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GEORGE H. SIMMONS, M.D., LL.D.

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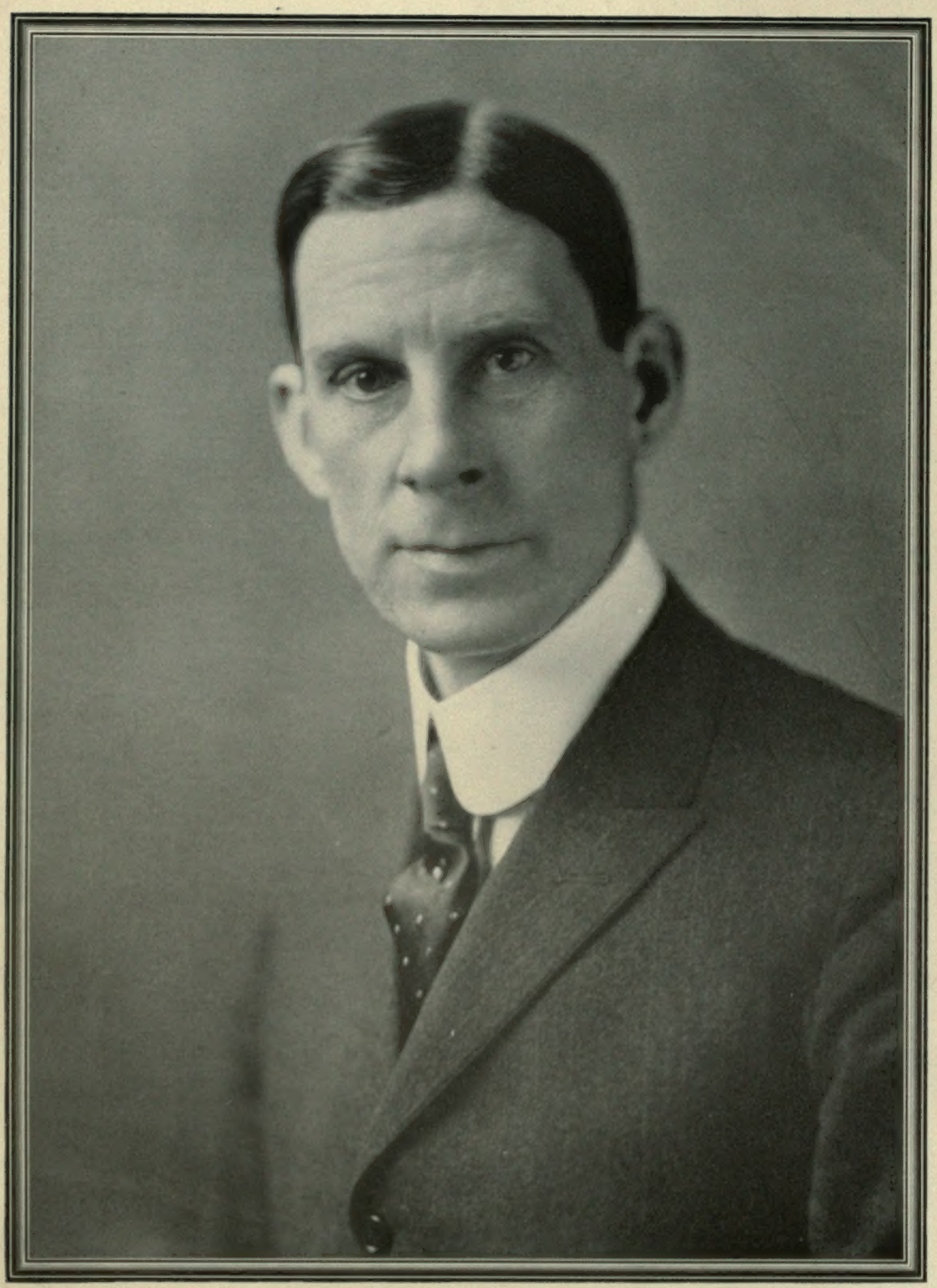
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PREVENTIVE MEDICINE AND THE GENERAL PRACTITIONER

JOHN M. DODSON, M.D.

CHICAGO

Six years ago, at the first banquet of the American Association of Industrial Physicians and Surgeons, held in Detroit, I commented on the fact that the industrial physicians, in devoting the major part of their time and attention to keeping employees well, were pointing the way to the general practitioner. I then ventured the prediction that, in the not distant future, the "family physician" would become, in large part, the "family health adviser," and would find his largest usefulness and derive a large part of his income in the field of preventive medicine.

The time seems opportune for more extended discussion of this prediction. Recently at the conferences on medical education, which are held each winter in Chicago, there have been numerous expressions of opinion that, notwithstanding the remarkable and gratifying advance in medical education in this country in the last quarter century, decided, if not radical, changes are necessary if our medical schools are to graduate students who are trained to render the best service that modern medicine makes possible.

Recent discussions in many medical societies, as well as papers and editorials in medical journals, voice a pronounced dissatisfaction with existing methods of medical practice. At a conference held in Washington last March, on the call of Surgeon-General Cumming, of the U. S. Public Health Service, to discuss the future of public health in this country, perhaps the most important and illuminating revelation was the deduction from several hundred questionnaires returned by medical students that public health (preventive medicine) is not "being sold" to the young men and women who are interested in medicine. The large majority of them reply that the matter has never been brought to their attention, and the idea of public health service as a career has never been considered by them.

To the family physician, and especially to the young men and women who are just entering on the practice of medicine, the possibility of impending changes in the methods of medical practice and medical education is of vital interest. There is a widespread feeling of unrest in the medical profession—a feeling much accentuated by the late war. Many physicians formerly engaged in general practice in small towns and rural communities, on being discharged from the medical service of the army and navy, were unwilling to return to the arduous work and meager returns of rural practice; and complaint comes from many such communities that they are without medical service of any kind. Some would find the solution of this problem in the graduation of more physicians, with a lowering of the requirements of premedical and medical education, in spite of the fact that we still have in the United States one physician for about every 700 of the population—a ratio nearly twice that of any other country in the world; despite, too, the further fact that there is no way of forcing the more poorly trained physicians into rural practice—a fortunate circumstance, because no other group of practitioners have such imperative need of that self-reliance and resourcefulness which comes in large part from adequate preparation.

The passing of the "family physician" is predicted and deplored. Some would seek to restore him by eliminating much or all of the instruction in the specialties, restricting the medical curriculum along clinical lines to medicine, surgery and obstetrics. Others advocate a curriculum which would deliberately encourage preparation for exclusive devotion to a specialty, and provide service for the community by the plan of group practice.

There is much complaint of the disproportion between the fees commanded by the specialist and the modest fees of the general practitioner. This is the excuse sometimes offered for the vicious—indeed, criminal—practice of "fee-splitting"; that is, a commission paid the family physician by the specialist, usually a surgeon, without the knowledge of patient or family, for a case brought to him for operation. The family physician feels keenly the injustice to himself and the frequent harm to the patient which result from the growing custom of patients' guessing at the diagnosis of their own symptoms and resorting direct to the specialist of one sort or another, a plan which often results in unnecessary operation and leaves the patient no better, and frequently worse, than before. The widespread activity of pseudomedical cults, osteopathy, chiropractic, naprapathy, Eddyism and the like, is a constant source of aggravation to the honest, adequately trained physician, and the demand that there shall be one uniform standard of preparation for the practice of the healing art is logical and necessary for the public welfare. Parenthetically, it may be remarked that the necessary legislation to secure this end can come only through the education of the public, in whose interest and by whose elected representatives it must be enacted.

It is obvious, then, that important changes are coming in methods of medical education, and it is quite as certain, for reasons presently to be set forth, that in this evolution preventive medicine will come to play a much larger rôle than in the past.

Preventive medicine is that science and art which seeks to prevent the occurrence of disease in the individual and to limit its spread in the community. It comprises (1) personal hygiene and (2) community hygiene and sanitation. Personal hygiene is that body of knowledge and practice by which each individual protects himself from disease, which might come to him by invasion from without or by disturbance of normal physiologic processes within his own body.

Modern community hygiene or public heath has perhaps been nowhere better defined than by Professor Winslow of Yale University: "Public health is the science and art of preventing disease, prolonging life and promoting physical health and efficiency through the organized community efforts for the sanitation of environment, the control of community infections, the education of individuals in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of social machinery which will insure to every individual in the community a standard of living adequate for the maintenance of health."

The general practitioner is intimately concerned with both of these phases of preventive medicine. In the matter of personal hygiene—much the more important of the two—if people are to be educated as to what makes for health and efficiency, and trained in proper habits of living and working, it is the physician—the family physician—to whom the community must look, primarily, for advice and instruction. The public health officials of any community, whose duty it is to set up safeguards of pure water and food supply, and to give attention to sewage disposal, sanitary housing, the institution of quarantine when necessary, the registration of vital statistics, and all other measures by which the community as a whole seeks to protect its members against disease—these officials are practically helpless without the cordial, intelligent, constant cooperation and support of the physicians of the community.

Preventive medicine, therefore, must come to have a larger place in medical education and practice for several reasons:

1. In this field, the physician can render the largest service to his patients.

2. It affords a source of income of which the family physician is in need.

3. Unless physicians render that service in the prevention and control of disease which modern medical science has made possible, other agencies will undertake this task.

4. Public health work—community hygiene—cannot flourish without the constant, intelligent support of the medical profession as a whole. Let us consider the items of this argument more in detail.

POSSIBILITIES OF SERVICE IN PREVENTIVE MEDICINE

The family physician can render the greatest service to his clientele by the preventing rather than by the curing of disease.

To one who is familiar with the stupendous progress in our knowledge of disease in the last sixty years, dating from the epoch-making discoveries of Pasteur, a progress which exceeds that of all the previous centuries, little argument is needed to make it clear that the practical benefits of this advance lie almost wholly in the field of preventive medicine. The hopes aroused by the discovery of the inoculation against hydrophobia, of antitoxin for diphtheria and of arsphenamin for syphilis that similar specific cures for other diseases would be found have not been realized. If we add to those already mentioned the serums for cerebrospinal meningitis and for tetanus or lockjaw, the cure of hookworm disease by thymol or other agents, and perhaps the use of emetin in cholera and of the acids of chaulmoogra oil for leprosy, we shall have included about all of the contributions to our therapeutic resources that have stood the test of experience. Even among these the prophylactic use of toxin-antitoxin against diphtheria and of antitetanic serum against lockjaw are far more effective as life-saving measures than their use after the disease has actually appeared. The indiscriminate use of vaccines of all sorts, and especially of shotgun combinations such as the so-called phylacogens, proved a delusion from which the profession seems happily to be recovering.

There has been an apparent, but only an apparent, loss to therapeutics through the demonstration by modern pharmacology of the inertness and uselessness of many of the drugs on which so much reliance was placed by the empiric practice of earlier times. The claims of most of these pharmaceuticals have been completely exploded by modern scientific investigation. The wise physician no longer believes that he is really benefiting his patient when he simply doles out to him a few pills or powders or a bottle of liquid medicine, or writes a prescription for them. A few, a very few, drugs have stood the test of accurate pharmacologic study and play a useful rôle in the physician's armamentarium; but the larger part of the resources of modern medicine in the treatment of the sick lies outside of the pharmacopeia. The wise physician has learned to beware the claims of the proprietary medicine manufacturer and of his detail man. The argument that experiment on animals cannot be used in drawing conclusions as to the action of drugs on human beings is, in large part, fallacious, and the so-called clinical proof, the testimony of bedside experience, must be interpreted with extreme care. Careless, inadequate observation of this sort has misled the medical profession more than any other kind of evidence.

Let us now set off against these rather meager gains in the field of therapeutics the tremendous achievements of preventive medicine: Yellow fever, one of the most dreaded and fatal scourges of mankind, all but abolished from the civilized world, even in its endemic focus in Ecuador; typhus, or ship fever, the dreaded tabardillo of the tropics, robbed of its terrors and made entirely controllable by the discovery of its mode of transmission, through the louse. During the World War, after thousands had succumbed to this disease in the Balkans and in Russia, the epidemic was promptly and completely arrested by the delousing of soldiers and civilians by relatively simple means.

Typhoid fever, the paratyphoids and the dysenteries, up to twenty years ago the most prevalent and fatal of army diseases, have been conquered through our knowledge of the modes of transmission, by provision of pure water and food, the detection and segregation of typhoid carriers, and inoculation against these diseases. Malaria, also by reason of the discovery of its mode of transmission by the anopheles mosquito, has been brought under control,

and vast areas of the most fertile and productive portion of the earth, hitherto all but uninhabitable by the Caucasian race, may now be occupied and cultivated by men of any race.

Cholera, once a frequent visitor to our own nation as well as to others, sweeping in vast pandemics from its endemic focus in India, has not visited the United States for a generation, and with constant watchfulness may be prevented from ever again becoming a scourge. The plague, likewise, has been all but exterminated, and may be completely abolished from the civilized world by the diligent application of our present knowledge.

These marvelous possibilities of modern sanitation and hygiene are not matters of mere theorizing but have been demonstrated on an enormous scale both in civil life and in wartime. One need but call to mind the wonderful accomplishments of the late General Gorgas and his staff in converting the Panama Canal Zone, once the most deadly pest-hole on the globe, into a region which presents an annual morbidity and mortality rate which compares favorably with that of the healthiest cities anywhere.

Contrast the awful experience of our own armies during the Spanish-American War and of the British in the Boer War—less than a quarter century ago—with that of the Japanese in the Russian war, and of all nations in that most terrific of all wars, the World War.

Through the civilized world, the experience of nations, states, cities and rural communities is equally gratifying as shown by statistics of illness and death. More than twelve years have been added to the average human life. The diseases of infancy and early childhood have been conquered to such a degree that in every well-conducted city the deaths in this early period of life are less than half what they were twenty or twenty-five years ago, in proportion to the population.

Of the achievements of modern surgery, it is unnecessary to speak to intelligent physicians or laymen—all made possible by the discovery of the microbic causes of wound infection and by aseptic technic, which is almost exclusively a preventive measure.

Progress has of necessity been slower in the growth of our knowledge of diseases of internal origin resulting from disturbed metabolism, excessive strain, mental and physical, defective heredity and bad habits of eating, living and working. Nevertheless, we already have accumulated knowledge which, if it could be transmitted to every individual so clearly and impressively as to induce him to cultivate and adhere strictly to correct habits of living, would result in an enormous reduction of human illness and an increase of human efficiency. To this great stock of knowledge, medical investigators are daily adding new increments.

With knowledge of all these facts, can one doubt for a moment that in medicine, more than in any other field, an ounce of prevention is worth many pounds of cure? Can one escape from the conviction that far and away the largest possibilities of service by the physician lie in the domain of prevention?

A SOURCE OF INCOME

One hesitates to use a commercial expression for fear that it may lead the reader away from the great truth that medicine is a profession of service, and the moment one abandons that point of view and substitutes money-getting as his chief goal, he sacrifices the great glory and satisfaction of a medical career. If, however, one were to use a frequent expression of the business world, one might say that preventive medicine is the "best goods" which the physician has to sell, and he is a poor merchant indeed who devotes his time to the display and sale of his poorer, less valuable goods, to the neglect of those which his customers—his patients—must soon discover are altogether the best goods for them to buy. And his patients are willing to pay for such goods, and the physician, to use another commercial phrase, "needs the money."

There is no doubt that the average income of the general practitioner, especially in the smaller cities and rural communities, has relatively declined in the last quarter century, and especially in the last decade. This decline is due to a number of conditions, some of which it is not easy to analyze. The very accomplishments of preventive medicine to which reference has been made have materially lessened the frequency and duration of many diseases. Typhoid fever, the infantile diarrheas, diphtheria and malaria were formerly sources of very considerable annual revenue to the average practitioner, yet he cannot but rejoice in the fact that these diseases have been so greatly lessened; and to the glory of the right-minded physician be it said that he has done all that he could do to bring about this result. The rapid development of hospitals and hospital practice, and the automobile and good roads have materially enhanced the capacity for service of the individual physician. He can give better and more efficient care today to two or three patients than he could give to one in earlier days, with the same expenditure of time and energy. While this factor has increased the income of some physicians, it has certainly diminished the average income.

The growth of specialism has doubtless affected the income of the family physician in some localities, but not to the extent that is often imagined. Specialism, of the right sort, does not take from the general practitioner work which he formerly did, but renders a service which was not possible before, and, properly used and controlled, greatly increases the service that medicine can render the sick.

The family physician of today is quite as competent as were those of previous generations to perform the minor surgical procedures, such as to remove foreign bodies from the conjunctiva or wax from the ear, to lance felons or boils, to reduce strangulated hernia or dislocations of joints, to dress the usual fractures, and to meet other surgical emergencies.

I doubt, too, that the medical cults, widespread as they are, materially encroach on the legitimate revenue of the really capable physician. Sooner or later, most of the foolish people who resort to these fads are compelled to seek the aid of scientific medicine, and they are very likely to need more attention and for a longer period than if they had not trifled with quackery of various sorts. The exploitation of the public by these cults is exasperating to the physician, but the real harm they do is not to him but to the public.

In the practice of preventive medicine, the practitioner has a legitimate source of income for service which he has heretofore, for the most part, given away in offhand suggestion and advice.

PREVENTIVE WORK OF OTHER AGENCIES

If the medical profession, and especially its largest, most important contingent, the family physician, does not assume leadership in this movement to prevent disease, other agencies will undertake the task. Indeed,

they are already doing this very thing. The social service worker, the public health nurse, the great benevolent foundations, have entered the field and are meeting the demand of the public for the institution of measures by which they may secure the benefits of modern sanitary science. Medical men are prone to underestimate the degree to which the public is already informed as to the developments of modern medicine and its possibilities in the prevention of disease. Perhaps the best evidence of this is the large amount of space devoted to health topics in the current literature of our time. Many of the leading newspapers print a health column every day edited by more or less—frequently, less—competent physicians. The periodical magazines circulating in the aggregate millions of copies seldom print an issue without one or more articles dealing with some achievement of medical science.

Now the significance of this fact is that the publishers of these newspapers and magazines are meeting a universal demand. They are not inspired by altruistic motives, and are not seeking to force on their readers information that they think they need but do not seek. They are printing material that will sell their product. Can one assume for a moment that a public so informed will fail to demand the institution of those measures of personal and community hygiene that will bring to them the beneficient fruits of modern medicine? No, the medical profession must make its choice. It may fight the irresistible movement of the people to secure these benefits, by community hospitals, health insurance, provision for the protection of maternity, the correction of remediable defects in schoolchildren, or the many other forms this movement may take; in which case, the profession will certainly be brushed aside or crushed as by a steam roller. Or the medical profession may recognize this trend and assume that leadership which it is its right and duty to assume. As leaders, it can direct these movements in such a way as to secure the largest possible benefits to the people as a whole and to conserve its own rights and emoluments. In any movement seeking the conservation of the health of the community, the highly trained, scientific medical man is the one indispensable factor. Any movement which seeks to secure his service at a wage which is not commensurate with the highly specialized training, skill and ability which the long, arduous and expensive modern medical education has secured for him, or which attempts to secure this service under conditions, by contract, or otherwise, that are obnoxious to any highly trained expert, must fail to secure the results that are sought. In the long run, that method of administering medical science, either preventive or curative, which best insures an adequate compensation and acceptable conditions of work to the physician is certain to insure the best returns to the community.

IMPORTANCE OF INTELLIGENT COOPERATION

The fourth argument—that public health cannot flourish without the intelligent, cordial cooperation of every physician in the community—is so obviously true that it needs no elaboration. Moreover, when medical students are fully informed as to the great advantages and the enormous possibilities of preventive medicine, there will be no dearth of men seeking service in the field of public health, because this phase of hygiene and sanitation is certain to make a strong and effective appeal to a large group, provided the conditions of public health work—reasonable wage, security of tenure of office and freedom from cheap and corrupt political interference—are insured.

How is the family physician to practice preventive medicine, to combine this with the present type of practice and to secure for such work a fair monetary compensation? This query can best be answered by pointing out what is already being done; for much more has been accomplished in this direction than is realized except by those who have surveyed the situation with some care.

The dentists were first in the field, and for some years it has been the custom of the good practitioners of dentistry to insist that the children especially, of their clientele, should be brought to them at regular intervals, three or four months, usually, in order that they may be trained in the proper care of the teeth, and the earliest signs of decay detected and arrested.

The infant welfare movement, inaugurated first among the poor by Budin of Paris in the so-called nourissons, has been the means of saving thousands of infant lives and of insuring sounder, stronger adults. This infant welfare movement has extended rapidly throughout the civilized world, at first as a charitable work; but within the last three or four years it has been translated into private practice. Many of the men engaged in pediatric work now secure a very considerable portion of their incomes from fees paid by mothers for advice in the care of their healthy, normal infants. The frequency with which such visits to the physician are made, at which the weighing and measuring of the child constitutes an impressive demonstration, varies, of course, with the zeal of the mother, the condition of the child and the judgment of the physician.

Similarly, it is rapidly becoming the custom in private practice for the prospective mother to seek examination and advice from the earliest stages of pregnancy, at intervals of from two to four weeks. In communities where this custom has for some time prevailed, as in New Zealand, the fatal accidents of labor, both to mother and infant, have been cut in half.

Reference was made in the beginning of this paper to the industrial physicians and surgeons. They, too, are pioneers in this field of prevention; for, in the best organized industrial establishments, the efforts of the medical department are almost exclusively devoted to keeping the employees well. Some of the great insurance companies have awakened to the life-saving possibilities of preventive medicine, and now offer their policyholders thorough examination at stated intervals for a small fee, or gratuitously. This, too, is not a philanthropic proposition, but one designed to reduce the number of death claims and conserve the funds of the policyholders.

A great national institution, the Life Extension Institute, organized by laymen, provides for its members a periodic physical examination, with medical advice to those found in need of it. This institute has made one serious mistake in setting a fee for its medical examiners that is utterly inadequate. There is a mistaken notion in the minds of most laymen and of many physicians that the physical examination of a healthy person demands less time and skill than that of one who is sick. The fact is quite to the contrary. A frank expression of disease, such as pneumonia, decompensation in cardiovascular affections, an acute infection—indeed, of almost any illness—should be recognized by the veriest tyro in medicine, although a thorough, complete examination must

always be made to insure the absence or detect the presence of obscure complication. To assure an apparently healthy individual that he is sound in all respects and free from any tendency to disease, able to withstand the stress and strain of the business in which he is engaged and of all the activities which make up his daily routine, requires an exhaustive, thorough examination that demands a high degree of skill and much time.

Many men, especially of large affairs, give evidence of their interest in this matter by subscribing to bureaus of urinalysis, paying a fee of from $10 to $25 a year for a quarterly report on the analysis of a specimen of urine sent to the laboratory. This is a practice that should be discouraged, because the examination of the urine alone is of little value. Many serious diseases which come on insidiously give no evidence of their presence in the urine. The person who is securing such reports at intervals from a clinical laboratory is lulled into a sense of security as to his health, and is extremely likely not to resort to his physician for a thorough, complete physical examination. Such an examination once a year is a far greater safeguard than an examination of urine every week.

A few wiser men, especially in the cities, make it a practice to seek such a thorough, comprehensive physical examination every few months or weeks.

To bring about the more general practice of preventive medicine, it is only necessary to extend the custom, now followed by a few, to all the people in any community. The action taken by the House of Delegates of the American Medical Association at the St. Louis session is evidence of the fact that the medical profession is aware that such examinations are important, and that they should be encouraged and facilitated. The resolution, passed by the House, as presented by the Council on Health and Public Instruction, reads:

> WHEREAS, The need and value of periodic medical examination of persons supposedly in health are increasingly appreciated by the public, it is recommended by the Council on Health and Public Instruction that the House of Delegates authorize the Council to prepare suitable forms for such examinations and to publish them in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; and that the county medical societies be encouraged to make public declaration that their members are prepared and ready to conduct such examinations, it being understood that the indigent only shall be examined free of charge and that all others are expected to pay for such examinations.

To render adequate and satisfactory service to his patients in the matter of prevention of ill health, the family physician should visit their homes at such intervals as will enable him to know the conditions of their living and working, and to advise when changes in such conditions are essential for the welfare of the family or any of its members. He should know intimately the schools that the children are attending and should advise with their teachers, when necessary, as to their school life in relation to their physical well-being.

Is the medical profession, as now constituted, prepared to meet this demand, which, to some degree, it must create? Is the average family physician so educated as to the facts and possibilities of preventive medicine that he can render as effective service in this line as he is supposed to render in curative medicine? It must be acknowledged that he is not.

THE REMEDY

And the remedy: First, study must be undertaken by the general practitioners, preferably, in part at least, through special continuation courses, provided for this purpose at medical centers; and the publication of a journal which shall present the newer truths of hygiene and sanitation in attractive, readable form, both to the profession and to the laity. Happily, the House of Delegates of the American Medical Association was alive also to this need, not satisfactorily met by any of the existing journals, and therefore instructed the Board of Trustees to arrange for the publication of such a journal of hygiene.

Secondly, for the physicians of the future, the present and coming generation of medical students, a revision of our present curriculum must be made in such manner as to stress the importance and need of prevention as distinguished from cure. This does not mean anything like so radical a revision as might at first appear. The remedy does not lie in the injection of new courses in formal sanitation, hygiene, bacteriology and the like, into an already overstuffed curriculum, or the replacement of existing courses by such as these; at least, to any marked extent. It lies rather in a change of attitude of every instructor in every course given in the clinical branches. The possibility of the prevention of disease and the wound infections should be a dominant thought in the mind of every clinician at every lecture or demonstration. For example, every time a case of typhoid fever is presented, the clinician should propound to the class these queries: "When, how and why did this patient become ill with this disease? Who was at fault? How could it have been avoided? How can the extension of this disease to others in the community be prevented? What are the specific duties of the attending physician in such a case in relation to the patient, the nurses, himself, the family and the community health officer? Just exactly what steps, what precautions should he take in discharging his full duty to each of these?"

Similarly, in discussing a case of wound infection as of a hand, he should inquire how much infection could have been forestalled: Who was at fault in not instituting the proper measures at once when the wound was sustained, the ignorance or the neglect of the patient himself? or, if he was ignorant, Why have those in control of the establishment in which he is employed allowed him to remain uninformed as to what he should do when injured?

The education of medical students as to what constitutes preventive medicine in the several diseases and accidents of life can be much more effectively accomplished when these are discussed in relation to all other aspects of such disease or injury—its etiology, pathology, diagnosis, prognosis and treatment—than in courses which treat only of the preventive measures detached from other aspects of the subject. Preventive medicine is the "safety first" movement in the combat against illness, wound infection and death. Needless to say, there is a considerable body of information concerning bacteriology, hygiene and sanitation which is best taught as it is now, in a department devoted to those branches.

Thirdly, it must be emphasized at all times and in all places that the medical profession is above all a profession of service to mankind. While, in the interest of the physician, of his family, his fellow physicians and his patients, it is his right and duty to exact a monetary return for his labors that is commensurate with the long, expensive period of preparation which has been required of him and the high degree of skill

thus acquired, he makes the most grievous and fatal mistake if he yields to the spirit of commercialism which is abroad, seemingly in more intensive degree than ever before, and makes "money-getting" his dominant thought.

Imbued with that fine spirit of service, the wise physician of today cannot but realize that his largest avenue of usefulness lies in the field of the prevention of disease.

25 East Washington Street.

SURGERY FOR THE TUBERCULOUS

H. G. WETHERILL, M.D.
DENVER

This subject is presented on the basis of the following fundamental facts, which are assumed to be established and acceptable by those who have had the largest opportunities for studying tuberculous diseases in man, and who know the scope and limitations of surgery as a remedy for such diseases.

PREMISES

1. Tuberculous patients, particularly those with pulmonary tuberculosis, are *always* "substandard" surgical risks, and must *always* be so regarded when surgical measures are contemplated for their relief.

2. The delicate "balance of power" [1] existing between the disease and the resistance is easily disturbed, and the scales may be turned unfavorably by surgical operations through

(*a*) exposure,
(*b*) shock,
(*c*) loss of blood,
(*d*) undue prolongation of an unwisely chosen anesthetic,
(*e*) inspiration or other forms of pneumonia following anesthetics;
(*f*) lowered resistance and diffusion to new and previously uninfected fields,
(*g*) postoperative mixed infection,
(*h*) injudicious use of so-called "drainage,"
(*i*) lack of a proper appreciation of the paramount importance of physiologic rest.

3. A large majority of those who are doing general surgery have failed to appreciate the limitations of surgery in the treatment of tuberculosis, or the special precautions required for such surgical operations when necessary and justified, and in these particulars the general surgeon has much to learn from the orthopedic surgeon.

4. A careful, differential, bacteriologic study is essential to a complete understanding of the surgical requirements and limitations of suspected tuberculous abscesses and effusions, and ordinary open operation and drainage should not be employed till this investigation has been made.

SUBSTANDARD SURGICAL RISKS

Little need be said regarding Paragraph 1 of the premises as set forth in the foregoing prospectus. Whether or not it is accepted as true, my purpose in presenting it as a basis or foundation for what I have to say regarding the details of the second item of the synopsis will be served.

I believe that the statements made as premises are true and are fully and wholle justified by facts, and that the opinions of those who have had the largest opportunities to study tuberculous diseases and the relation of surgery as a remedy for the cure of either tuberculous or nontuberculous conditions in tuberculous patients will bear me out in these beliefs.

That tuberculous invalids, particularly those with pulmonary tuberculosis, are *always* "substandard" surgical risks, and that special precautions should *always* be taken in the preparation, operation and aftercare of such patients when surgical operations are performed on them would appear to me to be so evident as to require no argument. However, in dealing with some of the special precautions required, this phase of the discussion will be briefly taken up later.

My principal appeal will be made for the exercise of the greatest possible care in selecting cases for operation, and in doing the operation, when one must be done, in such a way as to permit of no harm coming to the patient as a direct or indirect result of the operation or any of the incidents connected therewith; all of which means the exercise of extraordinary surgical judgment in the choice of patients for operation, and unusual conservatism, patience and faith in the essential tendency of tuberculosis toward cure,[2] if mixed infections are avoided and the resistance of the patient is not impaired or broken down.

Failure to appreciate the importance of functional and physiologic rest of a tuberculous organ or part, mixed infections, malnutrition and lowered defensive resources or resistance to the disease and its complications are responsible for most of the deaths attributed to tuberculosis.

The orthopedic surgeons, as a class, have long understood the importance of functional and physiologic rest as an essential of treatment in tuberculosis, and many physicians and general surgeons have yet to learn that very important lesson.

The average orthopedic surgeon knows also that uncomplicated tuberculous processes, free from mixed infections, or at least free from mixed infections of certain types, which he checks bacteriologically, do better if open operations and "drainage" can be avoided, and reliance is placed in physiologic rest of the diseased part and such general supporting treatment as may be indicated.

DISTURBANCE OF BALANCE OF POWER BY SURGICAL OPERATIONS

Let us now consider in what respect the interests of the tuberculous patient may be served in the event of his developing a condition for the relief of which a surgical remedy is necessary, and what are the particular and special dangers against which he is to be safeguarded.

He is, of course, subject to all of those ordinary risks of operation that are unavoidable in every case, but he is also peculiarly susceptible to injury from other causes purely and solely because of his tuberculous condition and because his powers of endurance and resistance are impaired.

Much depends on the condition for which the operation is to be done, and in particular whether it is tuberculous or nontuberculous, for, unquestionably, with the

1. Wetherill, H. G.: The Balance of Power in Infection, Colorado Med. **14**: 168 (June) 1917; Tr. Western S. A., 1917.

2. The key note of successful treatment is the early detection of the disease. The tuberculin test, the roentgen ray and the necropsy table all confirm the well observed facts which prove that after 40 years of age most human beings have at some time in their lives had a little tuberculosis and recovered from it without ever having been aware of its presence (Trudeau, E. L.: An Autobiography, Philadelphia, Lea & Febiger, 1915).

former a special and particular technic in certain steps of the operation may be adopted, as will be pointed out later; and certainly the greatest care of all details in the patient's interest will be observed.

Exposure, shock, loss of blood, undue prolongation of an unwisely chosen anesthetic, and inspiration or other forms of pneumonia following anesthetics. These constitute real dangers to all patients undergoing surgical operations, but they have especially dangerous factors for tuberculous patients, since their disease diminishes their defensive resources and retards their recuperation.

Patients with pulmonary tuberculosis are very susceptible to injury from certain anesthetics when badly administered over relatively long periods of time, and are quite prone to pneumonia and lung abscess from inspiration of food, fluid and mucus from the nasopharynx, and the diffusion of their own sputum into previously healthy areas of one or both lungs.

The choice of the anesthetic, the time over which it is used, and the skill with which it is administered are vital factors in operations on those with pulmonary tuberculosis.

Briefly stated, my own conviction regarding anesthesia for surgical operations on the tuberculous is as follows:

Wherever and whenever possible, local infiltration anesthesia, preceded by small doses of narcotics or sedatives associated with atropin or scopalamin, are preferable to all other forms and varieties of anesthesia. In this connection it is proper to state that with the modern local anesthetics and apparatus now available, and the exercise of a reasonable degree of skill and patience, almost any surgical operation may be done without causing the patient undue pain or discomfort.

Next in safety and efficiency, in selected cases, I should place spinal anesthesia, and after that, for operations up to the limit of one hour in duration, chemically pure sulphuric ether, preceded by small doses of morphine and atropin to prevent anxiety and resistance, to reduce the quantity of anesthetic required, and to dry the fauces and prevent the deep inspiration of faucial, tracheal and bronchial secretions.

For tuberculous persons, nitrous oxid gas would have a small place in my armamentarium, and chloroform would be absolutely barred from all use, even to the extent of a few drops as a preliminary to ether. I regard chloroform as a deadly poison in such infected cases, and believe that it should never be used under any circumstances. Harold Styles of Edinburgh gave us that tip more than twelve years ago.

Lowered resistance and diffusion to new and previously uninfected field, postoperative mixed infection, injudicious use of so-called "drainage," and lack of a proper appreciation of the paramount importance of physiologic rest. These are essential and vital factors which one may do little more than mention in a short paper, for to treat of them exhaustively would require a volume of many pages, with an elaborate chapter to be given to each subject.

In the records of every tuberculosis sanatorium may be found the histories of many patients who have suffered from some of the foregoing consequences of injudicious surgery. One superintendent, in a letter recently received, says:

> The most discerning surgical judgment should be exercised when surgical measures are contemplated in tuberculous subjects. This spring a tuberculous girl of 18 was operated on for appendicitis. At the same time her diseased tonsils were removed. It not only upset her "balance of power" but so lowered her resistance that the tuberculosis, which was "quiescent," became reactivated. This is only one of many instances I could cite in which operators have lacked surgical judgment.

Any or all of the factors in the first group (*a* to *e*) may be responsible for lowered resistance and diffusion of the disease. New foci in the lungs, pleura, kidneys or abdomen may readily be established, or, as in the foregoing instance, quiescent foci may be reactivated. Pure tuberculous areas may be and are engrafted with other organisms, and so, serious postoperative mixed infections arise, as was often the case when open operations with open drains were used for empyema, psoas abscess, tuberculous appendicitis and peritonitis.

"DRAINAGE" OF TUBERCULOUS AREAS

This brings us to the consideration of so-called "drainage" of tuberculous areas.

It is difficult to be temperate in the consideration of this phase of surgery for tuberculous areas, as there are many intelligent and skilful surgeons who still believe that, in the tuberculous abdomen, for example, drainage is necessary, and that a rubber tube or a piece of gauze will drain—all of which is, of course, erroneous and entirely aside from the harm these foreign bodies are known to cause in admitting mixed infectious organisms, and causing persistent sinuses and fistula.

That such "drainage" is now known by many surgeons of the largest experience to be unnecessary and distinctly harmful; that every one who knows anything of surgery knows that, in serous cavities, tubes and gauze "drain" for only a few hours and always act as irritants with a distinct tendency to cause persistent sinuses with mixed infections and intractable fistulas, counts for nothing with him who has for years had the "drain habit" and is afraid to abandon it. There are, too, a few conservatives who never know what others have done or are doing, and who will continue to "drain" tuberculous serous spaces as long as they live.

Since the disastrous experience of the World War, it has dawned on the minds of many surgeons that rib resections and open drainage of empyema cavities, particularly the tuberculous ones, was a mistake, and in the due course of time it may be hoped that this experience will lead to the conviction that the same principle applies to tuberculous serous cavities elsewhere, particularly in the abdomen.

BACTERIOLOGIC STUDY AND PHYSIOLOGIC REST

This leads us to the consideration of the great importance of a differential bacteriologic study of supposed tuberculous areas, whenever possible, before any operation is advised or undertaken.

Here, the orthopedic surgeon has blazed the trail with his psoas, bone and joint abscesses, and has checked his operative surgery with his bacteriologic findings. He cleans and closes tuberculous abscesses, if he opens them at all, but he is much more likely to aspirate them to relieve tension, if necessary, immobilize them and assure them long periods of *physiologic rest.*

Though many physicians and surgeons have recently learned to apply these important, scientific methods and vital curative principles to tuberculous serous spaces elsewhere, especially to the pleura, the careful bacteriologic study of tuberculous serous spaces previous to operation is far from being universal, and the principal of long periods of physiologic rest as a preoperative or a postoperative procedure is not generally appreciated as it should be.

Even a tuberculous lung may be given long periods of almost absolute physiologic rest by the use of artificial pneumothorax after the method suggested by John Murphy at Denver in 1898, and quite satisfactory relative rest may be secured by keeping a patient in bed in a position which favors the use, principally, of the other lung and reduces the respiratory rate. Immobilization of bones and joints, including the vertebrae, has been reduced to an exact science by the orthopedist. Peristaltic arrest and relative physiologic rest of the abdominal organs may be secured by diet, confinement in bed, and small doses of opium or other well-known drugs; so it would seem that the important principle of physiologic rest may be applied to almost any organ or serous surface subject to tuberculosis.

SUMMARY

It would be unfortunate if I should in the least degree convey the impression that I am opposed to necessary surgery for tuberculous persons, whether it be for tuberculous or nontuberculous diseases. What I do plead for is that tuberculous patients may always be regarded as substandard surgical risks, and that they require special study and special consideration in every way when an operation is deemed necessary for them. In particular, the choice of the anesthetic, the manner of its administration, the time over which it is used, and the preparation and after-care of the patient are important determining factors in procuring good results. In all operations for known tuberculous conditions, a conservatism based on the well understood tendency of the disease toward recovery should be exercised; operations should be checked with a careful bacteriologic study, and the essential principle of physiologic rest should be employed both before and after operation.

Every possible precaution should be employed to prevent postoperative mixed infections, and to avoid diffusion and dissemination of the disease. As a means to these ends, futile attempts at "drainage," which is unnecessary and does not drain and does predispose to sinuses, fistula, hernia and delayed convalescence, should be strictly avoided.

Given a tuberculous invalid with an empyema, an ischiorectal abscess, broken down or suppurating lymphatic glands, a tuberculous testicle or kidney, or a peritoneal tuberculosis involving the fallopian tubes or appendix, a timely, carefully considered and dexterously done surgical operation will bring about results absolutely unattainable by any other means. These are the circumstances under which surgery accomplishes marvelous results and brings credit to the surgeon and life and health to the patient. It relieves him of his burden of constant toxemia, reactivates his defensive mechanism, and, restoring his recuperative "balance of power," enables him to win the fight he must otherwise have lost.

Such surgery is brilliant, triumphant and satisfying.

1127 Race Street.

Cholecystectomy in Venezuela.—The first surgical removal of the gallbladder in Venezuela was made by Dr. Salvador Córdoba on Feb. 16, 1917. The operation was a success; the second operation of the same character was performed by Dr. L. Razetti on Feb. 20, 1917. In his recent thesis submitted to the National Academy of Venezuela, Dr. Córdoba reviews the evolution of gallbladder surgery, since Jean Louis Petit made his first cholecystectomy in 1737 to the first excision of the gallbladder by Lagenbuch in 1828 and the subsequent general use of the operation.

BETANAPHTHOL IN THE TREATMENT OF HOOKWORM DISEASE

C. N. LEACH, M.D.
AND
G. G. HAMPTON, M.D.
MANILA, P. I.

During the last few years, considerable interest has been revived in the use of betanaphthol as an anthelmintic, particularly in the treatment of hookworm disease.

TABLE 1.—RESULTS OF PRELIMINARY EXAMINATION BY PLAIN SMEAR AND WILLIS SALT FLOTATION

Number Examined	Uncinaria			Ascaris			Trichuris		
	+	—	%	+	—	%	+	—	%
397	372	25	93.7	173	224	43.6	104	293	26.2

TABLE 2.—WORM COUNTS AFTER TREATMENT WITH BETANAPHTHOL AND CHENOPODIUM

Prisoner's Number	Examination of Stool			Worm Count After Betanaphthol				Worm Count After Chenopodium			
	H.	A.	T.	H.	A.	T.	Oxy.	H.	A.	T.	Oxy.
1	+	—	—	0	0	0	0	0	0	0	0
2	+	+	—	0	0	0	0				
3	+	+	—	0	0	0	0				
4	+	+	—	0	[illegible]	0	0				
5	+	—	—	0	0	0	0	1	0	0	2
6	+	—	—	0	0	0	0	6	0	0	8
7	+	—	—	0	0	[illegible]	0				
8	+	—	—	0	0	0	[illegible]				
9	+	+	—	2	0	0	1	1	2	0	3
10	+	+	+	5	0	0	0				
11	+	+	+	3	0	0	2				
[illegible]	+	+	—	6	0	[illegible]	12				
13	+	+	—	9	0	0	2	5	0	0	2
14	+	+	—	2	0	0	12				
15	+	+	—	4	0	0	0	0	0	[illegible]	2
16	+	+	+	12	0	[illegible]	1				
17	+	+	—	2	0	0	0				
18	+	+	—	26	[illegible]	0	0	0	0	0	0
19	+	+	+	3	0	0	20	0	0	0	0
20	+	—	—	12	0	0	0	3	0	[illegible]	0
21	+	—	+	3	0	0	0				
22	+	—	+	19	0	0	0	0	0	0	[illegible]
[illegible]	+	—	+	59	0	0	2				
24	+	—	—	68	0	0	0	0	0	0	4
25	+	—	—	11	0	0	0	1	0	0	0
26	+	+	—	6	0	0	0	3	0	0	0
27	+	—	+	1	0	0	0				
28	+	—	—	18	0	0	0	1	0	0	[illegible]
29	+	+	—	15	0	0	1				
30	+	—	+	36	0	0	2				
31	+	—	+	1	0	0	16	1	0	0	2
32	+	+	—	1	0	0	0				
33	+	—	—	0	0	0	26				
34	+	+	+	6	[illegible]	0	0				
35	+	—	—	4	0	0	0				
36	—	—	—	3	0	[illegible]	4				
37	+	—	—	7	0	1	0				
38	+	+	—	4	0	[illegible]	0	5	1	0	0
39	+	+	—	0	0	0	23				
40	+	+	—	[illegible]	0	0	[illegible]				
41	+	+	—	1	0	[illegible]	[illegible]	[illegible]	0	0	0
42	+	—	—	[illegible]	0	0	0				
43	+	—	—	2	0	0	[illegible]				
44	+	+	—	2	0	0	1	1	0	0	0
45	+	—	+	15	0	0	0				
46	+	—	+	2	0	0	0	0	0	[illegible]	2
47	+	—	—	8	0	0	0	1	0	0	3
48	+	—	—	1	0	0	0				
49	+	—	—	0	0	0	0				
Total				385	0	1	125	29	3	0	28

With the work of Drs. Smillie and Mhaskar in mind, it was decided to carry out experiments along similar lines in the Bogambra Prison at Kandy, Ceylon. The inmates of this jail are all men, the census varying from 250 to 350 prisoners. This number is constantly varying on account of new admissions, dismissals on completion of prison term, and transfer to other prisons. They are admitted from all parts of the island. The ages vary from 19 to 75 years, and the term of confinement from one month to thirty years.

The majority of the inmates are of the farming class, and their living conditions, on the estates and in their homes, have been such as to offer the optimal condition for infection with hookworm.

In this work every possible assistance was given by the prison superintendent, Mr. C. C. Woolley, and his staff. In only one case did a prisoner refuse to take treatment, and no attempt was made to force the issue. The work, therefore, was carried on under the most favorable conditions.

TABLE 3.—RESULTS OF TREATMENT WITH BETANAPHTHOL

	Uncinaria			Ascaris		
		Cured			Cured	
	Number	Number	Per Cent.	Number	Number	Per Cent.
Given first treatment.....	284	90	31.6	136	95	69.8
Given second treatment..	139	53	38.1	62	40	64.5

A preliminary microscopic examination was made of the stool of each inmate. In obtaining these fecal specimens, tins bearing the prison number of each of the inmates were issued to the jailer, who in turn supervised the distribution to the cells of the individual prisoners. Tins were issued in the afternoon when the prisoners were locked up for the night. The specimens were collected in the morning at roll call, and delivered to a special ward which had been turned over to us for laboratory work. Two coolies were detailed by the jailer to assist in the preparation of stools for microscopic examination, the Willis salt flotation method being used. These men also did the screening of stools for the recovery of worms. The work of the coolies was supervised at all times by the medical officer in charge of the work, and the treatments were all administered by the officer.

TABLE 4.—SEVERITY OF INFECTION WITH HOOKWORM

Hemoglobin From 75 Prisoners			Maximum Number of Worms Expelled by Any One Patient	Minimum Number by Any Patient	Average per Patient
Highest	Lowest	Average			
100%	60%	73.2%	68	0	8

Preliminary stool examinations of 397 prisoners showed a 93.7 per cent. infection with *Uncinaria*, 43 per cent. with *Ascaris* and 26 per cent. with *Trichuris trichiura*.

Betanaphthol in powdered form, in 50 grain (3.25 gm.) doses, was administered in one dose as the first treatment to all who were found positive for hookworm. No preliminary or later purge was given. Treatments were given at 6:30 a. m., before any food had been taken, and all prisoners treated were kept under observation in the special ward, in order to note any untoward effects of this drug. No food was allowed until four hours had elapsed after the treatment. In no case were any serious symptoms complained of by the patients.

Eight days after this initial treatment, stools from all patients treated were again examined for ova. This examination revealed "microscopic cures" in 31.6 per cent. of the hookworm cases and 69.8 per cent. of the *Ascaris* cases. No case was considered negative until three 2 by 3 inch slides had been thoroughly examined and no ova found.

A second treatment of 60 grains (3.9 gm.) of powdered betanaphthol was given to 139 of the patients showing ova in their stools after the first treatment. They were again kept under observation in the ward, and no food was allowed until five hours after treatment. No untoward effects were noticed following this heavier dose. In all cases treated, the prisoners returned to their regular work after the 11:30 a. m. meal.

Eight days after the second treatment with betanaphthol, stools examined for ova showed that of the 139 patients with hookworm disease, 38.1 per cent. did not show ova in their stools, and of the sixty-two with *Ascaris* infestation, 64.5 per cent. showed no ova.

The first treatment consisted of 50 grains of betanaphthol. The second treatment consisted of 60 grains of betanaphthol. It is interesting to note that of the 385 hookworms examined, not one ancylostome was found.

Thirteen out of fifty-four patients received two treatments with betanaphthol, and expelled no worms.

TABLE 5.—WORM COUNT ON FIFTY-FOUR CASES SELECTED AT RANDOM

	Number Examined	Uncinaria			Ascaris			Trichuris		
		+	−	%	±	−	%	+	−	%
Preliminary microscopic examination.....	54	52	2	96.3	24	28	44.4	15	39	27.9

Eight out of twenty patients received the test treatment with oil of chenopodium who had previously had two treatments with betanaphthol, and expelled no hookworms.

Stools collected from fifty-four selected patients showed a total of 441 *Uncinaria*, no *Ascaris*, two *Trichuris* and 139 *Oxyuris* worms. These were expelled after two treatments with two doses of betanaphthol. Of the twenty cases available for test treatment with oil of chenopodium, following the two treatments with betanaphthol, twenty-nine *Uncinaria*, three *Ascaris* and twenty-eight *Oxyuris* worms were recovered from the stools after treatment.

The microscopic examination of stools after one treatment with betanaphthol revealed an absence of ova in 31.8 per cent. of the cases of hookworm and 69.8 of the *Ascaris* cases, while the worm count showed thirteen out of fifty-four, or 24 per cent. of the *Uncinaria* cases and none of the *Ascaris* cases to be cured.

In the twenty patients given the test treatment with oil of chenopodium, eight expelled no hookworms,

TABLE 6.—MICROSCOPIC EXAMINATION OF STOOLS EIGHT DAYS AFTER FIRST DOSE OF FIFTY GRAINS OF BETANAPHTHOL AND AGAIN AFTER SECOND DOSE OF SIXTY GRAINS

	Number Examined	Cured			
		Uncinaria		Ascaris	
		Number	Per Cent.	Number	Per Cent.
After first treatment.....	54	23	44.2	16	29.6
After second treatment..	16	9	56.2	5	31.2

showing a cure in 40 per cent. of the patients who received two treatments with betanaphthol.

The prisons of Ceylon offer an unusual opportunity for research work in tropical medicine. Owing to the transient character of the population, they also afford an excellent medium for the transmission of public

health propaganda to all parts of Ceylon. The Bogambra prison has representatives from every province of the island. The average daily census for 1921 was 456, and the total admissions amounted to 1,641. It is to be hoped that our work will be followed by a more thorough study in all of the prisons of Ceylon.

TABLE 7.—WORM COUNT AFTER BETANAPHTHOL

No. Patients' Stools Examined	Uncinaria			Ascaris	Thichuris	Oxyuris
	Male	Female	Total			
54	121	320	441	0	2	139

An attempt was made to determine what effect the length of term of confinement in the jail would have on the degree of hookworm infestation. The excellent sanitary conditions of the prison have reduced the chances of reinfection to the minimum. Unfortunately, a sufficiently large number of prisoners in each class were not available to render this experiment as valuable as one would like, but the findings are recorded in the hope that further work may be done along this line in the tropics.

It is customary in the Ceylon prisons to work the prisoners on the roads and other work outside the prison compound. These men work in their bare feet, and are frequently exposed to ideal conditions for infestation with hookworm. Therefore, any attempt to draw conclusions from Table 10 would be useless. One man listed in the table had been in confinement for thirty years, yet hookworm ova were demonstrated in the stools.

An opportunity was afforded to determine the effects of betanaphthol as a vermicide by following the administration with a postmortem. A prisoner (a Singhalese

TABLE 8.—WORM COUNT: TEST TREATMENT WITH TWENTY-MINIMS OF CHENOPODIUM; STOOLS COLLECTED FOR THREE DAYS AFTER TREATMENT

No. Patients' Stools Examined	Uncinaria			Ascaris	Trichuris	Oxyuris
	Male	Female	Total			
20	17	12	29	3	0	28

man, aged 55) who was sentenced to be hanged, volunteered to take betanaphthol in any quantity that we cared to administer. The stool was positive for hookworm and *Trichuris*. He was undergoing a religious fast for two weeks prior to his execution, his diet consisting only of a small quantity of rice once a day. November 25, 50 grains of betanaphthol in the powdered form was given, and no preliminary or later purge administered. All stools were carefully collected from this time on until the execution. As the prisoner was not allowed to leave his cell at any time and was compelled to use a bucket for latrine purposes, there was no chance of loss of any of the material. November 27, another dose of 75 grains (4.9 gm.) was administered. All stools for forty-eight hours after the first treatment showed no helminths. The same was true for twenty-four hours after the second treatment. The stools following treatment from this patient were all unformed or semiliquid in consistency, containing considerable partially digested rice.

The prisoner was hanged at 8 a. m., November 28, and the necropsy was performed the same day at 9:45 a. m. Before the digestive tract was removed for examination, the different anatomic portions were securely tied off so that none of the contents could pass from one section to the next. The intestinal tract was removed, starting with a section of the pylorus and including the entire intestinal tract down to the rectum. The intestine was opened one section at a time, and the contents of each section were placed in a separate bucket. This material was examined for ova and parasites. Fifteen male necators were obtained from the washings of the fecal material found in the colon. One male necator was found attached to the jejunum near the duodenum, and a second attached to the mucous membrane of the third portion of the duodenum. Many ova in the eight and sixteen segmented stages were found in the fecal material from the descending colon and rectum. The mucous membrane of the small intestine was covered with a thick, tenacious mucus. On removal of this mucus, the mucous membrane showed numerous small petechial hemorrhages. The abdominal viscera were otherwise normal with the exception of the spleen, which was enlarged to about twice its normal size.

TABLE 9.—DEGREE OF INFECTION

Average number of uncinarias expelled from each of 54 patients after two treatments with betanaphthol	8
Average number of uncinarias expelled from each of 20 patients after test treatment with 24 minims of oil of chenopodium	1.45

Although this man received 125 grains of betanaphthol in two doses at a forty-eight-hour interval, no worms were ever recovered during life. At postmortem, however, seventeen necators were found, of which two were still firmly attached to the mucous membrane of the small intestine.

SUMMARY

The 397 prisoners examined are fairly representative of the island of Ceylon, since they come from all nine provinces. The infestation rate, as shown by microscopic examination of the stools, is 93.7 per cent.

The severity of infestation is well illustrated by the hemoglobin findings and worm count. The average worm count from fifty-four prisoners was found to be only eight. The average hemoglobin from seventy-five prisoners was found to be 73.2 per cent.

Betanaphthol, as an anthelmintic, administered in one portion without purge preceding or following, has produced "microscopic cures" in only 31.6 per cent. of cases after one treatment. After a second dose, following an eight day interval, it has produced "microscopic cures" in 38.1 per cent. of those cases remaining positive after the first treatment.

TABLE 10.—EFFECT OF CONFINEMENT ON DEGREE OF INFECTION

Term of Confinement, Years	Number	Result of Microscopic Examination			Per Cent. Infected		
		Uncinaria	Ascaris	Trichuris	Uncinaria	Ascaris	Trichuris
From 2-3	10	9	4	3	90	40	30
From 3-4	8	6	2	1	75	25	12.5
From 4-5	5	5	2	2	100	40	40
From 5-30	11	10	4	1	90	36	9.1

Although the microscope shows 69.8 per cent. of cures for *Ascaris* after the first treatment with betanaphthol, and a further 31.2 per cent. cure with the second dose, none of the stools examined for helminths showed *Ascaris*.

With the dose as used in this prison (50, 60 and 75 grains of powdered betanaphthol) administered in one portion on an empty stomach and without purge, not a single patient experienced any untoward effects.

A CASE OF HYPERSENSITIVENESS TO SILK*

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AND
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This case is reported because of its unusual features.

REPORT OF CASE

Miss C. V. A., aged 21, a college student, was referred for diagnosis and treatment of asthma, March 30, 1921. Her maternal great-grandfather had asthma, her maternal uncle suffered from eczema, a maternal first cousin, once removed, had asthma, and a paternal uncle had attacks of hay-fever. She had had all the diseases of childhood, also diphtheria and tonsillitis, and influenza of moderate severity, two years previously. The adenoids had been removed in childhood. She suffered many head "colds" each winter. There was a history of some dyspnea about fifteen months before following a severe cold. This was apparently very mild. The condition now complained of had developed about three months before and had been steadily growing worse. After the last attack, she was confined to the infirmary for a few days. The attacks developed in the evening before she went to bed, and usually occurred after an evening spent in Boston. The condition during the night was good, and there was no difficulty on arising in the mornings. There were no clues as to a possible cause.

The physical examination revealed nothing of interest except a mild chronic eczema. The urine showed considerable indican but was otherwise negative. The blood smear revealed 29.5 per cent. lymphocytes and 10.5 per cent. eosinophils.

Complete atopic tests were made according to Cooke's technic, with the ordinary inhalant and food groups. Positive reactions were obtained with house dust, rice and flaxseed, and with some of the less important foods. The reactions, while positive, were not very strong, and, outside of the rice as a possible constituent of face powders, did not agree with the history.

The patient returned to college with the advice to avoid face powders. During the remainder of the college year, attacks occurred about twice a week but were not very severe.

September 19, after stating that she did not suffer from urticaria or hives, the patient volunteered the information that "welts" developed on her skin whenever it came in contact with silk. She had noticed this ever since the attack of influenza, two years before. One waist in particular was so troublesome that she was unable to wear it, although the same waist had been worn for a number of years before without difficulty. September 21, this waist was brought to the office and was put on in our presence. The skin was perfectly clear at the time except for the mild eczema. Within fifteen minutes, a giant urticaria developed on the skin of the arms, neck and chest and down to the line of the underclothes, but was most marked on the arms. The suffering was quite real and 12 minims of epinephrin in two doses was given without producing a great deal of relief. The urticaria lasted twelve hours in spite of the fact that the waist had been removed at the first sign of trouble.

The two sleeves of the waist were then cut off, approximately 100 square inches, and extracted according to the method of Coca.[1] This was tested by the intradermal method of Cooke, one test being made in each arm simultaneously. This would make the total amount used in the test from 0.02 to 0.05 c.c. Within a few minutes (the exact time was not taken, but was not longer than ten minutes) the patient began scratching her palms, and coughing. Then urticaria became general; the eyes were red and the lids were greatly swollen, the nose watered and then was blocked completely by the swollen mucous membrane; the asthma became alarming and epinephrin was administered in liberal doses. Within two hours, the entire reaction was over, and the patient went home. This was a typical constitutional reaction. The patient had never experienced a similar attack.

A sample of the waist was then sent to the Philadelphia Conditioning House, which reported that the silk was heavily weighted and that the fibers were decayed. Through the courtesy of Mr. Edwin A. Russell and Mr. Henry Meyer the following information on the silk industry was obtained: The cocoon of the silkworm is made up of strands of an insoluble substance bound into a solid mass by a more soluble substance known as "glue." The cocoons are placed in hot water, which softens the glue; an end of the strand is then picked up and the entire strand is pulled out. A reasonable effort is made to rid the fiber of the glue, but we are informed that it is never possible to get the fiber entirely pure. In certain specimens, the glue may make up as high as 25 per cent. of the silk. The fibers are then "thrown" together to form a thread. This is done by a number of processes. Among the most common is one involving the use of neat's-foot oil. The threads are then "weighted." Here there are various processes involving the use of zinc, tin and silica as the weight. After this, the silk is dyed, usually with anilin dyes.

In our effort to find just where in all these processes the silk picked up the substance which had such a bad effect on our patient, Mr. Henry Meyer kindly furnished us with silk in all stages, up to the weighting process. These were extracted in the same manner as the original waist and tested. Our task was immediately simplified because a strongly positive cutaneous reaction was obtained with the extract of a single strand of silk just as it is taken from the cocoon. In this specimen, there is nothing but the filament and the glue which has adhered to it. There is little doubt that the reaction is due to the rather soluble glue and not to the relatively insoluble fiber. Four different extracts of silk have been tested and all the reactions have been strongly positive. These have included silk after throwing and after it has been thrown and boiled.

DOSAGE AND RESULTS

Date	Dosage C.c.	Results
10/ 8/21	0.0025	No reaction
10/27	0.005	Mild urticaria for three days
11/ 3	0.01	Mild asthma and urticaria soon after
11/10	0.01	Mild urticaria soon after
11/17	0.01	Mild urticaria soon after
11/26	0.0125	Mild urticaria and cough
12/ 3	0.0125	Mild urticaria, no cough or asthma
12/15	0.01	No reaction
1/20/22	0.011	No reaction
1/27	0.013	Considerable asthma and urticaria for 1½ hours
2/ 4	0.012	No reaction
2/16	0.013	With epinephrin, 3 minims; no reaction

Since this severe reaction, the patient has had only six attacks of asthma, and these have all been very mild and of short duration. Most of these have a direct connection with silk, such as pressing clothes. One attack came on when the patient was visiting a girl friend. They occupied the same bedroom, and the attack started while the friend, who wore silk underwear, was undressing. The attack was soon over and, after discarding a silk quilt, sleep was undisturbed. Needless to say, the patient does not wear any silk herself. During this period, there was an occasional mild attack of urticaria. The eczema has remained unchanged.

The frequency of this hypersensitiveness is rare. We have tested more than 200 patients and have distributed the extract to other workers, so that we can safely say no other reactions have been obtained in 500 cases of asthma and urticaria.

With the thought in mind that silk might be the sole cause of all three complaints, asthma, urticaria and eczema, especially when silk on other persons might cause considerable

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* From the Laboratory of Physiological Chemistry of Jefferson Medical College.

1. Coca, A. F.: J. Immunol. 7: 163 (March) 1922.

difficulty, we thought ourselves justified in attempting hyposensitization.

This was done, and doses were given of the extract of her own waist, with the results presented in the accompanying table.

An attack of tonsillitis then interrupted the treatment, which has not been resumed. March 1, the patient tried to wear silk straps on her shoulders, and urticaria immediately appeared.

COMMENT

While the dosage used is undoubtedly open to criticism, it nevertheless indicates the great difficulty attendant on hyposensitization in certain cases. The smallest estimate possible of the dose used in the first testing would be 0.02 c.c. It was probably more than this. Thus, after four months of treatment, the patient was able to stand barely half the original dose, which gave such an alarming reaction.

Cooke and Coca [2] assert that hyposensitization is relative and temporary. To say this tolerance is only relative implies that there is a maximum beyond which it is impossible to hyposensitize. We know little or nothing about this implied maximum dosage. In the majority of cases, it is of no clinical importance. Usually, there is a clinical "cure" before the maximum is reached but in this case, we feel we are very close to the patient's tolerance for the silk solution, and yet the skin hypersensitiveness to externally applied silk remains approximately the same. There is a decided improvement in the asthma. This may be due entirely to the fact that the patient makes no attempt to wear silk (formerly silk was worn, care being taken to keep it away from the skin), or it may be the result of the injections.

It seems probable from this case that there are cases in which hyposensitization is effective to such a slight extent as to be of almost no value.

334 South Twenty-First Street.

2. Cooke and Coca: J. Immunol. 7: 219 (March) 1922.

THE ARTHRITIS OF SERUM SICKNESS*

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Most patients receiving considerable amounts of therapeutic serum develop serum sickness. Formerly this was most frequently observed following the administration of diphtheria antitoxin, but recently the introduction of larger doses of horse serum in the treatment of pneumonia and cerebrospinal meningitis has furnished more examples of this condition. Clinically, it is manifested during the second and third weeks following the serum treatment by fever, lymph node enlargement, urticaria and short, transitory leukopenia followed by leukocytosis. Another less frequent but very distressing symptom is joint pain and tenderness, the exact nature of which is but little understood. Up to the present time this manifestation has taken its name from the subjective symptoms.

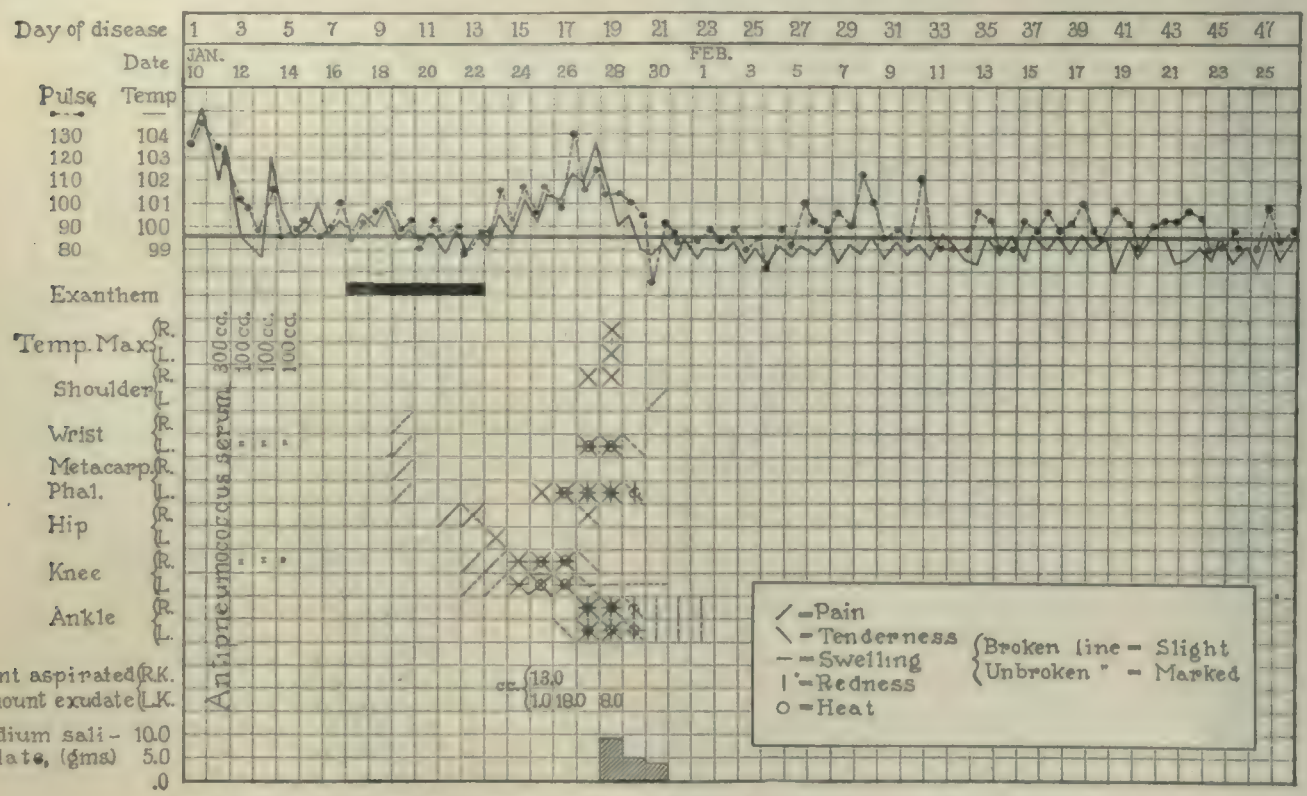


Chart 1 (Case 1).—Temperature curve, exanthem and joint involvement in case of serum sickness.

Pirquet and Schick [1] speak of it as *Gelenkschmerzen*. During the treatment of a large series of patients with antistreptococcic and antidiphtheritic serums, they did not encounter a single instance in which there was clinically demonstrable exudation into the joints. Hartung [2] found joint manifestations in ten among 375 serum treated patients (ten of sixty-eight cases of serum sickness). In eight of these ten cases, one or more joints showed swelling. The joints most often involved were those of the hands; in two instances, the right knee was swollen, the patella floated, and the skin

* From the Hospital of the Rockefeller Institute for Medical Research.

1. Pirquet, C., and Schick, B.: Die Serumkrankheit, 1905.
2. Hartung, C.: Jahrb. f. Kinderh. 42: 72, 1896.

was stretched and reddened. Goodall,[3] in describing the "complications" of serum sickness, states that "the most frequent of these is one which usually goes by the name of 'joint pains', but which is, I have no doubt, an arthritis." In certain of his cases, swelling of the joints occurred, but this was extremely rare; in the majority there was only pain with stiffness. In only

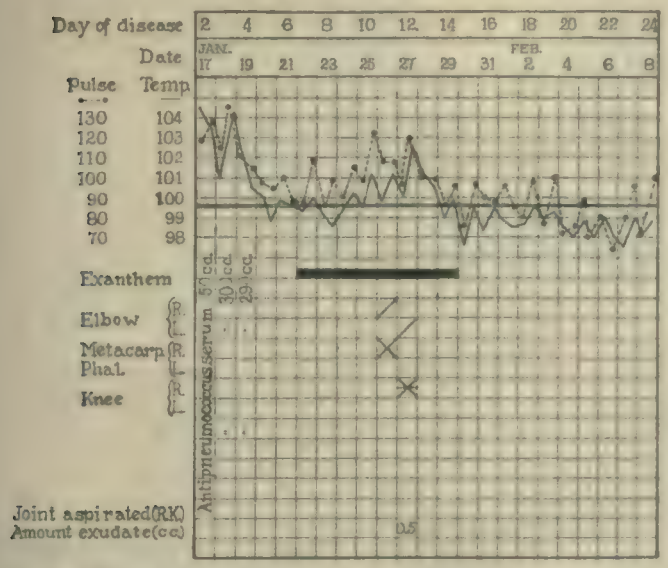


Chart 2 (Case 2).—Temperature curve, exanthem and joint involvement in case of serum sickness.

one of 376 patients having joint involvement did a relapse of arthralgia occur. Longcope [4] describes the condition under the term arthralgia. He says: "In comparison with the severity of the arthralgia, there is little to be observed. The joints are somewhat tender to the touch, but there is not, except in rare instances, swelling or reddening, and the joints are not hot to the touch. In only one instance have I seen a slightly swollen and red wrist." More or less joint symptoms were noted in about 20 per cent. of the cases of serum sickness observed by Weaver.[5] He found the pains to be spontaneous, and increased by motion and sometimes by touch. The severity of the pains was in marked contrast to the limited objective findings, and the pain disappeared in from one to three days, leaving the joints without permanent alteration. In his experience, swelling of the affected joints was unusual. Von Ritterstein [6] observed one case with swelling of the joints. Poynton and Paine [7] state that "antitoxic sera free from bacteria may sometimes produce effusion into the joints." Béclère, Chambon and Ménard [8] observed urticaria and symptoms of joint lesions in calves injected with horse serum. They state that microscopic examination of sections of the skin and joints revealed no evidence of inflammation.

Weaver [5] found that with doses of horse serum under 100 c.c. the frequency and intensity of serum disease was more or less in direct proportion to the amount introduced. Longcope and Rackemann,[9] and Mackenzie and Leake [10] have demonstrated that individuals receiving large amounts of serum fall into different classes according to their ability to react to the injection of the foreign protein. The majority produce antibodies readily and have severe symptoms; a smaller group produces no circulating antibodies and remains free from symptoms; the third group is intermediate between the other two.

In this hospital the occurrence of serum disease in patients treated intravenously with large amounts of Type I antipneumococcus serum offered an opportunity to investigate the character of this joint involvement and to compare the joint symptoms with the arthritis found in patients with rheumatic fever.

Ten cases of serum sickness have occurred in the last six months, six of which have shown mild or severe arthritic symptoms. One patient had pain only in the right shoulder; a second had pain in both shoulders and knees. Aspiration of the knees did not demonstrate an exudate. The remaining four had more severe joint symptoms extending over a longer period of time. In each, an exudate was demonstrated in one or more joints. In two of these, the exudates were evident both clinically and on aspiration; in the other two, no clinical signs of increased fluid could be determined, but aspiration yielded exudates. These last four cases were studied:

REPORT OF CASES

CASE 1.—J. H., a man, aged 29, was admitted, Jan. 10, 1922, on the first day of pneumonia. Physical signs indicated involvement of the left lower lobe. Blood culture yielded pneumococci, Type I. During the second day, 300 c.c. of antipneumococcus serum (Type I, New York State Board of Health, Lot 187 A) was given intravenously. On each of the three succeeding days, 100 c.c. of this serum was similarly administered. The patient's condition improved. By the sixth day, signs of resolution had appeared, and the patient's general condition was good. Serum disease began on the eighth day with a general urticaria, which persisted six days. There was no general glandular enlargement. Joint symptoms appeared on the third day of the serum disease, and continued for fourteen days. These were severe,

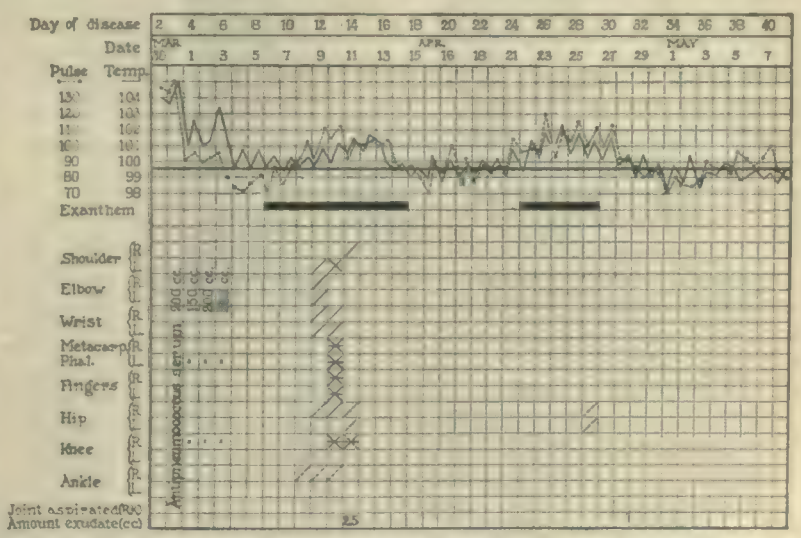


Chart 3 (Case 3).—Temperature curve, exanthem and joint involvement in case of serum sickness.

3. Goodall, E. W.: Lancet **1**: 323 (March 2) 1918.
4. Longcope, W. T.: Nelson Loose Leaf System of Medicine **2**: 632.
5. Weaver, G. H.: Serum Disease, Arch. Int. Med. **3**: 485 (June) 1909.
6. Von Ritterstein: Jahrb. f. Kinderh. **4**: 542, 1902.
7. Poynton and Paine: Researches on Rheumatism, 1913, p. 230.
8. Béclère, Chambon and Ménard: Ann. de l'Inst. Pasteur **10**: 567, 1896.
9. Longcope, W. T., and Rackemann, F. M.: J. Exper. Med. **27**: 341 (March) 1918.
10. Mackenzie, G. M., and Leake, W. H.: J. Exper. Med. **33**: 601 (May) 1921.

as can be seen in Chart 1, especially in the left wrist and the left metacarpophalangeal, knee and ankle joints. The right knee joint was aspirated on the ninth day of serum sickness, and 13 c.c. of rather turbid, opalescent fluid removed. On the ninth, tenth and twelfth days the left knee was aspirated and exudate recovered each time. Early, this exudate was turbid and opalescent, but later it was greenish-yellow, and only faintly turbid. Precipitin tests made by Dr. W. T. Longcope for the presence of horse serum in the joint exudate revealed, on the ninth day, 1:1,000; tenth day, 1:100, and twelfth day, 1:10. On the tenth day of the arthritis the patient was having so much pain that large doses of sodium salicylate were administered; this was followed by marked improvement. Salicylates were discontinued abruptly without the recurrence of joint symptoms. There was no evidence of cardiac complications. The patient has continued well since discharge from the hospital. He gave no previous history of rheumatic fever or arthritis.

The nature of the arthritis in this patient was the subject of considerable discussion. It appeared with other symptoms of serum disease and disappeared abruptly at the time a serum disease arthralgia would be expected to subside. The additional evidence of distinct amounts of antigen (horse serum) in the exudate early, at the height of the disease, and the almost complete disappearance of the horse serum from the joint two days later, when the symptoms subsided, are comparable with the findings in the blood serum of patients with serum disease. Painful temporomaxillary joints, such as this patient showed, are common in serum disease and rare in rheumatic fever. On the other hand, the intensity of the inflammation in the ankles, knees and left hand was much greater than that usually encountered in serum disease, and more like that of rheumatic fever.[11] The disappearance of arthritis following the saturation of the patient with sodium salicylate is another point in favor of rheumatic fever; for one of us has administered salicylates to patients with serum sickness arthritis without any beneficial effect. In this patient, however, the arthritis of serum disease would naturally be expected to subside at this time; and the concomitant disappearance of antigen from the joint fluid, noted above, led us to consider the arthritis to be the result of serum disease.

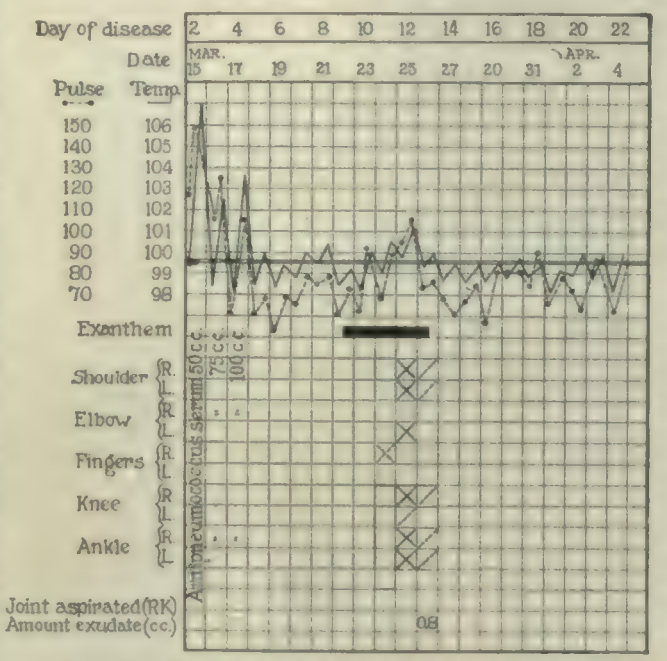


Chart 4 (Case 4).—Temperature curve, exanthem and joint involvement in case of serum sickness.

CASE 2.—N. M., a woman, aged 19, was admitted, Jan. 17, 1922, on the second day of pneumonia with consolidation of the right lower lobe. A blood culture was sterile. Pneumococci, Type I, were obtained from the sputum. During the second, third and fourth days of illness, 640 c.c. of Type I antipneumococcus horse serum (New York State Board of Health, Lot 187 A) was given intravenously; crisis occurred on the fourth day. Serum sickness began two days later. A mild arthritis occurred on the fifth day of the serum sickness, and lasted two days. Although there were only uncertain signs of an increase of fluid, the right knee joint was aspirated, and 0.5 c.c. of exudate was obtained, having a leukocyte content of 12,000 cells for each cubic millimeter, 64 per cent. of which were polymorphonuclear leukocytes. No general glandular enlargement occurred. Serum sickness lasted eight days. Convalescence was uneventful. There was no previous history of polyarthritis.

CASE 3.—E. M., a man, aged 24, was admitted, March 30, 1922, on the second day of illness, with consolidation of the left lower lobe. A blood culture was sterile; Type I pneumococci were recovered from the sputum. During the course of four days, 750 c.c. of Type I antipneumococcus serum (New York State Board of Health, 650 c.c. of Lot 196 and 100 c.c. of Lot 198) was injected intravenously, beginning the first day after admission. On the fifth day of illness the physical signs indicated an extension to the right lower lobe. Improvement occurred two days later. Serum disease began with urticaria six days after the administration of the first dose of serum. The exanthem lasted nine days. Glandular enlargement, glossitis and multiple arthritis were present; the arthritis lasted four days. Clinically, there was evidence of fluid in the right knee joint. This was aspirated, and 2.5 c.c. of greenish yellow, faintly turbid exudate was removed. The fluid contained 4,400 leukocytes for each cubic millimeter, of which 44 per cent. were polymorphonuclear neutrophil cells. A relapse of the serum disease, consisting of urticaria, increase in temperature and pulse, glandular enlargement and mild arthralgia, occurred after a free interval of seven days. It lasted eight days and was followed by an uneventful convalescence. There was no previous history of polyarthritis.

CASE 4.—L. B., a boy, aged 17, was admitted, May 15, 1922, on the second day of pneumonia, moderately ill with involvement of the right lower lobe. Blood culture was negative. Type I pneumococci were found in the sputum. Over a period of three days, 225 c.c. of Type I antipneumococcus serum was given intravenously, with return of temperature to normal. On the seventh day following the first serum administration, urticaria and general glandular enlargement appeared. A moderately severe multiple joint involvement developed two days later, and disappeared completely after three days. Although no definite evidence of swelling could be determined, the right knee was aspirated, and 0.75 c.c. of turbid exudate removed. This exudate contained 12,800 leukocytes for each cubic millimeter, the majority of which were mononuclear in type. The fluid was examined for the presence of antigen (horse serum); a positive precipitin reaction occurred with antihorse rabbit serum in a dilution of 1:15. The patient had serum sickness for six days, and recovered normally. He had had an attack of acute rheumatic fever with polyarthritis one year previously.

RESULTS AND COMMENT

In no case was arthritis evident until from two to five days after the appearance of the urticaria. The

11. At the time of correction of proof, a patient with definite serum disease is under observation. He shows not only pain and tenderness of all of the affected joints, but clinical evidence of effusion into the left knee from which 5 and 7 c.c. of turbid fluid was aspirated on the third and fourth days, respectively; 2 c.c. of fluid was also aspirated from the right knee, even though it showed no clinical evidence of effusion. The ankles showed pain, tenderness, swelling and local heat. This case seems to prove conclusively that marked evidence of inflammation may be found in the "arthritis" of serum disease.

duration of symptoms in a single joint varied from a few hours to nine days. A striking point was the disappearance of arthritic symptoms in all of the joints of a patient within twenty-four hours of the subsidence of fever. Although pain and tenderness were the only signs of involvement in many of the joints, the recovery of fluids having the character of exudates indicated that the process was inflammatory in nature. Moreover, the clinical examination of the joints in Case 1 revealed the intensity of the process in certain instances. The doubtful nature of this case has already been discussed. Taken alone, it would not be very conclusive; but a gradation of intensity from very mild to very severe is seen in comparing the cases in this order: 2, 4, 3, 1. Such clinical comparison leads one to conclude that all of the arthritic symptoms were due to a common cause—i. e., serum disease.

A description of the exudates is given in the accompanying table. Only the knees were aspirated because of the difficulty in obtaining fluid from smaller joints.

EXUDATES ASPIRATED FROM JOINTS OF PATIENTS WITH SERUM SICKNESS

Case	Date	Joint	Severity of Inflammation at Time of Aspiration	Quantity Aspirated, C.c.	Leukocyte Count: Total	Differential: Polymorphonuclear Neutrophils	Large Mononuclears	Small Lymphocytes	Polymorphonuclear Eosinophils	Pink Staining Cells with Pyknotic Nuclei*	Unclassified Cells	Precipitin Test for Horse Serum
1	1/25/22	Right knee	Marked	13.0	22,400	86.0	9.0	2.0	...	1.0	2.0	
	1/25/22	Left knee	Marked	1.0	.....	78.0	16.0	4.0	...	...	2.0	1:1,000
	1/26/22	Left knee	Marked	18.0	14 000	84.0	10.0	3.0	...	3.0	...	1:100
	1/28/22	Left knee	Swelling only	8.0	5,000	20.0	58.0	8.0	...	5.0	9.0	1:10 ?
2	1/27/22	Right knee	Marked	0.5	12,000	64.0	32.0	2.0	...	1.0	1.0	
3	4/11/22	Right knee	Slight	2.5	4,460	41.0	49.0	5.0	...	3.0	2.0	
4	5/26/22	Right knee	Slight	0.8	12,040	13.0	76.5	6.0	1.0	0.5	3.0	1:15

* These cells were of the same size as polymorphonuclear neutrophilic leukocytes; they had pink staining cytoplasm and pyknotic circular nuclei, single or multiple.

As only very small quantities of synovial fluid can be aspirated from normal joints, and as this fluid is partially devoid of cellular elements, it is safe to conclude that the recovery of 0.5 c.c. or more of turbid fluid constitutes definite evidence of exudation, especially as these fluids in every instance were microscopically abnormal. In general, the higher cell counts and greater proportion of polymorphonuclear leukocytes occurred in the more acutely involved joints; while the lower total counts and higher proportion of mononuclear cells were found in the fluids from joints mildly abnormal or longer inflamed.

These exudates were indistinguishable cytologically from many of those which we have recovered from inflamed joints of patients with acute rheumatic fever, intermittent hydrarthrosis, and chronic arthritis; and it is of importance to show that such exudates can be produced without the actual presence of bacteria.

The presence of horse serum in two of the joints and the constantly diminishing amount in one of them suggest a possible cause of the arthritis. It may be that in a patient whose tissues are allergic to horse serum the presence of that serum in the synovial cavities sets up an irritation in the lining membrane; and the disappearance of that serum may be the cause of the subsidence of this irritation. Although some workers have considered that the disappearance of the horse serum from the blood stream was due to the development of circulating antibodies, the more recent work of Mackenzie [12] has thrown some doubt on this opinion. In view of the uncertainty as to the relation between cause and effect in circulating antibody and antigen, it is impossible, at present, to be definite in reference to the effect of these substances in exudates.

12. Mackenzie, G. M., and Fruhbaar, E. L.: Proc. Soc. Exper. Biol. & Med. **19**: 269, 1922.

SUMMARY

Among ten patients with serum disease who had received large amounts of horse serum intravenously, there were six who showed definite joint involvement. From the joints of four of these it was possible to aspirate fluid having the gross and microscopic character of an exudate. From a fifth, in whom pain was the only symptom, no fluid could be obtained; the joints of the sixth were not aspirated. The positive findings in the synovial fluids from the four other patients, however, indicate that the arthritic symptoms in serum disease are due to an actual inflammation of the joints. The finding of horse serum in two fluids suggests that the irritation of the joint may be due to the presence of this foreign protein in an allergic tissue.

Clinically, the polyarthritis of serum disease is usually manifested by pain and tenderness of the joints, but in certain instances swelling, heat and redness may be present. The synovial exudate is microscopically indistinguishable from that occurring in joints of patients with rheumatic fever.

Activities of Pennsylvania State Board of Health Against Venereal Disease.—An intensive campaign against venereal disease has been conducted during the last three years by the genito-urinary division of the Pennsylvania State Board of Health. A complete list of the detention homes and genito-urinary clinics was distributed, giving their localities all over the state. Abstracts of state laws regarding prostitutes and quarantine were published, with a report on diagnosis and treatment of syphilis. Attractive colored, illustrated pamphlets on all subjects pertaining to health and disease prevention were widely distributed. A course of instruction on venereal disease was conducted at the Allentown Hospital by well known genito-urinary surgeons, and a play was given by the social workers on the same subject. Working plans of the health and morals committee of the venereal disease division were also published. The thirty-two detention homes are supported by the county or communities, the state furnishing the medical and nursing attention, including drugs and equipment. In the past three years, 72,000 ambulatory patients have received treatment, with no deaths. Five schools are being operated at strategic points where physicians receive a course in the treatment of venereal disease gratis. Through a recent law, the state department of health has had placed at its disposal a modern 400 bed hospital for the isolation, care and treatment of syphilitics. Instructive moving pictures, lantern slides, pamphlets and lecturers are obtainable on request from the education division of the health department for any community desiring them.

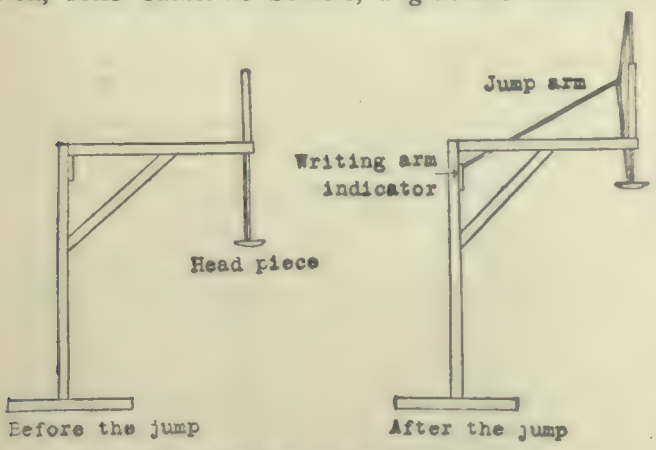
CORRELATION OF EFFICIENCY TESTS

SECOND REPORT

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In a preliminary report [1] on correlation of efficiency tests, a high correlation was shown to exist between Schneider's tests of cardiac efficiency and Sargent's physical test. The group measured varied in age from 11 to 36 years. It was pointed out in that report, however, that the "wide age range of the group tested gives only a limited distribution of any one age, and hence repetition of the test with more homogeneous groups is needed to verify the obtained coefficient."

Such further study has been made. Under my direction, Miss Catherine Somers, a graduate student of



Apparatus employed for securing data in Sargent test.

Teachers College, carried on during 1921-1922 at the University of Nevada the Schneider and Sargent tests. In all, 108 college women were tested.

The apparatus used in securing the data in the Sargent test was specially devised. An upright supported on a base has a fixed arm, attached to which is arranged a head-piece made of cardboard with the lower side padded. The jump arm is attached to an indicating arm, which moves one-third the distance of the jump arm. The subject to have her jump recorded stands under the disk. The operator notes the point at which the indicator stands. The subject makes her greatest possible vertical jump, and the indicator stays at the point reached by the indicator arm. The operator notes the jump in inches and multiplies by three, giving the exact height jumped.

The tests with a homogeneous group of women show that for that age range (from 17 to 23) the two tests have no more relation than mere chance might produce. This lack of positive correlation in this group bears out the surmise made in the preliminary report, namely, that a wide range of age is unsatisfactory for tests of this kind.

The reports of these two tests suggest numerous questions that ought to be answered if there is to be any authority in the tests for physical fitness. What is physical fitness? Is the physical fitness of Schneider's test an entirely different fitness from the type measured in Sargent's test? Dr. Sargent calls his test "the physical test of a man"; but isn't it true that one might jump rather high in Sargent's test and rank low in Schneider's test? If fitness exists, it exists in some form, and hence is measurable if the proper procedure is followed. We need to have more evidence that the numerous proposed tests of physical efficiency are really measuring what the authors say they are.

The age range of the 108 women in the group studied was from 17 to 23 years, with the distribution given in the accompanying table.

AGE RANGE OF WOMEN IN GROUP STUDIED

Age	17	18	19	20	21	22	23
Number	7	39	27	16	11	6	2

Mean, 19.3

The coefficient of correlation of the entire group was 0.02. For the group of women aged 18, which numbered thirty-nine, a correlation of —0.004 was obtained. This homogeneous group therefore showed a negative correlation. Thus, there would seem to be practically no correlation at all between the Sargent and Schneider tests for women of the age range 17 to 23 years.

SUMMARY AND CONCLUSIONS

1. There was, in the group tested, virtually no correlation between the Sargent physical test and the Schneider cardiac test for women of the age range 17 to 23 years.

2. The rather high correlation of 0.57 previously reported [1] is doubtless a chance result and is due to the wide age range of the group tested, or to a possible difference between men and women.

3. The Sargent and Schneider tests do not measure the same thing. Vigor, stamina, "pep" that Dr. Sargent refers to are not the same qualities as are measured in Schneider's test.

4. Whether Sargent's test is a good measure of physical vigor has not been determined; likewise, the reliability of Schneider's test is not indicated by this study.

1. Finkelstein, William, and Williams, J. F.: Correlation of Efficiency Tests, J. A. M. A. 78: 1454 (May 13) 1922.

CONGENITAL ATRESIA OF ESOPHAGUS, WITH ESOPHAGOTRACHEAL FISTULA

REPORT OF THREE CASES *

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This most common of esophageal anomalies is interesting because of its peculiar development; and it is important for the reason that we have as yet no satisfactory means of dealing with the condition.

REPORT OF CASES

CASE 1.—W. D., a boy, white, aged 6 days, was admitted to the Jefferson Hospital, Dec. 26, 1917, because of inability to retain food. The child was born after prolonged labor, by forceps delivery, but seemed entirely normal at birth. When water was given, regurgitation occurred almost immediately, attended by attacks of dyspnea. Roentgen-ray examination revealed an obstruction of the esophagus, and esophagoscopy by Dr. Jackson established the diagnosis of esophageal atresia. Gastrostomy was performed on the day of admission, but the child died, Jan. 6, 1918, of bronchopneumonia.

Necropsy the same day revealed atresia of the esophagus, the upper portion being dilated and ending in a blind pouch about 1 cm. above the bifurcation of the trachea. The lower segment was smaller in diameter and entered the trachea posterolaterally just above the bifurcation. A probe passed

* From the Department of Pathology, Jefferson Medical College.

into the upper end of the trachea entered the lower segment of the esophagus and passed readily into the stomach (Fig. 1). No other malformations were found. The lungs showed bronchopneumonia, which was probably due to regurgitation of material from the stomach.

CASE 2.—H., an apparently normal white boy, born in the Jefferson Hospital, March 28, 1921, under the private care of Dr. Edward A. Schumann, to whom I am indebted for permission to record this case, was unable to swallow. Roentgen-ray examination by Dr. Borzel revealed complete obstruction of the esophagus in the upper third, on a level with the supersternal notch. March 31, a gastrostomy was performed, but the infant died the following day. Necropsy revealed an esophageal anomaly almost identical with that noted in Case 1, the upper segment of the esophagus ending in a blind sac about 1 cm. above the bifurcation of the trachea, and the lower segment opening into the trachea directly opposite the point at which the upper segment of the esophagus abruptly ended (Fig. 2). No other malformations were noted.

CASE 3.—J. H., a boy, white, aged 5 days, was admitted to the Jefferson Hospital in the service of Dr. Graham, Jan. 24, 1922, with the statement that the child was unable to swallow. Roentgen-ray examination revealed a complete stenosis of the esophagus at the level of the third dorsal vertebra. Gastrostomy was performed the same day. The child was later seen by Dr. W. H. Spencer, and a report was made that probably the lower segment of the esophagus opened into the trachea, thus accounting for the attacks of choking when the child was fed through the gastrostomy opening; and that the upper segment ended in a blind pouch, as revealed by the roentgen ray. This report was accompanied by a sketch correctly portraying the condition, as later demonstrated at necropsy. The child died, January 27, and the esophageal anomaly disclosed at necropsy was so nearly similar to the other two that a photograph was thought unnecessary.

COMMENT

Very little can be added to the comprehensive review of this subject published by Plass [1] in 1919, which included 136 verified cases collected up to 1917. Since that time, cases have been recorded by Cautley,[2] Brenneman [3] (four cases), Huntington,[4] Kastner,[5] Shaw,[6] Taglicht,[7] Reynolds and Morrison,[8] Hirsch,[9] Zausch,[10] Willard [11] and Shattock.[12]

Doubtless, there are many other cases that have failed to find their way into literature, so that the anomaly should demand our attention, if for no other reason than its relatively frequent occurrence.

The malformation is practically always the same, varying only in minor details. The upper end of the esophagus is usually dilated, ending in a blind sac at or above the tracheal bifurcation; and the lower end opens into the trachea at or near the bifurcation. Other anomalies may be associated, atresia ani being the most common.

The etiology is not clearly understood. Shattock [13] believes that, at the time when the pouch from which the lower air passages develop is formed from the anterior wall of the mesenteron, the posterior wall occasionally participates in the process sufficiently to be drawn forward, thus narrowing the lumen. When, subsequently, the lateral pouching for the formation of the larynx develops from the stomodeum just above this region, so much of the already narrowed lumen is consumed that the connection between the upper and lower portions is left communicating with the air passages.

Giffhorn [14] believes that the lateral folds from which the air passages develop unite at one point with the posterior wall of the esophagus, causing atresia; while below they are unable to unite in the normal manner in the midline, and thus permit a fistulous communication to remain.

The diagnosis is readily made. The child regurgitates almost immediately after taking food. Suffocative attacks, attended by choking and cyanosis, accompany the attempts to swallow. The stomach inflates with each inspiration, and the breath sounds are more audible than normal over the abdomen. The passing of a catheter into the esophagus under the fluoroscope, and esophagoscopy, make the diagnosis certain.



Figure 1 Figure 2

Congenital atresia of the esophagus with esophagotracheal fistula: the similarity of the anomaly in Cases 1 and 2: *A*, upper segment of esophagus, ending in a blind sac; *B*, lower segment of esophagus, communicating with the trachea (opened in Figure 1, unopened in Figure 2); *C*, gastrostomy opening.

From a practical standpoint, the most important consideration in regard to this anomaly is the hopelessness of our present day method of treatment. In a large number of cases (sixteen of the 136 compiled by Plass, and most of the other cases since reported) gastrostomy was done, but has invariably proved futile. Death from starvation is certain to occur if the infants are not operated on; and, if operation is done, they invari-

1. Plass: Johns Hopkins Hosp. Rep. **18**: 259-286, 1919.
2. Cautley, E.: Brit. J. Child. Dis. **14**: 1 (Jan.-March) 1917.
3. Brenneman, J.: Atresia of the Esophagus, Am. J. Dis. Child. **16**: 143 (Sept.) 1918.
4. Huntington, J. L.; Young, J. H., and Foot, N. C.: Boston M. & S. J. **180**: 354 (March 27) 1919.
5. Kastner: Arch. Pediat. **37**: 670, 1920.
6. Shaw, H. L. K.: Congenital Atresia of the Esophagus, with Report of Case, Am. J. Dis. Child. **20**: 507 (Dec.) 1920.
7. Taglicht: Virchows Arch. f. path. Anat. **229**: 322, 1921.
8. Reynolds, R. P., and Morrison, W. W.: Congenital Malformation of the Esophagus, Am. J. Dis. Child. **21**: 339 (April) 1921.
9. Hirsch, I. S.: Congenital Atresia of the Esophagus, J. A. M. A. **76**: 1491 (May 28) 1921.
10. Zausch: Virchows Arch. f. path. Anat. **234**: 94, 1921.
11. Willard, H. G.: Congenital Atresia of Esophagus, J. A. M. A. **78**: 649 (March 4) 1922.
12. Shattock: Proc. Roy. Soc. Med., Sect. Dis. Child. **15**: 2 (Feb.) 1922.
13. Shattock: Tr. Path. Soc. London **41**: 87, 1890.
14. Giffhorn, quoted by Taglicht: Virchows Arch. f. path. Anat. **192**: 112, 1908.

ably die from shock or hemorrhage, suffocation, or bronchopneumonia, the last probably due to regurgitation into the lungs of food introduced into the stomach. Plass states that, theoretically, jejunostomy would appear better; but, even so, it has been suggested that the presence of food would stimulate the stomach secretions, which would be regurgitated into the lungs and set up an inflammation. In one case, jejunostomy was tried and failed.

Richter [15] advocated gastrostomy plus closure of the upper end of the lower esophageal segment. Two patients were operated on; the first died soon after operation; the second lived for twenty hours.

It does not seem that these infants could stand the ordeal of chest surgery, and yet it is only to advances of surgery within the thorax that we can look with any hope for success in the treatment of this anomaly.

1906 Walnut Street.

OBSERVATIONS ON THE CORRECTION OF DEFORMITIES OF LONG STANDING *

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There has always been a difference of opinion with regard to the treatment of severe paralysis following anterior poliomyelitis. One group has contended that locomotion with braces and crutches was too difficult and painful to be of any advantage to the patient. It has maintained that such patients are dependent anyway, to the extent that they need assistance to get into their braces; and, such being the case, they might as well be allowed to sit about in peace with no attempt made to prevent the inevitable development of flexion contractions at the hips and knees.



Fig. 1.—Patient on admission, supporting himself on his hands.

Other surgeons take the view that deformity should be prevented as a matter of routine, and that deformity already existing should be corrected. They insist that a certain amount of independence is of great value, both practical and psychologic, to any patient, and that the possession of the power of independent locomotion, even if it means only the ability to move from room to room, or to escape from the house in case of fire, is worth the sometimes severe methods necessary to obtain it.

The following case is reported as supporting the latter standpoint, and because there are other instructive features to be noted in the study of a case of such long standing deformity.

In the first place, before undertaking the treatment at all, the patient should be made to understand that there is a grave chance of the reconstructive process being fatal. Such patients are rarely, naturally enough, in good condition. They frequently suffer from chronic bronchitis and are particularly susceptible to

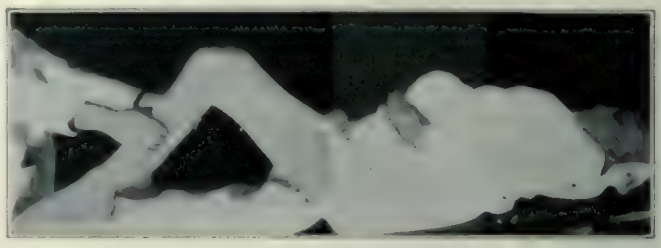


Fig. 2.—Patient on admission: Limits of extension at the hips and knees.

postoperative pneumonia. Their bones are soft and filled with fat. There is danger that enthusiasm may lead to corrective measures so energetic as to interfere with the circulation. In the correction of flexion deformity at the knee, I have seen cases in which the blood supply to the foot might be entirely cut off by extension of the leg beyond a certain angle. The general circulation in the limbs is poor and all the tissues are atrophic, so that the development of pressure sores is likely. The patient must understand what he may anticipate as an end-result. He must realize that the age of miracles is past, and that all he can expect is the ability independently to haul himself about. He must be warned that it is impossible to say in advance what, or how many, operative procedures may be necessary. If he persists in his desire for improvement in the face of these warnings, the surgeon may proceed with a clear conscience.

Under the present somewhat inflexible methods of teaching, the student is frequently led to suppose that a given condition may be remedied by a given operation. Almost any student of orthopedic surgery would say directly that the way to correct flexion contraction at the hip was to perform a Soutter operation, and, if questioned further, would say that the essential feature of the operation consisted in separating muscles from their insertion rather than simply dividing them, and in chiseling off the anterior superior spine. In this case, the classic procedure was almost useless. The contractions at both the hips and the knees were of all the tissues, muscles, joint capsules, tendons and nerves. One cannot expect to correct such deformities at one sitting or by any standard operative procedure.

The astragalectomy and backward displacement of the foot, which was the initial operation, was done simply to eliminate lateral instability of the foot, and thereby provide a firm foundation for weight bearing. The greatest emphasis throughout was laid on deliberation, on doing too little rather than too much at one sitting, with a careful eye always kept on the circulation. One must remember that the blood supply may be cut off either by extreme tension, narrowing the caliber of the vessel, or by violence, tearing the intima and thus setting up thrombus formation.

The most important feature of the case to me is the evidence afforded by the roentgen ray of the knees as to the influence of functional use in the stimulation of calcium deposit in the bones. One sometimes reads of

15. Richter: Surg., Gynec. & Obst. **17**: 397 (Oct.) 1913.

* From the Hospital for Ruptured and Crippled, First Division.

fractures as being a cause of osteoporosis. It would seem more reasonable to infer that the osteoporosis was the result of the disuse of the limb incidental to the fracture. The patient's original roentgenograms revealed the same extreme degree of bone atrophy that may be noted in the patella. Being on the feet intermittently in plaster and braces for four months apparently caused the deposit of calcium in the femur and tibia, the weight bearing bones, but had no similar effect on the patella, which was subject to no strain, even from movement of the knee.

While at operation no change was noted in the cartilage covering the astragalus and tibia, the roentgenogram of the knees would strongly suggest almost complete disappearance of the joint cartilage. Whether this was simply a part of the general atrophy or was consequent on the trauma and strain occurring during the reduction of the flexion deformity, one cannot say. It is unfortunate, as it seems unlikely that the patient would develop more motion in the knees than he has at present—10 degrees. This will, of course, interfere with his comfort when sitting.

From a study of this case, it appears, therefore, that: 1. Deformities of indefinite duration may be successfully corrected. 2. Some patients, at least, seem to consider independent locomotion worth the risk of repeated operations. 3. No single operation may be exclusively relied on, and a combination of gradual mechanical and operative correction is required. 4. Functional use has a direct influence on calcium deposit in bone.

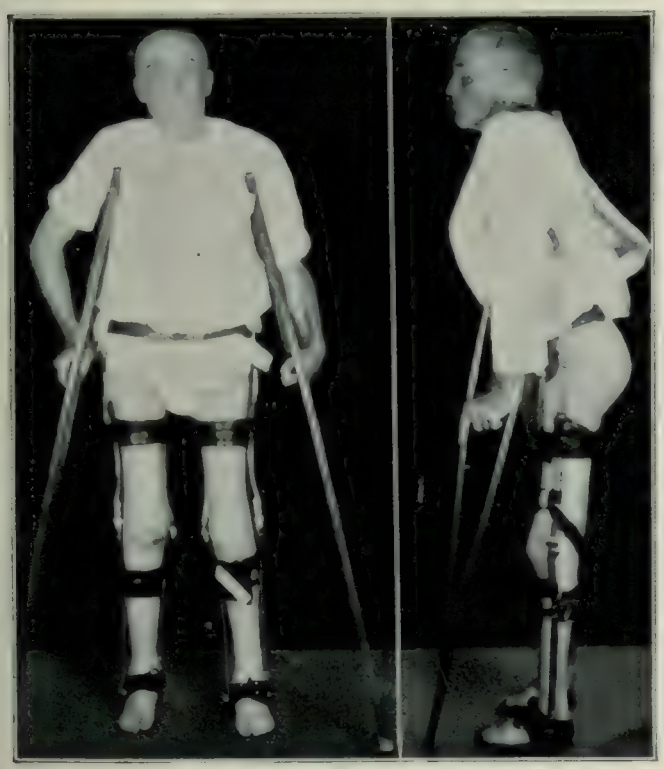


Fig. 3.—Patient at time of discharge.

REPORT OF CASE

History.—F. B., man, aged 52, single, with a negative past and family history, suffered from paralysis of both legs. He had had an attack of anterior poliomyelitis thirty-eight years previously, which resulted in complete paralysis of both legs. He has had no treatment, but had been examined recently in the clinic of the Vermont State Board of Health. Except for crawling on his hands and knees, he had since the onset been confined to a wheel chair, and during this period there has been a gradual development of flexion contractions at the hips and knees.

Physical Examination.—The patient was in good condition. The body and arms were well developed, and he could support himself on his arms, but could not walk. On the right side, there was complete paralysis of every muscle in the lower extremity; a flexion contraction of the hip at an angle of 130 degrees, and a flexion contraction of the leg on the thigh at an angle of 95 degrees. The foot was not deformed. On the left side, the tensor fasciae femoris was good. There was a trace of power in the internal and external hamstrings; otherwise, there was complete paralysis. There was a flexion contraction at the hip at an angle of 100 degrees; at the knee of 90 degrees. The foot dangled but was not deformed.



A B

Fig. 4.—*A*, almost complete disappearance of the joint cartilage; *B*, extreme osteoporosis of the patella.

Operations and Treatment.—Dec. 21, 1921: Operation of astragalectomy and backward displacement of the foot on the right side was performed. The right angular contraction at the knee could not be overcome by the exercise of any ordinary force, the contraction appearing to be entirely general, of the skin, muscles and capsule. Plaster of Paris was applied, holding the foot and knee at a right angle.

December 28: The plaster was cut behind the knee and correction of the deformity by wedging begun.

Jan. 18, 1922: Right Soutter operation was performed. Tension on the femoral vessels and anterior crural nerve prevented extension at the hip beyond 160 degrees. A long plaster spica was applied, holding the thigh at 100 degrees and the knee at 110 degrees of extension on the leg.

February 8: Left astragalectomy was performed, with backward displacement of the foot. A plaster was applied to the limb in a similar manner. The contraction at the right hip was completely reduced by stretching. The right knee was brought to 135 degrees of extension.

March 8: Left Soutter operation was performed, attended by similar difficulty from the contraction of the vessels and nerves, with extension limited at 165 degrees. The right knee was brought to 165 degrees extension, the left knee to 110 degrees, and Billroth splints were incorporated in the plaster.

March 27: Stretching of the abduction contractions at the hips was carried out. The right hip was brought into line with the body and the knee into full extension. The left hip was brought to 25 degrees abduction, full extension, and the knee to 135 degrees extension.

April 27: Under gas anesthesia, the abduction contractions were entirely reduced. The left knee was brought to 170 degrees extension.

May 2: The patient was out of bed, standing on the feet.

May 23: The first steps were taken with assistance.

June 1: The patient was on his feet, attempting to walk with crutches.

July 6: The plaster was bivalved and the patient measured for braces.

July 13: Contraction of the left knee was entirely overcome under gas.

Outcome.—October 1: Since about August 1, the patient has had his braces applied and has been up every day, first, walking in a walking machine, but lately using crutches. His knees are almost entirely stiff. He states that he feels his improvement to be continuous and entirely dependent on his general strength. He feels that he can improve more rapidly at home and is therefore to be discharged at his own request. His condition is satisfactory. He himself is satisfied with the result. Roentgenograms of the hips reveal extreme bone atrophy of the femora and pelvis. There is practically no space between the head of the femur and the acetabulum, which would seem to indicate practically complete absence of cartilage. Roentgenograms of the knees show the bones in contact, apparently, a complete absence or destruction of cartilage. The appearance is practically that of an ankylosis following operative fusion of the knees. The decalcification of the bones is not so evident as in the roentgenograms of the hips.

283 Lexington Avenue.

FATAL INFECTIONS FOLLOWING TONSILLECTOMY *

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AND
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Bacteria invade the tonsillectomy wound, and under certain conditions pass the surface barrier, producing a local or general infection. There are several reports in the literature describing these pictures. In Baum's [1] series of tonsillectomies, three patients developed abscesses in the peritonsillar tissues, and one developed suppurative adenitis of the entire cervical chain. These patients were all operated on under local anesthesia, and Baum suggests that the infection was carried into the tissues by the deep injection of the anesthetic substance. Among the general infections, Dean [2] reported three fatal cases. The temperature ranged from 101 to 103 F. and the glands of the neck were enlarged. On the third day there was difficulty in breathing and swallowing, followed by vomiting, delirium, visual disturbances, pus and blood in the sputum, scanty urine, convulsions and death. One of the patients had a sinus phlebitis, with exophthalmia and panophthalmitis. Another had a gangrenous process in the muscles of the neck with no localization or pus formation. Kerley [3] described a child of 2 years who developed discharging ears after tonsillectomy. Grayish white ulcerated areas appeared in the mouth, and the skin developed erythematous, hemorrhagic and pemphigoid lesions. The temperature reached 104 F., and death occurred in one month. In 14,960 tonsillectomies performed at the Royal Infirmary at Edinburgh from 1907 to 1920, Martin [4] reported six postoperative fatalities, four of which were due to sepsis. Bronchopneumonia developed in three.

Two cases of generalized infection following tonsillectomy are described; one a septicemia, the other a meningitis, both due to strains of pneumococcus.

REPORT OF CASES

CASE 1.—*History.*—D. M. R., a girl, aged 2 years and 4 months, had a sore throat lasting five days. In less than three weeks her tonsils and adenoids were removed under general anesthesia. She was apparently well at the time of operation. The mother was told that the tonsils were "full of pus" and the adenoids were "very large." She stated that the milk administered a few hours after the operation was sour to the taste. The child seemed befogged, and when she was removed to her home she asked where she was. That evening she was very hot and had several convulsive seizures. She was delirious and stuporous thereafter, and the convulsions continued for a few days. The temperature remained at about 103 F., and it was said that she refused food because of pain on swallowing. There was pain in the ear, but no discharge. The operation was performed elsewhere.

Physical Examination.—The child was first seen four days after the operation. She was lying in a semistupor, moaning, with head thrown back and mouth open. When aroused, she answered questions rationally. A foul odor issued from her mouth. The respirations were rapid; the cheeks were markedly flushed; the nose was pinched; there was deep scleral injection; the lips were glazed and red, as is often seen in septic processes. Moderate enlargement of the cervical glands was visible. Besides, there was general adenopathy. Signs of meningitis, such as the Kernig and Brudzinski phenomena, were absent, and the retraction was easily corrected. The abdomen was not rigid or distended. There were no abnormal findings in the heart or lungs.

The skin of the lower abdomen, thighs and legs was incompletely covered by a dull red, slightly raised macular eruption. There were normal areas of skin between the lesions. The rash appeared the day following the operation, but medicine had been administered before its onset. On the backs of the hands, particularly about the thumb and forefinger, were lesions of lichen urticatus, which antedated the operation. The throat was covered by a whitish exudate, which resembled the usual picture after tonsillectomy. When this material was swabbed, it proved to be caseous, and it crumbled on the slide. Direct smears contained a variety of cocci and an occasional bacillary form. There were no diphtheria bacilli. Cultures yielded the types present in the smear. There were no fusiform bacilli or spirilla in the direct smear. These findings were consistent with several subsequent examinations. Palpation of the pharynx because of the mouth breathing, enlarged cervical glands and opisthotonos revealed no masses. There was no retraction of the chest indicating laryngeal obstruction.

The clinical picture was that of septicemia from a throat infection. There was another possibility; namely, a blood dyscrasia, such as an acute lymphatic leukemia or the rare form of chloroma, which manifests itself by an ulcerative angina with an exudate like that present in this patient. The blood findings excluded these possibilities. There were 4,400,000 red cells, 75 per cent. hemoglobin, 11,500 white cells, with 76 per cent. polymorphonuclears, 12 per cent. lymphocytes, 8 per cent. large mononuclears and 4 per cent. transitionals. There were no abnormal cells. The urine contained a faint trace of albumin. A blood culture three days before death contained pneumococcus, Type II.

Course.—The child lived four days longer, growing progressively worse. The exudate extended so that it covered the uvula, palate, buccal mucosa, tongue and alveolar processes. A small area of harsh breathing developed in the right axilla, but there were no other signs of pulmonary involvement. The abdomen became markedly distended, but there was no rigidity, and the distention was relieved by enemas and high rectal tubes. Difficulty in swallowing and breathing became more marked. The pulse became weak,

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* From the Sarah Morris Memorial Hospital for Children, of the Michael Reese Hospital.

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2. Dean: Laryngoscope **20**: 738, 1910.
3. Kerley, J. H.: Arch. Pediat. **39**: 462 (July) 1922.
4. Martin, G. E.: J. Laryngol. & Otol. **37**: 80 (Feb.) 1922.

thready and imperceptible, but was improved at times by injections of camphorated oil and a digitalis preparation. Fluids were supplied by mouth and by rectum. The father's whole blood was injected twice intramuscularly in 50 and 25 c.c. amounts. A single dose of 20,000 units of diphtheria antitoxin was administered because of the possibility of a diphtheritic infection, despite negative cultures, and because of the possible nonspecific protein effect on the process. There were no signs that the course was retarded by any of these measures. Parental suggestion for intubation or tracheotomy was vetoed because the retraction was insufficient to warrant such procedures, and because of the practical certainty of fatal pneumonic complications in the face of the severe local infection and probable tracheal involvement. Postmortem findings proved the wisdom of noninterference.

Necropsy Findings.—Necropsy was performed by Dr. O. T. Schultz with these findings: About the epiglottis and the laryngeal opening there was present the same grayish opaque pultaceous material noted in the buccal cavity. The lateral margins of the epiglottis were superficially ulcerated. The inner surface of the larynx was covered by a layer of grayish exudate. As in the mouth, this formed a thin, crumbly, granular layer which had none of the characteristics of a diphtheritic membrane. The mucosa of the trachea was congested; in its upper part were areas that were duller and grayer than the surrounding mucosa. The granular layer present elsewhere extended down into the esophagus, being heavier in the upper part of the esophagus than in the larynx. In its middle third, the esophageal mucosa was pale and dull; near the lower end of the esophagus, the mucosa became normal in appearance.

Microscopic Examination.—Larynx: In areas of considerable extent, the surface epithelium was absent; the exposed stroma showed little reaction. Where epithelium was present, it was covered by a thin layer composed of granular material, in which leukocytes were embedded. In the trachea below, the epithelium was moderately infiltrated with leukocytes. Esophagus: The inner surface was covered by a layer of material whose thickness equaled about one-fourth the diameter of a low power field. In some places, this layer was granular; in other places, it contained a coarse fibrin meshwork, and, in still other places, it was made up of leukocytes which were faintly stained and shadowy. Immediately beneath this layer was a narrow zone of dense leukocytic accumulation. This lay on the submucosa, which was edematous and diffusely infiltrated by polymorphonuclear and endothelial leukocytes. No epithelium was seen, and the entire thickness of the mucosa had disappeared or undergone necrosis (Fig. 1). The extent of the superficial necrosis was striking; in sections from the lower part of the middle third of the esophagus, the change was almost as intense as in the upper third.

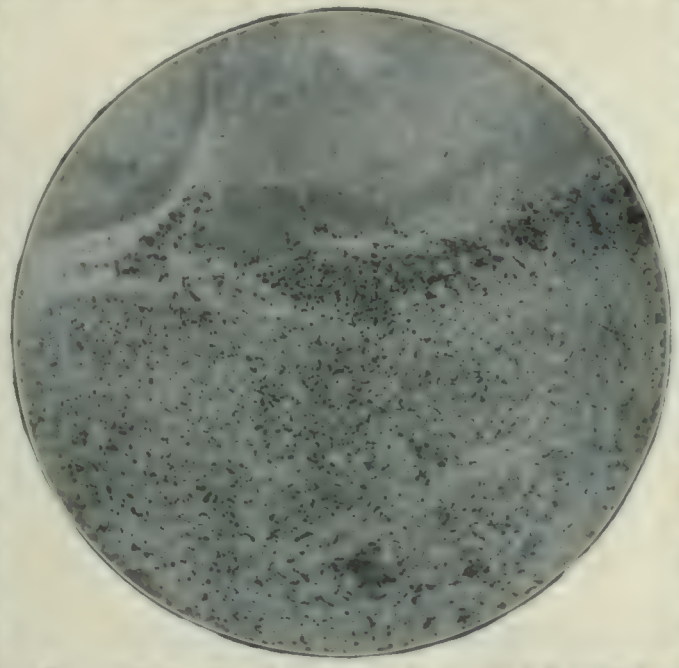


Fig. 1.—Section through esophagus, showing marked superficial necrosis. No epithelium is seen. Beneath the necrotic layer is a narrow zone of dense leukocytic accumulation. Beneath this layer is the edematous submucosa infiltrated by polymorphonuclear and endothelial leukocytes; × 110.

Bacteriology: In a postmortem culture from the pharynx, pneumococcus, staphylococcus and a few colonies of hemolytic streptococcus were present. The pneumococcus predominated; the number of hemolytic streptococcus colonies was not such as one usually obtains from the septic forms of pharyngitis. The heart's blood yielded pnuemococcus Type II.

There was an area of bronchopneumonia in the upper portion of the right lung, corresponding to the location of physical signs before death, in which harsh breathing was noted. The cortex of the kidney was cloudy and paler than the medulla. The convoluted tubular epithelium was swollen, and the small veins were engorged.

CASE 2.—*History.*—H. E., a boy, aged 7 years, began to manifest choreiform movements two weeks before tonsillectomy. The operation was performed at another hospital during the illness. He was discharged within twenty-four hours from the hospital in good condition. The next day his temperature rose to 105 F., and he was delirious. The temperature ran a septic course for a week, followed by two days' remission. This was followed by a chill lasting about an hour and subsequent rise in temperature. Daily thereafter, there occurred chills, fever and vomiting. A hacking cough was also present.

Examination.—On admission to the hospital, one month after the onset of chorea and two weeks after tonsillectomy, the child appeared acutely ill. The temperature was 102.4 F.; pulse, 160; respiration, 36, with considerable dyspnea. The pupils were unequal, and there was conjunctivitis in the left eye. Both ear drums were pearly gray. There was marked pulsation on the right side of the neck and slight pulsation on the left side. The neck was not rigid. The lungs were negative. There were many abnormal cardiac findings. The apex beat was diffuse. The left border extended to the anterior axillary line; the right border to the midsternal line. There was a double murmur at the apex and a diastolic murmur over the aortic area. Capillary pulsation was present. The liver was palpable, but not the spleen. The patellar reflexes were exaggerated. The Brudzinski and Babinski signs were positive; the Kernig was not definite. There were 3,600,000 red cells and 38,000 white cells, of which 88 per cent. were polymorphonuclears, 7 per cent. small mononuclears, 2 per cent. large mononuclears and 3 per cent. transitionals. The hemoglobin was 70 per cent. The urine was negative. Fluoroscopic examination revealed that the heart was wide at the apex and base, with no evidence of lung involvement.

Spinal puncture, the next day, yielded 30 c.c. of slightly turbid fluid under increased pressure. There were 640 cells, of which 64 per cent. were mononuclears and 36 per cent. polymorphonuclears. The globulin tests were faintly positive. Direct smears and cultures yielded no organisms. The Wassermann and Lange tests were negative. Twenty-five c.c. of antimeningococcus serum was administered intraspinally.

Course.—Following the puncture, the temperature rose to 107 F., and the pulse to 180; and morphin was required to quiet the patient. The following day, the temperature varied from 100.6 to 105 F. The child was semicomatose and manifested a subconjunctival hemorrhage on the left side. There was tenderness of the frontal and maxillary sinuses and throbbing of the right side of the neck. There were distinct signs of meningeal irritation. There was marked tenderness over the right carotid artery and jugular vein, but none on the left. Examination of the eyes showed edema of the left conjunctiva, haziness and opacity of the left cornea and old adhesions of the posterior part of the iris. The fundus was not visible. Apparently, this represented an old iritis and keratitis. There was retinal hyperemia on the right side.

A second spinal puncture yielded 30 c.c. of turbid fluid under increased pressure. A pellicle formed quickly. All

the globulin tests were positive. There were 1,067 cells, of which 75 per cent. were polymorphonuclear and 25 per cent. lymphocyte and endothelial. A direct smear contained gram-positive, extracellular diplococci. The culture of the fluid remained sterile. The blood culture of the same date yielded a luxuriant growth of pneumococci, Type I. The temperature was 104.8 F.; pulse, 64; respiration, 50, and irregular.

Another spinal puncture on this date yielded 30 c.c. of markedly turbid fluid under increased pressure. The globulin tests were all positive. There were 2,970 cells, of which 93 per cent. were polymorphonuclears. Direct smears from uncentrifugalized fluid contained large numbers of gram-positive diplococci, with very few cells (Fig. 2). Twenty c.c. of antimeningococcus serum and 9 c.c. of a 0.5 per cent. ethylhydrocuprein solution were administered. The child died shortly afterward.

Necropsy Findings.—Necropsy by Dr. O. T. Schultz revealed that both ventricles of the heart were increased in size. The aortic valve was ulcerated, and attached to its median segment was a grayish, soft vegetative mass, 1.5 by 1 cm. The anterior half of the left cerebral hemisphere was coated with a thin layer of opaque, yellowish exudate beneath the pia mater. The base of the brain was free from macroscopic exudate, although it contained an increased amount of cloudy fluid under the tentorium. The left middle ear contained a drop of thick, yellow pus. The ossicles appeared normal. The right middle ear was negative. There was unresolved pneumonia in the lower lobe of the left lung. Blood culture yielded pneumococcus, Type I.

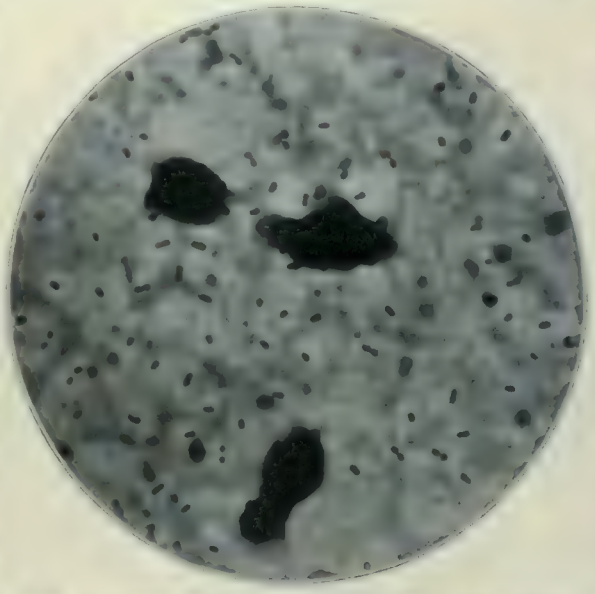


Fig. 2.—Direct smear of cerebrospinal fluid, showing large numbers of diplococci and few cells; × 1,200.

COMMENT

The findings in Kerley's case closely resemble those in our first case. In his case, the gums were swollen and there were grayish white ulcerated areas on the cheeks, tongue and lip, attended by fetid breath. This was not described in other reports.

The occurrence of a rash in our first case is interesting in the light of other reports. Dean quotes a case of LePlay in which infection followed tonsillectomy, accompanied by a scarlatiniform rash. He also mentions two cases of Fisher and thirty-four cases of Vingrave, in seven years, of surgical scarlet fever following tonsillectomy. Kerley's case manifested a variegated eruption, which may have been due to medication. Our case was definitely not the typical rash of scarlet fever. It was blotchy, raised and dull red and not in the usual location for a scarlet fever rash. A consideration of these skin eruptions merely adds further material to the data concerning skin eruptions associated with angina and bacteremia.

It is difficult to determine whether the chronic endocarditis in our second case had a direct relation to the septicemia, especially if Morris's [5] case is considered, in which there was a *Streptococcus viridans* septicemia and a chronic endocarditis, and no accident occurred after tonsillectomy. It appears plausible that an acute endocarditis may be precipitated from a chronic endocarditis by tonsillectomy.

The direct smear of the cerebrospinal fluid in our second case presents a picture often present in pneumococcus meningitis, as pointed out elsewhere,[6] namely, many pneumococci and few cells.

The bacteriology of the nasopharynx in children sheds some light on the occurrence of pneumococcic infection in our cases. About 50 per cent. of normal adult persons harbor the pneumococcus in the throat, the majority of which belong to Types III and IV. In 103 extirpated adenoids from patients from 5 to 16 years old, during April, May and June, 1920, Pilot and Pearlman [7] found 71.4 per cent. containing pneumococci, 85 per cent. of which belonged to Type IV, 13 per cent. to Type III and 2 per cent. to Type II. Furthermore, they found that the pneumococci rarely predominated in cultures from nasopharyngeal swabs. They were much more numerous in the crypts of the adenoids. In four cases they were recovered in pure culture. It appears that the pneumococcus is more frequently found in the adenoid than in the tonsil. In our cases, which occurred in the latter part of May, 1922, the necrotic process and septicemia were due to the Type II organism, and the meningitis and septicemia to Type I.

The occurrence of fatal infections following tonsillectomy emphasizes the necessity for caution. In the absence of acute local inflammation, the general immunity of the individual and the local resistance of the tissues to infection are usually sufficient to circumscribe the usual activity of the bacteria which invade the tonsillectomy wound. Otherwise, the infection may spread to the cervical lymph glands or tissues of the neck, producing the condition described by Dean. If the balance of forces is still more favorable to the organism, a generalized infection may supervene. These possibilities are more easily encompassed if local inflammation is present. In such cases the organisms are of greater virulence from the beginning, as is evidenced by the inflammatory reaction which they have produced. Therefore, it is the part of safety to wait until all local inflammation has subsided before creating any form of trauma to the region.

Despite this conservative view, many operators report the removal of the acutely inflamed tonsil without mishap. Buzard [8] removed the tonsils in a case of follicular tonsillitis. He reports that the temperature dropped from 104 to normal within three hours and that the only pain was that due to the operation wound. In twelve other cases he was likewise successful. Morris removed the tonsils without accident in twelve cases presenting joint pains. He advises this treatment for acute tonsillitis. Endocarditis did not develop in any of his cases, even though in one case *Streptococcus viridans* was present in the blood and there was an endocarditis previously.

5. Morris, R. S.: J. Lab. & Clin. Med. **2**: 168 (Dec.) 1916.

6. Levinson, Abraham: Cerebro-Spinal Fluid in Health and in Disease, St. Louis, C. V. Mosby Company, 1919, p. 200.

7. Pilot, Isadore, and Pearlman, S. J.: J. Infect. Dis. **29**: 47 (July) 1921.

8. Buzard, I. S.: J. Iowa M. Soc. **7**: 305 (Aug.) 1917.

Higginbotham [9] urges the removal of acutely inflamed tonsils, comparing the condition to acute appendicitis. He reports no complications in 500 cases. Holinger [10] has removed tonsils in all cases of peritonsillar abscess for seven years without mishap. According to these reports, complicating infections following tonsillectomy are not to be attributed to an active process in the tonsil or the pharyngeal tissue. The responsibility for the infection, therefore, becomes a question of balance of power between host and organism.

The course of our two cases leads us to favor delaying tonsillectomy in the presence of infection until all signs of acute inflammation have subsided.

25 East Washington Street—30 North Michigan Avenue.

SARCOMA (?) OF THIGH, WITH SECONDARY SARCOMA (?) OF INGUINAL REGION, LIVER AND LUNGS

RECOVERY AFTER INTENSIVE DEEP ROENTGEN IRRADIATION *

J. HENRY SCHROEDER, M.D.
CINCINNATI

The purpose of this report is to place on record what, so far as I have been able to learn, is the first successful attempt to treat by intensive deep roentgen irradiation a widely distributed sarcomatous invasion of deep tissues. I am able to demonstrate that it is technically possible and clinically permissible to administer to a patient over wide and separate areas of the body, within a limited period of treatment, the "sarcoma dose" of roentgen irradiation in the depth of each such area, with the result of the apparent disappearance of the neoplasm from all the involved areas.

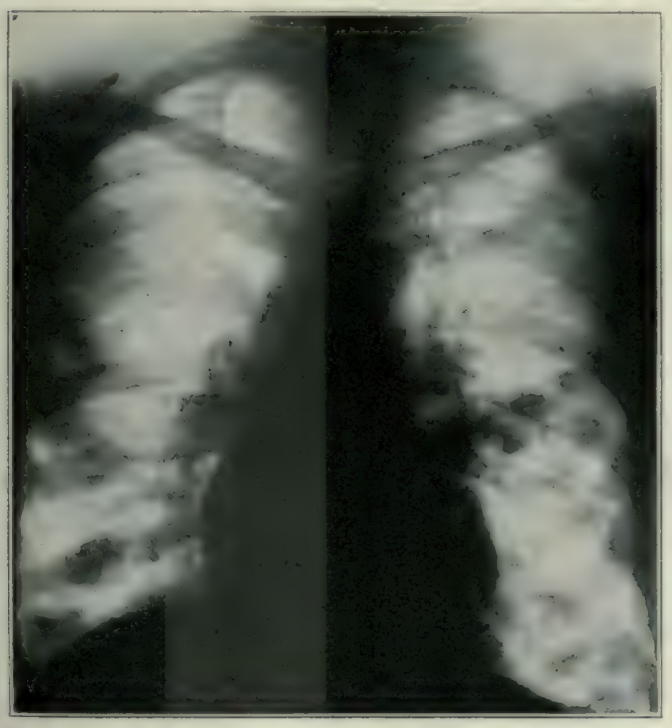


Fig. 1.—Lungs before roentgen irradiation, January, 1922, showing the characteristic shadows of secondary sarcoma throughout both lungs.

In order to establish the diagnosis, I give the complete history and clinical record. The excision of a specimen for histologic examination was, of course, not permissible.



Fig. 2.—Thigh before roentgen irradiation, with outline of sarcoma indicated by dotted line, because of faint print.

REPORT OF CASE

History.—H. M., a man, aged 50, was injured about three years ago by having his right thigh crushed. The present roentgenograms do not show any evidence that the bony structures of the thigh and knee were injured. He made a temporary recovery from his injury, but after about six months began to decline in health, with marked loss in weight. Digestive disorder was an early complaint. The injured leg became very painful, and the lower third of the thigh, the site of the previous injury, gradually enlarged. His physician made the diagnosis of sarcoma of the thigh and advised prompt amputation. The patient came to the hospital, and Dr. Samuel Brown, roentgenologist at the hospital, after the roentgenographic examination of the thigh, made the usual roentgen-ray examination of the chest, which revealed extensive and typical secondary sarcoma of both lungs (Fig. 1), and the results of the examination were so reported in the hospital records.

This brought to an end all surgical contemplations. When I was asked to see the patient at that time (January, 1922) to determine the practicability of intensive deep roentgen irradiation, I found the lower third of the thigh greatly enlarged, very painful and tender, and hard as a rock. The tumor mass could be outlined by palpation, and appeared as an easily definable, circumscribed neoplasm in the soft tissues of the thigh. It extended along the posterior and mesial tissues of the thigh to below the posterior aspect of the knee joint, completely disabling the patient. The inguinal region presented large and tender masses. An examination of the lungs disclosed impaired resonance over many areas of both lungs, and some moist râles. At this time nothing physically abnormal could be detected in the abdomen, although the

9. Higginbotham, I. L.: J. Kansas M. Soc. **16**: 42 (Feb.) 1916.
10. Holinger, Jacques: Ann. Oto., Rhinol. & Laryngol. **30**: 195 (March) 1921.

* Presented, with the patient, before the Academy of Medicine of Cincinnati, Oct. 23, 1922.

patient's complaint of indigestion suggested abdominal involvement. The liver was not enlarged, but became enlarged and painful later, as will be noted.

A roentgen-ray examination of the thigh revealed the outline of the tumor in the soft tissues of the thigh; the bony structures appeared normal (Fig. 2).

There was no history of syphilis. The Wassermann and Hecht-Gradwohl tests were reported negative. The blood count revealed: red cells, 5,135,000; white cells, 6,225; polymorphonuclears, 56 per cent.; eosinophils, 7 per cent.; large lymphocytes, 3 per cent.; small lymphocytes, 33 per cent.; large mononuclears, 1 per cent.

The *clinical* diagnosis appears to me as established through the evidently malignant type of the disease; through its history and course; through the character of the local lesion; through the occurrence of characteristic metastases, and particularly through the roentgenograms showing the typical shadows of deposits of secondary sarcoma of the lungs.

To this may be added, as if by way of confirmation, its response to deep roentgen irradiation, and the fact that the clinical diagnosis of sarcoma was repeatedly made by competent surgeons who examined the patient and indicated the case to me as hopeless.

Deep Roentgen Irradiation.—The ultrahard rays at 220,000 volts, and for the lungs at 200,000 volts, were used. The lungs received 70 per cent., and the other areas 80 per cent. of the surface erythema dose, in their depth. Four irradiation periods were required. During the first period, from January 21 to February 1, the thigh, inguinal region and both lungs were irradiated. Each region received the full dose in one sitting.



Fig. 3.—Lungs six weeks after the administration of the first roentgen irradiation dose.

The second period was from March 22 to March 27, during which the thigh and lungs received again the sarcoma dose.

The liver up to this time was not apparently enlarged, although the continued indigestion pointed almost certainly to an involvement of abdominal organs.

At the beginning of the third period of irradiation, June 29, the liver was found to be markedly enlarged and very tender, and at this time the liver and the thigh were each given the sarcoma dose.

During the fourth period, August 31, the thigh received its last irradiation.

Results.—The extensive irradiation was well tolerated. There were at no time alarming blood changes after the various doses.[1] After the first period of irradiation, the patient gained 23½ pounds (10.7 kg.) in weight within six weeks. The lungs were examined ten days after the first irradiation, and Dr. Brown reported that the roentgenogram revealed the deposits in the lungs to be less dense and circumscribed, indicating partial absorption. The lungs became entirely clear after the second dose, and on June 26 Dr. Brown reported, after a roentgen-ray examination, that all metastases had entirely disappeared (Fig. 4). A final examination, October 23, reveals that the lungs have remained clear.



Fig. 4.—Lungs six weeks after the second roentgen irradiation dose: All metastases have entirely disappeared.

The masses in the inguinal region disappeared after one irradiation.

The liver became of normal size after the application of one irradiation dose, and all tenderness disappeared. The patient called attention to the fact that he had never experienced such an improvement in his condition after any previous irradiation; all symptoms of indigestion vanished rapidly.

The tumor of the thigh proved the most refractory. Only after the fourth dose could no remaining infiltration be detected.

At the present time the patient is free from any evidence of the disease. His general condition is excellent. He is free from any complaint; only the muscles of the leg have not yet regained their former strength.

COMMENT

The attitude toward deep roentgen irradiation as a therapeutic agency in widely metastasized malignant disease has heretofore been one of discouragement. It has been demonstrated in this case that widely disseminated sarcoma is in itself not a bar to successful treatment with these irradiations. It may be safely done, provided the dosage is absolutely controlled and the patient has good resistance.

The patient will, of course, be carefully watched in the future. The outstanding feature at present is this,

1. The variations in the blood counts have been referred to by Schroeder, J. H.: Intensive Deep Roentgen Irradiation, J. A. M. A. 79: 1240 (Oct. 7) 1922.

that nine months ago this patient was lying in the hospital, hopeless and helpless; today he is looking toward a renewed useful existence.

11½ East Eighth Street.

MULTIPLE CALCULI IN STENSON'S DUCT

REPORT OF UNUSUAL CASE

ALFRED H. NOEHREN, M.D.
BUFFALO

In a careful search of the literature, I was unable to find the report of a case of salivary calculi exceeding the one herewith reported in the number of calculi found in one duct.

REPORT OF CASE

History.—F. S., aged 20, a student, consulted me in June, 1922, complaining of a swelling in his left cheek. He had noticed this swelling for the past eight years. It had varied from time to time, and during the last four months had been larger than ever before. There had been no pain, and the patient had not been troubled with pyorrhea, poor teeth, formation of tartar or bad odor of the breath. There had always been a free flow of saliva, and he had never passed any stones. He had consulted a physician in his college town, who diagnosed the condition as multiple salivary calculi.

Examination.—The patient was a well-developed young man, apparently in perfect health. His teeth were in good condition and, aside from the swelling, there was nothing abnormal in the appearance of his mouth. There was a moderate swelling of his left cheek, having the appearance externally of an alveolar abscess of the upper jaw. Palpation revealed the swelling to be irregular in shape and to consist of a number of hard bodies. It was felt near the anterior border of the masseter muscle at the level of Stenson's duct. Within the mouth, three distinct bodies could be distinguished, which seemed to be nearer the mucous membrane than the skin. It was impossible to find or probe the opening of Stenson's duct. The parotid gland was not enlarged. A diagnosis was made of multiple calculi in the buccal portion of Stenson's duct, probably three in number.

Operation.—This was performed under local anesthesia (1 per cent. procain) at the Deaconess Hospital, June 20. I incised the mucous membrane over the most prominent stone. With considerable difficulty, this was made to present at the wound and was grasped with forceps by an assistant, after which I was able to dissect it out. It was very firmly embedded and could not be pressed out without considerable dissection. This process was repeated with each of the other stones, always, however, using the same incision. To our great surprise, instead of three, there were fourteen stones, as seen in the accompanying illustration. They were hard and covered with tightly adherent tissue. The wound was three-fourths inch (1.9 cm.) long, and had to be considerably stretched. A gauze pad was kept inside the cheek for twenty-four hours.

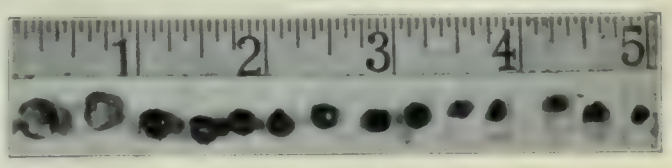
Outcome.—The patient made a good recovery. September 24, he wrote that the wound was well healed and the swelling practically gone. There was no pain, and no more stones could be felt.

COMMENT

Salivary calculi occur frequently enough to be of considerable clinical interest. Stenson's duct passes from the anterior border of the parotid gland transversely across the cheek on a line passing from the lower border of the concha to a point midway between the free margin of the upper lip and the ala of the nose, about a finger's breadth below the zygoma. Here, it lies on the masseter muscle directly under the skin and can be felt like a whip-cord, especially if the masseters are made to contract. It lies between the transverse facial artery above and the buccal branch of the facial nerve below. At the anterior border of the masseter, it turns abruptly inward, making almost a right angle. It passes through a mass of fat and the buccinator muscle to the mucous membrane, ending in a papilla opposite the crown of the upper second molar tooth. It is thus divided into a masseteric portion and a buccal portion, and, although the former is usually described as larger than the latter, in some recent dissections made on the cadaver, we found them of about equal length, i. e., about 1 inch (2.5 cm.) each, totaling slightly less than 2 inches (5 cm.). The diameter of the duct is about one-eighth inch (3 mm.), being narrowest at its termination.

In the case here reported, the calculi were in the buccal portion, and hence could be removed through the mouth. When calculi are in the masseteric portion or in the parotid gland, they must, as a rule, be removed through the skin, in which case the wound is less likely to heal and may result in a fistula.

The etiology of salivary calculi is not very clear. They are composed principally of the inorganic salts found in saliva, especially calcium carbonate and calcium phosphate. As in the case of tartar on the teeth, these salts are deposited by the action of bacteria. Furthermore, clumps of bacteria or particles of tartar may form the starting point of calculi, around which the salts are deposited.



Stones removed from Stenson's duct.

In this case, the good condition of the mouth and teeth would seem to reduce the possibility of a bacterial cause to a minimum. So we must look for another cause. The total amount of saliva secreted in twenty-four hours is 1,500 c.c. Allowing one half of this, or 750 c.c., for the parotid glands, the gland on one side would secrete about 375 c.c. in twenty-four hours; or, roughly, about 15 c.c. of saliva passes through each Stenson duct every hour. This is quite a stream, and any interference with it would be liable to cause trouble. As this patient is a student, he spends much time at his desk reading and writing. The natural student's attitude is to rest the head on the left hand. In this position, the hand naturally presses on that part of the cheek which contains Stenson's duct, especially where the duct turns around the anterior border of the masseter muscle and dips down to the mucous membrane. This causes a certain amount of stasis in the salivary flow and traumatizes the duct itself, thus making more likely a deposit of the salts of the saliva forming the nuclei of calculi. Furthermore, the pressure would tend to embed them, as in this case. To prevent a recurrence, therefore, the patient should be instructed to support his head in some other way.

1196 Main Street.

Choice of Physicians.—The more rapidly the public learns to be discriminating in its choice of physicians, the more rapidly will the standards in the practice of medicine become elevated.—Wolbach, New Growths and Cancer, Harvard University Press, 1922.

THE USE OF EPINEPHRIN IN THE STOKES-ADAMS SYNDROME *

HAROLD FEIL, M.D.
CLEVELAND

The discomfort of patients who have Stokes-Adams attacks is well known, and until recently there has been no successful means of combating the condition. The syncopal attacks may occur at such frequent intervals that the patient is in almost constant anguish. Besides, there is the danger of permanent ventricular standstill. To those who have observed such attacks, the picture by Holberton [1] is familiar. He describes a fit as "always preceded by cessation of the pulse for a second or two before syncope took place; on the heart recommencing to beat, the face would redden, and consciousness return, with a wild stare and occasionally a snorting, a slight foaming at the mouth and a convulsive action of the muscles of the mouth and face." This cycle may be repeated at frequent intervals, as in the patient whose case history is here reported.

Phear and Parkinson [2] recently reported good results from the subcutaneous injection of epinephrin hydrochlorid in 1:1,000 solution, in a patient who was suffering from syncopal attacks in complete heart block. It was their report that prompted me to employ this therapy.

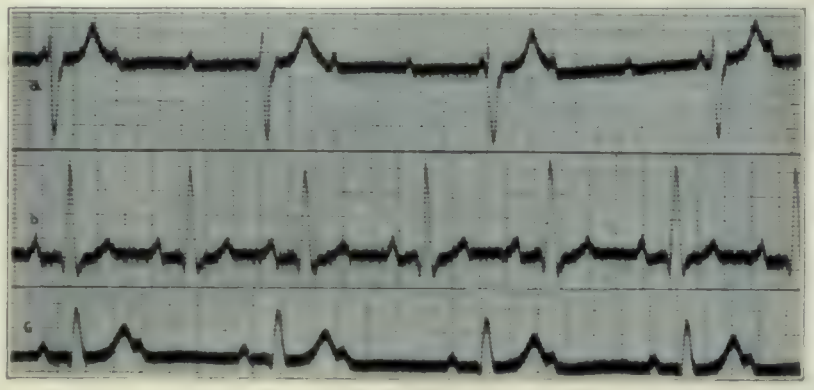


Fig. 1.—*a*, Complete heart block, after the syncopal attacks had ceased; rate of auricles, 90; rate of ventricles, 30; Q R S interval, 0.1013 second. *b*, Normal mechanism: rate, 68; Q R S interval, 0.1116 second; P-R interval, 0.2454 second. *c*, 2:1 block: rate of auricles, 84; rate of ventricles, 42; Q R S interval, 0.1228 second. The interauricular periods in *a* and *c*, during which the ventricular systoles fall, are shorter than those which follow; time in fifths of a second; all records from Lead 2.

Epinephrin has been suggested in the treatment of heart block because of its well known effect of stimulation of the physiologic endings of the sympathetic system and its supposed increase of coronary flow. Barbour and Price [3] have shown that epinephrin constricts the coronary arteries of the monkey (and presumably of man) and slows coronary flow. That epinephrin may stimulate smoothe muscle in one concentration and inhibit when the concentration is increased has been shown by Hoskins.[4] Epinephrin may slow the heart through its action on the vagus, either reflexly, because of the elevation of blood pressure, or directly on the center. Syncopal attacks, due to cerebral anemia consequent on ventricular standstill, may occur during the period when complete heart block is developing. In fact, syncopal attacks in complete heart block, when it is firmly established, are uncommon. It is during the transitional period, when the new center of impulse formation is taking on its function, that occasional or frequent periods of ventricular standstill occur.

Kahn [5] produced complete heart block in dogs by injection of epinephrin; but bradycardia did not follow, because both auricles and ventricles were accelerated. Egmond [6] later caused acceleration of auricles and ventricles in dogs, with experimental complete block. He agreed with Cullis and Tribe,[7] who found that, in experimental complete block in cats (produced by section of the His bundle), epinephrin caused as much acceleration of the auricles and the ventricles as before section. They believed that the accelerator fibers probably reach the ventricle by way of the coronary arteries. Routier [8] accomplished the same acceleration and also noted restoration of normal mechanism for a brief period. Stewart and Rogoff [9] found experimentally that epinephrin passing into the blood stream from the suprarenals at the ordinary rate can produce a cardiac irregularity (due, probably, to premature beats).

Hardoy and Housay [10] used epinephrin in a clinical case of complete heart block without effect on either the block or the heart rate. Intravenous injection of 1 c.c. of epinephrin in a 1:1,000 solution gave rise to dangerous symptoms with great acceleration of both chambers, yet affecting the heart block. Danielopolu and Danulescu [11] in 1916 used epinephrin subcutaneously in cases of complete heart block, noting that the rate of the auricles and ventricles was elevated, without change in the block. They also noted the lack of parallelism between the rate of acceleration of the auricles and ventricles. They recommend epinephrin hydrochlorid subcutaneously (from 1 to 2 mg.) in attacks of cerebral anemia which occur in heart block, and they state that the effect is less certain in complete heart block than in incomplete block. Lutembacher [12] gave 2 mg. of epinephrin intravenously in a case of complete heart block, and noted grave symptoms. In another case, the intravenous injection of 1 mg. was followed by numerous extrasystoles, causing ventricular tachycardia and a ventricular pause, with syncope. The pulse remained at 16 a minute for a week, one half of the rate before therapy. He suggests the use of epinephrin in syncopal attacks caused by ventricular standstill. Arrilaga [13] used the drug in six cases of complete heart block (in doses of 1 mg.), without modification of the block. Strisower [14] used epinephrin hydrochlorid subcutaneously in the dose of 0.5 c.c. of a 1:1,000 solution in a case of complete block, the ventricular rate rising from 28 to 84 in one-half hour, and the next day the electrocardiogram was normal. A month later, 2:1 heart block was noted, and a smaller dose of the same solu-

* From the Cardiographic Laboratory of Mount Sinai Hospital of Cleveland.

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12. Lutembacher, R.: Arch. d. mal. du cœur. **13**: 345 (Aug.) 1920.
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14. Strisower, R.: Wien. klin. Wchnschr. **33**: 269 (March 25) 1920.

tion doubled the ventricular rate and restored normal mechanism.

Phear and Parkinson [2] report the case of a woman, aged 49, who had suffered from recurring syncopal attacks for two years. During a period of six days, there was "periodic recurrence of ventricular standstill with its accompanying phenomena, continued at almost regular intervals during day and night. On two occasions, atropin, 1/100 grain, was administered, the immediate effect being a definite diminution in the severity of the symptoms, without any change in the frequency of the attacks; but the improvement was maintained only during two or three attacks and was followed by a reaction with more severe symptoms and enhanced mental distress." Five minims of epinephrin solution (1:1,000) was injected subcutaneously. Fifteen minutes later, the attacks stopped, and, although there was one slight attack a few hours later, no more appeared during the following four weeks. During the evening of the same day, another injection of 10 minims of epinephrin was given. The pulse rate following the administration of epinephrin was no faster than during the period of ventricular activity prior to the giving of the epinephrin.

These authors conclude, from their study of the literature and from their clinical case, that epinephrin administered subcutaneously may or may not abolish complete heart block. Even if the block is not changed, there is usually an acceleration of the rate of the auricles and ventricles. In their case, no change in the complete block occurred, but the standstill of the ventricles was abolished, with relief from attacks of the Stokes-Adams syndrome.



Fig. 2.—Arterial pulse curve of complete attack: The increasing diastolic pauses preceding standstill and the quickened rate after the ventricle begins to beat again are shown; time in fifths of a second.

Korns and Christie [15] report a clinical case in which the intramuscular injection of 10 minims of epinephrin hydrochlorid converted a 2:1 block into dissociation.

REPORT OF CASE

History.—A barber, aged 50, a married man, with one normal child, seen, Aug. 25, 1922, through the kindness of Dr. John Tucker, because of fainting attacks, gave an unimportant family history and a personal history of measles, diphtheria and tonsillitis in childhood. However, he had enjoyed excellent health during adult life until the onset of the present illness. Physicians had often remarked about his slow pulse, but there was no exact information on this point. The first fainting attack occurred during February, 1922, when the patient was entering his room after a day's work. He remained free from attacks until four weeks later, when, while out walking, he became dizzy and fell over in a faint. Another attack followed about three weeks later, when he fainted while at work. It was not unusual at that time for him to faint on rising from his chair. Five weeks prior to admission to the hospital, the syncopal attacks increased in frequency, so that he fainted once or twice daily. During this period approximately 20 pounds (9 kg.) in weight was lost. August 18, his pulse was 80, regular and rhythmical, and the blood pressure was 130 systolic and 76 diastolic. August 26, the attacks increased in number so that one followed another in almost unbroken succession. Continuing August 27 and 28, these successive syncopal attacks kept the patient in almost constant distress. In a typical attack, the ventricular standstill lasted from three to twelve seconds. Pallor was noted, and unconsciousness, twitching of the muscles, convulsive movements and respiratory stridor followed. The patient awakened complaining of a severe throbbing headache, with buzzing in his ears. For quite a while, he noted shortness of breath on walking. He never felt any premonitory symptoms before his attacks, and there was no point suggestive of epilepsy in the history.

Physical Examination.—This revealed that the patient was well nourished and well developed. He was then lying in bed, and suffering from syncopal attacks. There was no cyanosis or respiratory distress in the periods of consciousness. There were no signs of infection. There was moderate emphysema. The peripheral arteries were not thickened, and the rate of the pulse was 34 a minute, regular and rhythmical at times, but with frequently recurring intervals when the pulse could not be felt. The blood pressure was 140 systolic and 66 diastolic. There was no cardiac enlargement, a finding that was confirmed by fluoroscopic examination. The heart sounds were distant and were accentuated at times. The liver edge was palpable and tender. There were no other signs of stasis. Examination of the urine revealed no abnormality. The Wassermann reaction of the blood was negative, as performed by two laboratories. The electrocardiogram (Fig. 1 *a*) showed complete heart block, with the Q R S interval measuring 0.101 of a second. The auricular rate was 90, while that of the ventricles was 30.

Treatment.—The subcutaneous injection of atropin sulphate, 0.0013 gm., was without effect; 0.6 c.c. of epinephrin hydrochlorid solution (1:1,000) was then given subcutaneously, with immediate cessation of the syncopal attacks. The ventricular rate was 34, and was unbroken by any periods of standstill. No syncopal attacks occurred until twelve hours later, when Stokes-Adams syndromes again recurred. Another injection of 0.6 c.c. of epinephrin terminated these attacks. Twelve hours later, further syncopal attacks were noted, and were ended by epinephrin. Epinephrin hydrochlorid, 0.6 c.c. of a 1:1,000 solution, was injected twice daily for a period of ten days, and no further attacks occurred. The ventricular rate continued at about 34 a minute for one week, when the rate rose to 55 and then steadily to 84, five days later. An electrocardiogram (Fig. 1 *b*) showed normal mechanism with a prolonged P-R interval (0.245 second), and a Q R S interval in excess of the normal (0.114 second). The patient was comfortable and able to carry on simple activities without discomfort. Any exertion, such as climbing stairs or walking fast, provoked dyspnea.

A week later, the electrocardiogram showed 2:1 block (Fig. 1 *c*), the auricles beating 84 a minute and ventricles 42 a minute. A week later, the electrocardiogram showed complete block again, with a ventricular rate of 30. This dissociation has been maintained to the present moment, and the patient is working at his trade, but with greatly diminished tolerance for exercise, breathlessness coming on after a short walk.

TABLE 1.—EFFECT OF ATROPIN SULPHATE

	Auricular Rate Per Minute	Ventricular Rate Per Minute
Before atropin	76	29
Fifteen minutes after 0.0026 gm. atropin sulphate subcutaneously	83	31
Thirty-five minutes after atropin	92	35
Fifty-five minutes after atropin	94	31

Reaction of Patient to Drugs.—Atropin: Atropin sulphate, 0.026 gm., was given subcutaneously to determine the possible rôle of the vagus in the production of the heart block. Complete heart block persisted after the administration of the drug, although physiologic effects were noted, such as dilatation of the pupils and dryness of the pharynx. Table 1 shows the effect of atropin on the respective rates of

15. Korns, H. M., and Christie, C. D.: Note on the Use of Epinephrin in Heart Block, J. A. M. A. **79**: 1606 (Nov. 4) 1922.

auricles and ventricles. A definite acceleration of both chambers becomes evident fifteen minutes after the injection, persisting for at least forty minutes. No change in the ventricular complexes was noted in the electrocardiogram.

Epinephrin: Epinephrin hydrochlorid, 0.6 c.c. of a 1:1,000 solution, was injected subcutaneously to determine any possible change in rate or mechanism. Table 2 shows the result of this trial. A slight increase of the rate of the auricles and the ventricles is noted, in moderate agreement with the finding of Danielopolu and Danulescu,[11] who administered a much larger dose, from 1.5 to 2 mg. (1.5 to 2 c.c.) of a 1:1,000 solution, and obtained a greater rise in the rates of both chambers. The complete block was unaltered. The administration of epinephrin was followed by muscular tremor, pallor of the hands and face, and diaphoresis.

Blood pressure, maximum systolic and minimum diastolic, remained unchanged in spite of the slight acceleration of the heart.

CONCLUSION

There is clinical evidence that the subcutaneous injection of epinephrin in cases of partial heart block may overcome the delay in conduction, restoring it to normal; in 2:1 block, the mechanism may be restored to normal or dissociation may follow. In complete block, normal sequence may result or no change occur. In the latter event acceleration of the auricles and the ventricles usually results. In cases of frequently recurring attacks of Stokes-Adams' syndrome, the syncopal attacks may be abolished. From the clinical report of the English observers and from my report, the effect of the subcutaneous injection may be said to last about twelve hours. The dose administered to adults of average weight is from 0.3 to 0.6 c.c. of a 1:1,000 solution, injected subcutaneously. The danger in administration of epinephrin to patients with a considerable degree of arteriosclerosis or with hypertension (and in many cases of complete heart block there is an elevated systolic maximum pressure) must be weighed against the dangers and the discomfort of the syncopal attacks. Doubtless, epinephrin therapy is justified in the treatment of patients with frequently recurring syncopal attacks, in view of the usual urgency of the patient's condition and because of the satisfactory results obtained in the reported cases. In no event should epinephrin be administered intravenously. The use of epinephrin subcutaneously offers relief from Stokes-Adams' attacks and doubtless stimulates the new center of impulse formation in complete heart block, by way of the sympathetic endings. There appears to be little or no danger in the use of epinephrin in this type of case when it is properly administered. Intravenous injection results in greater concentration of epinephrin in the blood stream, and it is this factor that is probably responsible for the grave reactions reported in the literature.[16]

TABLE 2.—EFFECT OF EPINEPHRIN

	Auricular Rate	Ventricular Rate	Blood Pressure — Systolic	Blood Pressure — Diastolic
Before epinephrin	78	29	118	50
Ten minutes after 0.6 c.c. epinephrin, 1:1,000 solution	76	29	120	42
Twenty minutes after epinephrin	80	29	...	...
Thirty minutes after epinephrin	82	30	120	44
Forty minutes after epinephrin	79	30	124	40
Fifty minutes after epinephrin	81	31	120	42
Sixty minutes after epinephrin	79	30	120	42

TABLE 3.—BLOOD PRESSURE

Date	Rhythm	Systolic	Diastolic
	Normal (clinical examination)	130	76
	Complete heart block:		
Aug. 18, 1922	Before epinephrin	140	66
Sept. 1, 1922	Ten minutes after epinephrin	152	62
Sept. 3, 1922	Complete heart block	150	70
Oct. 28, 1922	Complete heart block	118	50

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THE DEMONSTRATION OF UNERUPTED HUTCHINSON'S TEETH BY THE ROENTGEN RAY*

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AND
BOYD S. GARDNER, D.D.S.
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On a number of occasions, one of us (J. H. S.) has been impressed with the significance of aplasia of the upper central incisors of the second dentition as a clue to the existence of heredosyphilis.

With a view to determining whether dental aplasia in heredosyphilis is actual or merely apparent, because of impaction or noneruption of the upper central incisors, roentgenograms are being taken in suitable cases in which the delayed appearance of these teeth suggests the possibility of aplasia.

The examination of children's teeth by the roentgen ray has been considered difficult and more or less hazardous. If the operator, however, does not attempt to make too many exposures and uses the bite method, children even at the age of 4 or 5 years can be handled quite successfully. The film is held in place by closing the jaws. A third person, to engage the hands of the child, practically eliminates danger. As it is only necessary to observe the unerupted upper incisors to get the full benefit of the dental examination in such patients, one exposure is sufficient.

We are not as yet in a position to make a definite statement with regard to the existence of an actual total aplasia in certain cases of heredosyphilis. The intra-alveolar demonstration of as yet unerupted Hutchinson's teeth represented by the case here reported seems, however, to have sufficient diagnostic interest to justify a report:

REPORT OF CASE

F. L., a baby girl, aged 5 months, was seen in the Mayo Clinic in 1917, with signs of nasal obstruction. What appeared to be a large parapharyngeal fluctuating mass was recognized. On the finding of a strongly positive Wassermann reaction on the blood, the mass was interpreted as probably gummatous. No teeth had as yet appeared. The liver was enlarged. Definite anterior bowing of the tibiae and a moderate rachitic rosary were recognized; slight epiphyseal enlargement was also apparent. There was a definite venous ectasia. The blood Wassermann reaction on the patient's mother was strongly positive.

Following the administration of six intravenous injections of arsphenamin, this patient was not seen again for five years. In this interval the pharyngeal gumma had completely involuted, the infection had become quiescent, the child had become fairly robust, and while she still displayed osseous stigmas suggestive of heredosyphilis, the Wassermann reaction was now repeatedly negative. At the time of her reexamination, the upper central incisors were absent and the

16. Rogoff, J. M.: Personal communication to the author.

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mother said that the first dentition teeth had been poor and had decayed rapidly. She was concerned lest the second dentition teeth should not be normal.

In the effort to determine whether an aplasia of the second dentition upper central incisors existed, a roentgenogram was made. The Hutchinson characteristics of the unerupted teeth are easily apparent, particularly the lateral bulging and the notch.

COMMENT

In any large syphilologic practice, cases are occasionally encountered in which the fact that the child's teeth are still of the first dentition makes it impossible, in the absence of other conclusive evidence, to clinch the diagnosis of heredosyphilis by the identification of true Hutchinson's teeth. In such cases, it seems possible that intra-alveolar identification of Hutchinson's teeth by the roentgen ray may be of diagnostic service. Moreover, as in the present instance, it may thus be possible to clinch the diagnosis of heredosyphilis in children in whom loss of the first dentition incisors, with delayed eruption of those of the second dentition, makes a direct clinical identification of Hutchinson's teeth impossible for the time being. We are carrying on further studies on these possibilities.



Unerupted Hutchinson's upper central incisors demonstrated by roentgen ray in a child, aged 5 years.

It is further of interest to note that, although the six arsphenamin injections which this child recevied at the age of 5 months caused a prompt recession of the active gummatous manifestations of the syphilis, there was no effect whatever on the germinal anlagen of the Hutchinson teeth. The anlagen of the upper central incisors of the second dentition are recognizable on the average at the twelfth month of life, and presumably have already received the abnormal developmental impulse or trend which leads to the formation of the Hutchinson teeth. It is certainly suggested that treatment for syphilis in infancy cannot affect the appearance of Hutchinson incisors in the second dentition. It must be admitted, however, that the treatment in this case did not reach the intensity demanded by modern standards, so that this conclusion can hardly be accepted as final.

Safety Week.—Much good was accomplished through the holding of Safety Week, observed in New York and throughout the country during the week of October 8-14, last. Through the concentrated efforts of the committee in charge, forty-seven fewer lives were lost during Safety Week, as compared to the corresponding week of 1921, and thousands of accidents were prevented in the City of New York alone. It is safe to assume that the "Safety Week" drive was responsible for saving the lives of hundreds of people throughout the country. Safety Week did one thing, if nothing else: It made people think, made them more careful, and cautioned them over and over again "not to get hurt." We should use the slogan "Don't Get Hurt" not for one week, but for all weeks, and for all times. No effort is more commendable or more heroic than the effort to prevent accidents. Teachers should inculcate into the minds of schoolchildren, at every possible opportunity, the essentials of "Safety First."—*School Health News,* November, 1922.

FALLIBILITY OF ROENTGENOLOGIC EVIDENCE OF HEALED GASTRIC ULCER

REPORT OF CASE *

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The changes in the roentgen-ray findings of peptic ulcer that take place in the course of medical treatment can be studied best in that type of ulcer showing a penetration on the lesser curvature. When filled by barium, the crater of a penetrating ulcer appears as a budlike projection from the outline of the stomach, which has been termed a "niche" by Haudek. When situated on the lesser curvature, a niche can be easily visualized, and is unlikely to be simulated by adhesions or cicatrices as are ulcers at the pylorus or duodenum.

Since Hamburger, in 1918, published his roentgenologic studies on the healing of peptic ulcers, several reports have appeared showing the diminution in size or the total disappearance of a niche in response to medical treatment. Most of the reported cases were observed for too short a time to draw definite conclusions regarding their cure, but these changes in the roentgenologic picture were interpreted as strong evidence of healing. The case here reported is instructive in showing the possibility of error in such an interpretation.



Fig. 1.—Lesser curvature niche after ten days of medical treatment.

REPORT OF CASE

History.—L. G., a man, aged 46, a furrier, came under my observation, April 18, 1921. His gastric complaint was of

* Read before the Metropolitan Medical Society, Feb. 28, 1922.

eight years' duration. For seven years his symptoms had been very mild. For about one year he had had attacks of severe epigastric pain and occasional vomiting. Twice there had been dark brown fluid in the vomitus, presumably blood, but a tarry stool had not been observed. He had never on a strict regimen of treatment, and there was no loss in weight.

Physical Examination.—The patient was a tall, thin, neurotic man weighing 130 pounds (59 kg.). The only physical finding of note was slight tenderness, which was localized in the epigastrium midway between the xiphoid cartilage and the umbilicus.

The blood pressure and the urine were normal. A test meal disclosed normal free hydrochloric acid and a small amount of macroscopic altered blood.

From these data the diagnosis of gastric ulcer was made, and April 20, the patient was placed on a modified Sippy treatment.

A roentgenologic examination, April 30, by Dr. S. J. Goldfarb, disclosed a niche on the lesser curvature, midway between the cardia and the pylorus (Fig. 1). There was no incisure on the greater curvature opposite the niche. The motility of the stomach was not delayed.

A confirmatory examination was made five days later, and the same results were again obtained.

Course.—Because of the roentgen-ray findings and the chronicity of the symptoms, operation was advised; the patient, however, feeling improved on his restricted diet, requested that the medical treatment be continued. At the end of two months his symptoms and tenderness were entirely gone and his weight was 136 pounds (62 kg.), a gain of 6 pounds (2.7 kg.) since beginning treatment. He was then referred to Dr. Goldfarb to determine whether any change in the roentgenologic appearance of the ulcer occurred, corresponding to the clinical improvement. He was examined, July 2, and to our surprise no evidence of the ulcer could be found either on fluoroscopic examination or by means of plates.

To corroborate this finding, the patient was examined fluoroscopically five days later, and again no evidence of the ulcer was seen. I believed that this case was another medically healed chronic gastric ulcer with roentgenologic evidence, similar to those that had been reported. July 15, however, almost three months after the beginning of the treatment, the patient suffered a return of the epigastric pain and vomiting, in which a small amount of altered blood was present.

To determine whether any change in the roentgen picture occurred, corresponding to this return of symptoms, another roentgenologic examination was made, July 20, but for a third time, no sign of the ulcer could be seen (Fig. 2). Because of the severity of the pain and the presence of blood in the vomitus, it was decided to submit the man to a laparotomy, despite the roentgen-ray findings. At operation, August 3, by Dr. Albert A. Berg, a callous ulcer was found present on the lesser curvature exactly as shown in the first roentgenologic examination. A subtotal gastrectomy was performed. Gross examination of the excised specimen revealed an indurated ulcer, the margins of which were congested and hemorrhagic in spots. The crater was filled with a mucoid substance, easily removed with the finger and without any intimate connection with the ulcer surface. The depth of the excavation then corresponded with the size of the niche in the first roentgenologic examination (Fig. 1). The mucoid material filling the crater probably accounted for the failure of the barium to enter it in the repeated examinations.



Fig. 2.—Absence of niche in repeated examinations after from ten and one-half weeks to three months of medical treatment.

REVIEW OF LITERATURE

In 1918, Hamburger [1] reported three cases of penetrating ulcer observed roentgenologically from three to four months, in which medical treatment was followed by partial to complete filling of a niche. One patient remained well for nearly two years. He also reported a case in which a peristaltic indentation was mistaken for a penetrating ulcer, which was not found at operation. He cited a similar case observed by Cole.

Small series of similar cases, observed for periods varying from fifteen weeks to one and one-half years, were also reported by White,[2] Buckstein [3] and Shattuck.[4] White remarks that it is possible that food may occasionally stick in the bottom of an ulcer crater and make it appear shallow.

In 1920, Øhnell [5] reported thirty-four similar types of ulcers, treated medically between November, 1916, and July, 1918. In thirty-one of these cases, the niches disappeared on an average after forty and one-half days of the ulcer cure. He found that as the niche disappeared the patient became free from symptoms, tenderness disappeared, and generally the motility distinctly improved. However, he stated that he knew of no clinically cured ulcer that had previously shown a niche, in which an actual pathologic anatomic demonstration had been made, showing the healed ulcer covered with epithelial tissue. He concluded that the period of observation in his cases was still too short to judge of permanent cure.

Holmgren, in the discussion of Øhnell's paper, said that in several cases he, too, obtained similar results, but that in certain cases the patients returned in the course of six months or a year with the niche in the same place as before.

Recently, Diamond [6] gave a detailed report of fourteen cases responding to medical treatment with the

1. Hamburger, W. W.: Roentgenological Studies in the Healing of Gastric and Duodenal Ulcers, Am. J. M. Sc. **155**: 204 (Feb.) 1918.
2. White, F. W.: Improvement in the Medical Treatment of Chronic Ulcer of the Stomach and Duodenum, M. Clin. N. Am. **2**: 1431 (March) 1919.
3. Buckstein, Jacob: Roentgenographic Evidence of Ulcer Healing, J. A. M. A. **76**: 231 (Jan. 22) 1921.
4. Shattuck, H. F.: Study of the Early Effects of the Sippy Method of Treating Peptic Ulcer, J. A. M. A. **77**: 1311 (Oct. 22) 1921.
5. Øhnell, Harold: Interne Behandlung bei Ulcus Ventriculi mit rontgenologischer Nishe, Acta med. Scandinav. **52**: 1, 1919-1920; Internal Treatment of Ulcus Ventriculi with Niche Proved by X-Rays, ibid. **53**: 706 (Jan.) 1921.
6. Diamond, J. S.: Observations on the Curability of Gastric Ulcer, with a Report of Fourteen Cases of Healed Lesser Curvature Ulcers, Am. J. M. Sc. **162**: 548 (April) 1922.

disappearance of a niche. Three patients in this group remained well for more than four years, which is the longest period of observation thus far recorded. The other cases were observed for varying periods up to three years.

COMMENT

It is difficult to prove the curative effect of medical treatment of chronic gastric ulcer because of the spontaneous remissions in symptoms that so frequently characterize the disease. It is well known, as Mayo states, that "one or two years between attacks without treatment is a common early history." Such patients consider themselves cured until a sudden relapse indicates that the disease still exists. However, in such cases, the view is also tenable that the old ulcer had healed, and a new one formed owing to the activity of the original etiologic agent. The study of the changes in gastric secretion or motility that follow medical treatment can give no results that are conclusive of cure, since there are no findings in the secretory or motor functions of the stomach that are pathognomonic for peptic ulcer. Roentgenologic examination (with a small percentage of error in mistaking a projection due to peristalsis or adhesions for a true niche), affords a method of obtaining definite objective record of morphologic changes in the surface of an ulcer.



Fig. 1.—Twenty minutes after barium meal: bulk of meal in cardia, and some trickling down through the constriction toward the pylorus. (This and the accompanying roentgenogram were taken by Dr. E. L. Mathias.)

It seems reasonable to interpret the diminution in size or the total disappearance of a niche as evidence of healing or cure, especially when these changes are accompanied by clinical evidence of improvement, and by other roentgenologic findings, such as the disappearance of an incisure, and improved motility. However, the case presented shows that this interpretation is open to error. There are causes for the disappearance of a niche other than the obliteration of an ulcer crater by granulation or cicatricial tissue. As mentioned above, food may enter the crater. In the case which I have presented, mucoid material filled the crater. It has been suggested that pressure by edema or enlargement of an organ, such as the liver or pancreas, adjacent to the ulcer, may obliterate the crater. It must further be borne in mind that, even if an ulcer crater is filled with granulation tissue, the ulcer cannot be considered healed unless its surface is completely covered with epithelial tissue. This condition the roentgen ray cannot demonstrate.

These facts, and also the knowledge that there are frequent remissions in symptoms in this disease, emphasize the need of a long period of observation (Moynihan suggests three years) before drawing any definite conclusions regarding the medical cure of a chronic gastric ulcer. To quote Moynihan, "When a chronic gastric ulcer, the cause of recurring attacks, is seen at the time of operation, it is perfectly obvious that the healing of a condition when such gross anatomic changes are present can only be brought about by long continued and rigid treatment."

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Clinical Notes, Suggestions, and New Instruments

EMPLOYMENT OF TWO DUODENAL TUBES IN GASTRO-ENTEROLOGY

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The recent article by Dr. Epstein[1] on a simple nonoperative method of treating gastric ulcer calls to mind a procedure which I have found of value, and which also has as a basis the use of two duodenal tubes. Although, as yet, I have not resorted to lavage and siphonage by means of the tubes with the idea of treating ulcer, we have found the use of the two tubes of considerable value in diagnosis. The possibilities of the procedure as affecting both diagnosis and treatment are almost without limit. The case here reported will illustrate concretely the value of the procedure.

REPORT OF CASE

H. S., a man, aged 65, white, admitted to the Vineyard Park Hospital, Aug. 3, 1922, complained of indigestion, loss of appetite, and loss of weight. He had had indigestion twenty-five or thirty years; anorexia for the last five or six years, and considerable distress after meals, following a period of about one hour of comparative comfort. One year before admission he had a hemorrhage from the stomach, and then tarry stools. He remained in bed several weeks, and had not worked since. He had lost 30 pounds (13.6 kg.) in one year. He had a sense of soreness and fulness in the left upper abdominal quadrant, and could not lie on the back or the right side. He vomited only occasionally now, and seldom any blood. Occasionally he coughed. The bowels were constipated. There were no cardiovascular or nervous symptoms.

The patient had had the usual diseases of childhood. Hemoptysis occurred in 1881, but not since. He was the father of seven children in good health. The family history and social history were negative.

The patient was poorly nourished. He lay in a left semirecumbent position in evident distress. The head, neck and chest were for the most part surgically negative. The abdomen was flat. The musculature was poor. There was marked sensitiveness and a vague sense of a mass in the left upper quadrant. A duodenal tube was passed, but no stomach contents could be withdrawn. A roentgenogram (Fig. 1) revealed a large shadow in the region of the cardia, with a small stream of the barium trickling down through a constriction toward the pylorus. In view of the failure of the first stomach aspiration, it was determined to leave a tube

1. Epstein, A. A.: A Simple Nonoperative Method of Treating Gastric Ulcer, J. A. M. A. **79**: 1321 (Oct. 14) 1922.

in situ for twelve hours. Accordingly, one was passed on the evening of August 5, and allowed to sink as far as possible until the following morning, with the patient turned on the right side as much of the time as he was able. On the morning of August 6, 2 c.c. of material was aspirated through the tube (Fig. 2 *A*). This was bloody, of a sour odor, alkaline to litmus, of a thin consistency, and contained no free acid. There was both microscopic and occult blood, and the total acidity was 60.

Figure 2 shows how far through the constriction the duodenal tube was able to gravitate during the twelve hour period. A second tube, passed an hour before the roentgenogram was taken, is shown in the pouch above the constriction (Fig. 2 *B*). It was intended to show the amount of uninvolved stomach by injecting the barium solution through the two tubes. In a measure this proved unsuccessful, but a diagnosis of carcinoma adherent to the retroperitoneal structures was substantiated. Operation at the patient's request was performed by Dr. John G. Sheldon, August 6. A carcinoma of the lesser curvature of the stomach was found, and numerous visceral metastases. The mass was immovable on the retroperitoneal structures. The abdomen was closed. The exploration was made under a local anesthetic.

POSSIBILITIES OF THE TWO TUBE PROCEDURE

It is our purpose, as opportunities offer, to makes use of the two tube procedure in elucidating some of the problems of gastro-enterology which have proved difficult by other means. Some of the problems that would seem capable of solution are: (1) synchronous determination of the chemistry of the two pouches of an hour-glass stomach (the case herewith reported is of this general group); (2) aspiration of duodenal secretions through one tube while the chemistry of the stomach is being studied by means of the other, thus avoiding error due to regurgitating alkali: (3) aspiration of the stomach secretions during the duodenal test for pancreas function, in order to rule out the seepage into the duodenum of acid gastric juice; (4) to determine whether lavage and siphonage of the stomach in cases of morphin poisoning, acute dilatation, and the like, will be possible while at the same time duodenal feeding is being carried out; (5) the question whether it will be possible over a considerable period of time to pour alkali from the duodenal tube into the stomach through the other tube, thus obviating such an operation as cholecystogastrostomy, and the use of exogenous alkali in cases of hyperacidity with ulcer.

In fractional gastric analysis shall we not be getting more nearly the true acidity at a given period by withdrawing some juice from each of two tubes at opposite ends of the stomach and mixing these samples before titrating for the acidity?

3825 Warwick Boulevard.



Fig. 2.—Two duodenal tubes in situ. Tube *A* was passed twelve hours before roentgenogram was taken.

TWO CASES OF CHRONIC SIMPLE CYSTITIS OF UNUSUAL ETIOLOGY

MIGUEL LAVANDERA, M.D., NEW YORK
Assistant Cystoscopist, French Hospital

The infrequency of this form of cystitis, and the unusual etiology of the cases in question, are the reasons for this report.

REPORT OF CASES

CASE 1.—Miss L. P., aged 30, a milliner, was referred to me, March 9, 1917, on account of intermittent frequent, painful, burning urination present for the last three months. The condition had been of gradual onset. The history otherwise was of no importance.

Cystoscopy revealed the bladder mucosa intensely red throughout. Scattered over the trigon were small, grayish flakes, easily dislodged by the tip of the ureteral catheter. Both ureters were catheterized to the kidney pelvis, and clear urine was obtained. Physical examination revealed no other abnormality.

Smears from the urethral meatus and from Skene's and Bartholin's glands showed some pus cells and organisms, but no gonococci. Catheterized bladder urine was cloudy, of offensive odor and alkaline, and contained a few pus cells. There were no gonococci or tubercle bacilli. Urine from the left ureter contained a few pus cells; urine from the right ureter was normal. Indigocarmin, intravenously, appeared deep blue in fifteen minutes from both sides. The blood Wassermann reaction was negative.

April 3, under rest and local treatment, the patient was relieved of all symptoms, and resumed work. June 2, she returned with all her former symptoms. Close questioning into her personal habits revealed that she habitually used a rubber sponge, followed by talcum powder on cotton, to keep the vulva dry and clean. Advice against this practice, five days' rest, fluid diet, daily bladder irrigation with 1:4,000 silver nitrate, and hot sitz baths brought permanent relief. A letter from this patient, Nov. 8, 1922, stated that she had been well since.

CASE 2.—Miss L. B., aged 33, engaged in housework, consulted the family physician, Nov. 1, 1920, because of dysuria and dull, aching pain in the lower part of the abdomen. The symptoms were of three weeks' duration, with gradual onset. December 31, the patient entered French Hospital, where I saw her in consultation. No other important fact in the history was elicited.

Rectal examination with the finger detected a small, smooth uterus with the fundus retroverted deep into the culdesac. Cystoscopy revealed the bladder irritable, the mucosa considerably injected, the posterior aspect of the trigon bearing tiny, superficial ulcerations. The ureters were catheterized to the kidney pelvis. The catheterized bladder urine contained many white and red blood cells. The divided urines were normal. No other findings were recorded on two subsequent cystoscopies while the patient was in the hospital. Roentgen-ray examination of the kidneys and ureters was negative. The blood Wassermann reaction was negative.

Jan. 7, 1921, unable to account for the cystitis, I advised exploratory incision to correct the position of the uterus and possibly to remove an adherent appendix. This was done on the 12th, confirming both these conditions. The patient, apparently, was cured; she was discharged on the 27th.

The Town with the Highest Child Mortality.—This, according to Dr. Ramón Pardo, is a proper description for Oaxaca, a city in southeastern Mexico. The average death rate among children under 11 years of age in 1910-1920 has been 604 per thousand births; among infants under 6 months, 204.4 per thousand births. The birth rate is normal, some years even rising to 53 per thousand inhabitants. The abnormal child mortality is gradually depopulating the town. Pardo thinks a similar condition prevails in other Mexican towns.

October 13, however, she again complained of all former symptoms. Cystoscopy revealed essentially the previous findings minus the ulcerations.

Closer inquiry into her personal habits brought out the statement that whenever she felt secretions in her external genitals she applied talcum powder on a cloth to the vulva. Correction of this practice and local treatment, as in Case 1, resulted in complete recovery.

I saw this patient, Nov. 18, 1922, and she assured me that she has had no further genito-urinary trouble.

COMMENT

The etiology of these cases suggests that the cystitis in question is probably more frequent than the literature leads one to believe.[1]

Not until the hygiene of the vulva was corrected did either patient recover permanently. Case 2 bears strong evidence that complete recovery would have taken place without the operation.

138 East Fifty-Fifth Street.

1. Smith, G. G.: Chronic Cystitis in Women Not a Disease, J. A. M. A. **61**: 2038 (Dec. 6) 1913.

Special Article

THE CARE AND FEEDING OF INFANTS

[NOTE.—This is the first of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

INFANT FEEDING

All infants, during the first months of life, should receive fresh, clean milk in their diet. In most instances, a sufficient supply can be obtained from only two sources: (1) breast milk from the mother or a wetnurse; (2) cow's milk from a properly managed dairy. Correspondingly, we speak of two classes of feeding, breast feeding and cow's milk feeding.

BREAST MILK FEEDING

From every standpoint, the ideal mother is one who can nurse her own baby, and thereby furnish it with sufficient milk to meet its needs for normal growth and development. The mother who is not anxious to nurse her infant is a great exception. In fact, most women are greatly disappointed at being unable to meet the full requirements of their baby.

The mother can easily be impressed with the fact that breast milk is the ideal food for a baby. It is always fresh; with a simple technic it remains clean, and it is always available. From the standpoint of economy, it is by far less expensive than other foods. It is the best prophylactic against the communicable diseases and the commoner infections in infancy, and as a curative measure in the presence of nutritional disturbances and infections it has no peer.

Even more important is the fact that the infant is assured a mother's careful observation, owing to its frequent and intimate contact with her. She soon learns to recognize the earliest manifestations of its illnesses. It must be recognized as a fact that most mothers are capable of nursing their infants.

It cannot be denied that there are mothers whose mental and physical condition makes breast feeding inadvisable, but fortunately they are greatly in the minority. Breasts with an insufficiency of glandular tissue to meet the full needs of the infant, even during the first months of lactation, are encountered more frequently. Far less commonly do we find breasts so poorly developed that all lactation is to be disregarded.

McClanahan,[1] summarizing the opinion of a group of pediatricians whom he interrogated for opinions as to the relative morbidity among breast and bottle fed infants, concluded:

> Breast-fed infants are less susceptible to infection, with possibly two exceptions—influenza and tuberculosis. They resist infection to better advantage and with less after-effect from the disease. Breast-fed infants have less morbidity than properly fed bottle infants, and the advantages are still greater as compared with infants who have been improperly fed.

Studies made in many different countries have demonstrated that the death rate among the artificially fed is at all times higher than among the breast fed; that when breast feeding is the custom, the mortality rate is low in spite of other unfavorable factors; and that when breast feeding is increased in a community, the infant mortality rate is lowered.

In studies made in overcrowded and poverty-stricken districts of London, New York, Chicago and other large cities, the fact is very clearly brought out that where by race or custom it is the practice to feed infants at the breast, the infant mortality rate is lower, even though the environment is highly insanitary.

In our complicated modern society, there must be widespread emphasis among all classes, not only on the importance of breast feeding but also on the ways and means of making it successful. There are many false opinions to be overcome, such as the statement frequently made that the modern woman has lost the ability to suckle her young, and the feeling created, as a result of the emphasis on the importance of pure milk and pasteurization in infant feeding, that this is at least as good as breast feeding and often better.

The reports of Sedgwick[2] of the findings of the Breast Feeding Investigation Bureau of the University of Minnesota confirm the ideas which many physicians have held, that in greater part the inability of the mother to nurse her infant is due to improper instruction and insufficient encouragement on the part of the attending obstetrician and those responsible for her nursing care.

Only too frequently when the question is asked, "Why did you wean your child?" the answer is, "Because the doctor advised me to do so." Knowing how commonly this is true, there is certainly room for missionary work in order that breast feeding may receive further encouragement.

> The University of Minnesota breast feeding bureau supervised the care of 2,847 babies during the year 1919. Of these, 96 per cent. were at the breast at the end of their second month, and of 2,022 still under observation at the end on nine months, 72 per cent. were at the breast receiving part or all of their food in this way.
>
> In Boston, the Baby Hygiene Association has had such success, that of 6,000 infants under its supervision only 196 babies less than 6 months old were entirely artificially fed. The statistics of the Starr Center in Philadelphia are equally notable. In 1912-1913, only 48 per cent. of the babies under its care were breast fed. After six years of propaganda for breast feeding, of ninety-two infants whose mothers had been cared for by the prenatal department, ninety were entirely breast-fed at 1 month of age, one was partially breast-fed, and only one was bottle fed.

1. McClanahan, H. M.: Arch. Pediat. **35**: 653 (Nov.) 1918.
2. Sedgwick, J. P.: Preliminary Report of Study of Breast Feeding in Minneapolis, Am. J. Dis. Child. **21**: 455 (May) 1921.

STIMULATION OF THE BREASTS

The demand which is made on the breast is by far the most important factor in the maintenance of the breast milk supply. Repeated, regular and complete evacuation of the breasts by a vigorous baby is, of course, the natural and best method. When this natural stimulus is not obtained, or when the demand on the breast is insufficient for any reason, the supply of breast milk decreases gradually until the supply is insufficient to meet the infant's needs. In these cases, artificial aid is necessary.

HAND EXPRESSION

Expression by hand is the best method for stimulating the breasts to secrete, when an infant is not available for this purpose. Wetnurses find it of the greatest advantage to practice expression at regular four hour periods, and when the breast is practically drained to place the wetnurse's infant at the breasts to empty them completely, both breasts being emptied at each period. The following methods for breast expression may well be followed:

The hands and nails should be scrubbed with soap, warm water and a nail brush, for at least one full minute. The nipple is washed with fresh absorbent cotton and boiled water or a boric solution. The hands are dried thoroughly on a clean towel and kept dry. A sterilized graduated glass tumbler or large-mouth bottle should be at hand to receive the milk.

1. The breast is grasped gently, but firmly, between the thumb placed in front, and the remainder of the fingers on the under surface of the breast. The thumb in front and the first finger beneath should rest just outside the pigmented area of the breast.

2. With the thumb, a downward pressing motion is made on the front against the fingers on the back of the breast, and the thumb in front and fingers behind are carried downward to the base of the nipple.

3. This second act should end with a slight forward pull with gentle pressure at the back of the nipple, which causes the milk to flow out.

The combination of these three movements may be described as "back, down, out."

It is not necessary to touch the nipple.

This act can be repeated from thirty to sixty times a minute after some practice.

It is advisable to empty both breasts at each expression.

The milk should be covered at once by a sterile cloth held in place by a rubber band and kept on ice until used.

Hoobler [3] reports that in the city of Detroit during two succeeding years, 67,000 ounces and 60,000 ounces, respectively, of milk was expressed from the breasts of women in different institutions and from private sources, and distributed throughout the city. Continued stimulation of the breasts by expression of the milk resulted in increasing quantities of milk.

Understimulation of the breasts results in a deficient milk supply.

MATERNAL NURSING

The Diet of the Mother.—The first principle of feeding a nursing mother should be to provide her with an abundance of simple but nourishing food. It should always be palatable and to the mother's liking. During the first days following labor and while she is still in bed, she should be on a more or less light diet, but one that is varied so that her appetite may be stimulated; she may thereby be encouraged to take sufficient food to meet the needs of the infant and herself. Four meals in twenty-four hours are usually all that she will take with comfort, while in bed.

When the mother is up and about, and has resumed her ordinary duties, she may be allowed to eat such foods as she was accustomed to before the advent of pregnancy and motherhood. It is a fallacy to forbid vegetables and fruits on general principles. As a rule, food that the patient can digest without inconvenience is a safe food, so far as the nursing is concerned. Occasionally an infant is seen who reacts to mother's milk by the development of colic when certain of the aromatic vegetables, such as turnips, cauliflower and onions, are a part of the mother's diet. Or, again, the same foods, or such additions to the mother's diet as coffee or salads, may interfere with her digestion and thereby change the quantity and not infrequently also the quality of her milk, all of which may react upon the child. Exceptionally an infant is seen that has become sensitized to one of the animal or vegetable proteins. These cases will be more fully discussed under "Idiosyncrasy to Mother's Milk." Restrictions in the mother's diet are, however, more especially indicated when she is feeding a premature or sick infant, because such infants are more readily affected by qualitative changes in the breast milk. More commonly, the error in the mother's diet lies in the nature of underfeeding and overfeeding. A greatly restricted diet in a robust young mother who has always eaten to her own satisfaction of a generous variety of foods is one of the surest means of curtailing the quantity and lowering the quality of her milk supply. On the other hand, overfeeding leads to revulsion to food, and sooner or later indigestion results. When the mother is convinced that any article of food disagrees with her, even though there may be doubt about it, the food should be discontinued. In a general way, milk, eggs, meat, fish, poultry, cereals, fresh vegetables and fruits should constitute the basis for selection. The acid fruits, salads and aromatic vegetables may be tried, to be discarded if they seem to distress the infant. Eggnogs, cereal gruels with milk, cocoa with milk, malted milk, and similar drinks can be given with the meals; or, when the mother desires, she may take them between meals. The day's diet should include 1 quart of milk in some form, and at least 1 quart of water. Tea and coffee in moderate amounts may be permitted.

Number of Meals.—Most mothers are better satisfied when eating only four times daily, the fourth meal being supplied at bedtime. The latter should consist of a dish of cereal and milk, or some other simple and easily digested food.

Air and Exercise.—From two to four hours daily should be spent in the open air, weather permitting. During this outdoor period, she should take moderate exercise, but never to the point of fatigue. It is well to divide the time of recreation into a morning and an afternoon period.

Sleep.—At least eight hours out of every twenty-four should be given to sleep. If her nights are disturbed, she should have the benefit of an hour or two rest period during midday. In case the infant has been accustomed to a feeding during the night, this should be withdrawn as soon as possible so that there will be only one nursing period between 6 p. m. and 6 a. m. This is most easily accomplished when the infant sleeps in a room separated from the mother and is under another's care during the night. Under all circumstances, the infant must sleep in its own crib.

To Avoid Constipation.—One free evacuation daily should be insisted on. As the excessive use of

3. Hoobler, B. R.: Tr. Am. Ped. Soc. 32: 290, 1920.

cathartics may result in diarrhea in the baby, efforts should be made to regulate the bowel function through food and exercise. A glass of cold water on arising in the morning, combined with a diet containing coarse cereals, sufficient vegetables and fruits, is usually all that is necessary. If this regimen does not have the desired effect, abdominal massage and local measures, such as an oil enema or a suppository, may prove effective. When these measures do not prove effective, it may be necessary to administer mild laxatives, such as liquid petrolatum, magma magnesiae or cascara sagrada. If no evacuation of the bowels has taken place during the previous twenty-four hours, an enema should be administered at bedtime.

Care of the Breasts.—During the latter months of pregnancy, a small amount of clear fluid is secreted by the breasts. Toward the end of pregnancy, and for the first few days after labor, colostrum is secreted. By the third or fourth day the character of the secretion is changed so that it resembles the later milk in both its physical and its chemical properties. The specific factor or factors which stimulate milk secretion are as yet unknown, but it is not unlikely that it may be in the nature of an enzyme. Two important results follow continued stimulation of the breasts by the infant: (1) contraction and involution of the uterus, and (2) increased secretion of breast milk. In the average breast, feeble stimulation results in a minimal milk supply, while stimulation by a strong infant or regular expression will be followed by a supply varying directly with the demand made on the breasts.

In the presence of small nipples, slight traction night and morning during the last months of pregnancy has a beneficial effect in lengthening the nipple.

A well established routine should be instituted for the care of the breasts during the period of lactation. To facilitate this, a readily accessible *tray with the necessary utensils* should be provided. This should contain a glass-stoppered bottle with a saturated solution of boric acid, a jar of cotton pledgets on toothpicks, to be used as applicators for the boric acid, and a graduated glass or beaker. The nipples should be thoroughly washed before and after nursing with a saturated solution of boric acid poured fresh from the bottle for each cleansing, and the surplus thrown away. The boric acid should be applied with the cotton pledgets. The fingers should not come in contact with the nipples, if the child is to nurse directly at the breast. If the nipples are tender, they should be anointed with a sterile mixture of 5 per cent. tincture of benzoin in liquid petrolatum.

In some cases, when the milk first comes in, the breasts may become engorged and painful. Usually this rights itself without difficulty as soon as the relation between the supply and demand is established. During this period of adjustment, besides limiting the fluids taken, the discomfort from engorgement may be relieved by elevating the breasts and keeping them partially under pressure by the use of a supporting breast binder. If a binder is used in time and the mother takes little fluid in her diet for a few days, it is rarely necessary to empty the breast by expression or with a breast pump. If left alone, mild cases of caked breast will disappear without treatment. Unnecessary handling of the breasts should be avoided. Besides limiting the fluid intake, laxatives are indicated. The vegetable cathartics are less likely to pass into the milk than are the salines. An icebag applied externally to a thin binder often will be of assistance. If the cold application produces discomfort, as occasionally it does, hot boric dressings protected by oiled silk may be used. These should be repeated at hourly intervals. The infant should be put to the breast regularly.

Fissures.—These offer serious difficulties to nursing because of pain and the danger of mastitis. Nursing through a nipple shield should be tried in order to minimize the danger of infection. When the infant cannot or will not use the shield, expression should be practiced. Failure to empty the breasts by these methods may make it necessary to risk the danger of infecting the breasts by allowing the infant to nurse directly from the breasts. When a nipple shield is used, it is imperative that it be cleaned thoroughly after nursing and reboiled before using. Among the best local applications are silver nitrate solution, 5 per cent., followed by an ointment, such as balsam of Peru, 1 part, and castor oil, 30 parts; or silver nitrate, 1 part, balsam of Peru, 2 parts, and sufficient petrolatum to make 30 parts.

Mastitis.—This is of frequent occurrence, even during the week following delivery, manifesting itself by headache and circumscribed pains in the mammary gland. The disease is usually confined to one of the lower quadrants. Tenderness, swelling, surface reddening and hard nodular points follow. The course of these mastitides, most of them parenchymatous, is favorable.

Much more serious are those cases which occur later, usually about three weeks after delivery. They begin more violently, with high fever, headache, vomiting, reddening of the skin and tumor formation which is painful to pressure. The pain is exhibited both at the seat of the trouble and in the axilla. With improper treatment, abscess formation quickly occurs and is often followed by repetitional relapses. In these cases we have often to deal with an interstitial mastitis.

Great care should be taken in differentiating between a simple engorgement (caked breast) and mastitis. As in the former, there is every indication for keeping the child at the breasts, in order that they may be emptied at regular intervals. Further indications for treatment in caked breast are met by a dry diet and purgation. When a diagnosis of mastitis is established, the infant should be removed from the breast and a tight binder applied. Two large icebags should be applied to each breast, kept half full so that they may not be too heavy. The binder should be thin, so that the icebags are not separated from the skin by enough cloth to prevent the cold from reaching the gland. The skin must feel cold to the touch; otherwise, no good will be derived from the ice. A saline cathartic may be given, and the liquids in the diet are restricted. The icebags may be removed one at a time after the patient has had a normal temperature for twelve hours. The infant is put back to the breast twenty-four hours after the temperature becomes normal.

If an abscess develops, the pus should be evacuated through radiating incisions. Even in the presence of abscess formations it is only exceptionally necessary to wean the infant. Usually by the end of the first week, even though the wound is still open and draining, the infant can be returned to the breast, after the first milk at each nursing is expressed and discarded. This will be found to have a favorable influence on healing. In most cases the breast function is soon reestablished.

(To be continued)

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SATURDAY, JANUARY 6, 1923

DEATHS OF PHYSICIANS IN 1922

During 1922, the deaths of 2,513 physicians in the United States were recorded in THE JOURNAL. Adding 3 per cent. to this number on account of delayed reports and possible omissions, we estimate the total number of deaths as 2,588. On an estimate of 146,000 physicians in the United States, this is equivalent to an annual death rate of 17.73 per thousand. The average annual mortality rate for the period from 1902 to 1922, inclusive, was 15.52.

Ages.—Of the 2,480 decedents whose age was stated, thirty-one were under 30; 149 between 31 and 40; 360 between 41 and 50; 536 between 51 and 60; 661 between 61 and 70; 531 between 71 and 80; 177 between 81 and 90, and thirty-five between 91 and 100. The greatest number of deaths for a given age occurred at 66 years, at which age eighty-eight deaths were noted.

Causes of Death.—Of the 2,449 known causes of death, 509 were diseases of the heart and circulatory system. General diseases accounted for 344 deaths; of these, 154 were from carcinoma and sarcoma, 44 from diabetes mellitus, 39 from septicemia, 37 from tuberculosis, 21 from anemia, 3 from typhoid fever and 46 from other diseases. Cerebral hemorrhage caused 234 deaths; paresis, 31; meningitis, 19; neuritis, 3; epidemic encephalitis, 5, and brain tumors and other diseases of the nervous system, 45. Pneumonia claimed 180 victims; influenza, 19; bronchitis, 5, and other diseases of the respiratory system, 35. Appendicitis caused 36 deaths; acute indigestion, 15; cirrhosis of the liver, 11; strangulated hernia, 10; biliary calculi, 8; gallstones 4, and other diseases of the digestive system, 30. Chronic nephritis accounted for 125; uremia, 38, and other diseases of the genito-urinary system, 18. Various diseases of the bone caused 4 deaths; senility, 456; sequels to operations, 93; and 22 deaths were due to complications not specified.

Accident and Homicide.—The causes and distribution of the 125 deaths from accident were: automobile-railway (grade crossing), 23; automobile, 39; firearms, 9; drowning, 7; street cars, 5; poison, roentgen-ray burns, falls, sleigh, lightning, collapsing roof and electrocution accounted for the remainder. The fifteen homicides were all due to firearms; of these, four physicians were shot by bandits, one by a maniac, and one by a nurse.

Suicide.—The fifty-six physicians who ended their lives by suicide selected these methods: firearms, 29; poison, 13; jumping from high places, 3; cutting instruments, 3; drowning, 3; asphyxiation, 2, and strangulation, 3.

Civil Positions.—Among the decedents who had held civil positions, one had been state governor; two, United States consuls; 40, members of the state legislature; 29, mayors of cities; 99, members of boards of health; 63, members of boards of education; 12, members of state boards of medical examiners; 6, postmasters; 4, police commissioners; 41, coroners; 4, bank presidents; 96 were veterans of the World War; 116, veterans of the Civil War; 8, missionaries, and 8, clergymen. Two past presidents of the American Medical Association died, four vice presidents, and the secretary; also, twenty-two former presidents of state associations.

PRESENT STATUS OF "INSULIN"

About one year ago it was announced that Banting and Best, working in the University of Toronto, had succeeded in isolating from the pancreas a substance capable of causing a marked reduction in the percentage of blood sugar and in the excretion of sugar in the urine of diabetic dogs. Since that time marked progress has been made in the clinical study of the preparation, but, unfortunately, uncontrolled newspaper announcements have given misleadingly exaggerated ideas of its possibilities. It is, therefore, well to have from Dr. J. J. R. Macleod, in whose department the work was conducted, an official statement concerning the present status of the use of this substance.[1]

The original preparation prepared by Banting and Best was a saline extract of the residue of the pancreatic tissue remaining some weeks after the ducts had been ligated. It was shown that this active principle is soluble in alcohol, and J. B. Collip succeeded in preparing an extract that is practically protein-free and nonirritant on subcutaneous injection. Although it was possible to prepare the product on a small scale, early attempts to prepare it in quantities met with difficulties. Furthermore, investigations on animals showed that the product when taken in an overdose produces alarming toxic symptoms. This made it desirable in the interest of public safety to withhold general publication of the method of preparation and general distribution of the product until some satisfactory method could be found for preparing it in marketable quantities. The broadcast issuing of products of

1. Macleod, J. J. R.: Insulin and the Steps Taken to Secure an Effective Preparation, Canad. M. A. J. **12**: 899 (Dec.) 1922.

varying potency would result in contradictory and unsatisfactory results which would delay, if not prevent, an adequate understanding of the value of the substance, and might result in serious consequences.

The investigators have, therefore, applied for patents for their product in Canada, the United States and Great Britain, and have formally tendered the patents, when granted, to the University of Toronto. The university has accepted the trust on the understanding that the patents shall be employed for the sole purpose of safeguarding the production of the substance against commercial exploitation, and to insure the marketing of a standardized product. Dr. Macleod states that "the method by which the university intends to fulfil these conditions is to license approved manufacturers to produce 'Insulin' under the patents subject to their satisfying the university by frequent submission of samples of their product that it is of adequate potency and purity." A royalty will be charged the licensees in order to maintain a testing laboratory, and any surplus income will be used for research. The original investigators receive no monetary return from the sales. In the meantime, several large commercial chemical houses are investigating the problem of producing the substance in large quantities, and a number of physicians conducting clinics in large hospitals are testing the products produced, under controlled conditions. Dr. Macleod states that this collaboration will be continued until there is every reason to believe that a product of standard potency and nontoxicity can be manufactured with certainty. From the present indications it is hoped that the experimental period will be ended some time during the first half of 1923.

As to the clinical use of the product, it is the belief of Dr. Macleod that it will probably never entirely replace careful dietary regulation, but that it is of undoubted value in assisting the weakened power to metabolize carbohydrate. The preparation, as made at present, must be given subcutaneously, usually in 2 or 3 c.c. doses twice daily; it is hoped that other methods of administration may soon be discovered.

These investigators and the university with which they are affiliated are to be congratulated on the methods they have adopted for controlling the production and the marketing of a product which holds large therapeutic promise. Such an investigation as they have outlined and are undertaking should be sufficient to show not only its value in the treatment of this hitherto very difficultly controlled disease, but also its limitations. It is to be hoped that when the investigations are finally completed the directors will also insist on controlling the advertising claims and methods of marketing, the fields in which the greatest abuses have crept in heretofore in connection with other proprietary substances. The conservative and scientific methods that have so far characterized the development of this new agent warrant the belief that the therapeutic claims will be so controlled.

THE DISAPPOINTMENTS OF HEXAMETHYLENAMIN

Hexamethylenamin, first introduced under various proprietary names, has at length joined the large and growing group of drugs of which much has been expected and still more promised in a therapeutic way, but which have failed to justify the hopes of their champions. It cannot be said that too little time has elapsed to permit a correct evaluation of the claims for hexamethylenamin, since a quarter of a century or more has intervened since the earliest announcement of its possible therapeutic significance. The drug owes its action entirely to the liberation of the antiseptic formaldehyd, a reaction now known to occur only in acid solutions. Hexamethylenamin itself is not actively antiseptic. The use to which it is still devoted with apparent scientific justification is in preventing the growth of micro-organisms in the urinary tract, and in destroying them when they are present in the urine during infectious diseases, such as typhoid fever. The drug is recommended as an antiseptic in cystitis, and as a prophylactic prior to operations on the urinary tract. In any event, its possible efficacy depends on the elimination of the drug through the kidneys with a urine that remains distinctly acid in reaction; otherwise, no benefit is to be expected. Such acidity may often be insured by simultaneous administration of substances like acid phosphates, which promote the secretion of an acid urine.

As it has been shown that antiseptic effects cannot occur in the body tissues and fluids that have a neutral or slightly alkaline reaction,[1] the hope that hexamethylenamin might function to destroy dangerous germs within the tissues themselves has been shattered. Contrary to what was at one time proposed, it has no material antiseptic value in the cerebrospinal fluid during spinal meningitis. Hexamethylenamin has been recommended as a solvent for uric acid, and has met the fate of most of its competitors for favor in the attempted execution of an almost impossible task.

And now it has been shorn of another reputed property, that of diuretic potency, by the studies of Ruh and Hanzlik.[2] These involved careful measurements of intake and output of fluid, not mere bedside guesses. Hexamethylenamin, whether used in small or in larger doses, is not a diuretic. The duration of the excretion of hexamethylenamin in the urine ranged from twenty-four to forty-one hours, being somewhat longer with larger doses used, but independent of fluid intake and diuresis. This, too, is contrary to current conceptions.

To complete the story of failure, it may be added that hexamethylenamin is said to be liable to produce

1. Hanzlik, P. J., and Collins, R. J.: Hexamethylenamin, Arch. Int. Med. **12**: 578 (Nov.) 1913. Hanzlik, P. J.: The Liberation of Formaldehyd from Hexamethylenamin in Pathologic Fluids, J. A. M. A. **72**: 295 (Jan. 24) 1914.

2. Ruh, H. O., and Hanzlik, P. J.: Hexamethylenamin as a Diuretic, J. A. M. A. **79**: 1980 (Dec. 8) 1922.

renal irritation when the dosage is unduly large or its use protracted. The trade names under which the drug has been widely advertised are numerous. Various compounds of the substance also have been added in recent years to the list to be exploited. They simply possess the actions of hexamethylenamin and the salts of the acid with which it may be combined.[3] The long story of this drug, lauded alike legitimately and fraudulently, filled with promise by the facile pen of advertising writers, and stripped of much of this vaunted glory by the tests of critical investigators, should be a wholesome lesson to those in whom great expectations are easily awakened. It is a lesson often repeated in the history of therapeutics—and the drug business.

INFANT MORTALITY IN RELATION TO INFANT FEEDING

Medical science is something more than a reconstructive force that heals the sick; it has become prophylactic in the broadest sense. The medical profession must watch the public health and protect it against unexpected attack or other avertible disaster; it must also teach the nation how best to rear the generation that is next to bear the burden. Viewed from the momentous consequences entailed by such a program, it is obvious that the information imparted should be sound —unbiased in its formulation and defensible in its precepts. There is a widespread belief that the simplest and at the same time the best way to feed an infant is to nurse it. "Happy the baby who enjoys his inalienable right to Nature's food supply—his own mother's milk," writes Mrs. Rose.[4] "His chances of a long and healthy life are immensely greater than those of the poor child who has to be artificially fed. In case of misfortune depriving him of his natural food supply, the best substitute is the milk of some other healthy woman with a baby of approximately the same age, but unfortunately this kind of substitute is not readily commanded by the average family."

If such pronouncements are to be made the basis of a nation-wide or even internationally applicable "appeal to reason," they must be based on incontrovertible facts rather than the traditions of the textbook writers. Usually, statistics of infant mortality are called on to substantiate the claim for the pronounced superiority of breast feeding. It has often been pointed out, however, that the artificial feeding of infants may be accompanied by unfavorable environmental conditions among the less well-to-do, and that a variety of such factors need to be evaluated carefully before any indisputable generalizations about diet alone are made.

Furthermore, many of the statistical data belong to earlier times, when living conditions among the families in which artificial feeding of infants prevailed were less satisfactory than today, and when the science of nutrition had not begun to make itself felt as a factor in the welfare of all classes. The place assumed by food regulating agencies in many countries during the World War attests the new era.[5] Has the newer knowledge served sufficiently to change current food habits and practices and thus to make the older views untenable in their application to present day conditions? The importance of up-to-date information is emphasized in a still different way by a recent statement of the director[6] of statistical research in the Children's Bureau, U. S. Department of Labor, insisting that, in view of the importance of the subject, statistical evidence of the relative influence of artificial and breast feeding on infant mortality seems surprisingly meager. According to this government expert, most of the data that are available relate to foreign cities or districts where special censuses of the kind of feeding received by the infant population have been taken and used in connection with records of the kind of feeding received by infants who died, or where other types of special inquiries have been made to ascertain the type of feeding prevailing.

The Children's Bureau has obtained information, soon to be issued in detail, regarding the influence of feeding on the mortality of more than 22,000 live born infants in eight representative cities of the eastern United States. The records extend from birth to the first birthday. They show that artificial feeding, as actually practiced in typical American city populations, is associated with a mortality between three and four times as high as the mortality among breast-fed infants. According to Woodbury,[6] this outcome is not to be explained either by the slight overweighting of the group of artificially fed infants, with infants in certain groups characterized by high mortality rates; and it appears in all nationality and in all earnings groups, though with variations depending probably on the particular conditions prevailing in the groups. Such facts are telling, and they give added support to current teachings of the continued importance of breast feeding. It is instructive and impressive to learn that, restricting the figures to the first nine months of life, during which the type of feeding is of greater importance than in the last three months of the first year, of the 192,212 months lived by the infants studied, 57 per cent. were lived by those while breast fed, 18 per cent. while partly breast fed, and 25 per cent. while artificially fed. Or, again, during the first nine months, 870 deaths of artificially fed infants occurred, as compared with only 181 that would have been expected at the rate of mortality prevailing among the breast-fed infants.

As an aid to the solution of these problems, THE JOURNAL begins, in this issue, a series of articles on

3. Hexamethylenamine and Hexamethylenamine Compounds, New and Nonofficial Remedies, 1922, p. 131.
4. Rose, Mary S.: Feeding the Family, New York, the Macmillan Company, 1916, p. 98.
5. Food and the War: U. S. Food Administration, Houghton, Mifflin Company, 1918.
6. Woodbury, R. M.: The Relation Between Breast and Artificial Feeding and Infant Mortality, Am. J. Hyg. 2: 668 (Nov.) 1922.

"The Care and Feeding of Infants." The series is addressed particularly to the general practitioner, and it is hoped that it will be of service in rendering advice regarding feeding problems in infancy. The great value of breast feeding is proved; but such trenchant facts as have been cited should not lead to pessimism in infant nutrition. No one can defend the position that science cannot greatly improve the artificial feeding of infants if it cannot actually provide the equivalent of the secretion of the human mammary gland. Science must strive to equal the perfections as well as to correct the imperfections of Nature.

Current Comment

GENERAL REACTIONS FOLLOWING TRANSFUSION OF BLOOD

After the transfusion of blood, unfavorable general reactions may arise, sometimes apparently in spite of the fact that preliminary tests have shown that the blood of the donor and that of the recipient are compatible. The results of recent experiments by Dyke,[1] who studied the iso-agglutinative power of human serum by comparative methods, may help to explain why such unfavorable reactions sometimes ensue. Dyke found that the serum of Group 1 according to the Jansky classification may vary not only in iso-agglutinative strength in different persons but also in the same person at different times; furthermore, that the corpuscles from different persons of Group 4 may vary in their agglutinability by the serums of Groups 1, 2 and 3; hence corpuscles of Group 4 may be placed wrongly, especially in cases in which the agglutinating power of the serum for Groups 2 and 3 is low, and Dyke suggests that only those serums of Groups 2 and 3 should be used for testing that are able to cause definite agglutination when diluted 1:10. According to Levine and Segall,[2] prolonged etherization may cause a temporary change in iso-agglutinative phenomena. In three cases the serum of patients, previously compatible by direct tests with the blood of prospective donors, was found to agglutinate the corpuscles of the donors in question, the most likely cause for this change being a prolonged ether anesthesia in each case. This change in agglutination was only temporary, but the observation, which should be extended, suggests that ether, being a lipoid solvent, may change the state of the blood in such a way as to modify the action of the iso-agglutinins present. Ottenberg[3] points out that a source of error in testing for blood compatibility is using deteriorated or weak serums, and that all tests should be made in duplicate with active test serums. In all cases of doubt both serum and cells of the patient should be tested. It will be recalled that some time ago a special committee, appointed by the American Association of Immunologists, the Society of American Bacteriologists, and the Association of Pathologists and Bacteriologists, recommended that the Jansky classification of persons according to isohemagglutination be adopted generally, in order to avoid the confusion and the possibility of accident due to the use of both the Jansky and the Moss classifications.[4] Confusion, with serious results, is almost certain to occur when prospective donors are grouped now according to the one particular classification, now according to another. The growth of a special class of persons who offer their services as professional donors, and who may travel about and announce themselves as belonging to this or that group, undoubtedly may prove a source of danger unless the grouping claimed is verified with special care. All danger from such sources will be removed by the adoption everywhere of the Jansky grouping.

1. Dyke, S. C.: On Isohemagglutination, Brit. J. Exper. Path. **3**: 146 (June) 1922.
2. Levine, E. C., and Segall, H. N.: Surg., Gynec. & Obst. **35**: 313 (Sept.) 1922.
3. Ottenberg, Reuben: Medicolegal Application of Human Blood Grouping, J. A. M. A. **79**: 2137 (Dec. 23) 1922.

MILD SMALLPOX (?)

On more than one occasion, recently, THE JOURNAL has drawn attention to the virulent trend of smallpox. The situation cannot be overemphasized, in view of the recent experience of Denver. That the remotest community is not immune, and that the cloak of mildness may hide for a time the real nature of the disease already present, is exemplified in the report of the county health officer of Biloxi, Miss., noted in *Public Health Reports*, Dec. 29, 1922:

> We have had nine cases of chickenpox reported. Chickenpox makes us think of smallpox, so I went to investigate and located a genuine case, confluent in type, resulting fatally. The victim, Dr. Fetters, a chiropractor, of Biloxi, recently from Denver, had never been vaccinated. Biloxi has had a number of mild cases of smallpox during the past few years, and some citizens are not being vaccinated as they should. A few cases like the one mentioned above would help to persuade them of the effectiveness and necessity of vaccination.

NEW REGULATIONS ON MARKETING OF MEDICINAL WHISKY

Bottled-in-bond whisky will from now on gradually replace bulk whisky for medicinal use, under a decision recently issued by the Commissioner of Internal Revenue (see page 44 of this issue). This decision is the outcome of the resolution adopted by the House of Delegates in St. Louis, last May, recommending that provision be made for the marketing of whisky in bottled-in-bond containers, so that physicians who prescribe whisky may have some assurance that their patients will receive the genuine article. Throughout the conferences that have been carried on, the officers of the Association have met with cordial cooperation on the part of government officials. All agreed that, so far as it is necessary to use whisky for medicinal purposes, the supply should be of known purity. In the absence of any legal standard of purity, except that provided by the Bottled-in-Bond Act, it was generally conceded that any provision whereby bottled-in-bond whisky would be made available for medicinal uses to the patient in original sealed containers would go a

4. Isohemagglutination: Recommendation that the Jansky Classification Be Adopted for Universial Use, J. A. M. A. **76**: 130 (Jan. 8) 1921.

long way toward solving the problem. One difficulty has been to find some way in which this could be done; that difficulty has been largely overcome in the decision just issued.

THE CLEVELAND HOSPITAL AND HEALTH SURVEY, TWO YEARS AFTER

Nearly two years ago, The Journal [1] congratulated the city of Cleveland for submitting to a complete physical examination from a health point of view, and for a frank report of the findings. It was predicted that this would result in great saving of life, and in increased health and happiness; and that this has been the case is indicated in the recent report [2] of the hospital council. The hospital and health survey was begun in November, 1919. It is not claimed that all of the health improvements which have occurred should be credited to the survey, but credit seems due it for certain definite and far-reaching results. The sanitary code of the city, which had been under consideration for a number of years before the survey was made, has since become a law. The reorganization of the hospitals of the city and of the city hospital training school for nurses should be in part, at least, attributed to the survey, as should also the city hospital bond issue.

THE BUFF SUBSCRIPTION BLANK

Following the insertion of a special subscription blank in The Journal a few weeks ago, numerous subscribers availed themselves of the opportunity to aid the Association in the problem of securing the annual subscription and fellowship dues without sending special bills. At the same time numerous Fellows of the Association added to the check for The Journal subscription a subscription to *Hygeia*, the new publication on individual and community health to be issued by the Association in March. Since the blank inserted several weeks ago may have been overlooked, a new blank is inserted in this issue. The saving to the Association in postage and in clerical work is a considerable one and represents additional work which the Association is able to perform for its Fellows and subscribers, as well as for the public. Every Fellow who is personally interested in the progress of the Association may aid by availing himself of the opportunity to remit, using this blank.

1. The Cleveland Hospital and Health Survey, Current Comment, J. A. M. A. **76**: 383 (Feb. 5) 1921.
2. The Cleveland Hospital and Health Survey, Two Years After, Cleveland, the Cleveland Hospital Council, 1921-1922.

Economic Loss from Disease.—Considering the economic loss due to a single disease, it is estimated that in 1922 the loss from tuberculosis will be $521,000,000. In addition, we shall pay for the care of the tuberculous a total of $663,000,000 or $6 for every man, woman and child in the United States. If there was no tuberculosis, the average life of Americans would be lengthened two and a half years, and the consequent gain in the next fifty years would be $27,000,000,000, or more than our total national debt. Experts say we can wipe out tuberculosis. Add to this the gain from the eradication of other preventable diseases, and the amount becomes stupendous.—Palmer, *Collier's Weekly*.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Dengue in Montgomery.—According to official statistics, 129 cases of dengue were reported up to December 15. No deaths have occurred, and while some cases were reported early in December, the disease is gradually subsiding.

County Elections.—Drs. Charles E. Ford and William W. Stevenson were elected president and secretary-treasurer, respectively, of the Randolph County Medical Association at Roanoke, December 14.——At the annual meeting of the Shelby County Medical Society, Dr. Claudius O. Lawrence was elected president and Dr. Willena Peck, secretary-treasurer.——Dr. John C. Bragg, Albany, was recently elected president of the Morgan County Medical Society.

ARKANSAS

Personal.—The Sebastian County Medical Society elected the following officers for the ensuing year: Drs. Willis F. Rose, Fort Smith, president; Walter G. Eberle, Fort Smith, vice president; Hardy H. Smith, Fort Smith, treasurer, and Jefferson D. Southard, Fort Smith, secretary.——Dr. Leonidas Kirby, Harrison, was recently elected president of the state board of health.——Dr. Erasmus S. Baker and Dr. Felix M. Scott were recently elected president and secretary-treasurer, respectively, of the Green County Medical Society.

CALIFORNIA

Recent Election Summarized.—Following are the results of the vote on medical measures in the recent state election: antivivisection, 226,339, for; 514,783, against; chiropractic measure, 481,000, for; 327,849, against; osteopathic measure, 439,775, for; 327,819, against.

COLORADO

Smallpox and Vaccination in Denver.—The department of health and charity of Denver has issued a leaflet giving information regarding the outbreak of smallpox in that city. During the thirteen month period from Nov. 1, 1921, to Nov. 30, 1922, the cases of smallpox numbered 854, with 263 deaths. The leaflet contains the names of all those who died during September, October and November, 1922. In the fatal cases, 240 patients had not been vaccinated, and twenty-three had been vaccinated. Analyzing the vaccination histories available of those who had been vaccinated before contracting the disease, it was found that thirty-eight years was the average time which had elapsed between vaccination and contracting the disease. More than one half were vaccinated more than thirty-five years before the disease was contracted; 75 per cent. were vaccinated more than twenty-five years before, and 90 per cent. more than fifteen years before. In three cases, seven years had elapsed since vaccination, and one patient had been vaccinated five years before. These data, says *Public Health Reports*, Dec. 22, 1922, emphasize the fact that vaccination and revaccination are the most effective means for the control of smallpox, but they remind us that one vaccination does not (in all cases) protect the individual throughout his entire lifetime.

CONNECTICUT

University News.—Yandell Henderson, Ph.D., professor of applied physiology at Yale University, has been elected an honorary member of the Coal Mining Institute of America in recognition of his contributions to resuscitation from mine gases.

Public Health Association Meets.—The annual meeting of the Connecticut Public Health Association will be held at the Hotel Garde, New Haven, at 11 o'clock, January 10. The subjects to be discussed are: the vaccination laws of Connecticut and the present danger of smallpox; the need of branch state diagnostic laboratories, and the present law governing the medical inspection of schoolchildren.

FLORIDA

Mosquito Survey at St. Augustine.—The state board of health has started a mosquito survey of St. Augustine. Assistance was given by the local troop of Boy Scouts, who made a house to house canvass with questionnaires which concerned the mosquito problem and general sanitary conditions.

GEORGIA

Wesley Memorial Hospital Opened.—The new Wesley Memorial Hospital, erected by the Southern Methodists on the campus of Emory University, Atlanta, was formally opened with appropriate exercises, December 1. It is a six story, stucco building and has an initial capacity of 200 beds. The Lucy Elizabeth Candler Memorial Hospital is connected with the main building and contains sixty-five beds divided between the children's hospital and the maternity pavilion. Walker White, former treasurer of the university, is superintendent and secretary of the institution.

ILLINOIS

Physician Acquitted.—Dr. Albert Willis, Christopher, was acquitted of the charge of having caused the death of Miss Mary Shifflett of Leroy, it is reported.

Personal.—Dr. Franklin A. Turner has been appointed director of hygiene of the Rockford public schools to succeed Dr. Dudley W. Day, who has resigned.

Diphtheria Increases.—It is reported that 180 cases of diphtheria were reported to the state board of health the first week in September, and the first week in October showed 340 cases. The first week of December, the total number amounted to 480.

Smallpox at New Lenox.—An outbreak of fifteen cases of smallpox at New Lenox in Will County was reported by a district health superintendent to the state department of public health, December 30. The cases were of a mild type and no effective quarantine had been established prior to the investigation by the district health superintendent.

Medical Society Elects Officers.—At the annual meeting of the Kane County Medical Society, at which Dr. Bertram W. Sippy gave an address on the treatment of gastric ulcer, the following officers were elected for 1923: Dr. Herman A. Brennecke, Aurora, president; Dr. Emmett L. Lee, Aurora, vice president, and Dr. Lawrence J. Hughes, secretary-treasurer.

Rabbits Have Hemorrhagic Septicemia.—A district health superintendent attached to the state department of public health, and a hygienic laboratory expert attached to the U. S. Public Health Service, have completed an investigation of the cause of a deadly infection which has recently spread among rabbits in the southern part of the state. Their report says that the rabbits are suffering from hemorrhagic septicemia.

Physician Fined.—It is reported that Dr. Carl A. Starck of Palatine was fined $200 and costs for violating quarantine regulations. The specific charge against Dr. Starck was for terminating the quarantine of a diphtheria patient on his own initiative, without reference to local health authorities and in violation of the state regulations. The charges, which were the second of the kind within sixty days, were brought at the request of field men attached to the state department of public health.

Diagnostic Laboratory Work Expanding.—During November, 1922, a new monthly high record of tests was again established by the diagnostic laboratory of the state health department. The main laboratory made nearly 14,000 examinations, an increase of about 40 per cent. over those made in November, 1921. Most of this increase was in diphtheria examinations, although there was a smaller number of diphtheria cases reported from the state this year than last. One of the factors responsible for the increase in examinations is the greater number of cultures being taken before release from quarantine. This has been brought about through the activities of the district health superintendents and other educational agencies.

Chicago

Memorial Exercises for Dr. William E. Quine.—On Wednesday evening, January 10, the regular meeting of the Chicago Medical Society will be devoted to exercises in memory of Dr. William E. Quine. The speakers will include Drs. William A. Pusey, Frank Billings, A. E. Wynekoop, Bishop Hartzell and Mr. John T. Richards. The regular meeting place in the Marshall Field Annex will be used for this occasion.

New Hospital Building.—Construction work on the new ten-story building for the Chicago Eye, Ear, Nose and Throat College and Hospital will be started in April, 1923. It will be located on the northeast corner of Market and Randolph streets. The first floor will be leased and the second and third floors will be for clinic and operating rooms. The upper seven floors will contain private rooms for patients. The estimated cost of the structure is $400,000.

INDIANA

Personal.—Dr. Thomas C. Dodds, Hartford City, was severely injured recently when the automobile in which he was riding was overturned and wrecked.

Cornerstone Laid.—The cornerstone for the new nurses' home and administration building at the City Hospital was laid with appropriate ceremonies, December 22. The estimated cost of the completed building is $425,000.

Physician Fined.—Dr. Emmet E. Rose was recently fined $25 and costs for failure to obey a traffic signal. It is said that Dr. Rose has been arrested three times within as many weeks for alleged violations of traffic ordinances. On the first occasion, he was sentenced to six hours in the city prison for contempt of court.

Meat Inspection.—Indianapolis has recently passed an ordinance prohibiting meats which have not been inspected by the city, before and after the killing of the animals, from entering the city. A state meat inspection system by the state board of health is contemplated, in view of the agitation arising since the ordinance was passed.

A Twelve Hundred Dollar "Cancer Cure."—The Anderson *Bulletin* reports that a warrant was issued for the arrest of "Dr." Ralph Williamson, said to be known locally as a "suggesto-therapist." Williamson, it is claimed, is charged with selling (for $1,200) to a school teacher, "a secret prescription or formula for the cure of tumors and cancer." The complainant asserts that the remedy is of no value.

New Medical Society Formed.—At a banquet and meeting of the Northeastern Indiana Medical Society in Kendallville, December 15, a permanent organization of four counties was effected, with Dr. Martin E. Klingler, Garrett, as president; Dr. Harold O. Williams, Kendallville, vice president, and Dr. Amos J. Hostettler, La Grange, secretary-treasurer. Dr. Willis Stanley Gibson, professor of pediatrics, Northwestern University Medical School, Chicago, gave an address on "Diphtheria and the Schick Test."

IOWA

Personal.—Dr. Frank N. Bay of Albia has been appointed county physician by the board of supervisors.

KANSAS

Hospital News.—The Sabetha Hospital, Sabetha, has planned an addition to cost $100,000.

LOUISIANA

Personal.—Dr. Joseph M. Tolivar, New Orleans, has tendered his resignation from the U. S. Department of Justice, the resignation to be effective January 15.

Practitioners Sentenced.—Walter and Joseph Fife, who were tried and convicted at Lake Charles, October 21, of practicing medicine without a license, according to report, were recently sentenced to sixty days in jail.

MAINE

Physicians Indicted.—It is reported that Dr. Frederick W. Tozer of Portland, and Dr. Erwin C. Ruth of Boston, formerly director of the New England division of the narcotic bureau, have been indicted by a federal grand jury on charges of conspiracy to defraud the government.

MARYLAND

University News.—Dr. K. F. Wenckebach, professor of internal medicine at the University of Vienna, will deliver the twelfth course of Herter lectures in pathology at the Johns Hopkins University Medical School. Dr. Wenckebach will arrive in this country in April.

MASSACHUSETTS

Personal.—Col. Walter B. Cannon, M.O.R.C., Cambridge, has been awarded the distinguished service medal "for exceptionally meritorious service as director of physiological

research for the American Expeditionary Forces in France."——Dr. Isolde Zeckwer of Philadelphia has been appointed resident pathologist at the Long Island Hospital, Boston.

Fine for Practicing Without a License.—A fine of $100 on the charge of practicing medicine without a license, in violation of state laws, was imposed on J. Fred Balcourt, Haverhill, when he was arraigned before Judge Winn, it is reported.

Upholds $1,500 Verdict in Suit Against Physician.—The supreme court yesterday decided, according to report, that Miss Georgianna Chesley, a Haverhill school teacher, is to retain the $1,500 she obtained from an Essex jury in a suit against Dr. Charles E. Durant of Haverhill for leaving rubber tubing in the wound of an operation for appendicitis, performed July 25, 1916.

MICHIGAN

Public Health Lectures.—The joint committee on public health education has filled more than sixty engagements for public lectures on scientific medicine, recently. It is estimated that about 300 lectures will be given during the coming winter.

Clubhouse for Medical Society.—At the annual meeting of the Kent County Medical Society at Grand Rapids, December 13, it was proposed that a clubhouse be erected for the society, to include club rooms, library and amphitheater. A resolution was also passed opposing the removal of the University of Michigan nurses' training school. Dr. R. J. Hutchinson succeeded Dr. Alden Williams as president; Dr. R. C. Bruce was elected vice president, and Dr. Frank C. Kinsey, secretary.

MINNESOTA

Hospital News.—The Lyman Hurst Hospital, Minneapolis, recently opened a department for the examination of schoolchildren for heart disease. The work is conducted by the board of education and city health department, and Dr. W. F. Reasner and Dr. Max Seham are the physicians in charge of the medical work.——The Mounds Park Sanitarium, St. Paul, announces the completion of a psychopathic department organized for the treatment of the milder phychoses.

Trachoma Survey.—Federal and state health officials are uniting in conducting a trachoma survey among the Indian and the white population in the northern section of the state. Trachoma, which is prevalent among the Indians on White Earth Reservation, it is feared may spread to the whites. Following the survey, Dr. A. J. Cesley, executive secretary of the state board of health, and Dr. Taliaferro Clark, U. S. Public Health Service, will outline a program for eradicating the menace, and present it to the state legislature. Numerous delegations in the past have waited on the Indian commissioner and Governor Preus, with the hope of obtaining the discarded hospital buildings on the White Earth Reservation for the use of trachoma victims among Indians, but no action has developed.

MISSOURI

New High School to Commemorate Name of Dr. William Beaumont.—The board of education of St. Louis adopted, December 12, the recommendation of its instruction committee to name the new high school on Natural Bridge Road in honor of Dr. William Beaumont, who, in addition to his well known services to the science of physiology, served as president of the St. Louis Medical Society in 1841.

MONTANA

Personal.—Dr. James L. Atkinson of Poplar, while making a professional call and attempting to cross the upper Missouri River, which was frozen, fell off an embankment and was seriously injured.——Dr. Ernest D. Hitchcock of Great Falls has been appointed director of the hygienic laboratory of the state board of health, to succeed the late Dr. Francis A. Coward, who succeeded Dr. Hitchcock in this office, August 1.

NEW HAMPSHIRE

Personal.—Dr. Samuel T. Ladd was elected mayor of Portsmouth, December 12.

NEW YORK

Personal.—Dr. Jacob Sobel was appointed a member of the medical advisory board of the board of health at a meeting, Dec. 13, 1922.——Dr. L. Duncan Bulkley has retired from the staff of the New York Skin and Cancer Hospital.

Fourth Harvey Society Lecture.—Dr. William T. Bovie, Ph.D., professor of biophysics, Harvard University, will deliver the fourth Harvey Society lecture at the New York Academy of Medicine, January 13. Dr. Bovie's subject will be "The Physiological Effects of Light Rays."

University of Louvain Honors American Surgeon.—The editors of the press of the University of Louvain have selected "The Cancer Problem," by Dr. William Seaman Bainbridge, as the first book to appear from the university's reconstructed press. The author brought the book up to date at the editors' request; it was then translated and printed.

School for Health Nurses.—Eighteen classes have been started in various parts of the state for the special instruction of public health nurses in the hygiene of maternity. More than 300 nurses are now receiving this instruction, and a considerable number are registered for a second series of classes to be started in the spring. Between now and March 1, 1923, classes in the first series will be held in Albany, Ithaca, Buffalo, Jamestown, Poughkeepsie, Canandaigua, White Plains, Gloversville, Kingston, Utica, Schenectady, Rome and Ogdensburg. The object of the course is to equip nurses with the information necessary in order that they may act as teachers of Mothers' Health Clubs.

Health Officers Form Clearing House.—Twenty-five health officers, representing cities and towns of the metropolitan district, met, December 18, at the office of Health Commissioner Copeland, and effected a temporary organization, in order that the metropolitan zone may be guarded by an exchange of information. Dr. Copeland was elected temporary president, and Dr. Louis I. Harris, director of the bureau of preventable disease of the health department, temporary secretary. The next meeting will be held Jan. 25, 1923, during the Health Show. A permanent organization will be effected, the purpose of which will be to unite the health offices in towns and cities in the metropolitan zone, for the purpose of establishing a clearing house of information, and for cooperation in all matters that concern public health.

New York City

Sentenced for Practicing Without License.—Dr. Fritz H. Hirschland of Flushing, L. I., has been sentenced to the penitentiary for from six months to three years for practicing medicine without a license, it is reported. Dr. Hirschland, who stated that he is a graduate of a German university, pleaded guilty to the charge.

Hospital Ends Ambulance Service.—The board of trustees of the Flower Hospital discontinued their public ambulance service, December 31. This action was taken after a conference with Bird S. Coler, commissioner of public welfare, who assured the board that arrangements could be made with other hospitals to take care of the ambulance calls that ordinarily are sent by police to Flower Hospital.

A Part-Time Service for Physicians.—The Bureau of Part Time Work, a noncommercial bureau for finding part-time work for the higher grade of women, has just completed its first year. It makes a specialty of supplying physicians' secretaries and nurses, laboratory technicians, clinic assistants and hourly nurses. The centralization of part-time work is a new experiment, financed by a New York philanthropist, and seems to fill a definite need. The headquarters of the bureau are at 105 East Fortieth Street.

Students' Health Association Meets.—The third annual meeting of the American Students' Health Association was held at Columbia University, December 28 and 29. The association represents fifty institutions of higher learning in the United States, and is interested in improving methods of teaching hygiene because "Society's investment in the relatively small number of men who reach college is too great to be wasted in educating individuals not physically equipped to meet the world after leaving college." Dr. John Sundwall of the University of Michigan, in addressing the meeting, said "The college course in hygiene should aim to instill an impelling desire in the student for physical efficiency, to acquaint him with the means of such efficiency, and to make him feel his responsibility to himself and the community in maintaining it." Dr. J. C. Raycroft of Princeton University was reelected president of the association

Supervision of Commercial Laboratories.—The committee on civic policy of the Medical Society of the County of New York has formulated recommendations for the supervision of commercial laboratories. These recommendations require that a commercial laboratory be directed by a physician and serve the profession only. They shall make no division of

fees and give no rebates. They shall not advertise a consulting staff unless that staff actually does the work of the laboratory. In advertising, they shall publish a list of their fees and submit to the committee on civic policy of the Medical Society of the County of New York a list of their personnel. They shall conform to the standards of work set forth by authoritative bodies and shall comply with the public health law as regards equipment, and reports. The committee further recommends that such laboratories as comply with these requirements be granted a certificate testifying thereto, so that the profession may have a guarantee of expert and ethical service, and the laboratory an incentive to furnish it.

Committee Reports on Cornell Pay Clinic.—A committee composed of representatives of the New York County Medical Society, the Eastern Medical Society, the New York Physicians' Association, the Yorkville Medical Society and the Harlem Medical Society, appointed to make an investigation of the Cornell Pay Clinic recently, made a report through the committee on civic policy of the Medical Society of the County of New York. Among the outstanding features of the report are the following: The committee believes that a better mutual understanding between the Cornell Pay Clinic and the profession is in process of formation. A multiplication of clinics on the style of the Cornell Pay Clinic would work to the disadvantage of both the practitioner and the specialist. The Cornell Clinic, for example, had 114,108 visits in one year; of these 22,536 were new cases. The cost of treating these patients was $232,875.40. The majority of the patients were clerks, teachers, city employees and artisans. From this, it would seem that the clinic is doing unnecessary semicharity or modified charity work for patients who can as well be taken care of by the physicians at large without charity. The committee suggests that pay clinics be limited to the care of cases referred by practitioners for special diagnosis and consultation. All other cases, especially those of disgruntled or dissatisfied patients, or persons who are unacquainted with competent physicians within their economic needs, should be referred to the nearest hospital or clinic to secure the name and fee of a physician. A more cumbersome method consists in the organization of a reference bureau. The committee expresses the opinion that the group practice idea is on the wane and that there are signs of the rehabilitation of individualism in medicine.

NORTH CAROLINA

Personal.—Dr. Carl H. Verner has resigned the office of county health officer of Craven County, effective January 1.

Hospital News.—Work will be started at once on a new city hospital at Gastonia. The building will be erected on the highest point of land in the city on North Highland Street, and will cost $103,000.

Schools Closed Because of Influenza.—The City Council of Hickory ordered the schools closed, about December 5, on account of the prevalence of influenza. There were about 127 cases in the schools for white children, and it was said the situation in the colored schools was worse. The disease was in a mild form, and it was expected the schools would reopen in a few days.

Charges Against Physician Withdrawn.—Charges, which have been pending since last June, of violation of the Harrison Narcotic Law, against Dr. John R. Lowery, have been removed from the docket of the federal court. Three of the government's witnesses failed to appear, and it is said the judge stated that, in view of the circumstances, the ends of justice would be met by taking a nolle pros with leave, the district attorney agreeing to that course.

NORTH DAKOTA

Personal.—Dr. Louisa E. Boutelle, Grand Forks, has been appointed a member of the state board of health.

OHIO

Hospital News.—The St. Francis Hospital at Columbus has obtained ground for the erection of a five-story addition.

Physician Loses Appeal.—The court of appeals in the case of the state against Dr. Joseph J. Boone of Mount Victory, who was convicted in the mayor's court of violation of the Crabbe Law, reversed the finding of the common pleas court, which had reversed the finding of the mayor's court, it is reported. This decision remands the case to the mayor's court for execution.

PENNSYLVANIA

Philadelphia

Dr. Penniman Succeeds General Wood.—The trustees of the University of Pennsylvania have elected Dr. Josiah H. Penniman, who has been acting provost during the absence of Dr. Leonard Wood in the Philippines, as provost of the university. General Wood will remain in Manila.

Dr. Hawk No Longer with Jefferson Medical College.—Under date of December 26, the dean of Jefferson Medical College of Philadelphia announced that Dr. Philip B. Hawk was no longer connected with that institution either as professor of physiologic chemistry or in any other capacity.

College of Physicians Elect.—The section on general medicine of the College of Physicians of Philadelphia elected the following officers for 1923: Dr. Herman B. Allyn, chairman, and Dr. Edward J. G. Beardsley, clerk. The executive committee of the section, as appointed by the president of the college, consists of Dr. David Hiesman, chairman, Oliver H. Perry Pepper and Dr. John H. Musser, Jr.

SOUTH CAROLINA

Smallpox.—Dr. Augustus H. Hayden, state epidemiologist, recently conducted an investigation of the smallpox situation in Orangeburg County, where, it is said, he found forty cases in the Providence community.

Influenza Epidemic.—Influenza appeared in epidemic form early in December, and rapidly spread throughout the state. A total of 1,176 cases, with sixteen deaths from influenza and pneumonia, had been reported in the city of Columbia up to December 15, on which date a marked improvement in the situation was reported by the state health department.

Drastic Measure Proposed to Eradicate Rabies.—Compulsory inoculation of all dogs in the state has been approved by the state board of health; and announcement has been made that a bill covering this requirement will be prepared for introduction in the next general assembly. Three persons have died from rabies this year, and 72 [illegible]e taken the Pasteur treatment.

Rural Health Work.—The annual report of the officer in charge of rural sanitation and county health work of the state board of health indicates that interest among the rural citizens in this work is increasing. This department conducted 13,155 examinations of schoolchildren in 1922; of this number, 6,951 had physical defects, and of the latter number 2,341 had the defects remedied. There were 31,351 typhoid inoculations; 5,181 children under 10 years of age were immunized against diphtheria, and 403 Pasteur treatments were administered.

TENNESSEE

Personal.—Dr. George T. Wilhelm, Memphis, has been appointed director of the department of hygiene and students' health service of the University of Tennessee.

Physician Gets Mistrial.—Having secured a reversal in the court of civil appeals following his conviction and sentence to the penitentiary in the federal district court in 1920, Dr. Lemuel B. McWhorter was given a second trial, December 5, which ended in a mistrial, owing, it is said, to a remark by a juror that Dr. McWhorter had made a fortune in the drug business. A third trial will probably take place in January or February.

Grand Jury Fails to Indict Physician.—The grand jury refused to indict Dr. Woodruff A. Banks, Chattanooga, who, it was reported, was charged with performing a criminal operation. Dr. Banks' conduct was recently under investigation by the local medical society, and the investigating committee reported him guilty of unethical conduct. However, Dr. Banks, after a vote by the society, was permitted to retain his membership.

TEXAS

Personal.—At a recent meeting of the Dallas County Medical Society, the following officers were elected: Dr. C. M. Rosser, president; Dr. Franklin A. Pierce, vice president, and Dr. William West Fowler, secretary.——Dr. William T. Largent, McKinney, has been reappointed health officer of Collin County for the third term.

North Texas Medical Association Elects Officers.—At the eighty-fourth semiannual meeting of the North Texas Medical Association, held recently in Dallas, the following officers were elected: Dr. Murphy M. Morrison, Denison, president; Dr. David M. Higgins, Gainesville, vice president, and Dr.

William S. Horn, Fort Worth, secretary-treasurer. The next meeting will be held in the spring, at Bonham.

UTAH

Personal.—Dr. Wilford W. Barber has been appointed director of the bureau of child hygiene of the state board of health.

VIRGINIA

Virginia Society of Oto-Laryngology and Ophthalmology.—At the annual meeting of the society in Norfolk, in November, the following officers were elected for the ensuing year: president, Dr. Elbyrne G. Gill, Roanoke; vice president, Dr. Joseph A. White, Richmond, and secretary-treasurer, Dr. Emanuel U. Wallerstein, Richmond. Hereafter, meetings will be held once a year. The next is scheduled for April, 1923, at Richmond.

Bronze Bust of Dr. Hunter McGuire.—A bronze bust of Dr. Hunter H. McGuire was recently presented to the medical College of Virginia by members of the family. Dr. McGuire, who was president of the American Medical Association in 1893, founded the University of Virginia College of Medicine, and was president of the college and chief surgeon of the army of northern Virginia during the Civil War. The bust, which was made by Dr. John W. Brodnax, associate professor of anatomy at the medical college, was presented with fitting ceremonies.

WEST VIRGINIA

Measles Epidemic.—There were eighty-one cases of measles in Wheeling, December 15, sixty-two in Warwood, and the others scattered over the remainder of the city. It is said that the spread of the disease has been checked.

WISCONSIN

Hospital News.—The Wausau Memorial Hospital, which is erecting a $750,000 building, took over the Wausau Hospital, January 1.

Course in Colloid Chemistry.—The department of chemistry of the University of Wisconsin announces a course in colloid chemistry to be conducted by Professor Svedberg of the University of Upsala, who will be in residence from Feb. 1 to Aug. 5, 1923. Professor Svedberg will give two lectures a week on the general theory of colloids and will direct the experimental researches of a number of graduate students during the second semester. A seminar in colloid chemistry will also be conducted during the second semester, the first half being devoted to theory and the second half to biologic applications of colloid chemistry. From June 12 to 16 a national symposium on colloid chemistry will be held at Madison, to which all scientists are invited. Those desiring to work under Professor Svedberg's direction, either during the second semester or during the summer session, should communicate promptly with Prof. Joseph H. Mathews, Ph.D., chairman of the department, since only a limited number can be accommodated.

CANADA

Hospital Donation.—Under the will of the late William Scott, of Egmondville, Ont., the sum of $40,000 has been donated to the town of Seaforth, Ont., for the erection and maintenance of a hospital.

Hospital News.—Ste. Justine's Hospital, Montreal, Quebec, was opened recently for inspection. A new wing has been added, making it possible to accommodate more than 150 children, where eighty were previously taken care of. The cost of the new building was $300,000.

University News.—Lord Byng, resident governor-general of Canada, Sir Robert Falconer of the University of Toronto and Dr. Herbert Gray of Toronto addressed the opening meeting of the National Student Conference which was held in Toronto recently. Students from nearly every country in the world were represented at this conference.

Special Instruction for Mental Defectives.—Owing to the large number of mentally deficient children attending the public schools in Toronto, Dr. C. J. O. Hastings, city health officer, has recommended that the board of education place in the estimates for next year an item to make provision for the separate teaching of mentally defective pupils.

The American Biochemical Society.—The society held its annual convention in Toronto, December 27-29. Dr. Frederick G. Banting of the University of Toronto was paid high tribute by the members of the society for his discovery of "insulin," a proposed treatment for diabetes. Dr. Banting's discovery was the chief topic of the concluding session of the convention, no less than nine papers being read by prominent scientists on this subject. Interest was added to this phase of the convention by the announcement of Dr. J. B. Collip that a new source of insulin had been discovered by him, in clams, and that the material is to be manufactured in Winnipeg, Man., his place of residence.——Officers of the society for 1923 were elected as follows: president, Philip A. Schaffer, Washington University; vice president, H. C. Sherman, Columbia University; secretary, Victor C. Meyers, New York Medical School, and treasurer, W. R. Bloor, Rochester, N. Y.

GENERAL

Phi Delta Epsilon Elects National Officers.—At the nineteenth annual convention of the Phi Delta Epsilon fraternity, held at Chicago, December 26-28, the following officers were elected for 1923: grand consul, Louis Bothman; vice grand consul, James W. Smith; chancellor, Monroe E. Greenberger; scribe, Henry B. Boley; historian, Charles Englander; marshall, Isidor Pilot; editor, Aaron Brown, and officers of trustees, Aaron Brown, Jacob Braun, A. J. Beller, and Leo S. Schwartz.

Western Society of Engineers Discuss Preventive Medicine.—At a meeting of the Western Society of Engineers, to be held January 5 in their rooms at 1735 Monadnock Building, Chicago, Dr. C. A. Kofoid, professor of zoology, University of California, will give an address on "Preventive Medicine and Sanitation in Relation to Human Efficiency." In addition, two films will be shown: "Unhooking the Hookworm" and "Exit Ascaris," loaned for the occasion by the Rockefeller Foundation and the U. S. Department of Agriculture, respectively. Members of the American Medical Association are cordially invited to attend, and to take part in the discussion following the address.

New Regulation on Medicinal Whisky.—Commissioner D. H. Blair of the Internal Revenue Department, just issued Treasury Decision 3418 governing the issuing of whisky for medicinal purposes:

> In the interest of the public health, and to prevent the use of impure, harmful and poisonous liquors, the withdrawal, for medicinal purposes, from distillery warehouses, general bonded warehouses, special bonded warehouses, concentration warehouses, or other warehouses in which untaxpaid spirits are held, of only such spirits, not including alcohol, as are bottled-in-bond, will be permitted on and after April 1, 1923, and special permits may be given to the owners of spirits in customs-bond and in free warehouses to bottle such spirits under the supervision of the Commissioner of Internal Revenue and upon the owner's giving sufficient bond against the unlawful diversion of such spirits while in transformation.

Administration of Maternity and Infancy Act.—The chairman of the federal board of maternity and infant hygiene, which under the Sheppard-Towner act must pass on the state's plans for use of the federal funds allotted them, reports that the board has not laid down any plan of work which a state must follow, "nor has it made approval of plans contingent on complying with certain conditions, each plan being considered on its merits." It intends, the report adds, that the plan of work shall originate in the state and be carried out by the state; and the plans which have been submitted and approved by the board differ widely, according to local conditions. Altogether forty-two states have accepted the terms of the act, twelve acceptances being by legislatures and the remaining thirty by governors, pending the next regular session of the legislature. Yearly statistics from 1915 to 1920 show an increase rather than a decrease in the mortality rate among mothers in connection with childbirth, and in 1920 the rate was higher in the United States than in any other country for which recent figures were available. Infant mortality has decreased, but the rate here is still not as low as in five other countries.

Principal Causes of Death, 1921.—The Department of Commerce announces that the compilations made by the Bureau of Census show that 1,032,009 deaths occurred in 1921 within the death registration area of the continental United States, representing a death rate of 11.6 per thousand population, as compared with 13.1 in 1920. The rate for 1921 is the lowest recorded in any year since the beginning of the annual compilations, in 1900. The death registration area (exclusive of the territory of Hawaii) in 1921 comprised thirty-four states, the District of Columbia, and sixteen cities in nonregistration states, with a total estimated population on July 1 of 88,667,602, or 82.2 per cent. of the estimated population of the United States. The death rate from cancer increased from 83.4 per hundred thousand in 1920 to 86 in

1921. Some of the other diseases for which the rates increased are diphtheria, typhoid fever, appendicitis, scarlet fever, diabetes and puerperal fever. The fatalities caused by automobile accidents and injuries show an increase from 10.4 per hundred thousand in 1920 to 11.5 in 1921. A marked decrease is shown in the death rate from tuberculosis, which was 99.4 in 1921 as compared with 114.2 in 1920; also in the death rate from influenza and pneumonia (all forms), which was 99.5 in 1921 as against 208.3 in 1920. The rates for measles, bronchitis, nephritis, whooping cough, heart disease, and diarrhea and enteritis also declined.

LATIN AMERICA

Hookworm Campaign in Brazil.—Most striking and effective is the hookworm poster recently issued by the S. Paulo health authorities. The different illustrations in color, picture the appearance of the blood in health and disease; a healthy peasant, properly clad and wearing boots, standing straight and ready to work, and a barefooted sick peasant, bending over and unable to do his task; coffee plantations with their red berries, healthy people with ruddy faces and hookworm patients with pale, sunken cheeks. The legends point out that a healthy farmer can do twice as much work as a hookworm patient.

Chair of Biologic Chemistry at Havana.—The chair of medical chemistry in the faculty of pharmacy at Havana has been abolished and the teaching of this branch has been transferred to the medical faculty and the name of the course changed to biologic chemistry. Dr. L. Plasencia, professor of microscopy and clinical chemistry, has been entrusted with the teaching of biologic chemistry, and in his inaugural lecture he announced that he has founded a special annual prize of 50 pesos, to be known as the Carlos Findlay prize in biologic chemistry, to be awarded to the student making the best record in this branch of study. The *Vida Nueva* reproduces his inaugural lecture in full.

Personal.—Dr. Gabriel Malda, head of the national public health department of Mexico, has been appointed vice president of the National Academy of Medicine. Dr. Malda was also recently made vice president of the American Public Health Association and head of the organizing committee of the seventh Latin American Medical Congress.—— Dr. L. Rivero Borrell, a Mexican urologist, has returned to his country, after spending three years in Europe.——On the fiftieth anniversary of his entering medical practice, Dr. J. Ramón Icaza was tendered a banquet by his friends and pupils. A souvenir album was presented to him. Dr. Icaza is now president of the Mexican Medical Association and was formerly professor of surgical therapeutics.

FOREIGN

The Seventh Centenary of the University of Naples.—A committee has been formed to arrange for the celebration of this septicentennial in 1924.

Japanese Pharmacists Separate.—A movement to separate the pharmacists' profession from that of the medical practitioners in Japan is being conducted in the country on a large scale.

Personal.—Prof. S. Winogradsky, former director of the imperial institute for experimental medicine in Petrograd, has been recently appointed chief of a newly organized division of soil microbiology at the Pasteur Institute.

Officers of Spanish Society.—Officers were appointed by the Spanish Medico-Surgical Academy as follows: president, José Sánchez Covisa; vice presidents, Manuel Arredondo and Pedro Cienfuentes; secretary general, Santiago Carro; treasurer, Baldomero Castresana; accountant, Antonio Piga; librarian, José Sanchis Banús.

Scientific Congresses to Be Held Abroad.—The Second Pan-Pacific Scientific Congress will be held in Australia from August 13 to Sept. 3, 1923. The first session will be held at the University of Melbourne and the second session (August 21 to September 3) at the University of Sydney.—— The tenth annual meeting of the Indian Science Congress will be held at Lucknow, Jan. 8-13, 1923, under the auspices of the Asiatic Society of Bengal. Sir M. Visesvaraya will preside. Lieut.-Col. C. A. Sprawson is chairman of the medical section.

Far Eastern Red Cross Convention.—The Far Eastern conference of representatives of Red Cross societies was held in Bangkok, Siam, November 29-December 7. The purpose of the conference was to lay before the organizations in the Orient the peace program of the Red Cross as adopted by the general council of the League in March, 1921. Delegates from Japan, China, India, Siam, the Philippine Islands, the East Indies, the Federated Malay States, French Indo-China, Australia and New Zealand were in attendance at the conference.

Memorials to Physicians.—A memorial tablet with bas-relief portraying the late Professor Maffucci of Pisa was recently unveiled by the provincial and military authorities of the province of Avellino.——A tablet has been placed on the wall of the town hall of the place where the late professor Grocco of Florence was born, and a statue erected on a public place.——An imposing memorial meeting was held recently at Rome to pay tribute to the late Dr. G. Fabbri, who initiated the work of protecting railroad employees against malaria, and devoted himself in recent years to helping the war blinded.

Scholarships in Neurologic Research.—The *Informateur* of Paris relates that the Laan Endowment, the seat of which is at Amsterdam, offers a scholarship of 250 florins a month to a research worker of either sex of any country, studying the nervous system along the lines specified by the R. A. Laan Endowment or suggested by the Netherlands Neurologic Society. Prof. C. Winkler of Utrecht is president of the endowment, and Dr. C. C. Delprat is secretary. The latter's address is Jan Luykenstraat 98, Amsterdam. The stipend is to be continued not longer than six or nine months to the same person. The committee passing on the applications includes the director of the central institute for the study of the brain at Amsterdam and one of the members of the committee for control of this institute appointed by the Netherlands Academy of Sciences.

The Swedish Institute of Eugenic Biology.—The *Informateur* relates that the government has appropriated 60.000 crowns toward the expenses of Dr. H. Lundborg's institute for biologic research on heredity and racial characteristics. Dr. Halkrantz has been appointed professor of research on heredity, and Dr. Nillsson-Ehle, professor of statistics. An experimental section for biopathology is planned, and a museum for the collection of data on hereditary factors. The settled character of the population in Sweden, generation after generation, affords unusual facilities for such research. Lundborg and his staff have published a number of studies along these lines, which have appeared mostly in the publications of the Swedish Medical Association. Lundborg is professor of psychiatry and neurology at the University of Upsala.

Radium in Belgian Congo.—The *Scalpel* of Brussels publishes an open letter from Dr. Matagne which was sent to all the members of the legislature of Belgium, pleading to have the radium found in the Belgian Congo kept for the benefit of Belgium, and not to be marketed. He cites the action of the French government in prohibiting the exportation of the radium found in Madagascar. The Austrian government before the war had also prohibited exportation of the Joachimstal radium or radium ore, and the Checkoslovakian government, he says, has confirmed this. The Oolen works are nearly ready with the first output of radium produced from the Katanga deposits in the Congo, and he urges prompt action by the government to prevent its being sold out of the country. He pleads for the foundation of a radium institute, to be the richest and finest in the world, with the radium from the Congo.

Public Health Matters in Syria.—The *Presse médicale* of Nov. 29, 1922, published an account of the organization of the public health and hospital system in Syria and Lebanon by the French high commissioner representing the French mandate in Syria since 1919. Beyrouth and Aleppo were crowded with refugee orphans and the first efforts were, of necessity, to found asylums for 10,000 waifs. These asylums are all maintained by the French commissioner except thirteen in Lebanon. In December, 1921, and March, 1922, about 30,000 refugees arrived from Cilicia. Their transportation and care were in charge of the French commissioner. The campaign against malaria, smallpox and venereal disease has been carried on vigorously, as also has the medical inspection of schools, and maintenance of the already established hospitals and dispensaries and organization of many new ones. The French medical school which has been at work for twenty years at Beyrouth proved of inestimable assistance, as its graduates were called on for their services. Of 140 physicians and pharmacists engaged in this public health service in the Near East, only about ten are native French. The article is signed by the inspector general of the medical department of the colonial troops.

Health Insurance in Spain.—In connection with the national conference on work, health and maternity insurance, held at Barcelona in November, there have been many discussions in the Spanish medical press as to the advantages and drawbacks attached to medical participation in the proceedings. At the recent conference of municipal physicians, one of the resolutions approved declared that compulsory sickness, injury and maternity insurance were detrimental to the medical profession. All in all, physicians have favored representation at the meeting in order to have their interests duly protected. The organizing committee granted the right to send delegates to the academies of medicine of Madrid and Barcelona, the superior board of health, the director general of public health, the president of the federation of medical societies and regional medical societies. The Physicians' Syndicate and other local societies of Madrid voted in favor of compulsory insurance provided physicians' rights are safeguarded. They argue that there are already in Madrid more than forty private insurance societies, with a membership of more than 120,000 families, paying four million pesetas (about $560,000) a year. These societies do not fulfil their purpose, since they are run for gain and in the end exploit both physicians and members.

Prizes Awarded by the Swedish Medical Association.—At the annual meeting of the Swedish Medical Association, the Jubilee prize for 1922 was awarded to Dr. J. Forssman for his works "Origin of the Anaphylactic Shock" and "A New Clinical Picture from Injection of Serum." They were published in the *Biochemische Zeitschrift*. The Alvarenga prize was not awarded. The Regnell prize was given to Prof. Ivar Broman for his work "The Evolution of Mammals." The Retzius gold medal for 1922 was presented to Prof. Charles Sherrington of Oxford for his research on the physiology of the nervous system. This medal is awarded alternately every four years for work on anatomy and physiology. The previous recipients have been A. von Koelliker, Carl Voit, G. Schwalbe, John Newport Langley, and O. Hertwig. The Retzius traveling scholarship in anatomy for 1922 was given to the prosector, Carl Hesser. A stipend from the Pasteur fund was given to Prof. A. Pettersson for his research on pneumococci in corneal ulcer, and to continue his attempts to transmit leukemia from man to monkeys. The Lennander lecture in 1922 was delivered by Prof. G. Ekehorn on "Tuberculosis of the Urinary Apparatus." The lecturer in 1923 will be Prof. B. Gadelius, whose subject is "Psychic Hygiene in Schoolchildren." A Gullstrand fund has been recently founded from the surplus after presenting Professor Gullstrand with a gold medal on the occasion of his sixtieth birthday. The *Förhandlingar* of the association states that there are now 1,456 members, including eleven foreign honorary and 145 foreign regular members, and eleven Swedish honorary members. The foreign members who died during 1922 were Erb, Carøe, O. Schaumann, Holsti, Kolster, Ranvier and Sivén. There are a large number of other endowments but in 1922 only 9,970 crowns were paid out in prizes.

Deaths in Other Countries

Dr. **C. W. Broers,** director of the central laboratory of the Netherlands public health service since its foundation at Utrecht in 1909.——Dr. **Baudet** of Paris succumbed to malignant scarlet fever contracted in his hospital service. The government sent the "epidemics gold medal" to his family.——Dr. **E. A. Fontana** of Empoli, Italy.——Dr. **P. Casciano,** professor of medical hydrology at Rome and deputy for four terms.——Dr. **E. Zuccaro** of Naples.——Dr. **Alexandrino Pedroso,** professor of microbiology at S. Paulo, Brazil.——Dr. **Pacifico Pereira,** professor at the University of Bahia.——Dr. **Pablo Galli** of Buenos Aires.——Dr. **A. Bing,** professor of otology at the University of Vienna, aged 78.——Dr. **E. Sidler-Huguenin,** professor of ophthalmology at the University of Zurich.——Dr. **O. Hösel,** psychiatric expert in the ministry of the interior for Saxony.

CORRECTIONS

Appointment to Norman, Okla., Institution.—In THE JOURNAL for December 23 appeared an announcement that Dr. J. C. Mahr had been appointed superintendent of the hospital at Norman, Okla. We are informed by Dr. Claude Thompson, secretary of the Oklahoma State Medical Society, that this is an error.

Infant Feeding and Infant Mortality.—In THE JOURNAL, December 30, p. 2251, in the abstract entitled "Infant Feeding and Infant Mortality" the last two lines should read: The ratio is much higher (6.3) in the group with earnings under $550 than in the group with earnings of $1,250 and over (4.1).

Government Services

Distinguished Service Medal Awarded Col. T. S. Wilson

Col. James S. Wilson, M. C., U. S. Army, has been awarded a distinguished service medal for "exceptionally meritorious and distinguished service as chief surgeon of the American Expeditionary Forces in Siberia." Colonel Wilson recently retired from active service after twenty-seven years in the Medical Corps. The presentation of the medal was made by Major Gen. J. H. McRae, Fifth Area Army Corps commander.

Hospital Evacuation Started

The U. S. Veterans' Bureau announced recently that evacuation of the Fort McHenry Hospital at Baltimore had been started. Patients now confined in the institution are being admitted to hospitals throughout the country to which they prefer to be sent.

House Favorable to Bursum Bill

The House of Representatives before adjournment for the Christmas holidays adopted the conference report on the Bursum bill, which would increase pensions of Civil and Mexican War veterans from $50 to $72 a month and those of widows of veterans from $30 to $50, with $6 additional for each dependent child. Nurses who served during either conflict would receive $50 monthly instead of the present $30 pension.

Pay Increased for Veterans' Attendants

President Harding signed this week the bill which had previously passed both houses of Congress increasing the pay of nurses and attendants of blinded ex-service men. The increases ranged from $20 to $50 a month.

School for Psychiatrists at St. Elizabeth's

Dr. W. A. White, superintendent of the Government Hospital for Insane at Washington, D. C., announced this week the establishment of a school at St. Elizabeth's early in January, for the instruction of physicians in the treatment of mental and nervous diseases. Dr. White stated that, at the time an appropriation of $35,000,000 was being considered for the construction of hospitals throughout the country for disabled veterans, he suggested to the U. S. Veterans' Bureau that, as half of the soldiers were tuberculous and the other half mental and nervous patients, something should be provided for the latter. He was authorized to organize an institution to train physicians, and, with his staff of forty-five men, has about completed all arrangements. Lecture courses numbering from two to eight will be given by prominent neuropsychiatrists.

Dickman Board Completes Task

The demotion of Army officers and separation from the service of 1,858 commissioned personnel ordered by Congress in effecting a reduction in the officer complement has been completed by the War Department. The elimination included 101 officers in the Medical Corps, sixty-four from the Dental Corps; twenty-three from the Veterinary Corps, and fifty-six from the Medical Administration Corps. In announcing completion of the reduction program, Secretary Weeks paid high tribute to the work of the Dickman board, to which the task of selecting officers for separation and demotion was delegated. The work was done, he declared, on a high plane without favor to any and strictly on a basis of merit. Surg. Gen. M. H. Ireland of the Medical Corps was a member of the board.

Annual Physical Examinations in January

The annual physical examination of commissioned officers and warrant officers of the U. S. Army will be conducted during the month of January, 1923, according to instructions issued by Surg. Gen. M. H. Ireland to the Medical Corps. Medical officers making the examinations have been ordered by the Surgeon General to exercise care and judgment in the defect or combination of defects of officers examined as

to whether they are incapacitated for field service; and, before arriving at a definite decision, they must carefully consider the age and rank of the officer concerned and the duties which he will be called on to perform while in active service. All immunization data of each officer in the Army will also be compiled by the commissioned personnel of the Medical Corps during the examinations, as well as descriptions of the reaction to all prophylactic vaccinations.

Encouraging Report on Narcotics

Col. L. G. Nutt of the narcotic division of the prohibition unit has reported that there has been a marked decrease in the number of drug addicts in the United States in recent years. While drug pedlers still constitute a national menace, he reported, their illicit traffic is more nearly under control today than it ever has been. Colonel Nutt asserted that reports circulated in Chicago to the effect that the number of drug addicts increased about "1,400 per cent." were without foundation.

General Ireland Recommends Changes

The Surgeon General of the Army, Major Gen. M. H. Ireland, has recommended to the War Department that the following legislation be presented to Congress for enactment as necessary to the Medical Corps of the Army:

An Act to Modify the Provisions of the Army Elimination Law: That any officer, irrespective of his age when appointed, who has been or is to be eliminated from the active list, either by discharge or retirement, in accordance with the acts aforesaid, and who has had prior service as an enlisted man or prior service in the military establishment under other governmental appointment which under existing law is now counted for purposes of retirement, pay or promotion, shall be credited with all such service.

An Act Granting Retirement to Members of the Army Nurse Corps: That members of the Army Nurse Corps who shall have had active service of twenty years, including for the purpose of computation former service as contract nurse prior to February 2, 1901, and all active service in the Navy nurse corps, shall on application therefor to the Secretary of War, be placed on a retired list, and shall thereafter receive 75 per cent. of the pay they were drawing at the time of such retirement.

An Act Designated to Extend the Period Under Which Decorations May Be Accepted from Foreign Governments: That the eleventh paragraph under the caption "Medals of Honor, Distinguished Service Crosses, and Distinguished Service Medals," Army Appropriation Act, approved July 9, 1918, to the extent that it establishes limitations of time as a condition of acceptance, by any and all members of the military forces of the United States who served in the World War, of decorations or medals from foreign governments, is amended so as to extend such limitation for a period of one year from and after the aproval of this act.

New Army Medical School Started

The cornerstone of the Army Medical School building in Washington, D. C., has been laid. Brig. Gen. Walter D. McCaw, commandant of the school and also a member of the staff of the Surgeon General, was present at the ceremonies held recently, as were officers of the Army and patients from the Walter Reed General Hospital. In the receptacle of the stone were placed extracts from the annual reports of the Surgeon General of the Army for 1862, and from 1893 to 1921: a photograph of the architect's drawing of the building; a photograph of Brig. Gen. George M. Sternberg, organizer and founder of the Army Medical School, and photographs of Generals Ireland and McCaw, and Colonel Glennan.

Annual Conference of District Sanitary Engineers

The annual conference of district sanitary engineers of the U. S. Public Health Service was held in Washington, D. C., Jan. 2-6, 1923. Among the invited guests were Dr. J. A. Omyot, deputy minister, department of health of Canada; Dr. W. S. McCullough, chief officer of health, provisional board of health, Ontario, and F. A. Dallyn, director, sanitary engineering division, provincial board of health, Ontario.

Test Suit Launched Against Sheppard-Towner Act

A suit against the enforcement of the Sheppard-Towner maternity act was launched in the District of Columbia Supreme Court, this week, when Mrs. Harriett A. Frothingham of Boston became the plaintiff and named Andrew Mellon, Secretary of the Treasury; Grace Abbott, chief of the Children's Bureau of the Department of Labor; Hugh S. Cumming, Surgeon General of the U. S. Public Health Service, and John J. Tigert, United States commissioner of education, in an injunction to prevent their carrying out the provisions of the act. According to the act, Congress is to appropriate $430,000 annually for a period of five years to carry on the work. Mrs. Frothingham, who lives at 113 Commonwealth Avenue, Boston, declares in her petition that this act violates the provisions of the fifth amendment to the Constitution. She declares the $430,000 provided for annually by the appropriation is paid into the United States Treasury by the taxpayers of this country and that taxation of this character is confiscatory in nature. In this, the complaint says, it violates that amendment to the Constitution. Mrs. Frothingham further charges that the act invades the sovereign rights of the states.

The Navy Medical Corps

There are at present several vacancies in the medical corps of the Navy. Successful candidates, after being commissioned, will be ordered to one of the larger naval hospitals pending the beginning of the next session of the Naval Medical School, at which time they will be ordered to duty in attendance on a course of instruction. On completion of the course of instruction at the Naval Medical School, Washington, D. C., they will again be ordered to a naval hospital for approximately one year, at the end of which they will be transferred to sea duty.

Lieut. Commanders F. E. Sellers and E. P. Huff will shortly be ordered to the Naval Hospital, Boston, for the purpose of taking a special course in internal medicine at the Massachusetts General Hospital. Lieut. L. H. Williams has been assigned to duty in attendance on a course of instruction at the Mayo Foundation, Rochester, Minn.

Fleets Change Hospital Ships

Announcement was made by the Surgeon-General of the Navy that while the fleet is combined at Panama in February for maneuvers, there will be an exchange of hospital ships: the *Relief*, which has been with the Atlantic fleet will go to the Pacific, and the *Mercy*, which has been with the Pacific fleet, will come to the Atlantic. The commander-in-chief of the fleet has been given authority to transfer officers and men between the two hospital vessels in case some desire to remain in the localities where they have been serving. Changes in the stations of naval medical officers follow: Commander J. D. Manchester has been transferred from duty at the naval hospital, Mare Island, Calif., to the Naval Training Station, San Francisco, and Commander C. N. Fiske from the training station to Mare Island hospital for duty. Commander W. A. Angwin has been ordered transferred from the *Relief* to the battleship *Nevada* for duty, being succeeded on the hospital ship by Lieut. Commander R. M. McDowell from the naval hospital at San Diego, Calif.

The Public Health Service

The advisory committee to the Surgeon-General on the education of sanitarians and the future of public health in the United States met in the office of the Surgeon-General, Washington, D. C., January 3. The object of this meeting was to confer with the Surgeon-General and officers of his staff for the purpose of definitely shaping policies of the Public Health Service. Many of the recommendations submitted by a conference on this subject, which was held under the auspices of the Public Health Service in March, 1922, are already being put into effect. The annual conference of the public health workers in Virginia was held at Richmond, December 27 and 28. The personnel of this conference consisted of state and local health officials, including physicians, nurses, inspectors and other sanitarians. Governor Trinkle made an address, as did Surg.-Gen. H. S. Cumming, Dr. J. A. Hayne, state health officer of South Carolina, and Asst. Surg.-Gen. W. F. Draper. In 1908, Virginia had no full-time county health work in operation. In 1912, the first full-time health officer went on duty. In 1917, there were five counties having full-time health officers, and in 1922 the number of counties employing full-time health workers had reached thirty-two. This statement, perhaps more than any other, indicates the progress which Virginia is making in developing her health organization. There will be a public health exhibit in the city of New York, January 22-27, at the Grand Central Palace, under the auspices of the city health department, in cooperation with the state department of health. Senator-elect Royal S. Copeland is chairman of the exhibit committee, and arrangement is being made for an intensive instructive exhibit.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Dec. 8, 1922.

Use of Preservatives in Foodstuffs

The food preserving industry has not as yet made any extensive researches in the domain of asepsis, which is difficult of accomplishment on a large scale, but has confined its attention chiefly to easier methods, with a view to utilizing chemical substances, more or less bactericidal, in order to produce a medium unfavorable to the development of bacteria. Such bactericidal preservatives, however, have serious disadvantages. From the practical standpoint, producers will always have a tendency to employ as preservatives strong chemical substances that are effectual when used in very small amounts, and they overlook the fact that the results desired cannot be secured without grave danger to the consumer. In another sense, the preservative or disinfectant seems to authorize, or at least to excuse, all forms of negligence. In view of the presence of the preservative that is supposed to conserve the foodstuff in an undeteriorated state, the industry seems to think that there is no need of using care to have the food to be preserved in as fresh a condition as possible, nor of taking any special precautions during the course of the preserving process; hence, the numerous cases of intoxication of more or less obscure origin but doubtless due to preserved foodstuffs, that have been observed of late. All the recent congresses on public health have passed resolutions disavowing the use of preservatives or disinfectants in foodstuffs, but this fact does not prevent certain states from authorizing, under the cover of commercial freedom, the use of various disinfectants or preservatives, on the sole condition that the label on the original package shall state the nature and the amount of the preservative used.

Another important matter to which Dr. F. Bordas has recently called attention is the fact that, in the countries where there is an abundance of everything, considerable impetus has been given to the food preserving industry by the increased demand for such produce in the regions that suffered profoundly during the World War. In view of this state of affairs, it is incumbent on us to consider the necessity of establishing safeguards with reference to the enormous stocks of merchandise that have been accumulating for months in the warehouses of the world. These safeguards are indispensable from the standpoint of public health and the point of view of securing honest goods for honest money. Foodstuffs preserved by heat sterilization or by freezing or refrigeration may have been manufactured a long time previously without the buyer or the consumer being in a position to know the facts in the case. It is important, therefore, as has already been demanded with reference to certain kinds of canned fish, that the date of manufacture be plainly stamped on the container, no matter what method of preserving was employed. In the case of foodstuffs enclosed in tin containers, the problem presents no particular difficulties; but the same information should be furnished the buyer when he purchases products preserved by freezing. Frozen meats and cold-storage butter might have the date of origin stamped on the package; also certain marks indicating the cold storage plant where the products have been stored.

The Disinfection of Glassware in Public Establishments

I mentioned in a previous letter the researches of Drs. L. H. Dejust, Wibaux and L. Dardel on the presence of pathogenic bacteria on table utensils, and the various methods of disinfecting them (THE JOURNAL, July 22, 1922, p. 314). Dr. Dejust has of late carried on his researches in collaboration with Mlle. G. Bigourdan. He was able to show that the drying of dishes with a towel, while more or less efficacious at first, becomes rapidly less so, since, as a rule, the same towel is used to dry a large number of dishes, before it is discarded. Particularly, in many restaurants and cafés when a towel has become too damp to be utilized further, it is merely hung up to dry and is used again, a few hours later, when it is dry. It is discarded only when it bears all too apparent signs of being soiled. There results a sort of methodical enrichment of bacteria, which, after twenty or more operations, renders the towel capable of contaminating sterile objects with which it comes in contact.

As for the use of concentrated solutions of strong acids (a 10 per cent. solution of hydrochloric acid, for example), which are said to kill instantly all the bacteria, Dejust and Mlle. Bigourdan are not inclined to recommend them. The use of such solutions presupposes a material that acids will not attack; the majority of the drinking vessels, however, are of metal. Furthermore, if acids are used, rubber gloves must be worn. The use of such solutions would necessitate the organization of a special dish-washing service. The proprietors of cafés and restaurants will never, of their own accord, go to this expense. However, during an epidemic of a disease that is transmissible by buccal secretions, the disinfection of the glassware of public establishments might be reasonably demanded. Under such circumstances, the inconveniences associated with the use of solutions of strong acids would be borne without complaint.

A different attitude toward the question should be taken in establishments where the risks of contamination are particularly great (sanatoriums, hospitals). For such establishments the solution of the problem is very simple. All that need be done is to replace the ordinary glassware with receptacles sterilizable by heat, so that they can be washed and disinfected in the dish-washing machines, at the same time as the rest of the tableware. This is the solution of the problem that was reached some time ago in the Hôpital Pasteur, where the patients are provided with metal cups. Certain glasses of special composition will not break when immersed in boiling water, even though they are immediately transferred to cold water; this type of glassware commonly used in laboratories is unfortunately too easily broken and also too high priced to be used habitually in the form of drinking glasses. However, the manufacturers might perhaps take into account this eventual application of their product. In the meantime, the use of cups, goblets and bowls (made of faience or porcelain) that can be sterilized by heat is to be recommended. Those in charge of hospital management ought to carry out this precaution—at least in the services where patients suffering from affections transmissible by the buccal secretions are being treated.

Society of Friends of the Faculté de Médecine of Paris

The Societé des amis de la Faculté de médecine de Paris has for its *raison d'être* the improvement in the medical school of the methods of instruction, the facilities for work available to the students, and the laboratories of scientific research; the expansion of French medicine in foreign countries, and the advancement of medical science in general. It consists at present of 182 members. In 1920, the society published a large edition of a prospectus setting forth the advantages and chief features of the Faculté de médecine of Paris, and sent copies to all the medical centers of the world. This year it proposes to put up in the halls of the university a commemorative tablet in honor of the students and doctors of the Faculté de médecine who died for France. Furthermore, the society plans to organize at the Faculté de

médecine, during the winter semester, a series of twelve lectures to be delivered by professors and instructors of the university. These lectures are intended to afford the professors an opportunity of presenting a summary of their own individual researches, thus giving an idea of their particular field of scientific activity.

Victims of Roentgen Rays

Dr. Vaillant, roentgenologist in the Lariboisière Hospital, whose left arm had already been amputated following an injury caused by roentgen rays, has just undergone an amputation of the right forearm for the same reason. On this occasion he received expressions of sympathy from the municipal council, the prefect of the department of Seine, the president of the republic and the minister of public health. The commission charged with the administration of the Carnegie Hero Fund met recently under the chairmanship of M. Emile Loubet, former president of the republic, at which time it considered the activities of several roentgenologists who have become the victims of their devotion to science; more especially Drs. Leray, Vaillant and Bergonié. It awarded a gold medal to Bergonié.

LONDON

(From Our Regular Correspondent)

Dec. 11, 1922.

Causes and Prevention of Blindness

In 1920, the minister of health appointed a committee to investigate and report on the causes of blindness, including defective vision sufficient to impair economic efficiency, and to suggest measures of prevention. The committee, which included ophthalmic surgeons, a neurologist and other experts, has now presented a report. In 1921, there were, in England and Wales, 34,894 persons too nearly blind to perform work for which eyesight is essential. The ages at which persons become blind are 21 per cent. in the first year of life, and thereafter about 10 per cent. for each decade up to 70 years. In the order of importance, the causes of blindness were: ophthalmia neonatorum; syphilis; congenital malformations; surface inflammations in childhood; trachoma; myopia; glaucoma; industrial disease and accident; accidents in civil life; war conditions, and sympathetic ophthalmia. For the prevention of ophthalmia neonatorum, the committee recommends that arrangements be made for pupil midwives to visit ophthalmic hospitals for the purpose of gaining experience as to the disease. For prophylaxis, Credé's method (with not stronger than 1 per cent. of silver nitrate) in skilled hands is recommended, but not as a routine for midwives, under whom its use would lead to the risk of neglecting the more important scrupulous cleansing. The disease should be diagnosed and notified at the earliest possible moment, that nursing facilities may be supplied or the patient admitted to a hospital. If physicians had facilities provided for consultation with an ophthalmic surgeon and for bacteriologic investigation, there would be less delay in treatment. For the latter, the midwife's care is inadequate: irrigation by a trained nurse must be performed at frequent intervals, day and night.

The committee found evidence that some physicians fail to recognize the disease early, because of limited training in ophthalmology. It therefore recommends that, to determine his qualification, every student should be examined in ophthalmology. Syphilis is given as the cause of from 10 to 15 per cent. of the cases of blindness. Trachoma, once so terrible in this country and still so in others, is now rare. The most important step is to prevent its importation by immigrants. As the determining cause of primary glaucoma is unknown, the disease cannot be prevented; but blindness can, by early treatment. The point is emphasized that, in the early stages, glaucoma may appear to be relieved by frequent changes of glasses; hence, the grave risk of treatment by opticians. The principal industrial diseases that affect eyesight are various forms of poisoning, cataract in glass and iron workers, pitch ulceration, and miners' nystagmus. Lead poisoning has almost ceased to be a factor, in consequence of exhaust ventilation, the use of leadless or low solubility glazes and labor-saving devices, and periodic medical examination of workers. Rare causes are trinitrotoluene and carbon bisulphid poisoning. No authentic case of poisoning by wood alcohol is known in this country; which appears to be due to the fact that methyl alcohol is not produced in a refined and drinkable form.

Advertising by Physicians

At the General Medical Council, Dr. R. A. Bolan brought forward an important motion to consider oblique or indirect advertising by physicians in the lay press. His object was to elicit a pronouncement on certain developments of journalistic advertising that had arisen in the last few years. He considered that, if these were not checked, there would be danger that some of the cherished traditions of the profession would be undermined. It was rare now that blatant advertisements, such as handbills heralding the attainments of a physician, were encountered. But more subtle and insidious methods had come into being. Brief notices of physicians were inserted in a column of the newspaper, sometimes called the "Court Circular" column, at the foot of which might be found the statement that advertisements were inserted there at a special rate. The notices were sometimes obituary paragraphs concerning persons related to a man who was referred to as "that well-known physician." Again, in notices of engagements or marriages, it should be sufficient to indicate the persons so that they would be known to their friends without seizing the opportunity to announce the qualifications and professional address of the bridegroom or of the father of one of the parties.

Physicians, wittingly or unwittingly, were advertised in the lay press by the publication of their opinions on matters of the moment. Sometimes, they contributed to the correspondence column. Some took the precaution of appending only their names; but, when the professional qualifications and address followed, one could only conclude that advertising was intended. Another method was to announce that a prominent person, being in ill health, had consulted such and such an "eminent physician," or had been operated on by such and such a surgeon, although the names were of no public interest. There was a large class in which advertisement took the form of press interviews on subjects which ranged from experiences on liners to fighting epidemics or performing operations by wireless, and the expression of opinions as to the spread of cancer or its treatment. Portraits were sometimes published of men who were described as experts on the particular subject. A more serious matter was a series of articles in which the writer used some such phrase as "my vast and varied experience." If the object of a physician was to instruct the public in some matter that was quite proper, it would be sufficient for the editor to say that the writer had the requisite position, without mentioning his name. The following motion was adopted by the council: "That it be remitted to the executive committee in consultation with the legal advisers to consider and report on the expediency of amending the council's warning notice with respect to canvassing and advertising so as to make it more clear and comprehensive."

Sir Norman Moore

Sir Norman Moore, late president of the Royal College of Physicians and physician to St. Bartholomew's Hospital, has died, at an advanced age. Born in Lancashire in 1847, the

son of an Irish barrister, he was educated at Owens College, Manchester, and at Cambridge. From the beginning of his medical studies he showed a literary bent. He finished his course at St. Bartholomew's Hospital, where he passed through the various posts up to that of physician, which he held from 1902 to 1911. Though painstaking and an excellent teacher and writer, he made his mark as a historian rather than as a physician. He was devoted to the Royal College of Physicians, where he filled most of the offices of importance, becoming president in 1918. Widely read in all branches of literature, he was especially attracted to history and biography. For the "Dictionary of National Biography" he wrote no fewer than 459 biographies, chiefly of medical men. These he composed with great accuracy of detail. Before writing the biography of a person, he read everything that the person had written. Long before the history of medicine was thought worthy of attention, he urged the importance of its study, and through his influence the Fitzpatrick lectures on the history of medicine were established at the Royal College of Physicians. He was president of the Section of the History of Medicine at the International Congress of Medicine in 1913, and president of honor at the congress this year. His opus magnum was a history of St. Bartholomew's Hospital, which appeared in 1919. Its preparation occupied him for more than thirty years. With great wealth of detail and high literary skill, he traced the history of the hospital from its foundation in Norman times to the present day.

Insanity and Crime

The difficulties that are constantly arising as to criminal responsibility have been discussed in previous letters. A criminal responsibility committee has been appointed by the Medico-Psychological Association, to determine the question of criminal responsibility of the criminal insane. The committee consists of twenty-eight members, and includes leading alienists. It hopes to find some kind of formula which will be accepted by judges and juries in cases in which the plea of insanity is made. The committee is expected to take several months to consider its findings. It may be remembered that this question was brought into prominence by the case of Ronald True, who murdered a courtezan and decamped with her jewelry. The jury refused to accept the plea of insanity, and convicted him of murder, notwithstanding undisputed medical evidence that he was insane. But before executing him, the home secretary, according to law, had to submit the question of his sanity to experts. They decided that he was insane and he escaped the gallows, though guilty of a brutal and cold-blooded murder.

Birth Control Attacked

Birth control has extended in this country, and a society has been formed. A journal is published and propaganda takes the form of public meetings also. Dr. Louise McIlroy, professor of obstetrics and gynecology at the London School of Medicine for Women, delivered the inaugural address of the session of the York Medical Society on the subject. She complained that psychanalysis had attracted charlatans, who used methods of the muck-raker as to sex and frequently suggested sex to patients in cases in which it was not in question at all. History showed that the downfall of Greece and Rome was due to the practice of race suicide, and if the practice obtained headway here, it would mean the downfall of our empire. Birth control methods would make venereal disease more prevalent, increase prostitution, and turn women in the home more or less into the line of prostitution, making them slaves of their husbands. The methods would not be confined to the married but would be an inducement to immorality among the unmarried. She had never met an obstetrician or gynecologist who advocated them, for they knew how harmful were the results. Their supporters in the profession were among physicians and health officers who favored them for economic reasons. But the remedy was to teach the young of the community what life and marriage really meant, and it must be insisted that sex union was not a physiologic necessity in the male—the most degrading doctrine women had ever accepted. If they got that idea out of their heads, they would have done much for the moral education of the race.

BERLIN

(From Our Regular Correspondent)

Dec. 9, 1922.

Significance of the Abderhalden Reaction in the Field of Psychiatry and Nervous Diseases

It was formerly thought possible to distinguish defect psychoses from other psychoses by means of the dialyzation method; dementia praecox, especially, was regarded as being diagnosticable in this manner, but more recent investigations tend to disprove this assumption. Kastan refuses to accept the theory of a special dysglandular psychosis. The notion of dysfunction is not clear clinically. The Abderhalden reaction does not prove that the organ which gives evidence of perverted metabolism is the one in which the pathologic changes first occurred; for the former may have been damaged by psychic influences. The results Kastan has reached through his own researches may be summed up thus: Eleven per cent. of his cases of manic-depressive insanity were found to be due to psychic enfeeblement and deterioration of the gonads; in eighty-seven cases of dementia praecox he found twenty-seven instances of deterioration of the thyroid gland, sixty instances of deterioration of the gonads and thirty examples of cerebral deterioration; in twelve cases he found deterioration of the brain, the thyroid and the gonads, and in nine cases no positive results were secured. He found cerebral deterioration in 33 per cent. of the epileptics examined, but noted no wealth of peculiar (*eigen*) dialyzable substances. In paresis he observed cerebral deterioration in 40 per cent. of the cases. Following the Steinach operation in dementia praecox there were no changes in the Abderhalden reaction. However, the reaction has had a theoretical value. It has led to viewing from a common angle all processes in the body associated with psychoses.

Topography of the Cerebral Cortex

At a meeting of the Gesellschaft deutcher Nervenärzte, Goldstein of the Frankfort Neurologic Clinic, Pfeifer of the Halle Psychiatric Institute, and Förster of the Breslau Neurologic Clinic read papers on the topography of the cerebral cortex. According to Goldstein, the processes that take place in the sensomotor area are never distinctly separate from the processes of the central apparatus. In every cerebral performance, the functions of a large, uniform apparatus which comprises the whole cerebral cortex are brought into play. To the various divisions of the cerebral cortex are delegated only certain special functions, which are, however, dependent on the whole. What are regarded as local symptoms is only the change that the function of a local focus produces in the whole performance. If one portion of the brain is injured, another portion of the same or the other hemisphere takes over the impaired function. The uninjured portion of an apparatus will endeavor, as far as possible, to take over the complete function of the intact apparatus. On the basis of psychologic tests carried out on 300 patients who had suffered brain injuries during the World War, Pfeifer showed that the reduction of the capacity for bodily and mental performance depends, qualitatively and especially quantitatively, to a great extent on the localization of the brain injury. Persons who have suffered

occipital injuries were found, on being tested for light sense, space sense and perception of depth and distance, to be twice as much affected as those who had suffered injuries of other portions of the brain. In injuries of the temple, a special diminution of function in the realm of acoustics was noted. In frontal injuries, the greatest damage to the higher intellectual functions was observed, especially as regards the processes of thought, logical thinking, power of judgment, forming of conclusions and power of concentration. On the other hand, those in whom the central convolutions were damaged were the least affected as far as intellectual qualities are concerned. In doing sums, those who had suffered occipital or temple injuries worked the slowest and the least accurately. In tests of the power of attention, those with occipital injuries showed the worst results. In tests of the emotions during work done amid disturbances, those with frontal injuries showed the greatest cerebral impairment, while those with occipital injuries showed the least. Disturbances of the emotions in general are most frequent and the strongest in those with frontal injuries. Injuries of the left hemisphere in right-handed persons show greater damage to the memory and intellect than injuries of the right hemisphere—especially in those who have suffered frontal injuries.

Personal

Dr. Iwan Bloch, the dermatologist and sexologist, has died at the age of 50. Besides various contributions to dermatology and the etiology of sexual diseases, Bloch has written a number of works on the history of medicine which are valuable for the history of civilization. Worthy of special mention is his "History of Prostitution." Under the pseudonym Eugen Dühren, he published a monograph on the Marquis de Sade, which is an instructive contribution to the history of sexual perversions and to the history of morals in the eighteenth century and the period of the revolution in France. He took an active part in the founding of the Berlin Aerztliche Gesellschaft für Sexualwissenschaft. The London society for research in sexual science made him an honorary member, two years ago, which was the first honor of this nature accorded since the war to a German scientist. He was also a member of the Gesellschaft für Bibliophilen, and secured the publication of an unprinted letter of Kant and the posthumous works of Heinrich Lautensack. Several months ago Dr. Bloch contracted a severe influenza infection, which was the beginning of a long illness, during the course of which he had to undergo the amputation of first one leg and then the other.

Marriages

AUBIN TILDEN KING, Captain, M. C., U. S. Army, Carlisle Barracks, Pa., to Miss Louise Antoinette Smith of Richmond Hill, N. Y., December 16.

WILLIAM LANDON BRENT, Colonial Beach, Va., to Miss Lucille Lewis of Birmingham, Ala., in November.

GUSTAVE B. DUDLEY, JR., Danville, Va., to Miss Priscilla Humbert of Lowmoor, Va., December 6.

WALTER L. STRANBERG to Miss Margarette A. Timmons, both of Milwaukee, December 17.

JOHN E. EVANS, Wilmington, N. C., to Miss Sara Shepherd of Chatham, Va., November 28.

CARL H. ILL, to Miss Jeannette R. S. Seymour, both of Newark, N. J., November 27.

JAMES P. HENNESSY, New York, to Miss Helen M. Hendrix of Baltimore, December 23.

CHARLES F. RINKER to Mrs. Louisa D. Hall, both of Upperville, Va., November 15.

JAMES HERBERT MITCHELL to Miss Marion Strobel, both of Chicago, December 6.

Deaths

Marshall Calkins, Springfield, Mass.; Dartmouth Medical School, Hanover, N. H., 1868; member of the Massachusetts Medical Society; professor of physiologic and microscopic anatomy at the University of Vermont College of Medicine, Burlington, 1873-1897; formerly attending physician to the Springfield City Hospital and the Springfield Home for Friendless Women and Children; member of the board of pension examining surgeons; corresponding member of the Boston Gynecological Society and member of the American Association for the Advancement of Science; died, November 26, aged 94, from senility.

Robert Arnot Sempill ⊕ Chicago; College of Physicians and Surgeons, Chicago (University of Illinois), 1891; professor of dermatology, Loyola University School of Medicine, Chicago, and professor of dermatology and syphilology at the Chicago Polyclinic; served during the World War in the M. C., U. S. Army, with the rank of captain; died, December 19, aged 58, from acute dilatation of the heart.

Daniel Olin Leech ⊕ Washington, D. C.; Medical Department of Columbia University, 1887; member of the American Therapeutic Society; formerly connected with the Florence Crittenton Hope and Help Mission, Eastern Dispensary and Casualty Hospital, the Sibley Memorial Hospital and the Garfield Memorial Hospital, where he died, December 14, aged 60, following an operation.

Henry Hodgen Kirby ⊕ Little Rock, Ark.; Washington University Medical School, St. Louis, 1906; clinical professor of gynecology at the University of Arkansas Medical Department, Little Rock; surgeon to St. Luke's Hospital; member of the Southern Medical Association; died suddenly while on a hunting trip, December 9, aged 39.

John Martin Maloney, Springfield, Mass.; Georgetown University School of Medicine, Washington, D. C., 1907; member of the Massachusetts Medical Society; served in the M. C., U. S. Army, during the World War; on the staff of the Mercy Hospital; aged 37; died, December 16, from pneumonia.

Archibald Cheatham, Durham, N. C.; University of Maryland School of Medicine, Baltimore, 1888; member of the Medical Society of the State of North Carolina; at one time superintendent of the Durham Board of Health; aged 58; died, December 10, from cerebral hemorrhage.

Henry Richings ⊕ Rockford, Ill.; Medical Department of the University of the City of New York, 1864; Civil War veteran; formerly member of the state board of health; at one time on the staff of the Rockford Hospital; aged 82; died, December 12, from heart disease.

John Benjamin Latham, Abilene, Texas; Memphis Hospital Medical College, Memphis, 1893; member of the State Medical Association of Texas; served in the M. C., U. S. Army, during the World War; on the staff of the State Epileptic Colony; aged 50; died, November 26.

Lee Arbor Scace, Centralia, Wash.; University of Minnesota Medical School, Minneapolis, 1907; member of the Washington State Medical Association; superintendent of the Scace Hospital; aged 42; died suddenly, November 21, at Hot Lake, Ore., from heart disease.

Albert J. Scholl ⊕ Los Angeles; Rush Medical College, Chicago, 1880; Medical Department University of California, San Francisco, 1890; formerly on the staff of the Los Angeles Orphan Home; aged 63; died, December 9, at the Pacific Hospital, following an operation.

Daniel Hutson Arthur, State Farm, Mass.; New York Homeopathic Medical College and Hospital, New York, 1887; member of the American Psychiatric Association; on the staff of the Bridgewater State Farm, Gowanda, N. Y.; aged 61; died, December 19.

Homer E. Griswold, Erie, Pa.; Cleveland Homeopathic Medical College, Cleveland, 1903; member of the Medical Society of the State of Pennsylvania; on the staff of the Hamot Hospital; aged 43; was found dead in bed, December 14, from heart disease.

Albert Harlow Pratt, Oakland, Calif.; Cooper Medical College, San Francisco, 1872; Bellevue Hospital Medical College, New York, 1878; formerly member of the board of education; aged 78; died, December 12, at the Merritt Hospital, from senility.

⊕ Indicates "Fellow" of the American Medical Association.

Walter Everett Whitney, Bangor, Me.; Jefferson Medical College, Philadelphia, 1893; member of the Maine Medical Association; member of the American Academy of Ophthalmology and Oto-Laryngology; aged 57; died, November 28, from uremia.

Frederick Eugene Leonard, Oberlin, Ohio; College of Physicians and Surgeons (Columbia University), New York, 1892; professor of physiologic and physical training at Oberlin College; aged 56; died, December 10, following a long illness.

Walter Marshall Dake, Denver; Hahnemann Medical College of Philadelphia, 1877; formerly professor of diseases of lungs at Denver Homeopathic College; aged 67; died, December 14, at La Jolla, Calif., from heart disease.

Jesse Raymond Burdick ⊕ Tulsa, Okla.; Hahnemann Medical College and Hospital of Chicago, 1900; member of the Central States Pediatric Society; aged 44; died suddenly, December 8, from cerebral hemorrhage.

Eugene Aloysius Moore ⊕ Philadelphia; Jefferson Medical College, Philadelphia, 1908; served in the M. C., U. S. Army, during the World War; aged 39; died, November 27, at the Anderson Hospital, from tuberculosis.

Patrick Clabon Nunn, Davisboro, Ga.; University of Georgia Medical Department, Augusta, Ga., 1886; member of the Medical Association of Georgia; aged 60; died, December 14, from acute indigestion.

Melville Skidmore ⊕ East Moriches, N. Y.; Bellevue Hospital Medical College, New York, 1879; aged 64; died, December 19, at Deal, N. J., from hemorrhages of both wrists, presumably self-induced.

Philip Edward Arcularius, East Orange, N. J.; Medical Department of Columbia College, New York, 1868; formerly lecturer on dermatology at his alma mater; died, December 5, from bronchopneumonia.

Columbus Drew ⊕ Jacksonville, Fla.; Washington University School of Medicine, Baltimore, 1869; Medical Department of the University of the City of New York, 1879; aged 76; died, December 13.

Charles Everett Hall, Freehold, N. J.; Medical Department of Columbia College, New York, 1863; Civil War veteran; formerly president of the Freehold Banking Company; aged 85; died, December 5.

John Freeman Stanbery, Newport, Tenn.; Tennessee Medical College, Knoxville, Tenn., 1896; member of the Tennessee State Medical Association; aged 49; died, November 29, from cerebral hemorrhage.

Albert A. Campbell ⊕ Ogema, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; also a druggist; aged 54; died, December 18, from pleurisy and pneumonia.

Henry L. Moffatt, Arpin, Wis.; Rush Medical College, Chicago, 1890; member of the State Medical Society of Wisconsin; aged 70; died, November 24, at Marshfield, from heart disease.

Jinkens L. Schley ⊕ Homer, La.; University of Tennessee College of Medicine, Memphis, 1909; aged 38; died, December 14, at a sanatorium in Shreveport, from organic disease of the heart.

George S. Turner, Krebs, Okla.; Missouri Medical College, St. Louis, 1895; member of the Oklahoma State Medical Association; aged 52; died in November, from cerebral hemorrhage.

William Viney Clark ⊕ Springfield, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1908; aged 51; died, December 19, from a fracture of the skull when he was struck by a train.

Charles Busby Conaway, Torrington, Wyo.; Drake University College of Medicine, Des Moines, Iowa, 1907; aged 39; died, November 15, at Colorado Springs, Colo., from tuberculosis.

Benton Brengleman Dunn, Perry, Ill.; Rush Medical College, Chicago, 1891; served in the M. C., U. S. Army, during the World War; aged 54; died in December, from appendicitis.

Albert L. Converse, Springfield, Ill.; Chicago Medical College, 1864; for two terms member of the state legislature; chairman of the board of supervisors; aged 80; died, December 7.

Thomas Pack Vann, Eva, Ala.; Chattanooga Medical College, Chattanooga, Tenn., 1905; aged 48; was killed, December 8, when the car in which he was driving was wrecked.

Samuel Renwick Wills McCune ⊕ New Castle, Pa.; Jefferson Medical College, Philadelphia, 1906; served in the M. C., U. S. Army, during the World War; aged 47; died, December 9.

Joseph Henry Hull, Washington, Iowa; Bellevue Hospital Medical College, New York, 1875; member of the Iowa State Medical Society; aged 72; died, December 17, from paralysis.

Leon Vasco Parker, Minot, N. D.; Rush Medical College, Chicago, 1920; member of the North Dakota State Medical Association; aged 39; died in December, from diphtheria.

Rufus F. Blount, Wabash, Ind.; Chicago Medical College, 1865; Civil War veteran; aged 91; died, December 15, at the home of his daughter in North Manchester, from senility.

John Barclay Laidley, Carmichaels, Pa.; Western Reserve University School of Medicine, Cleveland, 1856; Civil War veteran; aged 92; died, December 15, from pneumonia.

Emmett E. Gray, Quincy, Ind.; American Health College, Cincinnati, 1893; aged 65; died, November 19, at St. Mary's Hospital, Roswell, N. M., from bronchopneumonia.

D. W. Cowan, Sandstone, Minn.; University of Manitoba Faculty of Medicine, Winnipeg, Man., Canada, 1888; formerly state senator for Minnesota; died recently.

Joseph B. Du Rant, Lake City, S. C.; University of the South Medical Department, Sewanee, Tenn., 1900; aged 46; died, December 8, from influenza and pneumonia.

J. Whitney Barstow, Flushing, N. Y.; Dartmouth Medical School, Hanover, N. H., 1852; for forty years in charge of the Sanford Hall; aged 96; died, December 16.

Massie L. McCue, Greenwood, Va.; University of Virginia Department of Medicine, Charlottesville, Va., 1873; aged 74; died, November 15, from cerebral hemorrhage.

William Tonkin, Reading, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1886; aged 66; died, December 9, from cerebral hemorrhage.

Henry Marcellus Smith, Lee, Mass.; University of Vermont College of Medicine, Burlington, Vt., 1885; formerly city physician; aged 70; died recently.

John Karagiozian, Louisville, Ky.; Louisville Medical College, 1907; formerly a medical missionary in Armenia; died, December 6, aged 62.

William Philander Walker, Mason City, Ill.; Rush Medical College, Chicago, 1879; aged 66; died, December 11, from cerebral hemorrhage.

James J. McNulty, Philadelphia; Medico-Chirurgical College of Philadelphia, 1903; aged 43; died, December 15, from cerebral hemorrhage.

Jesse Beale Gallaspy, Newton, Miss.; University of Nashville Medical Department, 1907; aged 40; died, December 14, from heart disease.

Leroy A. Ellis ⊕ Van Wert, Ohio; Cleveland University of Medicine and Surgery, 1896; aged 58; died in December, from heart disease.

Matthew Hill Grimmet, Greenvale, Tenn.; Vanderbilt University Medical Department, Nashville, Tenn., 1878; aged 74; died, December 12.

Felix R. Collard, Wheelock, Texas; Medical College of Louisiana, New Orleans, 1869; Civil War veteran; aged 78; died, December 13.

David W. Farnsworth, Cherokee, Iowa; State University of Iowa College of Medicine, Iowa City, 1885; aged 71; died, December 16.

Charles O. Jenison, Greenville, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1877; aged 83; died, December 8.

Curtis Allen Lambert, Chicago; Miami Medical College, Cincinnati, 1871; aged 76; died, December 28, from acute indigestion.

William Dynes Starkey, Zionsville, Ind.; Indiana Medical College, Indianapolis, 1875; aged 85; died suddenly, December 3.

Stephen W. Cox, Chicago; Rush Medical College, Chicago, 1889; aged 65; died, December 24, from valvular heart disease.

Callie S. Walker, Kansas City, Mo.; Woman's Medical College, Kansas City, Mo., 1901; died, December 9, aged 69.

Robert Cofer Barrett, Philadelphia; Medical College of Virginia, Richmond, Va., 1914; aged 37; died, December 5.

George F. Garinger, Asherton, Pa.; Jefferson Medical College, Philadelphia, 1873; aged 72; died, December 2.

Aretus Kent Norton, St. Paul; Chicago Medical College, 1872; aged 72; died, December 10, from heart disease.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

SOME SOUND FINANCIAL ADVICE FOR PHYSICIANS AND MEDICAL ADVICE FOR LAYMEN

In an excellent little publication put out by *McClure's Magazine* and entitled "McClure's Financial Booklet," Paul Tomlinson, its author, gives some sage advice on "How to Avoid Worthless Stocks" and on many other financial subjects. Helen M. Davis, who is not a physician, but who, evidently, has a broad and intelligent outlook on things medical, has paraphrased Mr. Tomlinson's financial Don'ts so as to make them applicable to the medical, instead of the financial world. We give below both Mr. Tomlinson's original advice on "How to Avoid Worthless Stocks" and Mrs. Davis' paraphrase thereon. The latter contains information of especial value to the general public, the former is of value equally to the public and to the medical profession.

Avoid stocks whose promoters in their pamphlets show any of the following tendencies:

1. Ridiculing of conservative savings banks.

2. Denouncing Wall Street (which may or may not be a very bad place, but is invariably denounced by stock promoters for their own purposes and to throw a blind over their own operations).

3. Failure to state conspicuously the par value of the stock, or the fact that it has no par value, if that be the case.

4. Selling the stock at some absurdly low price, such as two cents a share.

5. Promise of enormous dividends.

6. Attempts to work the hurry-hurry game.

7. Advancing the price of the stock by vote of the directors. This is sometimes done by legitimate concerns, but they do not make a hue and cry of it in their circulars, as the swindlers do.

8. Offering a limited number of shares to one person.

9. Declaring that the present allotment of stock will soon be exhausted. Even if it is, which is unlikely, there are literally thousands of other good investments, and probably five thousand legitimate, reputable brokers, bankers, banks and trust companies ready to sell them to you.

10. Calling attention to the profits of some other company instead of their own. This is the surest sign of an illegitimate stock. Especially beware of any concern that calls attention to the profits of the Bell Telephone Co. Practically every swindler in the country uses this company as an illustration.

11. As a general principle, stocks in mining and oil companies, with a few notable exceptions, in companies promoting new inventions, or a single proprietary or patented article, in fruit and nut orchards, land companies, in the great bulk of moving-picture companies, should be left severely alone unless there is special, careful investigation. As for nearly all the new stocks, remember they are at best speculations. They may turn out well, but can you afford the risk? New stocks, "maiden offerings," may hold out great possibilities, but you should be a close student of such opportunities before venturing into them.

12. *Use common sense.* Ninety-nine times out of a hundred you will not be "let into" a fake proposition if you consult your banker or any reputable newspaper or magazine. Losses are of constant occurrence in every business; but at least be sensible enough to avoid the stock that is worthless at the start and never has a chance of success.

Avoid medical treatments whose promoters in their advertisements show any of the following tendencies:

1. Ridiculing of conservative medical treatments.

2. Denouncing the American Medical Association (which may or may not be a "trust" and an "octopus," but is invariably denounced by quacks for their own purposes and to throw a blind over their own operations).

3. Failure to state conspicuously the scientific tests by which the value of the treatment has been measured, or the fact that no such tests have been made, if that be the case.

4. Selling the treatment at some absurdly high price, so that its practitioners make $1,000 to $2,000 a week.

5. Promise of miraculous cures.

6. Attempts to scare the patient into the belief that he has some terrible disease, especially cancer or syphilis.

7. Decreasing the price of the treatment for those who do not bite at once. The sliding scale of prices is one of the earmarks of medical mail-order quackery.

8. Offering an unlimited number of minor ailments as symptoms of disease.

9. Declaring that their own system is the only sure cure that has ever been discovered. There is no sure cure of disease except that made by nature, and only those with a thorough knowledge of the body are in a position to be able to help nature make the cure.

10. Calling attention to the failure of scientists to recognize some discovery fifty or a hundred years ago. This is the surest sign of a quack. The attitude of scientists is more open-minded now than ever before to new discoveries of provable value.

11. As a general principle, pseudo-electrical or pseudomagnetic treatments, "patent medicines," freak diets and all treatments characterized by mystery should be left severely alone unless there is special, careful investigation. As for new treatments, remember that those brought out by obscure doctors with shady records are at best speculations. They may not kill you, but can you afford the risk? New scientific treatments are always thoroughly tried out on animals before they are even experimentally tried on people. Contrary to the impression which quacks try to give, modern physicians do not make a mystery of their treatments to people who desire to study such treatments before taking them.

12. *Use common sense.* Ninety-nine times out of a hundred you will not be "let into" a fake proposition if you consult your family physician about the "symptoms" which the quack declares mean his pet disease (even while he rants against wrong diagnosis). Diseases are constantly occurring; but at least be sensible enough to find out whether you really have them before you start having them "cured"; and if you have, avoid the treatment that is worthless at the start and never has a chance of success.

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

C. J. C. Regulator and C. J. C. Liniment.—Chester J. Czarnecki who traded as C. J. Czarnecki at South Bend, Ind., shipped in April, 1920, a quantity of "C. J. C. Regulator" and "C. J. C. Liniment" which were misbranded. Analysis of a sample of *C. J. C. Regulator* by the Bureau of Chemistry showed the product to contain iron chlorid, a small amount of plant material, a trace of oil of tansy and 18 per cent. of alcohol. The preparation was declared misbranded first, because it was labeled as containing 28 per cent. alcohol when it only contained 18 per cent. and further because it was falsely and fraudulently claimed as an effective remedy, treatment and cure for painful menstruation, hysteria, diseases peculiar to women, etc. The *C. J. C. Liniment,* according to the federal chemists, contained camphor, menthol, 5.2 grains of chloral hydrate to each fluid ounce, ether, ammonia and 63 per cent. of alcohol. The liniment was declared misbranded first, because, while it contained chloral hydrate, the quantity or proportion of this drug was not stated on the label. Neither did the label contain a statement of the quantity or proportion of alcohol and ether present in the liniment. Furthermore it was declared that the therapeutic claims were false and fraudulent, the liniment being described as an effective remedy, treatment or cure of rheumatism, influenza, neuralgia, colds, sore throat, pneumonia, etc. In May, 1922, Chester J. Czarnecki pleaded guilty and was fined $800 and costs.—[*Notice of Judgment No. 10553; issued Nov. 4, 1922.*]

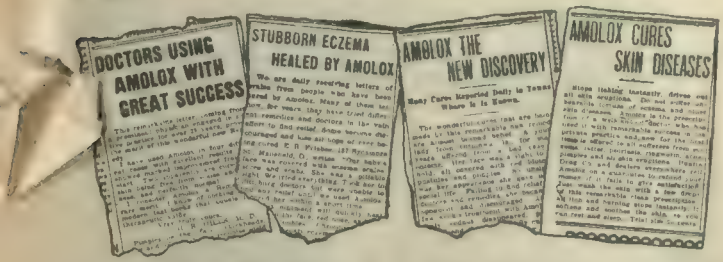
Allan's Red Wash and Parrott Mixture.—The Allan-Pfeiffer Chemical Co., East St. Louis, Ill., shipped in July, 1920, a quantity of "Allan's Red Wash and Sandalwood Emulsion Compound" and also "Parrott Mixture" which were misbranded. The federal chemists reported that analysis showed "Allan's Red Wash" to contain zinc sulphate, boric acid, a phenol, eucalyptol, a trace of alkaloid and water; the "Sandalwood Emulsion Compound" contained santal oil, mineral oil, methyl salicylate, copaiba, small amounts of magnesium and calcium salts and water; the "Parrott Mixture" was reported to consist of an emulsion of turpentine oil, methyl salicylate, camphor, copaiba, gum and water. These products were all falsely and fraudulently labeled as

effective remedies for gonorrhea and gleet. In August, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10627; issued Nov. 8, 1922.*]

Parrott Sexual Pills.—The Allan-Pfeiffer Chemical Co., St. Louis, Mo., shipped in April, 1921, a quantity of this product, which was misbranded. The Bureau of Chemistry reported that analysis showed the pills to contain strychnin, and a compound of iron and phosphorus. They were falsely and fraudulently recommended for hysteria, dizziness, nervous prostration, nervous debility and general weakness. In June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10648; issued Nov. 8, 1922.*]

Am-O-Lox Ointment and Am-O-Lox Prescription.—The Am-O-Lox Co., Youngstown, Ohio, shipped in September, 1918, and June, 1919, a quantity of "Am-O-Lox Ointment" and "Am-O-Lox Prescription" which were misbranded.

Am-O-Lox Ointment, when analyzed by the federal chemists, was reported to consist essentially of zinc oxid, sulphur, phenol, methyl salicylate and a small amount of dye in a base composed of petrolatum and paraffin. The preparation was falsely and fraudulently represented as an effective treatment, remedy and cure (when used with "Am-O-Lox Prescription") for eczema and all skin diseases, salt rheum, tetter, eczema of the hands, psoriasis, dandruff, all diseases of the scalp, barber's itch, ring worm, pimples, blackheads, piles, ulcers, boils, burns, red nose, hives and several other things.



"Am-O-Lox Prescription," the federal chemists reported, consisted essentially of glycerin, carbolic acid, salicylic acid, methyl salicylate, alcohol and water with coloring matter. It was falsely and fraudulently represented as a treatment, remedy and cure (when used with "Am-O-Lox Ointment") for all the conditions that Am-O-Lox Ointment was said to be good for. In September, 1921, the defendant company entered a plea of *nolo contendere* and was fined $25 and costs. —[*Notice of Judgment No. 10360; issued July 26, 1922.*]

Vigoron.—The Sydney Ross Co. of New York City, in November, 1919, and April, 1920, shipped from the State of New York to the State of California forty-two dozen bottles of "Vigoron" which were misbranded. The Bureau of Chemistry reported that analysis showed this product to consist of sugar-coated pills containing compounds of iron, manganese, zinc, arsenic, phosphorus and strychnin. Some of the claims made for the preparation were:

"A Blood Making and Purifying Tonic for . . . Neurasthenia."

"The Supreme Blood and Nerve Tonic. Recommended for . . . Neurasthenia, Nervous Irritability . . . Impotence, Irregular Menstruation . . . and General Conditions of Debility."

"The woman who expects to become a mother should not use Vigoron until the fourth month."

The therapeutic claims made for this nostrum were declared false and fraudulent and in May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10633; issued Nov. 8, 1922.*]

The Enemy Within the Gates.—"The Profession of Physic has been openly Assaulted, or secretly Undermined, by all the Quacks and ignorant Unlicen'st Practicers. But it has suffer'd much more from the Impudence, or Ignorance, or Imprudence of many of the Physicians."—The Craft and Frauds of Physic Expos'd. By R. Pitt, M.D., London, 1703.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TAENIA SOLIUM—TAPEWORM OF PORK

To the Editor:—The specific name *solium,* used in connection with the tapeworm of pork, seems to be a mystery; I am unable to make out its origin or its significance. If it were from *solus,* meaning "the lone tapeworm," the letter "i" has no business in the word. Moreover, the adjective ought then to agree with its substantive in gender, i. e., the name should be *Taenia sola.*

JOHN W. SHUMAN, M.D., Beirut, Syria.
Professor, American University of Beirut

ANSWER.—Much time has been used by various persons in trying to trace the origin of the word *solium* in the technical name *Taenia solium,* and the sum total of the result is the conclusion that the origin of this word is not known. One view is that it comes from the Syrian word *schuschl,* which signifies a chain. The Arabs are supposed to have changed this word into *susl* or *sosl,* which became *sol* in the romance languages. By adding the ending *ium,* the word *solium* has been obtained. This, however, is not the only explanation of the possible origin of the word; for instance, it is entirely possible, and has been suggested, that *solium* is a popular rendition of the word *solus* (alone); one author, Villeneuve, who lived about 1300, and who wrote in Latin, states that "some say these cucurbitini are generated in the stomach of a very large earthworm which is sometimes passed longer than one or two arms and which is called a 'solium' or a 'cingulum'" (quidam dicunt quod isti cucurbitini generantur in ventre cuiusdam maximi lumbrici qui aliquando emittitur longior uno vel duobus brachiis, qui *solium* sive *cingulum* dicitur). An early French author (Andry) inclined to the view that *solium* is so called because it is usually alone, namely, there is usually only one of its species in the intestine.

From the standpoint of zoological nomenclature, zoological names begin with 1758, and we do not have to go back of this date for the specific combination *Taenia solium.* Linnaeus, in 1758, published the name *Taenia solium,* but did not give its derivation; accordingly, since its derivation is now in dispute, we can view it under Article 8k of the International Rules of Nomenclature as a barbarous name without known Latin derivation, and this is the usual interpretation that is now accepted. It is entirely possible that *solium* is a vernacular for *solum;* it is entirely possible that it may have some other derivation. Whatever its derivation is, it now stands under the rules as a barbarous name, and is hence not subject to emendation or correction of any kind. The International Rules (Article 19) demand that in order to justify the emendation of a name, the point must be clear that an error of transliteration, a typographic error or a *lapsus calami* is present. In the case of *solium* this is not evident; hence the name cannot be changed, and we continue to use the name *Taenia solium.*

NUMBER 10 PROTEIN SUBSTANCES

To the Editor:—Have you any definite information as to the reliability of Horovitz Protein No. 10 for syphilis? Is it a reliable product? My attention was called to it and I wrote the Horovitz Bio-Chemic Laboratory for figures and proof. I received circulars and a letter *assuring* me, but no proof. Can you give me any definite information?

R. C. ADAMS, M.D., Bird Island, Minn.

ANSWER.—We know of no scientific evidence to indicate that Number 10 Protein Substances of the Horovitz Biochemic Laboratories Co. is a product which will cure syphilis. The product is essentially secret in composition. The claims made for it are unwarranted and may lead physicians to use the product unwisely. A. S. Horovitz, president of the Horovitz Biochemic Laboratories Co., was referred to in connection with the asserted cancer cure "Autolysin" (The Horovitz-Beebe Treatment for Cancer, THE JOURNAL A. M. A., July 24, 1915, p. 336). Later he was connected with the Wm. S. Merrell Co. and appears to have been largely responsible for this firm's line of "Proteogens" which the Council on Pharmacy and Chemistry declared inadmissible to New and

Nonofficial Remedies (Proteogens of the Wm. S. Merrell Company, THE JOURNAL A. M. A., July 12, 1919, p. 128), and the marketing of which THE JOURNAL characterizes as "another attempt to foist on our profession a series of essentially secret preparations whose therapeutic value has not been scientifically demonstrated." In the claims advanced for them, the products marketed by the Horovitz Biochemic Laboratories Co. bear a striking resemblance to the Merrell Proteogens. As in the case of the Proteogens, the Horovitz Laboratories have a list of "Protein Substances," each of which is claimed to be more or less specific against a given disease or condition.

TREATMENT FOR TAPEWORM

To the Editor:—Please describe the most satisfactory treatment for tapeworms infesting an 8 year old boy. INQUIRER, Virginia.

ANSWER.—An excellent tapeworm remedy for a child is pelletierin tannate, because its taste is more easily disguised than that of the oleoresin of aspidium. The dose for an 8 year old child, according to Young's rule, would be two fifths of the adult dose, or from 0.08 to 0.12 gm. (the adult dose being given at from 0.20 to 0.30 gm.). This remedy is best administered dissolved in 30 c.c. of a syrup, for instance, syrup of citric acid, or in one of the aqueous elixirs of the National Formulary, such as the aqueous elixir of glycyrrhiza.

The oleoresin of aspidium, which is more difficult to disguise, would be administered in a dose of 3 gm., which is approximately two fifths of the adult dose of 8 gm. This might be given in the form of an emulsion, or mixed with honey or fruit preserves. It is almost hopeless, however, to render this dose palatable.

On the day preceding, it would be best to give a liquid diet, with mild mercurous chlorid (calomel), solution of magnesium citrate and colonic flushing to secure as clean an alimentary tract as possible. On the morning of the treatment the patient should stay in bed and be given a full dose of the remedy selected. If the patient is in bad physical condition or has considerable irritation of the alimentary tract, a smaller dose is preferable for the sake of safety, to be increased in case of failure at the next administration, for which it is best to wait a few weeks.

From one to two hours after the dose, the patient is given a wine-glassful of solution of magnesium citrate every hour until profuse evacuation has been secured.

ARGYRIA

To the Editor:—I have a patient who treated his throat with local application of silver nitrate for several years. Later his skin gradually became quite dark and has remained so ever since. He is in perfect health and has no renal trouble. Do you know of any remedy to remove the effects of the silver nitrate? Please omit my name.

PHYSICIAN, Iowa.

ANSWER.—The patient evidently has argyria as a result of the persistent use of silver nitrate locally in the throat. The pigmentation is due to the actual deposit of the silver in the tissues, and it is irremediable.

USE OF PERTUSSIS VACCINE

To the Editor:—Please allow me to ask whether the period of contagion in pertussis is shortened by the treatment of the disease with pertussis vaccine. I have in mind a child, aged 18 months, in whom the disease came on abruptly. Vaccine treatment was started at once, and after four treatments of vaccine there is apparently a clinical cure: Vomiting, whooping, paroxysmal coughing have all ceased; the lungs are clear; the cough now is single or in couplets, and occurs only three or four times a day. Under these conditions would it be proper for a brother who has had preventive vaccine treatment to attend school, he being free of all symptoms of whooping cough after two weeks of exposure? If answered in THE JOURNAL, please do not publish my name.

————, M.D., Indiana.

ANSWER.—Regulations as to quarantine of cases of whooping cough vary in different places. It has been customary to extend the quarantine until the paroxysmal stage has terminated. The regulations of the Illinois department of health require quarantine "until five weeks after the development of the characteristic whoop or paroxysmal cough, or until one week after the characteristic whoop has disappeared."

There is much evidence that the danger of spread of infection is slight by the time that the characteristic whoop has well developed. This is indicated by the experience of hospitals and institutions for children, in which whooping cough is usually introduced by children who have the disease in the catarrhal stage, and rarely by those who have well developed paroxysms.

There appear to be no data at hand by which the effect of vaccines on the period of contagion of whooping cough can be estimated. The same rules would probably be valid as in unvaccinated cases.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 9. Chairman, Dr. Samuel W. Welch, Montgomery.

DISTRICT OF COLUMBIA: Washington, Jan. 9. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

HAWAII: Honolulu, Jan. 8. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

ILLINOIS: Chicago, Jan. 9-11. Supt. of Registration, Mr. V. C. Michels, Springfield.

INDIANA: Indianapolis, Jan. 9. Sec., Dr. W. T. Gott, Crawfordsville.

KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.

NEW MEXICO: Santa Fe, Jan. 8-9. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, Jan. 9-10. Sec., Dr. J. M. Byrum, Shawnee.

PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.

SOUTH DAKOTA: Pierre, Jan. 16. Director, Dr. H. R. Kenaston, Bonesteel.

VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

WEST VIRGINIA: Charleston, Jan. 9. State Health Commissioner, Dr. W. S. Henshaw, Charleston.

WISCONSIN: Madison, Jan. 9-11. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Georgia October Examination

Dr. C. T. Nolan, secretary, Georgia State Board of Medical Examiners, reports the written examination held at Atlanta, Oct. 10-12, 1922. The examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Michigan Medical School		(1922)	92.7
Eclectic Medical College		(1922)	90.9
Ohio State University College of Medicine		(1921)	90.6
Medical College of the State of South Carolina		(1922)	94.7
University of Virginia		(1920)	94.5
	FAILED		
Meharry Medical College		(1915)	72

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Tulane University		(1922)	Louisiana
Johns Hopkins University		(1918)	Maryland
University of Pennsylvania		(1914)	Minnesota
Meharry Medical College		(1917)	Tennessee
University of Zurich		(1917)	Dist. Colum.

Montana April Examination

Dr. S. A. Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination held at Helena, April 4-6, 1922. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 4 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University	(1921) 78.3,	(1922)	78
Washington University		(1910)	80.8
Medical College of Virginia		(1918)	80.1
	FAILED		
Ensworth Medical College		(1909)	67

Medical Economics

THE PROBLEM OF PERSONAL MEDICAL ADVERTISING

M. L. HARRIS, M.D.
CHICAGO

Advertising seems to be one of the most popular occupations of a constantly increasing percentage of the medical profession today. It may be of interest to physicians to be brought face to face with an iniquity which, unchecked, is certain to bring disgrace to the profession. "To advertise" is practically defined in the dictionary "to consist in publishing in a newspaper or in some similar way statements generally designed to promote the financial or other interests of the person concerned." It is perfectly evident from this definition that the motive which underlies advertising is one of selfish acquisitiveness, and that it is not based on the desire to impart information.

It seems to be difficult or impossible for some persons to distinguish the difference between imparting useful information concerning health matters to the public, and advertising their own particular abilities. In the practice of medicine, which from its very essence must forever be impregnated with humanitarianism, self-exploitation can find no justification if one has due regard for the imperfections of medical science and for the ability of others. There is no man, no group of men, so possessed of medical knowledge that they should be blinded to a realization of their own insufficiency. The extent to which individual members as well as groups of members of the profession under various high-sounding titles are soliciting patients by methods of advertising which are flagrant violations of the principles of ethics as well as of ordinary decency is growing at an alarming speed. Scarcely a day passes that some new form of advertising is not brought to the attention of the Judicial Council of the American Medical Association, and during the last six months an extraordinary number of matters of this kind have been presented to the Council. Some of these advertisements are camouflaged under the guise of bulletins or announcements, the bulletin of the ——— group or the ——— clinic; others are just plain out and out advertisements in the newspapers. Some of the bulletins which are issued periodically are distributed quite freely throughout the territory supposed to be tributary to the particular group. They often contain two or three pages of short clippings from medical journals to give them the appearance of having been sent out for the purpose of distributing useful knowledge; then follows the little ad., such as:

Dr. So and So, of our group, has just returned from a visit to such a center, or clinic, and has brought with him some wonderful knowledge, or method, or device, which will enable this group to do something which no one else in that vicinity is prepared to do.

Or there may be reported in brief a case, somewhat as follows:

CASE 41144.—Mrs. Blank suffered many years; consulted several physicians in the neighborhood without relief; referred to our "academy" or "clinic." An examination by our group of experts resulted in a correct diagnosis being made for the first time, and the patient was cured, etc.

In detailing these examinations, many tests are frequently mentioned for the purpose of impressing the readers with the great knowledge and thoroughness of the group examinations, it being immaterial whether all of the tests mentioned were necessary to the making of a correct diagnosis or not.

Another method of advertising is to publish in the newspaper an extensive write-up of the group or clinic, containing an elaborate description of the offices, of the wonderful paraphernalia and equipment, and last, but by no means least, a complete and unexpurgated pedigree of each and all of the members of the group, with their pictures. The character of these write-ups is such as to make it perfectly evident that they must have been written by the physicians themselves.

I should like to present a few excerpts from some of these advertisements which have been received recently.

Dr. A has had the most extensive and thorough medical training of any doctor in ———.

Dr. B is the premier surgeon of this community. ———'s position as a surgical center of this territory is due largely to his successful practice of surgery.

More than 1,000 residents of ——— were assisted into the world by Dr. C. In the course of so extensive obstetrical practice it necessarily follows that he has encountered almost every kind of difficult labor, and his results have demonstrated his ability to cope with these emergencies as they arise.

Training that comes of the examination of more than 10,000 patients is brought to the ——— clinic by Dr. D, the clinic roentgenologist.

Dr. E has had the most extensive and varied medical practice of any doctor in ———.

Dr. F is the Nestor of the medical profession of the city of ———. The extent of his practice is indicated by the fact that his prescription number on ——— date of the current year was 126959. In the course of his many years of practice there is hardly a disease or ailment flesh is heir to that the doctor has not been called upon to treat.

I am sorry that time does not permit me to quote more of these interesting and instructive excerpts. These are all taken from newspaper ads of the pedigrees of these group doctors, each one being accompanied by a picture of the doctor. I am sure you will agree with me that none of these doctors is liable to fall dead of modesty. I will read a few more excerpts from a newspaper advertisement of a recent group in another city:

"The general practitioner must depend upon his reputation for skill and his personality to draw patronage to his office." This particular group is to do away with this old fogey idea, as it is evidently going to depend on advertising to get its patients. It is certainly amazing and something novel in the history of medicine for medical men to deplore the fact that the physician should be obliged to secure his patients by reason of his professional skill and pleasing personality.

Has it come to pass in the practice of medicine that knowledge and skill and ability and personality are to be rated below printers' ink and audacity in advertising? Are we to return to the days of the blatant quack extolling his own wonderful virtues in printed prose and hawking them from the street corners? Have we arrived at a time when the physician's ability and skill are to be gaged by the number on his last prescription?

Another quotation—and this is a sub headline in a newspaper—"Eliminates competition." "It has been said that the profession of medicine is highly competitive, especially in the smaller cities, each physician being a competitor of every other physician." This clinic states it is going to do away with competition because every doctor in the group is to share in the profits of the business. Do the physicians of this group think for a minute that group practice is going to do away with competition? Does the group imagine that it is going to secure all of the medical business of that community? How absurd. We already have the disgraceful spectacle of two groups in the same town, each advertising its superiority over the other. How long can physicians making use of such tactics hope to retain the respect and confidence of the people?

Just a few more excerpts: "The physicians of the clinic are 'physicians first,' devoting their entire time to caring

for patients, while an entirely separate department looks after all matters of a business nature, such as the settling of accounts. . . . The troublesome relationship concerning payment of fees and bills is largely eliminated, as the physician is concerned only with the patient's sickness. The business manager must look after all else." What has become of the humanitarian spirit in the practice of medicine, the cherished inheritance of the ages, when physicians announce in the daily press that hereafter they will be so occupied in caring for the physical welfare of their patients that they have turned over to a business agent all business matters, such as all charges, fees, bills, etc., and then incidentally mention in the same announcement that patients will please see the business manager before making an appointment with the doctor? This is prostituting an altruistic profession to plain, outright commercialism. What a mockery are the Principles of Ethics when physicians pledged to support and follow them deliberately and openly trample them in the dirt. If the medical profession is to save itself from everlasting disgrace, something will have to be done to prevent its degenerating into vulgar commercialism by way of newspaper advertising and similar methods.

Book Notices

HANDBUCH DER GESAMTEN MEDIZINISCHEN ANWENDUNGEN DER ELECKTRIZITÄT INSCHLIESSLICH DER RÖNTGENLEHRE. In drei Bänden bearbeitet von zahlreichen Fachgelehrten des In- und Auslandes. Herausgegeben von Prof. Dr. med. H. Boruttau, Privatdozent der Physiologie an der Universität Berlin, und Prof. Dr. med. L. Mann, Privatdozent der Nervenheilkunde an der Universität Breslau. Mitherausgeber für den Röntgenband: Prof. Dr. med. M. Levy-Dorn, Leitender Arzt am Rudolf-Virchow-Krankenhause in Berlin, und Prof. med. P. Krause, Direktor d. medizinischen Universitätspoliklinik in Bonn. Band III, Lieferung I: Das röntgentherapeutische Instrumentarium. Von Dr. Heinrich Martius, Privatdozen und I. Assistent der Univ.-Frauenklinik in Bonn a. Rh. Band III, I. Teil, Lieferung I: Die Röntgenphysik, die allgemeine Röntgentechnik, das diagnostische Röntgenverfehren (allgemeiner Teil). Von Prof. Dr. M. Levy-Dorn, Leitender Artz am Rudolf-Virchow-Krankenhause. Band III, 2. Teil, Lieferung 2: Grundlagen der Dosimetrie der Röntgenstrahlen. Von Dr. med. Hans Th. Sehreus, Privatdozent und Assistant an der Universitätsklinik für Hautkrankheiten in Bonn o. Rh. Leipzig: Dr. Werner Klinkhardt, 1922.

This is the third volume of a handbook dealing with the application of electricity to medical work and with the physics of roentgen rays. In the introductory pages an outline is given of the modern conceptions of the fundamental electric theories, restricted to the points that are necessary for an understanding of the genesis and nature of the roentgen rays. The electron theory is touched on, and the terms volt, milliampere and ohm are explained as to their meaning and application. Electric induction and electromagnetism are defined and elucidated. It is demonstrated how the electric current is not only likely to produce heat but also to furnish chemical action. In the second subdivision, general roentgen technic is taken up. After the principles of the function of a roentgen-ray tube are explained, the various tubes are described. The difference between gas and ion tubes, and tubes of high vacuum and electron tubes are set forth. Half schematic drawings and complete pictures facilitate the understanding of the text, which in its contents is held down to the physical necessaries, without putting too high demands on the reader's education in physics. The Coolidge and Lilienfeld tubes are dealt with in a special chapter. Of great value to the roentgenologist are the rules given for the selection of tubes for the various purposes in roentgen-ray photography and treatments. Instruction is furnished concerning prolonging the life of the tubes, and their maintenance at the highest efficiency. Measuring of the hardness and quality of the roentgen rays is explained, and the pertinent apparatus are described as far as practical purposes are concerned. The intention of the author to furnish complete practical information is again demonstrated in the chapters dealing with the appliances that are used for the holding of the tubes in action and for the placing of the patient, and the fixation of those parts of the body that are the object of examination or treatment. The closing chapter is devoted to the discussion of the making of roentgenograms. The merits of the various plates and films and the method of development are elaborated on, and practical hints are given. In order to facilitate the discussion, the three capital parts of every therapeutic outfit are taken up separately: the generator, which furnishes the high tension currents, producing the cathode rays; the roentgen-ray tubes, in which the cathode rays are transformed into roentgen rays; and the auxiliary implements, the various statives and filters, the roentgen-ray table and all the protective arrangements. The author compares the merits of the self-hardening boiler tubes, the high vacuum tubes, and the tubes whose construction is based on the producing of roentgen rays by thermoionization, the Coolidge and Lilienfeld tubes. He appreciates the fact that the Coolidge tube has the advantage that intensity and hardness may be regulated independently, and recommends the use of storage batteries, in preference to any other heating device, for heating the glowing spiral. The last pages are devoted to the discussion of the accessory apparatus, statives, compression tubes, ray collector and tables for appropriately placing the patient. As a whole, the book gives the reader a complete survey of the present status of roentgenology, and is an excellent guide and a fruitful source of information for the physician engaged in practicing roentgen-ray diagnosis and therapy.

CLINICAL MEDICINE. I: Tuesday Clinics at the Johns Hopkins Hospital. By Lewellys F. Barker, M.D., LL.D., Visiting Physician to Johns Hopkins Hospital. Cloth. Price, $7 net. Pp. 617, with 66 illustrations. Philadelphia: W. B. Saunders Company, 1922.

The chief fault with this book is that it contains too many puerile questions and answers, unnecessary repetitions, and irrelevant facts as to history and physical findings. In the actual clinical conference, many of these things may be admissible and of value. In the edited lecture that is to be read, they are wearisome, time consuming and disconcerting. All the advantages of the clinical lecture—and we agree with Barker that the amphitheater clinic has its place and its advantages—will be retained in the lecture that is rewritten from the stenographic notes and printed, as were Trousseau's lectures, with unnecessary verbiage cut out. Dr. Barker has the learning, the easy command of English, and the clinical material that would enable him to write most entertainingly and instructively. Even as it is, with this fault just mentioned, he has given a volume that will be welcomed by many a practitioner who will find in these thirty-two lectures much helpful, up-to-date information. The reader will appreciate, too, the bibliographies that are appended to each lecture. These are not intended to be complete; but they will stimulate to further study.

UNTERSUCHUNGEN ÜBER DIE KÖRPERLICHEN STÖRUNGEN BEI GEISTESKRANKEN. Von Dr. Otto Wuth, Privatdozent an der Universität München. Paper. Price, $3.20. Pp. 113. Berlin: Julius Springer, 1922.

This is No. 29 of the monograph series edited by Foerster and Wilmanns. It contains an account of original biochemical investigations, and a review of those of others, in paretic dementia, manic-depressive insanity, epilepsy and dementia praecox. Ten subjects were investigated: the serum albumin content, the albumin globulin quotient, coagulability and the antitryptic titer of the blood, the precipitation of blood corpuscles by sodium citrate, the morphology of the blood, and the sugar, residual nitrogen, creatinin and uric acid in the serum. Those interested in such investigations will find data of value in this work. The author is very sober and cautious in his conclusions.

TASCHENBUCH DER RÖNTGENOLOGIE FÜR AERZTE. Von Dr. Med. Henri Hirsch, Facharzt für Strählentherapie in Hamburg, and Dr. Med. Rud. Arnold, Facharzt für Röntgenologie in Hamburg. Paper. Price, 90 cent. Pp. 107, with 62 illustrations. Berlin: Julius Springer, 1922.

This little book is intended for the physician who is not a roentgenologist but who desires an insight into what the use of the roentgen ray can offer. The first half deals with diagnosis, the second with the mechanics, technic of appli-

cation and the indication for roentgen-ray therapy. As a little compend or, better yet, as a means of obtaining a short and concise review of the subject, it fills the bill admirably. The outstanding objections, in view of the purpose for which it appears, are that too much is attempted in a small space, and that the illustrations, instead of being reproductions of plates, are diagrammatic in character. Any one who has taught for any length of time knows that diagrams in this important department of diagnosis can never impress the beginner as thoroughly as reproductions of plates. If diagrams accompany the plates, the result is still better. The section dealing with therapy is presented in a much more convincing manner. The general rules to be observed, a few words as to the type of tube, the current, technic, and choice of method are given in fair detail. The author is optimistic as to the value of this form of treatment.

Medicolegal

Competent Testimony of Alienist

(State v. Cerar (Utah), 207 Pac. R. 597)

The Supreme Court of Utah, in affirming a conviction of murder, says that it was insisted that there had been error in admitting in evidence the statements of a physician who testified as an expert alienist on behalf of the state with regard to what he had learned from making an examination of the defendant some months after the homicide and about six weeks before the trial. The statements of the physician respecting the defendant's mental condition were full, fair, and explicit in every particular. The court hardly grasps the force of counsel's contention that, in permitting the physician to testify concerning the defendant's mental condition, both past and present, some constitutional right was invaded, because, in stating the result of the physician's examination, the defendant was compelled to give evidence against himself. It certainly would be strange doctrine to permit one charged with a public offense to put in issue his want of mental capacity to commit the offense, and in order to make his plea of want of capacity invulnerable prevent all inquiry into his mental state or condition. The physician frankly stated that, in determining the mental state of the defendant at the time the latter was alleged to have committed the offense, he took into consideration only the facts stated in the hypothetical question. He, however, also said that the defendant's physical and mental condition at the time he made the examination were necessary factors in determining whether the defendant at the time the alleged offense was committed was in fact afflicted with the mental infirmity asserted by his counsel and which had been testified to by a physician who was a witness for the defendant. No one disputed the statements of the state's witness. The court is clearly of the opinion that no error was committed in admitting his statements in evidence.

Permanent Loss of Member and Total Disability

(Heaps v. Industrial Commission et al. (Ill.), 135 N. E. R. 742)

The Supreme Court of Illinois, in affirming a judgment that confirmed an award of the industrial commission in favor of one Betow, who had been injured while in the employ of Heaps, says that Betow had been blind in his left eye for five years when the injury in question occurred, which was to his right eye. The evidence showed conclusively that, by the injury to his right eye, he was reduced to total blindness, except when his eye was propped open by plasters or other artificial means. If further showed that he was practically blind and unable to do his work when his eye was kept open, and that keeping it open was very injurious to it, because it was not protected from dust and other flying particles by tears and other natural processes. There was no hope of improvement, and very little, if any, of his ever again seeing out of his left eye, even if it was operated on for cataract; and there was every prospect that his right eye would continue to grow worse and give him less vision. It was not questioned that he was entitled to compensation for his injury, but it was contended that he had not sustained complete loss of use or vision of his eye, and that it was error to award compensation for total disability. But the supreme court thinks that the evidence sustained the claim of Betow that he had suffered the loss of both eyes, or the permanent and complete loss of use thereof, within the meaning of the workmen's compensation act. It was not necessary, to sustain the award in this case, to show total and complete loss of sight under all circumstances. Betow was entirely blind at all times, except when he used artificial means to keep his eye open. When this was done, he had only 12/200 vision, which amounted practically to blindness, and that condition was morally certain to grow worse.

"Permanent loss," as used in the compensation act concerning the loss of an eye, limb, etc., means the taking away of the normal use of the member. The loss of a member is complete when the normal use of the member has been taken away. Ability to do some work by aid of a mechanical device is not inconsistent with complete loss of the use of an eye or a hand. It is now a well-established rule, in Illinois and other states, that where an employee, who previous to his employment has lost an eye, loses the other eye as the result of an injury, or who has lost an arm, and loses a leg as the result of an injury arising out of and in the course of his employment, he is entitled to compensation for total permanent disability. The reason for this rule is that, by the destruction of the one remaining eye, the employee loses all the capacity to see that he has, and an injury causing such a loss of the remaining eye necessarily causes total disability to see.

Refreshing the Memory—Exhibition of Umbilical Hernia to Jury

(Walsh v. Chicago Rys. Co. et al. (Ill.), 135 N. E. R. 709)

The Supreme Court of Illinois, in affirming a judgment in favor of the plaintiff for damages for personal injuries, says it was urged that there was error in overruling a motion to exclude the testimony of a physician that he had been the examiner for certain insurance companies and in the course of that work had examined the plaintiff, in May, 1914, and that the plaintiff did not then have a hernia. On cross-examination, it was shown that the witness had no independent recollection of so examining the plaintiff; that to refresh his recollection he had read memorandums kept by the company, a part of which he himself had made. It was objected that all of the memorandums were not made by the physician himself, and therefore he should not have been permitted to refresh his recollection therefrom. It has been held by this court, in accordance with standard authorities, that it is not necessary that the writing used by the witness to refresh his recollection be made by the witness himself, or that it be his original writing, provided that, after inspecting the record, he can speak of the facts from his own recollection. Neither is it necessary that the writing thus used be admissible in evidence. It was obvious, from a reading of this physician's testimony, that he was testifying according to his recollection as to the plaintiff's condition in May, 1914, after refreshing his memory from the memorandums made at the time and kept by the company.

It was also urged that error was committed on the trial of this case, in allowing the plaintiff to exhibit the umbilical hernia; that this exhibition of his person could have no other result than to arouse the prejudice of the jury. In view of the character of the injury, and the question whether it was caused by the accident, as the jury found, this court is of the opinion that it could not be fairly held that, in allowing damages of $2,500, the jury were influenced by passion or prejudice. On the trial of a case, the question whether the injuries to the person shall be shown to the jury is left largely to the discretion of the trial court. When the question bears on the extent of the wound or injury, it is the common practice to exhibit it to the jury, so they may see for themselves its nature and extent. This court finds no error committed by the trial court in its ruling on this point.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

December, 1922, 24, No. 6

*Vital Capacity of Lungs of Children in Health and Disease. C. A. Stewart, Minneapolis.—p. 451.
*Dehydration in Newly Born. I. H. Bakwin, New York.—p. 497.
Dehydration Fever in Newly Born. II. H. Bakwin, New York.—p. 508.
Treatment of Accessory Nasal Sinus Disease in Children. H. B. Lemere, Omaha.—p. 520.
*New Eruptive Fever Associated with Stomatitis and Ophthalmia. A. M. Stevens and F. C. Johnson, New York.—p. 526.
Congenital Duodenal Obstruction: Malrotation of Intestine. Report of Case. B. S. Denzer, New York.—p. 534.

Vital Capacity of Lungs of Children.—From Stewart's study it appears evident that the determination of the vital capacity of patients having diseases of the heart and lungs is of distinct clinical value. It is stated that it is inadvisable to use the determination of the vital capacity to the exclusion of other means of making a diagnosis, for occasionally this measurement is very misleading, and might easily lead to serious error if relied on alone. However, with the exercise of proper judgment and care, one usually is able to use the information gained through the measurement of the vital capacity safely and profitably in determining not only the presence but also roughly the extent and progress of disease of the heart and lungs.

Dehydration in the New-Born.—Dehydration was studied by Bakwin in newly born babies by correlating weight changes, skin elasticity and serum protein concentration (plasma water). Usually a marked weight loss in the newly born baby is accompanied by a loss of skin elasticity and an increase in the serum concentration (indicating a diminution in skin and plasma water). There are babies, however, who, despite relatively large weight losses, show no evidence of dehydration of the skin or plasma. In these babies, presumably, the water reserve of the tissues at birth is large. On the other hand, there are babies who show evidence of dehydration at birth. The skin alone may be desiccated (loss of skin elasticity without increase in the serum protein concentration) or both skin and plasma may be involved (loss of skin elasticity and increase in serum protein concentration). Since the water content of the baby varies so widely at birth it is impossible to tell from the weight curve alone whether or not a baby is dehydrated. The plasma water per cent. may increase even though there is no increase in weight. Impairment of skin elasticity may, and often does, occur without increase in the plasma concentration. Increase in the plasma concentration is usually, but not always, accompanied by an inelastic skin.

New Eruptive Fever.—Stevens and Johnson report two cases of an extraordinary, generalized, eruption with continued fever, inflamed buccal mucosa and severe purulent conjunctivitis. The first patient was seen on the tenth day of illness and followed to recovery. The second patient did not come under observation until the twenty-second day after onset of the illness; but the skin lesions at that time corresponded exactly with those of the first case at the same stage of the disease, and a careful description of the eruption as seen in the first week establishes its identity with that in the first case. No diagnosis could be made to correspond with the symptoms and course of the eruption in these two cases and no description was found of a skin condition in any degree comparable. Both cases occurred in boys, one aged 7, the other 8, coming from widely separated parts of a city, with no possibility of contact. Both cases manifested a purulent conjunctivitis, in the second case going on to panophthalmitis and total loss of vision, and in the first case responding to treatment, but leaving a severe corneal scar. The pus showed pyogenic organisms only, no gonococci. A high and continuous fever was present in both cases, explainable in the second case by a lobar pneumonia, but in the first case without apparent cause other than the skin condition.

American Journal of Ophthalmology, Chicago

December, 1922, 5, No. 12

Opaque Canal of Cloquet with Persistent Hyaloid Artery. H. W. Scarlett, Philadelphia.—p. 941.
Clinical Observations on Cornea. R. Von der Heydt, Chicago.—p. 943.
Two Cases of Retinitis Proliferans of Syphilitic and Diabetic Origin. V. L. Raia, Providence, R. I.—p. 946.
Some Facts About Salicylate Therapy. S. R. Gifford, Omaha.—p. 948.
Ocular Manifestations in Case of Hypophyseal Syphilis. F. P. Calhoun, Atlanta, Ga.—p. 952.
Hypophyseal Disease Probably of Syphilitic Origin. B. W. Key, New York.—p. 956.
Consideration of Cataract Procedures. W. F. Hardy, St. Louis.—p. 961.
Intra-Ocular Malignant Tumors in Young Children. C. J. Adams, Kokomo, Ind.—p. 967.
Impressions of Cuban Ophthalmologist. C. B. Welton, Peoria, Ill.—p. 970.
Infected Corneal Ulcer. E. C. Moulton, Fort Smith, Ark.—p. 972.
Auto-Ophthalmoscopy. Subjective Examination of Retina. S. I. Eber, Pittsburgh.—p. 973.

American Journal of Roentgenology, New York

November, 1922, 9, No. 11

Foreign Bodies in Bronchus and Esophagus. C. F. Bowen, Columbus, Ohio.—p. 705.
*Roentgenologic Study of Pathologic Gallbladder. B. R. Kirklin, Muncie, Ind.—p. 713.
*Roentgen Ray in Diagnosis of Scoliosis. F. W. Lamb, Portland, Me.—p. 723.
Unusual Foreign Body (Lead Pencil) in the Arm. C. F. Baker, Newark, N. J.—p. 727.
*Report of Three Unusual Cases. T. A. Groover, A. C. Christie and E. A. Merritt, Washington, D. C.—p. 729.
Two Tables Pertaining to Incidence of Bodily Habitus and Time of Complete Gastric Motility in Different Type of Habitus. R. W. Mills, St. Louis.—p. 731.
Roentgen-Ray Laboratory of University Hospital, Philadelphia. E. P. Pendergrass and W. R. Jamieson, Philadelphia.—p. 735.
Roentgen-Ray Therapy in Dentistry. J. L. Garretson, Buffalo.—p. 740.
Van Zwaluwenberg Type of Stereoscope. S. W. Donaldson and E. F. Merrill, Ann Arbor, Mich.—p. 742.
New Safety Device (Circuit Breaker). H. W. Van Allen, Springfield, Mass.—p. 745.
Time-Saving Devices for Roentgen-Ray Treatment of Ringworm and Favus of Scalp. G. M. Mackee and G. C. Andrews, New York.—p. 746.
Marker for Identifying Right and Left Eye Images in Stereoscopic Chest Films. P. C. Hodges, Peking, China.—p. 751.
New Method of Simultaneous Stereoscopic Observation of Both Mastoids. P. C. Hodges, Peking, China.—p. 753.
New Radium Applicator for Treatment of Cataracts. B. Allen, Iowa City, Ia.—p. 755.
Case of Tuberculous Gingivitis Treated with Apparent Success by Radium. G. E. Pfahler and B. P. Widmann, Philadelphia.—p. 756.
Technic and Statistics in Treatment of Carcinoma of Bladder by Radium. B. S. Barringer, New York.—p. 757.
Results of Treatment of Carcinoma of Cervix with Statistics and Technic. C. F. Burnam, Baltimore.—p. 765.

Roentgen-Ray Study of Diseased Gallbladder.—Kirklin has made a complete roentgenologic gallbladder study of 712 patients, and reported "roentgen-ray evidence of gallbladder pathology, with or without stones in 251 cases. In 214 of these cases in which data could be obtained, the surgeons reported that the gallbladder was normal to palpation in seven cases in which Kirklin had reported positive roentgenologic findings, and in six of the cases in which he had reported negative roentgenologic findings the surgeons reported gallbladder pathology of some form. In other words, the roentgen-ray conclusions were confirmed in all but fourteen cases, or approximately 93.5 per cent. Kirklin urges that a careful roentgenologic investigation should be made of the gallbladder region of every case that is referred for abdominal study.

Roentgen Ray in Diagnosis of Scoliosis.—Lamb asserts that a correct diagnosis of scoliosis, even in the earliest stages, may be made by the use of roentgen rays, but only if the operator recognizes the fact that the old positions produce misleading roentgenograms. In making a roentgen-ray diagnosis of scoliosis, the extreme right and left scoliotic position must be used. If the roentgenograms taken in these two positions show the lateral bending and the rotation equal and symmetric there is no deformity. On the other hand, if the roentgenograms are asymmetric there is a fixed deformity.

Anomaly of Left Lobe of Liver.—In examining thirty-five cases by the pneumoperitoneum method, Groover, Christie and Merritt have noted an anomaly of the left lobe of the liver in two patients. This lobe was larger than the normal

spleen, but occupied the splenic area, and the spleen was markedly enlarged and displaced downward. In the third case a perinephritic abscess communicated with the pelvis of the kidney.

American Journal of Syphilis, St. Louis

October, 1922, **6**, No. 4

*Transmission of Syphilis to Second Generation. J. V. Cooke and P. C. Jeans, St. Louis.—p. 569.
Practical Observations on Syphilis. IV. Syphilis of Nervous System. H. H. Hazen, Washington, D. C.—p. 586.
Symmetrical Synovitis of Knee in Congenital Syphilis (Clutton's Joints). J. E. Lane, New Haven, Conn.—p. 611.
*Incidence of Syphilis: Analysis of 1,088 Necropsies. W. W. Hala, Brooklyn.—p. 616.
From Fracastorius to Ehrlich. A. Ravogli, Cincinnati.—p. 623.
Standard of Cure in Syphilis. A. R. Fraser, Cape Town, S. Africa.—p. 633.
Standardization of Wassermann Reaction, XXIX. Methods for Establishing Uniform and Standardized Unit of Antigen. J. A. Kolmer, Philadelphia.—p. 651.
Id. XXXI. New Complement Fixation Test for Syphilis Conducted with Antihuman, Antichicken and Antiox Hemolytic Systems. J. A. Kolmer, Philadelphia.—p. 667.
Id. XXXII. Comparative Study of New Complement Fixation Test for Syphilis with Other Methods. J. A. Kolmer, Philadelphia.—p. 680.
Fibroid Subcutaneous Syphiloma; Report of Case Associated with Syphilitic Bursitis; Review of Literature. H. Goodman, New York.—p. 687.
*Diffuse Syphilitic Mastitis. W. N. Taylor, Columbus, Ohio.—p. 696.
Study of Wassermann Reaction in Large Group of Supposedly Nonsyphilitic Persons Including Groups of Diabetics and Nephritics. J. R. Williams, Rochester, N. Y.—p. 703.
*Syphilis Complement Fixation Reaction in Pregnancy with Special Reference to Kolmer Reaction. F. C. Smith, Philadelphia.—p. 705.
Clinical Value of Wassermann Reaction: Comparison of Cholesterinized and Noguchi Antigens (Acetone Insoluble). R. C. Jamieson and H. Ainslee, Detroit.—p. 708.

Transmission of Syphilis to Second Generation.—Experience extending over a period of ten years and based on the observation of many hundreds of cases has strengthened the confidence of Cooke and Jeans in the value of the Wassermann reaction in the hereditary form of the disease. It is highly probable that all mothers of syphilitic children are infected, although occasionally mothers of syphilitic infants have negative Wassermann reactions, and more often mothers of older syphilitic children have weakly positive or negative reactions. In all such instances the maternal infection is latent. A strongly positive Wassermann reaction in the mother does not mean that her infant will necessarily be infected and consequently a syphilitic mother may bear a healthy child. When the mother's Wassermann reaction is positive with the cholesterolized antigen only, the chances are about seven to one that the infant is not syphilitic. In most instances the father brings the infection into a family, although nearly 40 per cent. of the fathers of syphilitic children have negative Wassermann reactions (at the time the children are examined). The male may therefore transmit the disease after his infection has become latent. Transmission to the third generation is possible, but is incapable of proof. Identical or single ovum twins born to a syphilitic mother are both infected or both escape the disease; double ovum twins, on the other hand, have the same fate as children of two successive pregnancies, i. e., either, neither, or both may be infected. Adequate treatment of the syphilitic mother during pregnancy will result in a nonsyphilitic infant if the treatment is instituted before the fetus is infected. Subsequent pregnancies are not protected unless treatment is continued. Placentas of syphilitic infants show characteristic diffuse microscopic changes in 27 per cent. of cases. When such changes are present the infant later proves syphilitic in every instance. Syphilitic infants at birth have Wassermann reactions in the following proportion: 37 per cent. negative, 18 per cent. weakly positive and 45 per cent. strongly positive. After the first few weeks or months all syphilitic infants have strongly positive Wassermann reactions. Syphilitic infants over 2 months of age fail to show clinical evidence of the disease at one examination in 50 per cent. of instances. Nonsyphilitic infants may give weakly positive Wassermann reactions at birth which become negative later, but never give strongly positive reactions at birth or any other time. Hutchinson's triad of interstitial keratitis, enamel defects of the upper central incisors, and nerve deafness are rare. In older children with active manifestations of syphilis the Wassermann reaction is positive in almost 100 per cent. Certain possible exceptions are noted, keratitis being present in each case. A diagnosis of active hereditary syphilis in a child with a negative Wassermann reaction is justifiable only when the clinical evidence of the disease is absolute and unmistakable.

Incidence of Syphilis.—The incidence of syphilis in 1,088 necropsies analyzed by Hala was 21.41 per cent. Cardiovascular diseases among the adults showed the highest degree of incidence. The percentage incidence of syphilis among patients of a large city hospital is estimated at 13.8 per cent.

Diffuse Syphilitic Mastitis.—Taylor reports a case of diffuse syphilitic infiltration of the whole breast, occurring in a woman, aged 40. The breast was three times the size of the companion breast. Its appearance was that of a red and blue mottled, glistening mass hanging from the chest wall. It was symmetrical, smooth to touch, and no nodules were palpable. The nipple protruded normally; the skin was not adherent and the mass was not adherent to the chest wall. It was of doughy consistency, but not edematous and no definite nodule or nodules could be palpated. On palpation the breast felt very much like a mass of cotton batting wadded under the skin, fat and superficial fascia. There were no painful areas, points of fluctuation, or increase in temperature of the mass. Palpation revealed the whole breast involved in the process. Under treatment with arsphenamin and mercury salicylate, the breast diminished in size rapidly and symmetrically, and at the end of the sixth week had returned to normal size. This patient has persistently had a two plus Wassermann reaction.

Syphilis Complement Fixation Reaction in Pregnancy.—In a series of ninety-four cases of pregnancy in which the bloods were examined by Smith during the last three weeks of gestation, falsely positive Wassermann reactions with the Kolmer complement fixation test for syphilis and with the ordinary routine technic were not observed. Smith suggests that the few cases of apparently falsely positive Wassermann reactions in pregnancy recorded in literature may be provocative Wassermann reactions in cases of syphilis.

Boston Medical and Surgical Journal

Dec. 7, 1922, **187**, No. 23

*Wassermann Tests in Boston Maternity Hospital. D. L. Belding and C. B. Adams, Boston.—p. 815.
Changes That Have Occurred in Past 25 Years Having an Effect on Progress of Medicine. A. W. Marsh, Worcester, Mass.—p. 821.
Backache. W. Dameshek, Boston.—p. 830.
Case of Bilharziasis from U. S. Marine Hospital No. 2, Chelsea, Mass. W. P. Clare, Chelsea, Mass.—p. 834.
*Tuberculosis of Ankle Joint and Tarsus. H. J. Fitzsimmons, Boston.—p. 838.
Accommodation to Anoxemia of High Altitudes. A. C. Redfied, Boston.—p. 841.
Clinical Significance of Sudden Abdominal Pain. A. M. Rowley, Hartford, Conn.—p. 844.
Erythema Multiforme Bullosum Caused by Arsenic. Report of Case. W. J. Macdonald, Boston.—p. 847.

Wassermann Reaction in Pregnancy.—In 5,198 routine cases in a maternity hospital, the Wassermann test showed some degree of positivity in 9.2 per cent., was definitely positive in 7.8 and strongly positive in 4.6 per cent. Only 9.8 per cent. of the positive cases gave definite clinical evidence of syphilis, although an additional 19.9 showed suspicious findings. Belding and Adams state that positive Wassermann tests, with cholesterolized antigens, in pregnant women are not comparable to similar tests in nonpregnant women owing to certain blood changes, and therefore do not either represent the actual incidence of syphilis in a community or the per cent. of positive tests in healthy nonpregnant women. Owing to longer exposure, the per cent. of positives increases with age and length of married life. The per cent. of positives increases inversely as the wealth of the patient, and also differs according to occupation. In Boston the urban rate is higher than the suburban and the highest class residential districts show the lowest per cent. of positives, which, in this instance, explains the lower suburban rate.

Tuberculosis of Ankle Joint and Tarsus.—From 1868 to 1910, the Orthopedic Clinic of the Children's Hospital of Boston, treated 7,474 cases of bone and joint tuberculosis.

Of these 7,474 cases 213 were of the ankle joint and bones of the foot. In the last ten years there have been treated 1,988 cases of bone tuberculosis; eighty-eight of these being involvement of the ankle joint and bones of the foot. From such comparisons, Fitzsimmons is impressed with the fact that tuberculous lesions in bones and joints are not as frequent as they were ten years ago. The results of various forms of treatment are discussed by Fitzsimmons. From a comparison of data, he feels that the operative treatment of tuberculosis of the ankle joint and tarsus in children is usually harmful. Time is not saved, deformity is not decreased, and motion is not preserved. When the infection is sharply localized so that a direct surgical procedure can be followed, it might be of distinct advantage to resort to careful excision. Unfortunately, at present this is not possible, and, therefore, most surgery is to be avoided. Incision of the soft parts in the direction of the supposedly affected bone or joint has not been of any benefit. The abscess which presents itself and which spontaneously ruptures generally protects the surrounding tissues from invasion and from overwhelming infection. The cases in the operative group that were followed by the quickest healing and usually by the best surgical results were those that had been submitted to small incisions of the fluctuating mass of an abscess about to spontaneously rupture. Tuberculosis of the ankle joint and tarsus in children should be treated conservatively. Local rest by fixation, protecting against the strain and mechanical pressures which the individual bones or points are subjected to, should be rigidly enforced. Heliotherapy definitely aids before as well as in the presence of sinuses. Operative interference should be resorted to only after careful consideration and then the plan of procedure should be definitely understood. There is a greater danger of secondary involvement and general tuberculosis following operations than without. A large proportion of cases of tuberculosis of the ankle joint and tarsus get good functional results with very little deformity, but are more likely to get these results in a shorter time by the nonoperative procedure.

California State Journal of Medicine, San Francisco

December, 1922, **20**, No. 12

*Speech Development in Orthopedic Cases. C. G. Stivers, Los Angeles.—p. 421.
Sacral Anesthesia in Urology. A. J. Scholl, Jr., Rochester, Minn.—p. 423
Intratracheal Insufflation Anesthesia. M. Kavanagh, San Francisco.—p. 425.
Bowel Obstruction Following Operations Occurring During Convalescing Period. A. Weeks and L. Brooks, San Francisco.—p. 428.
Absence of Prostate Associated with Endocrine Disease. H. Lisser, San Francisco.—p. 430.
Some Outstanding Features of Recent Progress in Surgery. G. Thomason, Los Angeles.—p. 431.
Hemorrhoid Problem. S. Hyman, San Francisco.—p. 434.
Necessity for Immediate and Thorough Roentgenologic Study of All Injuries to Spine. H. W. Chappel, Los Angeles.—p. 436.
Outlook in Neuropsychiatry. W. F. Schaller, San Francisco.—p. 438.
Posture in Its Relation to Nutrition. A. E. Meyers, San Francisco.—p. 440.

Speech Development in Orthopedic Cases.—In a study of all the admissions to the Orthopedic Hospital School in Los Angeles during four years Stivers found that out of the 1,044 cases there were eighty-two cases of speech defect in addition to the orthopedic troubles. These cases were found in children affected with spasm, incoordination, ataxia, polioencephalitis and faulty postures. Normal children of school age show from 1 to 2 per cent. of speech defects. Crippled children of Los Angeles showed nearly 8 per cent. of speech defects, an example of the well known fact that persons with one developmental defect, in the motor or expressional system, are apt to show other defects.

Florida Medical Association Journal, St. Augustine and Jacksonville

October, 1922, **9**, No. 4

Aims of Gastro-Enterologist. E. B. Milam, Jacksonville.—p. 63.
Some Methods of Delivery of Occiput Posterior. E. W. Ayers, Coconut Grove.—p. 67.
Local Anesthesia Applied to Railway Surgery. J. E. Boyd, Jacksonville.—p. 69.
Bodily Mechanics. L. F. Carleton, Tampa.—p. 72.

Journal of Bacteriology, Baltimore

November, 1922, **7**, No. 6

Method for Isolation of Bacteria in Pure Culture from Single Cells and Procedure for Direct Tracing of Bacterial Growth on a Solid Medium. J. Orskov, Copenhagen, Denmark.—p. 537.
Bacterial Autolysis. W. S. Sturges and L. F. Rettger, New Haven, Conn—p. 551.
Bacillus Hemoglobinophilus Canis (Friedberger). T. M. Rivers, Baltimore.—p. 579.
Salt Effects in Bacterial Growth. III. Salt Effects in Relation to Lag Period and Velocity of Growth. J. M. Sherman, G. E. Holm and W. R. Albus, Washington, D. C.—p. 583.
"Color Standards" for Colorimetric Determination of H-Ion Concentration. L. S. Medalia, Boston.—p. 589.
Cause of Explosion in Chocolate Candies. J. Weinzirl, Seattle.—p. 599.
Micro-organisms Concerned in Oxidation of Sulphur in Soil. IV. Solid Medium for Isolation and Cultivation of Thiobacillus Thiooxidans. S. A. Waksman.—p. 605.
Id. Bacteria Oxidizing Sulphur Under Acid and Alkaline Conditions. S. A. Waksman.—p. 609.

Military Surgeon, Washington, D. C.

December, 1922, **51**, No. 6

Relations of United States Military and Public Health Service to Civil Practice. A. W. Boswell.—p. 609.
Brief Summary of "Congrés International de médecine et de pharmacie militaires." W. S. Bainbridge.—p. 614.
Use of Automatic Absorbable Metallic Sutures and Ligatures. J. S. Gomez.—p. 620.
Military Surgeon as Specialist. D. N. Carpenter.—p. 624.
Public Baths and Public Athletic Agencies as Factors in Raising Physical Standard of American Youths for Military Service. C. C. Demmer.—p. 632.
Some Changes That Have Taken Place in Duties and Activities of Naval Medical Officers, Afloat. C. E. Riggs.—p. 639.
Bronchopneumonia; Incidence and Diagnosis. W. A. Bloedorn.—p. 646.
Emergency Treatment of Water for Drinking Purposes. A. P. Hitchens.—p. 657.
Preventive Medicine and Its Relation to Military Medicine. R. F. Jones.—p. 663.

New Jersey Medical Society Journal, Orange

December, 1922, **19**, No. 12

Concerning Headaches; This Symptom as an Aid to Diagnosis. A. Cramer, Jr., Camden.—p. 347.
Public Health Administration in New Jersey. R. B. Fitz-Randolph.—p. 350.
Newer Phases in Treatment of Asthma. G. P. Meyer, Camden.—p. 356.
Unrecognized Syphilis. B. P. Thom, New York.—p. 363.

New Orleans Medical and Surgical Journal

November, 1922, **75**, No. 5

Abdominal Trauma. R. O. Simmons, Alexandria.—p. 223.
*Blood Pressure Observations in Psoriasis, Lichen Planus and Erythematous Lupus. J. N. Roussel.—p. 228.
Nonoperative Treatment of Urethral Stricture. H. W. E. Walther, New Orleans.—p. 231.
When Diseased Gallbladder Becomes Surgical. L. C. Chamberlain, New Orleans.—p. 238.
Fractures of Leg. I. Cohn, New Orleans.—p. 241.
*Radium in Treatment of Myelogenous Leukemia. A. Henriques and L. J. Menville, New Orleans.—p. 247.

Blood Pressure in Psoriasis, Lichen Planus and Erythematous Lupus.—In these three diseases Roussel has found almost a constant low pressure which seemed to drop as the disease progressed. In lichen planus the blood pressure appears to be low from the beginning, but in psoriasis and lupus erythematosus the pressure was generally lower in the old cases than in the early ones, mostly ranging in the old cases between 85 and 95 mm. In several cases of psoriasis of many years standing the eruption has disappeared entirely by simply raising the blood pressure from 85 to 120, only to see it reappear when the blood pressure dropped.

Radium Treatment of Myelogenous Leukemia.—Henriques and Menville report their observations in the treatment of chronic myelogenous leukemia by the surface application of radium over the spleen. One patient is in good condition eighteen months and another fifteen months since treatment began. A third patient shows a similar improvement in the past eight months. An enormous spleen, extending almost to the right lateral abdominal wall and almost to the symphysis pubis and protruding markedly both toward the front and the left, has been so reduced in size that it cannot be palpated fifteen months after treatment began. The white cells have shown a progressive decrease to the neighborhood of 20,000. The myelocytes have shown a marked reduction. The red cells in two cases increased from 2,000,000 to above

5,000,000 in about ninety days. The hemoglobin has shown a marked rise. These results were accomplished by a total dosage of from 2,200 to 2,400 mg. hours spread over four areas near the center of the spleen, through the skin, repeated monthly. The dosage employed at each sitting was from 550 to 600 mg. hours.

New York Medical Journal and Medical Record

Dec. 6, 1922, **116**, No. 11

Peptic Ulcer with Deformities of Viscus, Evidenced by Roentgen Rays, Changes for Better by Treatment. M. Einhorn, New York.—p. 613.
Phases of Gastrointestinal Infection, Pathology and Treatment. G. R. Satterlee, New York.—p. 619.
Intestinal Infections and Toxemias and Their Biologic Treatment. N. P. Norman and A. A. Eggston, New York.—p. 623.
*Incidence of Pain in Upper Left Quadrant of Abdomen. J. Friedenwald and J. W. Martindale, Baltimore.—p. 627.
Preoperative and Postoperative Treatment of Colon Malignancy. R. F. Carter, New York.—p. 630.
Cancer of Stomach. A. W. Hammer, Philadelphia.—p. 634.
Nonrecurrence of Gastric Cancer After Operation. S. Basch, New York.—p. 636.
*Study of Connective Tissue Changes in Gallbladder. N. D. C. Lewis and F. A. Reuter, Washington, D. C.—p. 640.
Effect of Magnesium Sulphate on Liver and Biliary Apparatus. J. C. Hemmeter, Baltimore.—p. 645.
Therapeutic Value of Duodenal Tube. C. D. Aaron, Detroit.—p. 648.
Chronic Duodenal Obstruction. E. P. Quain, Bismarck, N. D.—p. 651.
Experimental and Clinical Observations on Simplification of Intestinal Flora. C. Pope, Louisville, Ky.—p. 654.

Incidence of Pain in Upper Left Quadrant of Abdomen.—Observation of 1,134 cases in which an attempt was made to tabulate only those cases in which upper left quadrant pain might conceivably occur has shown Friedenwald and Martindale that splenic hypertrophy was comparatively rare and only in a small number of cases (1 per cent.) was it the cause of upper left quadrant pain. Of this group but 8 per cent. were accompanied with discomfort or pain in the upper left quadrant revealing the fact, that pain was a rather rare occurrence in this region of the abdomen, and that this area was usually comparatively free of organic disease. The character of pain varied from a slight discomfort to a severe distress; was constant or intermittent, and frequently occurred coincidently with pain in other regions of the abdomen. Finally, the pain noted in the upper left quadrant of the abdomen may originate from lesions in various organs. It was most commonly produced by affections of the left kidney (twenty cases); of the colon (nineteen cases), less frequently of the female generative organs (sixteen cases), of the pancreas (eight cases) and of the spleen (fourteen).

Sarcoma of Gallbladder.—Lewis and Reuter report a case of sarcoma of the gallbladder in which a diagnosis of subacute appendicitis was made. The abdomen was entered and explored through a right rectus incision. The appendix was postcecal, rather long and fibrous in appearance, and firmly bound down by adhesions. The vessels were injected and stood out prominently. On examination the mobility of the stomach and duodenum was greatly reduced by bands running toward the liver, but otherwise there was nothing abnormal. The kidneys, spleen, and pelvis organs were negative, but in the region of the gallbladder a long firm mass was felt, decidedly of the consistency of liver tissue, attached to the under surface of the right lobe of the liver at about the point where one would expect to find the gallbladder. Further search failed to reveal a recognizable gallbladder. The appendix was removed by the usual method and a cholecystotomy was done. A single stone about the size and shape of a bantam egg was removed from the cavity. The patient had a severe epileptic convulsion. She died four hours afterward. The postmortem findings are reported in detail.

Rhode Island Medical Journal, Providence

December, 1922, **5**, No. 12

Endocrine Glands. F. T. Fulton, Providence.—p. 347.
General Principles of Treatment of Skin Diseases. R. Blosser, Providence.—p. 352.

Southern Medical Journal, Birmingham, Ala.

December, 1922, **15**, No. 12

Nutrition: Most Important Public Health Problem of Today. S. Harris, Birmingham, Ala.—p. 955.
*Aneurysm of Heart Complicated with Chronic Mediastinal Pericarditis. E. Smith, St. Louis.—p. 962.
Spontaneous Pneumothorax in Pulmonary Tuberculosis: Occurrence and Management. I. S. Kahn, San Antonio, Tex.—p. 972.
Active Immunization Against Diphtheria. A. S. Root, Raleigh, N. C.—p. 980.
Causes and Treatment of High Blood Pressure. B. W. Fontaine, Memphis.—p. 987.
Some Evidences of Inadaptability in Ex-Service Psychoneurotics. G. H. Benton, Gulfport, Miss.—p. 992.
Diagnosis of Sterility in Women. M. Y. Dabney, Birmingham, Ala.—p. 1001.
Correlation of Pathology and Medicine and Surgery. K. M. Lynch, Dallas, Tex.—p. 1005.
Correlation of Physiology and Surgery. F. K. Boland, Atlanta, Ga.—p. 1007.
Use of Full Time Teachers in Clinical Medicine. G. C. Robinson, Baltimore.—p. 1009.
Full Time Clinical Departments. G. Dock, St. Louis.—p. 1013.

Aneurysm of Heart with Mediastinal Pericarditis.—Smith believes that his case suggests the following points as important in the diagnosis of cardiac aneurysm: (1) careful attention to possible antecedent history of a more or less rapid occlusion of a coronary vessel through thrombosis; (2) finding of two separate points of cardiac impulse in the cardiac area; (3) determination of an abnormal cardiac outline through careful physical and roentgen-ray examination. It is important to determine a possible complicating chronic adhesive pericarditis through (1) the presence of fixation of heart dulness; (2) retraction in the region of the apex and Broadbent's sign; (3) finding through careful roentgen-ray study evidence of adhesions of the pericardium to the surrounding structures. Should cardiac aneurysm be found to be complicated with chronic adhesive pericarditis, then it may be justifiable after full explanation of the situation to the patient to recommend cardiolysis to lessen the strain on the cardiac muscles by the constant systolic pull of the harness of adhesions; for the persistent tugging of these adhesions will break down the cardiac compensation just as certainly as will a bad valve lesion or any similar cause of constant cardiac overwork. On the other hand, cardiac aneurysm may occasionally heal, especially if relieved of pericardial adhesions. If not the cardiac compensation will probably be maintained longer without than with the added strain of chronic mediastinopericarditis. Not any more danger is involved to life in this procedure than in that of wiring a thoracic aneurysm, though both procedures are, of course, largely palliative.

Surgery, Gynecology and Obstetrics, Chicago

December, 1922, **35**, No. 6

Physician and Surgeon. H. Cushing, Boston.—p. 701.
Anatomy and Identity of "Encysted" and "Infantile" Hernia. A. V. Moschcowitz, New York.—p. 711.
Levator Hernia (Pudendal Hernia). H. C. Chase, New York.—p. 717.
Nature and Significance of Renal Stasis. E. G. Crabtree, Boston.—p. 733.
Recurrent Renal Calculi. J. D. Barney, Boston.—p. 743.
*Primary Tumors of Ureter. P. W. Aschner, New York.—p. 749.
*Elusive Ulcer of Bladder. H. L. Kretschmer, Chicago.—p. 759.
*Results of Operations for Cancer of Lip at Massachusetts General Hospital from 1909 to 1918. C. C. Simmons and E. M. Daland, Boston.—p. 766.
*Resuscitation, Intracardiac Injections. D. W. Crile, Chicago.—p. 772.
Forward Dislocation of Both Bones of Forearm at Elbow. I. Cohn, New Orleans.—p. 776.
Subastragaloid Dislocation of Foot; Three Cases. B. H. Moore, Chicago.—p. 788.
Fractures of Both Bones of Forearm with Great Dislocation Treated with Pin Traction. R. A. Koopmans, Rotterdam, Holland.—p. 793.
New Traction and Suspension Bone Tongs. E. J. Hoglund, Chicago.—p. 800.
Transsacral Nerve Block Anesthesia in Surgery of Pelvic Floor and Viscera. W. R. Meeker and E. B. Frazer, Rochester, Minn.—p. 801.
Pelvic Measurements by Roentgen Ray. A. B. Spalding, San Francisco.—p. 813.
*Aseptic Method of Intestinal Aanastomosis. W. C. Burket and W. B. McClure, Evanston, Ill.—p. 816.

Primary Tumor of Ureter.—Aschner found forty-seven cases of primary epithelial tumors of the ureter recorded in the literature. Of these only four were squamous cell carcinoma. One case is reported. It was a hydronephrotic, infected kidney with bifid pelvis, with leukoplakia, and squamous cell carcinoma of the upper ureter. The cases previously recorded are analyzed.

Elusive Ulcer of Bladder.—Fourteen cases are reported by Kretschmer. Of the eight patients operated on, one is having a relapse and another has pus and staphylococci in the urine.

The remaining patients consider themselves well; that is, they are free of symptoms. Of the remaing four cases, two are no longer under observation and in the other two there has been an improvement, without any treatment. However, these two cases are not entirely free of symptoms.

Results of Operations for Cancer of Lip.—One hundred and seventy-two cases of primary cancer of the lip were admitted to the hospital during a ten years period together with fifteen cases recurrent from previous operation. No attempt has been made to determine the end-results in the recurrent cases or those in which no operation was performed. Of the remaining 163 cases, the end-result is known in 122 instances. The radical operation was performed in 122 cases with the removal of the glands from one side of the neck in seventy-three and from both sides in forty-nine. There were three postoperative deaths in the series of 122 radical operations, an operative mortality of 2.5 per cent. In sixteen patients in whom the growth was extensive it was found impossible to close the defect in the lip in the usual manner without tension or without making the oral opening too small. Some form of plastic operation was performed to remedy the defect. Of the fourteen patients in this group who have been traced, ten have died of a recurrence of the disease, while only four (28.3 per cent.) are living and well. Of the 122 cases the end-result is known in 103, but in five cases the data are inconclusive, the patients having died of some other disease within the three-year limit without recurrence. Of the remaining ninety-eight cases, sixty-eight patients are living and well without evidence of the disease, or have died of other cause more than three years after operation, while thirty are dead; twenty-seven from a recurrence of the disease and three as a result of the operation. This gives 68.1 per cent. cures following the radical operation. The percentage of cures in the cases in which metastatic cancer was demonstrated in the glands removed was much smaller than in the cases in which no metastases were found. In nineteen traced cases in which the glands were involved by the disease, five patients are well (27.7 per cent.), while in the seventy-two conclusive traced cases in which no cancer was found in the glands, sixty-three patients are well (86.6 per cent.). Of the thirteen patients dying of a return of the disease, the site of the recurrence is known in nine. In four patients the recurrence was in the glands of the neck only, in four it was both glandular and local, and in one it was local only. If 27 per cent. of the cases in which metastatic cancer is demonstrable in the glands removed from the neck are cured by a radical operation, it is presumable that a certain number of cases in this group would have been cured if the more extensive operation had been performed. The average length of life of all patients dying of recurrence from the date of operation was 23.3 months. In cases in which the glands removed at operation showed cancer, the length of life was slightly shorter than the average (21.7 months). With one exception in all fatal cases the recurrence or death occurred within the three-year limit. One patient died of glandular recurrence seven years after the primary operation.

Intraventricular Injection of Epinephrin in Cardiac Failure.—Crile reports a case of cardiac and respiratory failure due to chloroform and shock in which direct cardiac massage and stimulation combined with artificial respiration failed to resuscitate. Intraventricular injection of epinephrin, 10 c.c. of a 1:1,000 solution (after at least fifteen minutes of complete cardiac failure) resuscitated cardiac function. Respiration returned after forty-five minutes. Four other cases are cited.

Aseptic Method of Intestinal Anastomosis.—The method described by Burket and McClure is dependent for success on an instrument formed of reciprocal male and female halves.

West Virginia Medical Journal, Huntington

December, 1922, **17**, No. 6

Atropin and Hypertonic Infant. A. A. Shawkey, Charleston.—p. 201.
Group Practice Menace. J. E. McDonald, Logan.—p. 204.
Anorectal Infections. E. H. Terrell, Richmond, Va.—p. 206.
Lueside. P. Seydel, Nitro.—p. 212.
Treatment of Acute Melancholia. E. W. Fell, Cincinnati.—p. 222.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

November, 1922, **34**, No. 11

Question of Sensitiveness to Nonbacterial Toxins and Proteins. A. Whitfield.—p. 331.
Exfoliative Dermatitis Following Administration of Arsenobenzol and Its Derivatives. D. Lees.—p. 339.
Treatment of Psoriasis Vulgaris by Intravenous Injections of Sodium Salicylate. J. Bravo.—p. 353.

British Medical Journal, London

Nov. 25, 1922, **2**, No. 3230

*Diagnosis and Treatment of Cholelithiasis. R. Morison.—p. 1005.
*Id. F. Macrae.—p. 1008.
Treatment of Nonmalignant Affects of Colon. I. W. A. Lane.—p. 1014.
Id. G. Waugh.—p. 1016.
Id. H. M. W. Gray.—p. 1020.
Id. H. J. Paterson.—p. 1023.
Id. A. J. Walton.—p. 1024.
*Operative Treatment of Difficult Hernias. H. S. Souttar.—p. 1024.
Bacteria of Tonsils and Adenoids. N. Wall.—p. 1025.
*Clinical Thermometer in Prevention of Pulmonary Tuberculosis. E. Clark-Jones.—p. 1026.
Acute Proctitis Causing General Peritonitis and Death. W. H. Du Pre.—p. 1027.
Fibroids Complicating Septic Abortion. F. H. Wallace and G. Wilson.—p. 1028.

Treatment of Cholelithiasis.—Morison's present views are against cholecystectomy as the operation of election in gallstone cases. He raises an objection to the various textbook descriptions of cholecystitis. The terminations of cholecystitis are the same as the end results of inflammation everywhere in the body. They may be catarrhal, or ulcerative, or phlegmonous, or suppurative, or gangrenous, or anything else adding to the difficulties of understanding them, but that should cease to be the teaching of writers who are to train the younger surgeons.

Drainage Following Gallbladder Operations.—Believing that the real danger in cholelithiasis lies in the infection accompanying it, Macrae has always arranged for drainage when cholecystostomy or cholecystectomy has been performed, and for the same reason he always hesitates to do the so-called "ideal" operation of cholecystomy.

"Darning" a Hernia.—Souttar uses a specially prepared mercurialized silk in his herniotomies because it is not absorbed, but is so far assimilated by the tissues as to become an integral part of them, providing a scaffolding around which fibrous tissue may be laid down, but preventing the stretching to which such tissue is liable. Microscopic sections show the strands of silk impregnated with fibrous tissue cells, the whole forming substantially a single structure. He uses the term "darning the hernia" for this operation.

Use of Thermometer in Preventing Pulmonary Tuberculosis.—Clark-Jones urges the claims of the clinical thermometer, understood and properly used, in the prevention of tuberculosis by demonstrating the slight persistent fever, and thereby ensuring rest. Pulmonary tuberculosis is manifested in its earliest inroads by a feeling merely of being below par, together with a slight degree of fever, which usually goes unrecognized.

Dec. 2, 1922, **2**, No. 3231

Degenerative Diseases of Liver. H. Rolleston.—p. 1055.
Prognosis and Treatment of Chronic Renal Disease. H. Maclean.—p. 1067.
Acute Myelogenous Leukemia: Aplastic Anemia. R. A. Fleming and J. Davidson.—p. 1074.
*Case of Intrapericardial Aneurysm of Aorta. B. T. Parsons-Smith.—p. 1075.
*Present Value of Widal Reaction in Inoculated Subject. A. G. Shera.—p. 1076.
*Laparotomy for Intestinal Obstruction on Board Ship. V. Moxey.—p. 1077.
"Hemorrhagic" Chicken-Pox. W. F. Shanks.—p. 1077.
Acute Meningitis Following Influenzal Mastoiditis. F. Muecke and W. H. Sarra.—p. 1077.

Intrapericardial Aneurysm of Aorta.—In arriving at a diagnosis in this case Smith was largely guided by the following considerations: (1) The punctate heaving quality of the pulsation, which to palpation appeared synchronous with the

arterial pulse. (2) The presence of aortic reflux, which, in view of the positive complement fixation test, would suggest syphilitic disease of the aortic stem, and the conduction of the diastolic murmur from its seat of production over the entire region of the tumor and upward into the cervical vessels. (3) The fact that the aortic root and the first 2 inches of its ascending arch were situated within the confines of the pericardial sac. (4) That the direction of least resistance to the spread of a dilatation aneurysm proceeding from the aortic root would be downward within the cavity of the pericardium. (5) The fluoroscopic appearances which identified the shadow of the tumor with that thrown by the heart and great vessels, and the distinct line of continuity which connected the marginal extremity of the tumor with the right-hand border of the ascending aorta; also the definite character of the expansile pulsation which seemed to warrant the exclusion of new growth or encapsuled pericardial effusion. (6) The absence of pressure signs, which, moreover, would be hardly likely to complicate the early stages of an aneurysm originating within, and governed in the matter of the direction of its spread by, the pericardial investments.

Value of Widal Reaction in Inoculated Subject.—A positive Widal reaction in the inoculated subject, even four or five years after inoculation, Shera asserts, is of very doubtful value in paratyphoid fever unless of markedly high titer. This in no way detracts from the superlative value of the reaction in the noninoculated.

Laparotomy on Board Ship for Intestinal Obstruction.—In Moxey's case a knuckle of ileum, about 2 feet from the cecum, was incarcerated in a mesenteric pocket; this was withdrawn. The protruded intestines were replaced, no flushing of the peritoneal cavity was employed, and the abdominal wall was closed in the usual three layers. The patient recovered.

Lancet, London

Dec. 2, 1922, **2**, No. 5179

Medicolegal Position of Anesthetist. J. D. Mortimer.—p. 1155.
*Internal Secretion of Pancreas and Its Application to Treatment of Diabetes Mellitus. R. L. M. Wallis.—p. 1158.
*Mechanical Treatment of Severe Dropsy. J. W. Carr.—p. 1161.
Uses of Poisson's Formula. G. de M. Rudolf.—p. 1162.
Succession of Dominant Species in Mixed Bacterial Culture in Fluid Medium. W. W. C. Topley and H. A. Fielden.—p. 1164.
Observations on Canine Feces on London Pavements. H. C. Brown and G. E. F. Stammers.—p. 1165.
*Prevention of Catarrhal Deafness. M. Yearsley.—p. 1167.
The Anticoagulating Properties of Arsenobenzols. C. Flandin and A. Tzanck.—p. 1177.
Physiologic Study of Phenomena of Shock (Nitritoid Crisis) Produced by Intravenous Injections of Arsenobenzols. M. Pomeret.—p. 1178.
Treatment of Syphilis by Intramuscular Injections of Amino-Arsenophenol. M. Bloch.—p. 1179.

New Pancreas Preparation in Treatment of Diabetes Mellitus.—A preparation of the pancreas obtained by alcoholic extraction in vacuo has been made by Wallis. He asserts that this extract, when given by the mouth, is capable of reducing the blood sugar in certain cases of diabetes mellitus. By reducing the blood sugar it is possible to increase the patient's tolerance to carbohydrates. The pancreatic extract is, therefore, useful as an adjuvant in treatment, particularly in cases of diabetes mellitus with complications—e. g., gangrene, threatened coma, etc. The duration of treatment as well as the actual dosage is determined by the general condition of the patient, the blood sugar, and the actual tolerance to carbohydrates.

Puncture of Skin in Treatment of Dropsy.—The simplest and most effective method of treating severe dropsy—either cardiac or renal in origin—which does not improve under the administration of the usual drugs, heart tonics, aperients, etc., Carr says, is merely to puncture the swollen feet or legs with a surgical needle. The punctures should be made where the swelling is most marked, usually over the dorsum and the malleoli, five or six punctures close together in each situation. From such punctures fluid will often flow steadily and continuously for several days, and if, as not uncommonly happens, they close before the dropsy has disappeared, fresh punctures may at any time be made in adjacent areas. There is not the slightest need for actual incisions into the subcutaneous tissues, such as are sometimes made. Before puncturing it is advisable to get the patient out of bed into a chair for a few hours, so that the feet become the most dependent parts and the edema fluid is able to gravitate down into them. The relief afforded by puncture is then more rapid. If possible the patient should remain in the chair while the drainage continues. Should ascites be present also, the drainage of the feet first relieves this, and then the edema gradually diminishes from the top of the thighs downward. Paracentesis of the abdomen is rarely necessary.

Prevention of Catarrhal Deafness.—Yearsley advocates the performance of submucous resection of the nasal septum to prevent deafness.

Medical Journal of Australia, Sydney

Nov. 11, 1922, **2**, No. 20

*Familial Hemolytic Splenomegaly. S. O. Cowen.—p. 545.
Prevention of Diphtheria. H. O. Lethbridge.—p. 561.

Familial Hemolytic Splenomegaly.—Cowen records the investigation of a remarkable series of cases of enlargement of the spleen associated with anemia and jaundice occurring in one family of forty-eight members. Of the twenty-six whose condition has been ascertained, fourteen were found to be affected with the family disease, while three others, now dead, whose records are too meager to justify a positive diagnosis, were probably affected.

Practitioner, London

November, 1922, **109**, No. 5

*Operation as Part of Conservative Treatment of Pott's Caries. W. I. de C. Wheeler.—p. 341.
Pneumonia and Its Treatment. N. Raw.—p. 357.
*Congenital Heart Disease and Its Prognosis. E. Bellingham-Smith.—p. 365.
Syphilis and Marriage. R. P. White.—p. 380.
Some Essential Details for Complete Removal of Tonsils by Reverse Guillotine Method. M. Vlasto.—p. 389.
Phlyctenular Ophthalmia. W. F. Stiell.—p. 395.
*Treatment of Urinary Incontinence. K. R. C. Hallowes.—p. 400.
Books Which Have Helped Me. J. R. Keith.—p. 402.

Conservative Treatment of Spinal Tuberculosis.—The conservative treatment of spinal tuberculosis in children, Wheeler says, is best carried out without operation. All adults, in the absence of special contraindications, and who either cannot obtain or will not endure prolonged treatment by orthodox methods, should be given the benefit of operation. The additional fixation obtained by a bone graft often determines cure in a patient who has not responded to the recognized nonoperative treatment. An active primary tuberculous lesion is not per se a contraindication to operation. Prudence dictates three months' postoperative treatment in bed and rest should be advised until twelve months have elapsed.

Prognosis of Congenital Heart Disease.—Smith endeavors to show that the prognosis of congenital heart disease is not always as grave as it is stated to be. His paper is based on a study of forty-eight postmortem examinations and on the notes of eighty-six cases. It is interesting to note that among the abnormalities there were twenty-one cases of widely patent ductus arteriosus; twenty-four cases of actual deficiency in interauricular septums, such as a widely patent foramen and seven cases of patent interventricular septum, the effect in these cases varying from an almost complete absence to small orifices admitting only a probe. Transposition of the heart occurred only once and was not associated with any intracardiac defect. In a few cases the cardiac malformation was associated with defects elsewhere. Two children were mongolian imbeciles. One child had complete harelip and cleft palate, and another had spina bifida.

Faradism in Treatment of Urinary Incontinence.—Hallowes encourages the use of faradism in these cases. One pad is placed over the lumbar enlargement of the spinal cord and attached to an electrode. The other electrode is a metal sound or catheter introduced into the urethra, but not into the bladder.

South African Medical Record, Capetown

Nov. 11, 1922, **20**, No. 21

Gastric Ulcer.—P. N. Vellacott.—p. 409.

Archives Franco-Belges de Chirurgie, Brussels

July, 1922, **25**, No. 10

*Grafts of Bones of Embryos. R. Simon and M. Aron.—p. 869.
*Access to Biliary Passages. C. Willems.—p. 884.
*Mesenteric Gland Tuberculosis. J. Moreau and L. van Bogaert.—p. 888.
Rare Traumatisms of the Wrist. E. Delannoy.—p. 926.
Rare Malformation of Hands. A. Dhalluin.—p. 931.
Polysyndactylia. J. Verdelet and J. Chavannaz.—p. 934.
Bilateral Strangulated Hernia. A. Chalier and P. Wertheimer.—p. 938.
*Minor Displacement of Cervical Vertebrae. Gruget.—p. 939.
Fracture of Cervical Spine. E. Vandeput.—p. 942.
*Displacement of Cervical Vertebra. J. Cahen.—p. 945.
*Paralysis of Scapular Girdle. E. Smeesters.—p. 951.

Grafts of Embryonal Bones.—Simon and Aron have been experimenting with long bones and joints taken from guinea-pig embryos from 6 weeks to 2 months old transplanting them in other adult or young guinea-pigs. These implants survived longer than under other circumstances, but finally they obeyed the general laws regulating bone implants, namely, regression, the breaking down of the bone tissue and its reconstruction at the expense of the host. The interval before this occurred, however, was much longer with the embryo bones than under other conditions, especially when soft parts were transplanted with the graft.

Access to the Liver.—Willems' illustrations show how he raises the liver region by a cushion below and cuts from close to the median line slanting down into the flank, extending the incision farther the greater the difficulties in the operation. One assistant devotes himself exclusively to drawing out the liver and pivoting it on the costal arch until its inferior aspect is fully exposed. He turns his back to the patient and grasps the right lobe of the liver each side of the gallbladder, and turns the liver over on the thorax. This renders all other retractors, etc., unnecessary, while there is nothing to obstruct the field of operation as his hands are outside of the abdomen. This pivoting outward and upward of the liver allows the amplest access to the biliary passages, facilitating operations on the gallbladder and bile ducts to a surprising degree. During the whole intervention the assistant holding the liver must not stir. The liver has to be held immovable, and his thread gloves over rubber gloves aid in this. The operation concluded, the cushion below is withdrawn and the liver returned to place, with a wick against its lower surface. The muscles are sutured in two tiers, and the skin is sutured, clips not holding well for this incision. He has always had a solid reunion, with never any tendency to eventration.

Primary Tuberculosis of Mesenteric Glands.—Moreau and van Bogaert compare with a case personally observed in a girl of 19 sixty-nine cases from the literature. The tubercle bacilli pass from the intestines into the glands without producing lesions in the bowel. The grave complications liable to result in young and old and the complete cure in 94.5 per cent. when the focus was excised justify prompt intervention. The local and general health was excellent in the fifty-eight reexamined from six months to thirteen years afterward. Only two instances of recurrence are known; in one a complete cure followed the second operation, but the other patient succumbed to tuberculous peritonitis two or three years later. The exact diagnosis had not been made beforehand in any instance, and probably certain cases of "chronic appendicitis" have in reality been tuberculous mesenteric gland lesions, as is evidenced by the occasional discovery of extinct tuberculous foci in these glands.

Minor Displacement of Cervical Vertebrae.—Gruget reports a case which confirms the grave symptoms liable to be induced by a lateral subluxation of the third on the fourth cervical vertebra. The young man had fallen from a ladder and the only symptoms were the twisting of the head to one side and difficulty in moving the left arm and shoulder which were very painful. The dislocation could be seen in the roentgenogram taken through the opened mouth, a week after the accident. Extension was applied, the head of the bed raised, and by the fourth day the deviation of the head was much reduced. Then, with the patient horizontal, the neck and head were manipulated to bring the head back into place which was easily accomplished. The extension was then continued for two days, and the cure has been complete to date.

In Cahen's case the seventh cervical vertebra was dislocated backward in an automobile accident, and the right arm was paralyzed and extremely painful. The symptoms spontaneously improved for four months and then have been stationary for the two months to date. The man of 53 refuses operative treatment. The improvement seems to indicate that the compression was from some clot rather than from a bone lesion. Prompt intervention at the time might have warded off his disability.

Paralysis of Scapular Girdle.—In Smeesters' case the paralysis of the deltoid and other muscles of the scapular girdle in the girl of 15 dated from childhood, and the right arm was useless, the muscles atrophied. He describes his method of treatment by a tendon and muscle plastic operation, arthrodesis, plaster cast and physical training, the results surpassing all expectations. The recuperation of the soft parts of the scapular girdle would in itself alone, he says, justify the intervention.

Bulletin Médical, Paris

Nov. 11, 1922, **36**, No. 46

Nephritis in Children. P. Merklen.—p. 905.
Treatment of Arrhythmia. G. Lyon.—p. 910.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 10, 1922, **46**, No. 31

Pernicious Anemia After Arsphenamin in a Tabetic. J. Deroide.—p. 1460.
Familial Recklinghausen's Disease. G. Guillain.—p. 1462.
*Occupational Poisoning by Benzene. Faure-Beaulieu and Lévy-Bruhl.—p. 1466.
*Pernicious Anemia Due to Bothriocephalus. A. Cramer.—p. 1475.
*Meningococcus Septicemia. C. Gandy and G. Boulanger-Pilet.—p. 1477.
Pneumocardiac Reflex. J. Walser.—p. 1483.
*Amebic Hepatitis. Eschbach.—p. 1487.
Diabetes Insipidus and Moral Insanity Following Encephalitis. C. I. Urechia and N. Rusdea.—p. 1492.
Solitary Tubercle of Cervical Cord. C. I. Urechia and N. Elekes.—p. 1497.
Compression of Brachial Plexus and Subclavian Vessels by a Goiter. A. Sézary and P. Bartet.—p. 1499.
*Phenolsulfonephthalein Test in Chronic Pulmonary Tuberculosis. P. Merklen and Minvielle.—p. 1502.
*Arsphenamin in Treatment of Inherited Syphilis. M. Renaud.—p. 1506.
*Radiography After Intramuscular Injections of Iodized Oil. Boulan.—p. 1509.

Occupational Poisoning by Benzene.—Faure-Beaulieu and Lévy-Bruhl describe a severe anemia with hemorrhagic purpura and metrorrhagia in a woman employing benzene in her work. The patient showed also transitory signs of an affection of the spinal cord. They believe that similar symptoms occurring after injections of arsphenamin may be due to the benzene in the drug. Legislation should enforce sufficient ventilation of the rooms where benzene is employed.

Pernicious Anemia Due to Bothriocephalus in Three Sisters.—Since only a small percentage of people suffering from bothriocephalus develop pernicious anemia, Cramer believes that a predisposition is necessary. In his cases of three intellectually inferior sisters he points out the extremely unhygienic conditions they were living in. Only one of the patients survived.

Meningococcus Septicemia Without Meningitis.—Gandy and Boulanger-Petit's patient showed for two months and a half intermittent fever resembling malaria, due to meningococcemia of type B. No meningeal symptoms were noted. The cerebrospinal fluid was normal. The treatment consisted in intravenous injections of antimeningococcus serum and later of an autovaccine. The patient was cured. They hold that attacks of erythema and papules (sometimes punctate hemorrhages) with intermittent fever should lead to a consideration of meningococcemia.

Amebic Hepatitis.—Eschbach's case long presented the signs of a clinical pulmonary affection with progressive cachexia until a slight enlargement of the liver aroused the suspicion of amebic hepatitis. The result of treatment by emetin was prompt and perfect, as well as in a second case of intermittent fever and progressive cachexia plus slight apical changes. An abscess in the liver several months later confirmed the diagnosis.

Phenolsulphonephthalein Test in Chronic Pulmonary Tuberculosis.—Merklen and Minvielle compared the elimination

of phenolsulphonephthalein with the amount of urea in the blood and the Ambard index in seventeen patients. The test showed a parallel result except in some of the cases where the excretion of phenolsulphonephthalein was diminished. Some of them had a corresponding increase in the Ambard coefficient, while others, even with marked diminution of the excretion of phenolsulphonephthalein, had normal amounts of urea in the blood, and normal coefficients.

Arsphenamin in Treatment of Inherited Syphilis.—Renaud recommends a very intensive treatment.

Radiography After Intramuscular Injections of Iodized Oil.—Boulan proves by roentgenograms that intramuscular injections of iodized oil may give after five months shadows, that are darker than the bones. The resorption is so slow, that they could be distinguished even after three and a half years.

Paris Médical

Sept. 16, 1922, **12**, No. 37

*Blood Transfusion. A. Tzanck.—p. 249.
Surgery of Arteries: Two Cases. Delassus.—p. 252.
*Early Detection of Emphysema. G. Rosenthal.—p. 254.
Surgical Technic for Separation of Xiphopagus. Le Filliatre.—p. 256.
Alcoholism and Ambulatory Automatism. R. Benon.—p. 260.

Three Varieties of Blood Transfusion.—Tzanck discusses three kinds of transfusion. In very urgent cases after a great loss of blood it would be a mistake to try to have everything perfect: every donor is good and every apparatus. The main thing is to get a sufficient quantity of uncoagulated blood and inject it as near the heart as possible. To prevent coagulation, he takes in a vessel 2 c.c. of 10 per cent. solution of sodium citrate for every 100 c.c. of blood. In a very extreme emergency one could try to inject the blood directly into the heart by means of a syringe holding 50 c.c. and a needle 8 cm. long and of a caliber of 1.2 mm. Rhythmic injection of the blood may be a good means to excite the heart. Animal experiments were encouraging. The second variety are great transfusions, in which one has sufficient time to take all the necessary precautions. Tzanck mixes 0.5 c.c. of the blood of the patient with the same amount of the blood of the presumptive donor and injects it in the heart of a guinea-pig. A mixture of incompatible blood kills the animal. The whole test takes hardly five minutes. He injects the blood in four increasing fractions. The third kind of transfusion—small quantities of blood—medical transfusion—is very important. Its effect is much better than one would expect from the quantity of blood injected. It acts very well in hemorrhagic conditions.

Physiotherapic Syndrome of Emphysema.—Rosenthal points out that a healthy person can test the vital capacity of his lungs five times without any appreciable diminishing of the volume of expired air. He can get the same volume of air out, whether he is breathing slowly or fast. The emphysematous have a lower capacity at the start, and it diminishes in subsequent tests, because they become tired. Measuring of the respiratory force by manometers gives similar results. Rosenthal points out the frequency of nasal troubles in these cases, and recommends local nasal treatment and respiratory gymnastics.

Presse Médicale, Paris

Nov. 11, 1922, **30**, No. 90

*Hemiglossitis. G. Worms and J. Bercher.—p. 973.
Influence of Blood Pressure on Number of Erythrocytes. Lenaz.—p. 974.
*Affections of Lenticular Nucleus. Paulian et al.—p. 977.
Present Status of Radiotherapy for Sterility in Women. L. Cheinisse.—p. 977.

Hemiglossitis.—Worms and Bercher describe two cases of a very marked swelling of one half of the tongue. The affection is benign and heals soon. A third case was of a longer duration (four weeks).

Treatment of Affections of the Lenticular Nucleus.—Paulian and Brauner injected 1 to 2 c.c. of a 25 per cent. solution of magnesium sulphate into the spinal canal and 0.0005 gm. to 0.001 gm. of hyoscin subcutaneously. The combination prolongs the favorable effect of hyoscin on the respective troubles, especially in Parkinson's disease. Three cases are reported.

Nov. 18, 1922, **30**, No. 92

*Metabolism of Fats. H. Roger.—p. 993.
Benign Continuous Subfebrile States with Pleural Manifestations. C. Mantoux.—p. 995.
*Action of Hypophysis Extracts on Blood Coagulation. R. Feissly.—p. 997.

Metabolism of Fats.—Roger relates that not only the liver, but also the lung and the mesenteric glands are important organs for the metabolism of fats. It is not logical to deny the importance of the lungs for heat production. The blood acquires during its passage through the lungs a faculty for destruction of fat, which is not entirely due to the oxygen content. The action is confined to the erythrocytes. It is possible that some forms of obesity might be attributed to an insufficiency of the lungs.

Action of Hypophysis Extracts on Blood Coagulation.—Feissly finds that coctostable extracts of most organs, not only of the pituitary, act like weak solutions of peptones. The best technic for their use is by subcutaneous injections.

Progrès Médical, Paris

Nov. 11, 1922, **37**, No. 45

*The Mucous Membrane in Gastric Cancer. Loeper and Marchal.—p. 525.
*The Sympathetic and Periodic Psychoses. Laignel-Lavastine.—p. 529.
Basal Metabolism. J. Forestier.—p. 533.

The Functioning of the Gastric Mucous Membrane in Cases of Cancer of the Stomach.—Loeper and Marchal attribute the hyposecretion in cases of cancer of the stomach to the lesions of the whole mucous membrane found by other authors. These lesions are due to the irritating action of secretions of the tumor and to microbes. The proteolytic, lipolytic and amylolytic power of the secretions is partly due to disintegrated leukocytes. They recommend disinfection of the stomach by normal saline or chlorinated soda. Administration of hydrochloric acid and pepsin is advantageous.

The Sympathetic and Periodic Psychoses.—Laignel-Lavastine demonstrates the importance of the vegetative nervous system in some paroxysms of psychoses. These cases present usually signs of vagotonia, and can be favorably influenced by exciting the sympathetic (epinephrin) or depressing the vagus (atropin, etc.).

Riforma Medica, Naples

Oct. 23, 1922, **38**, No. 43

*Leptomeningitis of Otitic Origin. G. Gradenigo.—p. 1009.
*Omentopexy in Atrophic Cirrhosis of Liver. P. Fiori.—p. 1011.
Treatment of Trichophytosis by Intramuscular Injections of Iodid. P. A. Meineri.—p. 1015.
*Testicle Grafts. S. Voronoff.—p. 1017.

Treatment of Purulent Leptomeningitis of Otitic Origin.—Gradenigo advocates early and radical treatment of both the meningitis and the focus in the ear. Autovaccines are good and may be supplemented with specific serums, etc.

Diversion of Portal Blood in Atrophic Cirrhosis of Liver.—Fiori recommends the fixation of the omentum—omentopexy—in treatment, because it may arrest the progressing cirrhosis, and a better function of the liver may result.

Testicle Grafts.—Voronoff reports his experiments on animals dating from June, 1917, and on men since June, 1920. Even slices of testicles from cynocephalus monkeys implanted in human testicles gave good results. Although not pretending to explain the whole problem of senility by the atrophy of sexual glands, Voronoff believes that this is the main factor. The results depend very much on the site of the implantation. Voronoff prefers the peritoneum or the tunica vaginalis, because the transudation of plasma can keep up the nourishment of the graft before it is vascularized. Subcutaneous tissue and muscles cannot prevent a central necrosis, and the rest lasts merely for a few months. Voronoff opens the scrotum under local procain anesthesia and fastens the fragments of the implanted testicle at each end with catgut. The glandular surface faces the tunica vaginalis, which is scarified as well as the tunica albuginea. The fragments must not touch each other. Too small fragments are absorbed. The undivided testicle can be implanted only if it is small and from young animals. [This is stated to be the complete paper prepared for the French Surgical Congress in October. It was debarred from presentation by

publication of a summary of it in a daily paper just before the congress.]

Nov. 6, 1922, **38**, No. 45

*Blood Pressure and Extracts of Lymphatic Glands. V. Scarpa.—p. 1057.
Case of Whole Transverse Colon and Its Mesentery Contained in a Scrotal Inguinal Hernia. N. Novaro.—p. 1060.
A Case of Ambulatory Cerebrospinal Meningitis. G. Comporti.—p. 1063.
Present Status of Surgery of Benign Abdominal Tumors. E. Aievoli.—p. 1065.
Serum Treatment or Vaccine Treatment? I. Iacono.—p. 1066.

Lowering of Blood Pressure by Extracts of Lymphatic Glands.—Since extracts of lymphatic glands seem to have an action antagonistic to epinephrin, Scarpa tried their use in cases of hypertension. The extract was well tolerated and lowered the blood pressure a little (20 mm. mercury) twenty minutes after subcutaneous injection. The pressure returned very soon to the previous height.

Prensa Médica Argentina, Buenos Aires

Oct. 10, 1922, **9**, No. 13

Etiology of Diabetes Insipidus. C. Bonorino Udaondo and J. E. Carulla.—p. 333.
*Cancer of Testicle in Child. J. P. Garrahan and F. Ruiz.—p. 339.
*Myograph. V. Tedeschi.—p. 343.
Vitamin Treatment of Tuberculosis. R. F. Carrón.—p. 348. Cont'n.

Cancer in Testicle of Boy of Fourteen.—The whole was interpreted as tuberculosis of the testicle plus a hemorrhagic tuberculous polyserositis. Necropsy about a year after the first symptom—the swelling of the testicle—revealed that the testicle was the site of a primary cancer, and the pleura, peritoneum and pericardium showed diffuse carcinomatosis. In Chevassu's compilation of malignant tumors of the testicle, only 5 of the 128 cases were in children, and all these were under 5. Ruiz has compiled 16 additional cases, including the one here reported and one other, an embryoma, in a boy of 4.

Myograph.—Tedeschi expatiates on the advantages of the simplified vertical myograph of which he gives an illustrated description and tracings.

Oct. 20, 1922, **9**, No. 14

Secretion of Epinephrin and Nerves Involved. B. F. Houssay.—p. 377. Cont'd.
*Prophylaxis of Clots in Bladder. C. M. Squirru and L. Figueroa Alcorta.—p. 382.
*The Pituitary and the Inter-Brain. C. P. Waldorf.—p. 386. Conc'n in No. 15, p. 415.
*Acute Articular Rheumatism. S. Libarona Brian.—p. 394.
Iodized Tuberculins in Immunization Against Tuberculosis. J. Frenguelli.—p. 398.

To Prevent Blood Clotting in Bladder.—After operations and in case of hemorrhage from other causes, Squirru and Alcorta found that clots did not form when 10 c.c. of a 5 per cent. solution of sodium citrate was injected into the bladder. To date no untoward by-effects from this have been observed or known.

Disease of the Pituitary and Inter-Brain. — Waldorp describes in minute detail some cases of adiposis dolorosa, obesity, diabetes, etc., in which the combinations and course throw light on the etiology, pathogenesis and treatment, as he explains. His conclusion is that all these diseases need revision from the standpoint of their origin. Excessive or deficient functioning of the pituitary alone is responsible only for acromegaly, giant or dwarf growth, microsomias and nanosomias. The centers in the inter-brain or thalamencephalon are probably responsible for polyphagia, adiposis dolorosa and other forms of obesity, diabetes insipidus, glycosuria, dystrophia, somnolency and fever for which the pituitary has been incriminated hitherto. There seems to be some connection between the internal secretion of the pituitary and the thalamencephalon, as is evidenced in the benefit from pituitary treatment in diabetes insipidus, but no such benefit is apparent in adiposis and glycosuria of the alleged pituitary type.

Acute Articular Rheumatism.—Libarona Brian's treatment is a daily subcutaneous injection of a mixture of 1.5 gm. of sodium chlorid and 1.05 gm. of sodium sulphate in 50 c.c. of water. In his extensive experience with this treatment all the patients were cured without complications or recurrence. The cure followed most promptly in a case in which the interval since the onset was only seventy-two hours, while the disease persisted longest in a case with an interval of six days.

Semana Médica, Buenos Aires

Oct. 12-19, 1922, **2**, Nos. 41-42

*Transactions of National Medical Congress.—p. 731.

Hydatid Disease.—These two numbers of the *Semana* are devoted almost exclusively to the numerous reports on hydatid disease which was the subject appointed for discussion at the Second National Medical Congress which convened at Buenos Aires, Oct. 1 to 8, 1922. Echinococcus cysts were discussed from every possible standpoint, diagnosis, treatment, prevalence, prevention, pathology, etc., by Wernicke—who has since died—Parodi, Llambias, Lagos García, Copello, Carbonell, Greenway, Tumburus, Spangemberg, Saralegui, Ricardo Finochietto, Navarro, and del Sel. Hydatid cysts in the lungs or peritoneum were discussed in particular by Escudero, Lanari, Finochietto, Ahumada and Carelli. The whole forms a remarkable presentation of the most advanced knowledge in regard to hydatid disease and its prophylaxis.

Deutsche medizinische Wochenschrift, Berlin

Oct. 20, 1922, **48**, No. 42

*Psychogenous Dyspepsia. I. Boas.—p. 1405.
*Result of Decompressive Trephining. Anschütz.—p. 1406.
*Blindness after Migraine. W. Löhlein.—p. 1408.
Yearly Fluctuations in Human Physiology and Pathology. K. Beckmann.—p. 1409.
Symptoms of Overburdening of Diseased Kidneys. F. Hirschfeld.—p. 1411.
*Metabolism in Disease of the Pituitary. R. Plaut.—p. 1413.
Influence of Posture on the Diuresis in Health. P. Neukirch and K. Neuhaus.—p. 1413.
Resistance of Tropical Malaria to Quinin. H. Schalk.—p. 1415.
Diagnosis and Treatment of Affections of the Testicles and Epididymis. L. Casper.—p. 1416.
Pleuritis. Goldscheider.—p. 1417.
Local Application of Drugs in Ophthalmology. K. Steindorff.—p. 1419.
Genesis of Roentgen Injuries. O. Strauss.—p. 1420.
Handling and Keeping of Injection Syringes and Needles. H. Kritzler.—p. 1421.
Apparatus for Restoring Shape to Sunken Nose. Freund.—p. 1422.
Fight Against Rabies in Russia. L. Poleff.—p. 1422.
Address at Centenary of German Naturforscher Society. A. Strümpell.—p. 1423.

Psychogenous Dyspepsia.—Boas emphasizes the importance of recognizing this disease. The history of the patient shows that there is usually a feeling of pressure, without strict relation to the meals. Though the patients speak of "pains," careful analysis shows that it is only a feeling of oppression. Globus without any other signs of hysteria is very common, and nervous nausea quite frequent. Psychotherapy is necessary and any restriction in diet is harmful.

Result of Decompressive Trephining.—Anschütz finds that palliative trephining accomplishes nothing with quickly growing tumors and very high intracranial pressure of long standing. Some benefit is derived with slowly growing malignant processes. The results are very good in benign or stationary malignant processes, if we operate early.

Blindness After Migraine.—Löhlein recommends in cases of migraine with ocular changes the use of amyl nitrite during the attacks to prevent blindness by its dilating action on the vessels of the eye.

Respiratory Metabolism in Diseases of the Pituitary.—Plaut finds that the pituitary regulates the specific dynamic influence of food.

Oct. 27, 1922, **48**, No. 43

Unity or Duality of Tuberculous Processes in Lungs. J. Orth.—p. 1437.
Dietary Problems in the Treatment of Gout. H. Strauss.—p. 1438.
Siedentopf's Photomicrographic Ocular. Kaiserling.—p. 1439.
*A New Function of the Spleen. K. Naswitis.—p. 1441.
Comment on Pincussen's "Estimation of Urobilin." A. Adler.—p. 1442.
Reply. L. Pincussen.—p. 1443.
Internal Treatment of Gonorrhea. W. Scholtz.—p. 1443.
*Respiratory Movement of the Apices. J. Kelemen and F. Kornfeld.—p. 1444.
Electric Ophthalmia at Moving Picture Studios. Reichert.—p. 1445.
Frequency of Inadequate Lactation. W. Kahn.—p. 1446.
A Typical Traumatic Affection of Head of Second Metatarsal Bone. Quirin.—p. 1447.
Disease of Prostate. Diagnosis and Treatment. Casper.—p. 1448. Cont'd.
Diagnosis and Treatment of Disease of the Digestive Tract. L. Kuttner.—p. 1450.

Minor Surgical Technical Points in Ophthalmology. K. Steindorff.—p. 1451.
Aspects of Scientific Criticism from the Legal Standpoint. F. Leonhard.—p. 1453.

A New Function of the Spleen.—Naswitis injected laked blood into the dog from which it was taken. It increased the amount of blood corpuscles only in normal dogs. It failed to have any influence in this line after splenectomy. He concludes, that the spleen has not only an inhibitory, but also a stimulating influence on the bone marrow.

Respiratory Movement of the Apices in Initial Infiltration and Adhesions of Pleura.—Kelemen and Kornfeld noted that in leaning forward a diseased apex showed greater respiratory movements than the healthy. Lack of respiratory movements is a sign of adhesion of the apical pleura.

Klinische Wochenschrift, Berlin

Nov. 11, 1922, **1**, No. 46

*Jaundice Due to the Reticulo-Endothelial System. F. Rosenthal and M. Fischer.—p. 2265.
Tonus of Heart's Action. Reinhard Ohm.—p. 2269.
*Intermittent Heterochromia of Iris. H. Curschmann.—p. 2271.
*Experimental Tar Cancers. R. Bierich.—p. 2272.
Virchow's Congenital Interstitial Encephalitis. H. Siegmund.—p. 2274.
Chloramin as Disinfectant. M. Grünwald and F. Bass.—p. 2278.
Prognostic Importance of High Speed of Sedimentation of Erythrocytes in Children with Tuberculous Bronchial Glands. Z. v. Bokay.—p. 2280.
Capsella Bursae Pastoris Not a Substitute for Ergot. T. Franz.—p. 2282.
*So-Called Abscesses of Sweat Glands in Axilla. F. Rost.—p. 2283.
Genesis of Urticaria. H. Mautner.—p. 2284.
Simplified Apparatus for Micro-Determination of Acetone and Beta-Oxybutyric Acid. A. Lublin.—p. 2285.
Significance of Liver and Muscles for Supply of Serum Proteins. W. Nonnenbruch and A. Gottschalk.—p. 2285.
*Bilirubin Reaction in Blood. Adler and Strauss.—p. 2285.
Heart Findings in 171 Athletes. H. Herxheimer.—p. 2286.
Blepharochalasis and Struma Plus Hypertrophy of Lip Glands. K. W. Ascher.—p. 2287.
Mentally Defective Children. T. Gött.—p. 2288.
Modern Points of View in Protection of Frontiers Against Epidemics. Frey.—p. 2291.
The Acting Substances of Ergot. E. Rothlin.—p. 2294. Cont'd.

Jaundice Due to the Reticulo-Endothelial System.—Rosenthal and Fischer were not able to prevent the formation of jaundice in animals by blocking the reticulo-endothelial system.

Intermittent Heterochromia of Iris of Nervous Origin.—Curschmann reports a case of ulcer of the stomach, in which the periods of pain were accompanied by a transitory discoloration of the iris of the side where the pains were felt.

Experimental Tumors of Animals.—Bierich finds that in the first stage after the continued application of tar, the fibers of connective tissue swell and elastic fibers multiply. Mast cells appear in numbers. All of these changes stop and even retrogress in the second stage, when the epithelium seems to overcome this barrier and grows into the depths. Since changes in the connective tissue can be produced by an application of roentgen rays or by repeated subcutaneous injections of arsenic, Bierich tried to prevent tar cancer formation in animals by these methods. His success speaks for the protective influence of connective tissue.

So-Called Abscesses of Sweat Glands in Axilla.—Rost attributes the abscess to an infection of lymphatic vessels. Roentgen-ray treatment gives good results.

Mechanism of Bilirubin Reaction in the Blood.—Adler and Strauss found that Hijman's direct reaction for bilirubin is connected with a lowering of the amount of globulins in the serum. Addition of globulins to the serum delays the appearance of the test. Electrolytes and other substances which dehydrate colloids, change the indirect into a direct reaction.

Münchener medizinische Wochenschrift, Munich

Aug. 18, 1922, **69**, No. 33

Indications for Surgical Treatment of Gallstones. F. Voelcker.—p. 1205.
Acute Yellow Atrophy of the Liver. G. B. Gruber.—p. 1207.
Puerperal Sepsis, Due to Gas Bacilli, plus Jaundice. W. Simon.—p. 1209.
Favorable Results of Sauerbruch's Cineplastic Method After Amputation of Arm. P. Jottkowitz.—p. 1212.
Turning of the Heart in High Position of Diaphragm. P. v. Zezschwitz.—p. 1214.
Influence on Leukocytosis of Irradiation of the Spleen. W. Förster.—p. 1215.
Bloodless Transplantation of Skin. W. Wolf.—p. 1217.
Instrument for Tying of Knots. K. Fecher.—p. 1217.
Ascarid in Liver. R. Veit.—p. 1219.
Comment on Kappis' "Free Bodies in Joints." G. Axhausen.—p. 1219.
Anemia of Infants Due to Goat's Milk. K. Blühdorn.—p. 1220.
History of Tuberculosis. G. Sticker.—p. 1221. Cont'd.
Medical Estimation of Diseases of Heart and Vessels. Grassmann.—p. 1224.

Oct. 6, 1922, **69**, No. 40

*Differential Diagnosis of Abdominal Affections. A. Läwen.—p. 1423.
Genesis of Renal Calculi in First Weeks of Life. König.—p. 1426.
Relation of Mode of Baking to Digestibility of Bread. Kestner.—p. 1429.
*Roentgen Irradiation in Hair Disease. Thedering.—p. 1430.
Choledochoduodenostomy in Place of Hepaticus Drainage by the Kehr Method. H. Flörcken.—p. 1431.
Birth Trauma of Brain. P. Schwartz.—p. 1431.
Treatment of Pertussis. Klotz.—p. 1431.
Examination of Abdomen in Abdominal Pain. F. Franke.—p. 1437.

Paravertebral Injections of Procain in the Differential Diagnosis of Intra-Abdominal Affections.—Läwen has been investigating to discover whether by means of paravertebral injections of a 2 per cent. solution of procain, by the resulting suppression of the pain in restricted areas, it may not be possible to establish a more accurate differential diagnosis of certain intra-abdominal affections. He had especially in mind the better differentiation of various forms of acute cholecystitis from appendicitis, gallstone colic from right renal colic, chronic manifestations of gallbladder disease from stomach symptoms, and acute appendicitis from incipient pneumonia or inflammatory affections of the adnexa. His experience covers ninety cases. In judging the results, it is important to decide whether the effect is a local effect on the nerves involved or a general effect from absorption of the anesthetic. Paravertebral injections of procain afford an opportunity of observing the segmental effect on various portions of the intestines and other viscera. He found that a single injection of 10 c.c. of a 2 per cent. procain solution to the right of the tip of the ninth spinous process; that is, at the tenth right thoracic nerve, will suffice completely to suppress a severe attack of gallstone colic. Further observations showed that procain injections at the right tenth thoracic spinal nerve are effectual not only on colic pains but also on persistent pains and sensitiveness to pressure in the gallbladder region and at the margin of the liver. The effect of the injection was especially marked in two cases in which the diagnosis "cholelithiasis" could not be surely established clinically. Other observations revealed the fact that this effect of the procain injected into the right tenth thoracic spinal nerve cannot be elicited unless the process is confined to the gallbladder and the bile ducts. His observations on paravertebral injections of procain in affections of the stomach and in colicky pains radiating from the kidney and ureter were not extensive enough to warrant final conclusions. The right tenth dorsal nerve is the one to reach in disease of the biliary apparatus; the right seventh dorsal nerve for the lesser curvature of the stomach, and the right first and second lumbar nerves for the appendix.

Roentgen Irradiation in Hair Disease.—Thedering has employed roentgen irradiation in alopecia totalis in place of the quartz lamp. He uses an irritative dose, which is a small fraction of the epilation dose—only from 1 to 2 erythem units—with a 0.5 to 2 mm. aluminum filter, at intervals of two weeks, from four different points on the scalp. Also in alopecia areata, seborrhea, etc., he has come to have more confidence in roentgen irradiation than in the quartz mercury lamp. One added advantage is that it reaches more satisfactorily small hidden patches or foci on the scalp of women.

Oct. 20, 1922, **69**, No. 42

*Hematuria and Nephritis in Appendicitis. W. Anschütz.—p. 1473.
*Callus Formation in Foot Without Fracture. W. Müller.—p. 1475.
*Prophylaxis and Treatment of Meningeal Syphilis with a New Endolumbal Technic. Gennerich.—p. 1475.
*Elimination and Determination of Arsphenamin in Urine. W. Autenrieth and H. Taege.—p. 1479.
Apparatus for Focusing Roentgen Rays on Tumors of the Pelvis. O. Gleichmann.—p. 1481.
*Treatment of Cardiospasm. J. Oehler.—p. 1482.
Comment on Schottmüller's "Cystitis and Cystopyelitis." H. Hohlweg.—p. 1482. Reply. Schottmüller.—p. 1483.
The Origin of Anatomic Knowledge in the Iliad and Odyssey. O. Körner.—p. 1484.
Hemorrhagic Diatheses. P. Morawitz.—p. 1487.

Hematuria and Nephritis in Appendicitis.—Anschütz points out that acute nephritis in patients suffering from appendicitis is an indication for appendicectomy. The nephritis is usually hemorrhagic, and it heals surprisingly quickly.

Callus Formation in Foot Without Fracture.—Müller attributes the formation of callus in the metatarsus without fracture to a reaction against insults and too great mechanical strain.

Prophylaxis and Treatment of Meningeal Syphilis with a New Endolumbal Technic.—Gennerich emphasizes the necessity of examining the spinal fluid in syphilitics. He describes his methods of endolumbal injections of arsphenamin with the use of two punctures.

Elimination and Determination of Arsphenamin in Urine.—Autenrieth and Taege find that scarcely 5 or 6 per cent. of the arsphenamin is eliminated by the urine, and this almost entirely in the first five hours. Arsenic can be demonstrated for a much longer time after the injection of arsphenamin; 30 mg. of arsenic was found in the liver in one man three months after the course of arsphenamin.

Simple Treatment of Cardiospasm.—Oehler gives the patient the stomach tube, and orders him to introduce it until it does not cause any discomfort. The patient thus cures himself in the course of time, sometimes in only a few days.

Wiener klinische Wochenschrift, Vienna

Oct. 19, 1922, **35**, No. 42

Tuberculosis from Clinical Standpoint. W. Neumann.—p. 817.
*Individualizing Treatment in Syphilis. J. Kyrle.—p. 820.
Aldehyd Differentiating Serologic Reaction. G. Beccadelli.—p. 823.
Technic of Microscopic Examination of Gallstones. Maresch.—p. 825.
Cesarean Section in Local Anesthesia. Waldstein.—p. 825.
Kielland's Forceps in Obstetrics. R. Stiglbauer.—p. 827.
Comment on Pewny's "Sedimentation Test." Starlinger.—p. 828.

Blood Picture and Individualizing Treatment in Syphilis.—Kyrle finds that a comparatively mild treatment is sufficient in cases with primary leukocytosis or which react strongly to injections of sodium nucleinate or similar products.

Oct. 26, 1922, **35**, No. 43

Disturbances of Digestion in Diseases of Pancreas. K. Glaessner.—p. 837.
*Duodenal Content and Gastric Secretion. Kauders and Porges.—p. 838.
Biology of the Reticulo-Endothelial Apparatus. K. Paschkis.—p. 839.
Combined Intravenous Treatment of General Paresis. W. Jacob.—p. 840.
*Resistance of Staining Against Boiling. K. Preis.—p. 841.
Typhoid Resembling Toxic Forms of Paratyphoid. v. Balogh.—p. 844.
Comment on Kogerer's "Hypnotic Analgesia." W. Neutra.—p. 845.

Influence of Duodenal Contents on Gastric Secretion.—Kanders and Porges applied different solutions directly into the duodenum of men. They found that hydrochloric acid (0.18 per cent.) and acetic acid (0.3 per cent.) inhibited the secretion of the stomach. Also high concentration of sodium chlorid, sulphate and glucose. Solutions of sodium carbonate and a 2.5 per cent. solution of magnesium sulphate did not disturb it.

Resistance of Tubercle Bacilli Staining Against Boiling.—Preis found that the human tubercle bacilli stained by carbolfuchsin retain the color after being boiled for five minutes, while other acid-fat bacteria, including the bovine type, are decolorized much quicker.

Zentralblatt für Chirurgie, Leipzig

Sept. 2, 1922, **49**, No. 35

Spinal Epimeningitis. H. Braun.—p. 1274.
Conduction Anesthesia Applied to the Leg. L. Drüner.—p. 1276.
*Restricted Use of Tampons in Incision Wounds. O. M. Chiari.—p. 1281.
Immobilization on Battle Field of Fractured Long Bones. A. Gregory.—p. 1282.
Slitting of Muscles to Increase Weight-Bearing Power for the Sauerbruch Arm. C. ten Horn.—p. 1284.
Remedying of Defects in Vessel Walls by the Gluing on of Rubber Patches. W. Müller.—p. 1287.
Remarks on Reyher's "Artificial Anus." V. Hacker.—p. 1289.
Remarks on Neudörfer's "Bellocq's catheter." O. M. Chiari.—p. 1290.

No Tampons in Incision Wounds.—Chiari explains his method of keeping open such small incisions on the fingers and hand as require it, by suturing the edges of the wound to the adjoining skin. Doubtless many surgeons have used the method, he thinks, but in the thirty cases in which he has used it the past six months the wounds have healed so well without the use of tampons that he thought it might not be superfluous to call attention to the method. To the wounds he applied ointments or sterile gauze, and hot hand baths are given, beginning the day after the incision.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 14, 1922, **2**, No. 16

*Gastric Cancer and Gastric Ulcer. F. A. Schalij.—p. 1726.
Chronic Arsenic Poisoning. U. G. Bijlsma.—p. 1729.
*Intussusception in Children. J. C. van der Ven.—p. 1733.
Speaking and Lip Reading by Deafmutes. J. J. Bruins.—p. 1737
Seroprophylaxis of Measles. C. M. Kroes.—p. 1746.
Case of Eunuchoid Giant Growth. C. van Luijt.—p. 1748.
Bilateral Mammary Cancer with Discharge Resembling Milk. H. L. Coopman.—p. 1753.
Present Status of Spirochetal Jaundice, Arsphenamin Jaundice and Acute Yellow Atrophy of the Liver. I. Snapper.—p. 1755.

Gastric Cancer and Gastric Ulcer.—Schalij presents evidence to sustain his view that old chronic gastric ulcers very rarely become cancerous. In 200 private patients with gastric cancer there were only 15 with a history of preceding stomach disturbance of any kind. In 6 of 97 operative cases there had been some slight and transient stomach trouble at some time, but nothing suggestive of ulcer. In 12 the history indicated old gastric ulcer as also in 3 of the 103 nonoperative cases. This percentage is small and is probably smaller still in reality, as the cancer may have developed at some other point in the stomach, remote from the old ulcer. He has encountered instances of this. He urges operative treatment in all cases of long persisting stomach disturbances but almost solely from the hope of finding an old hard ulcer, the removal of which may restore the patient to health. His operative group of cancer cases included 72 over 50, 18 between 40 and 50, 5 between 30 and 40, and one 23 and one 28 years old.

Intussusception in Children.—Van der Ven comments on the acuter course and the different factors of invagination in children. In a recent group of 10 cases in Lanz' service, the children were all under 2. All recovered in the 9 cases in which the interval from the first symptoms had been from three to thirty-six hours. The interval had been four days in the one fatal case. In 5 of the cases there had been a preceding period of diarrhea and gastro-intestinal derangement; some dietetic error is evidently a factor. In one case the cecum protruded from the anus as a large tumor, red and bleeding, and it was found that the child of 2 had been fed on herring with mustard sauce. Diarrhea had followed this and then intussusception. The invaginatum could not be palpated in 3 cases; all but 2 had blood in the stools. In another case the symptoms indicated invagination but they subsided spontaneously. The diagnosis in this case is still uncertain. The operation was made in all the cases as brief as possible; no atempt was made to fasten the loop to the abdominal wall as some recommend. There has been no tendency to recurrence in any instance. In 3 cases the appendix, in one a diverticulum was involved, and in one case some mesenteric glands were tuberculous. When pure blood is seen at the anus, the invagination has probably only just occurred. It thus is a favorable element, as the surgeon is more likely to get a chance to operate early. Lanz has been one of the pioneers in insisting on prompt operation for invagination and incarcerated hernia, his denunciation of taxis in 1902 having been a turning point.

Oct. 28, 1922, **2**, No. 18

Classic or Modern Preparatory Medical Training? G. von Rijnberk.—p. 1930.
*Experiences with 250 Cases of Diabetes. W. Hoogslag.—p. 1934.
Structure and Import of the Connective Tissue. G. C. Heringa.—p. 1952.
Modified Sulfoxylat-Salvarsan. P. Rinsema.—p. 1963.

Diabetes.—Hoogslag says that in 215 of his 250 cases of diabetes he found consanguineous marriages in 8 and 5 in this group of 8 were Jews. The Jews numbered 41 in his total of 250 cases. The ages ranged from 10 to 79 years, and the occupation was an unmistakable factor, in that conditions predisposing to corpulence favored diabetes also. Captains of passenger steamers are peculiarly predisposed as they have to preside at the meals and they get little exercise. Eating less and exercising more may cure without further measures. Lipogenous diabetes is found almost exclusively among the well to do. Lean diabetes is encountered in rich and poor alike, in children and especially in brain workers and in those with much responsibility. None of his diabetic patients complained of hunger but most of them of lassitude, both physical and mental, and of pains, in the most diverse parts

of the body. The practitioner must always bear in mind the protean nature of the manifestations of diabetes, and examine for sugar in every puzzling case. He cites a number of examples of patients applying to one physician after another before the diabetes was suspected; one was being treated for supposed sciatica; one by a skin specialist for a traumatic affection on the leg which refused to heal; another was being treated by a urologist for vulvar pruritus and dysuria. As no benefit followed, she consulted a female quack who recognized the diabetes and cured her by dieting. Hoogslag remarks that he was amazed at this quack's discernment, until a little later he was consulted by this quack who it seems had had diabetes herself for years. She had suffered from vulvar pruritus and had cured it on a physician's advice by the dieting, which she now advised in her turn. In another case pains in the face after exposure to wind were treated by the family physician for rheumatism without avail. Teeth were extracted and finally the rhinologist performed an intranasal operation. A surgeon then injected alcohol to block the nerve, but with only transient benefit. Lead poisoning was then suspected. Finally the patient took some urine to a quack but his sham examination revealed nothing. The man's daughter overheard a woman saying that the pains in the face from which she used to suffer had not returned since her doctor had found sugar and regulated her diet. The daughter then took a bottle of urine to the family physician, and he was mortified indeed to find 8 per cent. sugar in it. In a week the pains were completely cured.

He cites other cases which demonstrate the necessity for examining a specimen of the twenty-four hour urine or at least the urine of the whole day. Diabetes developing after an infectious disease was common in his experience. In 2 cases the onset was sudden and stormy and the course grave. One woman had repeated abortions after the onset of her diabetes. He deplores the heedlessness of the dentists who fail to advise examination of the urine when the teeth are showing the effect of diabetes. In 3 cases—all speedily fatal—falling of the hair was a prominent symptom. Abuse of alcohol, tobacco, sweets or beer did not seem to be an appreciable factor. The gynecologist, ophthalmologist or neurologist may be consulted first. In 43 per cent. of 207 cases, diabetes was known in the family. In some families the disease known in three generations ran a mild, in others a grave course. He never encountered a combination with gout or asthma, giant or dwarf growth. He discusses in detail his experience with treatment and the prognosis. In conclusion he warns that diabetes in children often escapes detection; in some cases there was alarming acidosis before the urine was examined. In others, symptoms suggesting ileus had led to unnecessary operations.

Finska Läkaresällskapets Handlingar, Helsingfors

September-October, 1922, **64**, No. 9-10

*Renal Diabetes. A. Johnsson.—p. 429.
*Differentiation of Spinal Cord Affections. W. Kerppola.—p. 442.
*Experimental Glycosuria. M. Savolin.—p. 456.
*Blood Cysts in Ovaries. B. Nyström.—p. 483.
The Life of the Mind. E. Ehrnrooth.—p. 493.
Metastatic Brain Abscess from Pleural Empyema. H. Hublin.—p. 524.

Renal Diabetes.—In the first of the two cases Johnsson analyzes, the man of 35 has been under observation for ten years, and the renal diabetes has persisted practically unmodified during this long period. The other patient is a woman of 44; her father had died from diabetes and her two brothers and one sister present mild diabetes, while she herself presents merely renal diabetes. It has persisted for sixteen years, unmodified, and independent of the diet. With alimentary glucose and starch tests, the sugar content of the blood increased in the woman as in normal conditions; in the man the increase was subnormal.

Differentiation of Disease in or Outside the Spinal Cord.—Kerppola concludes from his study of thirteen cases of spinal nervous disease that it is possible to determine whether the lesion is in or merely adjacent to the spinal cord. When the sensibility in the lower sacral segments is retained—especially the heat sense—this testifies to an extramedullary process. When the sensibility is abolished on one or both sides, the probabilities are in favor of some process in the spinal cord itself.

Experimental Glycosuria.—Savolin refers to the glycosuria which appears when the thoracic duct is ligated or its contents diverted. Its cause is still a mystery, and does not seem to have anything to do with diabetes mellitus. He experimented on cats with pancreas diabetes, and analyzes some clinical cases in which the thoracic duct had been torn or compressed. No glycosuria developed thereafter; possibly collaterals maintained the circulation. We have no grounds for assuming that the secretion of the pancreas reaches the blood by way of the thoracic duct.

Blood Cyst in Ovary.—A right tuberculous salpingo-oophoritis was probably responsible for the blood cyst in the woman of 26. The adnexa on that side were removed; those on the other side, and the uterus, seemed normal.

Hospitalstidende, Copenhagen

Oct. 25, 1922, **65**, No. 43

*Study of the Blood in Young Infants. P. Drucker.—p. 721. Conc'n.

Hemoglobin and Corpuscle Volume Percentage in Young Infants.—Drucker tabulates the findings from eighty-five healthy infants from 2 weeks to 2 years old, and tabulates the findings of Williamson and Appleton for comparison. He also compares the findings in fourteen children as determined in the different drops of blood, from the first to the fifteenth. The third drop is most instructive; the first two drops are generally darker in color, probably from less complete oxidation. For this and other reasons he insists that the findings are liable to be misleading unless the prick or incision in the ear is made quite deep and with a very sharp instrument (cataract knife). His figures show that the blood in infants is physiologically of a chlorosis type. This "chlorosis" reaches its maximum about the ninth month, which sustains the theory of a congenital store of iron. He adds that this physiologic tendency to the chlorosis type of blood in children persists nearly up to puberty, and this should be borne in mind in estimating the blood findings in a given case. The hemoglobin percentage (Haldane) divided by the cell volume gives a quotient which is low in the chlorosis type of anemia. Knowing, from tables he has compiled or quoted, the standard of this Hv quotient for each age, we can readily detect and estimate any deviation from normal, especially any tendency of the blood to become more concentrated.

Nov. 1, 1922, **65**, No. 44

*Colorimetric Estimation of Albumin. Jørgensen and Tørning.—p. 737.

Colorimetric Determination of Albumin.—Jørgensen and Tørning describe their modification of Claudius' method, and extol its advantages, saying that the whole procedure can easily be carried out in less than five minutes.

Svenska Läkaresällskapets Handlingar, Stockholm

Sept. 30, 1922, **48**, No. 3

*Structure of Goiters. A. Troell.—p. 125.
*Operative Treatment of Gastric and Duodenal Ulcers. E. Hedlund.—p. 167. Cont'd.

Structure of Goiters.—Troell gives 17 plates showing 63 photomicrograms, 4 of them colored, from 63 cases of goiter. Most of the cases were of the exophthalmic goiter type. Certain pathologic anatomic findings seem to be constant in the cases with diffuse disease, as he describes, although not in all stages. The thyroid secretion takes stains differently from the normal secretion or with ordinary goiter (basophil or acidophil). The follicles displayed an active hyperplasia. Round cell infiltration was found in 90 per cent. of the toxic goiters. Two pages of bibliography are appended.

Gastric and Duodenal Ulcer.—Hedlund analyzes his experience with 485 operative cases of gastric and duodenal ulcer, 1905 to 1920. The Weber test for occult blood was positive in 134. There was a history of profuse hemorrhage from the stomach in 31 cases, but in 45 per cent. in this group the operative findings were negative. Occult blood was found in 134, but the operative findings were negative in 26 per cent. of them. In 54 cases an ulcer was found although the Weber test had been negative. He tabulates the details of the present condition in all but 5 per cent. of the total. He classifies them according to the operation performed.

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THE COURSE OF MORTALITY FROM CANCER IN BALTIMORE *

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BALTIMORE

Of the many interesting questions that have emerged from the intensive study of cancer which has been conducted during the last seventy years, two of the most important are: Is cancer actually increasing? and Is it really curable? As is well known, in recent years, the first question has been answered in the affirmative by some statisticians, in the negative by others; and some critical students regard the material at hand insufficient in both quantity and quality for final judgment. The confession is made freely by surgeons of talent, training and indubitable probity that their just claims of high percentages of permanent cures in suitable cases, treated early by mechanical measures, are not generally accepted at face value by the bulk of the laity and of the medical profession. In the time at my disposal, it is not possible to review the now voluminous literatures on these two questions. Following strictly the implication of its title, in the present paper attention will be limited to a consideration of the Baltimore material, and in particular to the statistical data I have gathered from the records of the city health department.

For our present purposes, at least, this qualification has decided advantages, since the medical history of the city is well known to many, and from a critical study of the statistical records of the health department, extending over a number of years, I am in a position to estimate their value with some degree of assurance.

In this discussion I shall use the term cancer as synonymous with malignant growth, or tumor, whatever its histologic structure or origin, invading surrounding tissues and forming or capable of forming metastases. Similarly, the term benign tumor is used in the ordinary pathologico-anatomic sense as denoting a true tumor that does not infiltrate neighboring tissues or form secondary growths. From the practical standpoint, the great difference lies in the fact that, speaking generally, benign tumors exert no specific deleterious influence on health, and, barring such accidental complications as hemorrhage, torsion, necrosis and infection, they derive their lethal qualities from their size and position; in other words, from the mechanical pressure which they may exercise on vital parts. Cancers, or malignant tumors, besides this quality exerted in some instances by either the primary growths or by the metastases to which they so often give rise possess peculiar powers of injuring the organs which they primarily or secondarily invade by diffuse displacement of parenchymatous and supporting structures, and the system in important parts or perhaps as a whole by intoxication.

The typically anatomically benign tumor, barring the accidents referred to, remains clinically benign or nonmalignant so long as it does not exercise undue pressure; but should it, owing to seat, to undue size or to accidental complications, surpass certain bounds, ill health and finally death will ensue as certainly as in the case of cancer. For instance, an anatomically benign tumor of the skull or of the meninges, by pressure on certain portions of the brain, may kill as certainly as a diffusely spreading cancer of this organ; and a large, ulcerating, bleeding myoma of the uterus may cause death as surely as a sarcoma or carcinoma. Again, tumors primarily benign in regard to both histologic structure and other qualities, may and often do become anatomically malignant, or, in other words, typically malignant tumors may have their origin in benign tumors as well as apparently normal tissues. Among cancers there are all grades of malignancy, but, speaking generally, physicians judge this quality by rapidity and size of growth, the extensiveness of metastases and the degree of the associated prostration or cachexia. These and other important facts regarding the essential nature of tumors, so trite to this generation of medical men, came to light but gradually. It is not surprising, therefore, that statistical nosology, until recent years, has largely ignored them. Hence we find that until comparatively recently, distinction was not drawn sharply between deaths from cancerous and noncancerous tumors. Even now in statistical nosology, partly on account of imperative necessity for condensation and partly on account of lack of specific diagnosis on death certificates, no account is taken of differences of tissue origin and structure of either benign or malignant tumors. For instance, among tumors of the uterus, no distinction is made between such distinctly different kinds of growths as sarcoma of the uterine wall, carcinoma of the body and cervix, and chorio-epithelioma, so called. They are all rated as cancer of the uterus.

CLASSIFICATION

With the exception of 1815 and 1823, deaths from cancer have been recorded in the Baltimore tables of motrality in every year since 1813, but not until 1875 were they classified by organs affected. In the latter year, deaths from this affection were classified under cancer—diffused, breast, liver, face, rectum, uterus, stomach, neck, brain and pylorus. In 1878 these rubrics were further expanded to include cancer of

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the tongue, testicle, intestine, esophagus, trachea, mouth, eye, mesentery, arm, omentum, elbow and spine. From 1878 to 1899, when the international supplanted the old alphabetical system of classification, the statistical rubrics were expanded to include each organ or part certified in any particular year as the seat of fatal cancer. Since 1905 the number of rubrics has been restricted to conform with exactness to the limits

TABLE 1.—AVERAGE RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS BY FIVE-YEAR PERIODS, FROM CANCER AND OTHER TUMORS, AND FROM SENILITY AND CAUSES UNKNOWN IN ADULTS, FROM 1812 TO 1920, INCLUSIVE

Periods	Cancer	Tumor	Cancer and Tumor	Senility	Senility Causes Unknown	Senility and Causes Unknown
1812-1815	4	...	4	145	...	145
1816-1820	8	...	8	123	...	123
1821-1825	4	1	5	120	39	159
1826-1830	9	...	9	119	56	175
1831-1835	7	1	8	126	30	156
1836-1840	8	2	10	95	22	117
1841-1845	9	3	12	76	40	116
1846-1850	10	3	13	96	74	170
1851-1855	11	2	13	100	56	156
1856-1860	11	3	14	94	73	167
1861-1865	14	2	16	85	63	148
1866-1870	19	4	23	89	62	151
1871-1875	24	6	30	100	36	136
1876-1880	47	7	54	72	4	76
1881-1885	47	4	51	77	3	80
1886-1890	57	6	63	74	1	75
1891-1895	59	6	65	80	...	80
1896-1900	66	7	73	65	...	65
1901-1905	76	8	84	54	...	54
1906-1910	84	5	89	41	...	41
1911-1915	97	4	102	28	...	28
1916-1920	106	5	111	12	...	12

of the revised international system. Therefore it is clear that anyone familiar with the rules of the latter classification of causes of death can appropriately place under its rubrics deaths certified as due to cancer of various organs and parts in the period of 1875-1904. Though the rubric tumor appeared in the local statistical records in 1821, 1822, 1829 and 1830, it was not until 1833 that it secured a permanent place. Since 1875 deaths from "tumor" have been classified under organs of seat, but since 1899, with relatively few exceptions, they have been thought to be due to benign tumors of the uterus and ovaries. While the deaths ascribed to tumors have not been numerous as compared with those classified under cancer, the inference is inescapable that until 1899 a not inconsiderable proportion of the former properly belonged under cancer or malignant tumor. Since 1910, under the classification rules of the Bureau of the Census, tumor of the brain has been classified under "other diseases of the nervous system." On account of growth in perfection in this period of measures of diagnosis and of operation for growths of this situation, many of which are malignant, this practice has affected to some degree the rates for both cancer and tumor.

COURSE OF MORTALITY

When, now, in attempting to measure the course of recorded annual mortality from cancer and tumor in Baltimore over this period of 108 years, we apply the commonly used standard, namely, crude rates per hundred thousand of the living population at all ages, we obtain results agreeing in general with those observed elsewhere. The chief difference lies in the fact that the local data extend over a longer period of time than is usually the case. In short, the annual crude mortality rates for tumors as a whole—that is, for deaths ascribed to cancer and to tumor taken together—were relatively low until after 1870. With considerable fluctuations from year to year, the rates ascended from 2 in 1813 to 15 in 1821 and to 20 in 1846. By 1850 the rate had fallen to 9, and it was not until 1865 that the level of 1846 was again attained. The rate reached 27 in 1868, but by 1870 it again stood at 20. From the latter date the rate rose steadily, but with some fluctuations, of course, to 117 in 1920. From 1835 to 1920 the rates for tumor alone showed considerable annual fluctuations, but they were never considerable, and exceeded 10 in but one year. During the entire period under review, the course of the rates for cancer alone has determined the shape of the curve for the combined rate. For cancer alone the rates rose from 2 in 1813 to 11 in 1835. By 1867 the rate reached 20 for the first time. Reaching 51 in 1880, the rate rose with several relatively minor recessions to 113 by 1920.

When the irregularities incident to minor annual fluctuations are smoothed out by averaging the rates for five year periods from 1816 to 1920, inclusive (Table 1 and Chart 1), a sharply cut picture of the course of mortality of these affections, as determined by crude rates, is presented. Considering first the combined rate for cancer and tumor, it will be observed that until 1865 the rate was relatively insignificant, but, on the whole, progressively though slowly rising. In the next fifteen years, that is, between 1866 and 1880, the rate increased by 135 per cent. to 54, and these affections taken together had now become very significant causes of death. For the period 1881-1885 there was a slight recession, but for the quinquennial periods 1886-1890 and 1891-1895 the rates were 63 and 65, respectively. Since 1890 the rate has risen

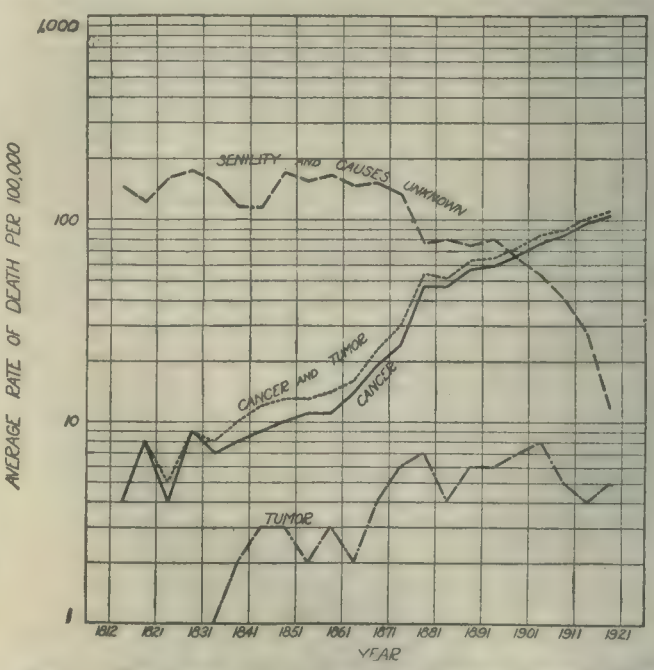


Chart 1.—The average rate of death per hundred thousand living inhabitants by five-year periods from cancer and other tumors, from 1812 to 1920, inclusive.

uninterruptedly, and for the five year period ending in 1920 it stood at 111. It is evident at a glance that the proportional contribution of tumors unqualified to the combined rate has declined on the whole since 1850, and that since 1905 has been an element of comparatively slight importance. The course of the curve of mortality for cancer follows so closely that for the combined rate that comment is unnecessary. So far,

then, it appears that since 1875, or in the last forty-five years, if these figures are accepted as reflecting correctly actual experience, mortality from tumors, benign and malignant, has increased by 100 per cent. By the same token, during the 100 years just past, the lethal force of tumors has multiplied by nearly 1,300 per cent. Since 1900, the crude death rate from cancer alone has increased by 40 per cent.

EXPLANATION OF INCREASE IN RECORDED DEATH RATES

How may these great increases in the recorded death rates for cancer be explained? To what degree do they represent actual occurrence? First to be considered in this connection are the questions of improvement in medical diagnosis and in statistical classification of deaths. The influence of improvement in diagnosis may be tested somewhat roughly in the following fashion: The deaths recorded as due to cancer since 1875 can be separated into five fairly well defined groups, (1) breast; (2) female genitals (uterus, ovary, vagina and pelvis); (3) esophagus, stomach and liver; (4) intestine and peritoneum, and (5) all other organs. The first four groups represent, respectively, Rubrics 43, 42, 40 and 41 of the international classification of causes of death, revision of 1909.

Cancer of the breast, equivalent for practical purposes to cancer of the female breast, is not only common enough, but in fatal cases is easily recognizable. It is the best example of accessible or open cancer of frequent occurrence. There is little room, therefore, for errors of diagnosis (in fatal cases) and of classification. Among the important organs not directly on the surface, but frequently the seat of fatal cancer, the uterus is most readily accessible to physical examination. Cancer of the cervix uteri, the most common form, can hardly proceed to a fatal termination without giving rise to clinical symptoms that demand attention, and in such cases the merest tyro in medicine can rarely fail in correct diagnosis. Similarly, cancer of the body of the uterus, in the last stages at least, has not, in the period now under consideration, presented difficulties of diagnosis. Nor in this period has the diagnosis of the comparatively rare primary cancer of the vagina and the external genitals of the female in fatal cases presented any serious difficulty. Cancer of the ovary and "of the pelvis," the latter appearing only occasionally in the records, is comparatively rare and is recognized chiefly at operation. Since 1876, however, few women in Baltimore with ovarian tumors have escaped operation. In cancer of these organs the important problems have not been concerned with ultimate, but rather with early recognition and with operative technic. The first two of these rubrics which we have set up present a particularly favorable material for study in this connection.

With regard to the third rubric, conditions are much less satisfactory. Malignant growths of the esophagus, though not exposed to direct view and relatively uncommon, are not only the most important cause after early life of stricture of the gullet, but before the fatal issue are associated with unmistakably characteristic symptoms. The affection may, it is true, be readily confused with cancer of the cardiac end of the stomach; but as the two affections belong to the same rubric, errors of differential diagnosis as between cancer of these two organs are of no present consequence. The diagnosis of cancer of the stomach, even yet often mistaken in fatal cases, has certainly increased greatly in accuracy since 1875. It was not until well after this date that our late colleague, Dr. Saltzer, specialized in diseases of the stomach and applied the newer methods of gastric analysis. It was some years before the routine use of chemical and microscopic methods in the diagnosis of diseases of the stomach by Osler in his clinic, opened in 1889, was adopted in other hospitals, and private clinical laboratories were established. It was hardly before 1900 that, through the work of gastro-enterologists, consulting internists, laboratory specialists (including roentgenologists), and surgeons—the latter by exposing the organ to direct inspection—the present era of intensive study of diseases of the stomach (and small intestine as well), may be said to have opened in Baltimore. It must be granted, therefore, that since 1876 the recognition of gastric cancer in its last as well as in its early stages has increased progressively in accuracy. As this organ is one of the most common seats of primary cancer in both sexes, the increased precision of diagnosis must have exercised an important part in the observed rise in the crude rate for cancer.

While primary cancer of the liver is comparatively rare, of the important viscera this organ is the one that is most frequently the seat of diagnosable malignant growths originating in other parts of the body. So propitious are conditions in this organ for the deposit and growth of metastases that, from primary cancers in themselves relatively obscure, it is often the seat of secondary growths so prominent on account of their number and size as to fix attention. While a large proportion of cancers of other organs of digestion, as the esophagus, stomach, intestine and pancreas, metastasize in the liver, it is also often involved secondarily from malignant growths not only of other abdominal organs, notably the uterus, but of such distant parts as the extremities, the central nervous system, the eye and the skin. In consequence, though these peculiarities of the liver often determine the recognition of cancer that would be otherwise overlooked, likewise they are responsible not infrequently for errors in statistical classification. With the increase of knowledge of the pathology of cancer and the improvement in diagnosis, doubtless, in many instances, deaths which in earlier years would have been credited to cancer of the liver have in more recent years been assigned in the statistical classification to the proper organs of origin. On the whole, however, it may be assumed that during the last forty-five years the diagnosis of malignant growths falling under our third group has undergone a very decided improvement.

The diagnosis of the relatively rare cancer of the small intestine has been until recent years comparatively obscure. The diagnosis and statistical classification of cancer of the colon have without doubt increased greatly in precision, but it is probable that a considerable proportion of deaths from cancer of the small and large intestine (the rectum excepted) are still classified under intestinal obstruction and other rubrics. Cancer of the rectum is comparatively accessible, and it is doubtful whether in its terminal stage any marked improvement in its diagnosis has occurred in the period under consideration. Primary cancer of the peritoneum is so infrequent as to be of relatively minor importance.

Cancer of "all other organs" embraces several distinct groups of malignant tumors which vary widely in the ease with which they may be recognized. Cancers of the skin (including the external genitals), the

nasal and buccal cavities, the eye, the larynx, the thyroid, the testes, the superficial lymph glands, the subcutaneous connective tissue, the skeletal muscles, and the bones which, taken together, represent a very considerable proportion of all malignant growths, have presented, in their fatal stages at least, no great difficulties in diagnosis that have been dissipated by recent advances in medical knowledge. In this respect they are, for the most part, directly comparable with cancers of the breast and uterus. On the other hand, cancers of the lungs and pleura, of the deeper lymphatic system, of the bladder, prostate and kidneys, of certain abdominal organs, as the pancreas, the kidneys, and the suprarenals, and of the central nervous system compose a group numerically less significant than the foregoing, and in this group diagnosis has in late years achieved very considerable progress. Out of this group, during the last ten years, fell growths of the brain, many of which are malignant. This error imposed by official rules of statistical classification has been more than counterbalanced, perhaps, by the dispersion to the proper organs of origin the members of the old statistical group "cancer, diffused." It seems likely, then, that in a substantial majority of instances the members

TABLE 2.—AVERAGE RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS BY FIVE-YEAR PERIODS, FROM CANCER, FROM 1876 TO 1920, INCLUSIVE

Period	Grand Total	Total Rubrics 40 and 41	Rubric 40: Esophagus, Stomach and Liver	Rubric 41: Intestine, Rectum and Peritoneum	Total Rubrics 42 and 43	Rubric 43: Breast	Rubric 42: Uterus, Ovaries and Pelvis	All Other Organs
1876–1880	47	17	15	2	18	6	12	12
1881–1885	50	20	16	4	19	7	11	11
1886–1890	57	25	20	5	22	8	14	10
1891–1895	59	25	21	4	22	8	15	11
1896–1900	66	29	26	4	23	8	16	14
1901–1905	76	38	31	8	21	8	13	16
1906–1910	84	42	34	8	23	8	15	19
1911–1915	98	48	37	11	25	9	15	26
1916–1920	106	59	39	13	27	10	17	27

of the category of "cancer of all other organs" were as readily recognizable in 1876 as in 1920. There can be no doubt that the increased frequency with which necropsies have been conducted by trained pathologic anatomists in both homes and hospitals since the opening of the Johns Hopkins Hospital in 1889 has contributed materially to correctness of diagnosis and, in consequence, of statistical classification of deaths due to tumors.

All things considered, on the basis of increase in precision of diagnosis alone, there should be no rise in the mortality from cancer of the breast and uterus, but the advance in the rates for cancer of the esophagus, stomach and liver should be considerable; in those for cancer of the intestine and peritoneum, very marked; and, finally, the increase in the rates for cancer "of all other organs" should be somewhat less than for cancer of the esophagus, stomach and liver. The crude mortality rates for these various categories as averaged for five year periods from 1876 to 1920, inclusive, are compared in Table 2. It will be observed that though the rate for each has risen, the increases are by no means equal. While the total rate for cancer increased by 125 per cent., and the rates for cancer of the breast and of the uterus (and other female organs of generation) rose by but 67 and 42 per cent., respectively, the rate for cancer of the esophagus, stomach and liver rose by 160 per cent., and that for the intestine and peritoneum by 550 per cent. On the other hand, the rate for cancer of "all other organs" rose by only 125 per cent., or in the same proportion as the total cancer rate. The increase in the rates for cancer of the breast and of the female generative organs was notably less than it was in those for the other three categories, and the advance in the rates for the latter categories varied roughly with the scope that was assumed to be available for the effect of improvement in diagnosis. But it was assumed that, on the basis of improvement in diagnosis, there should be no gain at all in the rates for cancer of the breast and of the female generative organs. In regard to this point, it is significant that during most of the period, i. e., from 1886 to 1910, these rates were practically stationary. The slight ascents in these rates in the periods before and after these dates may well be explained by variables yet to be considered.

If the mortality for tumors as a whole and for cancer in particular has not actually but only apparently risen in the striking ratio the official figures would seem to indicate, under what statistical rubrics were the unaccounted for tumor deaths classified? While they may have been dispersed, perhaps, under many rubrics through which it is now impossible to trace them, two rubrics, causes unknown in adults and senility, probably received the majority. The rates for these averaged for five year periods are compared with those for tumors in Table 1. The decline in the rates for these indefinite causes much more than counterbalances the ascent in the rates for tumors. Though there is ample room in these rubrics for hidden cancer (as well as for other causes of death improperly assigned) even if the higher rates of later years represented no actual increase in cancer, this evidence is only suggestive. Another heading under which some cancer deaths may well be concealed is intestinal obstruction; but as this is combined in the same rubric with hernia, comparison is not here attempted. Since 1900, and particularly since 1910, special care has been taken in the division of statistics of the health department to secure full and accurate classification of deaths from tumor.

In addition to the direct influence on cancer mortality rates, which, it has already been pointed out, must be attributed to the perfection in the methods of diagnosis and treatment during the last thirty or forty years, there must be taken into consideration the possibility of an indirect effect. It is a well established fact that since 1890 an ever increasing number of patients with cancer have come to Baltimore from other places for advice and treatment. Some proportion of these must inevitably die here. It is reasonable to suppose, then, that the proportion of cancer deaths in nonresidents was low in the early period and high in recent years. Unfortunately, no data on this point are recorded before 1917. However, in the four years 1917-1920, inclusive, on an average, 17 per cent. of all recorded deaths from malignant tumors were in nonresidents—almost all of whom, it is certain, were attracted to the city by the reputation of its physicians and surgeons in diagnosis in general and in the diagnosis and treatment of cancer in particular. It is inconceivable that in early years nonresidents could have accounted for anything approaching such a high proportion of the total deaths from cancer. Unhappily, data in regard to deaths of nonresidents from benign tumors have not been tabulated, but it is well known

that each year an appreciable number of persons from out of town with growths of this type are operated on by local surgeons, and that some fail to survive the experiment. On the other hand, there is no evidence that any significant proportion of residents with either cancer or benign tumor died outside the city. Therefore the conclusion is forced that a considerable proportion of the increase in cancer mortality in later years is to be attributed to this factor.

So far, then, it has been ascertained that a very notable, though unfortunately a not accurately determinable proportion of the observed increase in crude mortality rates from malignant and other tumors in Baltimore is readily explainable on the basis of progressive improvement in diagnosis and statistical classification, and a rise in the ratio of deaths from these causes among nonresidents drawn to a medical center particularly famous for the diagnosis and treatment of these maladies.

We have come now to the consideration of the influence of such specific biologic attributes as race, sex and age on the course of mortality from these affections.

TABLE 3.—NUMBER OF DEATHS AND RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS, FROM CANCER, ACCORDING TO COLOR AND SEX, FROM 1900 TO 1920, INCLUSIVE

	Total		White						Colored					
			Total		Male		Female		Total		Male		Female	
Year	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
1900	318	63	275	64	95	46	180	81	43	55	8	23	35	81
1901	358	70	319	73	118	56	201	90	39	49	7	20	32	73
1902	384	74	340	77	128	60	212	93	44	55	13	36	31	70
1903	370	70	332	74	121	56	211	92	38	47	12	33	26	58
1904	450	84	391	87	147	67	244	105	59	71	18	49	41	90
1905	437	81	380	83	152	68	228	97	57	68	17	45	40	87
1906	450	82	390	84	146	65	244	103	60	71	24	63	36	77
1907	473	85	415	89	168	74	247	103	58	67	13	33	45	95
1908	449	80	386	82	148	64	238	99	63	72	17	43	46	96
1909	450	79	393	82	142	61	251	103	57	64	19	47	38	78
1910	529	92	474	98	176	74	298	121	55	61	12	30	43	88
1911	526	91	469	96	195	82	274	110	57	63	15	36	42	85
1912	545	93	480	98	177	73	303	121	65	71	19	45	46	92
1913	598	101	510	103	198	81	312	124	88	94	33	78	55	108
1914	595	100	515	103	205	83	310	122	80	85	20	47	60	117
1915	627	104	564	111	235	94	329	128	63	66	28	64	35	67
1916	636	105	550	108	261	104	290	112	85	88	25	57	60	114
1917	640	105	568	110	255	100	313	120	72	74	23	51	49	92
1918	637	103	564	109	234	91	330	126	73	74	29	64	44	82
1919	749	104	660	107	286	93	374	121	89	85	27	56	62	110
1920	827	113	724	116	332	108	392	124	103	95	37	69	66	119

INFLUENCE OF SEX AND RACE

Data are available for calculating the effect of sex and race stock as determined by color on the crude rates for cancer for the twenty-one year period 1900-1920. The results are shown in Table 3. In this period the rates rose for white persons from 64 to 116, and for negroes from 55 to 95. For sex, the increases were: White persons: males, from 46 to 108; females, from 81 to 124; negroes: males, from 23 to 69; females, from 81 to 119. The course of the rates was much smoother for white persons than for negroes. In few years did the rates for negro males approach those for white males. Though there were no great differences between the rates for females of the two races, the rate for whites was almost invariably higher. In no one of these four groups did the rates fail to increase considerably during this period. It is clear not only that, as is commonly the case, high cancer rates are favored by predominance of females over males, but also that these rates must be influenced in a significant degree by variations in the proportion of negroes in the population. Though, as judged by the results of this analysis, the importance to be ascribed to these points is not great, it is of interest that in the earlier years the proportion of negroes to white persons was much greater than at present. Since 1880 there has been a steady and considerable decline in the ratio of negroes to white persons.

The influence of age on mortality from cancer of all organs for sex and race for 1920 is shown in Table 4. Below the twentieth year of age the deaths were few and, owing to the smallness of the figures, the differences in the rates as between white persons and negroes, and males and females, are hardly significant. Even in the third decade of life, the rate for the whole population was only 12. Here the mortality for negroes of both sexes was slightly higher than that for white persons. For the age period 30-39 years, the rates for the whole population were only 43; for white persons 43, and for negroes 55. In both races the rates were decidedly higher among females than among males. In females the risk of dying of cancer in this age period has become significant. Still, in the population as a whole below the fortieth year of age the risk is comparatively small. Of the total deaths from this affection, only 10 per cent. of the whole, 9 per cent. of the white and 16 per cent. of the negro, occurred in this large section of the population. From the fortieth year onward to the eightieth year in white persons and to the sevenieth year in negroes, these rates climb very steadily, to fall slightly during the remainder of life. Among the age group 70-79 years, slightly more than one in every 100 living white persons died of cancer, while in the negro the mortality was less by half. It is noteworthy that, between the twentieth and sixtieth years of life, the mortality was uniformly higher in negroes than in white persons, and that after the sixtieth year this condition is reversed, and by the eighth decade the death rate for white persons is more than double that for negroes. The reason for this is very evident. It lies mainly in the fact that between the thirtieth and the sixtieth years of life the negress has much the highest death rate, and that from the fortieth year the negro man has a much lower rate than either sex of the white race. The tailing off of the total rate for negroes after the seventieth year is due chiefly to decline in mortality among women. It is worthy of note that among white persons in the eighth decade of life the mortality is greater in men than in women, while after the eightieth year conditions are reversed.

INFLUENCE OF AGE

Of the variety of interesting and instructive facts derived from the foregoing analysis, the one of greatest importance for our present purpose is the capital rôle in cancer mortality played by age. If the results of these observations may be applied to the whole period under consideration—and there is nothing in the known history of cancer to forbid—it is obvious that, other things remaining equal, the cancer death rate would have been unfavorably influenced by relative increase in the population of white persons, especially of women, of females of both races, of white persons aged 40 years and over and of negroes between the fortieth and the seventieth years of life.

TABLE 4.—NUMBER OF DEATHS AND RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS, FROM CANCER, ACCORDING TO AGE, COLOR AND SEX FOR 1920

	Total Population		White						Colored					
			Total		Male		Female		Total		Male		Female	
Age Period	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
Under 1 year	1	7	1	8	1	15	..	..	..	..	..	..	..	..
Between 2 and 4 years	3	6	2	4	1	4	1	4	1	16	..	..	1	30
5 and 9 years	1	2	1	2	1	4	..	..	..	..	..	..	..	..
0 and 9 years	5	8	4	3	3	5	1	2	1	6	..	..	1	12
10 and 19 years	5	4	5	5	..	..	5	9	..	..	..	..	..	..
20 and 29 years	18	12	14	12	8	14	6	10	4	15	2	16	2	15
30 and 39 years	55	45	43	43	17	34	26	52	12	55	4	36	8	74
40 and 49 years	151	164	120	156	48	126	72	187	31	199	8	97	23	316
50 and 59 years	212	339	180	329	86	322	94	335	32	407	11	259	21	581
60 and 69 years	214	594	198	608	101	660	97	563	16	462	8	467	8	457
70 and 79 years	140	971	134	1026	63	1126	71	952	6	442	3	496	3	399
80 years and over	27	776	26	832	6	534	20	999	1	282	1	746	..	..
Total	827	113	724	116	332	108	392	124	103	95	37	70	66	119

TABLE 5.—NUMBER* OF DEATHS AND RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS OF THE SEVERAL AGE GROUPS, POPULATION AT ALL AGES, 30 YEARS AND OVER AND 40 YEARS AND OVER, FROM CANCER AND TUMOR AND FROM SENILITY AND CAUSES UNKNOWN IN ADULTS, FOR THE CENSUS YEARS 1830-1920, INCLUSIVE

	Population at All Ages						Of 30 Years and Over			Of 40 Years and Over								
	Cancer		Tumor		Cancer and Tumor								Senility		Causes Unknown		Senility and Causes Unknown	
Census Years	Deaths	Rate	Deaths	Rate	Deaths	Rate	Cancer Rate	Tumor Rate	Cancer and Tumor Rate	Cancer Rate	Tumor Rate	Cancer and Tumor Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
1830	6	7	1	1	7	9	18	3	21	26	4	31	102	450	43	190	145	640
1840	9	9	3	3	12	12	29	10	39	56	19	75	104	651	32	200	136	851
1850	14	8	3	2	17	10	26	6	32	48	10	59	155	535	94	325	249	860
1860	30	14	4	2	34	16	42	6	47	75	10	85	197	492	144	360	341	852
1870	49	18	8	3	57	21	51	8	60	87	14	101	288	513	141	251	429	764
1880	174	52	34	10	208	63	139	27	167	226	44	270	252	327	14	18	266	345
1890	256	59	25	6	281	65	151	15	166	247	24	271	365	352	6	6	371	358
1900	338	67	35	7	373	73	164	17	181	268	28	296	357	283	...	...	357	283
1910	502	90	27	5	529	95	209	11	220	331	18	349	191	126	...	...	191	126
1920	789	108	27	4	816	111	238	8	246	378	13	391	60	29	...	...	60	29

* In each instance the figures for the number of deaths represent the average of three consecutive years, namely, the census year and the year immediately preceding and succeeding.

The influence of changes in the age distribution of the whole population on the increase in the mortality rates for cancer (and "tumor") may be estimated in several ways. As it has been shown that of the deaths ascribed to cancer only a small proportion occurred in persons below the fortieth year, and an almost negligible proportion in those under the thirtieth year of age, it is permissible, for the sake of an approximate estimate of the influence of changes in the age distribution of the population, to disregard the lower age groups and to consider only that portion of the population above these two ages. Between 1830 and 1920, the percentage of the population of 40 years of age and over increased from 15.7 to 28.5 per cent. of the whole, or by 75 per cent.[1] In the same period the proportion of population 30 years of age and over rose from 29.2 to 54.8 per cent. of the whole, or an increase of 55 per cent. Between 1830 and 1920, therefore, the increase in the proportion of the population in the age period most susceptible to cancer was in a ratio far below that of the recorded increase in cancer mortality. Mortality rates for cancer and tumor for each census year between 1830 and 1920, calculated on the basis of the population at all ages and the populations above the thirtieth and fortieth years of life, respectively, are given in Table 5 and Chart 2. Whatever their specific differences, these rates for the census years follow the same general course throughout. All show an ascent more or less gradual until 1870, with a sharp rise to much higher levels in 1880.

Though some, at least, of the increase in the recorded mortality previous to 1870 may well have been due to an actual increase in the lethal force of tumors, it is inconceivable that the enormous advance in the rates between 1870 and 1880 can be thus explained. The rates for all tumors in 1830 and 1850 did not approach the level which, it will be shown later, the mortality for cancer of the uterus and breast had attained in 1880. The rates recorded for 1870 would hardly have covered the expected mortality from all tumors readily diagnosable at that time. It seems likely, then, that in the period previous to 1870, the diagnosis of tumors, except in the most obvious cases, was, on the whole, poor, and that deaths from this cause were but poorly recorded and classified. By the same token, the enormous increase in the tumor rate for 1880, as compared with that for 1870, must have been due very largely, if not entirely, to improvement in statistical classification of deaths inaugurated after the introduction of death certificates in 1875, under the influence of a

1. The figures for the age distributions of the population here used are those of the United States Census Bureau, from actual counts for the census years 1850, 1860, 1890, 1900, 1910 and 1920, and as graduated by my colleague, Dr. Lowell J. Reed, for 1830, 1840, 1870 and 1880.

commissioner of health, Dr. James Steuart, who, as his reports show, was particularly interested in statistics. This view is supported by the fact that in the rates calculated for the census years, there was no increase in the total rates for cancer and tumor between 1880 and 1890. It has already been pointed out that methods of precision in the diagnosis of internal cancer

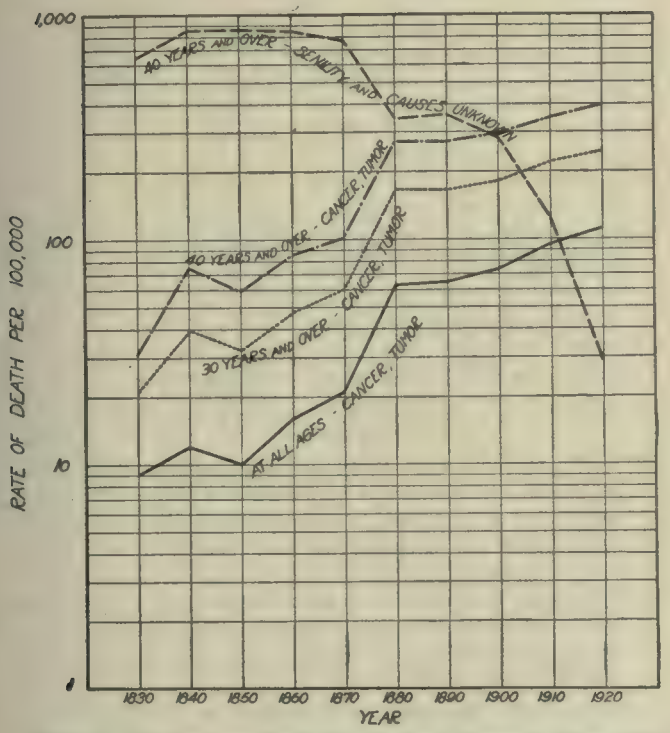


Chart 2.—The rate of death per hundred thousand living inhabitants of the several age groups. Population at all ages, 30 years and over and 40 years and over, from cancer and tumor and from senility and causes unknown in adults, for the census years 1830 to 1920, inclusive.

could have made but little progress in these ten years. If these observations and assumptions are correct, then the course of the rates for tumors (including cancer) does not signify an actual increase in lethal force in the period up to 1890. Since deaths classified under senility certainly and those under causes unknown in adults probably occurred very largely in persons 40 years of age and over, mortality rates for these two rubrics calculated for this age group are presented for comparison in Table 5 and Chart 2. It is evident that there was in these two indefinite rubrics alone ample room for all unclassified deaths from cancer and other tumors, as well as from various other chronic affections that were imperfectly recognized and classified previous to 1880. The close correspondence between the decline in the rates for these two rubrics, and the advance in those for benign and malignant tumors, particularly in the period 1860-1880, is striking. Since between 1880 and 1890 there was practically no increase in the rates, however calculated, further consideration of the course of these affections cover the thirty years since 1890. In this period the rates, however calculated, exhibit a progressive and considerable increase. The percentages of increases in these rates during the different portions of the period are shown in Table 6.

It will be observed that the greater the degree of correction for the age factor, the smaller the percentage of increase in the rates. Even this method must fail to express fully the influence of the age factor on the rates of cancer mortality, for here it is assumed that all increase in the proportional increase in the population above the twenty-ninth and thirty-ninth years of life is of equal consequence in this respect. However, it has been shown in Table 3 that the risk of dying of cancer increases greatly and in rising ratios from decade to decade of life. It is evident, then, that increases in the proportion of the population in the higher decades, the sixth, seventh and eighth, for instance, must exercise a more marked influence on the cancer risk than corresponding increases in the fourth and fifth decades. As a matter of fact, in the period 1890-1920, the proportions of the population in the sixth, seventh and eighth decades of life increased by 21, 26 and 19 per cent., respectively, while the proportional increases for the fourth and fifth decades were only 4 and 16 per cent. So, if it were possible to calculate for each census year rates specific for each of these decades of life, that is, rates more fully specific for age, correction for this factor would have been even more potent in effect. But when death rates for cancer alone specific for age for the census years 1900, 1910 and 1920 are applied to the respective age distribution of a standard population (Glover's Life Table for the United States), a rise in the rate from 105 in 1900 to 173 in 1920, or an increase of 65 per cent., becomes apparent in this twenty-one year period as due to causes other than age influence.

While some of this rise in tumor rates due to causes other than changes in the age distribution is probably ascribable to improvement in statistical classification of deaths, if most of it does not represent an actual increase in mortality, complete explanation is to be sought in other factors. Suffice it here to point out that the known advances in precision in diagnosis and the probable augmentation of the proportion of non-resident deaths would probably cover the deficit. However, it must be acknowledged that up to this point definite proof that mortality from tumors has not really advanced has not been forthcoming. Nor has any offset been allowed for a reduction in mortality that should have occurred, if the surgeons are correct in their assertions that they have wrought definite cures in cancers of certain organs, and have been more successful than formerly in removing benign tumors of particular organs, such as the uterus and ovary, that if left alone must have caused deaths.

TABLE 6.—PERCENTAGE OF INCREASE FROM ONE PERIOD TO ANOTHER OF RATES SHOWN IN TABLE 5

Periods	Population of All Ages	Population 30 Years and Over	Population 40 Years and Over
1890 to 1920	71	49	44
1890 to 1900	12	9	9
1900 to 1910	31	22	15
1910 to 1920	17	12	12
1880 to 1890	3	..	..

EFFECT OF IMPROVEMENTS IN DIAGNOSIS AND IN STATISTICAL CLASSIFICATION

There remains yet another test that may be applied to this material, with some hope of getting a clear-cut answer that will cover these objections so far as cancer is concerned. The diagnosis of cancer of the breast and uterus in lethal stages cannot be justly held to have improved significantly since 1880. However, since 1890 and particularly since 1900, operative technic for their cure has certainly, as the result primarily of the work of Halsted and Kelly and their associates, been greatly perfected, and of late years many other capable

surgeons have adopted like methods. If there has been no actual increase in the mortality from cancer of these two organs, then rates specific for sex and age should show no significant increase between 1880 and 1900, and an actual and not insignificant decrease since the latter date. Rates averaged for five year periods from 1876 to 1920, inclusive, for these two categories in respect of the total female population, that is, rates specific for sex alone, are given in Table 7. Since 1880, the percentages of increase in mortality were, for the breast, 43; for the uterus, 50, and for the two together, 47. It is noteworthy that for cancer of the uterus these

TABLE 7.—RATE OF DEATH, PER HUNDRED THOUSAND LIVING FEMALE INHABITANTS BY FIVE-YEAR PERIODS, FROM CANCER OF THE BREAST, UTERUS, OVARIES AND PELVIS, FROM 1876 TO 1920, INCLUSIVE

Period	Total	Breast	Uterus, Ovaries and Pelvis
1876 to 1880	34	12	22
1881 to 1885	36	14	22
1886 to 1890	42	16	26
1891 to 1895	43	15	28
1896 to 1900	44	14	30
1901 to 1905	40	15	25
1906 to 1910	45	16	30
1911 to 1915	48	18	30
1916 to 1920	53	20	33

rates showed little change between 1895 and 1915, and that those for cancer of the breast were practically stationary from 1880 to 1910. For cancer of the breast since 1910, and for cancer of the uterus since 1915, these rates advanced considerably. As, for practical purposes, deaths from cancer of the breast and uterus may be taken as confined to the age period 40 years and over, and, since 1880, the female population of this age group has contributed but slightly more (between 1 and 2 per cent.) than half the total population 40 years of age and over, it is possible to calculate rates reasonably specific for the actual population exposed to the risk of death from cancer of these organs for the census years 1880 to 1920, inclusive. From these data, presented in Table 8, it appears that after 1880 there was no increase in mortality from cancer of the breast, and since 1890 none from cancer of the uterus. On the contrary, since 1910, there has been a notable decrease in mortality from cancer of the breast, and since 1890 from cancer of the uterus and from cancer of these two organs taken together. Thus, when rates that approach specificity are obtained, in respect to cancer of these two organs, in which the disease in fatal stages is readily diagnosable, an apparent increase in mortality is converted into an actual decrease. Therefore, it seems to be established that, during the last forty years, cancer of the breast and uterus (including the other female organs of generation) has shown no real advance in mortality, and that there is a considerable margin of reduction, especially in respect of the latter category, to be placed to the credit of surgical interference.

As the operative mortality for cancer of these two seats is comparatively slight, the question of deaths among nonresidents is here of negligible importance. In the light of this important disclosure, it seems warranted that such proportions of the advances in the crude rates for cancer of all other organs as are not dependent on changes in the age distribution of the population should be attributed to improvements in diagnosis and statistical classification, and to relative increases in the number of deaths of nonresidents with cancer coming to the city for diagnosis and treatment, and not to an actual increase in mortality.

Since 1890, these specific rates for cancer of the breast and uterus have fallen by 25 and 42 per cent., respectively. As spontaneous recovery of cancer of these organs is unknown, unless the disease has decreased correspondingly in incidence—and for this there is no evidence—these figures may be taken as measuring in a general way the effect on mortality of earlier diagnosis and improved methods of mechanical treatment. If this is the measure of accomplishment amid many difficulties in a period of gradual evolution toward perfection in knowledge of the natural history, diagnosis and treatment of cancerous disease in these two organs in which it is so notoriously malignant, what may not be hoped for from the same or similar methods applied to relatively simpler problems? As, unfortunately, owing to the restrictions of the statistical tabulations, deaths from cancer of such organs as the skin, lips, tongue, bladder, prostate, colon, rectum, stomach and small intestine, for which, under the guidance of advancing knowledge in pathologic anatomy, mechanical measures of the treatment (including irradiation) have in recent years made such strides, cannot be separated out with any exactness into appropriate groups for statistical analysis. For complete studies of the mortality of cancer of these and other important organs, such as the central nervous system, new tabulations made under expert control from the original death certificates are necessary. Until this is done on a large amount of material and the results have been submitted to appropriate critical statistical analysis, no definite knowledge will be had of the true course of the great mass of cancerous disease, and of the real efficacy of treatment. In comparison with the yield in knowledge, the cost would be insignificant.

In the meantime, while it would be unwise to generalize too broadly from the implications of the present analysis of a restricted and isolated material, acknowledged to be not without defects in both diagnosis and classification, yet the indications are that, if it were practicable to investigate the course of cancer mortality for each particular organ or part, even if no more thoroughly than it has here been possible to do for cancer of the breast and uterus, it would be found that cancer is not increasing either in incidence or in mortality among those actually exposed to risk. So far as Baltimore is concerned, the two questions propounded at the beginning of this discussion have been answered in part. While the evidence at hand is insufficient to prove conclusively that there has been no actual increase in the mortality rates from cancer of all organs taken together, at least it renders this doubtful.

TABLE 8.—NUMBER* OF DEATHS AND RATE OF DEATH, PER HUNDRED THOUSAND LIVING FEMALE INHABITANTS 40 YEARS OF AGE AND OVER, FROM CANCER OF THE BREAST AND UTERUS, FOR THE CENSUS YEARS 1880 TO 1920, INCLUSIVE

Year	Total		Breast		Uterus	
	Deaths	Rate	Deaths	Rate	Deaths	Rate
1880	94	61	37	24	57	37
1890	158	76	50	24	108	52
1900	161	64	52	20	109	43
1910	199	65	74	24	125	41
1920	205	48	80	18	125	30

* In each instance the figures for number of deaths represent the average for three consecutive years—the census year and the year immediately preceding and succeeding.

It does show beyond all question of doubt that cancer mortality in Baltimore cannot have increased in anything approaching the degree indicated by the crude rates. For cancer of the only two organs, the breast and the uterus, for which rates approaching specificity could be obtained, it has been shown that in the forty years ending in 1920, mortality has not increased, and that during the latter half of this period there has occurred a gradual but very significant decline in the death rate which, in the absence of other satisfactory explanation, it seems safe to ascribe to medical activities.

625 St. Paul Street.

PRESERVATION OF THE LIFE OF COMPLETELY PARATHYROIDECTOMIZED DOGS

BY MEANS OF THE ORAL ADMINISTRATION OF CALCIUM LACTATE *

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In several earlier communications [1] it was stated that completely parathyroidectomized animals could be cured of all symptoms of parathyroid tetany by the intravenous injection of Ringer's solution. It was furthermore shown that this treatment could be stopped after from forty to sixty days without the appearance of tetany except under special conditions described in the papers referred to. In the course of this work it was found that calcium-free Ringer's solution or Locke's solution from which the calcium was partly precipitated possessed some efficacy in conserving the life of parathyroidectomized animals, but that ordinary Ringer's solution was incomparably better, especially early after operation.

These results strongly suggested that the calcium contained in the Ringer's solution was in some way responsible for the beneficial results seen following its intravenous administration in parathyroidectomized animals. When, however, calcium chlorid was administered orally in quantities from 2.6 to 3.6 times as great each day as was present in a day's treatment of Ringer's solution intravenously injected, the animal invariably went into severe tetany. These results seemed to indicate that it was not the calcium itself in the Ringer's solution which made it a more efficacious agent, but that ordinary Ringer's solution was a balanced solution. As a balanced solution it might presumably act not only by increasing the rate of urinary excretion but also by effecting a more rapid elimination of the nitrogenous toxin or toxins responsible for the tetany. Aside from these possibilities, we have not overlooked the possibility that the calcium may act by decreasing the permeability of the cells and thus preventing the poisonous material from acting injuriously on the latter.

About this time our attention was directed to an article by Frouin [2] on the efficacy of calcium and magnesium salts in conserving the life of parathyroidectomized dogs when such salts were administered orally. The statements of Frouin were in direct conflict with the experience of a host of physiologists and pharmacologists who had attempted to preserve the life of parathyroidectomized animals by the administration of calcium salts. Whereas the immediate effects of the intravenous administration of calcium salts are astounding, all investigators reported that the animals eventually died in spite of heroic medication with such salts. As late as 1917, Voegtlin [3] himself writes that "the life of such animals cannot be saved by the continued administration of calcium," and that the "oral administration of calcium salts is of doubtful value," i. e., in parathyroidectomized animals.

The administration of large quantities of calcium lactate or calcium chlorid solutions intravenously and in a concentrated form has always seemed to us a highly unphysiologic procedure. On a theoretical basis, it appeared to us absurd that grams of calcium lactate should be introduced daily and directly into the circulation over a period of many days. Whether this position proves to be correct or not, it seemed more reasonable to test out the efficacy of calcium compounds by administering them orally. On the basis of these considerations and the facts reported by Frouin, we decided to reinvestigate the therapeutic properties of calcium lactate in parathyroid tetany by administering this salt orally, in spite of the numerous reports in the literature on the impracticability of the procedure.

METHODS

The dogs used were put on a ration generally admitted to bring on rapidly and severely the fatal symptoms of tetany following the removal of the parathyroids. Each parathyroidectomized dog (the average weight of the dogs being 12 kg.) received daily one-half pound of meat and one-half pound of bread.

The general routine in the administration of the calcium lactate was roughly as follows: We usually gave each dog 10 gm. of calcium lactate dissolved or partly suspended in from 200 to 300 c.c. of cold tap water by stomach tube early in the morning. Several hours later we stirred up in the ground meat and bread 20 gm. of calcium lactate and offered this to the animal. This food was devoured eagerly: Late in the afternoon the animal again received 10 gm. of calcium lactate by stomach tube as in the morning.

In our experimentation we varied the amount of calcium lactate given daily, giving as much as 2.7 gm. per kilogram and as little as 0.43 gm. per kilogram of body weight.

We hope that this short description will suffice to acquaint the reader in a general way with our technic. The precise details will be published later.

RESULTS

In this preliminary publication we are prepared to record the following results:

1. Completely parathyroidectomized dogs can be kept alive without showing tetany on a diet very rich in meat by means of the oral administration of calcium lactate.

2. The daily intake of calcium lactate early after parathyroidectomy must amount to approximately 1.5 gm. per kilogram of body weight. As time goes on, the daily amount of calcium lactate necessary to prevent the appearance of tetany can be reduced.

3. After several months, the administration of calcium lactate can be stopped entirely without the appear-

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1. Luckhardt and Rosenbloom: Proc. Soc. Exper. Biol. & Med. **19:** 129, 130, 1921. Luckhardt and Rosenbloom: Science **56:** 48 (July) 1922. Luckhardt and Blumenstock: Science **56:** 257 (Sept.) 1922.

2. Frouin: Compt. rend. Acad. d. sc. **148:** 1622, 1909.

3. Voegtlin: Official Reports of Referate of American Gynecological Society, Pittsburgh, May-June, 1917, pp. 64-78.

ance of tetany. The spontaneous tetany occurring thereafter at irregular intervals, presumably because of constipation or the ingestion of large quantities of unspoiled or small quantities of putrid meat or other spoiled food, can be rapidly controlled by the oral administration of calcium lactate and the giving of enemas.

4. As in previously reported work, all tetany symptoms recur during the estral cycle. This tetany can be controlled perfectly by means of the oral administration of calcium lactate.

5. It is clear that water when given daily by stomach tube in large quantities (1,050 c.c. to a 12 kg. dog) does not prevent the appearance of violent tetany.

6. If, early after parathyroidectomy, the calcium lactate is withdrawn from the diet a single day, the animals will be found in most violent tetany within twenty-four hours or even earlier.

7. Whereas calcium lactate given daily in doses of 1.5 gm. per kilogram prevents absolutely the occurrence of tetany, bone ash given daily in doses as high as 5 gm. per kilogram has no appreciable effect in preventing the onset of very severe tetany. The total amount of calcium in a given amount of bone ash is very much greater than in an equivalent amount by weight of calcium lactate. The latter may be more readily absorbed, however, because of its greater solubility. There are some indications that bone ash given in large quantities possesses some undesirable properties.

8. As a result of muscular exercise and excitement, recently parathyroidectomized dogs on a low calcium intake may show suddenly seizures identical with the convulsize seizures seen in grand mal attacks of idiopathic epilepsy. On the basis of these findings and other data, we have suggested the use of calcium lactate in idiopathic epilepsy in doses approaching those found necessary to prevent tetany in parathyroidectomized animals. This dosage is much higher than that found in the United States Pharmacopeia. If calcium lactate is to be used at all in such conditions, it should be used in what appears at first sight to be massive doses. The large doses used in dogs have never been followed by any untoward symptoms even when given daily over a period of from sixty-four to eighty-one days. Amounts of calcium lactate similar to those given to dogs are not only well borne by epileptics but have been found to ameliorate the epilepsy, though it is too early to make definite statements on the subject.

9. On the basis of this work, we believe that the rôle of calcium lactate in preserving the life of completely parathyroidectomized animals is quite complex. It does not seem probable, at the present writing, that calcium salts act by meeting a deficiency of tissue or blood or lymph calcium on the view held years ago that the tetany after removal of the parathyroids was due to a loss of body calcium (calcium diabetes). We intend to determine at an early date whether the calcium asserts its beneficial action by acting locally on the bowel or its flora, or by or by acting constitutionally after absorption from the intestine. Chemical analyses of the blood and other body fluids will soon be undertaken, in the hope that such studies will help materially in elucidating the rôle of calcium, especially since we now possess several satisfactory methods in rapidly controlling the tetany and keeping the animals alive indefinitely. In earlier studies we were concerned primarily in conserving the life of parathyroidectomized dogs and in determining as far as possible the immediate cause of the distressing symptoms and the heretofore certain death. In addition to our own method, Dragstedt [4] has developed another method, on the basis of even more fundamental considerations, of preventing the death of completely parathyroidectomized animals. With this method and our own methods, it is now possible to study by diverse means the physiologic function of the parathyroid glands by determining the metabolic changes and compensatory readjustments that occur in the body following their removal.

SOME OCULAR PHASES OF LITTLE'S DISEASE (CONGENITAL SPASTIC RIGIDITY OF THE LIMBS)

REPORT OF CASES

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In 1861, Little, a British orthopedist, called attention to a condition not infrequently observed in consequence of premature births, mechanical injuries during parturition to the fetal head, etc., in consequence of which convulsions are excited after birth, and are succeeded by a determinate affection of the limbs of the child, which he designated "spastic rigidity of the limbs of new-born children, spastic rigidity from asphyxia neonatorum," and assimilated it to the trismus nascentium and the universal spastic rigidity sometimes produced at later periods of existence. It is manifestly outside the scope of this paper to discuss the general neurologic aspects of this condition, now usually designated as "Little's disease," though it may not be amiss to give a short clinical description of it, to refresh our memory, burdened with so many things ophthalmologic that the symptomatology of some of the rarer neurologic conditions at times escapes us.

According to Oppenheim, whose textbook contains perhaps the best description of the disease,

> Even in cases where the morbid condition must be regarded as congenital, symptoms pointing to involvement of the muscular system are not always recognized directly after birth. If the lesion is a very marked one, it will certainly be early manifested by the difficulty of separating the thighs, which are closely pressed together, and which at once resume the position of adduction. The condition is frequently first recognized when the child begins to attempt to walk, or shortly thereafter. . . . The lower limbs are held stiffly, the thighs rotated inwards, and so strongly adducted that the knees touch each other and in walking rub against each other. This, indeed, may be so very marked that in walking the thighs may cross each other. Whilst the hip and knee-joints are generally but slightly flexed, the pes equinus position is usually very pronounced, so that in walking the heels are raised in the air, and the little patient can only push himself along on the toes or the balls of the toes. . . .
>
> If the patient is examined in the dorsal position, the well-known phenomena of rigidity and motor weakness are observed, but it should be noted that these are not necessarily equally marked; the former may be very severe, whilst the motor power is little affected or even quite normal. Many writers go so far as to include under Little's disease only those cases in which the motor disturbances are due to muscular rigidity and not to weakness. This distinction cannot, however, be sharply adhered to.
>
> The knee jerk is always exaggerated; ankle-clonus is often absent. The patella is usually drawn somewhat upwards,

4. Dragstedt, L. R.: The Pathogenesis of Parathyroid Tetany, J. A. M. A. **79**: 1593 (Nov. 4) 1922.

and the patellar ligament appears to be lengthened. This is especially evident when the knee is flexed to an acute angle. Babinski's sign is usually present, but it should be remembered that in very young children dorsal flexion of the toes represents the physiological reflex movement. Oppenheim's sign, as well as the Bechterew-Mendel sign, is not constantly present. In the sitting position the rigidity and the spasm of the extensors are sometimes shown by the fact that the knees can not be fully flexed, the legs remaining poised in the air; sitting may in consequence become quite impossible.

Sensory changes, bladder disturbances, etc., are not present, or appear only in rare atypical cases. The symptoms affect the motor sphere exclusively.

The arms are involved in many cases, but in others are completely spared. If they are affected their attitude is usually a peculiar one. The upper arm is strongly abducted, the forearm flexed, sometimes also pronated, the wrist flexed or extended, the fingers flexed in every joint or in the interphalangeal joints only. This may vary in a few cases, but the attitude is always a forced one, at once revealing to the expert the condition of contracture. Passive movements are difficult, the tendon reflexes are exaggerated, the movements slow, awkward and feeble. The weakness of the arms, however, is not so great as that of the lower extremities. . . .

Deformities of the spinal column sometimes occur, and other anomalies of development may be found.

In pure cases of spastic paresis of the lower, or of all four extremities, Oppenheim points out that the symptoms must correspond completely with those of spastic spinal paralysis, and that there must be no indication of nondevelopment or incomplete development or degeneration of the spinal pyramidal tracts.

In such cases other symptoms, however, are generally present, which at once reveal the cerebral origin of the disease. Among these are ocular symptoms, presently to be mentioned in extenso; also disturbances of speech, the rigidity sometimes involving the muscles of articulation and causing difficulty and indistinctness in speech. The rigidity may be completely of the bulbar type, and in exceptional cases may be combined with difficulty in swallowing. There is one class in which, besides the spastic symptoms, there is only strabismus, or a combination of strabismus and speech affection. In others, several additional symptoms are present. While in many cases the intelligence is unaffected, there is in others weakness of the intellect which may amount to idiocy. Epilepsy may appear shortly after birth or during later life. Choreo-athetotic symptoms may affect all four extremities, but predominate, as a rule, in the upper extremities, and not infrequently appear in the muscles of the face and tongue, forming the symptoms which are earliest recognized. They are frequently confused with chorea.

The ocular symptoms include strabismus, nystagmus, rarely paralysis of the extra-ocular muscles and optic atrophy. Strabismus is the most constant. From his personal observations and a study of the literature, Feer found strabismus in 30 per cent. of cases of Little's disease which were without cerebral complications, and in 40 per cent. in which such was the case.

Although Uhthoff states that these figures are probably somewhat in excess of the actual occurrence of this symptom, in his experience strabismus does occur quite frequently. There is much difference of opinion in regard to the origin of the strabismus. It has been thought in most instances to be merely a concomitant squint due to errors of refraction. A study of the literature, however, will show very marked degrees of ametropia present in so few cases that we can safely assume that in most cases the deviations are dependent on innervational disturbances produced by the disease, and that they vary in degree and kind according to the location and extent of the cerebral lesion. Only rarely is spasticity such as occurs in the extremities present. Uhthoff has noted a periodically striking change in the intensity and even in the degree of the strabismus, and Feer thinks it somewhat oftener alternating than in the ordinary concomitant varieties. Only rarely is the strabismus divergent.

Nystagmus occurs next to strabismus in relative frequency, and varies greatly in degree and in kind. Paralysis of the eye muscles is very rare; so also is optic atrophy. De Bruin saw a case of the latter with normal macula, nystagmus, difficulty in swallowing, marasmus and death. Necropsy revealed a large cyst in the parietal lobe on both sides of the brain. The cunei were trophic, also the thalamus and peripheral optic system. In another, observed by Bruns, cerebral complications were found at the necropsy; i. e., thrombosis of the longitudinal sinus, and old and recent areas of softening in both hemispheres. Feer is inclined, especially when idiocy is also a complication, to regard the internal hydrocephalus present in some cases to be the bond of association between cerebral and optic nerve changes.

Anton and Liebe have also observed cases of optic nerve atrophy. In the light of our present knowledge, Uhthoff thinks that we are not justified in considering lesions of the optic nerve occurring in Little's disease to be analogous to the simple progressive atrophy of tabes, and suggests that the eye symptoms present may be a means of differentiating Little's disease from multiple sclerosis. He also points out that certain cases of amaurotic family idiocy present symptoms not unlike those found in Little's disease.

While it is probable that, in common with my colleagues, I have observed not a few cases presenting ocular symptoms dependent on Little's disease whose origin I failed to recognize, I shall present the notes of three which were diagnosed, and which will illustrate several types of this rather rare affection.

REPORT OF CASES

CASE 1.—Two years ago, by reason of my association with the Home for Incurables in Philadelphia as its consulting ophthalmologist, there was referred to me by Dr. W. W. Watson, the ophthalmologist to the institution, a man, E. D. W., aged 27, who had been an inmate of the home since 15 years of age. According to the statement of Dr. James H. McKee, who attended the mother at his birth, labor was very prolonged, and when toward the end of the second day the fetal heart sounds became weak, forceps were applied and the baby delivered in a pronounced condition of asphyxia pallida, but without a mark. Life was induced only after prolonged artificial respiration. Dr. McKee reports convulsions in the early days and repeated attacks of cyanosis. The child had difficulty in taking the breast, and spasticity developed very early. The left eye began to converge markedly at about 3 years of age. The child talked at 5 years but never entirely clearly, and did not begin to walk until he was 8 years old.

Dr. J. H. W. Rhein, one of the physicians of the home, noted that since the patient could remember, there had been little or no change in his condition outside of that stated in the history. At present there were no facial palsies or cranial nerve palsies; the tongue protruded straight in the median line. There were no atrophies of any of the muscles; the reflexes were generally increased; the chin jerk, the biceps jerk in the arms and the knee jerks were all increased and equal on the two sides. The cremasteric reflex was present, the abdominal reflex absent. Bilateral Babinski, Chaddock and Oppenheim signs were present. The gait was spastic. The patient walked on his toes, the knees interfering. The gait

was associated with a general athetoid condition of the muscles of the face, arms, trunk and legs. When lying recumbent, all the muscles were practically quiet except for an irregular contraction of the toes of both feet. Effort of any sort, speaking or moving any part of the body, gave rise to general athetoid movements of the face, arms, trunk and legs. All the movements were more pronounced on the right side. He practically used the left hand exclusively for voluntary acts. There was some hypertonicity of the muscles of the legs, brought out when the legs were bent at the knees by the examiner. The muscles were generally tense; except for some shortening of the Achilles tendons on both sides, there were no contractures. The sensation was normal everywhere. The finger to nose test brought forth some apparent hypermetry, but this was to be interpreted as an expression of athetosis. There was no adiadokokinesis. Station was normal. There were no subjective pains, no disturbance of the sphincters and no mental defect.

Dr. Watson reported convergent strabismus of the left eye of 40 degrees. The patient fixed well with each eye, but binocular vision was always resumed with the right eye fixing. There was no limitation of movements of either eye, and no nystagmus. There was no apparent spasticity in the movements of the ocular muscles. The eye grounds were negative. Corrected vision was normal in each eye.

The glasses which the patient had worn for several years to correct a moderate amount of hypermetropic astigmatism in each eye having failed to correct some symptoms of eye strain, and the patient being desirous of having his eyes straightened, Dr. Watson brought him to my service at the Howard Hospital, where a double advancement operation was done, under ether, on the external rectus muscles. Although more detailed information will be made of the anomaly at another time, it may be noted that an additional muscle was found in association with the tendon of the left externus. This adventitious tendon was advanced in common with that of the externus. The subsequent progress was uneventful, practical parallelism of the visual axes being obtained without further procedure.

Case 2.—In 1905, there were brought to me girl twins, aged 6 years, in one of whom, M., the mother had noticed soon after birth a tendency of the right eye to diverge, and in the other, A., rather purposeless movements of the eyes. Both were born at the period of seven and a half months in a difficult labor. Both children were noted as being delicate. M. had a skull too long in the anteroposterior diameter and orbits narrower than normal. A., examined at the same time, presented much the same shaped skull and orbits, but no ocular symptoms. When M. was made to fix in the median line, and a screen was placed over the right eye, the right eye deviated directly up under cover, slowly but steadily swinging down again to fix. When the left eye was screened off, the deviation was up, but also in, in the same slow rhythmical fashion as in the right eye. There seemed to be a lagging in the left eye when the object was carried down to the right, and this eye showed a tendency at times to slight convergent strabismus. H. equaled 1.5 D. in each eye. Vision was normal.

My examination having brought on a convulsion, and the child presenting other nervous phenomena, she and her sister were referred to Dr. W. G. Spiller for examination, who reported that both children were delicate, especially A. Both had a somewhat spastic condition of the muscles of the lower part of the face, and a peculiar manner of speaking, as though there might be some spasticity of the muscles of speech. The peculiar turning of the eyeballs upward and inward was very striking in M. She also had exaggeration of the patellar reflexes, and possibly might move the left lower limb a little awkwardly. There was no distinct weakness of the muscles. He believed that both children showed the effects of premature birth, and that the convulsions in M. were such as occur in children occasionally who are born too soon, and that they were brought on by the excitement of undergoing an examination. Both children were nervous, and A. might have convulsions at any time after excitement. He did not believe that any new lesions were developing in M.'s brain. Ocular disturbances are not uncommon in prematurely born children. M. might never have another convulsion, but she might have one at any time. Dr. Spiller advised the parents to keep them much outdoors, to prevent them from studying very hard, to hold back their mental development, and to pay much attention to their general health. These children belonged to the class he wrote about under the heading "Little's Disease."[1]

Other convulsions occurred in M. for a number of years, several of which followed ocular examinations, others being attributed to fatigue or overeating. In one of unusual severity the child was unconscious; the head was turned to the right, and the extremities on one side jerked.

These children reported for examination every two years, and their development has been followed with great interest. At no time have there been any intra-ocular changes, the optic nerves being normal. Although somewhat neurotic, both have developed almost normally, being mentally bright, and physically fairly strong. M.'s ocular condition, which has been regarded as an instance of that rare anomaly of the ocular muscles described by Stevens under the name of anotropia, has remained unchanged. The muscle test is unusual. At 5 meters in the primary position, there is an exophoria of 14 degrees. When the rod is placed before the right eye, the streak of light is below 6 degrees, and when it is transferred to the left eye, the streak is still below, and it requires an 8 degree prism, base down, to bring it up even with the light. Stevens was of the opinion that in these cases there is excess of the upward rotation in each eye, associated with a declination of the meridians, as a consequence of which the simultaneous and synergic action of the superior obliques is suppressed and the superior recti act alone. The occurrence of the anomaly in a subject of Little's disease is not without interest as bearing upon the etiology of this bizarre behavior of the ocular muscles.

Case 3.—In 1908, J. C. T., aged 4 years, was brought to me on account of rolling of the eyes. It was ascertained that he was delivered with instruments at the end of a labor that had lasted forty-eight hours, and that he was asphyxiated in consequence and revived with difficulty. He walked at about 16 months of age; though he never had convulsions, he was a nervous, irritable child. Rolling of the eyeballs was first noticed when the boy was 2½ years old.

The forehead was somewhat protruding and narrow, but the head not badly shaped. In ordinary fixation, the eyes were quiet, but marked lateral nystagmic movements manifested themselves in lateral excursions of the eyeballs, especially toward the left. The aberrant movements were also more marked at the extremities of the up and down movements of the eyes. No other gross deviations in the ocular movements were present, though both eyes were markedly out under cover. The eyegrounds were normal. This case was also referred to Dr. Spiller, who considered it to be an instance of Little's disease. He found no signs of paralysis or other organic disorder outside the nystagmus, which he thought had resulted from the disturbance at birth. He also was of the opinion that it was not improbable that during the asphyxia the cerebellum was especially affected, and that had the disturbance been a little greater, the child would probably have had cerebral diplegia.

This case has been followed up to the present time, the boy reporting once or twice a year for refraction or some slight ocular ailment. At 9 years of age, a tremor of the head appeared, during convalescence from an attack of scarlet fever. This gradually lessened, however, and when he was 14 years old, had entirely disappeared. Owing, perhaps, to his infantile disability but also to the spoiling influences of a petulant mother, the lad has been much hampered in his development, having difficulty in keeping up with his classes, and easily excited and hysterical. The nystagmus still persists. Both eyes are but slightly hypermetropic and astigmatic, but refraction is difficult, and full visual acuity was obtained with lenses only after patient insistence on the part of the oculist. At 5 meters, esophoria equals 8 degrees, and there is a right hyperphoria of 1 degree. There have never been any changes in the eyegrounds.

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1. Spiller, W. G.: Univ. Pennsylvania Bull., January, 1905.

ACIDOSIS IN HYPERTHYROIDISM *

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Although the presence of acidosis as a complication of hyperthyroidism, particularly after operation, is mentioned in the literature of thyroid disease, such references have as a rule been very brief and cursory. This complication is referred to by Crile,[1] by Crotti [2] and by Chesky,[3] both of the latter observers describing the acetone breath which is noted at times in patients after operation. However, many of the most recent articles and textbooks fail to mention the occurrence or the treatment of this complication.

A recent experience with cases of acidosis in thyroid disease suggests the desirability of studying more fully such an important complication. A summary of two of these cases is given:

REPORT OF CASES

CASE 1.—A married woman, aged 37, white, entered the Bell Memorial Hospital, University of Kansas, May 11, 1922, complaining of weakness, nervousness and fluttering of the heart. The duration of the symptoms was two months.

Physical examination disclosed evident loss of weight, exophthalmos with a positive von Graefe sign, a diffusely enlarged thyroid, a fine tremor of the fingers, and a moderate tachycardia, the pulse rate varying from 96 to 119. The blood pressure was: systolic, 140; diastolic, 40.

The blood count revealed: red blood cells, 5,900,000; leukocytes, 9,600; hemoglobin (Sahli), 80 per cent. The differential count revealed no abnormalities. The urine was normal. The basal metabolism was 23 per cent. plus.

The patient's thyroid was first treated by roentgen irradiation, and two exposures were given at intervals of four days. The day following the second treatment the patient was nauseated, and the next day began to vomit, complained of great thirst, and was unable to retain anything on her stomach. Her temperature rose from 99 to 100.2 F., and the pulse rate from 100 to 160. She began to hiccup, was very weak, and looked extremely ill. The breath at this time had a distinct acetone odor, and examination of the urine revealed the presence of large quantities of acetone and diacetic acid. The carbon dioxid combining power of the blood plasma was 48 per cent. by volume (Van Slyke method).

Proctoclysis was begun that afternoon, and she received every six hours 500 c.c. of a solution containing 5 per cent. each of sodium bicarbonate and glucose, part of which was expelled. Eighteen hours later, after the patient had received three such injections, she was comfortable, vomiting had ceased, her temperature was 98.6, and the pulse rate was 108. The carbon dioxid combining power of the blood plasma was 60 per cent. by volume, and the urine showed only traces of acetone and diacetic acid. The administration of sodium bicarbonate and glucose was continued for two days.

Two weeks later a lobectomy was performed on this patient under ether anesthesia, by Dr. M. T. Sudler. The pulse rate rose to 136 and the temperature to 101 following the operation, but the next day both were down to normal. The pathologic diagnosis of the tissue removed, by Dr. H. R. Wahl, was: chronic interstitial thyroiditis; focal epithelial hyperplasia of thyroid gland (toxic goiter).

For two days preceding the operation, the patient received 15 grains of sodium bicarbonate daily by mouth; and for three days after operation, she was given glucose and sodium bicarbonate by proctoclysis. No signs or symptoms of acidosis appeared.

The patient was discharged from the hospital, June 26, ten days after operation, markedly improved. She was seen again, September 22, when she had gained 14 pounds (6.4 kg.) and had a normal metabolic rate.

CASE 2.—A married woman, aged 37, white, entered the Bell Memorial Hospital, University of Kansas, Oct. 17, 1922, complaining of nervousness, palpitation of the heart and loss of weight. The duration of symptoms was one year, during which she had lost 40 pounds (18 kg.).

Physical examination revealed a marked exophthalmos, with a positive von Graefe sign, heteronymous diplopia, a diffusely enlarged thyroid with a very loud bruit, and a fine tremor of the fingers. The pulse rate varied from 80 to 100. The blood pressure was: systolic, 145; diastolic, 95.

The blood count revealed: red blood cells, 5,100,000; leukocytes, 6,200; hemoglobin, 89 per cent. (Sahli). The differential count was normal. The urine was normal; the basal metabolic rate was 20 per cent. plus.

The patient improved markedly under rest in bed. Three days after the first estimation of the metabolic rate, a second determination revealed the rate to be only 10 per cent. above normal.

An operation was performed, October 30, and a partial removal of the gland was carried out by Dr. M. T. Sudler under nitrous oxid and oxygen anesthesia. The day following the operation the patient's pulse was 160, the temperature 102.4 and respiration 24. The patient complained of intense thirst, and insisted on drinking a large quantity of water, which was promptly vomited. The breath had an acetone odor, and the urine contained considerable quantities of acetone and diacetic acid. The carbon dioxid combining power of the blood plasma was 21 per cent. by volume.

This patient was placed on the same glucose and sodium bicarbonate treatment by protoclysis. Twenty-four hours later the patient was comfortable, vomiting had ceased, the pulse rate was 110 and the temperature 99.2, and the carbon dioxid combining power of the blood plasma was 46 per cent. by volume. Six days later the carbon dioxid combining power was 51 per cent. by volume.

The patient was discharged from the hospital, November 21, markedly improved, the basal metabolic rate at this time being normal. The pathologic report of the tissue removed, made by Dr. H. R. Wahl, was: "marked epithelial hyperplasia of the thyroid gland, lymphoid infiltration (thyrotoxic goiter)."

COMMENT

Here, then, are two cases of marked acidosis associated with hyperthyroidism of moderate severity, the condition appearing in one instance after roentgen-ray treatment of the gland and, in the other, following a lobectomy performed under nitrous oxid and oxygen anesthesia. Both patients responded promptly to the administration of alkali.

Crile,[1] Austin and Jonas,[4] Morriss,[5] Caldwell and Cleveland,[6] Reimann and Bloom,[7] Cannon,[8] Carter [9] and Rose [10] have called attention to the acidosis that may follow ether anesthesia. Reimann and Bloom noted a fall of the plasma carbon dioxid from 86.2 to 62.7 c.c. in a patient following nitrous oxid and oxygen anesthesia, while Caldwell and Campbell, in a study of this condition, found in fourteen cases an average fall of 2.8 (measured in millimeters of mercury of the alveolar air). Caldwell and Campbell found also that the differences between the changes produced by gas

* From the Department of Internal Medicine, University of Kansas School of Medicine.

1. Crile, G. W.: The Phenomenon of Acidosis and Its Dominating Influence in Surgery, Ann. Surg. **62**: 257, 1915.
2. Crotti, A.: Thyroid and Thymus, 1918, p. 521.
3. Chesky, in Hertzler: Diseases of the Thyroid Gland, 1922, p. 169.
4. Austin, J. H., and Jonas, Leon: Clinical Studies of Acidosis, Am. J. M. Sc. **153**: 220, 1917.
5. Morriss, W. H.: The Prophylaxis of Anesthesia Acidosis, J. A. M. A. **68**: 1391 (May 12) 1917.
6. Caldwell, G. A., and Cleveland, Mather: Observations on the Relation of Acidosis to Anesthesia, Surg., Gynec. & Obst. **25**: 22 (July) 1917.
7. Reimann, S. P., and Bloom, G. H.: The Decreased Plasma Bicarbonate During Anesthesia and Its Cause, J. Biol. Chem. **36**: 211 (Oct.) 1918.
8. Cannon, W. B.: Acidosis in Cases of Shock, Hemorrhage and Gas Infection, J. A. M. A. **70**: 531 (Feb. 23) 1918.
9. Carter, W. S.: The Effect of Ether Anesthesia on the Alkali Reserve, Arch. Int. Med. **26**: 319 (Sept.) 1920.
10. Rose, M. E.: Acidosis in Surgical Anesthesia, Illinois M. J. **41**: 6 (Jan.) 1922.

and ether, ether, gas and oxygen, local anesthetics and chloroform were slight.

In the two patients described, acidosis may have developed in the second instance as a result of anesthesia. In the first, however, it was directly traceable to the thyroid toxicosis. The presence of intense thirst and vomiting in these patients was noteworthy. Crile [1] has called attention to this in his discussion of the relationship of thyroid disease and acidosis, and in another place [11] has pointed out the necessity of maintaining a proper fluid balance. In these patients, intense thirst ceased with the disappearance of the acidosis.

THE HISTORY OF EXPERIMENTAL SCARLET FEVER IN MAN *

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Most of the attempts to inoculate human beings with scarlet fever have been made, not for the purposes of studying the nature and mode of infection in this disease, but in the hope that a mild attack might result that would protect against further attacks. It was the success of inoculation of smallpox as a protective measure that led to the hope of like success from the inoculation of scarlet fever. Thus, Erasmus Darwin,[1] the grandfather of Charles Darwin, wrote:

> No one could do an act more beneficial to society, or glorious to himself, than by teaching humanity how to inoculate this fatal disease [scarlet fever]; and thus to deprive it of its malignity. Matter might be taken from the ulcers in the throat, which would probably convey the contagion. Or warm water might be put on the eruption, and scraped off again by the edge of a lancet. These experiments could be attended with no danger, and should be tried for the public benefit, and the honor of medical science.

He cites a case, communicated to him by Sir Busick Harwood, professor of anatomy at Cambridge, that would seem

> to shew, as far as a single case can be relied on, that the scarlet fever may be communicated, like the smallpox, by inoculation, and probably with similar success, if the matter be diluted with warm water, used in small quantity, and by superficial incisions only, through the cuticle.
>
> A man with a violent attack of scarlet fever had delirium, and the skin was cracked in many places, exuding an ichorous matter; the attendant was a poor man who recently had cut his hand with a glass bottle, and in the struggle with the patient one evening, this hand frequently came in contact with the patient's body. On the following day the hand was infected and the arm swelled, and on the day after that, scarlet fever set in from which he died in three days.

In another place Darwin says that "the scarlet fever exists with all degrees of virulence, from a flea bite to the plague."

An argument in favor of inoculation of scarlet fever was made by Struve,[2] which is repeated and elaborated by Most,[3] who died of cholera in 1832. Struve held that the surest means of prevention is to destroy the receptivity by an attack of the disease itself, and emphasized the success said to have been obtained by inoculation of measles and pest. He goes on to say that in all probability inoculation of scarlet fever would accomplish just as much as the inoculation of smallpox did before vaccination was introduced; but, as inoculation with scarlet fever probably would be accompanied with dangers of the same kind as those of inoculation of smallpox, vaccination clearly is desirable with blood, saliva, scales or material from ulcers in the throat of scarlet fever patients. Care must be taken to prevent the natural transmission of the disease. Most did not believe that vaccination against scarlet fever would be found in materia medica, although belladonna lessens susceptibility. If there exists in nature any agent that can prevent scarlet fever, it must be looked for in the animal economy. As two contagious principles cannot exist in the body at the same time, because when already infected with one virus it loses its receptivity to all other viruses of similar nature, a permanent preservative against scarlet fever might be obtained from swine suffering from a disease marked by swelling of the neck, by angina, and by erysipelatous inflammation of the surface of the body. Jenner's vaccination led others also to suggest animal diseases as possible sources of vaccines against scarlet fever.

If case inoculation was practiced, Most thought that it should be made during the season when scarlet fever is mild, preferably in January and February; only children between 2 and 7 years of age should be inoculated, not younger ones, because they are insusceptible, and not the older, because they are highly susceptible; the matter inoculated should be taken from a patient free from other disease and suffering with a mild attack of scarlet fever; the best material probably would be blood; and it would be best to inoculate it into the arms by means of punctures or scarifications; material from ulcers in the throat, as recommended by Darwin, should not be used, as likely to be mixed with decomposing matter. After inoculation, children should be placed on light diet and kept in rooms with an even temperature.

Neither Struve nor Most cites any actual cases of inoculation of scarlet fever. Before long, however, attempts were made to produce scarlet fever by inoculation with material from erythematous areas, with serum of miliary vesicles, and with scales of the skin. Experiments of this kind were made by Stoll, Miquel and others, but it is doubtful whether scarlet fever was produced in a single case, although contemporary and later writers appear to have regarded some of the results obtained as positive. Stoll is quoted repeatedly as having produced scarlet fever by inoculation of scales, but I have been unable to find his original article.

Rostan [4] writes: "The eruption appears at a certain time after the application of the cause, seven days, when inoculation has taken place," but he gives no facts to support this statement. He says, further, that scarlatina is an acute exanthem, contagious, which develops under the influence of a specific cause, susceptible of inoculation.

The experiments of Miquel,[5] Bretonneau's pupil and follower, "an humble pioneer," as he calls himself, are mentioned frequently. Belladonna having failed to protect against scarlet fever, Miquel in 1833 included

11. Crile, G. W.: The Protection of the Patient in Surgery of the Thyroid, Surg., Gynec. & Obst. **32**: 213 (March) 1921.

* From the John McCormick Institute for Infectious Diseases.

1. Darwin, Erasmus: Zoonomia **2**: 246, 1796.

2. Struve, Christian August: Untersuchungen und Erfahrungen über die Scharlachkrankheit, 1802, p. 267.

3. Most, George Friedrich: Versuch einer kritischen Bearbeitung der Geschichte des Schalachfiebers und seiner Epidemien von den Aeltesten bis auf unsere Zeiten **2**: 57, 1826.

4. Rostan, Léon: Cours de médecine clinique **2**: 186, 1830.

5. Miquel, J.-F., à Tours, et autrefois d'Amboise: Lettres médicales d'un vétéran de l'école de Bretonneau a M. le professeur Trousseau et autres pour mettre un terme a des erreurs professés sur les maladies eruptives et la spécificité, 1867, p. 138; Schmidt's Jahrb. **3**: 373, 1835.

this disease in experiments to localize by inoculation contagious diseases which he believed were propagated by inhalation. These appear to be the first definite attempt to inoculate scarlet fever. Material was obtained by scratching papules on the skin of a patient with scarlet fever on the third day, which material appeared like yellowish fluid; it was dried on lancets; he then inoculated this material into the arm of a girl, aged 28 months, by means of nine punctures; thirty hours later, zones of redness had appeared around the punctures, which remained for two or three days and disappeared on the fifth day; fifteen days later the same girl was inoculated again with other material of the same nature, but from a different source, and at this time no redness developed. He then inoculated in the same way two other children, one aged 1½ years and one aged 9. Local redness developed as before; the children were now made to sleep with their sister, who had scarlet fever, but they did not become sick. Other experiments were made by Miquel and by Bridel.[6] The results have been variously interpreted, some holding that the inoculated children were protected, others, notably Leroy,[7] who repeated the experiments on himself with tears, blood and scales, declaring that no protection resulted.

Petit Radel [8] is said to have obtained negative results from inserting scales of skin, and Albers [9] says that inoculations with the blood of patients with scarlet fever were without any results in two cases.

About this time, Robert Williams,[10] who held that after an attack of scarlet fever "the susceptibility of the constitution is exhausted to all future attacks of the poison," wrote:

> The contagious nature of scarlet fever has been strictly demonstrated by inoculation. The eruption of scarlet fever is sometimes intermingled with vesicles containing serum. This serum has been used by Sir Busick Harwood and other physicians to inoculate healthy children, in the hope that by this method a milder disease, as in the case of smallpox, might be produced. Scarlet fever has in many instances resulted from this experiment, but the disease has been as formidable as that which occurs spontaneously, and consequently this practice has of late years not been repeated.

Williams fails, however, to refer to any exact reports by Harwood or others and, like Murchison,[11] the only account of Harwood's observation I have found is in Erasmus Darwin's Zoonomia,[1] as stated. Practically the same statement as this by Williams, but also without any definite authority, is made by Copeland: [12]

> The propagation of the disease by inoculation and by contact of the morbid secretions of the disease has been demonstrated. Sir B. Harwood and others have tried to inoculate healthy children with the fluid from vesicles sometimes intermingled with the eruption of scarlatina in hopes of producing a milder disease, as in smallpox; but although the disease was thus communicated in many instances, no mitigation of its type was thereby obtained. In a case which came under my care, the disease was produced by the contact of a small portion of the discharge from the throat of a person with malignant anginous scarlatina, and the patient thus infected had the disease in the most severe form, and recovered with difficulty.

6. Bridel, quoted by Miquel: Lettres, p. 143.
7. Leroy, Raoul: Étude sur le traitement prophylactique de la scarlatine par la belladonna et par l'inoculation, Gaz. hebd. **5**: 314, 1858; Schmidt's Jahrb. **99**: 57, 1858.
8. Cited by Noirot, M. L.: Histoire de la scarlatina, 1847. Guersant: J. f. Kkr. **3**: 42; Encycl. d. med. Wiss. **10**: 440, 1833.
9. Albers, J. F. H.: Das Uebermpfen der Masern, J. de Chir. u. Augenh. **21**: 541, 1834.
10. Williams, Robert: Elements of Medicine **1**: 118, 1836.
11. Murchison: Scarlet Fever, Lancet, 1864, p. 541.
12. Copeland, James: Dictionary of Practical Medicine **3**: 747, 1860.

ACCIDENTAL INOCULATION OF SCARLET FEVER WITH SMALLPOX VACCINE

On account of its bearing on experimental scarlet fever, the accidental inoculation of this disease with smallpox vaccine, described by Salmon Hudson,[13] is given in full:

> That scarlatina is not only contagious, but actually infectious, capable of being transmitted by inoculation, we have the most positive and conclusive evidence, which will be shown by the narration of the following facts:
>
> In the winter of 1854, smallpox made its appearance in Medina village, the county seat of Medina County, Ohio. This, as usual in small places, created no little excitement; everybody wished to be vaccinated. Vaccine matter was obtained, and the physicians were kept busy, myself with the rest. Mr. G. S., a prominent man in our township, sent for me to come and see him; said he had been exposed to the smallpox, and thought he had got it. When I saw him he had a high fever, quick pulse, headache; complained of pains all over his body; said he wished me to vaccinate all of his family, which I accordingly did. Saw Mr. S. the next day; found his body well covered with a rash, sore throat, and every symptom characterizing a plain case of scarlatina; salivary glands were discharging freely, which he attributed to the administration of calomel, of which he had not received one grain. I attended Mr. S. four or five consecutive days, and then dismissed him; telling his wife to save me the scabs from the arms of her two little boys, which she promised to do. In about three weeks, I received an envelop, containing two very nice scabs. of which I was very choice, and the next day vaccinated some thirty children from those scabs, twenty-three of which were taken down simultaneously with scarlatina during the fifth and sixth days after being vaccinated. I was recalled to see them, and, of course had business a plenty; was called everything but a gentleman, censured without mercy, threatened with a prosecution, and escaped the expense of a defense in court by the intervention of my friends.
>
> The history of those scabs with which I vaccinated my patients, is this: Those little boys of Mr. S., after I vaccinated them, came down with scarlatina, though light, after which their vaccination operated effectually; vaccinia being for a time suspended during the invasion and termination of scarlatina, and then developing itself in the system, corroborating an old established principle that, as a general thing, the human system does not tolerate the invasion and development of two specific diseases at the same time.
>
> The little boys contracted scarlatina from their father after being vaccinated, and not being much sick I was not called; and was not even aware that they had had scarlatina at all, or I should never have used the matter from their arms. But this did not exonerate me from censure. "I did it on purpose to make business," "deserved to be put through," as they termed it. Madam Rumor, as she always is, was busy; epithets without number were heaped upon my head; which of course had a tendency to injure me in my business.
>
> And next as to the history of those cases which contracted scarlatina by inoculation from those scabs, which will be interesting as well as instructive. During the fifth and sixth days after I vaccinated them, twenty-three out of the thirty were taken down simultaneously with scarlatina, all of which did well; no unpleasant symptoms, such as retrocession of the rash, metastasis, or abscesses about the neck, but all terminated pleasantly within ten or twelve days from the time I vaccinated them. But no sooner had scarlatina subsided than vaccinia began to assert its prerogative; a nice little pustule began to form on the arm, and all the symptoms attending this disease became manifest, and occurred in every case that had scarlatina.

13. Extracts from Medical Thesis on Inoculation for Scarlatina, by Salmon Hudson of Whittlesey, Ohio M. & S. J. **14**: 190, 1862. Dr. Hudson's thesis was submitted to the faculty of the Starling Medical College at Columbus, Ohio, in 1862, in fulfilment of regular requirements for graduation. The late Dr. Starling Loving informed me in 1905 that the copy of the thesis had been lost. I have been unable to obtain any other details in regard to Dr. Hudson's observations.

Another important feature in those cases was that in several of the families whose children were vaccinated, some were absent. One, in particular, two little boys and a girl; the former two not being home, the matter was only put in the arm of the girl, who came down with scarlatina as the rest; had it very mild, from which her two little brothers contracted the disease in the most malignant form of which both finally died. In several other families the results were very similar; those who were vaccinated had it very mild and light, while those who took it in the natural way had it in the most malignant form, several of whom died.

Now, from the above it strikes me that scarlatina, like smallpox, may be modified and cut short—made less formidable—and, in those fearful epidemcs which so frequently destroy so many of our children, its progress may be arrested, its symptoms mitigated, and the disease shorn of its terrors.

Now as to the practicability, I would suggest that in one of these fearful epidemics I would immediately procure some vaccine matter, put it in the arm of some person just exposed, or coming down with scarlatina. As soon as the patient has had scarlatina, vaccinia will come on, provided the patient has never been vaccinated before. In this manner I have no doubt but the disease may be essentially modified—rendered comparatively safe and harmless.

The fact that twenty-three of the thirty children vaccinated with the same vaccine matter were taken down "simultaneously" with scarlet fever points to a common source of infection, and one cannot but regret that Hudson did not describe the symptoms more in detail. Definite information as to the relation of the rash to the point of vaccination would have been of the greatest value because in so-called surgical scarlet fever, which is the result of an involuntary inoculation, the exanthem may spread first from the wound as described so well in the classical instance of von Leube,[14] who writes:

I have surely had a very slight tendency to scarlatina, since neither as a child, when several of my brothers and sisters were ill of the disease, was I attacked, nor later on, in my treatment of my patients. One day I wounded the index-finger of my left hand during the autopsy upon the cadaver of a patient that had died of an unusually severe case of scarlatina. On the seventh day, after the injury to my finger the wound, which had only imperfectly healed, began to pain. Then early in the tenth day I became unwell and angina appeared. On the eleventh day vomiting, and a decided fever followed, and at the end of the same day the scarlatina exanthem appeared. This, contrary to the usual procedure, spread first from the original lesion, following the lymphatic vessels up to the left arm, in the form of a broad stripe, and then rapidly extended over the rest of my body. The course of the disease was one of medium severity; the desquamation began also upon my left arm.

In considering the inoculation of measles, Thompson[15] makes the following statement about the transmission of scarlet fever in smallpox vaccine:

As regards scarlatina, I may adduce an observation which Dr. Stirton made some time ago. A child whom he had vaccinated showed an eruption of scarlatina the day after he had taken lymph from it, with which he had vaccinated two other children. About the eighth day there appeared an eruption like erysipelas spreading from the vaccine vesicles, not like the ordinary areola, which he attributed to the inoculation of the virus of scarlatina along with that of vaccinia. He was then further confirmed in this opinion by the insusceptibility manifested by these two children to scarlatina on a subsequent occasion.

14. Von Leube, W.: Specialle Diagnose der inneren Krankheiten **2**: 364, 1893.

15. Thompson, Hugh: Inoculation, with Suggestions for Its Further Application in Medicine, Especially in Mitigating the Severity of Measles, Glasgow M. J. **33**: 420, 1890.

FURTHER HUMAN EXPERIMENTS WITH SCARLET FEVER

Continuing the review of the work on experimental human scarlatina, there is nothing conclusive in Ashmead's[16] report that, three days after the inoculation into the skin with scales from a patient on the twenty-fifth day of scarlet fever, redness developed, followed eventually by suppuration and acute tonsillitis without fever or desquamation.

Stickler[17] reported that he produced scarlet fever in ten children by inoculating the skin of the arm with mucus from the throat and mouth of a patient who had a mild attack of the disease. The material was secured soon after the eruption had appeared, and before its use it "was treated with carbolic acid, according to the suggestion of Chamberland and Roux, the addition of 1/600 part of the acid being made." This article was published posthumously, it having been found among Dr. Stickler's papers with the note that "the inoculations were made to prove that a protective virus had been discovered," but, as what was regarded as scarlet fever developed, other experiments were planned to secure protection. It is stated that scarlet fever developed in each of the ten persons, all of whom recovered. In several of the cases the eruption at first seemed more marked at the point of injection; in three cases this became the seat of abscess. In one case nephritis developed. The incubation varied from twelve to seventy-two hours. In at least four of the inoculations the material inoculated must have been kept for about eight days. There is no further statement as to the circumstances under which it was kept. In view of the lack of details in regard to the symptoms in the inoculated children as well as for other reasons, Stickler's results must be set aside as doubtful.

The most recent attempts to produce scarlet fever in man experimentally are by Takahashi[18] and by G. F. and G. H. Dick.[19] Takahashi injected his five children, aged from 3 to 10, with the blood of a patient with scarlet fever on the sixth day. The blood was diluted in physiologic sodium chlorid solution with sodium citrate so that 1 c.c. contained 0.0001 c.c. of blood, and of this mixture four children received 1 c.c. subcutaneously and one, a 3-year-old boy, the youngest, 0.5 c.c. No symptoms whatever developed, and several weeks after his injection three of the children were injected with 0.15 c.c. and one, the youngest, with 0.06 c.c. of blood from a scarlet fever patient on the fifth day of a severe attack. In no case did any symptoms develop after the second inoculation. Furthermore, smearing the throats of two of the inoculated children with a mixture of the throat secretions and blood of a scarlet fever patient on the fourth day of the disease was also without any apparent effect. Takahashi is inclined to conclude that this experiment "proved the efficiency of the prophylactic inoculation against scarlet fever," but in the absence of convincingly positive human control experiments the true significance of these experiments is not now determinable.

The largest series of inoculations to produce scarlet fever in man is that of the Dicks.[19] Healthy men and women volunteers between the ages of 18 and 35,

16. Ashmead, A. S.: Inoculation of a Japanese with Scarlet Fever Germs, M. Rec. **40**: 270, 1891.

17. Stickler, J. W.: Scarlet Fever Reproduced by Inoculation: Some Important Points Deduced Therefrom, M. Rec. **56**: 363, 1899.

18. Takahashi, I.: Prophylactic Inoculation in Human Against Scarlet Fever, Japan M. World **1**: 4 (June) 1921.

19. Dick, G. F., and Dick, Gladys H.: Experimental Inoculations in Scarlet Fever, J. A. M. A. **77**: 782 (Sept. 3) 1921.

living in Chicago and without any history of scarlet fever, were inoculated in various ways: The blood serum of scarlet fever patients was swabbed on the tonsils and injected subcutaneously without any effect; whole citrated blood from scarlet fever patients was injected subcutaneously without effect; the filtered (Maasen or Berkefeld) throat secretion of early scarlet fever was swabbed over the tonsils and pharynx, used as a gargle and injected subcutaneously without effect; cultures of hemolytic streptococci from the throats of scarlet fever patients were smeared on the throats of thirty volunteers, seven of whom developed sore throat, leukocytosis and fever, but no rash, the others remaining perfectly well; finally, nine inoculations by means of throat swabs were made with the pure cultures of a pleomorphic bacterium obtained from the throat, blood and urine in the early stages of scarlet fever, and in two instances sore throat with fever, leukocytosis and a rash on the palate, but no cutaneous eruptions developed. The fact that no case of typical scarlet fever was produced in these extensive experiments naturally raises the question which the future may solve whether the results would have been different if the volunteers had come from rural communities.

CONCLUSION

This brief review of the recorded attempts to produce scarlet fever experimentally in man reveals that it is exceedingly doubtful whether a single positive result has been obtained. In view of the ease with which scarlet fever appears to be transmitted under natural conditions and the not infrequent occurrence of surgical scarlet fever, the failure of the efforts at experimental transmission is a perplexing puzzle that awaits solution.

ISOLATED DISEASE OF THE SCAPHOID

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Since Köhler[1] described the first case of isolated disease of the scaphoid in 1908, forty-two cases have been reported. The disease is of more frequent occurrence than this figure would indicate, however, but is diagnosed weak foot, since it occurs in abducted feet, with mild symptoms which clear up on immobilization. Its importance lies in the fact that it has been mistaken for tuberculous disease. Unfortunately, no reports of the pathology so found have been published.

Our knowledge of its pathology is limited to what can be surmised from roentgenograms and the clinical picture. By roentgen ray, the scaphoid is seen as a disk, from one-third to one-fourth normal in size, biconcave, or of irregular density, or opaque. The picture, of course, varies with the stage of the disease.

However, the space occupied by the bone is undiminished, and there is no derangement of the other bones, such as would occur in a crush fracture. Schultze[2] reported a compression fracture produced on a cadaver which gave this picture by roentgen ray.

The suggested etiology has ranged from endocrine imbalance to osteomyelitis, including syphilis, infectious disease, vascular change and tuberculosis. Except for one patient of Köhler's and five patients of Schultze's who had family histories of tuberculosis, evidences of this disease have been lacking in the literature. In only three cases has an infectious disease preceded the onset by a short interval. Not only has the Wassermann reaction been negative as a rule, but other evidences of syphilis have been wanting. One patient of Campbell's had notched teeth, and its mother had a four plus Wassermann reaction.

Trauma appears most consistently in the histories as a possible factor. By seven reporters, it is assigned as the cause and preceded the onset by a period varying from several days to a year. It has never been of sufficient severity to be the direct and only cause of what seems by roentgen ray to be an extensive structural change. One writer[3] believes that trauma injures the center of ossification. Another supposes that nutrient vessels may have been torn off. Still another[4] assigns to trauma a dystrophy which softens the bone, later allowing collapse under weight-bearing.

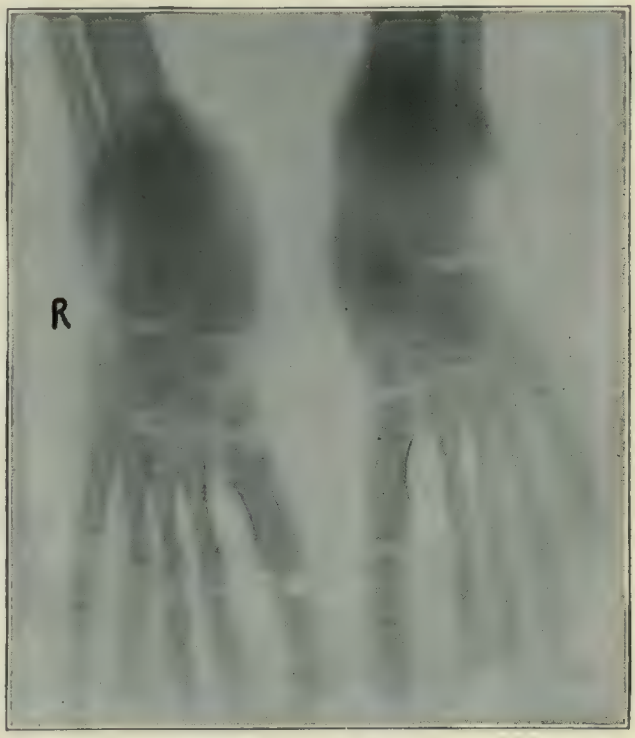


Fig. 1 (Case 1).—On admission: beginning compression of scaphoid; note abduction of forefoot on affected side.

The clinical picture is that of a child of from 4 to 8 years, giving a history of trauma varying from a turned ankle to a crushing injury beneath an automobile. The symptoms, which are occasionally entirely absent, are a slight limp, and discomfort at the site of the scaphoid, increasing often to actual pain at night. The signs, which are also inconstant, are enlargement of the scaphoid, as shown by palpation, and tenderness. Abscess formation never occurs.

The treatment is rest or immobilization in plaster for from three to ten weeks. The prognosis is excellent. I examined, through the kindness of H. L. Taylor, all the patients on the second division at the

1. Köhler, Alban: Ueber einer Haufige, bisher anscheinend unbekannte Erkrankung einzelener Kindlicher Knochen, München. med. Wchnschr., Sept. 15, 1908, p. 1922.
2. Schultze, Ernest: Das Alb. Köhler'sche Knochenbild des Os Naviculare pedis bei Kindern—eine Fraktur, Arch. f. klin. Chir. **100**: 431-452, 1913.
3. Preiser, George: Zur Frage der typischen traumatischen Ernährungsstörungen der kurzen Hand- und Fusswurzelknochen, Fortschr. a. d. geb. d. Röntgenstrahlen **17**: 360-363, 1911.
4. Mouchet, Albert, and Roderer, Carle: La scaphoidité tarsienne des jeunes enfants, Rev. d'orthop. **7**: 302 (July) 1920.

Hospital for Ruptured and Crippled whose symptoms had subsided not less than a year before. No abnormality was discovered in these six cases, three of which I have already reported,[5] nor could the affected side be distinguished from the other by roentgen ray.

In three of the four new cases reported below, serial roentgenograms were taken at three-week intervals. In one of these cases, through the courtesy of the roentgenographer to the Kings County Hospital, I saw the roentgenogram taken immediately following the injury to which the disease was traced. This revealed a foot normal in every respect, thus ruling out a direct compression fracture as the cause of its appearance in the roentgenogram. The serial pictures showed ossification to be progressing as in the normal foot. The bony architecture was normal about the opaque disk as a nucleus. This disk was obliterated in from three to nine weeks. It seems, therefore, that there was no injury to the center of ossification, and that no disturbance of the vascular supply had taken place.

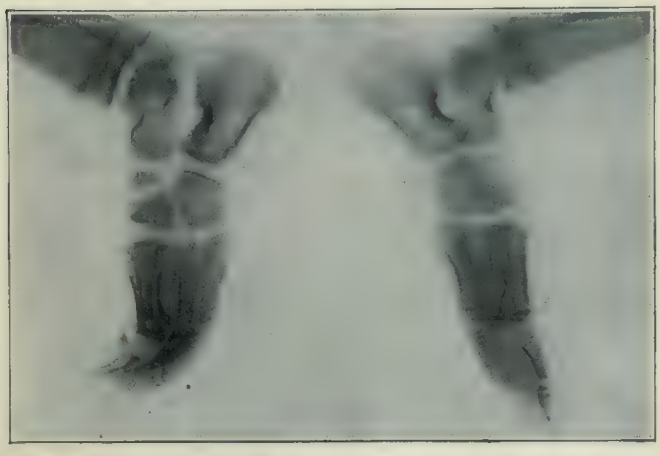


Fig. 2 (Case 1).—Two months later: compression complete with progress of ossification continuing; note white line indicating opaque disk through center of bone.

The scaphoid is cartilaginous up to about 4 years of age, when ossification commences. It is near this age that the disease is found. A mechanism of the disease which would seem to account for all the facts is the following: Through trauma, or possibly some unknown factor, the bone is enlarged. This is demonstrable by palpation and would also account for the abduction of the fore part of the foot found in these cases. In weight-bearing, this enlarged bone, as the keystone of the arch, is subjected to anteroposterior pressure, resulting in a flattening and spreading out laterally of the soft, newly formed osseous portion. The biconcave appearance presented would thus be accounted for. As the constituents of the bone—cartilage and osseous material—are still present, conversion of cartilage into bone continues as in the normal bone. The subsidence of the symptoms corresponds in time roughly to the reestablishment of bony architecture throughout all of the portion visible by the roentgen ray.

REPORT OF CASES

CASE 1.—H. M., aged 7 years, came to the dispensary of the Hospital for Ruptured and Crippled, Second Division, June 29, 1921, complaining of a limp, developing two weeks previously. The family history was negative throughout. The child had always been well. There was no history of trauma. Pain was present ony at night. The mother said that she had been told the boy had fallen arches. The general condition was good. The patient walked with a limp, the legs rotating inward. On standing, the feet were in a position of marked abduction and eversion. There was a prominence at the site of the left scaphoid, which was tender on pressure. No redness or other sign of inflammation was noted; and there were no stigmas of syphilis. As Case 2 (reported below) was under treatment at the time, this case was given mixed treatment, in order to compare the progress of the two. The foot was immobilized in plaster of Paris. Roentgenograms taken immediately and thereafter at three-week intervals revealed normal progress of ossification with final restoration of the bony architecture at the site of the opaque disk first seen.

August 8: The plaster-of-Paris cast was discarded. The tenderness of the left scaphoid was gone. The patient was advised to use the foot.

August 22: There had been no recurrence of symptoms. The patient was discharged.

CASE 2.—T. T., aged 6 years, came to the dispensary of the Hospital for Ruptured and Crippled, Second Division, May 27, 1921, with a complaint of limp. The family and past history was negative. There was insignificant pain, occurring only occasionally, more frequently at night. Symptoms dated back to March 6, when the patient was run over by a truck, the wheel passing over his right foot. He was removed to a hospital, where the foot and hip were examined by roentgen ray. He was then sent home, and remained in bed under a physician's care. At this time, there was pain, swelling and disability, lasting four days. He remained in bed six weeks, however, because of a limp, which had persisted to date. The general condition was good. The patient walked with a slight limp on the right. The foot was in moderate abduction and eversion; the scaphoid was enlarged, but not tender, and there was no redness. All motions were free. The teeth showed microdontia, with spaced incisors, but no definite signs of syphilis, and there were no other stigmas of syphilis. The foot was examined by roentgen ray and immobilized in plaster of Paris. The roentgenogram was typical of isolated disease of the scaphoid. The roentgenogram taken immediately after the accident was negative. Roentgenograms taken at three-week intervals revealed a process similar to those observed in Case 1.



Fig. 3 (Case 1).—One year later: Scaphoid is normal in architecture, but ossification has not yet overtaken that on normal side.

July 6: The plaster of Paris was removed. Slight prominence of the scaphoid remained. The plaster was discarded and use of the foot advised.

5. Moffat, Barclay: Three Cases of Isolated Disease of the Scaphoid, Tr. New York Acad. Med., Orthop. Sec., Jan. 21, 1921.

July 27: As the patient reported that the limp had disappeared and there was no further pain, he was discharged.

CASE 3.—A. B., aged 7 years, came to the dispensary of the Hospital for Ruptured and Crippled, First Division (service of Dr. Wallace, through whose courtesy the case is reported), Dec. 8, 1921. The family history was negative. In July, the boy jumped from a height of 2 feet, following which there was swelling and disability of the left foot, confining him to his bed for four days. No symptoms were noted after four weeks. Onset of pain and disability in the left foot occurred three days before while the boy was playing in the snow. The feet were moderately abducted and everted, with tenderness and swelling at the site of the scaphoid on the left. Examination by roentgen ray revealed a typical lesion of Köhler's disease, and serial roentgenograms revealed that the progress of the disease was similar to that in the two previous cases. The foot was immobilized in plaster.

Jan. 10, 1922: The plaster was removed. There were no further symptoms. The patient was encouraged to walk.

February 21: As there had been no recurrence of symptoms, the patient was discharged.



Fig. 4 (Case 4).—On admission: specific process in external cuneiform and cuboid; scaphoid compressed.

CASE 4.—W. R., aged 7 years, was admitted, Jan. 17, 1922, to the dispensary of the Hospital for Ruptured and Crippled, Second Division, complaining of swelling and limp in the right foot. The family and past history was negative. Onset occurred three months before, with generalized swelling of the right foot, and limp. Two months before, there was localized swelling on the dorsum of the foot, which was tender to touch and which had remained stationary since. There was no history of trauma. The patient walked with difficulty and was unable fully to extend the left arm. The angle of greatest extension was 135 degrees; the angle of greatest flexion, 60. There was some enlargement and tenderness about the left elbow joint. The right foot was swollen in the region of the tarsus. There was tenderness on manipulation and pressure. The function of the ankle was not impaired. Right calf, 6½; left calf, 7¼. The patient had been admitted for specific treatment. He received three doses of neo-arsphenamin, under which he showed improvement.

February 3: The patient was discharged to the outpatient department.

March 15: The patient was readmitted because of fluctuant swelling over the dorsum of the right foot. The left elbow was swollen, and was tender on manipulation. There was marked limitation of motion. The forearm was held at 135 degrees and in pronation. A posterior elbow splint was applied, and arsphenamin was given.

March 16: The abscess was incised.

March 31: The patient discharged to the outpatient department. The wound was unhealed.

June 21: Readmission: The child had been under treatment in the dispensary for several months for the ulcer on the dorsum of the right foot. A roentgenogram revealed involvement of the cuneiform and flattening of the scaphoid anteroposteriorly. The left elbow was enlarged and painful. Extension was limited to 160 degrees, with 15 degrees of motion.

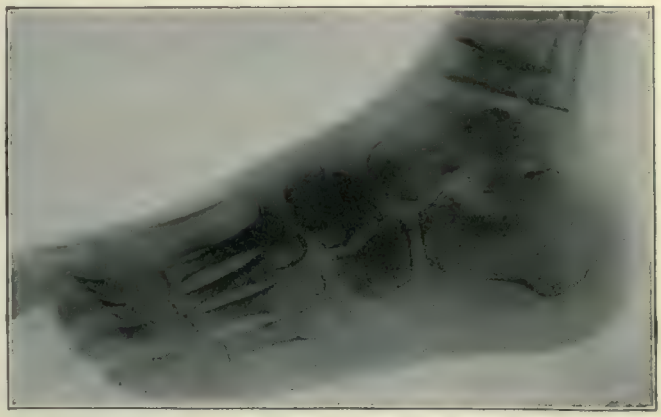


Fig. 5 (Case 4).—Eight months later: increased opacity of scaphoid; compression continuing as ossification advances.

June 22: The foot and elbow were drained, and necrotic bone was curetted from the dorsum of the foot.

June 21: The Wassermann reaction was negative.



Fig. 6 (Case 4).—Same as Figure 5, showing contrast with normal bone of other foot.

July 25: The patient was discharged to the outpatient department, with the foot and elbow in a posterior splint. The wounds were still draining.

September 25: Readmission: Tissue was removed from the elbow for examination. The patient was discharged to the outpatient department.

October 1: Tissue examination suggested tuberculosis or syphilis. No spirochetes were found.

In Case 4, the increase of pressure on the scaphoid was brought about by collapse of the outer border of the foot, the result of the specific process. Here, then, the scaphoid was only relatively enlarged.

CONCLUSIONS

1. The scaphoid becomes enlarged through trauma of varying severity.

2. The roentgen-ray appearance is due to a compression fracture of the scaphoid secondary to this enlargement, a result of the trauma of weight-bearing.

3. No infectious disease or disturbance of nutrition of the bone is involved in the etiology.

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BACTERIOLOGIC AND CLINICAL EXPERIENCE WITH BACILLUS ACIDOPHILUS *

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Our aim was to implant *Bacillus acidophilus* in the intestine and, while maintaining it as the predominant intestinal organism, to determine what changes, if any, were noted clinically. To ascertain the bacteriologic facts, we examined the feces of every patient before treatment and then at intervals of from five to ten days. In all the cases mentioned later, the implantation of this organism was successful, and during treatment it became the predominating fecal organism, and we were able to recover live *Bacillus acidophilus* from the feces.

After infancy, milk is less prominent in the diet than during infancy. *Bacillus acidophilus* gradually diminishes until in adult life it is present in very small amounts. The adult intestinal flora is determined, more or less, by the diet of the individual. The accompanying illustrations demonstrate the changes in the fecal flora after the administration of *B. acidophilus*.

It has been our endeavor to determine the value of *B. acidophilus* when applied clinically to the human subject. Our guiding factor in this work has been the inhibition of the colon bacilli by *B. acidophilus*. Therefore, if any beneficial results have been observed clinically, they must be attributed to the decrease in the colon bacilli and a minimization of their products.

The colon bacillus is a normal inhabitant of the intestinal tract of man, and is found always in greatest numbers in the large intestine. Under normal conditions it is rare to find these organisms in the small intestine, but in certain diseased states they may even be found in the stomach, and have been held responsible for inflammation of the gallbladder and its ducts, the hepatic duct, the pancreas and even the liver itself. In addition, the bacilli are believed by many to be responsible for a number of the rheumatoid arthritides.

The colon bacillus can utilize both carbohydrate and protein material; from the latter it produces the substances that are believed to be harmful to the body. By intravenous injections of small quantities of fecal extracts, Bouchard [1] repeatedly killed rabbits, thereby proving the toxicity of these products. Fortunately, blood from the intestine, laden with these substances, first passes through the liver, which converts the toxins into harmless ethereal sulphates and combined glycuronates. Nencki and Pawlow [2] experimented on the effect of intestinal absorption in dogs in which the liver was eliminated from the circulation. This was done by an Eck fistula, which forces the portal blood to flow directly into the inferior vena cava. Therefore, the products of digestion do not pass through the liver. When fed exclusively on a meat diet, these animals promptly died, but survived for a considerable time when given only a small quantity of protein.

When an excess of intestinal toxins reaches the general circulation, there is a resulting production of a severe autointoxication. This is especially true if there exists any impairment of the excretory organs. In some persons the effects of autointoxication become less obvious in the course of time. Perhaps this is due to the development of a partial immunity to intestinal toxins. But apart from the production of immunity, different individuals show great differences in their susceptibility to this form of poisoning. Many have suggested that the results of autointoxication are found in the chronic diseases so common to our later years. Nevertheless, in spite of the most critical survey of our knowledge about the effects of colon bacillus activity, we must admit that it is an ever present source of real danger to the well-being of the human mechanism. Although the autointoxication theory is by no means universally received, it is an accepted clinical assumption that often an intestinal absorption of toxic compounds, formed in the gastro-enteric tract, originates changes in the liver, kidneys, brain and blood vessels. We believe, therefore, that the autointoxication theory is one that deserves a great deal of consideration. If the intestinal flora could be so changed that the colon bacilli would be kept at a minimum with a lessening of their toxic products, a great deal would be accomplished toward combating the results of autointoxication.

By the use of cultures of *B. acidophilus,* this, in a measure, has been done. In our studies we have employed *B. acidophilus* in various forms. By mouth we have given it first as milk fermented by this organism, and later in nutrient broth cultures. In some instances it has been given by rectal implantation. We are not enthusiastic with this method, as it must always be supplemented by oral administration. The technic is simple. After a cleansing colon irrigation of plain water has been given, two or more ounces of the broth culture is slowly introduced into the rectum without pressure. The pelvis is kept elevated during the injection and for one-half hour afterward. Of course, this method is advantageous in procuring a rapid implantation.

For oral use we have found the culture more desirable than the milk. The milk must be taken in large amounts, from a pint to a quart daily. To some persons the taste is very disagreeable, and this is an important factor if we wish patients to continue the treatment. On the other hand, the culture is much more convenient to handle, both from the physician's and the patient's standpoint. Instead of calling for their daily supply of milk, patients may secure a week's supply at one time. The dose is from one to two tablespoonfuls three or four times daily before meals,

* Read before the New York Physician's Association, April 27, 1922.

1. Bouchard, C. J.: Leçons sur les autointoxications dans les maladies, Paris, 1887.

2. Nencki, M., and Pawlow, J. P.: Arch. f. exper. Path. u. Pharmakol. **38**: 215, 1897.

depending entirely on the response of the individual. The culture may be taken with milk, orange juice or lactose and Vichy water. In a large series of cases we have failed to see any advantage of the milk over the culture. With the latter, implantation is effected as rapidly as with the milk, and is maintained as long.

RESULTS

We have arbitrarily divided the cases in this study into two groups. Both types, however, have manifested general symptoms of their disease. The first comprises the so-called chronic intestinal stasis or autointoxication group, with more or less existing constipation. Case 1 will serve as an illustration.

CASE 1.—A woman, aged 31, a public school teacher, gave a history of chronic constipation of about fifteen years' duration. It was necessary for her to resort to various cathartics every few days in order to have an evacuation of the bowels. Clinically, the patient gave a definite history of autointoxication, with all its attendant symptoms: the bad breath, nausea, irritability, pains in the limbs, and a general feeling of malaise. These symptoms would disappear after a thorough bowel movement, only to return when constipation was again in evidence. She has been under observation since Oct. 4, 1919, and thoroughly investigated. The physical examination disclosed absolutely nothing abnormal. The blood showed a normal count; the stomach contents, a slightly increased acidity; the stool examination disclosed a preponderance of colon bacilli, and the urine a large amount of indican. The Wassermann reaction was negative. A roentgen-ray series of the gastro-intestinal tract was negative to obstruction or kinks of any kind, but a spasticity of the transverse colon was noted with a thirty-six hour retention. Feb. 26, 1921, she was placed on *B. acidophilus* cultures in one tablespoonful doses in milk, four times daily, and all cathartics were stopped. At the end of the third day she was forced to take a dose of castor oil to obtain relief. At this time the dose of the culture was increased to two tablespoonfuls three times daily. At the end of the first week bowel movements began to occur regularly, and have continued ever since. At that time her toxic symptoms began to disappear. Frequent examinations of the feces were made, and *B. acidophilus* was found to be the predominating organism. While we do not believe that this patient is cured of her constipation, her general health has materially improved.

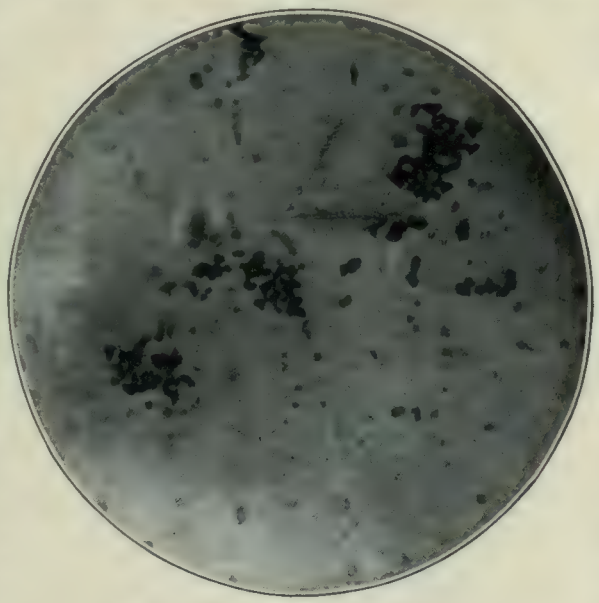


Fig. 1.—Pure culture of B. acidophilus.

The results in this group of cases must be considered from two points of view: as regards (1) their toxemia, and (2) their constipation. The subjective signs of improvement are first noticed by the patient in from three to ten days after treatment. The usual report of the patient is that there is a general feeling of improvement. There is early relief from the depression and malaise, so common to this variety. Headache disappears soon after, and, lastly, the abdominal distress is ameliorated. The constipation may or may not be relieved. However, in the mild forms of intestinal stasis, improvement has occurred.

The second large group of cases in this study comprises the diarrheas. In all of these, we excluded the possibility of tuberculosis of the intestine and diarrheas due to organic disease. Case 2 is typical:

CASE 2.—A woman, aged 34, under observation since April 14, 1921, with a history of digestive disturbances for the last five years, reported painful intestinal contractions, with the evacuation of large quantities of mucus, at times blood-streaked and always diarrheal in character, the bowels moving on an average of eight times a day. Loss of appetite, weight and sleep also were prominent symptoms. The physical examination was essentially negative. Except for the absence of free hydrochloric acid and a low total acidity, the stomach contents were negative. The stool examination on a flesh-free diet revealed undigested food particles and the presence of blood. A predominance of gram-negative bacilli was noted. The roentgen-ray examination of the gastro-enteric tract was negative except for gastric retention at the end of six hours. All other examinations were essentially negative. As the patient had gone the rounds of numerous physicians and had been dieted and given drugs for this condition, she was immediately placed on *B. acidophilus* cultures. Stool examinations were made every two days, and within ten days after treatment was begun, the feces showed a fairly good implantation of *B. acidophilus*. Coincident with this implantation the patient experienced relief from pain. The blood had entirely disappeared from the stool, and the mucus lessened. Up to the present she has continued to improve. She has a formed stool, and altogether has increased in weight and strength. During the course of treatment the culture could not be obtained for three weeks, and there was a return of her former condition. However, as long as the culture is taken, she enjoys good health.

As in the other group, we have viewed the results from two angles. The relief of the general symptoms was apparent in from five to fifteen days. The patients' report was similar to the first group: first, a feeling of improvement in the general condition and then a gradual disappearance of the symptoms until a normal state was reached. The diarrhea in this class of cases showed a marked response. In a majority, a very decided improvement was noticed at the end of the first week. Within three weeks the patient was having one or two natural movements daily. This continued all through treatment, and was present in a surprisingly large percentage of those taking the culture.

In both groups the patients' reports were carefully checked up by notation of the improvement in the objective findings. Bacteriologic studies of the feces were made in every case. After the first examination of the feces, only gram stains were made, and the relationship of the gram-negative and gram-positive flora was noted. Indican studies also were made. However, the laboratory findings were never considered important unless they coincided with the general clinical results.

In summarizing this work, attention should again be called to the fact that the improvement obtained by *B. acidophilus* implantation can be attributed only to a decrease in the activity of the colon bacilli. In the cases comprising this study, no other medication was

given. Dietary changes were carried out in all cases according to the individual needs.

We believe that the culture in broth is the most desirable means of administering *B. acidophilus*. It is more pleasant and more convenient for the patient, and it affords the physician a more accurate control of the dosage. It is of the utmost importance to make fecal studies in all cases. This is not only of value as an indication for the treatment, but also gives definite information as to the adequacy of the dose. In persons who do not show signs of implantation within a week, rectal injections of the broth may also be employed. Clinically, our results have been most gratifying. In the treatment of 200 patients in the constipation group and 100 in the diarrheal group, it was noted that in those suffering from autointoxication with constipation, 70 per cent. showed complete relief from their symptoms of toxemia; 15 per cent. showed some improvement, while the remaining 15 per cent. showed none whatsoever.

Since the 15 per cent of failures included many who did not continue the culture for an adequate length of time, we feel reasonably sure that if this treatment is maintained for four weeks in every case a larger percentage will show an improvement. In contradistinction to the relief of the symptoms, the constipation itself showed complete relief in only 25, improvement in 35, and failure in 40 per cent. of the cases.

In the second group, the diarrheas, there was complete relief from all symptoms in 70, some relief in 10, and failure in 20 per cent. of the cases.

Although this study has not been carried on long enough to determine the permanence of these figures, we wish at this time to record the fact that, in those cases under observation for a year or more, from 10 to 15 per cent. showed a return of their symptoms.

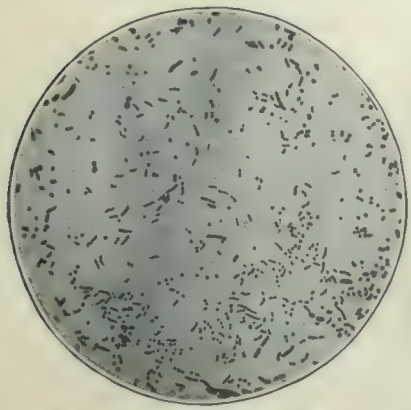


Fig. 2.—Fecal flora before treatment: colon bacilli predominating.

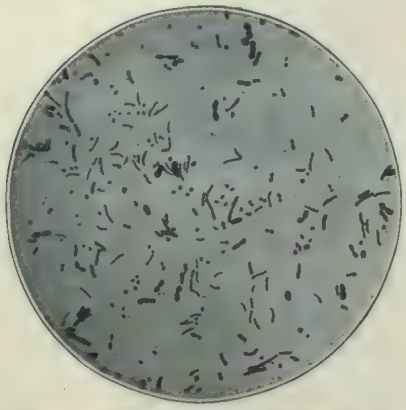


Fig. 3.—Same case: partial implantation of B. acidophilus.

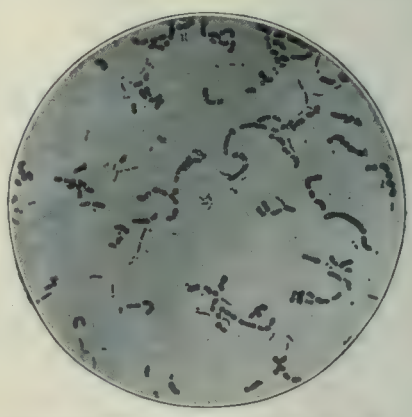


Fig. 4.—Same case: complete implantation of B. acidophilus.

EVALUATION OF RESULTS

We are confident of the value of *B. acidophilus* in the intestinal conditions mentioned in this paper. However, it is only one link in the therapeutic chain, and affords a larger chance of success in the treatment of these obstinate conditions than many forms of therapy. That *B. acidophilus* can be successfully implanted in the human intestine is indisputable, as is also the fact that this implantation can be maintained at such a high level as to keep *B. acidophilus* the predominating intestinal organism.

Its effect in changing the intestinal contents is noted in two ways: In the constipation group the feces become comparatively odorless, while in the diarrheas there is a gradual formation of the fecal material until a soft, light and partially formed stool results. The second effect is the relief from the toxic symptoms that previously existed. This bears a definite and constant relationship to the change in the fecal flora. Furthermore, the accumulated evidence and clinical belief that the products of intestinal putrefaction are harmful give additional importance to these results. As a consequence of more than two years' work, we believe that *B. acidophilus* minimizes intestinal autointoxication and is indicated in the so-called toxic intestinal conditions.

It seems proper, however, to remember the fate of similar predecessors, particularly the bulgarian bacillus, and a word of caution now would not be amiss. After all, the virtue of this remedial agent lies in its ability to inhibit the colon bacilli. As the latter organism is held responsible for intestinal "toxicity," the range of usefulness of *B. acidophilus* seems clearly defined. To employ the milk or culture in other conditions will eventually tend to discredit it and put it in ill repute. Honest enthusiasts and dishonest publicists may hail it as the "longevity bug," but we must not be deceived by the cry of a panacea. We feel that its value as outlined above is established. Whether it has additional properties should be first corroborated by sober and mature judgment. It is important to mention that when the administration of the culture ceases, the colon bacilli begin to increase, slowly at first, until the fifth or the sixth day, at which time they again are present as the predominant type of bacteria. Coincident with the increase of *B. coli*, the previous clinical symptoms again manifest themselves.

There are, nevertheless, definite indications for future work with *B. acidophilus*. Its effect on typhoid, paratyphoid and the dysentery group deserves careful consideration. Theoretically, *B. acidophilus* may be employed as a prophylactic agent. A colon bacillus infection of the gallbladder and its ducts or of the pancreas finds us usually without any means of proper treatment. By regular courses of *B. acidophilus* we have a means that offers some hope in the prevention of an ascending infection by *B. coli*. It certainly deserves consideration because of its harmlessness and ease of administration.

We suggest that *B. acidophilus* be given a trial in the intestinal conditions outlined. We do not believe that the Fountain of Youth has been discovered through its use, but feel reasonably certain that it is a therapeutic agent worthy of further investigation.

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LEISHMANIASIS IN THE UNITED STATES

REPORT OF THE THIRD AMERICAN CASE OF KALA-AZAR AND OF A CASE OF ORIENTAL SORE *

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AND
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Within a period of two months, two patients with leishmaniasis, one with kala-azar and one with oriental sore, were admitted to the Children's Clinic of the Stanford Medical School. While kala-azar is of extreme rarity in the western hemisphere, one case having been previously reported from Paraguay [1] and one from Boston,[2] reports of oriental sore in North America are increasing in frequency. During the current year no less than seven cases [3] have been reported from the United States and Canada. All of these, save two recently described by Fox,[3] have passed undiscovered or unsuspected by immigration inspectors. When we realize that both forms of leishmaniasis, the systemic and the cutaneous, flourish in the Old World under climatic and other conditions such as can undoubtedly be duplicated over wide areas of this continent and within latitudes which include at least two thirds of the United States, we should regard the infection as a potential danger of considerable import against which we should increase our safeguards.

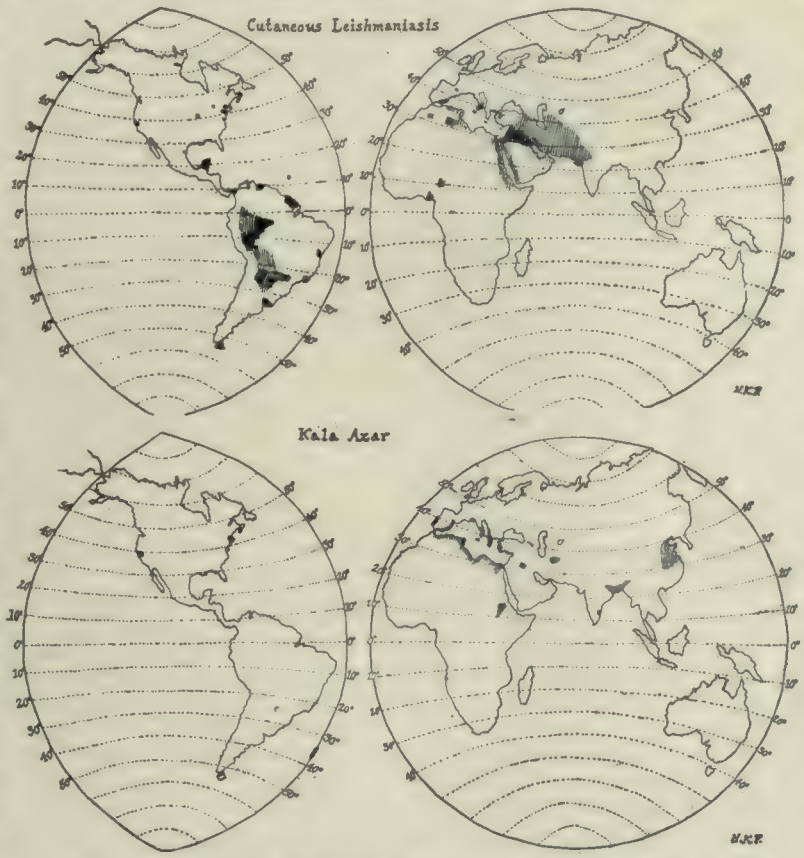


Fig. 1.—Approximate distribution of cutaneous leishmaniasis and of kala-azar. The exact limits of endemic foci cannot be determined. In South America the extent of infection is probably greater than is here shown, cases having been reported in every country north of the thirty-fifth parallel South, excepting Chile. Black dots represent imported cases.

REPORT OF CASES

CASE 1.—*Kala-azar* (H. K. F. and H. S., Jr.). *History.*—B. P., a girl, born, Jan. 30, 1920, in the province of Bari, Italy,[4] was admitted to the Children's Clinic, May 6, 1922, because of fever, loss of strength, weight and appetite, fretfulness and recent jaundice. The father and mother were well. They had had no other children. In May, 1921, when the patient was 15 months old, the family left Bari, went to Naples, and embarked for the United States. They arrived in Boston, June 14, and immediately went to San Francisco, where they have lived continuously ever since. The birth of the patient, and the developmental and feeding histories were essentially negative. No exposure to kala-azar was known. In Italy the child had been bitten many times by fleas. No bedbugs or body lice had been seen by either parent. No spots on the child's clothing or bedding, such as might have been made by crushed bedbugs, were ever observed, either at home, in Naples or on the steamer. The child was apparently well at the time she entered this country, and for about six months thereafter. In December, 1921, she became sluggish and irritable, refused food, slept poorly and cried a great deal. The symptoms gradually increased in severity. By March, 1922, she had become very weak, very pale and had some cough and fever. After a short period of improvement, the condition became rather suddenly worse. May 2, jaundice appeared, accompanied by light—but not clay—colored stools. There was no vomiting. Swelling of the abdomen had not been noted by the parents.

Physical Examination.—The age of the patient was 27½ months; the weight, 27¼ pounds (12.4 kg.); the length, 33 inches (84 cm.). The circumference of the head was 18¾ inches (45.7 cm.); of the chest, 18¾ inches (45.7 cm.); of the abdomen, 20⅛ inches (50.8 cm.). The skin and sclerotics were definitely icteric. There was moderate prostration. There was extreme asthenia. Apparently, nutrition was fair. The head, neck, lungs and heart were essentially normal. Respiration was rather shallow owing to abdominal enlargement. The liver was not tender; its edge was sharply defined and firm, and extended in the midclavicular line 10 cm. below the costal margin. The surface was smooth. The spleen filled the left flank; the lower pole was 12 cm. below the costal margin in the midclavicular line. The edge was notched and sharply defined; the substance, firm and not nodular. There was no abdominal or visceral tenderness, and no spasm. The superficial veins were prominent. The peripheral lymph nodes were not notably enlarged. The tendon reflexes were not obtained.

Laboratory and Special Examinations.—Blood examination revealed: erythrocytes, 2,350,000; leukocytes, 3,400, a ratio of 690:1; polymorphonuclears, 22 per cent.; small lymphocytes, 77 per cent.; large mononuclears, 1 per cent.; no transitionals, basophils or eosinophils; hemoglobin, 40 per cent.; color index, 0.85; poikilocytosis and anisocytosis. The urine was negative excepting for a positive bile test in the first examination only. Examination of the feces was twice negative for ova and parasites; there was no occult blood. The Widal test was negative. Two blood cultures were negative. The Wassermann test (with cholesterinized antigen) was negative. The coagulation time was three minutes. Roentgen-ray examination revealed the chest normal and the spleen enlarged. The tuberculin test, intracutaneous, human

* From the Division of Pediatrics, Stanford University Medical School.

1. Migone, L. E.: Un cas de kala-azar à Asunçion (Paraguay), Bull. Soc. de path. exotique **6**: 3 (Feb. 12) 1913.
2. Talbot, F. B., and Lyon, A. B.: Kala-Azar in a Child (the First American Case), Am. J. Dis. Child. **16**: 154 (Sept.) 1918.
3. Spencer, R. D.: A Case of Oriental Sore (of Italian Origin) Encountered in the United States, J. A. M. A. **76**: 1494 (May 28) 1921. Smith, D. K.: Oriental Sore: Report of Four Cases, Arch. Dermat. & Syph. **5**: 69 (Jan.) 1922. Fox, H.: Two Cases of Oriental Sore (Cutaneous Leishmaniosis), New York M. J. **116**: 365 (Oct. 4) 1922.
4. Bari, a province in southern Italy bordering on the Adriatic, is shown on Laveran's map (Leishmanioses, p. 69) as one of the places where kala-azar has been found.

and bovine, was negative. The changes in the blood picture while the child was under treatment and observation are shown is the accompanying table.

Diagnosis.—At the time of admission, leukemia, malaria and Gaucher spleen were thought to be the strongest probabilities, with syphilis and tuberculosis as possibilities. Leukemia was ruled out by the blood picture; against Gaucher spleen were the low erythrocyte count, the presence of fever and jaundice, the absence of conjunctival thickenings, characteristic pigmentation and epistaxis; against malaria were the absence of plasmodia from the blood and the failure of quinin to affect the fever; while against syphilis was the negative Wassermann reaction, the absence of any of the usual signs of syphilis, and in addition the size of the spleen, which was much larger than is seen—with possible rare exceptions—in syphilis. Kala-azar was discussed at ward rounds soon after the child was admitted. We were familiar with the fact that in Italy the so-called infantile splenic anemia had been found actually to be infantile kala-azar. We inquired of the mother, who unfortunately did not speak English fluently, as to the child's nativity. Her answer that the child had always lived in San Francisco misled us, and long delayed the establishment of the diagnosis. It was only much later that we found her statement to be incorrect and that the child had actually lived the first seventeen months of its life in a district of Italy where kala-azar is endemic.

BLOOD COUNTS

Date	R. B. C.	Hgb.	C. I.	W. B. C.	Pol.	Lym.	L. M.	Tr.	Eos. Bas.	R. B. C. W. B. C.	Comment
5/ 6/22	2,350,000	40 T	0.85	3,400	749	2,620	34	0	0	690	Poikilocytosis, anisocytosis
5/11/22	2,220,000	....	....	3,380	372	2,946	34	34	0	660	Poik., aniso.
Quinin sulphate, 20 grains, May 12-15											
5/20/22	2,260,000	40 T	0.89	3,900	468	3,393	0	39	0	580	Poik., aniso.
Ferric cacodylate, May 23-June 1											
5/26/22	2,900,000	40 T	0.67	4,100	943	2,296	820	41	0	710	Poik., aniso.
5/31/22	3,460,000	38 S	0.55	6,650	1,749	4,240	665	0	0	520	
6/ 6/22	3,660,000	45 T	0.62	8,250	825	5,775	990	660	0	440	Poik., aniso., polychr., 2 normobl. (at Lane Hospital)
Patient transferred to San Francisco Hospital, June 7											
6/ 7/22	4,110,000	40 D	0.49	9,000	630	7,020	450	0	0	460	(At S. F. Hospital)
Quinin sulphate, 90 grains, July 11-15											
7/18/22	.....	35	....	6,800	2,040	3,740	1,020				
Antimony and potassium tartrate begun, July 21. Transfusion, 100 c.c. of whole blood, Aug. 3											
8/ 4/22	2,470,000	40	0.81	3,900	.....	.....	...	...	...	630	
Ferric cacodylate, Aug. 12-Sept. 2											
8/24/22	3,630 000	65	0.90	4,600	1,334	2,990	276				
9/18/22	3,160,000	54									
9/25/22	4,470,000	68 T	0.76	11,525	1,844	8,874	0	346	461 E	390	

Splenic puncture would also have been made much earlier had not one of us seen the procedure end fatally some years before, and been averse to accepting the risk. The patient was transferred from Lane Hospital to the San Francisco City and County Hospital, June 7, for financial reasons, without an established diagnosis. In July the correct story of the child's nativity was obtained and kala-azar seemed so probable that the risks were accepted and the spleen was punctured. No ill effects ensued. The smears, examined in the laboratory of pediatrics at Stanford University Medical School, showed after considerable search a number of typical Leishman-Donovan bodies, from which the accompanying photomicrographs and drawings were taken.

Treatment and Course.—The jaundice disappeared spontaneously three days after admission, when the child's extreme pallor, hitherto masked, became evident. Quinin sulphate was given from May 12 to 15 to a total dosage of 1.3 gm. (20 grains), without effect on the temperature, size of the spleen or general condition. The jaundice disappeared on the third day and did not recur. May 20, the right tympanic membrane was found to be bulging, and paracentesis released an abundant yellowish pus, again without effect on the temperature or general condition. Injection of ferric cacodylate daily in 1 c.c. doses from May 23 to June 1 was accompanied by a progressive increase in the red cells but not in the hemoglobin; a slight improvement in the general condition and a somewhat lower temperature also ensued, but without change in the size of the spleen. In the San Francisco Hospital, liquor potassii arsenitis (Fowler's solution) was given without notable effect. Another course of quinin, 90 grains between July 11 and 15, was also without effect. The diagnosis of kala-azar having been established, July 20, by splenic puncture, intravenous injections of antimony and potassium tartrate were instituted on the next day. At this time the child was extremely pale and asthenic. Beginning with 10 mg., the doses were cautiously increased to 100 mg., so that at the time of the last injection, October 26, thirty-three injections to a total of 1,786 mg. (27½ grains) had been given. A definite response to the drug was evident within a few days in lowering of the fever and improved appetite and strength. Lessening of the size of the spleen and gain in weight were noted about two weeks later. Ferric cacodylate was again given from August 12 to September 2, and was accompanied by a marked improvement in the blood picture. By September 25 the child was so far recovered that she could be discharged from the hospital. At this time the leukopenia had given place to a white count of 11,525, eosinophils had reappeared, and the red cells had increased to 4,470,000, and the hemoglobin to 68 per cent. She was observed at the Stanford Children's Clinic twice a week thereafter. At the visit of October 26 she weighed 30 pounds (13.6 kg.), had an excellent color and was strong and active, but the spleen, though softer, was still nearly at the umbilicus, 10 cm. below the costal margin in the midclavicular line. Its mass was perhaps a little more than one half of its maximum. The injections were discontinued at that time because of vomiting. November 21, the spleen could no longer be felt. While she cannot be considered as cured and will be closely watched for recrudescence of symptoms with a view to further medication, her present condition is excellent.

CASE 2.—*Oriental sore* (H. K. F.). *History.*—R. H., an Armenian boy, born, Dec. 13, 1916, was admitted to the children's clinic, July 5, 1922, because of sores on the left buttock. During the Turkish persecution, the family left Armenia, reaching Persia in July, 1918. In 1921 they settled near Bagdad, where "Bagdad boil" was very common; but the father, who was an intelligent and educated man, did not know of any direct exposure, or of any exposure to bedbugs, fleas, lice or other biting insects. He stated that the disease was ascribed to eating dates. The family emigrated to the United States in April, 1922, passing inspection without incident. The child had been free from previous illnesses, excepting the immediate effects of severe privation during 1918, and otitis media lasting from 1918 to 1920, without subsequent recurrence. The present illness began in October, 1921, while the child was in Mesopotamia, as a small, indurated, red papule about the size of a pea, on the left buttock, which became gradually larger but apparently did not ulcerate until after April, 1922. The ulcer had gradually increased in extent, and recently two smaller papules had appeared near the original lesion. There had been no constitutional symptoms, and the lesion itself had caused no great discomfort.

Physical Examination.—This was essentially negative except for the lesions on the left buttock. The ulcer was roughly circular, about 1½ inches (4 cm.) in diameter, with irregular, ragged, sharply excavated edge and the floor occupied by granulations from which there was very little discharge. Just to the right of the upper end of the internatal fold was a

papule about ¼ inch (7 mm.) in diameter covered with a silvery gray crust. Another small lesion, apparently pustular, was equidistant from the other two. The blood count was essentially normal. Cultures and inoculations (white mouse and dog) of scrapings from the lesions were negative.

The father's statement that the child had a "Bagdad boil" gave the clue to the diagnosis, and scrapings from the three lesions, stained with Wright's stain, revealed after a considerable search a moderate number of characteristic organisms.

Treatment and Result.—A 2 per cent. ointment of antimony and potassium tartrate (tartar emetic), as recommended by Manson, showed no prompt curative effect in this case. After a week's application a number of pustules appeared, due no doubt to the drug itself, and complicated the treatment. The lesion rapidly healed after a mixture, prescribed in the skin clinic, was applied. This mixture consisted of creosote, 0.3 c.c.; ointment of mercuric nitrate, 4 gm., and sufficient petrolatum to make 30 gm. By October 7, the lesions were completely healed. The site of the original ulcer was marked by a silvery contracting scar, and of the smaller lesions and pustules by slightly pigmented spots.

VARIETIES OF LEISHMANIA INFECTION

These may be separated into two groups, the systemic and the cutaneous. It is highly probable that these are due to different organisms having a morphologic resemblance (*Leishmania donovani* and *Leishmania tropica*). Not only does kala-azar, the systemic infection, show differences of geographic distribution and of other phases of epidemiology, but at least one case has been described in which a single individual contracted both diseases at different times, thus demonstrating lack of

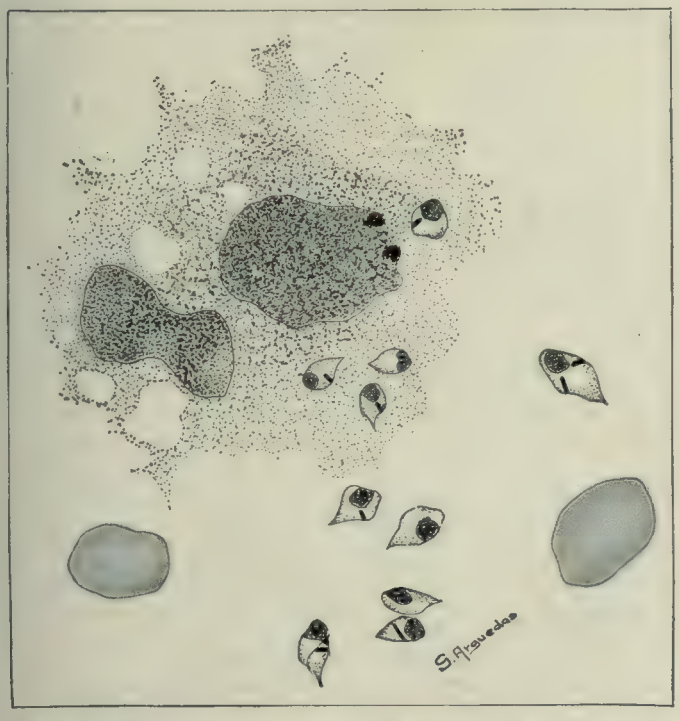


Fig. 2 (Case 1).—Kala-azar: smear from splenic pulp, free forms and cell inclusions.

cross immunization. There is, moreover, a cutaneous form of kala-azar, recently described by Brahmachari [5] occurring in persons incompletely cured of the ordinary form, which does not resemble oriental sore in any respect, and some cases of oriental sore and espundia have systemic symptoms which are not those of kala-azar.

5. Brahmachari, U. N.: A New Form of Cutaneous Leishmaniasis, Indian M. Gaz. **57**: 125 (April) 1922.

Oriental sore of the Old World and the cutaneous disease of South America (espundia, leishmania americana, and the like) differ in severity and in the tissues commonly attacked, and may be either different diseases or different varieties of the same disease. The former is characterized by the tendency of the lesions to be single or few in number, remaining discrete and

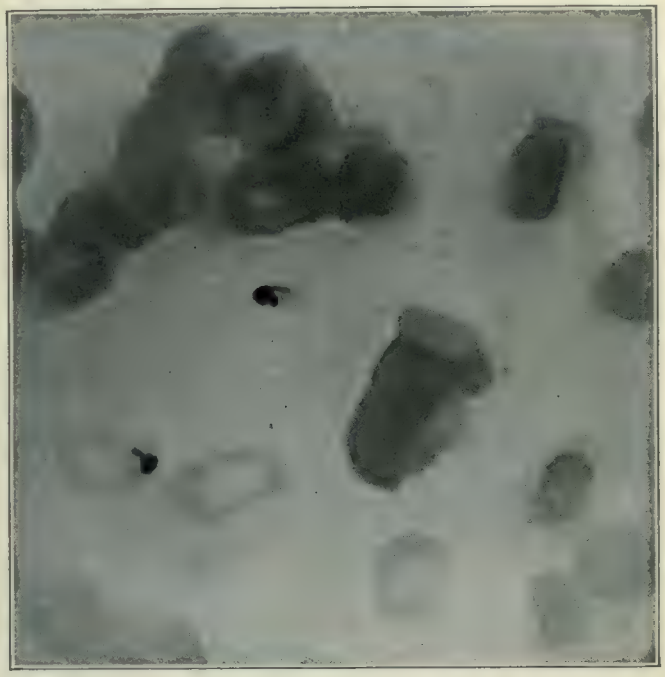


Fig. 3 (Case 1).—Kala-azar: smear from splenic pulp; two Leishman-Donovan bodies, with trophonucleus and blepharoplast.

rarely attacking the mucous membranes; the latter shows a multiplicity of lesions which frequently attack the mucous surfaces, particularly of the nose and lips.

GEOGRAPHIC DISTRIBUTION

The accompanying map (Fig. 1), compiled from various sources—largely from Laveran's [6] monograph—shows roughly the regions of the earth where Leishman infections have been found to exist endemically. It will be seen that kala-azar is limited at present to the Old World (excepting three imported cases in the New) between latitudes 10° N. and about 44° N. The three chief centers are (1) the Ganges basin and Madras in India; (2) China between the Yang-tse River, Peking and the Yellow Sea, and (3) the Mediterranean littoral. The great endemic region of oriental sore extends from the eastern shores of the Mediterranean eastward to the Persian Gulf, and thence eastward as far as Delhi in northwestern India. Probably secondary to the Syrian focus are the infected areas on the shores of the Red Sea, and possibly those of southern Italy and Sicily and those of northern Africa in Tunis and Algeria and Morocco. Infected areas also exist in the valley of the Niger not far from the equator. In South America the distribution is very wide, probably involving most of the continent east of the Andes between Panama and latitude 35° S. Large portions of the Amazon valley, of the Guianas, of northern Argentina, and Paraguay are known to be infected; also certain parts of the coastal regions; while cases have been reported from Colombia, Ecuador, Peru, Venezuela and Uraguay. In North

6. Laveran, A.: Leishmanioses, Paris, Masson et Cie, 1917.

America the disease is endemic in Yucatan, and it seems unlikely that Central America has entirely escaped. It is seen, therefore, that in the Old World, oriental sore occurs between 5° N. and about 43° N., while in the New World it occurs between about 35° S. and 22° N. Of the imported cases of kala-azar in the New World, one was reported by Migone [1] from Asuncion, Paraguay, in an Italian adult; one from Boston by Talbot and Lyon [2] in a Greek child, and the case here reported from San Francisco, in an Italian. All the cases of oriental sore in the United States and Canada with one exception have come from the Old World, chiefly from Mesopotamia. MacEwen [7] has reported one case, observed in Chicago, originating in South America. It should not be forgotten that from the first American case Wright [8] described and established the morphology of the infecting organism.

MODE OF TRANSMISSION

It is probable, though not conclusively proved by inoculation, that the bedbug is the chief if not the only transmitting agent of kala-azar. A recent study of the insect problem by Patton,[9] to which the reader is referred for the details, shows the reasons on which this belief is founded. Adie [10] has recently found the organisms swarming in a bedbug caught in the bed of a patient suspected of kala-azar. It should be noted that Patton believes that the disease is not caused by the bite of the insect but only when it is crushed on the skin, thus freeing the organisms inhabiting the intestine, which then enter the human host through small abrasions, such as might be caused by the insect's proboscis. If this is the case, it would be possible for one bug to communicate but one case of the disease. This, together with the probability that not more than 5 per cent. of bedbugs coming in contact with kala-azar patients become infected, would explain the very slow spread of epidemics. The natural mode of transmission of oriental sore is still unexplained. Fleas, bedbugs, flies and mosquitoes have all been blamed, but the case has not been proved. Patton incriminates the bedbug, and Wenyon the mosquito. Earlier work pointing to the dog-flea as the carrier has not been confirmed.

Manson [11] states that the most probable insect carrier is some species of *Phlebotomus*.

THE MICRO-ORGANISM

In its commonest form, the organism as obtained from the spleen or curettings from the sore is round or oval, sometimes pointed at one end, usually from 2 to 3 microns in width and from 4 to 5 microns in length. It has an eccentric nucleus (trophonucleus) and a smaller, rodlike, chromatin body (blepharoplast) at or near the periphery of the trophonucleus usually directed radially to the latter (Figs. 2, 3 and 4). With Wright's stain the protoplasm stains a faint blue, the nuclear material a dark blue. Occasionally a small additional granule of nuclear material—the kinetonucleus—can be seen near the trophonucleus. In smears from both diseases large mononuclear phagocytes can be found containing several—occasionally a great many—Leishman-Donovan bodies, sometimes apparently in process of disintegration. Dividing forms are also found, containing several typical nuclear arrangements but with the protoplasm not yet segmented. The flagellate forms, found in cultures and in insects, do not occur in the human lesions.

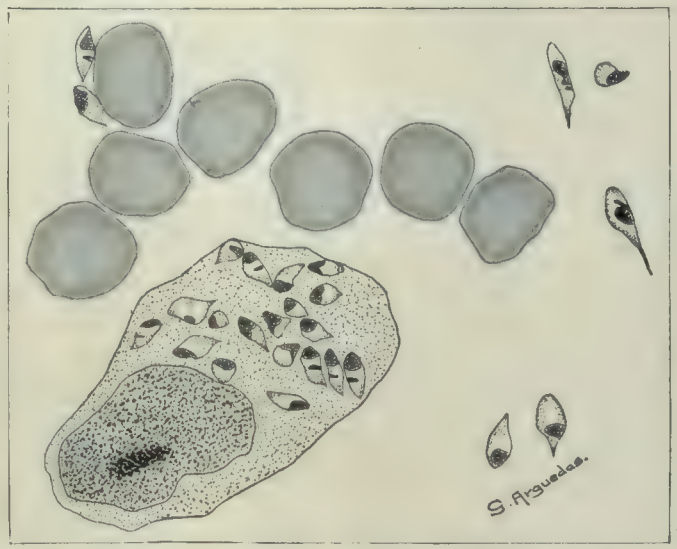


Fig. 4 (Case 2).—Oriental sore: smear from scrapings; nineteen Leishman-Donovan bodies in one large mononuclear phagocyte.

DIAGNOSIS

In answer to the question "Is there a common form of chronic splenomegaly in tropical or subtropical countries distinct from kala-azar and chronic malaria?" Rogers [12] says:

> Personally, I came to the conclusion that malaria and kala-azar sufficiently account for all the cases. . . . It is of interest to note in this connection that the so-called Banti's disease has been mainly met with in areas in which infantile kala-azar exists. It has been shown also to affect adults, while in at least one museum specimen of a spleen removed for Banti's disease abundant kala-azar parasites were subsequently found.

Clinically, the disease is characterized by an extremely irregular fever (Fig. 5), with two or more marked remissions or intermissions occurring on the same day (though this does not occur every day), a very large spleen and a considerably enlarged liver, a very marked leukopenia and a considerable reduction in the red cells. The patient is not benefited by quinin. Such symptoms and signs occurring in a patient who has come from the Mediterranean or other focus of infection justify puncture of the spleen, which rarely fails to show Leishman-Donovan bodies when kala-azar is present. It is of interest to note that the true nature of infantile splenic anemia of the Mediterranean was discovered by this means not much more than a decade ago. In view of the present etiologic obscurity of the conditions occasionally encountered in this country and labeled Banti's disease or splenic anemia, it might be well to investigate more generally the contents of smears of the spleen pulp. Splenic puncture should be cautiously done, a rather small needle, inserted obliquely, being used, and the relative respiratory movement of the spleen and the abdominal wall being prevented by manual pressure.

7. MacEwen, E. L.: Oriental Sore in the Americas, with Report of a Case, J. Cutan. Dis. **32**: 275, 1914.
8. Wright, J. H.: Protozoa in a Case of Tropical Ulcer, J. M. Res. **5**: 472-482 (Dec.) 1903.
9. Patton, W. S.: Some Reflections on the Kala-azar and Oriental Sore Problems, Indian J. M. Res. **9**: 496 (Jan.) 1922.
10. Adie, H. A.: Telegram, Indian J. M. Res. **9**, opp. p. 405, 1921-1922.
11. Manson: Tropical Diseases, Ed. 7, New York, Cassel & Co., 1921.
12. Rogers, Leonard: Fevers in the Tropics, Oxford Med. Pub. London, Ed. 3, Section "Kala-Azar (Indian and Mediterranean or Infantile Forms)," pp. 1-58. To this article is appended a bibliography extending to 1918.

Manson's injunction to use a perfectly dry needle and syringe is essential to prevent disintegration of the parasites. Napier [13] has recently advocated a test for kala-azar which may be of some diagnostic value:

To 1 c.c. of clear (not inactivated) serum from the patient in a test tube one-half inch in diameter, one drop of liquor formaldehydi is added. This is well shaken and kept at room temperature. A strong positive test is present when the serum "sets" in from one to two minutes and becomes opaque in from three to twenty minutes. In children the serum does not become so solid, and any degree of opacity is regarded as positive. In 147 out of 150 cases of enlarged spleen, splenic puncture and the formaldehyd test corresponded. In two of the ninety-one cases of kala-azar in the series, the test was negative. In one case spleen puncture was negative and the test positive; but this was probably a case of kala-azar, because it improved markedly on tartar emetic treatment.

Rogers lays great stress on the diagnostic importance of the leukocyte: erythrocyte ratio. When this is 1:1,500 or less, kala-azar is almost certainly present. In our case the lowest ratio was only 1:710. The differential count shows a relative lymphocytosis, with an increased percentage of large mononuclears and transitionals, and an absence of eosinophils.

In tropical countries, oriental sore has to be differentiated mainly from blastomycosis, desert sore (cutaneous diphtheria), tropical ulcer and tertiary cutaneous syphilis. Nonsyphilitic, granulomatous ulcers occurring in persons who have recently come from infected areas, especially Asia Minor and South America, should be regarded as due to *Leishmania* until proved otherwise. Though most common on the exposed parts, they may, as in our case, occur in the covered parts.

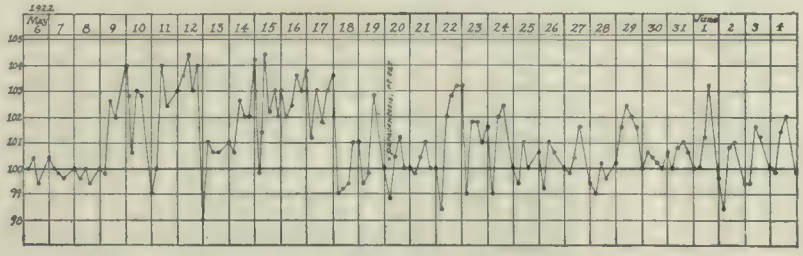


Fig. 5.—Kala-azar: temperature curve before antimony was given; note extreme irregularity, and the occurrence of two remissions on some days.

TREATMENT

Antimony is probably a true specific. It is still most commonly used as tartar emetic, but without doubt research will discover new combinations that are more effective and less toxic. Intravenous injections of tartar emetic are, however, still standard treatment. A 2 per cent. solution, freshly prepared, in distilled water is generally used, and the dose is from one-half grain to 1¾ grains (32 to 114 mg.). The largest dose that can be tolerated is said by Manson to be 2 grains (130 mg.). According to Rogers,[12] the dose is approximately 2 centigrams for each 10 pounds (4.5 kg.) of body weight. Our own patient, a child, tolerated well the larger dose of 100 mg., repeatedly. The usual practice is to repeat the injections about twice a week until fever has been absent for two months, unless symptoms of intolerance—usually vomiting—occur. Arsenic appears to have some value for the anemia. Intravenous injections of tartar emetic are also regarded as specific for oriental sore. A lanolin ointment of the same drug, in from 2 to 15 per cent. strength, is also recommended, but did not help our patient. Many other medicaments have had their advocates. The roentgen ray, freezing with ether or carbon dioxid snow, exposure to sunlight and excision have all been used with apparent success. The lesions have a strong tendency to heal spontaneously after from three to twelve months.

13. Napier, L. E.: A New Serum Test for Kala-Azar, Indian J. M. Res. **9**: 496, 1921-1922.

CONCLUSION

It is urged that medical inspectors of immigrants keep a sharp watch for leishmaniasis. There is a definite possibility that the cutaneous disease at least may become implanted in our soil. Darling [14] has expressed the belief that it may already be lodged in the southern part of the United States and that it may become endemic wherever the average annual temperature is 17.6 C. (63.7 F.) or more and the average winter temperature not lower than 6.3 C. (43.3 F.). Such conditions obtain, of course, in many parts of the United States. If the bedbug is the insect host there are large areas of this country where it can be found, and we have no lack of the other insects that have been incriminated. The latitudes within which the disease occurs elsewhere include more than two thirds of the United States. The danger of kala-azar, though perhaps actually more remote, is theoretically no less.

In the preparation of this paper the treatises of Rogers and of Manson, and Laveran's monograph have been freely consulted. While the map has been largely compiled from Laveran's book, many additions to his data have been made from later reports, particularly from South America, where cutaneous leishmaniasis appears to be extraordinarily widespread. We have not quoted all the references, as they would occupy more space than is at our disposal. It perhaps need not be explained that the shaded outlines in the map do not represent exact limits of distribution.

Acknowledgment is made to Dr. Harry A. Wyckoff, who examined specimens from the oriental sore and found the Leishman-Donovan bodies in them; to Dr. E. C. Dickson who made cultures and animal inoculations from the same case, and to Mr. Gustavo Arguedas, who made the camera lucida drawings that accompany the text.

14. Darling, S. T.: Oriental Sore, J. Cutan. Dis. **29**: 617, 1911.

Child Welfare in Peru.—Child welfare work in Peru, states Dr. C. E. Paz Soldán in his report at the Third American Child Welfare Congress, really began with the foundation at the beginning of the seventeenth century of the foundling asylum of Nuestra Señora de Atocha at Lima. In 1659, a school for orphan and foundling girls was opened. The Office of Public Welfare, in being organized on June 30, 1826, was placed in charge of orphan children. The first maternity was organized in 1826 in Lima, thanks to the efforts of a prominent physician and statesman, H. Unanue, the pioneer of public health work in Peru. Public Welfare Societies date back to 1834. At present, there are fifty-six with an annual appropriation of £375,000, of which about £80,000 are spent on child welfare. At the Lima Maternity, 2,066 infants were born in 1921, and over 4,229 children were cared for during the same year at hospitals and dispensaries.

ELECTROCARDIOGRAMS AND HEART MUSCLE DISEASE

PRELIMINARY REPORT *

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AND
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The electrocardiogram has always been looked on as an indicator of myocardial disease, but for a long time its interpretation was not clearly understood. The most evident things in the records were the irregularities of heart action, and so these were the first to attract the attention of the clinicians. Gradually, however, it came to be realized that irregular heart action of itself was not necessarily an indication of cardiac disease, and that its presence along with other signs of disease would give information of clinical importance only in certain patients. The type of irregularity, if it is due to disease at all, will indicate whether the auricles or the ventricles, or the auriculoventricular conduction system is being attacked, but it cannot tell us the condition of the most important part of the heart, the ventricular muscle.

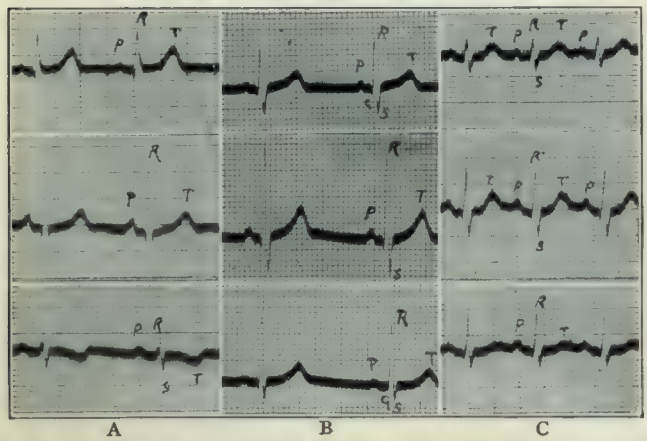


Fig. 1.—Three normal electrocardiograms, *A*, *B* and *C*, showing the normal variations which may occur. In this and all subsequent figures, the uppermost curve is the record by Lead 1, the central by Lead 2, and the lower by Lead 3. The height of the waves is due to the strength of the current, and is standardized so that ten horizontal divisions equal 1 millivolt. Time lines are vertical, and in most of the records are 0.04 second apart. In records *A* and *C* of this figure, they are 0.20 second apart. Waves marked *P* are due to the auricles; *Q*, *R*, *S* and *T* are due to the ventricles.

The electrocardiographic record can, however, furnish us with information on this point, though not through consideration of the abnormalities of cardiac rhythm. There are certain waves in the records which are due to the activity of the ventricles, and it is from these that the information is to be derived.

The record of each heart beat (Fig.1) can be divided into two parts; the first due to the activity of the auricles and called the P wave, and the second due to the activity of the ventricles, the waves being called Q, R, S and T. These ventricular waves are subject to certain variations in records from normal hearts, as can be seen in Figure 1. These are normal records, and, in order that the features of abnormal records may be more readily understood, it may be well to mention briefly the significant abnormalities that are found.

The least significant abnormality was first described by Einthoven,[1] who noted that certain changes in the Q R S group of waves seemed to indicate hypertrophy of the right ventricle (Fig. 4), while other changes seemed to indicate hypertrophy of the left ventricle (Fig. 5). Einthoven's signs of hypertrophy have been shown by later workers [2] to indicate the predominance of the electrical effect of one or the other ventricle—a predominance (preponderance?) rather than merely a hypertrophy. Figure 4 shows the sign of right ventricular predominance (R. V. P.) and Figure 5 of left ventricular predominance (L. V. P.). However, these signs are not to be considered as an indication of diseased ventricular muscle, but only as one which is asymmetrically developed so that the normal relations of the contractions of the right and left ventricles are disturbed.

From time to time, certain other variations of the ventricular waves of the electrocardiogram have been associated with a diseased state of the muscle of the ventricles. Figure 2 shows one such type of peculiarity of the ventricular curve, which is ascribed to bundle branch block. The special features are the abnormal width (straddling) of the Q R S group of waves, combined with notching or slurring of these waves [3] and fairly large excursions. Furthermore, the T waves are fairly large and are directed opposite to the chief deflection of the Q R S group. In their typical form,

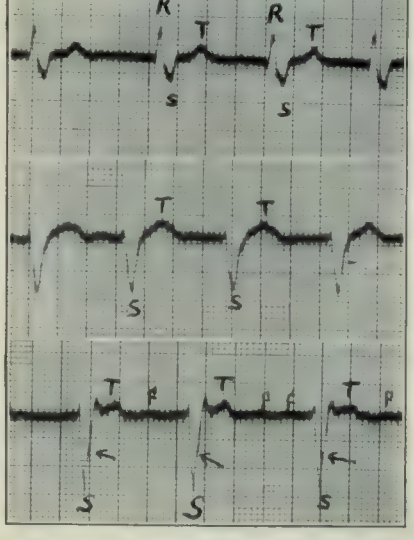


Fig. 2.—Electrocardiogram of Case 10. This record shows auricular fibrillation by the wavelets *f f f* and the irregularity of the ventricular waves. The latter have wide *Q R S* waves notched at point indicated by arrow, and the T waves opposite to the chief deflection of *Q R S*. These waves suggest a partial lesion of the right branch of the auriculoventricular bundle.

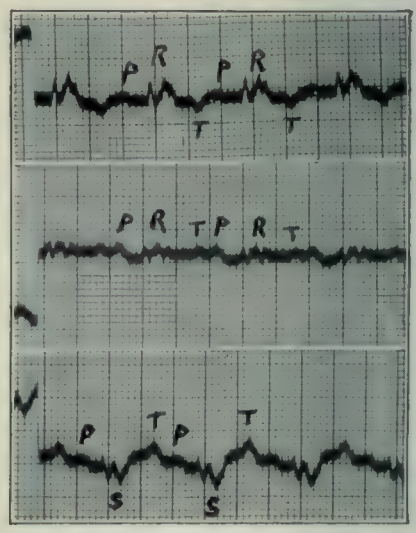


Fig. 3.—Electrocardiogram of Case 11. These ventricular waves are considered to indicate "arborization block" by the small amplitude and wide notched Q R S group, with the T waves opposite in each lead to the chief deflection of Q R S. The step-like movement appearing at the left end of each lead is due to the application of 1 millivolt.

* From the medical and pathologic services of the New York Hospital.

1. Einthoven, W.: Weiteres über das Elektrokardiogram, Arch. f. d. ges. Physiol. **122**: 517, 1908.
2. Lewis, T.: Observations on Ventricular Hypertrophy, with Especial Reference to Preponderance of One or Another Chamber, Heart **5**: 367, 1913-1914. Cotton, T. F.: Observations upon Hypertrophy, Heart **6**: 217, 1917.
3. Notching of the Q R S group, to be an abnormal feature, must be present in at least two leads, and in one of these must be near the peak of a large wave.

these waves resemble ventricular extrasystoles in appearance. They are due to a lesion interrupting one of the main right or left branches of the auriculoventricular bundle [4] and are usually associated with a widespread myocardial fibrosis. The curves of the figure are not typical, but are distinctly of this type, suggesting an almost complete loss of function of the right branch of the bundle. Figure 3 shows abnormalities which have been associated with so-called "arborization block." [5] The typical features of the ventricular waves are the wide and notched Q R S group which is considered significant.[3] Figure 6 shows another form of abnormality of the ventricular waves in that they are all of very small size, and serves as another illustration of a downward T wave in Lead 1. These various types of electrocardiographic abnormality have been considered to be associated with abnormality of the ventricular muscle [7] but the evidence for this is only of a circumstantial character.

It has been our hope to contribute toward a settlement of the association of ventricular muscle disease

CLINICAL DIAGNOSIS, ELECTROCARDIOGRAM AND PATHOLOGIC FINDINGS IN CASES STUDIED

Case	Diagnosis	Ventricular Waves	Ventricular Muscle and Coronary Arteries
1	Chronic interstitial nephritis; chronic arteriosclerosis	Borderline R. V. P.; downward T wave in all leads (digitalis)	Heart enlarged, 600 gm.; slight coronary atheroma; muscle normal
2	Aortic stenosis and regurgitation; mitral stenosis; auricular fibrillation; tertiary syphilis	Borderline L. V. P.; downward T wave in all leads (digitalis)	Heart enlarged, 540 gm.; coronaries markedly thickened and calcified, no narrowing or occlusion; muscle normal except for slight fibrous replacement in the left portion of the interventricular septum
3	Rheumatic mitral stenosis and regurgitation; heart block	Slight L. V. P.	Heart large, 425 gm.; coronaries show moderate atheroma, no narrowing; muscle normal
4	Rheumatic aortic regurgitation; mitral regurgitation and stenosis; acute pericarditis with adhesions	Normal except QRS = 0.12 second	Heart greatly enlarged, pericardium adherent in many places; coronaries normal; muscle normal except for slight invasion of the inflammatory process from pericardium
5	Coronary thrombosis; chronic arteriosclerosis	R. V. P.; T wave downward, Leads 2 and 3 and in Lead 3, with an upward convexity before the downward peak (Figure 4)	Heart large, 500 gm.; coronaries thickened, lumen of anterior descending branch occluded by thrombus at its first main division; large pale focus on posterior surface of left ventricle, where fibrous replacement was the predominant feature in sections; both here and in the lower part of the septum, especially on the left side, areas of necrosis of the muscle with the usual accompanying inflammatory reaction; muscle of right ventricle normal except for slight increase of interstitial tissue
6	Chronic arteriosclerosis; coronary artery disease; chronic myocarditis	Borderline L. V. P.; Small QRS excursions, R = 6 mm.; downward T wave in Leads 1 and 2	Heart much enlarged, 875 gm.; endocardium appears normal; wall of left ventricle thinned and has scattered grey areas; coronaries diseased and have calcareous deposits; left artery especially involved and for 3 cm. almost obliterated; marked increase of interstitial fibrous tissue and some fibrous replacement; right ventricle has only increase of interstitial tissue
7	Chronic arteriosclerosis; chronic myocarditis	All waves very small; downward T wave, Leads 1 and 2 (Figure 6)	Heart much enlarged, surface fat abnormally widespread and thick and left ventricular muscle somewhat thinned; coronaries markedly thickened and calcified, and narrowed throughout but no occlusion; considerable fibrous tissue replacement in left ventricle, less in right ventricle, and in septum no replacement, but moderate increase of interstitial fibrous tissue
8	Chronic arteriosclerosis; chronic myocarditis; auricular fibrillation	Marked L. V. P.; notched QRS group; downward T wave in Lead 1	Heart markedly enlarged, 640 gm.; left ventricle has numerous small areas of fibrosis, and at apex a thinned, fibrous, partly calcified area; patchy sclerosis of the endocardium, especially at apical part of left side of septum; coronaries show marked atheroma with narrowing, especially in anterior descending branch of left coronary, which was almost obliterated; muscle has marked increase of interstitial fibrous tissue, no fibrous replacement except in area at apex of left ventricle; right ventricle has only slight change
9	Chronic arteriosclerosis; chronic interstitial nephritis	Marked L. V. P.; notched QRS group; downward T wave, Leads 1 and 2 (Figure 5)	Heart much enlarged, 740 gm.; endocardium of both ventricles thickened, especially on septal surface of left ventricle; coronaries have extensive atheromatous plaques, little thickening, no occlusion; muscle shows diffuse but only slight increase of interstitial fibrous tissue; septal endocardium of left ventricle much thickened
10	Chronic arteriosclerosis; chronic interstitial nephritis; aortitis; auricular fibrillation	Wide QRS group; notched QRS group; curve suggests partial lesion of right branch A-V bundle (Figure 2)	Heart much enlarged, 575 gm.; left ventricle thinned toward apex; endocardium of right ventricle thickened in region between anterior and posterior papillary muscles; coronaries stiffened and tortuous, no occlusion; muscle in left ventricle has numerous dense patches of fibrous tissue replacement, elsewhere a moderate to marked increase of the interstitial fibrous tissue
11	Rheumatic mitral stenosis; mitral regurgitation	Small waves; wide QRS group; notched QRS group; downward T wave in Leads 2 and 3 (Figure 3)	Heart large, 475 gm.; muscle and endocardium appear normal except for diseased mitral valve; coronaries little or not at all thickened, slight atheroma, no narrowing; muscle has considerable fibrous tissue replacement, especially marked in the left ventricle but not accentuated in subendocardial muscle layers

group of small excursions and the T wave directed opposite to the chief deflection of Q R S. Figure 4 has a peculiar, sharply downward curve of the T wave, with an upward convexity of the S-T or R-T interval which has been associated with coronary artery occlusion.[6] Figure 5 has two types of abnormality; the T wave is turned downward in Leads 1 and 2, and there is a

and abnormality of the ventricular waves of the electrocardiogram. We have been able to collect the hearts from eleven bodies of persons whose records had been taken shortly before death,[8] and we have carefully examined the coronary arteries and the ventricular muscle in the gross specimen, and microscopic sections from the muscle. Sections were cut from the lateral wall of each ventricle and from the interventricular septum. They were stained with hematoxylin-eosin

4. Eppinger, H., and Stoerck, O.: Zur Klinik des Elektrokardiogramms, Ztschr. f. klin. Med. **71**: 157, 1910.

5. Oppenheimer, B. S., and Rothschild, M. A.: Electrocardiographic Changes Associated with Myocardial Involvement, J. A. M. A. **69**: 429 (Aug. 11) 1917.

6. Pardee, H. E. B.: An Electrocardiographic Sign of Coronary Artery Occlusion, Arch. Int. Med. **26**: 244 (Aug.) 1920. Herrick, J. B.: Thrombosis of the Coronary Arteries, J. A. M. A. **72**: 387 (Feb. 8) 1919.

7. Pardee, H. E. B.: The Diagnosis of Myocardial Disease, New York State J. Med. **21**: 282 (Aug.) 1921.

8. These patients were from the medical services of Dr. Lewis A. Conner and of Dr. William R. Williams, one of them being a private patient of the former.

and with Herxheimer's scarlet R. As a control to our interpretation of these sections, twelve hearts from normal persons who had met sudden death by violence were obtained from the Bellevue morgue and similarly cut and stained. This control series is reported elsewhere.[9]

As a result of this work, we are able to make some very interesting comparisons between the degree and character of disease in the ventricular muscle and the character of the electrical curve obtained. The cases have been tabulated to enable the reader to review them easily; the clinical diagnosis, electrocardiogram and pathologic findings being set down for each patient. It is noteworthy that the pathologic changes were all varying degrees or forms of fibrosis with the exception of the one heart with a recently thrombosed artery.

The first four patients were not considered to have significant abnormalities of the ventricular waves. The downward T wave in Leads 1 and 2 of the first two cases could well be due to the considerable amount of digitalis which both of these patients had received, so it was not felt that this abnormality of the curve should be ascribed to muscle disease.[10] Of these four patients, three had normal ventricular muscle and but slight changes in the coronary arteries. The other (Case 2) had marked thickening and calcification of the coronaries and a slight localized abnormality of the muscle of the left side of the septum.

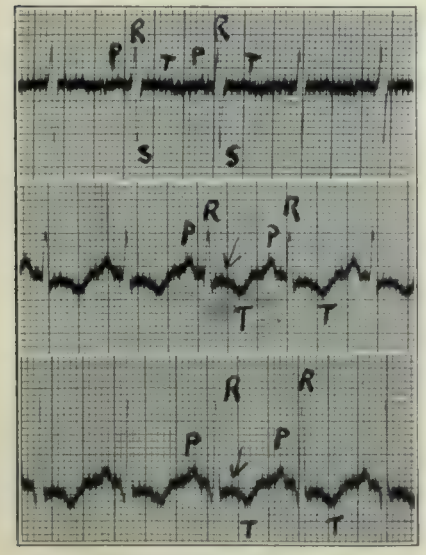


Fig. 4.—Electrocardiogram of Case 5: Right ventricular predominance (R. V. P.) is shown by the large *S* in Lead 1 and by the fact that *R* is larger in Lead 3 than in Lead 2. The upward convexity indicated by the arrow just preceding the downward T wave is frequently found after coronary artery occlusion.

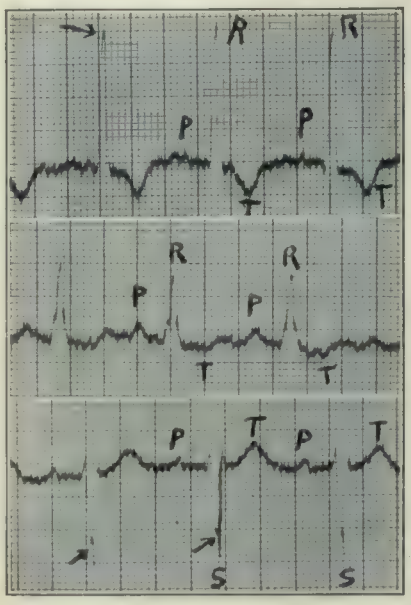


Fig. 5.—Electrocardiogram of Case 9: Notching of the Q R S group is indicated by the arrows, and the abnormal downward T wave in Leads 1 and 2 is plainly seen. Left ventricular predominance (L. V. P.) is shown by the large *S* in Lead 3 and the fact that *R* is larger in Lead 1 than in Lead 2.

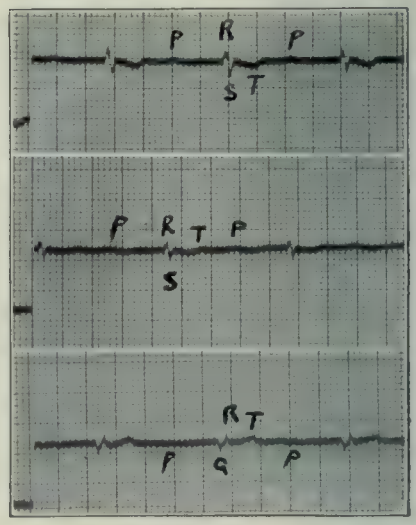


Fig. 6.—Electrocardiogram of Case 7: Prolonged auriculoventricular conduction time is evident (P R = 0.40 second)—a low grade of heart block. Note the small size of the Q R S and T waves; also the downward direction of T in Lead 1. The step-like movement at the left end of each lead is due to the application of 1 millivolt.

Cases 5 to 11 each showed one or more of the significant abnormalities of the ventricular waves, and all proved to have a distinctly abnormal ventricular muscle, though great variety in the extent and character of the disease was found. The electrocardiograms of these seven patients likewise showed a great variety of abnormalities. Case 5, with the recently infarcted area, presented the peculiarity of the T wave which is often seen in this condition, shown in Figure 4. The waves of Case 11, seen in Figure 3, have the peculiarities attributed to "arborization block" and said to be associated with severe and extensive pathologic changes. The heart did not show these extensive and severe changes, though there was a considerable degree of fibrous replacement, especially marked in the left ventricle. Particularly, it did not show the coronary artery disease or the endocardial thickening which would have been expected. Case 8 closely approximated the pathology associated with "arborization block," but did not show the typical electrocardiographic changes. It presented other abnormalities, however.

Case 10, with ventricular waves suggesting a partial lesion of the right branch of the auriculoventricular bundle (Fig. 2), presented a markedly pathologic muscle condition, and, in addition, a thickening of the endocardium of the right ventricle in the area where the right bundle branch comes to lie beneath it. It is unfortunate that we could not attempt to follow the bundle branch tissue in this heart. Case 9 (Fig. 5), with notching of the Q R S group and an abnormal downward T wave, showed a marked thickening of the endocardium, but did not have marked changes in the muscle. Cases 6 and 7 presented the feature of small excursions common to their ventricular waves (Fig. 6). In both, there was marked disease of the coronary arteries, with calcification and narrowing and marked muscle changes.

It can be clearly seen, then, that all of these hearts that had given abnormal electrocardiograms showed a distinctly diseased ventricular muscle. The condition of the ventricular muscle in these hearts leads us to feel that the bundle branch tissue, and especially its arborizations, have attracted a disproportionate amount of attention from those attempting to interpret abnormal electrocardiograms. The condition of the general mass of the muscle and the possible relation of this

9. Master, A. M.: Fatty Degeneration of the Heart, Arch. Int. Med., to be published.

10. Cohn, A. E.; Fraser, F. R., and Jamieson, R. A.: The Influence of Digitalis on the T Wave of the Human Electrocardiogram, J. Exper. Med. **21**: 593, 1915. It is now a well accepted fact that large doses of digitalis can turn downward an otherwise normal upward T wave.

to the abnormality of the waves has been neglected. It seems likely that disease involving the bundle branch arborizations is capable of changing the ventricular waves, provided it is sufficiently extensive; but then the coincident muscle involvement would also be extensive, for disease only very rarely picks out the specialized conducting tissue, leaving the nearby muscle intact.

SUMMARY

The coronary arteries and ventricular muscle of eleven patients dying of heart failure were carefully examined, and it was found that muscle disease occurred but rarely in the absence of disease of the coronaries. The outstanding lesion was always a fibrosis, though it varied much in degree and distribution.

The ventricular waves of the electrocardiogram taken shortly before death were normal in four cases: three of these had normal ventricular muscle and the other had but insignificant changes. The ventricular waves were abnormal in seven cases: one of these hearts had a moderate fibrosis, and the remainder had various sorts of marked abnormality of the ventricular muscle.

Though admitting the small number of our cases, we feel that they strongly suggest that an electrocardiogram with the special abnormalities described will indicate the ventricular muscle diseased to a definite degree, which the microscope, if not the naked eye, can discover, and which might well be expected to interfere with its function. If the ventricular waves do not show any of these special abnormalities, the indication is less clear; but it is likely that the ventricular muscle is normal, or at least affected with but the slightest degree of abnormality.

It seems that ventricular muscle disease is a far more important deduction from the finding of abnormal ventricular waves than has been heretofore considered, so that the clinical importance of abnormal electrocardiograms becomes more apparent. They give us indications of the condition of the ventricular muscle much as the stethoscope gives indications of the condition of the valves, and like the sounds of the stethoscope, the records must be very carefully considered before being used as a basis for diagnosis or prognosis.

74 West Forty-Eighth Street—Mount Sinai Hospital.

Deaths from Falls.—During 1921, in New York City, 864 persons died as a result of falls, a ratio of almost 12 per hundred thousand. Of this number, 103 persons were killed by falling from buildings and scaffolds. One hundred and thirty-eight persons were killed by falling from fire escapes and windows. Almost one third of these deaths occurred among children under 5 years of age—in other words among little children who were allowed to go out on fire escapes or to lean out of windows. Burns and scalds are another cause of death numerically important, and here, too, children are the greatest sufferers, almost one half of the deaths from this cause occurring during the first five years of life. Under 5 years of age, boys suffer a higher mortality than girls, because they are more venturesome; but in the next period of life, that is, between the ages of 5 and 14, girls suffer the highest mortality, probably because at this age the boys seek their recreation out of doors, whereas girls are more inclined to play indoors, and also because the latter are called upon to assist in the duties of the home, where opportunities for accidents of this sort are greatest.—*School Health News*, November, 1922.

Clinical Notes, Suggestions, and New Instruments

A SELF-RETAINING PALATE RETRACTOR

GEORGE D. WOLF, M.D., NEW YORK

This self-retaining instrument is presented in the interest of direct exposure of the rhinopharynx during operative procedure.



Fig. 1.—Instrument used as self-retaining tongue depressor.

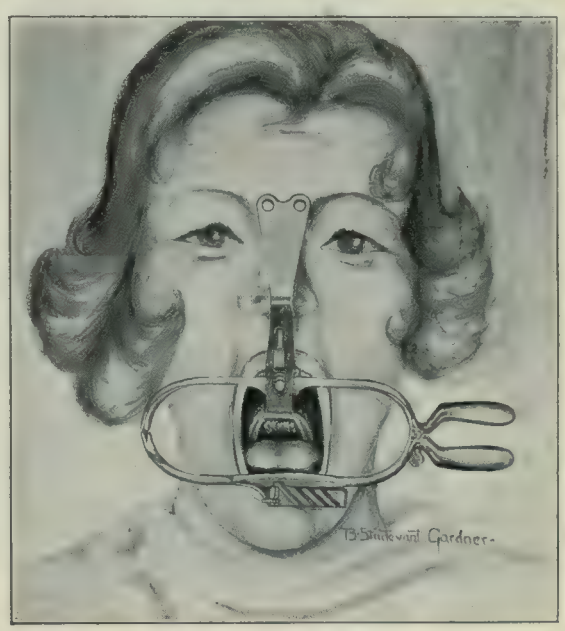


Fig. 2.—Instrument used as palate retractor.

In the center of the upper member of the Jenning mouth gag there is attached a downwardly projecting pin about one-fourth inch long, mounted on a narrow plate brazed across the curve that forms the bite. A groove is milled in

this pin near its end, forming thereby a button-like extremity (Fig. 1 *A*).

The small hook on the handle of the author's self-retaining tongue depressor is properly curved and fenestrated to form a palate retractor (Fig. 1 *B*). In the body of the handle is a series of holes (Fig. 1 *C*) drilled 15 degrees from the perpendicular, and of such diameter as to engage in the groove on the pin described above as part of the mouth gag.

The palate retractor, when so engaged, is self-retaining by reason of the traction exerted by the palate (Fig. 2).

The instrument is obtainable from E. B. Meyrowitz, Inc., 520 Fifth Avenue, New York.

815 Park Avenue.

INHALATION OF BARIUM IN SOLUTION

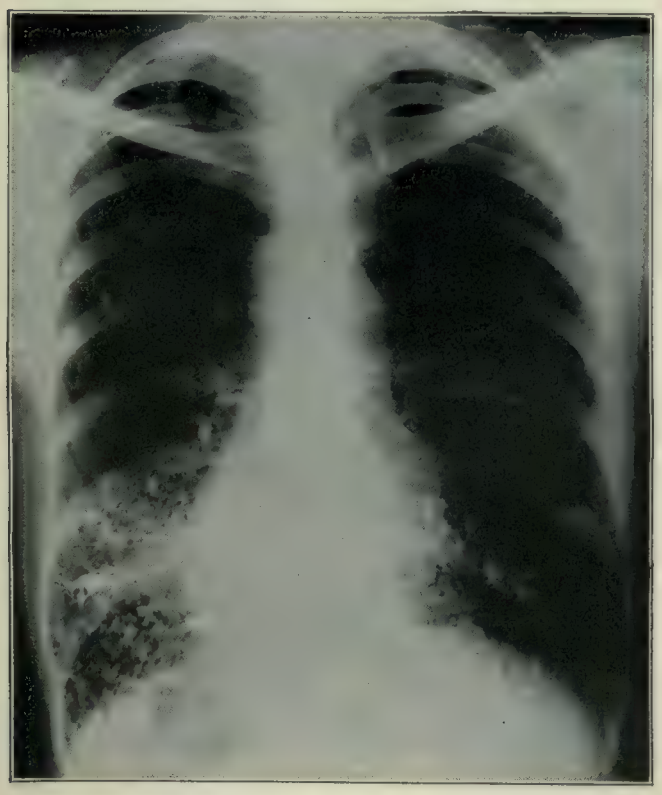
C. R. FISHEL, M.D., TACOMA, WASH.

Miss G. W., aged 46, a schoolteacher, referred by Dr. Broman for complete gastro-intestinal examination, which was negative, stated that five years before she had an abscess at the junction of the esophagus and stomach, and that a cavity still remained which she could wash out by the use of salt water and then regurgitate it.

RESULTS OF EXAMINATION

Barium was added to the solution, and she proceeded to wash out the so-called abscess cavity. After one or two unsuccessful attempts she succeeded in getting a liberal amount of the fluid down, which passed directly into the trachea. At the bifurcation, contrary to the usual rule, the greater portion passed into the left bronchus. It passed well out in the smaller bronchi in the lower half of each lung.

The patient showed no more inconvenience to the passage of the fluid into the trachea than she would have shown if



Distribution of barium in bronchi.

it had passed into the esophagus, and insisted on repeating the procedure for the benefit of the referring physician, who had been called to see it.

The patient was examined fluoroscopically daily for several days, very little change being noticed after the first few minutes, during which time the fluid had gravitated toward the base as shown.

The patient returned four months later, in her usual health. The portion in the larger bronchi had been expelled, but a very large percentage still remained unchanged.

Fidelity Building.

COMBINATION SEDAN AND AMBULANCE

JOHN B. POTTS, M.D., OMAHA

In many communities where the demand for a regular ambulance is not great, a sedan that has the doors coming together at the center can be converted into an ambulance with very little difficulty. The change is made by removing



Combination sedan and ambulance.

the center post, which is held at the bottom by metal dowels, and at the top by a wing nut. After the post is removed, the larger half of the front seat and the auxiliary seat is taken out, and a board is laid on the floor to make a level surface, on which a carpet is laid. This is done quickly, and requires little or no skill. In a sedan thus converted, the space between the front and rear of the car is sufficiently wide to hold a Bomgardner cot. The foregoing can be furnished by Mr. Pfeiffer of the Pfeiffer Top and Body Corporation, Omaha.

COMPLETE ANURIA FOLLOWING A MERCURIC CHLORID DOUCHE; RECOVERY AFTER BILATERAL RENAL DECAPSULATION

GEORGE W. OUTERBRIDGE, M.D., PHILADELPHIA

This case is of interest because of the sudden, intense and protracted symptoms of a profound toxemia, involving the renal, gastro-intestinal and hematopoietic systems, occurring subsequent to a vaginal douche of a small amount of moderately strong mercuric chlorid solution, taken for the purpose of inducing a miscarriage, and because of the ultimate recovery of the patient after numerous threatening complications and an unusually high nitrogen retention figure.

Mrs. V. F., aged 38, a tertipara, being two days overdue, on the afternoon of May 27, 1922, dissolved two mercuric chlorid tablets in a glass of water and used this as a vaginal douche. (Assuming a glass to equal approximately one-half pint, this would make about a 1:250 solution.) Almost immediately she began to have severe burning in the vaginal region, and abdominal cramps, with a chill lasting half an hour, followed by vomiting and diarrhea. She said that she walked the floor in agony all that night. The next day she called a physician, who packed the vagina loosely with gauze. On the afternoon of May 29, the patient was sent to the Abington Hospital, where she was admitted to the isolation ward, as she had been taking care of her children, who were sick with measles.

On admission, the teeth were bad, the gums reddened. The breath was fetid, the tongue dry and splotched. There was excessive secretion of saliva. The heart and lungs were normal. The abdomen was scaphoid; it was not tender;

there was gurgling peristalsis. The external genitalia very much swollen and excoriated; the entire vagina was fiery red except where covered with irregular patches of greenish-gray exudate; there were similar patches on the vaginal portion of the cervix; there was a very foul vaginal discharge; the vagina was entirely anesthetic on examination. The temperature and pulse were normal. Blood examination revealed: hemoglobin, 65 per cent.; erythrocytes, 3,100,000; leukocytes, 14,400. No urine was obtainable for examination, and the patient stated that she had passed practically none all day.

Because of the lapse of forty-eight hours between the use of the douche and admission of the patient to the hospital, it was not felt that calcium sulphid would be of any avail, and she was therefore put on ordinary eliminative treatment, but she responded very poorly, refused nourishment, vomited persistently, and was obviously getting gradually worse.

From admission at 2:30 p. m., May 29, to operation at 7 p. m., May 31, a period of about fifty-two hours, no urine whatever was passed, and repeated catheterizations revealed the bladder absolutely empty. Under gas-oxygen anesthesia, therefore, both kidneys were decapsulated. The right kidney was large, pale and easily delivered; the left was much smaller, deeply congested, and could not be delivered, the parenchyma tearing very easily at the least attempt to grasp it. It was therefore decapsulated in situ. Both capsules were thin, and stripped easily. That night the patient passed 2 ounces of urine, and a total of 8 ounces in the first twenty-four hours after operation. For the next six days the amounts ran from about 6 to 12 ounces in each twenty-four hours; on the eighth day after operation, elimination rose to 18 ounces, on the eleventh day to 30 ounces, and on the twelfth day to 64 ounces. From then on the daily output ranged from 90 to 110 ounces.

A specimen of blood sent to the laboratory, May 31, just before operation, for urea nitrogen estimation was unfortunately not accompanied by a warning that unusually high values should be expected, and the test was therefore made only for a maximum of 80 mg. for each hundred cubic centimeters. This amount was present, but how much more could not be determined. A second estimation, made three days later, however, showed the remarkably high figure of 260 mg. for each hundred cubic centimeters; but since this was taken after at least some elimination had been taking place for two days, it may not represent the highest figure actually reached.

Following operation, the patient was given hot packs and other customary eliminative treatment, to which she responded poorly at first, and somewhat better after a few days. She soon developed an intense gastro-enteritis, marked by very frequent, thin, liquid, brownish or bloody stools, and severe abdominal pain and tenderness. This continued for several days, and then gradually cleared up.

June 7, a typical measles rash appeared, which soon became most intense over the entire body, and ran a typical course, followed by very free desquamation. June 11, the patient began passing blood and clots by the vagina, and aborted the next day. Examination at this time revealed a sloughing of large portions of the vaginal mucosa; but there was some tenderness on palpation, in contradistinction to the complete lack of sensation noted on admission. Ophthalmoscopic examination, June 16, disclosed a mild neuroretinitis. By this time the blood urea nitrogen had fallen to 40 mg.; it rose again, July 1, to 143 mg., and then fell gradually to 60 mg., July 8, and to 12 mg., July 26. At no time did the systolic blood pressure go above 140. One of the kidney incisions healed promptly, but the other suppurated and required daily dressings for some time.

Through the latter half of June the patient appeared to be progressing favorably, but about the end of the month she began to manifest signs of great irritability, became irrational at times, and developed a definite cardiac murmur and a high grade anemia, the blood count having fallen by July 1 to hemoglobin, 25 per cent.; erythrocytes, 1,500,000; leukocytes, 6,000. Approximately the same count was maintained for the next five or six weeks in spite of energetic oral and hypodermic administration of iron and arsenic. July 4, the temperature, which had been about normal, began to go up, soon reaching about 102 F., where it remained persistently. July 20, the bladder urine showed a pure culture of *B. coli*, and the next day a cystoscopic examination was performed and the ureters catheterized, the urine obtained from each kidney likewise showing *B. coli* infection in pure culture. Each renal pelvis was irrigated with 1 per cent. solution of mercurochrome-220 soluble, and the ureteral catheters were left in place for an hour for drainage. The following day the patient's temperature shot up to 104, but then dropped gradually, and reached normal in five days, remaining there from that time on, save for a brief rise incident to transfusion, August 8.

Because of the persistent anemia, with general rather unfavorable progress of the patient, who refused almost all nourishment at times, and became much emaciated, with dry, scaly skin, and marked prostration, a blood transfusion with her husband's blood was attempted by the citrate method, August 8. The bloods were both typed and matched, both being Type 4, and appearing to be compatible; but after the introduction of a few cubic centimeters a sharp reaction took place, the temperature rising rapidly to 104 and the pulse to 150. For a time the patient's condition seemed critical, but the transfusion was immediately stopped, and atropin and epinephrin were administered hypodermically, and in a few hours she reacted. Her condition gradually improved, and barring minor complications, such as urinary incontinence for a time when lying down, and a superficial abscess in one of the incisions, requiring reopening, August 30, her progress was satisfactory after the middle of August; she took nourishment better, the vaginal mucosa healed without any adhesions or stenosis, and she was discharged, September 6, in fairly good condition. At this time the blood count was still low, however: hemoglobin, 35 per cent.; erythrocytes, 2,300,000; leukocytes, 6,000. The phenolsulphonephthalein elimination at the time of discharge was 35 per cent. in two hours; and culture of the urine disclosed merely a few colonies of staphylococci.

Examination of the patient, December 4, revealed that she was in excellent condition; she looked and felt well, had a good color, had gained rapidly in weight and strength, and was able to do her housework and take care of her children. The blood count was: hemoglobin, 70 per cent.; erythrocytes, 3,730,000; leukocytes, 7,600. Vaginal examination was negative, save that the mucosa in considerable areas appeared very pale, smooth and atrophic. The urine was entirely normal, and showed no albumin, casts or pus.

1927 Spruce Street.

DOUBLE UTERUS: CESAREAN SECTION FOR DELIVERY OF PREGNANT RIGHT UTERUS AT TERM

JOHN A. SHOEMAKER, M.D., BEREA, OHIO

Cesarean section is not rare enough to be noteworthy except when it is performed under exceptional circumstances, and when, as the operation of choice, it is attended by success. In the case reported here, its selection and justification are strikingly brought out.

REPORT OF CASE

History and Examination.—E. W. B., aged 24, a normal appearing white woman of negative family history, who came under observation in July, 1921, was married in April, 1921, and had menstruated in April, but not since. Examination revealed a mass in the culdesac of the pelvis. She was so constipated that an enema was ordered to clean out the rectum. Later examination revealed a double uterus, a double cervix, a fibrous vaginal septum and a pregnant left uterus. For confirmation of these findings, she was referred to an obstetrician, who agreed with the diagnosis of double uterus but did not think she was pregnant. However, a miscarriage of two months' fetus occurred from the left uterus, two days later. She made a good recovery, and an examination in August, 1921, revealed each uterus of normal size, the left perhaps a little larger. Her weight was then 116 pounds (53 kg.). By October, 1921, she was perfectly normal, and menstruated regularly from both uteri.

In January, 1922, the patient reappeared for examination, stating that her last menstruation had occurred, December 6; and, early in February, examination revealed undoubted pregnancy of the right uterus. She was suffering from emesis and had all the classic symptoms of pregnancy. In April, her weight had increased to 126 pounds (57 kg.). The right uterus was enlarging and occupying the right flank. The left uterus remained normal in size. The blood pressure at this time was systolic, 110, diastolic, 50. Urine examination was negative. The pelvic measurements were: intertrochanteric, 35 cm.; interspinal, 30 cm.; intercristal, 25 cm.; external conjugate, 17 cm.

June 1, the blood pressure was 110, systolic; the weight, 127 pounds (57.7 kg.). The patient was feeling very well. The pregnant uterus was still enlarging to the right flank, the left side of the abdomen being unoccupied. June 29, there was considerable discharge of blood from the right uterus, but a week's rest in bed was sufficient to avert a miscarriage. The fetus was lively. In August, the patient's weight was 135 pounds (61 kg.). Examination was entirely negative so far as untoward symptoms were concerned, and she was referred to a surgeon for confirmation of my opinion that a cesarean section at term should be the operation of choice, as offering the best chance for child and mother. The vaginal septum was so fibrous as to prove an obstruction to labor, and there was no means of telling the thickness of the uterine wall which divided the two uteri. It is well known that a thin wall is not uncommon in a bicornate uterus, and labor possibly would rupture the pregnant uterus.

The consultant advised a cesarean section at term, which was estimated to be from September 4 to 9. He also advised sterilization of the mother after delivery. Accordingly, arrangements were made for the patient to go to the hospital, September 1, for delivery; but, without warning, at 8:30 p. m., August 13, the membranes ruptured and she began to have pain. She was brought to the hospital at 10:30 p. m., and admitted at once to the delivery room, where rectal examination disclosed that labor was in progress, with vigorous pains and three fingers' dilatation. A vertex presentation was found; the fetal heart sounds were strong, with a rate of 130. The patient was shaved for laparotomy.

Operation (Dr. Clement).—Ether was administered at 1:45 a. m. Five per cent. iodin in alcohol was employed in preparing the patient for the incision. External examination revealed a right uterus completely filling the right flank and right hypochondrium. An enlarged left uterus could be felt through the abdominal wall, about the size of an orange. A long median incision to the left of the umbilicus was made through the skin and fascia down to the peritoneum, which was lifted and incised. Some serous fluid was found free in the abdomen. The pregnant uterus was pushed from the right to the midline, and incised from the lower uterine segment almost to the cervix. A live baby was quickly delivered, the cord clamped and the placenta extracted. Hemorrhage was slight. The uterus contracted promptly. There were two distinct organs joined together almost as low down as the cervix. Each fundus apparently had a complete wall, and a single tube and ovary to each uterus. The left uterus was soft and evidently hyperplastic. Both tubes were doubled, ligated and cut. Uterine repair was accomplished by four-layer continuous mattress sutures of chromic catgut. The peritoneum was closed with continuous suture. Muscles and fascia were closed with interrupted suture, and the skin was closed with silkworm gut and clips. Anesthesia was begun at 1:45 a. m. The incision was made at 2 o'clock, the baby was born at 2:05, the placenta was delivered at 2:10, and the operation was completed at 2:30. Both mother and baby were in good condition at 3:30 a. m., when the mother awoke from the anesthetic. The infant was a girl, normal, weighing 5 pounds and ten ounces (2,552 gm.)

Outcome.—The convalescence was uninterrupted, except for a slight rise in temperature the second day. The clamps were out on the sixth day, and except for some difficulty with the bowels, the period of the patient's stay in the hospital might have been shorter. As it was, a mother who thought her confinement had been easy was removed from the hospital the fourteenth day, with a normal, healthy baby.

REPORT OF A CASE OF FUNCTIONAL APHONIA, CURED UNDER GENERAL ANESTHETIC

C. NORMAN HOWARD, M.D., WARSAW, IND.

Mrs. M. T., aged 51, whose nervous system has been below par since her husband committed suicide, a year and a half ago, in January, 1922, contracted influenza. Prior to February 1, she enjoyed the full use of her voice, but that morning she found that she could not talk above a whisper. She ascribed the condition to the influenza. A number of chiropractic treatments were taken, but the voice remained a whisper. For the relief of this condition, she reported, Oct. 30, 1922. The loss of the voice had then persisted continuously for nine months.

Examination of the larynx revealed a slight redness of the posterior fourth of the left vocal cord. There was no paralysis of either cord. Examination revealed that the heart, lungs and kidneys were negative; the Wassermann reaction was negative, and there was no aortic aneurysm or goiter. A diagnosis was made of functional aphonia, also known as hysterical or nervous aphonia.

The patient was informed that there was no paralysis of the cords; that people affected in this way always recovered, and that the voice usually came back suddenly, just as it had left. The next day, she was told that we would put her to sleep and apply medicine to the parts, and that when she woke up she could talk. She was given ether, and, while she was under the anesthetic, the region was painted with 1 per cent. silver nitrate as a local fillip to the parts. In coming out of the anesthetic, and while only partly conscious, she mumbled something above a whisper. She was encouraged to talk louder and asked to count out loud, and did so. She has since then been talking normally.

SOME PRACTICAL SURGICAL PATHOLOGIC OBSERVATIONS AND DEDUCTIONS *

ALBERT C. BRODERS, M.D., ROCHESTER, MINN.

In the practice of surgical pathology, many points of interest are accumulated that cannot be obtained from textbooks. The pathologist, in his application of his self-gained knowledge, may feel that it has been acquired intuitively, while in reality it is the result of long experience. Certain of the following observations are common knowledge; others I believe to be original.

Exophthalmic goiter is almost never associated with primary malignant neoplasia of the thyroid gland.

Calcareous deposits, except in small amounts, are almost never associated with primary malignant neoplasia of the thyroid gland.

Carcinoma of the thyroid is usually smooth and glistening and of a pale pinkish tint. However, not all pale pinkish thyroid tumors are carcinomas.

Calcareous deposits, except in small amount, are almost never intimately associated with malignant neoplasia in any part of the body, because the calcareous material follows a degenerative process, and the malignant neoplasia represents an atypical regenerative process.

When uterine scrapings are examined in the fresh state and are found to be smooth, reddish or brownish, and glistening, the condition is practically always benign. On the other hand, if the scrapings are whitish or grayish and granular, or sometimes resemble brain tissue, the condition is practically always malignant.

If a pathologist receives a mass from an ovary or fallopian tube filled with a whitish putty-like material, a very simple test will show whether the mass is a dermoid cyst, or the end-result of a tuberculous process. If cold water is allowed to run over some of the substance held in the fingers, and it washes off, the condition practically always is tuberculosis; but if the substance sticks to the fingers it is practically always the product of a dermoid cyst. The substance that washes off contains a large amount of calcium carbonate, and that which sticks is made up, for the most part, of sebaceous material.

* From the Section on Surgical Pathology, Mayo Clinic.

If a careful microscopic examination is made of the walls of the sac that contains the substance that washes off easily, definite evidence of tuberculosis will be demonstrated in most instances. This material is usually found in the fallopian tubes, ovaries, testicles, epididymides, vasa deferentia, kidneys, lymph nodes in various parts of the body, lungs, and sometimes beneath the skin.

If a lymph node is found to be dirty brown on section, the diagnosis is practically always noncaseating tuberculosis. Sometimes a lymphosarcomatous lymph node will have a brownish tinge, but it is pale compared to the noncaseating tuberculous node. The microscopic examination of this type of tuberculosis reveals numerous ill-defined tubercles which contain a large number of epithelioid cells, but very few foreign body giant cells.

It is well known that tuberculous fallopian tubes are practically always open, and gonorrheal tubes are practically always closed. It is also well known that sticking a needle in the little bodies which are often found on the serosa of the fallopian tube will usually indicate whether one is dealing with tuberculosis or simple inflammatory cysts. If the little bodies collapse they are inflammatory cysts, but if they do not they are tuberculous.

Epithelioma is not often found in an eroded cystic cervix or in the cervix of a prolapsed sclerotic uterus.

If a cervix has numerous cysts it is almost certain not to be cancerous, but one should be on the lookout for adenomyoma of the body of the uterus, particularly if the cysts are associated with a polypoid endometrium.

A prolapsed uterus should be examined thoroughly, since fibromyomas are often present that are almost impossible to detect without slicing sections of a specimen with a sharp knife.

A boardlike stomach, a mass or an ulcer in the stomach, associated with white lines on the serosa, is practically always cancerous, as the white lines are the result of cancer cells metastasizing through the lymphatics.

The boardlike or leather-bottle stomach should be searched very carefully for carcinoma, and if none is found the adjacent lymph nodes must be searched, with the chances that the cancer will be located and definitely recognized. The reason cancer is so often hard to find in the leather-bottle stomach is that the cells are squeezed out in such a manner by the excessive amount of fibrous tissue that it is difficult to distinguish them from fibroblasts. I believe there is a condition of linitis plastica, but the diagnosis should not be made until the tissue has been most thoroughly examined for cancer, and even then the diagnosis should be qualified.

So far as we know, the uncomplicated syphilitic stomach is devoid of white lines on the serosa. Microscopically, besides marked fibrosis there is perivascular round-cell or plasma-cell infiltration; foreign body giant cells are found in scant numbers. A mass in the stomach, with white lines on the serosa, could be tuberculous, but tuberculosis of the stomach is such a rare condition that it can practically always be excluded.

MacCarty's rule that a gastric ulcer is malignant when it is 2.5 cm. or more in diameter is a good rule to follow, as the exception is relatively rare.

Multiple ulcers of the stomach, like multiple tumors of the breast, are not so likely to be malignant as are single ulcers of the stomach, or single tumors of the breast. However, this should not be depended on alone: it is safer to make a microscopic examination.

The diagnosis of lymphosarcoma or Hodgkin's disease of a lymph node should be made guardedly in the presence of germ centers, as in these conditions the architecture of the node is usually destroyed.

All blood clots or hematomas, not caused by operation, should be thoroughly examined, as a malignant neoplasm may be encountered that would otherwise be overlooked, particularly if the blood clot or hematoma is in the region of the kidney or testicle. All hemorrhagic masses in the fallopian tubes of women of the child-bearing period should be considered ectopic pregnancies until proved otherwise.

All pyometras should be thoroughly examined, as a carcinoma may be lurking in the background.

All sinuses, abscesses or postoperative wounds that refuse to heal should be examined for tuberculosis or actinomycosis, as the former condition is often found and the latter is not rarely encountered; as a matter of fact, tuberculosis should be kept in mind in the routine of pathologic examinations, as it may be found almost everywhere. The dirty brownish granulation tissue should be selected, as tuberculosis is more likely to be found in this than in the fibrous areas. Tuberculosis and malignant neoplasia should not be regarded as antagonistic, because the two conditions thrive side by side.

Melano-epithelioma is usually easy to diagnose, but is sometimes difficult to distinguish from hemangioma, especially if the endothelial cells of the latter neoplasm have picked up blood pigment, giving them an appearance similar to epithelial cells that contain melanin. If one is confronted with this condition, it is best to test the neoplasm for iron. If it is a melano-epithelioma, it will be iron-free; if it is an hemangioma, it will contain iron. The differentiation of these two neoplasms has a very important bearing on prognosis, as every one knows that melano-epithelioma is very malignant and that hemangioma is benign.

Benign foreign body giant-cell tumors have cells that contain blood pigment, or one or more of the lipoids; it may be necessary sometimes to distinguish these cells from epithelial cells containing melanin.

If a lymph node of the groin is examined and found to be melano-epithelioma, and the clinician cannot find the primary growth, he should be instructed to examine the bottom of the patient's foot, or toes, as an apparently insignificant black mole or black spot may be causing the trouble.

A pathologic diagnosis should be made on what is seen macroscopically and microscopically, and care should be taken not to lean too heavily on the clinical findings lest the diagnosis be biased. For instance, if a surgeon sends in a mass of uterine scrapings on a piece of gauze, it is not necessary for the pathologist to know the age of the patient or whether she has been bleeding or not; the thing for him to do is to make a diagnosis of the tissue that he has in his hand. The most important thing to know is the location of the tissue.

PNEUMONIA FROM INHALATION OF ZINC STEARATE TALCUM POWDER

WILLIAM EDMONDS, M.D., NEBRASKA CITY, NEB.

A child, aged 8 months old, who was given a can of zinc stearate talcum to play with, was heard to cough, drawing the mother's attention. Talcum was found on the child's face and in its mouth. The mother washed out what she could, and then called me. I arrived in a few minutes, Nov. 18, 1922, and gave an emetic, which brought up some powder. The child seemed limp, with shallow respirations, and the pulse ranging about 90. At midnight the condition became rapidly worse. The lungs became congested, breathing was difficult, and the child moaned. The temperature rose to 104.6 and remained there in spite of treatment. High enemas brought gray and whitish discharges. The baby nursed until eighteen hours before the end, which came, November 20. The lungs were congested and filled with liquid. The temperature was 105, the respiration 97 and the pulse 105, according to the nurse's count.

Rectal Binder.—DR. SIDNEY FURST, New York, writes: In THE JOURNAL, Dec. 9, 1922, p. 2000, Dr. A. J. Chisholm described a satisfactory rectal binder. A binder that I have used for some time, which I consider good, cheap and easy to obtain, is simply the ordinary jock strap used by athletes. This consists of a girdle and three flaps. The central or broad flap is used to hold firmly the testicles, and the two lateral flaps go over the respective gluteal regions. Now, if the jock strap is reversed, the central flap will cover firmly the rectal region, and hold in place any desired dressing. The jock strap can be had at any store that carries athletic supplies, or at most drug stores. The girdle comes in various sizes. The entire strap is made of elastic material, and will stand several washings.

New and Nonofficial Remedies

ANTIBERIBERI VITAMIN CONCENTRATE-METZ

Preliminary Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report on the experimental status of Antiberiberi Vitamin Concentrate-Metz. W. A. PUCKNER, Secretary.

The Metz Laboratories, Incorporated, have requested the acceptance for New and Nonofficial Remedies of Antiberiberi Vitamin Concentrate-Metz. The firm has supplied adequate information in regard to the process whereby the product is obtained, and has presented evidence to show that the potency of the product is controlled by adequate animal tests. The firm, however, has presented no proof to indicate that the product is of value therapeutically in human beings, and hence it cannot be admitted to New and Nonofficial Remedies.

The Metz Laboratories frankly admit that there is no evidence to show that Antiberiberi Vitamin Concentrate-Metz is of value in the treatment of human disease. The firm wishes only to make available to students and investigators of nutrition a product which is claimed to be antineuritic (antiberiberi) when fed to pigeons. It increases the food intake of rats fed on substance deficient in vitamin B and caused increased weight, but not to the same extent as does the vitamin B (according to McCollum's nomenclature). The product is offered without therapeutic claims and no dosage is given excepting for pigeons. It is made available as a scientific article for investigation and trial.

The Council believes that, from a scientific standpoint, Antiberiberi Vitamin Concentrate-Metz is suitable for study, suitable for animal experiments and for controlled experiments on man.

For the preparation of Antiberiberi Vitamin Concentrate-Metz, freshly pressed brewers' yeast (from dark beer) is extracted according to the method described by Casimir Funk (*J. Physiol.* **45**:75, 1912) except that mercuric chlorid is used before, instead of after, the phosphotungstic acid, and that instead of silver nitrate another silver salt is used. The extract is tested on pigeons to determine its power to check and cure avian polyneuritis, and on rats to determine its relative freedom from the fraction which promotes the growth of yeast (Funk and Dubin, *J. Biol. Chem.* **48**:437, 1921). The vitamin extract is diluted with sucrose so that 0.065 gm. (1 grain) shall represent the antineuritic potency of 10 gm. of freshly pressed brewers' yeast. Approximately, the finished preparation contains ⅛ grain of the vitamin extract and ⅞ grain sucrose.

Antiberiberi Vitamin Concentrate-Metz is marketed in the following forms:

Antiberiberi Vitamin Concentrate-Metz Powder: 0.065 gm. (1 grain) represents the antineuritic potency of 10 gm. of freshly pressed brewers' yeast.

Antiberiberi Vitamin Concentrate-Metz Tablets: Each tablet represents the antineuritic potency of 10 gm. of freshly pressed brewers' yeast.

Antiberiberi Vitamin Concentrate-Metz Ampules, 1 c.c.: an aqueous solution of Antiberiberi Vitamin Concentrate-Metz, containing in 1 c.c. the antineuritic potency of 10 gm. of freshly pressed brewers' yeast. This solution is stated to retain its potency for at least six weeks.

Antiberiberi Vitamin Concentrate-Metz is not claimed to be identical in effect with vitamin B in the sense of McCollum's nomenclature, but rather with the antiberiberi vitamin as first described by Funk (*J. Physiol.* **45**:75, 1912). Funk's attempt was directed to the isolation of a substance that would cure beriberi and particularly its analogue, avian polyneuritis. Subsequent investigators (Hoskins, Osborne, Mendel, McCollum et al.) found that yeast extract and many other food derivatives keep (or maintain) rats, mice and other animals eating and growing if the other components of the diet are adequate. These also prevented and cured avian polyneuritis. The Metz Laboratories claim that the Antiberiberi Vitamin Concentrate-Metz stimulates the growth of rats pronouncedly although not to the same extent as the vitamin B (according to McCollum's nomenclature). Whether the antineuritic factor is identical with the "yeast effect" (McCollum B factor) in growing rats is debated. Funk claims that the rat factor for growth contains something more than the antineuritic—that is, the conventional yeast B is a mixture, one of which (D) is essential for yeast. This likewise is debated.

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

DIGITAN (See New and Nonofficial Remedies, 1922, p. 105).

The following dosage forms have been accepted:

Digitan Ampules (for Hypodermic Use): Each contains 16 minims (1 Cc.) of a sterilized solution of digitan equivalent to digitan, 1½ grains (0.1 Gm.).

Digitan Solution (for Oral Use): 1 Cc. contains digitan, 1½ grains (0.1 Gm.).

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 35)

[NOTE.—This is the second of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

CONDITIONS TEMPORARILY AFFECTING THE QUANTITY AND QUALITY OF BREAST MILK

In many women the return of the menstrual period is associated with changes in the breast milk. This is especially true of the first menstrual period. In some instances they may occur with each menstruation. They may be both quantitative and qualitative. In cases of simple reduction in the food, the infant will frequently show signs of hunger. At other times, when there are also qualitative changes, colic and indigestion, the latter associated with frequent stools, occurs.

Menstruation is never an indication for weaning, and only rarely should any of the feedings be discontinued at these times, even though they cause minor disturbances in the infant. Disturbances are most frequently seen either before or during the first menstrual period.

The mental condition of the mother may have a direct influence on the milk secretion. These changes are, however, usually only temporary. When the infant is distressed at these times, it may be wise temporarily to remove it from the breast for one or two days, until the mother has recovered from the underlying cause, such as grief, shock, fright or anxiety. Expression should be practiced in the interim.

Drugs.—Alkaloids of opium, hyoscyamus, belladonna and similar drugs not infrequently pass into the milk and should therefore never be administered in large quantities to the nursing mother. Belladonna may cause a decrease in milk secretion and should be administered with caution during the period of lactation. Mercury, iodids and the newer salts of arsenic are also

secreted in the milk and may be used to advantage when a syphilitic mother is nursing her infant.

Contraindications to Nursing.—Tuberculosis, when progressive or open, is always a contraindication to nursing, because of the danger to the infant and the strain on the mother. With proper precautions, and when the breast is not diseased and human milk is not obtainable from other sources, it may be well to tide a weak infant over its first weeks by expressing the milk from the mother's breasts. It must be boiled before it is used.

Syphilis of the mother, except in freedom from infection on the part of the infant, is not a contraindication. Lack of the symptoms on the part of the mother in congenital syphilis is a very common occurrence; a Wassermann reaction on the mother's blood will usually clear up any doubt.

Any grave constitutional disease in which there is an extraordinary drain on the resources of the body, such as diabetes, heart disease with disturbed compensation, nephritis, exophthalmic goiter, malignant neoplasms, epilepsy and psychoses are contraindications to nursing.

Acute diseases should only in exceptional cases be considered as contraindications to nursing. Only conditions in which there is danger of overburdening the mother and infecting the infant should lead to its removal from the breast.

In acute infections in the mother, such as pneumonia, and the acute contagious diseases, such as scarlet fever, after considering the condition of the mother, one must weigh the danger from exposure to infection of the infant, as against the quality of the artificial food and environment in the individual case.

In the milder contagious diseases, such as measles or mumps, it is true that young breast-fed infants are rarely infected. Pertussis is an exception and has a high mortality in the new-born and young infants, and the infant should under all circumstances be protected from exposure. In the presence of diphtheria, the infant can be immunized with safety.

Pregnancy.—Only under exceptional circumstances, such as congenital weakness or illness on the part of the infant, should a mother be called on to prolong lactation after she becomes aware of her condition. First, she should not be called on to undergo the strain of nourishing her infant, the fetus and herself. Secondly, conception rarely occurs during the first months of lactation, the infant thereby having had the benefit of a good start on the breast, and bottle feeding can usually be instituted without great danger.

EXAMINATION OF HUMAN MILK

No baby should be deprived of its mother's milk because of the results obtained on chemical analysis. The baby, and not the laboratory, offers the practical test for judging the quality of breast milk. It is well known that the composition of milk, more especially in its fat and to a lesser degree in its protein and sugar content, varies greatly in the same individual, not only from day to day, but also at different periods of the same nursing. An analysis, therefore, to be of value, should be made from a specimen obtained from several expressions during the twenty-four hours, and each specimen should consist of the milk of an entire expression or the middle portion. The latter can be accomplished by allowing the infant to nurse for two or three minutes before the sample is expressed. A safer method would be to collect samples at all of the regular nursing periods. It is also essential for any conclusion that the total amount of the milk obtained in twenty-four hours be known through weighing the baby before and after each feeding. It is also to be remembered that the quality of the milk cannot be gaged by simple chemical analysis, because of the impossibility of estimating some of its most vital contents. Repeated examination of the milk from different wetnurses secreting about the same average quantities has shown marked variations in the chemical composition, notwithstanding which fact the infants under observation made equally good progress on the different milks. Again, normal chemical averages may be found in milk lacking essentials for the proper growth of the infant.

The average composition of mature breast milk approximates the figures given in Table 1.

TABLE 1.—COMPOSITION OF MATURE BREAST MILK

Reaction	Amphoteric or alkaline
Specific gravity	From 1.010 to 1.040
Fat	3.0 to 4.0 per cent.
Sugar	6.0 to 7.0 per cent.
Protein	1.5 to 2.0 per cent.
Salts	0.2 per cent.
Water	86.0 to 88.0 per cent.

On the addition of rennin it clots in fine curds. Oppenheimer [4] says:

In general, variations in quality determined by analysis fall into three types:

1. All elements too high: This type is most frequently found in women who do too little and eat too much and too rich food.

2. Fat and sugar low, proteins high: This type is usually found in women of the poorer classes who are overworked and underfed.

3. Fat and sugar very low, proteins very high: This type is usually found in the highly strung, overeducated and highly civilized women of the larger cities, but may be found in neurotic women of any class or community.

In recent years variations in the nutritional properties of human milk have been shown to be due to its vitamin content. The vitamins of human milk are supplied from the food taken by the mother; if they are not present in sufficient quantities in her food, the milk suffers. The effect of an insufficient amount or absence of these substances is exhibited in the child. Scurvy, for example, in the breast fed has been shown to develop because of the deficiency of the antiscorbutic factor in the mother's food. The development of rickets in the breast fed has also been shown to be due to a deficiency in the mother's diet, reflected in the quality of her milk.

THE NURSING PROPER

Regularity in Nursing.—The breast that is emptied at definite intervals invariably functions better than does one which is not, as regards not only the quantity, but also the quality of the milk. Thus, regular habits in breast feeding are as essential to milk production as to its digestion and assimilation. *The baby should be wakened to be fed.*

The average mother will supply the needs of the individual meal with one breast, and the breasts

4. Oppenheimer, E.: Pub. 83, Breast Feeding Children's Bureau, Washington, D. C.

should be alternated in successive feedings. Thorough emptying of the breast should be encouraged under all circumstances, as this is our best method for increasing the milk supply, and the baby is the only means at hand by which this can be accomplished. This should be encouraged in every instance. It is most readily thwarted by allowing a lazy baby partially to empty both breasts, as this will soon lead to a diminished milk secretion.

Sometimes, however, it is advisable to give *both breasts* at each feeding, e. g., (1) during the first few days to stimulate secretion, and a little later to relieve the congested breasts; (2) to weak babies when there is an abundance of milk and they are not strong enough to get the last milk, which comes harder; this is to be followed by expression; (3) to overfed babies, when it is desirable to give them only the first and weakest milk and to lessen the yield of milk from the breast; (4) as the milk supplied by one breast fails to meet the needs of the infant. The first breast should be thoroughly emptied before the baby is allowed to take the second breast and the next nursing started on the second breast given in the last feeding.

Number of Feedings in Twenty-four Hours.—Four-hour intervals should be observed at the outset, with either five or six feedings in twenty-four hours, according to the individual needs of the child. Night nursing can often be discontinued by the second month, and babies properly fed will go from 10 p. m. to 6 a. m. without anything but perhaps a drink of water.

A three-hour nursing period is more especially indicated when the mother's breasts are small and poorly developed, as the more frequent stimulation will result in a larger twenty-four hour quantity. The same is true of a small and weak infant who finds it difficult to remain at the breast through the entire nursing period.

Length of Nursing.—As a rule, a robust baby takes three fourths of the milk obtained from a good breast in the first five minutes of a twenty-minute nursing. From fifteen to twenty minutes should be the limit for the nursing period.

The quantity received at individual nursings will vary greatly throughout the day. The early morning nursings will often yield twice the amount of the later nursings. Therefore it is necessary to ascertain the twenty-four hour quantity in order to estimate the total value of milk received.

When one breast does not meet the infant's demands, both breasts should be given at each feeding, the normal nursing time of fifteen or twenty minutes being divided between the two breasts, either equally or by alternating a long and short feeding period of fifteen and five minutes, so that each breast will receive a long nursing period at alternate feedings. Weak and lazy babies may require awakening during the nursing period to keep them at work. Very weak babies may require a longer period, with short intervals in which they rest.

The Daily Total of Milk Required.—Most young infants will satisfy their requirements for growth and development when receiving an average of 2½ ounces (75 c.c.) of human milk for each pound (0.45 kg.) of body weight in twenty-four hours. Roughly, this may be stated as one sixth of the body weight in milk daily (50 calories for each pound). Older infants will usually thrive on 2 ounces (60 c.c.), or 42 calories of breast milk for each pound, or one eighth of their weight.

While infants of the same weight and age under the same conditions will require virtually the same amounts to provide for growth and development, on the whole the fat baby will require less for each pound than the thin one.

Heubner thus expresses the needs of breast-fed infants in terms of energy quotient:

> During the first few months, an infant requires 100 calories per kilogram daily of breast milk; after the sixth month the energy quotient gradually comes down to 80 or 85 at the end of the first year. An energy quotient of 70 is the minimum amount that an infant can take without losing weight.

Human milk can be estimated at 21 calories for each ounce, or about 70 calories for each hundred cubic centimeters of milk. With these figures in mind, it is easy to determine whether a breast-fed infant gets the right amount of food. It may well be emphasized that the infant who is making a normal gain should offer little cause for anxiety as to the exact quantity it may be receiving from day to day.

Water Requirements.—When the infant is receiving one sixth of its body weight in milk during the day, little if any additional water is required. When the breast milk does not meet this requirement, additional water and other food must be administered to meet the required one sixth of the body weight in fluids. During the first days of life, when the breast milk supply is insufficient, total fluids should be administered to meet the needs mentioned above. From 1 to 3 ounces (30 to 90 c.c.) of a 2 to 5 per cent. solution of sucrose or lactose which has been boiled may be given to the infant at four hour intervals until the milk appears.

Before the water is given, the infant should be placed at the breast at each feeding. Even when milk is plentiful, the administration of water two or three times daily from a nursing bottle accustoms the infant to taking the food in this way. An infant so trained will meet emergencies of weaning more readily than one unaccustomed to bottle feeding.

Feeding During the First Days.—During the first day of life, food may be withheld for twelve hours, the infant being kept in a warm crib. It usually soon falls asleep, and as a rule it should be awakened only to change diapers. As a rule, the child does not evidence its initial sensation of hunger by crying until after its first half day of life; and even then, in many cases, it is difficult to obtain the cooperation of the infant in administering its food. During the second twelve hours the infant may be put to the breast two or three times in order to stimulate secretion and to teach it to nurse. During the second twenty-four hours the baby should be put to the breast at regular four-hour intervals. The sixth feeding may be omitted. By the third or fourth day the infant will usually receive most of its required food from the breast. If a night feeding is to be instituted, it is well to waken the baby at the regular hour in order to cultivate regular habits, which are so essential to the mother's welfare. The infant should at all times be *taught to take food by the clock.* This means that it should not be nursed before the accustomed hour nor should its feedings be delayed beyond its regular time unless an emergency arises. When the infant either cannot take or does not receive sufficient food on the four-hour nursing period, with five or six nurs-

ings in the day, it should be put on a three-hour period, with seven feedings in twenty-four hours. The average infant can be trained by the second month to wait regularly for its food; and if the milk is of proper quality and of sufficient quantity it will sleep quietly for most of the interval between nursings.

Initial Weight Loss.—An initial weight loss is physiologic, and in the main is due to the loss of water through the skin, lungs and kidneys, and the meconium, by way of the intestinal tract. Necessarily, the weight loss is directly influenced by the amount of fluids ingested. To a certain extent the weight decrease depends on the size of the child, the weight loss, on the whole, being greater in a large infant than in a small one. The decrease usually continues for from two to five days after birth. The average weight loss will range between 8 and 10 per cent. of the body weight. Losses above the latter figure should always lead to careful study of the milk supply and water intake, and usually indicate a necessity for complemental feedings of carbohydrate solutions alone, if the breasts seem of good quality, or of milk mixtures. Schick [5] has found that he can prevent most of this initial weight loss by the feeding of sugar solutions during these first days, giving as high as 1 ounce (30 gm.) of sucrose during the twenty-four hours. More recently it has been found practical to use a 5 or 10 per cent. solution of corn syrup as complemental feeding, the total day's feeding, including the breast milk, averaging one sixth of the infant's body weight.

The Total Nursing Period.—Some mothers will be able to carry on the nursing for only two or three months; others as long as nine months. In outpatient as well as in private practice it is exceptional to find a breast milk supply which is sufficient for the infant after the ninth month. It is usually wise to allow one bottle feeding daily by the end of the third or fourth month in order to relieve the mother and at the same time train the baby in bottle feeding.

Protracted Nursing.—Weaning may be delayed when the infant is passing through the hot months of summer and when the quality of the cow's milk supply is uncertain. It may also be delayed when the infant is convalescing from a recent illness or in the presence of epidemics of acute infectious diseases.

Signs of Successful Nursing.—The normal full-term infant shows a gain of not less than 4 ounces (120 gm.) weekly. This is the minimum weekly gain that may safely be allowed. When a nursing baby remains stationary in weight or makes a gain of only 2 or 3 ounces (60 or 90 gm.) a week, it means that something is wrong, and the defect will usually, but not invariably, be found in the milk supply. When the baby is nursed at proper intervals and the supply of milk is ample and of good quality, it is satisfied at the completion of the nursing. Under 3 months of age it falls asleep after ten or twenty minutes at the breast. When the nursing period again approaches, it becomes restless and unhappy, crying lustily if the nursing is delayed. When the breast is offered, it takes it greedily. The weekly gain in weight under such conditions is usually from 4 to 8 ounces (120 to 240 gm.). At the fifth month the baby will have doubled, and at the twelfth month trebled its birth weight. The average gain for each week during the first year usually approximates 5 ounces.

Stools.—The feces of breast-fed babies are strikingly uniform and are like no other bowel movement in infancy. Normally there are two or three a day, sometimes only one, or, again, more than three. They are soft or mushy, homogeneous, of an egg-yellow or gold color, and have a slightly sour, not at all unpleasant odor. They are never formed and always cling to the diaper. The nature of the bowel movement, and its uniformity, is due to the "physiologic fecal flora" which is brought about by the ingestion of breast milk into the germ-laden intestinal tract. The dominating organisms have a fermentative rather than a putrefactive action on the food. The gases normally formed are carbon dioxid and hydrogen, and these are almost odorless. The acidity of the movement, its softness, and the mechanical action of the gases present, all insure active peristalsis and ready emptying of the bowels, so that true constipation is an exceptional condition in a breast-fed baby, and, if present, nearly always suggests too little food, or abdominal and intestinal muscles too little developed and too weak to force the stool past the anal sphincter. More often the stool is simply retained above the anus, owing to lack of peristalsis sufficient to overcome the anal sphincter. The latter condition is commonly interpreted as constipation by the laity.

The feces of the breast-fed baby are frequently not wholly normal; they quite commonly, especially during the first few months, contain small, soft, white or yellowish fat curds, an excess of mucus, and are often greenish, and may be more frequent than normal. *Such a condition is perfectly consistent with a normal growth and well-being of the baby, and should never in itself be a cause of worry, or an indication for a change of food.* This is a very important point that is commonly neglected. The condition of the bowel movements is only one factor, and in the breast-fed a minor one, in determining a baby's nutrition.

Signs of Unsuccessful Nursing.—The most significant symptoms are a stationary or insufficient gain in weight or losses in weight, fretfulness on the part of the infant while nursing, a tendency to remain for too long a time at the breast, and crying when it is removed from the breast. Small stools composed largely of mucus are usually an indication of insufficient food, especially when only one or two are passed daily. While every effort should be directed toward maintaining the breast-milk supply, it is of equal importance to interpret the symptoms of underfeeding as indications for complemental or supplemental feedings.

Except in the presence of extreme emergency, breast feedings should not be discontinued suddenly. It is always wise to continue as many feedings at the breast as may be warranted by the circumstances in the individual case.

(To be continued)

5. Schick: Ztschr. f. Kinderh. **27**: 57, 1920.

Deaths from Childbirth.—The Department of Commerce announces that provisional figures compiled by the Bureau of the Census show lower death rates of mothers from childbirth or puerperal causes in 1921 than in any year since 1917. Of the twenty-seven states for which figures are available, South Carolina has the highest 1921 death rate from puerperal causes (9.8 per thousand live births) and Connecticut the lowest (5.3). The ratio of deaths from childbirth to the number of women bearing children in the year 1921 was about 1 to 150.

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SATURDAY, JANUARY 13, 1923

PRESENT POSSIBILITIES FOR SPECIFIC CHEMOTHERAPY OF BACTERIAL INFECTIONS

Despite the fact that bacterial infections play a far larger part in human affairs than does invasion by protozoa and other animal parasites, most of the investigative work heretofore done on the possibility of specific chemical disinfection has concerned the latter group of invaders. When we think of specific chemotherapy, we recall malaria and quinin; trypanosomiasis and the several chemicals that destroy the parasites involved; amebic dysentery and emetin; bilharziasis and antimony and potassium tartrate; spirilloses and the arsphenamins; but most of us do not associate successful specific chemotherapy with bacterial infections. Theoretically, at least, we have the right to expect even more ready attack on bacteria than on protozoa, since the former are less closely related to mammalian organisms than the protozoa, and in chemotherapy we are seeking for cell poisons that will select the parasite rather than the host.[1] Up to the present time, however, we have no such successes to record with antibacterial chemotherapy as are contained in the foregoing list; but it is important to recollect that we have not a few positive items that encourage the hope that the day is not far distant when we may have an armamentarium as efficient against some, if not all, bacterial diseases as we now have against so many of the protozoan infections.

In the first place, the spirilloses represent invasions by organisms so closely related to bacteria that their classification with protozoa has been much contested; yet here we find our most remarkable example of a chemical antisepsis specific for a whole group of parasites. When we find an infection with spirillar organisms, we anticipate with confidence a positive therapeutic effect from arsphenamin, even when the diseases are so dissimilar clinically and anatomically as relapsing fever and yaws. Again, we have several demonstrations that chemical antiseptics do exist capable of specifically attacking a definite bacterium. One of the most striking of these is the quinin derivative ethylhydrocuprein, which has a most remarkably specific capacity to destroy the pneumococcus when it has infected an experimental animal. So slight a change in the composition of the complex ethylhydrocuprein molecule as the substitution for its ethyl radical of either a methyl or a propyl radical reduces its efficiency. Although this drug will certainly prevent or cure an otherwise lethal pneumococcus infection of mice, it has not solved the problem of the cure of human pneumonia, probably because in man the curative and toxic doses are too nearly the same. Nevertheless, it has been found of value in the treatment of local pneumococcus infections, such as corneal ulcers, and several reports have appeared of its successful use in pneumococcus meningitis. In the more or less efficient treatment of leprosy by chaulmoogra oil and its derivatives, we have evidence that even so resistant an organism as the acid-fast leprosy bacillus may be attacked by chemical means, thus holding out hope for a similar solution of infection with its more widespread relative, the tubercle bacillus.

Churchman[2] has stimulated much interest and furnished encouragement as to the ultimate possibilities of local sterilization of infected tissues and surfaces. His pioneer demonstration that gentian violet and other related dyes selectively inhibit or kill such bacteria as stain by Gram's method is widely known, and some therapeutic successes have been reported in the sterilization of infected wound surfaces and serous cavities with gentian violet. More recently he has found that a commonly used dye, acid fuchsin, has quite the reverse selectivity of gentian violet, for it acts specifically on bacteria that do not stain by Gram's method. In England, Browning and his co-workers have made important observations on the bactericidal action of certain dyes, particularly such members of the acridin group as the flavines.

Morgenroth, who was for many years associated with Ehrlich in chemotherapeutic investigations, has reported observations on two substances, one a new derivative of quinin, the other a derivative of acridin. These have a marked antiseptic action in tissues infected wtih streptococci and staphylococci. It has been found possible experimentally to infect mice subcutaneously with doses of the pus cocci which produce extensive local phlegmonous suppuration, associated with bacterial invasion of the blood, and then to sterilize both the local infection and the blood by injecting these chemicals into the subcutaneous tissues about the infected area.[3] This complete bacterial sterilization of the mouse may be obtained, it is claimed, even when the infection has been under way for eighteen hours.

1. Schlossberger, H.: Development and Problems of Modern Chemotherapy of Infectious Diseases, New York M. J. **115**: 26 (Jan. 4) 1922.

2. Churchman, J. W.: The Anilin Dyes in Therapeutics, J. A. M. A. **79**: 1657 (Nov. 11) 1922.

3. A lecture by Morgenroth gives a recapitulation of his work in this field: Morgenroth, J.: Ziele und Wege der chemotherapeutischen Antisepsis, Klin. Wchnschr. **1**: 353 (Feb. 18) 1922.

The exact quantitative studies that Morgenroth has carried out on experimental animals cannot well be duplicated in human infections. Nevertheless, German surgeons are beginning to describe a similar efficiency of the acridin derivative in clinical cases. Morgenroth says:

> What yesterday seemed absurd, tomorrow will seem banal. Today it is no longer a question for debate whether or not there can be a prophylactic and curative chemotherapeutic antisepsis, but merely a question of when, where and how. The future of chemotherapeutic antisepsis will probably resemble the present situation in respect to local and general anesthesia, for the future surgeon will inquire in each case whether the antisepsis should be local or be general through the circulation, which antiseptic is to be selected, what concentration and quantity, etc., just as he now does with his anesthetics.

If the foregoing optimistic forecast is true, the logical extension of these conclusions is that other, nonsurgical infections may equally well be overcome by similar methods. Somewhat rash these prophecies, perhaps; but when we consider the undoubted advances made in this field of chemotherapeutics in a few years by a very few workers, we have every right to anticipate much more to come. A larger appreciation of the possibilities of chemical attack on bacterial infections may lead to the expenditure of the quantity of brains and money that are warranted by the importance of the problems and the prospects of invaluable results.

THE QUEST OF POTENTIAL ENERGY

During the nineteenth century, the science of physiology learned the significance of the energy aspects of nutrition. As Lusk [1] has recently reminded us anew, in a delightful review of the history of metabolism, Rubner was the first to solve the problem initiated by Lavoisier, of demonstrating that the law of the conservation of energy held true for the animal organism. The crucial experiments were conducted within the memory of many persons still living. Calorimetry has attained large importance not only in the study of the chemical changes taking place in the organism but also in determining the possible value of food materials as sources of energy. Thus, calories enter into our daily reckonings in various ways in relation to the fuel needs of the human and animal mechanisms as well as the engines of human construction. Indeed, the struggle for existence has been described by a distinguished physicist as essentially a fight for the potential energies of coal, sugar and meat. Mendel [2] has remarked that, in view of the increase of population, it has been a favorite pastime for scientists to calculate the possibilities of the food supply of the future, and to venture phophecies involving the prospect of impending failures. A quarter of a century ago, Sir William Crookes provoked widespread discussion when he forecast the failure of the wheat crop to supply the needs of an increasing population of bread eaters in the present generation. Although his fears have not been entirely justified, there are signs that increase in production cannot go on indefinitely.[2]

Meanwhile, our food resources appear to be threatened from another direction. Man has become an implement-using animal, and has greatly increased his efficiency by employing the power-driven machine. Spohr [3] has presented this disconcerting picture:

> The source of energy which drives these machines is not a steady stream: it is being drawn from the accumulation of centuries. A year's consumption of coal at the present rate represents the accumulation of hundreds of years. The power of man to do work, physical work, the unit one-man power, is now an almost insignificant factor. A return to such a physical standard would almost certainly follow the failure of such sources of energy as man now has at his disposal. The quest of these sources of energy, coal and oil, is at present being pushed with a feverish intensity that has never been known before, and the competition for the possession of these stores recognizes no principles. The destiny of civilization is guided by and reflects the amount of available energy. When coal and oil are exhausted, the daily ration of solar energy will represent almost the entire means of livelihood; our mushroom civilization must pass like the historic empires of the past, and we may expect the reappearance in the world once more of galley slaves and serfs.

Through its truly remarkable property of photosynthesis, the plant is enabled to capture the solar energy and store it in the form of organic constituents. These may serve not only as food fuel for man, but also as fuel sources for the industrial world. Wood may replace coal; and alcohol produced by fermentation from the carbohydrates of plants may supplant petroleum in our heat engines. But the photosynthetic capacities of forestry and agriculture are limited, at best. Organic nature is wasteful. Out of hundreds of units of energy represented in solar radiation on a wheat field, for example, scarcely a single unit can be stored in a growing season. Boyd [4] has calculated that, if the entire corn crop of the United States produced by an acreage more than four times the total area of the state of Ohio were diverted to produce alcohol for fuel purposes, its heating value would scarcely exceed that of the present gasoline production of this country.

Obviously, if this is correct, we cannot afford to divert our indispensable food resources in the form of farm crops to motor fuel production. This brings us face to face with the scientific problem of rivaling nature in harnessing solar energy for the industrial uses which threaten to compete with man's needs of food fuel. As Spohr has remarked, it is the duty of the scientist to learn the precise manner in which this is accomplished. He need not be timid about competing with nature. He has many cases to his credit of surpassing the processes of nature both in efficiency and in reliability. There are many substances now effec-

1. Lusk, Graham: A History of Metabolism, in Endocrinology and Metabolism, 1922, p. 75.
2. Mendel, L. B.: Changes in the Food Supply and Their Relation to Nutrition, Yale University Press.
3. Spohr, H. A.: Photosynthesis and the Possible Use of Solar Energy, J. Indust. & Engin. Chem. **14**: 1142 (Dec.) 1922.
4. Boyd: Motor Fuel from Vegetation, J. Indust. & Engin. Chem. **13**: 836, 1922.

tively produced artificially that were formerly obtainable only from plants or animals. The physician is daily called on to correct or improve on nature. He does so when he corrects vision with glasses or increases the immunity factors in the blood so that man becomes more resistant to disease. Why should man hesitate to meet the problem of utilizing energy in order to promote his efficiency, if not actually to accomplish self-preservation?

DOES SCHOOL WORK IMPAIR HEALTH?

Many events in connection with human life are determined on a chronological basis solely with respect to the age of the individual concerned. In at least two of these it must seem somewhat strange, on careful consideration, to find that chronological rather than physiologic age has so often been made the basis for features of great importance in human experience. In many states the law carefully defines the age below which children may not leave school to engage in wage-earning labor. Thus, the problem of child labor is settled, in practice, on the basis of age, without necessary reference to the biologic or other fitness of the young worker concerned. The minimal standards for children entering employment, as formulated in a report [1] of the Children's Bureau Conferences in 1919, refers frequently to minimal ages for a variety of employment demanding varying degrees of physical endurance and skill. Everywhere one reads of an age minimum, although a novel addendum is found in the suggestion that a child shall not be allowed to go to work until he has had a physical examination by a public health physician and has been found to be of normal development for a person of his age, and physically fit for the work at which he is to be employed. It will mark a great step in advance when fitness to engage in manual labor or in other sorts of tasks at the end of a normal school life shall be based on the physiologic and mental equipment of the person concerned, as much as on the number of years that have elapsed since his birth.

A second event in which, all too often, years rather than physique and personality seem to be principles guiding to decision, involves the time in life at which children should begin their school work. We have no desire to enter into the debate as to when the preschool days should end. Certain facts in reference to the arguments often advanced deserve, however, to be known. It is frequently stated that the acceleration of the educational process through school attendance may in the long run be detrimental rather than otherwise. In other words, this concerns the question whether it would be better for the health of most children if they were not sent to school when the law says they are old enough to go, but were kept out until they are older. As the views entertained by both physicians and educators have usually represented personal opinions based on unsubstantiated impressions or chance observations, the U. S. Public Health Service [2] has conducted investigations bearing directly on the subject. A study of the schoolchildren in a typical American community has shown that the work of the elementary grades had little, if any, adverse effect on the pupils' weight. Of the children who entered the schools up to the standard of weight in the fall, remarkably few were underweight in March. This was observed entirely irrespective of the age of the pupil, the underage child making as good a showing as the normal age or overage child. Sterling [2] concludes that parents need not hesitate to send a healthy child to school at the age of 6, which was the entrance age of the school studied. When the investigator regards it as plain that school life, apart from detrimental influences which may exist in the home environment, is not ordinarily a menace to the child's state of nutrition, good sense seems to be adequately supported by a critical inspection of existing school conditions. Such justified generalizations cannot fail to be a helpful guide to him who may be the chief guide and counselor as well as physician in many families.

1. Standards of Child Welfare, Conference Series 1, Publication 60, Children's Bureau, U. S. Dept. Labor, 1919.

EXPERIMENTAL ASCARIASIS IN MAN

Until recently the life history of the eelworm, *Ascaris lumbricoides,* in man was believed to involve no intermediate host, and was usually stated to indicate a comparatively uncomplicated sojourn in the organism. The assumption was that when the developed eggs are swallowed, either in contaminated food or in water, or from hands soiled with dirt containing the eggs, the embryo develops directly to the adult stage.[3] The habitat of the parasite in its various stages of development was supposed to be the alimentary tract, although an occasional wandering of the worms was recognized as a dangerous aspect of ascariasis. Stiles,[3] in his elaborate review of the subject in 1907, mentioned that the escape of erratic eelworms by the mouth or nose is not very rare, and he regarded this aspect of the infections as particularly indicative of the importance of prophylactic treatment.

Through the more recent investigations of Stewart,[4] it has become probable that *Ascaris* cannot develop continuously and directly in the intestine of the host. The evidence secured in experiments on animals indicates that the larvae can and often do penetrate the intestinal wall, ultimately finding their way to the lungs. From there it is a short step for them to reach the esophagus and thus be returned to the intestine. The larvae have actually been found in many parts of the body. Ransom and Foster [5] of the Bureau of Animal

2 Sterling, E. Blanche: Nutrition and Education, Pub. Health Rep. **37**: 2798 (Nov. 10) 1922.

3. Stiles, C. W.: The Zoo-Parasitic Diseases of Man, Osler's Modern Medicine **1**: 596, 1907.

4. Stewart, F. H.: On the Life History of Ascaris Lumbricoides, Parasitology **10**: 197, 1918; **11**: 385, 1919; **13**: 37, 1920.

5. Ransom, B. H., and Foster, W. D.: Observations on the Life History of Ascaris Lumbricoides, Bull. 817, U. S. Dept. Agric., 1920.

Industry are in substantial accord with Stewart in respect to the erratic path of the parasites in the body. Newly hatched larvae may be eliminated in the feces; others may penetrate the intestine and go to the liver and lungs and occasionally other organs, including the abdominal cavity. The pathway from the alimentary canal has been debated; but the most cogent evidence points to the veins and pulmonary artery as the route, although a small proportion of the migrating larvae may travel by the lymph stream or perforate the diaphragm from the abdominal cavity.

The outstanding fact in the recent studies is the early appearance of larvae in the lungs, and the small numbers in remote organs such as the spleen and kidneys, in experimentally infested animals. The indication that something similar occurs in human cases of ascariasis is afforded by the somewhat heroic experiments of Koino [6] of Tokyo on men. After he himself had swallowed two thousand mature eggs of *Ascaris lumbricoides*—the human parasite—and another person had ingested the eggs of the pig ascaris, *Ascaris suilla*, symptoms attributable to larval migrations as in experimental animals occurred in both cases. There were headaches, fever, respiratory difficulties and other untoward results. Pneumonia ensued, and larvae were found in the sputum. The human host proved to be unfavorable for the pig parasite. These facts, though they afford evidence far more indirect and circumstantial than the more carefully controllable studies on man, serve, nevertheless, to fix attention anew on the dangers from *Ascaris* migration in the body.

6. Koino, S.: Experimental Infections on Human Body with Ascarides, Japan Med. World **2**: 317 (Nov. 15) 1922.

Current Comment

THE DURATION OF BREAST MILK FEEDINGS

The artificial feeding of infants, and particularly so-called bottle feeding, is essentially an imitation of the procedure whereby the nursling secures its supply of food at the mother's breast. If the period of nursing is made too brief, the resulting inability to secure sufficient nutriment must be obvious. How long, on the other hand, it may be wise or advantageous to permit the nursling to remain at the breast is not so readily answered in definite terms. It is taking, perhaps, a somewhat unhumanitarian or unideal point of view to estimate the loss of time which unnecessary devotion to such feeding may represent on the part of the mother; nevertheless, the total may actually amount to hours rather than a few minutes in the course of a day. To the wage earner or the head of a large household, this is not an entirely insignificant consideration. But there is also the question as to whether undue prolongation of the act of nursing may not be a positive detriment rather than merely a matter of indifference with respect to the welfare of the infant itself. There is a widely observed tradition that twenty minutes is the "proper" duration for each feeding. It may come as a surprise to many, therefore, to learn the results of a large number of actual determinations recently made at the Department of Diseases of Children of Columbia University, New York, by Smith and Merritt.[1] Through successive weighing of nursing infants, it was ascertained that they obtain the greater part of their feeding of breast milk in the first few minutes—from 40 to 60 per cent. in the first two minutes, and from 60 to 85 per cent. in the first four minutes. This holds true whether the supply is abundant, moderate or scanty. After eight minutes, very few babies get any milk whatever. Most pediatricians are agreed that prolonged feeding is undesirable for babies for several reasons; it is also not desirable for the mothers. The findings just referred to warrant the general conclusion that a normal baby that gets enough milk from one breast needs to nurse, as a rule, only from six to eight minutes; rarely from ten to twelve minutes. Smith and Merritt go a step further in their conclusion with the advice that, if the baby empties the breast in from five to eight minutes and shows no signs of discomfort from an adequate feeding obtained in that time, there seems to be no good reason why he should not take his bottle in about the same time. The reign of economy seems to be including the daily routine of man from the earliest days of his infancy.

1. Smith, C. H., and Merritt, K. K.: The Rate of Secretion of Breast Milk, Am. J. Dis. Child. **24**: 413 (Nov.) 1922.

EARLY SILICOSIS AND EARLY TUBERCULOSIS

If Paracelsus and Ramazzini had been pathologists, pulmonary disease associated with the inhalation of dust would have assumed importance generations ago, for they were the first to describe the condition now known as pneumonoconiosis. As it was, the pathology of the condition was unrecognized by the early writers, and at the time of Laënnec was confused with that of pulmonary tuberculosis. About 1825, Alison drew attention to certain similarities and differences between these diseases, and opened a discussion as to their intimate relation which has never entirely closed. In view of recent investigation, the fundamental changes arising from the inhalation of dust should be more generally recognized. When any sort of dust enters the lung, a host of wandering cells appears in the alveoli and takes up the dust particles. Then, or later, many of the laden "dust-cells" escape through the air passages without doing harm, but others fail to escape. Dust-cells which remain in the lung ordinarily survive only a short time. They are carried off by the lymphatics, they are autolyzed, or they undergo digestion by the tissue juices, leaving their loads of dust in situ. Coal dust, for example, to which an animal had been exposed some weeks before, was found [2] lying on the outer surface of the blood vessels where it could readily escape into the air tubes. In such cases elimination follows fairly closely on the heels of invasion, and the injury is slight. With some other dusts, however, among which silica is the most striking example, definite, marked pathologic changes occur whose extent depends on the

2. Mavrogordato, A.: Studies in Experimental Silicosis and Other Pneumonoconioses, Publications of the South African Institute for Medical Research, March, 1922.

quantity and quality of dust inhaled. Silica preserves, so to speak, the dust-cells which pick it up, prevents their autolysis or digestion in the lymph, and thus causes their accumulation in the lymph channels, which they eventually fill up and block. Behaving now somewhat as foreign bodies in the lymphatics, fibrotic changes occur in which the cells themselves merge into fixed connective tissue cells and ultimately coarse white fibers, and thus completely and perhaps permanently obstruct the lymph channel. When the affected lymphatics are perivascular, the fibrosis continues until the blood vessel itself is converted into a solid rod of fibrous tissue. Although all dusts tend to "drift" toward the visceral pleura, cells laden with silica differ from some others in collecting there in bunches, which, to the bacteriologist, at least, suggest a positive Widal agglutination. Mavrogordato terms these aggregations of dust-filled cells "pseudo-tubercles," since the method of formation and the cells concerned are the same as in the true tubercle. It is in these bodies that silicotic fibrosis first arises, and their presence on the visceral pleura is one of the earliest changes found at necropsy. There are thus three stages in the development of simple silicosis: (1) the provocation of "dust-cells"; (2) the accumulation of these cells in the lymphatics and their collection into "pseudo-tubercles," and (3) the fibrosis of obstructed lymphatics and of pseudo-tubercles. The early lesions of silicosis and pulmonary tuberculosis are much alike. The difficulty of differentiating them may be insurmountable. It is important, however, to realize that silica alone, without the association of the tubercle bacillus or other infective agent, can produce all the early stages of a pulmonary disease so similar to early tuberculosis.

Association News

THE SAN FRANCISCO SESSION

Applications for Space in Scientific Exhibit and for Time on Motion Picture Theater Program

Plans are under way for the Scientific Exhibit to be held at the San Francisco session of the American Medical Association. Application blanks for either exhibit space or time on the Motion Picture Theater Program will be ready, March 1. Those desiring application blanks should forward their names and addresses to Director Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago.

American Medical Association Eastern District Official Tour to San Francisco

The annual session of the American Medical Association will be held at San Francisco, June 25-29, 1923. The subcommittee appointed by the secretaries of the medical societies of the Eastern states has arranged a twenty-five day tour to San Francisco and return, stopping at interesting and important points. All details of the trip will be taken care of, and all arrangements made by an experienced tourist representative, who will accompany the party and take entire charge of the tour. In order to make this tour a success, and to have a special train with all conveniences, including diners, special Pullmans and baggage car, it will be necessary to have at least 125 Fellows subscribe to the tour. The state medical societies of the Eastern states and of some of the Middle states have appointed, as a subcommittee to arrange for the tour, Drs. Edward Livingston Hunt, Wilbur Ward and Malcolm C. Rose.

The committee extends to all who contemplate attending the annual session a cordial invitation to join the tour, further details of which will be published later.

EDWARD LIVINGSTON HUNT, M.D.,
17 West Forty-Third Street,
New York City.
Secretary, Medical Society of the
State of New York.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

County Health Units.—There will soon be a complete chain of health units across the northern counties of Alabama, it was announced recently. Limestone County has appropriated $5,000 for a full-time health officer and health unit, and when Jackson County makes a similar appropriation, which it now proposes to do, it will complete the chain.

ARKANSAS

Personal.—Dr. C. A. Williams, El Dorado, has been appointed full-time health officer to succeed Dr. S. J. McGraw, who recently resigned as head of the health board.

CALIFORNIA

Medical School Gets Higher Rating.—The College of Medical Evangelists, Los Angeles, has recently been granted a rating in Class A by the Council on Medical Education and Hospitals of the American Medical Association.

Former University President Dies.—Prof. William Thomas Reid, president of the University of California in 1881, died, December 18, in Berkeley, reports state. Dr. Reid was a graduate of Harvard University and received his LL.D. from the University of California.

Los Angeles Officers Elected.—At the annual meeting of the Los Angeles County Medical Association the following officers were elected for 1923: president, Dr. William H. Gilbert; vice president, Dr. Joseph K. Swindt, and secretary-treasurer, Dr. Harlan Shoemaker. An address was given by Dr. Donald J. Frick, the retiring president.

Popular Medical Lectures.—Stanford University Medical School announces the forty-first course of popular medical lectures, to be given at Lane Hall, beginning January 12. The first lecture was given by Dr. Philip King Brown on "Building Up Resistance to Disease: An Individual and Community Problem." January 26, Dr. Lewis M. Terman will speak on "Gifted Children." Mr. Astredo of the juvenile court will speak on the "Problem of the Delinquent Child," February 9. "Care of the Dependent Child" will be Miss Felton's subject, February 23. The fifth lecture will be delivered by Guy S. Millberry, D.D.S., March 9, on "Modern Views on Dental Hygiene in Childhood," and the sixth and final lecture will be given, March 23, by Dr. William C. Hassler, health officer of San Francisco, on "San Francisco's Health Program for Children: The Medical Aspects."

COLORADO

Dr. Powers Leaves Legacy to Medicine.—Dr. Charles Powers, who died suddenly, December 23, in the University Club, Denver, left a large part of his estate for the advancement of surgery and medicine. The income from $3,000 he left in trust for the Medical Society of the City and County of Denver, for the purchase of medical books and journals for the library. All of his books, instruments and pictures he bequeathed to the International Trust Company for distribution as deemed advisable. The remainder of the estate was left in trust, one half the income, on the death of his step-father, to go to the Children's Hospital of Denver; the other half of the income from the trust funds, on the death of Miss Hurd, a former secretary, to be paid to the trustees

of the New York Academy of Medicine of New York City, one half the income therefrom for the purchase of books on surgery and anatomy, and the other half to be devoted to the expenses of an annual lecture course "which shall embody results of original research in the department of surgery and surgical pathology, the lectures to be selected by the president of the academy, the senior professor of surgery, and the senior professor of medicine for the time being of the College of Physicians and Surgeons of New York."

DELAWARE

County Medical Meeting.—At the annual meeting of the New Castle County Medical Society at Wilmington, December 19, the following officers were elected: president, Dr. William E. Bird; vice president, Dr. William O. Lamotte, and secretary-treasurer, Dr. Charles P. White (reelected).

ILLINOIS

Conference on Sanitation.—The chief sanitary engineer of the department of public health recently met with the officers of the Fox River and Lakes Improvement Association, to complete plans for making the waters of the upper Fox River and Lakes safe for bathing purposes. Property owners concerned and members of the association will be advised to comply with sanitary regulations recommended by the department.

Diphtheria Closes Schools.—The Highland Park health commissioner has ordered restrictions placed on the movements of all children below the age of 14 years, and all grade schools closed, following the development of more than twenty-five cases of diphtheria during the last few days. High school classes will also be suspended, and policemen have been stationed at skating rinks and moving picture theaters to keep out all children under 14, in an effort to prevent the spread of the disease.

Infant Welfare Stations Established.—New infant welfare stations were opened during December at Freeport, Wilmington and Steger. At Freeport, the station will be maintained by the Amity Society, the clinics being conducted by Dr. J. A. Poling, city health officer. At Wilmington and Steger, the centers were established through the efforts of the county nurse and superintendent of schools, and the clinics will be conducted by members of the local medical societies. Dr. Elizabeth B. Ball, pediatrician, attached to the state department of public health, directed the opening of the station and the first clinic at each place, her services having been requested by the local agencies concerned.

County Medical Meetings.—Drs. Charles M. Doty and Christian H. Diehl were elected president and secretary, respectively, of the Effingham County Medical Society at the annual meeting.——Will County Medical Society elected Dr. Earl R. Steen president for 1923, and Dr. Edwin R. Talbot was reelected secretary.——At the annual meeting of the Morgan County Medical Society, Dr. Thomas G. McLin was elected president and Dr. Ellsworth Black, secretary.——Dr. Warren W. Murfin of Patoka was elected president of the Marion County Medical Society, December 15, and Dr. John E. Schoonover, Salem, secretary-treasurer.——Dr. William K. Farley, Fulton, has been elected president of the Whiteside County Medical Society.

Chicago

Banquet for Senator Copeland.—Chicago physicians gave a banquet in honor of Dr. Royal S. Copeland, health commissioner of New York City, January 9, at the Chicago Athletic Club. Dr. P. J. H. Farrell was toastmaster. Dr. Copeland spoke on the immigration peril and advocated examination on the other side—moral, mental and physical—and allocation, so far as possible, according to industrial or professional preparation. Dr. Charles E. Humiston, former president of the Illinois State Medical Society, and Dr. John Dill Robertson, formerly city health commissioner, also gave addresses.

Personal.—Dr. Joseph L. Miller, Rush Medical College, spoke on "Protein Metabolism" before the Elgin Physicians' Club, Elgin, December 18.——Dr. Duncan D. Campbell, on the staff of the Chicago State Hospital, has been appointed by the Missouri State Eleemosynary Board as superintendent of Hospital No. 2, St. Joseph, Mo., to succeed Dr. Aden C. Vickrey, who recently resigned.——Dr. Edwin Bruce Godfrey, Chicago, formerly city physician of Springfield, sailed, December 25, for Greece, where he will take charge of the American Red Cross work. Dr. Godfrey served during the World War in France with the rank of major in the American Expeditionary Forces.——Dr. Charles E. Galloway sailed, December 16, for Cherbourg and Southampton, on the White Star liner *Majestic*.

INDIANA

Dinner for Amos Butler.—The friends of Amos W. Butler, secretary of the Indiana Board of Charities, gave a dinner for him, December 2, on the completion of twenty-five years of service as secretary and manager. Governor McCray spoke of the splendid work of Mr. Butler.

Methodist Medical Meeting.—The research society of the Methodist Hospital, Indianapolis, gave a dinner for Dr. Samuel A. Levine of Boston, at the Columbia Club, December 1. Following the dinner, Dr. Levine gave an address on "Diagnosis and Treatment of Heart Lesions." Dr. Charles P. Emerson also gave a dinner for Dr. Levine.

IOWA

Large Gifts for Iowa University.—President Jessup of the State University of Iowa College of Medicine announced, December 27, two gifts of $1,125,000 each to the college, one from the General Education Board and one from the Rockefeller Foundation. The money will be used to erect and equip a new hospital and laboratory, it was announced. At its next session, the state legislature will be asked to appropriate $450,000 annually for the next five years to equal the gifts of the two foundations. As soon as the legislature accepts the plan, construction work will be commenced on the new buildings, for which sketches and estimates have already been prepared. The buildings will be erected on the west bluff of the Iowa River, facing the old capitol building.

MAINE

Kennebec County Medical Society.—At the annual meeting of the society in Augusta, December 29, Dr. Kendall urged closer cooperation between local and private health groups and the Maine State Public Health Association. Officers elected for 1923 were as follows: president, Dr. Ralph L. Reynolds, Waterville; vice president, Dr. Silas O. Clason, Gardiner, and secretary-treasurer, Dr. Herbert W. Hall, Augusta.

MARYLAND

Board of Mental Hygiene.—This board, which took the place of the state lunacy commission, January 1, under the state reorganization plan, has announced the following appointments made by Governor Ritchie: Drs. Hugh H. Young, George H. Hocking, Henry J. Berkley and J. Albert Chatard, all of whom were members of the old lunacy commission. In addition, H. Findlay Finch and Mrs. Athey have been appointed. The board will meet this month and will recommend the appointment of a commissioner of mental hygiene.

Personal.—Dr. Benjamin C. Perry, Bethesda, has been appointed a member of the state board of health, his term expiring in May, 1928. Dr. Perry is president of the board of county commissioners of Montgomery County.——Dr. William H. Welch, director of the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, and Dr. A. W. Freeman, resident lecturer on public health administration at the School of Hygiene and Public Health, will address a public health meeting at Catonsville, January 18.——Dr. Edward H. Hume, dean and professor of medicine at Hunan-Yale College of Medicine, Changsha, China, gave a lecture at Johns Hopkins University, January 4, on "China and America Today," in which he pictured conditions in China as both "discouraging and hopeful."

Johns Hopkins University News.—Plans for a new chemical laboratory for the Johns Hopkins University, to be located at Homewood, at a cost of about $600,000, have been completed. The details of the building have not been made public, but it is known that the type of architecture will conform to the colonial style of the Homewood group. Action to hasten the construction of the new laboratory has been influenced largely by present housing facilities of the chemical department. As soon as the board of trustees makes the proper authorization, bids will be placed.——Bids also for contracts for the new $1,000,000 home of the Johns Hopkins School of Hygiene and Public Health, which will be located at Monument and Wolfe streets, as a part of the hospital group, will shortly be asked. Plans have already been completed, and final revision of specifications is being rushed.

This structure will be of Italian architecture of brick and stone, and is provided through a donation to the school by the Rockefeller Foundation.

MICHIGAN

Each Prison to Have Full-Time Physician.—A new plan for medical and surgical service in the state penal institutions, under which a full-time resident physician will be assigned to each prison, will become effective shortly, it has been announced by Dr. R. M. Olin, state health commissioner. Dr. Russell L. Finch, Ann Arbor, has been appointed resident physician to the Marquette Prison, to succeed Dr. Harold B. Markham, who formerly did the work in addition to caring for his private practice.

County Elections.—At the annual meeting of the Muskegon County Medical Society, recently, Dr. Samuel A. Jackson was elected president; Dr. Albertus B. Poppen, vice president, and Dr. Fred N. Morfold, secretary-treasurer.——Dr. Daniel G. Castell was elected president, and Dr. Frederick A. Baker, secretary of the Oakland County Medical Society at the annual meeting in Pontiac.——Berrien County Medical Society elected Dr. Alvan A. Rosenberry, Benton Harbor, president, and Dr. Ralph B. Howard, Benton Harbor, secretary, of the society for 1923.

MINNESOTA

Medical Men Plan Law for Practitioners.—Physicians, chiropractors, osteopaths and practitioners of all other systems of healing, except mental and spiritual healing, will have to submit evidence of adequate training in anatomy, chemistry, pathology and physiology in order to obtain admission to examinations for licenses to practice their respective callings in Minnesota, if a law proposed by the Minnesota State Medical Association is enacted. The standard of fitness will be the same for all. Fitness must be demonstrated ordinarily by examinations, but evidence of having passed examinations before certain examining boards outside of Minnesota may be accepted. A new board, to be known as the State Board of Examiners in the Basic Sciences, will be charged with the execution of the law, and no licensing board may admit any candidate to its examinations, or license any candidate by reciprocity or in any other way, unless he has presented a certificate of fitness issued by the Board of Examiners in the Basic Sciences. It is to be optional with the licensing boards whether they will or will not accept such certificates as evidence of qualification in anatomy, chemistry, pathology and physiology, in lieu of examinations conducted by the licensing boards themselves.

MISSOURI

St. Louis Medical Society.—At the annual meeting of the society, January 2, held under the presidency of Dr. William W. Graves, the following officers were elected for 1923: president, Dr. William H. Vogt; vice presidents, Drs. Horace W. Soper and Robert F. Hyland, and secretary, Dr. Thomas Noxon Toomey.

Personal.—Dr. Jacob J. Singer, St. Louis, has been appointed consultant in diseases of the chest at the State Sanatorium, Mount Vernon.——Dr. R. T. Terry, professor of anatomy, Washington University School of Medicine, St. Louis, was elected secretary for the anthropologic section of the American Association for the Advancement of Science, at a meeting held, Dec. 29, 1922.

Honor for Dr. Opie.—The National Tuberculosis Association, after careful study of all research work being carried on in that field of work, has assigned first rank to the investigations of Dr. Eugene L. Opie, professor of pathology in the school of medicine, Washington University, St. Louis, and in recognition of his work has awarded him a grant of $3,000 for the twelve months beginning Nov. 1, 1922, for the further prosecution of his researches.

NEBRASKA

Personal.—Dr. Henry J. Lehnhoff, Lincoln, has been reappointed a member of the educational examining board in medicine.——Dr. Stuart A. Campbell, Norfolk, has recently returned from the Augustana Hospital, Chicago, where he underwent an operation for caries of the maxillae.

County Societies Elect Officers.—At the annual meeting of the Phelps County Medical Society at Holdrege, December 12, Dr. Guy W. Clark, Bertrand, was elected president and Dr. Jay A. Magill, Holdrege, was elected secretary of the society.——Drs. David D. Stonecypher, Peru, and Isaiah W. Irvin, Auburn, were elected president and secretary-treasurer, respectively, of the Nemaha County Medical Society at the annual meeting, December 13.

NEW YORK

To Honor Memory of Physician.—The Taxpayers Association of Canarsie have requested that the place be named "Estabrook" in honor of the late Dr. Curtis G. Estabrook, who died, January 1.

Graduates Hold Reunion.—A reunion of the class of 1919 was recently held at Long Island College Hospital, Brooklyn. Dr. James Egbert, president of the Long Island College Hospital; Dr. Frank D. Jennings, president of the Kings County Medical Society, and Drs. John O. Polak and William A. Jewett, were among the speakers.

Typhoid in Queens Village.—An outbreak of typhoid fever in Queens Village, Queens County, in which twenty-seven cases have been reported and two deaths have occurred, has been traced to a confectionery store near the public school. Thirteen children who attend the school and several adults in the neighborhood are victims, and it is believed that the epidemic was caused by ice cream served at a recent festival in the school. The store that sold the ice cream has been closed.

Formation of New Society.—The Eastern New York Eye, Ear, Nose and Throat Association was recently organized by men interested in these specialties in Troy, Albany and Schenectady, in order that mutual interchange of subjects might be made. Meetings will be held the third Wednesday of each month, alternately in the different cities. The following officers were elected: president, Dr. Eugene E. Hinman, Albany; vice president, Dr. John J. O'Brien, Schenectady, and secretary-treasurer, Dr. Frank M. Sulzman, Troy.

Chiropractor Fined.—Mrs. Stella Kubista, whose license as a midwife was revoked for illegal practices by the state department of health, and now a chiropractor, was placed on trial, November 29, at Buffalo, on the charge of performing illegal operations on a number of girls. After selection of the jury she pleaded guilty to the charge of assault in the second degree. Judge Dudley fined her $500, and sentenced her to serve from two and one half to five years in Auburn Prison, sentence suspended during good behavior. The district attorney's office and the health department are cooperating in stamping out this practice, and only recently two women were sentenced to Auburn for terms of from ten to fifteen years.

New York City

Harvey Society Lecture.—The fifth Harvey Society lecture will be delivered by Dr. Bela Schick, professor of pediatrics, University of Vienna, at the New York Academy of Medicine, January 27. His subject will be "The Prevention of Diphtheria."

Bronx Officers Elected.—At the annual meeting of the Bronx County Medical Society Dr. Joshua H. Leiner was elected president; Drs. Edward C. Podvin and Simon M. Jacobs, vice presidents; Dr. Isadore J. Landsman, secretary, and Dr. Jacob Adlair Keller, treasurer.

Health Exhibition.—The educational health exhibition held last year at the Grand Central Palace will be held there again, January 22-25, as a part of the campaign of the health department to make New York a healthy city. Each day will have a special feature, and every city department will help to make these features both interesting and instructive.

Establish Nurses' Training in France.—At a meeting of the American Committee for Devastated France, recently held in this city, it was announced that the first adequate and modern training school for nurses has been established in France. The committee will assume charge of this work for several years to come, not only because of France's inability to finance the work, but also because public health nursing is not well established in France, and teachers are few.

City Death Rate for 1922.—The number of deaths in New York City in 1922 increased by 5,432 over those in 1921, and there was a decrease of 4,557 births and 2,654 marriages. During the year, there were 69,689 deaths reported, with a rate of 11.93 per thousand of the population, as compared with a rate of 11.17 in 1921. This increase in the number of deaths is due to two severe epidemics of measles in the early part of last year and to the reappearance of influenza.

There were 129 deaths from typhoid fever, as compared with 123 in 1921. To influenza were attributed 869 deaths, compared with 384 for the preceding year. There were 5,944 deaths attributed to cancer, as compared with 5,573, an increase of 371. The number of deaths from nephritis increased by 343, and deaths from accidental causes increased 189. There were 337 homicides, as compared with 303 for 1921. There was an increase of 1,174 in deaths of children under 5 years of age. The number of deaths from measles was 976, as compared with 165 for 1921. The greatest increase was among the respiratory diseases, there being an increase from pneumonia alone of 2,317 over the number of deaths from that cause during the preceding year. Organic heart diseases also showed an increase.

OHIO

Cleveland Academy of Medicine.—At the annual meeting of the academy, the following officers were elected for the ensuing year: president, Dr. Clyde L. Cummer; president-elect, Dr. J. E. Tuckerman; vice president, Dr. Marion A. Blankenhorn, and secretary-treasurer, Dr. Harry V. Paryzek. In addition, the council will include Dr. Lester Taylor, formerly secretary-treasurer, and Dr. John Philips, ex-president.

Health Legislation Asked.—The special legislative bulletin of the Ohio Public Health Association recently issued outlines the legislative efforts which will be made by the association this year. A proposal will be made to amend the administrative code relative to the method of appointment of the director of health; there will be opposition to any attempt to amend the Hughes-Griswold local health law which does not strengthen the present health administration; more adequate state provision for promotion of mental hygiene will be advocated, and there will be opposition to any proposals which seek to weaken the state medical practice act.

OKLAHOMA

Annual Medical Meeting.—The annual banquet of the Logan County Medical Society was held in Guthrie, December 20. Following the banquet, Dr. Charles B. Barker was elected president of the society for 1923; Dr. Henry W. Larkin, vice president, and Dr. John L. Houseworth, secretary-treasurer.

OREGON

Former Dean is Honored.—At the annual banquet of past presidents of the Portland City and County Medical Society, December 20, an oil painting of Dr. Simeon E. Josephi, first president of the society (1884) and first dean of the University of Oregon Medical School, Portland, was presented to the members. The donor was Dr. J. Guy Strohm, president of the society. The portrait will be hung in the proposed new building of the medical school on Marquam Hill. Dr. W. T. Williamson made the presentation speech, and Dr. Richard B. Dillehunt, dean of the medical school, responded. Dr. Josephi spoke of the organization of the university medical school in 1887, in a small shack, and of his work as dean of the school for twenty-five years. Following the banquet, officers of the medical society were elected for the ensuing year as follows: president, Dr. George Parrish, city health officer of Portland; vice president, Dr. Calvin S. White; secretary, Dr. Harold C. Bean, and treasurer, Dr. Kittie Plummer, both the latter being reelected.

PENNSYLVANIA

Personal.—Dr. Francis Victor Laurent, Pittsburgh, who recently returned from a trip devoted to the study of the effect of climate on the organs of respiration, in which he traveled 30,000 miles by land, sea and air, in Europe, Africa and Asia, will leave this month on another voyage for research in the waters around South America.

Society Banquets.—The annual banquet of the Lancaster City and County Medical Society was held, January 3. Officers elected for 1923 previous to the banquet were: president, Dr. H. C. Kinzer, and secretary-treasurer, Dr. Charles P. Stahr.——The annual banquet of the Berks County Medical Society was held in Reading, January 9. Drs. Dorsett, Beardsley, Rugh, Burr and McCrae gave addresses.

Entire Health Board Ousted.—The board of health of East Pittsburgh has been discharged and a new board appointed by Chairman of Council Carrigan, as a result of a report by the health and garbage committee that insanitary conditions which existed at a dwelling had remained unremedied, notwithstanding complaints to the board. A motion was adopted to discharge the board and the chairman of council appointed Drs. Louis Weiss, Albert R. Trevaskis, John E. Newhouse, J. H. Lanigan and D. C. Mahoney on the new board. Drs. Trevaskis and Newhouse were members of the discharged board.

Philadelphia

France Honors Physicians.—At a luncheon given by Dr. Etienne Burnet, special representative of the French republic, January 3, in Philadelphia, Dr. Charles E. Sajous was made an officer of the French Legion of Honor, and Drs. James M. Anders and Francis X. Dercum, chevaliers of the Legion of Honor.

Philadelphia Clinical Association.—At the annual meeting of the association, recently, Dr. Charles S. Barnes was elected president; Drs. Louis H. Jacob and Frederick C. Hutton, vice presidents; Dr. William Hersey Thomas, treasurer, and Dr. James F. Donnelly, secretary.

Philadelphia Death Rate Higher.—The death rate in the city for 1922 was higher than that of the preceding year, while the birth rate, as recorded, was smaller according to the state department of health. It is stated that physicians have been negligent in recording births, as a canvass by nurses in the department in one section of the city brought to light 400 unregistered births. This condition has caused the health director to file complaint with the state authorities. The total of deaths from all causes was 24,990, an increase of 1,286 over 1921. There was a drop of nearly 3,000 in the number of births. Deaths from vehicular accidents of all kinds during 1922 totaled 289. The number of persons injured was 8,413. Saturday and Sunday are not included in these tabulations.

SOUTH CAROLINA

Personal.—Dr. Bayliss H. Earle, Greenville, retired surgeon, U. S. Public Health Service, has been appointed health officer of the county to succeed Dr. Eugene O. Chimene, who resigned recently.

New Whisky Endorsements.—It is announced by Dr. James A. Hayne, state health officer, that hereafter he will discontinue the issuance of endorsements of requests for whisky to be used for medicinal purposes. There is a conflict between state and federal laws as to the issuance of permits, and the state law being the stricter, forbidding druggists to honor whisky prescriptions, Dr. Hayne announces that only the state law will be observed by him, owing to a recent ruling of the U. S. Supreme Court to the effect that, when two laws conflict, the more stringent is to be observed.

SOUTH DAKOTA

Personal.—Dr. Louis Holtz, Aberdeen, former city health officer, is leaving for Europe, where he will spend a year attending clinics in Germany, Austria, France and England. Dr. Guy R. Duer of Stoughton, Wis., will succeed Dr. Holtz in his practice.——Dr. Stephen A. Donahoe, Sioux Falls, was recently elected president of the South Dakota Seventh District Medical Society.

TENNESSEE

Bill Proposed to Help Addicts.—Legislation will be introduced at the next session of the legislature, by Judge Fitzhugh, providing for power to sentence drug addicts without means to secure medical aid, to a county and city institution. It is hoped to have a farm in operation in the early spring, so that all addicts that are in desperate need of relief may be given treatment at an institution, which will later become self-supporting.

TEXAS

New Children's Clinic.—A building is under construction at the Richmond Freeman Hospital, Dallas, at a cost of $60,000, including equipment. The new addition will be devoted to a children's clinic.

County Elections.—Dr. Lewis W. Pollock, Temple, was elected president of the Bell County Medical Society recently. ——Ellis County elected Dr. Samuel L. Wadely, Palmer, president of the medical society.——Drs. Elbert D. Rice and Hugh H. Wisdom were elected president and secretary, respectively, of the Smith County Medical Society.—— Williamson County Medical Society elected Dr. Melton R. Sharp, Granger, president, and Dr. W. G. Pettus, secretary.

PHILIPPINE ISLANDS

New Health Regulations.—All cooks and house servants in Manila must report to the health authorities of the city for regular inspection and certification that they are free from disease, under new regulations issued by the health department in its campaign against contagious diseases. It is believed that many epidemics and much of the communicable disease are spread by cooks handling food, especially in the restaurants.——Recently a municipal ordinance was effected in Manila to prevent small stores and shops from giving drinking water to their patrons, since such water, usually taken from infected wells, was a constant source of infection in the spread of typhoid.

PORTO RICO

Medical Association of Porto Rico.—At the twenty-first annual meeting of the association, held at Ponce, December 16-17, under the presidency of Dr. P. Gutierrez Igaravidez, San Juan, the following officers were elected for the ensuing year: president, Dr. A. Martinez Alvarez, San Juan; vice president, Dr. Osvaldo Goyco, Ponce; treasurer, Dr. Jacinto Avilés, San Juan, and secretary, Dr. Agustin R. Laugier, San Juan. Both the secretary and treasurer were reelected. San Juan was selected for the 1923 meeting.

CANADA

Vital Statistics.—In the city of Toronto, Ont., during 1922, there were 13,304 births and 6,105 deaths, as compared with 13,976 births and 5,867 deaths in 1921.——London, Ont., had 1,516 births and 970 deaths in 1922, against 1,536 births and 1,003 deaths in 1921.

"Insulin" Accepted by Great Britain.—It is announced by the *Canadian Medical Association Journal* that the medical research council of Great Britain has accepted the patents for the manufacture of "insulin," the pancreatic extract isolated by Dr. Banting and Dr. Best in the physiologic laboratory at the University of Toronto. The council will act as sponsors for the distribution of insulin in Great Britain.

Canadian Association of Nurses.—At the annual convention of the Canadian National Association of Nurses held in Edmonton, it was decided to establish a national office for the association, with a paid executive secretary in Winnipeg. ——The nurses of Canada are collecting $65,000 for the purpose of erecting a memorial to the Canadian nurses who lost their lives in the World War. This memorial will be erected in Ottawa.

Memorial to Colonel McCrae in France.—The Imperial Grave Committee have finally accepted the plan for a memorial to the late Col. John McCrae, C. A. M. C., in Wimereux Cemetery, France, for which funds have been subscribed by the Canadian Clubs of Canada. The suggested memorial is in the form of a stone seat at the entrance to the cemetery, at one side of which there is to be a house of records and at the other a shelter, both handsome structures. On the seat will be inscribed a verse from Colonel McCrae's poem "In Flanders' Fields."

Personal.—Dr. Violet Amelia Shaw, Toronto, sailed recently for China, where she will act as a medical missionary.——Dr. Frederick G. Banting has been awarded the Reeve prize by the University of Toronto for his research work on the treatment of diabetes by "insulin."——Dr. Dorothy M. Trapp, Toronto, has been appointed a member of the resident staff of the Toronto General Hospital.——Dr. Joseph Edgar Bates has been awarded the Ellen Mickle fellowship in the University of Toronto, and will continue his work in the department of pathology.——Dr. Alexander E. Garrow, Montreal, has recently returned from Europe.——Dr. Ronald Levesque, Montreal, sailed recently on the *Empress of France* for Liverpool.

GENERAL

Veterinarians Convene.—The fifteenth annual conference of the veterinarians was held at the New York State Veterinary College at Cornell University, Ithaca, N. Y., January 11-12. Dr. Livingston Farrand, president of Cornell University, gave the address of welcome. Prof. C. L. Durham spoke on "Veterinarians in the Days of the Romans." Medical and surgical demonstrations were given during the afternoon of the 12th.

Western Surgical Association.—At the annual meeting of the association in Minneapolis, December 8-9, the following officers were elected for the ensuing year: president, Dr. Horace G. Wetherill, Denver; vice presidents, Drs. Willis D. Gatch, Indianapolis, and Clarence G. Toland, Los Angeles, and secretary-treasurer, Dr. Warren A. Dennis, St. Paul. The next meeting of the society will be held in December, 1923, at Colorado Springs, Colo.

Preventable Accidents.—Approximately 8,000 persons were killed in automobile accidents in the fourteen states where statistics on such fatalities are kept, according to the United Press. This has broken all records for former years, and fully 95 per cent. of the accidents, traffic experts estimate, were of the "preventable" type. New York was first, with 2,000 persons killed, and Pennsylvania second, with a casualty list of 1,100. Illinois and California ranked third in the list, with 1,000 killed in each state from automobile accidents.

Bill Proposed in Senate to Define Intoxicating Beverage.—A bill introduced by Senator Spencer of Missouri would provide for the appointment of a commission to investigate and determine what alcoholic content in a beverage makes the beverage intoxicating. The commission is given power to summon witnesses and to conduct experiments to enable it to report findings on the general subject. Senator Spencer asserted that the measure would determine "in a fair and scientific manner, as far as human investigation can determine the question, what amount of alcohol does make a beverage intoxicating."

International Cooperation on Illicit Use of Narcotics.—Col. O. G. Forrer, former assistant director of the prohibition bureau's narcotic division, has been sent to Europe to confer with foreign governments for the purpose of stopping the illicit shipment of drugs and narcotics into the United States. He carries full credentials from the state department to similar officials in several countries. His plans call for conferences with the authorities in Italy, Spain, France and possibly Germany, with a view to securing their cooperation. The decision to carry the antidrug campaign overseas was reached on information obtained by the federal authorities with the recent seizure in New York of a record shipment of morphin and cocain which had just been landed from a transatlantic steamer.

The Voight Filled Milk Bill Favorably Reported.—The Voight filled milk bill, which has passed the House of Representatives, has been favorably reported to the Senate from the Senate committee on agriculture. It is one of several measures demanded by the "farm bloc" Senators for passage at the present session of Congress. The bill defines filled milk as "any milk, cream or skimmed milk, evaporated, concentrated or dried, to which has been added any fat or other milk fat so that the product is in imitation or semblance of milk, cream or skimmed milk." The bill is directed particularly against manufacturers who combine skimmed milk and cocoanut oil, and sell it as an imitation of evaporated milk. The bill declares such filled milk is "an adulterated article of food injurious to public health, and its sale constitutes a fraud upon the public." Its shipment in interstate commerce is forbidden under a penalty of $1,000. The committee's report to the Senate states:

> Your committee does not doubt that the sale of filled milk as at present carried on is a violation, if not of the letter, of the spirit of the pure food and drugs act. This act cannot regulate the conduct of the retail dealer. He can buy this compound for about 3 cents per 1-pound can less than he is obliged to pay for the genuine article. Many instances were brought to the attention of your committee where retail dealers advertised the compound as "Hebe milk," "Silver Key milk," etc., and investigations conducted in many of our large cities reveal that the dealers were selling the compound as being as good and better than regular evaporated milk. It was shown that the compound was largely sold in sections of cities inhabited by people unable to read the label and people of limited means.

LATIN AMERICA

Medal to Guiteras.—The *Médica* of Matanzas relates that Dr. Juan Guiteras is living a quiet, rural life since his retirement from the charge of the national public health service in Cuba. On the occasion of the recent Sixth Latin-American Medical Congress at Havana, the Sociedad de Estudios Clinicos presented Dr. Guiteras with a gold medal as a tribute to his distinguished services to science. The address on the presentation of the medal was by Dr. Vicente Pardo Castello, followed by one of the delegates from Brazil to the congress. They spoke of Guiteras' work on yellow fever and his trip to Africa in 1916 to study epidemics under the auspices of the Rockefeller Foundation, and especially of his share in reducing the death rate from tropical diseases, not only in Cuba but also throughout the world.

Personal.—Dr. Julio de Novaes has been appointed director of the Rio de Janeiro public health service in the place of

Prof. Luiz Barbosa.——Dr. Federico Córdova was presented recently with a gold medal by the Medicolegal Association of Cuba, as a tribute to his fifty years of service as medicolegal consultant in the municipality of Havana.——Dr. Manoel de Abreu has returned to Rio de Janeiro from Europe, where he was sent on an official mission to study roentgen-ray installations, in view of the roentgen laboratory to be installed soon in the Emergency Hospital.——Dr. Julião do Amaral has been elected president of the newly organized Medical Club at Rio. Dr. Queiroz Lopez and Dr. G. de Figueiredo were the two secretaries elected. The *Folha Medica* states that fifty-six physicians signed as founders of the society. The committee to draw up the constitution includes, besides the officers, Drs. Lameira Ramos, A. F. dos Santos, H. Machado Silva and Eudoxio dos Santos.——Dr. Mario d'Utra e Silva has returned to Rio after five years abroad.——Dr. J. T. Borda was recently tendered a banquet by his friends in celebration of his appointment to the chair of psychiatry at the University of Buenos Aires.

Four Years of Public Health in Brazil.—The retiring president of Brazil has published a review of what has been accomplished in the four years of his incumbency. The *Folha Medica* reproduces the part devoted to public health matters. The retiring president organized the national public health service on a new and comprehensive basis. There are now four tuberculosis preventoriums in Rio and thirteen for leprosy and venereal disease, and twenty-seven others have been founded elsewhere in the country. The milk supply, and the sanitary service of the merchant marine were the subject of special regulations, and a laboratory for food inspection was founded. Several new hospitals were organized and an old asylum was transformed into a modern hospital of 250 beds, with a model training school for nurses. Fourteen states now have antivenereal disease stations and two more will soon have them. The system of Prophylaxis Rural to combat malaria, etc., has been installed in fourteen states; and the Guinle-Gaffrée Foundation has provided four dispensaries in Rio and two others are under way, as are also the plans for a 200 bed hospital. An army convalescent home was recently inaugurated; and the first public hospital for the tuberculous is soon to be thrown open, and a second one is already under way. These three institutions are at an altitude of 407, 600 and 820 meters, respectively.

FOREIGN

Royal Institution.—At a general meeting, December 4, with Sir James Crichton-Browne in the chair, Sir Arthur Keith was elected secretary to succeed the late Col. E. H. Grove-Hills. Professors Urbain (Paris), Ehrenfest (Leyden), Knudsen (Copenhagen), Bjerknes (Christiania), and Dr. Irving Langmuir were elected honorary members.

Biologic Neuropsychiatric Reunions.—Under this heading, a series of conferences have been organized at Paris for physicians to inspect for themselves the new specialist procedures in diagnosis and treatment of nervous and mental disease. The new procedures will be demonstrated by experts and moving pictures, and questions answered on general biology as applied to neuropsychiatry. Dr. A. Brousseau, Asile clinique Sainte-Anne, is in charge of these "reunions," which are to be held at intervals during the winter.

Infectious Diseases in Italy.—The statistics for 1921 have just been published. They show a total of 278 cases of epidemic (lethargic) encephalitis, but only eighty-six cases of epidemic meningitis. There was a notable decrease in the new cases of pellagra, but at Ronciglione, in the Rome District, about 1,000 cases of spirochetal jaundice were reported. There were 25,527 cases of typhoid reported; in some places, this amounted to 15 or 19 per 10,000 inhabitants. In Umbria, Venice, Tuscany and Calabria, it averaged 10 to 14 per 10,000.

A Medical Flyer in Belles Lettres.—A group of physicians has founded an artistic and literary review as the organ of the Groupement international des médecins artistes et littérateurs. Dr. Giuliani of Paris is the director, and the review publishes nothing that has been published elsewhere. The October issue contains a novelette by Dr. L. Graux of Paris, a serial novel by Dr. F. Brexals, a play by Dr. G. Trezel, and poems. The name of the review is *Epidaure,* and the address of Dr. L. Giuliani is rue Monge 62, Paris, France. The temple of Aesculapius was at Epidaurus.

Military Medical and Chemical Congress.—The Second International Military Medical and Chemical Congress will be held in Rome, May 28-June 2, 1923. The following subjects will be discussed: Evacuation, collaboration between civil and military authorities on questions of health, the treatment of penetrating wounds of the chest and their sequels, and chemical laboratories in the field, their rôle and methods. The official organ of the meeting is the *Giornale di Medicina Militare.* Communications regarding the meeting should be addressed to the Ministere della Guerra (Minister of War), Via XX Settembre, Rome, Italy.

New Curriculum at University of Paris.—A new plan for medical courses will be instituted at the University of Paris with the opening session of 1923, it has been announced by Professor Roger, dean of the school of medicine. The outline as it pertains to the different years is as follows: first year: morphologic studies, as represented by anatomy, histology and embryology; second year: study of function, as represented by physiology, biochemistry and pharmacology; third year: studies in pathology, as pathologic anatomy and histology; experimental pathology, surgical pathology, bacteriology and parasitology; fourth year: special pathology, diagnosis, clinical medicine, surgery and obstetrics; fifth year: first semester, hygiene, public health, clinical specialties; second semester, elective, general "perfection," and sixth year: hospital intern service.

Medical News from China.—Dr. Edward M. Merrins, following a prolonged illness, has returned to his duties as editor of the *China Medical Journal.* Dr. Lincoln, St. John's University, Shanghai, acted as editor in Dr. Merrins' absence. ——The Hunan-Yale College of Medicine opened its school session, September 25, with an enrolment of eleven new students. The following additions have been made to the faculty: Drs. R. M. Atwater, A. B. Dayton, Louise W. Farnam, William C. Grosvenor, W. S. T. Neville and Chow F. Tang.——Dr. W. K. McCandliss has gone to Kochow, where he will superintend the erection of new hospital buildings. While traveling on the North River from Canton and Lienchow, he and his party were attacked by bandits and robbed of all their possessions, including their clothing.—— The Hongkong University announces that it needs additional quarters for its students. Plans have been prepared for the enlargement of St. John's and Missionary halls at a cost of $196,000. A campaign will be conducted to raise the necessary amount.——Dr. L. F. Heimburger, formerly of Weihsien, has been appointed professor of dermatology at the Shantung Christian University School of Medicine, Tsinanfu.——It is announced by the Amalgamated Association of Cigarette Shop Unions that red-headed matches (presumably consisting of a mixture of red phosphorus and antimony trisulphid) have been responsible for a number of suicides in China. A resolution was passed against further production of them.——Dr. Joseph L. Harvey, resident physician in the John G. Kerr Hospital for the Insane, has been appointed roentgenologist to the Canton Medical College.——During August and September, the number of cases of cholera admitted to the Municipal Isolation Hospital for Chinese and to the two Chinese Red Cross cholera hospitals was 283, with thirty-one deaths.—— Arrangements have been completed for the translation of the British Pharmacopoeia into Chinese, at an approximate cost of $5,000, the money being guaranteed by the wholesale druggists and manufacturing chemists of Great Britain.—— Nearly half a million taels' worth of opium and cocain was seized by the customs officers at Shanghai, from Japanese steamers entering that port recently, it is reported.——The American Church Mission Hospital at Changshu was formally opened in September. Dr. Walter H. Port is superintendent.——It is reported that no less than twenty-eight missionaries and several natives are at present suffering from sprue in Korea, and that typhus is killing thousands of Koreans at Pingyang.

Deaths in Other Countries

Dr. **Samuel Hammond** in Queensland, Australia, aged 86. ——Dr. **Frederick Bryan,** alienist, in Scotland, suddenly from angina pectoris.——Sir **Isaac Balfour,** M.D., for thirty-four years professor of botany at the University of Edinburgh, aged 69.——Dr. **C. A. L. Rademaker** of Amsterdam, aged 61.——Dr. **Felix García,** medical inspector for the port of Matanzas, Cuba.——Dr. **Mahaux** of Brussels, shot in his home by an insane woman in revenge for his testimony as to her mental condition.——Dr. **G. R. Marone** of Acireale, who had been decorated several times for distinguished service in the Libyan campaign and during the World War.——Dr. **J. J. Maats** of Purmerend, aged 81.—— The *Revista de Medicina y Cirugía* of Havana mentions the death of Dr. **Francisco Rayneri** at an advanced age. He had been a medicolegal expert for the city of Havana.

Government Services

The Army School of Aviation Medicine

The Army School of Aviation Medicine completed its three-month course at Mitchel Field, L. I., last week, according to information given out by the Surgeon General. Seven officers of the Army Medical Corps and eleven officers of the Navy Medical Corps were graduated, thereby qualifying to serve at flying fields and other places in connection with aviation. The graduation exercises were attended by Major Gen. Merritte W. Ireland, Surgeon General of the Army; Major Gen. Mason M. Patrick, chief of the Army Air Service, and representatives of the bureau of medicine and surgery and the bureau of aeronautics of the Navy. The graduation class included: Majors B. B. Warriner, W. S. Woolford, and J. F. Duckworth, and Captains I. J. Gibson, D. M. Blakely, B. J. Peters, and C. V. Hart of the Army Medical Corps; and Lieuts. A. C. Smith, R. P. Henderson, F. R. Bealer, J. C. Adams, F. H. Clements, J. R. Poppen, G. L. McClintock, W. W. Davies, W. H. Wynn, J. D. and C. C. Ammerman of the Navy Medical Corps. The following officers of the Naval Medical Corps have been detailed to take the next course, commencing January 15: Lieut.-Com. Frederick Ceres and Lieuts. Bertram Groesbeck, Jr., George D. Thompson, Robert G. Doris, Stuart J. Trowbridge, Clinton G. DeFoney, Louis E. Mueller, John L. Farmer, Grover C. Wilson, George T. Dill and Earl E. Dockery. It is expected that about six officers of the Army Medical Corps will be detailed to take the instruction.

Policy as to Annual Physical Examination Changed

Circular No. 211, the formal order for the annual physical examination of officers and warrant officers of the army, has been issued. The order requires that all officers be physically examined during the calendar year 1923, and that such examination be held, as far as practicable, in the month of January. It may be held at a later period for the purpose of avoiding expense or for other good reasons. The primary purposes of these examinations are disease prevention and the conservation of health, to be accomplished largely by the early detection and treatment of latent physical defects. In former years, these examinations were often the basis for retirement of army officers. The present policy of the War Department is to employ these examinations not for the purpose of disqualification, but to locate incipient and obscure physical and mental defects which may impair the health of the officer, and to remedy and overcome defects which, if allowed to continue, would result in disqualification.

U. S. Veterans' Bureau Hospital Construction

During the calendar year 1922, six additional Veterans' Bureau hospitals were established, three of which, totaling approximately 1,142 beds, are for tuberculous patients; two others, totaling 705 beds, are for neuropsychiatric patients; and one hospital, furnishing 165 beds, for general cases. In addition to these, there were added to existing veterans' hospitals throughout the year a total of 1,072 new beds at four different hospitals, 300 of which were for neuropsychiatric cases, the remainder for tuberculous cases. At present, there are under construction or being planned fifteen new hospitals, totaling 5,059 beds, of which 1,878 are for tuberculous patients; 2,931 for neuropsychiatrics, and 250 for general cases. In addition, there are under construction, at four existing U. S. Veterans' Bureau hospitals, new modern hospital units which will provide for a total of 1,268 beds, of which 1,068 will be for neuropsychiatric cases. This excludes such hospital beds as were opened during the calendar year.

Advisory Committee on Education of Sanitarians

At the meeting of the advisory committee to the Surgeon-General on the Education of Sanitarians and the Future of Public Health in the United States, held in Washington, D. C., Jan. 3, 1923, the following were present: Dr. Haven Emerson and Dr. Wickliff Rose of New York, Dr. Winslow of New Haven, Dr. Howell and Dr. Welch of Baltimore, Dr. E. G. Williams of Virginia and Dr. A. J. McLaughlin of the Public Health Service. Among other matters discussed was the question of holding a joint meeting with the Committee on Medical Education and Licensure and Public Health and Hospitals of the American Medical Association in Chicago on March 7. Favorable action was taken and the program is now being arranged. New members added to the advisory committee are Dr. William H. Park of New York, Dr. A. C. Abbott of Pennsylvania, Dr. Frederick W. Sears of New York, Dr. John Sundwall of the University of Michigan, Prof. C. E. Turner of Boston, Dr. Lindsley R. Williams of New York and Dr. Henry Vaughan of Detroit.

Commissioned Status for Sanitary Engineers

Sanitary engineers in the public health service, under the terms of a bill introduced by Senator Watson of Indiana, would be given the pay, allowances and rank of medical officers. There is a proviso in the bill requiring them to pass an examination conducted by commissioned officers of the service.

Board to Recommend Medals

Work of the board of officers of the Army convened in Washington recently to recommend officers and enlisted men for medals and other awards for distinguished and exceptionally meritorious service is progressing satisfactorily. Under the law, decorations for World War service must be awarded before April 1, next. Several members of the Medical Corps, it is said, are being considered by the board for awards.

Medical Officers Recently Retired

Ninety-two officers of the Army have been found incapacitated for active service and have been transferred to the retired list, according to an announcement made by the War Department. The list includes the following members of the medical department of the Army:

Col. James S. Wilson, Medical Corps.

Lieut.-Cols. George H. R. Gosman, William M. Smart and George F. Juenemann, Medical Corps.

Majors Henry N. Stilphen, Joseph L. Siner, Frederick S. Macy, John P. Kelly and Corydon G. Snow, Medical Corps.

Capt. Zera E. Bolin, Medical Corps.

Capts. Carl Graner and Edward A. Lovelly, Jr., Medical Administrative Corps.

Women's Advisory Council Meets

There was a meeting of the Women's Advisory Council to the Public Health Service in the office of the Surgeon-General at Washington, January 12 and 13. The greater part of the program was devoted to the subject of immigration in its relation to public health. Among those who accepted invitations to address the conference were: the Hon. Albert Johnson, chairman of the House committee on immigration and naturalization; the Hon. W. W. Husband, commissioner-general of immigration, and Dr. Elizabeth B. Thelberg.

President Vetoes Bursum Bill

President Harding last week vetoed the Bursum pension bill that recently passed both houses of Congress. This measure carried increases in pensions to veterans of the Civil and Mexican wars and their widows, including nurses. The sum fixed was $50 a month. President Harding based his veto on the ground that these pension increases would cost the government $108,000,000. He also was opposed to paying pensions to widows who married veterans fifty years after the Civil War, as was specified in the bill.

Hospitals Authorized

Pursuant to instructions from the Adjutant-General of the Army, the organization of a veterinary station hospital, organized reserves, to be known as Veterinary Station Hospital No. 6 (a seventh corps area unit) has been authorized.——A veterinary evacuation hospital, to be known as Veterinary Evacuation Hospital No. 7 (organized reserve, a ninth corps area unit) has also been authorized by the Adjutant-General of the Army.——Pursuant to instructions of the Secretary of War, the organization of an evacuation hospital, organized reserves, to be known as Evacuation Hospital No. 24 (St. Vincent's Infirmary Unit, Little Rock, Ark.) has been authorized by the Surgeon-General.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 18, 1922.

Protection Against Anthrax

In a previous letter, the establishment by the government of a station for the disinfection of wool and hair at Liverpool was described. A report has now been issued on the work done. The disinfection process is carried out in seven stages; the machinery for opening the bales, feeding the material into machines, disinfecting, drying, cooling and rebaling is so designed as to permit of the carrying out of all seven stages in sequence as one operation, without handling of the material by workmen. Hydraulically pressed bales, as imported, are placed on the moving platform of a feeding and opening machine, and the steel bands and canvas covers are removed. The material is delivered into the first process machine, where it is submitted for ten minutes to a dilute alkaline solution at 102 F., to remove the albuminous material by which the anthrax spores are protected. It is then squeezed through rollers and delivered into the second process machine, where it is acted on for twenty minutes by a dilute alkaline soap solution at 102 F., in two successive baths, to promote a condition of the spores in which they can be killed with ease. This stage also cleanses the material completely. It then passes through rollers into the next process machine, where the disinfection is performed in two successive baths (with rollers between) of a 2.3 per cent. solution of formaldehyd at 106 F. It again passes through rollers, and is blown by air into a drying machine, from which it is discharged into a cooling machine, and thence is blown by air into the charging box of a baling machine.

The machines containing the formaldehyd solution are completely enclosed. When they have to be entered, for example for rewrapping the rollers, the workers wear army box-respirators filled with charcoal. No ill effects have occurred among the workers. To control the efficiency of the disinfection, samples of material before and after the process are examined by an independent bacteriologist. Since proper control of the disinfection has been established, anthrax bacilli have not been found after the process, though present before it in twenty-nine of 306 samples. Bacteria other than anthrax have been cultivated after the process, but this does not necessarily indicate insufficient disinfection, though the cultivation of more than five colonies of other organisms is regarded as pointing to insufficiencies. A charge is made for disinfection, and it is calculated that this should be 3 cents a pound to make disinfection a paying proposition. The suggestion was made that by the combined use of ultra-violet and roentgen rays disinfection could be carried out, and much more cheaply. But a trial of this method showed it to be a failure.

The Elixir of Life Again

One learns from the lay press—for so far the medical journals have taken no notice of the subject—that Dr. Conradi Buchardi has come from Vienna to practice "the Steinach operation of restoring youth." We are told that he has operated on nine patients—six women and three men—and that his engagement book is full. In a press interview, Dr. Buchardi has said: "I have just treated a woman of 67 with the roentgen rays, and I am hopeful of the result. The operation takes about half an hour. Women have to be treated three or four times. For men there is just a simple gland operation, and it takes the patients from one to three months to regain their lost energies. The operation can be repeated once. There may be a first operation on one side which will restore from 5 to 20 years of age. At the end of that period the other gland can be treated and the patient obtain another five to twenty years' lease of life. After that, old age comes on in the ordinary way and there is no sudden collapse." Dr. Buchardi states that film and theatrical people, to whom looks mean so much, are seeking his services. He alleges that he has operated in Vienna and Germany on Englishmen and Americans "with complete success." Why Germans have not participated in the benefits he can confer he does not explain. Provided "decay has not gone too far," the operation can be performed up to the age of 70. He was reminded of the operation on Mr. Wilson, who died suddenly on the night before he was to lecture in London on his rejuvenescence by Steinach, but he made no comment.

The Indianization of the Indian Medical Service

In previous letters, the effect on the Indian medical service of the government policy of extending the rights of Indians was described. This service at one time offered such opportunities for research and such excellent emoluments that it was eagerly entered by the ablest young physicians after graduation. There was a very difficult competitive examination at which only the highly competent stood a chance. The government still requires the services of European physicians, but the desire to enter the service has so diminished that, instead of a competitive examination, the vacancies are announced in the press, and physicians are invited to apply for them. Candidates must be under the age of 32. Service as an officer in the war counts for pay promotion and pension purposes. Thus, an officer with three years' war service enters as a captain and receives $2,800 a year. A free passage to India is provided for himself and his family. He has the right to retire at the end of five years with a gratuity of $5,000 and a free return passage.

Heredity and School Education

In a lecture delivered to school teachers, Karl Pearson said that the child is made by his parents, and all that teachers can do is to temper the steel. The physician and the teacher are not going to alter to any great extent the health or intelligence of the child. That did not mean that education was not possible, but that the material was given to them, and the teacher was not going to alter it. It was impossible to say that there was any significant increase of intelligence with age between 4 and 19. Quick or sullen temper was not modified with age, nor was shyness, conscientiousness or aptitude for athletics or handwriting. Kipling's strictures on "flanneled fools at the wicket, and muddled oafs at the goal" were not justified by the facts. Athletics generally went with quickness and intelligence. Referring to physical characteristics, Pearson said that medieval writers viewed red hair with suspicion, and in morality plays Judas was always given a red beard; but red-haired boys and girls today were the most conscientious, athletic and popular.

Syphilis Attributed to the Hire of a Wig

An action was brought against a well-known theatrical costumier in which syphilis was stated to have been contracted in a novel way. The plaintiff, a man of 33, went to the defendant's shop to hire a wig for the part of a woman at a concert for a discharged soldiers' fund. He was shown a number of wigs, which appeared to be kept in a heap in a drawer. He tried on one which had evidently been used before, because grease paint still adhered to the lining. The wig was prepared for him, and he wore it three times. Soon afterward a sore appeared on the right side of the head about where the edge of the wig would come, and later a

rash broke out. He consulted a specialist, Mr. J. E. R. McDonagh, who diagnosed syphilis, with primary sore on the head, and considered that the infection probably came from the wig. In cross-examination he said that he did not think that an abrasion was necessary for the contraction of syphilis. Another specialist, Mr. Arthur Whitfield, corroborated this evidence, and suggested that the grease paint might keep the spirochetes alive. Syphilis might be contracted in hair cutting, combing the hair or rubbing the head on a pillow. Evidence was given for the defendant that his wigs were cleaned in a rotary machine and soaked in benzin, which would remove all grease as well as dirt. A wig returned from hire was never handed to another customer until it had been cleaned. The judge pointed out that the syphilis might have been contracted in the other ways mentioned. The jury was not satisfied that the evidence proved infection from the wig, and gave a verdict for the defendant.

The Prevention of Anthrax

The International Advisory Committee on Anthrax, sitting in London, has adopted a report by its subcommittee on the criteria to be employed in settling a list of countries to be exempted from compulsory disinfection of wool, hides and animals. The report recommended exemption of those countries in which the raw material had not caused any cases of anthrax in the importing country for five years, unless anthrax spores had been discovered in the raw material by bacteriologic examination, and also of those countries of origin in which there was an absence of anthrax in an epidemic state among animals, or in which there was an application of strict measures for stamping out any outbreak at the source.

Insurance Against Smallpox

The outbreak of smallpox at Poplar has been successfully checked; and only scattered cases have followed in London. In the whole country there have been 902 cases of smallpox in the first eleven months of 1922, of which twenty-seven were fatal. It is supposed to have been due to the importation from eastern Europe of a particularly virulent type of infection; hence its high mortality. The outbreak has given rise to a novel form of insurance. Underwriters at Lloyds have provided for financial indemnity should the assured fall a victim to smallpox within twelve months. The rates quoted are 0.05 per cent. should the applicant have been vaccinated within the last ten years, and 0.1 per cent. if there has been no such vaccination.

PARIS

(From Our Regular Correspondent)

Dec. 15, 1922.

Professor Bernard's Impressions of the United States

Dr. Léon Bernard, professor of hygiene at the Faculté de médecine of Paris, at the invitation of the Rockefeller Foundation visited the principal institutions in the United States that are concerned with the advancement of public health. Recently he presented to the Academy of Medicine an account of his visit.

Bernard stated that the essential principle that lies at the basis of the organization of public health in the United States is that public health work should be administered by special functionaries termed "health officers." He emphasized particularly the large measure of authority exercised by these officers. Another thing that impressed Bernard was the fact that all the health officers are technicians, from the health officer of the village up to the state commissioner of public health. The state has organized special short courses to train small town health officers in the exercise of their duties. For the higher positions, physicians are chosen who have completed special courses of instruction in the universities.

The three forms of activity on which the functioning of the public health services are based are the collection of vital statistics, work in experimental laboratories, and educational propaganda. All these tend to encourage the idea of early medical intervention, which is seconded and prolonged through the aid of the visiting nurse. Bernard states that, in order to comprehend the high degree of importance ascribed by American hygienists to vital statistics, which was a source of wonder to those of us who collaborated during the war period with American organizations, it must be borne in mind that, in the United States, not only do these statistics constitute a basis for investigations, in which they have become a professional necessity, as it were, but also that hygienists have the responsibility of collecting them. He explains, further, that the administration of a civil state, as we conceive of it in France, does not exist in the United States. In the cities, the states and the central government, the reports of births and deaths are made to the department of public health. The result is that, instead of these being regarded merely as the basis of simple administrative or demographic considerations, they are taken as evidence of the degree of efficiency of the public health department in question. Another result is that the filling out of death certificates, instead of being a simple formality entrusted to the family of the deceased and controlled by a physician unfamiliar with the case, must be done by the attending physician (except in cases of death by accident), who is obliged to state the cause of death. These declarations become consequently authentic documents, the collation of which gives a clear idea of the state of the public health; this also makes it possible to control the exactitude of the declarations of diseases. It will be seen how much superior this system of collecting vital statistics is to that in vogue in France, to the defects of which I referred in detail in a previous letter (THE JOURNAL, Dec. 30, 1922, p. 2244).

Speaking of the development of the laboratories in the United States, Bernard stressed the point that the work of these laboratories is not confined to the performing of clinical examinations; they are all centers of scientific research. The same spirit and the same zeal for research are found in the laboratories that make clinical examinations for the public as are observable in the laboratories of the universities or of the private institutes. The workers are encouraged by the administrators themselves to do research work, and special funds are often provided for such purposes.

Bernard praises also the progress made in the United States in instruction in hygiene, which is all the more remarkable when compared with the wretched condition of such instruction in France, where the need is so great.

As for the social scourges, the campaign that is being waged against them in the United States is more effective than in France. The means of combating tuberculosis are the dispensary with its physician and visiting nurse, the sanatorium, the special hospital and educational propaganda. Compulsory notification for all cases of pulmonary tuberculosis has been established in all the states. The campaign against venereal disease has been no less vigorous.

Absolute prohibition of alcohol is regarded by Bernard as the culminating event of social hygiene in the United States. He is quite familiar (as we all are) with the exaggerated stories, often circulated by persons with ulterior motives, in regard to contraband alcoholics, clandestine manufacture, and intoxication by alcoholics of questionable origin and by various narcotics. This should not prevent us from recognizing the great, incontrovertible fact, which rises

above these petty infractions of the law, that a country with 110 million inhabitants has accepted the interdiction of the sale and the consumption of all alcoholic beverages. One passes through good-sized cities and vast rural districts without encountering a single saloon. Under these conditions, the regular alcoholization of the masses is rendered impossible. Although accurate statistics have not been collected as yet, it can already be observed that the prisons and the hospitals for the insane have fewer inmates. It has been noted also that there has been an upward trend in the labor output, and an improvement in general conditions as affecting the life of workingmen. It may be said, therefore, that a people capable of such renunciation as regards the gratification of a desire as old as humanity itself is, indeed, a great people.

Insanity in Relation to the War

Dr. Paul Cassel, general secretary of the departmental committee of the war injured of the department of the North, has just published an interesting study on the subject of insanity in relation to the war, his findings being based on statistics collected in the department of the North. His statistics show that the incidence of insanity has not increased, as the result of the war. It is true, there has been a greater frequency of "melancholic states," but this increase is largely compensated for by a decrease in the number of cases of *folie alcoolique* (insanity from alcoholics). However, it must be admitted that the war has been responsible for certain cases of jacksonian epilepsy, incomplete types of exophthalmic goiter, and syndromes arising in those who have suffered brain injuries and who consequently present problems for the psychiatrist. It should be added that the effects of this terrible period of four years of war are manifested not only in the hospitals for the insane. There seems to be reason to fear that the large number of syphilitics in the army whose condition was either not diagnosed or who received inadequate treatment may cause, in the next few years, an increase in the already high incidence of general paralysis. Just as it is not feasible, at the present time, to write a history of the military events of the war, it is likewise impracticable to produce a clear account of contemporaneous medical happenings, especially when we are concerned with phenomena so delicate in their mechanism, so complex in their origin, and so variable in their evolution and their duration as are cerebral troubles.

The Factory Physician

Professor Cazeneuve of Lyons called attention recently to the necessity of special instruction for physicians appointed to look after the sick in large commercial chemical houses (THE JOURNAL, Nov. 25, 1922, p. 1860). In a recent number of the *Journal de médecine de Lyon,* Prof. Etienne Martin takes up the same subject and emphasizes the same need. He holds that the "factory physician," before taking on the responsibilities associated with the employment and conservation of labor, should acquire special theoretical and technical knowledge in the field of occupational diseases and industrial toxicology. It will not be necessary to create in our medical schools special chairs for this purpose. All that will be needed will be to adapt certain courses of instruction to this new function, and to assign to the professors responsible for these courses the needed collaborators and the means of carrying out this adaptation. The main thing would be to amplify the instruction in industrial toxicology and to develop further our knowledge of occupational diseases. The instruction, however, should not be confined to theoretical lectures on these subjects, but should include practical demonstrations. Professors of medical jurisprudence are, for the most part, members of the councils on public health. They might easily use the influence that goes with their official position to secure from manufacturers the necessary authorization for their pupils who intend to become factory physicians to visit chemical plants and study conditions at first hand. Students would thus gain a practical experience that would be exceedingly valuable to them.

Vital Statistics for France During the First Six Months of 1922

The *Journal officiel* has just published the vital statistics for France during the first six months of 1922, and compares them with the statistics for the corresponding period of 1921:

	1922	1921
Living births	396,726	421,180
Deaths	387,681	348,329
Excess of births over deaths	9,045	72,851

The results, unfortunately, are quite unfavorable. The number of births has decreased, from one year to the other, by more than 25,000, while the number of deaths was increased by approximately 40,000. The net result is that the excess of births, which, in 1921, amounted to 72,851, has been reduced, this year, to 9,045. During the same period, the number of marriages decreased by nearly 45,000 (193,454 as against 238,185).

Election of Professor Vincent to the Academy of Sciences

At its last meeting, the Academy of Sciences elected Prof. H. Vincent as a member to fill the vacancy in the section of medicine and surgery caused by the death of Professor Laveran. Professor Vincent is a member of the faculty of the Ecole d'application de médecine et de pharmacie militaires of Val-de-Grâce. He also holds the office of general medical inspector of the army, with the rank of general of a division. He is known chiefly for his works on antityphoid vaccination, fusospirillar symbiosis (Vincent's angina), etc.

A New Medical School

A joint faculty of general and colonial medicine and of pharmacy has been recently established by government order in the city of Marseilles. Special emphasis will be placed, at this school, on instruction and special researches in colonial and tropical medicine. The school will not be opened until the delegates of the minister of public instruction have inspected and approved the buildings, library and general equipment.

Estimation of Disability in Industrial Accidents

While engaged at his regular work, a workman whose right hand was injured in the war had his left hand caught in a roller. The court of Besançon estimated at 50 per cent. the reduction in the working capacity of the man, taking as the basis "the percentage of disability usually allowed by law for the loss of the left hand" in a workman who has no other infirmity. The case was brought before the court of cassation (the highest court of France), which refused to accept the judgment of the lower court. The supreme court held that the indemnity due a workman who is the victim of an industrial accident depends solely on two factors, to wit: the wages that he was receiving before the accident, and the capacity for work that he retained after the accident. The condition of health or infirmity of the victim before the accident must not be taken into consideration. The total amount received in wages in one year furnishes the legal basis for his industrial value. More particularly, when a workman whose right hand was injured in the war loses his left hand as the result of an industrial accident, the judge may not, in fixing the indemnity to which he is entitled, take as a basis for the reduction of his capacity

"the percentage of disability usually allowed by law for the loss of the left hand"; he must consider the workman's actual condition, taking into account the almost complete incapacitation of both hands.

BELGIUM

(From Our Regular Correspondent)

Dec. 12, 1922.

Child Welfare in the Belgian Congo

There exists in the Belgian Congo a Ligue pour la protection de l'enfance noire. The purpose of this league is to combat child mortality on the Congo and to counteract harmful conditions that militate against the development of the native population. The headquarters of the league is at Brussels.

The activity of this league on the Congo is manifested by the organization of consultation centers for infants at all the stations where are found a physician, a hospital, a religious mission and a group of women interested in welfare work. At present, consultation centers have been regularly established at forty different stations. At these centers, babies are weighed, and receive milk, clothing and medicines.

Bad Housing Conditions in Antwerp

The city of Antwerp has instituted an investigation of the housing conditions prevailing, and the publication of a preliminary report sheds light on the acuteness of the housing crisis.

Anniversary of the Founding of the University of Brussels

The president announced that the commission of the foundation for the educational relief of Belgium, of which Mr. Hoover is chairman, had placed at the disposal of our alma mater a large sum of money which would not only allow the university to carry out its present plans without anxiety, but also permit the elaboration of new plans to bring all the faculties up to the level of what the Faculté de médecine would be in three years when the changes already provided for shall have been made; for it may be said that the pace for the marvelous development of the University of Brussels was set by the Faculté de médecine, for it was the first, in our capital, to expand its organization, its equipment and its institutes.

Visiting Nurses in the Home

The association of visiting nurses of Belgium has organized a home service of visiting nurses which will permit all classes of society to enjoy the benefits, when occasion requires, of a graduate nurse. Following the request of the attending physician for such service, a visiting nurse will be sent to the home of a patient, but she may remain only such time as is required to carry out the physician's prescriptions.

Radium in Relation to Tumors of the Mouth

Dr. Sluys recently called attention to the importance of an early diagnosis of tumors of the mouth. Dentists are the ones who can be expected to detect buccal cancers in the initial stage. We are just beginning to realize the great benefits that may be derived from early diagnosis since the application of radium in the early stages has given such remarkable results.

The Schick Test in Relation to Antidiphtheric Immunization

Dr. Vernieuwe presented recently to the Academy of Medicine a communication on the value of the Schick test after immunization with toxin-antitoxin mixture in diphtheric rhinitis. He stated that persons suffering from ulcerative diphtheric rhinitis usually react positively to the Schick test. When treated with the specific serum, they make rapid progress toward recovery; but as soon as the antitoxin is eliminated, the reaction becomes positive.

Antidiphtheric vaccination by the injection of an underneutralized toxin-antitoxin mixture modifies the state of receptivity of these subjects, and immunizes them (Schick test negative). It seems even capable of preventing the micro-organisms from persisting on the mucous membrane in an inactive form. However, this finding ought to be confirmed by wider investigation before it is considered as an established fact.

This research appears to have established another important finding, namely, that the creation of an operative wound in the pharynx or the rhinopharynx of a patient with diphtheric rhinitis may produce a new focus of diphtheria. This fact must not be lost sight of in operating on this region. This fact throws light on the pathogenesis of the affection, since it shows that the presence of the micro-organism, together with the receptivity of the subject, are not sufficient to produce it; there must be also a lesion of the mucous membrane or of the tissues.

BERLIN

(From Our Regular Correspondent)

Dec. 9, 1922.

Serotherapy and Chemotherapy in Puerperal Fever

Professor Bumm, director of the Berlin Universitätsfrauenklinik, at a recent meeting of the Berlin Medizinische Gesellschaft discussed his treatment of puerperal fever by means of a streptococcus serum and chemotherapeutic antiseptic. Of his 120 cases of severe streptococcus puerperal fever, the mortality of which usually ranges around 50 per cent., only 1.5 per cent. resulted fatally. Bumm admits that it is hard to determine whether, in view of the fact that the condition began with a local infection of the uterine mucosa, his treatment caused the process to remain localized, or whether the same result would have been reached without treatment. However, Bumm is inclined to assume the former to be true, since, following the treatment, the fever terminated by crisis and since a diminution of the number of bacteria in the blood could be established. The changes in the puerperal secretion also supported this view.

Welfare Work Among Patients with Venereal Disease

According to statements issued by the Dresden dermatologist Professor Galewsky, the incidence of venereal diseases in Saxony, even before the war, was greater than in other German states (excluding such large cities as Berlin and Hamburg). This condition still exists, and there has been a great increase in venereal disease, especially in the rural districts of Saxony. The percentage of women affected is much higher than formerly; according to the report of the local health insurance society of Dresden, the percentage in 1917 was 1.4, whereas in 1921 it had risen to 4.9. In Saxony there are three large special wards for venereal disease in the general hospitals of Dresden, Leipzig and Chemnitz. In the smaller cities, such as Plauen, Zwickau and Zittau, smaller services are established in a central location. In addition, there are various wards for children suffering from venereal disease. For ambulant patients there are two smaller policlinics in Dresden and one in connection with the university clinic of Leipzig; their total number of consultations in 1920 was 8,441. The lack of policlinics is partially compensated for by twelve consultation centers that were established in 1916 by the Landesversicherungs-Anstalt. Since the close of the war, the consultation centers of Saxony have given advice and treatment to 1,547 ex-service men and to 201 men who were still in the service. The number of consultations for the period from 1916 to 1921 was: 1916, 54; 1917, 976; 1918,

2,149; 1919, 8,133; 1920, 17,356; 1921, 24,707. In Leipzig and Dresden, special welfare centers have been established which endeavor to rescue and care for morally delinquent (or endangered) juveniles especially women and girls, without the interference of the police, and thus prevent them from taking the path that leads to ruin. The number of juveniles suffering from venereal disease, as registered in the Dresden consultation center, was:

INCIDENCE OF VENEREAL DISEASE AMONG JUVENILES

Year	Males	Females
1917	34	13
1918	52	20
1919	60	63
1920	76	122
1921	31	66

In addition to the welfare centers, seventeen institutions and homes of the Saxon evangelical conference have taken over the care of moral delinquents who have left school. Up to Dec. 31, 1921, 19,690 girls had passed through these institutions and homes. The welfare agencies of the Catholic Church have also been active in Saxony, but their figures do not run so high. Through the aid of the Landesverband der Deutschen Gesellschaft für Bekämpfung der Geschlechtskrankheiten (society for combating venereal disease), acting conjointly with the Deutsches Hygienemuseum, the state commission for the instruction of the people on public health problems, and the authorities in general, a campaign of enlightenment in regard to the dangers and the significance of venereal diseases has been carried on by means of lectures and exhibits in all parts of Saxony.

Personal

R. Oestreich, extraordinary professor of general pathology and pathologic anatomy at the University of Berlin, died suddenly, December 2, following an attack of apoplexy, at the age of 58. He was one of the last assistants of Rudolf Virchow, and after Virchow's death he remained at the pathologic institute under the direction of Virchow's successor, Professor Orth. He served also as prosector at the Augusta Hospital, having succeeded Professor Hansemann, who died several years ago. Besides several treatises on his special field of study, Oestreich published a number of textbooks on anatomicopathologic diagnosis. He was also an instructor in pathologic anatomy for students of dentistry.

Marriages

JOHN C. KASSMEYER, East Dubuque, Ill., to Miss Lillian May Minges of Dubuque, Iowa, at Oak Park, recently.

GLENN R. GROSS, Baltimore, to Miss Janet Langford of Frostburg, Md., at Washington, D. C., November 25.

JOHN SAMUEL TALLEY, Troutmans, N. C., to Miss Edith Murdock McLaughlin of Statesville, October 12.

BURTON RAYMOND WESTON, Mason City, Iowa, to Miss Dorothy Ellen White of Oskaloosa, recently.

JOHN MORTON DAVIS, Lynchburg, Va., to Miss Dorothy Talbott Thomas of Danville, November 18.

STUART W. HARRINGTON, Rochester, Minn., to Miss Gertrude Jones of Douglas, November 17.

JULIAN M. HOWE, Washington, D. C., to Miss Eleanor E. Elliott of Jackson, Miss., October 24.

FRANCIS E. PROCTOR, Allentown, N. J., to Miss Dorothy Mary Ford of Wayne, November 25.

ROBERT A. BUCHANAN to Miss Helen M. Dake, both of Wessington, S. D., December 14.

Martin Robert Broman to DR. MILDRED JESSIE ROBERTS, both of Chicago, December 28.

Deaths

Charles Andrew Powers ⊕ Denver; died suddenly at the University Club, Denver, December 23, from cerebral hemorrhage. His body was interred in Arlington National Cemetery, Washington, D. C., in compliance with his own desire, the hour and date of the service coinciding with that set aside for the award to Dr. Powers of the distinguished service medal, which was voted him in recognition of his services during the World War. The medal was conferred posthumously by Col. Harry G. Lee, the ribbons of the decoration being pinned to the uniform in which Dr. Powers was buried. Dr. Powers was born in Lawrence, Mass., in 1858 and graduated from the College of Physicians and Surgeons (Columbia University), New York, in 1883. After serving as attending surgeon at the New York Cancer, and St. Luke's hospitals, he located in Denver in 1894. He was emeritus professor of surgery at the University of Colorado School of Medicine, and had served as surgeon at the Denver City, St. Luke's and Mercy hospitals, and the State Home for Dependent and Neglected Children; from 1908 to 1917 he was a first lieutenant in the M. O. R. C. and in 1916 went to Paris as attending surgeon of the American Ambulance Hospital Unit for French wounded. When the United States entered the war Dr. Powers was made a major and was assigned to the American Hospital at Neuilly. He received his honorable discharge in 1918 and was commissioned lieutenant-colonel, M. O. R. C., in 1919. For his services in France (notably his facial reconstruction work) he received the Belgian Order of Leopold, the Médaille de la Reconnaissance Francaise, the French Legion of Honor and a citation from General Pershing. Dr. Powers was president of the American Surgical Association in 1912; a member of the International Urological Society, the International Surgical Society, the American Society of Clinical Surgery, and at the time of his death was president of the American Society for the Control of Cancer.

Erasmus Guy Hopkins ⊕ Richmond, Va.; University College of Medicine, Richmond, Va., 1899; died, December 19, at his home in Glen Allen, from carcinoma. Dr. Hopkins was born in Fredericksburg in 1877. Following his graduation he became city bacteriologist of Richmond, and served as pathologist at St. Luke's Hospital since 1907; professor of clinical pathology since 1917, and director of the clinical laboratory since 1913 at the University of Virginia Department of Medicine; laboratory director of the Retreat for the Sick and Stuart Circle hospitals; served in the M. C., U. S. Army, during the World War, in France, at Base Hospital No. 45, and at Justice Hospital Group, Toul; was honorably discharged, April 25, 1919 with the rank of major. He was a member of the American Public Health Association, the American Bacteriological Society, and Association of Military Surgeons of the United States.

William Stephen Disbrow ⊕ Newark, N. J.; Medical Department of the University of the City of New York, 1887; for twenty years professor at the New Jersey College of Pharmacy; formerly on the staff of the Hospital of St. Barnabas and the Newark City Hospital; member, and at one time president, of the Newark Board of Health; aged 61; died, December 26, at the home of his son in Summit, from cerebral hemorrhage.

Isaac Roscoe Goodspeed, San Mateo, Calif.; Medical School of Maine, Portland, 1854; for ten years justice of the peace, constable, coroner and postmaster at Pescadero and associate judge of San Cruz County; for thirty-five years physician of San Mateo County; aged 91; died, December 22, at the California Sanatorium, Belmont, from senility.

John Franklin Thompson ⊕ Portland, Me.; Medical School of Maine, Portland, 1886; member of the American Gynecological Society and the American Academy of Medicine; formerly professor of diseases of women at his alma mater; for twenty-five years on the staff of the Maine General Hospital; aged 63; died, December 27, from pneumonia.

Sidney Kinsman Fenollosa ⊕ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1902; formerly instructor of medicine at the University of Pittsburgh; on the staff of the Pittsburgh Hospital; served in the M. C., U. S. Army, during the World War; aged 49; died, December 11, from pneumonia.

Shirley Calhoun Gage, Waco, Texas; University of Louisville Medical Department, Louisville, Ky., 1895; member of the State Medical Association of Texas; served in the M. C.,

U. S. Army, during the World War; aged 51; died, December 19, in a local sanitarium, from mastoid abscess following an operation.

Claude Dalby Kellam ⊕ Norfolk, Va.; University College of Medicine, Richmond, 1903; served in the M. C., U. S. Army, during the World War, with the rank of captain; formerly consulting surgeon at the U. S. Marine Hospital No. 29, Norfolk; aged 41; died, December 15, at the U. S. Naval Hospital.

Louis Sydney Bassford Robinson, Camp Kearney, Calif.; Medical School of Harvard University, Boston, 1901; served in the M. C., U. S. Army, during the World War; surgeon in U. S. Public Health Service Reserve, stationed at U. S. Veterans' Hospital No. 64; aged 48; died, December 17, at San Diego.

Charles A. Wilcox, Amboy, Ill.; Rush Medical College, Chicago, 1870; formerly mayor of Amboy; at one time postmaster of Ottawa, and coroner of La Salle County; member of the board of education; for several years surgeon for the Illinois Central Railroad Company; aged 75; died, December 23.

Edward Lindon Mellus, Brookline, Mass.; Jefferson Medical College of Philadelphia, 1878; member of the New England Society of Psychiatry and the American Association of Anatomists; retired thirty years ago to take up research work in neurological physiology; aged 74; died, December 17.

Louis Willard Luscher, Kansas City, Mo.; College of Physicians and Surgeons of Kansas City, Kansas City, Mo., 1879; member of the Missouri State Medical Association; formerly professor of surgery at the University Medical College, Kansas City, Mo.; aged 64; died, December 26.

Lemuel Hart Neville, Galion, Ohio; Medical College of Ohio, Cincinnati, 1894; member of the Ohio State Medical Association; aged 53; died, December 25, at the Protestant Hospital, Columbus, from acute dilatation of the heart, following an operation on the gallbladder.

John C. Dunlavy, Sioux City, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1879; University of Louisville Medical Department, Louisville, 1882; formerly consulting oculist to the Samaritan Hospital; aged 73; died, December 18, from heart disease.

William Lloyd Shannon, Vancouver, B. C., Canada; McGill University Faculty of Medicine, Montreal, Que., 1911; Medical School of Harvard University, Boston, 1915; aged 34; died, December 26, from the effects of poison, presumably self-administered.

Franklin Watson, Willow Grove, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1897; member of the Medical Society of the State of Pennsylvania; aged 53; was found dead in bed, December 26, from heart disease.

Thornton Craig, Capay, Calif.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1876; member of the Medical Society of California; aged 77; died, December 20, at the Woodland Sanitarium, Woodland, from enteritis.

George Isaac Hemingway, Poughkeepsie, N. Y.; University of Vermont College of Medicine, Burlington, 1897; member of the Medical Society of the State of New York; aged 55; died, December 23, following a long illness.

John R. Wheless, Spring Hope, N. C.; College of Physicians and Surgeons, Baltimore, 1891; member of the Medical Society of the State of North Carolina; aged 54; died, December 4, from cerebral hemorrhage.

Samuel Gaston Huff, Santa Ana, Calif.; St. Louis Medical College, St. Louis, Mo., 1870; formerly superintendent of the San Bernardino County Hospital, San Bernardino; aged 78; died, December 16, from senility.

William Wesley Reed Hitchcock ⊕ Los Angeles; Rush Medical College, Chicago, 1879; Bellevue Hospital Medical College, New York, 1881; president of the California Hospital; aged 68; died, December 17.

Robert Hall Pepper, Huntington, W. Va.; Homeopathic Hospital College, 1885; member of the West Virginia State Medical Association; aged 60; died, December 23, following an operation for carcinoma.

Edward F. Milholland, Baltimore; University of Maryland School of Medicine, Baltimore, 1858; practitioner in Baltimore for more than half a century; aged 85; died, December 23, from pneumonia.

John Dickinson Mast, Reamstown, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1919; aged 34; died, December 12, at St. Joseph's Hospital, Lancaster, from typhoid fever.

Orson T. Staufft, Pittsburgh; Medical Department of Western Reserve University, Cleveland, 1883; member of the Medical Society of the State of Pennsylvania; aged 64; died, December 23.

Maria M. Romine, Harveysburg, Ohio; Woman's Medical College of Cincinnati, 1894; member of the Ohio State Medical Association; aged 73; died, December 16, following a long illness.

Fred Luther Osgood ⊕ Townsend, Vt.; University of Vermont College of Medicine, Burlington, 1889; member of the board of education; aged 64; died, December 30, from pneumonia.

George Manley Atwood, Bradford, Mass.; Medical School of Maine, Brunswick, 1884; member of the Maine Medical Association; aged 67; died suddenly, December 23, from heart disease.

William Vann Rumph, Fort Worth, Texas; Memphis Hospital Medical College, Memphis, Tenn., 1904; member of the State Medical Association of Texas; aged 54; died, December 20.

A. Marion Wassam ⊕ Galveston, Texas; Medical College of Ohio, Cincinnati, 1873; formerly member of the board of education; at one time coroner; aged 76; died, December 12.

Michael Francis Sullivan, Lawrence, Mass.; College of Physicians and Surgeons, Boston, 1891; member of the Massachusetts Medical Society; aged 65; died, December 25.

Harry Rulison, Albany, N. Y.; Albany (N. Y.) Medical College, 1905; aged 40; was found dead in his room at a New York hotel, December 12, from heart disease.

Hiram Herbert Rust, Gig Harbor, Wash.; University of Vermont College of Medicine, Burlington, 1876; aged 84; died suddenly, December 14, from heart disease.

Robert Joseph Marsh ⊕ Portland, Ore.; University of Pennsylvania School of Medicine, Philadelphia, 1898; aged 53; died, December 18, from pernicious anemia.

Charles J. Hull, Carthage, N. Y.; Eclectic Medical College of the City of New York, 1881; formerly village president and health officer; aged 65; died, December 23.

Isaac N. Woodman, Morrisville, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1893; aged 54; died, December 14, from cerebral hemorrhage.

Frank Major Beard ⊕ Shelbyville, Ky.; Medical Department University of Louisville, Louisville, 1893; aged 53; died, December 20, following a long illness.

Mary Helen Cullings, Syracuse, N. Y.; University of Michigan Medical School, Ann Arbor, 1886; aged 68; died, December 25, from pneumonia.

Samuel Howard Wilson, Mechanicsville, Pa.; Jefferson Medical College of Philadelphia, 1881; aged 67; died, December 18, from diabetes mellitus.

Frank J. Lebangood, Louisville, Ky.; Louisville Medical College, Louisville, Ky., 1879; aged 72; died recently, from acute articular rheumatism.

Henry Garey, Pittsburgh; Jefferson Medical College of Philadelphia, 1884; Confederate veteran; aged 94; died, December 18, from senility.

Daniel Schmidt, Jr., New York; Bellevue Hospital Medical College, New York, 1881; aged 62; died, December 15, from cerebral hemorrhage.

Charles E. Terrell, Fort Worth, Texas (licensed in Texas under the act of 1907); aged 59; died, December 16, following a long illness.

Mary Elizabeth Nutter, Norfolk, Va.; Boston University School of Medicine, Boston, 1884; aged 71; died, October 4, from senility.

William Burton Olds, Attica, Ohio; Bennett College of Eclectic Medicine and Surgery, Chicago, 1882; aged 78; died, December 29.

John Claude Hollis ⊕ Oakland, Calif.; College of Physicians and Surgeons, Chicago, 1906; aged 41; died, December 17.

Walter Melvin Hornby, Philadelphia; Medico-Chirurgical College of Philadelphia, 1895; aged 51; died, December 28.

David K. Douthett, Osceola, Iowa (licensed, Iowa, 1887); aged 67; died suddenly, December 19, from heart disease.

Vardiman M. O. McDowell, North Little Rock, Ark. (licensed, Arkansas, 1903); aged 65; died, December 18.

Alva B. Coons ⊕ Georgetown, Ky.; Kentucky School of Medicine; Louisville, 1886; aged 62; died, December 23.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

CULTURE-LAC OMITTED FROM N. N. R. AND OPTOLACTIN NOT ACCEPTED

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following reports.

W. A. PUCKNER, Secretary.

Culture-Lac

"Culture-Lac" is described in New and Nonofficial Remedies, 1922, as a culture of *Bacillus bulgaricus* manufactured by the Geck Laboratories, New York. The Special Pharmacal Products Co., Inc., Buffalo, N. Y., has advised the Council that it now owns and manufactures Culture-Lac. The product now marketed, however, is not the preparation described in New and Nonofficial Remedies as Culture-Lac but is said to be a culture containing *Bacillus acidophilus* and *Bacillus bulgaricus*.

In the advertising of Culture-Lac issued by the Special Pharmacal Products, Inc., it is stated:

"Owing to the difference of opinion of the medical profession as to the therapeutic value of the *Bacillus acidophilus* and the *Bacillus bulgaricus*, this laboratory, considering that the types were similar, also that both thrived in the same medium, decided to combine them and by so doing overcome any further objection."

This is not a valid reason for the sale of a mixture of *B. acidophilus* and *B. bulgaricus*. On the contrary, it is essential to therapeutic progress and in the interest of sound therapy that these two bacilli should be administered independently of each other.

The Council has decided that, on the basis of the present available evidence, preparations of *B. acidophilus* may be considered for admission to New and Nonofficial Remedies. In order, however, that an early estimate of the value of the bacillus as a therapeutic agent may be gained, the Council will admit such preparations only on condition that they are marketed under a properly descriptive name. Furthermore, the Council will not consider for acceptance any preparation containing *B. acidophilus* in admixture with other organisms unless acceptable evidence is presented to warrant the mixture.

In the advertising for the new Culture-Lac it is asserted:

"In considering divergent opinion as to whether the *Bacillus acidophilus* or the Bulgarian bacillus is the more active as intestinal antiputrefactives, it must be remembered that the fact has been thoroughly established by Metchnikoff and many other investigators, that functioning independently or both acting together when administered in combination, have marked therapeutic force."

This is an unwarranted therapeutic claim. The therapeutic use of *B. acidophilus* is distinctly in the experimental stage. Although there is evidence that the administration of sour milk products is at times beneficial, the theories advanced by Metchnikoff are entirely unsupported by scientific evidence, and no one subscribes seriously to these opinions at the present time.

The Council directed that the Culture-Lac of the Geck Laboratories be omitted from New and Nonofficial Remedies because it is off the market. The Council declared the Culture-Lac of the Special Pharmacal Products Co., Inc., inadmissible to New and Nonofficial Remedies (1) because there is no acceptable evidence to show that the administration of a mixture of *B. bulgaricus* and *B. acidophilus* is rational; and (2) because the preparation is marketed with unwarranted therapeutic claims.

Optolactin

Optolactin is the proprietary, nondescriptive name applied by Fairchild Bros. and Foster to a tablet said to contain mixed cultures of the *B. bulgaricus* A and *B. acidophilus*.

In the advertising the following reason for the marketing of this mixture is offered:

"This product, Optolactin, will enable those who attach a special importance to the *Bacillus acidophilus* to try it in combination with bacilli already well known. . . . And those who already use the *Bacillus bulgaricus* may employ this mixed culture with the assurance that Optolactin has all the qualities of the *Bacillus bulgaricus* of the Fairchild culture and with such new and important properties as may be derived from the inclusion of the *Bacillus acidophilus*."

Here, again, it must be emphasized that this is not a valid reason for the combination. In the interest of therapeutic progress and sound therapy it is essential that these two bacilli should be administered independently of each other.

In the circular which accompanies the trade package of Optolactin it is stated that *B. bulgaricus* "has now acquired a place in therapeutics for the purpose for which proposed by Metchnikoff and his colleagues, with his theory of auto-intoxication, disease resulting therefrom, and the ingestion of these bacilli in combating it." In consideration of the fantastic and erroneous statements which appear in the lay press about "auto-intoxication" and the endless ills said to result therefrom, this statement is likely to lead to the ill-advised use of Optolactin by the public.

The Council declared Optolactin inadmissible to New and Nonofficial Remedies (1) because there is no acceptable evidence to show that the administration of a mixture of *B. bulgaricus* and *B. acidophilus* is rational; (2) because the name is not descriptive of the composition of the preparation; and (3) because the circular accompanying the package is likely to lead to the ill-advised use of Optolactin by the public.

Correspondence

STERILITY FROM USE OF RADIUM

To the Editor:—Within the last few years there have come to my attention cases of sterility caused by handling radium. Nearly all the patients were young and healthy, and attracted by the steady salary promised, without much knowledge as to the action of radium on their future physical condition and without being informed as to that fact by those supposed to know. The employment, as a rule, is steady and practically continuous until these unfortunates come to realize that through the constant handling of radium they have become sterile. Young laymen, even most of the medical men in such employment, do not know and realize the dangers when they first start. It is impossible for men handling especially big dosages of radium to wear heavy enough lead aprons to be protected. Applicants should be informed of all the dangers, and decide their course with full knowledge in advance of the risks they are to take. Another way would be for such institutions to have enough men for each position to employ them for three months each year, giving long periods of freedom from the action of radium.

M. A. VARZHABEDIAN, M.D., Chicago.

THE NAMES OF PROPRIETARY PREPARATIONS

To the Editor:—May I express my most sincere approval of the ruling of the Council on Pharmacy and Chemistry for excluding from New and Nonofficial Remedies drugs (however valuable their therapeutic action may be, or however honestly described their chemical constituency) not distinctly named to show the active drug that they contain. Esterol should be "benzyl succinate," prepared by Frederick Stearns & Company.

It should be *suggested* by its name that any drug or preparation acts differently from the basic drug it contains. A drug or preparation should be ordered by its name, and then the preferred maker specified, if desired. For instance:

Elixir Glycerophosphates (the name of the maker of the preparation desired); Antipneumococcic Serum (the name of the maker of the preparation desired); Novocaine (the name of the maker of the preparation desired); Aromatic Fluidextract of Cascara (the name of the maker of the preparation desired); Fluidextract of Ergot (the name of the maker of the preparation desired); Elixir of Pepsin (the name of the maker of the preparation desired); Peroxide of Hydrogen (the name of the maker of the preparation desired); Tablets of Ovarian Substance (the name of the maker of the preparation desired); Tablets of Thyroid Substance (the name of the maker of the preparation desired), etc.

If a particular make of a drug is preferred, every physician has as much right to specify the brand desired as he has to choose the drug he will use in a given case.

The patent and trademark laws should be amended so that the originator of a particular method of securing purity of a drug, or the discoverer of a new valuable synthetic drug, should be allowed to patent the drug under its chemical name, or at least under a name that is distinctive of its constituency, and then every other firm should be allowed to make that drug and sell it under its patented name, paying a royalty to the discoverer or originator of the drug.

Medicine and medical treatment must be scientifically simplified.

It is regretable that proper names for the different diseases or syndromes and symptoms and signs are multiplying until their name is legion. Every man should be honored in early descriptions of the disease or condition that he has discovered, but it is deplorable to insist that every educated medical man shall know every sign, symptom and disease by some one's proper name.

OLIVER T. OSBORNE, M.D., New Haven, Conn.

AUTOCESAREAN SECTION IN A MOUSE

To the Editor:—Oct. 17, 1922, an ordinary brown mouse confined with others in a cage at the Ohio penitentiary was seen to be gnawing her abdomen. The attention of one of the superintendents, R. E. Moore, and a foreman, James Syfers, was called to the mouse, and they watched her until she had eaten an opening into her abdomen and removed four mice. Two of the mice were apparently still living, but soon died. The mouse did not seem to be at all disturbed by her operation, but ran around in her cage as though nothing had happened. My attention was incidentally called to the case a few days later by the warden of the penitentiary, Mr. P. E. Thomas. I visited his office and saw the mouse, which then showed simply a well healed scar.

After discussing the case with a number of my colleagues, it seemed important to know whether the operation had been a straight cesarean section, or an opening into an extrauterine fetal sac. In the interest of science, therefore, the warden surrendered the mouse, which was turned over to Prof. D. S. White, dean of the veterinary department of the Ohio State University. Examination disclosed that the pregnancy had been in the right horn of the uterus, and had apparently been normal, so that no reason was discovered why the mouse relieved herself in this way.

In conversation, Professor White stated that he had never heard of any such occurrence. Correspondence with several laboratories where large numbers of mice are utilized for scientific purposes has not elicited a report of anything of this sort. Dr. B. Merrill Ricketts of Cincinnati reported some years ago two cases of autocesarean section in the human female.

In a communication (through Dr. B. Merrill Ricketts) from the Bureau of Animal Industry of the U. S. Department of Agriculture, the statement is made that the library files of that department fail to reveal any data as to self-inflicted cesarean section in dumb animals, and the suggestion is made that no such case has been reported in veterinary literature.

J. F. BALDWIN, M.D., Columbus, Ohio.

DIAGNOSTIC VALUE OF BILIARY DRAINAGE

To the Editor:—I have read with considerable interest (THE JOURNAL, Dec. 23, 1922, p. 2129) the report by Fitz and Aldrich on chemical and physical examinations of bile removed at operation from gallbladders in a series of known gallbladder conditions. According to their results, they are not able to correlate their findings with any of the known gallbladder changes in the conditions they were investigating. Consequently, they have assumed that biliary studies according to the methods of Lyon cannot be of much diagnostic significance. So far as I am aware, neither Lyon and his co-workers, nor those who have made use of his methods, have ever based much on the physical and chemical analyses of bile obtained by this method of drainage. To be sure, the specific gravity, viscosity, color, etc., are noted, but usually do not have much weight in the diagnostic balance. We know that these characteristics of bile are very variable even in normal subjects at different times under different conditions. What is more important than any of these is the bacteriologic study of bile as obtained by the Lyon methods. The chief diagnostic value, to my mind, of this method of biliary study lies in the facility with which it lends itself to bacteriologic investigation of the gallbladder. Had Fitz and Aldrich been able to compare preoperative and postoperative bacteriologic findings in their series of cases, they would have learned that the Lyon tests were of practical diagnostic value. Furthermore, it is not clear that their microscopic examination of the bile specimens has been as thoroughly made as possible. In scientific work one cannot base far-reaching conclusions on incomplete studies, and therefore I believe that Fitz and Aldrich are not justified in throwing doubt on the value of the Lyon methods.

E. L. SHAFFER, PH.D., Trenton, N. J.
Assistant Pathologist, St. Francis Hospital.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DETERMINATION AS TO PREVIOUS VIABILITY OF INFANT FOUND DROWNED

To the Editor:—I am to appear in court to testify in an infanticide case. I had performed the necropsy and used the hydrostatic test on the lungs to determine whether the child was born alive. The lungs floated. How far can one interpret the findings of this test?

Y.

ANSWER.—The following statement from the "Text-Book of Legal Medicine," edited by Frederick Peterson and Walter S. Haines, 1903, p. 59, answers the question asked:

"In order to determine whether or not respiration has taken place, the following procedure is practiced: The height of the diaphragm is determined before the chest is opened (when respiration has fully taken place the diaphragm reaches to the fifth or the sixth rib; otherwise only to the fourth); the trachea is ligated in the neck before opening the chest; then the chest is opened, and the pleurae, pericardium and heart are examined; the pharynx, larynx and trachea, above the ligature, are also opened and examined. The organs of the chest are now removed in toto, the trachea being divided above the ligature, the heart and the thymus gland separated, and the lungs placed in a basin of cold, clean water. In

case they float freely, respiration has undoubtedly taken place; if the lungs sink, then the test is not decisive. The lungs, under such circumstances, are to be incised and note taken as to whether they crepitate or not, and whether air-bubbles appear when parts are compressed below the surface of the water. Furthermore, the lungs must be separated into lobes, the lobes into minute pieces, and the hydrostatic test again applied. In this way it may be possible to determine that air has gained entrance into certain parts of the lung in sufficient quantity to prevent small pieces from sinking.

"In the case of decomposition and the possible production on that account, in the lungs, of sufficient gas to buoy them up in the water, then a number of small pieces from the lungs are to be placed between the folds of a towel, and thoroughly compressed between two flat surfaces, such as between the floor and a board, exerting pressure by standing on the latter. The gas due to decomposition is pressed out, and the pieces from atelectatic, decomposed lungs will sink when thrown in the water after this treatment; inspired air, on the other hand, cannot be pressed out, and the pieces from inflated lungs continue to float."

ADMINISTRATION OF SODA AND GLUCOSE SOLUTIONS

To the Editor:—I am writing regarding the administration of soda and glucose solutions by hypodermoclysis. We had been having trouble with sloughing of the tissue around the site of the injection. I made up a 5 per cent. solution and sterilized by the fractional method in the Arnold sterilizer. My solutions are clear, with a slight darkening of the glucose. But even now we are having the same trouble. To cite an example: A woman with the dengue was given four injections. One was given in each breast and one in each thigh. They were all given the same day and by the same nurse. The one on the right thigh, which was the third given, caused considerable pain, the skin first becoming red and then peeling off, leaving a bluish tint, which later changed to a dark blue, became necrotic and sloughed. In another case, a trained nurse gave the injections into the breasts, the right first and then the left. These were given at the same time, and later sloughing occurred in the left breast. What is the cause for this, and how may we remedy it? Is the fault with the preparation, or is the amount of each injection too large?

————, Canada.

ANSWER.—The necrosis produced by the "soda and glucose solution" hypodermoclysis is, no doubt, due to its excessive alkalinity. Sloughing has occurred after subcutaneous injection of 2 per cent. solutions of sodium carbonate. Our correspondent does not state the exact strength of the solution; but, assuming that he used 5 per cent. of sodium bicarbonate, the irritation resulting from such a solution could be readily explained, especially if the heating for sterilizing is not done in such a way as to prevent loss of carbon dioxid. For, when the sodium bicarbonate solution is heated, it gives off carbon dioxid and is converted into the much more alkaline and destructive sodium carbonate. Such a solution may be given by proctoclysis or by intravenous injection; but it is not suitable for hypodermoclysis.

DOSAGE OF CINCHOPHEN

To the Editor:—In what dosage and amount should cinchophen be used? I find in some of the advertising circulars the directions to discontinue from seven to ten days and repeat, and I have been informed that there is danger of uric acid calculi forming in the kidneys if it is used continuously.

GEORGE D. CARNES, M.D., South Haven, Mich.

ANSWER.—The following dosage statement is given in New and Nonofficial Remedies, 1922: "In gout the dose of cinchophen is from 0.5 Gm. (8 grains) four times a day to 1 Gm. (15 grains) three times a day suspended in large quantities of water. In order to prevent the precipitation of free uric acid from the urine with possibly resulting renal colic, Weintraud considers it necessary to administer simultaneously 15 Gm. (225 grains) of sodium bicarbonate in the course of the first day, and from 5 to 10 Gm. (75 to 150 grains) on the following days. In articular rheumatism, Heller prescribes daily doses of from 3 to 5 Gm. (45 to 75 grains)."

In the treatment of rheumatic fever, Hanzlik, Scott, Weidenthal and Fetterman (THE JOURNAL, June 18, 1921, p. 1728) state that intensive and massive doses of cinchophen are necessary for complete relief, just as with salicylate. One gram of cinchophen (or neocinchophen) was administered every hour until definite symptoms of drug action were manifested. Then the medication was stopped; and, if no relief was obtained, a full therapeutic (toxic) dose was administered in the usual way. In the cases reported by the authors, some improvement appeared after from 3 to 6 gm. of cinchophen; further relief was not demonstrable until after from 6 to 10 gm. had been administered; complete relief occurred only when patients had received a total of from 10 to 13 gm.

In cases of chronic disease, it has been recommended to administer cinchophen for two or three days; then, not to give it for the next ten or fourteen days, and then repeat. This seemingly is based on an early communication of Weintraud, who thought its use in this manner would serve as a "prophylactic." Such directions do not appear in "Useful Drugs," "New and Nonofficial Remedies" or recent works on pharmacology and therapeutics.

VENTILATION OF ROENTGEN-RAY ROOMS

To the Editor:—In the application of deep roentgen-ray therapy, I am troubled considerably with the fumes of ozone and nitrous oxid throughout my office.

I have installed an exhaust ventilating system, but still the fumes linger in my rooms for a considerable length of time after the deep therapy treatment is administered. Unfortunately, my office space is so arranged that I have a long space, 20 by 80 feet, with a 13 foot ceiling, which affords ventilation only at the two distant ends. The side walls have no windows on account of adjoining buildings.

Would the installation of several air purifying devices be of any help in further purifying the air in my office suite? Are there any other air purifying devices that would be helpful?

HAROLD SWANBERG, M.D., Quincy, Ill.

ANSWER.—We know of no specific chemical action whereby air-purifying devices absorb the nitrous oxid of the air in rooms in which a high tension electric current has produced a breakdown of the normal chemical constituents of the air. Most such devices act to disguise odors. As to a means of taking care of the undesired gases in roentgen-ray therapy, there is nothing but actual change of the air in the room as rapidly as the nitrous oxid is formed. Open windows with the assistance of a fan or an exhaust apparatus are the only successful means for this purpose.

BIOLOGIC PRODUCTS FOR PREVENTION OF PNEUMONIA OR INFLUENZA

To the Editor:—Is there any vaccine or serum that is worth anything as a preventive of influenza, or as a preventive of pneumonia following influenza? Is there any such product that is worth using during convalescence?

J. F. MARTIN, M.D., Benson, N. C.

ANSWER.—The use of biologic products prepared from pneumococci and influenza bacilli is still in the experimental stage. Some products prepared from pneumococci have been accepted by the Council on Pharmacy and Chemistry for New and Nonofficial Remedies. A list may be found in that book, together with a brief discussion as to the experimental evidence on which the use of the products is based.

PRESENT STATUS OF "INSULIN"

To the Editor:—Will you kindly give me information regarding a preparation by the name of "Insulin," said to be manufactured by a professor from the Medical Department of the University of Toronto, who claims it is a specific in the treatment of diabetes?

W. E. RAMSAY, M.D., Houston, Texas.

ANSWER.—In THE JOURNAL, January 6, the present status of this product is discussed editorially. It is pointed out that the product is still in the experimental stage and that it seems to be of considerable promise, but that it is not yet available for general application in the treatment of the disease for which it is specific.

CHRONIC RESISTANT MACULAR ERYTHRODERMA

To the Editor:—Have you any literature on a skin trouble known among skin men as chronic resistant macular and maculopapular scaly erythroderma? Do the skin men recognize this condition, and if so, has it ever been classified?

J. A. MCCULLOCH, M.D., Maryville, Tenn.

ANSWER.—Resistant maculopapular scaly erythroderma is one of several names of a dermatosis that is rare but well known by dermatologists. There are several varieties of the condition. The commonest used name for it is parapsoriasis (the condition is not related to psoriasis). A better but less frequently used name is parakeratosis variegata, the name used by Unna, Santi and Pollitzer in the original description of the condition. Under one of these names this dermatosis is discussed in all of the modern dermatologic textbooks.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.
PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.
SOUTH DAKOTA: Pierre, Jan. 16. Director, Dr. H. R. Kenaston, Bonesteel.
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

POSTGRADUATE STUDY ABROAD

WILLIAM A. BRAMS, M.D.
CHICAGO

This article is written so that the physician contemplating a trip abroad for postgraduate work may know what courses he can get and how he can get them.

VIENNA

Vienna has been the center of postgraduate medical education for many years. There is in that city an organization of American physicians ready to help the American physician in the selection of courses and in finding board and lodgings. This organization is the American Medical Association of Vienna, which has headquarters at the Cafe zur Klinik, IX Wien, Spitalgasse and Lazarettstrasse, Austria. There are between 100 and 125 American physicians in this society, and a secretary who will give any information requested.

A list of desirable and moderately priced hotels, boarding houses (pensions) and private rooms without board is kept for the convenience of members and strangers. The various courses offered by the Viennese instructors and professors are posted, together with the hours, duration, cost, nature of the work and name of the teacher. Special courses may also be arranged for, since the organization is in close touch with the teaching bodies of the various hospitals and the university.

At the end of the course of study, a certificate is given by the faculty of the University of Vienna, stating the length of time and the subjects of each course taken. For this a small fee is charged.

Good room and board costs from $7 to $10 a week for one person. This does not include such extras as special taxes, small tips and special food. The total cost is much less than in the United States for similar accommodations. It is well to arrange beforehand, if possible, for quarters. This may be done through the medical association or through some friend.

The courses cost from $2 to $5 an hour. This means that the entire group of from two to ten or more agree to pay the teacher this sum, and the amount is equally divided among the members of the class. For example, each member of a course costing $5 an hour pays 50 cents an hour, if there are ten in the group. Private courses can also be arranged for in any subject. The average course covers from twenty to twenty-five hours, and this may be repeated as often as one likes; but private courses run in accordance with a previous arrangement. The American physician will find that, on the whole, the teachers and native population are quite hospitable and ready to help in many ways. There need be no fear on this point, as the average American is well liked and will get along very well.

While the housing and food situation for the native is a serious matter, the American, with the rate of exchange so much in his favor, will get almost anything he wishes in the way of food and lodging. There is a shortage in some things, such as milk, but for the average man the food will be quite satisfactory.

The usual method of procedure is to report at once to the office of the association and to ask the secretary, who speaks both English and German, for a list of courses or such other information as may be desired.

The eye, ear, nose and throat courses are excellent. The chief advantages are in the fundamental branches, but the opportunities for doing major operations are limited. This is because the government now limits the powers of the professors and instructors over the patients; and this, together with the large number of assistants who are also anxious to operate, tends to limit the actual practical work for the American physician.

Very good work may also be obtained in pathology, internal medicine, roentgenology, neurology, psychanalysis and dermatology. This list does not exhaust the subjects available, and the physician who is interested in going abroad to study will always find something of interest in this city.

BERLIN

Berlin also offers good opportunities for postgraduate work, especially in internal medicine, gastro-enterology, ear, nose and throat, and pathology.

Living conditions for the American are good, and he will find no difficulty in selecting suitable rooms and obtaining good food during his stay in this city. The prices for courses are about the same as in Vienna, and they are given in about the same way. Letters certifying to the work done in the various places in Berlin will be given by the teachers on the completion of the various courses. The American may expect to find that he will be requested to pay more for things than Germans or foreigners whose rate of money exchange is not so high as ours, but even then it is possible to live cheaper in Berlin than in the United States.

PARIS

Paris offers some very good opportunities for postgraduate work in neurology, internal medicine and skin diseases, and good work may be obtained in roentgenology and in tuberculosis. At the office of information of the School of Medicine, rue Ecole de Médecine, information can be obtained relative to courses and opportunities for work in the various hospitals and clinics. The secretary in charge speaks English, and is ready to furnish any information desired.

The living expenses in Paris are higher than in Vienna or Berlin, but the fees for the courses are much lower. The average course is from 100 to 200 francs per course for ach person, and at the clinics there are many opportunities for work for which there is no charge. Arrangements for such free work must be made with the head of the clinic. Certificates from the faculty of medicine of the University of Paris are given for courses or work completed at any of the hospitals or clinics.

While it is not absolutely necessary for the physician to be familiar with German or French, he will profit much more if he understands these languages, as many of the professors do not speak English. Some of the best courses in Vienna, Berlin and Paris are given in the native language, but courses in English may also be had in Vienna, especially in eye, ear, nose and throat and internal medicine. In Paris and Berlin there are few courses in English, so that some familiarity with the native language is important if the physician wishes to get the most out of his stay abroad.

LONDON

Information in regard to graduate courses in London can be obtained by writing to Mr. George E. MacLean, Director of the American University Union, 50 Russell Square, London, W. C. 1.

Book Notices

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By Anthony Bassler, M.D., F.A.C.P., Professor of Gastro-Enterology, New York Polyclinic Medical School and Hospital. Fifth edition. Cloth. Price, $8. Pp. 977, with 244 illustrations. Philadelphia: F. A. Davis Company, 1922.

The question arising in the mind of the reader who peruses the textbooks appearing from time to time is whether or not some of them are, so to speak, written to order. Is it really necessary in a book devoted to clinical gastro-enterology to devote almost one third of the volume to a discussion of facts that are to be obtained in any modern textbook of physiology and laboratory diagnosis? It seems that a clear, concise description of one technical procedure, the one of choice of the author, would leave the reader a much better impression than a maze of procedures, some simple, most of them too complicated for the average reader, who, as often as not, is confronted with the statement, after a particularly complicated technic has been described, that this method is not so good as another. At a time when there seems to be a growing feeling of distrust of the value of complicated methods of the examination of gastric contents, simplicity is the desideratum. Also, why devote twenty-two pages to urinalysis in a book on gastro-enterology? The author lays considerable importance on the work of Alvarez on peristalsis, describes in detail the methods of fractional analysis, and has enlarged the section on roentgenology of the gastro-intestinal tract. Bismuth, rather than barium, seems to be the choice of the author, as the latter is not mentioned. Credit must be given for the excellent presentation of the subject of anamnesis. In a domain of clinical medicine in which the history is the most important clue, if not the main diagnostic light in 75 per cent. or more of the cases, too much importance cannot be laid on this point. The section on ulcer is well written. It is unfortunate, however, that the author fails to consider cholecystitis, from which, at times, nothing is with more difficulty differentiated than ulcer. The diagnosis of gallstones is mentioned; chronic inflammation of the gallbladder, however, offers many more obstacles in diagnosis, on account of the similarity in symptoms, gastric content examination, and even roentgen-ray examination. The occurrence of hematemesis in 30 per cent. of all cases of ulcer seems to be very high. Formerly, hyperacidity and gastrosuccorrhea were considered entities. Now many of them are recognized either as ulcer or as the result of extragastric conditions. Careful observation of these would tend to lower the high percentage of hematemesis in ulcer. It is questionable whether roentgenologists will subscribe in their entirety to Dr. Bassler's statements; for example, that residue after six hours, acute fish-hook stomach, delayed pyloric opening and settling of the bismuth to the lower pole of the stomach are characteristic of gastric ulcer, and that gastric residue, dilatation of the cap, vigorous peristalsis, early free opening of the pylorus with early cleaning of the stomach, and lagging of bismuth in the duodenum are characteristic of duodenal ulcer. A happier statement would have been that these phenomena are observed at times in gastric and duodenal ulcer. In fact, they may occur in extragastric conditions, while duodenal stasis is far more frequent in gallbladder lesions. The subject of treatment is very well covered. It is not clear, however, why Dr. Bassler advises that transfusion in hemorrhage, certainly a life-saving procedure, should not be done too early. The subject of gastritis seems to be hereditary in character. Textbooks repeat that it is one of the commonest gastric ailments. Clinically, however, in the practice of a large number of gastro-enterologists, except as secondary to extragastric condition or carcinoma, it is a rarity. Dr. Bassler is one of the many who see numerous cases of gastritis. The rôle of the typhoid bacillus in the causation of gallstones and cholecystitis, while important, does not warrant the statement that "cholecystitis is mainly typhoidal in character." Rosenow has shown the importance of the streptococcus in the causation of cholecystitis. A few points in gastric physiology mentioned by Dr. Bassler do not seem to be in accord with modern physiology. He states that water and sugar solutions are absorbed by the stomach. McLeod, in "Physiology and Biochemistry in Modern Medicine" (1918, p. 456) states what appears to be the prevalent opinion, that water is not absorbed and that glucose only in concentrated solution is absorbed from the stomach. It might also be noted that, far from being impaired, the gastric emptying is often increased in conditions of achylia. Electricity finds many uses in the hands of the author, for the pain of chronic gastritis, for motor insufficiency, for chronic constipation and for psychic depression. It would be interesting to learn whether Dr. Bassler considers these as psychic aids or actual therapeutic measures, enhancing peristalsis as the case may be. There are numerous excellent illustrations, especially of pathologic specimens, and reproductions of roentgenograms, numerous diet lists, and prescriptions.

MOSQUITO ERADICATION. By W. E. Hardenburg. Cloth. Price, $3. Pp. 248, with 146 illustrations. New York: McGraw-Hill Book Company, Inc., 1922.

The public is beginning to realize that the average town can free itself from malaria and other mosquito-borne diseases for much less than it costs to endure them. Practical demonstrations, which the author recounts in this book, have been made at Roanoke Rapids, N. C., Electric Mills, Miss., and Crossett, Ark., by the St. Louis and Southwestern Railroad, and by the federal government during the mobilization of troops in the South. In a single year at Crossett before mosquito eradication was begun, physicians' calls for malaria totaled 2,502; the number of calls dropped the year anti-mosquito work started to 741, a difference of 1,761. Assuming that physicians made two calls to each case of malaria, the reduction effected by mosquito eradication work was 880 cases; and estimating the cost of each case at $15—wages lost, decreased efficiency, physicians' fees and medicine—the money value of the saving was $13,200. The actual cost of the antimosquito work for that year was $2,506.40. Such demonstrations of economy in malarial communities will increase when the public fully appreciates what has already been done. There is therefore a wide berth for a book which discusses how these campaigns are initiated, administered and carried on. The well known methods—draining, oiling, screening—of mosquito control are fully considered, and a chapter is devoted to the newer and less expensive method which employs certain fish. *Gambusia affinis* Baird and Gerard, a top minnow, is probably the best fish to use for general antimosquito work, within its habitat, of any of the North American fishes. It inhabits both fresh and brackish water, and in giving birth to its young—it is viviparous—it requires no special environment for depositing and hatching its eggs. One medium-sized female fish has been observed to eat as many as 165 mosquitos larvae in one day. The young fish begin eating a few hours after birth, and even at this stage will devour a mosquito larvae half as big as itself. The book is profusely illustrated.

LEÇONS DE PATHOLOGIE DIGESTIVE. (Cinquième Série). Par M. Loeper, Professeur agrégé à la Faculté de Médecine de Paris. Paper. Price, 15 francs net. Pp. 348, with 53 illustrations. Paris: Masson et Cie, 1922.

The lessons contained in the fifth series are so numerous and so interesting that properly to appreciate them requires much more experience with their subject matter than most American reviewers possess. The book reads somewhat like a romance, and even when the matter seems strangest it is most fascinating. It evokes skepticism and wonder; but the wonder is that of scientific inquiry, and as a result of reading the volume, one is much inclined to look for opportunities for testing the validity of much of its contents. Loeper, not carried away by undue enthusiasm for the powers of roentgenoscopy to elucidate all gastro-intestinal diseases, has gone deep into the chemistry, microscopy and clinical aspects of diseases of the stomach and intestine. Careful chemical tests are given; much stress is laid on pepsin, both in stomach juice and in urine; the relations between symptoms of gastro-intestinal disease and the nervous system are discussed. The theory that the vagus nerve absorbs toxins during the course of digestion is supported by some experimental data which on their face seem worth repetition. The

clinical pictures of lesser curvature ulcer, cancer and phlegmonous gastritis are painted in the best French style. The proteolytic ferments of cancer and their relation to cachexia, and the specific hemolysin and its relation to anemia form the subject matter of two most interesting chapters. Further details must be left to the reader.

Medicolegal

Power as to Quarantining Syphilitic Prostitutes

(Duncan v. City of Lexington et al. (Ky.), 244 S. W. R. 60)

The Court of Appeals of Kentucky, in affirming a judgment in favor of the defendants, says that the plaintiff asked for a writ of prohibition against the city, its health board and various health officers, to prevent the enforcement against her of a city ordinance providing for the quarantining of persons having syphilis. She asked also for a mandatory injunction ordering her release from quarantine. In the absence of proof, and under the pleadings, it must be taken as true that she was arrested on a warrant issued by the health officer on reasonable grounds for believing that she had syphilis, and was being detained, after an examination voluntarily submitted to which proved her infection, in the hospital quarters of the city jail with others of her own sex similarly affected; that in these quarters she was completely separated and removed from those confined in the jail under charge or conviction of crime; that the quarters were regularly designated as a quarantine area for such purpose, were properly equipped therefor, and in charge of competent physicians and nurses; and that she was detained therein in quarantine and for treatment only, and would be released as soon as the disease yielded to treatment and ceased to be communicable and a menace to the public health.

The principal, if not the sole, questions for decision were whether or not the city had the power to pass an ordinance providing for the arrest and detention in quarantine, in a properly equipped, managed and designated hospital, of known prostitutes afflicted with syphilis in an active, virulent, infectious and communicable form. That such power is inherent in a municipal corporation, even in the absence of constitutional or legislative provision with reference thereto, this court does not doubt; but this court need not decide or discuss that question, since Section 2059 of the Kentucky Statutes expressly authorizes the establishment of boards of health in cities such as Lexington, and Section 3058, which is a part of the charter of second-class cities, confers on the city council authority "to establish and enforce quarantine laws and regulations to prevent the introduction and spread of contagious diseases in the city, and within two miles thereof . . . to establish and maintain public hospitals within or without the city . . . to secure the general health of the inhabitants by any necessary measure . . . to constitute a board of health, and elect or appoint necessary health officers."

Construing these and several related statutes, this court held in *Hengehold* v. *City of Covington*, 108 Ky. 752, 57 S. W. 495, that cities of the second class are expressly authorized to empower the local health board to order the removal of persons infected with smallpox to a properly equipped pesthouse, and to enact "additional reasonable regulations to prevent the spread of epidemic diseases." By no course of reasoning can the fact that smallpox, an epidemic disease, was there involved differentiate that case from this one involving syphilis, a contagious disease, since the provisions of the charter of the city under which that conclusion was reached refer to contagious rather than epidemic diseases. Whether or not such power may be conferred on the health officer alone was also involved and decided in that case, the reason for holding that it could be so conferred being stated to be that "in such cases the necessity for immediate action is imperative, and it is not unreasonable to permit the health officer, or less than a quorum of the board, to order such removal in a case where it does not appear that the removal would endanger the patient's life." The court is, therefore, clearly of the opinion that the city had the power to authorize the health officer alone to cause the plaintiff's removal to and detention in the hospital quarters of the city jail especially prepared, equipped and designated as a quarantine area for persons afflicted as admittedly she was.

The court does not pass on the validity of the provision of the ordinance authorizing the health officer to quarantine persons "reasonably suspected of having" the diseases named, or on the legality of the plaintiff's arrest on orders of the health officer issued on information and belief merely, since it stood confessed on the record that she had syphilis in a contagious form, which was established by an examination voluntarily submitted to after her arrest.

Communication for Birth Report Not Privileged

(State v. Lassieur (Mo.), 242 S. W. R. 900)

The Supreme Court of Missouri, Division No. 2, says that complaint was made in this homicide case that a physician had been permitted to testify as to communications made to him by a woman witness. The state's counsel had elicited from the woman that she had become the mother of an illegitimate child shortly after the homicide, and on inquiry by the defendant's counsel she said that the deceased was the father. The prosecuting attorney sought to impeach this testimony by showing that the woman had told the physician whose testimony was objected to, and who had attended the woman at the birth of the child, that another than the deceased was the father, and that such information had been given to him, not to enable him to prescribe for her and to treat her, but for the purpose of gathering data for the state department of vital statistics. This communication was not privileged, and there was no error in permitting the physician to testify as stated.

Society Proceedings

WESTERN SURGICAL ASSOCIATION

Thirty-Second Annual Meeting, held at Minneapolis, Dec. 8 and 9, 1922

The President, DR. MILES F. PORTER, Indianapolis, in the Chair

Closure of Chronic Empyema Cavities by Use of Very Strong Surgical Solution of Chlorinated Soda and Gentian Violet

DR. W. D. GATCH, Indianapolis: Of seventeen cases of chronic empyema I have succeeded in closing the sinus in fourteen by the use of the so-called chemical method. Two patients died, but not from causes in any way connected with the treatment. One patient, with tuberculosis, still has a small sinus, but is able to work and earn a living. The other patients are well, at work, and practically without deformity. The treatment employed is devoid of danger, and is easily carried out. The strong surgical solution of chlorinated soda rapidly sterilizes the empyema cavity and destroys its thick wall at a rate which is not too rapid for safety. It also probably opens up pockets of pus not draining freely into the main cavity. Bronchial fistulas will close practically always when the empyema cavity with which they communicate is completely drained. Cavities infected with tuberculosis cannot be irrigated with this solution unless they have greatly thickened walls. Aqueous solutions of gentian violet can be used to destroy gram-positive organisms in these cavities. Empyema cavities can be sterilized and closed, and will be obliterated after a time. In such cases the thickened pleura will be absorbed completely. Reinfection of the contents of such a cavity does not necessarily require the reestablishment of drainage.

Surgical Significance of Mesenteric Lymphadenitis

DR. LEONARD FREEMAN, Denver: Mesenteric lymphadenitis is a common disease of children and young adults. It is characterized by enlargement of numerous lymph nodes,

usually small and soft; the infecting agent being, in many instances, the tubercle bacillus, presumably of the bovine type. The most prominent symptoms are: moderate pain, tenderness and rigidity, mostly in the right lower quadrant of the abdomen, often accompanied with slight fever, headaches, occasional colics, various gastro-intestinal symptoms, and loss of weight and energy. The disease is nearly always confused with appendicitis. Because surgeons are unfamiliar with the trouble, it is seldom recognized during operations. There is a strong tendency toward recovery, at least symptomatically, following laparotomy.

A New Pyelo-Ureteral Plastic Operation for Hydronephrosis

DR. ARNOLD SCHWYZER, St. Paul: The essential points of the method are: first, that the mucosa is not sutured, but brought into exact apposition. This reduces the danger of formation of concretion. Second, and more important, the slack and fold which is unavoidably produced by sliding the flap downward to the end of the slit in the ureter is taken care of at the upper end of the pelvic incisions, and the ureteropelvic junction does not become either kinked or puckered.

Pneumoventriculi Cerebri Following Fracture of Skull

DR. FRANK R. TEACHENOR, Kansas City, Mo.: As the presence of air in the cranial cavity or ventricles does not in itself cause any deleterious effects, treatment should be directed against its most common complications: (1) meningitis; (2) intracranial compression, and (3) its tendency in intracranial aerocele to the formation of cysts, by replacement of the absorbed air with fluid. Aseptic and antiseptic treatment of the wound of entrance of the air is of prime importance. Air in the ventricles is quite rapidly absorbed, and in the absence of indication for operative measures for the reduction of intracranial pressure, etc., may be ignored. In the cases of intracranial aerocele the air seems to be absorbed more slowly, and, on account of its tendency toward cyst formation, should be aspirated or drained. Drainage would also tend to lessen the danger of meningitis. The drainage or aspiration, if done, should be done early. The accompanying skull fracture and brain injury will usually indicate the type of treatment to be employed.

Endothelioma of Cheek

DR. EDMUND A. BABLER, St. Louis: These tumors are very hard to classify. They are all of mesoblastic origin, however, and belong in the broad group of sarcoma. A fairly large sized tumor of endothelial origin may present itself in the cheek without involving the skin or mucosa. The lymph glands of the neck may become involved fairly early and quite extensively, as in my case. The growth became sufficiently large to interfere with mastication and speech. The involvement of the lymph glands in our cases would indicate that quite a few of these cases undergo or are of malignant character.

Cancer and Benign Growths of the Female Breast

DR. DONALD MACRAE, JR., Council Bluffs, Iowa: I am opposed to the use of radium, the roentgen ray, cancer paste, or any other means of treatment except the knife. The earlier the cancer is removed by radical surgery, the greater the hope of permanent cure. A movable tumor within the mammary gland is probably not malignant. However, this examination alone should not satisfy the average surgeon. An experienced pathologist should be on hand to make frozen sections for immediate determination. A good surgeon with a poor pathologist should never attempt removal of questionable neoplasms from the human breast.

Perforated Gastric and Duodenal Ulcer

DR. A. C. STOKES, Omaha: The four most common symptoms indicating perforation of a gastric or duodenal ulcer in order of their percentage of value are: (1) sudden severe pain; (2) rigidity, boardlike and general; (3) abdominal tenderness, often localized, occasionally general, and (4) symptoms of collapse or shock. The symptoms of ulcer perforating in the anterior side of the lesser curvature of the stomach are likely to be more classical than those of perforating ulcer of the duodenum, and perforations in the posterior wall are least of all classic. These posterior perforations are often missed entirely until symptoms of a subphrenic abscess appears, or general infection in the lesser or greater peritoneal sac is well established. The treatment most in vogue is simple closure of the ulcer, with gastroenterostomy reserved for cases of pyloric stenosis, perigastric adhesions and large indurating ulcers. This should be attempted only at the time of the perforation, when the patient is in the best of condition, and within twelve hours after the perforation. Simple closure of a perforated gastric or duodenal ulcer cures the ulcer in about 80 per cent. of cases. The mortality following operation for perforated gastric ulcer increases in direct proportion to the number of hours following the perforation at which the operation is performed. All operations for perforated gastric or duodenal ulcer should be followed by proper medical treatment for considerable periods of time after the operation is performed.

Cholecystectomy Without Drainage

DR. W. A. COVENTRY, Duluth, Minn.: In virtually every case of cholecystectomy, one can with proper technic close the gallbladder incision without drainage. If this is done, the postoperative pain, especially passing up into the shoulder blade and scapula, the postoperative nausea and vomiting, postoperative temperature, postoperative tympany, and finally the end-result, will be very much more smooth, more pleasant to the patient and to the surgeon, and far more gratifying in all respects.

Appendicitis in Women

DR. A. W. ABBOTT, Minneapolis: An investigation was made to see how often pelvic peritonitis existed after appendicitis in women. In more than 1,000 cases that probably might meet these requirements, only forty-two were found that were absolutely representative. Ninety per cent. of these women had pelvic adhesions of varying extent. Comparatively little disease was found in the tubes and ovaries beyond adhesions. The analysis showed (1) that appendicitis is very commonly followed by pelvic pathology; (2) that appendicitis is a direct menace to the child-bearing capacity of women, and (3) this may explain some otherwise obscure cases of sterility. Admitting these conclusions, an early removal of appendicitis as the primary source of infection is urgently recommended.

Acute (Puerperal) Inversion of the Uterus

DR. EDWARD EVANS, La Crosse, Wis.: Inversion of the puerperal uterus is rare. Since the appearance of Jones' paper in 1913, I have been able to collect fifty-six cases. A relaxed uterus is the prime predisposing cause; improper delivery of the placenta is the most common active cause. In these fifty-six cases, however, the placenta was adherent in seventeen after the inversion occurred. Probably fundal attachment of the placenta is the greatest factor, and since fundal attachment is very rare, this would account for the rarity of inversion. Of the fifty-six cases, twenty-eight were reduced manually, five by Aveling's repositor, two spontaneously, four by laparotomy, five by vaginal hysterectomy, three by anterior colpohysterotomy, and three by posterior colpohysterotomy. In cases of complete inversion, it is probable that manual reposition can rarely succeed, and laparotomy should be the operation of choice. If the cervical ring can be felt in the vagina, then manual reduction should succeed very often, especially when the case is recognized early. Failing in this, anterior or posterior colpohysterotomy have about an equal number of advocates.

Preservation of the Facial Nerve During Complete Removal of Parotid Gland for Malignant Tumor

DRS. A. W. ADSON and W. O. OTT, Rochester, Minn.: Early diagnosis and early and complete enucleation are advised for encapsulated tumors of the parotid gland; but, if metastasis has occurred to the gland, radical removal should be carried out with preservation of the facial nerve. This radical procedure should be performed whenever there is doubt concerning metastasis from the encapsulated tumor into the parotid gland. As long as the tumor remains encap-

sulated, it is not highly malignant. In the operation for removing the parotid gland, the inframandibular branch of the seventh nerve is first exposed through an incision which extends from a point 3 cm. above and posterior to the lower tip of the mastoid, and curves downward 2 cm. below the border of the mandible to a point 4 cm. anterior to the angle of the jaw. The nerve branch is then traced backward until the temporal and cervical divisions of the seventh nerve are exposed. Then an additional incision is made down from the zygoma and just in front of the ear above the parotid, and this incision is connected with the one previously described. The section of the glands should be carried downward in the line of the incision from the zygoma, and should be deep enough to expose the mandible and the temporal border of the posterior masseter muscle. The dissection must be kept close to the cartilage of the ear and back of the parotid gland, care being taken not to injure the temporal branch of the facial nerve. By this method the two surgical fields can be connected. After this, the temporal and cervical divisions of the facial nerve are dissected away from the parotid. If this dissection is complete, the skin with the parotid may be elevated, leaving the peripheral branches of the facial muscles undisturbed. The incision is then carried forward sufficiently to elevate all of the parotid, dividing and ligating Stenson's duct. After this, the gland is removed from the skin. The next step is to lift the seventh nerve and dissect out the deep lobe of the parotid gland behind the mandible and mesial to the seventh nerve. The wound is closed with a subareolar stitch of catgut and with a dermal stitch of horsehair.

Significance of Right-Sided Abdominal Pain

DR. ROBERT C. COFFEY, Portland, Ore.: The chain of pathologic changes that can develop as a result of right-sided ptosis or nonfixation of the right colon may be stated as: (1) nonfixation of the cecum and ascending colon; (2) high fixation of the appendix and its mesentery well up under the liver; (3) Fixation of the hepatic flexure to the front surface of the kidney, with acquired membranous development to strengthen the support; (4) acquired membranes extending from the parietal peritoneum across to the mobile colon; (5) acquired membranes along the undersurface of the first part of the transverse mesocolon, for the extra support of this part of the colon; (6) one band extending along the omentum from the colon to the undersurface of the gallbladder; (7) another band extending from the colon across the duodenum, making extra fixation, and (8) a midline ptosis probably due to dilatation of the stomach secondary to dilatation of the duodenum, which was produced by duodenal-arterial mesenteric ileus. These conditions, when taken with the history, make a complete clinical and pathologic picture of right-sided ptosis, and offer a perfect explanation of the significance of marked right-sided abdominal pain that is not based on an organic lesion.

Radical Operations on the Stomach with Special Reference to Mobilization of the Lesser Curvature

DR. WILLIAM J. MAYO, Rochester, Minn.: The lesser curvature is the key of the anatomic lock which prevents mobilization of the stomach so necessary for operations of the partial gastrectomy type. If the gastric artery is tied early and the gastrohepatic omentum is separated from the liver, by traction on the distal stump of the gastric artery, the fat, the glands, and the unyielding structures of the lesser curvature of the stomach can be dissected out, the arteries being tied as they are encountered. This enables the lesser curvature to be elongated remarkably, and in the majority of cases in which the carcinomatous growth or ulcer is situated in the pyloric end or in the lesser curvature distal to the incisura, excision of the diseased portion of the stomach is possible, to be followed by direct union between the stomach and the duodenum. When the cut end of the stomach is more than twice the diameter of the cut end of the duodenum, it should be narrowed by proper suturing of the lesser curvature. The gastroduodenal union is accomplished by taking two stitches on the gastric side to one on the duodenal side, which produces a remarkably smooth anastomosis. Following the gastroduodenal union, the stomach is caught by two catgut sutures placed in the anterior wall sufficiently proximal to the anastomosis, so that when it is attached to the suspensory ligament of the liver it will carry the gastroduodenal anastomosis to the right of the spine, taking the tension from the suture line and improving gastric drainage.

Value of Pyelography in Abdominal Diagnosis

DR. DANIEL N. EISENDRATH, Chicago: Thorough examination of the upper urinary tract in the differential diagnosis of cases presenting symptoms of a subacute or chronic character is very necessary. Pyelography and ureterography are of greater value than the employment of the shadowgraph catheter alone. In cases in which pain is the principal symptom, a pyelogram or ureterogram will at times reveal the presence of changes in the pelvic outline as the result of pyelitis or ureteritis, or of a hydronephrosis or hydro-ureter due to obstruction, such as kinking from an abnormally movable kidney, calculus, stricture or an abnormal vessel to the lower pole. The differentiation of shadows due to gallstones from those due to renal calculi has been greatly aided by pyelography. The presence of a normal pyelogram in cases of abdominal enlargements makes it possible to exclude the kidney as the seat of the tumor. Changes in the outline of the pyelogram enable the surgeon to recognize kidney tumors at a comparatively early period, and the displacement of the ureters in retroperitoneal tumors is shown. Pyelography is of value in the recognition of renal anomalies which may be the seat of pathologic changes and giving rise to symptoms in locations in which the kidney was not normally found.

Peritoneal Drainage

DR. CUTHBERT POWELL, Denver: Drainage, so-called, of the peritoneal cavity does not remove infection, nor does it allow the escape of more than a negligible amount of fluid present in the general peritoneal cavity. On the other hand, the presence and pressure of drains undoubtedly militate against the recovery of the patient. Except in definitely localized and walled off abscesses, and possibly in those now fortunately rare late cases of general suppurative peritonitis, when the whole cavity is filled with pus under pressure, drainage is contraindicated. The surgeon's duty has been performed when the focus of infection has been removed and the abdomen closed in as short a time as is possible, consistent with a proper technic and with a minimum of trauma and exposure of the peritoneum. The use of gauze packs, towels and the like, and rough and unnecessary handling of the viscera all do an amount of harm which no form of drain will overcome. I wish to plead most strongly for a reversal of Tait's old dictum and advise that, when in doubt, one should not drain the peritoneal cavity.

The Value of the Roentgen-Ray Examination in the Early Diagnosis of Postoperative Ileus

DR. JAMES T. CASE, Battle Creek, Mich.: In the treatment of postoperative ileus, the greatest single factor in saving life is the earliest possible diagnosis of the fact of obstruction. In 1910 I began the use of the roentgen ray in cases of suspected ileus, especially when surgical intervention was not clearly indicated. No dressings are removed. No opaque medium need be administered. The whole procedure requires not more than five minutes. The film is at once developed, and it may be studied immediately after being dipped in the fixing solution. It will reveal at once whether there is any gas distention within the abdomen, and if so, whether the distention occurs within the stomach or within the large or small intestine. If doubt still exists as to the fact of the obstruction, a small amount of barium sulphate, say one-half ounce, may be administered by mouth in a little water, and another film made five or six hours later.

Sliding Hernias of the Cecum and Appendix in Children

DR. VERNON C. DAVID, Chicago: In three cases of sliding hernia of the cecum in children coming under my observation, there were no adhesions between the bowel and the testicle, and no gross evidence of a plica vascularis was present. The cecum and appendix were incorporated in the sac of the hernias; in fact, they were part and parcel of the sac.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

December, 1922, **164**, No. 609

*Infectious Mononucleosis (Glandular Fever); Report of Ten Cases. W. T. Longcope, Baltimore.—p. 781.

*Relations of Hypertension to Cardiorenal Diseases. N. B. Foster, New York.—p. 808.

*Vital Capacity in Health and Heart Disease. J. H. Pratt, Boston.—p. 819.

*Treatment of Lobar Pneumonia by Serum Free Solution of Pneumococcus Antibodies. L. A. Conner, New York.—p. 832.

*Pregnancy Complicating Heart Disease. H. E. B. Pardee, New York.—p. 847.

Mechanism of Elimination of Bacteria from Respiratory Tract. A. L. Bloomfield, Baltimore.—p. 854.

*Two Hundred Syphilitic Patients Whose Chief Complaint was "Stomach Trouble"; Interpretative Analysis of Diagnosis of Syphilis in Consultant Medical Practice. J. H. Stokes and P. W. Brown, Rochester, Minn.—p. 867.

Safeguarding of Tonsil and Adenoid Operation. G. Fetterolf, Philadelphia.—p. 884.

Clinical Observations and Research Work. J. B. Deaver and S. P. Reimann, Philadelphia.—p. 901.

Infectious Mononucleosis.—Ten cases of infectious mononucleosis are described by Longcope. The relation of this disease to glandular fever is discussed. The uniform character of this febrile disease and the association of an enlargement of the lymph nodes with a striking increase of mononuclear cells of abnormal type in the blood serve to differentiate the condition from other acute infectious diseases. If the disease is an entity, as it appears to be, the specific cause is unknown. It resembles most closely acute leukemia but may be differentiated by many characteristics. The disease is of short duration and recovery is the rule.

Relation of Hypertension to Cardiorenal Disease.—Foster asserts that adequate evidence for the belief that hypertension is a predominant factor in the causation of arteriosclerosis cannot be found. Even though some types of nephritis may possibly be of vascular origin, their genesis cannot be traced through arteriosclerosis to hypertension. But while there is no direct interdependence of these organic changes, there are many facts suggestive of the same causative agent producing both organic changes. Present knowledge seems to indicate in a most general way that organic change in the kidneys and vessels may arise in diverse ways, the least indefinite of these being through intoxications of infectious origin. There are suggestions that intoxications resulting from abnormal metabolism may have a similar effect. These intoxications produce early only functional disorders chiefly referable to the nervous system. When persistent, they induce organic changes affecting the blood vessels and kidneys.

Vital Capacity in Health and Heart Disease.—The effect of age on vital capacity was studied by Pratt in 100 men who showed no evidence of disease of the heart or other organs at the time of their examination. Pratt compared his findings in these cases with those of 100 persons, both men and women who had organic heart disease. The mean vital capacity of the 100 persons with normal hearts was between 3,500 and 4,000 c.c., while the mean for those with abnormal hearts was between 1,500 and 2,000 c.c. No one with a healthy heart had a vital capacity below 1,500 c.c., while 18 per cent. of those with heart disease had a vital capacity above 4,500 c.c., and only five of the 100 had a vital capacity above 4,000 c.c.; 11 per cent. of those with healthy hearts had a vital capacity above 4,500 c.c. Seventy-seven of the 100 persons with abnormal hearts had cardiac insufficiency of the congestive type. Dyspnea on exertion or edema was present. Sixteen presented no evidence of cardiac weakness. Pratt has for five years followed the variations in the vital capacity of all cases of heart disease that have been under his care. When cardiac insufficiency of the congestive type has existed, the vital capacity has followed closely the change in the clinical condition. It has proved to be a good index of the amount of reserve power possessed by the heart.

Treatment of Pneumonia by Serum Free Solution of Pneumococcus Antibodies.—The effect of treatment by the intravenous injection of a serum free solution of antibodies of the three fixed types of pneumococci was studied by Conner in a series of 116 cases of lobar pneumonia in adults, without any attempt at selection. The death rate was 14.6 per cent. In thirteen cases the exciting organism was a streptococcus or the Friedländer bacillus. The mortality rate for these patients was 46.1 per cent. Of the remaining 103 cases, ninety were proved to be due to the pneumococcus and the others, because of the low death rate among them, were regarded as probable pneumococcus cases. For these 103 patients the death rate was 10.6 per cent. Among the ninety proved pneumococcus cases, Type IV pneumonias were conspicuous both by their high incidence (54.4 per cent.) and by their very low mortality (4.1 per cent.). The figures suggest that the treatment had some real curative value, with respect to Type I and Type II cases at least, and this impression is supported by the fact that in a considerable proportion in which treatment could be instituted early, the progress of the disease was stopped short, and by the further fact that recoveries among the cases associated with positive blood cultures were more frequent than is usual under ordinary methods of treatment. The nature of the therapeutic effects of the solution is obscure in view of the apparent effectiveness of the treatment in Type IV cases. The difficulties in the way of explaining the beneficial results of the treatment on the score of some purely nonspecific action are discussed. The method is free from the disadvantages incident to the injection of large amounts of serum. It has, however, one serious defect in that the immediate reactions following the injections are often severe and occasionally are dangerous. In one patient death seemed to be directly traceable to the severity of this reaction. The method is believed to represent a step forward in the direction of a satisfactory form of rational treatment but further clinical study is needed and some means of controlling the severity of the immediate reactions to the injections must be found before it can safely be introduced into general use.

Pregnancy Complicating Heart Disease.—It is not Pardee's feeling that abortion is often indicated for women with heart disease. Most of them will go through very well indeed, but it is the physician's urgent duty to find some means of picking out those cases that will not go through without developing serious symptoms. Cardiac failure is the thing feared in all cases, and prognosis and treatment should be guided by the presence or absence of symptoms or signs of cardiac failure and by the degree of severity of these when present. The pathologic condition is of much less importance than the physiologic reactions. With proper observation and treatment severe cardiac failure should not occur during pregnancy, for if medical treatment does not ward it off, then intervention is indicated. Even during labor its occurrence should be rare with careful observation and a promptly performed forceps or cesarean section if severe failure seems imminent. Operation should not be withheld at any stage, even though the signs of failure are slight, if they are seen to be growing progressively worse under proper medical treatment. It is better to operate when the failure is moderate than to have to do so when it is severe.

Stomach Trouble and Syphilis.—Of 200 syphilitic patients who complained of stomach trouble, 70 per cent. had neurosyphilis. Twenty patients (10 per cent.) had organic lesions (syphilitic or nonsyphilitic) of the gastro-intestinal tract, nine (5 per cent.) had lesions of the heart, and in only 4 per cent. was it a true syphilis of the stomach. Stokes and Brown suggest that the seat of the lesion in patients with gastric crises and negative spinal fluid examinations is in the vagus, the abdominal ganglia and the sympathetic system. Fifty per cent. of 122 patients had hypo-acidity and 38 per cent. were normal. Hyperacidity was rare. Of 132 patients having roentgen-ray examinations, the findings in 84 per cent. were negative and in only 6 per cent. were there definite or doubtful syphilitic lesions. Treatment for syphilis underlying a gastric complaint must be directed according to the special indications in the case, and must not be merely general. Different methods will be required for underlying syphilis of

the nervous system, the stomach, or the heart, for example. The authors observed striking symptomatic improvement in certain cases of gastric and duodenal ulcer in neurosyphilitic patients in whom the roentgen ray after treatment showed the lesion itself to be still present. The spinal fluid examination stands out from this investigation as a procedure of the highest importance, outranking the serum Wassermann reaction in diagnostic syphilology as applied to internal medicine.

American Journal of Obstetrics and Gynecology, St. Louis

November, 1922, **4**, No. 5

*Life History of Ovarian Hematomas (Hemorrhagic Cysts) of Endometrial (Müllerian) Type. J. A. Sampson, Albany, N. Y.—p. 451.
Some Phases of Bovine Genital Infections of Possible Interest to Medical Profession. W. L. Williams, Ithaca, N. Y.—p. 513.
*Treatment of Puerperal Sepsis by Use of Mercurochrome Intravenously: Report of Animal Experimentation in Chemical Disinfection of Blood. E. B. Piper, Philadelphia.—p. 532.
*Use of Sutures as Tractors in Vaginal Operation for Prolapsus. T. S. Cullen, Baltimore.—p. 544.
*Precancerous Conditions of Cervix Uteri. R. R. Huggins, Pittsburgh.—p. 552.

Life History of Ovarian Hematomas of Endometrial Type.—Next to leiomyoma of the uterus, the pathologic conditions arising from the implantation of epithelium which escapes from the fallopian tubes into the peritoneal cavity Sampson believes probably furnish the most frequent pelvic lesions found at operation in women between the ages of 30 and the menopause. He has encountered thirty-seven cases with these lesions in 170 abdominal operations for pelvic disease in women between 30 and 50 (20 per cent. plus); and six additional cases, three in women under 30 and three in women over 50. One of the latter had not reached the menopause. The epithelium primarily giving rise to these implantations is derived from or through the fimbriated ends of the fallopian tubes. It lodges either on the surface of the ovaries or on the peritoneal surface of the other pelvic structures, especially those in the culdesac, or on both the ovaries and the pelvic peritoneum, and develops into glands or tubules (adenomas) of endometrial (mullerian) type. Sampson discusses this subject in great detail and many excellent illustrations are appended. Sampson believes further that the implantation adenomas in the ovary derived from tubal and uterine epithelium are the source of many ovarian cysts and carcinomas.

Mercurochrome Treatment of Puerperal Sepsis.—A solution of mercurochrome given intravenously in the proper dosage, Piper says, appears, in some cases, to be of great value in the treatment of puerperal sepsis and to have no deleterious effects. All cases of puerperal septicemia are so serious and so frequently fatal that heroic measures are justified. The dosage of the drug is an important factor. Piper gave about 25 c.c. of a 1 per cent. solution of mercurochrome in distilled water per hundred pounds of body weight. The reaction that occurs is almost routinely the same. Within the first hour there may be vomiting; in less than two hours a definite diarrhea will commence. In the first six hours there will probably be a marked chill with a rise in temperature up to 105 F. Following this chill there will be a gradual decrease in temperature with a proportionate pulse rate decrease until the temperature reaches subnormal, gradually rising to normal or slightly above where it should stay from twenty-four to forty-eight hours. The diarrhea will continue over a day or so and may require treatment.

Vaginal Operation for Prolapse.—Cullen describes a method which includes amputation of the cervix and raising up the bladder so that it will rest on the fundus of the uterus.

Precancerous Condition of Cervix of Uterus.—Huggins insists that every woman who has borne children and who has reached the age of 40 should be examined and if disease of the cervix is found it should be treated. This treatment may be palliative but often it should consist in the removal of the diseased tissue. While a cervix may present but slight evidence of disease, this may be sufficient in the presence of susceptibility and an acid medium to cause cancer. It is important that every practitioner acquaint himself with what a normal cervix is, so that he may appreciate the deviations from the normal and cure the cancer before it starts.

Archives of Dermatology and Syphilology, Chicago

December, 1922, **6**, No. 6

Prevalence of Yaws (Frambesia Tropica) in United States. H. Fox, New York.—p. 657.
*Erosio Interdigitalis Blastomycetica. J. H. Mitchell, Chicago.—p. 675.
*Malignant Endotheliomas with Cutaneous Involvement. G. J. Busman, Rochester, Minn.—p. 680.
Melanoblastoma of Nail Bed (Melanotic Whitlow). A. E. Hertzler, Halstead, Kan.—p. 701.
*Kolmer Modification of Wassermann Reaction. R. A. Kilduffe, Pittsburgh.—p. 709.
Specificity of Cholesterinized Antigens in Serologic Diagnosis of Syphilis. R. A. Kilduffe, Pittsburgh.—p. 730.
*Experience with Kolmer Quantitative Complement Fixation Test for Syphilis. L. J. Palmer and W. E. Gibb, Seattle.—p. 739.
Studies in Chemotherapy of Fungus Infections. I. Fungistatic and Fungicidal Activity of Various Dyes and Medicaments. J. F. Schamberg and J. A. Kolmer, Philadelphia.—p. 746.
Inoculation, Autoinoculation and Complement Fixation Tests in Pompholyx (Tilbury Fox). S. S. Greenbaum, Philadelphia.—p. 757.
Treatment of Phytosis of Feet. M. B. Hutchins, Atlanta, Ga.—p. 761.
Comparative Study of Kahn and Wassermann Reactions for Syphilis. S. Ide and G. J. Smith, Ann Arbor, Mich.—p. 770.

Saccharomycetic Interdigital Erosion.—In Mitchell's opinion the term erosio interdigitalis blastomycetica is confusing as it leads to the supposition that the causative organism is the well known blastomyces, with which it has nothing to do. He holds that substitution of "saccharomycetica" for "blastomycetica" would be advisable. The chronicity of the disorder, the fixed location of the lesion, the absence of vesication, the resistance to therapy and the occurrence of the disorder on the hands of washerwomen, make the dermatosis worthy of consideration as an entity. Whether or not the yeast is the causative organism, Mitchell does not say, as he has not carried out inoculative experiments, for the reasons given in the foregoing.

Malignant Endotheliomas.—Three cases are reported by Busman of tumors whose cellular elements present the histologic characteristics of endothelial cells. The clinical course of the lesions, in general, is that of tumors of slow growth, often developing at sites of trauma. Metastasis does not appear until late, when the tumor has reached considerable size. The tumors in all cases exhibit a marked hemorrhagic tendency. Clinically, the lesions must be distinguished from syphilis, carcinoma, sarcoma, sporotrichosis and the infectious granulomas. The histologic structure of the tumors is that of an undifferentiated polymorphic cell type of growth presenting a whorl arrangement of the cells with the formation of elongated strands and narrow trabeculae. There is definite evidence of an attempt to differentiate into vascular structures. A constant feature is the occurrence of vacuoles in the cytoplasm of practically all cells. Treatment consists of radical surgical removal of the original process followed by use of the roentgen ray or radium application to the site of the original lesion and to all probable areas of metastasis.

Kolmer Modification of Wassermann Test.—The results of tests on 1,014 serums examined in parallel series by a routine method of complement fixation and by the Kolmer modification of the Wassermann reaction are recorded by Kilduffe and the findings tabulated and discussed. The Kolmer method is favored because the results with this method are in close agreement with the clinical findings in a high percentage of cases. It is a strictly quantitative method and as such better adapted to the study of treated syphilis. It appears to be eminently worthy to supercede and supplant the methods now in common use. It presents by far the most acceptable technic yet proposed for adoption as a standard method and as such should be subjected to extensive, exhaustive and impartial trial and study. In early primary syphilis the Kolmer modification gives earlier and stronger results than routine methods.

Id.—Palmer and Gibb also favored the Kolmer quantitative complement fixation test for syphilis.

Archives of Neurology and Psychiatry, Chicago

December, 1922, **8**, No. 6

Recent Studies on Spirochetes in General Paralysis. C. B. Dunlap, Ward's Island, N. Y.—p. 589.
*Anatomic Study of Faisceau De Turck in Relation to Temporal Lobe. J. H. W. Rhein, Philadelphia.—p. 608.
Tuberous Sclerosis. Report of Case. W. Freeman, Philadelphia.—p. 614.

*Disturbances of Respiratory Rhythm in Children. Sequel to Epidemic Encephalitis. H. L. Parker, Rochester, Minn.—p. 630.
Psychopathology and Organic Disease. S. E. Jelliffe, New York.—p. 639.
Postencephalitic Deformities of Motion. S. P. Goodhart, New York.—p. 652.
Pyramidal and Extrapyramidal System Involvement in Epidemic Encephalitis. S. Brock and I. Margaretten, New York.—p. 660.
*Striocerebellar Tremor. Study of Nature and Localization of Combined Form of Organic Tremor. J. R. Hunt, New York.—p. 664.

Study of Faisceau de Turck.—A tumor measuring 5 cm. anteroposteriorly and 4 cm. transversely was found by Rhein occupying the posterior two thirds of the first and second temporal convolutions. Microscopic examination disclosed that the cortex and white matter of the superior and middle temporal gyri were totally destroyed by the tumor, and the brain tissue anterior and posterior to these regions to the extent of about 2.5 cm. was implicated by a cellular infiltration consisting of cells similar to those found in the tumor proper. A study of the serial sections of the brain internal to the tumor and the corresponding levels on the opposite side failed to reveal any evidence of degeneration on either side. The faisceau de Turck, at the point where it appears in th retrolenticular region, was intact. The foot of the peduncle stained uniformly and showed an undegenerated faisceau de Turck in this region. Rhein is convinced that if the temporal lobe is the origin of fibers which degenerate in a descending direction, consisting of the faisceau de Turck, they may come from the posterior third of the third temporal convolution.

Disturbance of Respiratory Rhythm Following Epidemic Encephalitis.—The histories of eight patients, seven of whom were children, suffering from a disturbance of the respiratory rhythm are cited by Parker. While four of the patients had had an infectious illness worthy of the diagnosis of epidemic encephalitis, the remaining patients dated their illnesses from an infectious episode or febrile illness. In seven patients the onset occurred during the first three months of 1920. The main features of the clinical picture in these cases were paroxysmal stretching, breath holding, grunting and forced noisy respirations. In others there was constant dyspnea, associated, in one case, with posture. The average duration of the illness was seventeen months before examination at the clinic, and in a few cases there was an appreciable gap between the initial illness and the appearance of the prominent symptoms. The persistency of the symptoms contrasted with the peculiar nature of the disease which was more manifest by night than by day. It was relatively unaffected by various forms of therapy. Combined with the peculiar paroxysmal respiratory attacks were changes in character. The patients were noisy, disobedient, and passionate, whereas formerly they had been well behaved. There was marked insomnia with inversion of the sleep rhythm in the seven children and abnormal drowsiness in the one adult.

Nature of Striocerebellar Tremor.—Hunt postulates the existence of a combined form of organic tremor caused by the involvement of separate neural mechanisms. There are recognized combined forms of palsy, central and peripheral, pallidal and pyramidal, as well as combined forms of sensory disturbances due to simultaneous involvement of more than one system. In this category Hunt would place the striocerebellar tremor.

Arkansas Medical Society Journal, Little Rock

December, 1922, **19**, No. 7

Significance of Blood Pressure Readings. A. W. Strauss, Little Rock.—p. 121.
Early Recognition of Carcinoma of Cervix. D. Gann, Jr., Little Rock.—p. 127.
Roentgen-Ray Treatment of Diseased Tonsil and Adenoids. J. D. Southard, Fort Smith.—p. 130.

Boston Medical and Surgical Journal

Dec. 14, 1922, **187**, No. 24

Mental Hygiene Campaign as Seen by an Outside Observer. B. Crothers, Boston.—p. 861.
Illustrations of Differential Diagnosis of Some Torpid States: Therapeutic Import. T. A. Williams, Washington, D. C.—p. 867.
Congenital Malformation of Intestine—Atresia and Imperforate Anus. Report of Twenty-Seven Cases. W. S. Quinland, Boston.—p. 870.
*Treatment of Diabetic Gangrene. H. F. Root, Boston.—p. 875.
*Hydatid Cyst of Lung. Report of Two Cases. G. M. Balboni, Boston.—p. 879.
Studies in Pancreatic Function. Enzyme Concentration of Duodenal Contents After Ingestion of Pure Foodstuffs and Food Mixtures by Normal Men. C. W. McClure and A. S. Wetmore, Boston.—p. 882.

Treatment of Diabetic Gangrene.—Seven cases of diabetic gangrene with successful operative treatment are reported by Root.

Hydatid Cyst of Lung.—Since 1917 two cases of hydatid cysts of the lung have been observed in the outpatient department of the Massachusetts General Hospital; one a unilateral cyst of the right lung, the other one of multiple cysts of both lungs. These two patients came principally for cough and bloody sputum. One of these cases is of considerable interest on account of the presence of multiple echinococcus cysts in both lungs with a probable cyst of the kidney.

Dec. 21, 1922, **187**, No. 25

*Studies in Pancreatic Function. Enzyme Concentration of Duodenal Contents in Pathologic Conditions Involving Pancreas, Liver and Stomach. C. W. McClure and C. M. Jones, Boston.—p. 909.
Congenital Obliteration of Bile Ducts and Congenital Biliary Cirrhosis of Liver. J. K. Gordon, Boston.—p. 923.
Problem of Tuberculous Suspect. J. B. Hawes, Boston.—p. 928.
Education of Trained Nurse. C. Frothingham, Boston.—p. 930.

Studies in Pancreatic Function.—Abnormalities in enzymatic activities of duodenal contents, demonstrated by the methods and procedures used in the work here reported, were found by McClure and Jones: (*a*) in the presence of some organic lesion involving the pancreas primarily or secondarily; or (*b*) when clinical, operative or necropsy findings indicated the possibility of derangement of the external secretory function of the pancreas. It seems fair to the authors to assume, therefore, that such abnormalities show pathologic involvement of the pancreas or its ducts, and that the involvement of the pancreas may be mechanical or functional in nature. If this assumption is correct, then it is justifiable to conclude that estimation of enzymatic activities of duodenal contents furnishes an index to the activity of the external secretory function of the pancreas. In achylia gastrica and pernicious anemia no abnormalities in the activity of the external secretory function of the pancreas were demonstrable, as measured by the enzyme concentration of duodenal contents. These findings suggest that the presence of hydrochloric acid is not necessary in order to stimulate normal pancreatic secretory activity. Under the experimental conditions used, enzymatic activity was not demonstrably affected by the presence or apparent absence of bile in the duodenal contents. The external secretory function of the pancreas, as measured by the enzyme concentration of duodenal contents, was found to be much depressed in chronic pancreatitis. Acute pancreatic necrosis, cancer of the head of the pancreas and lesions obstructing the pancreatic duct were accompanied by marked abnormalities in enzymatic activities of duodenal contents. Obstructive lesions caused great diminution, while acute necrosis usually caused dissociation in enzymatic activities. Estimation of enzymatic activities of duodenal contents furnished findings of value in the differential diagnosis between benign and malignant lesions, causing obstructive jaundice. Dissociation of enzymatic activities of duodenal contents are interpreted as showing derangement of the external secretory function of the pancreas. Acute and chronic cholecystitis and infectious (catarrhal) jaundice were accompanied by dissociation of enzymatic activities of duodenal contents. This finding suggests that there was associated derangement of the external secretory function of the pancreas.

Canadian Medical Association Journal, Toronto

November, 1922, **12**, No. 11

Chronic Brain Injuries: Pathology and Treatment. W. Sharpe, New York.—p. 761.
*Surgical Therapy and Net Results in Gallbladder Disease. R. R. Graham, Toronto.—p. 767.
*Cancer of Uterine Cervix: Summary of Results Obtained by Various Methods of Treatment. J. W. Ross, Rochester, Minn.—p. 772.
Asthma in Children. A. Brown, Toronto.—p. 780.
Merits of Intraperitoneal Injections in Infants. T. D. McGregor, St. John, N. B.—p. 787.
*Septic Absorption in Diffuse Septic Peritonitis. W. A. Costain, Toronto.—p. 789.

Postoperative Management. R. V. B. Shier, Toronto.—p. 793.
Local Anesthesia as Applied to Operations on Rectum and Anus. A. J. Grant, London.—p. 795.
Plastic Surgery of the Head and Neck. F. Risdon, Toronto.—p. 797.
Heliotherapy in Surgical Tuberculosis. R. I. Harris, Toronto.—p. 799.
Public Health Organizations. J. Roberts, Hamilton.—p. 805.
Osteo-Arthritis. W. A. Gardner, Winnipeg.—p. 808.
Lactic Acid Milk Feeding in Marasmus. R. R. Struthers, Montreal.—p. 812.

Results of Gallbladder Surgery.—In a series of ninety-one cases analyzed by Graham, there were seven deaths. In the chronic cholecystitis group without stone formation, there were fifty-two cases and one death; that one death occurring a year later as the result of a recurrence of a duodenal ulceration, for which a gastro-enterostomy had to be performed. The other six deaths occurred, with one exception, when the disease had progressed to the formation of stone, and in that instance there was an associated intestinal obstruction in a patient five months' pregnant, who miscarried seventy-two hours after operation. In view of the inefficiency of other forms of therapy in controlling sequels and relieving symptoms of gallbladder disease, Graham urges that surgical therapy should be instituted, preferably in the early stage of the disease prior to the onset of complications, at which time the mortality is practically negligible; and further that such surgical therapy, judiciously applied, will cure 66 per cent. and improve 34 per cent. of patients who survive the procedure.

Results of Treatment of Cancer of Uterine Cervix.—From Ross' study of 475 cases in which various forms of therapy were employed, it would seem that in very early cases of cancer of the uterine cervix treatment by surgery alone gives good results. Surgery in combination with radium gives slightly better results than surgery alone. In operable but not early cases treatment by surgery alone or combined with radium gives the best results. Radium alone or Percy cautery alone are of equal value and both less efficient. If radium is not available, Percy cautery should be used. In cases considered inoperable because of extension to the vagina surgery gives the best results and radium is disappointing. In inoperable cases radium, alone or in combination with cautery or surgery, is the only effective agent. In advanced cases radium is superior to all other methods but not curative. The incidence of fistula is higher with the Percy cautery than with any other method.

Septic Absorption in Diffuse Septic Peritonitis.—Judged from Costain's experimental observations, it would seem that the first procedure, after a diagnosis of diffuse septic peritonitis has been made, would be to establish a thoracic duct fistula, and at a later date such other operative measures as the situation warranted. The operation could be done with greater facility in the human than in the dog, as the duct is more accessible and, being larger, could be drained more successfully. The emaciation could be combated by blood infusions or transfusions. By checking the septic absorption, those distressing complications which are met so frequently in peritonitis would be largely overcome. The conclusion to be drawn from this experimentation is that in diffuse septic peritonitis death travels through the thoracic duct.

Delaware State Medical Journal, Wilmington

July, August, September, 1922, **13**, No. 3

Doctors and Welfare Agencies. A. Robin.—p. 21.
Labyrinthine Irritability Associated with Focal Infections. W. F. Bonner, Wilmington.—p. 28.

Indiana State Medical Association Journal, Ft. Wayne

December, 1922, **15**, No. 12

Trend of Neurologic Surgery. C. H. Frazier, Philadelphia.—p. 405.
Endocrinology in Its Medical Aspects. G. W. McCaskey, Fort Wayne.—p. 409.
Neurologic Phase of Endocrinology. C. C. Bitler, Newcastle.—p. 414.
Surgical Aspects of Endocrinology. W. D. Gatch, Indianapolis.—p. 423.
Epidemic Jaundice. S. C. Waters, Middletown.—p. 430.

Journal of Industrial Hygiene, Boston

December, 1922, **4**, No. [illegible]

Recent Investigation on Atmospheric Conditions in Industry. H. M. Vernon, London.—p. 315.
Preparation of Hatters' Fur: Chemical Study of Carrotting Process. J. R. Johnson.—p. 325.
Miners' Nystagmus from Point of View of Workmen's Compensation Act. T. L. Llewellyn, London.—p. 335.
Effects of Exposure to Arsenic Trichlorid on Health. S. Delepine.—p. 346.

Journal of Nervous and Mental Disease, New York

December, 1922, **56**, No. 6

Case of Pons Hemorrhage (Type Foville). G. B. Hassin, H. Isaacs and M. Cottle, Chicago.—p. 553.
*Thrombotic Cortical Amaurosis. H. Mella, Boston.—p. 563.
*Mental Symptom Complex Following Cranial Trauma. E. E. Hadley, Washington, D. C.—p. 567.
Psychosis with Encephalitis and Cerebrospinal Fluid Findings. B. Lemchen, Chicago.—p. 591.

Thrombotic Cortical Amaurosis.—Mella relates a case of sudden loss of vision which was diagnosed "toxic amblyopia" but on necropsy proved to be due to a bilateral lesion in the occipital lobe. The case appears to controvert, in part at least, the precept of John Hunter on the distribution of arteries. He held that they were distributed without relation to function. Wherever sections were made in the occipital lobes the blood vessels stood out prominently and were characteristic of an advanced arteriosclerosis. The thickening of media and the narrowing of the arterial lumen were so great that only a scant flow of blood could reach the parts supplied, resulting in degeneration of the calcarine area. The symmetrical position of the lesions makes the cause of blindness obvious. No lesions were encountered on examination of the optic tracts anterior to the occipital lobes. Beyond the general arteriosclerosis, the brain, cerebellum, pons and medulla appeared normal. This pathological picture proves the earlier diagnosis of toxic amblyopia to have been erroneous; furthermore it presents a condition which Mella says should be considered in all cases of amblyopia before making such vague diagnoses as "retrobulbar neuritis" and "toxic amblyopia" in the absence of fundus pathology. The case tends to corroborate the views of Shellshear, who believes that the arteries of the forebrain have a functional distribution and should not only be studied from the anatomic point of view, but in relation to their functional significance which is probably of paramount importance.

Traumatic Psychosis or Neurosis Not a Clinical Entity.—It is Hadley's belief that there is no clinical entity which may properly be called a traumatic psychosis or neurosis. However, there has been found, following severe injury to the brain, an alteration in the personality, which may be described as the "posttraumatic constitution."

Journal of Metabolic Research, Morristown, N. J.

July, 1922, **2**, No. 1

*Influence of Glands with Internal Secretions on Respiratory Exchange. VI. Effect of Suprarenal Insufficiency (by Removal) in Rabbits. D. Marine and E. J. Baumann, New York.—p. 1.
*Pancreatic Diabetes in Dog. VI. Influence of Pancreatic Extracts without Aid of Alkali on Metabolism of Depancreatized Animal. J. R. Murlin, B. Kramer and J. E. Sweet, New York.—p. 19.
Modified Haldane Open Circuit Apparatus for Measuring Respiratory Exchange in New Born Babies and Also in Rabbits and Cats. D. Marine, New York.—p. 29.
*High Fat Diets in Diabetes. F. S. Leclerco, Morristown, N. J.—p. 39.
Metabolism in Chloroform Poisoning. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 57.
*Influence of Benzyl Benzoate on Nitrogenous Metabolism. G. T. Pack and F. P. Underhill, New Haven, Conn.—p. 73.
Influence on Metabolism of Some Purin and Pyrimidin Bases. F. P. Underhill and H. F. Farrell, New Haven, Conn.—p. 107.
Vitamin of Cod Liver Oils. I. Potency of Crude Cod Liver Oil, Pressed Cod Liver Oil and Cod Liver Stearin. A. D. Holmes, Boston.—p. 113.

Influence of Endocrins on Respiratory Exchange.—A prolonged absolute rise in heat production has been obtained by Marine and Baumann in 82 per cent. of thirty-three rabbits from which both suprarenal glands were completely removed, and in 40 per cent. of fifteen rabbits whose suprarenal function was crippled by freezing. The period of increased heat production may last from a few days to several months—the longest period in which increased thermogenesis has been followed in an individual rabbit was twenty-three weeks. It is concluded that the increased thermogenesis is, in part, dependent on the increased rate of discharge of the iodin

containing hormone from the thyroid. The ability of the thyroid to store iodin or to produce this hormone is not impaired after suprarenal injury. Infection, trauma, nerve injury, muscular movement and diet are not regarded as being essential factors in the increased thermogenesis following suprarenal injury.

Influence of Pancreas Extracts on Depancreatized Animal.—Additional proof is presented by Murlin et al. of the presence, in pancreatic tissue, of a substance capable of restoring to the diabetic animal the ability to utilize glucose. Although these experiments were made during 1913 to 1916, they are presented to confirm the previously recorded observations of Banting and Best. The nature of the active principle is yet to be determined.

High Fat Diet in Diabetes.—Observations on three patients are reported by Leclerco showing the effect of increasing the diet with fat beyond the caloric tolerance. Injury of the assimilation is manifested by a rise of blood sugar, which is generally slow but in the severest cases may be rapid. These cases illustrate the well known fact that in fasting or undernutrition, even emaciated patients derive their energy chiefly from body fat. None of the facts, therefore, warrant an assumption that high fat diets will suppress hyperglycemia or glycosuria by means of a marked reduction of protein catabolism. The statement that severe cases of diabetes which are resistant to undernutrition or fasting can be cleared up by high fat diets, in the author's opinion is contrary to fact. The attempt to prevent undernutrition by giving fat or any other kind of food prevents also the benefits of undernutrition.

Influence of Benzyl Benzoate on Nitrogenous Metabolism.—Judging from experimental investigations in dogs, made by Pack and Underhill, the therapeutic dose of benzyl benzoate for human beings is probably insufficient to disturb the normal nitrogenous metabolism.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

December, 1922, **20**, No. 5

Effect of Epinephrin on Excised Strips of Frogs' Digestive Tracts. C. M. Gruber, St. Louis.—p. 321.
Action of Morphin on Vomiting Center in Dog. C. D. Leake, Madison, Wis.—p. 359.
Naturally Nephropathic Animals. Ability of Alkaline Solution to Influence Amount of Stainable Lipoid Material that Appears in Kidney Following Use of General Anesthetic. W. deB. MacNider, Chapel Hills, N. C.—p. 365.
Picrotoxin Hyperglycemia. A. L. Tatum, Chicago.—p. 385.
*Action of Quinin on Sugar Mobilization with Its Bearing on Question of Glycogenolysis. A. L. Tatum and R. A. Cutting, Chicago.—p. 393.

Action of Quinin on Sugar Mobilization.—Tatum and Cutting assert that quinin properly administered is a glycogenolytic agent. Quinin hyperglycemia is the result of a central nervous system disturbance which leads by way of the splanchnic nerves and the normally innervated adrenal glands to lysis of glycogen. In the absence of adrenal innervation quinin produces in most instances hypoglycemia, most likely by virtue of a peripheral depression of glycogenolysis. Quinin produced, in most instances examined, a rise in alkaline reserve capacity of whole blood along with hyperglycemia in normals and hypoglycemia in animals with denervated suprarenals. Neither quinin nor epinephrin hyperglycemia can, on the basis of available evidences, be considered to be dependent on acidosis.

Kansas Medical Society Journal, Topeka

December, 1922, **22**, No. 12

Bronchoscopy. E. M. Seydell, Wichita.—p. 347.
Anxiety and Fear, Normal and Abnormal. L. C. Bishop, Wichita.—p. 351.
Practical Mental Hygiene. K. A. Menninger, Topeka.—p. 355.

Michigan State Medical Society Journal, Grand Rapids

December, 1922, **21**, No. 12

Further Experience with Two Flap Low Incision Cesarean Section. A. C. Beck, Brooklyn.—p. 489.
Heart Murmurs. J. L. Chester, Detroit.—p. 495.
*Ophthalmia Neonatorum. G. M. Waldeck, Detroit.—p. 501.
*Present Status of Surgical Treatment of Uterine Prolapse. F. C. Witter, Detroit.—p. 505.
*Method of Treatment of Pyloric Stenosis at University of Michigan Hospital. L. A. Hoag, Ann Arbor.—p. 511.

Ophthalmia Neonatorum.—This paper is based on a series of 233 cases of ophthalmia neonatorum. The gonococcus was found in 55 per cent. of cases. Corneal involvement was present in twenty-nine cases. In twelve cases but one eye was affected, in seventeen cases both eyes were affected. Corneal damage was done in 12 per cent. There was no loss of vision on leaving the hospital in 201 out of 205 cases, or 98.04 per cent. In three cases, or 1.42 per cent., there was loss of vision in only one eye, and in one case, or 0.48 per cent., total blindess resulted. The only prophylactic means employed were care and cleanliness in handling and instillation of argyrol three or four times daily in the unaffected eye. Glass protection shields were not used.

Treatment of Uterine Prolapse.—Witter urges adaptation of the method to the patient rather than the patient to the method.

Medical Treatment of Pyloric Stenosis.—The following medical treatment is conducted at the University of Michigan Hospital in a severe case of pyloric stenosis or spasm: If the infant is already dehydrated because of fluid loss due to vomiting, and the symptoms are urgent, it is given parenteral fluid as long as conditions demand it. Usually subcutaneous or intraperitoneal saline solution is given. A stomach tube is passed and the gastric contents secured for analysis and measurement. A thorough lavage with plain water is then done and the formula given through the tube. The formula usually consists of a boiled skimmed milk and water and dextrin-maltose combination, to which may be added 3 per cent. of cereal. The strength and quantity is suited to the caloric requirements of a normal infant of the same age and weight. The lavage is repeated before every feeding at first. Atropin is added to each bottle in a quantity sufficient to keep just short of the limit of tolerance, unless distinct improvement is secured before the upper limit is reached. As the symptoms decrease the number of lavages is gradually reduced, then the dosage of atropin is carefully decreased as the infant's condition warrants. The formula is also regulated from time to time so that the retained amount continues to fully cover the caloric requirements of the patient.

Missouri State Medical Association Journal, St. Louis

December, 1922, **19**, No. 12

Some Clinical Features in Diagnosis and Treatment of Heart Failure. C. J. Hunt, Kansas City.—p. 483.
*Working Hypothesis as to Cause and Cure of Pernicious Anemia. M. Pitzman, St. Louis.—p. 487.
*Leukoderma Improved by Quartz Light. N. Toomey, St. Louis.—p. 491.
Congenital Defect of Anterior Abdominal Wall and Cryptorchism. J. G. Sheldon and E. P. Heller, Kansas City.—p. 493.
Mental Disorder as Factor in High Cost of Living. F. M. Barnes, Jr., St. Louis.—p. 495.
Observations in Prostatic Urethra. C. H. Suddarth, Excelsior Springs.—p. 498.
Three Cases of Foreign Body in Bladder. J. E. Dewey, Springfield.—p. 499.
Imperforate Urinary Meatus. E. E. Whiteside, Elvins.—p. 499.
A B C Movement for Hospitalization in Counties of Missouri. F. G. Nifong, Columbia.—p. 500.

Cause and Cure of Pernicious Anemia.—Beyond the blood destruction and regeneration, Pitzman asserts, the one factor practically universal in all cases of pernicious anemia is a marked hypochlorohydria or absolute absence of gastric secretion. The evidence in the literature is summarized, both for and against the propostion that this severe and prolonged hyposecretion eventually results in pernicious anemia. The anatomico-physiologic basis is given on which it is maintained that the present dosage and timing of hydrochloric acid with pepsin is pathetically deficient—hence no reason to expect real results, either in theory or in practice. A theory is advanced which traces both pernicious anemia and many cases of gastric carcinoma back to a primary atrophy of the gastric tubules, including suggestions for prophylaxis.

Quartz Light in Treatment of Leukoderma.—Toomey has secured improvement in two cases of leukoderma by means of ultraviolet radiation. Complete pigmentation of some of the areas was obtained. More or less pigmentation was developed in all of the areas, the degree of pigmentation in

some areas effecting a very acceptable cosmetic improvement. The quartz light pigmentation of the achromic areas has persisted for more than six months with no apparent loss of the acquired pigment. The leukodermic areas that responded with complete or nearly complete pigmentation as a result of the use of the quartz light were the ones situated on the face. Achromic areas on covered surfaces of the body responded to the light with only a partial degree of pigmentation, the degree of pigmentation in an area being approximately in inverse ratio with the degree to which it had been habitually kept protected from the sun's rays.

Nebraska State Medical Journal, Norfolk

December, 1922, **7**, No. 12

Treatment of Accessory Nasal Sinus Disease in Children. H. B. Lemere, Omaha.—p. 401.
Newer Views in Treatment of Syphilitic Optic Atrophy. S. R. Gifford, Omaha.—p. 408.
Radical Mastoid Operation. E. B. Brooks, Lincoln.—p. 413.
Relation of Anaphylaxis to Practice of Eye, Ear, Nose and Throat. H. F. Morrison, Lincoln.—p. 416.
Sphenopalatine Ganglion Neurosis. C. T. Uren, Omaha.—p. 421.
Eye and Its Relations to Internal Medicine. W. L. Albin, Lincoln.—p. 424.
Acute Otitis Media in Children. C. G. Baird, Beatrice.—p. 428.
Treatment of Frontal Sinus Disease and Complications. A. G. Lueschen, Columbus.—p. 430.
Injuries to Eyeball; Report of Cases. J. B. McPherson, Hastings.—p. 434.

Northwest Medicine, Seattle

December, 1922, **21**, No. 12

*Graded Extrapleural Thoracoplasty in Chronic Pulmonary Suppuration with Special Reference to Diffuse Bronchiectasis. C. A. Hedblom, Rochester, Minn.—p. 423.
Personal Experience with Artificial Pneumothorax. G. B. Kalb, Monrovia, Calif.—p. 429.
Relationship Between Clinical Laboratory and Physician. T. A. Flood, Salt Lake City.—p. 433.

Graded Extrapleural Thoracoplasty for Bronchiectasis.—The immediate results so far achieved in the treatment of six cases of typical bronchiectasis by graded thoracoplasty, Hedblom says, seem to be distinctly encouraging. There was no mortality; marked immediate improvement occurred in all cases. The relative safety of the graded operation, the comparative freedom from pain, the amount of collapse of the chest wall, and the relatively slight deformity commend the operation. There was a reduction of sputum on the average of from 50 to 90 per cent., or even more, with an associated gain in weight and general improvement. What the ultimate results will be remains to be determined. Judging from those so far obtained, as well as from the experience of others, it would seem probable that the final results will be unsatisfactory in some cases. For such cases pneumonectomy is contemplated. The indication for thoracoplasty in chronic abscess in this series of cases was the thick walled multilocular nature of the abscess and an indeterminate amount of associated bronchiectasis, central location of the chronic abscess with the incident increased risk of hemorrhage in case of drainage, and pulmonary suppuration of the indeterminate type. From the results obtained the impression is gained that patients with chronic abscess associated with bronchiectasis are less suitable for thoracoplasty, both on account of the greater tendency to recurrence and the proneness to retention of secretion and consequent extension of the suppuration. If the patients are young and in good general condition, they may prove suitable for pneumonectomy; otherwise, a graded thoracoplasty, possibly combined with thoractomy drainage, would seem to offer the best prospect for marked relief, if not cure.

Ohio State Medical Association Journal, Columbus

December, 1922, **18**, No. 12

Classification and Surgical Treatment of Chronic Diarrhea-Colitis. S. G. Gant, New York.—p. 813.
Some Phases of Intestinal Obstruction. W. D. Haines, Cincinnati.—p. 819.
Typhoid Fever, Its Treatment and Mortality. H. Jones, Circleville.—p. 822.
Pyelitis in Puerperium. A. Rogers, Columbus.—p. 825.
Feeding of Infants Based on Recent Experience. S. D. Giffen, Toledo.—p. 829.
Treatment of Disease of Accessory Nasal Sinuses. H. I. Lillie, Rochester, Minn.—p. 834.
Physical Intranasal Conditions Favoring Involvement of Nasal Accessory Sinuses. M. Metzenbaum, Cleveland.—p. 837.
*So-Called Angioneurotic Eruptions. A. Ravogli, Cincinnati.—p. 839.
*Parkinson's Disease as Sequel to Lethargic Encephalitis. H. H. Drysdale, Cleveland.—p. 842.

Rôle of Anaphylaxis in Angioneurotic Eruptions.—According to Ravogli anaphylaxis plays a leading rôle in so-called angioneurotic eruptions. Toxins from faulty metabolism get into the circulation and are carried to the periphery where they irritate the sensory and trophic nerve filament, causing itching, hyperaemia, and cutaneous exudation. Urticaria, angioneurotic edema, dermatitis herpetiformis, pruritis and recurrent eczema are leading types of vasomotor anaphylactic skin eruptions. Protein sensitization is very useful for diagnosis and in the treatment of these distressing conditions. The treatment, which has given Ravogli the best results has been the administration of calomel in small doses from 1/6 to 1/3 grain, together with sodium bicarbonate, repeated two or three times a day. Calomel has a specific action against the yeast fungi which remain in the gastro-enteric canal, and against the colon bacilli. At the same time the use of magnesium sulphate with sodium sulphate is beneficial, removing excretory substances from the system. Sodium bicarbonate and potassium citrate restore the alkalinity of the blood and remove acidosis. In obstinate cases the administration of phenyl salicylate together with sodium bicarbonate as an intestinal antiseptic, has given good results, and obstinate cases of chronic urticaria, and of dermatitis herpetiformis have yielded to this treatment.

Parkinson's Disease as Sequel to Lethargic Encephalitis.—The twenty-three cases reported by Drysdale apparently disprove the former conception that paralysis agitans is practically confined to the presenile period of life as the majority of the patients were less than 40 years of age and two were under 20. Postencephalitic Parkinsonian syndrome seems to pursue a much more rapid course than the usual type of the disease and the prodromal or developmental period is undoubtedly shorter. Several of these cases were unmistakably atypical. One patient died after eight months invalidism and during the progress of the malady, the possibility of a basilar meningitis was entertained. Unfortunately, necropsy was denied. The evidence serves to indicate that infections are active in no small degree. All of the patients gave a history of having been victims of sleeping sickness so-called, but in a few this information lacked adequate confirmation. It is, therefore, possible that their former illness was some other form of encephalitis or a meningitis, as conditions of this character have been erroneously confounded with lethargic encephalitis. The treatment of this new problem has been most disheartening. Hyoscin hydrobromate was of value in suppressing the tremors but nothing has proved helpful in combating the ravages of the disease.

Philippine Journal of Science, Manila

November, 1922, **21**, No. 5

Philippine Parasites of Family Trigonalidae. S. A. Rohwer.—p. 417.
Malayan Aphididae. R. Takahashi.—p. 421.
Chrysomeliden der Philippinen, III. V. J. Weise.—p. 423.
Flora of Southeastern China. E. D. Merrill.—p. 491.

Public Health Journal, Toronto

November, 1922, **13**, No. 11

Variolae and Morbilli Four Centuries Ago. W. R. Riddell.—p. 481.
Venereal Disease Situation in Canada. J. J. Heagerty.—p. 485
Place of Sanitary Engineer in Public Health. F. A. Dallyn.—p. 497.
School Child and Nutrition. H. R. Y. Reid.—p. 503.
Agglutination Phenomena with Diphtheria Antitoxin. P. J. Moloney and L. O. Hanna.—p. 508.

U. S. Naval Medical Bulletin, Wahington, D. C.

November, 1922, **17**, No. 5

History of United States Naval Hospital, Fort Lyon, Colo., and Activities of Naval Medical Corps in Development of Hospital for Sanatorium Purposes. F. W. F. Wieber.—p. 745.
Kolmer Modification of Wassermann Test. J. Harper.—p. 757.
Medicinal Garden. G. W. Calver.—p. 763.
Functions and Organization of Medical Corps Units Serving with Marine Corps in Field. S. N. Raynor.—p. 771.
Hygiene of Submersibles. C. M. Belli.—p. 785.
Classification, Diagnosis and Treatment of Bone Tumors. J. W. White.—p. 802.
Sterilization of Glass Syringes. H. E. Harvey.—p. 810.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

November, 1922, No. 268

Employment of Electrical Methods in Diagnosis and Prognosis of Paralysis Due to Lesions of Peripheral Nerves. G. Bourguignon.—p. 161.
Treatment of Contracted Fingers and of Some Cases of Cataract by Mild High Frequency Currents and Violet Rays. C. E. Shelly.—p. 177.
Backache and Referred Pain. E. F. Cyriax.—p. 183.
Treatment of Scoliosis. W. J. Broad.—p. 187.
Backache and Referred Pain. I. Gunzburg.—p. 188.
Reeducation of Muscles. P. Kouindjy.—p. 189.

Brain, London

October, 1922, **45**, No. 2

Reflexes of Defense. P. J. Babinski.—p. 149.
Study of Sherrington Decerebrate Animal in Chronic as Well as Acute Condition. H. C. Bazett and W. G. Penfield.—p. 185.
Pathogenesis of Subacute Combined Degeneration of Spinal Cord, with Special Reference to Its Connection with Addison's (Pernicious) Anemia, Achlorhydria and Intestinal Infection. A. F. Hurst and J. R. Bell.—p. 266.
Meningiomas (Dural Endotheliomas): Their Source, and Favored Seats of Origin. H. Cushing.—p. 282.

British Medical Journal, London

Dec. 9, 1922, **2**, No. 3232

*Effect of Cessation of Irritant on Development of Experimental Tar Cancer. A. Leitch.—p. 1101.
*Production of Cancer by Specific Forms of Irritation. J. A. Murray.—p. 1103.
*Paraffin Cancer and Its Experimental Production. A. Leitch.—p. 1104.
*Experimental Production of Cancer by Arsenic. A. Leitch and E. L. Kennaway.—p. 1107.
Occupation Cancer of Paraffin and Oil Workers of Scottish Shale Oil Industry. A. Scott.—p. 1108.
Epitheliomatous Ulceration in Industry. T. M. Legge.—p. 1110.
Roentgen-Ray Cancer. C. Rowntree.—p. 1111.
*Experimental Soot Cancer. R. D. Passey.—p. 1112.
Adder Bite. T. Oliver—p. 1114.
*Simple Method of Treating Club Foot. A. S. B. Bankart.—p. 1115.
*Pneumococcal Influenza. O. F. T. East.—p. 1117.
*Case of Bronchobiliary Fistula. A. G. Yates.—p. 1117.
*Restoration of Round Ligaments. A. J. Nyulasy.—p. 1118.
Possible Case of Bronchopulmonary Spirochetosis. J. F. Johnston.—p. 1119.
Eserin Poisoning Produced by Intravenous Injection: Recovery. B. L. Slater.—p. 1120.
Colloidal Gold for Lange Test. T. Grey.—p. 1120.

Effect of Cessation of Irritant on Tar Cancer.—The experiments conducted by Leitch clearly show that when tar has been applied repeatedly for a certain length of time and the irritant is then removed, tumors, even carcinoma, may make their appearance at a later date. It must be that the irritation produces in the normal cells subjected to its influence some profound change, undetectable by the microscope, so that they eventually proliferate in an unrestrained and in a harmful fashion. Leitch believes that it may be concluded that the neoplastic response to an irritant is a slow tissue reaction that exhibits no defensive property and that subserves no useful function. The internal changes in the cells in the earliest stages are unknown.

Experimental Cancer Produced by Irritation.—Murray conducted experiments in which unaltered tar, alcoholic extract, and ethereal extract of tar were applied to separate areas of the dorsal skin of each of sixty normal mice. After four months, when the first tumor appeared, fifty mice survived, and of these twenty-five presented malignant new growths. Twenty-two animals bore carcinoma at the site painted with the ethereal extract; twelve had carcinoma at the site treated with the original tar, and two only had carcinoma at the site treated with the alcoholic extract. In one of these animals no tumors appeared at the sites treated with the apparently much more efficacious whole tar and ether extract.

Experimental Paraffin Cancer.—By the frequent application of crude shale oils containing paraffins Leitch has thus produced tumor formations in thirty out of seventy-four mice which survived the treatment for more than 100 days. Owing to the increasing death rate after that time it is impossible to say how many more would have developed tumors had they lived long enough, or how many of the simple tumors produced would have gone on to malignancy. One animal resisted for more than nine months. The disappearance of some of the simple papillomas corresponds with what is found in man. In many of the older papillomas considerable difficulty has been encountered in forming a judgment of their benignity or malignancy. Experimental evidence shows that it takes at least ten years of exposure to paraffin oils to produce cancer in man—which corresponds to actual experience.

Experimental Arsenic Cancer.—In the hope of determining experimentally if arsenic might act as a tumor producing, or carcinogenic, agent, Leitch and Kenneway fed a series of rats and mice on bread containing arsenic. The experiments were unsuccessful. Then potassium arsenite was applied locally. In three months' time two thirds of the mice had died, but a growing tumor was produced in one of the survivors. Microscopic examination of a section through the tumor showed it to be a typical squamous cell carcinoma. There were also metastases in the lung in this animal.

Experimental Soot Cancer.—Cancer was produced experimentally by Passey by means of soot mixed with quicklime. In animals fed a fat soluble vitamin poor diet the tumors appeared a little earlier.

Treatment of Club Foot.—The apparent deformity having first been fully corrected in the ordinary way by tenotomy, manipulation, and splinting, Bankart secures permanent fixation of the foot in a corrected position by means of an artificial ligament attached to the fifth metatarsal bone and to the outer side of the tibia.

Pneumococcal Influenza.—East discusses an epidemic of cases influenzal in type in which the pneumococcus was the organism found in overwhelming predominance on examination of throat swabs by direct smear and culture in every case. *Micrococcus catarrhalis* and streptococci also occurred, but were in the minority, and *Bacillus influenzae* was not seen. Pneumococci were also the cause of such complications as occurred. The symptoms varied from a slight headache, sore throat, and fever to very severe prostration.

Bronchobiliary Fistula.—Yates cites a case in which an abscess of the liver appears to have penetrated the diaphragm and discharged itself into the lung, and at the same time to have effected a communication with one of the larger bile passages, with the result that pure bile continued to escape long after all pus had disappeared.

Restoration of Round Ligaments.—The operation devised by Nyulasy consists in splitting the anterior leaf of the broad ligament parallel to the round ligament, between the round ligament and the bladder, undermining the opening, and closing it by a purse string suture, the outer limit of the suture being in the vicinity of the internal abdominal ring and the inner limit being toward the uterine cornu. The immediate effect is to bring the uterus into anteversion, and the undue laxity of the anterior leaf of the broad ligament is reduced.

Indian Medical Gazette, Calcutta

November, 1922, **57**, No. 11

Therapeutics of Cinchona Alkaloids. R. N. Chopra.—p. 401.
Analysis of Clinical Picture in Kala-Azar. L. E. Napier.—p. 406.
Production and Pharmacologic Action of Khesari Amine. H. W. Acton and R. N. Chopra.—p. 412.
Care of Women and Children in Indian Industries. D. F. Curjel.—p. 415.
Case of Salivary Calculus. G. D. Mall.—p. 418.
Case of Bronchomoniliasis. M. J. Parmanand.—p. 418.
Case of Oxyuris Vermicularis in Vermiform Appendix. W. L. Harnett.—p. 419.

Journal of Laryngology and Otology, Edinburgh

December, 1922, **37**, No. 12

Benign Forms of Otogenic Meningitis. H. Mygind.—p. 597.
Relations of Optic and Vidian Nerves to Sphenoid Sinus. G. Young.—p. 613.

Lancet, London

Dec. 9, 1922, **2**, No. 24

Forty Years in History of Tuberculosis. P. Kidd.—p. 1207.
*Relation of Calcified Abdominal Glands to Urinary Surgery. J. T Walker.—p. 1213.

Case of Paroxysmal Hemoglobinuria. L. S. Hannema and J. R. Rytma.—p. 1217.
*Variations of Blood Pressure Under Intravenous Injections of Phenolic Compounds (Arsenobenzol, Arsphenamin, Neo-Arsphenamin, etc.). M. Pomaret.—p. 1220.
*Isolation and Preservation of Tubercle Bacilli by Means of Glycerin. C. C. Twort.—p. 1221.
*Urea Content of Cerebrospinal Fluid. J. S. Anderson.—p. 1221.
Case of Club-Hand. A. Mourad.—p. 1222.

Calcified Abdominal Glands.—In eleven of forty-two cases of calcified abdominal glands Walker operated and removed the glands. In ten of these cases the operation was planned for the removal of the glands, and in one case a calculus was removed from the kidney and the gland was uncovered in stripping up the ascending colon. It was removed at the same time. The result of the operation in these cases was the disappearance of the pain, whether it had the form of constant aching or recurrent attacks of colic. Walker's view in regard to adults by whom the calcareous end stage of tabes mesenterica has been reached, is that operation is only justifiable in those cases in which symptoms are severe and are proved to be directly due to the calcified glands. These cases can be selected only after investigation by thorough modern methods of examination.

Variations of Blood Pressure Caused by Phenolic Compounds.—The experiments reported on by Pomaret show that phenomena of shock under intravenous injections of arsphenamin and neo-arsphenamin are phenolic shocks, resembling the shocks registered after intravenous injections of more simple phenolic compounds, such as trinitrophenol and phenol. The shock is the more profound according as the solution injected is more acid, and consequently more precipitating (flocculating) with blood plasma. Intramuscular injections of these compounds do not produce in dogs the cardiovascular troubles registered.

Preservation of Tubercle Bacilli by Means of Glycerin.—The method employed by Twort is as follows: A large platinum loopful of sputum or other material from which acid fast bacilli are to be isolated, is inoculated into tubes containing 1 c.c. of pure glycerin, 75 per cent., 50 per cent., and 25 per cent. glycerin in physiologic solution of sodium chlorid. After remaining for twenty-four hours at room temperature, cultures are made on Dorset's 4 per cent. glycerin egg medium or Petroff's medium. If contaminations are numerous in all the tubes, further cultures are made on the third day. Sometimes all contaminating bacteria are destroyed after remaining twenty-four hours in glycerin, but more frequently they are not all destroyed, and the tubes may be very heavily contaminated. It may be necessary to revert to a third culture after a week; but the tubercle bacilli themselves do not appear to survive for longer than from three to four weeks. So far, by the use of glycerin, Twort has not once failed to isolate, with extreme ease, the tubercle bacillus from any specimens in which the bacillus has been demonstrated microscopically. Specimens, if left sufficiently long in glycerin have uniformly given pure cultures of the tubercle bacillus, even though originally containing very numerous contaminating micro-organisms.

Urea Content of Cerebrospinal Fluid Has Diagnostic Value.—In an obscure case Anderson succeeded in making a diagnosis of uremia by an examination of the cerebrospinal fluid which contained 310 gm. urea per hundred cubic centimeters.

Medical Journal of Australia, Sydney

Oct. 28, 1922, **2**, No. 18

Flies and Infectious Disease. L. Harrison.—p. 489.
Biology of House Fly. T. H. Johnston.—p. 494.
*Habronemic Conjunctivitis in Man Producing a "Bung Eye." L. B. Bull.—p. 499.
Thyroidectomy. M. O'G. Hughes.—p. 501.

Habronemic Conjunctivitis.—A small tumor removed from the conjunctiva of a child, aged 13 months, was found by Bull to be caused by *habronema* which in the adult stage are parasites in the stomach of the horse. This granulomatous condition occurs on the external mucous membranes of the horse, viz., conjunctiva and urethra at the orifice, and also on other parts of the external surface of the body and a pulmonary form has been described.

Bulletin de l'Académie de Médecine, Paris

Nov. 14, 1922, **88**, No. 37

*Tuberculosis and Pregnancy. Bar.—p. 219.
*Value of Vaccine Against Typhoid Fever. Loir and Legangneux.—p. 241.
*Prevention of Diseases in Morocco. R. Martial.—p. 244.
Hyperostosis of Tibia and Fibula Due to Leprosy. G. Delamare.—p. 247.
*Roentgen Epitheliomas Cured by Diathermy. H. Bordier.—p. 248.

Tuberculosis and Pregnancy.—Bar is pessimistic concerning the influence of pregnancy on tuberculosis. Very often the danger confronting the woman disappears under the cover of the physiologic euphoria of the second half of pregnancy until the tuberculosis flares up. The last stage of pregnancy is particularly unfavorable to tuberculosis, just as it is to influenza, smallpox, malaria and other infectious diseases, none of which are helped by the termination of pregnancy at this late stage. The cause is not certain, but Bar agrees with Fiessinger and Brodin's views on hepatic insufficiency as the cause of lowered resistance in pregnancy. Experiments on animals indicate clearly the disastrous influence of pregnancy on the development of tuberculosis, and it was interesting to see that the liver is a site of predilection in these animals as well as in pregnant women. Pregnancy is, according to Bar, a serious event in every woman with active tuberculosis, a disaster in advanced bilateral cases, and a real and sometimes very severe risk in every woman endangered by an active tuberculosis. He emphasizes the importance of the cutaneous reactions with tuberculin. If a woman in the beginning of pregnancy shows a strong reaction, Bar is conservative, provided that the findings in the lungs are satisfactory. If, on the contrary, such a woman has only a feeble cutaneous reaction, or none at all, one should operate, especially if the lesions seem to have started with the pregnancy. He prefers a simple abortion during the first months, and rarely resorts to hysterectomy. He does not like to operate in the second half. The necessity for after-treatment is evident.

Value of Vaccine Against Typhoid Fever.—Loir and Legangneux bring a statistic confirmation of the protective value of vaccination.

Prevention of Diseases in Morocco.—The tendency of the French government in Morocco is to adopt the principles of hygiene to the life of the people, instead of trying to change the habits of Mohammedans. He describes the methods used in the fight against typhus at Fez.

Multiple Roentgen Epitheliomas Cured by Diathermy.—Bordier recommends the use of diathermy for the removal of roentgen-ray epitheliomas, describing two apparently absolutely successful cases. He was himself the subject in one.

Bulletin Médical, Paris

Nov. 18, 1922, **36**, No. 47

*Chronic Bronchitis and Pulmonary Emphysema. E. Sergent.—p. 935.

Chronic Bronchitis and Pulmonary Emphysema.—Sergent emphasizes that almost every emphysema is complicated by a bronchitis, while not every chronic bronchitis has an emphysema. The question whether chronic bronchitis is accompanied by emphysema may be very difficult and even impossible to solve clinically, according to Sergent. The etiologic diagnosis is extremely important, as tuberculosis, syphilis, cardiac and renal troubles, diatheses, diseases of the upper respiratory passages may be the causes and have to be treated accordingly. He believes that emphysema is caused by the bronchitis mechanically, and is increased by inflammatory changes. One should not forget to consider, besides, a congenital dystrophy of the connective tissue of the lungs.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 17, 1922, **46**, No. 32

*Cryptogenous Septicemia. A. Clerc and G. Perrochaud.—p. 1512.
*Treatment of Hereditary Syphilis. J. Comby.—p. 1515.
*Scleroderma and Pituitary. R. Bénard and E. Coulaud.—p. 1518.
Herpes Zoster and Varicella. A. Cayrel.—p. 1524.
*Sclerodermic Syndrome with Goiter. Laignel-Lavastine and E. Coulaud.—p. 1526.
Erythema Nodosum and Herpetic Tonsillitis. J. Troisier.—p. 1530.
*Hemibulbar Retro-Olivary Syndrome. Ardin-Delteil et al.—p. 1535.
Syringe for Blood Transfusion. Emile-Weil and Isch-Wall.—p. 1537.

Cryptogenous Septicemia.—Clerc and Perrochaud's patient presented an intermittent fever, an eruption resembling rubella, arthralgias and a relative neutrophilia. Although no signs of meningitis were present and the cultures remained negative, they used antimeningococcus serum with good results.

Treatment of Hereditary Syphilis.—Comby urges not to forget mercury and iodids.

Scleroderma and Pituitary.—Bénard and Coulaud's case was refractory to the administration of thyroid, and was favorably influenced by the pituitary gland. This does not speak necessarily against the thyroid origin, according to them. Their patient died, and changes in the pituitary, adrenals and thyroid were found.

Sclerodermic Syndrome with Goiter.—Laignel-Lavastine and Coulaud report a case of scleroderma with atrophy of phalanges in a woman with goiter and tuberculosis. The cutaneous tuberculin reaction was negative, but turned positive when repeated after stopping the administration of thyroid and giving powdered ovary for ten days.

Hemibulbar Retro-Olivary Syndrome.—The case presented by Ardin-Delteil was due to syphilis.

Presse Médicale, Paris

Nov. 15, 1922, **30**, No. 91

*Vaccines Sterilized by Formaldehyd. S. Costa.—p. 985.
*Bilirubinemia in Icterus. M. Brulé et al.—p. 986.

Vaccine Sterilized with Formaldehyd.—Costa points out that formaldehyd is an excellent germicide, conserves the bacteria well while conserving their immunologic properties and destroying toxins. The emulsion of the culture is brought up to contain 1/50 to 1/300 of a 40 per cent. formaldehyd solution, and is preserved in the icebox. One can remove the formaldehyd by centrifugating the emulsion, but the presence of 1/8000 is not painful.

Bilirubinemia in Icterus.—Brulé, Garban and Weissmann object to van den Bergh's method that it gives intermediary stages between the direct and indirect reaction for bilirubin. Besides this, they find that it may change in the same patient in different stages, and believe that it is due to the amount of bilirubin in the serum. They compared the test with Blankenhorn's dialyzing of bilirubin. If the bilirubinemia is low and van den Bergh's reaction is slow (indirect), no bilirubin dialyzes. But in cases of a stronger bilirubinemia, reaction may be direct and yet the bilirubin may not dialyze. Brulé and his co-workers believe that the bilirubin which is adsorbed to the proteins of the plasma, gives the indirect reaction; does not dialyze, and does not appear in the urine. If the amount of it in the blood is too large, one part of it remains free and gives the direct reaction. Therefore they conclude that it indicates only the degree of bilirubinemia, but not a different sort.

Progrès Médical, Paris

Nov. 18, 1922, **37**, No. 46

*Internal Secretion and the Blood. M. Perrin and A. Hanns.—p. 537.
*Treatment of Complicated Gonorrhea. Legueu.—p. 538.
Ergot. H. Vignes.—p. 540.

Internal Secretion and the Blood.—Perrin and Hanns discuss the influence on the blood cells of experimental and clinical changes in the glands with internal secretion.

Treatment of Complicated Gonorrhea.—Legueu emphasizes the fact that the majority of complications of gonorrhea is caused by wrong treatment, especially by using too strong solutions too often. In prostatitis, it is necessary to put the patient to bed, to give him two sitz baths daily, which ought to be as hot as he can stand. Belladonna suppositories should be given in the rectum. The irrigations have to be mild. Phlegmonous prostatitis must be opened from the perineum. Legueu has never seen any good from incisions of an epididymitis. He recommends rest in bed and ice bags. The skin of the scrotum must be protected by a double layer of cloth, to avoid necrosis. Mild irrigations should be continued. The seminal vesicles are always affected in these cases. Mild massage preceding the irrigations gives good results. Every patient who treats himself gets cystitis. It is cured by injecting a 1 per cent. solution of silver nitrate into the bladder (after an irrigation). If gonococci do not disappear in two or three months, vaccines are of use.

Nov. 25, 1922, **37**, No. 47

Influence of Pregnancy and Delivery on the Pelvic Statics. H. Vignes.—p. 549.
Delirium, Belief and Play. Laignel-Lavastine.—p. 553.
*Treatment of Vascular Spasms by Sympathectomy. J. Forestier.—p. 558.

Treatment of Vascular Spasms by Periarterial Sympathectomy.—Forestier reviews favorably this field. The operation proved useful on the internal carotid in corneal ulcers due to injuries of the head, on the brachial artery in Raynaud's disease, on the hypogastric in craurosis of the vulva, and on the femoral artery in varicose ulcers. It is useful not only in angiospasms, but also in symptoms due to an overactivity of vasodilators.

Revue Franç. de Gynécologie et d'Obstét., Paris

October, 1922, **17**, No. 10

*Malformations of Fallopian Tubes. F. Jayle and Halpérine.—p. 489.
*Obstetric Future After Incision of Cervix. P. Balard.—p. 525.

Malformations of Fallopian Tubes.—Jayle and Halpérine refer in particular to blind accessory passages which, they say, are comparatively common. By examination of serial vertical sections of tubes they have discovered a number of malformations, two passages instead of one, accessory parts, supernumerary tubes, and rudimentary tubes in the broad ligament. They give twenty illustrations of these various types of malformations, of which about a dozen cases have been published in all, and describe in detail four cases personally observed of accessory passages without outlet. In one case these accessory passages were found in a ruptured tubal pregnancy. In another case the walls of both tubes and of the uterus were exceptionally thick, and a cross section of the tube on one side showed three passages and a patch of ossification. They explain the embryonal mechanism which entails these blind passages, parallel with the general direction of the tube, of congenital origin. A diverticulum is the result of some pathologic process.

The Obstetric Future After Incision of Cervix During Childbirth.—Balard has compiled 39 cases of women requiring deep incision of the cervix during childbirth who have passed through one or more pregnancies since. Conception afterward is rare. Hauch knows of only 15 per cent. in his 159 cases. In this group of 26 women there were 2 abortions; cesarean section was required later in 6; basiotrypsy once; and there were 2 deaths from placenta praevia with grave nephritis or atony of the uterus. In Hauch's service the incision of the cervix is restricted to the intravaginal portion of the cervix. When more than this is required, vaginal cesarean section is given the preference. The cervix is reconstructed after the incisions to restore its shape and leave it supple. The apparent facility of the incisions should not mislead to underestimate their influence on future pregnancies, although properly done they do not gravely compromise the obstetric future.

Schweizerische medizinische Wochenschrift, Basel

Nov. 23, 1922, **52**, No. 47

*Roentgen Ray Treatment of Epilepsy. M. Steiger.—p. 1141.
*Familial Multiple Sclerosis. F. Lotmar.—p. 1146.
Therapeutic Increase of Blood Coagulability. P. F. Nigst.—p. 1148. Conc'n No. 48.
Trauma and Tuberculosis of Bones and Joints. F. Zollinger.—p. 1154. Conc'n.

Treatment of Epilepsy by Roentgen Rays.—Steiger finds that it would be premature to conclude from his fifteen cases of epilepsy treated by the roentgen rays, that the benefit observed in some was due to this treatment.

Familial Multiple Sclerosis.—Lotmar describes this rare coincidence in two sisters.

Annali Italiani di Chirurgia, Naples

Aug. 30, 1922, **1**, No. 6-7

*Treatment of Aneurysms. G. Pascale.—p. 441. Conc'n.
*Fracture of Neck of Scapula. G. Razzaboni.—p. 454.
Primary and Solitary Hydatid Cyst in Omentum. G. Bolognesi.—p. 466.
*Treatment of Congenital Vaginal Anus. U. Camera.—p. 473.
*Spontaneous Cures of Cancer. D. B. Roncali.—p. 485. Conc'n.
*Paget's Disease. C. Gargano.—p. 500.
Staphylococcus Vaccine Therapy. V. Simeoni.—p. 519.
Cortical Blindness After a War Wound. G. Berti.—p. 536.

Aneurysm of Large Pelvic Vessels.—Pascale has had extensive experience in this line. In two young men the aneurysm retrogressed completely under treatment for syphilis, and he warns that in all dubious cases specific treatment should be given a chance before attempting any operation. Under other conditions, surgical treatment is indispensable, and for traumatic aneurysms he advocates extirpation of the sac as the only measure to protect against mishaps later. If the sac cannot be entirely removed, it can be opened and cleared, and the superfluous wall removed. Ligation of the artery above the aneurysm should be reserved for the last resource. An arteriovenous aneurysm should be treated by resection of the sac between the four ligatures. An aneurysm of a small artery on a limb should always be resected, as collateral circulation can be counted on. With a spontaneous aneurysm, the general medical treatment is the main thing. He describes a special technic for operating on an arteriovenous aneurysm of the internal carotid, with pulsating exophthalmos, and extols it as great progress in treatment of this grave lesion. He describes two cases of aneurysm of large vessels in the pelvis, and remarks in conclusion that in his surgical service at Naples a special study has been made of aneurysms for many years.

Complications of Fracture of the Scapula.—Razzaboni describes what he calls plexiform angioneurolysis in the axilla, an operation to correct symptoms resulting from the complications of fracture of the scapula.

Congenital Vaginal Anus.—Camera describes the technic with which he operated on a child of 3 with an opening between the rectum and vagina and complete incontinence of feces. He began by diverting the stools by an artificial anus after thorough purging. The distal bowel was repeatedly flushed from the artificial anus until the water came through clear. Then the coccyx was resected to give ample access to the rectum which showed no signs of a sphincter when opened. The communication with the vagina was sutured and the wall of the vagina reconstructed. Two months later the artificial anus was closed. The new anus is not yet continent but seems to be becoming more continent as time passes. The levator ani muscles have been known to assume the functions of a sphincter (Delbet), and there seems to be a suggestion of this in this case.

Spontaneous Cures of Cancer.—Previous instalments of Roncali's review of this subject have been summarized as they appeared. He cites ninety-eight articles, his final conclusion being that a natural or spontaneous cure of true malignant disease has never been demonstrated. In extremely exceptional cases the primary cancer may retrogress when metastases develop, but the malignant disease as a whole continues its course.

Paget's Disease of the Nipple.—Gargano presents evidence to prove that Paget's disease of the nipple is an epithelioma.

Pediatria, Naples

Nov. 15, 1922, **30**, No. 22

Stepthrothrix Meningitis in Children. F. Fonzo.—p. 1043.
Intracranial and Spinal Hemorrhages in the New-Born. F. de Angelis.—p. 1054. Idem.—p. 1083.
Pathology of Bones. A. F. Canelli and G. B. Audo-Gianotti.—p. 1057. Cont'd.
*Cholesterin Content in Leishmaniasis. G. Castorina.—p. 1076.
Case of Intermittent Acrocyanosis in Hereditary Syphilis. M. A. Torroella.—p. 1081.

Cholesterin Content in Leishmaniasis.—Castorina found the cholesterin content of the blood in seventeen cases of internal leishmaniasis low, from 0.106 per cent. to 0.05 per cent. Only one case had 0.14 per cent. This case was examined at the beginning of the disease, while the general state was still good. During convalescence the amount usually became higher.

Policlinico, Rome

Nov. 13, 1922, **29**, No. 46

*Changes in Testicle and Epididymis After Resection of Some of the Spermatic Veins. G. Nicastro.—p. 1501.
Multiform Erythema. C. Manassei.—p. 1502.
*Hydatid Fremitus in Bladder. D. Maselli.—p. 1507.

Changes in Testicle and Epididymis After Resection of Spermatic Veins.—Nicastro found that in dogs the resection of the posterior group is followed by severe changes in the testicle, while the resection of the anterior group did not have bad results. The experiments are important for the treatment of varicocele.

Hydatid Fremitus in a Distended Urinary Bladder.—Maselli shows that other cysts or similar organs may present a typical tremulous impulse on palpation like a hydatid cyst.

Nov. 20, 1922, **29**, No. 47

*Experiments on Hydrocephalus. A. Chiasserini.—p. 1525.
Development of Vaccine Pustules by Direct Contact. C. Ramorino.—p. 1527.
*Oxygen to Start a Pneumothorax. G. Capuani.—p. 1530.
Comment on Nicolich's "Roentgenotherapy of Carcinoma of the Bladder." G. Sighinolfi.—p. 1532.
Prevention of Diseases Among Railway Employees. Dragotti.—p. 1536.

Experiments on Hydrocephalus.—Chiasserini produced in dogs a rapid accumulation of fluid in the lateral ventricles of the brain by occluding the aqueduct of Sylvius.

Oxygen to Start a Pneumothorax.—Capuani follows the advice of authors who recommend the use of oxygen to start a pneumothorax in difficult cases.

Archivos Latino-Amer. de Pediatría, Buenos Aires

September, 1922, **16**, No. 9

Disturbances in the Artificially Fed. L. Morquio.—p. 513. Cont'd.
*Congenital Myxedema. A. Armand Ugón.—p. 524.
Tumor in Median Lobe of Cerebellum. R. Chiappori and L. Velasco Blanco.—p. 528.
Purulent Conjunctivitis in the Newly Born. C. M. Berro.—p. 533.
Influenzal Croup. Six Cases. A. M. Bargo.—p. 539.
Typhoid in Children at La Plata, 1912-1921. C. S. Cometto.—p. 548.
Cerebral Hemorrhages in Boy of 11. José Bonaba.—p. 556.
*Purpura with Ventricular Hemorrhage. E. Portu Pereyra.—p. 562.

Congenital Myxedema.—The child's condition improved somewhat under thyroid treatment begun when it was 11 months old. The mother, aged 38, had a goiter of twenty-two years' standing, and of late years had presented symptoms of hyperthyroidism.

Purpura with Ventricular Hemorrhage.—The boy of 13 did not seem very sick, the fifteenth day of mild Werhof's disease, when the hemorrhage into the ventricle proved fatal. Pereyra knows of only three cases of meningeal hemorrhage on record in the course of purpura in recent years. In two the disease was very grave but, in one, it was mild as in his own case.

Prensa Médica Argentina, Buenos Aires

Aug. 20, 1922, **9**, No. 8

*Slow Endocarditis. T. Castellano and R. Garzón.—p. 189. Conc'n No. 12, p. 314.
Besredka's Antigen in Diagnosis of Tuberculosis. A. Bachmann and A. F. Poiré.—p. 197.
*Cholecysto-Enterostomy. N. Tagliavacche.—p. 198.
*Retention of Urine in the Female. A. Calmens.—p. 200.
Benzyl Benzoate in Therapeutics. P. M. Barlaro.—p. 204.

Slow Endocarditis.—Castellano and Garzón give a profusely illustrated report of a case of *Streptococcus viridans* endocarditis lenta, comparing the clinical and bacteriologic findings with the pathologic anatomy. The patient was a woman of 35 with an apparently healthy son 8 years old. At 14 she had had acute articular rheumatism, and this had entailed dyspnea on exertion, and four of her children died soon after birth. The malignant endocarditis developed with pains in bones and muscles and left hypochondrium, and ran a nine months course. The viridans and also hemolytic streptococci were found in the cultures. The hemolytic cultivated from the blood evidently became transformed into the viridans. The latter alone was found in the organs, as also in rabbits, inoculated with the patient's blood. In treatment, vaccines and transfusion of blood and splenectomy seem to

be the only measures that have offered any chance of benefit. Four cases have been published in which recovery followed transfusion of blood (300 or 400 c.c. a week). Death seems to occur from the general infection rather than from the heart.

Plastic Cholecystenterostomy.—Tagliavacche demonstrated at the local surgical society in 1919 an apparently healthy dog on which he had performed a special plastic operation six months before. (The technic was described in the *Prensa Médica*, Oct. 30, 1919.) Three years later he killed the animal, and the illustration here shows the perfect success of the operation. The liver is of normal size and aspect. The ligature of the common bile duct is still in place, and the passage is still impermeable. The new plastic duct, uniting the gallbladder and the cystic duct with the duodenum, had evidently worked perfectly during the three years and three months before the dog was killed.

Retention of Urine in the Female.—There was nothing organic to explain the period of retention of urine in the girl, eight months after the onset of menstruation and again two years later. After the urine had been systematically drawn for a time, the practice was abruptly discontinued, and the girl began to urinate normally, and menstruation became regular again, confirming the psychopathic origin.

Sept. 20, 1922, **9**, No. 11

*Eosinophilia in Stomach Fluids. C. Bonorino Udaondo.—p. 281.
*Prevalence of Neurosyphilis. M. Alurralde.—p. 283.
Hydatid Cyst in Upper Arm. N. Tagliavacche.—p. 288.
The Hospital Problem in Argentina. E. Catalán.—p. 291.

Eosinophilia in Stomach Content.—Bonorino Udaonda found local eosinophilia pronounced in the six cases of achylia tabulated. In all there was some grave organic disease. The findings were constantly negative in transient or persisting functional achylia.

Increasing Prevalence of Neurosyphilis.—Alurralde declares that inadequate arsenical treatment of syphilis merely deprives the organism of its resisting powers, without eradicating the infection. The spirochetes thus have freer play than in absolutely untreated syphilis, and their ravages are graver. Resumption of medication then is liable to entail serious meningeal reactions, like a kind of Herxheimer reaction.

Repertorio de Medicina y Cirugía, Bogota

July, 1922, **13**, No. 10

*Mechanism of Hearing. V. Ribón.—p. 518.
Electrotherapy. I. Rodríguez.—p. 527.
Alcoholism in Colombia. E. Montaña.—p. 541. Cont'n.
Antityphoid Serotherapy. Luis F. Buenaventura G.—p. 554. Conc'n.

Mechanism of Hearing.—Ribón has made a special study of the psychophysiology of hearing, and especially of audition of music. He summarizes the various hypotheses in vogue to explain the mechanism of hearing and the musical sense, emphasizing the psychologic element, and that the organ of hearing has not yet reached its full evolution.

Revista de la Asoc. Méd. Argentina, Buenos Aires

July-August, 1922, **35**, No. 213-214

*Bacteriophagy. C. E. Pico.—p. 293 and p. 297.
*Biology of an Argentine Rodent, the Vizcacha. L. Giusti and E. Hug.—p. 300.
*Refractometry of the Serum in Pregnancy. Mazza and Iraeta.—p. 313.
*Hemoclastic Crisis in the Pregnant. S. Mazza and D. Iraeta.—p. 319.
*Action of Epinephrin. J. Guglielmetti.—p. 324. Idem. B. A. Houssay.—p. 329.
*Chronic Synovitis. O. Ivanissevich.—p. 333.
Paget's Disease of the Nipple. A. Buzzi.—p. 339.
*Bone Implants in Spondylitis. A. Gutiérrez.—p. 342.
*Loose Bodies in Knee. R. Rodríguez Villegas.—p. 356.
*Traumatism of Undescended Testicles. A. G. Gallo.—p. 359
Fracture of Scapula. N. Tagliavacche.—p. 364.
*Fracture of Skull. V. Gutiérrez.—p. 368.
*Shifting the Ulnar Nerve. P. Jáuregui.—p. 377.
Pincers for Dissecting Nerve Fibers. P. Jáuregui.—p. 382.
Microscopy of Living Eye. E. Amoretti.—p. 385.
Associated Movements of Eyelid and Jaw. A. Tiscornia.—p. 390.
The Fight Against Uterine Cancer. C. A. Castaño.—p. 395.
Model School Building. A. Gelly Cantilo and A. Zwanck.—p. 404.
Proposed League for School Hygiene. A. Restagnio.—p. 425.
*Cystic Spinal Meningitis. R. H. Chiappori and C. Robertson Lavalle.—p. 433.
Paraplegia from Polyneuritis. J. C. Montanaro.—p. 438.

History of Bacteriophagy.—Pico quotes from an article by Emmerich and Low to prove that these authors called attention in 1899 to bacteriologic enzymes as a factor in acquired immunity, and the self-limitation of infectious diseases. Gamaleia also published that year an article on bacteriolysins, and Malfitano in 1900 on autolysis of the anthrax bacillus. These workers thus noted the microbian lysis, but they did not recognize its transmissibility through indefinite passages in vitro which d'Herelle has emphasized. Pico describes experiments which seem to show that the lytic principle is contained in the bacteria themselves.

Physiologic Research on Rodent.—Giusti and Hug report considerable research on *Lagostomus trichodactylus*, the viscacha, an Argentine rodent.

Refractometer Index of the Serum of the Pregnant.—Mazza and Iraeta tabulate the findings in sixteen primiparas and twenty others.

The Hemoclastic Crisis in the Pregnant.—Fully 36 per cent. of the forty-four pregnant women tested after ingestion of 200 gm. of milk, fasting, showed the typical drop in the leukocytes. All were supposedly healthy.

Action of Epinephrin.—Guglielmetti concludes from his research on striped muscle that epinephrin acts on the intermediate substance which is found at the point of junction of the muscle and the nerve.

Epinephrin and Hypertension.—Houssay refers to the share of epinephrin in the rise in blood pressure on irritation of the splanchnic nerve or bulbar puncture.

Chronic Synovitis.—Ivanissevich reports a case of disease of the knee in which the diagnosis wavered between syphilitic synovitis and a joint lesion of nervous origin. No improvement was realized under arsenicals, mercury and iodid, but examination three years later showed an intense tremor. The Wassermann reaction had never been positive and the knee was not painful, notwithstanding the chronic synovitis and hydrarthrosis. The cause is still a mystery, although the presumption is in favor of syphilis in spite of the negative serologic and therapeutic data.

Rib for Albee Implant in Spine.—Gutiérrez used a rib, rather than a strip from the tibia, for the Albee operation in the case reported. The gibbus was so pronounced that the implant had to be curved. The rib used had been taken from another woman during an operation on the chest, and had been kept in saline for two weeks. In four other cases he resected and implanted one of the patient's ribs. In one case the compress containing the rib was dropped on the floor, and the operation was delayed while the rib was boiled for twenty minutes.

Extraction of Loose Bodies in the Knee.—The operation is immensely facilitated if the loose body is held immovable with a small fine awl driven through the skin into it. Otherwise it slips around, and may require much groping for it.

Traumatism of Undescended Testicle.—The trauma in the man of 26 had caused the testicle to enlarge, and the tumor was removed twelve days after the accident. The microscope showed incipient malignant degeneration of sarcomatous type.

Fracture of Skull.—There was depression of the bone at the site of the fracture, and it was removed, with the cicatricial dura. The gap left was closed nine months later with a Müller-König osteoplastic operation. The man of 40 seems to have completely recovered except for very rare and slight dizziness.

Shifting the Ulnar Nerve.—Jáuregui illustrates his method of shifting the nerve at the elbow to a region where it is less exposed to injury and strain, in treatment of fracture, neuritis, etc.

Compression of Spinal Cord by Cystic Meningitis.—Symptoms on the part of the eyes accompanied the symptoms indicating pressure on the cervical spinal cord. The laminectomy released a gush of fluid and the symptoms all subsided at once or gradually. The cyst occupied the space of the fifth to the eighth cervical roots, and certain fibrous bands had to be resected to restore free circulation in the spinal canal. The first symptoms had been pains in the arms and back of the eyes, with impairment of vision. By the end of

the second year, when the operation was performed, there was complete quadriplegia, and the Bernard-Horner and the Brown-Séquard syndromes, with atrophy of the left optic disk, just beginning in the other. The young woman recovered the use of the legs completely after the operation, and seems to be slowly regaining the use of her arms.

Revista Española de Medicina y Cirugía, Barcelona

July, 1922, **5**, No 49

*Syphilitic Asthma. José Calicó.—p. 372.
Care of the Insane in Different Countries. S. A. Meza and J. Paulis. —p. 374.
*The Antecedents of Uterine Cancer. C. Stajano.—p. 377.
Evolution of French Surgery. Forgue.—p. 383.
Dietetic Treatment. A. Arteaga Pereira.—p. 390.

Syphilitic Asthma.—Calicó recalls that in Leredde's series of cases of asthma of syphilitic origin (1917), the syphilis had been inherited in twenty. Castex since then has published nine cases, and commented on the nocturnal character of the attacks as an almost constant feature of syphilitic manifestations. Calicó urges that the possibility of inherited syphilis should always be borne in mind, even when apparently most improbable. In Sézary's recent case, the asthma developed at the age of 36, and bronchopulmonary sclerosis and enlarged glands nearby and a positive Wassermann reaction gave the clue, which led to the cure of the asthma under mercurial treatment. Calicó reports a further convincing case in a woman of 56 who had had transient attacks of dyspnea since childhood. Her brothers show signs of inherited syphilis, and she gives a weak Wassermann reaction. Under a year of mercurial inunctions and potassium iodid the asthma and tendency to slight cyanosis have materially improved, and she says she never felt so well as now.

Antecedents of Uterine Cancer.—Stajano argues that the modifications in endocrine functioning — especially ovarian functioning—which form the menopause, alter conditions in the uterine cervix. This opens the portal to malignant disease at this point. Various other factors—intercurrent syphilis, typhoid, intense emotions, or the like—may modify endocrine functioning, and thus secondarily alter conditions in the cervix even in the young, and the satellite cancer may develop. When it does develop under these conditions, all the catabolic functions are so active that the cancer runs a rapidly fatal course. He has never found any record of cancer of the cervix under 23 and it is very exceptional after 64. The uterine cervix is prematurely aged by inherited or acquired taints, as he shows by his list of thirty-seven cases of this "cervical cancer" in young women. In nearly all it had been preceded by some known predisposing factor, usually syphilis, very severe typhoid, or rapidly recurring pregnancies, aging the women prematurely.

Deutsche medizinische Wochenschrift, Berlin

Nov. 3, 1922, **48**, No. 44

*Congenital Diseases and Constitutional Abnormities. A. Greil.—p. 1471.
Treatment of Asthma Attack. Schottmüller.—p. 1474.
To Lengthen Limbs. M. Zondek.—p. 1475.
Psychic Changes After Wound of Frontal Lobe. R. Veit.—p. 1475.
*Old Congenital Luxation of Hip Joint. C. Deutschländer.—p. 1476.
Sputum Disinfection. F. Simon and G. Wolff.—p. 1478.
Diagnosis and Treatment of Urinary Hemorrhage. L. Casper.—p. 1480.
Diagnosis and Treatment of Chronic Diarrhea. L. Kuttner.—p. 1481.
Technic for Functional Tests of the Ear. Haike.—p. 1483.
Causes and Prevention of Roentgen-Ray Burns. L. Rothbart.—p. 1485.
A Cuff for Blood Pressure Measuring Apparatus. J. Treis.—p. 1485.
Comment on Proposed Tuberculosis Law in Prussia. K. Süpfle.—p. 1486.
Legal Aspects of Scientific Criticism. F. Leonhard.—p. 1487.

General Causes of Congenital Diseases and Constitutional Abnormalities.—Greil reviews the possible causes of congenital abnormalities, including the predisposition to tumors. No other placentate animal is exposed to such unfavorable intra-uterine conditions nor to a similar mistreatment during nursing as some human beings. The conception should be limited to the first week of the intermenstrual period. The overabundant resorption of sperma, which occurs only in the human species, is harmful. Too young and too old mothers do not have the best offspring. Pregnancy toxicoses can be the cause of latent congenital anomalies. Exogenous factors (syphilis, tuberculosis, malaria) are also to be considered.

Treatment of Old Congenital Luxation of Hip Joint.—Deutschländer declares that operative treatment gives good results even in children 8 to 15 years old. In two thirds of the cases, after the operation, the head of the femur lies in the center of the acetabulum, while in 30 per cent. it remains excentric. Though the function is not perfect in this group, it may be sufficient even for outdoor sports. In cases which are over 15 years old, a complete anatomic cure is very rare as yet.

Nov. 10, 1922, **48**, No. 45

*Bronchial Asthma. A. Barth.—p. 1503.
*The Function of the Spleen. H. Rautmann.—p. 1504.
Ankylosis of the Spine and Disturbances of Internal Secretion. C. Cohn-Wolpe.—p. 1505.
Periodic, Constitutional and Pathologic Fluctuations of Capillary Action. W. Hagen.—p. 1507.
Disinfection of Urethra in Gonorrhea. J. Schereschewsky.—p. 1508.
Types of Meningococcus. K. Hundeshagen.—p. 1509.
Bruck's Precipitation Reaction in the Serodiagnosis of Syphilis. J. Zeissler.—p. 1510.
General Principles for Treatment of Pneumonia. Goldscheider.—p. 1512.
Examination of the Pregnant. M. Henkel.—p. 1515.
Treatment of Furuncles. A. Schule.—p. 1517.
The American Method of Selecting a Donor for Blood Transfusion. J. J. Halbertsma.—p. 1517.
Case of Fatal Barbital Poisoning. Bofinger.—p. 1518.
Diseases of the Upper Air-Passages and Tuberculosis Welfare Centers. Ballin.—p. 1518.
Health Insurance Societies in Relation to Physicians. S. Alexander.—p. 1519.

Bronchial Asthma.—Barth states that asthma is now quite generally recognized as a neurosis. The neurosis is evidenced by attacks of dyspnea occurring under conditions which in the majority of persons would fail to produce like symptoms. The labored breathing is due to the fact that the inspirations of the patient become progressively deeper, while the expirations continue to be incomplete, with the result that the distinctive position of the respiratory apparatus during inspiration is scarcely ever completely abandoned for that of expiration. This pathologic respiratory process is often caused by trivial changes, especially in the upper air-passages. Lung emphysema and bronchial catarrh are not asthma but the results of asthma. Treatment consists, therefore, (1) in enlightening the patient in regard to his condition and influencing him mentally; (2) in educating the patient to breathe regularly, especially as regards expiration, and particularly as soon as the onset of an attack is noted, and (3) in the discovery and local treatment or removal of the precipitating cause for the attack. Although early treatment offers the best prospects for recovery, treatment of old cases is also sometimes successful. Emphysema and bronchial catarrh may require special treatment in addition. Irritants that affect the patient unfavorably should, of course, be strictly avoided.

The Function of the Spleen.—Rautmann refers to his researches, in collaboration with Frey, to gain a more accurate knowledge of the erythrocyte-destroying activity of the spleen. In the venous blood from the spleen of dogs they found one million fewer erythrocytes per cubic millimeter than in the arterial blood. They noted that the spleen retained or destroyed greater numbers of erythrocytes that were damaged with respect to their osmotic resistance than it did normal erythrocytes. They increased experimentally the osmotic resistance of the erythrocytes by injection of phenylhydrazin, and found afterward that the number of erythrocytes in the venous blood of the spleen was the same as in the arterial blood, indicating that in this case the spleen was no longer able to hold back or destroy the now more resistant erythrocytes. To test the permeability of the spleen as a filter, nucleated erythrocytes (from birds) were injected directly into the splenic artery. Afterward, in the venous blood of the spleen, only a few nucleated erythrocytes were found. Other experiments carried out with Thoma showed that the leukocyte content of the venous blood of the spleen fluctuates considerably. After the intravenous injection of epinephrin, the total leukocyte count in the venous blood of the spleen was much greater than in the venous blood of the ear; there was also a considerable increase in the erythrocytes. In animals previously treated with typhoid bacilli or sheep erythrocytes, the venous blood of the spleen was found to be, on the second or third day after the injec-

tion, much richer in antibodies than the venous blood of the ear. By intravenous injection of epinephrin, the antibody content was still further increased, whereas, after prolonged ether narcosis, it was considerably less. The fact that in infectious disease the spleen increases in volume and is gorged with blood may doubtless be interpreted as a hyperfunctioning of the spleen in the nature of a very intensive formation of antibodies. In further researches Rautmann plans to test the effect of roentgen-ray stimulation of the spleen with a view to increasing the formation of antibodies.

Medizinische Klinik, Berlin

Nov. 12, 1922, **18**, No. 46

*Obstetric and Gynecologic Peritonitis. W. Benthin.—p. 1453.
Early Acute Tonsillitis in Influenza. A. Lukowsky.—p. 1458.
*Pseudo-Obesity. F. Kisch.—p. 1460.
Case of Polyglandular Insufficiency. Petschacher and Hönlinger.—p. 1462.
*Conservative Treatment of Large Hemorrhoids. P. Bonheim.—p. 1464.
*Action of Hydrotherapy and Heat on Blood. E. Stückgold.—p. 1465.
Malaria with Eruption Similar to Erythema Nodosum. Günther.—p. 1467.
Quantitative Wassermann Reaction in Blister and Other Fluids of Body. G. Wagner.—p. 1468.
The Exudative Diathesis. K. Blühdorn.—p. 1469. Conc'n.
Recent Urologic Literature. R. Paschkis.—p. 1472.

Improvements in Treatment of Obstetric and Gynecologic Peritonitis.—Benthin makes in suspicious cases a puncture of the abdomen. The presence of an exudate containing leukocytes is an indication to operate. It would be foolish to operate with simple inflammation of the adnexa with irritation of the peritoneum, but it is a grave mistake to omit operation in peritonitis. He uses lumbar anesthesia, and tries to make the operation as simple and mild as possible. He does not touch adhesions; leaves the pus where it is; puts one drain in Douglas' pouch, and two drains laterally, which he brings out through the lower end of the abdominal wound. At the end, 200 c.c. of ether are poured into the abdominal cavity. No organs are removed except when they are perforated. The after-treatment is considered very important, and starts with a subcutaneous infusion of 1 liter normal saline, with epinephrin. The first day every two hours injections of camphor, caffein and digitalis are given. The abdomen is kept warm by an electric light bath. Physostigmin was rarely necessary to stimulate the bowels. On the fourth day the drains are replaced by narrow strips of gauze. Benthin warns explicitly not to treat too actively, and attributes the comparatively good results (52 per cent. total mortality) to the ether and avoiding of injuries to the abdominal organs.

Pseudo-Obesity.—Kisch describes a group of patients who have an enlarged abdomen and are a little overweight, but who present only a slight increase in the fat of the abdominal walls. The diaphragm stands high and this can cause heart troubles resembling angina pectoris and shortness of breath (cardio-intestinal complex of symptoms). The usual treatment for obesity fails in these cases, but they are quickly ameliorated by cathartics, massage of the abdomen and application of heat on the abdomen. Kisch attributes the symptoms to a sympatheticotonic inhibition of the movements of the bowels.

Conservative Treatment of Large Prolapsed Hemorrhoids.—Bonheim reports good results in all his three cases with Boas' method of treatment of large hemorrhoids. The patients are kept in bed, get little food, and are given bitter salts and injections of morphin. The prolapsed hemorrhoids are treated three times daily for fifteen minutes (with two interruptions of one minute) with Bier's suction glass. The edema is kept up by hot applications. The patients are cured in ten to fourteen days. Morphin is necessary in the first days to combat the pains.

Action of Hydrotherapy and Heat on Blood.—Stückgold finds the amount of fibrinogen increased after baths in the electric light box.

Nov. 19, 1922, **18**, No. 47

*Immunity Against Smallpox and Vaccinia. H. A. Gins.—p. 1483.
*Age Predisposition in Children. A. Peiper.—p. 1486.
*Cirrhosis of Liver with Icterus and Splenomegaly. R. Bauer.—p. 1489.
*Healing of Wounds After Roentgen Rays. E. Vogt.—p. 1491.
Clinical Action of Strychnin. E. Baráth.—p. 1492.
Radium Emanation in Arthritis. T. Vaternahm.—p. 1493.
*Itching of Ears in Pyrosis. D. Engel.—p. 1495.
Use of Tellurium for Determination of Death of Tissues. P. Rostock.—p. 1499.
Diseases of Urethra. E. Portner.—p. 1501.
Recent Literature on Diseases of Heart and Arteries. E. Edens.—p. 1503.

Immunity Against Smallpox and Vaccinia.—Gins reviews historically the researches on smallpox immunity. He points out that the general immunization from systematic vaccination has changed smallpox from a disease of children into a disease of old people. In the years 1758-1774 the deaths from smallpox in Berlin were: 0.07 per cent. in people over 40 years; 1.25 per cent. from 39 to 12 years old, and 98.7 per cent. under 12 years. In 1916-1917, there were 90.56 per cent. over 40 years, 7.32 per cent. from 39 to 12 years, and only 2.12 per cent. under 12 years old.

Predisposition of the Age in Children.—Peiper reviews the relation of the age to different diseases of children.

Cirrhosis of Liver with Icterus and Splenomegaly.—Bauer describes a case of an atrophic cirrhosis of liver with icterus and splenomegaly. The patient died after splenectomy from a hemorrhage from an ulcer of the stomach. The spleen did not show any fibrosis, nor deposits of iron.

Healing of Wounds After Roentgen Rays.—Vogt finds that previous application of roentgen rays does not endanger the healing of the subsequent laparotomy. There are no objections to irradiate a carcinoma of the uterus before the radical operation is done.

Itching of Ears in Pyrosis.—Engel observed that some patients suffering from pyrosis complained about itching in the external meatus at the time of their trouble. The itching was usually in the left ear. He considers it a reflex gastro-auricular phenomenon, due to the vagus.

Münchener medizinische Wochenschrift, Munich

Oct. 27, 1922, **69**, No. 43

*Correction of Swelling of Colloids. H. Schade et al.—p. 1497.
Peculiar Epidemic of Bulbar Paralysis in an Institution. John and Stockebrand. —p. 1500. Conc'n No. 44, p. 1544.
Psychiatric Observations in Javanese. A. Gans.—p. 1503.
Leukopenia Following Non-Specific Intracutaneous Injection. E. F. Müller.—p. 1506.
Late Eunuchoidism and Adiposogenital Dystrophia. W. Hueck.—p. 1507.
*Inulin in Diabetes. R. Offenbacher and W. Eliassow.—p. 1508.
Strangulation Ileus in Movable Colon. W. Porzelt.—p. 1510.
*So-Called Nervous Dermatoses. A. Marcus.—p. 1510.
Technic of Artificial Pneumothorax. W. Neumann.—p. 1511.
Comment on Selheim's "Torsion of Organs." G. Schaetz.—p. 1512.
Flexible Gastroscope. M. Sussmann.—p. 1513. Reply. R. Schindler.—p. 1513.
Did Newton Suffer from Influenza-Encephalitis? E. Ebstein.—p. 1513.
Diagnosis of Some Diseases of the Teeth. Walkhoff.—p. 1514.

Experiments on Therapeutic Correction of Swelling of Colloids.—Tannic acid and formaldehyd counteract to a certain degree the toxic action of very diluted hydrochloric acid on tadpoles. Therapeutic possibilities are discussed.

Inulin in Diabetes.—Offenbacher and Eliassow find that inulin seems to be utilized better, by diabetics, than glucose and levulose.

So-Called Nervous Dermatoses.—Marcus reports a few cases of "nervous" dermatoses cured after the real cause was discovered and removed. A universal eczema recurring with each menstruation was traced to the artificial leather support used for the menstrual bandage. Another case was due to the habitual addition of a little of a certain antiseptic to the bath water. Other cases were due to the use of a perfume, different toilet creams, even of good makes, petrolatum, salves, etc. He gives a list of nineteen other toilet articles that have induced skin affections. In one case a man's periodic itching and crop of furuncles were finally traced to work in the garden with Japanese primroses.

Nov. 3, 1922, **69**, No. 44

*Psychic Influence on Secretion in Stomach and Duodenum. O. Langheinrich.—p. 1527.
Clinical Picture of Deforming Juvenile Osteochondritis of the Hip Joint. G. Riedel.—p. 1529.
Persistence of "War Lymphocytosis." B. Spiethoff.—p. 1532.
*Biologic Diagnosis of Tuberculosis. E. Nehring.—p. 1533.
Ponndorf's Diagnostic Method in Different Dermatoses. L. Görl and L. Voigt.—p. 1534.
*Fractioned Examination of Cerebrospinal Fluid. K. Eskuchen.—p. 1536.
Specific Staining of Amyloid by Congo Red. H. Bennhold.—p. 1537.

Rarer Indications for Roentgen Treatment in Gynecology. H. Martius.—p. 1538.
Apparatus to Insure Precision in Gynecologic Deep Roentgen Treatment. W. Simon.—p. 1539.
Influence of Number of Interrupters on the Superficial and Deep Dose of Roentgen Rays. H. Rahm.—p. 1542.
*Costal and Abdominal Breathing. L. Deppe.—p. 1543.
Waterwheel Sound in Heart Disease. J. Wagner.—p. 1543.
A Futile Method for Statistics on Heredity. W. Weinberg.—p. 1544.
Cough and Its Treatment. A. Bacmeister.—p. 1549.

Psychic Influence on Secretion in Stomach and Duodenum.—Langheinrich hypnotized the subject and tested the influence of suggestions of intake of butter of bouillon on the secretion in stomach and duodenum. There were distinct differences, but he warns not to neglect the mechanical and chemical elements involved.

Biologic Diagnosis of Tuberculosis.—Nehring finds that the double intercutaneous injection of 1/10 mg. and 1 mg. old tuberculin gives much better results than Pirquet's method.

Fractioned Examination of Cerebrospinal Fluid.—Eskuchen confirms Weigeldt's investigations, and demands the counting of cells in the first and last drop of the cerebrospinal fluid. The differences are very great, and are chiefly due to the sedimentation of the fluid in the body. The distribution of the bodies causing the Wassermann and colloidal gold reaction is more even.

Costal and Abdominal Breathing.—Deppe does not believe that men's breathing is abdominal and women's costal. It seems rather to be individual. The best type is the combined costo-abdominal breathing.

Wiener klinische Wochenschrift, Vienna

Nov. 2, 1922, **35**, No. 44

Chronic Gastritis. O. Stoerk.—p. 855.
*Stability of Colloids of Plasma. W. Starlinger.—p. 860.
Tuberculosis Due to Direct Inoculation and Its Surgical Treatment. G. Stein.—p. 862.
Influence on Nervous System of Obstruction of Nose. Stein.—p. 865.
Comment on Porges' "Hunger Pains." G. Schiff.—p. 866.
Present Status of Tuberculosis. M. Weiss.—p. 866.

Influence of Light on Stability of Colloids of Human Plasma.—Starlinger found that the amount of fibrinogen precipitated from a citrated plasma is diminished after addition of eosin or ferrous sulphate and exposure to light (especially short waves). The phenomenon is less pronounced with globulins, and still less with albumins. Starlinger believes, that this stabilization of colloids is due to the partial hydrolysis of the proteins by a transfer of oxygen by means of the catalyzers. This increases the amount of the products which stabilize the colloids.

Nov. 9, 1922, **35**, No. 45

Borderland Between Gynecology and Urology. Richter.—p. 875.
*Pathology of Respiratory Metabolism. P. Liebesny and H. Schwarz.—p. 879.
*Depersonalization Following Meat Poisoning. A. Pilcz.—p. 883.
*Chemical Aspects of Tuberculosis of the Bones. H. Reh.—p. 884.
*Instability of the Colloids in the Blood Plasm. J. v. Daránvi.—p. 885.
Remarks on Bum's "Treatment of Sciatica." R. Grünbaum.—p. 886.
Reply. A. Bum.—p. 886.

Pathology of Respiratory Metabolism.—Liebesny and Schwarz confirm the normal basal metabolism in obesity of pituitary origin. Powdered thyroid increased it in these cases. The basal metabolism is increased in diseases of the hemopoietic organs with increased production of cells, as in leukemia, pernicious anemia, hemolytic icterus. It was normal in aplastic anemia.

Case of Depersonalization Following Meat Poisoning.—Pilez describes a case presenting all the symptoms of Krishaber's "loss of self-consciousness"—disturbance in the sense of reality—with the typical preservation of the ability to act like a healthy person. This state started during a severe meat poisoning and lasted for seven weeks.

Tuberculosis of Bones.—Reh does not like to treat this chronic disease chronically. His method of choice is to operate, except in the rare cases where it is strictly contraindicated by the extension of the operation, possibility of severe infection, the certainty to hurt vital organs, and the general weakness of the patient

Lability of Colloids of the Blood Plasma.—Darányi discusses some reactions of blood, serum and plasma, because he finds that they were not yet considered from the viewpoint of lability of colloids in one paper. They were explained so only separately. The speed of sedimentation of blood corpuscles, the precipitation of plasma and serum by different means run to some extent parallel, and may be considered as a measure of disintegration of tissues. Darányi considers his own method for testing the instability of the colloids in the serum as most advantageous.

Zeitschrift für Urologie, Leipzig

1922, **16**, No. 11

*Endemic Urinary Calculi in Siam. O. Schneider.—p. 473.
Bilharzia Eggs in the Sperma. E. Pfister.—p. 488.
Plastic Induration of Penis. R. Rothschild.—p. 490.

Endemic Urolithiasis in Siam.—Schneider reports from Bangkok his experiences with stones of the bladder. The cause is unknown. The poorer classes are much more subject to the disease than the wealthy; 42 per cent. of the cases were under 15 years old. Anal prolapse leads us to suspect a stone. Lithotrypsy could be used only exceptionally. In his last series of seventy cases all were males except five. In four other cases he removed a calculus from the urethra of infants, less than a year old, which had been exclusively breast fed.

Zentralblatt für Chirurgie, Leipzig

Oct. 7, 1922, **49**, No. 40

*Extra-Articular Measures to Induce Ankylosis. J. Hass.—p. 1466.
*Tendon Regeneration. E. Wehner.—p. 1467.
"Preferable Method for Anesthetization." Hinterstoisser.—p. 1469.
Spontaneous False Reduction of Incarcerated Hernias. E. Haim.—p. 1470.
*Strong Sugar Solutions as Preventive of Operative and Anesthesia Mishaps. B. Tenckhoff.—p. 1472.
*Plastic Substitute for Stomach. V. Hoffmann.—p. 1477.
Semmelweis not Lister. Reply to C. Bayer's Article in No. 33. F. Bruck.—p. 1479.

Extra-Articular Measures to Induce Ankylosis of Hip-Joint.—Hass describes with an illustration a method he has used in three cases of highly destructive and recurring coxitis to induce ankylosis of the hip-joint. A curving incision is made about the great trochanter as in Lexer's method of arthroplasty. The great trochanter is cut off slanting, and, together with the attached muscles, it is pushed along upward until the tip fits into a recess hollowed out to fit it in the ilium, just above the roof of the acetabulum. The trochanter is then sutured with stout silk or silver wire to hold it in this place, suturing it to the femur and to the ilium above. Then a plaster cast is applied for three months in abduction. The operation is thus entirely outside the joint. Especially adapted for this operation are those cases in which the head of the femur is destroyed to such an extent that the great trochanter is brought near to the ilium. The advantages claimed for this procedure over the transplantation of a piece of the tibia are: No necessity of molesting the tibia, good nutrition of the pedunculated transplant, broad and close contact of the raw bone surfaces, and above all, greater solidity of the local osteoplasty. In the three cases the operation was performed more than a year ago, and in two cases a solid bony ankylosis has been secured. In one case the union between the trochanter and the ilium is only fibrous. The joint is held by this operation as if by a big bolt, bolting it into a solid whole.

Theory of Hormone Action of the Synovia in Tendon Regeneration.—Wehner refers to Salomon's finding that outside of the tendon sheath the tendon ends are sure to heal, whereas within the sheath they never heal. Salomon's view is that the absence of regeneration in the enclosed tendon is due to inhibiting hormones in the synovial fluid. On the basis of his theory, Salomon had recommended no suturing of the tendon sheaths but rather the removal of a large portion of the tendon sheath. In his experiments on from 1 to 2 year old rabbits and dogs 6 months old, Wehner was able to secure excellent regeneration of the quadriceps tendon (after excision of the patella) without a suture or bridging over of the defect or the use of a fixation bandage. What he emphasizes is the fact that the synovia of the knee joint, which, without doubt came in contact with the tendon defect or the regenerating tendon tissue exerted no action that inhibited regeneration.

Strong Solutions of Glucose as Preventive of Operative and Anesthesia Mishaps.—Tenckhoff recounts the favorable results secured by the slow injection of 10 c.c. of a 10 per cent. solution of glucose the evening before an operation. The injection sometimes caused chills. The effect on the postoperative pulse was marked. The frequent acceleration of the pulse was not noted, nor did it become weak and small but remained slow and strong, characterized by high tension, an indication that the glucose has a favorable effect not only on the central organ but also on the peripheral portions of the circulatory system, tending to raise the blood pressure. It was surprising to note that even after the most serious operations the pulse curve remained about the same after the operation as before. It appears that the effect of the glucose persists for two or three days and thus helps the patients over the dangerous period.

A Plastic Substitute for a Resected Stomach.—Hoffmann recalls that persons who have undergone total stomach resection are inconvenienced by the fact that they can eat only light meals and therefore have to eat frequently. To improve this condition he proposes an operation which he has performed thus far only on the cadaver and on animals. With a simple technic it provides a receptacle with twice the capacity of the small intestine. The esophagus is joined to the jejunum at a point where a long loop of the small intestine can be secured. Between the afferent and efferent legs of this jejunum loop a long anastomosis is established, which, beginning just below the tip of the loop sutured to the esophagus, throws the two legs into one cavity, the jejunum thus forming a receptacle 15 cm. long. The food passes from the esophagus through a short double-passaged portion of the intestine into the newly created reservoir. Also the secretions of the liver and the pancreas flow into this reservoir. It is advisable to carry out the entero-anastomosis before the esophagus is united with the intestine, since a loop of intestine that is fixed in position is not so accessible. The circumference of the upper small intestine in man is from 4 to 6 cm. By the side-to-side suture of the two legs of the loop of the jejunum we obtain a reservoir with a circumference of from 5 to 9 cm. The time required for the anastomosis is so short that this secondary operation can be easily allowed to follow such an extensive intervention as total or subtotal gastric resection. In some instances it might be better to perform the secondary operation at a second sitting (under local anesthesia). The storage receptacle thus created is, to be sure, a very imperfect substitute for the stomach. However, it affords the patient an opportunity of eating much more at a meal. He gives an illustration of the technic.

Zentralblatt für Gynäkologie, Leipzig

Sept. 2, 1922, **46**, No. 35

Contribution to the Subject of "Narrow Pelvis." W. Zangemeister.—p. 1395.
Pregnancy after Bilateral Sactosalpinx and Abscess of Douglas' Pouch. B. Ottow.—p. 1406.
Perforation of the Uterus and Severe Injury of the Adnexa. W. Stoeckel.—p. 1410.
*Artificial Glycosuria in Pregnancy. A. W. Bauer.—p. 1413.
Complete Inversion of the Uterus in Childbirth. C. Neis.—p. 1421.

Artificial Glycosuria in Pregnancy.—Bauer's researches lead him to state that, although artificial glycosuria induced by the ingestion of glucose does not furnish a differential diagnosis between extra-uterine pregnancy and tumor of the adnexa, its value must be recognized for the early diagnosis of pregnancy. In 200 cases the sugar content of the blood, following the ingestion of 100 gm. of glucose on an empty stomach and during rest in bed, increased, on the average, from 0.08 to 0.2 per cent. The sugar was taken in 200 gm. of tea, drunk rapidly, and blood and urine were drawn for examination every ten minutes for an hour and again thirty minutes later, and thirty minutes after this. Thirty of the women were nonpregnant; 120 were in the first three months of pregnancy, and fifty were in the other months of a pregnancy. All the women pregnant for less than three months showed pronounced glycosuria thereafter, while this was evident only in 66 per cent. of the other pregnant women, and only in one of the thirty nonpregnant women. In 300 other pregnant women examined, spontaneous glycosuria was found only in 0.75 per cent., and the sugar content of their blood was within normal range.

Zentralblatt für innere Medizin, Leipzig

Nov. 18, 1922, **43**, No. 46

Substitute for Iodin. H. Friedenthal.—p. 745.

Nov. 25, 1922, **43**, No. 47

Recent Progress in Neurology and Psychiatry. M. Goldstein.—p. 761.

Mededeel. v. d. Burg. Geneesk. Dienst, Java

1922, No. 3. English Edition

*Hookworm in Soil at Batavia. J. A. de Nooy.—p. 125.
*Working of Slow Filtering Sand Filter in the Tropics. P. C. Flu.—p. 135.
The Aorta in Malay Men. H. Müller.—p. 167.
Differentiating Points of Certain Mosquitoes. E. Rodenwaldt.—p. 185.

Ankylostoma Larvae in Soil of Native Villages in Java.—De Nooy found that the mature larvae have a greater power of resisting desiccation than is generally accepted. The infection of the soil plays an important part in the infection and reinfection, but flies aid likewise.

Slow Working Sand Filter.—The filter was arranged so that each square meter of filter surface yielded only 2.4 cubic meters of water during the twenty-four hours. The water is treated beforehand with aluminum sulphate. This arrangement supplies good drinking water from the turbid water of the rivers of the Java lowlands, but the filter must be exposed to the sunlight, and the process must be under the daily control of skilled technical men and bacteriologic chemists. Otherwise, other methods are preferable.

Acta Medica Scandinavica, Stockholm

Nov. 7, 1922, **57**, No. 1

Importance of Tissue Cultures in Experimental Medicine. Fischer.—p. 1.
*Glycosuria of Pregnancy. K. Motzfeldt.—p. 10.
Question of Peristaltic Action in Capillaries. E. Kylin.—p. 25.
Standardization of Hemoglobinometers and Its Importance for Index Calculation. H. C. Gram.—p. 27.
*Induced Motor Action. H. Gertz.—p. 41.
*Attempt at a Differentiation of Gonococcus Types. O. Thomsen and Erik Vollmond.—p. 77.

Glycosuria of Pregnancy and the So-Called Renal Diabetes.—Motzfeldt warns not to underestimate a seemingly renal diabetes; it may change into the real form. In one case with hypoglycemia, hyperglycemia was found when reexamined one year later. He discusses a case of renal diabetes occurring during pregnancy, and recurring at a later pregnancy. In a man of 27 the renal diabetes was transitory. In the third case there seems to be a connection between the diabetes and a traumatic neurosis. (In English.)

Induced Motor Action.—Gertz repeated extensively some observations made by Purkinje, relating to dizziness, and long forgotten. The subject is placed on a disk rotating on its axis, and turns in the opposite direction, so that he does not change in reality his relation to the surroundings. Although the vestibular apparatus is not irritated, yet after stepping down from the disk and taking a few steps, the subject feels himself drawn toward the side toward which he was turning. Since he knows, that he did not have the intention to continue to turn, he may become dizzy. This experiment constitutes a new physiologic source of dizziness, being neither of vestibular nor of visual origin. The phenomenon resembles the experiment of the hand pressed against the wall, described by Salmon and Kohnstamm. Gertz modifies their experiment in an advantageous way. He distinguishes in direct motor innervation two parts: One constitutes the direct impulse to the act; the other consists in arrangements of the nervous conditions which direct or end the motion. The vestibular apparatus and the cerebellum are parts of the second, which Gertz calls the system of predisposition. He believes that the exercise induces a predisposition for its continuation, and that this is responsible for the phenomena described. (In French.)

Attempt at a Differentiation of Gonococcus Types.—Thomsen and Vollmond assert that a simple complement fixation test does not allow us to state definite types. Absorption

experiments, however, have made it possible to separate three groups, although some strains remained outside. (In English.)

Hospitalstidende, Copenhagen

Nov. 8, 1922, **65**, No. 45

*Spastic Ileus. H. Jacobsen.—p. 753.
The Ureter During Hysterectomy for Cancer. N. Tuxen.—p. 759.
What Has Been Learned from the Gullstrand Lamp. C. Rasmussen.—p. 760.

Spastic Ileus.—Jacobsen operated twice on the girl of 7 in the course of two days. The first laparotomy had been done on the assumption of invagination but nothing abnormal could be found except that certain segments of the intestine seemed to be contracted. No mechanical obstruction could be discovered. After a day of subsidence of all symptoms, they returned again and the abdomen was opened anew. Nothing could be found except this tendency to local spastic occlusion of the bowel. During the ten months since there has been no return of symptoms and the child seems well. By the double laparotomy the absence of any other cause for the tendency to ileus beyond the spastic contraction seems to be absolutely established. The differential diagnosis can be only by exclusion, although it is well to bear in mind that the spastic occlusion of the bowel is often multiple. The absence of blood in the stools testifies against intussusception with which it is most likely to be confounded. When spastic ileus is certain, morphin, atropin, lavage of the stomach, enemas and laxatives may be indicated. Morphin can be given by the rectum. As a last resort, enteroanastomosis above the spasm may be considered.

Hygiea, Stockholm

Nov. 15, 1922, **84**, No. 21

*The Diazo Reaction in Relation to Leukocyte Count. N. Svartz.—p. 869.
Epidemic Encephalitis. Etiology and Epidemiology. C. Kling.—p. 894. Cont'd.

The Diazo Reaction and the Leukocyte Figure.—Svartz discusses the possible reasons for the low leukocyte count which seems to accompany the diazo reaction. The reaction becomes more pronounced as the number of leukocytes drops, and vice versa, as is shown by the charts from seventeen cases of typhoid, paratyphoid or tuberculosis. The proportional relations are not always absolute, but leukopenia with a pronounced diazo reaction is such a constant finding as to exclude casual coincidence. One and the same factor may be responsible for both. No evidence has been found to date connecting the diazo reaction with any substance liberated by destruction of leukocytes. The German, Russian and Scandinavian literature on the diazo reaction is reviewed, and it is emphasized that a positive reaction does not necessarily indicate an unfavorable outcome, but an acute febrile disease with a positive diazo reaction should suggest typhoid. In forty-four cases of typhoid tested, the reaction was pronounced in the first week in all but two and these were extremely mild cases.

Ugeskrift for Læger, Copenhagen

Oct. 19, 1922, **84**, No. 42

*The Evidence in Accident Insurance. G. Philipsen.—p. 1389.
*Pernicious Anemia with Stenosis in Intestine. E. Meulengracht.—p. 1401.

Workmen's Compensation from Medical Standpoint. — Philipsen is chief of the Denmark council that has to pass on the demands for state accident and health insurance. He discusses in turn the various forms of disability, saying of traumatic neuroses that the council abides here by the evidence of skilled neurologists. With multiple sclerosis, as no one knows its etiology, if it develops after a well authenticated trauma, which might possibly have brought on the disease, the council accepts this without question and gives full compensation. The same applies to general paresis. When it develops apparently in connection with an absolutely authenticated injury to the head, full compensation is generally allowed. The causal or aggravating effect of a trauma—even emotional trauma—in exophthalmic goiter is accepted usually without question. An infectious disease contracted in the hospital while taking treatment for a fractured limb, for example, is accepted as entitling to compensation, as also pneumonia or pleurisy developing during the sickbed required by the accident. In one case the man had been sent to the city for an operation on account of an accident, and in the city he succumbed to influenza. The council accepted that the influenza must have been in the incubation stage and that the exposure to the weather had rendered the course so grave. The council is more skeptical in regard to the connection between an accident and the development of diabetes, but occasionally it has been accepted as a consequence of an accident; a case of this kind has just been appealed to the higher court. Gastric ulcer is not accepted as a consequence of accident, even when a severe trauma has preceded its manifestations, but in rare cases the accident has been admitted to have been responsible for the flaring up of the lesion. The greatest difficulty is in cases of insignificant accidents to elderly persons, injury to an ankle or finger. The immobilization may have been too long, and the subject brings a physician's certificate to the effect that he is totally disabled. Sometimes a new examination shows that the character of the case has been misconstrued or else that the physician has been imposed on by simulation or exaggeration.

Pernicious Anemia with Stenosis in the Intestines.—Meulengracht adds two more cases to the list of those he has encountered in which stenosis of the small intestine was found with classic pernicious anemia. In the first here described, a stretch of the intestines with several old and new tuberculous strictures was resected; the woman of 64 was too debilitated to recuperate. In the second case the stenosis was evidently due to adhesions. No signs of tuberculosis were found but the roentgen findings indicate stenosis. The irritation of the mucosa of the bowel above the stricture allows resorption of substances which probably entail the blood disease.

Oct. 26, 1922, **84**, No 43

*Traumatic Injury of Nervous System. V. Christiansen.—p. 1444.
Rubeola Without Eruption. G. Fløystrup.—p. 1461.

Tardy Consequences of Trauma of Nerves.—Christiansen protests against the Danish legislation which refuses to consider a causal connection between accidents and affections which develop more than three years later. He describes a number of instructive cases in which the connection seemed to be beyond question although the interval had been nine, ten, up to twenty-one years. He emphasizes one clinical picture in particular, severe atrophy and sensory disturbances in the ulnar nerve domain with a deforming arthritis in the elbow and a history of dislocation of the elbow ten, twenty years before. The function of the elbow may be only slightly impaired by the bone affection; in one case merely the last five degrees for complete extension were hampered, but roentgenoscopy confirmed the bone lesion. He describes other cases in which a brain cyst developed at the site of a trauma of the head twenty or thirty years before. The interval was sixteen years in one case, and the man succumbed to embolism after the operation on the cyst. Christiansen regards the man's heirs as entitled to compensation as there had been more or less indications of irritation of the cortex during this long interval, as likewise in another case in which a fibrosarcoma was removed from the site of trauma ten years before. This man recovered full earning capacity two years after the operation. Instances of tardy traumatic epilepsy are cited which reproduce the various stages of genuine epilepsy. He describes in addition a case of trauma to the back of the head which was followed at once by unconsciousness and drowsiness. The third day there was total oculomotor paralysis. The somnolency persisted for two or three weeks but the condition was completely normal once more by the end of the month. The young man had been knocked down by a motorcycle, but the attending physician diagnosed epidemic encephalitis from the tendency to somnolency and the ptosis, and the claim for accident indemnity was rejected at first.

Upsala Läkareförenings Förhandlingar, Upsala

Oct. 28, 1922, **28**, No. 1-2

Grave Familial Jaundice in the New-Born. I. Thorling.—p. 1.
A Theory for Color Vision. H. Ohrvall.—p. 77.
Embolectomy. Three Cases. P. Häggström.—p. 107.
Psychology and Biology. H. Sjöbring.—p. 133.

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DRUGS AND ANIMAL EXPERIMENTATION

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The origin of the belief of mankind in the efficacy of drugs in the treatment of disease is a most interesting subject for speculation. The use of drugs antedates written accounts. Certainly the most primitive people on the earth today employ drugs as curative agents, and the earliest written records tell of the uses of drugs and poisons. We know that at certain periods disease was looked on as evidence of displeasure of the supreme being or beings, and that it was in the nature of a punishment visited upon man.

The view has been expressed that, since many of the materials used as remedies are disagreeable, either in odor, taste, texture or their origin, the taking of the medicine was of the nature of a sacrifice to appease the gods. The fact that not all of the materials used by primitive people are abhorrent is opposed to this view. Again, the belief in the efficacy of drugs may be attributed to the view which seems to have been held that since the supreme being created all things, including man, and sent the diseases to plague him, he must have created a remedy for every disease and left it to the ingenuity of man to discover the remedy. In the writings of the renowned Paracelsus [1] (1493-1541) occurs the statement: "Every disease has its medicine. For it is God's will that He be manifested in marvelous ways to the sick."

On the other hand, the belief in the efficacy of drugs, even in very early times, may have been based on observation and experience. Primitive man must have come in contact very early with strong pharmacologic agents, such as fruit juices, which, on being left exposed to the air, had fermented and yielded alcohol. He must have observed the effects of such materials. Similarly, among the plants, he must have found drugs which produced such remarkable effects that they would not escape the crudest observer. When he found substances which taken internally or placed on the skin produced decided effects on his body, nothing could have been more natural than for him to use such materials in treating injuries and illness in order to effect desirable changes within him. When illness plagued a man, he and his friends searched for a remedy as long as life lasted, and in the course of human history it is probable that almost every accessible material has been used in the treatment of disease.

1. Paracelsus: Die erste Defension, **1**: 253, quoted from Stillmann: Paracelsus, Chicago, The Open Court Publishing Company, 1920, p. 123.

The observations made on the action of the drugs in disease were crude and faulty, and no one knew what the course of the untreated disease would be, because all patients were given remedies. Yet, by this method, most valuable advances were made in the course of the ages. Thus, opium was in use before the Christian era, mercury was used in the treatment of syphilis in the sixteenth century, and cinchona bark, from which quinin is derived, was employed in the treatment of malaria in the seventeenth century. At the time of the Spanish conquest, the Indians of Peru were using coca leaves to assuage the pangs of thirst and hunger in their long journeys over the Andes. The action of the coca leaves, we now know, is due to the cocain which they contain, which acted partly as a local anesthetic and partly as a stimulant of the central nervous system.

The difficulty with this method was that it took many hundreds of years to advance the healing art with a definite contribution, and even then the value of the remedy in most cases was not actually proved, but was still a matter of opinion. Innumerable examples could be given to illustrate the increased value a drug possesses when its use passes from a haphazard to a scientific basis. We shall return to this subject later in this discussion.

Therapeutic investigation differs from most other types of work in that one cannot both treat an individual and leave him untreated excepting in certain diseases confined to the surface of the body. In other words we cannot divide an individual and treat half of him, and leave the other half untreated in order to determine definitely the effects of a drug under identical conditions. When we use different individuals, it is impossible to have conditions identical because two individuals may not respond in exactly the same way to a given disease or a given remedy, so that in all cases a therapeutic agent must be subjected to examination in a very large number of individuals under the best controlled conditions possible in order to get a final estimate of its therapeutic efficiency. Just as certain individuals may show an idiosyncrasy toward a drug and respond differently from the average of the same species, so there are certain differences in the response of different species to substances. The idiosyncrasy of certain species toward certain substances is well known and recognized. Apart from the remarkable variation in the response to drugs, noted in the case of certain species, there is a remarkable similarity in the response of the whole animal series toward drugs in general.

EFFECT OF VARIOUS DRUGS ON MAN AND ON ANIMALS

The statement is frequently made in antivivisection publications that man and animals are so dissimilar in

their reaction to drugs that no information of service in human medicine is derivable from studies of the action of drugs on animals. Such a statement has never been made or implied by any one having first hand knowledge of the subject. Let us examine the facts for a few of the most important drugs.

General and Local Anesthetics.—The most useful and safest general anesthetics for man are also the best and safest for the animals, and are in daily use whenever operations are performed on man or any of the higher animals. Can it be denied that the action of this group of substances on man and dog, for instance, is essentially identical? In the anesthetizing of the two, we employ the same agents and apparatus. Both pass through the same four stages under chloroform or ether, namely: (1) slightly impaired consciousness; (2) stage of excitement; (3) surgical anesthesia, and (4) toxic stage approaching death. The changes occurring in the circulation and respiration in chloroform and ether anesthesia are essentially the same in man and in dog. Similarly, the local anesthetics have the same effects in animals and in man. Thus, cocain placed in the eye of the dog or rabbit takes away the sensibility, and touching the eyeball no longer causes the animal to wink. All of the local anesthetics have been introduced through animal experimentation. For many types of operation in human surgery, they possess a great advantage over the general anesthetics.

TABLE 1.—MINIMAL FATAL DOSE OF STRYCHNIN

Animal	Mode of Administration	Minimal Fatal Dose per Kilogram Mg.
Rat	Subcutaneously	3.0
Frog	Subcutaneously	2.1
Mouse	Subcutaneously	1.3
Man	By mouth*	1.1
Ground squirrel	Subcutaneously	0.8
Rabbit	Subcutaneously	0.6
Cat	Subcutaneously	0.4
Dog	Subcutaneously	0.4

* It is probable that the fatal dose of strychnin for man by mouth is very nearly the same as it would be if given subcutaneously.

Soporifics (sleep-producing drugs).—The sleep-producing drugs for man act entirely similarly in the case of the higher animals. They produce sleep of a depth and duration depending on the dosage. As in man, an excessive dosage of these drugs will produce anesthesia. The soporific action of every member of this group of drugs was discovered by animal experimentation, and then used therapeutically.

Strychnin.—This substance acts essentially the same in the animal series from the frog to man. The drug in every case causes increased excitability of the spinal cord, so that ordinary sensory stimuli reaching the cord through the nerves carrying sensation cause convulsions which follow one another at intervals depending on the dose received and the rate of absorption. These convulsions in the frog, rabbit, dog or man can be produced by stimulating sensory nerves, and in the frog they can be largely prevented by cocainizing the skin. Cocain is absorbed through the intact skin of the frog. In treating strychnin poisoning in man, we apply the information gained through animal experimentation, largely with the frog; and although it is not practical to cocainize the entire surface of the body of a man, we keep the patient in a dark room free of all noise and vibrations, and protect him as far as possible from sensory stimulation.

The dose of strychnin for each kilogram of body weight necessary to kill many animals, including man, is known. The minimal fatal dose for the commoner forms is given in Table 1.

The minimal fatal dose of strychnin for man is arrived at through the many cases of murder, attempted murder, suicide and accident. Thus, not only the symptoms of strychnin poisoning, but also the fatal dose per unit of body weight is similar for man and the animals mentioned. So true is this that, in cases of poisoning, the toxicologist ordinarily tries the effect of the material isolated from the dead body on the frog—an important test in the identification of strychnin. The test is always recognized by the court. It is true that there are other species that are very much more resistant to strychnin than are man and the common test animals. Thus, the dose necessary to kill a snake is 23 mg. per kilogram, and for the bat, 40 mg. per kilogram. The amount of a substance that is required to kill an individual of one species may be much greater than for an individual of another species, and yet the type of action may be the same in the two cases. The fatal dose is only one of a number of important facts to be ascertained.

Atropin.—There are several instances in which the susceptibility of a particular species to a drug departs very far from that of the remainder of the animal series, and a case that is frequently referred to is the high degree of tolerance of the rabbit to atropa belladonna and the constituent atropin.

The action of atropin has been studied on certain beetles, amphibia (salamander, triton and others), the frog, guinea-pig, hedgehog, rat, rabbit, chicken, pigeon, dog and cat. Among the mammals, there is little difference in the symptoms produced, but marked differences in the dose required to produce similar effects. Man is the most sensitive creature to this drug; then in order come the carnivora and finally the herbivora. The rodents are particularly resistant to atropin.

Atropin and belladonna are very valuable drugs in human medicine. They are used:

1. To dilate the pupils for ophthalmoscopic examination and to prevent permanent damage in iritis.
2. To lessen vagal inhibition of the heart in certain cases of arrhythmia and to prevent reflex stoppage of the heart and death in certain conditions, such as in early chloroform anesthesia.
3. To reduce the secretory and motor activity of the stomach in gastric and duodenal ulcer, and to distinguish between pyloric occlusion of the stomach by spasm of the pylorus, which does not require operative procedure, and organic obstruction, which requires immediate surgical intervention.
4. To dilate the bronchoconstrictor muscles in asthma and in anaphylaxis and allied conditions, in which it may be life saving.

The first use mentioned did not require animal experimentation. The second use could never have been discovered except by animal experimentation, because without this method we should not have understood the function of the heart or the circulation, and therefore could not properly treat these conditions. The inhibitory action of the vagus nerve could not have been discovered, nor the action of atropin on it. The effect of atropin on the heart rate in the various species varies with the extent of vagal tone. The third and fourth uses of atropin could not have been discovered without animal experimentation. No one who is acquainted with the facts could doubt the immense value of animal

experiments in the elucidation of the proper therapeutic uses of atropin and belladonna in human and veterinary medicine.

Morphin.—Let us consider another case frequently referred to in antivivisection literature—namely, that the dog can hardly be killed by morphin. This statement is partly true. The fatal dose of morphin for the dog is about thirty times larger than that for man; yet, the action of morphin on man and dog is strikingly similar on the higher centers of the central nervous system. The fatal dose of a drug does not constitute the entire knowledge of the action of a drug, nor is it the most important factor, as these writers seem to think. In physiologic laboratories, general anesthesia is usually preceded by a liberal dose of morphin to relieve the dog of the stage of anxiety and excitement when going under the anesthetic. Every laboratory man, therefore, has had ample opportunity to observe the action of morphin on the dog. The dog under a 1 grain dose passes into a condition of lazy lethargy remarkably similar to that seen in man.

A striking characteristic of morphin as a pharmacologic agent is the fact that man readily develops the morphin habit, and at the same time develops a tolerance for the drug so that a dose many times as large as the ordinary dose may be taken without producing a greater effect than the original dose. Exactly the same holds for the dog. The nature of morphin habituation and tolerance has been studied in the dog, and Faust [2] found that dogs behave in a manner remarkably similar to man under these conditions. Through this work on dogs, it has been found that morphin tolerance depends largely on the fact that repeated administration of the drug results in the developing by the body of increased power of destroying the drug. It is obvious, therefore, that dog and man react remarkably alike to morphin.

The Anthelmintics.—The drugs used against intestinal parasites, although the most logical for the antivivisectionist to attack, have been particularly free from their condemnation. Here we purposely select a drug for the sole purpose of killing or stunning an animal and driving him out of his natural home and habitat into outer coldness and an environment where he must necessarily die from starvation and neglect! Our conduct becomes the more reprehensible when we recall how completely these poor creatures are dependent on man and how attached they become to him, never voluntarily deserting him, no matter how dangerous or disagreeable a position he may occupy. Will the antivivisectionist here also claim that animal experimentation is of no avail? Do studies of the toxicity of anthelmintics on worms mean nothing? These are animal experiments. Owing to the lack of available material for work in this field at all times, Dr. Torald Sollmann has suggested and used earthworms as test objects.

The same anthelmintics are used in the similar infections in man and in the higher animals with equal success. For example, santonin is used in infections with *Ascaris lumbricoides* (roundworm) in both man and pig. In the field of anthelmintics, animal experimentation is essential for two reasons: to determine the toxicity of the drug (*a*) to the worm and (*b*) to the host. This yields us the "therapeutic index" of the drug.

The Digitalis Group.—In considering the debt of human medicine to animal experimentation in connection with all the drugs acting on the circulation, we must begin by stating that without animal experimentation we would not know the function of the heart. We would think, as people thought before Harvey's work (1628), that the arteries were filled with air and that the blood ebbed and flowed in the veins. It was through animal experimentation that we obtained correct and detailed knowledge regarding the normal circulation, and of course without such knowledge the efficient treatment of diseases of the heart and blood vessels would be out of the question.

In view of these facts, it seems hardly necessary to discuss in detail the debt of medicine to animal experimentation in connection with the important drugs acting on this system. It may be stated, however, that practically all of our knowledge of the action of all drugs affecting the circulation was obtained first through animal experimentation. It is inconceivable that we could ever have obtained a correct knowledge of the action of digitalis without resorting to this method of study. The life-saving action of digitalis in organic heart disease is one of the most striking instances of the efficacy of drugs in medicine.

The Nitrites.—The action of the nitrite series on the circulation was discovered through animal experimentation, and then applied to human medicine. The remarkable relief of an attack of angina pectoris by amyl nitrite, discovered by Sir T. Lauder Brunton, himself an eminent experimenter, will always remain as a brilliant therapeutic achievement. The discovery was based directly on animal experimentation. The same applies to epinephrin, the active principle of the suprarenal gland, used locally to stop hemorrhage, in certain types of shock, and to relieve attacks of asthma.

The Antiseptics.—In considering the group of antiseptic drugs, we must bear in mind that the relation of bacteria to disease would have remained unknown except for animal experimentation; and since the antiseptics are used to prevent the growth of bacteria or to kill them, we cannot conceive of the rational development of this type of drug without knowing anything of bacteriology.

A champion of the antivivisection cause, W. R. Hadwen, who has been addressing antivivisection societies in this country, has made a large number of statements regarding the use of antiseptics. There occur such statements in his addresses as the following: "I am positive that before another decade has rolled by, instead of germs being looked upon as our worst enemies, they will be looked upon as the best friends we have." In spite of his professed feelings of friendship for these germs, he objects to their being injected into man, even when their efficacy as vaccines is proved. He refers to them in other places as filth. He speaks most scornfully of the antiseptics in one place when their use was proposed by medical men through animal experimentation, but lauds their empiric use by Semmelweis because he thought that the great contribution of Semmelweis was in no wise connected with animal experimentation. As a matter of fact, Semmelweis did do animal experimentation.

The death rate of women in the Lying-In Clinic in Vienna dropped from 11.4 per cent. in May, 1847, to 1.27 per cent. the year following the practice of disinfecting the hands with chlorinated lime. A breach of technic on the part of a student, with an attendant rise of mortality to 5.25 per cent., demonstrated by human experimentation the efficacy of the antiseptic. On

2. Faust, E. S.: Arch. f. exper. Path. u. Pharmakol. **44**: 217, 1900.

account of these terrible experiments on human beings, Semmelweis declined to do further animal experiments, as he regarded the result of this breach of technic as a conclusive demonstration. Certain prominent antivivisectionists writing for their cause seem to approve heartily of this terrible sacrifice of human life in the Vienna Lying-In Clinic to establish a point which could have been proved readily by a few animal experiments.

In other words, when antiseptics are introduced by Semmelweis through human experimentation, the antivivisectionist is in favor of them; but when they are introduced by Lister and Carrel on the basis of Pasteur's work and all those who founded the science of bacteriology through animal experimentation, he scorns their use. The same champion of antivivisection referred to above quotes the statement from Capt. J. Stanley Arthur, that "chlorin gas had solved the problem of a pure water supply on a large scale for the troops, and accounted for the fact that there was no epidemic of typhoid or other water-borne disease which caused such havoc in the South African campaign." He uses this in his tirade against typhoid vaccine. Apparently, the gentleman does not know that chlorin in purifying water acts as an antiseptic, killing the bacteria causing the water-borne disease, and that the amount required and the results are controlled entirely by bacteriologic methods.

SIMILAR REACTION OF ANIMALS AND MAN

The statements made in antivivisection literature that the animals react entirely differently from the human being to drugs is further refuted by three outstanding facts:

1. Canary birds are used by miners the world over for the detection of the gas known as carbon monoxid. This substance is a very poisonous gas which combines with the red coloring matter of the blood—hemoglobin—and replaces the oxygen carried by this pigment, forming carbon monoxid hemoglobin. This robs the blood of its most urgent function—the carrying of oxygen from the lungs to the tissues—and results in death when the blood is about 80 per cent. saturated with the gas. This gas is present in many mines, and active ventilation of the mines is required to keep the concentration down below the danger point. All the higher animals have hemoglobin in their blood and react to carbon monoxid in precisely the same way that man does. All animals below the vertebrates, which do not depend on hemoglobin for the transport of oxygen, are totally unaffected by the gas. Birds, because of the large volume of air breathed per unit of body weight, and because of their small size and small blood volume, become affected by carbon monoxid before man, and when the miner observes that his canary bird is lying down instead of perched up as normally, he realizes that the air is not suitable for the support of life and he makes a hasty exit for clear air. If he reaches wholesome air in time, the bird revives—if not, the bird dies. Would the antivivisectionist deny the miner this security which animal experimentation has given him in order to protect the bird against the possibility of death by asphyxiation?

The mouse was formerly used as an indicator for carbon monoxid, but the difference in the attitude of a normal mouse and one suffering distress is not so readily observable as in the case of the bird. This use of animals would be obviously impossible if animals and man responded utterly differently to chemicals, whether drugs, which in proper dosage are useful in the restoration of health, or poisons.

2. Before the rise of toxicology, which made the detection of poisoning almost certain, people lived in dread of being poisoned by their enemies. This dread was particularly pronounced among important personages, the royal families, and persons prominent in the affairs of church and state. It was then a common practice to have the cooks or servants first partake of the food, and frequently the food was fed to animals when there was reason for believing that it might contain poison. Instances of the recognition of the similarity in the action of food and poisons on man and on animals are found in ordinary literature.

In "The Swiss Family Robinson" we find, the statement, "As a rule we may consider any kind of vegetable or fruit eaten by birds or monkeys as wholesome"; and, again, the father of the family suggests that the edibility of the figs be tested on the pet monkey before eating them. This book, by a medical layman, which breathes a spirit of kindness to animals, therefore suggests the use of animal tests in determining the action of unknown materials on man, and represents the opinion which would be given by any layman with common sense.

Similarly, the toxicologist of today, when searching for an unknown poison in a dead body, administers a small amount of the supposedly toxic material to a small frog in order to determine the presence or absence of any poison in it.

3. If any final proof were needed that drugs act very similarly on man and the higher animals, it is furnished by the fact that many drugs are standardized by biologic methods—i. e., testing on animals. The active principles of certain important drugs cannot be quantitatively determined by chemical means with the desired accuracy. The most important instances are the drugs of the digitalis series, the drugs acting on the uterus, and antitoxins, vaccines and serums.

The digitalis drugs are used in the later stages of organic heart disease, often prolonging the patient's life and enabling him to return to the ordinary duties and pleasures of life. When this drug is administered, the physician must know that the particular specimen is not inert, that it has the power to do that which is expected of it, and finally what dose of the particular preparation is required. This can be ascertained only by experiments on animals or by its use at the bedside when human life lies in the balance, with the family watching the experiment and the fate of the family at stake.

The action of digitalis on the frog and on the cat is sufficiently like its action on man to enable us to determine its potency as a cardiac drug and to determine its dosage. In the frog, the digitalis bodies act also on the muscle of the heart, increasing the contractions, and by determining the amount required to bring the heart of a 20 gm. frog to systolic standstill in exactly one hour, we learn the potency of the drug for man also.

Ergot and pituitary extract are used to prevent hemorrhage following childbirth. Not infrequently following delivery, the uterus fails to contract and remains flabby and dilated, and severe bleeding results. The two drugs that are most used to bring about contraction of the uterine muscle, thereby constricting the blood vessels and stopping hemorrhage, are ergot and extract of the posterior lobe of the pituitary gland. Here also the active principles cannot be quantitatively

determined chemically, and again we are forced to resort to biologic testing. In this case, the best test object is the uterus of the virginal guinea-pig. The action on the uterus of the guinea-pig is the same as on the human uterus—the drug causes contractions of the uterine wall. Surely, the antivivisectionists would not have us determine the potency of the drug on the young mother, nor would they take the responsibility for the loss to the husband and new-born for the ebbing away of the mother's life because the preparation of the drug was inert. The same conditions obtain in determining the potency of diphtheria antitoxin and other antitoxins. Here, again, in the absence of animal experimentation we should have to determine whether or not the antitoxin was active on the child sick with diphtheria. How many persons would consider such a procedure in the case of their own child?

With this evidence, the reader may decide whether the effects of drugs on animals and man are so utterly dissimilar as to render such studies useless. In the light of these facts, consider for a moment the responsibility which the antivivisectionist assumes toward you and me and all mankind in urging the abolition of animal experimentation.

GENERAL CONSIDERATIONS REGARDING DRUGS AND ANIMAL EXPERIMENTATION

In order to give a more general picture of the importance of animal experimentation to the science of pharmacology, a few of the fundamentals of the subject which have been established may be briefly referred to.

Pharmacology is that phase of biologic science which deals with the action of chemicals or mixtures of chemicals on living things. It is therefore a fundamental branch of medical science, and is an important study in every medical curriculum. In its relation to medicine it deals largely with substances that are useful in human therapy. In its relation to veterinary medicine, emphasis is laid on drugs and poisons important from the point of view of that subject.

Pharmacology has largely furnished the basis for the scientific use of drugs in the curing of diseased conditions, the alleviation and prevention of pain, and the prolongation of life. These are the basic problems with which it deals. As a by-product, pharmacologic work often leads to important contributions in the field of normal function; i. e., physiology. Again, pharmacologic work often leads to important advances in pathologic physiology, and thereby elucidates the subject of functional derangements in disease. The subject includes structural changes in the body as a result of chemical agencies, chemical changes in the drug as a result of its passage through the body, and the relation of chemical constitution of drugs to pharmacologic action. The term "pharmacology" is sometimes used in a somewhat narrower sense by restricting it to the alteration of function by chemical means. In the treatment of disease by drugs, we are concerned with the alteration of abnormal function by chemical means.

The cells of our bodies are bathed in a fluid—lymph—derived from the blood and tissues, which insures a free interchange of material between blood and tissues. The body cells of the higher animals live in a fluid medium as truly as do single-celled forms which live in the ocean. All animal experimentation shows that life depends on the maintenance of a certain physical and chemical environment. The administration of any drug that brings about a change in the functional activity of the cell must do so in consequence of a change in the chemical environment of the cell. In order to understand this change it is necessary to understand the normal chemical environment of the cells of our body. The body of facts concerning the normal chemical environment constitutes the subject of physiologic chemistry.

Changes in the chemical environment of the cells of the body are of two types: (1) negative and (2) positive, the two being equally definite. A negative change in the chemical environment is brought about by a reduction of dosage or entire withdrawal of something that has become a factor in the chemical environment and therefore a substance to which the cell has become accustomed. Thus, a decrease in the supply of oxygen causes striking symptoms or even death. The withholding of food from the animal, the withholding of cocain, morphin, alcohol, coffee and tobacco from the body habituated to these drugs, or the withholding of the vitamins from the diet are all instances of a negative change in the chemical environment which brings about more or less striking changes in the functional activity of the cells.

A positive change in the chemical environment results every time an active drug is administered. The administration of a definite dose of a drug may produce changes in the functional activity of different intensity according to the mode of administration. The intensity of action of a drug depends on the concentration in which it reaches the particular cells on which it acts, and the duration of time that this concentration is maintained. The concentration which a drug reaches in the body is a function of two factors: (1) the rate of absorption, and (2) the rate of its removal from the body. Drugs are removed from the body by two general methods: (*a*) excretion, and (*b*) chemical destruction in the body.

Thus, a drug administered by mouth is usually absorbed more slowly than if administered subcutaneously or intravenously, and in this case the intensity of action is determined by the rate of absorption. If the rate of absorption drops below the rate of removal, the drug has no effect in the body because a sufficient concentration is not obtained. Therefore, it is very important for us to know the rate of absorption of drugs when administered by any of these routes. None of this information applicable to all cases of drug action could have been obtained without animal experimentation. The very rudiments of the subject could not have been elucidated.

Starting about thirty years ago and lasting for a period of ten or fifteen years, there was a general state of mind among physicians that there were few drugs valuable in the treatment of disease. This period of drug nihilism served a most useful purpose because the existing knowledge of the use of drugs, many of which had been handed down through the ages, was unreliable and there was a sort of blind confidence in the efficacy of drugs which resulted of necessity in disappointment when they were critically used. Within the last fifteen or twenty years, there has been great progress made in the treatment of disease. The increase in the amount of animal experimentation has placed the use of drugs on a much firmer basis. Nearly all valuable new drugs have been introduced by the route of animal experimentation, the only noteworthy exception being chaulmoogra oil, the use of which in leprosy was determined in human beings without preliminary

animal experimentation because leprosy is a disease which cannot be given to animals. The latter fact is probably responsible for the great delay in finding adequate treatment for the disease.

Animal experimentation has resulted in increasing the usefulness of old drugs. It has also been extremely useful in discarding drugs that are useless and in clearly defining types of cases in which a given drug is indicated and may be of service. The result of all the work that has been done is that drugs are used today in a much more scientific way than formerly, and drugs are not expected to accomplish what is impossible. Thus, in degenerative diseases in the course of which specialized tissue has actually disappeared as a result of disease processes and has been replaced with inactive scar tissue, and when such loss of tissue produces symptoms, it is vain to hope to restore the lost tissues by drugs. The use of drugs in such conditions is as futile as would be an attempt to cure a wooden leg or a glass eye, by drugs. The proper use of medicines, therefore, presupposes an accurate knowledge of the pathology of the disease, in regard to structural changes both in the tissues and in their function.

TABLE 2.—CURATIVE DRUGS

Drug	Disease
Quinin	Malaria
Mercury	Syphilis
Arsphenamin	Syphilis
Neo-arsphenamin	Syphilis
Arsanilic acid	Trypanosomiasis
Chaulmoogra oil	Leprosy
Emetin	Amebic infestation
Oil of chenopodium	Hookworm infestation
Thymol	Hookworm infestation
Santonin	Roundworm (Ascaris lumbricoides) infestation
Pelletierin	Tapeworm infestation
Thyroid gland (thyroxin)	Cretinism, myxedema and milder forms of hypothyroidism
Diphtheria antitoxin	Diphtheria

Let us take up a single instance of how animal experimentation has greatly improved the therapeutic use of old drugs. Digitalis was introduced into medicine by Dr. William Withering in 1785 for the treatment of dropsy. Clinicians at various times urged its use in various conditions, a partial list of which would include apoplexy, rapid pulse, inaccessible hemorrhage, tuberculosis, tuberculous hemorrhage, inflammatory fever, malaria, neuralgia, epilepsy, hemicrania, general paresis, delirium tremens, menorrhagia, uterine atony and typhoid fever.

Digitalis was in general use for seventy-five years before its action was studied by the method of animal experimentation. In spite of all these years of clinical use, the views held by medical men regarding its action were in many important respects entirely erroneous, and its field of therapeutic usefulness was not clearly defined, as the list of conditions in which it was recommended clearly indicates. Thus, in 1860, Clarus [3] stated that digitalis slows and weakens the heart. Animal experimentation with this drug started about this time, and as a result the therapeutic use of digitalis now is strictly limited to the condition in which it can definitely be proved that it is of service—namely, to relieve or prevent decompensation in heart disease and to relieve acute cardiac breakdown. The drug greatly strengthens contractions of the heart muscle. This we know by direct observation, and this knowledge could not have been reached without animal experimentation. In the other conditions its use has been virtually abandoned. In the same manner, many useless drugs have been eliminated, and the sphere of usefulness of many worth-while drugs has been accurately defined so that positive proof exists of their usefulness, each in its own field.

3. Clarus: Handbuch der speciellen Arzneimittellehre, 1860.

PURPOSES OF DRUGS

Drugs are used in medicine for four main purposes: (1) to cure; (2) to relieve; (3) to diagnose, and (4) to prevent disease.

The curative drugs actually remove the cause of the disease. They are sometimes referred to as specific drugs. A list of the best recognized curative drugs is given in Table 2.

The palliative drugs are used to relieve symptoms of disease and often thereby prolong life. The most important of this group of drugs are given in Table 3.

The drugs used to relieve or to prevent pain include the general and local anesthetics, opium, morphin, codein, scopolamin and analgesics of the acetanilid-acetylsalicylic acid groups.

Drugs used to meet special emergencies include ergot and preparations of the pituitary gland, to prevent hemorrhage following childbirth, and iron salts, to cause a rapid regeneration of blood in chlorosis and secondary anemia.

Drugs used for diagnostic purposes include tuberculin, principally in veterinary medicine; phenolsulphonephthalein, in tests for kidney efficiency; atropin sulphate, in cardiac arrhythmias and functional spasm of the pylorus, and several others used less frequently.

Drugs used to prevent disease include the iodids, to prevent the development of goiter; tetanus antitoxin, to prevent lock-jaw; diphtheria antitoxin, to prevent diphtheria, and vaccinations, to prevent smallpox, typhoid fever, etc.

In many instances the use of the palliative drugs saves life by tiding over a crisis and enabling the natural forces tending to restore the normal to become operative.

TABLE 3.—PALLIATIVE DRUGS

Drug	Most Important Uses
Digitalis group	Decompensated heart disease
Purgatives	Constipation, to rid body of excess of fluid
Camphor	Cardiac embarrassment
Epinephrin	Shock, hemorrhage, asthma
Nitrites	Especially amyl nitrite in angina pectoris
Diuretics	To increase secretion of urine
Arsenous oxid	Pernicious anemia
Glucose	To prevent acidosis
Soporifics	To promote sleep; in certain types of convulsions
Atropin	To prevent vagal stoppage of heart; decrease secretions; relax bronchioles; mydriatic
Strychnin	To stimulate respiratory center
Bromids	Epilepsy
Phenobarbital	Epilepsy

The great clinician Sydenham said, "Without opium few would be callous enough to practice therapeutics." It is essential that the physician be able to control pain, since pain is most exhausting. The recent work on shock has emphasized that severe pain itself is inimical to the return of the normal state.

RÔLE OF ANIMAL EXPERIMENTATION IN THE INTRODUCTION OF A NEW DRUG

The rôle of animal experimentation in the introduction of a new drug into human or veterinary medicine should be presented. In order to have a concrete example before us we shall take a new arsenical drug which some investigator conceives will be a better drug than any known in the treatment of syphilis. Let us begin

with Ehrlich's drug arsphenamin, which was introduced about 1910, in the treatment of syphilis.

Ehrlich started out with the information that an organic arsenical compound known as atoxyl is useful in the treatment of diseases caused by trypanosomes, such as trypanosomiasis (South African sleeping sickness). The trypanosomes are biologically closely related to *Spirochaeta pallida,* which is the infectious organism in syphilis. Trypanosomiasis is virtually always fatal if untreated. Atoxyl possesses certain disadvantages, however, in that in certain cases it causes impairment of vision or even blindness. Ehrlich found that atoxyl has no action on the organisms in question when they are exposed to the drug in the test tube. In the infected animals (rats, mice and fowl), the drug has a definite destructive action on the parasites.

Ehrlich and his colleagues then began to make a series of chemical derivatives of atoxyl, producing in all nearly a thousand substances. The six hundred and sixth substance, known as arsphenamin, had outstanding value in the treatment of animals experimentally infected with syphilis (rabbit), trypanosomiasis (rat and mouse) and spirillosis (fowl). The next point which had to be elucidated by Ehrlich and his coworkers was the so-called therapeutic index; namely, the ratio of the curative dose to the maximal tolerated dose. For a drug to be useful in medicine there must be a sufficient margin of safety between the dosage which will be beneficial and that which will do harm. This ratio again must be worked out on animals. Following this part of the study, the toxic dose of the drug is determined in a series of animals—rabbit, guinea-pig, white rat and white mouse. The data thus obtained enable one to arrive at the surely safe dose which may be used in the first studies in human therapy. The pathologic changes in the tissues produced by toxic but nonfatal doses of the drug in animals must next be studied in order to determine the point of attack of the drug in the body so that in the first cases of therapeutic use in which it is studied we shall know exactly what type of symptoms to look for if the drug exercises any toxic effects. Some drugs in toxic doses manifest their first effects on the circulation, others on the nervous system, the skin, digestive organs, or the kidneys, etc.

In this manner we may focus our attention in the early therapeutic study in man on the organs likely to be attacked, and by appropriate tests detect the very earliest sign of any deleterious effect. In this way a drug may be excluded in human medicine if it is too dangerous—that is, if there is not a sufficient margin of safety between the therapeutic and toxic dosages without injuring a single individual. Without the preliminary animal experimentation it would be impossible to know where a drug would act or what drugs were worthy of study in human or veterinary medicine. No man who had the proper feeling toward his fellows could be induced to make such a study at the present time without the information to be obtained by animal experimentation.

The statement is frequently made in antivivisection literature that "the last experiment must always be on man." The foreknowledge gained from animal experimentation is of as much value as are the laboratory tests made to determine the strength of new materials used in the construction of a bridge. The final experiment is made when the bridge is built and in use; the preliminary tests must be made in the laboratory to learn the strength of the materials and whether there is any probability of success. No engineer would think of using untested new materials. Surely those opposed to animal experimentation would hesitate to recommend that tests of new drugs be made on the human being without previous trials on the lower animals.

With all of this preliminary information, animal experiments would still have to be done to determine the chronicity of the lesions produced by a toxic dose of the new arsenical drug in order to know what period of time should elapse before repeating a dose for therapeutic effects. It is essential that the repetition of doses be spaced so that there will be no accumulation of toxic effects. Finally, after a drug has been successfully introduced, it is necessary in the case of arsenicals to control each batch of the manufactured product to make sure that every step in the process is properly controlled. Therefore, the toxicity must be tested on animals, or human life would occasionally be sacrificed.

It is variously estimated that from 5 to 10 per cent. of the population have syphilis. This disease menaces the next generation, and it is of inestimable importance to control its ravages. There is no field of medicine in which animal experimentation is more important for progress or in which the results have conferred greater benefits on man. The future in this line of endeavor holds even greater promise that this scourge will be conquered.

It should always be borne in mind that some of the greatest discoveries in therapeutics are the outcome of pure research undertaken with the thought of increasing the bounds of biologic knowledge but without the thought of immediate application; but this is not always the case.

Sir T. Lauder Brunton,[4] an eminent physician and an ardent animal experimenter, wrote, in 1867: "Few things are more distressing to a physician than to stand beside a suffering patient who is anxiously looking to him for that relief from pain which he feels himself utterly unable to afford. His sympathy for the sufferer, and the regret he feels for the impotence of his art, engrave the picture indelibly on his mind, and serve as a constant and urgent stimulus in his search after the causes of the pain, and the means by which it may be alleviated." Brunton had in mind the patient suffering from angina pectoris, an agonizingly painful disease of the heart, and he introduced the use of amyl nitrite, which often affords magical relief. The introduction of this drug by Brunton was the direct result of animal experimentation. Similarly, the observation of human suffering at the bedside and the depth of sympathy felt by the physician is often the direct stimulus for investigation involving animals. The physician's sympathy in these cases does not take the idle form of such phrases as, "Too bad; I am sorry, but we must save the guinea-pigs." He leaves the bedside with the determination to be able to control the next such situation which arises, and to bestow the blessings of relief for which his profession stands. He knows full well that to accomplish his purposes means energy, hard work, ingenuity, ability to stand up under disappointments, financial loss and self sacrifice. All these obstacles he is ready to face; they are inevitable, and he knows it. But there is a form of obstruction which he ought not to have to encounter. It is the opposition of persons who are either fanatical or misinformed on the subject of animal experimentation.

4. Brunton, T. L.: Lancet, July 27, 1867.

Among the former one often sees individuals with an excess of money and leisure and no legitimate outlet for their energies, who either have no conception of the mass suffering of the race, or are totally callous to it, who seek to interfere with his noble purpose and to revile him, his methods, and his purposes, to the uninformed public through falsehood and calumny. Attempts to convince such persons of the legitimacy and propriety of animal experimentation have been and probably always will be fruitless; but, as already intimated, there are other individuals who have taken this matter up largely because of the misrepresentations perpetrated by their fanatical colleagues. It is to this misinformed class and to the uninformed public that the experimenter must appeal, and in so doing he feels that their intelligence and rational philanthropy will be ready to meet him half way and result in a complete understanding.

Forget for a moment that the methods of animal experimentation have given us practically all of our knowledge of physiology and hygiene, the science of bacteriology, aseptic surgery and local anesthesia, and have greatly contributed to the knowledge and safety of general anesthesia, and the proper use of most of our drugs. In brief, let us suppose that the methods of animal experimentation had not added immensely to our knowledge of human and veterinary medicine and practically rid the world of Asiatic cholera, yellow fever, bubonic plague and many terrible epidemic diseases affecting animals. On this supposition, let us imagine that a physician sees a patient suffering with general paresis resulting from an accidental and innocent infection with syphilis years previously. He knows that the mental impairment if untreated will be permanent, that the family will lose a valuable member and will be stigmatized by having a member die in a hospital for the insane, and that the marriageability of sons and daughters will be interfered with. Suppose this physician begins an investigation involving animals in the determination to find a way of treating or preventing the development of this disease, believing that animal experimentation had never up to that time accomplished anything. Should he be helped or hindered in his work? Let those who suffer answer; or, if they cannot, let those who see them and render all aid within their knowledge answer for them. But do not allow the answer to be given by those who are ignorant and refuse to be informed, and who lead such happy lives that they never come in contact with anything more pitiable than a dumb animal. Their opponents see poignant human suffering all the day and every day. The ideal and logical solution would be to let each group turn its attention to the relief of the type of suffering that it sees. The medical experimenter is unalterably opposed to wanton cruelty wherever found, and will lend moral and financial support to any movement directed against it. The only conflict that exists is that those in favor of animal experimentation demand that the lives of a few animals may be sacrificed in the most humane manner possible for the benefit of the human race and the remainder of the animal world. The proposition may be briefly stated in this way: Every new drug must have its first trial. Shall this first trial be on man or on animals? Each must answer this question for himself; but the answer must be made with the full knowledge that drugs act very similarly on man and on animals.

INTRACUTANEOUS REACTIONS IN PERTUSSIS

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During the last four years, several epidemics of pertussis have occurred in a large institution for the care of children harboring about 400, ranging in age from 1 day to 6 years. The opportunity was thus afforded us to study the disease with special reference to (*a*) natural immunity, (*b*) acquired immunity, and (*c*) the diagnosis of the disease in its earliest stages, and before the onset of the characteristic spasmodic cough, whoop and vomiting.

Children exposed in previous epidemics and not acquiring the disease were considered as possessing a natural immunity. Other children giving a history of having had the disease before admission, or having had an attack of pertussis while in the institution, were grouped as those possessing an acquired immunity.

To possess a method whereby it would be possible to designate a child as having a natural or acquired immunity, and to be able to diagnose pertussis in its earliest stages would be an invaluable addition to our control of the disease: its epidemiology and therapeusis.

In our study we employed various preparations of the Bordet-Gengou bacillus, injected intracutaneously. The specific reaction obtained by Schick[1] with diphtheria toxin was taken as our standard of comparison.

The injections were made into the upper part of the flexor surface of the forearm. Two minims was injected intracutaneously. Separate needles and syringes were used for the control and the solutions. The controls consisted of physiologic sodium chlorid solution, this solution plus preservatives, or broth and ascitic fluid, as used in the various test solutions. No reaction was read before forty-eight hours had elapsed, thus eliminating the element of error (pseudo-reactions). All reactions were considered positive that were found to be present at forty-eight hours and persisting for seventy-two, and in most cases ninety-six hours. The size of the reactions varied from 5 mm. to more than 1 cm. in diameter. Induration was usually present, and many of the reactions were sharply defined. They were red, and the color persisted for about four days, gradually fading. Peeling often closed the reaction. No constitutional disturbances accompanied the injections.

TABLE 1.—REACTIONS TO PERTUSSIS VACCINE, EIGHT BILLION TO EACH CUBIC CENTIMETER, IN EPIDEMIC OF 1918

Number of children injected	164		Control
Number of children injected, with natural immunity and exposed at time of injection (no history of pertussis)	77	Pos. 42 Neg. 35	Pos. 0 Neg. 77
Number of children injected, with acquired immunity and exposed at time of injection (history of pertussis)	35	Pos. 23 Neg. 12	Pos. 0 Neg. 35
Number of children injected, ill with pertussis at time of injection	52	Pos. 52 Neg. 0	Pos. 0 Neg. 52
Number of children originally negative, later positive with onset of the disease	26		
Number of children originally positive, later increased positive with onset of the disease.	10		

In the epidemic occurring in 1918, we used pertussis vaccine. The strength of the injected material was 8 billion to each cubic centimeter.

1. Schick: München. med. Wchnschr. **9**: 2608-2610, 1913.

A close scrutiny of Table 1 will disclose that the contradictory reactions rule out the specificity of the injected material. Although all children ill with pertussis gave a positive reaction, twenty-six of them had shown a negative reaction at a previous injection. All retest cases became positive at the second injection (sensitization?)

In the epidemic occurring in the following year, a weaker solution was employed. It was thought that the large number of positive reactions obtained with the stronger vaccines might be interpreted as protein reactions.

In a study of Tables 2 and 3 it will be seen that the number of negative reactions increased as the strength (in protein) of the test solutions became less.

TABLE 2.—REACTIONS TO PERTUSSIS VACCINE, TWO BILLION TO EACH CUBIC CENTIMETER, IN EPIDEMIC OF 1919

			Control
Number of children injected	61		
Number of children injected, with natural immunity, and exposed at time of injection (no history of pertussis)	23	Pos. 19 Neg. 4	Pos. 0 Neg. 23
Number of children injected, ill with pertussis at time of injection	38	Pos. 30 Neg. 8	Pos. 0 Neg. 38

No retest injections made in this group.

TABLE 3.—REACTIONS TO PERTUSSIS VACCINE, FOUR, EIGHT, SIXTEEN AND THIRTY-TWO MILLION, IN EPIDEMIC OF 1919

			Control
Number of children injected	20		
Number of children injected, with natural immunity	6	Pos. 0 Neg. 6	Pos. 0 Neg. 6
Number of children injected, ill with pertussis at time of injection	14	Pos. 0 Neg. 14	Pos. 0 Neg. 14

No retest injections made in this group.

In the Schick test we have important factors entirely wanting in the materials used in Tables 1, 2 and 3. Schick, working with a toxin liberated by the diphtheria bacillus, was able to use a substance whose dosage could be accurately gaged. There is no proof at hand that the Bordet-Gengou bacillus liberates an exotoxin, although it is true that living Bordet-Gengou bacilli injected intraperitoneally into guinea-pigs have proved fatal, when grown under certain cultural conditions.

Our problem then confined itself to obtaining a substance produced by the Bordet-Gengou bacillus under the same conditions as those existing in the preparation of diphtheria toxin. Through the courtesy of Dr. Olga Povitzky of the New York board of heatlh, so-called pertussis "toxin" was prepared. Bordet-Gengou bacilli were grown in broth with ascitic fluid, and the filtrate

TABLE 4.—REACTIONS TO PERTUSSIS "TOXIN"

			Control
Number of children injected	27		
Number of children injected, with natural immunity and exposed at time of injection (no history of pertussis)	8	Pos. 5 Neg. 3	Pos. 2 Neg. 6
Number of children injected, with acquired immunity and exposed at time of injection (history of pertussis)	9	Pos. 5 Neg. 4	Pos. 1 Neg. 8
Number of children injected, ill with pertussis at time of injection	10	Pos. 8 Neg. 2	Pos. 3 Neg. 7

No retests were made in this group.

was used. Large quantities of this filtrate injected into mice did not prove fatal.

Antigen extracts as described by Povitzky [2] were used in the epidemic occurring this year. This substance was prepared by scraping a forty-eight-hour growth of *Bacillus pertussis* on coagulated horse blood-veal-agar medium into distilled water, shaken for two successive days, brought up in the water bath to 56 C.,

TABLE 5.—REACTIONS TO PERTUSSIS ANTIGEN

			Control
Number of children injected	104		
Number of children injected, with natural immunity and exposed at time of injection.	43	Pos. 10 Neg. 33	Pos. 0 Neg. 43
Number of children having pertussis at time of injection	61	Pos. 34 Neg. 27	Pos. 0 Neg. 61

No retests were made in this group.

and left in the incubator at the same temperature over night; the next day the emulsion was centrifuged and the supernatant fluid rendered isotonic by adding 9 per cent. of salt.

The reactions in Table 5 most resembled in size, shape and color the positive Schick reaction. A greater number of positive reactions were obtained during the early stages of disease. Further studies will be carried out with various concentrations of pertussis antigen.

Orgel,[3] following the work done by Modigliani and de Villa,[4] obtained a seeming specificity of reaction by the intracutaneous injection of *Bacillus pertussis* vaccine containing 2 billion bacilli to each cubic centi-

TABLE 6.—REACTIONS TO PERTUSSIS VACCINE (AUTOLYZED), TWO BILLION TO EACH CUBIC CENTIMETER

Number of children injected, ill with pertussis	26	Pos. 20 Neg. 6
Number of children injected, having an acquired immunity	6	Pos. 6 Neg. 0
Number of children injected, with natural immunity, exposed at time of injection	21	Pos. 18 Neg. 3
Healthy children not exposed at time of injection	7	Pos. 7 Neg. 0
Saline control in all cases		Pos. 6 Neg. 54

TABLE 7.—REACTIONS TO STAPHYLOCOCCUS VACCINE (AUTOLYZED), TWO BILLION TO EACH CUBIC CENTIMETER

Number of children injected, ill with pertussis	24	Pos. 20 Neg. 4
Number of children injected, with acquired immunity	5	Pos. 5 Neg. 0
Number of children injected, with natural immunity	3	Pos. 3 Neg. 0
Healthy children injected and not exposed to the disease	7	Pos. 7 Neg. 0

meter. Modigliani and de Villa used a solution of *Bacillus pertussis* in distilled sterile water (one platinum loop to each cubic centimeter of water) incubated at 37 C. for forty-eight hours. As a control, autolyzed *Bacillus coli* was used. In fifty-eight immune children there were no positive reactions with either the test solution or the control. In thirty-eight children ill with pertussis, all reacted positively; controls were negative. They describe the positive reaction as a papule which usually disappears in twenty-four hours. The intensity of the reaction was greatest in the early stages of the disease. Our reactions, as shown in Tables 6 and 7, do not confirm their results.

Sixty cases tested with pertussis vaccine gave fifty-three positive and seven negative reactions. Thirty-

2. Povitzky, Olga R.: Agglutination in Pertussis, Arch. Int. Med. **17**: 279-292 (Feb.) 1916.

3. Orgel, S. Z.: A Method for the Early Diagnosis of Pertussis, J. A. M. A. **79**: 1508-1509 (Oct. 28) 1922.

4. Modigliani, E., and De Villa, S.: The Intracutaneous Reaction for the Early Diagnosis of Pertussis, Pediatria **29**: 337 (April 15) 1921.

nine cases tested with staphylococcus vaccine gave thirty-five positive and four negative reactions.

Of the twenty-six cases of active pertussis tested with pertussis vaccine (Table 6), fourteen reacted positively in three hours, nineteen in twenty-four and seven in forty-eight hours. Twenty-four cases of active pertussis tested with staphylococcus vaccine (Table 7) gave thirteen positive reactions in three hours, twenty in twenty-four hours, and fifteen in forty-eight hours. No reaction was considered positive unless at least 5 mm. in diameter.

CONCLUSIONS

No specific reactions were obtained by the use of various preparations of Bordet-Gengou bacilli injected intracutaneously to prove the presence of the disease, or a natural or an acquired immunity. Positive and negative results alike were obtained in children having the disease, in children with an immunity, and in children developing the disease after the injection.

152 West Eighty-Eighth Street.

ANAPHYLACTIC KERATITIS

REPORT OF A CASE

SYDNEY WALKER, JR., M.S., M.D.
CHICAGO

The injection of a foreign protein into an animal produces severe, perhaps fatal, intoxication in many instances. With some proteins this natural toxicity is very marked: fresh bovine and human serum are quite toxic to guinea-pigs. It has been asserted that by injecting a pig with the dissolved lens of one eye, it will become sensitized, so that it will react to a subsequent injection of the lens from the other eye.[1] The symptomatology of the intoxication which follows injection of the protein into an animal sensitized with the same protein is such as to indicate that a poison is responsible, although as yet it has not been isolated. The syndrome is practically the same, no matter what sort of protein is being used; hence it would seem that the poison must always be the same or similar, no matter how varied the nature of the protein capable of inciting anaphylactic intoxication. Presumably this reaction is merely an exaggeration of the normal process of the defense of the body against foreign proteins. The anaphylactic state appears to influence virtually every part of the body.

Experimental work on ocular anaphylaxis is not frequently found in the literature, yet Kodama[2] has done some work along this line with the reaction of guinea-pigs to horse serum, with more or less definite conclusions. In a search through the literature for the last five years, I have been unable to find the report of a case of anaphylactic keratitis; in fact, one would surmise that ocular anaphylaxis is rare. It is undoubtedly true that nearly all, if not all, persons are sensitized at one time or another of his or her life, and under the present trend of medicine, when vaccines, serums and protein injections are daily made use of, it is surprising that more cases of anaphylactic intoxication do not develop. The case here reported may show to some degree in what the promiscuous injection of foreign protein may develop.

1. Wells, H. G.: Chemical Pathology, Philadelphia, W. B. Saunders Company.
2. Kodama, R.: J. Infect. Dis. **28**: 48 (Jan.) 1921.

REPORT OF CASE

J. N., a man, aged 23, complained of severe pain and loss of vision in the right eye, which had been present for twenty-four hours. He stated that two days before he had gone to the Blood Cell Serum Laboratory in response to an advertisement, in order that he might have his blood made thinner. Without further questioning a small quantity of blood had been withdrawn from his arm, and eighteen hours later, the serum having been prepared, he was given an intravenous injection.

Twenty minutes later he suffered a typical anaphylactic reaction: chills, fever and collapse, followed by prostration. Two days later the right eye became sore. The patient was a well nourished American with negative history except for the diseases of childhood. The physical findings were negative; the leukocyte count was 8,200; there was no anemia; the Wassermann reaction was negative. The nose, throat and teeth were in good condition.

The vision of the left eye was 20/20; the eyeball was normal. The vision of the right eye was 10/200. There was a subacute staphylococcic conjunctivitis with a slight amount of discharge. The cornea presented an acute deep keratitis with a secondary iritis. This keratitis was diffuse, involving nearly the whole cornea, so that only a faint red reflex was obtainable. In conjunction with the ocular condition, there was a localized eczematous patch on the upper lip. Under hot fomenations, atropin, ethylmorphin hydrochlorid (dionin) and catharsis, the eyeball gradually cleared, until on the twentieth day the acute process had subsided, leaving a punctate leukoma, and the vision rising to 20/50 minus 2. At the same time the patch on the upper lip disappeared.

COMMENT

The onset, symptoms and clinical course stamp the case as one of anaphylactic manifestation. It is true that we do not know what liquid was injected; but, assuming that it was serum drawn from the patient, the statement of Wells[3] that even the clotting of blood or plasma may produce changes that render it highly toxic for the animal from which it came, with the same anaphylaxis-like manifestations that are produced by the toxic serums in the typical anaphylatoxin experiment, the patient's own serum could have caused this reaction. Wolff-Eisner has advanced the hypothesis that drug reactions may be produced by the blood or tissue proteins altered by the chemical, so that they are as foreign protein to the injected animal; this would substantiate the assumption further.

Böttner[4] says that, on the whole, however, man does not seem to be highly susceptible to anaphylaxis, at least as compared with the guinea-pig, especially in view of the fact that collargol, containing 25 per cent. protein, has had widespread use in intravenous injections at intervals suitable to produce sensitization and shock, without recorded serious results. This statement would explain the few cases from sources such as mine.

Conceivably sensitized persons at times have free antigen in their blood, especially in a case of food sensitization, and if this is so, injury to any tissue or organ might possibly determine local anaphylactic reaction in these places. It is entirely possible, then, that the manifestation on the upper lip of this patient might have been of this nature.

The intravenous injection of foreign serums or proteins in the human being is not unfraught with elements of danger, and happily, though its promiscuous use is not widespread. It is entirely possible, however, that the intravenous injection of protein or chemical substance even in the hands of the skilled practitioner, may result in some unlooked for complication, especially in view of the fact that once protein is in the blood stream,

3. Wells, H. G.: Physiol. Rev. **1**: 44 (Jan.) 1921.
4. Böttner, A.: Deutsch. Arch. f. klin. Med. **125**: 1, 1918.

we lose all control over it, as apparently there is no means at present of knowing whether or not the patient is sensitized. The condition of antianaphylaxis, i. e., the presence of free antibodies in the circulating blood, preventing the antigen from coming in contact with the intracellular antibodies, may be a partial explanation of the lack of reaction in many cases.

CONCLUSIONS

1. Anaphylactic keratitis is a rare manifestation.
2. Intravenous injections of proteins or chemicals may possibly be followed by anaphylactic complications even in the hands of skilled clinicians.

25 East Washington Street.

PROBLEMS CONCERNING INFECTIONS OF CERVIX, BODY OF UTERUS, AND FALLOPIAN TUBES *

ARTHUR H. CURTIS, M.D.
CHICAGO

A dozen years ago, dilation and curettage was probably the most frequently performed gynecologic operation. This held true for the most prominent clinics as well as for less well known operating rooms. Not only was this a usual operation, but the reason assigned for scraping the uterus was most often a chronic infection, variously designated as chronic metritis, endometritis or leukorrhea.

Observance of the futility of this procedure, particularly its limited value in attempts to relieve discharges, stimulated in me a desire to learn something about chronic leukorrhea and chronic infections of the uterus. These efforts, in turn, eventually led to a study of diseased fallopian tubes.

THE PROBLEM OF CHRONIC ENDOMETRITIS

Four years ago a combined bacteriologic and histologic study was completed of 118 uteri removed to remedy various pathologic conditions.[1] The greater part of the endometrium of these uteri was excised in its entire thickness down to the muscle layer, placed in sterile containers, and thoroughly ground and cultured; the remainder was used for microscopic examination.

This bacteriologic and histologic study revealed that the body of the uterus, above the level of the internal os, rarely yields evidence of chronic infection. It appeared that infection of the uterus commonly called "chronic endometritis" is practically to be ruled out as an independent clinical entity.

Since that work was reported, there has been gradual acceptance of the view that chronic infection of the body of the uterus is unusual; and with the growth of that belief, we have developed greater conservatism in the use of the curet in attempts to relieve chronic endometrial infection.

THE SOURCES AND TREATMENT OF CHRONIC LEUKORRHEA

A subject that has absorbed much of my time and attention is the problem of leukorrheal discharges;[2] the sources from which they arise, the nature and virulence of the bacteria present, and adequate measures for promotion of recovery have all been greatly in need of study.

Examination of discharges from large numbers of patients reveals that the normal vaginal secretion contains few bacteria aside from so-called "Döderlein" bacilli, which are innocent, large, gram-positive organisms closely related to lactic acid bacilli. Profuse, purulent leukorrheal discharges, on the contrary, contain a greatly varied flora, chiefly gram-negative anaerobic bacilli, most of which are mildly pathogenic for experimental animals. The most important leukorrheal organisms, from the standpoint of stubbornness of infection, as well as danger of serious pathologic processes, are gram-positive diplococci which grow into chains in cultures. These streptococci may be either aerobic or anaerobic, but the latter appear to be more virulent; they are the most frequent organisms present in puerperal infections with thrombophlebitis.

It has been possible to find two chief sources from which chronic discharges arise: (1) small glands about the meatus of the urethra, chiefly Skene's ducts and the urethral glands, and (2) the cervix of the uterus.

The cervix, as we all know, is lined with mucus-secreting glands, whereas there is practically no secretion from the body of the uterus. In patients with leukorrhea of cervical origin there is an overgrowth of infected hypersecreting mucus glands. Discharges persist not only because of the presence of these glands but also because there are associated granulations and varying degrees of obstruction of the cervical canal.

A small percentage of chronic leukorrhea cases are due to diffuse pelvic infection, to congested displaced organs and to other kindred lesions, but the overwhelming majority belong to the infected cervix-Skene's duct group.

During the last four years we have treated the most severe and persistent cases of chronic leukorrhea as follows: The vicinity of the urethra is searched for infected Skene's ducts and urethral glands. Diseased foci are threaded on the blunt end of a needle, the tract is laid open with a knife, and the lining is fulgurated or otherwise cauterized. The cervix is thoroughly dilated, and radium is introduced into the cervical canal for the purpose of producing atrophy of the infected hyperplastic glands. Recovery has resulted in ninety out of 104 patients treated according to this plan.

Whether the endocervix is treated with radium or thoroughly excised according to the method of Sturmdorf is perhaps immaterial. We must remember, however, that the glands in the region of the urethra also demand examination and appropriate attention.

INFECTIONS OF THE FALLOPIAN TUBES

An investigation of diseased fallopian tubes[3] was made in a series of 300 cases. Bacteriologic study was accomplished by thoroughly grinding and cultivating the entire diseased tube, with the exception of certain portions reserved for histologic examination.

From the clinical history, examination of the external genitalia, and evidence obtained at operation, together with laboratory study of the tubes, it was possible to determine that gonococcal infection was responsible for the pathologic changes in more than 70 per cent. Approximately 10 per cent. more were thought to have

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* Read before the Toledo, Ohio, Academy of Medicine, Nov. 17, 1922.
* From the Pathologic Laboratory and Gynecologic Service, St. Luke's Hospital.

1. Curtis, A. H.: A Combined Bacteriological and Histological Study of the Endometrium in Health and in Disease, Surg., Gynec. & Obst. **26**: 178 (Feb.) 1918.

2. Curtis, A. H.: Surg., Gynec. & Obst., March, 1914, p. 299; Chronic Leukorrhea: Its Pathology and Treatment, J. A. M. A. **74**: 1706 (June 19) 1920.

3. Curtis, A. H.: Bacteriology and Pathology of Fallopian Tubes Removed at Operation, Surg., Gynec. & Obst. **33**: 621 (Dec.) 1921.

been primarily infected with the gonococcus; but this could not be determined with certainty.

It has long been known that gonococci soon disappear from the tubal mucosa, but proof that infection does not persist in the deeper tubal structures has been wanting. It is therefore of interest to note that it has not been possible for us to obtain gonococci in cultures from the entire thoroughly ground tube if the patient has been free from fever and leukocytosis for a period of more than two weeks. Not only does the infection soon die out, but a single attack usually causes only moderate pathologic changes and symptoms of correspondingly mild degree. Badly diseased tubes are most often the result of frequently repeated infection from the lower genital tract or from an outside source.

Although the process of gonorrheal infection usually involves the entire thickness of the tube, the mucous membrane is most markedly affected. When healed, the mucosa in typical cases is crippled by adhesions between its folds or "villi." In addition to these adhesions we also find glandlike nests of mucosa buried in the tube wall as a result of the inflammatory process. Longitudinal and serial sections reveal that these nests remain connected with the tube lumen and form pockets which predispose to lodgment of the ovum and development of tubal gestation.

A final point in the differentiation of gonorrheal salpingitis requires emphasis. Adhesions to the surrounding viscera, even though old and numerous, can be separated by blunt dissection. This appears always to hold true, even though the process has been one of the greatest severity.

Streptococcus infection accounts for more than 10 per cent. of pathologic changes in the tubes. Nearly all of these infections are traceable to abortion or intrauterine instrumentation. The infections are often widespread in the cellular tissues, and tubal involvement is usually only a part of the picture. Although hydrosalpinx or other gross lesions may occur, the typical pathologic condition is perisalpingitis without notable change in the lumen or deeper portions of the wall of the tube. Adhesions vary in number and firmness; virulent streptococci tend to leave densely adherent surfaces without available lines of cleavage. Streptococci, in contrast with gonococci, may remain buried and viable in the tissues for many years after the original infection.

Tuberculosis has been present in 5 per cent. of diseased tubes removed by us. Tuberculosis of the female genitalia,[4] exclusive of generalized tuberculous peritonitis, is chiefly a tubal infection, and involves particularly the mucous membrane of the tube. The tubes are usually much enlarged and much indurated. When opened, it is found that thickening of the wall is due to hyperplasia of the mucosa, without much change in the muscle layer and peritoneal covering. The gross picture is similar to that of severe recurrent gonorrheal salpingitis. Some points that aid in the differentiation from gonorrheal tubes are these: There is greater tendency to pallor of the tissues. Tubercles are not often recognized until subsequent microscopic examination. Calcified areas may be palpated. Occlusion of the fimbriated ends occurs much less often than in gonococcus infections of equal severity; when the fimbriae are free, caseous material may sometimes be expressed from the open end of the tube. Adhesions are firm, and must often be cut or torn when separated.

Tuberculous and streptococcus infections of the tubes have in common certain features of surgical interest. Exceedingly firm adhesions, not amenable to blunt dissection, are characteristic of both. This is in contrast with gonococcal infection, as is also the tendency to persistence of viable bacteria in the tissues for very long periods of time. Extension of infection to the ovary is frequent in tuberculosis, and is one of the most distressing complications of streptococcus salpingitis. In the presence of a diseased ovary, with the indications for removal somewhat uncertain, more radical surgery appears indicated in streptococcus and tuberculous infections that in gonorrheal disease of equal severity, because persistently viable bacteria predispose to postoperative ovarian infection.

4. Williams, J. W.: Tuberculosis of the Female Generative Organs, Johns Hopkins Hosp. Reports **3**: 85, 1893. Peterson, Reuben: Review of One Hundred Cases of Women with Pelvic Tuberculosis with Special Reference to the End-Results of Operative Treatment, Tr. Am. Gynec. Soc., to be published.

CONCLUSIONS

1. The body of the uterus seldom harbors bacteria for a long period of time. Discontinuance of uterine curettage in attempts to relieve chronic infection marks a decided advance in our methods.

2. In most instances, leukorrhea arises from the cervix and from glandular tissues in the vicinity of the urethra. Treatment directed to eradication of these diseased areas yields very satisfactory results.

3. Gonorrheal infection of the fallopian tubes is naturally a quickly self-limited disease. So-called chronic gonorrheal salpingitis is usually a recurrence from an external source or repeated invasion from the chronically infected lower genital tract.

4. Streptococcus infection of the tubes occurs usually as a complication of abortion or intra-uterine manipulation, and is commonly only a part of more widespread pelvic infection. Streptococci, in contrast with gonococci, may remain viable in the tubes for many months or even for years.

5. Even the most prolonged and most severe gonorrheal disease of the tubes is characterized by adhesions amenable to blunt dissection. Adhesions which require cutting or tearing speak for streptococcus or tuberculous infection.

6. In any given case, if there is question whether it is advisable to remove the ovaries at the time of operation, more radical measures are indicated in streptococcus or tuberculous infection than in gonococcal disease of equal severity, because viable bacteria probably remain buried in the tissues, and there is likelihood of postoperative chronic ovarian infection.

104 South Michigan Avenue.

Medical Impressions of Latin America.—Several physicians formed part of the official delegation sent by France to take part in the centennial celebrations in Brazil this fall. Dr. J. L. Faure, an official delegate from several scientific associations, has been publishing in the *Presse médicale* his impressions of the trip. It is a bright and breezy account of his journey to the "end of the world," as the Chileans call their country, Chile not being on the road to anywhere unless possibly in circumnavigating the globe. He traveled by land from Rio to Montevideo, Buenos Aires and Santiago, and was particularly impressed by the emergency service in these cities. At Santiago, there are three emergency stations, and when the ambulance arrives with the injured everything is ready even for the gravest interventions. One young surgeon there had already operated in four cases of stab wounds of the heart. There are arrangements for keeping the patients for a few days, after which they are transferred to a hospital or sent home. He says that the French might do well to take this emergency service as a model. The faculty of medicine at Santiago conferred an honorary degree on him.

DETERMINATION AND INTERPRETATION OF CHANGES IN LUNG VOLUMES IN CERTAIN HEART LESIONS *

CHRISTEN LUNDSGAARD, M.D.
NEW YORK

The development of the pathology of the circulation is one of the most interesting chapters in the history of medical science, first, because the diseases of the heart always have attracted the attention of many of the foremost clinicians; secondly, because the relation between

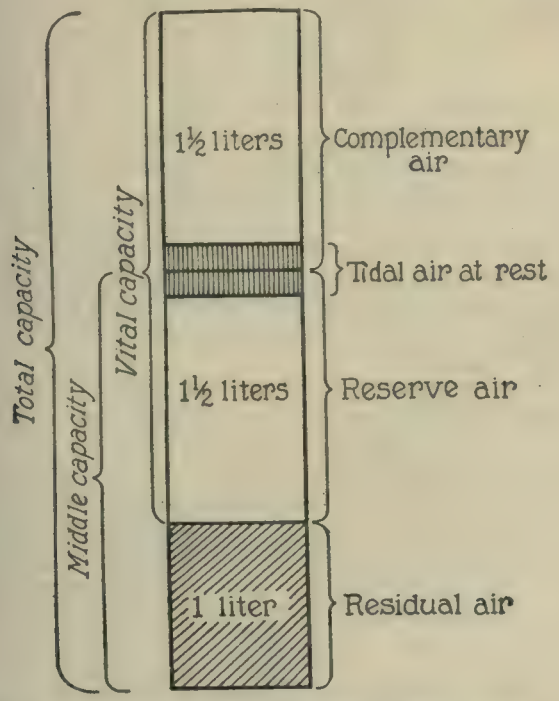


Fig. 1.—Lung volumes in "average normal" adult at rest.

the clinical studies of these diseases and the more fundamental medical sciences early became very intimate, and, thirdly because disturbances in the circulation usually do not remain confined to the circulatory organs. When disturbance in the function of the heart or, as we now know, in the function also of the capillaries reaches a certain intensity, changes in other organs (such as the lungs, liver, spleen, kidneys and subcutaneous tissue) occur. Such remote disturbances may be brought about in different ways, and may assume different characteristic features. They may in their very beginning remain confined to the vascular part of the organs. However, if the stasis lasts long enough, changes take place in the parenchymatous or interstitial parts of the organs. These changes may become permanent and irreversible, and may act almost as new and independent diseases (cirrhosis of the liver and kidneys; induration of the lungs). In some instances these secondary changes increase the extra burden already put on the heart through the primary lesion, and thus a vicious circle is established.

The study of the morphologic changes secondary to circulatory involvement began more than half a century ago, and our knowledge is in these respects rather complete. The physiologic or functional side of these questions has first more recently been subjected to investigations. Even the problems we face are not yet clearly defined. It is therefore natural that our interpretation of symptoms observed at the bedside is mainly or, in many instances, exclusively based on our anatomic knowledge.

Among the organs secondarily involved in circulatory failure, the lungs rank high in importance on account of the intimate anatomic and physiologic connections between the lungs and the heart. If, in a patient with heart disease, the lungs are secondarily involved, not only may the gaseous interchange between air and blood be interfered with, but also a mechanical hindrance to the blood flow itself may ensue. As to the last point not much information is at hand, and certainly very little is quantitatively known. From the accentuation of the second pulmonic sound, we conclude that an increased blood pressure is present in the pulmonary circulation, a condition that throws more work on the right ventricle and causes hypertrophy of its walls. Furthermore, it is usually assumed that a decreased range of excursion of the chest impedes the inflow of the venous blood to the right auricle. As to the first point, the exchange of the gases between the blood and the air, also very little is known. A disturbance of gaseous exchange may be caused in two ways: first, by an abnormal condition of the membranes separating the blood from the alveolar air, causing a slower diffusion of gases; second, by changes in the lung volumes, so that the tension of the gases in the alveoli is unfavorably affected. I shall in this confine myself to a discussion of one phase of the last mentioned problem; namely, the question of the changes in the lung volumes in patients with heart disease.

USUAL TERMINOLOGY APPLIED TO LUNG VOLUMES

Figure 1 represents the conditions in what we might term an average normal person at rest. The whole column indicates the total lung volume, that is, the maximum amount of air which the lungs hold after a maximum inspiration. A certain part of this can be expired at maximal effort; this is termed the vital capacity. A smaller part of the total capacity cannot by any means be brought out of the lungs. This is called the residual air. During rest, the normal subject does not use the whole range of his vital capacity: he breathes with the lungs a little more than half filled. This amount is called the middle capacity. After inspiration he has a little more, after expiration a little less air in the lungs. The difference between the expiratory and the inspiratory position is called the tidal air. The tidal air, in normal persons at rest, is about 500 c.c. (Table 1). In a series of studies on different problems connected with the pathology of respiration and circulation, carried on during the last few years in Professor Faber's

TABLE 1.—NORMAL RELATIVE VALUES FOR THE DIFFERENT LUNG VOLUMES BASED ON TWENTY-SEVEN OBSERVATIONS

Total capacity	100	T
Middle capacity	62	$T \times \frac{62}{100}$
Residual air	24.7	$T \times \frac{24.7}{100}$
Vital capacity	75.3	$T \times \frac{75.3}{100}$
Reserve air	37.3	$T \times \frac{37.3}{100}$
Complementary air	38.01	$T \times \frac{38.0}{100}$

* Read before the Harvard Medical Society, Boston, Dec. 5, 1922.
* From the Medical Clinic of the University of Copenhagen and the Hospital of the Rockefeller Institute for Medical Research.

Clinic in Copenhagen, the range of variation of the relative values of the lung volumes in normal resting adults was established. It was found that, in comparison with what is often seen in disease, the normal figures are fairly constant. The average normal values are given in Table 1. We can say that the vital capacity is three fourths and the residual air one fourth of the total capacity. The ratio of vital capacity to residual

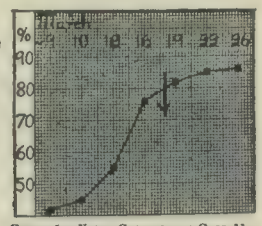


CHART 1.—VITAL CAPACITY IN CASE 11.

Case	Date	Vital Capacity c.c.	Vital Capacity %	Condition	Remarks
11	3/.9	1,400	42	.....	Hydrothorax; othropnea; edema of legs
(Chart 1)	3/10	1,475	45	Improved	Less dyspnea but still orthopnea
Med. No. 6261	3/12	1,800	55	Improved	Less edema; less dyspnea; less hydrothorax
Chronic	3/16	2,500	76	Improved	Lungs clear; less dyspnea; hydrothorax gon
myocarditis	3/19	2,700	■	Stationary	Left hospital in good condition
Auricular	3/22	2,775	85	Stationary	
fibrillation	3/26	2,800	86	Stationary	

Fig. 2.—Increase in the vital capacity of a patient with heart disease during treatment; the value does not reach the normal figure. (After F. W. Peabody.)

air is, of course, 3:1. If, therefore, the normal value of one of the lung volumes is known, one can with a certain degree of accuracy calculate the other volumes.

VITAL CAPACITY

These different lung volumes, fairly constant in normal resting persons, may undergo smaller or larger changes in patients with heart disease. Let us first consider the vital capacity. The exactness and easiness with which the vital capacity is determined since Hutchinson, in 1846, introduced the spirometer, has resulted in a large number of investigations. We know that the vital capacity is often diminished to a very considerable extent in patients with heart disease. especially in patients with mitral lesions, because the lung stasis is most pronounced in these cases. By dividing

TABLE 2.—RELATION BETWEEN DEPTH OF RESPIRATIONS, NUMBER OF RESPIRATIONS, AND AIR IN LUNGS, SECURING COMPLETE MIXTURE OF LUNG AIR AND BAG AIR IN DILUTING METHOD

Liters of Air Left Unexpired in Lungs During Mixing	Depth of Respiration in Liters 1	1.5	2	2.5	3	4	5	
6.3	..	14	..	..	..	..	..	Number of rebreathings necessary to secure full mixture*
5.8	..	13	7	..	..	..	..	
4.8	..	10	7	..	6	..	..	
3.8	..	6	6	..	5	4	..	
2.8	..	6	5	..	5	3	3	
2.0	9 (6)	6 (5)	4 (3)	(3)	3	3	3	
1.3	(7)	(5)	(3)	(3)	(3)	..	..	

* Figures in parentheses apply to bag, the others to a Krogh spirometer. The connecting tube between spirometer (bag) and mouth must be not more than 30 cm. long and not less than 1.5 cm. wide. Respiration rate from 8 to 20 a second. Not more than from 1 to 2 liters of air must be left in spirometer after inspiration.

patients into groups according to their height, Peabody and his associates at the Harvard Medical Clinic [1] have shown that a decrease in the vital capacity is a conspicuous symptom in many patients with heart lesions. If the patients were segregated according to the severity of the clinical symptoms, it was found that a general parallelism existed between the decrease in the vital capacity and the severity of the condition. They furthermore have shown that definite changes in the vital capacity take place as the clinical conditions of the patients change. In Figure 2, which is taken from one of Peabody's publications, this is clearly seen. During the stay in the hospital the vital capacity has increased considerably without, however, reaching its normal value. The first four determinations were made during the decompensated, the last three during the compensated, stage. It is of interest that the vital capacity did not reach its normal value. Brittingham and White [2] made the interesting observation that the increase in vital capacity often seems to lag behind the clinical improvement.

OTHER LUNG VOLUMES

Information about the changes in the vital capacity alone certainly has proved of value as a quantitative expression of the degree of the functional involvement of the lungs and of the pulmonic circulation in heart disease. However, as to the deeper understanding of the mechanism of the production of the lung involvement, determinations of the vital capacity alone yield less information for the simple reason that it may express changes in two variables, namely, the total capacity and the residual air.

As is well known, the total lung capacity (T) equals the sum of the vital capacity (V) and the residual air (R). $V = T - R$. A decrease in V may therefore be caused by (1) a decreased T or (2) an increased R, or (3) both of these factors acting together. For the understanding of the mode of production of the lung involvement in heart disease, it is therefore of fundamental importance to study the changes in total capacity and residual air.

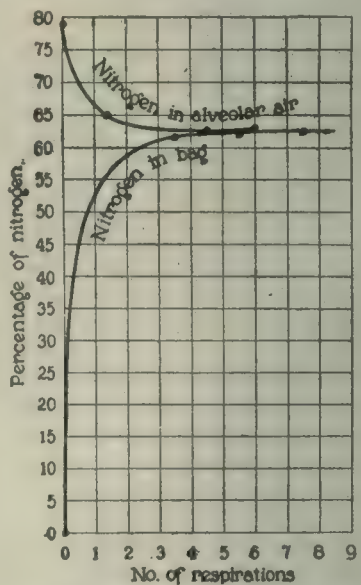


Fig. 3.—Mixing curves (oxygen method) obtained by taking repeated samples of air from bag (lower curve) and from alveoli (upper curve) without interrupting rebreathing. Mixture is present when alveolar curve bends upward (on account of decrease in total amount of air in bag + lungs). The value to be used for calculation is at the corresponding point of lower curve. (After different articles of Lundsgaard and Schierbeck, Proc. Soc. Exper. Biol. & Med. and Am. J. Physiol., to be published).

In determining these volumes we face two obstacles, which are not always easy to overcome. The first is a difficulty in the determination of these lung volumes; the second, a difficulty in the estimation of the results gained. As to the first question, the total capacity, the middle capacity and the residual air cannot be brought entirely out of the chest. They can therefore be determined only by applying one of the so-called dilution methods, which require a complete mixture between the air in the lungs and the outside air. In normal persons such a mixture can easily be obtained. In heart patients, however, it is often difficult to ascertain the presence of complete mix-

1. Peabody, F. W., and Sturgis, C. C.: Clinical Studies of Respiration: Effect of General Weakness and Fatigue on Vital Capacity of Lungs, Arch. Int. Med. **28**: 501 (Nov.) 1921. Peabody, F. W., and Wentworth, J. A.: Clinical Studies on Respiration, ibid. **20**: 443 (Sept.) 1917. McClure, C. W., and Peabody, F. W.: Relation of Vital Capacity of Lungs to Clinical Condition of Patients with Heart Disease, J. A. M. A. **69**: 1954 (Dec. 8) 1917.

2. Brittingham, H. H., and White, P. D.: Cardiac Functional Tests, J. A. M. A. **79**: 1901 (Dec. 2) 1922.

ture. In the Copenhagen Clinic we have studied the quantitative influence of variations in the three most important factors entering into the process of mixing lung air with other air when other minor factors are kept approximately constant. The three factors are the number of rebreathings, the depth of the rebreathings, and the amount of air left in the lungs after the expiratory phase of the rebreathings.

Based on our experimental results we have worked out a table from which we can select the magnitude for these three factors necessary to secure mixture in a given case (Table 2). If we want still further guarantee that mixture is present, we can construct what we might call a mixing curve, as shown in Figure 3. Such a curve can be obtained by having a patient rebreathe from a bag (Fig. 4). Without disturbing the experiment, small samples of air are drawn from the bag and from the alveoli into evacuated tubes. The percentage of nitrogen (if the oxygen method is used) can be plotted in curves, as shown in Figure 3. Mixture has taken place where the upper curve is at its lowest point. The nitrogen value to be used is the corresponding figure in the lower curve. In this way we have secured complete mixture in the determinations of the total lung capacity and the residual air of our heart patients. In patients with so small a vital capacity (below 1 liter) that the depth of the mixing respirations cannot become large enough to secure mixture within a reasonable time, the nitrogen-hydrogen method worked out in 1920 at the Rockefeller Hospital by Van Slyke and Binger [3] may be used.

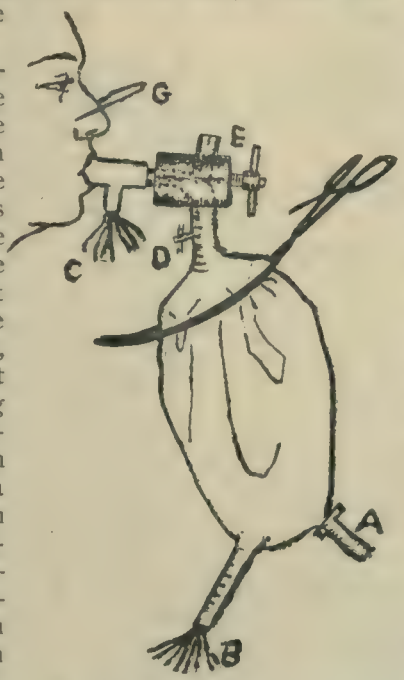


Fig. 4.—Five liter rubber bag: lead tubes with capillary boring inserted at *C* and *B*; through these tubes, samples of air can be drawn into evacuated recipients without interrupting rebreathing; alveolar air drawn at *C*; bag air drawn at *B*. (After Lundsgaard and Schierbeck.)

Having obtained reliable figures for the different lung volumes actually present in such patients, we face the second obstacle, namely, the question how to find and express the deviation of these lung volumes from what would be the normal figures in such patients. Hutchinson realized that the directly observed figures did not yield any quantitative and hardly enough qualitative information. Rubow,[4] in his investigation on the lung volumes in patients with heart disease, calculated the relative size of the different lung volumes, using the total volume as the basic figure (Table 1). It is generally supposed that changes in the relative size of the lung volumes express important functional abnormalities, and other investigators have since the time of Bohr's and Rubow's publications used this way of presenting their observations.

In Table 3 the relative values of the different lung volumes in eleven heart patients are given. The value for the total capacity is 100, and the values for the middle capacity, the vital capacity and the residual air are consequently fractions of 100. In this way the middle capacity becomes either normal or slightly increased. Similar results were obtained by Rubow, who in this way saw a proof of Bohr's much discussed theory about functional adjustment of the middle capacity. Bohr thought that an increase in the middle capacity facilitated the blood flow through the lungs, and that it therefore was to be looked on as a functional adjustment secondary to a decreased power of the myocardium.

The relative values for the residual air show a considerable increase, and values for the vital capacity a marked decrease in all our cases. Expressed as relative values, our observations therefore simply confirm several previous determinations.

Quite a different picture of the conditions is obtained if the lung volumes are given, not relative to the observed total capacity but in percentage of the figures indicating the normal size of the lung volumes in each particular patient. These normal figures, of course, can be obtained only by calculation from some other body figure. Several empiric procedures have been proposed in the course of time, particularly for calculating the vital capacity. All, however, are open to discussion, and not more than an approximation can be claimed for any of them. We have applied the procedure devised by Van Slyke and myself [5] at the Rockefeller Hospital in 1918. We determined three dimensions of the chest in the different positions. The lung volumes were then determined in the corresponding positions. In a series of eighteen normal adults the ratio between the size of the chest (determined as the product of the three dimensions) and the lung volumes were found to be constant enough to be useful for a calculation in cases in which only the chest measurements could be obtained. In another series of determinations of the chest-lung volume ratio in twenty-seven normal adults in the Copenhagen Clinic, we arrived at practically the same average figures and the same constancy as found in the first eighteen subjects at the Rockefeller Hospital.

It is self evident that one cannot calculate the normal lung volumes from the chest dimensions if the form of the thorax deviates materially from the normal. It is also clear that one cannot *a priori* rely on its validity in patients in whom the excursions of the chest wall are abnormal, a condition which is common in heart patients, as expressed in Table 4.

However, by combining the ratio of chest dimensions and lung volume with the normal ratio between the different lung volumes, one can overcome this difficulty and obtain figures which can be shown at any rate to approximate the normal so much that it is justifiable

TABLE 3.—OBSERVED LUNG VOLUMES GIVEN IN PERCENTAGE OF NORMAL RELATIVE VALUES*

No. of Patients	Total Capacity	Middle Capacity	Residual Air	Vital Capacity	Comment
1	100	105	122	92	Patients with uncompensated heart failure
2	100	99	143	85	
3	100	90	118	94	
4	100	99.5	145	85	
5	100	87	146	84	
6	100	142	156	81	
7	100	...	215	62	Patients with compensated heart failure
8	100	103	170	77	
9	100	101	136	88	
10	100	95	135	88	
11	100	125	187	71	

* Compare Table 1.

3. Van Slyke, D. D., and Binger, C. A. L.: Proc. Soc. Exper. Biol. & Med. **18**: 141, 1921.
4. Rubow, V.: Deutsch. Arch. f. klin. Med. **132**: 255, 1908.
5. Lundsgaard, Christen, and Van Slyke, D. D.: J. Exper. Med. **27**: 65 (Jan.) 1918.

to consider them the normal figures.[6] We have in this way determined quantitatively the deviation of the lung volumes from the normal in eleven patients with heart disease. We found (Table 4) that in most cases a decrease in the total capacity takes place, a decrease which as a whole is most pronounced in the clinically most severe cases. The figures range from 107 to 52 per cent. of the value calculated as normal. The middle capacity is either diminished or normal. The residual air is decreased in three cases and increased in eight. The vital capacity is decreased in all cases, and often to a very considerable extent. The reason for the discrepancy between the values in Table 3 and in Table 4 is, of course, the fact that the figures in Table 3 were based on the observed total volumes, which in itself deviates considerably from the normal values.

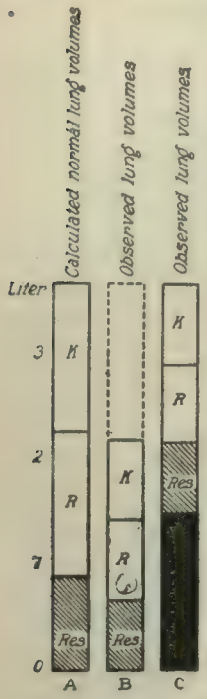


Fig. 5.—Mode of production of changes in total lung volumes in heart patients: *A*, calculated normal figures in Patient 1; *B*, condition if decrease is due to diminished expansion of chest; a certain amount of air remains outside the chest (area inside dotted lines); *C*, mechanism if diminished air content of lungs is due to an increase in the nonaerial space (black area) in the normally expanded thorax: *V K + R*, vital capacity; *Res.*, residual air. (After Lundsgaard and Schierbeck.)

The figures in Table 4 bring out two important facts that were distorted or even veiled in Table 3. One concerns the middle capacity, in which no increase is present. The other is that the residual air may be increased in some and decreased in other cases of heart failure. In short, in heart patients we have found that the total lung volume and middle capacity are in most cases diminished; in others, normal. The vital capacity is more or less decreased; the residual air is in some cases decreased, in others, increased.

Peters and Barr,[7] in 1920, used this procedure in calculating the normal lung volumes in six patients with heart diseases. They did not find any increase in the residual air in any of their patients. In calculating the normal lung volumes, they proceeded in the same way as Garvin, Lundsgaard and Van Slyke in tuberculous cases in 1918, using the actual chest measurements without correction. However, if this is done, a considerable error may result, usually so that the calculated residual air is too large. If Peters and Barr's results are corrected for impaired chest movement, their figures change considerably, and the first four cases show increased residual air. In the last two heavily decompensated cases the residual air is diminished, even compared with the corrected figures. The correction, as in our own figures, is made by assuming the position of the chest to be normal in maximum inspiratory position. Vital capacity and residual air are then found by multiplying the (calculated) total volume by 0.75 and 0.24, respectively (Table 1).

MECHANISM OF PRODUCTION OF CHANGES IN TOTAL LUNG VOLUME

The decrease in the total lung capacity can theoretically be brought about in two different ways, as shown in the diagram in Figure 5. The total maximum air space may be diminished because the chest wall does not expand as much as usual. Consequently, a certain part of the complementary air or even a part of the reserve air remains outside the lungs (Column B). The other mode of production is shown in Column C. The chest wall can expand to its normal limit. However, a larger part of the chest space than usual is occupied by fluid or solid matter, leaving less space for air. This explanation was already suggested by Traube. Later it was taken up by Siebeck.[8] If the decrease in the total lung capacity was produced as shown in Column B by a less extensive expansion of the chest than usual, one would have to assume an effect either of weakness of the inspiratory muscles, or of stiffness of the lungs (von Basch's[9] *Lungenstarre*). However, Peabody and Sturgis showed in 1921 that weakness cannot have any important effect. As to the stiffness, one must assume that if it is present it exerts its influence on the expiratory rather than on the inspiratory movement. It therefore seems not very likely that Column B represents the condition. On the other hand, can the decrease in the total air space of the lungs be attributed solely to an increase in the nonaerial contents of the chest? We have a series of factors which act together in diminishing the air space of the thorax, namely: (1) an increased blood content of the lung capillaries; (2) an increased thickness of the interstitial tissues; (3) eventually some intra-alveolar and intrapleural fluid, and (4) increased size of the heart. To these four factors may be added (5) increased size of the abdominal organs (liver, etc.), forcing the diaphragm upward, although the mechanism is some-

TABLE 4.—OBSERVED VALUES OF DIFFERENT LUNG VOLUMES IN PERCENTAGE OF NORMAL VALUE, CALCULATED FROM THE SIZE OF THE CHEST WALL, AFTER CORRECTION FOR DIMINISHED EXCURSION OF CHEST HAS BEEN MADE

No. of Patients	Total Capacity, per Cent.	Middle Capacity, per Cent.	Residual Air, per Cent.	Vital Capacity, per Cent.	Excursion of Thorax, $\frac{Cr^*}{Ct}$	Comment
1	60	63	73	56	86.4	Patients with uncompensated heart failure
2	52	51	73	45	84.7	
3	54	49	64	52	82.5	
4	78	78	112	67	83.0	
5	100	87	145	86	79.2	
6	71	100	109	58	80.3	
7	81	...	172	50.5	82.0	Patients with compensated heart failure
8	85	87	142.5	65	81.5	
9	102	103	132	94	80.9	
10	107	102	142	96	84.3	
11	89	112	164	61	85.3	

* Normal ratio, 74.7. $\frac{Cr}{Ct}$ = "chest volume" at maximum expiration divided by "chest volume" at maximum inspiration.

TABLE 5.—CHANGES IN LUNG VOLUMES IN ELEVEN PATIENTS WITH MITRAL DISEASES AT DIFFERENT CLINICAL STAGES

Clinical Conditions		Lung Volumes: Total Capacity	Vital Capacity	Residual Air
Compensated stage	Incipient cases	Normal	Decreased	Increased
	More advanced cases	Decreased	Further decreased	Increased
Decompensated stage		Further decreased	Further decreased	Decreased

6. The rather elaborate calculations are not given here. Readers are referred to a series of articles to appear in 1923. Preliminary reports were given at the December, 1922, meeting of the Society for Experimental Biology and Medicine.

7. Peters, J. P., and Barr, D. P.: Am. J. Physiol. **54**: 335 (Dec.) 1920.

8. Siebeck, R.: Deutsch. Arch. f. klin. Med. **100**: 204, 1910; **107**: 252, 1912.

9. Von Basch: Klinische und experimentelle Studien aus dem Laboratorium von Prof. von Basch, Berlin **1**: 171, 1891.

what different. Indeed, one might be inclined to ascribe to the last factor the mode of action expressed in Column B. The maximum difference between the total lung volume calculated as the normal figure and the observed lung volume is in our eleven cases 1.75 liters (No. 5). Although no quantitative information is at hand as to the effect of these different factors, we believe that we are justified in ascribing the diminished total lung volumes in heart diseases to a pathologic increase in the solid and fluid matter normally present in the chest cavity (including the upward displacement of the abdominal organs).

MECHANISM OF PRODUCTION OF CHANGES IN RESIDUAL AIR

We found, as mentioned, in eight patients a considerable increase, whereas a decrease was present in three patients. By comparing these figures with the clinical pictures, a highly important fact is revealed. The eight patients showing increased residual air were all in the so-called compensated stage, whereas the three patients showing a decrease were markedly decompensated. How is it brought about that the residual air is increased in the compensated stage but decreased when compensation is broken? The explanation of this is, I believe, to be found in von Basch's theory about the so-called *Lungenschwellung* and *Lungenstarre*. I think it might be of interest to see how von Basch arrived at his theory. He wound a rubber tube containing water on a spiral on the outside of a soft bag. The bag was supposed to represent the air space in an alveolus and bronchus, and the tube the blood vessels around the alveolus. By increasing the pressure in the tube, he could produce a distention of the bag (Fig. 6). He boldly transferred this by analogy to the conditions in the human lungs in patients in whom the pressure in the pulmonary circulation was increased. His theory has never been actually confirmed in patients. On the contrary, most investigators have rejected it. I believe that our findings may be explained by von Basch's theory better than in any other way, so far as the mild cases are concerned. The increased residual air in these cases, according to this theory, is caused by a stiffness of the lung capillaries on account of the increased pressure in the capillaries. It is interesting and of importance that we have found this increase in the residual air to be present before the total capacity is affected. Similarly, the sign of increased pulmonic blood pressure, the accentuation of the second pulmonic sound, is the earliest sign of valvular mitral disease. In the advanced cases, von Basch's theory does not hold true. This is undoubtedly due to the same factors that diminished the total air space, namely, increase in the solid and fluid content of the chest and probably particularly to fluid in the alveoli.

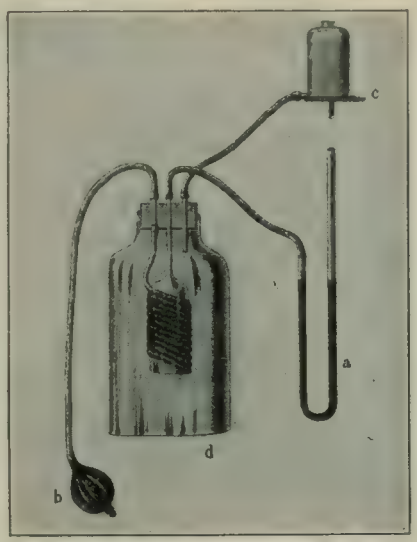


Fig. 6.—Von Basch's apparatus for demonstrating the effect of increased pressure in a rubber tube wound up in a coil around a rubber bag; *a*, manometer connected with the bag.

MECHANISM OF PRODUCTION OF CHANGES IN VITAL CAPACITY

The vital capacity was found to be diminished in both the compensated and the decompensated stage. In the first stage, this decrease is mainly or even entirely due to the increased residual air, that is, to stiffness of the lungs. In the second stage, the decrease in the vital capacity is caused exclusively by the diminished total volume, that is, to the diminished air space in the lungs. A continued series of determinations of the lung volumes in heart patients during different functional stages of the disease, as taken up by Dr. Binger at the Rockefeller Hospital, will undoubtedly prove to be most valuable for correlating the clinical stages with the changes in lung volume. In the first place, one will be able to follow the excursions of the chest and the diaphragm from time to time, and in this way test the validity of our assumption. Furthermore, by determining the lung volumes from time to time, one obtains a sort of control on the calculated figures.

The ordinary sequence of events in heart patients with lung involvement, according to our findings and interpretations, is therefore the following:

In the very first stage of a (mitral) lesion in which the main clinical symptoms are the accentuated pulmonic second, the concentric hypertrophy of heart and the murmurs, the only abnormality found may be an increased residual air. In course of time when the stasis lasts long enough, the total volume begins to decrease, owing to the increasing influence of the previously mentioned factors. The residual air may, however, still be found increased. At last a period of broken compensation turns up, with further decrease in the total capacity. In this period, however, the residual air is diminished often to a considerable degree.

From this it appears natural that the vital capacity in heart patients cannot in the course of effective treatment increase to its normal value (Fig. 2). Even if the total capacity becomes normal, the residual air remains increased on account of the increased pressure in the pulmonic circulation necessary for the establishment of compensation. The vital capacity, therefore, must remain somewhat diminished.

I shall not in this place enter into a discussion of the effect of the changes in lung volumes on the mechanism of respiration and on the gaseous supply of the blood.

Parasites and Their Discoverers.—In 1879 the epoch-making discovery of the rôle of the mosquito in the development of filarial worms was made by Manson and the science of medical entomology was born. The transmission of trypanosome diseases by tsetse flies was discovered by Bruce in 1893, the relation of mosquitoes to yellow fever by the American Yellow Fever Commission in 1900, and to dengue by Graham in 1902; the relation of ticks to African relapsing fever by Dutton and Todd, and independently by Koch in 1905; the relation of ticks to spotted fever by Ricketts in 1906; the relation of lice to typhus by Nicolle and his fellow workers in Algeria in 1909, and independently by Ricketts and Wilder and by Anderson and Goldberger in Mexico in the same year (published in 1910); the life history of blood flukes by Leiper in 1914 and 1915, and the rôle of crabs as second intermediate hosts of lung flukes by Nakagawa in 1916.—Chandler, Animal Parasites and Human Disease.

THE CHOICE OF PYELOGRAPHIC MEDIUMS *

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In 1906, through the work of Voelcker and von Lichtenberg, the urinary tract was first rendered opaque to the roentgen ray. Since that time the technic of pyelography has steadily improved, and the procedure, now satisfactory and devoid of danger, plays a rôle of supreme importance in urologic diagnosis. The earliest efforts and their attendant difficulties are matters of common knowledge. The colloidal silver preparations of which so much was expected proved unsafe. Indeed, their untoward effects might well have been foretold had it been remembered how readily invasion of the renal and general circulations may follow abnormal pressure within the kidney pelvis. Instances of disaster following the use of silver are multiple, the damage resulting in most cases from silver embolism, and the kidney being usually the chief sufferer.

These more harmful substances, therefore, were supplanted by the thorium solution of Burns.[1] This was an excellent contribution. Its value from the standpoint of density in roentgen-ray plates is unquestioned. But thorium is expensive; the solution is not easy to prepare and it is kept sterile with some difficulty, as evidenced by the fact that it permits the growth of molds.



Fig. 1.—Normal renal pelvis filled with 12 per cent. sodium iodid solution.

During the last few years simpler substances, salts of the halogen group, have come into favor and have been generally accepted as more nearly ideal pyelographic mediums. Aqueous solutions of sodium bromid and sodium iodid have proved to be highly satisfactory. They are of sufficient molecular weight to cast good shadows. They are readily injected through small catheters and are withdrawn with equal ease. They are inexpensive, easily prepared, and kept sterile without difficulty. Furthermore, they are so entirely lacking in toxic effects that their entry in small amounts into the circulation, should it occur, need not be feared.

We have referred to the fact that thorium permits the growth of molds. No such contamination will be found in the bromid and iodid solutions; but whether or not they possess positive germicidal properties is an important question which seems not to have been answered. A study of the phenol (carbolic acid) coefficients of these two substances has therefore been undertaken. As a result of this investigation, it is possible to say that both solutions have a very slight inhibitory effect on bacteria. There is no significant difference, in this regard, between the sodium iodid and the sodium bromid. Neither is definitely bactericidal.

While sodium bromid and sodium iodid are both entirely satisfactory from the point of view of roentgen-ray density, sodium bromid has been more widely used. In this clinic for several years it has been employed as a routine in 25 per cent. solution. The same substance is in use in the Boston City and Massachusetts General hospitals. Sodium iodid has also had its champions, notable among them being Cameron,[2] who is responsible for a good deal of the experimental work that has been done to compare the efficiency of these two mediums. He first recommended a 25 per cent. iodid solution, but later suggested that its hypertonicity might prove undesirable. He finally selected a 13.5 per cent. solution, and on the basis of his very thorough work, he concluded that it was the best available pyelographic medium. From the standpoint of opacity, he found it just as satisfactory as 25 per cent. sodium bromid, and better than thorium. He called attention also to the important observation that iodin possesses a selective absorption, apart from its atomic weight, and that the relative density of its shadow increases with increasing penetration of the roentgen rays. Believing, further, that toxicity grows with hypertonicity, he felt that the markedly lower osmotic pressure of 13.5 per cent. sodium iodid solution gave it distinct advantage when compared with 25 per cent. sodium bromid.

We became interested in the problem of the choice of mediums as a result of an incidental observation made in the course of a long experimental study of the urinary tract. We were interested in the reaction of the bladder musculature to distention with various fluid substances. Anesthetized rabbits were used. A ventral midline incision and retraction of the intestines made it possible to observe the slowly filling bladder, together with one or both ureters. Provision was made for the recording of intravesical tension. Purely as a basis for more accurate interpretation of subsequent fluoroscopic studies, we were filling with body-warm 25 per cent. sodium bromid solution. We were greatly surprised at the close of the first of these experiments to find that striking changes in the bladder wall had

* From the Laboratory of Surgical Research of the Medical School of Harvard University and the Urological Clinic of the Peter Bent Brigham Hospital.

1. Burns, J. E.: Thorium—A New Agent for Pyelography, J. A. M. A. **64**: 2126-2127 (June 26) 1915; Further Observations on the Use of Thorium in Pyelography, Tr. Sect. Gen.-Urin. Dis. A. M. A., 1916, pp. 314-323.

2. Cameron, D. F.: Aqueous Solutions of Potassium and Sodium Iodids as Opaque Mediums in Roentgenography, J. A. M. A. **70**: 754-755 (March 16) 1918. Cameron, D. F., and Grandy, C. C.: Sodium and Potassium Iodids in Roentgenography, ibid. **70**: 1516 (May 25) 1918. Cameron, D. F.: The Use of Iodids in Pyelography, ibid. **72**: 1737 (June 14) 1919; A Comparative Study of Sodium Iodid as an Opaque Medium in Pyelography, Arch. Surg. **1**: 184-214 (July) 1920.

been produced. In numerous previous experiments we had filled with warm physiologic sodium chlorid solution to the point of moderate tension, and at the end of each of the experimental periods we had found the bladder able actively to empty itself. Furthermore, there were no gross changes in the vesical wall as a result of the filling. With 25 per cent. sodium bromid solution used under the same conditions, the results were invariably different. Very marked changes occurred, and the bladders were rendered incapable of normal contraction. Large quantities were not used to produce these effects (average 40.7 c.c.), and the pressures engendered (average 17.4 mm. of mercury) were low as compared with the levels frequently reached in our work with physiologic sodium chlorid solution.

The first response to bladder filling with 25 per cent. sodium bromid was an increased irritability of the vesical musculature marked by rhythmic undulatory contractions. This initial stimulation, however, was only transient, and gave way finally to distinct depression. As filling progressed, the posterior region of the bladder developed a pale, silvery sheen, the spread mesh of muscle bundles being blanched as though completely anemic. With greater distention, the most conspicuous and important change occurred in the form of extreme edema. This involved chiefly the posterior dependent portion of the bladder, but extended into all of the adjacent tissues. A striking jelly-like, edematous layer appeared between the lateral trunk blood vessels and the vesical wall. Bromin, forced through structures of altered permeability, could be recovered from the serous surface of the organ. Thrombosis of small vessels was sometimes seen. When emptying was permitted, the bladder was found to be completely crippled as a result of the single filling. The anterior wall, protected somewhat by the air bubble and away from the weight of the bromid solution, contracted normally. The posterior wall collapsed like a wet paper bag.



Fig. 2.—Hydronephrosis and hydro-ureter, with associated infection; pyelogram made with 12 per cent. sodium iodid solution.

The same experiment performed in a dog of 13 kg., 400 c.c. of fluid being used, raising a pressure of only 40 mm. of mercury, produced the same striking edema and the same characteristic bromid changes. Suspecting that these results were not the specific effect of sodium bromid itself, we performed similar experiments using isotonic 36.4 per cent. sodium iodid. Similar changes were produced. Twenty-five per cent. sodium chlorid solution also gave the same picture. Furthermore, "physiologic" bromid, isotonic with the blood, was found to be of no more effect than physiologic sodium chlorid solution.

Hypertonicity seemed, therefore, to be the responsible factor.

It was then of importance to determine how long the damage due to bromid persisted. With aseptic technic, rabbits were catheterized, and the bladders, emptied of urine, were gently filled with warm 25 per cent. sodium bromid solution. A brief, light anesthesia was obtained with morphin and ether. The fluid was introduced by means of a small syringe, care being used to avoid large quantities and high pressures. In six cases the amounts injected varied from 10 to 32 c.c. (average, 21 c.c.); and the pressures ranged from 10 to 22 mm. of mercury (average, 15 mm. of mercury). At the end of the filling and when the pressure had been maintained for a brief interval, the bladder in each case was allowed to empty and the catheter was withdrawn. The average time spent in this entire procedure was twenty minutes.

The animals were returned to the cage, and twenty-four hours later anesthesia was repeated. A ventral incision permitted direct inspection of the bladders. In one of the six cases there were present only patches of slight discoloration on the posterior wall. It is perhaps of some significance that in this instance less than fifteen minutes was spent in the filling, and the pressure developed was slightly lower (10 mm. of mercury) than in the other experiments of this series. In the remaining five cases, however, lesions of surprising extent were found. In all of them the urine was grossly bloody. The bladders were thin, flabby and edematous. They presented a grayish discoloration, most marked posteriorly, and there was extensive thrombosis of the blood vessels. The edema involved all of the adjacent structures, and fresh fibrinous adhesions between the bladder and the neighboring loops of the bowel gave a typical picture of a plastic pelvic peritonitis. Subserous petechial hemorrhages in the dependent coils of intestine were also frequently seen.

In the production of these lesions, irritants other than sodium bromid may be excluded as factors. Infection was certainly not concerned in the picture after so brief an interval. One of the animals gave signs of acute illness, and in this case a few cocci were seen in smears of the bladder urine. Smears from the extravesical exudate, however, contained no organisms. In another case with typical changes, cultures from the urine and from the fibrin on the outer bladder surface were negative. That an actual rupture of the organ at the time of filling was not responsible for the conditions found was evidenced by the fact that these damaged bladders could still be filled with considerable quantities of physiologic sodium chlorid solution and withstand high pressures.

Our next procedure was to perform a similar experiment and observe the bladder after forty-eight hours. With the aid of morphin, 20 c.c. of the bromid solution

was introduced very slowly; 12 mm. of mercury was the highest resulting pressure, save for a transient sharp rise to 40 mm. during a struggle of the animal. After a forty-eight-hour interval, the rabbit seemed entirely well; but the bladder presented the typical changes which have been described. These were less in extent, however, and showed signs of recovery. Thirty-five cubic centimeters of physiologic sodium chlorid solution was now introduced, raising a pressure of 23 mm. of mercury, and the organ remained entirely intact.

As we believed that we were dealing with the influence of hypertonicity, it now seemed important to learn how much it was necessary to reduce the concentration of the solution in order to escape its untoward effects. Testing solutions of lesser percentage, we found that 10 per cent. sodium bromid was practically innocuous. But this concentration was insufficient for satisfactory roentgen-ray density, as proved by a clinical trial. We selected, therefore, a 14.56 per cent. solution of sodium iodid, isotonic with 10 per cent. bromid. As might be expected from its isotonicity, it was equally lacking in harmful effects when subjected to our experimental test. Moreover, its much heavier molecular weight gave it a very satisfactory degree of opacity to the roentgen ray. The results of its clinical use were excellent. It was then interesting to find that for clinical purposes the margin of safety could be made still greater. Twelve per cent. sodium iodid is perfectly satisfactory for the making of pyelograms, and this solution is now in routine use in our clinic. It is isotonic with 8.2 per cent. sodium bromid. Compared with sodium bromid, therefore, its use involves a reduction in hypertonicity from that of a 25 per cent. to that of an 8 per cent. solution.



Fig. 3.—Adenocarcinoma of bladder, with small diverticulum; cystogram made with 12 per cent. sodium iodid solution.

We do not wish to infer that serious damage such as we have described follows the clinical use of 25 per cent. sodium bromid. We do submit, however, on the basis of our work, that it is potentially an irritant and that its use is unwise. We feel that its hypertonicity, especially in the presence of increased pressure, may cause sufficient edema of the renal pelvis to occlude its outlet and so produce the picture of colic, chills and fever which too often follows pyelography. This is especially true when the amount introduced is large and when the fluid is retained for any considerable time. Certainly, bilateral pyelograms with this solution are inadvisable, if, indeed, they are ever warranted.

The following clinical record is of interest. The observation was made by a member of the staff who at the time knew nothing of our work:

A man, aged 46, came into the hospital with symptoms of disease of the urinary tract. A diagnosis was made of renal calculus with associated infection, on the right side. In the course of the investigations, bilateral pyelograms were made with the 25 per cent. bromid then in use. Slight enlargement of the right kidney pelvis was shown, a stone being apparently within its collecting portion. Following the cystoscopy, the patient developed for the first time a fever of 101.5 F., and the right kidney became very tender. Two days later a pyelotomy was performed. The perirenal fat was found to be markedly edematous, and because of edema the operator experienced difficulty in working with the tissues of the pelvis.

Without further comment on the solution to be used, it will not be amiss to say a word concerning the proper making of a pyelogram. First of all, the hazards of the procedure should be borne in mind and the cases should be carefully selected. Patients with extensive infection and depressed renal efficiency should be subjected to pyelography with the greatest caution. We feel also that pyelograms in ambulatory cases should not be advised, as a general rule.

When the ureteral catheter has been introduced for this purpose, it should be advanced gently to the upper ureter or pelvis, but not so far into the latter as to produce unnecessary trauma and bleeding. Drainage of the contents of the pelvis for a brief period is then desirable. This is usually accomplished by the collection of specimens for microscopy and culture. The pyelographic medium should be injected slowly, for rapid distention is more productive of pain than is slow distention. Great pressures should be avoided with the utmost care. With this provision, it is of small consequence whether the gravity or the syringe method of filling is used. Indeed, we believe the latter preferable. But the danger of high pressures within the bladder or renal pelvis cannot be overemphasized. The ease with which fluid may be forced from the pelvis into the kidney parenchyma and into the general circulation has been demonstrated repeatedly. The work of Poirier [3] in 1891 is a classic example. In his experiments he introduced water into the ureter, and saw it flow out through the renal vein. Lewin [4] and Goldschmidt, similarly, injected air and produced death from air embolism. There are many such observations in the literature, and we are too apt to forget their significance.

The quantity of fluid to be used is not always easily determined. The practice of waiting upon the patient for the signal of pain in the side is not dependable. Indeed, the production of pain should be avoided. It

3. Poirier, Paul: Compt. rend. Soc. de biol., 1891, pp. 585-587.
4. Lewin, L.: Ueber das Eindringen von Luft aus der Blase in das Herz und die Wege dieser Wanderung, Arch. f. Exper. Path. u. Pharmakol. **40**: 308-312, 1898.

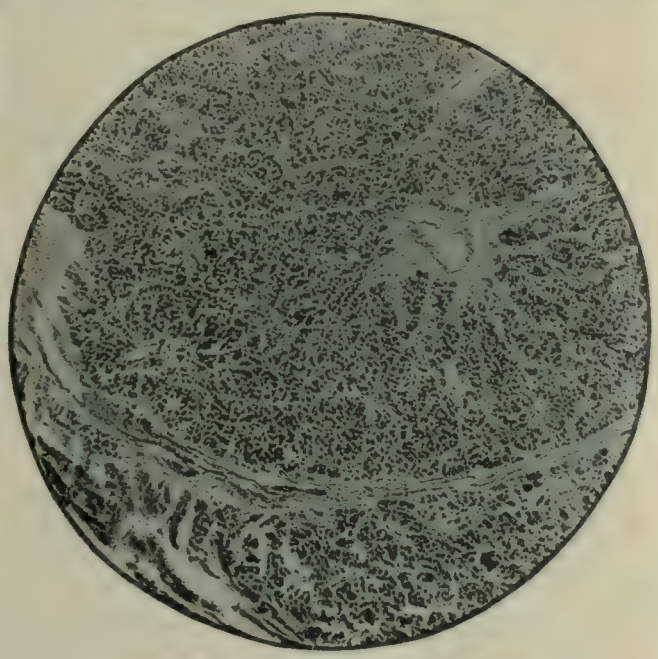
is better to take a plate with from 7 to 10 c.c. as a guide to the amount of further filling, than to subject the patient to the risks of overdistention. When a satisfactory picture has been obtained, the solution should be promptly withdrawn into the syringe, or, if this is not possible, the catheter should be left in situ to facilitate pelvic emptying. Finally, forced fluids, rest and urinary antiseptics will add their share to the comfort and safety of the patient.

721 Huntington Avenue.

MALIGNANT TUMORS OF THE SUPRARENAL GLAND

WILLIAM E. STEVENS, M.D.
SAN FRANCISCO

Malignant tumors of the suprarenal gland are comparatively rare, and an early diagnosis is more difficult than that of hypernephroma or other growths occurring in the kidneys. The prompt detection of this condition is, however, of paramount importance, for the patient's only hope of recovery lies in surgical intervention before adjacent structures have become involved or metastases have occurred. The case here reported is of unusual interest from etiologic and diagnostic standpoints. It afforded an opportunity for anatomic and histologic study, in addition to thorough clinical investigation. While correctly designated under the broader term a hypernephroma, it should be classified with the adenocarcinomas.



Adenocarcinoma of left suprarenal gland.

REPORT OF CASE

M. G., a youth, aged 17, a leather repairer, seen in consultation with Dr. Harold Brunn, entered the Mount Zion Hospital clinic complaining of pain in the left upper abdominal quadrant. Except for measles when a child, he had never been sick before. Two hours after lifting a trunk he had been seized with a sharp pain in the left groin, became very weak, and fainted. Operation the following day revealed retroperitoneal bleeding with hematoma. He left the hospital in five weeks. Two weeks later, he complained of a steady, severe, sharp, cutting pain in the upper left abdominal quadrant and left lumbar region. He was taken to another hospital, and the pain disappeared in two weeks. He felt fairly well for seven months, and then had another attack similar to the foregoing. In addition to pain, he now also suffered from anorexia, nausea, marked weakness and slight headache. He was again taken to the same hospital, and operated on by the visiting surgeon. Incisions were made in the upper left lumbar regions, but apparently nothing was found. (A pyelogram taken at this time revealed a lateral elongation and narrowing of the left renal pelvis, together with an absence of the inferior calix.) He had had pain in the incisions since that time. Two months later, he again had a severe attack and was taken to the same hospital, but no diagnosis was made. Two weeks after this attack he entered Mount Zion Hospital, stating that he had awakened that morning with steady, sharp pains over the lines of the incisions. These radiated upward and anteriorly across the abdomen. He also complained of chilly sensations, night sweats, anorexia, indigestion and vertigo. The bowels were regular, but the stools were occasionally tarry. He could not sleep on account of the pain, and had lost 6 pounds (2.7 kg.) in weight. Examination revealed a brownish pigmentation of the skin of the face, and a diffuse mottling over the entire body. A fine tremor of the tongue was present. The right base of the chest moved a little more than the left. When the patient coughed, there was a slight bulging, which started to the right of the umbilicus and extended over the upper left abdominal quadrant and lumbar region. It was most marked in the latter location. The left abdominal reflex was diminished. There was an area of slight hyperesthesia extending from the eleventh dorsal to the third lumbar vertebrae in both lumbar regions. The urine contained an occasional pus cell. The patient left the hospital in four weeks free from subjective symptoms. Examination between the attacks revealed a dilated stomach with peripyloric adhesions, a slight limitation of motion in the left half of the diaphragm, and hyperesthesia on both sides at the level of the eleventh and twelfth dorsal vertebrae.

A diagnosis of retroperitoneal postoperative adhesions following hematoma was made.

About six months later, the patient again entered Mount Zion Hospital complaining of the same symptoms. He stated that he had been free from pain only during three or four short intervals. It had been more marked than usual during the last two weeks. His blood pressure averaged 175 systolic and 120 diastolic. A mass beginning 1 inch to the left of the midline was felt projecting 1½ inches below the border of the ribs. It had a sharp border, and a notch could be detected. The surface was smooth, resembling liver or spleen, and it had a very slight respiratory excursion. There was a slight tenderness, most marked about 2 inches to the left of the midline. Another mass, smooth, rounded and more deeply situated, extended down the left flank, to a point just below the level of the umbilicus. It was difficult to determine whether or not this was a part of the mass previously mentioned. It gave the impression of being an enlarged kidney. There was a patch of dulness with vocal fremitus posteriorly at the base of the left lung. Fluoroscopy revealed the left dome of the diaphragm high and fixed, and the stomach low in the pelvis. The urine occasionally contained a few blood cells, and cellular, hyaline and granular casts. Cystoscopic examination revealed an injected trigon. The ureters were catheterized to the pelves. No urine was obtained from the left kidney on either of two occasions, although three patent catheters were inserted. Clear urine, microscopically negative, was obtained from the right kidney. A comparative urea test of the right kidney and bladder urines showed equal values. Indigocarmin, injected intravenously, appeared on the right side in fourteen minutes; none appeared on the left side in seventeen minutes. Injection of thorium nitrate solution produced the characteristic pain. The resulting pyelogram disclosed marked flattening and transverse elongation of the pelvis, an absence of the calices, and a marked angulation of the ureter.

Operation revealed a large, retroperitoneal, abdominal mass lying below the stomach and splenic flexure of the colon. Inferiorly it extended well down into the loin, medially to the midline, and above beyond reach. It was of the color

of a normal kidney, but varied in consistency, being semicystic below and markedly indurated and nodular above. It was firmly adherent and quite vascular, and was considered inoperable. No fluid was found on puncture of the lower portion with a trocar. On the morning and evening of the fourth day after operation, the patient suffered from attacks of dizziness and convulsions. On return to consciousness five minutes after the first convulsions he was blind, but vision returned in a few minutes. The mass increased rapidly in size, the abdomen and lower chest becoming markedly distended. The feet and legs became edematous.

The patient died eight weeks after operation, twenty-two months after the beginning of symptoms.

Necropsy revealed the abdomen and lower part of the thorax greatly distended. Firm adhesions were found at the base of the left lung. The left pleural cavity was greatly encroached on by the high diaphragm. Extending from below the costal border was the liver, greatly enlarged and irregularly filled with tumor masses. Across this extended the distended, discolored colon. The small intestines were adherent to the anterior abdominal wall and matted together by numerous adhesions. The liver was removed with great difficulty, being adherent to the adjacent tissues, particularly to the diaphragm over the left dome. The stomach was flattened by the pressure of the solid contents of the abdomen. The left flank was occupied by a large, retroperitoneal mass. Across the face of this was the pancreas. The tumor was densely adherent to the diaphragm and posterior abdominal wall, particularly in the region of the scars. It was removed with great difficulty, and with it the left kidney, which was attached to its lower pole. The axis of the kidney ran obliquely upward and outward. No enlarged lymph glands were found. The lungs were collapsed. The left lung was shortened, owing to encroachment of the abdominal contents on the pleural space. In both lungs a few small nodules similar to the main tumor were found near the periphery. The liver was tremendously enlarged and irregularly studded with tumor masses varying in size from a pin point to a baseball. The larger masses were umbilicated, whitish yellow at the periphery, and terra cotta colored and necrotic in the center. The liver tissue was somewhat pale, but normal markings were preserved. The total mass weighed 4,473 gm., and measured 30 by 9 by 3 cm.

Following gentle manipulation, the tumor mass separated readily from the kidney, leaving the latter intact. A depression was noted on the medial face of the kidney, just above the hilum. The capsule of the kidney was not invaded, and stripped from the organ readily. The kidney was flattened with the exception of its lower pole. The pelvis had been obliterated by pressure. It weighed 105 gm., and measured 12 by 7 by 0.75 to 2.5 cm. A small red infarct was noted in the cortex.

The tumor, which was originally ovoid, was absolutely necrotic, and fell apart, allowing the disorganized center to escape. It measured roughly 20 by 18 by 18 cm., and weighed 1,400 gm. As a whole, it was terra cotta, but areas varied from brick red to a pale yellow.

The diagnosis was hypernephroma of the left suprarenal gland.

Microscopically, the tumor was made up of cells in circular groups or in long cords. The groups were separated by very fine connective tissue strands. In some areas there was a distinct perithelial arrangement, and everywhere vascularity was pronounced. No suggestion of lumen formation was found. The individual cell showed a relatively small, deeply staining nucleus, with a relatively large amount of cytoplasm. The latter was much vacuolated. Mitotic figures and giant cells were very frequent.

The picture presented the microscopic characteristics of the suprarenal adenoma type of hypernephroma. The picture lacks the characteristics of renal carcinoma, such as papillary pattern or tendency toward lumen formation.

COMMENT

In this case there seems to have been a definite connection between the trauma and the development of the hypernephroma. An early diagnosis was rendered difficult by the appearance of symptoms so soon after the injury, by the bleeding and hematoma found at the first operation, and because of the negative findings at the second operation. The patient's later symptoms, pigmentation of the skin, tumor mass, weakness and gastro-intestinal symptoms, were, of course, suggestive of a tumor of the suprarenal gland. An interesting feature of this case was the brownish discoloration of the skin, although but one of the suprarenal glands was affected. Another unusual feature was the comparatively slow progress of the disease. The majority of suprarenal tumors progress rapidly after the first symptom has appeared. Adenocarcinoma is infrequent in such a young patient; the average age is 44 years.

Until a comparatively recent period, the majority of both cortical and medullary growths were classed as sarcoma or lymphosarcoma. The latter now, however, are considered to be of neuroblastic origin, and are termed neuroblastoma or neurocytoma. They are derived from the medullary portion of the gland, and usually occur during infancy or early childhood. They assume, in a large majority of cases, one of two forms, the Pepper type, with secondary growths only in the liver, and the Hutchinson type, characterized by metastases most marked in the skull, although the sternum, vertebrae and rarely the long bones and viscera are at times involved. Unlike the neurocytoma, the adenoma, carcinoma and hyperplasia are cortical growths. The tendency of some cortical tumors to reveal sarcomatous properties, however, has been demonstrated.

The etiology of malignant tumors of the suprarenal gland is obscure, although a history of injury is given in about 9 per cent. of these cases. Not unlikely a predisposition to the development of this condition exists, or the progress of a growth already present is accelerated by traumatism.

In a study of seventy-four cases in which my own was included, the following facts of diagnostic significance were elicited: Of seventy cases in which sex was mentioned, forty-two males and twenty-eight females were affected. Thirty-four per cent. occurred in infants or young children, 18 per cent. in patients between 6 and 40 years of age, and 48 per cent. in patients over 40 years old. Of sixty-seven cases in which a definite age was given, the average age was 32½ years. The right suprarenal was involved in 41 per cent., the left in 45 per cent., and both suprarenals in 14 per cent. Metastases occurred early, and were unusually widespread. In this series of seventy-four cases, the liver was involved in twenty-seven, the kidneys in sixteen, the lungs in fourteen, the skull (particularly the orbit, in Hutchinson's type) in eleven, the opposite suprarenal gland in nine, the peritoneum in seven, the brain in five, the lymphatic glands, especially the aortic, bronchial and mesenteric glands in fourteen, the pancreas, heart, mediastinum and ribs in three, the spleen, intestines and diaphragm in two, and the ovary in one case.

The most common subjective symptom of which these patients complained, and the first to appear, was weakness. This was present in about 33 per cent. of the foregoing cases, and was usually accompanied by loss of appetite and often by vomiting and diarrhea. Next to weakness, gastro-intestinal disturbances and pain were the most common complaints, each occurring in about 20 per cent. of this series. The latter occurs when the tumor has attained sufficient size to exert pressure on the surrounding structures. Unlike that

due to pathologic conditions of the kidney, the pain in suprarenal growths usually extends from the lumbar region upward toward the corresponding shoulder, and anteriorly across the abdomen.

The objective symptoms that were noted, in the order of their frequency, were these:

1. A tumor mass, which could be palpated, occurred in 38 per cent. of these patients. When the suprarenal growth has attained sufficient size, the kidney is usually displaced downward and laterally, and it is often possible to feel it in this position. When the suprarenal tumor is large, the kidney may often be felt as a distinct prominence on its surface. Because of its high position behind the ribs, palpation fails to detect a small tumor.

2. Pigmentation occurred in 20 per cent of these patients.

3. Loss of weight occurred in 12 per cent. of them.

4. Hematuria occurred in 9.5 per cent. The latter is much less common than in renal growths, a fact of significance in the differential diagnosis. When present, it is thought to be due to congestion caused by pressure on the renal vein.

5. Elevation of temperature occurred in 8 per cent. of the patients. It is thought to result from necrosis of the tumor.

6. Premature sex development, principally overgrowth of hair, occurred in 8 per cent.

7. Pus, albumin or casts in the urine occurred in 7 per cent. These findings, pointing toward pathologic changes in the kidney, tend to make diagnosis more difficult.

8. As previously mentioned, a flattening and elongation of the corresponding renal pelvis, disclosed by roentgenograms of the injected kidney, was found in our case. This obviously indicates involvement either of the kidney or of some immediately adjacent structure.

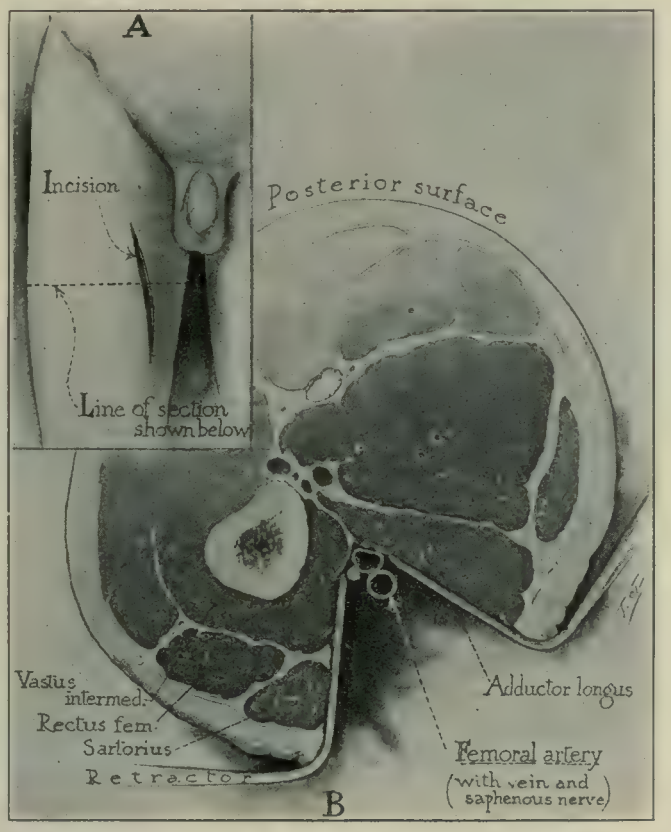


Fig. 1.—*A*, method of approaching the femoral artery; *B*, cross-section of thigh, showing relationship of femoral artery.

Keeping the foregoing subjective and objective symptoms in mind, a correct diagnosis should be made in an appreciable number of cases. As previously mentioned, the patient's only hope of recovery lies in early diagnosis and removal of the tumor before extension and metastases have occurred. Cases of successful extirpation have been reported.

In addition to surgical procedures, the preoperative and postoperative use of deep roentgen-ray and radium therapy should be considered.

Flood Building.

Chronic Appendicitis.—That chronic appendicitis may cause dyspeptic symptoms appears to have been first suggested in 1896 by Rutherford Morison.—Hurst, Guys Hospital Reports.

PERIARTERIAL SYMPATHECTOMY

ALBERT E. HALSTEAD, M.D.
AND
FREDERICK CHRISTOPHER, M.D.
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In 1851, Claude Bernard discovered that, when the sympathetic nerve is cut in the neck of a rabbit, the blood vessels in the ear of the same side become very much dilated. He and other observers afterward demonstrated that, if the peripheral (head) end of the severed nerve is stimulated electrically, the ear becomes blanched, owing to a constriction of the blood vessels. Bernard also discovered a second class of nerve fibers, which, when stimulated, caused a dilatation of the blood vessels in the area supplied.

The vasoconstrictor nerve fibers belong to the sympathetic autonomic system, consisting, therefore, of a preganglionic fiber arising in the central nervous system and a postganglionic fiber arising from the cell of some sympathetic ganglion. These nerves form plexuses in the media of arteries and terminate in contact with the muscle fibers. While the terminations of the nerves are in the media, the adventitia, or externa, is spoken of as the nervous layer; for it is into and through this layer that the fibers must pass before entering the media. The adventitia consists of connective tissue, which is denser and contains more elastic fibers in its inner portion. A prominent layer of elastic tissue near the media is called the outer elastic membrane. In the larger vessels, the adventitia contains small nutrient blood vessels, the vasa vasorum, which may penetrate the outer part of the media.

The recent work of Leriche[1] of Lyons has been of great interest and value to those endeavoring to treat vasomotor and trophic disturbances. Leriche has observed that, when the sheath of an artery is removed, one can see, just at the moment its external layer is pinched, that the vessel contracts, its pulse stops, and its size diminishes. If the cellular layer is excised, the diminution in size will progress to one third or one fourth of the normal size of the artery. After from three to fifteen hours, secondary signs invariably appear. These are: (1) elevation of local temperature from 2 to 3 degrees, giving the patient a subjective sensation of heat; (2) elevation of arterial pressure, which may be as great as 4 cm. of mercury, and (3)

1. Leriche, Réné: Tr. Am. Surg. A. **39**: 471, 1921.

increasing amplitude of oscillations. Leriche says the vasodilator reaction is transitional after periarterial sympathectomy; becomes attenuated from the fifth and sixth day, and disappears after from three to four weeks.

Leriche's operation has been to isolate from 8 to 10 cm. of the artery. The sheath is divided and, with one

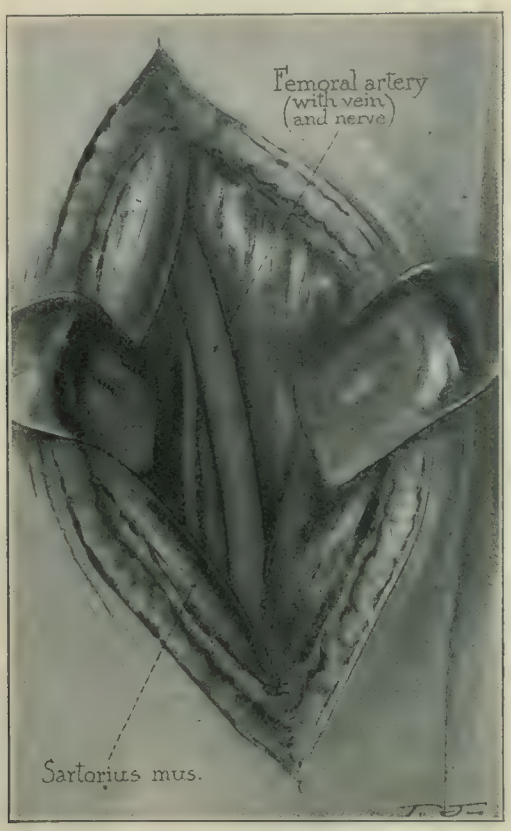


Fig. 2.—Exposure of femoral artery.

part held by forceps, the tunica adventitia is dissected away with either a knife or a cannular sound, until the vessel has been completely denuded. This procedure does not injure the main artery wall. Leriche has performed the operation 64 times; in 11 cases of causalgia or equivalent syndromes, 2 cases of painful stumps, 19 cases of posttraumatic contractures, 4 cases of large traumatic edemas, 1 case of trophedema, 4 cases of ischemic sequelae, 1 case of trophic sloughs on a stump, 10 cases of trophic sloughs after nervous section, 1 case of sore of the heel after medullary injury, 1 case of varicose eczema, 1 case of trophic trouble after frostbite, 1 case of spasmodic paralysis, 3 cases of an attempt to modify tension of the cerebrospinal fluid, 2 cases of jacksonian epilepsy, 1 case of goiter, 1 case of intermittent claudication and 1 case of erythromelalgia.

His study of cases leads him to believe that periarterial sympathectomy (1) is often very efficacious in painful phenomena; (2) will influence hypertonic symptoms of muscular phenomena, and (3) is very efficacious in trophic troubles which lead to ulcers.

Following is a case in which periarterial sympathectomy was performed:

REPORT OF CASE

History.—V. P., a sleeping car conductor, aged 55, was admitted to the medical service of Dr. Arthur R. Elliott, St. Luke's Hospital, Chicago, April 6, 1921. A tentative diagnosis of endarteritis obliterans was made by the admitting physician.

Six weeks previous to admission, the patient's right foot began to be painful and feel numb, and these symptoms had grown progressively worse. The pain radiated to the calf of the leg and the ankle felt weak. The patient was unable to walk more than half a block at a time; and, for the last four days and nights, the pain had been excruciating, preventing sleep. There had been no similar attack, and the foot had not swelled. The patient had typhoid fever and "soft chancre" at 17 years of age, but otherwise the history was negative. The family history was also negative.

Examination.—The right pupil was slightly larger than the left, and both reacted rather sluggishly to light and accommodation. The musculature of the extremities was fairly well developed. There was no paralysis, and no tenderness save in the right foot, which was painful when manipulated, and, to a lesser extent, in the right calf, on palpation. The body was otherwise that of a normal, healthy man.

April 9, the blood sugar was 0.091 per cent., the blood urea nitrogen 17.47 mg. per hundred cubic centimeters, and the total nonprotein nitrogen, 38.95 mg. per hundred cubic centimeters. The Wassermann reaction was clearly negative. There were 4,980,000 red blood cells and 10,050 white cells; hemoglobin, 90 per cent. The urine showed a faint trace of albumin, a few hyaline casts, no sugar, and an occasional leukocyte.

Diagnosis.—A diagnosis of endarteritis obliterans was made by Drs. Arthur R. Elliott and George W. Hall.

Treatment.—The patient was given 4 liters of Locke's solution daily by mouth and the duodenal tube, and hot formentations were applied to the foot. He made some improvement.



Fig. 3.—Method employed in removing the adventitia of the femoral artery.

April 26, he was given sodium citrate 120 grains (8 gm.); Locke's solution, 64 ounces (2 liters); potassium iodid, 30 grains (2 gm.); sodium bromid, 20 grains (1.3 gm.), and hydrated chloral, 5 grains (0.3 gm.). After a few days, the sodium citrate, sodium bromid and chloral were discontinued. May 1, nitroglycerin, $\frac{1}{100}$ grain, every two hours for eight doses daily, was started, and was continued a week. May 17, thyroid extract, 5 grains (0.3 gm.) twice

daily was started, and, May 19, sodium nitrite, 2 grains (1.3 gm.), every four hours. May 27, the electric oven was tried on the foot, and nitroglycerin was substituted for sodium nitrite. June 4, massage of the leg was started. June 24, 300 c.c. of 0.5 per cent. sodium citrate was given, intravenously. The condition was unchanged throughout.

August 13, the patient was seen by Dr. Halstead, who advised an attempt at periarterial sympathectomy or an amputation. August 24, the patient was transferred to our surgical service.

Operation.—August 26, the femoral artery of the right leg was dissected out so that the junction of the middle and lower thirds was visible. The adventitia was incised with great care and stripped completely off for a distance of 5 cm. The wound healed rapidly and cleanly, and the patient was discharged on the thirteenth day after operation, September 8.

July 21, 1922, ten months after operation, the patient was admitted to St. Luke's Hospital for carbuncle of the neck. Operation of incision and drainage was carried out.

Outcome.—The patient is working as cashier in a restaurant and is on his feet most of the twelve hours that he is on duty. He is able to walk a mile or more. There is no pain in the leg except a slight one if he walks rapidly. Numbness, which was present at the time of operation, has practically disappeared. Before the operation, the patient was unable to do anything, and the pain was most severe when lying in bed. Now there is no pain. The general health is excellent. The leg used to be cold but gets warm in bed now. Tactile and thermal discriminations are normal. The scar is pale and the wound is cleanly healed.

30 North Michigan Avenue—Winnetka Bank Building.

PNEUMOLITH OR BRONCHOLITH*

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The occurrence of pulmonary or bronchial stones coughed up with the sputum is not so common that the observation of a single case on a single occasion does not present data worthy of record. It so happens that just at the time of the appearance of an article on pulmonary calcification by Elliott,[1] two pieces of calcified matter were brought to me by a patient long a sufferer with chronic bronchitis.

The causes, distribution, composition and clinical evidences of pulmonary calculi are well brought out by Elliott,[1] by Wells,[2] by Norris and Landis[3] and by Kidd,[4] but there is no extensive collection of literature. I append to this short report a list[5] of the most important articles since Poulalion's thesis in 1892. A few are not listed because of their inaccessibility.

There are two principal varieties of pulmonary calcification: one that has its origin in a chronic or healed inflammatory area, tuberculosis being usually the cause, and one that is part of the pathologic changes in calcium and phosphorus metabolism whereby these salts are laid down at places of high acid concentration. The latter is a metastatic calcification. The former is usually localized or irregularly distributed, whereas the latter is more uniform and may be universal in the pulmonary tissue, blood vessels and serous membranes. It is also possible for stones to form in bronchiectatic cavities, around a nucleus of organic matter, especially if drainage from the dilatation is imperfect. The case here reported may be explained on the basis of an old calcified tubercle ulcerating through a bronchus, or as a stone originating in a bronchus; from the roentgen-ray report, the former is more probable.

REPORT OF CASE

A man, aged 60, was healthy, until at 30 he developed tuberculosis. This was arrested by a life of three years in the plateau region of the Rocky Mountains, after which he returned to city life, being engaged since then in active practice. He has always been very active in outdoor life as a farmer and hunter, crediting to this the preserved arrestment of the tuberculosis. About ten or twelve years ago he began to have repeated attacks of "grip" at irregular intervals, especially at the times he spent the winter season in Philadelphia. These attacks were accompanied by bronchitis, a condition that became confirmed after a few years. For the last four or five years there has been almost constant cough, with excessive mucopurulent sputum, which comes up in coherent masses. There has also been some hemoptysis, occasionally as blood streaking in the sputum, but more often as fresh clotted blood amounting to as much as 3 ounces. The free bleeding occurred with paroxysmal cough in the morning. In the winter of 1920 I examined the sputum, and found no tubercle bacilli, but large numbers of pneumococci and *Streptococcus equinus*. From this a vaccine was prepared and administered for eight treatments, there being after the first few doses distinct relief of cough and decrease of expectoration. The improvement was not maintained, and the treatment stopped. Examination revealed signs of a bronchiectasis, a diagnosis confirmed by roentgen ray. The roentgenogram revealed bronchiectasis on both sides, but larger in the right upper lobe bronchus. There were several dense shadows in both lungs which might be either calcified areas or fibrosis, and probably a few calcified glands at the hilum. Since this time the pulmonary condition has not improved materially, although life in the South during the winter and in the West during the summer has relieved the severity of the cough, and stimulated the general health. During the last two years the breathing has become more and more labored, amounting to distinct asthma on extraordinary exertion; the latter feature was better this fall because of the patient's careful life and because an easier state of personal affairs permitted more composure.

Physical examinations at repeated intervals during the last fifteen years have given virtually identical findings. Below the right clavicle down to the third interspace there has been slight retraction of the chest, impairment of resonance, and at times a suggestion of a tympanitic note. Breath sounds here have been harsh, but expiration has not been clearly tubular in type. Posteriorly, similar findings were obtained down to the midscapular level, but more distant from the ear. The abnormal signs were always more distinct at the third interspace than at the extreme apex. No diagnosis of bronchiectasis could be made unqualifiedly by physical examination, although this was suggested.

In September, 1922, the sputum was again studied bacteriologically, with the idea of determining whether any organisms present would give a sensitivity reaction by a skin test. The predominating organism was found to be a member of the hemorrhagic septicemia group, and this gave a moderate but still definite reaction when injected, beside a control, into the skin. Injection treatment was started with 25 million, an amount which gave no local reaction but produced decided malaise, the temperature going up to 99.2 F. (this man's thermometric record is always normal or below), slight increase of cough, which was not harassing, with easier expectoration. Because of the temperature rise, the foregoing dose was continued three times at intervals of five days with always the same result, though diminishing in intensity. Attempts at increasing the quantity had no good effect. After the second reaction the patient brought two fragments of calcareous matter coughed up during the night with mucus but not wholly enveloped by it. No especial effort was required to raise the stone. The patient thinks that they probably represent one stone broken by his teeth. The one retained as museum specimen is 4 by 3 by 2 mm., quite

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* From the William Pepper Laboratory, University of Pennsylvania.

1. Elliott, A. R.: Broncholithiasis, J. A. M. A. **79**: 1311 (Oct. 14) 1922.
2. Wells, H. G.: Chemical Pathology, 1920, p. 468.
3. Norris and Landis: Diseases of the Chest, 1920, under Calcification of the Lungs.
4. Kidd, in Allbutt: System of Medicine **5**: 338.
5. This list of articles is omitted in THE JOURNAL, but will appear in the reprints, a copy of which will be sent by the author on request.

irregular, rough and without facetting or capsule. The smaller piece on examination showed traces of calcium carbonate, calcium oxalate and magnesium phosphate; there was also a little organic matter. It is interesting to note that this man has maintained for several years that there was in his lung a foreign body, he being conscious of the presence of a peculiar sensation indicating the existence of something that should not be there.

OTITIS MEDIA COMPLICATING OPERATIONS ON THE GASSERIAN GANGLION *

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ROCHESTER, MINN.

Otitis media complicating operations on the gasserian ganglion was first observed in the Mayo Clinic about three years ago, in a patient who complained of a sense of fulness and deafness following section of the posterior root of the gasserian ganglion for trifacial neuralgia. Since then, such observations have been made several times. This type of otitis media occurs from a few days to several weeks after operation on the gasserian ganglion. The chief complaint is a sense of fulness and deafness on the side on which the operation is performed. Otalgia is never severe, and is not a common complaint. Examination of the ears discloses a fulness in the inferior quadrants of the tympanic membrane, with more or less obliteration of the common landmarks. There is usually a fluid level, and a bubbling sound is heard with inflation of the eustachian tube. Two patients said that they had "water in the ear." The tympanic membranes were pale in each instance. In this condition, there also appear within the middle ear bleblike formations without evidence that the remainder of the cavity contains fluid. The tympanic membrane is gray or pink, and does not contain generalized fluid. It is flaccid or atrophic in appearance, is not intensely red, and never has the sense of resistance with the otoscope. Deafness, as tested by tuning forks, was of the conduction type and was not severe. The posterior superior wall of the canal did not droop.

In classifying the pathologic conditions in the middle ear in cases of otitis media, the question arises whether the fluid is exudate or transudate. Because of the close association and connections of the tympanic plexus in the mucous membrane of the middle ear with the branches from the gasserian ganglion, as described here, it is definitely established that the fluid is the result of an altered condition of the mucous membrane consequent to the operation. It is accepted that the operation results in a trophic disturbance in the mucous membrane of the middle ear, causing the collection of fluid. I believe that this type of otitis media is due to the secretion of the fluid; but the point cannot be definitely established. Animal experimentation as a means of investigation might have been feasible, except for the fact that the results of section of the posterior root of the gasserian ganglion in animals not suffering from trifacial neuralgia would not be parallel to those following a similar operation on patients with a definite disturbance of the sensory root, or of the gasserian ganglion, as in the cases here reported. It was therefore concluded that such investigation would not be of value.

In one case observed (Case 1), secretory otitis media followed alcohol injection of the posterior root of the ganglions. Spontaneous rupture and secondary infection, resulting in suppurative otitis media, occurred. It is also of interest that the posterior root was injected, since the neuralgia disappeared at once and cutaneous anesthesia followed.

In another case of secretory otitis media, not reported because the condition occurred several weeks after the patient went home, so that our information was not definite, suppuration occurred, but cleared up promptly. This man had a corneal ulcer, as did one other patient.

Abrasions of the cornea are not uncommon following operations on the gasserian ganglion; two of this series of patients had corneal ulcers. I am unable to determine whether such ulcers are due to trauma or purely to trophic local changes. Both causes may exist and possibly a combination of the two, namely, lowered local resistance due to the trophic changes, with subsequent trauma from dust and other foreign materials. Although goggles of the automobile type are worn by such patients postoperatively, trauma cannot be ruled out definitely.

In many respects, the picture of otitis media due to trophic disturbances following gasserian ganglion operations simulates herpes zoster otiticus, differing chiefly, however, in that pain is absent in the former and severe in the latter; also, the bleb formations on the pinna are absent in this form of otitis media.

NERVE CONNECTIONS

Sensory and trophic nerve supply to the mucous membrane of the middle ear is abundant, and it is directly connected with the sensory root of the gasserian ganglion. The tympanic plexus in the middle ear also has direct connection with the posterior root of the fifth cranial nerve, the sphenopalatine ganglion and the cervical sympathetic nerves.

The sensory nerves to the external auditory canal are derived from the auriculotemporal branch of the trigeminus, and from the auricular branch of the pneumogastric. The latter, also known as Arnold's nerve, perforates the wall of the meatus, and supplies its lining membrane.

The posterior wall is separated from the mastoid process by the tympanomastoid fissure. The auricular branch of the pneumogastric nerve passes through this fissure to the posterior wall of the canal. The coughing, sneezing or vomiting that sometimes follows irritation of the canal, as from cleaning the ear, or examining it with instruments, is said to be due to a reflex effect on the pneumogastric nerve through this branch. The auriculotemporal branch of the trigeminus nerve enters into its supply, and may explain the earache that occurs in cases of cancer of the tongue or disease of the lower teeth.

The nerve supply of the tympanic membrane is derived chiefly from the auriculotemporal branch, supplemented by twigs from the tympanic plexus and by the auricular branch of the vagus. They accompany, for the most part, the blood vessels and, besides supplying the latter, form a subcutaneous and a submucous plexus. The tensor tympani and tensor palati muscles receive their nerve supply from the same source, namely, the trigeminus, through the otic ganglion.

The nerves supplying the mucous membrane of the tympanum are branches from the tympanic plexus,

* From the Section on Otolaryngology and Rhinology, Mayo Clinic.

formed by the tympanic branch of the glossopharyngeal nerve, in conjunction with sympathetic filaments from the network accompanying the carotid artery. The tensor tympani muscle receives its supply from the trigeminus, the stapedius from the facial. Although the chorda tympani nerve has an intimate topographic relation to the space which it traverses close to the outer wall, it gives no filaments to the structures within the tympanum. The nerves of the eustachian tube are supplied from the tympanic plexus and from the pharyngeal branches of the sphenopalatine ganglion.

The tympanic nerve, or Jacobson's nerve, arises from the petrous ganglion and traverses a tiny canal in the osseous bridge between the jugular fossa and the carotid canal. Entering the tympanic cavity and receiving fibers from the carotid plexus of the sympathetic by way of the small deep petrosal, the tympanic nerve passes upward and forward in a groove on the promontory, and breaks up in this situation to form the tympanic plexus. After distributing filaments to the mucous membrane lining, the tympanic cavity and the associated air spaces (mastoid cells and eustachian tube), its fibers reassemble, and join with a filament from the geniculate ganglion, to continue as the small superficial petrosal nerve to the otic ganglion.

The branches of the tympanic nerve are the small superficial petrosal nerve, the branch to the fenestra ovalis, the branch to the fenestra rotunda, the branch to the eustachian tube, the branch to the mastoid cells, and the branch to the great superficial petrosal nerve.

The auricular branch of the vagus is given off from the ganglion of the root. It receives a filament of communication from the petrous ganglion of the ninth nerve, and follows the outer margin of the jugular foramen to an opening between the stylomastoid and jugular foramina. Entering this foramen, it traverses a canal in the temporal bone which crosses the inner side of the facial canal, and terminates between the mastoid process and the external auditory meatus. Leaving the canal, the nerve supplies the skin of the posterior part of the auricle and of the posterior inferior portion of the external auditory meatus. While traversing the temporal bone, the auricular nerve communicates with the facial and, after reaching its arc of distribution, with the posterior auricular nerve.

The communicating branch of the facial nerve to the tympanic plexus traverses a tiny canal in the temporal bone to reach the tympanic cavity, where it joins the main continuation of the tympanic plexus of the glossopharyngeal to form the small superficial petrosal, and proceeds to the otic ganglion, which it enters, as a sensory root. The fibers from the tympanic plexus, probably secretory in function, are distributed from the otic ganglion to the parotid gland.

REPORT OF CASES

CASE 1.—Mr. S. A. H., aged 48, complained of severe pain throughout the left side of the face, which was recognized as trifacial neuralgia. July 28, 1922, the patient was relieved by a preliminary alcohol injection of the sensory root of the fifth cranial nerve. He returned in about two weeks for recurrence of the severe pain. Examination of the ears was negative. August 10, a gasserian ganglion operation was performed on the left side, the posterior root being cut. Three days after operation, the patient complained that his left ear felt full. This feeling persisted, with slight deafness.

Examination revealed the right ear to be normal; the left tympanic membrane was pale; the lower quadrants were bulging, and the upper were normal. Motion of the tympanic membrane with an otoscope confirmed the patient's suspicion that there was water in the ear, because the fluid could be seen to move. Changing the position of the head changed the relation of the fluid level to the ear landmarks. Eustachian tube inflation caused a bubbling sound. Functional test of the hearing revealed a slight conduction type of deafness. There was no otalgia at any time. Paracentesis was not necessary, and the patient was dismissed from observation three days later. August 18, he wrote that symptoms of fulness and deafness were decreasing. The fluid level was lower.

CASE 2.—Mr. W. B., aged 48, had typical trifacial neuralgia. The ears were normal. Three alcohol injections were given on the right side, May 28, Dec. 15 and Dec. 19, 1921, respectively. The last injection afforded relief, but the patient had a sense of fulness and deafness in the right ear. The ear ruptured spontaneously, and a thin, watery fluid escaped. No further treatment was necessary. December 29, a gasserian ganglion operation was performed, the right sensory root being sectioned. Three days later, before the primary dressing was changed, the patient complained of slight pain in the right ear, soon followed by a spontaneous discharge of clear fluid.

Examination revealed a pale tympanic membrane, slightly full in the lower quadrants, with a posterior inferior perforation, and a thin fluid pulsating through the opening. This clear fluid became definitely purulent on the following day, by secondary infection. Slow but steady improvement ensued. Jan. 14, 1922, when the patient was dismissed from observation, the tympanic membrane was retracted and the perforation healed, and subjective and objective symptoms had entirely disappeared.

CASE 3.—Mr. F. N. B., aged 65, had trifacial neuralgia. Preoperative examinations revealed normal ears. July 30, 1921, the right sensory root of the gasserian ganglion was sectioned. About nine days later, the patient complained of fulness and slight deafness in the right ear.

The typical pale membrane, with slight fulness in the lower quadrants and the slight deafness typical of the condition, was present. There was no otalgia; paracentesis was not considered necessary. The patient was seen daily, and the ear rapidly cleared. He also had a corneal ulcer in the right eye which was typical in its resistance to local treatment. Further trauma was eliminated by the use of a glass eye-shield.

CASE 4.—Mr. T. E. G., aged 68, had a right gasserian ganglion operation for trifacial neuralgia, May 19, 1921. The sensory root was cut. The findings in the ears were negative. The patient was dismissed from observation without complications. However, a letter from his home physician reported that he had subsequently developed right otitis media, which spontaneously ruptured and became secondarily infected. He also developed a right corneal ulcer. Both resisted local treatment. A later letter, December 19, stated that both the ear and the eye were almost cured.

COMMENT

Four other cases belong to this series, but, since a personal examination was not made, they are not incorporated in this report. Case 1 was typical in every detail, and most interesting. It should be noted, however, that all the patients had complete relief from the pain after operation. They also had cutaneous anesthesia over the surface supplied by the posterior root of the ganglion. It should be noted, further, that two of the four patients had trophic disturbances in the form of secretory otitis media and corneal ulcer. This again brings up the question of the factor of trauma in these cases of postoperative corneal ulcers.

SUMMARY

1. Secretory otitis media following operation on the gasserian ganglions is an entity. It is probably due to trophic disturbances in the mucous membrane of the middle ear.

2. The nerve connections between the gasserian ganglion and the mucous membrane of the middle ear are abundant.

3. The ear and eye complications are always on the side on which the operation is performed.

4. Trauma, as an etiologic factor, is eliminated so far as the ear is concerned, and this gives further basis to the argument that the corneal complications are entirely trophic in origin.

5. The process may be similar to that occurring in a herpes zoster otiticus.

SPASMODIC FORCED RESPIRATION AS A SEQUEL OF EPIDEMIC ENCEPHALITIS

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The protean character of the sequelae of epidemic (lethargic) encephalitis has come to be well recognized as evidence of its involvement of almost any part of the brain or spinal cord. Its syndromes are legion, and it bids fair to rival neurosyphilis as a waste basket for the vagaries of neurologic diagnosis.

During the last year, certain disturbances of the respiratory mechanism have come under my observation as a sequel to epidemic encephalitis, which have resulted clinically in disorders of breathing of a very bizarre nature. In each instance, the symptoms have conformed to the same general pattern, but there has been a different coloring as far as the individual respiratory difficulty was concerned.

We are all familiar with the dyspnea that accompanies respiratory or cardiovascular diseases, the toxemias and the well known Cheyne-Stokes respiration. Quite different in all their characteristics are those disorders of respiration to which encephalitis has given rise. These are more in the realm of disturbances of rhythm and amplitude than of rate, though tachyrespiria is also present.

The literature on this disease contains no histories of cases similar to those reported here, though several writers mention respiratory syndromes following encephalitis. Aronson [1] reports the case of a young child who developed a persistent rapid respiration, about 45 a minute, accompanied by certain character and psychic changes. Grossman [2] mentions in his review of the sequelae that three patients complained of difficulty in breathing without any pathologic condition in the lungs. Hoover [3] reports an unusual case of inspiratory dyspnea due to paralysis of the dilators of the nares, which was relieved by raising the nares. Barker [4] says that peculiar disturbances, such as tachypnea, irregular respiration and paroxysms of deep breathing, are seen, and specifically notes one of these cases which was accompanied by a tetanic attack.

This peculiar respiratory disorder varies considerably as to its time of onset, following the acute disease in some instances in four months, in others more than a year. It does not begin suddenly, but gradually develops to a maximum point, where it maintains a fairly constant level.

The type of case described by Aronson has also been noted by me and is a type of respiration in which the rate is over 40 and the effort loud and labored, suggesting the panting of a dog.

The other cases, five of which have come under my observation, are different, in that there are intervals of normal breathing interspersed with occasional outbursts of abnormal respiration. Without any premonitory feelings other than, perhaps, slight dizziness, the patients complain that they feel compelled to take a deeper breath; that something is compressing the lower chest which interferes with adequate depth of breathing. The breathing, therefore, suddenly becomes deeper and more rapid, usually between 40 and 45 a minute. The effort is marked, inspiration being voluntarily long and deep, with all the accessary muscles called into play. Expiration is also voluntary and labored, frequently ending with a noticeable grunt. During these spasmodic paroxysms, the mental attitude is obviously one of distress and anxiety, suggesting that which is sometimes seen in vagal attacks, and is concentrated on the difficult breathing. Conversation is avoided, and, if the breathing is voluntarily interrupted, the succeeding respirations appear to be more violent, as though to compensate. There is marked restlessness accompanying the paroxysms; the patients become uneasy; the hands are clenched and unclenched; the musculature throughout the body may become tense and rigid; often they lie down, sit up, stand up and then bend forward or backward, depending on the impulse of the moment.

Weakness predominates during the attacks, and, if standing, the patients will lean against the wall, assuming unusual postures. Yawning is a frequent accompaniment. A child showed psychic accleration with the attack; another patient, marked depression; while in two the attack seemed to terminate in a slight transient cyanosis accompanied by a period of apnea. One of the two, during the height of the attack, arched his back, clenched his hands, and appeared about to have a true convulsive attack. There were, however, no clonic movements and no loss of consciousness at any time, though noticeable pallor, followed by cyanosis and irregularity of the pulse, were present.

These attacks terminate as abruptly as they begin, usually after from five to fifteen minutes' duration there being none of the crescendo, diminuendo quality noticeable in the Cheyne-Stokes respiration. Their frequency is variable, occurring three or four times a day, and often just before sleep at night.

The paroxysms are increased by any emotional stimulus, and also by inactivity; for when the mind is diverted or exercise is being taken, they do not seem to be initiated.

These attacks are likely to be free from other physical signs, though the heart rate was shown by the electrocardiograph, in one case, to exhibit a marked sinus arrhythmia, and in the most severe case there was a temporary loss of the pulse in the wrist at the height of the attack.

The inevitable diagnosis in all these cases had been hysteria, but all except one patient, on careful questioning, gave a clear-cut history of a febrile disease, with perversion of sleep and other localizing intracranial signs.

1. Aronson, L. S.: Encephalitis with Unusual Sequelae, Neurol. Bull. **3**: 113 (March) 1921.
2. Grossman, Morris: Sequels of Acute Epidemic Encephalitis, J. A. M. A. **78**: 959 (April 1) 1922.
3. Hoover, C. F.: Inspiratory Dyspnea Due to Paralysis of Dilators of Nares Following Acute Infectious Meningo-Encephalitis, J. A. M. A. **78**: 966 (April 1) 1922.
4. Barker, L. F.: Sequelae of Epidemic Encephalitis, New York State J. Med. **22**: 251 (June) 1922.

Two of the patients showed as residuals the familiar thalamic facies, staring eyes with lack of emotional tone and tendency to the mask. They also showed pupillary irregularities, and one, a persistent insomnia.

Therapy in these cases was of no avail, though one case was improved by moderate doses of phenobarbital (luminal).

REPORT OF CASE

History.—A. W., a man, aged 22, single, seen June, 1922, had had a severe head cold in February, 1921, which made him feel quite sick but did not put him to bed. During and after this illness he had some tendency to prolonged sleeping, which, after several months, turned into a partial sleep inversion. This had persisted off and on up to the time of examination, the patient falling asleep readily during the daytime, but suffering from insomnia at night, often reading the whole night. At the termination of this acute illness, he began what at first was considered a habit of coughing, which had persisted until the present time. The breathing was forced and labored, coming on rather rhythmically in paroxysms of five minutes' duration, with about five minutes' intermission. It was inhibited by diverting the mind and by taking an interest in something, while any emotion intensified it. The attacks were characterized by rapid, deep respiration, chiefly through the mouth, with some distortion of the facial expression, and the use of the accessory respiratory muscles. Expiration was forced and accompanied by a noisy coughlike grunt. Extreme fatigue followed each paroxysm.

There was a period of several months about a year after the acute illness when he was bothered by excessive perspiration, and during the past year he had had no ambition or "pep." Activity was an effort, and he desired to sit around all day. He had done no work, and was inattentive and forgetful. His family had noticed that he stared more, and that there was a change in his facial expression. There was at no time diplopia, myoclonia or pains.

Examination.—This revealed widening of the palpebral fissures, producing some strain of the eyes, with a noticeable blankness of expression and emotional play over the face, especially the upper part (thalamic facies). There was no impairment of voluntary movement. The pupils were slightly unequal, but regular in outline and reacted to light and accommodation. Other than the respiratory difficulty described in detail above, the patient was free from physical signs.

Summary.—This case presents a typical but definite history of an acute epidemic encephalitis, with acute onset and some lethargy, followed by inverted sleep mechanism, thalamic involvement, as seen in the facies, retarded physical activity (movement), and evidence of autonomic disturbance in the period of excessive perspiration and the paroxysms of forced respiration.

COMMENT.

It seems almost impossible, with our present knowledge of the respiratory mechanism, to postulate a localization for this interesting autonomic disturbance; but it is unquestionably rhythmic and automatic, two functions usually attributed to that system. Its freedom from medullary signs would rule out the bulb as the site of the lesion.

The marked emotional element in these attacks, the psychomotor excitation, the disturbance of the sleep mechanism and the ironed out facies predicate an unquestionable thalamic lesion.

Von Monakow recently described in detail his conception of a continuation of the sympathetic chain up through the pons to the thalamus, where it has a large nucleus, and thence to the postparietal cortex as its end station. Under the influence of such data and knowing the numerous other autonomic sequelae of encephalitis, we can suggest for future observation a center in or near the thalamus which is part of the respiratory functional control, this seeming particularly to regulate its rate and rhythm. It seems possible that it is such a function which is diseased in this unusual postencephalitic respiratory syndrome.

NOTE.—Since this article was written, there has been reported [5] a series of five cases with a postencephalitis respiratory syndrome. These occurred in children, and unquestionably describe a clinical syndrome similar to the one that I have described in adults.

74 West Forty-Eighth Street.

Clinical Notes, Suggestions, and New Instruments

A UNIQUE CASE OF COEXISTENT TUBERCULOSIS AND SYPHILIS IN THE GENITAL TRACT

DAVID M. P. MAGEE, M.D., LONG BRANCH, N. J.
Urologist, Monmouth Memorial Hospital

The fact that tuberculosis and syphilis frequently coexist in a patient is attested by experience.

REPORT OF CASE

History.—J. S., a colored man, aged 48, a laborer, single, admitted to the urologic service, Aug. 3, 1921, complained of swelling in the left inguinal region of two months' duration, starting with swelling in the corresponding testicle and traveling to the groin.

Physical Examination.—There was a swelling in the left inguinal region about the size of a small egg, indurated in character, with a slight amount of tenderness present. There was slight involvement of the neighboring gland on each side of the swelling. The left testicle felt normal, but the epididymis was enlarged, hard and somewhat tender, with distinct small nodules on the vas, which also felt thickened. The right testicle was involved in a small mass, and presented several small distinctly nodular spots on its surface. The epididymis on this side seemed also to be involved, but the vas did not feel nodular and was not much thickened. The patient's temperature varied from 98 to 99 F. The urine showed albumin, a few hyaline casts with an occasional cylindroid, and a few leukocytes, with some epithelial cells. No tubercle bacilli were found. Blood examination revealed: hemoglobin, 85 per cent.; color index, 0.77; red blood cells, 5,500,000; white blood cells, 7,200; small lymphocytes, 25 per cent.; large lymphocytes, 11 per cent.; polymorphonuclear neutrophils, 59 per cent.; eosin, 4 per cent.; basophils, 1 per cent.; Wassermann reaction, four plus. A roentgenogram of the chest revealed considerable widening of the aorta in the region of the arch, and lung infiltration of the right apex.

A working diagnosis was made of bilateral tuberculous epididymitis, with probable extension into the right tunica vaginalis.

Operation.—On the ninth day after admission, the left side was operated on, an epididymovasectomy with enucleation of the enlarged inguinal gland on that side being performed. The epididymis was hard, enlarged and indurated. The testicle was soft and rather friable, and the vas was thickened and slightly nodular. During the attempt to dissect the inguinal gland, it ruptured, and about half a dram of purulent material flowed out. The gland itself was tightly adherent to the surrounding structures. At this stage, the patient did not appear to be doing well, so the right side was left for future operation. The epididymis, inguinal gland and vas were sent to the laboratory, and a diagnosis of tuberculous epididymitis was made.

Course and Treatment.—Convalescence was uneventful except that it was somewhat protracted by the discharge from and breaking down of the wound in the inguinal region. The patient returned home, September 3, with the intention of returning later for operation on the right side. Anti-

5. Parker, H. L.: Disturbances of the Respiratory Rhythm in Children: A Sequela to Epidemic Encephalitis, Arch. Neurol. & Psychiat. 8: 630 (Dec.) 1922.

syphilitic treatment was begun in the urologic clinic, September 10. Up to the time of his readmission for the second operation, he had received six intravenous injections of neo-arsphenamin, 0.6 gm. each, and two intramuscular injections of mercuric salicylate, one of one grain and one of one-half grain.

This treatment was interrupted after October 21, because the patient failed to return.

Second Operation.—December 6, he was readmitted to the ward, complaining of pain in the right side of the scrotum, which was rather sharp at times. Otherwise, he felt quite well. The physical findings were the same as before, except for the scar of the first operation. The next day, the right testicle, epididymis and cord were exposed and removed, along with an old fistulous tract leading from the lower pole of the epididymis to the skin surface on the anterior portion of the scrotum. The vas deferens was thickened and the epididymis nodular. The testicle on section had a fibro-gelatinous appearance. There were several small cysts, which resembled blebs, on the surface of the testicle. These contained straw colored fluid. On laboratory examination, the testicle showed chronic productive interstitial inflammation with hyalinization of the seminiferous tubules, characteristic of syphilitic orchitis. There was dilatation of the epididymis tubules, and regenerative hyperplasia of the efferent ductules and of the interstitial cells also characteristic of syphilis, The diagnosis was syphilitic orchitis.

Outcome.—An uneventful recovery ensued, and the patient was discharged about December 22, reporting to the clinic on the 23d and continuing treatment until March 3, 1922, during which time he received eleven intravenous injections of neo-arsphenamin, each 0.6 gm., and eight intramuscular injections of mercuric salicylate, each one-half grain. During this time, he had two more Wassermann tests, one, Dec. 30, 1921, two plus, the other, March 3, 1922, four plus.

He has not returned for further treatment, but has been seen by me several times since last March. To all appearances, he is doing well, having gained in weight noticeably. As far as I know, he is doing his usual work.

COMMENT

Here we would seem to have a pure tuberculous process on the left side and a pure syphilitic process on the right side. It is this feature of the case which makes it of more than passing interest.

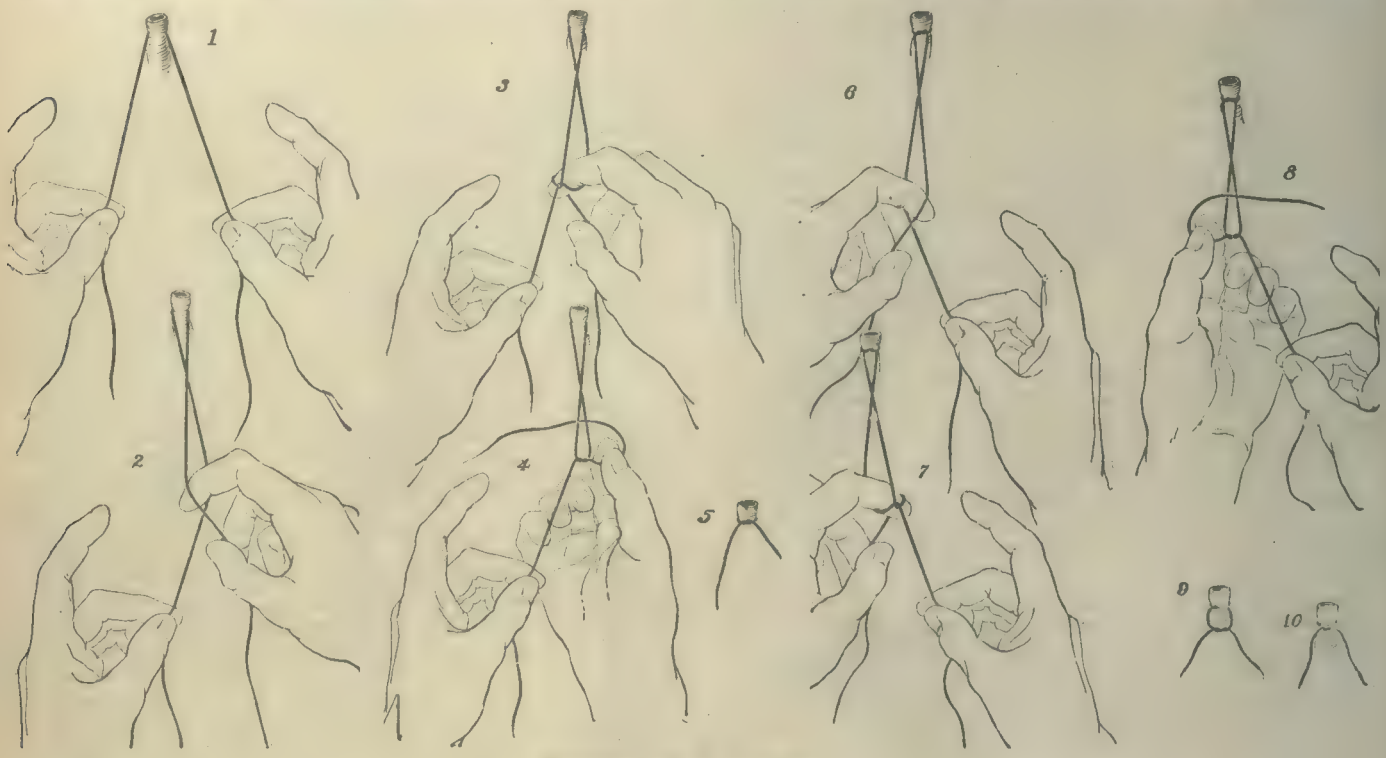
I should like to call attention to two things which were discovered on examination: (1) probable involvement of the right lung at the apex, as developed by the roentgenogram, probably a tuberculous process, which may have been the forerunner of the genito-urinary tuberculous condition, and (2) the presence of the sinus, which communicated with the surface of the scrotum on the right side. This was entirely healed, but would lead one to suspect tuberculous involvement on that side. To offset this, there was the pathologist's report, which nowhere mentioned tuberculosis in connection with the material sent him, which consisted of the entire removed specimen.

148 Broadway.

THE TECHNIC OF A KNOT

WALTER J. SULLIVAN, M.D., CHICAGO

The accompanying illustrations present the technic of a knot which I have been using for the last two years. A short piece of catgut can be used in the tying of the knot, and a reef or flat knot can be accomplished by the technic, as illustrated. A strand of catgut or linen from 6 to 7 inches in length can easily be used, and the accompanying results obtained.



Successive steps in tying knot.

As far as I know I have not seen this particular technic illustrated anywhere, and in reply to my inquiries many men who have done quite a bit of technical work state that they have not seen it in print or in any illustrations.

Frequently small pieces of catgut are left from suture material, and these can be utilized to tie the knot. Long strands of catgut, as illustrated here, do not work as well as short strands.

2550 Prairie Avenue.

Physician Versus Cobbler.—The *Deutsche medizinische Wochenschrift* quotes a letter in the daily paper from a physician who wrote that he had just been paid by the insurance society for his medical services for the last three months, and his fees included one for medical examination and six office treatments of a certain shoemaker at 12 marks each, total 72 marks. The same day, the shoemaker returned to him a pair of shoes he had been repairing, with the bill, 1,000 marks.

METHOD FOR PREPARING BLUE CELLULOID INJECTION MATERIAL *

JOHN ALBERT MARSHALL, D.D.S., PH.D., SAN FRANCISCO

This note refers to those anilin dyes which may be used for coloring specimens prepared by the celluloid injection method.

In a study of the anatomic relations of the salivary glands, it became of interest to inject simultaneously the gland substance through the excretory duct, and the arterial blood supply through the common carotid artery. The red dye used for the injection of the arteries is the usual substance employed for this purpose, namely, alkanin. This material in various dilutions does not afford a sufficient contrast for the study and comparison of the small excretory ducts and the capillaries. The gross relationship is more clearly indicated when two colors are used. The difficulty seems to be due to the necessity of macerating the injected specimens in concentrated hydrochloric acid, and subsequently washing away the débris. In this manner, the injected masses are freed from the overlying hard and soft tissues. A search of the literature failed to find a description of any blue dye which would withstand the action of the concentrated hydrochloric acid. The color of alkanin is not changed during digestion, but apparently no blue dye has been described with properties identical in this respect to the red dye.

A combination of dyes may be used, however, which, although temporarily discolored by concentrated hydrochloric acid, regains a distinct hue when washed in water. Such dyes are, for example, crystal violet and brilliant green. A 10 per cent. solution of both of these dyes is made in acetone and used for coloring the celluloid preparations. Subsequent digestion of the injected material by means of concentrated hydrochloric acid decolorizes the dye temporarily. When digestion is complete and the injected mass washed with water, the color returns.

The great advantage of these dyes is apparent in experimental work requiring simultaneous injection of different systems or of different structures.

REPORT OF CASE OF OBSTRUCTION TO INTESTINE DUE TO ASCARIS

W. P. BAUGH, M.D., ALBANY, ALA.

In this case *Ascaris lumbricoides* caused an obstruction of the small intestine, necessitating resection.

Miss R., aged 36, referred by Dr. Mouldon Smith of Ardmore, Tenn., was admitted to the Benevolent Society Hospital at Albany, Ala., Nov. 6, 1922, with intense pain in the abdomen, in the right hypochondriac region. She was poorly nourished, was suffering great shock, and presented all the symptoms of an intestinal obstruction.

The history was negative except that she had had several attacks of pain in the abdomen for the last two years which had been diagnosed as subacute appendicitis.

A median abdominal incision was made. When the abdominal cavity was entered a considerable portion of the ileum was seen to be collapsed, with a definite line of demarcation at each extremity, with beginning gangrene. A large mass was observed; radiating from this mass, there were cordlike structures in the intestine extending from both sides of the mass.

The diagnosis of *Ascaris lumbricoides* was made, and approximately 70 cm. of the ileum removed at its middle third. An end-to-end anastomosis was performed.

In the removed section of intestine there was a large mass of *Ascaris lumbricoides* consisting of nine worms matted together, the longest one measuring 27 cm. and the shortest one 12 cm. The largest of them was dead, and the others were wrapped about it.

The patient was dismissed from the hospital, November 21, after an uneventful recovery.

* From the George Williams Hooper Foundation for Medical Research, University of California Medical School.

Special Article

THE CARE AND FEEDING OF INFANTS

(*Continued from page* 109)

[NOTE.—This is the third of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

MIXED FEEDING AND WEANING

The main indications for mixed feeding are: 1. To furnish sufficient food to meet the infant's needs when the mother's supply becomes inadequate. This is best accomplished by *complemental feeding* by the administration of cow's milk mixture after a limited period on the breasts. 2. To relieve the mother of one or more breast feedings to provide for her recreation. 3. To teach the infant bottle feeding in the preparation for emergencies. The two latter conditions will necessitate replacing breast by bottle meals. These are known as *substitute feedings*. Whichever of these two methods of extra feeding is adopted, the all important question to be answered for the mother is what foods and how much of them shall be given to replace the breast milk. It has been stated that average infants will require amounts approximating 2½ ounces (75 c.c.) for each pound of body weight, of breast milk in twenty-four hours.

It is necessary to weigh the infant before and after nursings for one or more days to obtain a fair idea of the amount of cow's milk mixture that it will be necessary to administer in cases of underfeeding at the breast. Example: Given a normal infant weighing 10 pounds (4.5 kg.), the food value of 25 ounces (700 c.c.) of breast milk should be approximated (one sixth of the body weight). Comparative determinations of human and cow's milk show, on an average, fat, 3.5; protein, 1.5; carbohydrate, from 6 to 7.5 in the former, and fat, 4.0; protein, 3.5; carbohydrate, 4.5, in cow's milk.

Clinical experience has taught us that most infants will thrive on artificial mixtures approximating the food values contained in breast milk. Roughly, 1½ ounces (45 c.c.) of cow's milk to which ⅒ ounce (3 gm.) of sugar (cane or milk) and 1 ounce (30 c.c.) of water has been added, will meet the requirements for each pound of body weight (0.54 kg.).

It is a safe and rational plan to think of the infant's needs in grams of fat, protein and carbohydrate for each pound of body weight. The breast-fed infant receiving 2½ ounces per pound receives, fat, 2.6; protein, 1.1, and carbohydrate, 5.0 gm., daily for each pound of body weight. These values are approximated by 1½ ounces of cow's milk with ⅒ ounce of sugar and 1 ounce of water added (fat, 1.8; protein, 1.57; carbohydrate, 5.0). Example: A 10-pound infant receiving 15 ounces of breast milk is receiving 2½ ounces for each 6 pounds of his body weight, and will require in addition the equivalent of 2½ ounces of breast milk for each of 4 pounds of body weight, which can be supplied by 6 ounces or one and one-half times four of cow's milk, and ⅘ ounce of sugar.[6] To meet

6. Two level tablespoonfuls of cane sugar equal 1 ounce; 3 level tablespoonfuls of milk sugar equal 1 ounce.

his water requirements, the mixture should be made 10 ounces, adding 4 ounces of boiled or cereal water.[7]

The cow's milk mixture can be divided into equal parts to be given from the bottle as complementary feeding following the breast nursings.

The exception to these food requirements is the thin infant whose substitute feedings must approximate the requirements of his full weight for his age. It is to be remembered that small *fat* infants require less total food than large infants of the same age. (Further details for artificial feeding will follow.)

Food Other Than Milk Mixtures.—Most infants may be given small quantities of orange juice during the third month of life, even though they are exclusively breast fed. During the fourth month, small quantities of well-cooked cereals can be started, and during the early part of the second half year a vegetable and meat broth may be started to advantage. These additions may be made to the diet even when the breast milk supply is sufficient to meet the caloric requirements. Besides rounding out their diet, they prepare the infant to meet the emergencies of a diminishing breast-milk supply.

WEANING

Weaning should always be done gradually, when possible, for the sake of both mother and child. The first months in the life and development of a child are the most critical period. Weaning at this time is a serious matter. A well baby after he is 6 months old can, as a rule, be successfully weaned when necessary, if it is properly done. However, at least part breast feeding should be continued throughout the next three months, or even longer, if possible, depending on the infant's health, the season and the other circumstances. When a mother cannot give her infant at least two satisfactory breast feedings daily, it is advisable to wean the child.

Sometimes a baby cannot take cow's milk; in such a case milk from a goat may be tried. This has been of great value in some cases of exudative diathesis.

As a rule, the trouble in weaning is not because the infant cannot digest cow's milk, but because the change is made too suddenly or the food given at first is not properly adapted to the infant.

In cases of sudden weaning, the food must be weaker in the beginning than for an artificially fed child of the same age. If weaned at 6 months, the infant should be put on a mixture for a child of 2 or 3 months, and the same rule applies for older infants. When the infant becomes accustomed to cow's milk, the strength can be gradually increased.

By gradually changing this way from breast feeding to bottle feeding, weaning can usually be completed in two weeks without upsetting the baby. It is very seldom necessary to wean in a shorter time than this and there is every reason to wean gradually so as to prevent any disturbance. Rarely should breast feeding be continued past the first year.

The fear of the laity of the "second summer" is well founded when dirty milk and other improper foods are fed promiscuously; but with clean, certified and sterilized milk and properly prepared soft foods the dangers of the summer heat are minimized. It should be the rule to underfeed rather than overfeed in hot weather; during the extreme hot spells the diet may well be reduced by one third or even one half.

7. One kilogram equals 2⅕ pounds; 30 c.c. (or 30 gm.) equals 1 ounce.

THE PHYSICIAN

It is necessary that the medical adviser, in order that maximum breast feeding may be maintained, shall impress on his patient that the instances in which the mother's milk will not agree with her own baby are very rare; that the first few days and weeks form the most critical period in the nursing history, during which the mother and the infant are adapting themselves to each other. During this period there is great danger that the distress and lack of gain in weight due to underfeeding may be misinterpreted as improper feeding. The scale used for measuring the twenty-four hour intake, by weighing before and after each feeding and the estimation of the gain in weight over given periods of time, must be the determining factors for the institution of complemental feeding. In order to establish a maximum milk flow, both breasts should be given at each feeding, but at not too short intervals, and if other food is necessary it should be given after the nursing and not in place of a nursing. Such a procedure will result in a maximum stimulation. When, through any cause, the infant is unable properly to stimulate the breasts, regular expression should be practiced. Mothers are to be taught that lactation can be reestablished even after the baby has been off the breast for some time.

In private practice, in order to obtain the maximum breast feeding, it is necessary that routine consultations with the mother be inaugurated. These should begin shortly after the baby is born, by personal instruction to the mother as to the best means of promoting her breast milk supply through proper hygiene and diet, on her own part, and regular stimulation of her breasts by the baby or by expression of milk or a combination of these methods. When the activities of the physician do not permit such instruction it should be given by a trained nurse or some one who has had practical experience along these lines.

In not a few instances, even in the presence of good breasts, during the first few weeks the breast milk supplied by the mother will not meet all the requirements of the infant, and occasionally this period of insufficient supply may run into the second month. In all such cases complemental[8] feeding becomes necessary. With improvement in the mother's general health and her assumption of her normal activities, the breast milk supply increases, and repeatedly we have seen what at first seemed a hopeless case for complete breast feeding develop into one in which the infant could be supplied with all of its needs until the time arrived at which mixed feeding was the diet of choice. Such cases are especially common among the very young and old primiparas, and these are the ones who require the greatest amount of encouragement.

It therefore becomes the duty of the physician, in order that the mother may assume her full responsibilities toward her infant, to see the infants in their practice at regular intervals during the period of lactation. Weekly or bimonthly consultations during the first month, and monthly visits during the remainder of the nursing period are not only to be recommended but in many instances are imperative for the best interests of the infant. Breast feeding is rarely considered a burden by the young mother when the four-hour nursing period has been established, and in case of emergency it is usually possible to express suffi-

8. Complemental feeding is the administration of a bottle following a period at the breast; substitute feeding the replacing of a breast by a bottle feeding.

cient milk to satisfy infants, should it become impossible for the mother to be present at the feeding hour.

DISTURBANCES IN BREAST-FED INFANTS

Breast milk is a complete food and contains all the essentials of a well-balanced diet for the human infant. Notwithstanding the fact that there is a considerable difference in the chemical composition of milks from different sources, the average infant will thrive on them. However, nutritional disturbances are of common occurrence in the breast fed; and while, on the whole, they are less dangerous than similar disturbances in bottle-fed infants, they should receive early and serious consideration.

Those most commonly seen fall within one or more of the following groups: (1) underfeeding; (2) overfeeding; (3) congenital debility, with resulting impairment of the vital functions; (4) intercurrent parenteral (pharyngitis, tonsillitis, bronchitis, pneumonia, pyelitis, etc.), and enteral infections, and (5) idiosyncrasy toward mother's milk.

UNDERFEEDING

The diagnosis will be dependent on an estimation of the quality and the quantity of milk received by the infant. The clinical picture as presented by the infant is the predominating factor that leads the physician to an investigation of the underlying elements causing its lack of progress.

The quantity of the twenty-four hour supply is ascertained by weighing the infant before and after each nursing without change of garments. An accurate beam scale should be used. Most infants require from 2 to 2½ ounces (60 to 75 c.c.) of breast milk per pound of body weight in twenty-four hours.

SYMPTOMS

Dissatisfaction on the part of the infant with its individual meals is usually the first evidence of underfeeding. This is usually followed by restlessness and crying before the nursing time is due. Again, it may manifest its dissatisfaction by nursing greedily for a short time, releasing the breast and crying. In some instances it cannot be induced to remain at the breast because of the difficulty it encounters in obtaining its food after the first few minutes; or, on the other hand, there may be a tendency to prolong its feeding time. These symptoms are usually soon followed by a period of stationary weight or a loss in weight.

Usually the stools are normal in appearance, but small in amount, and give little evidence of the cause of the trouble. However, if the food supply is decidedly insufficient, we may have a positive evidence of the underfeeding by the appearance of the so-called "hunger stools," which are brownish or greenish brown and contain little fecal matter and much mucus.

If the condition is not corrected, the baby becomes weak and apathetic. The skin loses its turgor, its temperature becomes subnormal, it is pale and anemic and the fontanels become depressed and the abdomen sunken. Whenever there is room for doubt as to the cause of this group of symptoms, the scale will furnish the most positive evidence.

TREATMENT

The first step necessary in the institution of a rational regimen is to ascertain whether the fault is to be found in the mother or in the infant. On the part of the mother, it may be due to her physical condition or lack of glandular tissue in the breasts. Or, again, the infant may have some deformity or infection of the mouth interfering with nursing, or it may be too weak to continue its nursing to the end. If the infant is not getting enough food, artificial food must be supplied, temporarily, as part of the diet.

Undue haste in removing the baby from the breast offers the greatest danger in the treatment of underfeeding and should be resorted to only when other means fail. The ability to increase the quantity of milk secreted by the average woman must necessarily vary directly with the quantity and quality of the glandular tissue composing the breast. However, to a certain extent at least, certain factors will more or less directly influence the quantity and quality of the secretion and they are worthy of our attention.

If the trouble is due to an actual insufficiency in the milk supply, careful attention must be paid to the hygiene of the mother. She must have plenty of rest and sleep, her surroundings must predispose to a happy frame of mind, she must not be overburdened with household cares and her exercise must be regular. If possible, she should be freed from all care of the baby at night. She should eat sufficient food and drink plenty of liquids. Every effort should be made to stimulate her appetite, so that she will take an abundance of milk and other nutritious foods; but she should not be forced beyond her natural appetite, even in the taking of fluids. The general rules previously mentioned for the mother's diet should be followed. An excessive diet may be assimilated by the mother's body without increasing the flow of milk.

The diet recommended should be palatable to the nursing mother, as previously recommended.

Stimulating massage, combined with expression, may be applied to the breast in such a manner as to stimulate the whole gland. This can best be accomplished by two movements: By gently raising the whole breast from the chest wall and kneading it gently between the fingers, and by holding the breast against one hand and making circular movements against the periphery with the outspread finger-tips of the other hand and gradually working from its base toward the nipple.

Baths at a temperature comfortably cool (from 80 to 90 F.) should be taken daily to promote the mother's general health as well as cleanliness. These should be followed by a brisk rubbing with a coarse towel.

Steaming the breast by the application of hot towels covered with oil silk two or three times daily is of decided benefit.

Galactagogues are of questionable value. General tonics will often improve the digestion and tend to overcome anemia, and in this way improve the general health and thereby lactation. If after such methods the mother's milk is still insufficient, mixed feeding—part breast feeding and part bottle feeding—may be given for weeks or even months. One bottle feeding a day should be given in place of the breast, and the bottle should be given after each of the other breast feedings to make up the necessary amount. The baby should be encouraged to empty the breasts.

When part breast milk and part cow's milk is given, a well baby will usually have no difficulty in digesting the cow's milk. In case the baby is disturbed or sick, the bottle can be stopped for a few days and the diet limited to breast milk and boiled water. Carbohydrates can usually be added to the water to advantage, in the form of cereals and sugars.

(To be continued)

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SATURDAY, JANUARY 20, 1923

PROGRESS OF CLINICAL CALORIMETRY IN THE UNITED STATES

The ready determination of the fundamental metabolic reactions in the body for the purpose of discovering pathologic conditions because of which the exchange of matter and the transformation of energy may be noticeably altered has been the goal of many investigators. Thanks to the development of clinical calorimetry, to which American investigators have contributed no small share, the estimation of the so-called basal metabolic rate has become a procedure adapted to accurate application in any well organized hospital or clinical laboratory. Only a few years ago, apparatus for this purpose was unheard of except in a few specially equipped laboratories for physiologic research in nutrition. Today, outfits for the study of metabolism at the bedside exceed the number of persons properly trained to apply the apparatus to its appropriate uses. The magnitude of the development and legitimate exploitation of these newer diagnostic resources of the medical sciences can best be appreciated from the report that a single clinic of repute is already in a position to report more than 25,000 measurements of basal metabolic rates on nearly 9,000 persons in the last five years,[1] while another hospital has already recorded metabolism studies in a series of 1,000 cases.[2]

The statistics thus rapidly accumulating are enabling those interested in the problems of metabolism to secure at least tentative answers to some of the questions still puzzling them. With respect to the technic of the measurements themselves, the need of insisting on suitable conditions for the analysis is well understood by those initiated into the fraternity of metabolism analysts. As an expert has recently remarked in discussing the temporary elevations of the metabolic rate so often encountered, nothing the subject does or fails to do, except deep sleep, can depress the metabolic rate, whereas any slight disturbing condition, such as a headache, pain, discomfort, excitement, restless or uneasy sleep the preceding night, fear, movements, fever, surreptitious ingestion of food, or innumerable other factors may, in certain cases, cause an appreciable elevation. Technical errors, we are told further, are a much less common source of inaccuracy than failure to obtain the metabolic rate under absolute basal conditions. A basal determination is not obtained if the subjects fail to cooperate, or are nervous and worried over the procedure, as they are likely to be in the first test. Under such conditions the observed metabolic rate may be from 5 to 30 per cent. too high. Therefore, a first test with an observed metabolic rate between + 10 and + 20 per cent. will probably be lowered to within the normal limits of variation if the test is repeated a sufficient number of times to obtain a true basal metabolic rate.

What shall be the standard for comparison? Although food and activity are intentionally excluded from modifying the metabolism, account must be taken of age, sex and size. In examining the question of how the active protoplasmic mass, i. e., the metabolizing tissue, of the body can best be estimated, Boothby and Sandiford [3] have found that there is a remarkable agreement between the surface area calculated by the Du Bois surface area formulas and the formulas derived from Harris and Benedict's biometric correlation formulas for the prediction of the basal heat production. Hence the Du Bois formula for the determination of the surface area and the Du Bois normal standards of heat production for each square meter of body surface for age and sex are considered by them the best method at present available for predicting the normal heat production.

A tremendous interest attaches to the demonstration from the Mayo Clinic [1] that a high percentage of persons have normal metabolic rates according to the Du Bois standards, unless they are suffering from some specific disease characterized by an alteration in the basal metabolism. Boothby and Sandiford allege that the basal metabolic rate differentiates diseases into those with increased, normal and decreased metabolism as sharply as the temperature divides diseases into the febrile and afebrile groups. Out of several thousands examined, more than three quarters of all patients other than those with disorders of the thyroid had basal metabolic rates within the restricted Du Bois normal limits of + 10 to — 10 per cent.; 90 per cent. had basal metabolic rates within + 15 to — 15 per cent. The high percentage of normal results is most significant when it is considered that nearly all of the subjects who comprised the normal group had a functional or organic disease. With the exception of the thyroid and suprarenal glands, there is at present no evidence that any ductless gland is responsible for a demonstrable

1. Boothby, W. M., and Sandiford, Irene: Summary of the Basal Metabolism Data on 8,614 Subjects, with Especial Reference to the Normal Standards for the Estimation of the Basal Metabolic Rate, J. Biol. Chem. **54**: 783 (Dec.) 1922.

2. Means, J. H., and Burgess, H. W.: Basal Metabolism in Nontoxic Goiter and in Borderline Thyroid Cases, Arch. Int. Med. **30**: 507 (Oct.) 1922.

3. Boothby, W. M., and Sandiford, Irene: A Comparison of the Du Bois and the Harris and Benedict Normal Standards for the Estimation of the Basal Metabolic Rate, J. Biol. Chem. **54**: 767 (Dec.) 1922.

calorigenic reaction. A scientific basis for clinical calorimetry being thus firmly established, it becomes increasingly important that the training and educational equipment of those who are to profit by it shall be so adequate that the progress of medicine will be properly safeguarded, and above all that quackery shall not be enabled to gain a foothold where ignorance and incompetence leave an unprotected pathway.

DRUG EXANTHEMS

With the notable increase in the number of new drugs, many of them representing synthetic chemical compounds developed in the laboratories of various countries, have come manifestations of unusual or unexpected reactions produced by them in exceptional cases in the human organism. Thus, in addition to the long recognized exanthems known to occur at times after the use of bromids and iodids and such familiar medicaments as arsenical compounds, a diversity of skin eruptions, many of them transitory in character, has been described in recent years. The offending substances include such popular drugs as the derivatives of barbituric acid, several of which are widely used as soporifics, and various antipyretics, including some of the most familiar ones, hexamethylenamin and phenolphthalein. The skin manifestations occasionally called forth by the latter popular laxative have had repeated mention in THE JOURNAL.[1]

The theories of the etiology of the cutaneous manifestations have been as varied as the latter themselves appear to be. The hypotheses have followed the views that have happened to prevail at successive periods; accordingly, one reads of idiosyncrasy, susceptibility, chemotaxis, toxicity and, more recently, of allergy, or anaphylaxis, in connection with the phenomena. Some of the theories are susceptible of more rigorous experimental test. Reasoning that if a suitable explanation should be found for the more frequent of the exanthems, such as iododermas and bromodermas in their various forms, the answer might suffice also for the skin lesions or rashes produced by many other drugs. Wile, Wright and Smith[2] of the University of Michigan have reconsidered some of the factors in connection with the effects of bromids and iodids. The theory of the existence of specific precipitins for these substances in the blood was promptly disposed of, as this type of "immune" substance was not demonstrable. Percutaneous sensitization tests for iodid and bromid are uniformly negative, and cannot, therefore, be used to indicate ingestion susceptibility.

1. Wise, Fred, and Abramowitz, E. W.: Phenolphthalein Eruptions, Arch. Dermat. & Syph. **5**: 297 (March) 1922. Ayres, Samuel: Phenolphthalein Dermatitis, J. A. M. A. **77**: 1722 (Nov. 26) 1921. Corson, E. F., and Sidlick, D. M.: Urticaria from Habitual Use of Phenolphthalein, ibid. **78**: 882 (March 25) 1922. Rosenbloom, Jacob: Report of a Case of Nasal Herpes Due to Ingestion of Phenolphthalein, ibid. **78**: 967 (April 1) 1922. Wise, Fred, and Parkhurst, H. J.: Drug Eruptions from the Clinical Aspect, Arch. Dermat. & Syph. **6**: 542 (Nov.) 1922.

2. Wile, U. J.; Wright, C. S., and Smith, N. R.: A Preliminary Study of the Experimental Aspects of Iodid and Bromid Exanthems, Arch. Dermat. & Syph. **6**: 529 (Nov.) 1922.

Wells[3] pointed out, not long ago, that there still remains no satisfactory proof that anything except proteins can act as anaphylactogens. He scouts the idea that drugs can produce true anaphylaxis. It is probable, Wells asserts, that many of the systemic reactions observed after intravenous injections of arsenicals and other substances are not anaphylactic but anaphylactoid, and dependent on capillary thrombosis, agglutination, emboli or capillary toxicity, after the order of the results obtained by Karsner and Hanzlik. According to Wells, the failure to produce passive anaphylaxis with the serum of persons hypersensitive to drugs, the failure to secure convincing active sensitization in guinea-pigs, the number of instances in which drug hypersensitiveness is exhibited on the first injection and those in which heredity is evidently responsible, and numerous points of difference from true anaphylactic reactions, all make the identity of drug hypersensitivity with true antigen-antibody anaphylaxis a matter of great improbability. With this the studies of Wile, Wright and Smith are in harmony. The local phenomena of iododerma and bromoderma, they state, do not find their explanation on simple bacterial or simple chemical grounds. The ultimate explanation probably lies in a complex biochemical reaction. The classification of such cutaneous phenomena, however, as true sensitization or allergy, they conclude, is as yet unjustifiable in the light of present knowledge.

THE DISTRIBUTION OF BACILLUS BOTULINUS

Botulism stands almost alone among human diseases in that the microbic cause is not a tissue invader transmitted directly through the agency of man or the higher animals or by means of insects, but is primarily a saprophyte, owing its pathogenic power to a toxin produced in food substances outside of the animal body. From the standpoint of prevention, therefore, the real habitat and distribution of *Bacillus botulinus* become matters of fundamental significance. Certain forms of animal and plant life dangerous to man have a definite localization on the earth's surface. Poisonous snakes, the mosquito carrier of yellow fever virus, and poison ivy are all restricted to certain areas; is this true of *B. botulinus?*

The obscurity that still surrounds the natural living conditions of most of the spore-forming anaerobes has been especially marked in the case of *B. botulinus*. With the exception of an isolated finding in 1897 by Kempner and Pollack, who came across this organism in the intestinal contents of a hog, it had been found until recently almost solely in connection with outbreaks of human botulism. Some early observations on the Pacific Coast by Meyer and Geiger[4] seemed to indicate

3. Wells, H. G.: The Present Status of the Problems of Anaphylaxis, Physiol. Rev. **1**: 44 (Jan.) 1921.

4. Meyer, K. F., and Geiger, J. C.: Pub. Health Rep. **36**: 1313 (June 10) 1921.

that manured soil was very likely to contain *B. botulinus* spores. One of their observations is very striking: "For eight years previous to 1918, an owner of a small vegetable garden grew and home canned string beans without any spoilage. In 1918, the garden was fertilized with animal manure. The beans grown during this year were canned by the same method used previously, the contents of the jar promptly spoiled and some contained botulinus poison." From this, it would seem that the home of *B. botulinus* is in the alimentary tract of certain domestic animals.

This view has been considerably modified by a very extensive study of the distribution of the spores of *B. botulinus* carried out by Meyer and his associates, the results of which have just been published.[5] From this, it appears that the spores of *B. botulinus* are widely distributed in soil throughout the United States and part of Canada. They have also been obtained from soil samples collected in Belgium, Denmark, England, the Netherlands and Switzerland, and from Hawaiian and Chinese soils. In the United States, they have been found in almost every state in the Union. It is a surprising and possibly significant fact that *B. botulinus* spores were found far more frequently in virgin soil from mountainous districts than in soil or manure collected from animal corrals, pig pens, and the like. Contrary to earlier assumptions, soils subjected to intensive fertilization yielded *B. botulinus* less commonly than did uncultivated soils.

Of the two types of *B. botulinus,* the more toxic, commonly known as Type A, was found mainly in the Pacific Coast and Rocky Mountain states, while Type B predominated in specimens from the Mississippi Valley and Great Lakes region. Scattered findings of Type A were reported from some of the Atlantic Coast states, but for the most part B was the prevailing type. The soil samples from European countries did not show A in a single instance.

The findings of Meyer and his collaborators with regard to the presence of *B. botulinus* in various vegetables and fruits are equally interesting. In view of the soil findings mentioned above, all garden and field products in certain localities might be expected to carry *B. botulinus* spores at times. This is apparently true in general, but the authors call attention to some common variations in the results reported. Pea pods, stalks and leaves gave 5.4 per cent. of positive cultures (fifty-one specimens), while the vines and pods of string beans (forty-four specimens) were 32.7 per cent. positive. The number of specimens of any particular vegetable examined is hardly large enough to warrant special comment, and it is evident that the occurrence in vegetables should be closely correlated with local soil findings. Ten specimens of spinach were examined and all were negative, although this vegetable has been involved in several outbreaks of botulism.

5. A series of seven papers in the Journal of Infectious Diseases **31:** 501-613 (Dec.) 1922.

The failure of these recent observers to find *B. botulinus* in significant numbers in animal excreta is worthy of particular notice. They are now inclined to believe that manures or fertilizers contribute relatively little to the contamination of the soil with this bacillus. Their observations on man also were negative. Contrary to the findings of Tanner and Dack,[6] who found *B. botulinus* in two out of ten specimens of feces from healthy persons, Meyer and Dubowsky did not obtain a single positive result from the examination of stools of forty-five normal persons.

It is evident that much still remains to be learned about the distribution of *B. botulinus* in nature. As always happens in scientific progress, these extensive and important observations, while they clear up much that was formerly obscure, suggest also numerous problems that remain for solution.

BACILLUS ACIDOPHILUS AND INTESTINAL PUTREFACTION

The accumulating experience in the use of milks soured by the action of lactic acid-producing organisms illustrates the unwisdom of accepting indirect inference in place of convincing observation and experiment in the applications of science to practice. At the outset it may be frankly admitted that the administration of sour milk products is at times beneficial. This is particularly true in pediatrics.[7] If clinical observation justifies the belief that for certain types of gastrointestinal disturbances fermented milk accomplishes more than sweet milk with a similar fat, sugar and protein content, the precise convincing explanation for the specific benefits is by no means yet forthcoming. One by one the hypotheses are being shattered. The early assumption that the Bulgarian bacillus of Metchnikoff fame could be successfully implanted in man and the intestinal flora permanently modified thereby seems to have become untenable. Of late, attention has been directed to the effects of the administration of milk cultures of a related micro-organism, *Bacillus acidophilus,* stated to be a normal inhabitant of the human alimentary tract, but ordinarily present in very small numbers under the most common dietary regimens.[8] This bacillus is reported to be more successfully implanted, provided a suitable pabulum is provided for it in the intestinal tract. Only under such conditions can the flora be transformed into the acidophilic type.

Because the acidophilic bacteria can be made to predominate so largely in the intestine under appropriate modes of administration, if not actual implantation in a more permanent way, it has been assumed that the activities of putrefactive organisms would be almost

6. Tanner, F. W., and Dack, G. M.: Clostridium Botulinum: Presence in Human Alimentary Tract, J. A. M. A. **79:** 132 (July 8) 1922.

7. Lactic Acid-Producing Organisms and Preparations, New and Nonofficial Remedies, Chicago, American Medical Association, 1922, p. 156.

8. Rettger, L. F., and Chaplin, H. A.: The Intestinal Flora, Yale University Press, 1921.

entirely suppressed by a favorable change of flora induced by milk containing cultures of *Bacillus acidophilus*. With the disappearance of putrefaction, the somewhat hypothetic toxic products charged with harm to the body might also reasonably be expected to be lacking. Consequently, and not without some logic, suitably treated milk has been recommended in the treatment of intestinal disturbances due to putrefactive changes. However, if indican excretion may be taken as an index of intestinal putrefaction, it now appears that implantation of *Bacillus acidophilus* in the intestine does not necessarily lower the putrefactive processes. This, at least, is the conclusion that may be derived from two recent independent investigations, by Smith and Kulp [9] at Yale University, and by Kast, Short and Croll [10] at the New York Post-Graduate Medical School and Hospital. Some of the human subjects showed increased indican and phenol excretion in the urine when liberal amounts of milk and lactose cultures of *B. acidophilus* were added to the diet, although the concentration of the micro-organisms in the feces proved to be very high. In other cases, despite excellent implantation and determined change of intestinal flora to the aciduric type, the output of indican did not usually fall below that of the control periods.

It may be that the large amount of tryptophan-yielding protein present in milk and serving as a possible indican precursor may explain the outcome. These important and timely facts should not be interpreted as an arraignment of *Bacillus acidophilus* therapy. They merely suggest that favorable clinical results obtained with milk and lactose cultures of *Bacillus acidophilus* are not primarily dependent on decreased production of the antecedents of indican.

9. Smith, A. H., and Kulp, W. L.: The Effect of Change in Type of Intestinal Bacteria on Urinary Indican and Phenols, Proc. Soc. Exper. Biol. & Med. **20**: 44 (Oct.) 1922.

10. Kast, L.; Short, J. J., and Croll, H. M.: The Influence of Diet and of B. Acidophilus Ingestion on Intestinal Putrefaction, Proc. Soc. Exper. Biol. & Med. **20**: 45 (Oct.) 1922.

Current Comment

FUNCTIONAL TESTS FOR THE LIVER

Although so-called "functional tests" for the kidney have proved to be of considerable value in the clinical study of renal disorders, the attempts to devise equally useful or dependable tests for hepatic function have not been so successful. This is not due to failure to devote attention to the subject, or to lack of persistent effort to devise satisfactory reactions. A variety of tests have been proposed, often with considerable enthusiasm on the part of their authors; in most cases, however, a sufficient trial has demonstrated that they fall short of the expectations that were raised for the procedure. The explanation of the inadequacy has usually resided in the fact that comparatively few of the tests proposed involved functions that are absolutely specific for the liver, or that a number of simultaneous conflicting factors made interpretations very uncertain. The importance of the subject should nevertheless encourage rather than discourage further effort toward the discovery of an adequate test. Several years ago, Abel and Rowntree [1] of the Johns Hopkins Medical School discovered in phenoltetrachlorphthalein a pigmentary substance which, under normal conditions, is excreted entirely by the liver. Thus the dye leaves the blood stream rapidly and is carried into the alimentary tract contents with the bile. According to experimental investigations by Rosenthal, the elimination of definite doses of phenoltetrachlorphthalein proceeds with remarkable uniformity except in cases of liver damage. His recent researches with a simplified technic [2] on human patients give promise that a method available for clinical use has at last been perfected whereby an index of the functional capacity of the liver or of the total amount of functioning liver tissue can be secured without difficulty. Clinical results have fully borne out experimental work. Following the intravenous injection of the dye, strikingly high degrees of retention in the plasma have occurred in cases of hepatic disease. The most noteworthy retentions among the patients studied in Boston by Rosenthal have been present in acute hepatitis, in a case of cirrhosis in which there was a small liver, and in advanced cases of hepatic carcinoma. Such reports should encourage a thorough trial of the new procedure.

THE COST OF WORK—IN CALORIES

Now and then it falls to the professional duty of the physician either to prescribe some form of work for his patients or to consider the possible suitability of the tasks in which they are customarily engaged. Thus, there is added to the many requirements for acceptable medical practice the duty of becoming an expert on the subject of both muscular and mental effort. Exercise must be prescribed for some persons; others must be prevented from engaging in overstrenuous occupation. Personal experience becomes a helpful teacher in enabling us to pass judgment on various degrees or types of exercise; and now science is coming to our further assistance. The study of energetics bears out experience in telling us that lumbering is a calory-consuming occupation in which the daily need of food fuel may rise to 6,000 calories. Hence, Lusk [3] is moved to remark that the proverbial reputation of sawing wood as a strenuous occupation has here its scientific verification, and explains the disinclination of the hungry to engage in this useful occupation, as well as the unpopularity of charitable wood yards. The wood yard and the stone pile are more likely to be involved in a sentence to jail than in a physician's directions. The easier tasks that permit suitable function without overtaxing an impaired heart or some other organ are usually expressed in medical literature in terms of dumb-bells or Indian clubs or stairclimbing. Most considerations of this sort have involved the male sex and

1. Abel, J. J., and Rowntree, L. G.: J. Pharmacol. & Exper. Therap. **1**: 231, 1909.

2. Rosenthal, S. M.: A New Method of Testing Liver Function with Phenoltetrachlorphthalein, J. A. M. A. **79**: 2151 (Dec. 23) 1922.

3. Lusk, Graham: The Science of Nutrition, Ed. 3, Philadelphia, W. B. Saunders Company, 1917, p. 349.

its vocations. Of late, new data have accumulated with respect to the energy expenditure of women in household occupations. The figures for rest approximate 60 calories or, in round numbers, a calory per kilogram, hourly. Such work as sewing requires the additional expenditure of from 10 to 15 per cent. of energy; for dishwashing or ironing the increment mounts to 20 per cent. or more, while the rapidly vanishing vocation of sweeping may make an extra energy demand of 65 per cent. an hour. According to the information issued from the Office of Home Economics [4] at Washington, it appears that knitting, crocheting, darning and sewing by hand make moderate demands on the body as regards energy expended, compared with washing, ironing, sweeping and dishwashing. This does not take into account such matters as fatigue from sitting in one position, from monotony of work, or similar factors, but simply the energy expenditure for the work done. Here is a liberal range of choice of therapeutic tasks for women. And lest the list should seem to be too conservative, let us add that the work of typewriting, according to Carpenter,[5] belongs in the dishwashing group of muscular exertions.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Dr. Grote Resigns.—Dr. Carl A. Grote has resigned as city and county health officer for Huntsville and Madison County to accept a similar position in Greensboro, N. C. Dr. Grote has been in charge of the health department at Huntsville for five years and was president of the Junior Chamber of Commerce and the Kiwanis Club. He succeeds Dr. Harry Brockman. Dr. Burton F. Austin, Decatur, county health officer of Morgan County, will succeed Dr. Grote as health officer of Madison County.

CALIFORNIA

Personal.—Dr. Lester E. Tretheway, Manteca, has been appointed a member of the county board of health.——Dr. David Starr Jordan, Stanford University, Palo Alto, Calif., has been awarded the Order of the Rising Sun by the Japanese government in recognition of his services to that country. President Kozai and Professor Watase of the Imperial University of Tokyo presented the decoration.

State Board of Health.—Governor Stephens has reappointed the following physicians, whose terms expired some time ago, as members of the state board of health: Drs. Edward F. Glaser, San Francisco; George E. Ebright, San Francisco; Robert A. Peers, Colfax; Adelaide Brown, San Francisco, and Frederick F. Gundrum, Sacramento. These officers will serve for four years.

CONNECTICUT

Personal.—Dr. Albert E. Austin, Greenwich, sailed, December 16, on the White Star liner *Majestic* for Cherbourg and Southampton.——Dr. Gilbert T. Smith, Stamford, has been appointed chief surgeon of the S. S. *Resolute*, which left New York, January 8, for a tour round the world.

4. Langworthy, C. F.: Report of Work on Energy Expenditure for Sewing and Some other Household Tasks, J. Home Economics **14**: 621 (Dec.) 1922.

5. Carpenter, T. M.: The Increase in Metabolism Due to the Work of Typewriting, J. Biol. Chem. **9**: 231, 1911.

FLORIDA

Duval County Medical Society.—At the annual meeting of the society in Jacksonville, December 5, Dr. John E. Boyd was elected president; Dr. Elmo D. French, vice president, and Dr. Francis A. Copp, secretary. Dr. John K. Norwood was reelected treasurer and business manager of the *Duval County Medical Society Bulletin.*

Antimosquito Association Organized.—At the recent antimosquito conference, held in Daytona, the Florida Antimosquito Association was organized, with Col. Joseph Y. Porter, Sr., Key West, as chairman. This independent agency, with a membership of civic organizations, corporations and individuals interested in mosquito control work, will be closely identified with the state board of health, which will make community surveys, outline plans, initiate campaigns and guide its movements.

GEORGIA

Public Health News.—The portable dental clinic of the Atlanta public schools reported 11,669 children with defective teeth among pupils of nine public schools examined recently. The 240 members of the Atlanta Dental Society are cooperating in a drive for better teeth among schoolchildren, each dentist treating, free of charge, at least one child. Of 6,279 children examined during one week, 5,534 were found to be in need of treatment.

Crawford Long Memorial Association.—The Atlanta Academy of Medicine has furnished an office free of cost for the Crawford W. Long Memorial Association to conduct its campaign for funds to erect a statue of Dr. Long in the National Hall of Fame, Washington, D. C. Souvenir checks have been sent out by Dr. Frank K. Boland, president of the association, to be filled in by the subscriber with the amount he wishes to give. On one end of the check is a picture of a medallion of Dr. Long as a young physician, administering ether for the first surgical operation under anesthesia, March, 1842. Druggists will also be recipients of the requests for donations. Dr. William J. Blalock, president of the Fulton National Bank of Atlanta, is treasurer of the association. The sum of $10,000 is required, of which only $3,000 has been subscribed to date.

ILLINOIS

Personal.—Dr. Arthur N. McCord, city physician of Streator, sustained a fracture of the right wrist, December 15, while cranking his car.——A public reception and banquet was given in honor of Dr. Clarence E. Smart of Weldon on the occasion of his leaving for Savannah, where he will reside in future.——Dr. Herbert E. Parson, Decatur, has been reelected county physician.——Dr. Ward P. Burdick was unanimously elected president of the staff of St. Anthony Hospital, Rockford, at the annual meeting.——Dr. Walter C. Martini has resigned as medical superintendent of the Oaklawn Sanatorium, Jacksonville, and will act in the same capacity at the Champaign County Tuberculosis Hospital at Urbana, succeeding Dr. Anna C. Johnson, who resigned recently.

Chicago

Society of Medical History Meeting.—At the meeting of the Society of Medical History, Chicago, January 12, papers were presented by Dr. Peter Bassoe on "Early History of Neurology and Psychiatry in the Middle West," and by Dr. A. S. Warthin, Ann Arbor, Mich., on "Noah Webster as an Epidemiologist."

Personal.—Dr. Robert C. Timms has resigned from the city health department, following five years' service.——Drs. Franklin H. Martin, Emil G. Beck, Arthur D. Black, Truman W. Brophy, Frank E. David, Ernest J. Ford, Junius C. Hoag, Effie L. Lobdell, Albert J. Ochsner and Henry Schmitz will leave, February 10, for an extended tour of South America.——Dr. Benjamin B. Beeson, Chicago, read a paper on "The Diagnosis of Skin Diseases" before the Scott County Medical Society at Davenport, Iowa, January 2.

Infant Welfare Society.—The annual meeting of the society will be held, January 24. At a meeting held recently, it was stated that approximately 12,000 babies were taken care of by the twenty-seven stations during 1922. This work will be extended to every corner of the city, with the hope of saving the lives of 18,750 babies in Chicago during 1923, it was announced. While the death rate among infants for the city was 89 per thousand, the rate among welfare babies was only 14.——Vital statistics recently announced give Chicago's

birth rate as 20.02, as compared with 20.33 in 1921, and the death rate, 11.88, as compared with 11.08 in 1921. Thus the city's population is increasing at the rate of 25,000 a year from the excess of births over deaths alone.

INDIANA

Memorial to Physicians.—Bronze memorial tablets to the late Drs. Albert C. Kimberlin and Frank B. Wynn were unveiled with appropriate ceremonies at the Methodist Episcopal Hospital, Indianapolis, January 14.

Indianapolis Medical Society.—At the annual meeting of the society, December 30, the following officers were elected for 1923: president, Dr. John W. Sluss; vice presidents, Drs. William F. Molt, and Arthur L. Walters, and secretary-treasurer, Dr. William A. Doeppers. Dr. Charles H. Good, president of the Indiana State Medical Association, gave an address.

KENTUCKY

Personal.—Dr. Henry E. Tuley, who has resigned as superintendent of the Louisville City Hospital on account of ill health, has been succeeded by Henry Reager.——Dr. James U. Ridley, Robard, has been elected health officer of Henderson County to succeed Dr. Everett N. Powell of Corydon.

Public Health News.—The advisory committee of the state board of charities and corrections, December 30, appointed fifteen Lexington physicians as a local consulting staff of the state board to work with the resident staff of the Eastern Kentucky State Hospital and the State School of Reform at Greendale, in providing proper medical care to the inmates of the two institutions. This is the first move in a campaign to improve the conditions from a medical standpoint at the charitable and penal institutions of the state. The Feeble-minded Institute and the State Reformatory, Frankfort; the State Hospital, Lakeland; the State Hospital, Hopkinsville, and the state penitentiary, Eddyville, are the other institutions that will receive gratuitous service by local physicians. ——Five sanitary inspectors from the School of Public Health, operated by the University of Louisville, have been added to the public health workers of the state. These men, who will be sent to different counties of the state, in addition to having pursued technical and theoretical studies in public health during the summer, were given practical work under the supervision of the health officer in one of the full-time health departments.——An order has been issued by the health officer of Catlettsburg, for general vaccination following the discovery of four cases of smallpox in the city. The victims had been at large on the streets for several days before their cases were diagnosed. A rigid quarantine has been established over the locality.

LOUISIANA

Hospital News.—A ward in the proposed new annex building of the Touro Infirmary, New Orleans, will be named in memory of the late Samuel Schwartz, whose heirs have increased the building fund of the infirmary by $15,000, it was announced, January 3, by the board of managers. The ward will be known as the Sam Schwartz Ward. Owing to the number of premature babies born at the infirmary, the baby incubator, installed through the generosity of Mr. Bonart, has proved inadequate, and Mr. Bonart has donated another. Dr. J. W. Newman, New Orleans, recently donated $5,000 to the institution, for maternity work.——The Greenwell Springs Tuberculosis Sanatorium, near Baton Rouge, was totally destroyed by fire, recently. The loss is estimated at $50,000.

MASSACHUSETTS

Physician Elected Mayor.—Dr. William D. McFee was elected mayor of Haverhill, December 5, by a majority of 2,341. Dr. McFee is chief of staff of the Gale Hospital and was formerly city physician.

Hospital News.—Repairs costing $60,000 will be made at the Peter Bent Brigham Hospital, Boston, recently vacated by the U. S. Veterans' Bureau, it is announced by Dr. J. B. Howland, superintendent.——The new home for the Boston Lying-In Hospital, with the new nurses' home, opposite the Harvard Medical School at Cambridge, was formally opened, January 1, when the patients were admitted. Nearly $1,000,000 has been raised to defray expenses of constructing the new hospital and nurses' home. The wing in which private wards will be established will be erected later. Dr. William L. Richardson, through whose efforts the hospital was reopened, is president emeritus of the trustees.

Personal.—On the retirement of Dr. George W. Dow, Lawrence, as medical examiner, Dr. Victor A. Reed, his assistant, will succeed him. Dr. George B. Sargent, Lawrence, will succeed Dr. Reed as assistant medical examiner.——Dr. John M. Little of Boston will succeed Dr. Edwin W. Dwight, Boston, as chief surgeon of the Boston and Albany Railroad. Dr. Dwight, whose resignation became effective, January 1, has been chief surgeon of the road since 1909.——Prof. E. L. Mark, who was 75 in May, and retired recently with the title of Hersey professor of anatomy, emeritus, Harvard University, was given a dinner in Boston, December 27.——Dr. Howard T. Child, Boston, has been assigned as permanent subdistrict medical officer of the local office of the U. S. Veterans' Bureau, Burlington, Vt. Dr. Child served with the U. S. Navy during the World War.—— Dr. Peter L. McKallagat has resigned as city physician of Lawrence.——Dr. Joseph A. Bacon has been reappointed head of the Haverhill Tuberculosis Sanatorium.

MISSOURI

Personal.—Dr. George M. Boteler, city health officer of St. Joseph, resigned, January 15. This was Dr. Boteler's third term as health officer. He has accepted the position of assistant health officer of the District of Columbia and will reside in Washington.

The Hodgen Lecture.—Dr. Lewis S. McMurtry, Louisville, Ky., will deliver the Hodgen Lecture for 1923, under the auspices of the St. Louis Surgical Society and the Medical Fund Society at the University Club, St. Louis, January 24. His subject will be "The Birth of Scientific Surgery."

Physicians in the General Assembly.—The following physicians were elected to the general assembly at the recent elections: representatives, Dr. Frederick L. Ogilvie, Scott County; Dr. Robert F. McReynolds, Knox County; Dr. Heine Marks, City of St. Louis, fifth district; Dr. William A. Porter, Lafayette County, and Dr. L. V. Cockrum, Lewis County. Dr. Benjamin B. Tout of Cass County was reelected to the senate.

NEVADA

Physician Elected to Legislature.—Dr. Roy W. Martin, superintendent of the Las Vegas Hospital, has been elected to the state legislature.

New Health Ordinance.—At a meeting of the city council of Reno, December 26, a new health ordinance was drawn, providing that physicians must report all contagious and communicable diseases except in certain specified instances. It also contained a clause making it compulsory for any person under arrest and suspected of being infected with any disease considered dangerous to the public health to submit to a physical examination, and treatment if necessary, at his own expense or, if indigent, at public expense.

NEW JERSEY

Personal.—Dr. Charles J. Murn was recently elected president of the board of health of Patterson.——Dr. George B. Ellor, a former commissioner, has been appointed health commissioner of Bloomfield to succeed Dr. Benjamin F. Sturges. Dr. Morgan D. Hughes has resigned as member of the board of health of Bloomfield.——A dinner was given to Edward Weston, LL.D., Sc.D., Newark, head of the Weston Electrical Instrument Company, at the Hotel Commodore, New York, December 28, at which he was presented with a silver loving cup by the guests.——Drs. George V. V. Warner, Redbank, and John C. Clayton, Freehold, were elected president and secretary, respectively, of the Monmouth County Medical Society, at the annual meeting at Freehold, recently.

NEW YORK

Brooklyn Plans Clinics.—The department of public welfare, in cooperation with the Medical Society of the County of Kings and the Long Island Hospital Medical College, Brooklyn, will hold clinics at the Kings County Hospital during January and February, it was recently announced by Commissioner of Public Welfare Coler. Invitations were sent to the medical profession to attend the clinics in internal medicine, surgery, gynecology, obstetrics, neurology and other subjects and also to attend the formal exercises of the opening of the new dispensary and operating suite of the Kings County Hospital, January 12.

Hospital News.—The pavilion for handicapped children of Ontario County, erected at Memorial Hospital, Canandaigua, was formally dedicated, December 27. This pavilion was the gift of the Canandaigua Rotary Club.——The DeWitt Sanatorium has given up its plans for establishing an institution for the treatment of maternity and surgical cases at 168 Hancock Street, Brooklyn. This change of plans is the result of opposition on the part of residents in the neighborhood who fear that such an institution would decrease real estate values and increase fire hazards.——The Veterans' Mountain Camp of the American Legion, Tupper Lake, which has been remodeled to conform to state requirements for a hospital of its type, will be formally opened in the near future, the work having been completed. The Knights of Columbus have recently given to the camp, on account, $1,000 of the $10,000 recently pledged by them to the movement.—— St. Mary's Hospital, Rochester, has started construction of a new nurses' home, to be erected at a cost of $300,000. This is to be the first unit of a new hospital group in Rochester, the plan for which has been developed by the hospital authorities, with Dr. S. S. Goldwater, New York, as consultant. The new outpatient department of St. Mary's Hospital was formally opened, January 2, with Dr. Leo F. Simpson as director of the surgical clinic, and Dr. Benjamin F. Duffy, of the medical clinic.——The United Hospital Fund Campaign, to raise a fund of $1,300,000 for extension and improvement of services at Rochester General Hospital, Rochester Highland Hospital and the Homeopathic Hospital of Rochester, was conducted, January 12-20.——The Monroe County Tuberculosis Sanatorium, of which Dr. John J. Lloyd is superintendent, will give a course in diagnosis and treatment of tuberculosis to Rochester physicians, beginning January 12. There will be eight sessions on Friday mornings.

New York City

Guitry's "Pasteur" Coming to America.—At the Pasteur centenary meeting held at the New York Academy of Medicine, January 10, the president of the academy, Dr. George David Stewart, announced that the rights to Sacha Guitry's play "Pasteur" have been acquired for Henry Miller. The play will be presented by the Charles Frohman Company, Henry Miller taking the title rôle. The English version of the play has been made by Arthur Hornblow, Jr.

Chandler Foundation.—Robert Eckele Swain, Ph.D., professor of chemistry and head of the department of chemistry of Stanford University, gave the Charles Frederick Chandler Foundation lecture at Columbia University, January 9, on the subject of "Atmospheric Pollution by Industrial Wastes." In 1910, friends of Prof. Charles F. Chandler presented a sum of money to Columbia University for the foundation, the income from which is used to provide a lecture by an eminent chemist and a medal which is presented to the lecturer in recognition of his achievements in science.

Personal.—Dr. Fred H. Albee has been invited to give the opening address at the Congress of Orthopedic Surgeons, to be held in Amsterdam, Holland, May 25-26.——Dr. Boris Bogen, head of the Joint Distribution Committee for Russian and Polish Relief, Dr. I. G. Kligler of the Rockefeller Institute and head of the Palestine Malarial Research Unit, and Dr. Otto Shulhof, director of recreation for New York, sailed, December 16, on the White Star liner *Majestic,* for Cherbourg and Southampton.——Drs. William J. Robinson and Martin Rehling were reelected president and secretary, respectively, of the medical board of the Bronx Hospital and Dispensary, December 28.——Dr. Herman Baruch returned from Europe on the White Star liner *Majestic,* January 5.——Dr. Robert Bárány, professor of otology at the University of Upsala, Sweden, gave an address on "Development and Problems of Neuro-otology" before the New York Academy of Medicine (section on otology and neurology and psychiatry), January 13.——Dr. Henry O. Reik has tendered his resignation as head of the American Institute of Medicine and editor of the *International Medical and Surgical Survey.*——Dr. Hans Zinsser, professor of bacteriology at the College of Physicians and Surgeons and bacteriologist to the Presbyterian Hospital, will join the staff of the Harvard Medical School, Boston, next autumn, as professor of bacteriology and immunology.

OHIO

New State Health Commissioner.—Governor Donahey has appointed Dr. John E. Monger, Columbus, as state director of public health to succeed Dr. H. H. Snively. The appointment was announced, January 3, on receipt of definite declination from Dr. Allen W. Freeman, professor of public health at Johns Hopkins University, Baltimore, whose five-year term as state health commissioner was broken by the reorganization law last July.

Columbus Academy of Medicine.—At the annual meeting and banquet of the academy, December 11, legislative action necessary to secure the abolition of the office of coroner and provide for a medical examiner and staff, with proper psychiatric and pathologic divisions, under the county prosecutor; and the creation of a central bureau of criminal identification within the state department of welfare, which would take the finger prints of all persons arrested in the state regardless of the nature or outcome of the case, was indorsed. The pathology of crime was discussed, and Charles De Woody, director of the Cleveland Association for Criminal Justice, spoke on "Crime and the Administration of Criminal Justice."

Personal.—Dr. Carl C. Hugger, Columbus, has been appointed resident obstetrician and gynecologist of the New York Polyclinic Hospital.——Dr. Wilbur G. Carlisle, Bucyrus, sustained injuries, and his brother was killed, recently, when their automobile was struck by a train. It is reported that Dr. Carlisle will recover.——Dr. Michael R. Haley, Piqua, has been awarded the French medal of honor for meritorious services in France during the World War.—— Dr. Theodore E. Myler has resigned as health officer of Geauga County.——Dr. Archibald C. Adams, republican candidate for coroner of Allen County, was reelected for the third term at the November election.——Dr. John H. Berry, superintendent of the Athens State Hospital, was elected president of the Athens County Medical Society at the annual meeting.——Drs. John J. Reynolds and Dyle J. Slosser were elected president and secretary, respectively, of the Defiance County Medical Society, recently.——Dr. Carl L. Mueller has been elected health commissioner of Wapakoneta to succeed Dr. George L. Lyne, who resigned, January 7.——Dr. Charles S. Runk, New Lexington, has been appointed health commissioner of Perry County.——Dr. William H. Carey, Bellefontaine, has been appointed health commissioner of Logan County for the second term.——Dr. Orange H. Thomas, Fremont, has been reelected health commissioner of Sandusky County.

Mental Hygiene Clinic in Cincinnati.—The director of the Community Chest and Council of Social Agencies of Cincinnati has submitted to the board of directors an outline for a mental hygiene clinic. The plan has been approved and a special committee has been appointed under Dr. Emerson A. North to proceed to establish a working organization. It is hoped to clear up mental problems in the field of dependency, to develop a method of handling effectively the mental problems of the juvenile and police courts and to supply the public schools with the facilities necessary for dealing with problems in conduct disorders. The clinic is to work in cooperation with these various agencies. It is hoped to make a social study of the home conditions of the various patients, to have physical examinations, and psychologic examinations for determining intelligence levels, and finally to enlist the aid of a psychiatrist in an endeavor to discover evidences of developing mental disease, conflicts or wrong mental attitudes. Cases needing medical attention will be referred to the established hospitals and clinics and those in need of adjustment to the educational bureau. Cases involving home conditions were to be referred to the social agencies or social workers of the clinic and cases requiring psychiatric treatment would either be treated directly in the clinic or be referred to some of the established phychiatric institutions. The plan is comprehensive, and its progress will be watched with general interest throughout the country.

OREGON

Central Willamette Valley Medical Association.—At the annual meeting of the association in Eugene, December 7, Dr. William H. Davis, Albany, was elected president; Dr. Robert L. Wood, Lebanon, vice president, and Dr. Frank E. Beauchamp, Albany, secretary-treasurer.

Granite City Hospital.—This institution, recently purchased by Jesse Winburn and renovated, has been opened to physicians and dentists, offering equal privilege and service to all members. It will be known as the Ashland Community Hospital. At a meeting of the physicians and dentists recently, appreciation for this gift to Ashland and the medical profession was voiced, and a plan to buy a community ambulance was launched. Winburn was a former patient at the hospital.

Personal.—Dr. Jacob E. Shearer, Tillamook, has been appointed chairman of the state hospitalization board for

disabled ex-service men.——Dr. Eugene W. Rockey was unanimously elected commander of Portland Post No. 1 of the American Legion for 1923 at the annual meeting.——William C. Munly, captain, M. C., U. S. Army, for three years in Coblenz, Germany, with the American Army of Occupation, recently returned to this country.——Dr. Edgar O. Dutro, Hood River, who was forced to give up the practice of medicine a year ago owing to ill health, has resumed his practice.——Dr. William Donald Nickelsen, who has been in charge of the dispensary at Moscow, under the American Relief Administration, has returned to Portland from Russia.——Dr. Henry C. Jeffeŕds, Portland, recently sailed on the *Laconia* for a tour of the world. The ship was chartered for this purpose and is expected to circle the globe in less than three months.——Major Richard B. Dillehunt, M. O. R. C., dean of the University of Oregon Medical School, Portland, has been assigned to General Hospital No. 46 (reserve) by the War Department.

PENNSYLVANIA

Philadelphia

New Surgical Society Organized.—The George P. Muller Surgical Society of the Post Graduate School of the University of Pennsylvania has recently been organized. Section meetings will be held every second and fourth Monday in the month. Papers are furnished by the graduate surgical students.

Academy of Natural Sciences of Philadelphia.—At the annual meeting of the academy, December 19, Richard A. F. Penrose, Ph.D., was elected president to succeed John Cadwalader, LL.D. Edwin G. Conklin, Ph.D., and Dr. Henry Skinner, Philadelphia, were elected vice presidents, and George Vaux, Jr., treasurer. Dr. Spencer Trotter, Swathmore, was elected librarian.

Physicians Held in Bail.—Seven physicians who offered "busy practice" as their only excuse were brought before Magistrate Grelis and held in $400 bail each on charges of failing to report births in accordance with the state law. The charges will be removed as soon as they comply with the law. The prosecution was instituted by Dr. Wilmer R. Batt, state registrar of vital statistics.

Personal.—Dr. J. Blair Spencer has resigned as director of the local health council for the prevention of tuberculosis, in order to devote his time to his office as assistant director of public welfare. During his period of service with the health council, Dr. Spencer turned his salary of $8,000 a year over to charity.——Dr. Edward Martin has resigned as state health commissioner, following four years' service.——Dr. John B. Deaver, Philadelphia, conducted a surgical clinic at the Presbyterian Hospital, Charlotte, N. C., January 5.——Dr. Horatio C. Wood, professor of materia medica, Philadelphia College of Pharmacy and Science, will deliver the eighth lecture of the free public course given by the college, January 24, on "The Cost of Patent Medicine." Prof. E. Fullerton Cook, Ph.M., delivered the seventh lecture, January 17, on "The Making of Medicine (From the Time of the Pharaohs Down to the Scientific Age of Today)."——Dr. Victor George Heiser, New York, has been appointed commissioner of health to succeed Dr. Edward Martin, and Dr. Ellen C. Potter will succeed Dr. John M. Baldy as commissioner of public welfare.

RHODE ISLAND

Personal.—Dr. Charles H. Holt has been elected mayor of Pawtucket. Dr. Holt, previous to taking the oath of mayor, resigned the position as head of the department of health, which he has held for seven years. He will be succeeded by Dr. Florian A. Ruest, a graduate of Laval University, Montreal, Canada.

TENNESSEE

Health Board Eliminates Two Bureaus.—The venereal disease and the oral hygiene departments will be discontinued by the state board of health, it is announced. The work of the oral hygiene department overlaps that of the rural sanitation bureau, while lack of cooperation on the part of some of the cities of the state is assigned as the reason for the elimination of the venereal disease bureau.

TEXAS

Public Education Campaign.—Responding to an appeal from the state board of medical examiners for amendment of the medical practice act so as to make the law enforceable, the State Medical Association began a campaign of public health education, January 1. Dr. C. M. Rosser is chairman of the educational campaign. Six physicians made lecture tours of north and east Texas during the first week. A dinner was given at Greenville for members of the state legislature, heads of civic organizations and the medical profession, to discuss the situation. Dr. Joseph D. Becton, president of the State Medical Association, attended the dinner.

VIRGINIA

State Health Conference.—A conference of state health workers was held in Richmond, December 28-30. Dr. Warren F. Draper, U. S. Public Health Service; Dr. James A. Hayne, secretary of the state board of health of South Carolina, and Dr. Ennion G. Williams, state health commissioner, gave addresses at the session.

Personal.—Dr. Benjamin J. Baker, Norfolk, following a long illness and a year's rest from work, has resumed his practice.——Drs. Willie S. Snead and Samuel Downing were elected president and secretary-treasurer, respectively, of the Warwick County Medical Society, at the annual meeting in Newport News, December 15.

WASHINGTON

Hospital News.—Sealed proposals were received, January 16, by the director of the U. S. Veterans' Bureau, Washington, D. C., for the construction of a neuropsychiatric hospital at American Lake, Tacoma, consisting of twenty-eight fireproof buildings, complete, with water, lighting, heating and sewer systems. Plans and specifications for the institution have been completed.——A new building was recently completed at Our Lady of Lourdes Hospital, Pasco, at a cost of $135,000. The hospital staff has been organized and a training school has been opened.

Personal.—Dr. William H. Anderson, Seattle, has been appointed superintendent of the King County Hospital, Seattle, to succeed Dr. James Tate Mason. The entire board of the hospital will be reorganized, Dr. Anderson announced. Dr. George M. Horton has been named consulting chief of the institution on the new board.——Dr. Joseph L. Lane has returned to Seattle following eighteen months in Europe, where he took graduate courses in London, Paris, Berlin and Vienna.——Dr. Joseph H. Fitz, Montesano, has been appointed health commissioner of Grays Harbor County to succeed Dr. Raymond J. Cary of Elma.——Dr. Joseph P. Kane, former health officer of Tacoma, was elected president of the Pierce County Medical Society, and Dr. Warren B. Penny, secretary-treasurer, for 1923.

CANADA

New Mental Hygiene Committee.—At a meeting of the Montreal branch of the Canadian National Committee for Mental Hygiene, at the end of December, the Mental Hygiene Committee of Montreal was formed. Dr. Colin K. Russel was elected president of the committee; Dr. F. H. Mackay, secretary, and Dr. Gordon S. Mundie, medical director.

New Medical Society Formed.—At a meeting of District No. 1 of the Ontario Medical Association, recently held at Chatham, the Kent County Medical Society was organized, with Dr. James W. Rutherford, Chatham, president, and Dr. Ernest C. Riseborough, Chatham, secretary. Dr. Edward R. Secord, Brantford, and Dr. Thomas C. Routley, Toronto, president and secretary, respectively, of the Ontario Medical Association attended the meeting and banquet.

University News.—The following appointments have been made by the board of governors of the University of Toronto, department of medicine: assistant professors of ophthalmology, Drs. Duncan N. MacLennan and William Lowry; department of obstetrics and gynecology; assistant professor, Dr. Frederick A. Cleland; associates, Drs. William A. Scott and John G. Gallie.——The library of Western University was recently the recipient of a volume of "The Aphorisms of Hippocrates and the Sentences of Celsus." This book is considered one of the earliest medical books written.

Federation of American Societies for Experimental Biology.—The annual meeting of the federation, comprising the physiologic, biochemical, pharmacologic and pathologic societies, was held in Toronto, December 27-29. Reports of elections received up to date are as follows: American Society of Experimental Pathologists: Dr. Eugene L. Opie, professor of pathology at Washington University Medical School, St. Louis, was elected president. Dr. Joseph Erlan-

ger, professor of physiology at Washington University School of Medicine, St. Louis, was reelected treasurer of the American Physiological Society, and Prof. Philip A. Shaffer, Ph.D., professor of biochemistry at Washington University School of Medicine, St. Louis, was elected president of the American Society of Biological Chemists. Dr. Shaffer also served as chairman of the executive committee of the federation of the American Societies for Experimental Biology. At the meeting of the federation the following councilors were elected for the ensuing year: Drs. John R. Murlin, Rochester, N. Y.; S. A. J. Carlson, Chicago; C. W. Green, Missouri; Joseph Erlanger, St. Louis, and A. B. Luckhardt, Chicago.

GENERAL

American Society for Clinical Investigation.—The fifteenth annual meeting of the society will be held in Atlantic City, N. J., April 30. Those submitting titles of papers to be read before the meeting must accompany them with abstracts of their papers (not more than 200 words). Titles should be sent to Dr. James H. Means, secretary of the society, 15 Chestnut Street, Boston, not later than March 1.

Bacteriologists Elect.—At the annual meeting of the Society of American Bacteriologists in Detroit, December 27-29, the following officers were elected for the ensuing year: president, Prof. Edwin G. Hastings, Madison, Wis.; vice president, Dr. Arthur Parker Hitchens, major, M. C., U. S. Army, Washington, D. C., and secretary-treasurer, J. M. Sherman, Dairy Division, U. S. Bureau of Animal Industry, Washington, D. C.

Rockefeller Purchases Pasteur Home.—John D. Rockefeller recently purchased, for 40,000 francs, as a centenary gift to the people of the village, the cottage at Dôle, France, in which Louis Pasteur was born 100 years ago. The French parliament has given an additional sum of 20,000 francs with which the cottage will be remodeled into a public museum. It will be presented to the people of the commune of Dôle. The property and house formerly belonged to Pasteur's father, a tanner.

Association of American Medical Colleges.—The thirty-third annual meeting of the association will be held at Ann Arbor, Mich., March 2-3, under the presidency of Dr. Charles P. Emerson, Indianapolis. The chief topic of discussion will be the new medical curriculum. Dr. Harley E. French, dean of the University of North Dakota School of Medicine, will speak on "Problems of Two Year Medical School," and Prof. Theodore Hough, Ph.D., dean of the University of Virginia Department of Medicine, will read a paper entitled "Shall the Premedical Requirement Be Increased?" Dr. Frederick C. Zapffe, Chicago, is secretary of the association.

National Health Council.—At the annual meeting of the National Health Council at its New York offices, January 6, the following officers were elected for the ensuing year: chairman, Lee K. Frankel, Ph.D., to succeed Dr. Livingston Farrand of Cornell University; vice chairman, Dr. Frankwood E. Williams, medical director of the National Committee for Mental Hygiene; secretary (reelected), Dr. Samuel J. Cumbine, Topeka, secretary of the Kansas State Board of Health, and treasurer (reelected), Dr. William F. Snow, New York, general director of the American Social Hygiene Association.

Congress on Surgery to Meet in London.—The international Congress of Surgery issues an advance program for the meeting, which will occur in London, July 16-21. The sessions will be held under the presidency of Sir William Macewen. Among American surgeons who are included on the program are the following: Drs. W. R. MacAusland, Boston, "Arthroplasties"; Harvey Cushing, Boston, "Surgery of the Endocrines"; C. Frazier, Philadelphia, "Surgery of Traumatic Nerve Lesions"; George Crile, Cleveland, "Operative Shock"; William J. Mayo, Rochester, "The Splenic Syndromes," and Major A. P. Hichens, Washington, "Serum and Vaccine Therapy." The arrangements for the congress are in the hands of the secretary, Dr. L. Mayer, who may be addressed at 72 Rue de la Loi, Brussels.

American Association for the Advancement of Science.—At a recent meeting of the American Association for the Advancement of Science, held at Cambridge, Mass., Charles D. Walcott, LL.D., Ph.D., secretary of the Smithsonian Institution, Washington, D. C., was elected president. Professor Walcott is president of the National Academy of Sciences. Prof. E. W. Washburn, Ph.D., University of Illinois, was elected vice president of the chemical section.—A special number of *Science* containing the address of the retiring president of the American Association for the Advancement of Science and the proceedings of the association of the sections of the affiliated national scientific societies meeting at Boston during convocation week was issued recently.—Prof. Charles E. Mendenhall, Ph.D., of the University of Wisconsin, was elected president of the American Physical Society.—During the meeting of the sections of the affiliated national societies at Harvard University, Prof. Lewis M. Terman, Stanford University, Palo Alto, Calif., was elected president of the American Psychological Association and Prof. John Anderson, Johns Hopkins University, Baltimore, secretary.

Bequests and Donations.—The following bequests and donations have recently been announced:

Cambridge Hospital, Cambridge, Mass.; Free Hospital for Women, Brookline; the Perkins Institution and Massachusetts School for the Blind, Watertown, and the Massachusetts Charitable Eye and Ear Infirmary, Boston, shares in the $375,000 estate of Charles G. Green, Cambridge.

Childrens' Hospital, Philadelphia, and the Children's Seaside Home, Atlantic City, N. J., on the death of the annuitants, one half of the principal of the $125,000 estate of the late Major Charles W. Bailey of Philadelphia.

Massachusetts Homeopathic Hospital, Boston, $100,000; Children's Hospital, the Boston Floating Hospital, the Eye and Ear Infirmary and the Massachusetts Association for Promoting Interests of Adult Blind, each $10,000, by the will of Arthur F. Estabrook.

San Antonio, Calif., for the establishment of a hospital, $75,000, by Mrs. James Paul.

Eastern Maine General Hospital, Bangor, $75,000 from "a friend."

Roosevelt Hospital, New York, the residuary estate of Helen T. Cole, appraised at $70,634.

Mount Sinai Hospital, New York, as a nucleus for medical education, $25,000 from Mr. Joseph F. Cullman.

Children's Hospital, Birmingham, Ala., $25,000, from Mr. Crawford Johnson of that city.

British Old People's Home, Riverside, Ill., $22,000; donation of a site valued at $10,000 by Mr. Samuel Insull of Chicago, and $12,000, the result of a bazaar held by the Daughters of the British Empire in Chicago.

Hale Hospital, Haverhill, Mass., $20,000; Old Ladies' Home, $10,000, and the Haverhill Children's Aid Society, $500, by the will of George C. Wadleigh of Haverhill.

Jane Lamb Memorial Hospital, Clinton, Iowa, $11,000, to furnish rooms in the new addition, collected at a festival held for that purpose.

Sebring, Fla., $10,000, for the establishment of a charity hospital by Mr. and Mrs. George E. Sebring.

New York Neurological Institute, New York, $10,000, by the will of the late Dr. Pearce Bailey of New York.

Denver Sanatorium of the Jewish Consumptives' Relief Society, $10,000, the proceeds of a ball held by the ladies' auxiliary of the society in New York City.

Methodist Episcopal and St. Christopher's hospitals, Philadelphia, $5,000 each for the maintenance of free beds; the Children's Seaside Home, Atlantic City, N. J., $2,000, by the will of Annie W. Buckley.

Edna P. Alter Mexican Settlement Association, Pasadena, Calif., $8 000, for a maternity ward, anonymously.

St. Luke's Hospital, New York, $7,500, the income to be used for members of the Artists' Fund Society, by the will of George H. Story.

Exeter Cottage Hospital, Exeter, N. H., $5,000, anonymously; $500, by the will of Miss Gordon of Washington, D. C.; $500, under the will of Mrs. Soule; $100, by the will of the late Miss Ann Flagg, and $100, from the father of a patient.

Touro Infirmary, New Orleans, for maternity work, $5,000, by Dr. J. W. Newman.

Presbyterian, Eye, Ear and Throat Hospital, Baltimore, $3,000, by the will of Mrs. Mary S. Butler.

St. Vincent's and St. John's hospitals, Cleveland, each $1,000 by the will of F. H. Glidden.

Spartanburg General Hospital, Spartanburg, S. C., the greater part of the income from the estate of Mrs. Alice M. Lee, for the founding of the "Boyce Lee Memorial" for charity patients.

Flagler Hospital, St. Augustine, Fla., property facing the institution, for a park to be maintained by the hospital trustees; by Mr. Don H. Bacon.

Durham (N. C.) County Health Department, a touring car, by the Civic League of Durham.

Annual Congress on Medical Education, Licensure, Public Health and Hospitals.—The annual Congress on Medical Education, Licensure, Public Health and Hospitals will be held at the Congress Hotel, Chicago, March 5-7, 1923. This year the U. S. Public Health Service will participate in the conference. The provisional program of the congress follows. On the first day, March 5, during the forenoon the Council on Medical Education and Hospitals, will present a program as follows:

1. Remarks by Chairman, Dr. Arthur Dean Bevan, Professor of Surgery, Rush Medical College, Chicago.
2. Report of the Secretary, Dr. N. P. Colwell, Secretary of the Council on Medical Education and Hospitals, Chicago.
3. Report on Investigation of Graduate Medical Schools, Dr. Louis B. Wilson, Director of the Mayo Foundation of Medical Education and Research, Rochester, Minn.
4. The Medical Curriculum, coordination of courses to increase efficiency, Dr. E. Stanley Ryerson, Secretary, University of Toronto Faculty of Medicine, Toronto.
5. Nursing Education and Service. A Report from a Special Committee of the Council on Medical Education and Hospitals, by the Chairman, Dr. Robert W. Lovett, Professor of Orthopedic Surgery, Harvard Medical School, Boston.

On Monday afternoon the Federation of State Medical Boards of the United States will present the program as follows:

1. Enforcement of the Medical Practice Act, Dr. H. M. Platter, Secretary of the Ohio State Medical Board, Columbus.
2. Needed Revisions in Medical Licensure in Accordance with Present Day Medical Education, Dr. Kendrick C. Babcock, Provost of the University of Illinois, Urbana.
3. A Single Standard for Admission to the Practice of Medicine. By Harry Eugene Kelly of the Chicago Bar.
4. The Hospital Intern Year as an Essential for the License. Dr. Alexander MacAlister, Secretary of the New Jersey State Board of Medical Examiners, Trenton.

In the forenoon of Tuesday, March 6, the Association of American Medical Colleges will present the following program:

1. The Danger of a Stereotyped Curriculum by Dr. Charles P. Emerson, Dean and Professor of Medicine of the Indiana University School of Medicine, Indianapolis.
2. Present Ideals of the Physical Plant in Medical Education.
   (a) Charles R. Bardeen, Dean and Professor of Anatomy of the University of Wisconsin Medical School, Madison.
   (b) Dr. G. Canby Robinson, Dean of Vanderbilt University Medical Department, Nashville.
3. The Art of Medicine, by Dr. Irving D. Cutter, Dean of the University of Nebraska College of Medicine, Omaha.

On Tuesday afternoon the American Conference on Hospital Service will give the following program:

1. Introductory Remarks by Dr. Frank Billings, President of the American Conference on Hospital Service.
2. The Rôle of Non-Medical Clinical Assistants in Hospitals Without Interns, by Dr. S. S. Goldwater, Director, and Dr. W. M. Bluestone, Assistant Director, Mt. Sinai Hospital, New York.
3. Liability of the Hospital for the Acts of Its Servants, by John A. Lapp, Director, Department of Social Action of the National Catholic Welfare Council, Chicago.
4. The Relation of the State University Hospital to the Medical Profession, by Dr. C. P. Howard, Professor of Medicine in the State University Iowa College of Medicine, Iowa City.
5. Annual Report of the Hospital Library and Service Bureau, by the Director, Miss Donelda R. Hamlin, Chicago.

On Wednesday, March 7, during the forenoon the Council on Health and Public Instruction will present the following program:

1. "Hygeia," A Journal of Individual and Community Health, by Dr. Victor C. Vaughan of the Editorial Board.
2. Symposium: The Medical Profession and the Laity.
   (a) From the Standpoint of the Layman, Dr. Walter Dill Scott, President of Northwestern University, Evanston, Ill.
   (b) From the Standpoint of the Health Officer, Dr. Watson S. Rankin, Secretary of the North Carolina State Board of Health, Raleigh.
   (c) From the Standpoint of the Practitioner, Dr. Frederick C. Warnshuis, Secretary of the Michigan State Medical Association, Grand Rapids.
   (d) From the Standpoint of the Board of Trustees of the American Medical Association. Dr. Frank Billings, Chicago.

On Wednesday afternoon the program given under the auspices of the U. S. Public Health Service will deal with:

The Education of Sanitarians and the Future of Public Health in the United States.—A report of progress from the Committee of Fifteen appointed by Surgeon General Cumming of the United States Public Health Service at the Conference held in Washington, March 14, 1922.

Tuesday evening the Federation of State Medical Boards will hold its annual dinner followed by its regular executive session.

LATIN AMERICA

Personal.—Dr. Juan N. Corpas has been appointed dean of the medical school of Bogotá, Colombia, succeeding Dr. L. F. Calderón, who had filled the position for many years.

Cancer Ward in Havana.—A ward for cancer patients has been set aside at the Havana Municipal Hospital. Dr. Gustavo de los Reyes will be in charge of the radium treatment.

Public Health Propaganda in Salvador.—The department of public health of El Salvador has begun publishing in the newspapers a series of articles on infant care and feeding.

New Argentine Journal.—The Phthysiologic Association of the Tornú Hospital in Buenos Aires has begun the publication of a journal, *Revista de la Asociación de Tisiología del Hospital Tornú.* The editor is Dr. Nicolás Romero. Plans are now being made in Argentine for the organization of a society of phthisiology having as its nucleus the present Tornú society.

New Hospitals.—A new hospital is being built at Loja, Ecuador, the proceeds of 6 per cent. of the provincial taxes being employed for this purpose.——A children's hospital and a general hospital were recently opened in Montevideo: Pedro Visca Hospital and Pasteur Hospital, respectively.——A day nursery was established recently at Quito, Ecuador, by the Child Welfare Society. The medical director is Dr. J. B. Arzube Cordero.

Sixth Latin American Medical Congress.—According to a statement by Dr. F. M. Fernández, secretary of the medical congress held recently at Havana, not less than thirty-one resolutions were adopted. Recommendations were made for the erection of a statue of Carrión at Lima, as urged by the previous congress; establishment of medical service in all steamships; organization of cancer institutes in all countries now lacking such institutes; eradication of plague, yellow fever, and hookworm disease, and control of malaria; organization of a Pan-American association of eugenics and homiculture at the Pan-American conference to be held at Santiago, Chile, in March; appointment of a committee to prepare a model bill regulating importation and sale of narcotics; enforcement of the Montevideo convention as to reciprocity of professional diplomas; study of hydatid disease, paragonimiasis and bronchopulmonary spirochetosis; creation of anatomic museums in all Latin American medical schools; organization of a Latin American Medical Association with headquarters at Montevideo, charged with the duty of publishing a journal; standardization of medical courses, terminology and pharmacopeias; restriction of Chinese immigration; simplification of antirabic treatment; public education in heart diseases and their causes; adoption of laws against abortion; support of the Gorgas institute at Panama; active campaigns against venereal diseases; uniformity in quarantine laws; protection of the health of pregnant women; creation of a Latin American committee on nerve and mental hygiene. The next Latin American congress will meet at Mexico City within a period of not less than two and not more than three years.

FOREIGN

The Medical Press and Pasteur.—Our exchanges for December, from every quarter of the globe, bring one long paean of laudation of Pasteur.

Cajal Street.—A Spanish journal gives a list of more than 100 towns in Spain which have renamed a street in honor of Prof. Ramón y Cajal. Some have installed large artistic tablets to designate the street.

Gift for Glasgow University.—Mr. Henry Mechan has donated £25,000 (approximately $115,000) to the University of Glasgow for the foundation of a new chair of public health in the university.

Cheese Poisoning Traced.—Dr. Cameron Macaulay, assistant medical officer of health of Dover, England, recently traced 126 cases of food poisoning to a single red Canadian cheddar cheese, portions of which had been distributed to eighty households.

Election of Officers.—The National Academy of Medicine at Madrid recently reelected Dr. Carlos M. Cortezo president; Dr. A. Fernández Caro, vice president; Dr. Espina y Campo, librarian; Dr. Nicasio Mariscal, secretary, and Dr. Martín Bayod Martínez, treasurer.

Committee on Hygiene Meets in Geneva.—The committee on hygiene of the League of Nations convened at Geneva, January 8. Among the questions discussed was the nomination of a representative of the American hygienic service as a member of the committee, and collaboration with the international sanitary bureau at Washington, D. C. Dr. Bernard Nocht, director of the Hamburg Institute, has been appointed a member of the health commission of the league.

Tributes to Physicians.—The city of Ocaña recently placed a tablet on the house in which Dr. Espina y Capo of Madrid was born, and a street was renamed in his honor.——Professors Jemma and Caronia of Naples were recently tendered a banquet as a token of appreciation for their work in pediatrics. It has resulted in founding an actual Neapolitan school of pediatrics. Their publications have made their names well known in this country. They are the editors of *Pediatria,* which is regularly summarized in the Current Literature department.

The Next German Congress for Internal Medicine.—The date for the Thirty-Fifth Kongress für innere Medizin has been appointed as April 9 to 12, 1923, at Vienna. Prof. K. F. Wenckebach—at present in this country—is to preside, and the two subjects appointed for discussion are "Lethargic Encephalitis" and "Arterial Hypertension." Economo of Vienna and Nonne of Hamburg open the discussion on the first topic, and Durig of Vienna and Volhard of Halle, on the second. No other communication on these two topics will be allowed, but free discussion is planned. Communi-

cations can be addressed to Professor Wenckebach, Lazarettgasse 14, Vienna.

The Beneke Prize.—Our German exchanges give the particulars for competition for the endowed Beneke prizes, offered by the University of Göttingen. The competing articles must be sent in anonymously and be received before Aug. 31, 1924. The topic is "Experimental Research on the Structure of the Carbon Framework in the Biliary Acids." The first prize is 1,700 and the second 680 marks. For the year 1925, the topic is "Consequences of Amitotic Cell Division for the Constitution of the Nucleus as Studied in Plants and Animals (Exclusive of Unicellular Organisms); in particular, the behavior of the chromosomes as to the shape and numbers when a cell, after amitotic division, divides again by karyokinesis." Also the vigor of development of cells after amitotic division is to be investigated. The prize is 1,000 marks.

Foreign Congresses.—At the International Congress of Ophthalmology, held in Washington in 1922, the invitation of the ophthalmologic societies of Great Britain and Ireland to hold the next congress in London in 1925 was accepted. A general committee consisting of representatives of the inviting societies has since met and has formed an executive committee, empowered to make arrangements for the 1925 congress. It will be held in London, July 21-24. The three official languages will be English, French and German. The subscription for membership has been fixed at the sum of £2 ($9.30). Invitations will be sent to the principal ophthalmologic societies or other representative bodies in every nation, asking them each to nominate a delegate to the congress who would be responsible for promoting its interests in the country which he represents. Leslie Paton, F.R.C.S., 29 Harley Street, London, W., is the secretary.——At the annual meeting and banquet of the British Association of Economic Biologists at the University of Manchester, December 15, Dr. W. Laurence Balls introduced a discussion on "Genetics in Relation to Applied Biology," which was followed by a discussion on the place of applied biology in universities and on the relation of biology to medicine.——The annual meeting of the Royal Surgical Aid Society was held in London, December 8. This was the diamond jubilee (fiftieth) anniversary of the society.

Personal.—Dr. W. A. Lethem, assistant medical officer of the port of Liverpool, has been awarded the diploma in tropical medicine by the University of Liverpool.——Dr. F. J. Paley was recently invested with the Order of the Knighthood of St. Gregory the Great, conferred on him by the late pope in recognition of his work among the clergy. Following a banquet in his honor, Dr. Paley stated that during the twenty-three years' of its existence, the Diocesan Nursing Home of Brighton had cared for more than 1,000 priests. This included sick priests from England, Ireland, Italy, Spain, France and the South American countries.——Sir William Thorburn delivered the Bradshaw lecture in the theater of the Royal College of Surgeons, December 8, on "The Surgery of the Spinal Cord."——Dr. Ernest H. Starling, professor of physiology in the University of London, has been appointed the first Foulerton professor, under the foundation of the Royal Society, created by the will of Miss L. A. Foulerton.——Sir William H. Bragg, Quain professor of physics in the University of London, has been elected a corresponding member of the Paris Academy of Sciences in the section of physics.——Major Gen. O. E. P. Lloyd, V. C., has been appointed colonel commandant of the R. A. M. C. The rank is next to that of colonel-in-chief.——Dr. Alexander G. Gibson has been appointed lecturer in morbid anatomy at the University of Oxford.——Prof. T. Rovsing of Copenhagen has been elected an honorary member of the Italian Urologic Society.

Deaths in Other Countries

Dr. **Isaac B. Davenport,** well known dental surgeon of the American colony of Paris where he had resided for more than forty years; Knight of the Legion of Honor, died at Le Vesinet, November 4, aged 68.——Dr. **John M. Finny,** Dublin; a former president of the Royal College of Physicians and of the Royal Academy of Medicine; King's professor in the practice of medicine; aged 81.——Dr. **Thomas H. Kellock,** December 19, in London, aged 59.——Dr. **R. J. Ryle,** justice of the peace; at Guy's Hospital, London, aged 67.——Dr. **Jules Chambrelent,** professor of obstetrics at the University of Bordeaux until called to Paris in 1918 to take charge of the national Saint Maurice maternity home. Three of his works had been awarded prizes by the national Academy of Medicine.——Dr. **Balard d'Herlinville,** president of the medical syndicate of the Havre district.

CORRECTION

Chest Measurement as a Gage of Body Weight.—In the article by Parmenter and Gray (THE JOURNAL, Dec. 23, 1922, p. 2159), the first half of the sixth paragraph should have read:

"Is the weight correlated with the girth as closely at expiration as at the calculated midrespiratory phase used in all our previous papers? This question is suggested by the preference for the former by army examiners[4] in order to forestall draft evasion on the ground of a finding less than the military minimum, and also by Oeder[5] in order to compensate approximately noticeable stoutness." The third footnote should have read: "Miles, W. R., and Root, H. F.: Personal communication to the authors." Footnote 4 was: "Gould, B. A.: Investigations in the Military and Anthropological Statistics of American Soldiers, New York, 1869. Baxter, J. H.: Statistics, Medical and Anthropological, of the Provost General's Bureau, Washington, D. C., 1875. Davenport, C. B., and Love, A. G.: Army Anthropology, Statistics, Medical Department, U. S. Army, Washington, D. C., 1921." Footnote 5 was: "Oeder, G.: *Berl. klin. Wchnschr.* **52**: 433 (April 26), 466 (May 3) 1915."

Government Services

Annual Report of the U. S. Veterans' Bureau

The first annual report of the U. S. Veterans' Bureau has been issued. The report covers all the World War relief activities of the United States government, and it is proposed to have one or more copies available for reference in all the offices, hospitals and schools of the bureau. The report contains a historical record of the statistics, appropriations and disbursements, and of the principal events leading to the consolidation of the government agencies that have administered the laws for relief of veterans of the World War. An appendix to the report contains reprints of all laws for the relief of veterans of the World War that were approved prior to June 30, 1922.

Proposed Bill to Aid Disabled Veterans

Through a bill introduced in the House by Representative Wursbach, the director of the Veterans' Bureau is directed to provide hospital, dispensary and other medical treatment, including surgical appliances, to all disabled veterans whose disability was incurred in line of duty. The service is to be rendered to veterans on the presentation of their pension certificates. The bill also provides that whenever a veteran, because of disability, is ordered to a hospital for treatment, transportation shall be furnished him by the Veterans' Bureau.

Vaccination Free to Postal Employees

The Postmaster General has arranged for the entire personnel of the postal system, numbering 333,000 employees, to be given free vaccination against smallpox and typhoid and paratyphoid fever. The Secretary of the Treasury has authorized all stations of the U. S. Public Health Service throughout the country to accommodate postal workers on their request. It is estimated that 90 per cent. of the railway mail service, which has 23,000 members, have been vaccinated. Postmaster General Work stated that not only the fifty-eight Public Health Service stations recently authorized to make free medical and physical examinations of postal employees, but all other stations, wherever located, will give free inoculations.

Immigration and Public Health

The Women's Advisory Council to the U. S. Public Health Service met with the Surgeon General, January 12, in Washington, D. C. Among the addresses delivered was one by Dr. Elizabeth B. Thelberg of Vassar College, chairman of the National Council of Women. Dr. Thelberg emphasized the importance of heredity in insanity, and said that 59 per cent. of those now receiving institutional care are from parents one or both of whom give a history of insanity in the family. She called attention to the large number of persons now being discharged from institutional care as cured, many of whom continue to procreate, reproducing in kind. Many other questions of interest were discussed, the program being mainly devoted to the subject of the effect of immigration in its many relations to the public health.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 23, 1922.

Surgeon Sued for Operating Without Patient's Consent

Owing to the great interest and importance of the case referred to briefly in THE JOURNAL, Dec. 30, 1922, p. 2243, a more complete account, taken from the *South African Medical Record,* which has just come to hand, may well be given: In the Cape Provincial Division of the Supreme Court before Justice Watermeyer and a jury, a suit for damages in the amount of $50,000 was entered against Dr. C. C. Elliott, a Capetown surgeon, for amputation of the penis without the consent of the patient or, alternatively, for performing an unnecessary operation. The plaintiff, aged 50, was admitted to the New Somerset Hospital, Capetown, suffering from gangrenous ulcer of the penis. After a careful examination by the defendant, who is visiting surgeon to the hospital, and by Prof. G. B. Bartlett of the University of Capetown, who is pathologist to the hospital, it was decided that the patient was suffering from cancer, and that to save his life the penis should be amputated. This was done, but the plaintiff stated that he consented to operation only under the idea that a circumcision was to be performed. He saw a report in which Professor Bartlett recommended that the growth should be treated as "malignant," but he did not know what this meant. Some medical evidence was given for the plaintiff throwing doubt on the diagnosis of cancer and suggesting that, in any case, radium or the roentgen ray should have been tried before proceeding to amputation.

Dr. Elliott stated that he had had a good many similar cases, and had given this one much thought and research, looking up authorities. In his opinion, roentgen-ray or radium treatment would have been not only inefficient but dangerous. It was the duty of the house surgeon to obtain the consent of the patient, and he assumed that this had been done. The only responsibility he took was with regard to the operation. He took none with regard to obtaining consent, which was an administrative matter. The house surgeon explained that, as the patient was transferred from one ward to another in preparation for operation, he unfortunately assumed that the patient's consent had been obtained.

Prof. C. F. M. Saint of Capetown University gave evidence that, on Professor Bartlett's report, amputation was the proper treatment. Since this case the hospital has adopted a printed form which must in all cases be signed by a patient, giving consent before an operation. In summing up, the judge said that a man did not waive control over his body by going into a hospital, and that consent for operations should always be obtained, as admitted by the defense. In this case, by an oversight it was not obtained, and the question arose, Who was responsible? It was clear that no moral responsibility attached to Dr. Elliott, who was justified in assuming that consent had been obtained. But that did not affect the legal position, for if an assault had been committed, it did not matter whose duty it was to ask for consent condoning that assault, everybody concerned being equally liable. When it came to damages, the jury would have to consider, first, whether the patient was suffering from cancer; next; Was the operation necessary to save life? If these two questions were answered in the affirmative, the jury would have to consider whether the patient had suffered any damage at all. The jury by a majority of 6 to 3 gave a verdict for the defendant, for whom judgment was given, with costs. It should be noted that the surgeon's plea that he was not responsible for obtaining the consent of the patient failed, and that he escaped damages simply because the jury found that the plaintiff had suffered none. The moral for operators is obvious.

Arsenic in Cocoa

Arsenic occurs as an impurity in so many chemicals, and chemicals enter so much into present-day methods of food preparation, that from time to time the country is startled by the discovery that this deadly poison has been found in some common article of diet. It may be remembered that some years ago an epidemic of arsenical poisoning occurred in the north of England owing to contamination of beer with arsenic. One of the large cocoa manufacturers in this country has been summoned under the Sale of Foods and Drugs Act for selling cocoa adulterated with arsenous oxid to the extent of one-tenth grain per pound. The analyst for the prosecution said that this was a dangerous proportion. A royal commission had suggested one one-hundredth grain as the limit that should be allowed, and he and other analysts worked according to that. For the defense, it was submitted that even if a man consumed in the day five cups made with this cocoa, he would take into his system only one one-hundredth grain. Asked if he suggested that this would be harmful, the analyst replied that if a man took it for three weeks it would not necessarily be harmful, but that was getting on the line where it might be. The cocoa firm employed eighteen qualified chemists to analyze every article coming into the factory, and forty articles were tested for arsenic. Last July some of the cocoa supplied was found to contain faint traces of arsenic. The chemists were put on double shifts, working night and day. Everything in the place was analyzed, and at last it was found that the impurity was in potassium carbonate, which had been used for years in small quantities to make the cocoa more soluble and more digestible. It was bought from one of the best firms in the trade, which had been unable to explain its presence.

The firm instantly sacrificed the whole of the cocoa affected, 350 tons. It had succeeded in getting supplies of the alkali absolutely free from arsenic. It had instituted a new test, and was able to say that from August 1 every ounce of cocoa from its works was free from impurity. The manufacturers considered whether it was possible to get back the cocoa they had sent out to the trade, but decided that it was not, because they had 65,000 customers, many of them wholesalers. Chocolates did not come into the question at all, because they were made from cocoa which did not contain potassium carbonate. Sir William Wilcox, medical adviser to the Home Office, stated that this was the first case he had heard of in which arsenic had got into food through potassium carbonate. A fine of $100, with $260 costs, was imposed.

The Birth Rate

At the Royal Statistical Society, Mr. T. T. S. de Jastrzebski recently read a paper on "Changes in the Birth Rate and in Legitimate Fertility in London Boroughs, 1911 and 1921." In the nine months following the census of 1921 there was a fall of 9.4 per cent. from the same period of 1911, although the proportion of married women under 45 years of age in the population should have given an increase of 1.7 per cent. The decline in infant mortality, however, reduced the fall in the effective birth rate—i. e., the rate obtained by deducting the deaths under 1 year of age from the births—to 4.2 per cent. Legitimate fertility showed a decline of 12.8 per cent., or when standardized for variation in the ages of the married women under 45, of 11.7 per cent. The gap between the boroughs with better economic conditions and those with a poorer population had diminished sensibly. Notwithstanding the fall in both the birth rate and in legitimate fertility, the natural increase by excess of births over deaths

in 1921 was 390,335 as against 354,328 in 1911, and this gain was at the first period of life. There was no reason to consider an infant mortality of between 50 and 60 for each thousand births as beyond the scope of our legitimate expectations. In the view of the speaker, the reproductive forces at work in the nation are greater than the destructive, and the problem of the immediate future is one of overpopulation rather than of underpopulation.

The Causes of Accidents

The Medical Research Council has issued two reports of the Industrial Fatigue Research Board on the causation of industrial accidents. Fatigue is held to be an important contributory cause, as are also psychic influences, such as altertness and attention. Another factor is inexperience, which generally means youth. But, besides inexperience, there are certain qualities of youth, such as bravado and failure to realize danger, which tend to disappear with age. Alcohol also plays a part. Inadequate or unsuitable lighting are important, and, similarly, the temperature of the worker's environment seems to have a considerable influence.

PARIS

(From Our Regular Correspondent)

Dec. 22, 1922.

International Intellectual Cooperation and the League of Nations

In previous letters I have referred to the origin, membership and plans of the commission on international intellectual cooperation, which was appointed by the League of Nations (THE JOURNAL, June 10, 1922, p. 1828; July 29, 1922, p. 492, and Sept. 2, 1922, p. 836). Three committees appointed by the commission are holding a session in Paris at present; namely, the committee on bibliography, the committee on matters pertaining to universities, and the committee delegated to study into the question of intellectual ownership.

The committee on bibliography is engaged in the coordination of bibliographic enterprises undertaken in the various countries, with a view to avoiding duplication of effort and assuring to scientists and investigators the advantages of a complete bibliography easily accessible. The committee on university matters is dealing with various questions relative to the organization of the international congress of universities. The committee, however, recognizes the fact that political conditions will not permit the convening of such a congress at present. But it is possible to take up at once an extended inquiry into the best means of bringing about a cooperation between the universities. Opportunity is offered also for the discussion of kindred questions, such as the publication of an annual catalogue containing a list of all the courses given in the universities of the world, and the creation of a bureau of information pertaining to universities.

The committee on intellectual ownership is studying more particularly the question of the extension of authors' rights in the field of science, so as to secure to the individual scientist and the field of science represented by his country a more adequate participation in the benefits arising from the utilization of his discovery. At present the system of patents protects only the inventor of the industrial application of a scientific discovery. The mathematician, the physician, the chemist and the biologist, whose scientific discoveries made possible the invention, derive no benefit either for themselves or for their laboratories from the utilization of their works. At the instance of the chairman, M. Bergson, the committee delegated M. Ruffini, professor in the University of Turin, to draw up a plan which, subject to the approval of the commission on intellectual cooperation and the council of the League of Nations, might be used to establish the juridical principles for international protection of scientific discoveries. Such a plan might serve later as the basis for drafts of laws which, with the necessary modifications, might be presented to the parliaments of the various countries. With this object in view, M. de Torrès y Quevedo of Madrid was designated to study the possibilities of applying, in a practical way, the juridical principles and the suggestions for legislation contained in the document to be drawn up by Ruffini.

Pasteur as an Artist

The son-in-law of Pasteur, M. René Vallery-Radot, has published a book that presents a side of Pasteur's character that is but little known. Before he became the great scientist whose centenary the entire world is about to celebrate, Pasteur was known for his drawings in black and white and his pastel work. Between the ages of 15 and 20 (from 1836 to 1842), Pasteur had drawn the portraits of all the notables of his home town, Arbois, department of Jura. These portraits reveal the fact that, young though he was, he already possessed remarkable ability as an observer and artist.

Aid for Scientific Research

M. Paul Appell, rector of the University of Paris, has just received from Madame Hélène-Edouard Nathan two sums of 100,000 francs each. The first is to be used for the laboratories and for scientific research, half in accordance with recommendations of the Comité national d'aide à la recherche scientifique, and the other half is to be employed to meet urgent scientific needs. The second sum of 100,000 francs will be utilized for honor loans to worthy students. These loans, to the number of twenty of 5,000 francs each, will be made in the name of Madame Hélène-Edouard Nathan, and will be granted in response to requests made to the scholarship committee of the Société des amis de l'université de Paris. Applicants for these loans may be either Frenchmen or foreigners, but they must be enrolled in one of the five faculties of the University of Paris.

The Place of Physical Training and Athletics in the Schools

The consulting committee on physical training and athletics in the schools has just approved a preliminary draft of a budget pertaining to the detailed and rational organization of physical education in the schools of various grades. This budget provides for the creation, at the Faculté de médecine, of a course of instruction in physiology as applied to physical education, with a view to preparing physicians for the duties that devolve upon them in connection with physical education. The number of special instructors in physical training in the secondary and technical schools and in colleges will be increased. In the elementary schools, the regular teachers will give the physical training needed, and will assign to it the same importance as to intellectual training. Provision is also made for appropriate special instruction to be given pupil-teachers.

Aid for Students

The Association pour l'extension des études pastoriennes, founded two years ago, has endeavored to ameliorate, at least in some degree, the trying situation of university students, for whom the high cost of living makes it very difficult to continue their studies. The funds collected by this society enable young investigators to devote their time to research work in the Pasteur institutes and the biologic laboratories of France and its colonies. The scholarships that are accorded, on the recommendation of a committee of eight members presided over by Dr. Roux, director of the Pasteur Institute, amount ordinarily to 24,000 francs, and cover two years of study. Fifteen such scholarships have already been granted. The association, in order to be in a

position to continue its work, has issued an appeal for funds, calling more particularly on those who, in the past, have themselves been indebted in any way to the Pasteur institutes.

Aid for War Injured

The Union des colonies étrangères, a society formed by the foreign colonies of France in aid of the victims of the war, recently held its general meeting under the chairmanship of Mr. Walter Berry (president of the American chamber of commerce), who is the president of the administrative council. M. Joseph Asscher, general secretary, read his report showing the work accomplished by the society. More than six million francs have been expended in France, and 8,235 disabled or injured men have been given in schools the supplementary training they needed. Mr. Berry announced that he was about to return to the United States, and that he hoped to come back with large gifts with which to carry on the work of the society.

Distinctions Accorded to Dr. Vaillant

Besides the gold medal accorded to Professor Bergonié of Bordeaux, the Carnegie Hero Fund has granted the same distinction to Dr. Vaillant, another victim of roentgen rays. Vaillant received also an allocation of 50,000 francs.

Election of Officers of the Academy of Medicine

As Dr. Chauffard, professor of clinical medicine at the Faculté de médecine, who has been the vice president of the Academy of Medicine, has become the president for the year 1923, in accordance with the constitution, the academy has elected Dr. J. A. Doléris vice president. Dr. Doléris is an honorary obstetrician to the hospitals of Paris, and has been a member of the Academy of Medicine since 1905. The academy also elected by acclamation Dr. Souques as annual secretary, and Professors Pouchet and Schwartz as members of the administrative council.

Death of Dr. Jules Chambrelent

Dr. Jules Chambrelent, formerly assistant professor at the Faculté de médecine of Bordeaux, has died at the age of 68. He was born in 1854 and studied medicine in Bordeaux. In 1889 he became instructor in clinical obstetrics at the Ecole de médecine of Toulouse. In 1892 he became assistant professor at the Faculté de médecine of Bordeaux. Chambrelent has studied especially the subjects of stillbirth and infant mortality, and in 1917 he gave a course in child welfare. He was also a collaborating editor of the Traité de l'art des accouchements published by Bar, Brindeau and Chambrelent. In 1917 the Academy of Medicine accorded him the Tarnier prize for the value of his works as a whole. During recent years he had been the director of the Maison Maternelle Nationale at St. Maurice, near Paris.

BELGIUM

(From Our Regular Correspondent)

Dec. 27, 1922.

Prison Reform

In a previous letter, I referred to various hygienic reforms in the Belgian penitentiary system. As a result of statistics published by the anthropologic service, which was established in 1907, the minister of justice has been prevailed upon to consider the immediate creation at Merxplas of a sanatorium for the tuberculous, a hospital for patients with venereal disease, and a home for epileptics. It is certainly the only logical course to take advantage of the time spent by a prisoner in a penitentiary to give him good medical care and improve his health in every way possible. The bacteria carrier who is not sterilized in prison will later resume his place in society. If he is returned to society in the same condition in which he arrived (or possibly in a worse state, for his contagiousness may have increased), he will be the cause of the spread of disease in the family and in the workshop. By giving to prisoners renewed health and strength, we are affording them the means of surmounting the difficulties that they will experience in earning their living, and we shall thus increase the chances of permanent reformation. When it is a question of tuberculosis or syphilis, the two diseases that are encountered at every turn in our prisons, the reasons cited have especial value.

Celebration in Honor of Eugène Lust

The Ecole centrale de puériculture held recently a celebration in honor of Dr. Eugène Lust, who founded in 1897 the first consultation center for infant welfare. It was due to his influence that such centers were established in all parts of the country. He was the founder of the Ligue nationale belge pour la protection de l'enfance du premier âge, the Ecole de puériculture and the Commission permanente du lait. He was also the general secretary of the Union internationale.

Diverticula of the Bladder

In discussing diverticula of the bladder before the Société belge d'urologie, Dr. François emphasized recently the great value of cystoroentgenography in the establishment of a diagnosis. Cystoroentgenography is accomplished by the injection into the bladder of from 100 to 150 c.c of a 30 per cent. solution of sodium iodid, after which a roentgenogram is taken. The patient is then allowed to urinate, whereupon a second plate is made. As regards surgical intervention, this should not be decided on unless the trouble is very marked.

BUDAPEST

(From Our Regular Correspondent)

Dec. 15, 1922.

Epidemic Diseases in Hungary

Some interesting facts concerning the statistics of epidemic diseases in Hungary have been brought to light by a recent book, based on the figures published by the commission of the Hungarian Bureau of Statistics.

PREVALENCE

The author points out that, ever since the year 1874, the death rate from epidemic diseases in Hungary has shown a steady decrease, except in the case of scarlet fever, which has remained almost stationary since 1876. Smallpox, typhus exanthematus and cholera, on the other hand, at present appear only sporadically, and are usually suppressed at once; moreover, these diseases are invariably imported into Budapest, the infection being traced in every case to some source outside the city.

Typhoid, on the whole, has been less frequent in Hungary since the improvement of the sewerage system and waterworks. During the last two years, however, there has been an increase in the number of cases of typhoid in Budapest, and since the source of infection can hardly be in the city itself, every effort is made to obtain the history of each fresh case so that measures can be taken to check the evil at the fountain head. Scarlet fever has also been more or less endemic in Budapest for several decades. In a table showing the scarlet fever statistics for the last three years in forty-six European cities, Budapest ranks successively as the forty-first, forty-second and forty-third, the only towns occupying a lower place on the list being Bucharest, Lemberg, Odessa, Petrograd and Warsaw.

CAUSES

The reason for these alarming figures is to be found in the terrible poverty prevailing in the lower quarters of

Budapest, and in the ignorance and indifference that too often accompany it. From 85 to 90 per cent. of the deaths from scarlet fever in that city occur among the poorer classes, and are in great part due to the insanitary conditions in which they live and the overcrowding of their houses. The common practice of receiving a number of lodgers night after night in one room is a potent factor in the spread of disease, as well as an obstacle to the isolation of the patient.

REMEDIES

Any material improvement in the condition of the poorer classes in Budapest, therefore, would do much to eliminate scarlet fever, or at least would help to solve a problem which threatens to become a very pressing one. In the meantime the only effectual means of checking the spread of infection is strict isolation; hence it is of the utmost importance that every case of scarlet fever be reported at once to the proper authorities. The recent statistical returns prove beyond all doubt that more than half the cases are never registered, and in the poorer quarters of the city the mortality is extremely high.

The only remedy for this abuse would be to open a special "epidemic bureau," directed by energetic and reliable physicians, having under them a staff of men whose duty it would be to find out and report every case of scarlet fever in the city. The physicians, besides visiting the various patients, would be required to supervise removal to the fever hospital and disinfection of houses, etc.; while not the least important part of their duties would be the discovery of the source of the epidemic. The work of an organization of this kind could be greatly facilitated by systematic medical supervision of schoolchildren, such as is now carried out in England and Germany.

With regard to the isolation of scarlet fever patients, there is no doubt that the question is often complicated by the fact that it is not always easy to diagnose the disease in its early stages, particularly when there is little or no rash. Much of this difficulty might be overcome if the medical course included six months' attendance at a fever hospital. It is very important that club physicians, above all, should be capable of recognizing the earliest signs of scarlet fever, since their examination of patients must of necessity be very rapid, and the symptoms of incipient disease might be easily overlooked by one who was not an expert in diagnosis. Competent club physicians are particularly necessary in Budapest, where, out of a population of 1,000,000, more than 300,000 persons are members of sick clubs. But a correct diagnosis, important as it is, is not everything, and, after the physician has notified the case, he often has considerable difficulty in isolating the patient.

A card of warning on the front door may keep away visitors; but the different members of the household will probably continue to go to their offices or workshops, and to travel in public conveyances, thus scattering infection broadcast. The poor, who regard the doctrine of infection and disinfection as a superstition of the rich, resent having their bedding taken to the dispensary for fumigation, and evade the law by hiding it in the house of a neighbor, who probably falls a victim of his own generosity, and in his turn helps to spread the disease in a similar manner.

FEVER HOSPITALS

There can be no doubt that, except when the patient and his nurse can be completely isolated from the rest of the family, and the physician can rely on the intelligent cooperation of the entire household, the proper place for a patient with scarlet fever is the fever hospital. This fact has at last been recognized by the state, and a number of fever hospitals for the accommodation of patients during an epidemic will shortly be erected; while every effort will be made to overcome popular prejudice against such institutions by most careful attention to the comfort and well-being of their inmates. One cause for the dislike of hospitals entertained by the general public is the fear of infection from other patients.

That this fear is not wholly groundless has been proved by a Budapest practitioner, Dr. Preisich, who stated, in an article, that during the year 1912 as many as 137 persons suffering from scarlet fever contracted other diseases, such as measles, diphtheria and varicella, and in some cases more than one; while eighty-one patients having diphtheria and varicella contracted scarlet fever. This danger, of course, can be avoided by building special hospitals for every form of contagious disease.

SOURCES OF INFECTION

At present, the chief source of infection is the provinces, where, owing to defective hygiene, sporadic cases of scarlet fever are constantly occurring, and may easily become the precursors of a formidable epidemic throughout the country. The utmost vigilance, therefore, should be maintained in country districts, and every precaution should be taken to prevent the infection being carried into towns. The same care should be observed with regard to diphtheria, which is as much a menace to public health as scarlet fever, though, thanks to the modern treatment of this disease by serums, the mortality is now considerably less.

BERLIN

(From Our Regular Correspondent)

Dec. 16, 1922.

Vital Statistics of the Large Cities of Germany for the Third Quarter of 1922

As compared with the second quarter, the number of living births in the large cities of Germany for the third quarter of 1922 showed a considerable diminution, the total having fallen from 75,726 to 67,512, which signifies, on an annual basis, a decrease from 18.5 to 16.4 for each thousand of population. This marked decline in the birth rate, it is thought by some, may be regarded as the reflection of the effect of the first sharp advance in the prices of commodities during the last quarter of 1921; for the duration of the decline, extending over several weeks, as well as its intensity, corresponded to the terrific advance of the American dollar (as determined by the number of marks required to purchase one dollar) during the corresponding months of conception; namely, October and November, 1921. On the other hand, the mortality for the third quarter, 1922, although, during this period, the sharpest advance in prices took place that the country has experienced thus far, decreased to such an extent that the death rate per thousand of population (10.1) went below the death rate for the third quarter of 1921 (10.4), which was the lowest heretofore recorded. We are, therefore, face to face with the paradoxic fact that the death rate sinks as the prices soar. This phenomenon admits of only one explanation; namely, that at present what is taking place is not so much an advance in prices, in the true sense of the term, as it is a progressive depreciation of money values, to which we may ascribe an influence on the trend of the birth rate, but which exerts no effect on mortality conditions, so long as the masses are able to adapt the economic conditions to the money depreciation. One favorable factor affecting the death rate was the advantageous character of the weather during the summer of 1922, to which the absence of the summer peak of infant mortality and of acute and infectious diseases of the digestive organs may be ascribed. Also with reference to other infectious diseases,

the oft made observation that cool and rainy summers keep down epidemics was again confirmed. However, the marked decline in the death rate for the third quarter of 1922 as compared with the rate for the preceding quarter is due mainly to the great decrease in the mortality from pneumonia and tuberculosis. The pneumonia death rate dropped from 1.46 to 0.72 per thousand of population, and the tuberculosis rate fell from 1.80 to 1.31. During the third quarter of 1921, the death rate from tuberculosis, 1.22, was only 0.09 less than in the third quarter of 1922.

Progress in Roentgenography

The ordinary photographic plate is sensitized mainly to blue and violet light. Therefore, in the corresponding photograph the dark blue sky will look white, while a yellowish red flame will appear almost black. Only with the discovery of the monochromatic plate did it become possible to make photographs that reproduce for the eye the various colors in their lights and shades. Such plates are spoken of as being sensitized to red, yellow or green rays. There are also different kinds of roentgen rays, which are distinguished by their respective wave lengths; but heretofore there has been no method known by which the photographic plates used in roentgenography may be sensitized to them, in a similar manner. Now, however, Dr. C. Schleussner would seem to have solved the problem by adding a secondarily radioactive substance (*Sekundärstrahler*) to the light-sensitive substance of the roentgenographic film or plate. Such secondary radioactive substances also emit rays when roentgen rays come in contact with them and make the plate extremely sensitive to their action, although not at all sensitive to ordinary light. The result is quite startling. Roentgenograms of bones taken with the sensitized roentgenographic plate bring out all the finer details in the structure of the bones, which otherwise can be observed only in the sawed ends of the bones themselves. By means of this invention, it is hoped that it will be possible to secure information of pathologic changes and of injuries that the ordinary plate entirely fails to record; it brings also the problem of cinematography by means of roentgen rays one step nearer.

Gymnastics for Infants

Detlev Neumann, a former army officer and athletic director at the *Militärturnanstalt*, after many experiments extending over a period of years, has worked out a system by which the muscles of infants may be strengthened by gymnastics and a favorable effect on the whole organism secured. Judging from the practical trials of the system, which were carried out with healthy and sick infants with the aid of Professors Bier and Langstein, the results are said to be very satisfactory. For the gymnastic exercises a table is used that is large enough to allow the child to tumble about on it at will, but not so large but that the assistant can control his movements with the hands. A well padded underlay is the only requisite for the Neumann-Neurode system of gymnastics for infants. After three or four repetitions of the same exercise, the child usually knows what is expected of him. The child must never be allowed to lie on the table without supervision, for the motions may become so exaggerated as to lead to unexpected results. In incipient cases of rickets, exceptionally favorable results have been obtained by the use of this system. It is indicated also for children that learn to walk late and do not make the proper effort, that find it difficult to sit up straight, that have a flabby musculature, and that cannot stand on their feet without assistance. In all such cases, according to a report issued by the Empress Augusta Victoria House, marked improvement was noted in two months, and later a complete cure was effected.

Marriages

ARTHUR WESLEY ANDERSON, Cumberland, Iowa, to Marguerite Lucille Hansen of Grand Rapids, Mich., December 28.

WALTER HAROLD CULLEY, Harrison, Ohio, to Miss Audrey Genevieve Simms of Moundsville, W. Va., December 3.

FRANK W. SHELTON to Miss Bess F. Crosson, both of Independence, Iowa, at Kansas City, Mo., December 9.

CHARLES SUMNER LEVY, Baltimore, to Miss Ruth Bear of Lonaconing, Md., at Cumberland, December 27.

FREDERICK D. BARKER, Dayton, Ohio, to Miss Mary Wood Roberts of Columbus, November 30.

ARTHUR W. RECORDS, Franklin, Ind., to Miss Edna W. Alfred of Union City, December 21.

EDWIN NASH BROYLES, Atlanta, Ga., to Miss Eleanor Curtis Whiteley of Baltimore, January 6.

FULLER BRYAN BAILEY to Miss Mabelle Carolyn Zimmer, both of Chicago, January 6.

EMMA MAKI WICKSTROM to Mr. Enoch M. Cox, both of Portland, Ore., recently.

Deaths

Guthrie McConnell ⊕ Cleveland; University of Pennsylvania School of Medicine, Philadelphia, 1896; member of the American Association of Pathology and Bacteriology and the American Society of Clinical Pathologists; formerly assistant professor of pathology at St. Louis University, St. Louis; professor of pathology, bacteriology and hygiene at Temple University Department of Medicine, Philadelphia; at one time pathologist to the Barnard Free Skin and Cancer and St. Luke's hospitals, St. Louis; formerly assistant pathologist at the Snodgrass Laboratory, St. Louis, and bacteriologist for the Missouri State Board of Health; served in the M. C., U. S. Army, during the World War; aged 47; died, January 5.

Lemuel Grant Baldwin ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1886; formerly president of the New York Obstetrical Society, the Brooklyn Gynecological Society and the Long Island College Alumni Association; member of the Brooklyn Pathological Society; gynecologist to Brooklyn and St. Peter's hospitals and the Hospital of St. Giles the Crippled, Brooklyn; St. Francis' Hospital, Jersey City; St. John's Hospital, Long Island City; St. Joseph's Hospital, Far Rockaway, and the Huntington Hospital, Huntington; aged 59; died, December 31, at the Skene Sanitarium, from cerebral hemorrhage.

George C. Ross ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1891; member of the American Surgical Association, Philadelphia Academy of Surgery, Obstetrical Society of Philadelphia and the Pathological Society of Philadelphia; served in the M. C., U. S. Navy, during the World War, with the rank of commander; aged 56; on the staffs of the Methodist, Germantown and University of Pennsylvania hospitals and the Lankenau Hospital, where he died, December 27.

Alfred Yale Massey, Belleville, Ont., Canada; Trinity Medical College, Toronto, 1898; formerly a medical missionary in Labrador and for several years chief medical officer for the Belgian government in Africa, where he had worked with Dr. Koch; recipient of the honor of Chevalier de l'Ordre Royal du Lion from the king of the Belgians for his work on epidemic encephalitis; for twenty years medical missionary in the Belgian Congo, where he died recently, aged 51.

Edward Addison Craighill, Lynchburg, Va.; University of Pennsylvania School of Medicine, Philadelphia, 1861; member of the Medical Society of Virginia; also a druggist; veteran of the Civil War; formerly president of the Virginia Pharmaceutical Society and at one time president of the city council; aged 82; died, January 2, from senility.

William Peter Strain, Far Rockaway, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1906; member of the New York Academy of Medicine; visiting pediatrician to the Neponsit Beach and St. Joseph's hospitals; aged 38; died, January 5, at the New York City Hospital, from heart disease.

Dorsey Dean Metcalf, Fort Wayne, Ind.; Milwaukee Medical College, Milwaukee, 1911; member of the Indiana State Medical Society; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 40; died, December 30, at the Lutheran Hospital, following an appendectomy.

Homer Brown Haile, Madras, Ore.; University of Oregon Medical School, Portland, 1909; member of the Oregon State Medical Association; veteran of the Spanish-American War; served in the M. C., U. S. Army, during the World War; aged 47; died, December 16, from heart disease.

William H. Morrison, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1880; member of the Medical Society of the State of Pennsylvania; Philadelphia Neurological Society, and the Pathological Society of Philadelphia; aged 66; died, December 31.

Curtis Rudolph Estabrook, Brooklyn; Bellevue Hospital Medical College, New York, 1877; for ten years government surgeon at the mines in Mexico, and at one time attached to the hospital on Blackwell's Island; aged 75; died, January 1, from carcinoma of the throat and tongue.

John A. McCafferty, Brooklyn; Fordham University School of Medicine, New York, 1916; member of the Medical Society of the State of New York; formerly registrar of the health department; visiting surgeon to St. Catherine's Hospital; aged 34; died, January 2, from pleurisy.

Charles McHenry Cooper, Chatfield, Minn.; University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1892; former mayor of Chatfield and at one time member of the board of education; aged 57; died, November 23, following a long illness.

Albert May, Crothersville, Ind.; Medical Department University of Louisville, Ky., 1875; member of the Indiana State Medical Association; aged 76; died, November 9, as the result of a self-inflicted wound, which severed his jugular vein.

William Grimsley Taylor, Greensboro, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1919; member of Medical Society of the State of North Carolina; aged 27; died, December 28, from pneumonia and pleurisy.

Henry Peter Wekesser ⊕ Lincoln, Neb.; University of Nebraska College of Medicine, Omaha, 1908; member of the Southern Surgical Association; aged 42; died, December 15, at St. Elizabeth's Hospital, following an appendectomy.

Pyrl H. Gunsaullus, Bronson, Mich.; Detroit College of Medicine, 1894; member of the Michigan State Medical Society; formerly secretary of the school board; aged 62; died, December 27, from pneumonia and heart disease.

L. Theophilus Hill, Abbeville, S. C.; University of Maryland School of Medicine, Baltimore, 1882; member of the South Carolina Medical Association; also a druggist; aged 70; died, December 26, from cerebral hemorrhage.

Edward Blake Oliver, Fort William, Ont., Canada; Trinity Medical College, Toronto, 1898; health officer of Fort William since 1912, and formerly president of the Ontario Health Officers' Association; aged 45; died recently.

Milton Bliem Fretz, Palmyra, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1871; member of the Medical Society of the State of Pennsylvania; also a druggist; died, December 29, from heart disease.

William Howell Batte, Memphis, Tenn.; Memphis Hospital Medical College, 1901; member of the Tennessee State Medical Association; aged 43; died, January 1, at the Gartly-Ramsey Hospital, following an operation.

Oscar Frederick Eastman, Calgary, Alta., Canada; Northwestern University Medical School, Chicago, 1910; aged 47; died, November 5, from injuries sustained when the automobile in which he was driving, overturned.

Isham Randolph Page, Baltimore; New York University Medical College, New York, 1859; member of the Medical and Chirurgical Faculty of Maryland; Civil War veteran; aged 89; died, January 1, from senility.

Ferdinand Edward Peck, Stearns, Ky.; Southwestern Homeopathic Medical College and Hospital, Louisville, 1898; member of the Kentucky State Medical Association; aged 46; died, December 21, from pneumonia.

William Walne Wallace, Birmingham, Ala.; Tulane University of Louisiana School of Medicine, New Orleans, 1921; on the staff of the Hillman Hospital; aged 25; died, December 27, from influenzal pneumonia.

Julia Maltby Dutton, Newton, Mass.; Woman's Medical College of New York Infirmary for Women and Children, 1885; aged 78; died, December 15, from cerebral hemorrhage and ulcer of the stomach.

William Green Hanson ⊕ Everett, Mass.; Boston University School of Medicine, Boston, 1878; aged 65; died, December 18, at the Massachusetts Homeopathic Hospital, Boston, from pneumonia.

Ezeckiel Walter Jenkins ⊕ Denver; University of Tennessee College of Medicine, Memphis, 1907; aged 41; died, December 26, from injuries received when knocked down by a motor truck.

Martin Luther Malloy ⊕ Eutaw, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1899; aged 47; died, December 27, in a Tuscaloosa hospital, as a result of stab wounds.

James Harvey Preston, Nashville, Tenn.; Vanderbilt University Medical Department, Nashville, 1879; member of the Tennessee State Medical Association; aged 67; died, December 26.

Charles L. Erwin, Newport Center, Vt.; University of Vermont College of Medicine, Burlington, 1867; formerly member of the state legislature; aged 78; died, December 26.

Emile E. Simard, Montreal, Que., Canada; Victoria University Medical Department, Toronto, Ont., 1883; aged 64; died recently at the Hospital for Incurables, Westmount.

Collin B. Brown, Edgewood, Texas; University of Tennessee College of Medicine, Memphis, 1800; aged 68; died, December 30, at the Baylor Hospital, Dallas.

Hannah M. Brown Romaine, Los Angeles; Hahnemann Medical College and Hospital of Chicago, 1887; aged 76; died, December 2, from valvular heart disease.

Thomas J. Talbott, Jr. ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1895; aged 50; died, January 1, from cerebral hemorrhage.

John G. Scott, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, 1879; aged 68; died suddenly, October 29, while on a hunting trip.

James Spencer Mackey, Rogersville, Ala.; University of Tennessee College of Medicine, Memphis, 1907; aged 46; died, December 18, from pneumonia.

Charles Henry Newth ⊕ Philomath, Ore.; Ensworth Medical College, St. Joseph, Mo., 1889; aged 65; died, November 29, from acute indigestion.

Harry Asahel Barker, Burlington, Vt.; New York University Medical College, New York, 1883; aged 69; died, December 28, from pneumonia.

George C. Hayes, Williamsport, Ohio; Starling Medical College, Columbus, 1882; aged 69; died, December 30, from cerebral hemorrhage.

George Hardy Finch ⊕ Springfield, Mass.; University of Vermont College of Medicine, Burlington, 1898; aged 54; died, December 18.

William J. Holloway, Chappells, S. C.; University of Georgia Medical Department, Augusta, 1868; aged 77; died, December 28.

Arthur Beever Westfall ⊕ Lafayette, Ind.; Kentucky School of Medicine, Louisville, 1890; aged 62; died suddenly, December 22.

Julius Gruenewald, Glasgow, Ill.; Missouri Medical College, St. Louis, 1891; aged 65; died, December 30, from pneumonia.

John Seth Farrell, Barnes City, Iowa; State University of Iowa College of Medicine, Iowa City, 1877; aged 71; died in December.

Stephen West, Angus, Ont., Canada; Victoria University Medical Department, Toronto, 1886; aged 60; died, October 30.

Willard A. Haynes, Sabetha, Kan.; New York University Medical College, New York, 1881; aged 70; died, December 29.

Butler W. Cobb, Greenwood, S. C.; University of Georgia Medical Department, Augusta, 1885; aged 70; died, January 2.

Charles A. Perrin, Bozeman, Mont.; Michigan College of Medicine, Detroit, 1881; aged 68; died, December 29.

Andrew B. Ireland, Philadelphia; Jefferson Medical College of Philadelphia, 1885; aged 66; died, December 31.

Matthias Stevens Bowser, Lima, Ohio (licensed, Ohio, 1896); aged 85; died, December 22, from senility.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

NEISSER-SAN-KAHN NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

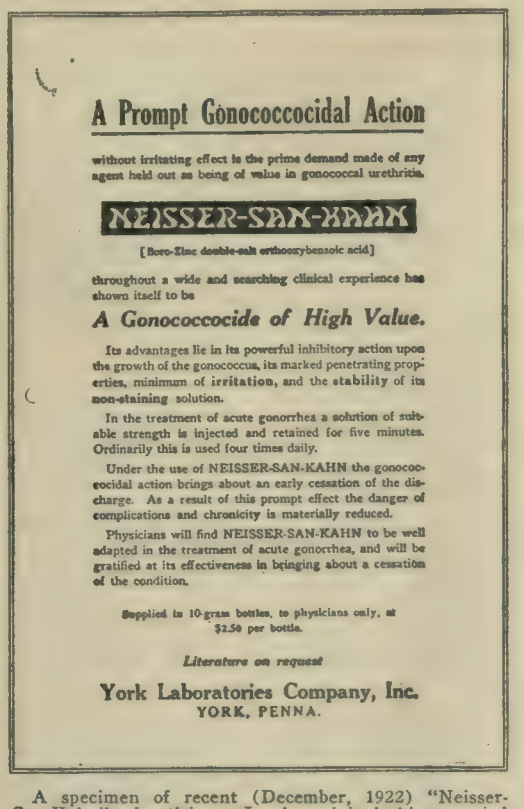
W. A. PUCKNER, Secretary.

Neisser-San-Kahn is marketed by the York Laboratories, York, Pa., as "a new genito-urinary product" with the claim that, "in Neisser-San-Kahn the genito-urinary surgeon has at his command a new salt of marked value in urethral infections." The product is said to be a definite chemical body, zinc borosalicylate, and to have the composition indicated by the chemical formula "$(C_{14}H_{10}BO_7)2Zn$." The following statement with reference to the method of manufacture was furnished the Council:

"PREPARATION. Boric-acid being converted into hydrogen Tetraborate $H_2B_4O_7$. With a certain amount of Acid Salicylic and Zincum Carbonatum, (Normal) it forms the body of the product through crystallization. The crystals are recrystallized from hot water to discard the irritating property of the Acidum Salicylicum."

Neisser-San-Kahn is claimed to be "especially adapted for treatment of all forms of Neisserian infection." The preparation is marketed in the form of tablets. A blotter, evidently intended for the druggist, advises:

"In the absence of other instructions from the prescribing physician, Neisser-San-Kahn should be dispensed as follows: 1 tablet (1 gm.) Neisser-San-Kahn in three (3) ounces hot distilled water."



A specimen of recent (December, 1922) "Neisser-San-Kahn" advertising. In the original this occupied a full page.

Although Neisser-San-Kahn is said to be a new chemical compound, a preparation claimed to be zinc borosalicylate was introduced about ten years ago (in Germany) with claims similar to those now advanced for Neisser-San-Kahn. This German preparation was called Dr. A. Foelsing's "Mucosan." Mucosan was analyzed at the University of Giessen by K. Feist (*Apotheker Zeitung*, 1912, p. 306). Feist concluded that the product presented a loose chemical combination of zinc salicylate, salicylic acid and boric acid, and that a product having properties identical with those of Mucosan is obtained when a mixture of boric acid 2.11 gm., zinc salicylate (hydrated) 5.63 gm. and salicylic acid 2.86 gm. is dissolved in a little water and the solution evaporated to dryness.

As evidence for the therapeutic value of Neisser-San-Kahn the York Laboratories submitted letters from physicians who had used the preparation. These did not indicate that the preparation has any other action in urethritis than that of zinc sulphate. Zinc sulphate is indicated only in certain forms of urethritis and the submitted evidence presented no warrant for the general use of the preparation advocated by the firm which markets it. The market is crowded with preparations proposed for the treatment of urethritis and the combination presented in Neisser-San-Kahn appears to have no advantage over established drugs.

The Council declared Neisser-San-Kahn inadmissible to New and Nonofficial Remedies on the following grounds:

1. It is an unoriginal preparation marketed under a proprietary, nondescriptive name. The rules of the Council provide that a proprietary name for a medicinal article shall be recognized only when the use of such an exclusive name is in the interest of the public welfare. In consideration of the benefits which may come from the discovery of a therapeutic agent the Council concedes to the person or firm which, by right of discovery, controls such a product the right to name it and offers no opposition to an arbitrary name for such a product. The combination presented by Neisser-San-Kahn and claimed to be zinc borosalicylate, however, is not the discovery of the York Laboratories and hence the Council cannot recognize the proprietary and nondescriptive name of this firm.

2. The therapeutic claims are not substantiated by acceptable evidence and are, therefore, unwarranted.

3. The available evidence fails to show that the preparation, claimed to be zinc borosalicylate, has any advantage over established zinc salts. The use of substances which are unessential modifications of established drugs is unscientific and serves no useful purpose and hence, in the absence of evidence of superiority over established zinc salts the use of this so-called zinc borosalicylate is not in the interest of rational therapy.

Correspondence

SUPPLIES FOR LEPER STATIONS

To the Editor:—I have been impressed with the very encouraging work for the cure of leprosy which is being done in the two leper stations under my care—Kwangju and Fusan, Korea. I am in the United States this year for my regular year of absence. While in this country I am anxious to extend to as many people as possible an opportunity to help in this splendid service for humanity.

Naturally, my mind goes out to my colleagues in the medical profession as the ones who will best understand the scope and importance of the work from a physical standpoint, and I feel that if they knew of some of our pressing needs, many of them would be glad to cooperate in supplying these.

I have made a list of some of the apparatus and supplies of which we stand in need: two microscopes; surgical instruments of all kinds; drugs; dressings and all kinds of hospital supplies, and medical books.

We can use any of these things second hand. Some hospitals in America burn many articles in the way of bandages and dressings that could be resterilized and would be useful to us.

I shall be pleased to answer any questions or to furnish additional information in regard to this important work and its needs if addressed at my American home, Columbus, Ark., until September, 1923.

R. M. WILSON, M.D., Kwangju, Korea.
Medical Missionary.

DETECTING LEAKS IN BASAL METABOLISM APPARATUS

To the Editor:—In a communication in THE JOURNAL, Nov. 25, 1922, p. 1868, Dr. Lynch of Dallas advocates the use of coal gas and a flame for the detection of leaks in the Benedict form of basal metabolism apparatus. We regard such a procedure as dangerous, involving, as it does, the possibility of an explosive mixture of gas and air being formed in the tubes and chamber of the apparatus. The use of coal gas is open to objection on other grounds, namely, that certain constituents of the gas are soluble in rubber, and rubber tubing so contaminated may continue to give off unpleasant odors for some time even after a thorough ventilation of the apparatus. Such odors may impair the accuracy of a basal metabolism determination by nauseating the patient under examination.

The method of painting soap-suds over the sites of suspected leaks while applying pressure to the top of the spirometer bell, has proved quite satisfactory in our hands, and is recommended for the detection of leaks in Benedict's or any similar apparatus.

H. F. PIERCE, New York.
Associate in Physiology, Columbia University College of Physicians and Surgeons.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SOLUTION OF HYPOPHYSIS ADMINISTERED AFTER CESAREAN SECTION IN PREVIOUS LABOR

To the Editor:—Would there be any risk in giving pituitary extract, if indicated, during labor, the patient having had previously a cesarean section for a transient cause?

H. S. GEIGER, M.D., Kissimee, Fla.

ANSWER.—The query contains two parts: 1. May certain pregnant women after cesarean section be managed expectantly at the termination of subsequent pregnancies? 2. May pituitary extract be used as a uterine stimulant in labor, with especial reference to its effects on a uterus previously subjected to cesarean section?

1. During the last decade the indications for cesarean section have been so broadened that many operations have been performed for adventitious circumstances, some of which are manifestly spurious. Of "transient" causes there stand out preeminently placenta praevia, eclampsia, malpositions, and ovarian tumors offering insuperable obstruction to labor. In subsequent pregnancies and labors, their recurrence is hardly probable; therefore, the women so affected would be in no jeopardy from the indications that had presented themselves in the previous labors. These are in sharp contrast to those women who had contraction of the pelvis, and required sections, for the primary indication is permanent. However, cesarean section for transient indications presents an aspect which demands most serious consideration, not only in placing the indication for the section, but also in dictating the policy in the delivery of the baby at the termination of all subsequent pregnancies. The relation of the cesarean scar to later labors is still an unsettled problem, for many assert that a cesarean once is a cesarean always, while others hold that such women may have a labor conducted under watchful expectancy. The preponderance of evidence is pointing toward the first stated aphorism. The cesarean scar is essentially an indication for the repetition of the operation because of the danger of rupture of the scar. If an exception does exist, the following conditions should probably be fulfilled: a multiparous woman with the history of an easy spontaneous birth or births, with a normal pelvis, normal presentation and position, in an approved surgical hospital where watchfulness may be scrupulously observed, and immediate laparotomy be performed if necessity arises. In all others the cesarean section should be performed before labor sets in. The danger of uterine rupture, with death of the fetus, and high maternal mortality, is acute. In the *American Journal of Obstetrics and Gynecology* (**4**:579 [Dec.] 1922) figures were quoted to show that of 200 repeated sections, thirty-eight uteri either ruptured or had attenuated scars which would have ruptured under the stress of hard labor. Holland (*Brit. M. J.* **2**:519 [Oct. 1] 1921) showed that the danger of rupture in subsequent spontaneous labor was fully 25 per cent. Therefore, the physician who contemplates conducting a woman through a spontaneous labor expectantly should weigh the evidence with the greatest circumspection.

2. Pituitary extract is an extremely potent drug. The potency of the products of different manufacturers may vary enormously, just as the product of one manufacturer may vary at different times. The potency of the products issued by different pharmaceutical houses, tested by the U. S. Public Health Service, varied as much as from 1 to 8. The highly active drug may be extremely dangerous when administered to a parturient woman in the presence of a malposition or other interference to labor. The accumulating evidence of ruptured uteri after administration of pituitary extract is worthy of mention. In normal labor, pituitary extract should be given only in fractional doses, 2 or 3 minims, repeated in twenty or thirty minutes, when the only delay to the progress of labor is due to beginning secondary inertia—when the os is fully dilated, the membranes are ruptured, rotation is completed, and the outlet is sufficiently relaxed to permit the easy birth of the child. Facilities for a prompt forceps operation should be available in the event that this small dosage produces untoward effects. Pituitary extract never should be given in the presence of a suspected, let alone a known, cause for dystocia. As pituitary extract may cause rupture of an intact uterus, it is absolutely contraindicated in the case of a uterus damaged by a cesarean scar until after the child and placenta have been delivered.

TREATMENT OF LUPUS

To the Editor:—Kindly inform me through Queries and Minor Notes of the latest treatment of lupus. Please let me know the technic.

————, Massachusetts.

ANSWER.—The treatment of lupus vulgaris in general is unsatisfactory, and many methods have been advised. For methods recently proposed the evidence is not particularly promising. The latest actual addition to our means of treatment is, perhaps, the use of ultraviolet light, now carried out by means of mercury vapor lamps made of quartz and known as quartz lights. The affected areas are exposed to this light under pressure. The exposures are carried out to the point of producing acute inflammatory reactions. The method is one depending for its success on the experience of the physician in treating lesions of this character. The lights and their methods of use are described in the various textbooks on electricity and light therapy.

EXCESSIVE PERSPIRATION OF HANDS AND FEET

To the Editor:—A young man is troubled since childhood and especially after adolescence with excessive perspiration of hands and feet, when moderately warm or when slightly nervous, e. g., during quizzes and examinations. His mother had the same trouble. Is it hereditary? What are the possible causes? How can this condition be effectively alleviated or cured? Please omit my name.

————, M.D., Michigan.

ANSWER.—Excessive perspiration of the hands and feet and excessive perspiration occurring elsewhere is a symptom of excessive irritability of the nervous system. This may be of neuropathic origin or it may be due to chemical or endocrine causes, e. g., hyperthyroidism. As a neuropathic or an endocrinopathic tendency seems to be transmissible in families, such symptoms may also be hereditary. The cure of the condition would necessitate discovery of the cause, in the first place, and its appropriate treatment. Thus, neurasthenia would require a mental and physical hygiene suitable to the individual. Hyperthyroidism—discoverable by some of the other symptoms of this condition, most especially

an increase in basal metabolism—might be benefited by thyroid and thymus roentgenotherapy, in addition to proper hygiene.

As symptomatic treatment, an astringent might be used, e. g., a 25 per cent. solution of aluminum chlorid, as recommended by A. W. Stillians (THE JOURNAL, Dec. 30, 1916, p. 2015). It is dabbed on gently and allowed to dry; the application is repeated every second or third day for three applications, and then once a week to prevent recurrences. A 0.5 per cent. solution of atropin sulphate, a few drops of which were rubbed in the hands, just before hand-shaking, has given comfort to a traveling salesman who was annoyed by finding his hands suddenly wet on such occasions. Should all these things prove unsatisfactory, a skilfully directed course of roentgenotherapy may put an end to the trouble.

DENTAL CARIES AS A SOURCE OF FOCAL INFECTION

To the Editor:—I would much appreciate information on the subject of dental caries not involving the pulp, as a source of focal infection. It is understood, of course, that dental caries at any stage is a potential source of future focal infection, and that dental repair is highly important. The specific question on which I desire information is, whether there is any present tangible evidence tending to prove that dental caries not involving the pulp is actually a source of focal infection for such diseases as neuritis, arthritis, myalgia, myocarditis and valvular heart disease.

W. W. ANDERSON, M.D., Cincinnati.

ANSWER.—There is no evidence that cavities in the teeth which do not involve the pulp ever act as a focus for the dissemination of bacteria through the blood and lymph streams. Neuritis, arthritis, myalgia, myocarditis and valvular diseases of the heart are not due to a focus in a simple cavity of decay in a tooth, nor are any other diseases.

Miller, in "Micro-Organisms of the Human Mouth," says that while the diameter of the dentinal tubules is sufficient to admit bacteria of the mouth, the great mass of bacteria in cavities of decay do not penetrate even up to the normal dentin, much less into it. Black and others have verified Miller's findings.

The organism that penetrates farthest in the dentinal tubules is the lactic acid bacillus. When this acid-forming fungus dissolves the lime, first in the enamel, and then in the dentin, sufficiently to expose the pulp, opportunity is offered for pathogenic organisms to enter the pulp, which they destroy; then opportunity is offered for the organisms to reach the apex of the tooth, from which point they are disseminated to all parts of the body through the blood stream.

DEFINITION OF MAJOR OPERATION

To the Editor:—Please publish what operations in surgery are major and what minor.

H. A. BISHOP, M.D., Millington, Mich.

ANSWER.—In THE JOURNAL, Oct. 21, 1916, was published the following definition of the term "major surgical operation," as defined and issued by the workmen's compensation board of Pennsylvania, in interpreting the term as applied to cases under the compensation law of that state:

A major operation is a surgical procedure which entails immediate serious consequences to the patient and which requires skill and training to perform, and includes: 1. The setting of fractures of long bones and reducing of subluxations, providing accuracy and efficiency of reduction be demonstrated by roentgen ray taken before and after surgical treatment. 2. All operative procedures, other than finger and toe amputations, cleansing, draining and closing wounds, evacuating pus by incisions, the manipulating and reduction of uncomplicated dislocations, the treatment of uncomplicated fractured ribs, the removal of superficial foreign bodies from the eyes, and the removal of subcutaneous foreign bodies.

Census of Deaf and Dumb.—The Department of Commerce announces that 44,885 deaf and dumb persons, or deaf-mutes, were enumerated in the census of 1920. In 1910 the number was 44,708. The deaf-mute population was only 425 per million in 1920, as compared to 486 per million in 1910. There was one deaf-mute for every 2,359 people in 1920, as against one for every 2,060 in 1910. The relative decrease in the prevalence of deaf-mutism during the last ten years is due, in part, according to this report, "to more skilled treatment of certain diseases, especially those of children, which frequently cause deafness."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.
PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

Montana October Examination

Dr. S. A. Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination held at Helena, Oct. 3-5, 1922. The examination covered 10 subjects, and included 50 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Indiana University		(1920)	75.6
State University of Iowa College of Medicine		(1917)	79.5
University of Minnesota		(1921)	82.6
Creighton University		(1921)	82.7
Medical College of the State of South Carolina		(1900)	93.8
University of Vermont		(1913)	76.8
University of Pressburg, Hungary		(1921)*	80.7
	FAILED		
Medical Dept. of the Univ. of the City of New York		(1893)	53.9

* Graduation not verified.

Washington July Examination

Mr. William Melville, secretary, Washington Department of Licenses, reports the oral and written examination held at Spokane, July 6, 1922. The examination covered 14 subjects, and included 140 questions. An average of 75 per cent. was required to pass. Of the 7 candidates examined, 4 passed and 3 failed. Thirty-eight candidates were licensed by reciprocity, and one candidate was licensed by endorsement of credentials. Eight candidates received chiropractors' licenses by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University		(1922)	80.95
Harvard University		(1920)	80
Jefferson Medical College		(1921)	75
	FAILED		
Northwestern University		(1922)	60, 60
University of Berlin		(1918)*	50

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles		(1921)	California
Chicago College of Medicine and Surgery		(1915)	Illinois
College of Physicians and Surgeons, Chicago		(1903)	Illinois
Illinois Medical College		(1902) Oregon, (1903)	Illinois
Loyola University		(1916), (1917)	Illinois
Northwestern University		(1921)	Montana
Rush Medical College		(1910)	Illinois
University of Illinois		(1917), (1919)	Illinois
State University of Iowa College of Medicine		(1907) (1919)	Montana Iowa
Kansas Medical College		(1910), (1913)	Kansas
University of Kansas		(1920)	Kansas
University of Louisville Medical Department		(1913)	Oregon
College of Phys. and Surgs., Baltimore		(1909), (1910, 2)	Montana
Maryland Medical College		(1904)	Alaska
University of Maryland		(1909)	Maryland
Harvard University		(1896)	Iowa
Hamline University		(1904)	N. Dakota
University of Minnesota		(1920) Illinois, (1921)	Minnesota
Barnes Medical College		(1907)	Illinois
Central Medical College of St. Joseph		(1900)	Idaho
Creighton University		(1917) Montana, (1921)	Nebraska
University of Nebraska		(1919) Alaska, (1921)	Nebraska
Ohio Medical College		(1906)	Ohio
University of Cincinnati		(1921)	Ohio
Jefferson Medical College		(1900)	Montana
University of Pennsylvania		(1918)	Penna.
University of Tennessee		(1918)	W. Virginia
Western University, London, Ont		(1904)	Nebraska

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Pennsylvania		(1919)	N. B. M. Ex.

* Graduation not verified.

Book Notices

ENDOCRINE GLANDS AND THE SYMPATHETIC SYSTEM. By P. Lereboullet, P. Harvier, H. Carrion, and A. G. Guillaume. Translated by F. Raoul Mason, M.D., Instructor in Pediatrics, New York Post-Graduate Medical School and Hospital, with the Collaboration of Daniel R. Ayres, A.B., M.D., Assistant Professor of Gynecology, New York Post-Graduate Medical School and Hospital. Cloth. Price, $6. Pp. 378, with 31 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

This book contains chapters on the physiology, pathologic anatomy, diseases and therapy (including organotherapy) of the ductless glands and the sympathetic nervous system. There is a good deal of duplication of material and discussion, but the chief defect is lack of knowledge and critical sense on the part of the authors. The reader may form his own opinion of the reliability of the authors in their statement of facts, from the following quotations:

Milk and eggs can sometimes be considered as organotherapeutic products.

The adrenal secretion has a specific neutralizing effect on certain poisons.

Addison's disease can be considerably improved or even cured by organotherapy.

It has been known for a long time, for instance, the part played by the stimulation of the sympathetic in Basedom's disease, the majority of the symptoms of myxedema have their origin in alterations of the sympathetic.

Faradization of the thyroid decreases the secretion of the gland.

Arterial hypertension is due to hyperfunction of the adrenals.

Pregnancy can be considered a state of autointoxication.

The placenta is a galactogogue.

Dried extract of the cow's mammary gland is an efficacious galactogogue.

The extract of the lung has been used with some degree of success in purulent pleurisy, and some very good results have been obtained in pulmonary tuberculosis.

Extracts of the kidney have given the best results in the acute symptoms of uremia, and in eclampsia of pregnancy. In acute nephritis, complete cures have resulted.

The book is not a contribution to either the art or the science of medicine.

TREATMENT OF INJURIES OF THE PERIPHERAL SPINAL NERVES. By Sir Harold J. Stiles, K.B.E., F.R.C.S., Regius Professor of Clinical Surgery, University of Edinburgh, and M. F. Forrester-Brown, M.S., M.D. Cloth. Price, $4.30. Pp. 180, with 58 illustrations. New York: Oxford University Press, 1922.

In this monograph, as the authors state in the introduction, "an attempt is made to place at the disposal of the general surgeon, who may be called upon to deal with an occasional case of peripheral nerve injury, the experience which has been gathered from the exceptionally abundant material provided by the Great War; . . . to map out for the surgeon who has no special experience of the subject those paths which will lead to a successful result for himself and his patient, and to help him avoid those pitfalls which have entrapped most workers at first, before they learned to look out for them." This object has been successfully accomplished. The work is divided into three parts. The first part takes up anatomic considerations, discussing in detail the nerves most commonly injured, and the effects of complete division; diagnosis, including general principles and special difficulties; types of lesion found at operation; indications for operation; choice of type of operation; prognosis; order of recovery, and treatment after operation. These subjects are handled briefly, but in a practical, clinical way, and the facts are thoroughly up to date. The second part deals with the operative treatment of war injuries of the peripheral nerves. After discussing general considerations, it considers injuries to the nerves of the upper extremity; injuries to the nerves of the lower extremity, and procedures when end-to-end union cannot be effected. The illustrations showing the surgical anatomy of these operations are of unusual excellence. One can at once detect that this chapter was written by Sir Harold Stiles, although this is not stated. The operations are discussed in an exceptionally able way, typical of the practical knowledge and familiarity with anatomic detail that characterizes this great English surgeon. It is unfortunate, however, that nowhere in the monograph is it stated that this part of the work is an exact copy of both the text and the illustrations of the chapter by the same title contributed by the author in Volume II of "Orthopaedic Surgery of Injuries," edited by Sir Robert Jones, which appeared in 1921, by the same publishers. The third part deals with tendon transplantation in cases of peripheral nerve injuries. In it are discussed indications essential for a successful operation, and it ends with details of some special operations, taking up, in order, operations for musculospiral paralysis, for complete flexor paralysis in the upper limb, for partial flexor and extensor paralysis in the upper limb, for quadriceps paralysis and injury, for paralysis of the tibialis anticus, or a single extensor, and for complete external popliteal paralysis. The illustrations in this chapter also are of unusual value, showing clearly the surgical anatomy and the operative details. The entire work is concise, practical and authoritative.

QUESTIONS NEUROLOGIQUES D'ACTUALITÉ. Vingt Conférences, Faites a la Faculté de Médecine de Paris, 1921. Par MM. S. A. K. Wilson, Ch. Chatelin, H. Claude, G. Roussy, Guillain, Lhermitte, Souques, Babonneix, André Léri, P. Sainton, A. Sicard, Crouzon, Poulard, Ch. Foix, Laignel-Lavastine, Vurpas, Bourguignon, Béhague, Bouttier, Pierre Marie. Introduction par M. Le Professeur Pierre Marie. Paper. Price, 28 francs. Pp. 551, with illustrations. Paris: Masson et Cie, 1922.

This series of addresses on live neurologic subjects, each by a man whose name is not only internationally known but also identified with recent research in the topic in question, constitutes one of the most remarkable collections of authoritative monographs yet published. Each contains a review of the whole question treated, prepared for a general medical audience and therefore of interest to every physician. The addresses are on progressive lenticular degeneration, by Wilson; cerebral tumors, by Chatelin; serous meningitis, by Claude; sensory disturbances of cerebral origin, by Roussy; spinal cord traumatisms, by Guillain; epidemic (lethargic) encephalitis, by Lhermitte; paralysis agitans, by Souques; infantile encephalopathies, by Babonneix; syphilitic muscular atrophies, by Léri; exophthalmic goiter, by Sainton; algias and their treatment, by Sicard; atypical familial nervous disease, by Crouzon; pupillary modifications, by Poulard; medullary automatism, by Foix; thyreogenous psychoses, by Laignel-Lavastine; minor mental syndromes, by Vurpas; chronaxis, by Bourguignon; traumatic epilepsy, by Béhague; epilepsy, by Bouttier, and Does man possess preformed or innate language centers? by Marie.

THE HEART AS A POWER-CHAMBER. A Contribution to Cardio-Dynamics. By Harrington Sainsbury, M.D., F.R.C.P., Consulting Physician to the Royal Free Hospital and the City of London Hospital for Diseases of the Chest. Cloth. Price, $3.75. Pp. 248, with 23 illustrations. New York: Oxford University Press, 1922.

This is in no sense a treatise. It is rather a collection of essays on some of the problems connected with the heart in health and in disease. There are considered such widely diverse topics as the mode of contraction of the ventricular muscles, the bruits of mitral disease, back-pressure effects, the utilization of the blood as a carrier of remedies, venous pulsations, the automatic mechanism of the heart, heart disease, heart failure and treatment. The subjects are presented from the standpoint now of anatomy, now pathology, now physiology, now physics; or with statements based on experimental or clinical observation or offered as pure theory. The style is generally clear with frequent allusion and classical quotation. The book is interesting, and at times throws illuminating side-lights on certain phases of cardiology. As a whole, however, it is disappointing and makes one wonder why it was written.

DA PATHOGENIA DO SOMMO, PARTICULARMENTE NA ENCEPHALITE LETHARGICA. Por el Dr. A. C. Pacheco e Silva. Paper. Pp. 15, with 11 illustrations. São Paulo, 1922.

After some research work at the Salpêtrière with material from three cases of epidemic encephalitis, the author comes to the conclusion that epidemic encephalitis offers a good opportunity for studying the pathogenesis of sleep. As the infundibular region shows changes and the pituitary seems normal, in encephalitis, Pacheco thinks it more justified to place the sleep center in the infundibular region, as suggested by Claude and Lhermitte, rather than the pituitary, as suggested by Salmon. Marie, under whose auspices the work was conducted, expresses no opinion as to its value, in the introduction.

Medicolegal

Right to Registration Under Harrison Narcotic Law

(Starnes v. Rose (U. S.), 282 Fed. R. 336)

The United States District Court, Northern District of Georgia, in granting a writ of mandamus to compel the defendant, a collector of internal revenue, to register under Section 1 of the Harrison Narcotic Law a physician licensed to practice under the Georgia laws, says that a writ of mandamus does not compel an act as to which the officer has discretion; and the question was whether the collector has discretion in reference to registering a practicing physician, under Section 1. Registration was refused or suspended in this case on the ground that two indictments were pending against the applicant, charging offenses against the narcotic act. The collector justified his refusal by Section 11 of Regulation 35 of the Treasury Department, as amended by Treasury Decision 3139 of March 2, 1921, providing, among other things, for the reference of the application to the supervising federal prohibition agent of the department in which the applicant proposes to engage in the business or occupation within the scope of this regulation, for his investigation and approval or recommendation for rejection; and that unless the applicant's qualifications are found to be satisfactory, the applicant will be rejected by the collector. The collector relied also on Instructions for Enforcing the Provisions of Treasury Decision 3139, of July 26, 1921, which direct that "persons who have been arrested and held for action by the grand jury, or who have been indicted, will be held by the collector as under investigation, to await the outcome of the trial. In the event of conviction, registration may be refused."

The Harrison Narcotic Law is not a licensing act whose aim is to control the dispensing of narcotics by confining the dispensation to proper persons; for that is an exercise of the police power as to opiates which is not possessed by Congress. The act rests on the power to tax, and its provisions for registration and its restrictions on the dispensation of narcotics are for the purpose of safeguarding the tax on the dispenser and on the drug. Its enforcement is left to officers of the revenue. For these purposes, it properly requires a registration of persons engaged in the businesses enumerated in Section 1, and makes it a crime to carry on such a business without registration. But to prohibit a practicing physician from prescribing narcotics unless he registers, and then to refuse to register him, would, to that extent, be to prohibit and regulate his practice of medicine, a thing within the province of the state, and not of the United States, and in contradiction of the revenue purposes of the act.

The act contains no enumeration of qualifications for a registrant, except as being engaged in one of the businesses mentioned; and it has no provision for a refusal of registration to him. Section II of Regulation 35, indeed, assumes that Congress meant that the registrant should be lawfully engaged under the laws of the state in the business for which he would register, and requires that inquiry be made into that fact. The qualifications referred to therein are those fixed by the state law for the business in question. Neither the collector nor his superior officer has power to add any other qualification or obstruction to registration. Regulations attempting this would not be "for the carrying of the provisions of the act into effect," as authorized therein, but would subvert the registration required by it. The instruction of July 26, 1921, was not made by "the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury," and so was not authorized by the act; but, if it were, in attempting to make a pending charge of crime a ground for refusing registration, it would be unsustainable. Even after conviction, to do so would add a deprivation of vocation to the punishment fixed by law. Prior to conviction, there is only an accusation, of which the registrant is presumed to be innocent. The determination of those who may properly practice medicine or otherwise dispense drugs belongs to the agencies of the state. The collector must register on proper application all who are by the state law permitted to dispense them. He has no discretion in the matter.

Society Proceedings

SOUTHERN SURGICAL ASSOCIATION

Thirty-Fifth Annual Meeting, held at Memphis, Tenn., Dec. 12-14, 1922

The President, DR. C. JEFF MILLER, New Orleans, in the Chair

Chronic Obstructive Jaundice: Report of Nine Cases Treated by Cholecystogastrostomy

DR. WILLIAM A. DOWNES, New York: All patients suffering from chronic obstructive jaundice should be operated on, as surgery offers the only hope of relief. Internal drainage of the bile ducts is preferable to external drainage. The slightly greater risk involved in anastomosing the gallbladder over simple drainage is more than offset by the increased comfort of the patient, plus the added advantage of retaining the biliary secretion. Besides, in the event of a cure by external drainage, a secondary operation is necessary to close the fistula. I have found it easier to unite the gallbladder to the stomach than to the duodenum; and, since the passage of bile through the stomach is harmless, I consider cholecystogastrostomy the operation of choice.

Fractured Spine: Consideration of the Practical Care and Treatment

DR. WALTER C. G. KIRCHNER, St. Louis: In fractures of the spine, too much stress has been laid on the diagnosis and treatment of the lesion itself, and not enough attention has been paid to matters relating to the welfare of the patient. I had a case of pronounced fracture and dislocation of the fourth and fifth lumbar vertebrae in which there was complete paralysis of the lower limbs, with loss of bladder and rectal function. In spite of high grade decubitus, emaciation and weakness that were present, great improvement in the patient's condition resulted from careful handling and persistent attention to detail, so that he was able to be up and about and, in a restricted sense, help himself in his daily needs, thus dispensing with special care and nursing. Treatment must be directed to the control of shock, the correction of deformity, relief of pressure on the cord, and the prevention of sepsis, decubitus and a state of inanition. The patient's mental state must receive attention. Catheterization of the bladder should be avoided. Intelligent and painstaking nursing and mechanical measures are important factors in aiding improvement or recovery.

Traumatic Brain Lesions

DR. E. DUNBAR NEWELL, Chattanooga, Tenn.: A stereoscopic roentgenogram should be taken of every head injury when the blow has been sufficient to cause a fracture of the skull or to render the patient unconscious. Fracture of the skull per se does not indicate that the patient has been injured seriously. With the symptoms of lesion to the brain or its membranes present, the absence of a fracture does not alter in the least the treatment or the prognosis. The failure of the roentgen ray to detect a fracture of the base does not mean that one does not exist. Basal fractures must not be considered hopeless; certainly 75 per cent. of these patients may be saved if they are watched intently and intelligently treated.

Influence of Hemorrhage on the Mortality in Gunshot Wounds and Other Injuries of the Abdomen

DR. J. M. MASON, Birmingham, Ala.: The mortality of 88.8 per cent. in the large hemorrhage series, as compared with 31.5 per cent. in the small hemorrhage series, teaches that our treatment of hemorrhage must be improved. Transfusion must be employed more extensively. Autoreinfusion should be practiced in selected cases. If cases are seen early, and

observation indicates that hemorrhage is not progressive, operation may even be deferred a short time, while waiting for reaction, and while efforts are being made to obtain donors for transfusion.

Papilloma and Adenoma of the Gallbladder

DR. IRVIN ABELL, Louisville, Ky.: Benign tumors of the gallbladder, notably papilloma and adenoma, are not so rare as formerly thought. They occurred once in every thirty-six cases of my series. The invariable presence of chronic inflammatory changes in gallbladders containing such tumors would argue the importance of chronic irritation as an etiologic factor in their development. The overshadowing clinical picture is that of cholecystitis, there being no correlation of symptoms with the presence of such tumors. The fact that such tumors occur in the course of chronic cholecystitis is an additional argument in favor of cholecystectomy.

Important Considerations in the Treatment of Fractures of the Shaft of the Femur

DR. ALBERT O. SINGLETON, Galveston, Texas: The early reduction of fractures of the femur under spinal anesthesia with the aid of the fluoroscope or of roentgenograms, and by placing the splint in position before reduction, will succeed in a number of instances in securing and maintaining good position. The Thomas splint is the splint of choice, with provision for flexion of the knee. Extension is necessary in all cases, whether open or closed reduction is made, and whether or not plates or other methods of fixation of the bone are used. Skeletal extension or traction is superior to skin traction when there is overriding of the fragments, particularly in fractures of the lower end of the femur. It is important not to neglect the muscles, tendons and joints and allow them to suffer from disuse and atrophy.

Chronic Ulcerative Colitis

DR. HARVEY B. STONE, Baltimore: One of the striking clinical characteristics of chronic ulcerative colitis is its chronicity and recurrent nature. When it resists medical treatment or becomes severe, operative intervention is indicated. Ileostomy and separate appendicostomy for colon irrigations, with exclusion of the colon from function, offers the best results.

Surgery of the Acutely Inflamed Gallbladder

DR. ROBERT CALDWELL, Nashville, Tenn.: Every case of acute cholecystitis should be treated surgically. Operation should be done as early as possible after the onset of the symptoms. The treatment should be a cholecystectomy when at all possible. In the severe cases, operation should be done the quickest way and with the least manipulation. The leaving of a clamp on the cystic duct and vessel will meet this requirement.

Brain Abscess

DR. CHARLES BAGLEY, JR., Baltimore: In a series of twenty cases of brain abscess, seventeen patients were operated on, with a mortality of 45 per cent. In eight of the cases in which operation was performed, the patients died; and the three who were not operated on died. A necropsy was performed in eight of the eleven fatal cases.

The Patency of the Fallopian Tubes Ascertained by Transuterine Injection of Fluids

DR. I. S. STONE, Washington, D. C.: The method was first tried during the operation on a young woman with acute bilateral salpingitis and appendicitis with extensive pelvic peritonitis. We were impelled to pursue a conservative course because the patient was contemplating marriage in the near future. It was considered folly to leave a tube which was dripping with pus, yet we allowed the left tube and corresponding ovary to remain in situ, although the specific nature of the infection was beyond question (the responsible party confessed it). After opening the abdomen and removing the right tube and ovary with the appendix, all of which were hopelessly destroyed, we proceeded with the injection. The cervix uteri was caught with tenaculum forceps; a large glass syringe filled with 1:1,000 hot mercuric chlorid solution was introduced into it and passed through the internal os. Firm pressure with the hand caused a small stream of the solution to appear at the pavilion, which was caught on a sponge and not allowed to flow into the abdomen. Besides the transuterine irrigation of the left tube, the same solution was used to irrigate its distal end by distention and flushing until we reached every possible fold in its mucosa. After a stormy first night the patient recovered, married, and bore her first child nine years afterward, and a second child two years after that. The patient and her two daughters are now living and in excellent health.

Surgical Conditions of the Right Side of the Abdomen

DR. W. F. WESTMORELAND, Atlanta, Ga.: The majority of these patients are not immediately cured by operation. The mechanical faults are corrected, but the rapidity of the convalescence depends on intelligent medical care. All of these patients have acidosis, usually of a very high grade, and generally characterized by an acute fall and spring exacerbation. Sodium bicarbonate in sufficient dosage to control the acidosis should be taken. The diet should not be restricted, but well balanced, with plenty of green vegetables and fruit, particularly ripe oranges or orange juice. The patient should have plenty of sunlight and fresh air and light exercise in the open.

Fractures of the Elbow Joint and of the Lower End of the Humerus

DR. EDGAR LORRINGTON GILCREEST, San Francisco: For the treatment of fractures in the vicinity of the elbow joint, with the exception of fracture of the olecranon process, the fully flexed position offers the best results. Often a splint is unnecessary, the forearm being strapped to the upper arm and fixed to the chest with a bandage. The advantages of the flexed elbow positions are: (1) It gives the most complete anatomic reposition of fragments and the best fixation; (2) it favors the retention of the more important flexion function of the joint, and (3) it cooperates with gravity in the subsequent restoration of function.

Mesenteric Thrombosis

DR. JAMES F. MITCHELL, Washington, D. C.: Mesenteric thrombosis is of particular interest because of its gravity, the difficulty of diagnosis, and the poor results of surgical treatment. Pathologically, the occlusion may be either venous or arterial, or both vessels may be involved. Venous occlusion is less dangerous than arterial and is less frequent, occurring in about 40 per cent. of cases. It is due in most instances to a descending thrombosis, or may be in itself a primary affair due to some infectious process in the intestine, most often appendicitis. Arterial occlusion occurring in about 60 per cent. of cases is usually attributed to arteriosclerosis, endocarditis or some infectious process elsewhere. This explanation will answer for those cases in which the catastrophe occurs in the course of or following some infection or surgical condition. There are many instances, however, for which no explanation can be given for the source of the embolus that has caused the obstruction. As a matter of fact, most of the cases which come into the hands of the surgeon are of this type, and this fact possibly offers a partial excuse for the extreme infrequency of a preoperative diagnosis. The superior mesenteric artery is occluded more frequently than the inferior, the usual explanation being that its diameter is nearly three times as great as that of the inferior; that it arises from the aorta at a higher point than the inferior, thus having an earlier opportunity of intercepting an embolus, and that its course is nearly parallel to that of the aorta, while the inferior runs off at an acute angle. The result of the occlusion is usually a hemorrhagic infarct, a pathologic condition that has never been satisfactorily explained, except that while the superior mesenteric artery is not anatomically a terminal or end artery, it nevertheless is so physiologically.

As to treatment, operation at the earliest possible moment with immediate resection of the affected area, with a safe margin of healthy bowel, offers the best chance of recovery. The results are disappointing from a statistical point of view. The mortality in cases in which operation is performed is variously estimated at from 75 to 90 per cent.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Internal Medicine, Chicago

December, 1922, **30**, No. 6

*Pathology of Bronchial Asthma. H. L. Huber and K. K. Koessler, Chicago.—p. 689.
*Intestinal Digestion of Connective Tissue. J. Buckstein, New York.—p. 761.
*Psychologic Tests Applied to Diabetic Patients. W. R. Miles and H. F. Root, Boston.—p. 767.
*Experimental Observations on Localization of Pain Sense in Parietal and Diaphragmatic Peritoneum. J. A. Capps and G. H. Coleman, Chicago.—p. 778.
*Osteitis Deformans in Monkeys. E. P. C. White, Philadelphia.—p. 790.
*Cholera Acidosis and Its Therapy. M. Tsurumi and T. Toyoda, Dairen, Manchuria.—p. 797.
Vitally Stainable Reticulation and Chromatic Granules in Erythrocytes Preserved in Vitro. O. H. P. Pepper, Philadelphia.—p. 801.
*Effect of Atropin on Gastric Function, as Measured by Fractional Analysis. B. C. Lockwood and H. G. Chamberlin, Detroit.—p. 806.
*Anemia of Chronic Nephritis. G. E. Brown and G. M. Roth, Rochester, Minn.—p. 817.

Pathology of Bronchial Asthma.—A pathologic histologic examination of the finer structure of the bronchi was made by Huber and Koessler. The findings suggest a certain parallelism between the clinical picture and the structural changes. The outstanding finding is the evidence that the actual thickness of the walls of bronchi and bronchioli of more than 0.2 mm. outside diameter is increased, as compared with similar structures in nonasthmatic persons. This difference is due to increased thickness of all layers, from the epithelium to the outer fibrocartilaginous layer. Hyperemia and cellular infiltration of the wall and increased activity of the glands lead to swelling and thickening and this can produce, mechanically as well as chemically, irritation of the peripheral nerve endings in the tube, which may indirectly cause bronchospasm. The abundant secretion of the epithelium and the hyperactive glands obstruct, in some instances completely, the already narrowed lumen of the middle sized and small bronchi and the bronchioli. In this way both systems, the exudative and the bronchomuscular, act simultaneously in the production of the stenosis, in some cases one more than the other but always both to some extent. Even in the purely allergic asthma of an infant 16 months old, which at that age already showed definite thickening of the bronchial wall, as compared with a well infant of the same age, the exudation into the bronchi and bronchioli with complete obstruction of some is proof of this combined involvement. These observations make it plain that in man, at least, the allergic reaction of the tissues is not confined alone to the smooth muscle fiber system, but involves also the whole organ system which serves edudative processes, endothelium, epithelium, capillaries and glands. Cases are cited and the literature is reviewed. The paper is well illustrated.

Intestinal Digestion of Connective Tissue.—A method is presented by Buckstein for the study of the digestion of connective tissue, when introduced directly within the lumen of the small intestine of the human being. Connective tissue digestion may occur within the small intestine, and is not dependent entirely on gastrogenic function. The absence or presence of connective tissue in the stool, throws no light on the nature of the gastrogenic function, since the small intestine is definitely involved in its digestion.

Psychologic Tests for Diabetics.—Diabetic patients frequently complain of poor memory and power of attention, but objective proof of this has been lacking. By certain psychologic tests applied in such cases as well as to suitable controls it was found by Miles and Root that diabetic patients with hyperglycemia and glycosuria at the beginning of treatment show a decrement of about 15 per cent. or more in memory and attention tasks. The loss is in amount rather than in quality. With treatment the diabetic improves rapidly in his psychologic status, approaching but not quite reaching normal. In accuracy and quickness of movements five treated diabetics, whose disease was of long duration, were 20 per cent. below normal.

Localization of Pain Sense in Peritoneum.—According to Capps and Coleman, the parietal peritoneum and its underlying serosa, so far as explored—namely, all the anterior median areas and the lateral areas as far as the anterior superior spines—are sensitive to pain from strong pressure of a smooth point or light pressure or lateral movement of a rough point of wire. The pain elicited by stimulation of the parietal peritoneum is localized with considerable accuracy by the patient, the error being less than one inch. The authors' observations confirm the conclusions of Ramstrom and Lennander that the parietal peritoneum is devoid of pressure sense. The peritoneum covering the diaphragm is devoid of pressure sense as applied by light contact or stroking of a beaded wire point. But to strong pressure with a beaded point or light contact with a rough point it is acutely responsive to the sense of pain. The localization of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself. It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion produces pain over a sharply limited point somewhere along the trapezius ridge. These impulses are doubtless carried by afferent fibers of the phrenic nerve to the cervical cord and thence referred to the neck by the sensitized cutaneous nerves of the fourth cervical segment. This pain has not been observed along the course of the phrenic nerve itself.

Osteitis Deformans Stage in Deficiency Disease.—White's study of osteitis deformans in monkeys would seem to suggest that Paget's disease may be just one stage in a deficiency disease. It may be a reparative response: (1) through a disordered neurotrophic mechanism, (2) through the perversion of the calcium governing glands which have been disordered by an improperly balanced diet, or (3) through the addition of an excess of calcium to the diet of an animal whose body fluids were unable, through previous faulty diet or other disorders, to hold it in solution.

Therapy of Cholera Acidosis.—The alkali content of the blood in mild cases of cholera is practically the same as in health. But in the severer, and especially in the very serious cases, a marked decrease of alkali is observed, leading to acidosis. By the injection of alkali, the blood alkali in cholera cases is generally increased temporarily or permanently; that is to say, the number of drops by the stalagmometer (according to Traube's method) increases. The occasional decrease of the number of drops is believed to be due to the increased acid produced in the body and to the great increase of tolerance to alkali in consequence of acidosis in an acute form. The mortality after the injection of sodium bicarbonate-saline in forty-nine cases, observed by Tsurumi and Toyoda, was 28.4 per cent., while the mortality in 480 cases in which no alkali was given, but instead saline, or serum, or both, was 42.7 per cent., a difference in favor of alkaline therapy of 14.3 per cent.

Effect of Atropin on Gastric Function.—Lockwood and Chamberlin found that the effect of atropin on the human stomach is to depress both the secretion and motor action, but is much less than that observed in lower animals. Maximal clinical dosage of atropin depresses both the free and total gastric acidity about 30 per cent. The same dosage lessens motor movements in the human stomach enough to delay the evacuation time after an Ewald meal about ten minutes. Bile is more frequently observed after atropin, probably due to greater relaxation of the pylorus.

Anemia of Chronic Nephritis.—The anemia of uncomplicated chronic nephritis was studied by Brown and Roth from several standpoints. Evidence is presented to show that the anemia of uncomplicated chronic nephritis develops in the absence of blood loss, and this anemia is not due to excessive hemolysis. Evidence is also presented which indicates that the bone marrow suffers damage concomitantly with renal, retinal and cardiac tissues. Chronic nephritis is a constitutional disease; accumulating evidence points to primary vascular injury of widespread distribution, renal,

cardiac and retinal tissues and the bone marrow tissues reveal secondary effects of vascular disease. The unknown agent causing renal insufficiency is probably the etiologic factor in the disturbance of hematopoiesis; in other words, a common cause is present. The anemia of chronic nephritis, if present to the degree indicated, has a prognostic value similar to that of creatinin retention.

Canadian Medical Association Journal, Toronto

December, 1922, **12**, No. 12

*New Attempts to Procure Immunity to Malignant Disease in Man. S. Russ, London.—p. 841.
Recent Advances in Roentgen-Ray Treatment. E. R. Morton.—p. 844.
Thyroid Disease. N. J. MacLean, Winnipeg, Man.—p. 847.
Goiter. R. E. McKechnie, Vancouver, B. C.—p. 854.
Goiter Problem—From the Patients Standpoint. F. N. G. Starr, Toronto, Ont.—p. 858.
Exophthalmic Goiter. J. K. McGregor, Hamilton, Ont.—p. 860.
Comparisons of Clinical and Radiologic Findings in Lung Diagnosis. F. S. Bissell, Minneapolis, Minn.—p. 863.
Diagnosis of Empyema. W. S. Lemon, Rochester, Minn.—p. 867.
Roentgen-Ray Findings in Empyema and Abscess of Lung. L. R. Hess, Hamilton, Ont.—p. 871.
Deficiency Diseases. F. H. Wetmore, Hampton, N. B.—p. 873.
*Surgery of Duodenal Membranes; Results of Treatment. R. P. Cromarty, Brandon, Man.—p. 876.
Treatment of Prostatism. D. W. MacKenzie and M. I. Seng, Montreal, Que.—p. 879.
*Respiratory Complications After 7,000 Administrations of General Anesthetics. D. C. Aikenhead, Winnipeg, Man.—p. 884.
Focal Infection in Tonsils of Adults Suffering from Subacute and Chronic Systemic Disease. R. S. Pentecost, Toronto, Ont.—p. 886.
Throat Conditions in Children. E. Boyd, Toronto, Ont.—p. 891.
Advantages of Gas Inflation in Obstetric and Gynecologic Diagnosis; Importance in Study of Causes of Sterility. R. Peterson, Ann Arbor, Mich.—p. 893.
Case of Chronic Rhinitis Treated by Radium. W. H. B. Aikins, Toronto, Ont.—p. 897.

Procuring Immunity to Malignant Disease.—Russ reports on attempts made in thirty cases to immunize patients suffering from cancer against their own tumor cells. In these cases the disease was at such a stage that complete surgical removal was not considered possible, but it was not so far advanced as to preclude a prospect of life for some months. Of these patients, five were suffering from carcinoma of the breast, diagnosed by microscopic examination. A limited operation was performed, the primary growth only being removed, and the axillary glands left. Then Russ made his injections of tumor tissue. When last seen, these patients were all in good health without evidence of recurrence. In some of the cases the disease had been very advanced. In reviewing these results, Russ says, it much be borne in mind that in almost all the cases the stage of the disease rendered any other form of treatment inadvisable. Briefly, the procedure employed was as follows: The tumor removed at operation is minced and exposed to the roentgen ray—a dose of 2 rads. (The electroscope is standardized with a known quality of radium, and the time required for an effective exposure to the roentgen rays to obtain the equivalent of a "rad," must be determined as the exposure goes on.) The minced tumor is sucked into a long glass syringe fitted with a wide aperture and canula, and equal quantities of this radiated material are injected into two pockets previously made in the abdominal wall. The quantity of material injected has varied from 4 to 15 c.c.; in most cases it is more than 8 c.c.

Surgery of Duodenal Membranes.—During operation performed for the relief of stasis due to bands on the colon, terminal ileum, etc., a condition of membranes on the duodenum has been observed by Cromarty in a large number of cases. The different types of duodenal membranes referred to ranged all the way from sheets closely overlying the duodenum and fixed at the omental and mesocolic attachments, to dense cordlike bars from the liver or colon, spreading out over the duodenum. The latter have frequently caused distinct constriction of the duodenum, while the first always tend to cause longitudinal puckering of the duodenal wall, and consequent interference with its proper muscular function and disturbance of its outline. The results of surgical treatment are gratifying. Cromarty asserts that the importance of removing the duodenal membranes as a part of the work in operation on colon bands cannot be overestimated. Search for the cause of failure of simple appendicectomy or cholecystectomy in chronic cases, especially with so-called reflex pain high up, has stimulated thorough examination and resulted in blame being laid on these membranes in many cases. In order of frequency, the commonest symptoms are: (1) gnawing or cramping pain in the epigastrium, 75 per cent.; (2) tenderness in the epigastrium, 56 per cent.; (3) eructations of gas, 50 per cent.; (4) nausea or vomiting, 42 per cent. In many respects these findings are similar to those in duodenal ulcer. But there is one great point of difference, namely, that the pain in ulcer is very definitely related to ingestion of food, whereas in cases of duodenal membranes, the pain tends to be very persistent, pulling and gnawing in type, and is not influenced for the better by taking food.

Respiratory Complications Following Anesthesia.—There were nineteen cases of respiratory complications following the 7,000 administrations analyzed by Aikenhead, with four deaths, giving a morbidity of 0.27 per cent., and a mortality of 0.05 per cent. Cold months show a higher pulmonary rate than warmer months. In January, February, March and December there were nine cases, while in the eight remaining months, they only totalled ten. Respiratory complications occurred after the following operations: Appendectomies, eight; tonsillectomies, four; one each after the following: operation for harelip, work in antrum, removal of thyroid, and extraction of teeth. Of the nineteen cases, nine were definite cases of lobar pneumonia; four cases of bronchopneumonia; one case of pulmonary infarct; one case of abortive type of pneumonia; four cases of mixed respiratory infection.

Illinois Medical Journal, Oak Park

December, 1922, **42**, No. 6

Peptic Ulcer. J. B. Deaver, Philadelphia.—p. 421.
Management of Maternity. W. D. Chapman, Silvis.—p. 428.
Relation of Nose and Throat to Ear Diseases. G. E. Shambaugh, Chicago.—p. 431.
Christian Science from Medical Standpoint. E. Jacobson, Chicago.—p. 434.
Physician an Important Factor in Public Health Problems in Illinois. C. W. Lillie, East St. Louis.—p. 438.
Paravertebral Anesthesia in Abdominal Surgery. N. H. Lowry, Chicago.—p. 440.
Macroscopic Urine Precipitation Test for Active Tuberculosis. F. A. Causey, Peoria.—p. 443.
*Protozoan Débris as Primary Cause of Malignancy. H. B. Flynn, Chicago.—p. 445.
Indications for Surgical Intervention in Toxic Goiter. C. Langer, Chicago.—p. 448.
Present Status of Goiter Problem. C. T. Hood, Chicago.—p. 449.
Roentgenologic and Clinical Findings in Normal Chest. New York.—p. 451.
Life and Health. C. L. Redfield, Chicago.—p. 457.
Plea for Conservatism in Surgical Treatment of Chronic Infections of Maxillary Sinus. C. B. Welton, Peoria.—p. 460.
*Modern Program for Treatment of Syphilis. E. A. Oliver, Chicago.—p. 464.
*Open Air School as Factor in Preventive Medicine. J. Milligan, Jacksonville.—p. 469.
Make-up of Neurotic. M. Solomon, Chicago.—p. 473.
Revival of Artificial Pneumothorax. E. F. Traut, Oak Park.—p. 475.

Protozoon Débris as Cause of Malignancy.—Flynn speaks of a spirillum-like protozoon which she has secured from cases of carcinoma and sarcoma—several months after operation had been performed when the patient was seemingly enjoying improved health. Seventy-five per cent. of these patients had died at the last checking up. This organism fulfils the three laws of Koch. Flynn has never succeeded in isolating this organism from fibromas except when microscopic examination disclosed a tendency to malignant degeneration and the organisms were then present in the blood stream.

Treatment of Syphilis.—Oliver uses arsphenamin and soluble mercuric chlorid, 1 per cent. in physiologic solution of sodium chlorid, in a dosage of 35 minims twice weekly, or the insoluble mercuric salicylate, 10 per cent. emulsion in liquid petrolatum, in dosage of 10 minims every five days. Arsphenamin has been administered by the gravity method, thus avoiding the painful infiltrations so often obtained by using a syringe. Oliver urges that every case be treated individually, and submitted to frequent medical examination and urine analysis.

Open Air Schools as Preventive Measure.—Milligan states that in 1921 there were more than 3,000 open air schools in the United States. The Chicago open air work has been of such a type that it has been a pattern which others have followed and its results have been uniformly favorable. Medical inspection and the services of a school nurse are as essential as teachers in open air schools. The open window rooms need much less equipment; the windows are hung so that they open into the room from the top of the sash to provide the maximum amount of air and the minimum amount of draft. The usual heat is turned into the room and it is only necessary for the children to wear their ordinary outdoor wraps. As a rule, there is no rest period arranged for and no food is provided. This type of room is admirably adapted to keep well children well. Children are chosen now for open air schools for many more ailments than formerly, though probably there will always be more of those suffering from respiratory diseases than any other one illness. It has been estimated that the number of children who would be benefited by the open air school regimen is from 3 to 5 per cent. of the total school population of a community. The greatest accomplishment of this type of school is that it teaches its pupils a regimen that not only helps them in their present state of physical unfitness but will help to prevent future disability.

Johns Hopkins Hospital Bulletin, Baltimore

December, 1922, **33**, No. 382

Diagnostic and Therapeutic Use of Uveal Pigment in Injuries of Uveal Tract and Sympathetic Ophthalmia. A. C. Woods, Baltimore, and A. Knapp, New York.—p. 419.
*Production of Toxic Substances by Pneumococci. A. M. Chesney and A. B. Hodges, Baltimore.—p. 425.
*Growth of Influenza-like Bacilli on Mediums Containing Only an Autoclave Labile Substance as an Accessory Food Factor. T. M. Rivers, Baltimore.—p. 429.
*New Method of Testing Liver Function with Phenoltetrachlorphthalein. II. S. M. Rosenthal, Baltimore.—p. 432.
*Study of Trichomonas Hominis. M. J. Hogue, Baltimore.—p. 437.
Entero-Urethral Fusion in Fetus, Simulating Fetal Ascites. J. C. Baldwin, Baltimore.—p. 440.
Case of Tubal Pregnancy Probably Caused by a Parovarian Cyst. L. Brady, Baltimore.—p. 442.
Isolation of Nucleic Acid from Tissues. W. Jones and C. Folkoff, Baltimore.—p. 443.
Case of Congenital Osteosclerosis. R. K. Ghormley, Baltimore.—p. 444.

Production of Toxic Substances By Pneumococci.—The relationship of the toxic substances obtained from pneumococci by solution of the bacterial cell or by manipulation of pneumonic exudates to the phenomena of intoxication in pneumonia in man is discussed by Chesney and Hodges. They found that filtrates of actively growing cultures of pneumococci in beef infusion broth, normal human serum and defibrinated normal human blood are not toxic for mice when injected intraperitoneally.

Bacillus Para-Influenzae.—Two influenza-like bacilli are described by Rivers which require the addition of only an autoclave-labile substance as an accessory food factor. *Bacillus para-influenzae* or *Hemophilus para-influenzae* has been suggested as the name for this group of organisms.

Phenoltetrachlorphthalein Test of Liver Function.—Phenoltetrachlorphthalein has been intravenously injected and its behavior in the blood stream has been studied in normal animals, in dogs following chloroform poisoning, phosphorus poisoning, and in dogs after ligation of the common and cystic bile ducts. The concentration reached in the plasma of normal dogs, after 5 mg. per kilogram injections, is strikingly constant. Approximately 10 per cent. is present in two minutes, 8 per cent. in three minutes, and from a large trace to absence in fifteen minutes. The rate of disappearance was found higher in two cats, and more rapid in one rabbit. Variation of the dose has a direct influence on the curve obtained. There is a marked increase in these concentrations, with a greatly prolonged rate of disappearance, after injury to the liver parenchyma; the extent to which this occurs depends on the degree of damage to the liver cells, as evidenced by the condition of the animals, and by necropsy findings. Curves approaching normal are obtained if repair has taken place. Curves have been obtained in jaundice due to mechanical obstruction that differ widely from those found in the jaundice associated with extensive degeneration of the hepatic cells. A simplified method is presented by Rosenthal for quantitative determination of the amount of dye in the plasma. A practical test for its qualitative detection is also described.

Study of Trichomonas Hominis.—Sodium chlorid serum water has proved an excellent medium for the cultivation of *Trichomonas hominis*. When the tubes are covered with paraffin oil the organisms live from thirty-five to sixty-six days without being transferred. Attempts were made by Hogue to infect cats, kittens and rabbits with *Trichomonas hominis* but all attempts failed.

Journal of Laboratory and Clinical Medicine, Chicago

December, 1922, **8**, No. 3

*Interpretation of Blood Sugar Estimations That Are Near Normal. H. J. John, Cleveland.—p. 145.
Blood Flow in Man. M. B. Taylor, Ontario, Canada.—p. 153.
Rapid Preparation of Polychrome Methylene Blue Stains for Frozen Sections of Fresh and Fixed Tissues. B. T. Terry, Nashville, Tenn.—p. 157.
Action of Morphin, Codein and Apomorphin as Shown by Perfusion of Medulla of Terrapin (Pseudomys Troosti). W. J. R. Heinekamp, Chicago.—p. 165.
Chemical Changes of Blood Under Influence of Drugs. II. Morphin. H. V. Atkinson and H. N. Ets, Chicago.—p. 170.
*Pathogenicity of Organisms Commonly Regarded as Saprophytes. E. Kellert, Albany.—p. 176.
*Actinomycosis of Gastro-intestinal Tract: Study of Fourteen Cases. J. C. Brogden, Rochester, Minn.—p. 180.
*Intestinal Antisepsis. Effect of Antiseptics on Type of Experimental Intestinal Toxemia. L. R. Dragstedt, C. A. Dragstedt and O. M. Nisbet, Chicago.—p. 190.
Some Points in Metabolism Usually Neglected by Physician. J. F. McClendon and K. March, Minneapolis.—p. 194.
*Hematometric Differential Counting. A. J. Hinkelman, Oklahoma City.—p. 196.
*Quantitative Flocculation Test for Syphilis. Comparison of 500 Cases with Wassermann Test, Using Simplified Sachs-Georgi Technic. H. M. Feinblatt, Brooklyn.—p. 200.

Interpretation of Nearly Normal Blood Sugar Estimations.—When a case of glycosuria is checked by a blood sugar examination and a value of from 125 to 155 mg. per hundred c.c. is found, John says the natural tendency is to disregard this comparatively low figure and to conclude that the patient is nondiabetic because his blood sugar is so near the normal level. In the six cases presented by him the blood sugar was near the normal in all; hence it is clear that a blood sugar level which is near the normal cannot be regarded as normal unless the conditions under which it was obtained are known (whether the individual is on a diet or has been eating sparingly for a time, etc.), and unless one can demonstrate by a glucose tolerance test that the slight rise is of nondiabetic origin. Borderline cases are the most difficult to diagnose and yet the most interesting and the most important. When it is seen that the borderline case has a diabetic trend, a simple restriction of carbohydrates will carry the subject through life comfortably. Usually the total calories need not be changed. On the other hand, if such a patient is allowed to drift along without dietary supervision, he will reach the stage of diabetes when a marked restriction of proteins and total calories, as well as of carbohydrates, will be necessary. In the first instance the man is kept at his work, producing and providing for his family; but if a waiting course is adopted, the man is apt to become a permanent invalid and an economic burden.

Pathogenicity of Saprophytes.—Kellert asserts that under favorable conditions many micro-organisms classified as saprophytes may induce in man profound lesions and even death. Bacteria classified as nonpathogenic when found in association with acute infectious processes are not necessarily secondary invaders or contaminants.

Actinomycosis of Gastro-Intestinal Tract.—Any mass which occurs in the lower part of the abdomen in the region of the ileocecal juncture, particularly one associated with a persistently discharging sinus, Brogden says, should be regarded with suspicion. Repeated examination of the discharge, pathologic examination of tissue from the mass or from the walls of the sinus, marked loss of weight and strength, pronounced anemia, flexion of the thigh without disease of the vertebral column or hip joint, and marked constipation rarely fail to establish the correct diagnosis of actinomycosis of the intestinal tract. Fourteen cases of the

disease have occurred in the Mayo Clinic in the last four years. The acute form is more common; it usually begins as a typical attack of acute appendicitis. The chronic form is insidious in onset, with very slight indefinite pain in the lower abdomen. There may be practically no pain, the mass being the first sign of the disease. Diarrhea is not a constant symptom of the disease. Constipation was the rule in the fourteen cases. The ileocecal coil is most often affected; the stomach and upper small intestine are practically immune. Carious teeth, diseased tonsils, bad hygienic surroundings, overcrowding, or anything that lessens body resistance, are predisposing factors. It is doubtful whether the disease is transmitted from cattle to man. In three of the fourteen cases there was a definite history of exposure to lumpy jaw in cattle. Early operation and excision of the diseased area before the infection spreads to the surrounding tissues, frequent roentgen ray and radium treatments over the abdomen, and large doses of potassium iodid by mouth and sodium iodid intravenously offer the best hope of cure. In the later stages, after extension of the disease to the adjacent organs and sinus formation, radical surgical measures are of no avail. Some patients apparently are cured under treatment with radium, roentgen ray and the iodids; others improve wonderfully only to recur in from two to four years. Death usually occurs from cachexia and extension of the disease to the liver and thorax. The average mortality is from 50 to 70 per cent.

Intestinal Antisepsis.—The experimental work reported by the Dragstedts and Nisbet shows that direct application of antiseptic solutions to short segments of the intestine in animals does not effect sterilization or inhibit the production of intestinal poisons.

Hematometric Differential Counting. — Hinkelman has modified part A of Zollikofer's fluid as follows: yellow eosin, soluble in water, 0.5 gm.; liquor formaldehydi, concentrated, 0.5 c.c.; phenol, 95 per cent., 0.5 c.c.; distilled water, 100 c.c. This fluid causes a complete hemolysis of the red cells, swells the white cells to an extent considerably beyond their natural size and stains differentially.

Comparison of Wassermann and Sachs-Georgi Tests.—Five hundred parallel Sachs-Georgi and Wassermann examinations made by Feinblatt showed an agreement of 93.8 per cent. Of the thirty-one conflicting cases, sixteen were positive to the Sachs-Georgi test and fifteen to the Wassermann test. Of the sixteen patients who reacted positively to the Sachs-Georgi test but negatively to the Wassermann test, fifteen presented definite clinical evidence of syphilis. Of the fifteen patients who reacted positively to the Wassermann test but negatively to the Sachs-Georgi test, eleven presented definite clinical evidence of syphilis.

Minnesota Medicine, St. Paul

December, 1922, 5, No. 12

Need of Psychopathic Hospital at University of Minnesota. A. S. Hamilton, Minneapolis.—p. 683.
*Surgery of Acute Conditions of Gallbladder. E. S. Judd and W. P. Herbst, Rochester, Minn.—p. 687.
*Vomiting of Pregnancy and Its Treatment. A. G. Schulze, St. Paul.—p. 692.
Pancreatic Cyst in Left Hypochondrium: Extirpated. H. A. H. Bouman, Minneapolis.—p. 697.
*Surgery in Infantile Paralysis. M. S. Henderson, Rochester, Minn.—p. 706.
*Value of Routine Determination of Bleeding and Coagulation Times on Newly-Born Infants. M. Warwick, St. Paul.—p. 713.
Commoner Types of Ocular Tuberculosis. W. E. Camp, Minneapolis.—p. 719.
Delayed Pedicle Flap in Plastic Surgery of Face and Neck. G. B. New, Rochester, Minn.—p. 721.
*Case of Dissecting Aneurysm of Aorta, with Distinctive Roentgen-Ray Findings. F. J. Hirschboeck and P. G. Boman, Duluth.—p. 724.

Surgery of Acute Gallbladder Lesions.—Judd and Herbst point out that the distinction between acute and chronic empyema of the gallbladder is purely clinical, as the surgical and pathologic pictures do not differ, and the acute and chronic conditions have the same macroscopic picture. The points necessary to a clinical diagnosis of empyema are a history of gallstones, an acute pain, and tenderness and rigidity over the gallbladder, usually with fever. In most cases there was a general history of gallbladder disease with a number of hard colics. In only sixteen of the seventy-seven cases reviewed was there a history of jaundice; and in twenty-four of the same number, of fever. The associated conditions found at operation were appendicitis, thirty-five cases; pancreatitis, twenty-seven; common duct stones, six; duodenal ulcer, one; and stones, seventy-seven. Drainage was used more often than not. Pancreatitis occurred in twenty-seven of seventy-seven cases. The mortality is rather low following operative procedures. Of nineteen acute cases one patient died of bronchopneumonia, and of fifty-eight chronic cases one patient died of pulmonary embolism. The operative procedure in these cases depended on the acuteness of the process, the patient's general condition, and the degree of technical difficulty encountered in removing the gallbladder. The treatment of choice is cholecystectomy, but when contraindicated, cholecystostomy is performed, or in some instances, part of the gallbladder is removed.

Treatment of Vomiting of Pregnancy.—Patients whose vomiting is not sufficiently severe to warrant hospital isolation, Schulze says, may be treated at home by means of a high carbohydrate diet partaken of frequently during the day rather than the usual three meals. Lactose solution may be taken by mouth. Alkaline solutions may be administered with the lactose or alternating with it, but it must be remembered that alkalies, while they overcome the condition of acidosis, do not combat the condition which produces it. The urine should be examined frequently to detect a glycosuria.

Surgery in Infantile Paralysis.—Henderson states that surgery is indicated only in the residual paralysis following poliomyelitis and only about 25 per cent. of such patients can be helped by surgical procedures. As a rule, manipulations precede tenotomies, and manipulations with tenotomies, osteotomies, the last named being resorted to only for correction of skeletal deformities. Arthrodeses are occasionally indicated but should be performed only after a careful consideration of the power left so that the patient may use the fixed point to advantage. Lastly, but by no means least, the social status and the habits of the patient must be considered. Plastic operations on tendons are useful, but are applicable in only a small percentage of cases. A weak muscle must not be expected to do the work of a stronger muscle, particularly when it is placed in a new position and is usually at a mechanical disadvantage. Astragalectomy is the operation of choice for calcaneovalgus and in certain other conditions, but should always be accompanied by a posterior displacement of the foot.

Value of Determination of Bleeding and Coagulation Time on New-Born Infants.—Warwick would determine the bleeding and coagulation times, as a routine measure, for every new-born infant on the third, fifth and ninth days. After instituting these tests as a routine measure, of 250 infants, thirteen, or 5.2 per cent., showed a prolongation of the bleeding or coagulation time, or both. Of the 250, only two, or 0.8 per cent., developed symptoms, and one, or 0.4 per cent., died. Of the thirteen showing a prolongation of the bleeding or coagulation time, in whom early treatment was instituted, two, or 15 per cent., developed symptoms and only one, or 7.7 per cent., died. Three, or 23 per cent., showed congenital syphilis.

Roentgen-Ray Diagnosis of Dissecting Aneurysm of Aorta.—In this case, Hirschboeck and Boman found a shadow to the left of the heart, which was radiolucent and not of a uniform density, extending from a point corresponding to the top of the arch of the aorta to the left, outward and downward, nearly to the periphery, forming an obtuse angle, and then turning directly downward toward the diaphragm, where its further course could not be traced on account of its fusion with the denser subdiaphragmatic structures. The unusual radiolucence, with the aortic shadow obviously extending down along the inner portion of this shadow, and the visualization of the hilus markings through it, were considered unusual, and various diagnoses were considered, but the final decision was dissecting aneurysm which had undergone recanalization, at times free of blood, which would permit of this curious radiolucent appearance. This diagnosis was confirmed at the necropsy.

Porto Rico Medical Association Bulletin, San Juan

October, 1922, **16**, No. 139

Microchemistry of Blood. R. del Valle Sárraga.—p. 179.
Child Survey. A. Fernós Isern.—p. 199.
*Dermatomycoses. A. L. Carrión.—p. 204.
Recent Discoveries Affecting Control of Hookworm Disease. R. B. Hill. —p. 210.
Case of Mesenteric Thrombosis. M. Diaz García.—p. 215.
*Progress of a Medical Discovery. A. M. A.—p. 218.

Dermatomycoses.—A special feature of the skin affections due to parasites of vegetable origin observed by Carrión in Porto Rico is the extreme extent and number of the areas affected. Intense pruritus is another feature. He describes three cases. The prompt cure under proper treatment confirmed the diagnosis in one case in which the affection had persisted for a year under various treatments applied on a mistaken diagnosis. In one man, aged 43, the eruption had persisted for fifteen months, the diagnosis wavering between syphilis, uric acidemia, herpes and other skin affections. In the third case, a woman, aged 48, the dermatomycosis was limited to the face. It had persisted for seven years, but promptly subsided under proper treatment when the microscope revealed the mycelium.

Progress of a Remedy.—The enthusiasm with which the profession hails certain forms of progress is generally detrimental to the profession in the long run. It is curious to see how a certain program of five stages is invariably followed by each new remedy: the nascent stage, the stage of attention, the stage when the remedy is regarded as infallible, the stage when it is discredited, and finally, the fifth and last stage, the stage of sedimentation, when wise and ripe judgment of experts has finally settled the exact place to which the remedy or the discovery is entitled. . . . Arsphenamin is now in the sedimentation stage, but organotherapy and endocrinology are far from having reached this stage. Vitamins are now passing through the stage of discredit. The conception of focal infection is in transition between the panacea and the discredit stages.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Dec. 16, 1922, **2**, No. 3233

Etiology of Optic Nerve Atrophy. C. O. Hawthorne.—p. 1153.
Id. II. J. H. Pringle.—p. 1156.
Id. III. H. M. Traquair.—p. 1157.
*Bovine Actinomycosis; Pathogenesis and Treatment by Vaccines. W. M. Scott.—p. 1163.
*Healing of Gastric Ulcer. M. J. Stewart.—p. 1164.
Intravitam Staining: Application to Pathologic Investigation. D. F. Cappell.—p. 1166.
*Primary Chronic Interstitial Nephritis and Arteriosclerotic Kidney. J. S. Dunn.—p. 1166.
Relation Between Oxyuris Vermicularis, Appendicitis and Local Eosinophilia of Appendix Wall. E. H. Eastwood.—p. 1170.
Cholesterol Content of Blood in Anemia and Its Relation to Splenic Function. W. MacAdam and C. Shiskin.—p. 1170.
Degenerative Diseases of Liver. F. B. Carter.—p. 1171.
Hysterical Simulation of Fracture. H. C. Woodhouse and F. C. Jones. —p. 1171.

Vaccine Therapy in Actinomycosis.—Scott asserts that vaccine therapy is a valuable adjuvant in the therapeutics of actinomycosis, virulent antigens giving by far the best and most uniform responses.

Method of Healing of Gastric Ulcer.—Stewart has been carefully examining in the postmortem room, the stomach and duodenum for evidence of scarring, while noting at the same time the incidence of ulceration in these viscera. Statistics are given to show that, in the postmortem room, scarring is met with almost as frequently as gastric ulceration, while duodenal scars occur with about half the frequency of duodenal ulcers. This difference may be accounted for partly by the greater liability of duodenal ulcers to perforate. Single and multiple gastric scars are met with in the ratio of 4 to 1, which is exactly the same as the ratio of chronic to acute ulcers. It is suggested from this that acute and chronic ulcers have an equally good chance of healing. Hour-glass contraction of the stomach is met with in about 6.5 per cent. of all cases of completely healed gastric ulcer—that is to say, in about 8 per cent. of cases of healed chronic ulcer. The incidence of pyloric stenosis is little more than half this. There is no evidence that carcinoma arises in connection with gastric scars, whereas in a series of ninety-eight stomach specimens received from the operating room and submitted to microscopic examination the incidence of carcinoma in cases of simple chronic ulcer was 11.5 per cent. Gastric scars are not always conspicuous, and must be looked for carefully after gently wiping away adherent mucus or food materials. Conclusive histologic evidence of scarring is afforded by the presence of fibrosis of the muscular coat. Only ulcers which have definitely involved the muscular coat leave a permanent scar, and one which can unmistakably be recognized both by naked eye inspection and by microscopic examination. The most striking scars are, of course, those of ulcers which have completely perforated the muscular coat. When an ulcer heals, the continuity of the mucosa is completely restored, but it is usually thinner than normal, and less well supplied with glands. There is no evidence as to whether or not a gastric or duodenal scar readily reulcerates, although it is, perhaps, a legitimate assumption that the thinner mucosa, together with the less vascular fibrous tissue underneath, will be more vulnerable than the normal mucous membrane. It is possible, on the other hand, that certain ulcer producing factors may have disappeared as a result of this cicatrization, and there is evidence to show that the well known recurrent character of the lesion may be dependent rather on the formation of a new ulcer or ulcers than on a breaking down of the old.

Arteriosclerotic Kidney and Chronic Interstitial Nephritis.—The evidence submitted by Dunn is regarded as showing that while arteriolar sclerosis and narrowing is a frequent cause of shrinkage of the renal cortex, it does not by itself produce a condition which is likely to be mistaken for chronic nephritis, either macroscopically or microscopically. Further, it is doubtful if the loss of renal substance occasioned in this way is ever sufficient to cause uremia; death almost invariably results from cerebral hemorrhage. On the other hand, the condition which has been referred to as "primary chronic interstitial nephritis," or renal cirrhosis, which is regarded by some authors as the maximal development of arteriosclerotic atrophy of the kidney, is quite a distinct condition; it is often characterized clinically by a tendency to failure of renal function in its later stages, and pathologically it is distinguishable by the greater degree of derangement of the renal architecture. There is a greater, often a severe, fibrosis of the cortex; the amount of renal substance lost is greater, necessitating hypertrophy of that which remains; there is usually, if not always, evidence of old glomerulitis in the tufts which remain recognizable, and it is suggested that the total destruction and disappearance of many tufts is also due to an earlier inflammatory process.

China Medical Journal, Shanghai

November, 1922, **36**, No. 6

*Experimental Tetany. E. W. H. Cruickshank.—p. 445.
Submucous Resection of Nasal Septum. H. P. Nottage.—p. 469.
Spread, Probable Mode of Infection and Prophylaxis of Leprosy. L. Rogers.—p. 474.
Vitamins: Review. W. H. Adolph.—p. 487.

Experimental Tetany.—The calcium content of 100 c.c. of normal blood amounts to the following average figures: total, 9.12 mg.; plasma, 8.11 mg., and cells, 1.01 mg. In tetany, Cruickshank shows, that these drop to the average figures: whole blood, 5.7 mg.; plasma, 5.26 mg., and cells, 0.46 mg. These figures show a loss of calcium amounting to 37.2 per cent. for whole blood; to 54.4 per cent. for cells, and to 35.2 per cent. for the plasma. Diffusible calcium in normal serum averages from 60 to 70 per cent. while in severe parathyroid tetany it amounts to 94 per cent. of the total calcium. While there is an immediate state of alkalosis following parathyroidectomy, this condition is not necessarily marked, and with the development of the signs of severe tetany it passes rapidly into a condition of acidosis as shown by a steadily falling p_H of the blood. The immediate relief of the condition consequent on the withdrawal of from 70 to 100 c.c. of blood is indicative of a toxic causative factor. The calcium deficiency and the great loss of colloidal calcium are merely indicative of a rapid protein disintegration.

Journal of State Medicine, London

December, 1922, **30**, No. 12

Arsenobenzol in Treatment of Syphilis. C. H. Mills.—p. 507.

Lancet, London

Dec. 16, 1922, **2**, No. 5181

*Menorrhagia in Young Girls. S. Gray.—p. 1261.
Therapeutic Action of Bayer "205" in Nine Cases of Human Trypanosomiasis. G. C. Low and P. Manson-Bahr.—p. 1265.
*Quinidin in Auricular Disease. J. Parkinson and J. W. McK. Nicholl. —p. 1267.
Medicolegal Importance of Blood Groups. S. C. Dyke.—p. 1271.
*Two Cases of Symptomless Perforation of Esophagus. Revealed by Sequels in Lungs. T. A. Brown.—p. 1272.
Use of Thoracoscope in Cases of Artificial Pneumothorax. S. V. Pearson.—p. 1273.
*Case of Rapid and Fatal Absorption of Phenol Through the Skin. W. R. M. Turtle and T. Dolan.—p. 1273.

Menorrhagia in Young Girls.—Inasmuch as an immense majority of cases of excessive menstruation are unassociated with palpable or obvious structural change, Gray would emphasize that menorrhagia is the one condition which does not demand immediate pelvic examination, even in young girls. Unless the symptoms of hemorrhage were absolutely urgent, examination should be postponed until after trial of medical treatment. In most cases the examination will not be needed and the girl will escape the discomfort of an anesthetic. In Gray's opinion the greatest defects in the upbringing of adolescent girls are in providing for them insufficient sleep and almost no real leisure. In the high school and secondary type of school—more especially in the latter—the girls are too hard driven on the working days, the games being almost as much a matter of "drive" as the lessons. Excessive homework is often either permitted or connived at. Parents should be taught that the whole organization of the life of their daughters ought to run more quietly. Not by three days in bed every month, but by an hour or two longer in bed every night; and not by a too strenuous term succeeded by a too strenuous vacation, but by a steady and well regulated interchange of work and play they will best promote the health of their girls—of work that is well within the compass of the girls.

Quinidin in Auricular Disease.—Parkinson and Nicholl observed the action of quinidin in thirty-five cases, comprising six cases of paroxysmal tachycardia, five of paroxysmal auricular fibrillation, five of auricular flutter, and nineteen of auricular fibrillation. Quinidin sulphate was used and was given as a powder in gelatin capsules, each containing 5 grains. Preliminary doses of 5 and 10 grains were given on the first and second day of treatment, respectively, lest there should be any idiosyncrasy toward the drug. It was then increased to 15, 20, 30 and 40 grains daily until the change in rhythm (if any) occurred. The daily amount was given in divided doses. None was given by night. The smallest amount of the drug which effected the change into normal rhythm was 15 grains, 5 grains given on the first day and 10 grains on the second day. As much as 11 drams was given in twenty-five days to one patient, yet no change in rhythm resulted, though the dose reached 50 grains daily on four successive days. In three intractable cases 50 grains was given daily for a short period, but in none was the treatment successful. When normal rhythm was restored, the dose was gradually reduced until 5 grains was taken twice or thrice daily. In some of the paroxysmal cases, in which prolonged administration was requisite, the average dose was 5 grains, three times daily. The conclusions reached are: In paroxysmal auricular fibrillation quinidin is indicated, for in some cases it either inhibits the attacks or reduces their incidence; and no other drug, not even digitalis, will do this. In paroxysmal tachycardia quinidin proves to have little or no effect. In auricular flutter it is likely to prove valuable, for it sometimes restores normal rhythm directly, and if not, may succeed after digitalis alone has converted flutter to fibrillation but not to normal rhythm. In a small proportion of cases with established auricular fibrillation, quinidin restores normal rhythm, which continues with clinical benefit. In most cases it is unsuccessful in that normal rhythm is not restored, or if restored is not maintained, or restoration is unattended by clinical improvement.

Symptomless Perforation of Esophagus.—In the case cited by Brown the assumption is that a fish bone or similar object caused perforation of the esophagus and pleura, and opened up the way for the entry into the lung of septic organisms. Hemoptysis directed attention to the lung condition. Roentgen-ray examination revealed no foreign body; it showed an irregular opacity of the lower two thirds of the right lung, and suggested the presence of a cavity near its base. The patient gradually got weaker and the right side of the chest scarcely moved with respiration. Death ensued. At the necropsy, the right side of the chest was found full of dark brown, foul smelling fluid, containing fragments of disintegrated lung. Only the lower part of the lung was left, and this was almost completely gangrenous, the few areas not so affected being solid and gelatinous in appearance. It was impossible to say what had become of the pleura because the lung was so completely destroyed. There were no adhesions whatever, and no enlarged glands could be found. A small sinus, just large enough to admit a probe, led from the right side of the esophagus, at its lower end, into the gangrenous mass in the right pleural cavity. No foreign body could be found anywhere. The liver and myocardium showed cloudy swelling. A second case illustrates the possibility of morbid changes in the lungs leading to a fatal issue some years after perforation of the esophagus, probably caused by a foreign body, and furnishing no symptoms at the time.

Fatal Absorption of Phenol Through Skin.—Dolan cites the case of a man who unknowingly broke a bottle of phenol in his pocket and within an hour died from poisoning resulting from the absorption of the phenol by the skin.

Medical Journal of Australia, Sydney

Nov. 4, 1922, **2**, No. 19

Restoration of Round Ligaments in Retroversion of Uterus. A. J. Nyulasy.—p. 517.
Streptococcus: Biggest Menace to Mankind. S. Pern.—p. 518.
*Patent Foramen Ovale. C. Joyce.—p. 529.
Normal Gastric Cycle. F. L. Apperly.—p. 523.
*Myxedematous Dyspituitarism. J. P. Hastings.—p. 526.

Myxedematous Dyspituitarism.—Hastings makes use of this term in describing a case which followed a thyroidectomy done in 1915. This induced a synergetic action on the part of the pituitary body which was definitely enlarged. For a year or two following the thyroidectomy, the synergetic action of the pituitary body prevented the development of the myxedematous symptoms. Then the hyperpituitarism was followed by hypofunction and thus produced a clinical phenomenon which is best described as myxedematous dyspituitarism.

Patent Foramen Ovale.—Two cases of patent foramen ovale are reported by Joyce. The patients occupied the same ward simultaneously.

Bulletin de l'Académie de Médecine, Paris

Nov. 21, 1922, **88**, No. 38

*Tuberculosis and Pregnancy. Pinard.—p. 259.
*Carbohydrates and Diet in Diabetes. Desgrez et al.—p. 276.
*Neuroparalytic Keratitis. F. Lagrange.—p. 288.
*Artificial Pneumothorax in Pulmonary Gangrene. P. Emile-Weil.—p. 297.

Tuberculosis and Pregnancy.—Pinard is extremely opposed to Bar's recent paper on therapeutic abortion in tuberculous mothers. He did not see any bad influence of gestation in tuberculous cows. He saw many pregnant women die of tuberculosis, as he has seen other patients dying from it also. He saw healthy children born from mothers dying of tuberculosis, and contents himself by treating the tuberculous woman and separating the child from her after delivery. He asks physicians to follow him to conserve the traditions and the good name of French medicine.

Carbohydrates and Diet in Diabetes.—Desgrez, Bierry and Rathery maintain their conviction that levulose may be much better tolerated than glucose. It has an antiketogenic effect. They find that there is no essential difference between diabetic acidosis and the acidosis of healthy people deprived of carbohydrates. The authors admit that the same diet may cause a different ketogenesis, and attribute this partly to the endogenous supply of glycogen, partly to individual differences in

the capacity of balancing between the ketogenic and antiketogenic substances. The diet has to be balanced accordingly. Vitamins should not be forgotten.

Neuroparalytic Keratitis.—Lagrange describes three cases and concludes from his clinical observations that a coincident affection of the trigeminus and of the ophthalmic ganglion is necessary to cause neuroparalytic keratitis.

Artificial Pneumothorax in Pulmonary Gangrene.—Emile-Weil reviews successful and unsuccessful cases of this operation. No pneumothorax should be tried in cases with purulent complications in the pleura or pericardium. Bilateral lesions are an absolute contraindication. The most favorable localization of the resulting cavity is in the parenchyma near the hilus. Once the cavity is formed, the earlier the treatment, the better the results, although Forlanini's successful case had been ill for six years. Specific antigangrene serum, if used in large quantities, proves very useful.

Nov. 28, 1922, **88,** No. 39

Relations Between Tuberculosis and Pregnancy. A. Hergott.—p. 309.
Law on Poisonous Drug Traffic. P. Cazeneuve.—p. 312.
*Pyoculture. P. Delbet and A. Beauvy.—p. 319.

Pyoculture.—Delbet and Beauvy report experiments on animals undertaken to refute an objection by Metchnikoff. The results confirmed the value of the test. Where the micro-organisms did not multiply in pus from the abscess, the animals survived in spite of the virulence of the micro-organisms.

Bulletin Médical, Paris

Nov. 25, 1922, **36,** No. 48

*Syphilis of the Ear. J. Ramadier.—p. 965.
*Paresthesia in Otorhinolaryngology. P. Aubriot.—p. 969.
Clinical Aspect and Treatment of Venous Complications of Otitis. H. P. Chatellier.—p. 971.

Syphilis of the Ear.—Ramadier reviews the possible localizations of syphilis in the ear. The affection of the middle ear is very important in hereditary syphilis. Acquired syphilis prefers the nervous parts. The specific neuritis of the auditory nerve may appear sometimes during a general secondary eruption, or at the end of it, although it may come in the tertiary stage. It starts with attacks of tinnitus, rarely dizziness. After a few days, the hearing is impaired, usually in one ear more than in the other. It is typical, that this neuritis is usually dissociated, affecting either the cochlear, or the vestibular portion of the nerve. In the treatment, the so-called neurorecidives have to be avoided by using mercury at the start and progressively increasing amounts of arsphenamin derivates.

Paresthesia in Otorhinolaryngology.—Aubriot analyzes these phenomena and considers their foundation, which can be either an illusion derived from a minimal anatomic lesion, or an hallucination. In both cases there is no proportion between the stimulus and the psychic reaction. Such a meagre grain can develop so strongly only on an abnormal soil. The patients are usually very eloquent. The most common complaints are the feeling of a foreign body, dryness, phlegm, burning, and constriction. A careful examination is necessary to eliminate organic lesions like the chronic deep tonsillitis, tuberculous and syphilitic lesions near the tubes.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 24, 1922, **46,** No. 33

Comment on "Calcium Chlorid." H. Barbier.—p. 1540.
*Intoxication with Benzene and Benzin. Duvoir.—p. 1541.
*Benzene Anemia. Faure-Beaulieu and Lévy-Bruhl.—p. 1543.
Symmetric Purpura in a Tabetic with Hodgson's Disease. A. Cain and P. Hillemand.—p. 1544.
Severe Simple Cryptogenetic Anemia Cured by Blood Injections. P. Emile-Weil and P. Isch-Wall.—p. 1547.
Intermittent Biliary Fistula. Carnot and Blamoutier.—p. 1553.
Vaccines in Acute Pulmonary Affections. J. Minet.—p. 1557.
*Paroxysmal Hemoglobinuria. Ardin-Delteil et al.—p. 1562.
*Scopolaminomania. E. D. Paulian and Tomovici.—p. 1567.
Instability Due to Lenticular Nucleus. E. D. Paulian.—p. 1568.

Intoxication with Benzene and Benzin.—Duvoir emphasizes the necessity to distinguish between the cyclic compound benzene and the aliphatic benzin, which is ten times less toxic. Besides, it is necessary to make an exact analysis of the poisoning substance, because there are different amounts of impurities in benzenes, which may be very toxic.

The Toxic Agent in Benzene Anemia.—Faure-Beaulieu and Lévy-Bruhl report a case of anemia due to professional contact (inhalation) of benzene of the highest purity.

Paroxysmal Hemoglobinuria.—Delteil, Derrieu and Azoulay tried without success to influence this condition by repeated intravenous injections of 25 to 40 c.c. of the patient's own serum. Antisyphilitic treatment did not change the positive Wassermann reaction, but the patient after this could be exposed to cold without getting the hemoglobinuria.

Scopolamin Addiction.—Paulian and Tomovici report two cases of scopolaminomania, which may be important because the use of this drug against the sequelae of encephalitis is often deemed necessary. There were no other pathologic symptoms except the craving for the drug.

Presse Médicale, Paris

Nov. 22, 1922, **30,** No. 93

Bronchitis and Catarrhs. F. Bezançon and S. I. de Jong.—p. 1005.
*New Kind of Paraplegia. C. Vincent and E. Bernard.—p. 1006.
*Treatment of Pneumococcus Keratitis. G. Pacalin.—p. 1008.

New Kind of Paraplegia.—Vincent and Bernard describe a case of apparent paraplegia due to a contraction of the anterior tibialis, with spasms similar to Parkinson's disease.

Treatment of Ulcerative Pneumococcus Keratitis.—Pacalin recommends an ointment containing 2 per cent. of ethylhydrocuprein and 1 per cent. of methylene blue. Ethylmorphin should not be forgotten, and atropin must be used, even in cases of marginal ulcers. Its only contraindication is increased intra-ocular pressure. Pacalin does not need to employ the thermocautery since he uses ethylhydrocuprein. A 5 per cent. tincture of iodin is sufficient to touch delicately the ulcer. It is good to wait a moment for the evaporation of the alcohol from the cotton before touching the ulcer. Hot compresses should be applied. Injections of milk are useful, if they raise the temperature.

Annali d'Igiene, Rome

October, 1922, **32,** No. 10

*Epidemic of Typhoid Fever. P. Maione.—p. 793.
*Partial Disinfection of Earth. G. Moreali.—p. 804.
*Experimental Infections Through the Teeth. P. Farina.—p. 810.
Recent Literature on Milk.—p. 816.

Epidemic of Typhoid Fever.—Maione describes an epidemic of forty-six cases of typhoid fever in a community of 940 inhabitants. The outbreak was due to contaminated wells, and appropriate measures were effective.

Partial Disinfection of Earth.—Moreali finds that a 5 per cent. solution of phenol has a partial germicidal power, but it does not allow the isolation of the tetanus bacillus if other sporulating microorganisms are present.

Infections Through the Pulp of Teeth.—Farina produced septicemia by introducing the bacilli of chicken cholera into the teeth of rabbits.

Policlinico, Rome

Nov. 1, 1922, **29,** Medical Section No. 11

*Clinical and Pathologic Study of Botulism. S. Pisani.—p. 567.
*Pseudoleukemia and Osteosclerosis. S. Pastore.—p. 595.
*Thermoprecipitation in Plague. M. Pergola.—p. 610.

Clinical and Pathologic Consideration on Botulism.—Pisani gives the pathologic findings in the bulbar and pontine nuclei and anterior cornua of the spinal cord. He emphasizes the importance of lesions of the parasympathetic system: the greatest lesions of cells are at the level where the autonomous fibers arise. Most of the clinical symptoms, like the abolition of lacrimal, salivary, gastric, bronchial and skin secretions, and absence of the oculocardiac reflex, can hardly be explained otherwise than as a lessened influence of the parasympathetic. Pilocarpin acts very favorably. Only one of the three cases described in detail was fatal.

Pseudoleukemia and Osteosclerosis.—Pastore reviews thirteen cases of other authors and one of his own and confirms the fact that diffuse osteosclerosis is connected with different affections of the blood producing organs.

Thermoprecipitation in Plague.—Pergola shows the superiority of thermoprecipitation in the postmortem diagnosis of

pulmonic plague over the other methods, including experiments on animals.

Nov. 15, 1922, **29**, Surgical Section No. 11

Familial Appendicitis. O. Cignozzi.—p. 585.
Ankylosis of Jaws of Syphilitic Origin. A. Malerba.—p. 591.
Gas Cysts in Intestines. G. Matronola.—p. 610.
Syphilitic Tumor of the Kidney. F. Niosi.—p. 621.
*Blocking the Splanchnic Nerves. B. Quarella.—p. 638.

Blocking the Splanchnic Nerves.—Quarella relates that the effect was perfect in all but one of his twelve cases in which he operated in the abdomen under regional splanchnic analgesia. In the one case in which supplementary ether was required, the extensive cancer was on the lesser curvature of the stomach, and adhesions probably interfered with the diffusion of the anesthetic. He confirms the impression that the surgeon feels as if he were operating on a cadaver. There is no contraction, no shrinking away from the knife; the patient breathes tranquilly and the expression is calm. After the operation the color and pulse keep good, the breathing tranquil, expectoration easy. From the literature, only 10 per cent. at most require a little supplementary anesthetic. The contraindications are those for local anesthesia in general, and inflammatory foci in the region of the celiac plexus. The only danger seems to be that the left renal vein might be injured when the needle is pointed too low down, as this vein passes in front of the body of the second lumbar vertebra. He uses a special needle, with a guide.

Nov. 27, 1922, **29**, No. 48

Anatomy and Physiology of the Temporomandibular Joint. P. Dorello.—p. 1557.
*Diagnostic Pneumothorax. C. Vallardi.—p. 1561.
*Transmission of Sheep-Pox to Man. A. Bevilacqua.—p. 1563.
Chenopodium in Italy. E. Cavazzani.—p. 1565.

Diagnostic Pneumothorax.—Vallardi used artificial pneumothorax for a roentgen-ray diagnosis of echinococcus cysts.

Transmission of Sheep-Pox to Man.—Bevilacqua reports two cases of general infection due to contact with sheep affected with ovinia.

Riforma Medica, Naples

Nov. 13, 1922, **38**, No. 46

Transactions of Congress of Internal Medicine.—p. 1081: Main topics: Anaphylactic Asthma; Icterus; Duodenal Ulcer.

Rivista di Clinica Pediatrica, Florence

September, 1922, **20**, No. 9

*Differential Diagnosis of Rubella. P. Brusa.—p. 513.
*Benzoin Reaction in Young Children. G. Squarti.—p. 535.

Differential Diagnosis of Rubella.—Brusa was impressed with the peculiar leukocyte findings during a small epidemic of rubella. The eruption in some cases suggested measles, in others, scarlet fever, but the course was typical of rubella. In all examined—even during the incubation phase—the blood showed leukocytes with an excentric nucleus, having the chromatin arranged like the spokes of a wheel. There may be one or more nucleoli, and the protoplasm is intensely basophil and vacuolated. They are probably derived from the plasma cells. Cells of this description were never found in measles, scarlet fever or infectious erythema. There seems to be some special irritation of the lymphatic system in rubella, and the effect is more pronounced in cases of the lymphatic constitution and in debility from various toxic and infectious influences. The differential blood counts on different days of the disease are tabulated for comparison. These peculiar cells formed 10.33 per cent. of the leukocytes on the second day in one girl of 4 years who had previously had several infectious diseases. The percentage was 9.33 the fourth day in one infant, and 5.33 in several on the third day. The peak seemed to accompany the enlargement of the glands, which is almost constant in this disease, and reaches its maximum at the third to the sixth day of the eruption.

The Benzoin Reaction in Children.—Squarti gives minute directions for the benzoin test of the spinal fluid, and tabulates the reaction in forty-three children with various brain or meningeal affections, especially inherited syphilis. There was no reaction in the normal or in those with simple hydrocephalus, but with inherited syphilitic meningeal disease the response was very often positive with the weaker dilutions. In all other forms of meningitis the response was negative, or occurred only with the stronger dilutions.

Anales de la Facultad de Medicina, Montevideo

August, 1922, **7**, No. 6

*Calculus in Appendix. A. Navarro.—p. 307.
*Achlorhydria. C. Nario.—p. 316.
*Reflex Abdominal Syndromes. C. Stajano.—p. 323.
Case of Paget's Disease of Bones. J. Nin y Silva.—p. 335.
*Slow Pulse from Extrasystoly. H. J. Rosello.—p. 345.
Syphilis without Primary Chancre. J. May.—p. 353.

Calculus in Appendix.—The man's appendix measured 11 cm. and the calculus weighed 1.4 gm. and was composed of pure cholesterol. The cholesterol content of the blood was within normal range.

Achlorhydria.—In the first of Navarro's three cases the diagnosis had wavered between gallstones and a gastric or duodenal ulcer, but under systematic treatment to supply the lacking gastric and pancreatic juices, the symptoms almost entirely subsided. In the second case the symptoms had led to an operation for supposed duodenal spasm from an ulcer, but the findings were negative, and improvement followed medical treatment with digestive juices. The third patient was a man of 40 with a history of stomach disturbances for fifteen years. He had taken treatment for gastric ulcer without more than temporary relief, and cholelithiasis plus pancreatitis seemed the only explanation until discovery of the achlorhydria. This aggravates disturbances from cholelithiasis or pancreatitis, and correction of the stomach chemistry relieves some if not all of the symptoms. Navarro urges study of the chemistry of the stomach before proceeding to any operation in this region, and especially before and after resection of the pylorus, as a basis for analysis of stomach functions.

Reflex Clinical Picture with Intra-Abdominal Hemorrhage.—Rupture of an ovarian pregnancy and rupture of a blood cyst in the ovary caused sudden, stormy symptoms in the three cases described. The peritoneum was flooded with blood in the first case, but there was not much extravasation in the second, and in the third there had been no hemorrhage, but the same syndrome had been induced in all, and suggested rupture of an extra-uterine pregnancy. The only feature common to all had been the sudden distension of the ovary, that is, sudden distension of its sympathetic network of nerves. And this, Stajano asserts, is responsible by reflex action for the sudden and alarming clinical picture. It is not caused by the intra-abdominal hemorrhage, as usually taught, but by the sudden, violent distension of sympathetic nerve fibers. Every major operation entails a predisposition to such reflex action. It may affect the digestive apparatus, the heart, or the brain. The symptoms from this reflex action may increase in intensity together with the hemorrhage which generally accompanies it. It is important to distinguish between the symptoms for which each is responsible. He has seen a large enema of coffee arrest the reflex clinical picture.

Bigeminal Pulse with False Bradycardia.—The pulsus bigeminus in Rosello's case was due to extrasystoles.

Prensa Médica Argentina, Buenos Aires

Sept. 30, 1922, **9**, No. 12

Pathology of Pituitary Region. C. P. Waldorp.—p. 309. Cont'd.
*Polycystic Kidney. J. Palacio.—p. 318.
*Eosinophilia with Hypertrophied Prostate. Legueu and Astraldi.—p. 324.
*Arsenicals in Treatment of Neurasthenia. R. Ortega Belgrano.—p. 326.

Polycystic Kidney.—Palacio's patient was a man of 36 with numerous evidences of dystrophia from inherited syphilis.

Eosinophilia with Abnormal Prostates. — Legueu and Astraldi report eosinophilia of 1, 2, 3, 4 and even 8 per cent. in ten men with complete retention of urine, treated by an operation on the prostate. The range was similarly high—up to 11 per cent.—in thirteen others with adenomatous prostates, not confirmed by operation. The eosinophilia does not seem to have any connection with the composition of the urine or the size of the prostate adenoma. The mere presence of the adenoma is enough. On the other hand, the number of eosinophils was abnormally low in cases of cancer of the prostate. This may aid in the differential diagnosis.

Arsphenamin in Treatment of Neurasthenia.—Ortega Belgrano believes in striking quick and striking hard in treatment of neurasthenia. Nothing is so well adapted for this, he says, as arsphenamin. He has been using it for this purpose for eight years and here reviews his experiences in this line with 18 women and 24 men. He gives by the mouth the day before and the day of the injection 5 drops of epinephrin solution, two or three times during the day. He then gives a minute dose of the arsphenamin, about 0.05 gm. and gradually increases the amount to a maximum of 0.45. The injection is made intramuscularly or subcutaneously: "The intravenous route is too dramatic for the neurasthenic." The total amount injected varied from 3 to 6 gm. Two months afterward he commences a new series of injections. The results were a complete cure in 30; great improvement in 8, and little benefit in 4, although in this last group he extended treatment to include a third series. The patients threw off their fatigue and their anxious worried mood, and became cheerful and visibly rejuvenated in aspect and functioning.

Oct. 30, 1922, **9**, No. 15

Hydramnion with Twin Pregnancy. J. B. Gonzalez and A. Villa.—p. 409.
*Localization of Tender Points. D. Del Valle.—p. 421.
Volvulus of the Ileum from Diverticulitis. D. S. Cúneo.—p. 424.
Vernes' Flocculation Reaction in Syphilis. J. B. Arizabalo.—p. 426.
Bill to Insure Safe Drinking Water in Factories. E. Catalán.—p. 428.

Improved Technic for Localization of Tenderness.—Del Valle emphasizes the extreme precision as to localization of tender points in the abdomen by gently laying the hand flat on the abdomen, and tapping lightly the knuckle of the flexed forefinger, the elastic hammer striking the knuckle at the tip of the angle of the flexed joint. The skin of the abdomen is not pressed in, but the light tap of the hammer jars the tissues in the depths along the axial prolongation of the terminal and middle phalanges of the finger. When the abdominal wall is pressed in with the finger, as in the usual palpation in the search for tender points, the pressed in wall distributes the effect fan-like over the entire subjacent tissues. With this light percussion localization of the tender point, he was able to differentiate gallbladder disease in a case of chronic dyspepsia, the symptoms pointing only to the stomach, and in acute appendicitis with puzzling symptoms, adnexitis, etc. A few typical cases are described in which this *algesio-localización-percutoria,* as he calls it, alone gave the needed clue. The article is illustrated.

Revista de la Asoc. Méd. Argentina, Buenos Aires

September, 1922, **35**, No. 215

*Gangrene of Lung. A. Bergman.—p. 445.
Radiology of Paget's Disease. C. Donovan.—p. 458.
*Spirochetal Bronchitis. G. Aráoz Alfaro et al.—p. 461.
*Sporadic Acute Myoclonus. A. Bergman.—p. 476.
*Aneurysm of Femoral Vessels. A. N. Sacco.—p. 485.
Pseudomyxoma of Appendicular Origin. O. F. Mazzini.—p. 492.
Diffuse Lipomatosis in Man of 55. L. Ayerza and I. Hernández.—p. 500.
*Cleavage Between Colon and Omentum. A. Gutiérrez.—p. 505.
*Resection of Duodenal Ulcer. N. Tagliavacche.—p. 515.
*Extreme Gastroptosis. A. Gutiérrez.—p. 517.
The Question of Appointments to Hospital Services.—p. 523, and p. 535.
Epithelioma of Accessory Lacrimal Gland. A. Natale.—p. 545.
Hole in the Macula. E. de la Vega.—p. 548.
Chronic Poliomyelitis. J. A. Esteves.—p. 553.
Pathologic Anatomy in Case of Mongoloid Idiocy. R. Sánchez Elia.—p. 561.
Tumor in Occipital Lobe. J. M. Obarrio.—p. 564.
Rare Case of "Stereotype Movements." F. Morixe.—p. 578.

Gangrene of the Lung.—Bergman discusses the peculiar bacteriologic findings in a case of gangrene following influenza in a man with syphilitic lesions in the lung.

Spirochetal Bronchitis.—In one of four cases described, the spirochetal process had involved the lung, and the severe clinical picture had been that of pulmonary tuberculosis for seven months, with night sweats, loss of 8 kg. in weight, and blood-streaked sputum. The onset had been stormy, with fever, chills and incessant cough. In some of the cases, old alveolar pyorrhea had preceded the bronchitis. Subcutaneous inoculation of sputum in guinea-pigs induced a typical abscess swarming with the Castellani spirochetes and fusiform bacilli. Mixed treatment with mercury and neo-arsphenamin was promptly effectual.

Sporadic Myoclonus.—The man of 32 developed suddenly an acute multiple infectious myoclonus. The onset, he said, was like an electric shock. By the next day he was unable to control his legs. The course of the disease was a little less than three weeks, recovery being apparently complete. No relief was obtained from bromids and chloral or suggestion.

Traumatic Femoral Aneurysm.—When Sacco operated on the arteriovenous aneurysm it was "dead." The case was peculiar further in that the extensive aneurysm had not caused any symptoms, attracting the young man's attention to his leg, for eight months after the trauma. The sac resected was 17 cm. long and 14 cm. wide at its largest point. The whole of that leg had been much larger than its mate, but it subsided to normal circumference in a month or two after the operation.

Cleavage Between Colon and Omentum.—Gutiérrez explains the mechanism and the advantages of detaching the secondary union which interferes with posterior gastro-enterostomy.

Resection of Duodenal Ulcer.—Tagliavacche resected the duodenal ulcer during an operation for removal of the gallbladder, and did not attempt gastro-enterostomy. The cure has been complete during the five years to date.

Gastrectomy for Gastroptosis.—The disturbances from the extreme gastroptosis had been so severe that the man of 28 contemplated suicide. Six months after the almost total gastrectomy, he had gained 12 kg. in weight and had had no return of his previous disturbances.

Revista Española de Medicina y Cirugía, Barcelona

August, 1922, **5**, No. 50

*Malta Fever. A. Salvat Navarro.—p. 433.
*Support for Operations on the Kidney. M. Serés.—p. 440.
*Cerebrospinal Rhinorrhea. G. Roqueta.—p. 442.
Roentgenotherapy for Laryngeal Cancer. A. Battlés.—p. 449.
Formaldehyd in Serodiagnosis of Syphilis. P. González and M. Armangué.—p. 451.
Recent Works on Neurology. J. Vilató.—p. 453.

Malta Fever.—Salvat remarks that the differential diagnosis of Malta fever is very difficult from clinical examination alone. He advises to examine the blood for agglutination and fixation of complement as well as for the micrococcus. It may be necessary to inoculate several plates or slanting tubes; he prefers an agar culture medium with a little sugar, and says that it is best to draw the blood when the fever is at its height. Malta fever meningo-encephalitis is usually recognized only by some casual hint. Duran de Cottes insists on the differential value of the local reaction to intradermal injection of a few drops of an emulsion or autolysate of the killed micro-organisms. Intense hyperemia follows in three or four hours, and may resemble an erysipelatous patch. The ophthalmoreaction is less certain. In dubious cases, inquiry as to prevailing morbidity among goats may give the clue.

Serés' Support for Kidney Operations.—Serés insures the absolute immobility of the patient by having him lie on his side on a broad and high wooden bolster in which a deep, broad transverse groove is hollowed out. The trunk lies in this groove which holds it firm in the region of the kidneys, while the exposed side bulges upward. The arms and legs are free. More than 400 operations on kidneys with this *soporte-fijador* have amply confirmed, he says, its superiority to the usual arrangements for operations in the lumbar region. Illustrations accompany his description.

Cerebrospinal Rhinorrhea.—In one of Roqueta's three cases the woman's intense headaches stopped when the profuse discharge from one side of the nose began. The vomiting and dizziness were also much improved, but all returned with the same intensity when the rhinorrhea was temporarily arrested. They subsided anew when the flow was restored. The woman was syphilitic, and her physician insisted that the rhinorrhea was of nasal origin, from excessive treatment for the syphilis. In the second case there had been hydrocephalus since meningitis in childhood. Whenever the profuse rhinorrhea was arrested, severe cerebral symptoms developed. Both these patients died in a few months or years.

Deutsches Archiv für klinische Medizin, Leipzig

Nov. 2, 1922, **140**, No. 5-6

*Flora of Human Intestines. L. Bogendörfer.—p. 257.
*Sequelae of Epidemic Encephalitis. F. Palitzsch.—p. 271.
*Blood Serum and Quantitative Analysis. G. Leendertz.—p. 279.

*Research on Extrasystoles. B. Kisch.—p. 286.
*Uric Acid in Blood in Nephritis. G. Czoniczer.—p. 289.
*Urobilin. A. Adler.—p. 302.
Polyglandular Syndromes. S. Hirsch.—p. 323.
*Pellagra. A. Lustig.—p. 342.
*Pressure on Veins in Baths. E. Schott.—p. 358.
*Action of Iodids on Blood Viscosity. G. Deusch and B. Frowein.—p. 377.

The Micro-Organisms of the Human Intestine.—Bogendörfer examined the contents of the ileum with Ganter's apparatus. At a distance of from 1 to 2.5 meters from the pylorus, two kinds of diplococci were found in healthy persons. The colon bacillus was never discovered above a point 2.5 meters below the pylorus. Short gram-negative and long gram-positive bacilli and other micro-organisms were cultivated from some subjects, but the number was small. In pathologic cases, especially with anacidity of the stomach, micro-organisms which usually are found only in the colon were discovered in the small intestine. They may be present, however, even with hyperacidity.

Sequelae After Epidemic Encephalitis.—Palitzsch reviews the outcome in forty cases of encephalitis: 22.5 per cent. died; 15 per cent. were incapable of any work; 17.5 per cent. had impaired earning ability; 25 per cent. were able to work in spite of some sequelae, and only 20 per cent. recovered.

Blood Serum and Quantitative Analysis.—Leendertz compared the amount of protein in the serum resulting from clotting of whole blood with that of the serum resulting from clotting of plasma. He found that the serum from whole blood contains less protein. This is due to the migration of salt solution from the corpuscles. The serum is therefore not suitable for very exact quantitative determinations. The usual method of estimating the fibrinogen from the difference between the proteins of plasma and the proteins of serum is misleading if the serum was obtained from the whole blood.

Research on Extrasystoles.—Kisch discusses the mechanism of interpolation of auricular contractions in connection with automatism of the ventricles.

Uric Acid in Blood in Diagnosis and Prognosis of Nephritis.—Czoniczer in thirty-six cases with uric acid content exceeding 3.5 mg. in 100 c.c. of blood, always found more than 50 mg. of nonprotein nitrogen. He believes he is justified in concluding from these thirty-six severe cases that a lower uric acid content excludes nephrogenous nitrogen retention. Amounts exceeding 9 mg. give an extremely bad prognosis. The uric acid in the blood was increased in cases of pseudo-uremia with retention of small amounts of nitrogen. He admits that the method has no value in gout, but gives no directions for excluding this diathesis, which is not an uncommon basis for nephritis.

Urobilin.—Adler examined healthy and sick persons with his quantitative modification of Schlesinger's test. In healthy persons, 20 to 25 mg. of urobilin are excreted in twenty-four hours. Ingestion of proteins increases urobilinuria, as does hunger. A heavy protein meal after hunger yields large amounts. In pathologic cases the amount excreted in the morning is higher, and protein food increases it very strongly. In cirrhosis of the liver and cases of severe hepatitis, 1 gm. of urobilin may be excreted in twenty-four hours. Pneumonia, scarlet fever, typhoid, severe tuberculosis may yield 0.6 gm. In hemolytic icterus 0.3 to 0.4 gm. is excreted and it may be increased by injecting epinephrin. In pernicious anemia between 30 and 50 mg. may be excreted. Urobilinuria is the most sensitive indicator of retention of bile in the blood.

Pellagra.—Lustig reports the results of investigations made by the official Italian commission since 1910. All the theories presented were controlled. They conclude that corn is the responsible factor. Possibly this is effective by reason of the low content of protein and vitamins in the corn diet of the peasants.

Pressure on Veins in Baths.—Schott demonstrates that the mere hydrostatic pressure of the water can increase the venous pressure sufficiently to stimulate the heart. This may be an additional factor in the therapeutic action of baths.

Action of Iodids on Blood Viscosity.—Deusch and Frowein find that inorganic preparations of iodin do not lower the protein content of the serum, as do preparations from the thyroid gland. The viscosity of the blood did not parallel the changes in the protein content.

Deutsche medizinische Wochenschrift, Berlin

Nov. 24, 1922, **48**, No. 47

*Poliomyelitis in Marburg. E. Müller.—p. 1569.
Untoward Effects of Disinfection of Hands with Denatured Alcohol. E. Payr.—p. 1572.
*Periarterial Sympathectomy. F. Brüning.—p. 1572.
*Future of Roentgen Rays. O. Strauss.—p. 1575.
*Permanent Slow Irrigation in Puerperal Fever. A. Wagner.—p. 1577.
Intraperitoneal Infusions. Weverinck.—p. 1577.
*Dilution of Milk in Infant Feeding. J. Levy.—p. 1578.
Venesection in Infants. F. Rohr.—p. 1579.
Freeing Cowpox Lymph from Microbes. A. Groth and K. Arnold.—p. 1580.
Yeast and Yeast Extract and Its Taste. T. Sabalitschka.—p. 1582.
The Uncomplicated Abortion. M. Henkel.—p. 1583.
Examination of the Nose. Finder.—p. 1585.
Birth and Death Rate of Children in East Africa. R. Lurz.—p. 1588. Cont'n.
Distress of Physicians and Compulsory Sickness Insurance. Stier-Somlo.—p. 1588.

Poliomyelitis in Marburg.—Müller discusses chiefly the epidemiologic moments. The disease is transmitted mostly by healthy carriers, who cannot be isolated. The final disinfection of the house is, therefore, rather a sort of psychotherapy than a preventive act.

Periarterial Sympathectomy. — Brüning found that the spasm of arteries reaches sometimes up to the axillary artery from the periphery. Jaboulay-Leriche's operation consists in removing the adventitia of the artery for the length of about 8 cm. This has to be done as high as possible, to avoid anastomoses. It is indicated in all the vasomotor-trophic neuroses which are accompanied by angiospastic conditions, like acroparesthesias, Raynaud's disease, acro-asphyxia, and eventually scleroderma. It is contraindicated in embolic and diabetic gangrene.

Changes and Future of Roentgen-Ray Treatment.—Strauss postulates an investigation of the question, whether we should use as high doses in the postoperative treatment, as for the treatment of the primary tumor.

Permanent Irrigation in Puerperal Fever.—Wagner recommends in puerperal fever permanent irrigation of the diseased part (perineum, vagina or uterus), and attributes the good results simply to the drainage.

Dilution of Milk for Infants.—Levy demonstrates on 195 cases that even in the first three months, a more concentrated (two thirds) milk is better tolerated, than milk which has been diluted to one half.

Klinische Wochenschrift, Berlin

Nov. 25, 1922, **1**, No. 48

*Pathology of Eclampsia. T. Fahr.—p. 2361.
*Clinical Aspect of Eclampsia. T. Heynemann.—p. 2363.
*Ferments in Blood. P. Rona, H. Petow and H. Schreiber.—p. 2366.
*Pneumococci in the Healthy and Sick. A. Seitz.—p. 2367.
*Hypoglycemia After Rectal Infusions of Sugar. Rubino and Varela.—p. 2370.
*Elimination of Spleen. E. Seifert.—p. 2374.
Methods to Stop Bleeding. L. König.—p. 2376.
Potato Flour for Infants. E. Müller.—p. 2378.
*Influence of Drugs on Urethral Glands. A. Perutz.—p. 2381.
*Blood Changes in Cancer. H. A. Dietrich.—p. 2382.
Needle Electrodes in Electrocardiography. H. Sachs.—p. 2383. Reply. W. Straub.—p. 2383.
*Alimentary Hyperglycemia and Glycosuria. C. Traugott.—p. 2384.
*Quinin and Hemoclasis. M. Grossmann.—p. 2385.
Artificial Segmentation of Mammalian Ovum and Its Significance for Extra-Uterine Gravidity. J. Novak and K. Eisinger.—p. 2385.
Traumatic Sarcoma. K. Philippsberg.—p. 2385.
Intermittent Claudication of Aorta and Its Branches. Mendel.—p. 2386.
Otogenous and Rhinogenous Purulent Meningitis. Fleischmann.—p. 2386.
The German Museum of Hygiene. M. Vogel.—p. 2389.

Pathology of Eclampsia.—Fahr recapitulates the pathologic findings in eclampsia and emphasizes especially the changes in the glomeruli described by himself, independently of Löhlein, two years ago. Fahr admits that the changes in kidneys and liver are probably in part due to the spasm of arteries, but believes that there is also a toxic factor and a factor leading to formation of thrombi.

Clinical Aspect of Eclampsia.—Heynemann reviews the theories and emphasizes the spastic changes which can be directly observed in the capillaries of the skin. The non-

protein nitrogen in the blood is usually but little increased. Fifty per cent. of the cases with signs of destruction of red cells (hematin, bilirubin) die. An increased diuresis has a good prognostic significance, but one can be never sure in eclampsia. A forced delivery can hurt the patient. If the attacks occur during delivery, it is necessary to finish it quickly. Forceps may be required. In the first delivery a cervical cesarean section may be necessary. Lumbar puncture sometimes influences the cerebral symptoms favorably, but entails death in other cases. A venipuncture (500 c.c.) is beneficial, and it should be repeated if necessary. Intravenous injections may harm the patient. Eclampsia is extremely rare in cases where a nephritis of pregnancy was correctly treated.

Diagnosis of Disease of Organs from Their Ferments in the Blood Serum.—Rona, Petow and Schreiber utilized Rona and Pavlovic's experience that the lipase which is extracted from the liver, is not changed by quinin, which destroys the lipase of normal serum. They were able to demonstrate by this means that, in cases of mechanical icterus, a quinin-resistant lipase appears in the serum in addition to the normal ferment. A similar ferment originating perhaps in the kidneys may circulate in the blood in cases of kidney disease. Since Rona and Pavlovic found that the lipase from the pancreas is resistant to atoxyl, one can hope to use this method for disease of the pancreas.

Pneumococci in the Surroundings of Healthy and Sick Persons.—Seitz examined the pneumococci and streptococci from the sputum in pneumonia cases and from persons who were in contact with them. Considering the serologic types of pneumococcus, he found distinct relations. He admits that it would be useless to make ordinances against these carriers, but he believes very much in the good results of education of the public on the dangers of transmission.

Hypoglycemia After Rectal Infusions of Sugar.—Rubino and Varela made very slow rectal infusions of small quantities of sugar. The threshold for sugar excretion was lowered. If the infusion was very slow, the sugar level in the blood fell in most cases. If similar symptoms occur after giving glucose by mouth, it is considered by them to be a sign of insufficiency of the liver. Rectal and intravenous injections of sugar, as a rule, cause a decrease in leukocytes and changes in blood concentration which do not parallel the changes in the sugar level of the blood.

Compensatory Phenomena After Loss of Spleen.—Seifert found that the proliferating reticulo-endothelial system of the liver of splenectomized mice is capable of accumulating injected corpuscular elements, although, quantitatively, the function is not so extensive as in Kupffer's cells. The same cell may contain at the same time different substances, and it is impossible to block these cells against subsequent injections.

Innervation and Influence of Drugs on Urethral Glands.—Perutz injected different substances into the urethra, and examined their action on Cowper's and Littré's glands. These glands behave like most others: Pilocarpin and epinephrin stimulate secretion; atropin inhibits the action of pilocarpin, but not of epinephrin. Perutz found it advantageous to inject pilocarpin in the urethra; 20 c.c. of a solution of 0.05 gm. in 200 c.c. of water, kept for from ten to fifteen minutes in the urethra, was usually sufficient. It is rarely necessary to use the double concentration. He finds that it is a good method to prove the presence of gonococci in chronic cases.

Blood Changes in Cancer.—Dietrich found that serum from cancer patients inhibits the hemolysis by sodium taurocholate less than does normal serum.

Alimentary Hyperglycemia and Glycosuria. — Traugott found that diabetes can be excluded if 100 gm. of sugar, taken one hour after ingestion of 20 gm., does not produce hyperglycemia. If it does, this is not a certain proof of the existence of diabetes, because neurotic persons may behave in similar manner.

Quinin and Hemoclasis.—Grossmann finds that intravenous injection of 0.2 gm. of hydrochlorid of quinin causes leukopenia in all cases with liver affections. The differential leukocyte count does not change, and he attributes the phenomenon to a retention of leukocytes in the visceral capillaries.

Medizinische Klinik, Berlin

Nov. 26, 1922, **18**, No. 48

*Vegetative System and Individuality. F. Kraus.—p. 1515.
*Constitutional Paradoxic Pulse. H. Curschmann.—p. 1521.
Cases of Dystonia and Spasm of Muscles of Neck. E. Maliwa.—p. 1522.
*Typhoid Abscess of the Spleen. K. Paschkis.—p. 1523.
*Nasal Breathing and Treatment of the Lungs. G. Wotzilka.—p. 1525.
*Syphilis of Suprarenals. W. H. Crohn.—p. 1526.
Local Mercurial Treatment of Varices. J. Rosner and E. Wohlstein.—p. 1527.
*Regulation of Placental Circulation. W. Schmitt.—p. 1528.
Cysticercus of the Brain as a War Injury. W. Jacobi.—p. 1529.
Diseases of Penis. E. Portner.—p. 1531.
Survey of Syphilis. F. Pinkus.—p. 1533.

Vegetative System and Individuality.—Kraus understands by the vegetative system the surfaces and structures of protoplasma which belong to the colloid electrolytes and the crystalloid electrolytes, buffers, hormones—the "lubricants of the system"—catalyzers, and the regulatory influence of the vegetative nervous system on them. This system is the uniting link between organs and personality. The paper is full of original views, and a discussion of it by Kraus' pupils is given on page 1539 of the same number of the *Medizinische Klinik*.

Constitutional Paradoxic Pulse.—Curschmann agrees with Schmidt that it is a mistake to attribute the paradoxic pulse to an adhesive pericarditis. He believes that it may be due to a compression of the subclavian artery by the presence of a scalenus minimus muscle in persons with a low blood pressure.

Typhoid Abscess of the Spleen.—Paschkis reports a case of subphrenic abscess originating in the spleen in a patient who had suffered from polyarthritis. Typhoid bacilli were found in the abscess. He discusses the possibilities of typhoid arthritis and the pyogenic action of typhoid bacilli.

Nose Breathing and Treatment of the Lungs. — Wotzilka believes that obstruction of the nose predisposes to tuberculosis, because the breathing becomes shallower and the lymphatic current therefore slower. One part of prophylactic treatment of tuberculosis should consist in making the upper respiratory passages free.

Syphilis of Suprarenals.—Crohn's patient presented all the signs of Addison's disease in a 12 year old boy with positive Wassermann reaction. He was cured by specific treatment.

Regulation of the Circulation in the Placenta.—Since no nerves have been found as yet in the vessels of the placenta, it seems evident that their action is regulated directly. Schmitt finds that they dilate when oxygen is lacking and contract if its supply is good.

Münchener medizinische Wochenschrift, Munich

Nov. 10. 1922, **69**, No. 45

Estimation of Disability Due to Sequels of Epidemic Encephalitis. W. Villinger.—p. 1561.
*The Hair of Cancer Patients. H. Schridde.—p. 1565.
*Prevention of Serum Sickness. R. Kraus.—p. 1566.
Köhler's Disease. Sonntag.—p. 1567.
*Treatment of Polycythemia Rubra. K. Gutzeit.—p. 1569.
*Roentgenotherapy in Tuberculosis of the Larynx. L. Rickmann.—p. 1572.
*Treatment of Epiphora. Hensen and Lorey.—p. 1573.
*Metal Guide in Duodenal Tube. S. Bondi and F. Eisler.—p. 1573.
*Infiltrates Due to Arsphenamin. G. Klein.—p. 1574.
Acute Arsphenamin Injuries from the Standpoint of the General Practitioner. G. Fant and Kreibich.—p. 1574.
Further Evidence that Syphilis in the First Stage Can be Completely Cured by a Single Serial Treatment with Neo-Arsphenamin. W. Morath.—p. 1575.
Secondary Suppurations. G. Ledderhose.—p. 1576.

Gray Hair and Cancer Patients.—Schridde does not confirm the old belief that gray hair is rare in persons predisposed to cancer, but found other interesting changes, which he considers so typical, that he was able to make the diagnosis before starting a postmortem. He finds that among the dark, gray or blond hair of the parts exposed to light (scalp, beard, brows, and especially the temporal region) there are always in such cases purely black hairs, void of luster and more rigid than normal hair. On white paper, they look like lines drawn with India ink. They do not occur in red-haired people. Schridde finds that an abnormal pigmentation of the skin was present in all cases of cancer. These changes do not seem to be present in sarcomas.

Prevention of Serum Sickness by Means of Heterologous Antigens.—Antitoxic serum prepared from cattle does not cause the immediate serum sickness, like horse serum, even on reinjection, except in cases where horse serum had been used before. Yet horse serum may be used for the second injection after using beef serum for the first. The disadvantage lies in the lower antitoxic titer of beef serums. Kraus proposes the exclusive use of beef serums for prevention of diphtheria and tetanus, especially in the application of toxin-antitoxin mixtures. Wherever one uses horse serum in curative treatment, one should inject normal beef serum first, to prevent serum sickness.

Treatment of Polycythemia Rubra.—Gutzeit saw transitory remissions after the use of phenylhydrazin and benzene. Venesections are good. Quinin and arsenic are of no use. Irradiation of bones by large doses of roentgen rays gives the best results. The treatment has to be controlled by the changes in the leukocytes and the general state of the patient.

Roentgenotherapy in Tuberculosis of Larynx.—Rickmann reports excellent results in twelve cases of beginning laryngeal tuberculosis. In other cases he combines it with other methods. Four cases were unfavorably influenced. The dose has to be small (irritating, not destroying).

Roentgen Irradiation of Lacrimal Glands. — Hensen and Lorey report favorably on the results of this with improved technic in epiphora.

Sounding of the Duodenum. — Bondi and Eisler use the duodenal tube with a mandrin, which makes it half rigid. One can introduce it under roentgen control in a few seconds into the duodenum.

Injections of Glucose in Infiltrates.—Klein injects in cases of beginning infiltrates after arsphenamin once or twice 20 c.c. of a 50 per cent. solution of glucose intravenously. If possible, he selects the vein which was used for the arsphenamin. It helps in many, though not all cases.

Wiener klinische Wochenschrift, Vienna

Nov. 16, 1922, **35**, No. 46

Left-Handed Children. R. Neurath.—p. 895.
*Wildbolz' Reaction in Tuberculous Meningitis. K. Kundratitz and F. Schenk.—p. 900.
*Sedimentation of Blood in Arthritis. A. Simó.—p. 901.
*Treatment of Abortion. Wagner.—p. 902.
*Treatment of Gonorrheal Epididymitis. E. Radnai.—p. 902.
Comment on Starlingers' Article in No. 42. W. Pewny.—p. 903.
Practical Hygiene of Breeding. S. Weiss.—p. 903.

Wildbolz's Reaction in Tuberculous Meningitis.—Kundratitz and Schenk tested the cerebrospinal fluid in fifteen cases of tuberculous meningitis with Wildbolz's urine concentration method. The results were practically negative, although they employed great care in concentrating the fluid, and injected it not only in the patient, but also in other individuals.

Sedimentation of Blood in Arthritis.—Simó examined the speed of sedimentation of erythrocytes in fifty different cases of arthritis. The speed is increased in tuberculous and rheumatic arthritis, and seems to depend, to a certain extent, on the size and activity of the inflammation. Deforming arthritis does not increase much the speed of sedimentation.

Treatment of Abortion.—Wagner favors active treatment, but it has to be done delicately.

Treatment of Gonorrheal Epididymitis. — Radnai reports two cases which were very favorably influenced by a few intravenous injections of 10 c.c. of a 10 per cent. solution of calcium chlorid.

Nov. 23, 1922, **35**, No. 47

*Acute Hemorrhage from Stomach and Duodenum. H. Finsterer.—p. 913.
*Motor Function of Stomach with Duodenal Ulcer. T. Bársony.—p. 916.
Puerperal Occlusion of the Mesenteric Vessels. Bucura.—p. 918.
Roentgen Diagnosis of Benign Tumors of Stomach. Z. Kalisch.—p. 921.
French Views on Icterus. F. Stöhr.—p. 922.

Surgical Treatment of Acute Hemorrhages from Stomach and Duodenum. — Finsterer found in Vienna among 1,262 necropsies presenting ulcer of stomach or duodenum, 301 perforations and 190 deaths due to hemorrhage from arrosion of an artery. He does not believe that the mortality in operative cases is in reality much higher than in cases treated internally. If one would count only the severest hemorrhages treated internally, and compare them with Finsterer's unusually favorable results (19.6 per cent. mortality in fifty-one operative cases, of which only a part was operated on early), one could consider, according to the author, his results as 5 per cent. superior.

Motility of Stomach Induced from Duodenum. — Bársony finds that it is superfluous to suppose some influence of the pneumogastric nerve in the pathogenesis of increased tonus, peristalsis and local spasms of the stomach in cases of duodenal ulcer. These symptoms can be explained sufficiently by Bayliss and Starling's law: Increased contractions occur only in the segment of the irritation and orally from it. Aborally, there is a loss of tonus. This second part of Bayliss and Starling's law is confirmed in these cases by the atony of the duodenum or its bulbus, distal from the ulcer.

Nov. 30, 1922, **35**, No. 48

*Roentgen Ray Treatment of Peritoneal and Genital Tuberculosis in Women. W. Weibel.—p. 933.
Changing of the Depressive Action of Saccharin on the Heart into an Irritating Action. M. Heitler.—p. 935.
*Chronic Gonorrhea in Women. Matzenauer and H. Weitgasser.—p. 937.
*Indications for Intensive Roentgen Ray Treatment. L. Freund.—p. 939.

Roentgen-Ray Treatment of Peritoneal and Genital Tuberculosis in Women.—Weibel recommends roentgen ray only in the adhesive form of tuberculous peritonitis. He saw better results in genital tuberculosis.

Cupping Glass in Treatment of Chronic Gonorrhea.—Matzenauer and Weitgasser report very favorably on the results of the repeated application of a vacuum glass to the uterine cervix for fifteen or thirty minutes.

Indications for Intensive Roentgen-Ray Treatment. — Freund shows that the warnings given by Holzknecht are practically identical with Freund's views of twenty-five years ago.

Zeitschrift für Krebsforschung, Berlin

Nov. 25, 1922, **19**, No. 4

*The Cure of Cancer. O. Strauss.—p. 185.
Spontaneous Tumors in Wild Rats. M. Beatti.—p. 207.
Tumors of Human Nervous System. M. Beatti.—p. 209.
*Relations Between Cancer and Nerve Substance. C. S. Engel.—p. 215.
External Pendulous Fibromyoma of the Stomach. Kratzeisen.—p. 227.
Plastic Mastitis with Cancer of Stomach. H. Stahr.—p. 231.
*Statistics of Malignant Tumors. H. Petzold.—p. 245.
*Catalase in Blood in Cancer. Zerner.—p. 263.

The Cure of Cancer.—Strauss discusses the problem of curing cancer. We are as yet not able to do much in the way of prevention. Not only a predisposition but also exogenous factors are necessary for the development of cancer. Cancer is not merely a local disease, and, therefore, good results will be obtained only when it is possible to influence the whole organism after local removal of the growth. The roentgen rays act only on the most disperse phase of the tumors. Strauss hopes that a combination of roentgen rays with chemotherapy (iodin, arsenic, silver) after the operation may improve the results.

Relation Between Development of Cancer and Nerve Tissue.—Engel reviews some interesting findings on the importance of nerves for regeneration of the organs of lower animals. Several authors have pointed out that a connection may exist between the nervous system and the development of cancer. Engel emphasizes the fact that the chemical irritants inducing cancer have an affinity for lipoids, and therefore for nerve substance.

Statistics of Malignant Tumors.—Petzold gives a good statistical review of 159 malignant tumors and their metastases found among 1,648 necropsies made in the years 1914-1918 in a hospital (Kiel).

Catalase in Blood in Cancer.—Zerner finds that the lowering of the amount of catalase in the blood in carcinoma is valuable, especially in differential diagnosis from pernicious anemia.

Zentralblatt für Chirurgie, Leipzig

Nov. 18, 1922, **49**, No. 46

Differential Diagnosis of Gastric Ulcer and Cancer. Payr.—p. 1706.
Remarks on "Traumatic Hydronephrosis." A. Troell.—p. 1712.
Pathologic Outward Rotation of Hip-Joint. Loeffler.—p. 1715.
Warning Colors for Poisonous Alkaloids. W. Köhler.—p. 1717.
As to the Priority of Semmelweis or Lister. W. v. Brunn.—p. 1719.

Nov. 25, 1922, **49**, No. 47

*Spondylopathia Leukaemica. E. Melchior.—p. 1737.
Mechanics of Introduction of Gastroscope into Esophagus. Sternberg. —p. 1741.
A Peculiar Case of Contrecoup. S. Lindqvist.—p. 1744.
Ludloff's Operation for Hallux Valgus and Pes Cavus with Hammer Toe. J. Fraenkel.—p. 1745.
Reply to "Hypospadias Operation." A. Fischer.—p. 1748.

Acute Leukemia Simulating Tuberculous Caries of Spine.—Melchior reports in detail a case to show that, in the differential diagnosis of tuberculous spondylitis, acute lymphatic leukemia must be considered. A boy, aged 11, was referred to the hospital with a tentative diagnosis of tuberculosis of the spine. The lumbar spine was contracted and in the lower portion there was a marked localized sensitiveness to pressure and to tapping, together with severe pains. A roentgenogram showed spina bifida at the fifth lumbar vertebra. In spite of the absence of deformity and of pronounced changes in the vertebrae, and because evidence of a different etiology was absent, the diagnosis of tuberculosis of the spine was made and, soon after, ostèoplastic spondylopexy by the Albee method was carried out. The course was at first undisturbed; but fever set in from infection of the incision in the back, and a large amount of seropurulent, exceedingly hemorrhagic fluid was evacuated, from which a hemolytic staphylococcus was cultivated. The implant was eventually expelled. The wound showed no tendency to heal. The patient gradually declined and developed epistaxis, bleeding of the gums, petechiae and pains in the spleen region. This was thought to be due to sepsis, until finally a blood examination showed acute lymphatic leukemia (5,600 white blood cells, 40 per cent. of which were lymphocytes, 3 per cent. neutrophils, 4 per cent. eosinophils, 50 per cent. lymphoblasts, and 3 per cent. myelocytes). The hemorrhagic diathesis (hematemesis) developed further; extreme thrombopenia (up to 2,000) and anemia set in, and the leukocyte count rose to more than 27,000. Death finally ensued after a total five months' course. No trace of tuberculosis was found at necropsy, and the vertebrae were externally intact. The lymphatic infiltration of the marrow had entailed softening of the spongiosa. In a similar case of acute leukemia simulating Pott's disease, published in 1914, the boy aged 5 had had a plaster jacket applied on account of the pains and localized stiffness of the spine. It relieved the pains but the acute leukemia continued its fatal course. The two cases teach the necessity for examining the blood even in surgical affections.

Zentralblatt für Gynäkologie, Leipzig

Nov. 25, 1922, **46**, No. 47

Icterus Neonatorum. G. Linzenmeier.—p. 1873.
*The Hemoclastic Crisis in Pregnancy. G. Kaboth.—p. 1883.
*Treatment of Infectious Processes in Abdomen. Pribram.—p. 1889.
Development of New-Born in Postwar Period. G. Pribram-Rau.—p. 1894.
Rupture of Symphysis Intra Partum. R. Hornung.—p. 1898.
"Effect of Camphor on the Nursing Breast." Temesváry.—p. 1901.

Testing of Liver Functioning in Pregnancy by the Hemoclastic Crisis.—Kaboth tested liver functioning by the Widal method in thirty-two healthy pregnant and in eighteen healthy nonpregnant women. The positive Widal reaction (sudden leukopenia) occurred in 56.2 per cent. of the pregnant and in 16.7 per cent. of the nonpregnant women. In the majority of the cases the figure found after the first twenty minutes showed, in comparison with later values, the greatest difference from the original leukocyte figure. This value was therefore considered chiefly. The original value was generally reached again after two hours. In more than half of the cases, after a few days, a second and, in some cases, a third and fourth examination was made. In 26 per cent. of the cases the results of the later tests were materially different from those of the first. This fact lessens considerably the clinical value of the method.

Treatment of Infectious Processes in the Abdominal Cavity.—Pribram, after thirteen years' experience in surgery and World War service as chief of a surgical unit, holds that the advantages of primary closure of the peritoneal cavity without drainage are exceedingly great. Quite aside from the shortening of the patient's confinement in the hospital and the resulting reduction of postoperative thromboses, the danger of extensive adhesions, which after drainage (especially with strips of gauze) are unavoidable, is very much lessened, though some adhesions may still occur. If we consider how many patients suffer during the balance of their lives from great discomfort, and submit to repeated operations, usually without securing permanent relief, we must realize the importance of restoring immediately the physiologic relationships of the peritoneal cavity.

Japan Medical World, Tokyo

November, 1922, **2**, No. 11

*Artificial Production of Tumors in Viscera. Y. Kazama.—p. 309.
*Phagocytosis of Pus Cells. R. Umemura.—p. 312.
Relation of Immunity with Bacteriolysinfast Tubercular Bacilli. S. Toyoda and E. Yo.—p. 316.
Experimental Infections on Human Body with Ascarides. S. Koino.—p. 317.

Artificial Production of Tumors.—As the result of study of intestinal carcinoma in schistosomiasis japonica, Kazama came to a firm belief that that stimulus can be one of the causes of cancer formation. Based on this belief he has been trying since 1919 to produce tumor formation on the mucous surface of viscera by action of various stimuli. He has succeeded in producing adenomatous cancer in the gallbladder of guinea-pigs. When the surface of the mucous membrane of the stomach, urinary bladder or gallbladder of the rabbit or guinea-pig is mechanically or chemically irritated, or both combined, for a certain period of time, there form polypous, papillous or adenomatous growths or even adenoma or adenocarcinoma at the places where the stimulation was applied the most. Metastases form from the malignant new growth.

Phagocytosis of Pus Cells.—Umemura asserts that the pus cell is living and has phagocytic action. It has movement, and reduces methyl blue. The phagocytic action of pus cells decreases with the time. At 37 C. it disappears or is reduced to a half in six hours. The phagocytic action is reduced to one half at 45 C. or at freezing point; at 15 C. it is only one half or one fifth. The phagocytic rate of pus cells is between 0.1 and 15 per cent. The phagocytic action of pus cells is accentuated in normal serum. Activated pus fluid accentuates the phagocytic action of pus cells, while inactivated pus fluid loses the action. When normal serum is added as complement, the action is recovered. The dilution of pus fluid reduces the phagocytic action.

Hospitalstidende, Copenhagen

Nov. 15, 1922, **65**, No. 46

*Scleroma in the Rhinopharynx. O. Boserup and A. Nyfeldt.—p. 769.

Rhinopharyngeal Scleroma.—Pains in the left ear and deafness were the first symptoms in the young woman. Then a catarrhal nasal affection developed and the nose became obstructed, and *Bacterium rhinoscleromatosis* was cultivated from the nasal secretions. Instead of the traditional excision or cauterization of the lesion, autogenous vaccines and roentgen-ray treatment are being used now. Brunner and Kriebel have reported good results from vaccine therapy, but Metscherski saw no benefit from it in a case of eight years' standing. Rydigier has obtained good results with roentgen exposures but the course has to be from two to six months long. He has patients free from recurrence for five years to date.

Nov. 22, 1922, **65**, No. 47

*Carcinoma in Small Intestine. P. Freudenthal.—p. 785.

Carcinoma in Small Intestine.—In the case reported by Freudenthal the woman of 40 developed suddenly pains in the abdomen and vomiting. The pains began half an hour after eating, with a sensation of oppression in the cardia, increasing to severe pains. They began in the epigastrium, a little to the right of the median line, and spread to the umbilicus and then over the whole abdomen, persisting for up to four hours unless relieved by morphin. Vomiting also gave some relief. There never was any visible blood in vomit or stools. Between the attacks there was no pain or dyspepsia. At the fourth month an operation on the diagnosis of stenosis disclosed the cancer.

Norsk Magazin for Lægevidenskaben, Christiania

November, 1922, **83**, No. 11

*Tuberculosis of Bronchial Glands in Children. A. Brinchmann.—p. 857.
*Congenital Fracture of the Leg. P. Bull.—p. 872.
Principles for Factory Inspection Work. O. Lorange.—p. 878.
*Chronic Stenosis in Lower Duodenum. S. Widerøe.—p. 894.

Diagnosis of Tuberculous Bronchial Glands in Children.—Brinchmann states that in the 180 children he examined, the seven principal physical tests for tuberculosis were not all found positive in any one instance. In some of the children an acute or subacute tuberculous process is probable, but none of these seven tests elicited a positive reaction. He adds that the passing years are increasing skepticism rather than confidence in the instructiveness of roentgen-ray findings in children. Only four points are certain to date: namely, that normal glands and freshly enlarged glands cast no shadow, but cheesy glands and opaque and calcified glands cast a distinct shadow. The shadow of tracheobronchial glands usually falls inside the shadow of vertebrae, and thus escapes detection, and the left hilus glands are masked by the heart shadow. The right hilus glands may be masked by vessels and bronchi absorbing the rays, and dappling the roentgenogram even in normal conditions. The d'Espine sign was positive in 65 per cent. of the 103 children supposed to have tuberculous bronchial glands, and interscapular vesicular breathing was found in 42 per cent. The de la Camp's percussion of the spine was positive in 18 per cent., but the Smith sign—a humming sound heard at the manubrium of the sternum when the head is bent backward—was present in only 13 per cent., and interscapular dulness in only 15 per cent. In 23 of the children both the d'Espine and interscapular vesicular breathing were manifest, and in 11 in this group the roentgen findings were confirmatory. In 8 cases the d'Espine, de la Camp, sternum dulness and bronchial vesicular breathing were associated. Petruschky's spinalgia was found in only 2 of 300 children examined; in one case with and in one without enlarged bronchial glands. In the 41 children with positive roentgen findings indicating bronchial gland disease, 10 had no other signs of it; 28 had a positive d'Espine; 20 had interscapular vesicular breathing, and 17 had both. On the other hand, in 50 negative roentgen cases, in 28 there were one or more signs pointing unmistakably to hilus tuberculosis. His positive findings in all this material are meager, but they show that, taken together, the roentgen and physical signs may transform suspicion into certainty although none alone is conclusive.

Congenital Fracture of the Leg.—In one of Bull's two cases a congenital fibrous osteitis was evidently responsible for the fracture, as also in Frangenheim's case. Characteristic for these congenital fractures is the difficulty in getting the fracture to heal; some local changes must evidently be responsible for this as other fractures in these children seem to heal normally. In one of his cases he finally succeeded in securing consolidation at the age of 14, after several ineffectual operations in early childhood. The bone had probably outgrown the fibrous osteitis in the course of the years. This experience warns not to be hasty in amputating an ununited fracture in a child but give Nature plenty of chance to heal the bone disease first.

Chronic Stenosis of Lower Duodenum.—Widerøe relates that all his five patients in this group were women from 21 to 33 years old. Four had had symptoms for from four to ten years, the other for only a few months. All had been treated on the assumption of a gastric ulcer. The symptoms had been so sudden and severe in one case that perforation had been assumed. In all there had been paroxysms of pain and vomiting, but in some there were no symptoms in the intervals; in the others there was more or less continuous pain. The patients felt best before meals, and disturbances in time followed every meal. There were no characteristic nocturnal attacks, and the character of the food did not seem to have any influence. The patients felt relieved by vomiting, and there was no hematemesis. A course of treatment for ulcer had very little if any effect. A constant tendency to nausea with eructations seems characteristic. The pain was referred to the epigastrium to the right or left of the median line. The pain was of a boring nature, not like colic. The duodenum was not dilated enough to be palpated in these cases. He thinks this stenosis in the lower duodenum occurs more often than supposed, and fails to be correctly diagnosed. Duodenojejunostomy cured all the disturbances in two of his cases. In another case the operation is quite recent, and in the two other cases the intervention was restricted to detaching adhesions and fastening the colon in place. The symptoms were only temporarily relieved, and the condition is now as bad as ever. The milder cases may yield to medical measures, laxatives, reclining after eating, raising the foot of the bed a little at night, abdominal massage, fats, etc. The passage into the duodenum may become more permeable under this treatment and the symptoms subside. If not, the duodenum should be sutured to the jejunum.

Ugeskrift for Læger, Copenhagen

Nov. 2, 1922, **84**, No. 44

*Traumatic Neuroses. A. Wimmer.—p. 1475.
The Fat Soluble A Substance and Rachitis. C. E. Bloch.—p. 1486.

Traumatic Neuroses.—Wimmer explains that the traumatic neurosis is the physical and mental manifestation of an emotional shock. The emotional shock may have been so severe as to induce temporary amnesia, and thus the causal shock may not be remembered. He explains that this *enfant terrible* of accident insurance requires the same impartial analysis of its symptoms and causes as the material consequences of a trauma, and proper treatment as a pathologic condition.

Nov. 9, 1922, **84**, No. 45

*Intravenous Injections of Glucose. S. Jørgensen and T. Plum.—p. 1525.
Bismuth Treatment of Syphilis. H. Müller.—p. 1547.

Intravenous Injections of Glucose.—The tests here reported have apparently established that intravenous injection of 20 gm. of glucose is entirely harmless. The glucose was injected, after a fast, dissolved in 50 c.c. of water. The sugar content of the blood was recorded at the end of three minutes, and again every two or three minutes for fifteen minutes, and then at longer intervals up to three hours. In seventeen nondiabetic individuals, a typical chart reveals a rise of the sugar content from 0.080 to 0.310 at the end of three minutes, a steep drop from this to 0.160 at the end of ten minutes, and to 0.066 at the end of sixty minutes. The sugar content had returned to the original level of 0.08 by the end of the second hour. In the fifteen diabetics, the chart is quite different. The original peak is equally steep, but not above 0.280, and the decline is more gradual. Even by the end of the third hour the sugar level still averages 0.130. The advantage of this method is that only 20 gm. of glucose are required, and the whole test is complete in two hours. If the original sugar level has not been reached by this time, the carbohydrate metabolism is scarcely normal. The findings show among other things that benign glycosuria is most certainly not diabetic. Also that the condition of the kidneys does not seem to have much bearing on the regulation of the sugar in the blood.

Nov. 16, 1922, **84**, No. 46

Tuberculous Mesenteric Glands in Children. H. R. Krogsgaard.—p. 1579.

Nov. 23, 1922, **84**, No. 47

*Wassermann Reaction Late in Syphilis. T. E. H. Thaysen.—p. 1617.
*Pernicious Anemia After Roentgen Treatment. I. Hansen.—p. 1643.

Nov. 30, 1922, **84**, No. 48

Recent Literature on Phenobarbital. J. Riising.—p. 1671.
To Relieve Pain of Anal Fissure. E. Sylvest.—p. 1678.

Wassermann Reaction in Late Syphilis.—Thaysen analyzes the Wassermann findings in 111 cases of tabes, fifty-four men and fifty-seven women, in relation to prognosis. A positive reaction does not seem to have any bearing on the prognosis in the pronounced cases. A negative reaction in the abortive cases seems to indicate a nonprogressive course later. In the total 111 cases, a positive response to the Wassermann test was obtained only in about a third of the cases.

Pernicious Anemia in Exophthalmic Goiter.—The pernicious anemia developed acutely, directly after a course of roentgen treatment. The causal connection seemed unquestionable although preexisting achylia may have afforded a predisposition. The patient was a woman, aged 30, who had been under treatment for hyperthyroidism at intervals during several years.

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THE SIGNIFICANCE OF LYMPHATIC INVOLVEMENT IN INFECTIONS

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A clinician of great experience once made the statement that if he had his choice between an infection disseminated through the blood stream and one spread by the way of the lymphatics, he would choose the former, giving as a reason that when a noxious agent enters the blood, the whole force of the organism acts on it quickly, with the reasonable chance that it will be carried to some portion of the body with sufficient resistance to develop immunity; whereas, if it enters the lymphatics and is not overcome in the lymph nodes, the toxic agent may be permitted to enter the blood stream more or less continually, and will perhaps eventually lead to an incurable infection. This opinion was so greatly at variance with that of the medical profession at large that I speculated on the number and importance of the facts to sustain it. In the light of various experiences, I studied the relation of the lymphatics to the ultimate prognosis in tuberculosis, syphilis and cancer, all introduced from without through the protective mechanism of the body, and two of which, tuberculosis and syphilis, have identifiable foreign causative agents. We must ever remember Cohnheim's original observation that the source of a given infection can be detected if the sentinel lymphatic gland first showing enlargement can be located.

Besredka has confirmed the experimental work of Noetzel on anthrax. Noetzel demonstrated that rabbits and guinea-pigs tolerate large numbers of anthrax bacilli when injected directly into the blood or the peritoneal cavity without contaminating the cutaneous tissues, amounts which would cause a fatal anthrax infection if injected into the skin tissues, which are rich in lymphatics. This shows that there is a definite relation between the site of the infecting organisms and their toxic effect, and discloses an inviting field for research.

Tuberculosis, syphilis and cancer are, directly or indirectly, the great destroyers of human life. The bacillus of tuberculosis has the well-known bacterial resistance to medications, to which it is more resistant than the human organism itself. If a cure is effected, it is through self-engendered immunizing substances. Since the spirochete, like the plasmodium of malaria, the hookworm, and other larger and better known protozoa, is susceptible of being destroyed by specific medication, it would appear fair to group it with the protozoa, in contrast with bacteria, which Vaughan believes lie between the vegetable and animal worlds. We do not know the cause of cancer, and doubt that it is the result of a foreign intruder; but the cancer cell is, to all intents and purposes, as specific an enemy to the human organism as either the bacillus of tuberculosis or the spirochete.

Many of the ablest exponents in the treatment of tuberculosis believe that if the primary tuberculous focus, where the bacilli enter the protective mechanism of the body, become acclimatized and first involve the lymphatic system, can be removed, the secondary processes will thereby be rendered much more amenable to treatment. These investigators evidently believe that the strain of bacilli of tuberculosis becomes more or less specific to the individual, which Rosenow has shown to occur with many types of bacteria. Surgical experience in the removal of localized tuberculous deposits gives some stability to this opinion.

The facts in relation to spirochetal involvement of the lymphatics are less easy to ascertain, but evidence shows that the lymph nodes in a high percentage of cases fail permanently to check the progress of the disease. There is much evidence to the effect that the glands may act as secondary foci in the distribution of spirochetes, while the defense reaction developed by their presence in the lymph nodes is to a considerable extent protective against the action of remedial agents. We know that in the spleen, which is a lymphoid organ, spirochetes are protected against remedial agents under certain conditions, that an arrest in progressive syphilis and remarkable improvement in the coincident anemia follow the removal of the spleen if greatly enlarged, and that in such cases spirochetes are to be found in the spleen.

The central nervous system has no lymphatics. The blood vessels do not come into direct contact with the nerve cells, which are insulated by the neuroglia. While from 80 to 85 per cent. of patients with neurosyphilis will be remarkably improved by treatment, permanent arrest of the disease occurs possibly in not more than 50 per cent. Contrast this percentage with the 90 per cent. of permanent arrest of syphilis of the soft parts in which the blood comes in contact with the involved tissues, carrying with it remedial agents destructive to the spirochete. Earlier diagnosis and treatment, because of visibility of the lesions, undoubtedly play an important part in producing the results.

Rosenow's observations and experiments showing the specificity of organisms in relation to their secondary effects apply in syphilis. Fifteen varieties of spirochetes have been shown experimentally, each of which appears to have individual characteristics, which can be shown in the living animal as well as in the test tube.

It is remarkable that in cancer the secondary process is always a transplant from the original, and reproduces

in its new location the cellular morphology of its origin. From various investigations, particularly those of Sistrunk and Bloodgood, made to determine the ultimate results following operation for carcinoma, it can be said that the curability of cancer, following operation for growths susceptible of local removal, depends more on the glandular involvement than on any one factor. It would be conservative to say that two thirds of all cases of removable cancers in which there is no glandular involvement will remain cured, and death will result in only one third because of subsequent local extension or blood transmission. One may even say that the prospects of cure of cancer, other things being equal, depend more on the lymphatic richness of the part affected than on any other one factor. In from 80 to 85 per cent. of cases of cancer of the body of the uterus, which is poor in lymphatics, hysterectomy results in five-year cures, but in cancer of the cervix, with its rich lymphatic supply, in only 25 per cent. Because of the sparseness of the lymphatics, 50 per cent. of five-year cures follow operations in cases of cancer of the large intestine. Incurability in carcinoma of the colon is more often due to secondaries in the liver from emboli broken off from cancer-infected venous thrombi than from carcinoma of the glands. In carcinoma of the stomach, with its rich supply of lymphatics, there is 25 per cent. curability following radical operation.

The lymphatics are a system of absorbents. Twenty years ago, Charles H. Mayo emphasized the fact that the lymphatics reached the height of their activity in adolescence, and, like the tonsils, the spleen, and other lymphoid structures, slowly retrogress, thus explaining the relative curability, decade by decade, of carcinoma in the aged, as contrasted with the rapid growth of malignant disease in the young.

The toxic agents are commonly distributed in three ways; through the blood, which is exceedingly rapid; through the lymphatics, which is slower, and by local extension from a pathologic lesion.

The blood is the agent which carries life-sustaining substances to the tissues. The walls of the capillaries are normally pervious to oxygen and crystalloid substances soluble in water, such as glucose sugar and the amino-acids, which are diffused through the arterial part of the capillary walls, and waste products of combustion in the tissues are diffused back into the venous part of the capillaries. Diffusion depends largely on pressure. The arterial part of the capillary has greater pressure than the tissues, and the tissues greater pressure than the venous part. The point should be emphasized that normally the blood capillaries pick up only molecular substances or extremely fine subdivisions, soluble in water, below the colloid dimensions. The blood capillaries, except in the gastro-intestinal tract and liver (portal system), are not normally pervious to colloidal substances, but these larger particles are taken up by the endothelial cells which act as phagocytes, and by ameboid movements carry them into the lymphatics. It is true that in pathologic conditions, as shown by Krogh in his studies of the toxic effects of histamin on the blood capillaries, such extreme dilatation may render the capillary wall pervious to larger substances and permit the escape of colloids of the blood plasma into the tissues, with stasis and agglutination of the red cells, a condition of shock in which the animal will, so to speak, bleed to death in its own tissues. Generally, it is the function of the lymphatics as absorbents to pick up material substances insoluble in water, such as bacteria, protozoa and the cancer cell, which are too large to enter the blood capillaries. This absorption is through the agency of phagocytes, which by diapedesis reach the lymphatics. The reactions in the lymph nodes represent the struggle of the gland to detoxicate these pathologic agents. The lymphatic channels lead from one gland to another, but in each gland they break up into lymphatic capillaries varying from a micron to 1 mm., and into endothelium-lined pockets and sinusoids before they are gathered again into the larger lymphatic channels for onward movement. So far as the bacillus of tuberculosis, the spirochete and the cancer cell are concerned, the process is one of involvement of gland after gland, with eventual escape of the pathologic agents into the venous system through the subclavian veins. New leukocytes formed in the lymphatic system may act as carriers of the specific agents.

There are two theories with regard to lymphatic vessels: one, that the lymphatics communicate directly with the tissue spaces, the ancient view as against the second and modern view of MacCallum that the lymphatics represent a closed system lined by a single layer of endothelial cells. There is still discussion, however, as to whether the fluid in the lymphatic channels is tissue fluid, or whether there is a difference, not yet recognized. The lymphatics are thought to originate from the venous system; this theory is apparently confirmed by the excellent work of Sabin, Lewis and others.

It is an interesting and perhaps not wholly unprofitable digression to direct attention to the fact that in invertebrates the blood is white or colorless. In vertebrates, with the exception of the amphioxus, the blood is red, and in mammals, has established characteristics. The first blood of the fetus is white. Is it possible that the lymphatics are the primary system, and the vascular circulation the secondary? Leukemia is a reversion to the most primitive type of blood, and might well be called the cancer of the white cell, just as pernicious anemia has been picturesquely designated the cancer of the red cell.

There are no lymphatics in the liver other than in the portal connective tissue spaces. The star-shaped cells of Kupffer are endothelial cells, with phagocytic properties, lining the blood channels and sinuses of the liver. There is very little evidence to show that Kupffer's cells differ in function from similar phagocytic endothelial cells which line the blood sinuses in the spleen, lymph nodes and other organs.

The voluntary muscles have no lymphatics inside the connective tissue spaces of the muscle sheaths, which accounts for their remarkable resistance to infection.

The lack of lymphatics in the central nervous system is well illustrated by the slow absorption of hemorrhagic exudates, and the latency of abscess of the brain.

There is as yet no direct evidence to show that new lymphatic glands can form. It is equally true that there is no direct evidence to show that they do not form. The main lymphatic trunks usually accompany the blood vessels, and lymph glands interrupt their courses in certain situations. The position of the large lymph glands is obvious, but smaller glands exist and may be numerous, sometimes microscopic in size, and often infiltrated with adipose tissue for which they may be readily mistaken. In the arrest of solid objects they play the same part as the larger glands; Stiles has established their importance in the arrest of cancer

cells. Hyperplasia of these minute glands may lead to the belief that they are new formations. Hemal lymph nodes are believed by Meyer not to be true lymph nodes; they appear normally in certain of the lower animals, but are seldom seen in man, unless perhaps in accessory spleens. The pelvis has few lymphatics, and is relatively immune to infections as contrasted with the under surface of the diaphragm, which has many lymphatics with apertures of such size that microscopic carmin particles have been seen to enter them and pass through into the thoracic glands. Herring and MacNaughton, in a splendid research, conclude that the lymphatics are probably not so numerous as is often believed, and that they are almost always confined to the true connective tissues. They have shown that the lymphatics are concerned with the absorption of solids and material insoluble in water, while the blood capillaries are mainly associated with the absorption of material which is soluble in water. The fact that the lymphatic vessels are supplied with valves which prevent back-flowing and incompetence of these valves, or interruption of the lymph current from various other causes, is important in connection with the etiology of various forms of lymphedema.

The influence of secondary septic infection on the lymphatic manifestations of tuberculosis, syphilis and carcinoma can hardly be overestimated. The tuberculous patient seldom dies from tuberculosis unless the infectious products are confined, producing injurious pressure, as on the brain; death results rather from the associated sepsis. If septic complications of tuberculous processes exist which are removable, the prospect of cure or improvement is greatly enhanced. It is very important that all foci of infection in the tonsils, teeth, and so forth, be eradicated in the tuberculous patient. Growing experience in the treatment of tuberculosis teaches that the glandular manifestations of tuberculosis may be and often are successfully combated spontaneously by encapsulation of the bacilli of tuberculosis and their destruction within the lymph nodes. It is largely a question of individual resistance. A high percentage of general postmortems reveal tuberculous lymphatic glands, many of which have been successful in sterilizing the contained bacilli.

In syphilis the prospect of successful lymphatic defense is not good, and some spirochetes escape from the lymphatic glands into the circulation. Undoubtedly more or less individual immunity to syphilis exists, but permanent arrest of syphilis depends largely on specific medication, such as arsphenamin and mercury, rather than on spontaneously produced immunization. The removal of foci of infection or septic complications of syphilitic infection has been shown to have a great influence in aiding the arrest of the disease by appropriate treatment.

In cancer, the prospect of successful glandular defense against the extension of the disease is exceedingly small. There is reason to believe that a certain immunity to cancer does exist in individual cases. On several occasions I have been unable satisfactorily to remove the entire growth, and yet the patient made a recovery lasting for three or more years. The records of certain necropsy findings after deaths from operation have shown interesting data, especially with regard to the lungs. Areas of carcinoma too small to be shown in the roentgenogram were represented by little nodes of fibrous tissue containing a few cancer cells; other little areas in the vicinity were quite similar in appearance, but contained no cancer cells in the cicatricial mass. While this would by no means prove that the defense as a whole is successful, it does show that a mechanism of defense exists, and that roentgen ray and radium in addition to sterilization of the cell nuclei act in much the same way, developing masses of scar tissue which cut off the blood supply and obliterate the contained cells. The cancer cell left to itself eventually destroys its host, unlike the bacillus of tuberculosis and the spirochete, which can live only on the living; hence invariable destruction of their hosts would mean eventual extinction of the infecting organisms.

Clinical and pathologic experience teaches that cancerous involvement of glands means incurability of the disease in a large majority of cases. It is true that glandular defense may be efficient for a prolonged period, but ultimate cure is confined to only a small group of cases when the lymphatics are involved in the cancerous process.

Investigation of the results following operations on patients who had come to the clinic with cancer of the rectum with involvement of the glands showed that in Group 4, in which all the regional glands were involved, there was only one five-year cure in spite of the removal of all the involved glands that could be detected. It is extremely important, in operating in cases of early cancer, that all the gland-bearing tissue should be most carefully removed. Here is the chance to remove the disease, and if there is glandular involvement to dissect beyond it. However, terrific operations as a routine procedure, when the glands are extensively involved, may not give added security against the return of the disease sufficient to warrant the increase in the operative mortality; each case must be judged on its merits. Experience has taught us the advisibility of removing the primary source of the disease wherever possible, whether or not all of the involved lymph nodes can be extirpated, especially if the disease is situated in a septic region, such as the stomach, intestines and rectum. A palliative resection, even if all the enlarged glands cannot be removed, will often add three years or more of comfortable existence. The individual may return to his daily duties, and die after a comparatively short and painless illness from internal metastasis. We have had patients for whom palliative resection of the stomach was performed without removal of all the infected glands, who lived for three or more years in comfort and apparent health. The same has occurred in cases in which the liver contained metastatic cancerous nodules. Palliative operations which remove the primary source of the disease may permit nature's defense to exert its full strength on the glandular and other secondary lesions.

CONCLUSION

I wish particularly to direct attention to the fact that not all enlarged glands associated with cancer, especially in septic situations, such as the gastro-intestinal tract, are due to cancer. The glands may enlarge if a benign lesion, such as a chronic ulcer, precedes the cancerous change. Chronic sepsis involving the glands is not infrequent; the glands may become so extremely hard as to appear malignant. This condition is quite constant in cancer of the large intestine. Postmortems show that half the patients who die from cancer of the colon have no cancerous involvement of the lymphatic glands at the time of death, although the glands may be greatly enlarged from sepsis. I mention this because I have operated on many patients whose condition after

exploration has been pronounced inoperable on account of glandular involvement, and I have been able to resect and definitely to show that the glands were septic, not cancerous. These patients have remained well for long periods. Microscopic examination of the glands will be necessary in many cases to decide the question.

AFTER-CARE OF INFANTILE PARALYSIS CASES OF THE 1916 EPIDEMIC IN BROOKLYN

A DETAILED REPORT OF ABOUT THREE HUNDRED CASES FOLLOWED THROUGH FIVE YEARS

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Introduction by Thomas J. Riley, Ph.D.
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INTRODUCTION

When an epidemic attacks more than five thousand children and young adults in a community in a few summer months, with a mortality of about 25 per cent. and with an expectation of more or less crippling of the remaining three fourths, it is a matter of general interest to the community at large as well as of special interest to the medical profession. The first interest is centered around measures to prevent the spread of the disease in the community. No less important is the immediate and follow-up care of those stricken. But a community does not do its full duty if it neglects to collect pertinent facts concerning such a scourge, and to publish them in the hope that from such data useful information may be available. This is a report of the repeated examination of 297 chosen patients, from the thousands stricken with infantile paralysis in Brooklyn, in the summer of 1916, and followed through five years. From the manner in which they were selected it is believed that they typify, and the findings are practically those of the entire group stricken and surviving the initial mortality.

At first everybody was so busy creating or enlarging the facilities for caring for the many children that had been left crippled that little attention was given to making examinations and records that might have scientific value as to the progress and recovery of the children. Soon, however, the Brooklyn Committee for Crippled Children made plans for such a record. An elaborate form was prepared by a special committee of orthopedic surgeons and neurologists, which included Dr. Walter Truslow, Dr. Jacques C. Rushmore, Dr. William Browning and Dr. Frederick C. Tilney. This form of record was put in the hands of the orthopedic surgeons at the three largest orthopedic dispensaries in Brooklyn, and it was arranged that 100 children should be chosen from each of the three, who should be examined every six months with great care for several years. This record was intended to show in detail the initial condition and the history of the case under the several forms of treatment.

Unfortunately, the war called away some of the orthopedic surgeons, and the examinations were not carried out as thoroughly as had been hoped. Moreover, the original plan of having three different surgeons or groups of surgeons making the records gave a variety of findings from which it was not possible to eliminate entirely the personal equation. However, the reexaminations were centered in the hands of Dr. Horace G. Dunham, who completed them and prepared the report. It is rather remarkable that 297 out of the initial 300 are reported on in his statistics. Not all of them were examined at the later dates, but the basis for his findings has probably been excelled in few instances, if any.

Although the burden of after-care and the responsibility for this special report rested at the first with the Committee for Cripples of the Brooklyn Bureau of Charities, material assistance has been rendered by the Brooklyn orthopedic hospitals and dispensaries and the Visiting Nurse Association and the Children's Aid Society in carrying on the work and the study.

THE REPORT

While Medin was the first to demonstrate the occurrence of acute anterior poliomyelitis (infantile paralysis) in epidemic form, he included only such patients as had been paralyzed. It remained for his associate Wickman to call attention to the nonparalytic or abortive forms, and to emphasize the fact that these patients might be influential distributors of the disease.

Since time has shown that the disease is very common and that probably a large proportion of the population at some time in their life history has been afflicted by the abortive or nonparalytic form, particularly in very early life, it is easily conceivable that a certain number of obscure conditions of the central nervous system may have at least been initiated by adhesions and obstructions resulting from such an attack, unnoticed at the time of onset because no clinical signs and symptoms were present. This is especially applicable to various types of hydrocephalus which can be induced by slight pathologic change along the various channels from the lateral ventricles of the brain to the subarachnoid spaces.

The origin of the American epidemics during the last two decades is somewhat in question. It was thought by one group that the 1907 epidemic followed the influx of a large number of Scandinavians only two years after the epidemic in Norway and Sweden. This theory, however, would seem to need further proof before its acceptance, since the distribution of the poliomyelitis epidemic of 1907 in the Middle West did not closely correspond geographically with the distribution of the newly arrived Scandinavians. In Norway, a small epidemic was recorded in 1868, while in Sweden, the first one noted was 1881. From that time the epidemics have become more frequent and of greater dimensions up to the great epidemic in Scandinavia in 1905. Since that time epidemics in varying degrees of severity have been reported throughout Europe, the United States, the West Indies, South America, Australia and the South Sea Islands. In certain parts of Europe the disease is endemic. It is only since 1905 that much attention has been paid to this disease by boards of health, and particularly by the daily press.

It is most significant that one writer states that the majority of the nonparalytic cases at present escape recognition, as well as a large number of those resulting in definite paralysis. Furthermore, the New York epidemic of 1907 was practically ignored until after the acute stage was past and until the residual defects of a large series of cases came to the attention of dispensaries and of neurologists, pediatricians and orthopedic surgeons, thus leading to an investigation of the cause.

Sinkler pointed out the seasonal relation to the disease, and states that 78.8 per cent. occurred from May to September. This is the experience of most observers in most of the epidemics, which does not preclude its appearance in any month of the year, the lowest incidence being in the colder seasons of winter and early spring. Transmission may take place by direct contact, carriers, dust, infected clothing and other material or intimate contact with the patient, and by foodstuffs, insects or domestic animals. There seems to exist no doubt at the present time regarding the transmissibility by direct contact. In fact, this has been demonstrated in a practical way by inducing the disease in monkeys with virus obtained from the secretions of the nose and throat of man showing the clinical phenomena, as well as of those individuals who have been in direct contact with the disease but who have manifested no clinical signs or symptoms. In this series, the number of children in a family with only one person ill ranged from one to eight, the average being three children to each family so affected. There were fourteen families in which more than one child in the same family were paralyzed. The reason even greater numbers are not affected during epidemics may be explained, and at some future time demonstrated, on the basis of a natural immunity to this particular virus, just as the Schick test for diphtheria susceptibility has given us similar data; and, in addition, a large number of "contacts," both direct and indirect, very reasonably may acquire an immunity without the acute upset and residual paralyses.

A point of interest brought out by the investigations of the 1916 epidemic was that most of the cases occurred on the first and second floors of the taller houses. This is contrary to conditions found during scarlet fever and diphtheria outbreaks, which show a higher percentage on the upper floors. It suggests a point in favor of the transmission by rat fleas in the case of poliomyelitis, the lower, relatively darker quarters favoring the abode of rodents and insects.

Another important observation made during the 1916 epidemic, while not conclusive, is strongly suggestive.. It was found that a large number of children with poliomyelitis had a diseased condition of the nose or throat, and sometimes a combination of both, affecting tonsils and adenoid tissue. Of special significance is the observation that only a small group of patients previously operated on for tonsil and adenoid conditions contracted the disease, and in the patients operated on in whom it did develop, the percentage of recoveries was very much higher than in those who had not been subjected to operation. The disease is one that essentially confers immunity after the attack; the duration of the immunity is, of course, not known. A few instances are recorded in which a child apparently had recovered from an attack of infantile paralysis, and after a long interval experienced a recurrence with increased paralysis. Two such cases are recorded in the New York epidemic of 1916, but not one is included in this series of 297 patients. However, the immunity produced by one attack seems to be almost perfect, and the instances of recurrence are so rare as to be classed with the curiosities.

Certain interesting facts are found in the records of the New York State Department of Health, concerning the 1916 epidemic, which was the most extensive recorded. From June to December, 1916, there were, in the state, 13,000 cases and 3,300 deaths. It began in Brooklyn in April, 1916, and at first spread slowly and later more rapidly to every part of the state. More than two thirds of the entire number, or 8,991 cases, were in New York City. The mortality rate was approximately 25 per cent., a higher figure than that found in any previous large epidemic. While absolutely by far the greater number of patients were in New York City, the relative percentage was much higher in the rural communities, which averaged 2.4 per cent. per thousand, while New York City showed 1.6 per cent. per thousand. In the other cities of the state the average was 0.6 per thousand.

In the first 7,500 cases in New York City, nearly 80 per cent. were among children under 5 years of age, while in other parts of the state less than two thirds of the patients were under 5 years.

After much careful study, it was determined that persons with the disease were a source of active infection at least eight days after the acute onset, and there was little evidence that the disease was contracted from a person ill more than two weeks. For this reason the proper isolation period suggested for suspected cases in the future is two weeks. It is thought that the virus is carried to the different parts of the body by the lymphatic system, and, contrary to the older studies, the disease at present must be considered a general and not a local infection, but shows a tendency to localize in the nerve and lymphoid system.

PATHOLOGY

Naturally, in a disease such as poliomyelitis, in which a wide variation in degree of damage takes place, from the abortive, nonparalytic, to that causing early death, one must of necessity find great divergence in the extent of the pathologic changes.

The pressure of the cerebrospinal fluid is usually moderately increased, and presents abnormal characteristics. It is sterile and usually clear, but in exceptional cases may be cloudy or bloody. The number of cells is increased from twenty to 100, and in some cases even as high as 500 per cubic millimeter. The polymorphonuclear is the chief type of cell encountered in the earlier stages of the disease and preceding the paralytic period, and sometimes they comprise 80 or 90 per cent. of cells counted at this time. After paralysis is established, the mononuclear lymphocyte predominates in numbers ranging from 75 to 100 per cent. There are sometimes other less conspicuous cells, such as the endothelial type of large mononuclear cell, and the phagocytic cell. All of these types of cells rapidly disappear from the fluid, the count being normal or approximately so, at the end of a fortnight after the acute onset.

Like the normal fluid, it gives a positive Fehling's reaction and usually gives a reaction for globulin, but less marked than that obtained in the various forms of meningitis. The early changes show asymmetric congestion of the blood vessels of the meninges, brain and spinal cord, and with the congestion, an exudate of small, round cells in the perivascular lymph spaces of the leptomeninges. The most highly vascular areas of the cord present the most marked changes in the cervical and lumbar regions, and especially the anterior part of the cord, though not exclusively in these areas, as changes varying in degree may occur throughout the entire cord.

With obstruction of the circulation, there is more or less marked edema, and punctate hemorrhages or even larger vascular ruptures may be seen scattered throughout the white and gray substance of the cord.

The fact that a large proportion of these cases show their early paralysis much more marked than months and even years later, is readily understood after study of the pathologic invasion of the affected regions of the cord. Here the virus effects changes of all grades from the severest destruction, gradually shading off in the parts more remote to very slight and scarcely appreciable deviations from the normal structure. In the less severely involved areas, a strong tendency to return to normal is noted, and the temporary inhibition of nerve function due to acute upset is gradually eliminated as recovery is approximated; consequently, the muscles supplied by the centers involved are in turn able to resume their function in proportion to the restored innervation. These more favorable changes are due largely to absorption of exudate and edema, which cause transient pressure on these tracts, and the more hopeful aspect is impossible at the site of immediate and complete tissue destruction during the acute upheaval. While both motor and sensory portions of the cord are affected, it is well known that the motor side bears the brunt of the damage in this disease.

SYMPTOMS

Even a small experience with infantile paralysis must soon convince one that signs are much more prominent than symptoms. In a multitude of cases the acute onset will be ignored until some form of paralysis demands the attention. The different regions of the central nerve system affected have given rise to certain more or less characteristic types which are responsible for a classification of scientific interest.

The common symptoms of the acute attack are fever, general malaise, sometimes nausea and vomiting, headache, irritability, gastro-intestinal disturbance, and more often constipation than diarrhea. In addition, but less frequently, are observed sometimes coryza, rigidity of the neck, tonsillitis, pharyngitis, muscular twitchings, convulsions and cough. With all this array of manifestations of an acute disturbance, it must be remembered that many children would go to bed apparently well, and next morning be unable to move one or more of their extremities. It is well known that the severity of the onset bears no definite relation to subsequent paralysis, the mildest of the acute attacks being at times followed by extreme and permanent damage to the central nerve system, while on other occasions the converse is true. Fever is the most constant of the acute symptoms and sometimes the only outstanding one, probably explaining why in repeated instances the diagnosis of "teething," "diarrhea," "pneumonia" and other complaints common to childhood has been made prior to the appearance of paralysis. Headache is most commonly associated with the febrile state. In addition, there is frequently pain along the spine and in the legs, and also back of the head and neck. The child's mental state is more likely to be one of drowsiness until disturbed, when it becomes irritable during manipulation, but soon relapses into its former state again.

DIAGNOSIS AND PROPHYLAXIS

It is easily conceivable, when considering the protean nature of poliomyelitis, that sporadic outbreaks would cause obscurity and error in diagnosis; but it is much less to be comprehended that errors should occur so frequently during a great epidemic as the facts seem to indicate from the records of 1916. Presumably, in some instances, the diagnosis of infantile paralysis, in the initial period of an acute upset in a child, was incorrectly made, as the subsequent course and termination of these particular instances demonstrated; but much safer and wiser was it to err in favor of prevention and quarantine than to permit the real infection to be widely scattered under some other guise, simply because the muscle defect had not yet established its true identity.

The most important and far reaching consideration underlying the question of diagnosis is, after all, prophylaxis. The patient with an acute illness suggesting poliomyelitis already has the disease or has not; and while the best methods of treatment at hand will be employed, that particular patient has already developed his illness, and this fact cannot be altered. What can be controlled, however, is the dissemination from that focus to a multitude of other spots within a wide radius, owing to a diagnosis of some benign illness which would not indicate the rigid prophylactic measures imperative in every case of infantile paralysis.

A type of this disease not so important to the patient as to the community is the nonparalytic or abortive form of infantile paralysis. Often, these cases are much more of a menace, because unrecognized, than the paralytic type, which is likely to be correctly diagnosed early, allowing proper preventive measures to become operative immediately. The gravity of this phase of the situation may be realized when no less an authority than Wickman found from 25 to 56 per cent. of nonparalytic cases in the total incidence of the disease; and even so he considered these figures far too low! Naturally, after an epidemic is established, there do not exist the same chances of ignoring the true condition. However, when one appreciates the widespread disaster which may result from dissemination of the nonparalytic poliomyelitis, which may in the next child produce the severest paralysis, the alternative of occasional diagnostic errors in its favor is not to be questioned. That the earliest recognition of this type is of first importance in controlling the spread of the disease needs repeated emphasis. Even when a great epidemic is not holding sway, it is particularly important in acute illnesses in which any obscurity prevails to perform a spinal puncture for complete examination of the cerebrospinal fluid, for by this means sufficient evidence may be brought to light for at least a tentative poliomyelitis, and thereby prevent its further spread from that focus into the community at large.

PROGNOSIS

While there are a number of factors in the prognosis of vital interest to the patient, that of first importance to the vast majority is, What are the possible and probable end-results, and will they seriously handicap from an economic standpoint? Only a very small number of these cripples can afford to disregard the capacity for earning a livelihood, even if they were willing to ignore mentally such a physical condition. In this group the lower extremities invariably expressed a more favorable effort toward restoration of function except in those few instances in which the arms and hands were so slightly affected originally as to return quickly to a practically normal status.

This disease is peculiar in that, with so serious a process, even during its acute stage, one does not have apprehension so much as to life or death as to end-results, after the first force of the storm is over. The great question is, What kind of a wreck will be left, and to what future purpose? This is the most difficult problem to solve. Experience with two large epidemics

in this city has given ample evidence that the initial period of the acute onset offers no features that are infallible as a standard guide in prognosis. The most scrupulous and exacting care must be given each patient. The question of diagnosis involves two essential points: prophylaxis for the community, and the most advanced treatment for all stages of the disease in order to insure the greatest possible function ultimately. At the same time, the early neglected cases should not be ignored. Repeated instances are recorded in which no attention was given until long after deformity was established, and by persistence and regularity in treatment over a long period, much relative improvement was demonstrated.

In a general way, the younger the child, the nearer does restoration of function approximate the normal status. Ordinarily, when complete recovery takes place it is within six weeks, and may be delayed six months, again emphasizing the importance of earliest diagnosis for correct treatment in order to secure the maximum salvage of involved parts. While an attempt was made to test the electrical reactions of these children during repeated examinations, it was highly unsatisfactory in the great majority of the patients. The prerequisite of a perfectly quiet state during this procedure, in order to obtain data of any value, was practically impossible, partly because of ignorance, but chiefly on account of their youthful fear.

GENERAL STATISTICS

This series has seven patients with a practically complete return of function in the upper extremities, and twenty-three with a similar result in the lower extremities. In the 297 patients, the paralysis was first noted from one to twenty-one days after acute onset, the average time being three days. The ages ranged from 8 months to 15 years, averaging for the series 2.8

TABLE 1.—PARTS OF THE BODY INVOLVED

	Number
Back and abdomen alone	1
Right arm alone	6
Left arm alone	10
Right leg alone	14
Left leg alone	14
Both arms alone	4
Both legs alone	33
Both legs and left arm alone	5
Left arm and left leg alone	1
Left arm and face alone	1
Right arm and face alone	1
Face alone	2
Back and abdomen plus:	
Both arms and both legs	9
Both arms	1
Both legs	120
Both arms and left leg	2
Both legs and right arm	11
Both legs and left arm	4
Right arm	9
Both legs, right arm and face	1
Left arm	6
Right leg	24
Left leg	15
Left arm and right leg	1
Both legs and face	1
Left arm and face	1

years. Record as to the month of onset was obtained in 292 instances: three during April, 1916; three in May; forty-one in June; 146 in July; eighty-seven in August, and twelve in September, the peak being reached in midsummer.

The return of function of the lower extremities with assistance was from one week to one year, or an average of four months; and without assistance, from three days to one year, or an average of four months. While the average is the same in the two groups, it is evident that the less involved, i. e., return of function without need of assistance to get about, showed an earlier tendency to resume normal work than the more extensively injured legs.

The records show that spinal puncture was performed in forty-two different instances. It is quite probable that more were performed, however, and not noted. Two hundred and ninety patients suffered from the spinal type of this disease, five from the bulbopontile, and two from the meningitic.

TABLE 2.—MUSCLE GROUPS INVOLVED

	Number
LOWER EXTREMITY	
Abductors of thigh	159
Adductors of thigh	168
Flexors of thigh	164
Extensors of thigh	167
Internal rotators of thigh	205
External rotators of thigh	165
Extensors of leg	222
Flexors of leg	209
Extensors of foot and toes	190
Dorsal flexors of foot	191
Tibialis anticus	249
Extensor longus digitorum	195
Extensor longus hallucis	195
Peroneus	208
Plantar flexors, foot and toes	195
Gastrocnemius and solens	225
Tibialis posticus	224
Flexor longus digitorum	195
UPPER EXTREMITY AND TRUNK MUSCLES	
Orbital	5
Facial	7
Masticatory	1
Pharyngeal	1
Laryngeal	1
Cervical flexors	5
Cervical extensors	5
Cervical rotators	5
Erector spinae (thoracic)	175
Erector spinae (lumbar)	174
Serratus magnus	14
Intercostals	2
Rectus abdominalis	153
Lateral abdominal	154
Deltoid	63
Pectoralis major	48
Latissimus dorsi	45
Supraspinatus	45
Infraspinatus	45
Teres major	46
Teres minor	46
Rhomboids	46
Biceps	45
Triceps	46
Pronators of forearm	37
Supinators of forearm	39
Flexors of wrist	38
Extensors of wrist	36
Adductors of thumb	39
Flexors of thumb	40
Extensors of thumb	39
Flexors of fingers	43
Extensors of fingers	42
Abductors of fingers	39
Adductors of fingers	39

These reflexes were elicited months, and in many instances a year or longer, after the acute onset.

Coldness and cyanosis were evident in most of the cases in varying degrees; the greater the paralysis, the more pronounced were these changes. There were none with breaking down of soft parts and ulceration, although a few children, constantly flat on a Bradford frame, had at times a papulovesicular eruption which would recur at intervals. These conditions, although partly attributable to a loss of motion in the affected regions, are primarily a consequence of involvement of the vasomotor system in the paralyzed parts of the body. That so few trophic skin lesions were present in this series is probably due to the fact that treatment was persistent, either at home, in the clinic, or in combination. The electricity, muscle training, exercises and massage—especially the latter—certainly improve the general circulation and vascular tone. It is also known that new paths of conduction for nerve impulses may be developed to replace those destroyed, and that certain

definite exercises are influential in stimulating these new pathways.

For the entire series of examinations the records show certain measurements, as recorded in Table 4.

A glance at these figures shows that increase in atrophy far exceeds the number of those decreasing over an equal period of time. This might create a false impression of relative values unless one understands

TABLE 3.—REFLEXES ABSENT

	Number
Pectoral	2
Biceps	21
Triceps	25
Wrist	20
Radial	13
Ulnar	14
Patellar	179
Achilles	222
Plantar flexors	112

that atrophy and function have no direct bearing on each other; that is, a high grade of atrophy may still give in that member an excellent degree of function far excelling that in an affected extremity of comparatively slight atrophy. There is also a class in each muscle group which shows no change between first and last examinations; that is, there was a certain amount of wasting on the initial examination, which remained the same at the last test, which I am convinced indicates the value of treatment in maintaining that standard. The patients who showed increasing atrophy during regular treatment were those more profoundly involved; and here again, I feel that proper attention in these cases greatly modified the results. In the

TABLE 4.—MEASUREMENTS

	Number	Percentage
UPPER EXTREMITIES		
No shortening	11	16⅔
Decrease in shortening	22	33⅓
Increase in shortening	29	45½
No change between first and last examination	4	6⅔
CIRCUMFERENCE OF UPPER ARM		
No atrophy	1	2
Decrease in atrophy	10	20
Increase in atrophy	30	60
No change between first and last examination	9	18
CIRCUMFERENCE OF FOREARM		
No atrophy	0	0
Decrease in atrophy	26	31¼
Increase in atrophy	42	51⅕
No change between first and last examination	14	17
LOWER EXTREMITIES		
No shortening	42	18⅔
Decrease in shortening	41	18⅕
Increase in shortening	127	61
No change between first and last examination	15	6⅔
CIRCUMFERENCE OF THIGH		
No atrophy	1	0.5
Decrease in atrophy	51	23½
Increase in atrophy	146	67½
No change between first and last examination	28	13
CIRCUMFERENCE OF CALF		
No atrophy	3	1¼
Decrease in atrophy	47	20¾
Increase in atrophy	141	67
No change between first and last examination	36	16⅓

majority of these cases, atrophy is greatly out of proportion to impaired function, which has been distinctly improved in every patient of the series, in varying degrees, excepting about seven.

The various types of deformity encountered and requiring some form of treatment are listed in Table 5.

TREATMENT

While treatment of the acute stage of illness is not the primary concern of this review, which considers children suffering with varying degrees of paralysis and with a tendency toward as well as established deformity, it may be of some interest to note certain procedures which our records indicate were carried out during the early days of illness. Serum was administered to eleven patients, and intraspinal injections of epinephrin to three. Of 290 of the total number examined (297), the records indicate that 121 were treated at home during the acute illness, and 169 in hospitals.

The after-treatment, in its many phases, bears directly on this series. In the convalescent and chronic stage, treatment was carried out through orthopedic clinics. Therefore, in every case the advantage of any form of special treatment was advised by the chief in this branch of surgery before it was carried into practice. One of the essential purposes in effecting early treatment, that of preventing deformity which follows contraction of the muscles, and which can in a large majority of instances be prevented, was not possible of fullest realization even in these special clinics, because many did not get adequate care until after the damage had in a measure been established.

Hydrotherapy was very generally advised for all these patients, and by the majority was faithfully carried out.

TABLE 5.—TYPES OF DEFORMITY REQUIRING TREATMENT

	Number
"C" curve to left of spine	17
"C" curve to right of spine	11
Left dorsal, right lumbar curve of spine	19
Right dorsal, left lumbar curve of spine	23
Posterior curve of spine	17
Scoliosis	1
Lordosis	13
Abdominal protrusion	98
Flat foot	42
Foot drop	16
Hammer toe	13
Varus	18
Valgus	78
Equinus	5
Equinovarus	33
Equinovalgus	90
Calcaneovalgus	28
Backward curvation of knee	55
Subluxation of shoulder	42
Total	619

When possible, the child was taught to exercise the affected muscles while in warm water, which was an advantage, the extremities being lighter in water than in the air. Massage, muscle training and electricity were advised for practically all of these patients. The number taking advantage of these measures and the regularity with which they were followed varied, as must always be the case with clinic patients and different types of human nature; but it is well within conservative limits to state that all of them had massage and muscle training exercises; a majority regularly; and many included electricity, which, however, was not given in all instances. The electrical treatment was more difficult to give, because that meant a trip to the clinic, which was prohibitive to many of these mothers with large families and no responsible substitute; but massage and muscle training could be and was carried to them by the visiting nurses. In the clinic this form of treatment was given by skilled masseuses. In any form of treatment the best results are to be expected from trained operators; but when this was found impossible owing to lack of numbers, the mothers were instructed, and many times proved to be intelligent and able cooperators after a little training by the visiting nurse.

Lovett and Martin, in a series of cases, concluded that the chances for improvement with expert daily

treatment were 6:1; with supervised home exercises, 3.5:1; and without supervision it was 2.8:1. They also studied forty-four totally paralyzed muscle groups after the lapse of one year. In 48 per cent of these after two months' training, there was a certain amount of demonstrable power developed, while in a similar number of the same kind of cases with no treatment, a return of power was observed in only 27 per cent. This would seem to be significant in emphasizing the great value of expert treatment for the maximum return of power, even though a certain number of less gravely affected patients may show some improvement when neglected.

The massage has a twofold advantage in that it stimulates nutrition by the exercise, and induces an increased flow of blood and lymph to the paralyzed parts, thus aiding in the more rapid and complete elimination of waste products. A mild sinusoidal current was used for those children receiving electrical treatment. The muscle training exercises were those best adapted to the needs of the involved group in the individual case and found to give the best results.

A vital need for many of this group was attention by the orthopedic surgeon to adjust braces and splints as the indication demanded. One can readily understand how great would be the need for some kind of support for the weakened muscles in order to prevent deformity, to prevent contracture of nonparalyzed muscles, and to prevent overstretching of the partially paralyzed group. By performing these functions when properly applied, apparatus aids directly in the recovery from paralysis. The three different orthopedic clinics meeting the demands of these 297 patients applied braces in 153 instances; Bradford frames, in 48; plaster casts, in 145; plaster jackets, in 20; abdominal binders, in 32; splints, in 44; shoes raised, in 74; foot strapped, in 47 cases; foot plates, in 3; and only one pateint had crutches adjusted in this series.

Operative procedures[1] were resorted to sixty-six different times on fifty-nine different patients: astragalectomy, 7; tendon lengthening, 8; muscle stretching, 18; subperiosteal separation, 8; tenotomy, 10; loop operation, 7; tarsectomy, 2; Gallie operation, 3; arthrodesis, 1; Hoke operation, 2.

It has been impossible to secure complete information relative to the patients operated on. Concerning twenty of the fifty-nine different patients, I am advised that two show much improvement, fourteen some improvement, three slight improvement, and one a poor result. It is too soon, however, to value end-results.

I am advised that there are at present 136 of the 297 patients receiving treatment, fifty of these being on the home treatment list. Of the remainder, six have died, thirty-four have moved away, thirty-five cannot be located, and the remainder are not receiving treatment of any kind. Experience would seem to prohibit any absolute and infallible time limit when one can say that the last vestige of improvement in a muscle group has been attained. It has been repeatedly demonstrated over periods of from five to seven years under adequate supervision, and response has been stimulated in neglected cases after the same number of years and even a longer stretch. Hence the main guide would seem to be regular, consistent treatment under expert supervision from the onset until one's judgment in each individual patient indicates that the maximum result has been reached.

1. The number of operations has greatly increased since this report was closed.

It has many times been emphasized that improper treatment may produce greater damage than neglect. Atrophy may result in muscles from overexertion as well as from insufficient exercise. Caution in exercise, massage and electricity has proved more beneficial than pushing to the point of fatigue. Lovett's spring balance test is one of the excellent measures especially designed to meet this problem .and prevent overtaxing the involved muscle group.

Prevention is, after all, the only positive means of an absolute cure. Such a statement may seem perfunctory, and the interval of a decade between great epidemics tends to lull one into a sense of security; but a brief glance at the past history of this blighting malady should arouse permanent interest and activity toward constant vigilance for the future. The records show these figures: New York City, 1907, 2,500 cases; Nebraska, March to December, 1909, 1,037 cases; Pennsylvania, summer, 1910, 1,076 cases; Minnesota, summer, 1910, 1,000 cases; United States as a whole, 1910, 14,590 cases; New York City, July to November, 1912, 1,108 cases.

The foregoing figures show only those epidemics including 1,000 cases or more in this country. Let it be remembered that there remain other invasions both at home and abroad, of startling proportions: Sweden, July to September, 1905, 1,030 cases; October to December, 1911, 3,840 cases; Norway, summer, 1911, 1,250 cases. Furthermore, from the time of its earliest record in the country when the ten cases in Louisiana, in the summer of 1841, were compiled, there have been, in addition to those already noted at short intervals of two or three years, outbreaks in different sections of this country ranging from ten to 923, the latter figure representing the Massachusetts outbreak in the summer of 1909.

These figures of past history surely seem worthy of serious deliberation for future policy toward a disease that visits us practically every season to some degree. It is easy to settle into a state of false security after a great menace has passed by, but what assurance is there that another is not close at hand?

The most decisive victory when biologic poisons are at work is to prevent invasion.

SUMMARY

This group of patients did not come under the same supervision from the acute onset up to the present time. Our experience with them dates from one to two years after the initial period of their illness, therefore giving a great variety of physical defect, depending on the severity of the attack, the type of early treatment in each instance, and the intelligence of the parents in cooperating with the physician.

The histories of this group indicate that only fourteen families had more than one child ill with this disease at the same time, which would strongly suggest that its contagion is not transmitted by methods obtaining in our common infectious diseases, such as diphtheria and scarlet fever, particularly since the vast majority of all the other cases were in families with two or more children in the same household. Other factors are dominant in its transmissibility, of which we to date have speculated much and to little practical purpose.

One great lesson should by this time have been learned. Particularly during an epidemic of infantile paralysis of any size, children with obscure indispositions should be kept at rest in bed for several days

until the exact nature of their condition can be determined. One can err only on the right side in giving the patient with this disease every chance for the best recovery. When paralysis supervenes, it usually appears within a very short time after the initial upset, the average for this series being three days after the first manifestation of illness; but often the paralysis comes on twenty-four or forty-eight hours after, so that the patient with a malaise of no consequence need not be incapacitated over a long period of expectancy.

Early, neglected patients should never be ignored in treatment later, regardless of the degree of involvement. Repeated examples are a matter of record in which no treatment was given until long after deformity was established, and by persistence and regularity over a sufficient period, much relative improvement has been accomplished.

It is essentially a disease of childhood, the average age of this series being 2.8 years; therefore in every obscure, acute illness the diagnosis of infantile paralysis should always be a mental reservation, since sporadic cases occur in the community every year.

In this series, the back and abdomen with both lower extremities was the combination of involvement by far the most frequently found, indicating the common attack in these regions of the cord. In the lower extremities, the tibialis anticus was most often affected, next in frequency being the calf muscles and tibialis posticus. In the upper extremities, the biceps and triceps head the list. The more severely involved upper extremities did not respond to treatment as rapidly as the equally involved lower extremities, in our series.

While it is known that patients long neglected will show some restoration of function, it has been very definitely established, through practical application, that proper treatment regularly and systematically followed will produce far greater results than no treatment, in the same degree of involvement. Obviously, to obtain the best results and maximum functional return, these patients must have intelligent care from the outset of their illness. Correct treatment for a definite stage applied at the wrong time is far worse than none, just as surely as exercise pushed to the point of fatigue and muscle exhaustion is distinctly harmful.

Those patients have made the greatest progress in return of function who had the least interference during the initial stage of their illness, and when treatment in the subacute and chronic stages was intelligently advised and faithfully carried out. It would seem to us from experience with this series, some coming in the subacute and others in the chronic stage of the disease, that it is just as important for a correct diagnosis and proper treatment in the beginning as at any period, since many subsequent deformities might be avoided entirely if the patient was properly supervised at the outset.



Meckel's diverticulum and proximal loops of bowel distended with fecal material; the terminal ileum and the cecum are collapsed. (From sketch made at operation.)

ACUTE INTESTINAL OBSTRUCTION CAUSED BY FECAL IMPACTION IN MECKEL'S DIVERTICULUM *

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The case here reported is of unusual interest on account of the rarity of the pathologic condition. In a search of the literature we were unable to find any other case in which a fecal impaction starting in a Meckel's diverticulum had resulted in an intestinal obstruction. Numerous cases of intestinal obstruction due to Meckel's diverticulum have been recorded. Halstead,[1] in 1902, quoted Lichtenstern as noting a Meckel's diverticulum to be the cause of intestinal obstruction in 6 per cent. of all cases of acute obstruction. The obstruction in the cases reported has been brought about in various ways. In most cases a loop of bowel has been caught under or over the terminal filament of the diverticulum in much the same way as in the case of a postoperative adhesion. The diverticulum has at times knotted itself about a loop of intestine. Many cases have been reported in which the diverticulum has been the cause of an intussusception. Peritonitis secondary to a diverticulitis has been reported as the cause of an ileus. But we have not been able to find a case on record in which a Meckel's diverticulum had collected sufficient solid material to cause a fecal impaction and obstruction. Fecal impaction in the small intestine, although extremely rare, is not unknown.

REPORT OF CASE

On the night of August 12, 1922, E. B., a 10 year old schoolboy, was brought to the Sarah Morris Hospital (the pediatric pavilion of the Michael Reese Hospital) complaining of abdominal pain. The child had had a mild diarrhea for the preceding week, but had been up and about and otherwise well. Four hours previous to admission to the hospital, he was seized with sharp, severe, generalized, abdominal cramps. Gradually these cramps became localized at a point

* From the Surgical Service of the Sarah Morris Hospital, Michael Reese Hospital.

1. Halstead, A. E.: Ann. Surg. **35**: 495, 1902.

just below the umbilicus in the midline. About an hour later the child started to vomit, and had vomited four times before admission. to the hospital. The vomitus at first contained the food eaten at supper; later it contained bile. At no time was the vomitus fecal. The mother had given the child an enema, and had obtained a small liquid stool, but with no relief of symptoms. There was no blood in the stool.

One year previous and again two months previous, the child had had similar attacks, which, however, had cleared up spontaneously in a few hours. Except for measles at the age of 4, the child had always been in excellent health.

On admission to the hospital it was noted that the child looked very ill. His face was drawn; his nose was peaked. He complained of nausea, and wanted to vomit, but was unable to do so. The pain had shifted more to the lower right abdominal quadrant, and was steady in character. He lay quietly in bed with both legs extended.

Physical examination except for his general appearance of being acutely ill, and for the abdomen, revealed no abnormalities bearing upon the case. The abdomen was slightly distended. There was distinct tenderness on light palpation over the lower right abdominal quadrant. Deep palpation anywhere over the abdomen caused pain, which was referred to the lower right quadrant. There was a definite increase in muscle resistance on the right side as compared to the left. The abdomen was everywhere tympanitic. There was no dulness in the flanks. Liver dulness was present. The liver, spleen and kidneys were not palpable. Just to the right of the midline at the level of the umbilicus could be felt a sausage-shaped mass, which seemed to be about 3 inches long. Pressure on this mass caused severe pain. Rectal examination was negative. The temperature was 99 F. (rectal); the pulse, 84; respiration, 22. Blood count revealed a leukocytosis of 14,100.

No definite diagnosis could be made. The probable diagnosis was. first, intussusception, in spite of the absence of bloody stools, and, second, acute appendicitis, the mass palpated being interpreted as the inflamed appendix enveloped in omentum.

The patient was prepared and brought to the operating room. Ether anesthesia was given. The abdomen was opened with a right pararectus incision. Several cubic centimeters of a clear fluid escaped. Coils of distended small intestine appeared. The mass that had previously been noted was easily palpated and delivered into the wound. It was composed of distended small intestine, but its exact nature and its position were at first difficult to recognize. Further exploration revealed the large intestine, cecum and distal ileum collapsed but otherwise normal. The appendix was free, not inflamed and evidently not associated with the present condition. About 8 inches above the ileocecal valve, the ileum abruptly became markedly distended, the intestine was livid, and the serosa was injected. At this point a broad based pouch, evidently a Meckel's diverticulum, protruded from the antemesenteric border of the intestine. The diverticulum and the ileum proximal to it for a distance of about 5 inches were distended by a doughy, semisolid mass, containing numerous small, hard lumps. The intestine above this was distended by gas and fluid. Gentle pressure was made on the diverticulum and the proximal intestine. Suddenly the intestinal contents slipped into the collapsed ileum, followed by a gurgling of gas and fluid. The semisolid contents could be milked along the ileum, through the ileocecal valve and into the large intestine. There had clearly been a fecal impaction, starting probably in the diverticulum, and causing an acute intestinal obstruction. As much of the impacted mass as possible was milked into the large intestine. The intestine almost immediately took on a more healthy appearance as the distention was reduced. Firmly believing that any unnecessary interference is strongly contraindicated in cases of acute intestinal obstruction, we did not make any attempt to obliterate the diverticulum. Furthermore, it was evident that purgation would be desirable in the after-treatment; consequently, we were especially anxious not to injure the intestinal wall.

After partial reduction of the impaction, careful palpation of the intestine gave no evidence of a stenosis, or of any fixed intra-intestinal mass. The abdomen was closed in the usual manner, without drainage. The patient left the operating room in good condition.

In addition to the usual postoperative treatment of simple laparotomy cases, the child was given intramuscular injections of pituitary extract. Colonic flushings were alternated with olive oil retention enemas. Three copious bowel movements were obtained within the first thirty-six hours. The movements were brown and semisolid, and contained many hard masses. No undigested food particles were noted macroscopically. There was no macroscopic blood. The laboratory findings were negative.

The boy made an uneventful recovery, and left the hospital on the thirteenth day. One month later he was called back for physical examination and careful roentgen-ray study of the gastro-intestinal tract. His general physical condition was excellent, and a most careful examination with the fluoroscope and roentgenograms failed to reveal any retention. The diverticulum could not be visualized.

The case leads to many interesting queries and conjectures. Why, in the absence of any macroscopic foreign bodies or undigested food particles, a fecal impaction should occur in the small intestine with apparently no stenosis of its lumen, it is difficult to explain. We surmise that the diverticulum, acting as a reservoir, first became distended, and through pressure on the ileum caused a functional stenosis which gradually led to an impaction. Was it a wise policy to refrain from repairing the diverticulum at the time of operation? It is an open question whether or not it would be wise to reoperate, and obliterate the diverticulum before a fourth attack occurs. The boy at present, however, seems to be in perfect health. The roentgen ray fails to detect any retention, and it seems to us probable that this patient may, in common with many others, go his way unmolested by his Meckel's diverticulum.

SUMMARY

1. The case, an acute intestinal obstruction caused by a fecal impaction starting in a Meckel's diverticulum, is of interest because of its rarity. We were not able to find any similar cases in the literature.

2. A preoperative diagnosis of such a condition could not be made.

3. The uneventful convalescence was due, probably in great part, to the conservative procedure.

Military Training and Health.—President David P. Barrows of the University of California in an address to members of the Association of the Army of the United States said of military training, "The weaknesses of our people were disclosed by the war, by our experience with five million drafted men. In my opinion no educational effort which the national government can make, at least for the male element of the nation, could compare in results with provision for a period of military training for every young man. Even though this period were no longer than six months it would suffice to do three things: to survey our youth physically, correct bodily defects and cure infectious complaints, train in cleanliness and personal hygiene. Six months' experience in camp and in the field would return the youth of our nation to their homes incalculably more robust, more healthful, more disposed to wholesome habits of life. In the second place, military instruction does one indispensable thing for a man's mind—it schools him in the habit of attention, makes him put his mind upon a task and keep it there. It uncovers the intellectual capacity of the nation as nothing else can reveal it, and distinguishes classes of the mentally weak for whom appropriate vocations must patiently be found. In the third place, military training teaches a man that he has duties as well as rights; that he owes his country, if occasion arises, all that he has."

THE BLOOD PRESSURE OF HEALTHY MEN AND WOMEN

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This study is based on the record of risks accepted at standard rates by the Mutual Life Insurance Company of New York for the years 1907 to 1919, inclusive. More than 95 per cent. of the readings were taken by our New York City examiners and our medical referees and their immediate assistants. In the earlier years, no readings were taken except by these examiners, but in the later years a few reports were made by our other examiners in the field. These reports amounted to less than 6 per cent in the year 1919. In the earlier years, most of the readings were obtained by palpation, but since 1915 nearly all of them have been taken by auscultation. The readings were taken while the applicant was seated, and the apparatus was at about the level of his heart. A wide cuff was employed, and in most cases the Tycos manometer.

It is well known that the systolic pressure increases with age and with weight, and also that weight increases with age. In order to reach proper conclusions regarding these three variables, age, weight and pressure, it is necessary to separate each age into weight groups. For convenience, our material has been arranged according to the build groups of the Medico-Actuarial Mortality Investigation.[1] The basis of these groups is the average weight of men for each inch of height at the age of 37. Build Group 0 comprises those within 5 per cent. above and below this standard. Build Group 1 comprises those from 5 to 15 per cent. above the standard; Build Group 2, from 15 to 25 per cent. above the standard; Build Group 3, from 25 to 35 per cent. above; Build Group 4, from 35 to 50 per cent. above, and Build Group 5, those more than 50 per cent. above the standard. Those who are under weight start with Build Group 6, which comprises applicants who are from 5 to 15 per cent. less than the standard. Build Group 7 comprises those who are from 15 to 25 per cent. below standard; Build Group 8, those from 25 to 35 per cent. below, and Build Group 9, those who are more than 35 per cent. below the standard.

Table 1 presents an abridgment of the build groups at the heights 5 feet 4 inches, 5 feet 8 inches, and 6 feet, and indicates the general range of the build groups; the other heights can be interpolated easily.

TABLE 1.—GENERAL RANGE OF BUILD GROUPS

	Build Groups: Weight in Pounds									
Height	9	8	7	6	0	1	2	3	4	5
5 feet 4 inches.....	90 and under	91 to 104	105 to 118	119 to 132	133 to 147	148 to 161	162 to 175	176 to 189	190 to 210	211 and over
5 feet 8 inches.....	101 and under	102 to 116	117 to 132	133 to 148	149 to 164	165 to 180	181 to 196	197 to 211	212 to 235	236 and over
6 feet 0 inches.....	115 and under	116 to 133	134 to 151	152 to 169	170 to 188	189 to 206	207 to 224	225 to 242	243 to 268	269 and over

SYSTOLIC PRESSURE IN MEN

The average systolic pressures among healthy men, when analyzed according to age and build group, are set forth in Table 2. It is based on 150,419 entrants, men only. The largest number entered in the age periods 25 to 29 (27,737) and 30 to 34 (26,892), but even the oldest age period contained 1,889 entrants. The extreme light-weight group (9) and the extreme heavy-weight group (5) contained but few entrants. However, it was easy to extrapolate reasonable values for them at each age.

In reading across the table, it will be noticed that there is an increase of about 10 mm. between the very light-weight group (8) and the very heavy-weight group (4) in each age period. Also, if we read down each build group, it will be noticed that the pressure increases about 11 or 12 mm. between the youngest and the oldest. Nearly all of this increase comes after the age of 40, for 2 mm. will cover the increase up to that age in most of the build groups.

If we take into account all the factors, especially with regard to the youthful applicants who are classified as light weight and those who are markedly over weight, Table 2 is submitted as representing the systolic pressure that may be expected "on the average" for the corresponding age period and build group in reasonably healthy men in the United States and Canada, unless marked leanness or fatness be considered a sign of ill health. The last column, "All Builds" and the last row, "All ages," represent the average of the preceding figures, as if each group contained the same number of entrants. In most tables, the corresponding averages are affected by the fact that the entrants in different groups vary. Thus, the low average of ages 15 to 19 and 20 to 24 usually is due to the fact that three quarters of their entrants are in the lighter build group. In the original basic material, from which this table was prepared, the average for age 15 to 19 was 121.2 mm., and for age 20 to 24, 123.4 mm. After that age, the difference is less than 1 mm.

If we eliminate those risks in Table 2 whose pressure is above 140 mm., we get a curious result. We remove only 8,579, or 5.7 per cent., and still leave 141,840 entrants. The general average for all ages and all builds is reduced only 1.3 mm. The averages for the older age groups and the heavier build groups are all markedly lowered. The difference between the systolic pressure in the youngest age period, 121 mm., and in the oldest age period, 129.8 mm., is only 8.8 mm., instead of 12 mm., as before. The marked increase at age 40 also disappears, or at least is postponed until age 55. The differences between the build groups are not so great as before. The systolic pressure in Build Group 4 is lowered to 127.9 mm., while in Build Group 8 it is lowered only 0.4 mm. Evidently, a great number of the differences in Table 2 are due to the inclusion of blood pressures above 140 mm. But there are only 704 entrants whose pressure is above 150 mm., and only 372 of these whose pressure is above 155 mm. The pressure of practically all of those eliminated lay between 141 and 150 mm., inclusive. The larger averages, therefore, in the older age and in the heavier build groups are due to the inclusion of an increasingly larger number of risks whose blood pressures are not unusually high. There is a temptation to regard any systolic pressure above 140 mm. with suspicion, and Rogers and Hunter[2] make a charge for a systolic

1. Medico-Actuarial Mortality Investigation **1**: 120-121, 1912.

2. Rogers and Hunter: Proceedings of the Association of Life Insurance Medical Directors **8**: 130, 1921-1922.

pressure of 140 mm. up to and including age 35, according to the system of numerical rating in vogue in the New York Life Insurance Company.

Life insurance has furnished the only large collections of reports on the blood pressure of healthy men. A few articles have appeared on the blood pressure of students,[3] of soldiers,[4] and of some other groups, but the ages have been limited usually to those comparatively young. Four excellent reports have been made from life insurance data. One by Dr. J. W. Fisher [5] was made in 1914. A very extensive report was made by Dr. Mackenzie [6] in 1915. Another report

TABLE 2.—SYSTOLIC PRESSURE FOR MEN

Ages	Build Groups 9	8	7	6	0	1	2	3	4	5	All Builds
From 15-19	114	116	120	122	123	125	126	128	130	131	123.5
20-24	117	119	121	122	123	125	126	128	130	131	124.2
25-29	117	120	121	123	124	125	126	128	130	131	124.5
30-34	118	120	121	123	124	126	127	129	131	132	125.1
35-39	118	121	122	123	124	126	127	129	131	132	125.3
40-44	119	121	123	124	126	127	129	130	132	133	126.4
45-49	121	122	125	126	127	129	131	132	134	135	128.2
50-54	123	124	126	128	130	131	133	134	136	137	130.2
55-59	126	128	129	131	133	134	137	138	139	140	133.5
60 and over	128	129	132	133	135	136	138	139	140	142	135.2
All ages....	120.1	122.0	124.0	125.5	126.9	128.4	130.0	131.5	133.3	134.4	127.6

was made by Rogers and Hunter,[7] on observations taken during 1913 and to 1916. Another excellent report was made by Goepp [8] on cases arising during 1918. For the individual age periods, Fisher's, Mackenzie's, and Hunter and Rogers' averages are quite close to those set forth in Table 2; but Goepp's are a little lower. He noticed this and thus commented on it:

> The thought suggests itself whether the general reduction in the scale of living brought about by war conditions, particularly in the matter of eating and the use of alcohol, may not have had its influences on the averages obtained in the series.

On this hint those risks who were examined at the home office in New York were classified according to years of issue, and the results are set forth in Table 3.

The systolic blood pressure in New York City dropped decidedly in 1917 when we entered the war, and stayed low during 1918 and 1919. It began to rise in 1920, and came back to the prewar level in 1921. In the first five months of this year, it seems to have fallen off a little. In this table, the averages for all ages combined are valuable for comparison, for the age incidence is nearly the same for each year of issue.

The mortality results from this mass of material are not very conclusive. The time that has elapsed since the records were first noted has been so short that the number of deaths in the classes with high pressure or low pressure is very small. Without giving a detailed tabular statement, it may be said that there were 2,906 actual deaths and 3,691.8 expected deaths. This gives a mortality ratio of 79 per cent., and shows excellent selection; for it includes the deaths from influenza and from the war. The lower pressures of 110 mm. and less showed poor results in the younger age groups, 15 to 29, and very good results in the older age groups, 45 and over. From 110 mm. to 145 mm., the results were good except in the younger age groups, 15 to 29, in which they began to be poor above 140 mm. The results were not good at any age when the systolic pressure was above 145 mm. as compared with the general results. A very few applicants were accepted whose systolic pressure was above 160 mm., and presumably care was taken to see that these applicants were very good in other respects. This class showed very poor results, especially among those who were overweight. The combination of a blood pressure over 160 mm. and any excess weight, as set forth in Table 1, makes distinctly for a high mortality.

3. Alvarez, W. C.: Blood Pressure in University Freshmen and Office Patients, Arch. Int. Med. **26**: 381 (Oct.) 1920. Barach, J. H., and Marks, W. L.: Blood-Pressures: Their Relation to Each Other and to Physical Efficiency, ibid. **13**: 648 (April) 1914.
4. Smith, Bertnard: Blood Pressure Studies of Five Hundred Men, J. A. M. A. **71**: 171 (July 20) 1918. Sorapure, V. E.: Lancet **1**: 841 (Dec. 21) 1918.
5. Fisher, J. W.: Diagnostic Value of the Sphygmomanometer in Examinations for Life Insurance, J. A. M. A. **63**: 1752 (Nov. 14) 1914.
6. Mackenzie, L. F.: Proceedings of Association of Life Insurance Medical Directors, 1915, p. 221.
7. Rogers and Hunter: Proceedings of Association of Life Insurance Medical Directors, Thirtieth Annual Meeting **6**: 92, 1919.
8. Goepp, R. M.: Pennsylvania M. J. **22**: 295 (Feb.) 1919.

SYSTOLIC PRESSURE IN WOMEN

The study of systolic pressure in women is based on the women whose blood pressures were reported in the issues of 1907 to 1919, inclusive. The remarks in the opening paragraphs on systolic pressure in men apply equally well here. The total entrants numbered 11,937. Women weigh less than men, and more than 55 per cent. of them are in the lighter weight build groups (6, 7, 8 and 9), while only 40 per cent. of the men are in these groups. The average systolic pressures for women are 1 or 2 mm. less than those for men up to age 40. After 40, the systolic pressures of women are quite equal to those of men, and they may be even 1 or 2 mm. higher.

If we eliminate all the applicants whose systolic pressure is above 140, we get a result similar to that in men. The total number eliminated is only 422, 3.5 per cent., and the average pressure for all is lowered only 0.9 mm. As in the case of men, the older age groups and the heavier build groups show more marked reductions of from 2 to 5 mm., yet these changes are due almost entirely to risks whose pressure is between 141 and 150 mm., inclusive; for there are only thirty-eight women whose pressure is over 150 mm., and only twenty-two of these show a pressure above 155 mm.

TABLE 3.—RESULT OF CLASSIFICATION ACCORDING TO YEARS OF ISSUE

Years of Examination	Number of Entrants	Average Systolic Pressure
1913	827	127.5
1914	973	126.0
1915	832	127.6
1916	829	125.4
1917	934	122.8
1918	883	123.7
1919	1,076	123.9
1920	1,203	125.4
1921	1,338	126.5
1922 to June	580	125.2

As in the case of men, these changes depend on the increasing proportion of risks with a pressure of from 141 to 150 mm. in the older age groups and the heavier build groups, and not on the inclusion in these of risks with an unusually high pressure.

DIASTOLIC PRESSURE IN MEN

The study of diastolic pressure in men is based on the reports made by our examiners in the years 1916 to 1919. Ninety-five per cent. of these reports on diastolic pressure were furnished by our examiners in New York City and our medical referees and their immediate assistants. All of these were trained to take the diastolic pressure at the very end of the fourth phase, practically just before the beginning of silence.

Whether this really shows the pressure in the brachial artery after the pulse wave has passed is open to discussion. It calls for the simplest technic, and is determined more easily and regularly than any other point suggested for the diastolic pressure. It is certainly more easily determined than the end of the third phase as the sounds pass into the fourth phase. In many cases, our examiners at the home office find it difficult to determine this change of sounds, and in some cases the fourth phase is entirely absent; but no one finds it hard to detect the last sound. In some abnormal conditions, especially aortic leakage, the sounds continue

TABLE 4.—DIASTOLIC PRESSURE FOR MEN

Ages	Build Groups 9	8	7	6	0	1	2	3	4	5	All Builds
From 15–19	75	76	77	78	79	80	81	82	83	84	79.5
20–24	76	77	78	79	80	81	82	83	84	85	80.5
25–29	77	78	79	80	81	82	83	84	85	86	81.5
30–34	78	79	80	80	81	83	84	85	86	87	82.3
35–39	79	80	81	81	82	84	85	86	87	88	83.3
40–44	79	80	81	82	83	85	86	87	88	89	84.0
45–49	80	81	82	83	84	86	87	87	88	89	84.7
50–54	81	82	83	85	86	87	88	88	89	90	85.9
55–59	82	83	84	86	87	88	89	89	90	90	86.8
60 and over	82	83	85	86	87	88	89	89	90	90	86.9
All ages..	78.9	79.9	81.0	82.0	83.0	84.4	85.4	86.0	87.0	87.8	83.5

to very low readings; but in these cases applicants are unhealthy, have not been accepted as standard risks, and are therefore not included in this study. The amount of pressure over which the fourth phase extends is about 2 to 6 mm., usually. As shown by Mackenzie,[9] this range holds true for 75 per cent. of the cases. In 20 per cent. more, it ranges from 7 to 10 mm. If larger, it is doubtful whether the examiners read the fourth point accurately. A wide cuff was used in all cases, and most of the readings were taken on the Tycos manometer. All of the risks were accepted at standard rates.

The diastolic pressure is affected by weight and age just as is the systolic pressure. Table 4, therefore, showing the average diastolic pressure, is arranged similarly to Table 2, and should be read in connection with Table 1. It is based on the records of 60,733 applicants, all men, examined in the years 1916 to 1919 by first-class, well-trained examiners. Reading across the table, it will be noticed that the diastolic pressure increases about 1 mm. for each build group. Reading down a build group, it increases about 7 or 8 mm. from the youngest to the oldest. In proportion to its size, the range of diastolic pressure, both in build groups and in age periods, is nearly as large as that obtained in a study of the systolic pressure. In the diastolic pressure, there is no indication of the distinct rise in the systolic pressure which begins at the age of 40. On the other hand, the total increase in diastolic pressure is just as great proportionately as the total increase in systolic pressure; for the total diastolic increase is about 8 mm., and this is one tenth of the diastolic average, while the total systolic increase is about 12 or 13 mm., and this also is about one tenth of the systolic average.

If we eliminate from Table 4 all persons whose diastolic pressure is 95 mm. and higher, the results are similar to those obtained in a study of the systolic pressure. Only 4,186 cases, 6.9 per cent., are eliminated, and the general average pressure is lowered only 1.3 mm. The large averages in the older age groups and the heavier build groups are much reduced, so that, in Build Group 0, only 5 mm., and in Build Group 1 only 4 mm. separate the youngest from the oldest. Only 1,308 applicants had a diastolic pressure of 100 mm. and upward, and most of these were just 100 mm. In fact, only 175 had a pressure of 105 mm. and upward. In nearly all of the cases eliminated, therefore, the applicant had a diastolic pressure of from 95 to 100 mm.

9. Mackenzie, L. F.: M. Rec. 97: 1029 (June 19) 1920.

DIASTOLIC PRESSURE IN WOMEN

The study of diastolic pressure in women is based on the women entrants who gave a record of the diastolic pressure in the issues of 1916 to 1919. The introductory paragraph in the study of the diastolic pressure of men applies equally well here. The total entrants numbered 5,276. The average diastolic pressures of women are about 1 mm. less than those of men up to age 40. Then for ten years they are about the same, but at the age of 50 they increase quite rapidly, and afterward they are substantially higher than those for men. However, the entrants beyond age 50 were too few to warrant the assumption that this increase over the diastolic pressure in men is certain. It is strengthened, however, by the rise in woman's systolic pressure over man's systolic pressure at the same ages. Perhaps menstruation is responsible for the lower pressures, systolic and diastolic, among women younger than 40, but it does not seem reasonable to consider the menopause the cause of the higher pressures after the age of 50.

PULSE PRESSURE IN MEN

The study of pulse pressure in men is based in part on the preceding data and in part on examinations made at our home office from 1917 to August, 1922, and includes only risks accepted at standard rates. All of the latter readings were taken by auscultation, the subject being seated, with a mercurial manometer at the level of the heart. The diastolic pressure was recorded at the end of the fourth phase, the last distinct sound.

Table 5 shows the cases arranged according to age and build groups. It should be read in connection with Table 1.

TABLE 5.—PULSE PRESSURE FOR MEN

Ages	Build Groups 9	8	7	6	0	1	2	3	4	5	All Builds
From 15–19	39	40	43	44	44	45	45	46	47	47	44.0
20–24	41	42	43	43	43	44	44	45	46	46	43.7
25–29	40	42	42	43	43	43	43	44	45	45	43.0
30–34	40	41	41	43	43	43	43	44	45	45	42.8
35–39	39	41	41	42	42	42	42	43	44	44	42.0
40–44	40	41	42	42	43	42	43	43	44	44	42.4
45–49	41	41	43	43	43	43	44	45	45	46	43.4
50–54	42	42	43	43	44	44	45	46	47	47	44.3
55–59	44	45	45	45	46	46	48	49	49	50	46.7
60 and over	46	46	47	47	48	48	49	50	50	52	48.3
All ages..	41.2	42.1	43.0	43.5	43.9	44.0	44.6	45.5	46.2	46.6	44.1

In studying the pulse pressure, we must always remember that it is not a real measure like the systolic and diastolic pressures, but merely the difference between these two. All of its attributes depend on these two real measures. Thus, the slight decrease from the youngest age period up to age 40 is due to the fact that the diastolic pressure increases about 3 mm. during that time, while the systolic increases only about 2 mm. The averages remain about 40 to 44 mm., until age 50, after which they increase markedly. The pulse pressure also rises slightly with increasing weight. Both these phenomena are accounted for by the greater rise in systolic than in diastolic pressure under these conditions.

Although the average pulse pressure shows little change in the different age periods, the applicants examined at the home office show that the range between the extremes of high and low is much greater than in the systolic or diastolic pressure, in proportion to its size. Thus, the lowest pulse pressure was 20, and the highest, 64. Between 20 and 64 is a range of 44 mm., which is as large as the average pulse pressure for all ages. On the other hand, the range of systolic pressures was from 95 to 160 mm. This represents a gap of 65 mm., which is barely a half of the average systolic pressure. The diastolic range was from 50 to 103 mm., a gap of 53 mm., which is only a little more than half of the average diastolic pressure.

Not only the range of deviation, but also the amount of deviation from the average is much greater in the pulse pressure. This is well shown by the coefficients of variation for the three pressures. The coefficient of variation is obtained by dividing the standard deviation by the average, and is a very good measure of the extent and quantity of the deviations from the average.

The diastolic coefficients (10 for all ages combined) are slightly larger than the systolic (9 for all ages combined), but the coefficients of the pulse pressure (17.7 for all ages combined) are much larger than either of the others. They are more than twice as large as the systolic coefficients in some age periods, and nearly twice as large as the diastolic coefficients. This is not unnatural, since the pulse pressure is the resultant of the two variables, the systolic and the diastolic.

We are all impressed by the fact that the average pulse pressure remains nearly at a level up to age 50, and after that rises only a few millimeters, while both the systolic and the diastolic pressure increase steadily with age, and the increase in millimeters is larger than in the pulse pressure. At first, this seems to indicate that the pulse pressure is the more stable and less liable to erratic fluctuations. But even this stability is fictitious, if we take into account the average number of millimeters in each of the pressures.

This marked variability of the pulse pressure, with a range from 20 to 60 mm. in apparent health, casts some doubt on its clinical significance and its value for insurance purposes. A favorite ratio has been: pulse pressure 1: diastolic pressure 2: systolic pressure 3. This is the so-called 1:2:3 ratio, and is probably derived from the averages. The pulse pressure of 42, which is obtained from a diastolic of 84 and a systolic of 126, is ideal. But is there any reason why a risk should be called unhealthy when the diastolic pressure is 84 and the systolic 104, or when the diastolic is 90 and the systolic 110? Yet in these cases the ratios would be 1:4:5, and 1:4.5:5.5. Should a risk be considered unhealthy when the systolic pressure is 140 and the diastolic, 70? This gives a pulse pressure of 70, and the ratio becomes 1:1:2. Doubtless, these unusual pulse pressures call for very careful examinations of the cardiovascular apparatus. In the last case, the medical examiner should look most carefully for any evidence of aortic leakage, and in both sets of cases for any signs of arteriosclerosis. If he certifies that there is no evidence of any impairment in the heart or vessel after careful examination, applicants presenting these unusual cases should not be regarded as unhealthy. Perhaps it may be said that a pulse pressure less than 30 mm. or larger than 56 mm. should be regarded as a warning signal to examine the heart and vessels with great care; but otherwise its value to us for life insurance seems quite limited. Much research will have to be made and many facts accumulated before it can be determined whether it has any real significance.

The pulse pressures of women are 1 or 2 mm. less than men's throughout life. In the younger ages, this is due to the fact that woman's systolic pressure is lowered more than her diastolic in proportion to man's. In the ages above 50, on the other hand, her diastolic pressure is raised more than the systolic proportionately.

An effort has been made to use the product of the pulse pressure and the pulse rate as an index of the work of the heart. Addis has written an excellent paper on this product.[10] Before it can be used for insurance purposes, it will have to be studied carefully. He says:

> The striking difference between the averages of normal individuals under basal and daytime conditions are the clearest illustration of the necessity for uniformity in the conditions under which the observations are made. It is not possible to use the basal normal for the evaluation of pressures obtained in patients in the morning if they have been out of bed even for a moment. The normal values for daytime measurements cannot be taken as a standard for observations made on patients who are standing or sitting, or on those who have just walked up a flight of stairs. The variability of normal blood pressure under such conditions is not known.

All of his readings were taken with the subject lying down, while practically all insurance records are taken with the subject sitting up. His coefficients of variation for systolic pressure were 11 for basal and 13 for daytime; for diastolic pressure, 14 for both basal and daytime; and for pulse pressure, 30 for basal and 28 for daytime. These coefficients are decidedly larger than those obtained in our study, and they tend to show that the blood pressure in all aspects is more variable when the subject is lying than when he is sitting. Perhaps some of his "normal" cases, which numbered only 300, would be classified as idiopathic vascular hypertension, described by O'Hare.[11] A careful reading of papers by O'Hare, Addis and others has convinced me that the method of obtaining the blood pressure as followed by insurance companies is trustworthy and reliable for persons in average good health. Doubtless, food, exercise and excitement have some effect; but they are rarely sufficient to raise the blood pressure in a healthy man above the point of acceptance by a life insurance company. If an applicant's blood pressure is too high at the first examination and remains so after he has been properly soothed and quieted, it does not often come down to acceptable figures at a second examination, unless treatment is taken. Very few readings are so low on account of dread of the examination as to need a second test, for life insurance has become a commonplace to most applicants.

SUMMARY

1. The systolic pressures of healthy men are set forth in Table 2, which is to be read in connection with Table 1. They increase decidedly, both with age and with weight. Nearly half of the increase from age and weight both is due to the increasing proportion of systolic pressures between 141 and 150 mm. In connection with the use of a numerical rating, as is the practice of the New York Life Insurance Company, which charges an excess rating for a systolic pres-

10. Addis, Thomas: Blood Pressure and Pulse Rate Levels; Levels Under Basal and Daytime Conditions, Arch. Int. Med. **29**: 539 (April) 1922; Blood Pressure and Pulse Rate Reactions, ibid. **30**: 240 (Aug.) 1922.

11. O'Hare, J. P.: Am. J. M. Sc. **159**: 369 (March) 1920.

sure of 140 mm. in the ages below 40, a question arises whether any systolic pressure above 140 mm. should not be suspected of pathologic possibilities. The mortality ratios do not definitely prove this, but, for pressures above 145 mm., they indicate it strongly. The results obtained by Dr. J. W. Fisher [12] corroborate this view.

Pressures below 100 mm. are rare in life insurance. They will usually be found in the very young and thin, and life insurance has shown that the applicant presenting the combination of youth, thinness and a pressure below 100 is prone to tuberculosis. To some extent this holds true also for those having a pressure below 110. Among those who are not young, these low pressures do not seem to be associated with increased mortality. In fact, the mortality ratios indicate that low pressure after age 45 is desirable. This is of great interest, for the average systolic pressure begins to increase decidedly at that age. It would seem that the average pressure runs counter to the best interests of health. In that respect, it resembles weight; for the average weight increases with age, while the lowest mortality after age 45 is found among those who are 15 per cent. lighter than the average weight.

The systolic pressures of healthy women are a little lower than man's up to age 40, partly for the reason that women weigh less up to this age. After that, they are a little higher than man's, and they behave like man's with reference to pressures over 140 mm.

2. The diastolic pressures of healthy men are set forth in Table 4, which should be read in connection with Table 1. They increase with weight and age in about the same proportion as the systolic pressure. It is possible that a diastolic pressure above 94 mm. is in the danger zone.

The diastolic pressures of healthy women are a trifle lower than man's up to age 40, and a trifle higher after age 50.

3. The pulse pressures of healthy men are set forth in Table 5. As it is not a real measure, but merely the difference between the systolic and diastolic pressures, all of its attributes depend on these. It is very variable, and its value to life insurance seems to be merely incidental and not substantial.

Probably life insurance and general medicine will never regard blood pressures in the same light. Life insurance sees only persons who are healthy, or at least think they are. Even the highest pressure of fat, elderly persons is below 140 mm. on the average, if they are acceptable for life insurance. This also means that practically as many are below 140 mm. as above, and we have seen that, of those above 140 mm., nearly all of them are below 150 mm. General medicine, on the other hand, sees those who feel that they are sick. If their illness is due to abnormal blood pressure, it is usually high, frequently as high as 200 mm. or more. General medicine knows that these high pressures will come down to 170 mm. or 180 mm. by appropriate treatment, and many of the patients will live for years. But medicine does not realize that a small increase in the number of deaths each year means a great difference to life insurance. At age 50, we expect only fourteen to die in the following year out of 1,000 living, and we call that 100 per cent. mortality. If twenty-eight die, our mortality jumps up to 200 per cent. At age 60, if the number of deaths among 1,000 living increases from 26.69 to 40.04, the mortality increases to 150 per cent. If a practitioner should see 1,000 patients with high blood pressure at age 60, and wager with himself that 974 would survive the year and only 960 did survive, he would not feel downcast. In fact, he would probably point to the record with pride and boast of his ability in prognosis. But life insurance would have to tell him that his mortality was 150 per cent. in that group, and a medical director who did not make a better guess than that would not hold his position long. General medicine would look complacently at the living, but life insurance would ruefully regard the dead, for forty claims would have to be paid instead of the twenty-six expected.

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12. Fisher, J. W.: Proceedings of Association of Life Insurance Medical Directors **7**: 21, 1920-1921; 1915-1916, p. 203.

PERICARDITIS CALCULOSA

REPORT OF A NEW CASE DISCOVERED ROENTGENOLOGICALLY *

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Rarely does the roentgen-ray examiner stumble onto anything more interesting and startling than the revelation of a calcareous deposit in the pericardium. This relatively rare deposit of lime salts, occurring in a regular or irregular manner on the surface of the heart, sometimes loosely spoken of as "ossification" and "bone" in the pericardium, is more properly designated as pericarditic calcification or pericarditis calculosa. The calcium deposit, composed of the phosphate combined with small amounts of the carbonate and a trace of sodium, usually is confined to the pericardium; but it may extend into the substance of the heart.

There have been published several excellent summaries of our knowledge of the pathology and symptomatology of this rare condition, notably those by Diemer,[1] Jones,[2] Mitchell,[3] Klason [4] and Mueller.[5] The total number of cases found reported in the literature prior to 1922 is ninety. To these I have a new case to append.

REPORT OF CASE

Mrs. Z. R., aged 45, housewife, whose family history was negative, in childhood suffered from measles, mumps, whooping cough, and what was thought to be a light attack of scarlet fever. The menses were always irregular and scanty, and ceased entirely at 25. She was married at 18 and had one confinement, which was normal. Except for constipation, her health had been good until the death of her son in France in 1919. At this time she suffered a collapse, followed shortly by swelling of the abdomen and the left side of the neck. The urine had always been scanty. Abdominal distention continued until July, 1920, when 8 quarts (liters) of fluid were removed by paracentesis. She was tapped again in September, 1920, and had been tapped subsequently at intervals of from seven to ten weeks. On account of her physician's apprehension regarding her kidneys, the patient had lived on a low-protein diet ever since her collapse. Physical weakness had grown very marked. Some shortness of breath had been noted.

* From the Surgical Department of the Battle Creek Sanitarium.

1. Diemer, F.: Ueber Kalkablagerungen an den sërosen Hauten des Hertzens, Ztschr. f. Heilk. **20**: 257, 1899.
2. Jones, A. E.: Lithemia, Charlotte M. J., March, 1901.
3. Mitchell, J. H.: Calcification of the Pericardium, Tr. Chicago Path. Soc. **8**: 109, 1909-1912.
4. Klason, T.: Pericarditis calculosa und Herzverkalkungen, Acta radiol. **1**, Pt. 2:162-170, 1921.
5. Mueller, E. F.: Perikarditische Verkalkungen, Fortschr. a. d. Geb. d. Röntgenstrahlen **25**: 231, 1918.

The blood pressure was 112 systolic and 70 diastolic. The height was 58 inches (147 cm.); the weight, 112 pounds (51 kg.) after tapping.

The temperature was 98.6 F.; the pulse, 84. The teeth were in a bad state; pyorrhea was marked. The left cervical and axillary glands were enlarged.

There was decreased resonance over the lower half of both lungs posteriorly, accompanied by râles suggesting a chronic venous congestion.

Liver dulness was moderately increased. No irregularities were palpable along the lower margin of the liver, or revealed on the upper border of the liver shadow during fluoroscopic study. No splenic enlargement was found.

Pelvic examination revealed a urethral caruncle; a small, atrophic uterus; the fundus not palpable. Rectal examination was negative except for evidences of mucous colitis.

The bones and joints were normal. The pupillary reflexes were normal; the patellar reflexes were absent.

There was moderate edema of the legs extending to the ankles, although, when questioned, the patient stated that she had not noted the occurrence of such a symptom before.

Urine examination revealed from none to two hyaline casts, an occasional trace of albumin, persistently low specific gravity and scanty urine, the average twenty-four-hour specimen being 600 c.c.

Blood study revealed: hemoglobin, 70; red cells, 3,010,000; leukocytes, 12,000; blood Wassermann reaction, negative; nonprotein nitrogen, 28.4; blood sugar, 90.

The alveolar carbon dioxid tension was 38; acetone, 0.

A barium meal study gave normal findings for the stomach and intestine except for marked colonic stasis, for which no organic obstruction could be found aside from marked spasticity of the terminal colon. The emptying time of the colon was much longer than seventy-two hours, in spite of cleansing enemas. It was felt that the barium meal study excluded the presence of malignant disease in the gastro-intestinal tract.



Fig. 1.—Heart of author's patient.

The patient complained of marked cardiac palpitation, which she thought was due to the pressure of the distended abdomen. There was no precordial tenderness. The apex beat was palpable in the fifth interspace. Cardiac dulness on percussion extended 8 cm. to the left of the midline. The heart sounds were fairly distinct. No murmurs were heard at the apex. A slight systolic sound was heard at the base. In the erect position the heart sounds were distinct; the murmur was not increased. The heart action was irregular. The physical examination elaborated by the electrocardiogram led to a diagnosis, by Dr. M. A. Mortenson, of myocardial degeneration, with evidence of auricular fibrillation and myocardial inefficiency.

Thus far in the study of this case, no suggestion had been offered as to any other unusual condition of the heart, although the patient's chest had been examined fluoroscopically in connection with the barium meal as well as during the usual entrance examination given all new patients. The costophrenic angles were noted as clear, the diaphragm showing normal excursion on both sides. At this juncture a review of the roentgen-ray findings was requested, and I was fortunate in observing a very unusual shadow in connection with the heart, apparently pulsating with the cardiac contractions, yet in the periphery of the cardiac shadow. In the left side of the heart shadow there was an area of calcification, lying in the pericardium in the form of an ovoid patch, 8 cm. in diameter, occupying the anterior and inferior surface of the left aspect of the cardiac outline. Careful study of the stereoscopic roentgenograms made in several positions gives one the impression that this irregularly calcareous patch is flat and suggestive of a piece of "armor plate." An estimation of the calcium content of the blood was then made by Clark's method, with a resulting figure of 6.1 mg. of calcium for each hundred cubic centimeters of blood, which is a little lower than the normal figures, from 7 to 10 mg. (Dr. W. B. Lewis).

For nearly a year the patient has continued treatment aimed principally at the cardiac, renal and hepatic inefficiency. She has been tapped at irregular intervals, on the whole less frequently than before. The weight and strength have increased. The urinary output continues scanty and of low specific gravity. Edema of the lower extremities and a general appearance of puffiness continue in spite of the treatment.

The clinical diagnosis is: myocardial degeneration with auricular fibrillation; pericardiac calcification; chronic nephritis; the syndrome of hepatic cirrhosis with ascites.

COMMENT

Numerous points of great clinical interest present themselves for discussion in connection with this condition. As before suggested, less than a hundred such cases are on record, and the great majority of these were discovered accidentally at necropsy. Various authors writing prior to 1899 declared that the diagnosis had never been made on the living patient and, indeed, could never be made except accidentally from the introduction of a knife. In a series of thirty-eight cases reported by Jones [2] in 1901, only one case is mentioned as being diagnosed as adherent pericardium during life, although pericardial synechia is constant in percarditis calculosa.

The possibility of discovering pericardial calcification roentgenologically was suggested by Diemer [1] in 1899, and by Simmonds [6] and by Lydtin [7] in 1907. It remained for Schwarz [8] of Vienna to realize this possibility in 1910 when he reported a case in which fluoroscopy of the thorax revealed within the heart outline a number of denser shadows which moved coincidently with the cardiac pulsations. The largest of these measured 2 by 3 cm., and occupied the left and anterior border of the pericardium. The patient had no symptoms relative to the heart, but some years previously had suffered a severe blow on the precordial region.

In 1911, Schwarz [9] discovered a second case in a woman, aged 33, with enlargement of the liver and ascites, but without edema of the lower extremities. Screen examination of the thorax revealed a denser, pulsating, finger-wide shadow extending from the left

6. Simmonds: Fortschr. a. d. Geb. d. Röntgenstrahlen **12**, 1907.
7. Lydtin: Diss., München, 1907.
8. Schwarz, G.: Wien. klin. Wchnschr. **23**: 1850, 1910.
9. Schwarz, G.: Wien. klin. Wchnschr. **24**: 1386, 1911.

apex at the lower border of the heart shadow upward toward the middle line.

Groedel,[10] in 1911, also recorded a case of pericardial calcification discovered fluoroscopically, the shadow in this instance likewise occupying the left side of the heart, anteriorly, along the auriculoventricular border.

Rieder,[11] in 1913, recorded two cases similar to the foregoing, discovered during fluoroscopy. In one of these, however, the calcification was first found during the third fluoroscopic examination. Later plate examination established the fact that a dense deposit of lime had occurred between the auricle and the ventricle, parallel with the left border of the heart, extending from the apex upward toward the middle line; and that there were numerous less dense radiating shadows branching off from the principal calcareous deposit, forming a sort of network. Lateral and oblique screen study disclosed, further, that the densities extended along the anterior and inferior borders of the heart, the posterior border being entirely free from calification.

Alfred Weil,[12] in 1916, reported a case of "armored heart" occurring in a young soldier exhibiting the clinical picture of Pick's pericarditic pseudocirrhosis of the liver. The anterior and inferior surfaces of the ventricles were encircled by a crust of lime. There was a gap in the mail-like calcareous coat at the apex into which the heart seemed to be forced, perhaps accounting for the diastolic scratching heard with greatest distinctness just at the apex. The first complaints, three years previous, were increasing dyspnea on exertion, and abdominal distention. At that time clinical examination established cardiac dilatation, hepatic enlargement and ascites, and occasional edema in the lower extremities. Under appropriate treatment, he was able to resume light work. The calcareous deposits were at first overlooked, being found only when the patient was later subjected to roentgen study.

Klason [4] of Stockholm, in 1921, cited two other cases found roentgenologically by Brauer and by Assmann, and added five additional heretofore unreported cases of pericarditis calculosa, three of them discovered accidentally during postmortem studies, the other two found roentgenologically in the living patient. Figure 2, an illustration borrowed from Klason, is a roentgenogram of the heart in the living patient, showing the distribution of the calcareous accumulations.

I have thus been able to obtain literature concerning eleven [13] cases of calculous pericarditis discovered in the living patient, thanks to the roentgen examination, and the case herewith detailed constitutes the twelfth.

Calcareous deposits in the endocardium and myocardium have long been recognized at the necropsy table, but the likelihood of such calcifications being discovered roentgenologically is extremely remote. On the other hand, the gross pericardial lime incrustations recognized at necropsy as long ago as 1724 should be found roentgenologically without serious technical difficulty. It is true that the condition is rare, only about ninety cases being recorded up to date. Wells,[14] in 1902, reported four cases of "calcific pericarditis" out of 1,048 necropsies at Rush Medical College. Chambers [15] found that in five out of eighty-six cases of adherent pericardium, formation of "bony" material had taken place in the old fibrin. It is likely that the number of reported cases will rapidly increase now that the roentgen rays are coming into such general use in clinical examinations.

AGE AND SEX

The average age at which the condition under discussion occurs was 48.4 years in fifty cases studied by Jones.[2] The youngest patient was 11 and the oldest 91. These cases were all discovered at necropsy, however. With the aid of roentgenology, many cases are being discovered antemortem in younger patients. The proportion of males to females is as two or three to one.

ETIOLOGY

Various causes have been suggested. The insidious onset of symptoms renders it probable that inflammatory products may be gradually converted into calcified tissue. It is significant that almost without exception the visceral and parietal layers of the pericardium are united by a plastic process, in which the calcareous deposit occurs. There is a total obliteration of the pericardial cavity. Impaired circulation is probably an important factor; other calcifying factors are decreased metabolism, necrobiosis and tissue necrosis. A number of the cases cited above give a history of pericarditis, pleurisy or some undetermined "trouble" in the chest. It was only rarely, though, that a diagnosis of adherent pericardium was made during the life of the patient. Careful attention to certain details of fluoroscopic technic emphasized by Klason,[4] referred to later, may increase the number of diagnoses of synechia pericardii.

DISTRIBUTION

The lime deposits occur especially over the anterior and inferior aspects of the ventricles, while the auricles are rarely affected. This may be due to a circulatory condition. Virchow,[16] in 1858, considered that the distinct calcifications found in the lungs, stomach, kidneys, intestines and blood vessels were due to a superabundance of lime salts in the blood, and that inadequate renal elimination might also be a causative factor, as many of these cases are associated with advanced renal disease. Virchow thought that the deposits occurred more frequently in organs rich in blood supply. Von Recklinghausen,[17] contrary to Virchow, considered that calcification occurred in tissues poor in blood supply, and that calcification could proceed when the calcium content of the blood was normal. Wells [14] showed that frank calcification might occur in the absence of any discoverable pathologic etiology. Galleani,[18] by injection of mercuric chlorid into the kidney substance of a rabbit, produced a lesion exhibiting calcification after undergoing a fibrinous necrosis. Litten [19] produced a similar lesion in the renal tubules by ligation of the renal artery.

Bernardie,[20] in discussing calcification of uterine myomas, brought forward very interesting data supporting the theory that calcification of fibroids is the result of some form of necrobiosis associated with a progressively diminishing blood supply. Peraire [21]

10. Groedel, F. M.: Fortschr. a. d. Geb. d. Röntgenstrahlen **16**, 1911.
11. Rieder, H.: Fortschr. a. d. Geb. d. Röntgenstrahlen **20**: 50, 1913.
12. Weil, Alfred: Armored Heart and Pick's Hepatic Cirrhosis, Fortschr. a. d. Geb. d. Röntgenstrahlen **23**: 489 (No. 6) 1916.
13. Schwarz, two; Groedel, one; Rieder, two; Weil, one; Brauer, one; Assmann, one; Klason, two; Mueller, one.
14. Wells, H. G.: The Pathology of the Healed Fibrous Adhesions of the Pericardium, Am. J. M. Sc. **123**: 241, 1902.
15. Chambers, quoted by Jones (Footnote 2).
16. Virchow, Rudolph: Cellular Pathology, New York, 1859.
17. Von Recklinghausen, quoted by Klotz: J. Exper. Med., 1895, p. 633.
18. Galleani: Lo Sperimentali **58**: 371, 1904.
19. Litten. Ztschr. f. klin. Med., 1879.
20. Bernardie, A.: Thèse de Paris, 1901.
21. Peraire: Tr. Soc. anatomique, Paris, 1909, p. 151.

states that calcification of an intra-uterine pedunculated fibroid is very rare because its blood supply remains adequate.

It is conceivable that the process may begin as a serofibrinous or fibrinous pericarditis. During the production of the reactive granulation tissue there is a reduction of the blood supply to the fibrinous masses, which, when not absorbed, may remain imprisoned for a long time. Such dead masses in which the circulation is very slow and insufficient have a decided tendency to undergo calcification (Klason). Naturally, the lime would accumulate in those regions of the pericardium subjected to the least disturbance from the contractions of the chambers of the heart.

Various infections have been noted in the histories or in the necropsy reports in many of the cases of pericarditic calcification, notably tuberculosis, *Streptococcus viridans* infection, typhoid, and pyorrhea alveolaris. "Rheumatism" is frequently referred to in the histories.

In the case here reported, the calcium content of the blood was just below the figures given as normal by Clark,[22] and by Halverson, Mohler and Bergeim.[23] These writers obtained values lying between 9 and 11 mg. of calcium for each hundred cubic centimeters in normal cases, with distinct decreases in patients suffering from hematogenous jaundice, eclampsia, pneumonia, and particularly anemia and severe nephritis. In my patient there are definite evidences of a long standing renal inefficiency, and a calcium value of 6.1 mg. for each hundred cubic centimeters of blood by Clark's method. Diemer [1] reiterates that a slowing of the circulation favors the process of calcification, and under such circumstances an abnormally high calcium content of the blood does not play an important rôle.



Fig. 2.—Heart of Klason's patient.

DESCRIPTION

The descriptions of the calcareous deposits vary slightly. Some have been described in the preceding pages. The following quotations are from other previously reported necropsy cases:

The visceral surface of the pericardium was lined with irregular, ragged calcareous masses; the parietal surface on the inside had a smooth calcareous plate measuring 7 by 3 cm.[2]

There was a thin, calcified band across the front of the ventricles, which ran with the convex margin toward the apex; along the right border this band extended up to the right auricular appendix. Posteriorly there was a broader band which was attached to both the diaphragm and the heart.[24]

Douglas and Yates [24] state that the condition undoubtedly began as a purulent pericarditis; absorption took place, but in a ring, and calcification followed.

The pericardial sac was entirely obliterated and the membrane enormously thickened. Because of the thick calcareous plate which had formed in the pericardium, it was impossible to open the heart in the ordinary way.[25]

There were adhesions of the pleura, and the layers of the pericardium were universally adherent. Over the right auricle anteriorly and over the posterior part of the left ventricle, there was a calcareous plate, dense, hard, over 12 cm. broad, and from 6 to 10 mm. in thickness. The anterior wall of the left ventricle was free.[26]

With the tissue of the pericardium there was found an extensive deposit of calcareous matter which covered the whole anterior surface and about half the posterior. The thickest part of the deposit occurred where the pericardium unites with the central tendon of the diaphragm. As it extended upward in two parts, the deposit gradually became thinner. The inner surface of the pericardium was roughened in spots by the concretion. . . . The arch of the aorta presented a calcified surface 6.5 sq.cm. in area. There was also calcareous degeneration of the internal carotid, the vertebral and the ophthalmic arteries.[27]

Both pleural cavities obliterated by adhesions. Pericardium adherent to anterior chest wall and adjoining mediastinal tissue. Pericardial cavity entirely obliterated and the seat of extensive calcareous infiltration. A large section of the heart was encased in a hard calcareous sheath, which implicated the pericardium of the right ventricle, about one half of the anterior and under surface of the right auricle, the left edge of the heart, and the lower two thirds of the left ventricle, the apex and the diaphragmatic surface of the heart. This calcareous sheath appeared to be made up of a single calcareous plate.[28]

Both pleural cavities obliterated. . . . The pericardial cavity was entirely obliterated and largely calcareous, the calcified mass being in the left half of the pericardium anteriorly and posteriorly, and on the under or diaphragmatic surface. There was a hornlike projection from this calcareous plate which extended out in front of the inferior vena cava

22. Clark, G. W.: The Micro-Determination of Calcium in Whole Blood, Plasma, and Serum by Direct Precipitation, J. Biol. Chem. **49**: 487 (Dec.) 1921.

23. Halverson, J. O.; Mohler, H. K., and Bergeim, Olaf: The Determination of Small Amounts of Calcium, Particularly in Blood, J. Biol. Chem. **22**: 159 (Nov.) 1917; The Calcium Content of the Blood Serum in Certain Pathological Conditions, ibid. **32**: 171 (Nov.) 1917.

24. Douglas, M., and Yates, A. G.: A Case of Calcification of the Pericardium, J. Path. & Bacteriol. **18**: 120, 1913-1914.

25. Simpson, F. O.: Calcification of the Pericardium, J. Ment. Sc **48**: 529, 1902.

26. Bruen, E. T.: Extensive Calcareous Deposit in the Pericardium, Tr. Path. Soc. Philadelphia **14**: 153, 1887-1889.

27. Fenn, C. T.: Calcareous Degeneration of the Pericardium, Chicago M. J. **25**: 321, 1868.

28. Kelly, A. O. J.: On multiple Serositis: The Association of Chronic Obliterative Pericarditis with Ascites, etc., Am. J. M. Sc. **125**: 116, 1903.

so that it partially surrounded its diaphragmatic opening [youth, aged 19].[29]

The heart was normal in size; the only portion of the ventricle free from a calcareous covering was a part about 2 cm. in diameter at the left anterior and inferior angle. The heart muscle was infiltrated with calcareous material. Both layers of the pericardium were welded together and formed an irregular calcareous casing for the heart. In its thickest part this covering was 18 mm. thick. There was a ridge of exceptional hardness around the interauriculoventricular groove.[30]

Pericardial sac obliterated, the two layers being united; large calcareous deposits in the pericardium around the base and especially over the inferior vena cava [girl, aged 13].[31]

Pericardium and epicardium grown together. On section it was found that a hard ring of varying width, following the course of the sulcus circularis, surrounded the entire heart. The thickest part of this ring was a calcareous deposit which covered the surface of the right auricle, extending on both sides toward the right and left ventricle. The deposit of calcium showed the amorphous, not the crystallized form.[1]

There was a ring-shaped calcareous deposit in the pericardium; on the left border of the heart the ring was closed by a strip of material of lighter consistency.[1]

The two layers of the pericardium were bound together by a membrane of connective tissue. At certain points along the coronal sulcus, instead of the connective tissue a calcareous plaque 2.0 to 2.5 mm. thick lay between the two layers attached to both, surrounding the heart in the form of a ring of varying width.[32]

The layers of the pericardium were closely adherent. On section, a calcareous strip was found crossing the posterior wall of the left ventricle, forming a plaque under the mitral valve, surrounding the base of the ventricles in a complete ring.[33]

Review of the foregoing excerpts from the reports on postmortem material suggests at once the frequency of an associated or preceding pericarditis, and in many instances evidence of old involvement of the pleura, especially that covering the diaphragm. It is also evident that the presence of the calcareous deposit in the pericardium masks the physical signs and renders more difficult than usual the diagnosis of adherent pericardium. From the roentgenologic standpoint the following may be suggested as signs of pericarditis adhesiva: (*a*) a triangular shaped heart; (*b*) disappearance of the boundaries between the various heart chambers, usually made out fluoroscopically; (*c*) diminished excursion of the edge of the cardiac shadow during heart action, and (*d*) diminished mobility of the heart in relation to the diaphragm with the patient in the lateral positions.

TECHNICAL DETAILS FOR ROENTGENOLOGIC STUDY

The roentgenologic study of pericarditis calculosa should be carried out both with the screen and with plates. Several cases, finally discovered, went through repeated plate and screen study before the diagnosis was made.

Klason [4] believes the fluoroscopic study more valuable than the roentgenographic. True, one can vary the penetration of the ray employed and can turn the patient in various directions more easily and economically with the screen than with the plate method. I prefer a combination of screen and roentgenographic examination, though in the case reported in this paper I discovered the calcified pericardium while repeating a part of the barium meal study. Such a case impresses very forcibly the lesson that no fluoroscopic observation should ever be attempted until after the eyes have been thoroughly prepared for screen observations by a long preliminary stay in the dark.

CONCLUSION

It is hoped that the foregoing report and discussion may stimulate renewed interest in and search for calcareous depositions in the pericardium. Such calcifications, which must remain unsuspected before a roentgen-ray examination, are of great importance, for a heart shackled by a pericardial calcareous shell must be seriously hampered in its action. The discovery of this rare and interesting complication will add light to many cases with circulatory disturbances, ascitic manifestations and hepatic cirrhosis.

29. Herrick, J. B.: Pericarditic Pseudo-Cirrhosis of the Liver, Tr. Chicago Path. Soc. **5**: 71, 1901-1903.
30. Lucas, J. J. S.: Pericardial Calcification, **2**: 1404, 1907.
31. Bennion, J. M.: A Case of Adhesive Mediastino-Periocarditis, Brit. M. J. **1**: 316, 1906.
32. Rozza, F.: Pericarditis calculosa, Pest. med.-chir. Presse **34**: 636, 1898.
33. Pellasse, M.: Péricardite calcifiante avec signes de rétrécissement mitral, Lyon méd. **111**: 509, 1908.

MENACE OF THE DIAGNOSTIC THROAT CULTURE IN DIPHTHERIA *

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The etiologic relationship between diphtheria and the diphtheria bacillus has been established beyond cavil. It may seem a platitude to assert that the disease known as human diphtheria is the reaction of the body to the toxin of the diphtheria bacillus. The unfortunate annual succession of tragedies witnessed at the Willard Parker Hospital, traceable to lack of clear thinking on this point, have forced us to emphasize the fact that the presence of diphtheria organisms in the throat is not synonymous with diphtheria, and that the failure to find diphtheria organisms in culture tubes inoculated from swabs passed over the mucous membranes of the throat does not exclude the presence of diphtheria. In the interests of clear medical thinking, we wish to emphasize the fallacies that may result from the throat culture diagnosis of diphtheria, and the dangers consequent upon delay in making the diagnosis from a laboratory report instead of from the clinical picture.

FALLACIES

The presence of a virulent culture of diphtheria bacilli may be reported from the throats of sick or of healthy persons who are carriers. From a public health standpoint, the detection of carriers is a matter of great importance, and it interests us as practicing physicians. Fifteen per cent. of all children in great cities are immune carriers of diphtheria organisms and are therefore deprived of hospital care by the usual procedure. Shick testing and immunization would obviate this. The absence of diphtheria bacilli in throat cultures taken from patients ill of diphtheria has been the subject of special investigation. In the taking of cultures from more than a hundred patients admitted to the diphtheria service at Willard Parker Hospital, the usual superficial culture was taken in two tubes, as well as a deep culture, the swab being placed between the

* From the Willard Parker Hospital, Department of Health, New York.

membrane and the tissue. One of the superficial cultures was sent to the diagnostic laboratories of the board of health. The other was sent, in order to avoid chilling and delay in incubation, to the pavilion laboratory, and was examined by one of us. In our laboratory, we obtained 3 per cent. more positive cultures than the health department laboratory, which reported no growth in cases in which we obtained diphtheria bacilli. We obtained 12 per cent. more positive cultures from *under* the membrane than from the usual superficial culture.

DANGERS OF DEPENDING ON THE DIAGNOSTIC CULTURE

The dangers of depending on the diagnostic culture may be presented both statistically and by the report of individual cases. In diphtheria, the factors involved

TABLE 1.—PRIMARY CULTURES OF ONE HUNDRED PATIENTS WITH CLINICAL DIPHTHERIA

	Culture Positive Per Cent.
Surface, department laboratory	80
Surface, pavilion laboratory	86
Under membrane, pavilion laboratory	98

in any case are the virulence of the organism and the natural resistance of the patient. This may seem to be another platitude; but all statistics involving the duration of illness must be read with this knowledge. As a rule, patients with diphtheria enter our institution as soon as the diagnosis is made. For the last three years, our mortality (excluding laryngeal cases) has been: during the first twenty-four hours, from 27 to 30 per cent.; during the first forty-eight hours, 14 per cent.; for more than forty-eight hours, 54 per cent. The average period of illness in the fatal cases, without antitoxin before admission, was four and one-half days. The mortality in 300 cases, considered in respect to the number of days before treatment was administered, was: first day, 0; second day, 0.01 (on admission, all three patients had a complicating bronchopneumonia); third day, 0.02 (three patients with myocarditis: one, laryngeal and two, bronchopneumonia); fourth day, 0.026 (five, diphtheria, toxic); fifth day, 0.03 (straight diphtheria, toxic); sixth day or later, 0.04 (straight diphtheria, toxic).

Delay in the administration of antitoxin is chargeable (1) to parents who fail to summon competent medical attention through an attempt at lay diagnosis or through a misinterpretation of symptoms, and (2) to physicians who fail to read a clinical picture, and thrust the burden of diagnosis on the laboratory. The most aggravated case of this kind was that of a man who was under a physician's care for eleven days and died after the membrane had been permitted to extend to the bronchi because frequent cultures taken in the usual way were negative. Six other cases were recently observed at the hospital:

REPORT OF CASES

CASE 1.—J. C., a girl, aged 6, had been ill four days before admission. The family physician had seen her on the second day of her illness. All that day she had complained of sore throat, and her mother said she had had a high fever. The family physician diagnosed acute tonsillitis, and cultures were taken the following day. No antitoxin was given, as the report on the culture was negative. The patient became worse, and on the fourth day was sent to the Willard Parker Hospital.

On examination, there was a characteristic odor of the breath, profuse serosanguineous nasal discharge, and membrane on both tonsils and the uvula, soft palate and posterior pharyngeal wall. The patient appeared toxic. She received antitoxin intravenously. Nevertheless, there occurred severe nasal hemorrhages and cardiac arrythmia; and she died on the nineteenth day of her illness.

Even in cases which are not fatal, the late administration of antitoxin subjects the patients to prolongation of their illness, and at times protracted or permanent crippling of the heart, or nervous system, as these cases show:

CASE 2.—S. A., a girl, aged 2½ years, who was ill six days before admission, was finally sent in on the advice of a consulting pediatrician. The patient had been seen by three physicians. Each in his turn had taken a culture, and all were negative; the child was getting worse, and the membrane had spread down the larynx. On admission, the patient was toxic. There was marked intercostal retraction, nasal discharge with excoriation, and a throat full of exudate, and the posterior or pharyngeal wall was lined with sloughing membrane. Laryngoscopy revealed a larynx blocked with membrane covering the aryepiglottic folds, arytenoids and vocal cords. There was also a subglottic membrane. On the fifth day, 10,000 units of antitoxin had been given intramuscularly; and 30,000 units was given on admission. In the hospital, throat and nose cultures revealed diphtheria bacilli.

CASE 3.—P. D., a nurse, aged 22, was ill five days before admission. The onset had been gradual, the chief complaints being sore throat, malaise and a slight rise in temperature. On the second day of her illness, she consulted a nose and throat specialist, and he took a throat culture. On the following day, Klebs-Loeffler bacilli were reported, and the patient was referred to the Willard Parker Hospital. On admission, she was seriously ill, complaining of sore throat, headache and dysphagia. She was slightly dyspneic. The tissues of the neck were swollen and tender. The throat was full of diphtheritic exudate, covering the tonsils and pillars. The uvula was edematous and congested. The temperature was 102 F., the pulse, 108. She received a massive dose of antitoxin intravenously, from which there was a severe reaction in two hours. Recovery was slow. This patient subsequently developed a palatal paralysis, with regurgitation, cardiac arrythmia and moderate degeneration of the heart muscle. She remained in the hospital fifty-four days.

TABLE 2.—THREE HUNDRED CASES OF DIPHTHERIA

Days Ill Before Treatment	Number of Cases	Mortality Per Cent.
1	80	0
2	79	3.6
3	64	6.4
4	36	13.9
5	21	23
6 and over	20	25

CASE 4.—A. Q., a nurse, aged 30, had been ill four days before admission. The tonsils, uvula, soft palate and posterior pharyngeal wall were covered with membrane. A throat specialist treated her for Vincent's angina because a throat smear had revealed the spirillum and bacillus of Vincent's angina. The membrane continued to spread, and a second culture revealed Klebs-Loeffler bacilli. She was then given 10,000 units of antitoxin intramuscularly. On admission, she was moderately prostrated. Breathing was difficult because of the throat obstruction. The temperature was 103 F. The appearance was toxic. She received antitoxin intravenously without reaction. Subsequently, there developed palatine paralysis and cardiac arrythmia.

CASE 5.—S. S., a charge nurse in a hospital, had been ill two days. Diagnosis and treatment waited another twenty-four hours for a culture report. The patient was admitted with a severe angina, dyspnea and inability to swallow. She was prostrated. The tonsils, palate, pharynx and uvula were covered with exudate. Antitoxin was administered intra-

muscularly and intravenously on admission. She was in the hospital for a month, and suffered subsequently for many months from heart weakness as the result of her illness.

CASE 6.—Dr. W. C., aged 57, was admitted, March 16, 1922, and was in the hospital for five months. He had been ill four days before admission. For three days, it was thought that he had an acute tonsillitis. On the third day, a culture was taken, and Klebs-Loeffler bacilli were reported twenty-four hours later. He then received 10,000 units of antitoxin intramuscularly, before going to the hospital. In our admitting room, he received an additional 10,000 units intravenously, and 20,000 units intramuscularly. A membranous exudate covered both tonsils and posterior pharyngeal walls, the uvula and the lateral two thirds of the soft palate. There was marked bilateral swelling of the neck. The anterior and posterior cervical lymph nodes were enlarged. His appearance was extremely toxic. Nine days after admission, he developed nasal voice and regurgitation. Subsequently, there developed a peripheral neuritis, with weakness, paresthesia, anesthesia, loss of knee jerks, and pain. There was also diplopia. Finally there developed paralysis of bladder control, which necessitated catheterization for a month.

COMMENT

This severe and dangerous illness and the costly loss of time are in contrast to the usual course of diphtheria promptly recognized and treated. Most of our patients leave the hospital well, on the twelfth day.

Even at the risk of retelling an oft-told tale, we shall recount the reaction of the human body to diphtheria toxin. Diphtheria toxin is an agent destructive to the chromaffin tissues. It is a capillary poison, at first stimulating the capillaries to contract, and later causing them to dilate, with hemorrhages.

LOCAL AND GENERAL PHENOMENA

The clinical picture resulting from reaction to the toxin may be divided into the local and general phenomena.

Local Symptoms.—There is a necrotic membrane surrounded by adjacent redness, and with pallor beyond. The designation of the disease is descriptive of the membrane which the Greeks called διφθέρα, meaning wash-leather. It is reminiscent of the ancient process of puering skins. Early pastoral people digested the elastic fibers of sheep and goat skins with the pancreatic extract contained in the dung of dogs or fowl. This softens the leather and makes it chamois-like; it also accounts for the offensive odor and the color frequently associated with such leathers. The diphtheria membrane is shaggy, is greenish yellow, has a characteristic offensive odor, and when it is removed there is bleeding. An adequate illumination is essential; the patient must be made to gag so as to avert the tonsils. A careless inspection of the throat or nose is unpardonable.

The lymph nodes in relation to the membrane are enlarged, and if the process lasts there is considerable perinodular edema and puffiness. The nodes become matted together. Other local symptoms depend on the location of the membrane. There may be obstruction of the nose, nasopharynx, pharynx or larynx.

General Symptoms.—These are due to the stimulation of the sympathetic nerve system. The pulse is always rapid, frequently disproportionately so when the temperature rise is considered. Often the temperature rises so little that it may mislead those who measure the severity of an illness with a thermometer. At times, there is a chill and a sharp rise of temperature at the onset; but the pulse is always rapid, and continues so unless appropriate treatment is instituted. In neglected cases, there is a general pallor and, later, hemorrhage into the skin or from the mucous membranes, with progressive, profound weakness.

It must not be forgotten that pus organisms may become pathogenic simultaneously with diphtheria bacilli, and that the reaction of the body to them may complicate the clinical picture.

When in doubt as to the correct interpretation of symptoms, it is better to give antitoxin needlessly than to err by waiting for a laboratory report.

The report from the laboratory adds nothing decisive to the diagnosis.

TRANSPLANTATION OF TENSOR FASCIAE FEMORIS IN CASES OF WEAKENED GLUTEUS MEDIUS

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The limp caused by a weak gluteus medius with marked swaying of the body toward the involved side, and dropping of the hip on the opposite side (Trendelenburg sign) is very noticeable in many cases of poliomyelitis.

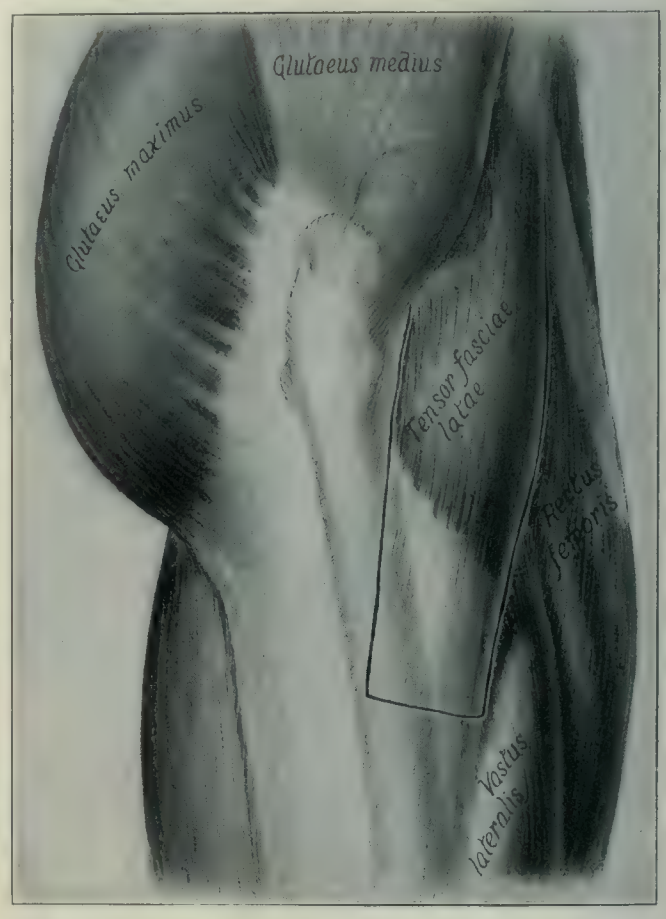


Fig. 1.—Normal anatomic appearance about the hip. The black line along the tensor fasciae femoris represents the incision made in freeing this muscle before transplantation.

In the endeavor to alleviate this limp, I devised the plan of transplanting the tensor fasicae femoris muscle into the outer side of the femur to increase the power in the gluteus medius.

The tensor fasciae femoris is to some extent an abductor, but its greater power is in flexion. A function

of the gluteus medius often overlooked is its action in holding the center of gravity of the body over the supporting leg when standing on one foot. We are all familiar with the action of the gluteus maximus in holding the body erect and preventing the trunk from falling forward, but it is not generally recognized that the gluteus medius is equally necessary to keep the body

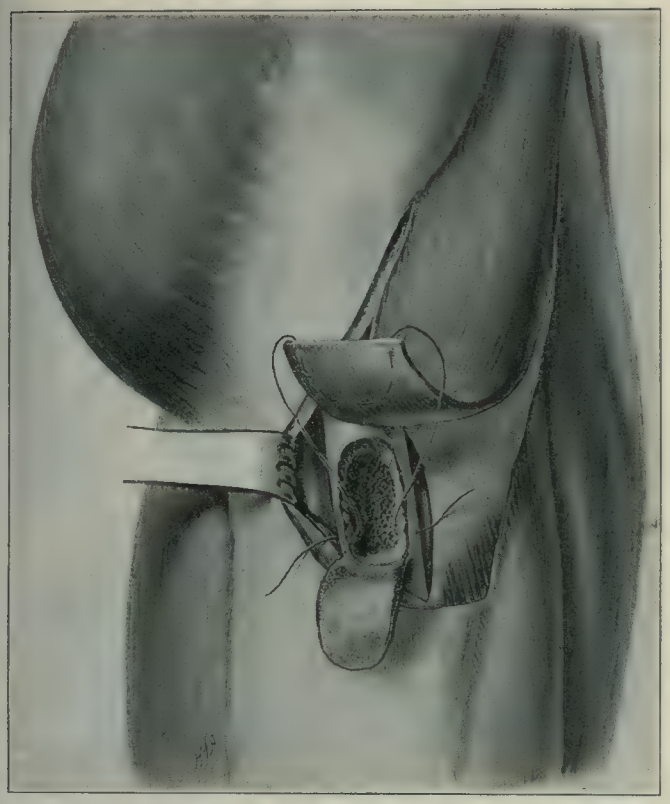


Fig. 2.—Groove in femur and freed tensor fasciae femoris with silk suture before insertion into the femur.

from falling to the opposite side whenever the weight is borne on one leg. Inability of the gluteus medius to perform this function causes a limp. There is either a dropping of the pelvis on the opposite side, similar to the Trendelenburg sign, which is an awkward gait, difficult to overcome, or else it results in an attempt to bring the center of gravity over the supporting leg by throwing the body to that side and reaching out with that arm, in the typical and distressing abductor limp.

METHOD OF PERFORMING OPERATION

The incision starts at the anterior superior spine, and extends backward and downward over the great trochanter, and then downward along the course of the femur for about 3 inches.

The skin with the subcutaneous fat is reflected forward, exposing the fascia lata.

Anteriorly, running downward from the anterior superior spine, the fascia lata is seen to become thin before extending over Scarpa's triangle. Along this line the fascia is incised downward from the anterior superior spine to 3 inches below the great trochanter, where it is divided transversely backward for about 1½ inches.

At about 1½ inches below the great trochanter, the fibers of the tensor fasciae femoris are seen becoming inserted into the fascia lata.

The outer surface of the femur is next exposed, about 2½ inches below the trochanter, by dividing the fibers of the vastus externus. A periosteal flap is turned downward at this point, and a groove, going into the marrow, is made about 1 inch long and one-half inch wide.

The free end of the fascia lata is then sutured with No. 18 twisted silk and inserted into the groove by carrying the silk ends through holes drilled in the femur on each side of the groove. The knot is tied over the fascia in the groove, and the periosteal flap is turned back and sutured over the groove containing the fascia.

Before the suture of the silk is completed, the thigh is abducted about 30 degrees, and the fascia is seen to have moderate tension.

The skin and subcutaneous fat flap are then turned back and sutured by layers to their original situation.

A plaster spica is applied from the waist to the ankle, with the leg in 30 degrees' abduction.

The postoperative treatment consists of simple superficial massage after two weeks, and muscle training is begun after four weeks. The patient is allowed to go about with the spica and crutches at the end of four weeks.

At the end of two months the spica is removed and an abduction walking splint applied, which the patient wears for six months.

SUCCESS OF OPERATION

So gratifying have been the results of this operation that I have now performed fifteen such operations with very satisfactory results in most cases. The Trendelenburg sign has disappeared and the lateral swaying of the body has markedly diminished, if not disappeared.

The success of the operation depends largely on a careful choice of suitable cases. It will not be of great benefit in cases in which the limp is due to weakness of both the gluteus maximus and the gluteus medius. These patients find it necessary to sway the body backward as well as to the side, diagonally, in order to preserve their equilibrium, and the backward sway due to the weak gluteus maximus will remain after the operation, proving fully as unsightly as the original limp.

It is also important to distinguish whether the dropping of the pelvis is due to weakness of the gluteus

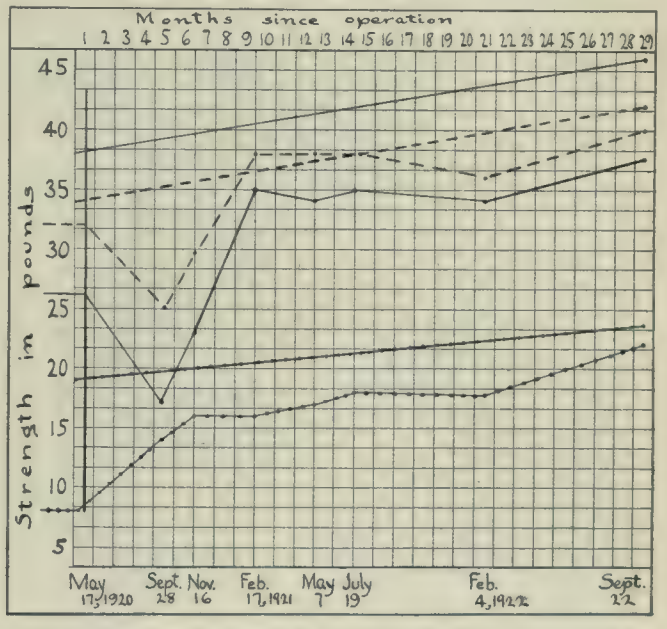


Fig. 3.—Postoperative gain of power in abduction in a case that showed a weakened gluteus medius—diminished power in abduction of the hip—with slight weakness in flexion and extension. Straight solid line, normal flexion; solid curve, postoperative flexion; straight broken line, normal extension; broken curve, postoperative extension; straight beaded line, normal abduction; beaded curve, postoperative abduction. The operation was performed, May 17, 1920.

medius, or whether it is the result of weakened lateral abdominal muscles. In the latter case, it will not be prevented by transplanting the tensor fasciae femoris to increase abductor power.

In suitable cases, beside the gain in abductor power and the improvement of the limp, I believe that the operation will give increased muscle support to the hip joint, and so tend to prevent the dislocations that frequently occur in cases of poliomyelitis with much involvement of the muscles around the hip.

535 Beacon Street.

OTITIC ABSCESS OF THE CEREBELLUM

REPORT OF CASE *

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CHICAGO

Abscess of the cerebellum secondary to suppurative otitic disease is rare, but is of more frequent occurrence than is generally supposed. Not infrequently, cases of suppurative otitic disease in which intracranial complications are suspected, will reveal the presence of a cerebellar abscess on surgical exploration or at necropsy. The case here reported is of especial interest, (1) to show the difficulties in diagnosis (some cases will give few, if any, localizing signs); (2) because a cerebellar abscess was found on surgical exploration of the posterior cranial fossa, and (3) because the necropsy report was added to the clinical record, thereby making the case record complete.

REPORT OF CASE

History.—F. P., a man, aged 43, single, entered the Cook County Hospital, Jan. 29, 1922, with the diagnosis of influenza. His previous history revealed that he had had a chronic suppurative otitis media, involving the right ear, for the preceding eighteen years. The present complaint began two weeks before with headache, which was almost continuous and involved the frontal and occipital regions and was associated with earache. Two days before, he had had a very severe chill, which lasted twenty minutes. He stated that during the past two weeks he had had attacks of vertigo, which were associated with falling to the right, but unaccompanied by nausea or vomiting.

Examination.—The canal of the right ear was filled with cheesy material, together with a fetid serosanguineous discharge. No mastoid tenderness was present. There was marked stiffness and a tendency toward retraction of the neck. No pathologic reflexes were present. Blood pressure was 130 systolic and 85 diastolic. Blood examination revealed hemoglobin, 98 per cent.; red cells, 5,664,000; color index, 87 per cent.; white cells, 8,700. Urine examination was negative. Spinal puncture revealed fluid under increased pressure, and 20 c.c. was removed. It was turbid and globulin was strongly increased as shown by Pandy, Nonne and Ross-Jones tests. The cell count was 3,110 per cubic millimeter, with 96 per cent. polymorphonuclear and 4 per cent. small mononuclear cells. An intracellular diplococcus was occasionally seen, none being found with the Gram stain. The spinal and blood Wassermann tests were negative. At this time a diagnosis of epidemic meningitis was made, 35 c.c. of spinal fluid was withdrawn and 30 c.c. of antimeningococcic serum was given intraspinally.

January 30, the temperature was 99 F.; the pulse, 94, and respiration, 30. Another spinal puncture was made, and 40 c.c. of spinal fluid was removed. The fluid was under increased pressure; the cell count was 1,240 per cubic millimeter. Intracellular diplococci were not found. Culture of the spinal fluid revealed a gram-negative bacillus, which was probably due to contamination. Thirty cubic centimeters of antimeningococcic serum was given intraspinally.

January 31, the patient's mentality was clear. The neck was more rigid, and the Kernig sign was bilaterally present. There was tenderness over the right mastoid. A roentgenogram of the right mastoid was cloudy.

The patient was examined by Dr. Sidney Strauss, who reported that the stiffness of the neck and findings in the spinal fluid pointed to a meningitis. The absence of cerebral symptoms and leukocytosis, with the low temperature, left the etiology in doubt. The possibility of tuberculous meningitis had to be considered.

Functional tests disclosed deafness of the right ear; in the Weber test the sound was lateralized on the left; the Rinne test was negative, and the Schwabach test revealed diminution. The caloric test showed that the right labyrinth was functioning, but was impaired.

In consultation with Dr. Sidney Strauss, it was decided to explore the right mastoid region. This revealed a very dense, sclerotic mastoid, the only cell found being the antral cell. This was undoubtedly an example of arrested development of pneumatization of the mastoid. The lateral sinus and the dura over the tegmen, on exposure, were normal. A radical mastoid operation without the plastic stage was done.

February 1, the temperature was 99; the pulse, 100. There was cervical rigidity, but no abnormal reflexes were present. The spinal fluid was cloudy, under increased pressure. Globulin tests were positive, and the cell count was 2,300.

February 6, drainage from the mastoid wound and external auditory canal was profuse. White blood cells numbered 14,400. The condition was much improved. The temperature was 99.8 F. The spinal fluid was clear; the cell count, 510, the cells being mostly polymorphonuclear. Globulin tests were negative.

February 8, the temperature was 98.4 F.; the respiration, 22; the pulse, 84. The condition was improving; drainage was considerable. The spinal fluid was under moderately increased pressure and turbid; globulin tests positive. The cell count 1,880 per cubic millimeter.

Examination by Dr. Hassin revealed that mentality, the cranial nerves, reflexes and sensibility were normal. There was nystagmus on looking to the right. Rigidity of the neck, Brudzinski, and Kernig signs were absent. Neurologic examination did not reveal any involvement of the brain or meninges. The only indication of meningeal involvement was the turbidity of the spinal fluid, and this might well have been due to a focal irritation. Functional hearing tests revealed complete absence of function of the cochlear and vestibular branches of the eighth cranial nerve. The patient did not hear tuning forks or the Galton whistle with the right ear. Douching the right ear with cold water at 68 F. for four minutes failed to give any definite response. There was spontaneous nystagmus to the right; on looking toward the left, there was slight diagonal nystagmus to the left. Examination of the ocular fundi was negative.

February 16, the temperature was 99 F., the pulse, 88. The general condition had not changed. Reexamination by Dr. Hassin revealed that there was involvement of all the peripheral branches of the right facial nerve. The right corneal and conjunctival reflexes were diminished. There was slight deviation of the tongue to the right. No sensory facial disturbances were detected. The mental condition was fair. Muscle power was good. There was probably pressure on the seventh, twelfth and fifth nerves at the point where they leave the pons. Exploration for an extradural abscess was advised.

February 17, the temperature was 98 F., the pulse, 72. The pulse became as low as 60 and the patient very stuporous. There were no neck rigidity and no additional palsies.

Operation.—The right cerebrum and cerebellum were explored for brain abscess. The tegmen tympani and antri being exposed, a brain searcher was inserted into the temporosphenoidal lobe with a negative result. The searcher was then introduced posteriorly to the lateral sinus, inferiorly enough to enter the posterior fossa, and inserted in the direction of the internal auditory meatus. This resulted in locating an abscess in the right lobe of the cerebellum from which about 15 c.c. of thick, greenish yellow, fetid pus was evacuated. Gutta percha and gauze drainage was established.

February 18, the temperature was 100 F., the pulse, 80. The patient did not regain consciousness, and died in coma.

* From the otolaryngologic service, Cook County Hospital.

Anatomic Diagnosis.—This was: suppurative otitis media; recent surgical incision of the skin behind the right ear; part of the temporal bone (mastoid operation) missing; abscess of the right lobe of the crebellum; hyperemia of the cerebellum; traumatic perforation of the right temporal lobe (exploratory operation); turbid spinal fluid; marked hyperemia and edema of the brain.

Bacteriologic examination of the spinal fluid removed at necropsy revealed a pure culture of hemolytic streptococci.

Histopathologic examination of the temporal bone by the pathologist, Dr. W. B. Moody, did not reveal any apparent pathologic changes in the labyrinth.

COMMENT

At the time of the first exploration of the mastoid region, when no pathologic condition was found sufficient to account for the sympathetic meningitis, it was a serious mistake not to explore the middle and posterior cranial fossae for the presence of a brain abscess. Had exploration of the cerebellum been made at that time, the fatal result might have been avoided, since seventeen days elapsed between the first operation and the finding and drainage of the cerebellar abscess. This case serves to emphasize a statement made in a recent article: [1]

> The presence, and especially the persistence, of a sympathetic meningitis, when there is associated an otitic focus of infection, in the absence of sinus thrombosis, perisinuous abscess or extradural abscess, denotes the presence of some intracranial suppuration, as subdural abscess or cerebral or cerebellar abscess, and calls for an immediate operative exploration of the middle and posterior cranial fossae.

The clinical course subsequent to the first operation misled us into believing that the patient was getting better, and thereby too long postponed the second operation.

This case also serves to emphasize the point that cases in which there is more or less complete arrest of pneumatization of the temporal bone are especially predisposed to the development of suppurative intracranial complications. It also illustrates that sympathetic meningits may be the precursor of diffuse suppurative leptomeningitis. The history of vertigo, with falling to the right, should have suggested at least the possibility of a right cerebellar lesion.

In conclusion, I might point out that this was a metastatic abscess of the cerebellum, as the result of a hematogenous infection from the middle ear, by way of the general circulation.

25 East Washington Street.

1. Yerger, C. F.: Meningitis of Otitic Origin, J. A. M. A. **79**: 1924 (Dec. 2) 1922.

Gold and Oxygen.—Gold is unquestionably a very useful metal to man; it is the sign of riches, of the savings amassed by labor. Coined into money, it passes from hand to hand and is good in all exchanges, in all commercial transactions. It is a splendid part to play, I admit; but if gold were to disappear entirely from the earth, what would happen? Nothing very serious. Banks might be inconvenienced, commerce upset for a little while, but that is all. The world would soon move on as before. Suppose, on the other hand, one of these three metalloids, whose names you have just learned—oxygen, for example—should disappear. Immediately everything on earth would die, from the biggest animal to the tiniest worm; all plant life would perish, from the giant of the forest to the smallest thread of moss. Life would henceforth be impossible and this inhabited globe become a gloomy solitude, with man, animal, and plant forever banished. That as you see, would be a far more serious disaster than the inconvenience of a banker or the vexation of a merchant.—Fabre: The Wonder Book of Chemistry.

SPECIFIC TREATMENT OF HAY-FEVER DURING THE ATTACK

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RICHMOND, VA.

The present treatment of autumnal hay-fever consists in graded prophylactic inoculations of that pollen extract to which the patient is most sensitive, at weekly or more frequent intervals, from the latter part of May until the onset of the pollen season. The inoculations are then discontinued. In a certain percentage of patients so treated, there ensues either complete freedom from hay-fever or great amelioration of symptoms. A not inconsiderable proportion, however, experience little or no improvement, and a few apparently develop more severe attacks than in the years in which they received no prophylactic treatment.

In those cases showing little or no improvement, Walker [1] states that pollen extract injections may be continued, but in smaller amounts, given at the same intervals (from five to seven days). He finds that in some cases the symptoms are made worse by the injection of pollen extract during the hay-fever season.

MacKenzie [2] has reported slightly better results in prophylactic treatment by combining with the parenteral administration of the pollen extract local instillations on the nasal mucosa, in gradually increasing concentration.

Even then, there are many patients experiencing little or no improvement. It is with the latter refractory group that this report has to deal.

REPORT OF CASES

CASE 1.—Miss R., aged 21, seen, June 16, 1922, had had hay-fever for the preceding four years, with onset about the middle of August and continuing until the first frost. At the age of 11, she had suffered recurrent attacks of asthma, which she believed she had only in the summer months. This condition had existed for only two seasons, and there had been no recurrence. In 1920 and 1921, the patient had received prophylactic hay-fever inoculations, but she had never been tested for sensitization by the cutaneous reactions.

From the routine examination, the diagnosis of (1) hay-fever and (2) nonorganic cardiac murmur was made. The patient reacted very strongly (four plus) to short ragweed and to daisy, mildly to sunflower (two plus), very mildly to giant ragweed (one plus) and negatively to the remainder of the pollen proteins with which she was tested. She was next tested with various dilutions of short ragweed, and gave a distinct reaction with dilutions as high as 1:10,000. Prophylactic inoculation with short ragweed was commenced, June 16, and the routine recommended by Walker was strictly followed. June 29, daily nasal sprays were started, and continued according to the procedure described by MacKenzie. July 31, the patient gave a negative reaction to short ragweed in a dilution of 1:5,000, and a very mild reaction to a dilution of 1:1,000. Two days later, she developed a typical attack of severe hay-fever. She was visiting in Massachusetts at the time, and the symptoms persisted until her return to Richmond, August 14, when they rapidly subsided. The patient remained symptom free until August 24, when she again became ill with a typical severe hay-fever. The eyes were swollen nearly shut, with a semipurulent secretion, and there was much sneezing, hydrorrhea and malaise. The patient was immediately started on daily subcutaneous inoculations of 0.25 c.c. of a ragweed pollen extract containing 10 mg. of protein nitrogen per hundred cubic centimeters. After three days, the symptoms improved definitely, and by

1. Walker, I. C.: Frequent Causes and Treatment of Seasonal Hay-Fever, Arch. Int. Med. **28**: 71 (July) 1921.
2. MacKenzie, G. M.: Desensitization of Hay-Fever Patients by Specific Local Applications, J. A. M. A. **78**: 787 (March 18) 1922.

August 30 she was entirely free from symptoms. Daily inoculations of the same amount were continued until September 8, when the patient left town for a period. Treatment was discontinued at that time, and she remained symptom free.

CASE 2.—Miss V., aged 36, a schoolteacher, seen, June 9, 1922, had had autumnal hay-fever for thirty-one years. Usually, the disease had been accompanied by mild asthmatic attacks. Diagnosis was made of (1) hay-fever and (2) gingivitis. The patient gave a four plus reaction to short ragweed, two plus to daisy and sunflower, one plus to orchard grass, and questionable reaction to giant ragweed and timothy. She reacted negatively to corn pollen, goldenrod, walnut and willow. When tested with dilutions of short ragweed, she gave a very mild reaction to 1:5,000, and none to 1:10,000.

Treatment was started, June 15, and administered both hypodermically and by nasal spray, as described in Case 1. July 15, the skin tests revealed little diminution in sensitization. August 22, the patient had three or four sneezing spells with a little cough and a very mild conjunctivitis. The extract was discontinued. No special treatment was given, and after three days, symptoms subsided entirely. September 1, the patient moved into another apartment and worked all day in a dust laden atmosphere. She began to sneeze immediately, and for four days had mild symptoms of hay-fever, with sneezing, coryza and conjunctivitis. September 6, daily inoculations in the amount given in Case 1 were started. These were continued until September 16. The patient improved after the first treatment, and remained symptom free throughout this period. Inoculations were then discontinued for two days, with return of mild symptoms. Daily injections were again instituted with double the dose, again with almost immediate improvement. September 23, the patient was doing splendidly, and inoculations were reduced in frequency to every third day. This was continued until October 3, when treatment was discontinued entirely. The patient remained symptom free throughout the remainder of the hay-fever season, during which time several of her friends who were suffering from the same disease continued with their typical symptoms.

CASE 3.—Mr. B., aged 30, seen, June 27, 1922, was given tests with the various pollens. He gave a four-plus reaction to short ragweed, and a two plus reaction to giant ragweed, daisy and corn pollen. Reaction to short ragweed in a dilution of 1:10,000 was strongly positive. Treatment was given as in Cases 1 and 2, and, July 31, he gave a negative reaction to a 1:5,000 and a mildly positive reaction to a 1:500 dilution.

With the onset of the pollen season, August 20, the patient had three days of severe symptoms, with subsequent complete recovery. Inoculations were discontinued, but through a misunderstanding the patient continued using his nasal sprays in a concentration of 10 mg. of protein nitrogen per hundred cubic centimeters. About September 1, mild symptoms recurred, and the spray was discontinued. Symptoms persisted for a week, when daily inoculations of 0.25 c.c. were started. Improvement was noted within twenty-four hours, and continued steadily until, after five days, all symptoms had disappeared except that the nose was stopped up a little at night, though not sufficiently to interfere with sleep. The patient stated that he sneezed on an average once or twice in twenty-four hours. Daily inoculations of 0.25 c.c. were continued until September 19, throughout which time the patient remained symptom free. Treatment was then discontinued, without recurrence of symptoms.

CASE 4.—B., a schoolboy, aged 14, first seen, Sept. 2, 1922, was suffering from a typical severe attack of hay-fever, his first attack. There was nothing noteworthy in the history other than that he had had a tonsillectomy one month previously. The patient's father, who was a physician, had sent him to two internists, who reported that they could do nothing other than give him symptomatic treatment, but suggested that the patient could probably be immunized against an attack next year.

He gave a three plus reaction to short ragweed, two plus to goldenrod, and one plus to daisy. Because of the apparent success in the first case described, I considered it worth while to attempt daily inoculations of small amounts of ragweed pollen extract. Daily injections were started with 0.25 c.c., containing 10 mg. of protein nitrogen per hundred cubic centimeters. The treatment was continued at home by his father, and, September 9, he reported the condition greatly improved. Daily inoculations were continued for a few days longer, after which they were decreased to every second day, later to every third day, and finally discontinued, the patient remaining greatly improved, according to his father's report.

CASE 5.—Dr. S., aged 33, seen, Oct. 17, 1922, for the preceding two weeks had had his first attack of hay-fever. He noted that immediately on leaving the Shenandoah Valley on his way to Richmond, the symptoms subsided. With the exception of the local condition, nothing noteworthy was observed in the physical examination. Cutaneous tests with the various pollen proteins were made, and the reaction was found negative to all except corn pollen.

The patient was advised to remain for a few weeks in a locality in which he would be free from symptoms. This being impossible, he returned home. Symptoms immediately recurred, and daily inoculations were instituted with complete relief after the second dose. Immediately on the termination of treatment after the first heavy frost, symptoms returned and persisted until inoculations were recommenced. Injections were now reduced in frequency to every second day, then to every third day, and around the end of November were discontinued, with no return of the trouble.

The long persistence of the attack in this case is readily explained by the extreme mildness of the winter, such that until the end of November, the farmers were able to continue their work in fields and barns. In the rural community in which the patient lived, there was undoubtedly sufficient dust from corn to cause reaction.

The patient has remained symptom free until the present time, with the exception of the last week in December, when he had three or four days of rhinitis, with sneezing, conjunctivitis, etc. This followed the eating of some corn.

SUMMARY AND CONCLUSIONS

In three cases of autumnal hay-fever with sensitization to short ragweed, the patient had been desensitized by the routine commonly followed, both parenteral injection and nasal instillation being employed. One patient developed hay-fever in a very severe form; while two were decidedly improved but not symptom free, after the onset of the pollen season. In all three cases, symptoms cleared up almost entirely following daily subcutaneous injections of small amounts of ragweed pollen extract.

A fourth patient, a boy who had developed hay-fever for the first time and had had no preventive inoculations, did equally well following daily subcutaneous treatment. The frequency of inoculations was gradually reduced in this case, the patient remaining greatly improved.

A similar case is reported, with sensitization to corn pollen.

If we may assume, from our meager knowledge of the immunology of this disease, that relief of symptoms following preventive inoculation is due to an increased tolerance (as in morphinism) rather than a true immunization, and that the condition resulting is one of so-called antianaphylaxis, the daily administration of small amounts would appear to be a more logical procedure than the giving of larger amounts at much longer intervals.

During the pollen season, the nasal mucosa is bearing the brunt of the allergic reaction. The administration of pollen elsewhere, as through the skin, would theoretically distribute the reaction throughout the other tissues, thereby relieving to some extent the intensity of the local reaction.

In the method of treatment suggested, those patients who have not been improved by prophylactic treatment may become either greatly improved or symptom free by continuation of the treatment during the pollen season.

According to the method proposed, patients presenting themselves for the first time during the pollen season, and without previous treatment, may be treated by specific measures, with considerable hope of relief.

404 Professional Building.

CHILLS FOLLOWING TRANSFUSION OF BLOOD

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Transfusion of blood, when used with proper precautions, is a comparatively safe procedure; but when used indiscriminately and without proper consideration of technic and indications, blood transfusion can be followed by most serious complications, even by death.

The safety with which blood transfusion can be used in a variety of diseases is based mainly on Landsteiner's discovery of the blood groups. Landsteiner,[1] in 1900, demonstrated that human beings and certain animals can be classified in three different groups. A fourth group was added by Jansky [2] in 1907. This work of Landsteiner is the foundation underlying the modern development of blood transfusion.

As compared with the preliminary testing of donor and recipient, the technic of blood transfusion, i. e., the method to be applied in a given case, is of minor importance. Any method (syringe, stopcock, paraffinized glass cylinders, sodium citrate) is applicable, provided it is possible to measure exactly the amount of the transfused blood.

THREE FACTORS IN POSTTRANSFUSION CHILLS

In spite of the fact that blood transfusion, when properly applied, is void of danger, the posttransfusion chill is an unavoidable and sometimes very unpleasant sequel to transfusion. Posttransfusion chills are encountered in a considerable number of cases, no matter what method is used. In an attempt to analyze these chills in order to avoid them, or to reduce their number and severity, three factors must be considered: (1) tests; (2) methods of transfusion, and (3) the condition of the patient.

1. *Tests.*—It is of the utmost importance that the tests be performed with expert precision. The interpretation of the tests is usually simple. However, in some cases it requires extensive experience to reach proper conclusions as to the compatibility of the tested bloods. The importance of this point is best illustrated by the results reported by Lindeman.[3] In 1914, he reported 150 transfusions by his syringe-cannula method with 33 per cent. of chills. He had performed all the transfusions himself, but the tests had been made by different men. By supervising all the tests personally, he was able in 1916 [4] to report 146 transfusions with only 9 per cent. of chills. The best results are obtained by the direct matching of the blood of the donor and the recipient. Group matching, though very popular on account of the ease of execution, is not as accurate, and is apt to be followed by a larger number of chills.

The recipient must again be tested, if the transfusion is to be repeated. The fact that a recipient may change his group after a transfusion was first observed by Libman and Ottenberg.[5] Lately, Astrowe [6] has called attention to this very important fact, which is not generally known. It is of the utmost importance in the avoidance of chills and other more serious complications.

Eden [7] has proved that the blood grouping of a patient may be temporarily changed after the administration of certain drugs (quinin, antipyrin, etc.) and after an anesthetic. The curious effect of anesthesia on blood grouping was observed independently by Levine and Segall.[8]

2. *Technic.*—In considering the different methods of blood transfusion, with regard to posttransfusion chills, it must be stated that the number of chills is much more dependent on care in technic than on the choice of method. Whatever method is used, chills will be encountered in a fairly large percentage of cases, unless the strictest adherence to careful technic is observed.

It has been stated that the sodium citrate method of blood transfusion, which I [9] introduced in 1915, was followed by too many chills, as compared with other methods. Nevertheless, study of the literature on this subject gives evidence that the percentage of chills is about the same for all the different methods. Meleney, Stearns, Fortuine and Ferry,[10] comparing the Lindeman syringe method with the citrate method, found no difference in the frequency of chills. Ravdin and Glenn [11] encountered as many chills with the paraffinized glass cylinders as with the sodium citrate method.

The syringe stopcock method of Unger,[12] according to the records of Mount Sinai Hospital for 1922, was followed by more chills than the sodium citrate method (see below).

The question of the number of chills which follow the different methods of blood transfusion cannot be answered by the results of those who have become expert in one particular method. They are apt to have a special skill with this method, which will automatically reduce the number of chills. Thus, Lindeman,[13] in 1919, reported 214 consecutive transfusions without a chill, whereas, in 1914, he had encountered 33 per cent. of chills in 150 transfusions. While Lindeman attributed his remarkable results to careful supervision of tests, I think that the improvement of his technic was a contributory factor.

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13. Lindeman, Edward: Blood Transfusions Without a Chill by the Syringe-Cannula System, J. A. M. A. **72**: 1661 (June 7) 1919.

The sodium citrate method, because of its simplicity, was used by members of the attending and house staff of the hospital, whereas other methods, because of the greater difficulty in technic, were performed only by specialists.

My statistics show a gradual rise in the number of chills following the citrate method. I did not encounter any chill among my first twenty-two transfusions given by this method. A small number of cases offers no proof. Horsley, Vaughan and Dodson [14] have recently advised the revival of vessel anastomosis, because they did not observe a chill among twenty-four cases. Similar results can be duplicated by any method. Thus, there is no reason to abandon the modern, more simple methods of blood transfusion.

From my records of transfusion, the vast majority of which were performed at Mount Sinai Hospital, I find that the percentage of chills among the first 129 citrate transfusions was 15. Among 200 transfusions, the percentage rose to 20, and among 365 transfusions, to 24. The citrate method, very soon after its introduction, was performed by different members of the attending and house staff. The figures, 20 per cent. and 24 per cent., respectively, represent results obtained by different men.

Most hospitals use one method to the exclusion of others, and are thus not able to compare results. At Mount Sinai Hospital we have fortunately been able to compare the results as to number of chills, etc., from transfusion of citrated with those of uncitrated blood. The citrate method and Unger's stopcock method were developed at this hospital; both methods are at present in use. Records of transfusions from Jan. 1 to Nov. 1, 1922, show that thirty-four citrate transfusions were followed by eight chills, and twenty-nine Unger transfusions were followed by ten chills. Thus, the citrate method yielded 23 per cent., and the Unger method 34 per cent. of chills. In other words, the percentage of chills after the Unger method was 11 larger than the percentage after the sodium citrate method. These transfusions were performed by members of the attending and house staff, and indicate the results obtainable in the hands of the average physician.

Careful technic is very important in any method of blood transfusion. The proper insertion of the cannula into the vein is of the utmost importance. If the needle is not inserted in the proper direction, if it strikes the vein at an angle to its longitudinal axis, the blood cannot flow rapidly, and small clots are apt to form. These, though minute, may cause chills.

Another cause for clot formation is the use of cannulas of small caliber. It is much easier to enter the vein with a small size cannula than with one of large caliber. Hence, the inexperienced surgeon selects a small cannula, which will prevent the rapid flow of blood from the donor into the glass jar.

Reasonable speed in using the citrate method is important, in order to avoid excessive cooling of the blood before it enters the recipient's vein.

Proper insertion of the cannula into the vein is as important in the use of uncitrated blood as with the citrate method. To insure the proper operation of the syringe stopcock methods (of Miller, Unger, Bernheim and others), both needles must allow an unobstructed flow of blood.

14. Horsley, J. S.; Vaughan, W. T., and Dodson, A. I.: Direct Transfusion of Blood, Arch. Surg. **5**: 301 (Sept.) 1922.

Small transfusions are less likely than large (from 800 to 1,000 c.c.), to be followed by chills. The blood of some donors is more likely to cause reactions than that of others.

Mellon, Slagle and Acree [15] publish results of experiments which suggest that reactions following intravenous injections might be lessened if the solutions (citrate, saline, etc.) were properly buffered. It is possible that a difference in the hydrogen-ion concentration of the blood as compared with that of the saline and citrate solutions may account for some of the chills which follow the Unger and citrate methods.

3. *Condition of the Patient.*—The frequency of chills after the transfusion of blood is dependent in a large measure on the disease for which the transfusion is performed. In looking over large series of transfusions, one is impressed by the fact that in certain conditions chills are rare, whereas, in others, they occur very frequently. For instance, in transfusion given to replace loss of blood volume consequent on profuse hemorrhage, chills are of comparatively rare occurrence. When transfusion is done in blood diseases such as pernicious anemia and purpura hemorrhagica, chills occur much more frequently. The most formidable chills were encountered when treating leukemia and acute sepsis. Experience has shown that in leukemia, as well as in acute sepsis, transfusion is useless as a therapeutic measure, and sometimes causes grave danger to the patient. For this reason, blood transfusion is strictly contraindicated in these conditions.

Unger [16] has published results of experiments and claimed that sodium citrate has a deleterious effect on the blood. He states that, according to his investigations, citrated plasma has anticomplementary power, and sodium citrate increases the fragility of the red blood cells, and decreases the phagocytic power of the leukocytes. Were Unger's experiments conclusive, the applicability of the citrate method would be limited to cases of hemorrhage. It could not be used either in diseases of the blood (pernicious anemia, purpura hemorrhagica, etc.) or in cases of subacute or chronic sepsis. In other words, its use would be strictly contraindicated in a great number of diseases, in spite of the fact that this method has been used in the treatment of these conditions, with excellent clinical results, for many years.

It was clear without further experiments that Unger's conclusions concerning the inhibitory action of sodium citrate on the leukocytes was erroneous; for in the Wright opsonic index determination, in which the phagocytic activity of the leukocytes is to be measured, leukocytes are collected in from 1.5 to 2 per cent. sodium citrate solution. This is ten times as strong as the percentage of sodium citrate used in transfusion.

The other two points claimed by Unger have been disproved by the recent work of Mellon, Hastings and Casey.[17] They state that the results of their experiments are, in the main, "diametrically opposed to those of Unger." They found no anticomplementary power in citrated plasma, and no deleterious effect either on the red or on the white blood cells. These results of Mellon, Hastings and Casey are in accord with clinical

15. Mellon, R. R.; Slagle, E. A., and Acree, S. F.: Practical Applications of "Buffers," J. A. M. A. **78**: 1026 (April 8) 1922.

16. Unger, L. J.: Deleterious Effect of Sodium Citrate Employed in Blood Transfusion, J. A. M. A. **71**: 2107 (Dec. 31) 1921.

17. Mellon, R. R.; Hastings, W. S., and Casey, Gertrude W.: Observations on the Effect of Sodium Citrate on the Blood, J. A. M. A. **79**: 1678 (Nov. 11) 1922.

experience with the citrate method, collected from all over the world. Experience has proved that, other factors being equal, clinical results obtained by the citrate method are as good as those obtained when uncitrated blood is used in transfusion.

CONCLUSIONS

1. The number of chills which follow transfusion of blood can be reduced by proper blood tests, careful technic, and strict attention to the indications.

2. The percentage of posttransfusion chills is about the same, no matter what method is used.

3. In a series reported here, posttransfusion chills were encountered in 23 per cent. after the citrate method, and in 34 per cent. after the Unger stopcock method.

4. Mixture of sodium citrate with blood in the proportion of 0.25 per cent. does not affect the vitality either of the erythrocytes or of the leukocytes.

1155 Park Avenue.

Clinical Notes, Suggestions, and New Instruments

WEIGHT AS A ROUTINE TEST IN PREGNANCY: A PRELIMINARY REPORT

C. HENRY DAVIS, M.D., MILWAUKEE

Urinalysis was for many years the only routine test employed during pregnancy. Within the last decade, the value of blood pressure readings, previously rarely used as a special test, has been generally recognized. Both of these tests give valuable data; but I have found that the information gained from the routine recording of weight greatly enhances their clinical value, and I urge the addition of this third test in all prenatal work.

A survey of the literature reveals only a few articles since that of Gassner published in 1862. From two years' experience in recording weight as a routine test, I am convinced that Gassner's average gain of 3½ to 5½ pounds (1.6 to 2.5 kg.) a month during the last three months of pregnancy is excessive, and should be prevented through careful regulation of diet. Since the average loss of weight following delivery is between 15 and 20 pounds (6.8 and 9 kg.), it is obvious that, if a woman has a normal weight before pregnancy, her total gain should not exceed 20 pounds. If previously underweight, she may be allowed a somewhat greater gain, possibly as much as 30 pounds (13.6 kg.). There is evidence that an excessive gain is dangerous. The woman who is fat should be kept on a carefully limited diet, and she may actually reduce to the benefit of herself and the growing fetus.

Pregnancy is usually characterized by a stimulated metabolism and improved health. Some women show improved metabolism from the first weeks, but others, owing to nausea and vomiting, lose weight during the first three months. It is important to know the amount of this loss. An excessive loss is dangerous, and by careful handling can usually be prevented. Naturally, the woman who has lost considerable weight during the first trimester may be permitted a greater average weekly gain during the second and third.

The weight of the fetus at term depends to some extent on the food intake of its mother. The excessive weight of a newborn baby is a good indication that the mother ate immoderately during pregnancy.

The marked decrease of eclampsia in central Europe during the period of war rationing led us to realize that eclamptics are usually women who have gained weight rapidly during pregnancy. Is excessive eating one of the factors in the breakdown of the metabolism and the development of this toxemia? Careful regulation of the diet, checked by routine weight records, may give valuable information in this particular.

Since starting the routine weighing of pregnant patients, I have several times noted that during the week or the two weeks before the appearance of albumin, increase of blood pressure or gross evidence of edema, there has been an abnormal increase in weight. Edema as evidenced by pitting of the ankles or other parts of the body is a rather late manifestation of retained fluids. Weight records may thus show an early evidence of failure on the part of the excretory organs.

As a result of observation that albumin and an increased blood pressure usually follow sudden gains in a pregnant woman's weight, eliminative treatment and a strict limitation of diet is now ordered as soon as the sudden increase is noted, regardless of the blood pressure and urinalysis tests.

There are many logical reasons, as well as clinical evidence, to back the plea for the consideration of weight in conjunction with blood pressure tests and urinalysis as a routine measure during pregnancy.

141 Wisconsin Street.

ASTHMA DUE TO CAT AND DOG HAIR: A PERSONAL EXPERIENCE

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At the age of 6 years, my parents noticed that I had considerable difficulty in breathing. This was thought to be due to a pair of very large tonsils, which almost entirely closed the aperture in my throat. Tonsillectomy and adenectomy were performed at this time, but my dyspnea persisted and was then recognized as bronchial asthma. From this time, I suffered with frequently recurring attacks of more or less severity. I scarcely knew the meaning of a good night's sleep and, at times, I was unable to go to bed at all, but was forced to spend the night in a chair. Whenever I had a cold, which was very often, I was completely incapacitated. The inhalation of various asthma powders and cigarets gave me temporary relief, but no hope for a cure was held other than that I might possibly outgrow it.

My first real relief was obtained by a visit to Atlantic City. At the time, I was having a very severe attack; but my asthma left me immediately on arriving in Atlantic City, and I was completely free during the entire time I was there. When I returned home, my asthma came back almost immediately. This experience has been repeated innumerable times since then; my asthma invariably left me when I went to Atlantic City, and I remained free while there, with the exception of a few isolated attacks; but when I returned home, my asthma, just as surely, came back again. My physicians explained this on the assumption that the climate of Washington was unfavorable for my trouble. This assumption was later proved to be erroneous. In 1913 we moved to a new residence in the same neighborhood, and I was entirely free from asthma for a period of two years, though exposed to identical climatic conditions. In 1915, my asthma returned and was as bad as ever.

I took up the study of medicine, but was discouraged by my professors, who told me there was no cure for asthma. Examination of my heart, blood and urine gave negative results. My blood pressure was normal. Fluoroscopic examination of my chest was negative. I took potassium iodid, Hare's anti-asthmatic prescription, benzylbenzoate and other preparations internally, but with no results other than a gastro-intestinal disturbance.

I tried calisthenics, deep breathing, long walks, cold baths, sleeping outdoors, vegetarian diet, and fasting, but my asthma persisted in spite of all.

In an effort to obtain some relief from my suffering I resorted to osteopathy, then neuropathy, chiropractic and finally Christian science, but they all proved dismal failures.

In 1919, while an intern in the Atlantic City Hospital, I heard and read something about protein sensitization as applied to asthma. I obtained some twenty-five food proteins, with which I tested myself, but they all gave negative results.

When I returned to Washington, additional skin tests were made, and I gave a marked reaction to dog-hair protein. I then went to Philadelphia and was thoroughly tested out by

Dr. Sterling, who found me sensitive to dog-hair, ++; cat-hair, +, and horse-dander, ±. To all others I gave a negative response. Since, I have made innumerable tests on myself, with always the same results, thus convincing me of the absolute specificity of the tests.

The explanation of my case is simple. At our former residence we always had a number of cats, which were the cause of my asthma at that time. My two years of freedom in Washington, from 1913 to 1915, were due to the fact that we got rid of our cats when we moved. In 1915, some one gave us a dog, which started my asthma again as badly as ever. Going to Atlantic City merely meant getting away from cats and dogs. The few isolated attacks occurring in that city could be traced directly to intimate exposures to cats or dogs.

We got rid of our dog, and I treated myself with gradually increasing injections of dog-hair protein. Since then I have been entirely free from asthma.

After being a martyr to asthma for twenty-two years, I am now well.

1726 M Street, N. W.

REPORT OF A CASE OF ESSENTIAL PENTOSURIA IN BROTHER AND SISTER *

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It will be recalled that two types of pentosuria[1] exist: (1) the alimentary type, characterized by the presence of optically active xylose or arabinose in the urine, which follows the ingestion of large amounts of pentose-containing foods[2] such as apples, cherries, plums, beets and leguminous vegetables, and (2) the idiopathic, or essential, pentosuria.

Salkowski and Jastrowitz[3] first described a case of essential pentosuria in a morphin addict who also occasionally excreted a trace of glucose. In this type of pentosuria, r-arabinose, an optically inactive pentose, is usually excreted. Janeway[4] was able to compile from the literature twenty-four of these cases up to the year 1906.

In the two cases of chronic pentosuria that have come under my observation, the patients were:

Mrs. A., Jewish, aged 30, who was told twelve years ago that small amounts of sugar were present in the urine. At no time has she had any symptoms of diabetes mellitus.

Mr. W., Jewish, brother of Mrs. A., aged 31, who twelve years ago was refused insurance on account of diabetes. At no time has he had any symptoms of diabetes mellitus.

In the accompanying table are presented the data showing that both of these patients are excreting pentose; and, as the urine is inactive, it is no doubt racemic arabinose that they are excreting.

In the literature it is well known that pentosuria is very common in Jews and is often found in families. The cases reported here are of this nature. The only other case of pentosuria I have observed is the case of a Jew, aged 63, who has had this condition for the last eleven years.

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FINDINGS IN TWO CASES OF ESSENTIAL PENTOSURIA

Patient	Date	Benedict Test	Fermentation*	Osazone: Melting Point	Osazone: Nitrogen Content	Osazone: Distillate†	Bial Test	Polarization	Tollens Test for Glycuronic Acid	Quantity of Pentose, Gm.	Diet
Mrs. A.....	10/ 8/22	+	0	158°	17.02	+	+	Inactive	0	6.0	General
	11/ 9/22	+	0	159°	17.01	+	+	Inactive	0	6.4	Restricted carbohydrate
Mr. W.....	11/ 8/22	+	0	158.5°	17.08	+	+	Inactive	0	4.7	General
	11/22/22	+	0	159.2°	17.06	+	+	Inactive	0	4.9	General

* After fermentation, the urine reduced Benedict's reagent as strongly as before fermentation, and also yielded an osazone. Urine containing pentose exposed to the air keeps its reducing power impaired, in distinction from glucose containing urine.

† Distillate applies to dissolving the osazone in warm water, adding excess of concentrated hydrochloric acid and distilling. The only substances in the urine that form furfurol under these conditions are the pentoses, glycuronic acid and glycuronates. These are distinguished from pentose by the fact that urine containing them rotates the plane of polarized light, gives a positive Tollen's test, and yields an osazone of different nitrogen content and melting point than does pentose. Furfurol is tested for in the distillate by Bial's reagent.

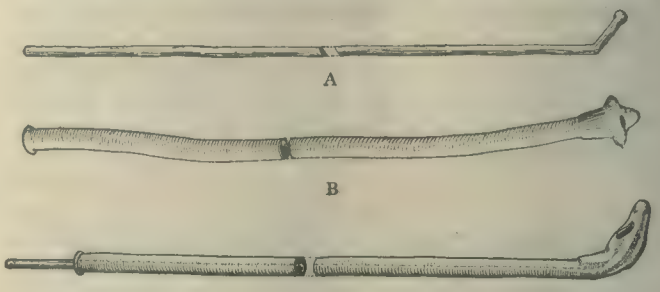
* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of bibliographic references. The complete article appears in the author's reprints.

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SIMPLE METHOD OF INTRODUCING A MUSHROOM CATHETER *

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The mushroom catheter makes the ideal indwelling catheter. The usual introducers or obturators are not satisfactory in all cases. They work fairly well in a normal urethra, but in an exceptionally difficult, tortuous, prostatic urethra, they may fail. The method that I have used with much satisfaction is very simple. I once had occasion to introduce a mushroom catheter, but had no obturator with me. I had, however, a Walther ureteral bougie. I used the butt end of this, and slipped the catheter over it, and was successful in placing the catheter in the bladder. I used this on several occasions and found that it worked very well. Later, I encountered a tortuous prostatic urethra and found that the catheter would not make the turn.



A, solder wire obturator; *B*, catheter; *C*, catheter with obturator in place.

It then occurred to me that if I had some instrument that I could bend like a Coudé catheter, I could cause it to make the turn and slip by. I secured about 16 inches of ordinary solder wire, which is sold in every hardware store. A hot soldering iron was held against the tip, in order to produce a bead of flux. As soon as it was cool it became smooth and fitted in the tip of the mushroom catheter.

This obturator of solder can be molded to any desired shape, and has never yet failed to pass the most difficult urethra.

TECHNIC

First, the catheter and obturator of solder are sterilized in the usual manner, preferably by boiling. The urethra is then filled with a lubricant. Next, the obturator is introduced into the catheter, and a suitable bend is made at the tip. The catheter is stretched well over the solder obturator so that the mushroom head is elongated until flat. If the catheter will not enter readily, it is withdrawn, and another bend is made in it until the bend necessary to enter the prostatic

* Read before the Kansas City Urological Society, Dec. 16, 1922.

* From the Department of Genito-Urinary Surgery, University of Kansas School of Medicine.

urethra is found. The catheter is then released and permitted, by its own elasticity, to resume its normal shape. When this occurs, the mushroom head spreads out and takes hold on the internal urinary orifice. The solder obturator is then easily withdrawn. The method also works very nicely for introducing a mushroom catheter into the female urethra. I have used it for several months, and have not yet failed to pass a No. 20-22 or No. 24 mushroom catheter whenever I desired. This obturator may also be used to stiffen the ordinary soft rubber catheter during introduction for the purpose of draining the bladder in prostatic obstruction or spasmodic stricture of the urethra.

415 Argyle Building.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BACTERIAL ALLERGENS-SQUIBB (See New and Nonofficial Remedies, 1922, p. 247).

Bacillus Diphtheroid Allergen-Squibb: Prepared from the protein from *Bacillus diphtheriae.*

Staphylococcus Citreus Allergen-Squibb: Prepared from the protein from *Staphylococcus citreus.*

Bacillus Influenzae Allergen-Squibb: Prepared from the protein from *Bacillus influenzae.*

Bacillus Diphtheroid Allergen-Squibb, Staphylococcus Citreus Allergen-Squibb and Bacillus Influenzae Allergen-Squibb are prepared by the following method:

Seed tubes are inoculated from stock cultures, and seed agar bottles are inoculated from seed tubes. After twenty-four hours' growth, the seed bottles are examined for purity of culture, the bottles washed off with 0.4 per cent. cresol and physiological solution of sodium chloride. The contents are centrifuged and the liquor decanted. The organism is rewashed and centrifuged again. The organism is extracted with 0.2 per cent. sodium hydroxide solution, filtered and the filtrate is brought to the iso-electric point of the protein by the addition of hydrochloric acid. The purified bacterial protein is filtered off and dried with anhydrous acetone.

Bacterial Allergens-Squibb are white powders; insoluble in water, salt solution, or acid, but readily soluble in dilute alkali.

FOOD ALLERGENS-SQUIBB (See New and Nonofficial Remedies, 1922, p. 241).

Egg Yolk Globulin Allergen-Squibb: Prepared from the purified globulin of yolks of hen's eggs.

Horse Serum Allergen-Squibb: Prepared from the protein of normal horse serum.

The following method is used for the preparation of Egg Yolk Globulin Allergen-Squibb:

The washed yolks of fresh hen's eggs are completely extracted with ether, dissolved in a 10 per cent. solution of sodium chloride and dialyzed until the solution is free from salts. The precipitated globulin is filtered and washed with water. It is redissolved in a 10 per cent. solution of sodium chloride and the solution filtered. The globulin is again precipitated from the filtrate by dialysis, the precipitate washed with water and finally with anhydrous acetone and dried.

The product is a fairly yellowish powder, odorless and tasteless, soluble in dilute salt solution and insoluble in water.

The following method is used for the preparation of Horse Serum Allergen-Squibb:

The proteins from normal horse serum are precipitated by acetone and the precipitate is dried with acetone.

The product is a white powder, odorless, tasteless, partially soluble in water, more completely soluble in dilute alkali.

Observations on Intelligence.—The truest and most profound observations on intelligence have in the past been made by the poets and, in recent times, by the story writers. They have been keen observers and recorders, and reckoned freely with the emotions and sentiments. Most philosophers, on the other hand, have exhibited a grotesque ignorance of man's life and have built up systems that are elaborate and imposing, but quite unrelated to actual human affairs. They have almost consistently neglected the actual process of thought and have set the mind off as something apart to be studied by itself.—Robinson: The Mind in the Making.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 183)

[NOTE.—This is the fourth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

OVERFEEDING

In the normal breast-fed baby, overfeeding is not of frequent occurrence and is usually of temporary importance, except in very young and premature infants and in those infants fed by gavage. The condition is usually corrected spontaneously by refusal of the infant to nurse longer than is necessary to meet its needs. When the breasts remain unemptied, the milk secretion soon decreases. The temporary overfilling of the stomach is usually satisfactorily relieved by a regurgitation of part of the meal. There always remains some danger of the stomach's becoming accustomed to this tendency to reversed peristalsis. It is most commonly seen during the first weeks of life before the mother's breasts and the baby have become adapted to each other. Overfeeding in infants fed by gavage may lead to dilatation of the stomach when the food is too rapidly administered, and this may lead to grave symptoms.

ETIOLOGY

Too frequent feeding is the most common cause; less frequently, too prolonged feedings. Excessive quantities of milk from a free flowing breast are usually of temporary importance when the infant is nursed by the mother, but are more likely to be a factor when infants are nursed by a wetnurse, more especially when her breasts are kept active by the nursing of a second infant. Milk excessively rich in fat and sugar may lead to nutritional disturbances.

Ordinarily the stomach of a breast-fed infant empties itself in about two hours. The period between nursings during which the stomach is empty is one of considerable importance in that during this period, free hydrochloric acid is present. Besides its antiseptic properties, it assumes an important rôle in stimulating the secretion of pancreatic juice and bile, both of which have an important bearing on digestion. Too frequent nursings interfere with these normal physiologic processes. Excessive quantities of food, even at proper intervals, impose too great demands on the gastric mucosa. When the food contains excessive quantities of fat, gastric secretion becomes diminished.

SYMPTOMS

The earliest manifestations of overfeeding are regurgitation, anorexia, irritability and, not infrequently, diarrhea. Regurgitation occurs at first only occasionally, immediately after nursing, and without any discomfort on the part of the infant (spitting). The regurgitated fluid is often unchanged milk. This is usually the first premonitory symptom.

Diarrhea follows when overfeeding continues and regurgitation becomes insufficient to rid the body of excess food. This is especially true when the milk is

high in its fat and sugar content during the first weeks of life. The stools are more frequent than normal, and contain undigested particles of food. The irritating feces often cause intertrigo in the anogenital region.

In many cases no other symptoms develop, the condition undergoing a spontaneous cure. The breasts lessen their yield, and thus the cause of the condition disappears, or, on the other hand, the digestive power of the infant increases to such an extent as to be able to take care of the excess, if not too large. When, however, these disturbing factors are entirely neglected, the excess of the food continued, or even increased, owing to wrong interpretation of symptoms, then more serious symptoms develop.

Vomiting becomes habitual, occurring from a few minutes to half an hour after nursing. It is accompanied by visible discomfort and straining on the part of the infant. The vomitus consists of curdled milk, mucus and gastric juice. Between vomiting, there is often painful belching. The stomach shows distention, and empties itself only after three or four hours. Free hydrochloric acid is reduced or may be absent, the acid products of fermentation being present. The microorganisms are increased in number and variety, owing to stagnation and absence of antiseptic free hydrochloric acid.

The weight early becomes stationary; in severer cases, associated with diarrhea, loss of weight becomes marked.

DIAGNOSIS

There is great danger of making a diagnosis of overfeeding in infants sick from other causes. As previously stated, it is, on the whole, a rare condition in normal infants. In the presence of symptoms suggestive of overfeeding, positive diagnosis is made by determining the amount of milk taken by the infant, and comparing it with amount an infant of the same age and weight should get.

If, however, the food is found to be quantitatively correct, occasionally information of value may be obtained by examining the quality of the milk chemically, especially as to its fat and sugar content. The specimen for examination should be taken under precautions pointed out under "Examination of Human Milk." By making a proper etiologic diagnosis, valuable indications for rational treatment are obtained.

COMPLICATIONS

Pylorospasm and gastric dilatation are not uncommon in the neglected cases.

Diarrheal disturbances are accompanied by the milder evidences of intestinal irritation, such as colic, and more or less numerous bowel movements—acid and irritating, greenish-yellow, and containing numerous curds and much mucus. The buttocks soon become reddened, and intertrigo results.

Anhydremic intoxication, complicated by acidosis, while rare in the breast-fed infant, may result when the vomiting and diarrhea are neglected. The baby becomes drowsy and stuporous, pays little attention to its surroundings, and not infrequently develops an extreme anorexia.

In simple diarrheal disturbances, the intestinal findings dominate the picture, while in intoxication they share their prominence with the added nervous symptoms.

Eczema not infrequently results from overfeeding in the breast-fed infant, and is usually seen in the fat type of infant who is otherwise healthy.

Pyelitis is a frequent complication in neglected cases of diarrhea.

TREATMENT

The prophylaxis of this condition is of importance, and consists in giving the mother proper instructions as to the nursing, especially as to its frequency, and seeing to it that the rules covering the interval, number of nursings and time at the breast are observed. In wetnursing, more caution is necessary, especially in those wetnurses who have an abundance of milk, which is frequently the case in a wetnurse whose child is older then the infant nursed.

A very important point to impress both on the mother and on the wetnurse is the fact that crying of the infant is not always due to hunger, and that offering the breast should not be used as a means for quieting the child.

When the flow of milk is very free, it may be necessary to reduce the nursing period to even three to five minutes, it being a fact that most infants take about 75 per cent. of their entire meals in the first five minutes at the breast. It is always well at the beginning of such an experiment to weigh the baby after a two, three, five, ten and twenty minute period to ascertain the exact amount which the baby obtains from the particular breast which it is nursing, so that conclusions may be drawn as to the time it is to be left on each breast. If the short nursing periods with increased intervals do not result in a lessened secretion and relief of the symptoms, the milk should be expressed and fed by hand in measured quantities.

When the breast milk contains an excess of fat, this is most easily remedied by reducing the mother's diet as a whole and increasing her exercise and water intake.

When the infant shows evidence of gastric distention and retention, the treatment consists in emptying the stomach and bowels of the overload of fermenting food, and resting the digestive apparatus, both these objects being achieved by giving a bland diet, consisting of boiled water, or weak tea sweetened with saccharin, for twelve hours.

If vomiting continues, it is advisable to wash out the stomach with physiologic sodium chlorid solution or 1 per cent. sodium bicarbonate solution.

Irrigation of the bowel aids in removal of fermenting intestinal contents.

INTERCURRENT PARENTERAL AND ENTERAL INFECTIONS

Infections in the mother or infant may be the causative factors of nutritional disturbances. In the mother the most important are puerperal fever and sepsis, the acute infectious diseases, and local infections of the breasts. In the infant, infections outside the digestive tract, such as pharyngitis, tonsillitis, pneumonia, pyelitis and bronchitis, are classed as parenteral infections, and those of the intestinal tract as enteral infections.

SYMPTOMS

If the mother is ill, the clinical picture will vary, depending on whether the infant becomes infected by

the contact, or suffers only through a diminished food supply. Conditions in the mother which would justify weaning have been discussed.

In conditions following infections in the infant, the symptoms depend on whether the infection is local, systemic or confined to the intestinal tract. The clinical picture varies directly with the degree of disturbance of the metabolic function. As a rule, the enteral infections are more commonly associated with grave disturbance of the infant's nutrition. Parenteral infections also interfere with the processes of metabolism necessary to meet the nutritional needs. Undoubtedly, in many of these a secondary enteral infection results from ingestion of bacteria from the upper respiratory tract.

The diagnosis of the primary seat of infection in the infant is of considerable importance in deciding the method of treatment.

TREATMENT

Parenteral infections rarely call for restraint in administration of food because of the associated anorexia, and the infant should be nursed (if possible without danger to the mother) directly at the breast.

In the case of enteral infections, it may be necessary to withdraw the maternal milk and replace it by a short period of starvation, to be followed by small quantities of breast milk, taken directly from the breast during short nursings, or it may be best to feed small quantities of expressed milk to the infant at regular intervals.

Not infrequently it becomes necessary to feed these infants by catheter in order to sustain them. This method of introducing their food should be begun sufficiently early to avoid a catastrophe.

Under no circumstances should they be placed on food other than the mother's milk when the state of her health and the quality of her milk permit.

Inert fluids, such as water, weak tea, broths made from young meat and young fowls, and cereal decoctions, should be given between feedings to insure a sufficient intake of water, the infant's age permitting. A careful record should be kept of the twenty-four hour quantity of all fluids administered, in order to insure the child a sufficient water and food administration.

IDIOSYNCRASY TOWARD MOTHER'S MILK

The cases in which the mother's milk is totally unfit for the infant's use are exceptionally rare. More recently, considerably more attention has been given to the effect of the mother's diet on the quality and quantity of her milk secretion. The instruction so commonly given to the mother to the effect that she may eat whatever she likes has, in the light of more recent investigations, shown need for modification. The effect of the diet of the mother on the milk must be considered under two headings; first, what foods disagree with the individual mother to the extent of affecting the quantity of her milk supply. The mother will be the best judge as to what foods she herself finds it desirable to eliminate from her diet because of an undesirable effect on herself. More important, however, from the standpoint of food idiosyncrasy is the result following the eating of foods by the mother which she herself may relish, but which may have an undesirable effect on the child. It is well known that eggs, some cereals, fish and sea foods, certain meats, chocolate, and even cow's milk proteins, when ingested by the mother, may result in a sensitization of the infant.

The more recent work of O'Keefe[9] demonstrated the frequency of such a sensitization in eczema. Sixty-one per cent. of forty-one cases showed a positive reaction to one of the cow's milk proteins. Forty-one per cent. showed a positive reaction to one of the egg-proteins, two cases to oats, and one to wheat. About 20 per cent. of the positive cases showed a response to both milk and egg proteins. Apparent cure in about 20 per cent. more followed the omission or limitation in the maternal diet of one or more food proteins to which the infant was sensitive.

Talbot[10] reports a case in which a very severe eczema cleared up on the mother's discontinuing the eating of chocolate, and recurred on her again eating that food.

By a series of experiments, Shannon[11] was able to demonstrate that two infants under his care, who were suffering from urticarial skin lesions, had become sensitized to egg protein ingested by the mother. He in turn sensitized a series of guinea-pigs by the injection of the breast milk from these women, and was able to precipitate anaphylactic reactions by intrathecal injection, when eggs were added to the mother's diet.

Cases of Egg Anaphylaxis.—The grandmother of a patient presented no idiosyncrasy following ingestion of eggs, until the time of her first pregnancy, when during the fifth month she ate eight eggs in one day. Since that time, twenty-four years ago, she never has been able to relish eggs. Her first child was unable to eat eggs or anything containing eggs during her childhood, but during her later years she has been able to eat food containing a moderate quantity of egg. She has no children. Her second child, the mother of the patient, gave the same history, stating that she could detect the smallest quantity of egg in pastry, at the first taste. The patient had been a well infant until seen at 8 months, when it was still exclusively breast-fed, and had developed a severe diarrhea. For twelve hours it was placed on barley-water, with instructions to add the white of one egg to a pint of barley water during the subsequent twelve hours. It partook of 1 ounce of this mixture of barley water and egg albumin. Within thirty minutes, it became violently ill, with vomiting and purging, and shortly thereafter developed marked edema of the entire body. This lasted for six hours, when it receded spontaneously. When a slight abrasion was made with a Pirquet scarifier, and a drop of egg albumin was applied to the abrasion, a white wheal, one-half inch in diameter, developed within six minutes, continuing to increase in size for fifteen minutes, when it was surrounded by an erythematous area, 1 inch in diameter; throughout this erythematous area, numerous pin-head sized white elevations developed. The entire reaction disappeared in one and a quarter hours.

9. O'Keefe, E. S.: Eczema in Breast-Fed Babies, Boston M. & S. J. **185**: 194 (Aug.) 1921.
10. Talbot, F. B.: M. Clin. N. Am. **1**: 985 (Jan.) 1918.
11. Shannon, W. R.: Demonstration of Food Proteins in Human Breast Milk by Anaphylactic Experiments on Guinea-Pigs, Am. J. Dis. Child. **22**: 223 (Sept.) 1921.

Quack Plague "Doctors."—Some of the most noisy detractors of our work were the native quacks who persisted in beguiling the public as to their ability to cure the disease. When patients came with fever and cough, they always gave hopeful prescriptions. If the sickness was not infectious, the patient got well and the quack's reputation jumped skyward; should it turn out to be true plague, both patient and quack often died. In Harbin alone, we recorded seven deaths among the old-style practitioners; one was the "vice president of the medical research society" whose body was thrown out into the street by his wife in order to escape isolation of the family. At Dalainor one quack after catching the disease passed it on to his wife and four children. None survived. —Reports: North Manchurian Plague Prevention Service, 1918-1922.

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SATURDAY, JANUARY 27, 1923

LEUKOCYTIC SECRETIONS

It is perhaps unfortunate that the routine counting of the colorless corpuscles of the blood, which has become an every-day procedure in clinical medicine, has tended to focus attention so effectively on the numbers of these cells and thereby to overshadow the functional importance that they unquestionably possess. The leukocytes have long been recognized as independent and structurally typical cells, which are usually very much "alive" so that they may respond to their environment with motile as well as chemical reactions. Their motility, as expressed in the familiar ameboid movements of the white cells of the blood, by virtue of which they can penetrate vascular walls and permeate various tissues, has attracted great interest, particularly in view of the fact that such corpuscles can ingest foreign particles, including bacteria. This performance is, of course, the basis of the phagocytic theory of immunity so ardently championed by Metchnikoff. In phagocytosis a single, unattached cell carries out a sort of intracellular digestion that is characteristic of the lowest forms of animal life. In the latter a single cell is obviously called on to perform all necessary functions; but, in the course of evolution, when the body becomes more and more a "community of many cells," a division of labor takes place which is expressed morphologically in the differentiation of tissues and the adaptation of certain types of tissue cells to specialized activities. Apparently, as Zinsser has pointed out, the leukocytes have retained the primitive abilities of the more independent cells of the lower forms, perhaps as a provision against certain emergencies. At any rate, it is all too rarely recalled that, in addition to ingesting and digesting bacteria, the phagocytes may help to clean up the débris of residual cells of all sorts, such as extravasations of blood that occasionally accumulate, so that it would seem as if the scavengers preserved their primitive characteristics for definite physiologic purposes, and were by no means always associated, as is often tacitly assumed, with the defense against infectious disease.

Besides removing foreign organisms and necrotic tissue by phagocytosis, the leukocytes have been charged with further responsibilities for which, however, the evidence is by no means so clearly marshaled. A generation ago it was customary to ascribe to them a function in the absorption and transport of foodstuffs from the intestine. On this basis the so-called digestive leukocytosis, or increase in the number of white cells in the blood after meals, was explained. It now seems far less likely, if not actually improbable, that fats and proteins require leukocytic intervention for their absorption. The leukocytes have also been assumed to be concerned with the supply of the plasma proteins and to take an important part in the as yet little understood mechanisms of blood coagulation. From this standpoint, as Howell [1] has expressed it, they might be regarded as unicellular glands, the products of their metabolism serving to maintain the normal composition of the blood plasma. The formation of granules within the substance of the eosinophils offers, he adds, a suggestive analogy to the accumulation of zymogen granules in glandular cells.

In an analogous vein, Carrel and Ebeling [2] have interpreted leukocytes as motile unicellular glandular structures which set free their secretions in the humors of the body. Through the splendid device of producing pure cultures of leukocytes—a procedure in which Carrel's laboratory at the Rockefeller Institute for Medical Research in New York has taken a large initiative—it has at length become possible to study the products of leukocytic metabolism with less contamination from unrelated materials than is possible when the more complex tissue extracts must be employed. Attention has already been directed to Carrel's evidence [3] of the presence of growth-activating substances in leukocytes, and of the setting free of these substances in the tissues and fluids in which leukocytes accumulate. Leukocyte extracts increase the rate of multiplication of fibroblasts in vitro, and this property is acquired by peritoneal exudate or connective tissue invaded by leukocytes. In this respect there is a resemblance to embryonic tissues which also yield substances that stimulate cell proliferation. Carrel and Ebeling [2] have even more recently found that leukocytes, cultivated in plasma, always secreted substances which increased the rate of growth of homologous cells. Less frequently, they set free substances which hemolyzed foreign erythrocytes. The latter is a typical immunity reaction. The growth-promoting substances, in the words of Carrel and Ebeling, are analogous to those contained in embryonic tissues, and probably represent some of the nutriment brought to fixed tissue cells by leukocytes. They may possess the function of rejuvenating cells which have ceased to multiply when

1. Howell, W. H.: Textbook of Physiology, Ed. 8, Philadelphia, W. B. Saunders Company, 1921, p. 442.
2. Carrel, Alexis, and Ebeling, A. H.: Leukocytic Secretions, J. Exper. Med. **36**: 645 (Dec.) 1922.
3. Carrel, Alexis: Growth Promoting Function of Leukocytes, J. Exper. Med. **36**: 385 (Oct.) 1922.

the cicatrization of a wound or the repair of a fracture requires a resumption of tissue activity. According to this hypothesis, the leukocytes brought to the surface of a wound by the process of inflammation would not only oppose bacterial invasion, but also bring to the tissue the material necessary to cell multiplication. To this extent one may follow the conclusions and analogies now demonstrated for the secretions of the leukocytes as well as for the extracts of their bodies. It calls for far greater belief, however, in accepting the further assumption, namely, that the inhibiting action of blood serum in old age may be due partly to a reduction in the amount and activity of the substances secreted by leukocytes and tissue cells in the humors of the organism.

EFFICIENCY IN MEDICINE

In addition to the many profound changes in the living conditions of mankind which the World War served to bring about, the exigencies developed by the great conflict have helped in a large way to emphasize the possible significance of efficiency and organization in the conduct of human affairs. Prior to the war, considerable attention had already been devoted to the subject of industrial management, and the "system" introduced by Taylor and his followers had been widely introduced into the world of business. With the advent of the struggle between nations for supremacy, the need of conserving the health and workin gefficiency as well as increasing the work output of the individual was strongly emphasized. Everywhere the preservation of man power and the promotion of its functions became a part of the win-the-war program. Science was applied to the study of industry on a scale never before attempted. Industrial physiology became an expression to conjure with. Hand in hand with investigation of shop management went the examination of the hygienic conditions for work and the problems of fatigue in relation to the work output. Now that the stress of immediate need is no longer so imminent, it is becoming more evident that the welfare of the worker is involved not only in the day's work but perhaps also in the prolonged continuance of forms of labor that may alter unfavorably his physical or sociological welfare in the long run rather than for the time being.

To review the manifold questions here at stake would be tantamount to describing the entire scope of the new industrial hygiene. It was said recently that impoverished nations, of which there are today numerous instances—nations dependent on the fruits of labor rather than on the wealth of nature for their existence—are bound to promote the working capacities of their peoples in the direction of vigor and rational efficiency, in order to survive. In the attempts to promote such ends, physicians and the medical sciences have taken an important part. They have sought and taught the possible dangers to health, as, for example, in averting occupational disease and preventing child labor; they have aimed to ascertain the personal fitness of individuals for special tasks, under the water, on land and in the air. Morbidity and mortality are only a portion of the considerations that engage the attention of the medical profession. Man is to be regarded not merely as a machine but also as a personality which must "carry on" in many directions.

It appears somewhat strange that, in this era of standardization, medicine itself has been so little altered as an art and a profession. Dürig,[1] the Viennese physiologist, asserts that in almost no other department of technical work have the tools been so little standardized as they have been in practical medicine. Consider, he says, the possible and impossible forms of the stethoscope; the various models of apparatus for electrotherapy and heliotherapy; the continually changing types of hemacytometer; the almost innumerable sorts of instruments for operative procedure for which every surgeon seems to delight in devising a form which no one else is trained to use; the manifold drugs of uncertain therapeutic worth. Assuredly, the waste of human energy in becoming adjusted to such a situation is not inconsiderable. Would it not be possible and even highly advantageous to adopt a greater uniformity, as happens in other vocations, without sacrifice of skill or dignity?

It shall not be denied that any tendency to detract from the possibility of individual initiative and ingenuity is to be strongly deprecated in any field of endeavor, and particularly in medicine, in which each case presents a more or less personal problem. "Leadership," Hoover[2] has written, "is a quality of the individual. It is the individual alone who can function in the world of intellect and in the field of leadership. . . . Salvation will not come to use out of the wreckage of individualism. What we need today is steady devotion to a better, brighter, broader individualism—an individualism that carries increasing responsibility and service to fellows."

Dürig, too, well realizes the importance of conserving the resourcefulness of the individual. The work of man must not be converted into machine-like performance. However, in the pressing daily tasks of medical practice there is much that can be and is being "standardized" with advantage rather than detriment. Conservation of time and energy through better systematized routine and equipment in office work, hospital or laboratory leaves a larger proportion of the inexpansible twenty-four hour day at the service of the individual. Lack of orderly conduct in any vocation, disorder and chaos in professional surroundings, are not evidences of personal originality. Even the musical instruments used by great artists are standardized. The essential question is whether there is not still a

1. Dürig, A.: Das Taylorsystem und die Medizin, Wien. med. Wchnschr., 1922.
2. Hoover, Herbert: American Individualism, New York, Doubleday, Page & Co., 1922.

large opportunity for conservation through system in the work of most practitioners.

A further problem in human efficiency concerns the adaptation or adaptability of persons to the tasks set before them. It is likely, particularly with the present dearth of facilities for the education of all those who desire to embark in medical practice, that more attention will soon be devoted to the test of the fitness of each candidate for his job. There are many qualifications that characterize the ideal physician. How to discover the latent possibilities of developing them in him who seeks entrance to the profession is a pressing problem in medical education.

INTESTINAL WORMS AND APPENDICITIS

Although the literature on the etiology of appendicitis abounds in the names of American physicians who have contributed to an understanding of the disease, one aspect has of late received its chief emphasis from abroad. There foreign materials are believed to play a larger part in the genesis of the disorder than our clinicians are inclined to admit. There was an earlier period in the study of appendicitis when concretions, seeds, worms, bones and unnamed other foreign things were charged with responsibility in individual cases for irritative and more or less destructive effects on the mucous membrane, and thus of initiating an attack. In Germany, Rheindorf [1] has conducted studies leading him to the conclusion that oxyuriasis, or infestation with the common pinworm, *Oxyuris vermicularis,* assumes a by no means negligible part in the genesis of many cases clinically recognized as appendicitis. His conclusions, based to a considerable extent on histologic examination of the mucous membrane, have by no means been readily accepted.

Recently, Noack [2] has carefully examined the appendixes of a number of patients on whom extirpation of the organ was carried out. In nine out of fifteen cases taken at random from the experiences of a large surgical clinic, pinworms or parts of pinworms were discovered on careful microscopic examination of the removed appendix. Even when remnants of the worms were missing, it is not impossible, Noack argues, that the parasites may have had some responsibility for the attack involving a bacterial invasion of injured tissues subsequent to the disappearance of the worms themselves.

In the light of the current interest in the theory of focal infection, the return to a consideration of foreign bodies as predisposing causes of appendicitis in a larger number of cases than is now commonly assumed may not prove popular. Without presuming to guide the uncertain reader, we may nevertheless point out that, according to Stiles of the United States Public Health Service, the pinworm is one of the most common of the intestinal worms; and a prominent parasitologist believes that there are few persons who have not harbored *Oxyuris* at one time or another in their lives.[3] Furthermore, a recent writer [4] refers to the portal of entry which intestinal worms give to bacteria and protozoa, by reminding us that we have not yet fully awakened to the prime importance of an uninjured mucosa. The relation of intestinal worms to appendicitis, he avers, is more than hypothetic, so that probably far more cases of appendicitis are the outcome of injury done by worms than is usually supposed. Shipley states that appendicitis is a commoner disease now than it was when vermifuges were more frequently given. It has been objected that very few of the thousands of appendixes removed are reported to contain parasites. Chandler points out, however, that they are seldom sought, might easily be overlooked, and might not be recognized as such if found. It is furthermore possible, he adds, that parasites which initiated the inflammation and ulceration might no longer be present in the appendix on its removal, as they are able to move about freely in the digestive tract.

PROBLEMS IN ANTIKETOGENESIS

The considerations of both the theory and the therapy of diabetes no longer deal solely or even preeminently with the fate of ingested carbohydrate so far as it is expressed by glycosuria. Something more than the metabolism of sugars is involved in the pathology of this disease. Second only to the occurrence of sugar in the urine or an abnormally high sugar content in the blood are the evidences of disturbance in the chemical transformation of other fragments of the foodstuffs, expressed in so-called ketosis. The elimination of acetone, acetoacetic acid or betahydroxybutyric acid is always indicative of a metabolic abnormality that of late has usually been associated with disturbances in the breakdown of fatty acids and their physiologic derivatives. It has long been known that ketosis, as expressed by ketonuria, tends to occur when sugar is not burned suitably or sufficiently in the organism. To combat ketosis, it has been customary to increase the amount of available carbohydrate. In the diabetic, this procedure tends to find its limitation, however, in the lowered carbohydrate tolerance of the individual. In a fanciful way it has often been remarked that fats burn in the flame of the carbohydrates; and Woodyatt [5] once added significantly that, when the proportion of fat is too great for the fire, it "smokes" with unburned fat and acetone substances. Sugars are thus antiketogenic or ketolytic in relation to the ketogenic fatty acids of the fats.

1. Rheindorf: Die Wurmfortsatzentzündung, 1920; Centralbl. f. Path. **32**, Part 4, 1921; Mitt. a. d. Grenzgeb. d. Med. u. Chir. **34**, Part 4, 1921.
2. Noack, F. K.: Appendicitis und Oxyuren, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **35**: 407, 1922.
3. Stiles, C. W.: Osler's Modern Medicine **1**: 601, 1907.
4. Chandler, A. C.: Animal Parasites and Human Disease, New York, John Wiley & Sons, 1922, p. 204.
5. Woodyatt, R. T.: Acidosis in Diabetes, J. A. M. A. **66**: 1910 (June 17) 1916.

It now appears that somehow a "balance" is obtained under normal conditions between the ketogenic and the antiketogenic factors in metabolism. Shaffer [6] has developed the hypothesis that, in the usual routine of chemical transformations in the body, antiketogenesis, or the process by which the formation of the undesirable acetone substances is averted, consists in a reaction between acetoacetic acid, the first formed of the "acetone bodies," and a derivative of glucose (or of other antiketogenic substances), the compound being further oxidized; but that, failing to react with ketolytic substance, acetoacetic acid is resistant to oxidation, accumulates, and (after conversion in part into acetone and hydroxybutyric acid) is excreted. According to this idea, abnormal amounts of acetone bodies would appear among the metabolic products only when the rate of ketogenic catabolism exceeds the rate of antiketogenic (ketolytic) catabolism.

Proceeding in harmony with such a general view, several groups of investigators [7] have attempted to estimate the various interreacting factors supplied by the diet in cases of ketosis, in order to learn whether the facts tally with the assumptions. The proteins are potential sources of both ketolytic derivatives (sugar) and ketogenic products, the fats being primarily sources of the latter. Thus far, many data have been accumulated to show that, with dietaries in which the relative proportions of proteins, fats and carbohydrates are so selected as to produce a deficit of the ketolytic (or antiketogenic) groups, ketosis is bound to occur.

It is preeminently in diabetic patients, or persons with a lessened ability to utilize sugar, that the possibility of averting ketogenesis by increasing the carbohydrate intake fails. In the light of the newer studies, however, a high protein intake with its potentialities as a source of sugar in metabolism may also become objectionable, if the carbohydrate thus formed cannot be used. Obvious modes of adjustment to such a situation consist in decreasing the protein metabolism, the fat metabolism or even the total metabolism. Since protein and fat have both ketogenic and antiketogenic quotas, while carbohydrate has only the latter, the problem of securing an optimum for a person who shows both glycosuria and ketosis involves a knowledge of what he actually metabolizes rather than what he may eat. As Shaffer [8] has recently summarized it, interest is focused on the question: How much additional ketolytic substance, in terms of glucose of food carbohydrate, must be allowed the subject (of known size, activity and consequently energy requirements) in order to provide a safe margin over a bare ketogenic balance in his metabolic mixture? If, Shaffer adds, he has sufficient "tolerance" to burn (utilize) such an amount, and receives it, ketosis will not appear; but if his tolerance is already lower, ketosis is unavoidable until the amount of the metabolic mixture (the total metabolism) is decreased to the point at which a ketogenic balance is attained. Many of the successful features in the modern trends in the dietotherapy of severe diabetes can be interpreted in the light of the foregoing.

6. Shaffer, P. A.: Antiketogenesis, II, The Ketogenic Antiketogenic Balance in Man, J. Biol. Chem. **47**: 449 (July) 1921.
7. Shaffer, P. A.: J. Biol. Chem. **49**: 143 (Nov.) 1921. Woodyatt, R. T.: Objects and Method of Diet Adjustment in Diabetes, Arch. Int. Med. **28**: 125 (Aug.) 1921. Hubbard, R. S., and Wright, F. R.: J. Biol. Chem. **50**: 361 (Feb.) 1922.
8. Shaffer, P. A.: Antiketogenesis, IV, The Ketogenic-Antiketogenic Balance in Man and Its Significance in Diabetes, J. Biol. Chem. **54**: 399 (Oct.) 1922.

Current Comment

INTRAPERITONEAL TRANSFUSION

In view of the seemingly miraculous results sometimes observed after the transfusion of blood in desperate cases, there can be little wonder that the procedure has acquired great prominence. Those who are accustomed to practice transfusion appreciate best what difficulties and disappointments as well as what unexpected discouragements may be involved. Aside from the problem of compatibilities of blood between donor and recipient, aside from the difficulties attending the avoidance of clotting by one method or another, there remains the equally serious feature of mastering the intravenous operative technic. Introduction of substances into the circulation or withdrawal of blood no longer appear as formidable as they did only a few years ago. Progress in therapeutic technic has involved, among other things, the acquirement of facility in the manipulation of blood vessels. Nevertheless, it would be unwarranted even today to speak of venipuncture as a simple or insignificant operation. One need only watch the conduct of this operation in every-day practice to appreciate the inelegancies or even crudeness of procedures that ought to be conducted with skill, dexterity and surgical perfection. All of the foregoing circumstances, therefore, seem to justify attempts to secure the benefits of blood transfer by methods other than those of intravenous injection. Perhaps intraperitoneal transfusion will prove to be a possible pathway to success. It might be assumed that red corpuscles thus introduced would find difficulties in reaching the circulation, where they are intended to function, out of the peritoneal cavity. Experiments recently conducted on rabbits at the University of Minnesota by Siperstein and Sansby [1] point interestingly to the probable rapid absorption of freshly citrated blood injected into the peritoneal cavity. That the new erythrocytes actually enter the blood stream is suggested by the rise in hemoglobin and cellular elements following transfusions in normal and anemic animals which cannot be accounted for by a mere concentration of the blood. Easily identified nucleated corpuscles of birds, when injected intraperitoneally into rabbits, can be recovered from the general circulation in fifteen minutes. After severe hemorrhage, the animals improved visibly following the transfusion. No hemoglobinuria could be demonstrated at any time. Consequently, the Minnesota investigators conclude that the intraperitoneal transfusion of freshly citrated

1. Siperstein, D. M., and Sansby, J. M.: The Intraperitoneal Transfusion of Citrated Blood, Proc. Soc. Exper. Biol. & Med. **20**: 111, 1922.

blood acts like a true transfusion and not like the absorption of nutrient material. Whether or not the procedure which they propose as "a therapeutic method of possible merit" is suitable for human conditions must be carefully considered by those who are expert in this field.

PROPOSED REORGANIZATION OF FEDERAL HEALTH ACTIVITIES

Elsewhere in THE JOURNAL [1] appears an account of a conference held in Washington last week on the proposal for a reorganization of the health activities of the federal government. The plan now submitted seems likely to receive serious consideration, as it involves no increase and no decrease in the activities of any of the agencies of the federal government affected, no changes of personnel, and no increase or decrease of appropriations. It proposes simply to assemble under one head—and that head a cabinet officer—in their present form, all of the activities of the federal government relating to health, education and social service, and also the work of the Veterans' Bureau. In the plan proposed, the affairs of each bureau will be administered by a technical head, designated as a director-general, who will be responsible to the secretary as the head of the department. The secretary of the proposed department of education, health and welfare will presumably change with the changes in the administration—just as other cabinet officers do—but this will be a matter of minor importance if competent director-generals remain in the service. Such matters of detail as the determination of just which bureaus, divisions and other agencies will be transferred to the proposed department, and to just which bureau each will be transferred, remain to be worked out. These matters, however, should not be allowed to stand in the way of the larger project. The immediate advantage of the proposed department, it is stated, lies in the fact that in it would be gathered under one responsible head a considerable group of government establishments engaged in work more or less related, and in activities which should be coordinated better than is now possible. The proposal should be given thoughtful consideration by the medical profession.

1. Reorganization of Federal Health Activities, General News, this issue, p. 262.

National Office of Eugenics.—A Belgian national office of eugenics has been established in the Solvay Institute of Sociology at Brussels, according to the *Eugenical News*. Dr. A. Govaerts is director of the office. An appropriation of 10,000 francs has been made by the Institute Solvay, it is stated, and Mr. Armand Solvay will make a personal gift of 7,000 francs. Among those who have been instrumental in the establishment of the office are: Dr. M. F. Boulanger, director of the School of the Feebleminded at Waterloo and president of the Belgian Society of Eugenics; the surgeon general of the Belgian army; H. Velghe, director general of hygiene in the department of the interior; Dr. Bayet of the Royal Academy of Medicine; M. Berryer, minister of the interior and of hygiene, and senators, ministers and lawyers. At the meeting of the international commission, which was held recently in Antwerp, the mayor of the city announced that an appropriation had been made for a branch office of the national office of eugenics, to be located at Antwerp.

Association News

SAN FRANCISCO SESSION

Plan of Proposed Twenty-Five Day Tour, with Stops at Points of Interest

The secretaries of the constituent medical associations of the Eastern states have appointed a committee to arrange for a special twenty-five day tour to San Francisco for the session of the American Medical Association during the week June 25-29. The details and arrangements of the trip will be handled by an experienced tourist representative, who will accompany the party and have entire charge of the tour. In order to secure special train privileges, it will be necessary to have 125 or more persons subscribe to the tour. The committee in charge of this enterprise consists of Dr. E. Livingston Hunt, chairman, 17 West Forty-Third Street, New York; Dr. Wilbur B. Ward, 24 West Fiftieth Street, New York, and Dr. Malcolm C. Rose, 504 Knickerbocker Building, New York. The committee extends a cordial invitation to members and Fellows of the American Medical Association to join the party.

On the way to San Francisco, stops will be made at Chicago, Kansas City, Denver, Colorado Springs, Albuquerque, the Grand Canyon, San Bernardino, Riverside, Los Angeles and Yosemite National Park. On the return trip, stops will be made at Portland, Seattle, Victoria, Vancouver, Lake Louise, Banff, Winnipeg, St. Paul and Chicago. At each stopping place, visits will be made to points of interest, all details of transportation having been arranged for.

Meals will be served on the diners attached to the trains of the various railroads over which the tour will pass, except where stops of considerable length are made in a few cities, in which instances meals will be had at leading hotels. Those interested may secure complete information concerning the tour from Dr. E. Livingston Hunt, chairman of the committee in charge, 17 West Forty-Third Street, New York.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Osteopaths Hit by Supreme Court Ruling.—A decision rendered by the supreme court, Montgomery, January 4, in the case of the *State ex Rel. Leonora Bond* v. *the State Board of Medical Examiners* sets forth that osteopaths have no legal recognition in Alabama, and the state board of medical examiners cannot be forced to permit them to take the regular medical examination. The supreme court held that the state board of examiners could not be forced by mandamus to perform a function which is clearly within its own discretion.

ARIZONA

State Health Commissioner Named.—Governor Hunt has appointed Dr. Frederick T. Fahlen, Phoenix, as state superintendent of public health to succeed Alexander M. Tuthill of Phoenix.

CALIFORNIA

Unconditional Pardon Granted Dr. Card.—Dr. William S. Card, San Francisco, convicted of murder in the second degree in 1918 and sentenced to a minimum of ten years and a maximum of life, was recently granted a conditional pardon by Governor Stephens which made it imperative for Card to leave California on his release from San Quentin. The new governor, Friend Richardson, it is reported, has made the pardon unconditional.

CONNECTICUT

Yale University News.—According to a new agreement between the board of permanent officers of the Yale Univer-

sity School of Medicine and the corresponding boards of Yale College and the Sheffield Scientific School, admission to the combined course in either graduate school will be on a competitive, instead of an automatic, basis as heretofore. Those seniors will be eligible as candidates for the course whose scholarship standing during their junior year has been 75 or above, and who have fulfilled the science and language requirements of the medical school. Their applications, which are due before July 1, following the completion of the junior year, will be considered in conjunction with all other applications, and the medical class will be chosen from the entire number of candidates. The Yale graduates who are admitted will take their entire first year medical work and receive credit for a B.A. or B.S. degree. The degree of M.D. is awarded after three years' additional study. As only sixty students are admitted each year from several hundred applicants, the decision to select all members of the first year class in the Yale Medical School on the same basis is of interest to premedical students throughout the country.

DISTRICT OF COLUMBIA

Sentence Physician for Murder.—According to reports, Dr. Herbert Bryson, Washington, convicted of second degree murder, September, 1922 (THE JOURNAL, Oct. 14, 1922, p. 1343), was sentenced, January 5, to serve from fourteen to eighteen years in the penitentiary. Dr. Bryson was convicted of killing a woman in Cassville, Pa., with whom he had eloped from Washington.

Women's Welfare Association.—January 5, the Women's Welfare Association, Washington, opened a special clinic for the treatment of both asthma and hay-fever in young people, as the first step in the antiasthma campaign for the benefit of young girls now being waged in the city. The clinic, in charge of an expert, will be held every Friday afternoon. The Women's Welfare Association had previously conducted an asthma and hay-fever clinic for adults as part of the association's clinic of applied immunology.——Under the auspices of the Woman's Welfare Association, Dr. George M. Kober, professor of hygiene and dean of the Georgetown University School of Medicine, Washington, delivered, January 14, the first of a series of public health lectures to be given semimonthly. His subject was "Progress in Health Conservation During the Last Fifty Years." The series will run through April. Subsequent speakers will be Drs. George W. McCoy, director of the U. S. Public Health Service Hygienic Laboratory; Hugh S. Cumming, surgeon general of the U. S. Public Health Service; Valeria H. Parker, director of the American Social Hygiene Association; William A. White, superintendent of St. Elizabeth's Hospital; Vernon Kellogg, secretary of the National Research Council, and Harvey W. Wiley.

ILLINOIS

Free Dental Clinic for Cook County.—It was announced at the annual meeting of the Chicago Dental Society, January 20, that a children's free dental clinic will be opened within ninety days at the Cook County Hospital in a building formerly used as a measles quarantine station, with funds from the Pageant of Progress Exhibition. It was also announced that $3,000,000 had been given by an anonymous Chicagoan to found and maintain a large dental clinic.

Smallpox Incidence Climbing.—One hundred and forty-four cases of smallpox were reported to the state department of public health during the first two weeks of January as compared with 120 cases for all of December and decidedly fewer cases for the two preceding months. Counties reporting ten or more cases during the first two weeks in January were Bureau, Carroll, DeKalb, Henry, Lee and Will. Lee and Will counties reported the greatest prevalence.

Chicago

Personal.—Dr. Albert J. Ochsner spoke on "Medical Economics" at a meeting and dinner of the Will County Medical Society, at Joliet, January 10.——Dr. Frank C. Mann, Rochester, Minn., gave an address on "The Experimental Production of Peptic Ulcer" at the regular meeting of the faculty of the Laboratory of Surgical Technique of Chicago, January 26.——Dr. Joseph Welfeld, Chicago, held a skin and urologic clinic before the Kane County Medical Society at Elgin, recently.

INDIANA

State Board of Medical Registration and Examination.—At the annual meeting of the board in Indianapolis, January 10, Dr. William A. Spurgeon, Muncie, was reelected president. All other officers were reelected as follows: Dr. Eldridge M. Shanklin, Hammond, vice president; Dr. William T. Gott, Crawfordsville, secretary, and Dr. Jesse W. Bowers, Fort Wayne, treasurer.

Source of Smallpox Traced.—The city health commissioner of Fort Wayne, Dr. John H. Gilpin, announced, January 9, that, following an exhaustive investigation by the board of health, the source of the recent epidemic of smallpox in the city had been determined. The disease was brought to Fort Wayne through two Harlan men who worked in the Pennsylvania shops and returned to their homes each evening. Several cases of smallpox developed in the families of these men. Ten cases occurred in the city, and following the development of several cases in the South Side High School, that institution was closed. More than 500 children were vaccinated at the board of health office, January 8 and 9.

IOWA

Clinic Week.—The twelfth annual clinic of the State University of Iowa College of Medicine, Iowa City, was held, January 16-17. Prof. John Whitbridge Williams, Baltimore, was the principal speaker. Dr. Lee W. Dean, dean of the college of medicine, and Walter A. Jessup, Ph.D., president of the university, also gave addresses.

KENTUCKY

Health Surveys.—A survey of the diet and care of Southern mountain children, by the children's bureau of the U. S. Department of Labor disclosed that only 16 per cent. of the children studied belonged to families which were able to provide the modest requirements of adequate living. Nearly half the children were living in homes in which the family income was so small as to make a minimum standard of care appear impossible. The children living on a diet consisting of milk and unbolted corn meal were found, to be well nourished. The other foods available in the community, such as corn bread and sorghum, dried beans and fat salt "middlings" so failed to supply the essentials of growth that undernourishment resulted when the dietary was composed chiefly of these foods. This survey was undertaken at the request of the Kentucky State Board of Health, to discover "why a state famous the world over for its prosperity should turn out so large a percentage of physically defective men as the draft record showed," and its findings have just been published under the title "The Nutrition and Care of Children in a Mountain County of Kentucky."——Dr. Thomas Haines, representing the National Committee for Mental Hygiene, is in Kentucky directing a mental hygiene survey in the rural schools of the state. He will also visit the eleemosynary institutions on invitation of the state board of charities and corrections to make a mental and conditional survey of their inmates. This work is the result of a resolution passed at the last session of the state legislature, inviting the committee to visit Kentucky.

MARYLAND

Public Health Association Formed.—At a meeting held in Lonaconing, January 8, the Allegany County Public Health Association was organized by Drs. Champe C. McCulloch, county health officer, Ralph Barnes, medical director of the Maryland Tuberculosis Association, and Harvey H. Weiss, city health officer of Cumberland. The purpose of the association is to assist in all public health activities in the county and finance a public health nurse for the county outside of Cumberland.

Personal.—Dr. William S. McCann, associate professor of medicine at Johns Hopkins University, Baltimore, has been appointed professor of medicine at the University of Rochester (N. Y.) Medical School. Dr. McCann was at one time Arthur Tracy Cabot fellow at Harvard University School of Medicine, Boston, and instructor of medicine at Cornell University Medical College, New York.——Dr. Karl M. Wilson, associate in clinical obstetrics at Johns Hopkins University, has been appointed professor of obstetrics at the University of Rochester Medical School.——Dr. Florence R. Sabin, Johns Hopkins Medical School, Baltimore, addressed the Physiological Society of Philadelphia, at its stated meeting, January 15, on the subject of "Recent Studies on Blood and Bone Marrow."

MASSACHUSETTS

Boston Medical History Club.—At the meeting held at the medical library, December 18, it was voted to change the constitution so that the annual meeting will be held in April

instead of December. Dr. Robert M. Green read a paper on "The Early History of Medical Journalism in New England," and Dr. Harvey Cushing spoke on "Pasteur."

Personal.—Dr. Francis H. McCrudden, chief of the medical service of the Robert Brigham Hospital, Boston, while it was operated by the U. S. Veterans' Bureau, has been made chief of the medical service of the U. S. Public Health Service Hospital, Washington, D. C. Dr. McCrudden is professor of therapeutics at Tufts Medical School, Boston.——Dr. Howard L. Quimby has been appointed city physician of Gloucester, and Dr. Philip P. Moore has been appointed a member of the Gloucester Board of Health.——Dr. Paul H. Provandie was recently elected mayor of Melrose.——Dr. William O. Hewitt was named health officer of Attleboro recently, to succeed Dr. Ralph P. Kent, who had held the position for eight years.——Dr. A. F. Budreski has been appointed city physician of Brockton.——Dr. Michael R. Donovan, health officer of Lynn, fell recently, and fractured his shoulder blade.——Dr. John I. McNamara has been elected a member of the board of health of Taunton.——Dr. F. DeBorgia Bergeron has been elected assistant city physician of Fall River.

Harvard University News.—The following changes in the faculty of the Harvard Medical School have recently been announced: Dr. Francis Howard Lahey, professor of surgery at Tufts College Medical School, Boston, has been appointed professor of clinical surgery; Dr. Charles Allen Porter has been promoted to the Homans professorship of clinical surgery; Dr. David Cheever, to an associate professorship of surgery, and Dr. Howard A. Lathrop, to the position of acting professor of clinical surgery during 1923. Dr. George P. Denny has been made director of appointments for medical alumni during the present year.——The university has received a payment of $100,000 on account of the $200,000 legacy left for cancer research under the will of the late Hiram F. Mills of Quincy, who died in October, 1921. The bequest was made to the medical school for the establishment of the Elizabeth Worcester Mills Fund, the income "to be devoted to the investigation of the origin and cure of cancer," in memory of his wife.——A fund of $28,000 has also been received by the university by the bequest of the late Miss L. W. Walker of Boston, to establish scholarships at the Harvard Medical School "for the benefit of four needy and deserving students."——Mr. and Mrs. McKinlock of Chicago have donated the sum of $500,000 to the university, for the erection of a freshman dormitory in memory of their son who was killed in action in France during the World War.

MICHIGAN

Personal.—Dr. George G. Barnett has been appointed full-time health officer of Ishpeming to fill out the unexpired term of Dr. David Littlejohn, who resigned recently.——Dr. A. H. Horn, formerly on the staff of the Michigan Home and Training School for the Feebleminded, Lapeer, has been appointed assistant superintendent of State Hospital No. 1, Fulton, Mo.——Dr. F. J. Banting of Toronto, Canada, gave a lecture on "Insulin" before the Bay County Medical Society at Bay City, January 21.——Dr. Reuben J. Harrington has been appointed health officer of Muskegon, to succeed Dr. Charles F. Smith, who has resumed private practice. Dr. Eugene S. Thornton was reelected chairman of the board of health.——Drs. E. C. Warren and L. Fernald Foster were recently elected president and secretary, respectively, of the Bay County Medical Society.——Dr. Worth Ross has resigned as director of the division of child hygiene of the health department of Detroit, following twelve years' service. Dr. Earl W. May, Detroit, has succeeded him.

MINNESOTA

Dr. Scofield Reelected.—At the annual meeting of the Minnesota State Board of Health, Dr. Charles L. Scofield, Benson, was reelected president of the board.

Society News.—The Ramsey County Medical Society held its third annual clinic week, January 9-12, at St. Paul. Dr. Vilray P. Blair, associate in surgery, Washington University School of Medicine, and professor of oral surgery, Washington University Dental Department, St. Louis, gave an address on "Repair of Defects of the Face; Congenital and Acquired."——The annual meeting of the Northwestern Medical Officers' Association of the World War was also held at St. Paul, January 9.——The annual banquet of the Minnesota Academy of Ophthalmology and Otolaryngology was given, January 11, in conjunction with the clinic week of the county medical society, and all the visiting physicians attending congresses in St. Paul were invited to attend. Dr. Meyer Wiener, St. Louis, gave an address. Another banquet was given, January 10, at the St. Paul Hotel, at which Dr. Dean Lewis of Chicago, professor of surgery at Rush Medical College, spoke on "Treatment of Fractures and Their Complications."

MISSISSIPPI

Society News.—At the annual meeting and banquet of the Central Medical Society held at Jackson, Dr. John H. McLain was elected president and Dr. Roland W. Hall, secretary-treasurer. A vice president was elected from each of the counties of Yazoo, Smith, Madison, Rankin, Hinds and Simpson, which constitute the society. Dr. James B. McElroy, Memphis, Tenn., gave an address on "Syphilis of the Aorta."——At the annual meeting of the South Mississippi Medical Association in Laurel, Dr. John R. DeVelling, Laurel, was elected president and Dr. Joseph S. Gatlin, Laurel, secretary-treasurer. Dr. Walter S. Leathers, state health commissioner, spoke on "Medical Progress and Its Economic Benefit to the State."

MISSOURI

Missouri State Board of Health.—At the annual meeting of the state board of health in Jefferson City, January 10, Dr. Emmett P. North, St. Louis, was elected president; Dr. Rudolph S. Vitt, St. Louis, vice president, and Dr. Cortez F. Enloe, Jefferson City, secretary and state health commissioner.

NEW YORK

Physicians Will Not Protest Registry Measure.—An attempt by a minority group of physicians to have the Kings County Medical Society hold a mass meeting to protest against the alleged endorsement by the New York State Medical Society of a bill providing for the annual reregistration of physicians throughout the state was defeated at the monthly meeting of the county society in Brooklyn, January 16. Dr. James Vanderveer, chairman of the legislative committee of the state society, went down from Albany to address the meeting on the subject. He stated that the measure was for the protection of the physicians and to weed out the men practicing medicine on the diplomas of dead physicians or on purchased or stolen diplomas, of which there were many in the state.

Health Drive to Open in Syracuse.—Syracuse has been selected as the up-state industrial city area for one of the three health and tuberculosis demonstrations to be made in New York with the aid of the Milbank Memorial Fund. The purpose of the demonstrations is to bring all the resources of science and of public and private agencies together in an intensive campaign to show the practicability of preventing tuberculosis and sickness. The demonstration will be carried on for five years, and it is estimated that the total expenditures will be between $1,500,000 and $2,000,000. Cattaraugus has been chosen by the administrators of the fund for a demonstration of what can be accomplished in a rural county in a health campaign. Both areas were selected on the recommendation of the executive committee of the tuberculosis and public health committee of the State Charities Aid Association, with the approval of the technical board of the Milbank Memorial Fund. The Milbank fund was created by the late Mrs. Elizabeth Milbank Anderson, in memory of her father and mother, Mr. and Mrs. Jeremiah Milbank, and the demonstrations will be in the nature of a memorial to Mrs. Anderson.

New York City

Harvey Society Lecture.—Dr. Philip A. Shaffer, professor of biologic chemistry, Washington University Medical School, St. Louis, will deliver the sixth Harvey Society lecture at the New York Academy of Medicine, February 10. His subject will be "Antiketogenesis: Its Mechanism and Significance."

Association of the Alumni of the College of Physicians and Surgeons.—The annual meeting of the association will be held, January 30, at the Columbia University Club, New York. Prof. Walter W. Palmer, Bard professor of the practice of medicine of Columbia University, will read a paper on "The Development of the Department of Medicine." A dinner will follow the meeting.

Academy of Medicine to Expand.—At a special meeting of the New York Academy of Medicine held, January 15, resolutions were presented which were adopted at the stated meeting, January 18, whereby the trustees of the academy have been empowered to sell the present property of the Academy

at 17 West Forty-Third Street at the time and on the terms that they may deem for the best interests of the academy. The trustees were further empowered to use, for the purchase of a new site for the academy building, the proceeds of the sale and also to sell any other property which the academy can properly dispose of, for this purpose. It is reported that the trustees have an option on a site for a new building at Sixtieth Street and Park Avenue.

NORTH CAROLINA

Physicians to Charge Insurance Companies.—At a meeting of the Guilford County Medical Society, in Greensboro, January 4, a resolution was unanimously passed to the effect that physicians of the county should in future charge a stipulated fee to insurance companies for giving information regarding some one of their patients. It was stated that a physician by giving information to an insurance company without written evidence that the patient was willing for the physician to give the information risked being sued for damages. A committee will be appointed by the medical society to confer with the several insurance companies on fixing a minimum charge for this service.

OREGON

State Board of Health Elects.—Dr. John H. Rosenberg, Prineville, has been elected president of the Oregon State Board of Health to succeed Dr. Charles J. Smith of Portland. Dr. Frederick D. Stricker, Portland, was reelected secretary of the board.

University Dedicates Medical Building.—On January 13 the new University of Oregon medical school building on the campus in Portland was dedicated and named Mackenzie Hall in memory of the late Dr. Kenneth A. J. Mackenzie who, until his death, was dean. More than a 1,000 guests assembled in the lobby of the new building and the dedication exercises were followed by an inspection of the plant by those attending. The new building is a four story, reinforced concrete structure which embodies the latest development in medical school construction. It houses the administrative offices, the library, the departments of bacteriology, pathology, experimental biology and a portion of the department of physiology, and also research laboratories for the clinical departments. The building cost $226,000, one half of which was appropriated by the General Education Board and the other half by the state legislature. The General Education Board in addition appropriated $50,000 for equipment. The new building trebles the size of the medical school plant and enables an increase in the student body to a total of 280 students or seventy in each of the four years.

PENNSYLVANIA

Declines State Health Job.—Governor Pinchot announced, January 19, that Dr. Victor G. Heiser, New York, had declined the offer of the post of state commissioner of health of Pennsylvania to succeed Dr. Edward Martin.

Loving Cup for Dr. Martin.—On his retirement as state health commissioner, Dr. Edward Martin was presented with a loving cup by Colonel John D. McLean, deputy health commissioner, on behalf of the employees of the department.

Medical Club of Philadelphia.—Dr. John G. Clark was elected president of the club at the annual meeting; Drs. Albert E. Roussel and Alexander MacAlister, vice presidents, and Dr. William S. Wray, secretary. Dr. George A. Knowles will succeed Dr. Lewis Adler, Jr., who resigned after seventeen years of service as treasurer.

TENNESSEE

Personal.—Dr. John F. Binkley, Nashville, has been appointed director of rural sanitation to succeed Dr. Eugene L. Bishop, who has been granted leave of absence to study at Johns Hopkins University, Baltimore.——Dr. James B. McElroy, acting dean of the University of Tennessee College of Medicine, Memphis, was recently elected president of the Memphis and Shelby County Medical Society at the annual banquet, to succeed Dr. Frank D. Smythe.——Dr. William E. McGaha, who with Dr. Harry J. Lemmon, has been operating the Church Street Hospital, Newport, has retired from the corporation and Dr. Lemmon is now the sole owner, it was recently announced.

VIRGINIA

Public Health Course.—To meet the need of trained health workers in the state, courses in public health work and sanitary inspection are offered by the University of Virginia, under the direction of Dr. William S. Keister, health officer of Charlottesville, in cooperation with the state board of health. These courses began January 3, and those who apply to the department of medicine may be admitted at any season of the year. One course is arranged for medical graduates, who will receive twelve weeks' of intensive practical training in field and office work, and the other course is arranged for the training of sanitary inspectors, who will receive ten weeks of field work under the supervision of health officers. Those who complete the course will be certified by the university authorities.

WEST VIRGINIA

New Hospital Opened.—The Guyan Valley Hospital will be opened at Logan, March 15, it was recently announced. The institution contains ninety beds. The superintendent has not yet been appointed.

WISCONSIN

County Medical Meetings.—At the annual meeting of the Fond du Lac County Medical Society, Dr. John J. Rehorst was elected president and Drs. David N. Walters and D. John Twohig, were reelected secretary and treasurer, respectively.——Drs. Guerdon C. Buck, Platteville, and Dr. Carlton H. Andrew, Platteville, were elected president and secretary-treasurer, respectively, of the Grant County Medical Society at the annual meeting in Lancaster, December 22.——The Sheboygan County Medical Society elected Drs. Joseph C. Elfers and Gustav J. Hildebrand, president and secretary-treasurer, respectively, for 1923.

CANADA

University News.—That the University of Toronto is in urgent need of $60,000 to purchase "Insulin" for treatment of the thousands of people suffering from diabetes who are daily applying for treatment was the information given out by Col. A. E. Gooderham, chairman of the university committee on Insulin, recently. According to Colonel Gooderham, the problem of funds for the purchase of Insulin is one that should be settled by the provincial government. At present, only about twenty patients can be treated each day.

Public Health News.—Dr. Gordon Bates, Toronto, and Dr. J. J. Hagerty of the Dominion Department of Health, Ottawa, recently left for New Brunswick, where they will address a series of public meetings on social hygiene, and form a number of new social hygiene councils. Dr. William F. Roberts, minister of health for New Brunswick, is arranging an itinerary, which will include the larger cities of the province.——The Manitoba Social Hygiene Council is asking the provincial government to make a certificate of health necessary for the securing of a marriage license, so as to bar the marriage of those suffering from social diseases.

GENERAL

Influenza.—An apparently mild form of influenza is prevalent in several states. According to *Public Health Reports*, Mississippi reported 3,048 cases for the three weeks ending January 6; North Carolina, 2,277; West Virginia, 959; Georgia, 872, and Alabama, 503. In the fifth week of 1920, Illinois reported 30,330 cases, and in 1922 New York alone reported 5,731 cases for the week ending February 4.

American Legionaries Elect.—The annual dinner of the Caduceus Post 818, American Legion, was held at the Harvard Club, New York, January 11. This post represents a membership of 400 ex-service men who have been connected with the medical, dental or sanitary corps. Dr. Henry C. Coe was elected commander for the ensuing year; Drs. S. W. Wadham, W. C. Fisher and Mr. Gerstner, vice commanders, and the Rev. Herbert Shipman, treasurer. Dr. DeWitt Stetten and Dr. Royal S. Copeland gave addresses, following the dinner.

Physicians' Prescriptions to Be Protected.—Orders have been issued by the internal revenue commissioner at Washington, D. C., to bottle all bulk liquors now held in bond and to guarantee them as to proof and quality, in order to protect the public from poisonous whisky bought at drug stores on prescriptions. In an effort to curb dealings in denatured and industrial alcohol, the federal prohibition authorities have issued orders for the revocation of scores of dealers' permits, among these being that issued to one of the largest alcohol producing plants in the country, it is stated.

The Atlantic Medical Monthly.—About a year ago, Dr. Alexander R. Craig, late secretary of the American Medical Association, suggested to the Board of Trustees of the Pennsylvania Medical Society that a consolidation of the medical journals of Delaware, Maryland and Pennsylvania would centralize medical thought and purpose. A favorable impression was made, and Dr. Craig was authorized to present the suggestion in an unofficial capacity to the other two state societies. The Medical Society of Delaware was receptive, and at a conference of the publication committees a tentative agreement was made. After passing through the usual official channels, the suggestion will appear in concrete form in April, as the *Atlantic Medical Monthly*. The new journal will represent the combined journals of Pennsylvania and Delaware, and will be a successor to the *Pennsylvania Medical Journal*. The *Atlantic Medical Monthly* will bring closer together the physicians in these neighboring states, and will be a monument to one whose life was devoted to the medical profession.

Proposed Bill for Narcotic Control.—Senator France introduced in the Senate a measure providing for financial aid from the United States for the states in the prevention of drug addition and for the care and treatment of drug addicts. The bill appropriates $3,000,000 for the fiscal year ending June 30, 1920, and $2,000,000 for the fiscal year ending June 30, 1921. The Secretary of the Treasury is authorized to cooperate with the states, through their respective state boards or departments of health, narcotic commissions or other state or municipal officers in charge of the control of the production or distribution of narcotics and habit-forming drugs, or in charge of the care and treatment of drug addicts resident within the confines of their states. He is empowered to allot among the states appropriations of federal money for this purpose to an amount not to exceed the sum appropriated by the state for the same purpose. The Secretary of the Treasury may also permit the use by any state or municipality of any hospital or other building, equipment and medical supplies, including any narcotic drugs, in the possession of and under the control of the U. S. Public Health Service.

Narcotic Regulations Modified.—Regulations governing the prescribing of narcotics in the treatment of incurable diseases and for aged and infirm addicts whose physical collapse from the withdrawal of the drug might be fatal have been modified by the Commissioner of Internal Revenue, with a view to preserving as far as possible professional secrecy with respect to such cases. The commissioner has heretofore ruled that an order purporting to be a prescription, issued to an addict or habitual user of narcotics, not in the course of professional treatment in an attempted cure of the patient but for the purpose of providing narcotics to keep him comfortable by maintaining his customary use, is not a lawful prescription; and that persons filling and receiving drugs under such an order, and the person issuing it, shall be regarded as guilty of violation of the law. Exceptions have been recognized, however, in the treatment of incurable diseases and of aged and infirm addicts. In the treatment of incurable diseases, it has been required that it be endorsed on the prescription that the drug is dispensed in the treatment of an incurable disease; under the treasury decision just issued, the physician may endorse the prescription in that manner, or endorse simply, "Exception (1) Art. 117." In the treatment of aged and infirm addicts, the physician has heretofore been required to endorse on the prescription that the patient is aged and infirm, giving age, and that the drug is necessary to sustain life; under the recent decision, the physician may endorse his prescription as heretofore, or he may endorse it, "Exception (2) Art. 117." By using either of the cryptic alternatives now allowed, a physician may limit the chances of undesirable disclosures of the patient's condition. The druggist who fills a prescription is no longer required to obtain on the back of it the signature of the person who secures the drug prescription. It is sufficient that the name of such person appear.

Reorganization of Federal Health Activities.—On Wednesday, January 17, a conference was held in the office of Brig.-Gen. C. E. Sawyer, physician to President Harding and chief coordinator of the federal Board of Hospitalization, to consider plans for the coordination of the health activities of the federal government. In addition to General Sawyer and the Surgeon-Generals of the Army, the Navy and the Public Health Service, there were present Dr. A. W. Belting, president Eastern Homeopathic Medical Association, Trenton, N. J.; Lieut.-Commander J. T. Boone, Medical Corps, U. S. Navy; Dr. Claude A. Burrett, Rochester, N. Y.; Dr. Gilbert Fitzpatrick, chairman, Executive Committee, American Institute of Homeopathy, Chicago; Dr. C. W. Garrison, executive secretary and state health officer, state board of health, Little Rock, Ark.; Dr. James A. Hayne, secretary and state health officer, state board of health, Columbia, S. C.; Dr. A. T. McCormack, president, Conference of State and Provincial Health Authorities of North America, and secretary, state board of health, Louisville, Ky.; Dr. R. M. Olin, state health commissioner, Lansing, Mich.; Col. W. O. Owen, Washington, D. C.; Dr. W. A. Pearson, dean, the Hahnemann Medical College and Hospital, Philadelphia; Dr. Ennion G. Williams, state health commissioner, Richmond, Va., and Dr. William C. Woodward, executive secretary, Bureau of Legal Medicine and Legislation, American Medical Association. Explaining the purposes of the meeting, General Sawyer said:

> For some time there has been a plan on foot for the development of a Department of Public Welfare. The Reorganization Committee of the government has agreed that it is essential that such a department be created, and since there is likely to be early preliminary action on this subject, I deem it advisable that the medical profession should be informed as to a tentative plan now under consideration, to be presented to Congress, which affects the Public Health Service of the United States. After a careful study of the necessity of a Department of Public Welfare, it has been concluded that such a department should be organized, incorporating in its scope, education, public health, social service and the Veterans' Bureau. This department would be conducted under a new cabinet officer, with an assistant secretary, and one director-general for each of the subdivisions of the department, the subdivisions to be sectionized as found necessary in the fulfilment of the completed plan.

According to the plan submitted by General Sawyer, the proposed department will be known as the Department of Education, Health and Welfare, with a secretary who is to be a cabinet officer at its head, and an assistant secretary. The plan calls for the creation of a bureau of education, a bureau of health, a bureau of social service, and the Veterans' Bureau, each with a director-general at its head. It is to be expected, of course, that the secretary, and possibly the officer next in rank, the assistant secretary, will, because of their rank and their relation to the determination of the policies of the government, change with each administration. The several director-generals, however, are to be the technical heads of the bureaus, and as more or less permanent officers to preserve continuity of policy and administration. The plan calls for no enlargement or reduction in the activities of the several branches of the federal government now engaged in work in the lines of activities to be incorporated in the new department. It is proposed that the various agencies of the federal government (except those within the army and navy) relating to health, education, social service and the rehabilitation of veterans be transferred to the new executive department, each to carry with it its present powers, appropriations and personnel, intact. It was suggested that the prospect was never better than now for the establishment of medicine as a fixed unit, associated with other departments of the government, providing in a most satisfactory and effective way for carrying out the highest ideals of modern medicine. An executive committee to carry forward the work of the conference was appointed by the chairman, consisting of Drs. Fitzpatrick, Olin and Woodward.

LATIN AMERICA

Further Restrictions on Foreign Physicians in Mexico.—According to a presidential decree of Dec. 23, 1922, validation of foreign diplomas in Mexico will hereafter be governed by regulations issued by the National University of Mexico City. According to these regulations, foreign diplomas will be revalidated in Mexico by the National University only when reciprocity agreements exist (Mexico has such a treaty only with Japan) and the foreign diploma has been issued by an acceptable institution. Foreign physicians must otherwise submit to a general examination in Spanish. It is believed that these requirements, if enforced, would disqualify the majority of American physicians in Mexico now practicing by sufferance or by verbal agreement.

Personal.—The two prizes offered by the Sociedad Médico Quirúrgica of Guayaquil for the best reviews of the work of Pasteur were awarded to Dr. F. López of Quito and Dr. Luis Espinosa Tamayo of Guayaquil. A silver tablet with inscription was the first prize. Both articles are to be published in the *Anales* of the society.——Dr. Nin Posadas of Buenos Aires has been elected foreign corresponding member by the newly reorganized Italian Urologic Society.——Drs. Carlos A. Arteta and A. J. Valenzuela have returned to Guayaquil from their trip to Cuba. They were the official delegates from Ecuador to the recent Latin-American Medical Congress at Havana.——Dr. J. M. Estrada Coello was

the official delegate from Ecuador at the Third American Child Welfare Congress held recently at Rio. He is one of the five editors of the *Anales,* the organ published by the Sociedad Médico Quirúrgica of Guayaquil.——At the time of the Brazilian centennial celebration, the president of Portugal, Dr. Antonio José de Almeida, who is a retired physician, was one of the guests. The National Academy of Medicine held a special meeting in his honor, and elected him to honorary membership.

FOREIGN

Chair of Alcohol Research Established.—A foundation has been established by a retired merchant of Osaka, Japan, and the sum of 100,000 yen ($50,000) has been granted for placing in one of the universities of Japan a chair of alcohol research, with the object of putting temperance work in that country on a sounder basis. This decision results, it is stated, from efforts of the American Association for Alcohol Research, founded in 1921 by Capt. Richmond Hobson, now seeking a similar endowment for a chair of alcohol research in an American university.

Medical News from China.—The China Medical Board of the Rockefeller Foundation has made a conditional gift of $75,000 in gold to the Peking Union Medical College for the erection of one of the two science halls which are provided for in the plans for a group of buildings to be erected on a 300 acre site. The gift is contingent on the raising of an equal amount for the erection of the other science hall. A campaign to raise the $1,000,000 necessary for the erection of the new buildings was recently launched by L. Leighton Stewart, president of the university.——The revised English edition of "Infant Care," a publication of the federal children's bureau, is being translated into Chinese and adapted to Chinese conditions by Dr. Vivia S. Appleton, associate secretary of the Council on Health Education, Shanghai, and Mrs. Chen.

American Women Establish Quarantine Station in Greece.—Dr. Mabel Elliott, formerly of Benton Harbor, Mich., recently arranged with the Greek government to take over the entire island of Macronisi, in the Grecian Archipelago, 30 miles south of Athens, and equip it with facilities for handling 10,000 refugees at one time, in an effort to cope with the unprecedented outbreak of disease among the Near East refugees in Greece. Dr. Olga F. Stastny of Wilber, Neb., will be in charge of the station and will have a staff of forty Greek physicians and nurses. The cost of the project is estimated at $10,000, which will be entirely defrayed by the American Women's Hospital Association, of which Dr. Elliott is director. The island, which is 8 miles long and 2 miles wide, is uninhabited.——Dr. Esther Lovejoy, New York, president of the American Medical Women's International Association, has just returned to Greece to continue her relief work among the refugees.

Deaths in Other Countries

Dr. **Kenneth Macleod** at Southampton, December 17, aged 79. Dr. Macleod formerly served in the Indian Medical Service and for many years was professor of surgery at Calcutta Medical College and health officer of Calcutta; founder, and at one time president, of the Calcutta Medical Society; later he was appointed professor of military medicine at the army medical school, Netley, England, and was president of the section on tropical medicine of the British Medical Association. For twenty years, he edited the *Indian Medical Gazette,* and he was the author of many well known medical works.——Dr. **Max Nordau,** at Paris, aged 74. He was born at Budapest but practiced medicine at Paris, where he wrote the iconoclastic works, "Conventional Lies" and others that have made his name well known and helped to break the spell of *Gottesgnadenthum.* He spent the years of the war in Spain.——Dr. **A. Bonome,** professor of pathologic anatomy and bacteriology at the University of Padua, aged 66.——Dr. **Erico Coelho,** professor of obstetrics at the University of Rio de Janeiro, senator, and author of numerous scientific and literary works.——Dr. **V. Godinho** of S. Paulo, Brazil, author of a textbook on microbiology.——Dr. **L. Dedet,** at Paris, a retired naval medical officer.——Dr. **G. Domenech y Lorda,** Villaclara, Cuba, public health inspector for the province.——Dr. **Herman Legrand,** the public health official for France at Alexandria, and physician to the European Hospital.——Dr. **Mario Studart** of Rio de Janeiro.——The *Archivos Brazileiros de Medicina* reports the death of Dr. **T. Pimentel de Ulhoa** of Uberaba, and of **Dr. J. Hardmann,** prominent in the public health and hospital service of the state of Parahyba.

CORRECTION

The Names of Proprietary Preparations.—In the letter by Dr. Oliver T. Osborne, THE JOURNAL, January 13, page 127, the first sentence should read "It should not be suggested," the word "not" having been omitted.

Government Services

School of Neuropsychiatry in Veterans' Bureau

A school of neuropsychiatry has been established at St. Elizabeth's Hospital, Washington, D. C., by the U. S. Veterans' Bureau. The difficulty of obtaining physicians experienced in the treatment of patients with mental and nervous troubles made it desirable for the Veterans' Bureau to establish this special school to train physicians to care for such cases.

The school will be under the direct charge of Dr. Frank F. Hutchins, clinical director of neuropsychiatry, U. S. Veterans' Bureau, and professor of mental and nervous diseases, University of Indiana. The present class attending the school is composed of fifty graduate physicians, all ex-service men, carefully selected from 1,200 applicants. These physicians, on satisfactory graduation from the course, have guaranteed to give at least two years' continuous professional service to the beneficiaries of the U. S. Veterans' Bureau. Each course will extend over a period of about four months. There will probably be not more than two courses annually. Courses will be offered as long as it appears necessary in order to meet bureau requirements. Instruction will cover the necessary reviews of the fundamentals, followed by clinics and lectures on the various forms of nervous and mental diseases, including endocrinology. Special attention will be devoted to diagnostic methods, general care of patients and methods of treatment. Students will have actual experience in practical work. General problems of hospital administration, medicolegal questions, rehabilitation methods, psychometric examinations and other related matters will be adequately dealt with. The entire course covers a period of four months. It consists of 176 lectures and approximately 500 hours of laboratory work.

The main part of the course will be given at St. Elizabeth's Hospital, a government institution for the insane, at Washington, D. C., which offers unusual and unexcelled facilities for such work. There are nearly 4,000 patients and case histories of more than 20,000 discharged patients immediately available for study. Here are all classes of nervous and psychotic diseases, while other public hospitals in Washington will provide abundant clinics in so-called functional diseases, borderline cases and the milder types.

The teaching staff that has been selected to give this course in neuropsychiatry is significant. A number of America's most eminent neurologists and psychiatrists will come to deliver lectures on special topics, and members of the staff at St. Elizabeth's will include lecturers and members of the medical departments of the Army, the Navy, the Public Health Service, the United States Veterans' Bureau and the U. S. Department of Agriculture.

Federal Hospitalization Plan

The seven or more departments of the government operating federal hospitals in different parts of the country will be consolidated under one responsible head, according to plans of the Secretary of the Treasury, who will probably make such recommendation to Congress within a short time. The Secretary is planning to submit to Congress a special report now being drawn up by the chairman of the Treasury Consultants on Hospitalization, Dr. W. A. White, which proposes a federal unification of hospitalization. At present, the government is operating hospitals located all over the United States under numerous and dissociated control, including the Army, Navy, U. S. Public Health Service, the Interior Department, the U. S. Veterans' Bureau and others. These authorities should be centralized, according to the report being prepared by Dr. White and his committee of physicians and surgeons, who have been serving the government without pay. A federal plan for hospitalization should be carried forward with an eye not only to the present, but

also to the future, the report will point out, taking into consideration the need for old soldiers' homes as veterans of the World War grow old, and the possible need for marine hospitals in case the projected merchant marine develops as expected. The idea of such a federal plan is approved by Brig.-Gen. Charles E. Sawyer, chief coordinator of the federal Board of Hospitalization. This board, while performing some of the functions of a central head for the various hospital agencies of the government, does not have enough power to handle a program of widespread control, lacking sufficient authority from Congress. One of the difficulties in the administration of the present hospital program has been the zeal of the various department heads to forward their own particular organizations. The federal Board of Hospitalization, which acts as official adviser to the President in all hospital matters, consists of the present officials in charge of dissociated control: Brigadier-General Sawyer, chief coordinator; Col. Charles E. Forbes, director of the U. S. Veterans' Bureau; Dr. W. A. White, chairman of the Treasury consultants; Surgeon-General Ireland of the United States Army; Surgeon-General Stitt of the United States Navy; Surgeon-General Cumming of the U. S. Public Health Service; Gen. George H. Wood of the National Homes of Disabled Volunteer Soldiers, and Charles M. Burke, commissioner of Indian affairs.

The White committee report on a comprehensive federal plan for hospital management will not only outline, in general, what such a reorganization would be able to do for the future of government hospitals and government beneficiaries of all kinds, but will also be backed by a mass of documentary evidence collected by the committee in its extensive study of the problem since March, 1921, when the committee was named by Secretary of the Treasury Mellon. The report will give a list of the hospitals built by the committee in cooperation with the supervising architect's office, under Assistant Secretary of the Treasury Clifford, in the construction of which the committee expended $18,600,000, appropriated under the so-called Langley bill. Another part of the White report bearing directly on the necessity of a centralized federal hospitalization plan will include the studies which the consultants made preliminary to giving their advice on the location, site and character of these hospitals. Not only will this federal centralization be recommended, but the report will also propose cooperation of the states in the matter of hospitals.

Withdrawal of Army Officers from Veterans' Bureau

Regular Army officers on duty with the U. S. Veterans' Bureau have been withdrawn by order of Secretary of War Weeks. Four of these officers will be relieved immediately, while the others will be permitted to remain with the Veterans' Bureau until several weeks have elapsed. Those officers who will be relieved immediately are: Lieut.-Col. Roger Brooke, chief of consultants; Lieut.-Col. Paul S. Halloran, in charge of inspection section, medical division; Major Raymond W. Bliss, assistant chief, hospital division, all three of whom are medical officers; and Major George P. Ahern of the employment service, rehabilitation division. The following officers will remain on duty for a short time with the U. S. Veterans' Bureau, although they will be withdrawn under Secretary of War Weeks' order: Lieut.-Col. R. L. Reeves, assistant director in charge of rehabilitation; Lieut.-Col. R. U. Patterson, Medical Corps, in charge of the medical division, and Major John G. MacDonnell, who has been liaison officer between the War Department and the Veterans' Bureau.

Changes in Veterans' Bureau

Reorganization of the administration of the U. S. Veterans' Bureau was effected by Col. Charles R. Forbes this week through changes in many of the important executive posts. Col. George E. Ijams of Baltimore was named executive officer of the bureau to succeed Dr. T. Hugh Scott, who, at his own request, was transferred to be commanding officer of the Muskogee, Okla., hospital. Colonel Ijams has been chief of the district organizations in the bureau. His successor has not yet been named. To succeed Col. Robert U. Patterson, who has been withdrawn from the bureau to his duties in the regular Army, Dr. L. B. Rogers, who is now inspecting hospitals in the Philippines, was appointed as assistant director in charge of the medical division. Dr. P. C. Rawles of the medical service, Dr. B. C. MacNeil of the inspection service and Dr. E. A. Turner of the administrative force of the medical division were assigned to service in the field.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 1, 1923.

The Increase of Cancer

All statistics seem to show an apparent increase of cancer. The recently issued report of the registrar-general for Scotland for the year 1921 gives the mortality due to cancer as 122 for each hundred thousand of the population, a rate higher than that of any previous year. The health officer of Kent also states that in 1921 the death rate from cancer was the highest on record in the county, 133 for each hundred thousand. In 1910, the rate was 90, so that possibly an increase of nearly 50 per cent. has taken place. In both Scotland and Kent, cancer caused a higher mortality than any other disease excepting heart disease, and in the former country the rate exceeded that of tuberculosis by 50 per cent. The usual factors controlling reports of cancer deaths should, of course, be taken into consideration.

Research in Diabetes

The directors of a business firm (Ashton & Parsons) have made a gift of $13,000, to be paid in instalments of $2,000 a year over a period of six and one-half years to Guy's Hospital, to be spent in research into diabetes mellitus and other related diseases of metabolism. The money will be used to provide for the services of an additional worker in the hospital, to aid the investigations into the preparation and use of "insulin," the substance discovered by Banting and Best at Toronto University.

Milk Regulations

The ministry of health has issued regulations prescribing conditions under which milk may be sold, under four special designations. In the production of "Grade A milk" the herd must be kept separate from all other animals, marked for identification and registered. Every animal must be examined once every three months by a veterinary surgeon approved by the ministry. If an animal shows any evidence of disease likely to affect the milk, it must be removed from the herd. If tubercle bacilli are found in the milk, the producer must take all the necessary steps to ascertain which animals are diseased, and remove them from the herd. The milk must either be bottled at the dairy farm or be consigned from the dairy in an unventilated sealed container, with the address of the dairy on it, the day of production, and the words "Grade A milk." The milk must be delivered to the consumer either (*a*) in bottles with a tightly fitting disk and a cap overlapping the lip, so fastened as to form a complete seal; or (*b*) in containers of no less capacity than 2 gallons, closed with a tightly fitting cover and sealed. The milk must not be treated with heat at any stage.

"Grade A (tuberculin tested) milk" must be produced under the same conditions, with the additional regulation that every animal in the herd must be tested with tuberculin at intervals of six months. No animal must be added to the herd without having been tested with tuberculin in the preceding three months. Reactors are to be removed from the herd forthwith.

"Certified milk" is the highest grade. It is produced subject to all the foregoing conditions with the additional regulation that all the milk is to be bottled on the farm immediately after production in the manner described above.

"Pasteurized milk" must be produced by means of approved apparatus and methods; the milk is to be retained at a temperature of from 145 to 150 F., for at least half an hour and immediately cooled to 55 F. or lower. It is not to be

heated more than once or otherwise treated. "Flash" methods are not allowed.

The bacteriologic standards required are that at no time before delivery to the consumer shall these standards be infringed:

	Maximum Number of Bacilli for Each C.c.	B. Coli Absent in
Grade A	200,000	0.01 c.c.
Certified	30,000	0.10 c.c.
Pasteurized	30,000	0.10 c.c.

In instructions to the licensing authorities, the ministry suggests that samples for bacteriologic examination shall usually be taken about once a month. Producers of the specially designated milk must be licensed and the licenses may be revoked because of unfavorable reports.

PARIS

(From Our Regular Correspondent)

Dec. 29, 1922.

The Centenary of Pasteur

Many ceremonies have marked the celebration of the centenary of Pasteur, but the three most significant in this country were those that took place at the Academy of Medicine, the Pasteur Institute and the Sorbonne.

At the Pasteur Institute were gathered the relatives and the pupils of the great scientist; also the delegates of all the societies to which he belonged. Arrangements for the celebration that was held at the Sorbonne were made by the Association générale des étudiants de Paris, under the chairmanship of M. Léon Bérard, minister of public instruction, and of M. Paul Strauss, minister of public health. Many delegates from schools and colleges—also several foreign delegates, were present.

At the Academy of Medicine addresses were delivered by the president, Professor Béhal, and by Professors Delezenne, Widal, Delbet, Wallich, Barrier and Calmette.

PASTEUR'S CONTRIBUTIONS TO BIOLOGY

As well expressed by Professor Delezenne, never has biology undergone so decided a revolutionary process as that which marks the advent of Pasteur. He delved into the infinitesimally small things of life, and his researches shed new light on the constitution of matter, and even extended to the limits of the great problem concerning the origin of living matter, the fundamental characteristics of which he associated with molecular dissymmetry and the subtle modifications that Nature so readily accomplishes but which the chemist can never produce. If Pasteur's life work may be said to have won the admiration of men because of the many blessings that it has brought to humanity, it is perhaps in the field of general biology that we can best measure its amplitude; for its scope and its practical value are, to a great extent, dependent on the light it has shed on the most essential problems of life.

PASTEUR'S CONTRIBUTION TO MEDICINE

In his discourse, Professor Widal pointed out the profound transformation that the discoveries of the great scientist had brought about in medicine. "All was obscurity and confusion as to the origin of transmissible diseases, when suddenly all became clarified through the light of his genius." The science of medicine is indebted to Pasteur for methods and technical procedures which are so exact and so perfect that nothing is done in any branch of bacteriology, which does not seem like a ritual repetition of Pasteurian procedures. Sterilization of material for study, cultivation of bacteria in culture mediums, isolation of micro-organisms in pure culture, differentiation of anaerobic and aerobic species, and reproduction of diseases by the inoculation of animals, are some of the methods which Pasteur created and which have transformed our methods of medical research.

PASTEUR'S CONTRIBUTIONS TO SURGERY

According to the idea brought out by Professor Delbet, Pasteur gave to surgery the most splendid gift that it has ever received; namely, operative safety. The conquests of modern surgery have become possible through the work of Pasteur. But Delbet pointed out that the endeavor to combat infection by means of antisepsis is not based on a genuine Pasteurian doctrine; for, though Pasteur at first attached great importance to contamination through the air, he very soon found that the air contains few bacteria, and he reached the conclusion that infection is transmitted mainly by contact. It was in the direction of asepsis—sterilization by means of heat—that Pasteur hoped to see surgery develop. Delbet quotes these words of Pasteur to show how the scientist outlined the program of the surgeon:

> If I had the honor of being a surgeon, convinced as I am of the dangers to which the germs that are found on the surface of all objects expose us—more particularly in the hospitals—not only would I take care to use only instruments that are perfectly clean, but, after having subjected them to a rapid flaming, I would use only lint, bandages and sponges that had previously been exposed to hot air of a temperature from 130 to 150 C., and I would use only water that had been subjected to a temperature of from 110 to 120 C.

By his remarkable intuition, Pasteur had caught a glimpse of the rôle of devitalized tissues, which, at a later period (during the World War), was to attract the attention of surgeons. In speaking of wounds infected with *Vibrio septicus*, Pasteur wrote:

> But if, under such conditions, a single blood clot or a single fragment of dead tissue remains in some recess of the wound, . . . immediately the septic germs will give rise, in less than twenty-four hours, to an infinite number of vibrios through multiplication by cell division, which are capable of producing a fatal septicemia in a short time.

It was not until the middle of 1915 that surgeons began to carry out, in the treatment of wounds, the systematic resection of devitalized tissues, and this marked a veritable transformation in the evolution of wound treatment. Lesions which, at the beginning of the war, without being cleansed or having the dead tissue removed, were treated with an antiseptic, dragged along, if death did not result, for weeks and months, leaving fistulas and weakness in their train, whereas they healed in from ten to twelve days when treated by resection of dead tissue, and no sequels resulted. Five hundred thousand men, wounded in 1918, returned to the front before the declaration of the armistice. Here, as well, the surgeons simply learned to apply the teachings of Pasteur.

PASTEUR IN RELATION TO OBSTETRICS

In obstetrics, as in medicine and in surgery, the discoveries of Pasteur mark the beginning of a new era. As early as 1847, it is true, Semmelweis had recommended that the physician attending in childbirth should wash his hands with chlorinated lime before touching his patient, and as the result of this precaution the mortality from puerperal fever had dropped to around 1 per cent. But this discovery had no echo, unless it was at Edinburgh, where Simpson followed this example. It was not until twenty years later that Pasteur, by teaching a more accurate conception of the etiology of puerperal fever, brought about radical changes in the treatment of puerperants and made almost negligible the mortality from puerperal infection, which had formerly ranged from 25 to 50 per cent.

PASTEUR'S INFLUENCE ON PUBLIC HEALTH IN GENERAL

In 1879, Pasteur took up, in his vineyard at Arbois, a study of the origin of yeasts that cause the fermentation of grape juice. By covering the grapes with cotton, for some time before they mature, or by protecting them with glass, he found that he could prevent the introduction of yeast spores by the air, the wind and insects, and the juice of these grapes did not ferment, whereas the juice of grapes ripened in the

open air ferments soon after it is extracted. From this observation he drew at once the following conclusion:

> Are we not justified in believing, by analogy, that the day will come when preventive measures, easy of application, will put an end to these scourges which, appearing suddenly, bring terror and sadness to a whole people, such as yellow fever and bubonic plague?

Calmette rightly designates this prophecy as wonderful; for, less than a quarter of a century later, yellow fever and the bubonic plague ceased to be, along with cholera, dread-inspiring experiences of humanity.

It was these studies on fermentations, on so-called spontaneous generation, and on the diseases of silkworms that enabled Pasteur to establish the bases of his germ theory, which has been so fruitful of results; for, with the discovery of the attenuation of virus, vaccination against chicken cholera, anthrax, swine erysipelas and rabies, it was destined, from 1885 on, to overthrow all old medical theories and to put on a solid foundation the prophylaxis of transmissible diseases, thus giving a more permanent basis to public health administration.

Calmette states, not without a certain bitterness, that the notion of contagion, enunciated in England by the Public Health Act of 1875, did not receive official recognition in France until the passage of the sanitary act of Feb. 15, 1902. It is regrettable that Pasteur's own country was not the first to profit by the beneficent results of his researches. Calmette therefore expresses the hope that the hundredth anniversary of the birth of the founder of modern hygiene may become for the people of France a time for the taking of an inventory of stock, as it were, in order to ascertain how the work of France to safeguard the public health compares with what has been done by other nations which are not so neglectful of their human capital and of human welfare.

THE COUNTRYSIDE WHERE PASTEUR WAS BORN AND REARED

The department of Doubs, in which Pasteur was born, celebrated the centenary of its most illustrious son by ceremonies which took place at Arbois, Dôle and Besançon. At 5 o'clock, on the evening of December 27, from all the belfries of the department burst forth loud and reverberating peals in tribute to the memory of Pasteur, born just one hundred years before. Many people from the countryside, joined by strangers from a distance, flocked to Dôle to pay a visit to the old home and birthplace of the great scientist.

The Publication of Pasteur's Works

Until recently, the works of Pasteur were scattered through the reports of proceedings of the Academy of Sciences and of the Academy of Medicine or were found in reviews and scientific journals. Dr. Pasteur Vallery-Radot, physician to the hospitals of Paris and grandson of the famous scientist, has now collected them, and the world is greatly indebted to him for his enterprise. Pasteur's complete works will constitute seven volumes. The first two volumes have just appeared in a magnificent edition published by Masson et Cie. Volume I comprises the treatises on chemistry and physics, and also the articles on crystallography, which mark Pasteur's entrance into the scientific world. These are the studies which led him to investigate the subject of fermentations and which formed the basis of his later discoveries; for all of his studies seem to be linked together, and, as has been well expressed by Roux, "Pasteur had already revolutionized medicine without having made a special study of any disease." We can also feel grateful to Dr. Pasteur Vallery-Radot for having adopted the chronological order in the publication of each series of works of his illustrious grandfather, for this permits us to follow very exactly the evolution of Pasteur's thought. Thus, in reading Volume II, which is devoted to his researches on fermentations and on so-called spontaneous generation, we can see how, by his investigations on molecular dissymmetry, Pasteur was led to the study of fermentation, and how, at a later period, his researches on so-called spontaneous generation were, as he himself stated, only a "necessary digression" from his work on ferments. Vallery-Radot truly says that the reader is spellbound by the wealth of induction and deduction, which is peculiar to Pasteur's genius.

The Future Pasteur Museum

In connection with the ceremonies held, December 27, at the Pasteur Institute, visitors were accorded permission to inspect the apartment that the scientist occupied on the ground-floor of his residence. In the drawing room, a museum, or, rather, the beginnings of a museum, could be found, for it is the intention of the relatives and pupils of Pasteur to restore ultimately all the furniture to the position that it formerly occupied. Later, therefore, a visit to this apartment will enable one to gain a retrospective view of Pasteur's work as it actually developed. Even at present, we find in this collection enclosed in glass cases interesting evidences of the studies of the master. We see the models carved in wood by Pasteur himself to illustrate his work in crystallography; also retorts, cylinders, mortars and flasks used in demonstrating the nonexistence of spontaneous generation. In some of these were found—intact and still sterile—the solutions just as Pasteur had left them. Here we see the microscopes that he used, and there, photographic copies of pages of his notebooks in which he had jotted down his observations.

PRAGUE

(From Our Regular Correspondent)

Dec. 20, 1922.

Institute of Hygiene

Dr. Pavel Kucera, formerly professor of hygiene at the universities of Cracow and Brno, delivered a lecture on the organization of the institute of hygiene before the medical society in Prague, December 11. Professor Kucera was designated director of this institute, which the Czechoslovak government is building, with the help of the International Health Board of the Rockefeller Foundation. The institute of hygiene, the construction of which must be completed before the end of the year 1926, according to the contract between the Rockefeller Foundation and the government, will not only be a service laboratory for the health service of the country, but will also serve as a teaching center for the education of all members of public health personnel, primarily of health officers. The construction of the first half of the institute was started this fall. It will contain institutes for the production of serums, Pasteur vaccine for rabies and smallpox vaccine. The buildings will be completed before next winter, and the institutes will be transferred into the permanent buildings from the temporary quarters that they are now occupying. After the first half of the institute has been put into operation, the construction of the second half will be started, in order not to exceed the time limit given in the contract. After its completion, the institute will comprise eleven departments, including a bacteriologic, food and drugs laboratory, and departments of school hygiene, industrial hygiene and housing.

The medical profession is following the plans for the construction of the institute of hygiene with keen interest. The only objection comes from the medical faculties, which see an important medical institution growing beside the university and claiming for itself a rôle which up to the present time was fulfilled by the medical faculty; namely, the education of health officers. Although it is anticipated that the organization of a school of hygiene in the institute of hygiene will meet opposition on the part of the university professors, the

ministry of health, under whose auspices the institute is being built, has resolved to put its cause through in the interest of an advance in the education of public health officers. The personnel for the institute of hygiene is being trained largely in the United States, because scholarships have been granted by the Rockefeller Foundation to the Czechoslovak government for this purpose.

Public Health Education

A subdivision of public health education will be created in the ministry of health and physical education, beginning Jan. 1, 1923. Czechoslovakia will be the second country on the European continent to have such a subdivision established in connection with the health service, Jugoslavia being the first. Dr. Charles Driml, who will be appointed chief of the subdivision, has studied the methods of public health education in the United States. Since his return to this country, he has organized several popular exhibits, and has written public health educational pamphlets. One of the most effective means for the education of schoolchildren in public health matters is plays with marionettes, which are very popular in this country. Dr. Driml conceived the idea of approaching the schoolchildren in this way for the purpose of improving their health habits. The plays are being translated into English by the Junior Red Cross, and parts of them have already been published in Canadian magazines.

Control of Venereal Diseases

The ministry of health started organizing social and health centers in larger cities two years ago. It was the intention of the ministry to create institutions that would become its tools for the eradication of the social diseases. The character of these institutions was preventive, as it was conceived by the originator of the idea, Dr. Francis Hamza, who is now professor of social medicine in Brno. The centers were started as tuberculosis dispensaries, and, owing to the activities of the American Red Cross, twenty cities have added preventive child welfare stations. Three of them have opened also venereal disease dispensaries. It has been very difficult since the beginning to limit the functions of these centers entirely to the prevention of disease. The physicians who were appointed as chiefs of the centers were educated as practitioners of curative medicine, and, naturally, began to treat disease in the centers. This, of course, made the medical profession antagonistic to the centers in many places. This was especially true in the tuberculosis clinics, where the tuberculin treatment was administered. But the relationship of the medical profession and the tuberculosis dispensaries is improving, because the physicians in the dispensaries limit their functions chiefly to prevention; and slowly the questions of social medicine are being made understandable to the medical profession through the committee on social medicine, which is a very active body, composed largely from young physicians.

The activities of the child welfare centers since the beginning have been limited to medical control and supervision of the children, and therefore did not arouse the antagonism of the medical profession. The question was much more complicated with the venereal disease dispensaries, where it is very difficult to perform merely preventive functions in the station. The ministry of health has prepared a tentative program for these stations, which is built on the experiences of Germany. It is the intention to conduct these venereal disease stations as institutions for the control of venereal patients, who are forced to continue treatment under the new venereal disease law until they are declared free from infection by the physician. The functions of the dispensary will be limited only to the control of the patients, and no treatment will be given. If his case comes under the insurance act, the patient will be sent to the insurance practitioner of the club to which he or she belongs. If there is no one who can assume the expenses of the treatment, the dispensary will send the patient to a medical practitioner, who will receive from the funds of the dispensary the fees for the treatment of the patient, according to the scale of the insurance.

The ministry plans to open such a dispensary in Moravska Ostrava, which is a big industrial city, and it wishes to use the experience gained in this city in the erection of similar dispensaries in other large cities. In this way, the health centers will be brought in closer contact with sickness insurance, and at the same time machinery will be created for the execution of the new venereal disease law, for which the routine public health administration is too cumbersome. These social and health centers are financed through subsidies from the ministry, with contributions from local funds. It is planned to transfer the expenses for maintenance of these centers to the counties, after the reorganization of the administration of the country has been completed.

BERLIN

(From Our Regular Correspondent)

Dec. 30, 1922.

Racial Physiognomy

Last month, Professor Hellpach, instructor in psychology at the polytechnic in Karlsruhe, and now minister of public instruction in Baden, delivered an address before the Heidelberg Naturhistorischmedizinische Verein on the influence of heredity and environment on physiognomy or facial expression. As distinct from the inherited manifestations and qualities of constitution and race, which are comprised under the term "genotype," Hellpach distinguishes a "phenotype," which is characteristic of the tribe or clan. Marks of the phenotype become stamped on the face at about the fifteenth year of age, and are dependent on the place of residence or the environment. The influence of the genotype breaks its way through and manifests itself also in children born in the new environment of parents of a different stock or even in children who were brought to a new region in their early childhood. Hellpach referred to statues of German painters (using for the Franconian face Albrecht Dürer and for the Swabian-Alemannic type, Hodler and Hans Thoma) and also to photographs to illustrate the phenotypes of the two ancient tribes that form the population of Baden. He called attention in the Franconians of the old Palatinate in northern Baden to the triangular shape of the face, the pointed chin, the long nose, the protruding cheek bones and the correspondingly marked "zygomatic shadow," giving rise, if the soft parts are well developed, to a heart shape or to an oval form with the smaller end of the oval projected downward, whereas, among the Swabian Alemannians in southern Baden, a broad chin and flat cheeks, rising perpendicularly, give the face a square-set or rectangular appearance; or, if the soft parts are more fully developed, a full-moon face, so-called, results. Hellpach thinks that the cause for a phenotype existing in a pure form for centuries lies in the peculiarities of the dialect; or, not so much in the dialect as such, as in the accentuation and the dynamics of the spoken language. The position of the accent, the type of the accent, and the mode of speaking (whether rapid or slow), occasion in the various dialects a different type of "mimokinetics" (play of the features) and a varying innervation of the organs of speech, all of which factors, in turn, serve to model the face accordingly, a more lively motion of the lips being characteristic of the more "labial" dialect of the old Palatinate, and a more set and fixed expression about the mouth being typical of the predominantly guttural Alemannic dialect. Simultaneous with the adoption of the dialect, there is an habitua-

tion to the tribal temperament or disposition going on, whereby an inborn or hereditary temperament may likewise be transformed. The effects of imitation and adaptation, which are such significant factors in human life, serve to explain the fact that the phenotype of the tribe prevails and appears even in the children of immigrants of different tribal origin. This assimilation of immigrants by the old native stock is, in Hellpach's opinion, the explanation of the riddle why, in spite of wars, revolutions and marked shiftings of the population, the ethnical boundaries of the old German tribes have remained essentially the same for a thousand years. It would appear, therefore, that tribal instincts and tribal peculiarities are not so much a physical as they are a mental product, and we find herein a confirmation of the words of the poet that it is the mind that molds the body.

The Wretched Living Conditions Among the German People

December 15, the physicians of Berlin, with numerous representatives from all parts of the country, held a special meeting, under the chairmanship of Geheimrat Rubner, at which attention was directed to the grave damage to health that has already been caused or is imminently impending as the result of the increasing poverty of the people. Professor His, an ordinarius of the medical faculty, delivered an address on "The Marked Decline in the Standards of Living Among the German People," while Dr. Dippe, the chairman of the Deutsche Aerztevereinsbund, spoke on the subject of "The German Physicians at the Bedside of the German People." The social hygienist Professor Krautwig, who is a member of the city council of Cologne, addressed the assembly on the theme, "German Children in Need; What Is to Be the Fate of the German People?"

Age Distribution of the Population of Bavaria

Recent statistics published by the public health department of Bavaria give a clear conception of the markedly changed age distribution of the population as caused by the large number of men killed in the war and the decrease in the birth rate. The influence of the decline in the birth rate on the age distribution is so great that the loss of men in the war has affected, for the most part, only the relationship of the sexes for the age group 15 to 30. A long time will elapse before normal conditions are restored.

AGE DISTRIBUTION OF MEN AND WOMEN
(1,000 BASIS)

	German Empire, 1910		Bavaria, 1914		Bavaria, 1919	
Age Group	Men	Women	Men	Women	Men	Women
0- 1	26.3	25.0	26.8	25.7	14.2	12.5
1-15	322.0	311.1	324.8	314.2	294.7	267.6
15-30	263.8	256.8	249.2	246.6	263.7	280.7
30-60	317.6	321.3	320.9	323.3	342.9	347.9
60-70	45.9	54.6	51.1	58.1	55.2	57.7
Over 70	24.4	31.2	27.2	32.1	29.3	33.6
	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)

Personal

Prof. Dr. Alt, chairman of the *Aerztekammer* (chamber of physicians) of the province of Saxony, for many years the director of the Landes-Heil- und Pflegeanstalt in Uchtspringe, died in Magdeburg, December 28, at the age of 62.

In honor of the seventy-fifth birthday of Professor Flügge, who was for many years the director of the Hygienische Institut in Berlin, Professor Kayserling, the tuberculosis expert of Berlin, who is connected with the Robert Koch Foundation for Combating Tuberculosis, has founded a Flügge Fund for tuberculosis research, with an initial subscription of 100,000 marks.

April 1, Professor Küstner, director of the University Women's Hospital in Breslau, will retire from active service, in conformity with the provisions of the old age pension law. Prof. L. Fraenkel of Breslau has been called to succeed him.

MEXICO CITY

(From Our Regular Correspondent)

Jan. 11, 1923.

Yellow Fever

During the year 1922, forty-one cases of yellow fever were reported in Mexico, as compared with 115 in 1921 and 505 in 1920. Besides the decrease in the number of cases reported, which, of course, does not represent the full number of cases, the decrease in the area where the disease prevailed must be considered. In 1920, many cases occurred in towns both on the Atlantic and on the Pacific coasts; in 1921, there were outbreaks in several towns on the Eastern coast, while in 1922, there were only three cases at Puerto Villarta, on the Pacific coast, and the remainder at Pánuco, Tampico and Tuxpam, on the Gulf coast. Not one indigenous case was reported from Vera Cruz, for many years a noted yellow fever focus.

Child Welfare Congress

Early this month the second Congreso Mexicano del Niño was held in Mexico City. Because of the number and the contents of the papers submitted and the interest in its transactions, the congress proved a great success. The third congress will be held in Mexico City in 1925. The civil engineer Félix F. Palavicini was appointed president and Dr. Salvador Uribe y Rivera, secretary. His address is 1 Calle de Iturbide, No. 11, Mexico City.

Mexican Medical Association

The Mexican Medical Association has just held its first scientific meeting with a fair degree of success. An encouraging feature was the attendance of several physicians from other states who had stayed away from previous meetings. The present session was devoted to a celebration of Pasteur's centennial. The ceremonies were in charge of Drs. Ramón Icaza and D. M. Vélez, president and vice president, respectively, of the association. New officers were appointed. The president-elect for the next two-year term is Dr. Fernando Zárraga.

Personal

Dr. Fernando Ocaranza, former president of the Mexican Society of Biology, has been appointed corresponding member of the Buenos Aires Biologic Society, a branch of the Argentine Medical Association.——A banquet was recently tendered Drs. Ulises Valdés and Gabriel Malda, by a number of local physicians.

Marriages

VERNE CARLTON HUNT, Rochester, Minn., to Miss Mona Sibeck of Little Rock, Ark., December 28.

GLENN ROBERT CUTTER to Miss Josephine Gage, both of Council Bluffs, Iowa, at Sabula, recently.

PAUL N. JEPSON, Rochester, Minn., to Miss Dorothy Cannon of Haddenfield, N. J., December 28.

MICHAEL S. MCGAURAN to Miss Catherine T. Reardon, both of Lawrence, Mass., December 26.

CHARLES GOLDMAN, Brooklyn, to Miss Helen Louise Goodman of Waco, Texas, December 3.

HELMER ENGH, Gillespie, Ill., to Miss Helen Runnestrand of Hettick, Wis., November 30.

JOHN MILTON DODSON, Chicago, to Mrs. Mary Hyde Webb of Detroit, January 17.

ALBERT C. LUCAS, Castle, Okla., to Miss Grace Philpots of Okemah, November 20.

OTTO FRENZEL to Miss Matilda Myers, both of Pigeon, Mich., January 14.

WILBERT HALL to Miss Lillian May, both of Mitchell, Canada, recently.

VICTOR R. LAPP, Hamilton, Canada, to Miss Edna Ward of Toronto, recently.

Deaths

Herbert Clark Emerson, Springfield, Mass.; Medical School of Harvard University, Boston, 1893; at one time city bacteriologist; for eight years served as city physician and member of the board of health; president of the Springfield Hospital; member of the Massachusetts Medical Society; formerly president of the Engineering Society of Western Massachusetts, the Hampden County Tuberculosis and the Hampden County Public Health associations; chairman of the Connecticut Valley section of the American Chemical Society; for nearly twenty years maintained an analytic and consulting laboratory in the city; aged 57; died, December 6, from pulmonary congestion.

James D. Hillis, Lafayette, Ind.; University of Michigan Medical School, Ann Arbor, 1880; member of the Indiana State Medical Association; formerly professor of electrotherapeutics at Purdue University School of Medicine, Indianapolis; secretary of the city board of health and past president of the Tippecanoe County Medical Society; aged 69; died, January 4, at the Albert E. Stern Sanatorium, Indianapolis, from cerebral hemorrhage.

Robert P. Bush, Horseheads, N. Y.; University of Buffalo (N. Y.) Department of Medicine, 1874; member of the Medical Society of the State of New York; Civil War veteran; formerly member of the state legislature; at one time member of the board of education, school commissioner, and county coroner; aged 80; died, January 8, in a hospital at Elmira, from pneumonia.

Versile Mornington Gates, Elk Rapids, Mich.; Detroit College of Medicine and Surgery, Detroit, 1910; member of the Michigan State Medical Society; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 36; shot himself while suffering from melancholia, December 29.

Edward Mercur Williams ✠ Sioux City, Iowa; University of Pennsylvania School of Medicine, Philadelphia, 1905; member of the Philadelphia Neurological Society, American Neurological Association and the American College of Physicians; aged 41; died, January 8, from pneumonia.

Joseph Pettit, Philadelphia; Jefferson Medical College of Philadelphia, 1890; formerly secretary of the Pennsylvania College of Dental Surgery; practiced dentistry in Philadelphia for more than a half a century; aged 73; died suddenly, December 31, from heart disease.

Edgar Clarence Cowles, Cleveland; Cleveland University of Medicine and Surgery, 1897; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 47; died, January 1, from accidental asphyxiation while repairing his automobile.

Aaron W. Cooper, Fowlerville, Mich.; University of Michigan Medical School, Ann Arbor, 1868; Civil War veteran; for seventeen years postmaster of Fowlerville; aged 82; died, December 7, from injuries received when he was knocked down by an automobile.

Charles P. Cook New Albany, Ind.; Medical Department University of Louisville, Louisville, Ky., 1883; member of the Indiana State Medical Association; formerly surgeon to St. Edward's Hospital; aged 64; died suddenly, January 7, from heart disease.

Delmer Neil Hayden, Fossil, Ore.; Willamette University Medical Department, Salem, 1913; served in the M. C., U. S. Navy, during the World War; aged 36; was found dead in bed, January 7, with a handkerchief saturated with chloroform on his face.

Henri Louis Pache ✠ Burlington, Vt.; University of Vermont College of Medicine, Burlington, Vt., 1900; epidemiologist and head of the venereal disease department of the state board of health; aged 48; died, January 7, following a long illness.

Luther Jackson Weldon ✠ Denver; Denver and Gross College of Medicine, Medical Department University of Denver, 1905; on the staffs of St. Luke's, St. Anthony's and the County hospitals; aged 46; died, January 8, from angina pectoris.

Albert Shelley, Baltimore; Jefferson Medical College of Philadelphia, 1895; member of the Medical Society of the State of Pennsylvania; served in the M. C., U. S. Army, during the World War; aged 56; died, January 6.

John Saunders Carter, Dallas, Texas; University of the South Medical Department (Sewanee Medical College), Sewanee, Tenn., 1906; member of the State Medical Association of Texas; aged 49; died, January 7.

Frederick W. Beilstein, Chicago; Northwestern University Medical School, Chicago, 1900; member of the Illinois State Medical Society; aged 45; died, January 17, at the Wesley Memorial Hospital, from peritonitis.

Edmund Lawrence Maurer, Brownton, Minn.; University of Minnesota Medical School, Minneapolis, 1904; member of the Minnesota State Medical Association; aged 44; died recently, in a Minneapolis hospital.

William Ezra Graham, Calgary, Alta., Canada; Trinity Medical College, Toronto, Ont., 1897; M.R.C.S., England, and L.R.C.P., London, 1901; F.R.C.S., Edinburgh, 1907; aged 47; died, November 12, from carcinoma.

Morris Edwin Derfler, Novinger, Mo.; Washington University Medical School, St. Louis, 1909; member of the Missouri State Medical Association; aged 50; died, October 30, from chronic nephritis.

Michael Edward Connell, Oshkosh, Wis.; Rush Medical College, Chicago, 1881; formerly superintendent of the Milwaukee County Hospital, Wauwautosa; died, January 8, from cerebral hemorrhage.

Edwin Guilford Annable, Concord, N. H.; University of Vermont College of Medicine, Burlington, 1880; member of the New Hampshire Medical Society; aged 82; died, November 12, from senility.

Christopher C. Bippus, Pittsburgh; Jefferson Medical College of Philadelphia, 1889; member of the board of education; aged 57; died suddenly, January 7, from heart disease, at Shelbyville, Ind.

Helen B. Carpenter, Seattle; Woman's Medical College of New York Infirmary for Women and Children, 1886; formerly practitioner in Boston; died in December, aged 62, from heart disease.

John Henry Thornton ✠ Lansing, Iowa; Rush Medical College, Chicago, 1879; local surgeon for the Chicago, Milwaukee and St. Paul Railroad; died, January 1, from cerebral hemorrhage.

Andrew Jackson Deas, Augusta, Ga.; Medical College of Georgia, Augusta, 1893; member of the Medical Association of Georgia; aged 59; died, October 30, following a prostatectomy.

George Chandler Bassett, Detroit; Detroit College of Medicine and Surgery, 1895; member of the Michigan State Medical Society; aged 48; died, December 17, from acute endocarditis.

Robert H. De Lap, Richland Center, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; member of the State Medical Association of Wisconsin; aged 76; died, October 30.

Margaret Elizabeth Clarke, Brooklyn; New York Medical College and Hospital for Women, New York, 1881; aged 79; died, December 22, at the Peck Memorial Hospital, from carcinoma.

Frank H. Ruhl ✠ Lansdowne, Md.; Baltimore University School of Medicine, 1892; formerly health officer of the Thirteenth District (Baltimore County); aged 60; died, January 6.

Timothy D. Beach, London, Ohio; Starling Medical College, Columbus, 1873; Bellevue Hospital Medical College, New York, 1875; aged 80; died, December 29, from heart disease.

Charles H. Emig, Melrose, Mass.; St. Louis College of Physicians and Surgeons, 1899; for twenty-five years a Methodist minister; aged 70; died suddenly, January 6, from heart disease.

Thomas Purcell, Erie, Pa.; University of Buffalo (N. Y.) Department of Medicine, 1888; member of the Medical Society of the State of Pennsylvania; aged 71; died, December 8.

Nathaniel Joseph Minter, Chattanooga, Tenn.; Tennessee Medical College, Knoxville, 1895; member of the Tennessee State Medical Association; aged 59; died, December 30.

Andrew J. Cavender, Murrayville, Ga.; Atlanta Medical College, 1893; aged 63; died, December 27, at the home of his daughter in Gainesville, from cerebral hemorrhage.

Thomas B. Hammer, Des Moines, Iowa; Physio-Medical College of Indiana, Indianapolis, 1881; aged 74; died, December 28, from injuries received when he fell on the ice.

Edmund A. Boas, Chicago; Rush Medical College, Chicago, 1884; member of the Illinois State Medical Society; aged 60; died, January 17, from chronic nephritis.

Samuel Stewart Snarr, Mount Jackson, Va.; Maryland Medical College, Baltimore, 1909; member of the Medical Society of Virginia; aged 42; died, December 12.

Katherine W. Corcoran ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1902; aged 52; died, January 17, at the West Side Hospital, from diabetes mellitus.

Tryon Y. Howard, Niagara, Ky.; Medical Department University of Louisville, 1867; Civil War veteran; aged 84; died, January 4, from carcinoma of the stomach.

Hugh J. Death ⊕ Franklin, Ohio; Medical College of Ohio, Cincinnati, 1881; aged 65; died, January 7, at the Miami Valley Hospital, Dayton, from cholelithiasis.

John Newton Chism, Jamestown, Tenn.; Vanderbilt University Medical Department, Nashville, 1891; aged 68; died, December 5, from uremia, at Nashville.

John Andrew Brown, Sparta, Ga.; University of Georgia Medical Department, Augusta, 1908; aged 36; died, January 6, from pneumonia, following influenza.

Peter Alexander McDougall, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1864; aged 83; died, December 11, from senility.

Sarah W. Devoll, Portland, Me.; New England Female Medical College, Boston, 1872; aged 87; died, October 30, in Boston, from pneumonia.

Armistead Green Taylor, Amelia, Va.; Medical College of Virginia, Richmond, 1867; Civil War veteran; aged 81; died, January 2, from senility.

William Alfred Jones, Kingston, Ont., Canada; Western University Faculty of Medicine, London, 1914; aged 30; died, November 27, in Toronto.

Otho Pierce Franks, Churubusco, Ind.; Fort Wayne College of Medicine, 1904; aged 48; died suddenly, January 2, from heart disease.

Frank H. Thomas, Belle Center, Ohio; Pulte Medical College, Cincinnati, 1898; aged 60; died suddenly, December 29, from heart disease.

John Joseph Egan ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1905; aged 44; died, January 11, from angina pectoris.

James Applebee, Parry Sound, Ont., Canada; Victoria University Medical Department, Toronto, 1887; aged 66; died, December 11.

John W. B. Scott, Hamilton, Ohio; Physio-Medical Institute, Cincinnati, 1874; aged 73; died, January 5, from cerebral hemorrhage.

William J. Heizer ⊕ Lebanon Junction, Ky.; Medical Department University of Louisville, 1883; aged 72; died in November.

Frank W. Hess, Estelline, S. D.; Detroit Medical College, 1880; Civil War veteran; aged 72; died, December 25, from carcinoma.

William Wylie Hunter ⊕ Anamosa, Iowa; State University of Iowa College of Medicine, Iowa City, 1886; aged 64; died, January 8.

Ernest B. Boyes San Francisco; Trinity Medical College, Toronto, Ont., Canada, 1896; aged 49; died, November 7, at Denver.

Robert Harry Tatum, Chattanooga, Tenn.; Chattanooga Medical College, 1899; aged 48; died, December 7, from influenza.

Andrew Marshall, Chillicothe, Mo.; Miami Medical College, Cincinnati, 1876; aged 86; died, November 9, from senility.

Elmer Ellsworth Wilson, Hayt Corners, N. Y.; Jefferson Medical College of Philadelphia, 1888; died suddenly, January 3.

Edward Alexander Holland, San Antonio, Texas; Rush Medical College, Chicago, 1884; aged 62; died, November 2.

Edmund S. Fessenden, Albany, Wis. (licensed, years of practice); aged 87; died, December 15, from senility.

George H. Mehard, Wampum, Pa.; Jefferson Medical College of Philadelphia, 1882; aged 65; died, January 5.

John Edwin Barringer, Armada, Mich. (licensed, years of practice); aged 81; died, October 27, from senility.

John M. Deam, Dayton, Ohio; Medical College of Ohio, Cincinnati, 1881; aged 71; died, January 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

QUAYLE'S "BOB-WHITE HABIT SINKERS"

An Alleged Cure for Morphinism and Other Drug Addictions

Charles H. Quayle, M.D., of Madison, Ohio, "Medical Director," of the "Dr. Quayle Sanitarium, a Retreat for Drug Addicts, Alcoholics and Cigarette Inveterates" and "Specialist in Drug and Liquor Addictions" has for some years been exploiting an alleged cure for chronic morphinism "and any other drug addiction." THE JOURNAL has received inquiries from physicians and laymen, of which the following are specimens:

This from a physician in Georgia:

"Kindly advise me as to whether Dr. Quayle's treatment for drug and alcoholic addictions is safe, ethical and all that he claims."

An Ohio physician wrote:

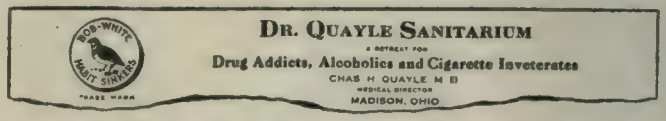
"Just received the enclosed [Quayle advertising matter.—ED.] through the mail. Looks like some more bait for the medical profession. What is it?"

And this from the advertising manager of a group of high-grade lay publications:

"An advertising agency has offered to us a contract for the Quayle Treatment, purporting to be a sure cure for the morphin habit. In response to my letter declining the advertisement I have received a voluminous statement with alleged testimonials, all attempting to prove that this particular morphin cure is reliable and that it is a great public benefaction masquerading as a commercial proposition. I am sending the booklet herewith and if, without inconvenience, you can give me the facts about it, I may be able to keep it out of some other publications. Unless you can give it a clean bill of health (which I greatly doubt) it will not go into our publications."

While a Mississippi physician wrote some time ago:

"Today I received a letter from a Dr. Charles H. Quayle who styles himself 'Specialist in Drugs and Liquor Addiction.' This gentleman proposes to license me to use his special treatment in my sanatorium and to give me the right to use such treatment in my 'district,' as he calls it. . . . If the A. M. A. has any information about this gentleman, I shall be very glad if you will let me have it."

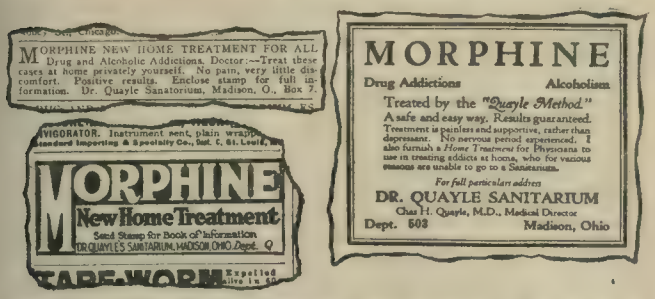


Photographic reproduction (greatly reduced) of letterhead used by Dr. Quayle's sanitarium.

THE CURE IN 1914 AND 1915

In 1914 Quayle was sending out to physicians from Madison, Ohio, a circular letter regarding the alleged wonders of "Dr. Quayle's Guaranteed Three Day Drug and Liquor Treatment." According to this letter, Quayle "by unremitting study, experiments and observation" had at last "discovered an absolute cure for the relief of the craving for *all Drugs and Liquors.*" Further, this alleged treatment was —at that time—"not for sale to any layman or person who wishes to treat himself"; it could "only be purchased by a Physician" and was "for the use and advantage of the medical profession only." Quayle stated that he wished to impress on physicians the fact that his "Medicine is not a product of a Sanitorium [*sic*], nor is it protected by a patent." Had it been patented, of course, it would not have been a secret—as it is. Quayle said, also—then—that there would be no advertising of the remedy "except in the Medical Journals." Today we find Quayle's product advertised in the *Police Gazette* and similar literary productions. Finally, the Quayle letter explained that the price of the treatment to the physician would be "$25.00 with the understanding that no Physician is to administer it for less than $50.00 per patient."

This, as has been stated, was in 1914. In March, 1915, Quayle was sending letters to sanatoriums from Cleveland, Ohio, and offering to license the physicians in charge so that their institutions could have a monopoly on the use of Quayle's treatment in a given "district." The "advantages" that were offered to those who would enter into this arrangement were set forth at length in the "follow-up" matter that came to those who evinced interest in the scheme. The first alleged advantage was that it permitted the physician who entered into the contract "to control the situation"; second, it enabled the physician "to become a specialist . . . and thereby secure considerably larger fees than he could in ordinary practice"; third, the fee for the treatment "must not be less



Some typical Quayle advertisements, greatly reduced. The upper left appeared in a recent issue of the *American Journal of Clinical Medicine;* the lower left in the *Police Gazette,* that on the right in *American Medicine.*

than $150.00" and "10 per cent. of the gross receipts from patients" was to be sent "to the home office for use for local publicity" under the direction of an advertising agency; fourth, the physician was told that to become Quayle's representative, would place him "in direct contact with humanitarian movements in the community" and he would "secure the active cooperation of organizations looking toward moral uplift"; fifth, the "representative" would receive the support of Quayle's organization "along every material line."

Additional "follow-up" matter told of the methods that could be used "to develop business." First, there was a certain portion of the royalty that Quayle received that was to be "devoted to local publicity in your territory." This publicity would "not advertise the individual" but would advertise "Dr. Quayle's Three Day Treatment." Then there would be circulars and booklets supplied by Quayle; also "display notices in newspapers." Further, it was suggested that editorial write-ups and notices might be secured in local newspapers which might also be "induced to run testimonials in connection therewith."

The contract to be entered into between the physician who wanted to use Quayle's nostrum and C. H. Quayle himself was an interesting document. It is too long to give more than the opening paragraphs:

"THIS AGREEMENT made and entered into this.....day of....., 1915, by and between Dr. C. H. Quayle and.....

"WITNESSETH: In consideration of the sum of Twenty-five Hundred Dollars ($2500.00) paid to the said Dr. C. H. Quayle, contemporaneous with the execution of this agreement, the receipt of which is hereby acknowledged, said Dr. C. H. Quayle gives, grants and conveys to said.....the perpetual and exclusive license to use within the limits of.....what is known as Dr. Quayle's Three Day Treatment for the drug and liquor habits, including the right on the part of said.....to advertise said treatment in the prosecution of the business of ....sanitarium at..... The above license is given and granted by said Dr. C. H. Quayle and received by said .....upon the following conditions, to-wit:"

The conditions were briefly: *First,* that the doctor entering into the agreement would not use the Quayle Treatment elsewhere than in the sanatorium; *second,* that he should within ten days of the date of the agreement receive fifty packages of "Dr. Quayle's Three Day Treatment" and would guarantee to pay Quayle $50.00 a treatment for all additional "treatments" ordered; *third,* the physician, on the fifteenth of each month, should pay a certain advertising agency named in the contract 10 per cent. of the gross receipts of the sanatorium; *fourth,* that Quayle would, through the advertising agency, spend a certain amount "in advertising and publicity"; *fifth,* that the physician would administer the "treatment" according to Quayle's directions; *sixth,* that the license was not transferable and, *seventh,* that in default of the payments the agreement could immediately be revoked and terminated.

As further follow-up material, prospective licensees received copies of form-letters that the licensee might send to physicians and also a form-letter that would do to send "to patient prospects." Then there was a specimen of newspaper copy showing how a write-up could be furnished the local newspaper telling of the opening, in a certain locality, of "an institution which will perform a humanitarian service" and which was "licensed to use a scientific remedy so successfully used for years, Dr. Quayle's Three Day Treatment for Drug Addiction and Alcoholism."

If the physician resisted all these blandishments, the final series of the follow-up came asking if there was "any particular reason" why the Quayle Treatment had not been adopted and suggesting that the local physician might "arrange with the newspapers for taking care of a few charity patients." But let us quote from the letter:

"How would it be Doctor, if you could arrange with the newspapers for taking care of a few charity patients? It could then be so arranged so that Dr. Quayle could go to your Sanitarium and put through these patients for you which would be the means of your getting a lot of Publicity through the newspapers on account of demonstration treatments."

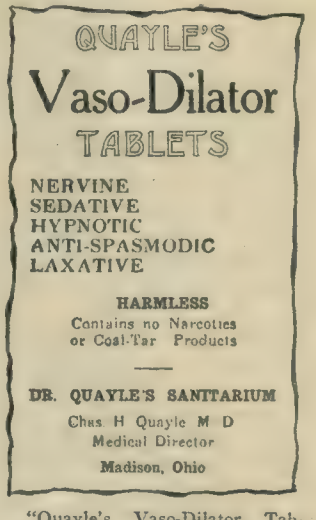
The letter closed with the näive suggestion:

"This will be an elegant opportunity for you to do a good work for humanity and make money besides."

NOW A MAIL-ORDER TREATMENT TO THE PUBLIC

All this, as has been stated, was in 1915. Since then Quayle has evidently changed his method of exploitation and the "medicine" that, at that time, was "not for sale to laymen or persons who wished to treat themselves" is now to be found advertised in the *Police Gazette, Smart Set;* etc.

One of Quayle's newspaper advertisements, "Morphin, New Home Treatment: Send Stamp for Book of Information" was answered not long ago and, in reply, came a form letter signed "Charles H. Quayle, M.D., Medical Director," stating that a booklet was enclosed and also a history blank that must be filled out when ordering treatment. The letter stated further that "the 'HABIT SINKERS' cause no pain, sickness, nor the loss of time; are harmless, contain no NARCOTICS or other habit-forming drugs and are easy to take." Moreover, it said that "the amount of Morphin or the length of time taken makes no difference"; it closed with the statement that the price of the treatment is $25.00 and "All Treatments sent in plain packages."



"Quayle's Vaso-Dilator Tablets" are, apparently, a sideline. They are said to be indicated in such conditions as "Aphrodisia," "Epilepsy," "Painful Menstruation," "Prostatitis" and "Shell Shock." The price asked is $10.00 a thousand.

Accompanying this form letter was a printed sheet containing two testimonials. Then there was a printed "clip sheet" similar to that used in sending free publicity matter to newspapers. It was written in the usual newspaper style and bore the heading "Morphin Habit Cure Discovered—Dr. Charles H. Quayle of Madison, Ohio, Hailed as Miracle Man in Medical World." The article bore the Madison, Ohio, date line for January 10 (no year given), which was the date of the "release." The article is simply a puff of Quayle, "The Miracle Man." It is alleged to have been written by "Charles E. Cake, Managing Director, Anti-Narcotic League of America." Efforts to find out who Cake is have been just as unavailing as has been the endeavor to discover something about the "Anti-Narcotic League of America." Whether this imposingly-named organization exists for any other purpose than that of being used as an advertising accessory by

C. H. Quayle we have been unable to determine. Cake's article closed with this paragraph:

"The American Medical Association stated that it was hoped sincerely that he would give his drug addiction cure to the fraternity before he died, but Quayle isn't thinking about this just now."

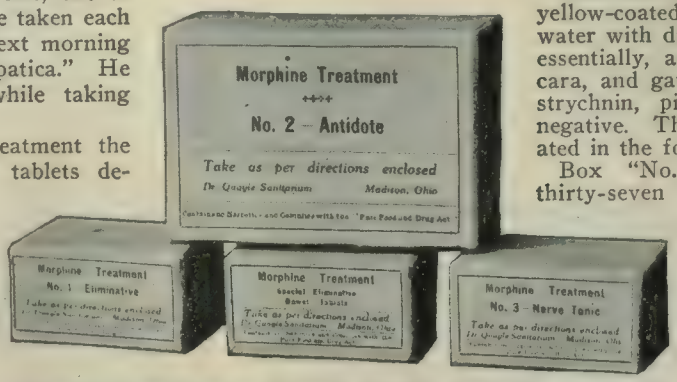
It should not be necessary to say that the American Medical Association has never expressed any "hope" regarding C. H. Quayle, and it might be suggested that the alleged author of this piece of fiction should become "Managing Director" of an "Anti-Ananias League."

With the letter came a booklet telling how Quayle discovered the formula "after years of investigation and research," but taken up mainly with testimonials common to advertising matter of this kind.

A "TREATMENT" IS ORDERED

Twenty-five dollars was sent to Quayle by a layman for one "treatment" which consists of four boxes of pills. One of the boxes contains three chocolate-coated pills and one capsule; another box contains twelve white-coated tablets; in a third are thirty-seven red-coated pills, while the fourth—the alleged "Antidote"—contains 323 yellow-coated tablets. A small leaflet accompanies the boxes, giving "Directions for Taking." The sufferer is told, first, to take the three chocolate-coated pills and the capsule and twelve hours later to "take two teaspoonfuls of Sal-Hepatica." He is told, further, that the bowels should move two or three times a day and, if necessary to accomplish this, one of the white-coated tablets should be taken each night at bedtime, followed the next morning by "two teaspoonfuls of Sal-Hepatica." He is warned to "use no acids while taking medicine."

As the second step in the treatment the patient takes the yellow-coated tablets described as the "Antidote." The number of these tablets to be taken at a dose varies with the amount of morphin that is being used. It is insisted, however, that the patient must take these tablets "every three hours day and night for six days"; "set your alarm clock if necessary." On the seventh day the number of "Antidote" pills is to be diminished by one, but is still to be taken "every three hours, day and night." On the eighth and ninth day one of these tablets is to be taken "every three hours, day and night."



Photographic reproduction (reduced one-half) of the "Morphin Treatment" sold by Quayle to the general public for $25.00.

The sufferer is warned that should he "vomit or feel sick to stomach" or should he "experience seeing imaginary objects" the "Antidote" tablets should be discontinued until the symptoms have passed. He is also told not to attempt to read while taking these tablets "as pupils are dilated." Further, he is told that should "any nervousness or desire for morphin" be felt after the ninth day, the "Antidote" tablets should be continued "up to the 12th, 15th or 21st day or until you feel sure of yourself."

At the same time that the addict is taking the "Antidote" tablets he is told to gradually diminish the amount of morphin he has been in the habit of taking. He is instructed to put in a bottle the total amount of morphin that he would ordinarily use in nine days, figure the number of doses this would be and then put that many teaspoonfuls of water into the same bottle. When the time comes to take the dose of morphin one teaspoonful of the solution is taken and a teaspoonful of water is added to the bottle in its place. The poor victim is told never to add any more morphin to this bottle but to continue diluting the solution as long as he is taking the "Antidote" tablets.

The tablets in the fourth box are to be taken, one after each meal, "after there is no more desire for morphin and you have finished with the antidote tablets." The patient is told, also, that while taking the treatment, the diet should consist of milk, cereals, eggs and vegetables only, and these taken sparingly and that a glass of water should be taken every two hours. Finally:

"It is also necessary to have some will power and determination as there are times when you will feel weak (from the loss of your accustomed drug) and discouraged. But if you will follow directions exactly as laid down you will get the desired results."

A complete Quayle treatment was turned over to the A. M. A. Chemical Laboratory for analysis. The laboratory report follows:

LABORATORY REPORT

One original package of "The Quayle Treatment" (Dr. Quayle Sanitarium, Madison, Ohio) was submitted to the chemical laboratory for examination. The package consisted of a box in which were four smaller boxes labeled as follows:

"No. 1—Eliminative." (Contained 3 chocolate-coated pills and 1 capsule.)
"No. 2—Antidote." (Contained 323 yellow-coated tablets.)
"No. 3—Nerve Tonic." (Contained 37 red-coated pills.)
"Special Eliminative Bowel Tablets." (Contained twelve white-coated tablets.)

The box "No. 1—Eliminative" contained three chocolate-coated pills and a capsule of grayish powder. The pills contained a soft mass which gave a positive reaction for emodin-bearing (laxative) drugs; mercurous chlorid (calomel) was absent. The capsule contained a gray powder of metallic mercury and excipients such as found in certain modifications of Mass of Mercury ("blue mass") and so-called "blue mass powder."

The box "No. 2—Antidote" contained 323 yellow-coated tablets which disintegrated in water with difficulty. These tablets contained, essentially, a laxative element such as cascara, and gave tests for atropin. Tests for strychnin, pilocarpin and scopolamin were negative. The atropin is probably incorporated in the form of an extract of belladonna.

Box "No. 3—Nerve Tonic" contained thirty-seven red-coated pills containing strychnin.

The box "Special Eliminative Bowel Tablets" contained twelve white-coated tablets. In these was found mercurous chlorid (calomel); they also yielded a positive test for emodin-bearing drugs.

Summed up, the "Quayle treatment" for "Morphin or Any Other Drug Addiction" is, essentially, (1) active elimination by cathartics; (2) the administration of atropin during the stage of morphin withdrawal and (3) the use of strychnin at the close of the "treatment."

It is evident from the laboratory findings that this alleged "absolute cure," said to have been discovered by Quayle "after years of investigation and research" and "by unremitting study, experiments and observation," is no more a cure than could be devised by any physician who is familiar with modern medical literature. The analysis fails to show a single element of originality in it. The scheme of having a quantity of morphin equal to several days' dosage dissolved in water to be periodically diluted as the patient uses it, is one that has been tried and found wanting—for generations. No physician will believe that a patient suffering from chronic morphinism can cure himself by any such method as that exploited by Quayle. That an occasional morphinist might cease the use of the drug coincidentally with the taking of the Quayle treatment is conceivable, although inherently improbable. For the one individual who possesses the almost superhuman will-power to give up the drug to which he is enslaved while treating himself, there must be hundreds to whom any method of self-treatment must be a more or less brief period of physical agony followed by the almost inevitable relapse with the mental suffering that such a relapse implies. "Play the game fair and do not cheat if you wish to win. . . . it will require some grit and will power on your part," says Quayle in the letter that accompanies the $25.00 worth of pills. The ghastly irony of this exhortation will be understood by those who have seen the suffering of a morphinist even when being treated under ideal institutional surroundings.

The mail-order sale of a secret mixture of pills and tablets for the alleged self-cure of morphinism would not be a business to be proud of, even were it conducted by laymen. Here, however, is a case in which a physician is engaged in the traffic. In the eyes of the intelligent public, these facts do more to discredit the medical profession and to bring organized medicine into disrepute than all the diatribes ever written by the followers of cults, the exploiters of nostrums or other enemies of scientific medicine.

Correspondence

"THE CARE AND FEEDING OF INFANTS"

To the Editor:—In one of your valuable series of articles on the care and feeding of infants (THE JOURNAL, Jan. 13, 1923, p. 109) the author says "Schick (*Ztschr. f. Kinderh.* **27**:57, 1920) has found that he can prevent most of this initial weight loss by the feeding of sugar solutions during these first days, giving as high as 1 ounce (30 gm.) of sucrose during the twenty-four hours."

In a short paper (*New York M. J.*, Jan. 9, 1915) I reported briefly the results which I had obtained by giving 200 newborn infants 1½ ounces of a 10 per cent. lactose solution every three hours, and was able to show that the initial weight loss could be reduced one half; that nearly twice as many infants regained their birth weight at the end of ten days, and that the so-called inanition fever could be prevented. Further investigation makes it seem likely that this fever is not due to dehydration alone. The increased water intake probably aids in the elimination of certain toxic products through the genito-urinary tract. The addition of lactose probably changes the bacterial activity in the intestine from a proteolytic to a fermentative type, and by inhibiting the growth of proteolytic organisms prevents the formation of toxic products which are the cause of the fever.

CHARLES HERRMAN, M.D., New York.

GOAT'S MILK IN INFANT FEEDING

To the Editor:—The first article in the series on "The Care and Feeding of Infants" was read with much interest. I am located in the hill country of Texas, to which section many infants are sent, especially during the hot summer months. Several years ago my attention was called to the milk of the Swiss goat as being superior in the feeding of these infants, most of whom have some disturbance of the gastro-intestinal tract. We have given goat's milk a careful trial, and with such excellent results that for two years the hospital has maintained its own herd for the feeding of infants and in the Sippy treatment of ulcers.

Goat's milk is normally alkaline, and is easier of digestion, forms smaller curds, and conforms more nearly to human milk than does cow's milk. The fact that the goat is almost immune to tuberculosis is a factor in its favor.

Many institutions now use goat's milk, and almost every city of any size has its source of supply. The southwest is raising these "Ford cows" in numbers, and the demand keeps way above the supply.

One feature that appealed to me in some rural cases seen in consultation was that the babies were 25 miles away from an ice supply, so that the goat was milked every three hours, and the milk given warm and fresh, with no chance of bacteria to multiply and outside contamination far less liable.

WILLIAM LEE SECOR, M.D., Kerrville, Texas.

[COMMENT.—The subject is discussed in a forthcoming article of the series.—ED.]

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.
PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

New Hampshire September Examination

Dr. Charles Duncan, secretary, New Hampshire State Board of Medical Registration, reports the written examination held at Concord, Sept. 14-15, 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 11 passed and 1 candidate, an osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Loyola University		(1917)	1
Eastern University School of Medicine		(1913)	1
Harvard University		(1918)	1
Tufts College Medical School		(1920), (1921)	2
Columbia University		(1921)	1
College of Phys. and Surg. in the City of New York		(1890)	1
Long Island College Hospital		(1907)	1
Woman's Medical College of Pennsylvania		(1917)	1
University of Vermont		(1894), (1921)	2
	FAILED		
Osteopath			1

Maine November Examination

Dr. Adam P. Leighton, acting secretary, Maine State Board of Registration of Medicine, reports the written examination held at Portland, Nov. 14-15, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University		(1922)	79
Harvard University		(1921) 84, (1922)	81, 87
Jefferson Medical College		(1922)	86
McGill University, Montreal, Quebec		(1919)	82

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Harvard University		(1901)	New Hamp.
Hahnemann Medical Coll. and Hosp. of Philadelphia		(1921)	Penna.

Book Notices

CHLOROFORM ANÆSTHESIA. By A. Goodman Levy, M.D., M.R.C.P., Physician to the City of London Hospital for Diseases of the Chest. With a Foreword by Arthur R. Cushny, M.D., LL.D., F.R.S., Professor of Materia Medica and Pharmacology in the University of Edinburgh. Cloth. Price, 7 shilling and 6 pence. Pp. 159, with 9 illustrations. London: John Bale, Sons & Danielsson, Ltd., 1922.

This book contains chapters on pharmacology and toxicology, physiologic considerations of respiration, deprivation of oxygen and asphyxia, the mechanism of the absorption and elimination of chloroform, the dosage of chloroform, death under chloroform, the administration of chloroform, the physical principles of methods and apparatus, clinical considerations, and delayed chloroform poisoning. The discussions are short and to the point, and show a comprehensive knowledge of facts. The writer has apparently succeeded in his appointed task of preparing a volume which is a real contribution to medical science. One of the most valuable chapters of the book, especially for the anesthetist, is the one dealing with deprivation of oxygen and asphyxia. In view of the fact that many anesthetists are advocating the

use of oxygen as a vehicle, it is interesting to read, on the administration of oxygen, that "in the course of normal pulmonary ventilation with an effective circulation, the oxygen in the inhaled air is more than sufficient to provide oxygen to the tissues, and it is therefore evident that the administration of an excess of oxygen can serve no useful purpose under normal conditions," and that it can at most add 2 per cent. by volume to the oxygen in the blood. The writer states that the method of introducing an anesthetic vapor into the blood by inhalation possesses at least two salient advantages which account for the dominant position that it occupies at present. The first is its performance without the aid of surgical procedure, the second its capacity for rapid adjustment. The pulmonary route is a physiologic device for the easy passage of gases to and fro between the alveoli of the lungs and the blood, so that adsorption is rapid, and excretion hardly less so. There is a delicate response to a little increase or a little decrease in the concentration of the vapor inhaled, and this concentration may be so easily adjusted that it is difficult to conceive of any method which is likely to rival it in these relations. The author states that the liability of death from chloroform is generally estimated at about one in 3,000 administrations, but it is probably considerably higher; in 13,393 administrations of chloroform annotated by the Anesthetics Committee of the British Medical Association, the number of deaths was eighteen. At least ten of these were directly due to the chloroform, yielding a mortality of one in 1,339. These statistics are based on the reports of physicians who were accustomed to the administration of anesthetics, so that deaths from gross negligence can be ruled out of account. In conditions of good health, chloroform is much more dangerous than other anesthetics. In grave conditions it still remains the least safe anesthetic, but the disparity between it and other anesthetics is far less marked than in health. In relation to status lymphaticus, the author says it is certain that the majority of chloroform deaths are not associated with any such condition; thus, in the registrar-general's report for 1916, in 164 deaths under chloroform or a mixture containing chloroform, the condition of status lymphaticus was noted in twenty-two. It was found only once in death under other anesthetics, so that it appears evident that the chloroform was the primary cause of death and not the condition of status lymphaticus, whatever subsidiary part this may play when it coexists. Many American anesthetists and surgeons will take issue with the author in the statement that the treatment of acidosis or delayed chloroform poisoning with sodium bicarbonate is physiologically unsound, and that the chief indication is to maintain the strength of the patient until vomiting ceases. Graham demonstrated, through his researches, that the administration of sodium bicarbonate simultaneously with chloroform prevented the development of acidosis or delayed poisoning. Others have reported the recovery of patients critically ill (acidosed) following chloroform anesthesia by the intravenous injection of sodium bicarbonate. There is a good index and a very good bibliography. The author is fully conversant with foreign literature, and frequently mentions American authors.

LEITFADEN DER RÖNTGENOLOGIE. Herausgegeben von Prof. Dr. med. et phil. H. Gerhartz. Paper. Price, 1230 marks. Pp. 290, with 386 illustrations. Berlin: Urban & Schwarzenberg, 1922.

This work is really a set of monographs on the several branches of roentgen-ray endeavor, diagnostic and therapeutic, by various authors who have joined with Gerhartz in producing the book. Several of the contributors are among the leading roentgenologists of Germany; Forssell, who supplies the chapters on the digestive tract, is from Stockholm, and is regarded as an authority on this branch of the work. In general, the entire work deserves favorable comment. In particular, one is surprised at the very poor quality of reproductions of roentgenographic illustrations (excepting Forssell's on the stomach and the colon). Very few of the illustrations are satisfactory, failing, as they do, to give the reader a proper proof or example of the text; thus, they are completely unconvincing and entirely miss the point sought. The line diagrams, on the contrary, are excellent, and it seems that the book would measure higher had the author resorted to this form of illustration throughout. An unusual presentation of conditions of the thoracic cage, in which lesions of ribs and sternum are detailed, leads the book. The chapters on the heart by Gerhartz are especially noteworthy, as is his work on the pulmonary and pleural structures. Goetze supplies a section on abdominal diagnoses with the aid of gas inflation, while Forssell's chapters on the digestive tract may safely be regarded as the last word in gastro-intestinal roentgen-ray diagnosis. This portion of the book deserves much praise. Thost's chapter on the head, sinuses and throat is also of the highest order. The deep therapy section is written by Seitz, Wintz and Dreyfuss, authors of the highest standing in this line. These chapters are rather short and condensed as compared with several recent German publications on roentgen-ray therapy, which are impressive in point of voluminosity. The boiled down information as presented in this work is especially acceptable to practical roentgenologists. Some of the newer ideas of roentgen-ray dosage are presented and described. The authors work on a basis of biologic dosage. The total skin tolerance being assumed as 100 per cent., the carcinoma dose they figure to be 110 per cent., the sarcoma dose as from 60 to 70 per cent. Benign lesions call for smaller percentages of "H. E. D." (*Haut Einheits Dosis*), which is the 100 per cent. or skin tolerance. Treatment types are divided into (*a*) castration dosage and (*b*) carcinoma dosage. They describe the technic for various lesions, among which is that of the climacteric, a treatment of established value widely recognized in Europe, but which has received less attention in this country than it deserves. The book will be found of considerable value as a reference work, since the collaborators are of such large experience and advanced standing in their respective lines in roentgenology.

ÉTUDES NEUROLOGIQUES. Par Georges Guillain, Professeur agrégé à la Faculté de Médecine de Paris. Paper. Price, 25 francs net. Pp. 469, with illustrations. Paris: Masson et Cie, 1922.

This book is made up of fifty-six previously published papers, most of them in collaboration with Guy Laroche or other assistants. Some of the papers are of lasting value, others naturally of only transient interest. All are the result of careful observation and serious work, few of great practical value to the general practitioner. They embrace subjects in nearly every department of neuropathology (such as poisons of the nervous system, lesions of cranial and spinal nerves, atrophies, spinal fluid, syphilis and epidemic encephalitis. The neurologist will find some unusual and peculiarly interesting things, such as the spinal cord form of trypanosomiasis, the meningeal form of brain tumor, Argyll Robertson pupil in nonsyphilitic lesions, compression of the cord in Recklinghausen's disease, a peculiar infection characterized by icterus and meningeal symptoms, and an apneic form of tabetic crisis.

PRINCIPLES AND PRACTICE OF X-RAY TECHNIC FOR DIAGNOSIS. By John A. Metzger, M.D., Roentgenologist to the School for Graduates of Medicine, Medical Department, University of California, Southern Division, Los Angeles. Cloth. Price, $2.75. Pp. 144, 61 illustrations. St. Louis: C. V. Mosby Company, 1922.

Roentgen-ray laboratory technicians will find this book of material assistance in their routine work. The text is clear and concise. The author has included exposure formulas which will give the less experienced technician a basis on which to work in the taking of each different anatomic part. Under the subject of apparatus the Bucky diaphragm is briefly described, but scant mention is made of Potter's invaluable contribution to roentgen-ray art, which is the result of his untiring efforts in making the original Bucky diaphragm a practical accessory for every day use. The photographic illustrations of the various positions speak louder than a word description of the several poses. Under nasal sinus technic one wonders why the author does not describe Law's position for projecting the sphenoidal sinuses, instead of the more difficult and awkward position that is illustrated. For the greater part, the book may be accepted as a reliable exposition of modern roentgen-ray procedure. Since most laboratory assistants have learned roentgen-ray technic only by experience, one feels that this book has a considerable value in the field which it covers.

Medicolegal

Mistreatment of Furnisher of Blood for Transfusion

(Jeter v. Davis-Fischer Sanitarium Co. et al. (Ga.), 113 S. E. R. 29)

The Court of Appeals of Georgia, Division No. 1, in affirming a judgment in favor of the sanatorium company, sustaining the latter's demurrer to the plaintiff's petition, says the plaintiff alleged that a physician, after he had operated on a certain patient in the sanatorium, stated that his patient was in need of blood transfusion. The plaintiff proposed that the blood be taken from her, and, after a test of her blood had been made, the physicians and nurses of the sanatorium placed her on the operating table, telling her that the taking of the blood from her arm would not amount to more than a pin scratch; that the blood would be taken with a needle and she would scarcely know it. She told them not to cut her arm, but to take the blood with a needle only. Nevertheless, without her knowledge, they made an incision in her arm, and with forceps and their bare fingers pulled up a vein and took the necessary blood for the transfusion from a vein. After that, the incision was sewed up and she was put to bed. In consequence of the treatment she received, she was unable to use her arm, it had become stiff, and her health had been almost ruined. She alleged further that the physicians and nurses most grossly neglected and maltreated her after the arm had been unlawfully cut by them; that they all knew the condition she was in, and, wilfully and without cause or reason, failed and refused to dress her or her arm. Wherefore, she laid her damages at $30,000. But the court holds that her petition clearly showed that there was no liability on the part of the sanatorium. The plaintiff volunteered her services, not to the sanatorium, but to a patient who was being treated at the sanatorium, and to the physician treating the patient. It was not alleged that it was part of the duty of the sanatorium to furnish the plaintiff's blood to the patient or to the physician. The acts complained of were the acts of a physician, and not of the hospital of which the plaintiff's friend was a patient. There was nothing alleged that showed that the sanatorium was responsible to the plaintiff for her pain and her suffering. It was not alleged that the sanatorium employed the specific services of any person to take the blood which she volunteered to give to her friend from her arm. The petition showed that if there was any liability, it was liability of the physician and not of the sanatorium.

Bookkeeper Without Power to Employ Physician

(West Lumber Co., v. Nash (Tex.), 243 S. W. R. 704)

The Court of Civil Appeals of Texas says that plaintiff Nash, a physician, sued the defendant lumber company for medical attention and room in a sanatorium for an employee of the defendant, named Sneed, who had been shot, though not while in the performance of work for the company. The theory on which the plaintiff predicated his right to a judgment was that, after Sneed had been at the sanatorium for two days, one Reynolds called the plaintiff over the telephone, said that he was speaking for the lumber company, and told him to do what he could for Sneed, and "they would pay his bill." Reynolds testified that he was employed as bookkeeper for the company, but he denied that it was within the scope of his authority to employ a physician to render services to its employees. He further denied that he had employed the plaintiff or said the company would pay Sneed's bill. It was not enough to support a judgment for the plaintiff to show that Reynolds was the bookkeeper of the defendant, but, to support the judgment, the proof must also show that the plaintiff was authorized by the defendant to perform the services for which he sued. There was no evidence showing that Reynolds was authorized by the defendant to employ the plaintiff to perform such services, or that he had ever performed any services for the defendant that could have induced or did induce the plaintiff to believe that he had such authority, but, to the contrary, the undisputed evidence showed that he in fact had no such authority. If it is conceded that Reynolds told the plaintiff to give Sneed the services performed by him, saying that the lumber company would pay for his services, this employment of the physician would not bind the company. It is well settled that those dealing with an assumed agent of another are bound, at their peril, to ascertain not only the fact of the agency, but also the extent of the agent's authority, and that in case either is controverted, as in the present case, the burden of proving that the assumed agent was in fact the agent, and had the authority to act in the capacity claimed for him, is on the plaintiff. Manifestly, no such burden was met in the present case, and, the facts appearing to have been fully developed, the judgment recovered by the plaintiff is reversed, and a judgment rendered for the defendant.

Society Proceedings

SOUTHERN SURGICAL ASSOCIATION

Thirty-Fifth Annual Meeting, held at Memphis, Tenn., Dec. 12-14, 1922

(Concluded from page 206)

Accidental Ureteral Injuries During Pelvic Operations

DR. JOHN M. MAURY, Memphis, Tenn.: The remedial measures that may be employed in these cases are: (1) removal of the ligatures; (2) implantation of at least one ureter into the bladder; (2) uretero-ureteral anastomosis on one or both sides; (4) nephrostomy, and (5) severing one or both ureters and bringing the proximal ends to the skin surface. Removal of the ligatures is the procedure of choice. In order of choice, ureterovesical implantation, uretero-ureteral anastomosis or nephrostomy may be employed. In the event of the patient's condition precluding the possibility of choice, the least time-consuming procedure must be followed, and this is nephrostomy. Double nephrostomy may be done in a few minutes, with the expectation that absorption of the ligature and canalization will result in due course of time, while the condition of the patient may make an anastomosis a formidable procedure. If canalization is not satisfactorily accomplished the patient is in good condition for anastomosis or implantation.

Spontaneous Hematoma Occurring in a Case of Spindle-Cell Sarcoma of Kidney

DR. FRANK K. BOLAND, Atlanta, Ga.: The case is unique for two reasons: first, because I have been unable to discover in the literature the report of a similar condition occurring in a neoplasm of the kidney; and second, because the rupture of the kidney and formation of the hematoma were the first signs of the disease manifested in the case. Previous to this time the patient had been in good health, and presented no symptoms that would lead one to suspect her of having anything wrong with her kidney. Apparently the rupture occurred early in the course of the disease.

Autotransfusion

DR. LUCIUS E. BURCH, Nashville, Tenn.: In a case of splenectomy for splenic anemia, the operation was difficult and bloody. The large amount of blood that was lost in the abdomen during the operation was recovered by means of expressing the contents of the abdominal packs into a glass receptacle. A little more than 800 c.c. of blood was recovered, and after this was citrated and strained through four layers of gauze, it was injected into a vein at the elbow. At the time the transfusion was started, the pulse was 140 and barely perceptible. At its completion, the pulse was 102, strong, and the patient's color was good. There was no reaction following the transfusion; operative recovery was unusually smooth, and at the end of two weeks he was able to leave the hospital and return to his home. I have used this procedure in three other cases successfully—two of ruptured tubal pregnancy, and a nephrectomy. Autotransfusion is a safe procedure, although in a limited number of cases reactions will occur. Sodium citrate is not essential. Physiologic sodium chlorid solution will make an admirable substitute,

and if neither of these is at hand, the pure blood may be reinjected. Extra-uterine pregnancy will offer the largest field of usefulness for this procedure, but in wounds of the spleen and liver, wounds of the lung producing a hemothorax, and in operations during which a large amount of blood is unavoidably lost, it will be found not only life saving but hastening postoperative recovery. Contaminated blood should not be thrown away. This blood should be given as a rectal drip. Autotransfusion may occasionally be used to advantage in certain obstetric complications, such as placenta praevia, rupture of the uterus, and cesarean section.

Sarcoma or Embryoma of the Kidney in Infants

DR. CHARLES R. ROBINS, Richmond, Va.: A boy, aged 12 months, was sent to me on account of a lump in the right side of the abdomen, which proved to be a globular tumor filling nearly the entire abdomen. It could be palpated posteriorly in the right kidney space and flank, and seemed to be somewhat attached at this point, although freely movable. The pelvis and subcostal region appeared to be clear, and the tumor projected anteriorly. A diagnosis of sarcoma of the kidney was made and operation advised, which was done two days later. The ascending colon and small intestine had become displaced to the left of the tumor. The peritoneum was incised external to the ascending colon and the kidney removed from its bed without difficulty. The pedicle was isolated, and the vessels and ureter ligated separately. At the lower pole of the kidney, an aberrant artery and vein entered. These were ligated separately. There was comparatively little bleeding, which was easily controlled, the peritoneum was sutured, and the abdominal wound was closed without drainage. The tumor was about the size of a grapefruit, and sprang from the lower pole of the kidney. The upper portion of the kidney was quite normal.

Brain Abscess

DR. HARRY HYLAND KERR, Washington, D. C.: A study of 120 cases of abscess of the frontal lobe recorded in the literature shows nearly half of them undiagnosed until the necropsy, and the mortality from this type is about 80 per cent. Persistent headache with sustained leukocytosis, and especially the presence of retinal changes indicative of pressure in cases of drained frontal sinusitis or ethmoiditis, should demand exploration. Exploration by the two-stage operation through a sterile field may be indicated. Direct drainage with a minimum of trauma should be established and not be disturbed until all symptoms have subsided. It is of paramount importance to drain a brain abscess too long rather than too short a time.

Factors of Safety in Thyroid Surgery

DR. WILLARD BARTLETT, St. Louis: I feel that I have been greatly helped in handling this difficult subject by graduated approach, classification as to operative indications, and cooperation of the internist. All patients are classified as to operative indications in one of five groups: (1) ligation of superior thyroid vessel group; (2) unilateral resection of the male subject; (3) unilateral resection of the female subject; (4) bilateral resection with wound left open, and (5) bilateral resection with complete wound closure. Three exceedingly important considerations are: (1) anesthesia, 0.5 per cent. procain infiltration with preliminary narcotics; (2) the operation performed wherever the patient's nervous system is most protected; (3) the wide open wound in the highly toxic subject. Five considerations, above all others, influence me in my estimate of the operative risk: (1) myocardium; (2) kidney function; (3) metabolic rate (relative); (4) weight (relative), and (5) self-control.

Ranula, with Comments on the Thompson Theory of Origin

DR. V. P. BLAIR, St. Louis: Thompson's hypothesis, that the deep ranula and related cysts originate from migrated positions of the cervical sinus, is sufficiently broad to explain all heretofore observed types. It offers at least a logical basis for adequate surgery. My patient had a cystic mass on the left side of the floor of the mouth, seen from within the mouth and also externally in the submaxillary region when she swallowed. The mass could be felt bimanually. Fluctuation was present. A swelling was also present on the right side, seen from within the mouth and apparently lost posteriorly in the neighborhood of the first molar. The swelling on the left side was approached from an external submaxillary region incision. A cystic mass protruded from the floor of the mouth behind the posterior edge of the mylohyoid muscle. The mass was dissected free from the hyoglossus muscle, inner internal pterygoid muscle and from the wall of the pharynx. On completion of the excision, the right sided mass had disappeared.

White Bile in the Common Duct

DRS. E. STARR JUDD and JOHN H. LYONS, Rochester, Minn.: The presence of a colorless liquid (without bile pigment) in obstructed common and hepatic ducts usually indicates increased operative risk. In the Mayo Clinic series the operative mortality was 21 per cent., in spite of cautious preoperative measures and postoperative care, including calcium and transfusions. We believe that while the mortality is high, it is probably no higher than it would be in a series of cases of complete biliary obstruction of the same duration with green bile in the common and hepatic ducts. Our nineteen cases occurred among 649 operations on the common and hepatic ducts in four years. In nine of these, the obstruction was due to stone in the common or hepatic duct, and in six to trauma at a previous cholecystectomy; in two the obstruction was due to carcinoma (one of the pancreas and one of the ampulla), and in one it was due to pancreatitis. In one instance the white bile seemed to occur as a result of cholangeitis. In no instance in which the gallbladder was present was it found to be normal. Seventeen of the nineteen patients were intensely jaundiced at the time of operation, and there had been no recent decrease in the jaundice. One patient had a biliary fistula; one was not jaundiced, although there was complete obstruction to the common duct by stone. In the latter instance, cholecystectomy and cholecystostomy with removal of the stone resulted in drainage of bile on the fourth day after operation. The patient made an uneventful immediate convalescence, but died on the thirty-second day after operation, because of acute hemorrhagic pancreatitis. Rous and McMaster have shown experimentally that white bile occurs only when the obstructed ducts are not connected with a normally functioning gallbladder, and conclude that this fluid is a secretion of the mucosa of the biliary passages which occurs with obstruction when the secretion of the mucosa of these passages is greater than its resorption. The findings in the patients observed at the Mayo Clinic bear out the conclusions that Rous and McMaster made from their experimental work. The liver does not necessarily cease to secrete bile in these cases, although it is probable that the hepatic function may be suspended for a time in certain patients and entirely reestablished later.

Errors in Home Treatment of Appendicitis

DR. FRED W. BAILEY, St. Louis: The virulence of appendicitis is not decreasing. It is because of the fact that careless, indifferent treatment obtains. In many forms of appendicular colic that are lashed into a fulminating process by purgatives, the patients would recover from the immediate attack if sanely treated, and could then be operated on without mortality. Until we know the exact pathologic condition present in each case, we cannot hope to prognosticate the outcome. The interval operation is a misnomer. The time to operate is at the earliest moment of positive diagnosis, provided talent is available and the environment acceptable.

Treatment of Diverticulum of the Esophagus

DR. CHARLES H. MAYO, Rochester, Minn.: External surgical removal in one or two stages, change of position, or obliteration are the methods of choice. If a general anesthetic is used, the sac must be well emptied before operation. About thirty years ago, while I was bringing up a large intrathoracic sac, the patient, who was under a general anesthetic, almost suffocated by the contents pouring into the trachea; he very nearly died later from bronchopneumonia. This experience led to the employment of a local anesthetic, usually procain, with some preliminary morphin, in virtually all such cases.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Chicago

December, 1922, **12**, No. 12

Symposium on Next Step for State Health Departments. E. R. Kelley. —p. 995.
Id. Emphasis Shifting from Disease Prevention to Health Promotion. W. S. Rankin, Raleigh, N. C.—p. 999.
Id. E. Martin, Harrisburg, Pa.—p. 1005.
Id. I. D. Rawlings, Springfield, Ill.—p. 1009.
Id. E. G. Williams, Richmond, Va.—p. 1012.
Measures for Control of Acute Respiratory Diseases. W. A. Evans, Chicago.—p. 1015.
Plans to Reduce High Mortality from Acute Respiratory Diseases in Winter. H. F. Vaughan and G. T. Palmer, Detroit.—p. 1022.
Mental Hygiene Service for Children of Preschool Age. A. Gesell, New Haven, Conn.—p. 1030.

American Journal of Tropical Medicine, Baltimore

November, 1922, **2**, No. 6

Final Report on Control of Yellow Fever in Merida, Yucatan, Mexico. M. E. Connor, New York.—p. 487.
*Preliminary Survey of Tropical Diseases in Massachusetts. G. C. Shattuck, Boston.—p. 497.
Porto Rico as Field for Study and Investigation of Tropical Hygiene. R. W. Hegner, Baltimore.—p. 519.
*Cultivation of Trichomonas from Human Mouth, Vagina and Urine. K. M. Lynch, Dallas, Tex.—p. 531.
Cultivation of Blastocystis and Determination of Species. K. M. Lynch, Dallas, Tex.—p. 539.
Special Entomologic Mounts. C. S. Ludlow, Washington, D. C.—p. 551.
Use of Nutrient Agar for Rearing Dipterous Larvae. R. C. Shannon, Ithaca, N. Y.—p. 555.
Experimental Investigation of Supposed Poisonous Qualities of Colorado Potato Beetle Leptinotarsa Declemlineata. F. Defiel, Minneapolis.—p. 559.
*Effect of Tartar Emetic Intravenously on Nonprotein Nitrogen of Blood. M. D. Levy and P. S. Dimmitt, Galveston, Tex.—p. 569.

Tropical Diseases in Massachusetts.—Data are presented by Shattuck which throw light on the frequency and source of such tropical diseases as are found commonly in Massachusetts. The records of the Massachusetts State Department of Health covering the period of five years from Jan. 1, 1917, to Dec. 31, 1921, inclusive, show that there were admitted: malaria, 414 cases; dysentery, 228 cases; smallpox, 137 cases; pellagra, 75 cases; uncinariasis, 33 cases; elephantiasis, 27 cases; actinomycosis, 12 cases; leprosy, 12 cases; beriberi, 5 cases; bilharziosis, 5 cases; aleppo boil, 3 cases; blastomycosis, 2 cases, and one case each of sprue and mycetoma.

Identity of Trichomonas.—Lynch is of the opinion at the present that *Trichomonas vaginalis* and *Trichomonas buccalis* have not been clearly differentiated and that they are probably one organism.

Effect of Tartar Emetic on Nonprotein Nitrogen of Blood.—In order to determine whether tartar emetic given intravenously in the dosage usually employed in treatment had any deleterious effect on the patient, Levy and Dimmitt selected six cases of varied medical ailments. Complete blood analyses were made. The patients were all on the ordinary house diet, and were ambulant. Tartar emetic, in a 2 per cent. solution, was given intravenously every other day—six doses being given—starting with 0.5 c.c. and ending with 5 c.c. It was noted that tartar emetic intravenously, even in small doses, over a comparatively short period of time, is capable of producing a decided increase in the nonprotein nitrogen elements of the blood.

Annals of Medical History, New York

September, 1922, **4**, No. 3

Guy Patin and Medical Profession in Paris in Seventeenth Century. F. R. Packard, Philadelphia.—p. 215.
Robert Talbor, Madame de Sévigné and Introduction of Cinchona. G. Dock, St. Louis.—p. 241.
Regulating Physicians in Colonial Virginia. E. Ingle, Richmond, Va. —p. 248.
Some English Worthies of Science of Interest to Ophthalmologists. B. Chance, Philadelphia.—p. 251.
Early History of Anatomy in United States. E. B. Krumbhaar, Philadelphia.—p. 271.
Some Early Observers of Albuminuria. W. Dock, Boston.—p. 287.
Medical Magic. I. H. Coriat, Boston.—p. 291.
Caduceus and Its Symbolism. R. Wilson, Jr., Charleston, S. C.—p. 301.
George Cheyne and "English Malady." W. R. Riddell.—p. 304.

Boston Medical and Surgical Journal

Dec. 28, 1922, **187**, No. 26

Improvement of Health Conditions in Rural Communities. M. V. Safford, Boston.—p. 946.
Empyema: Report of One Hundred Cases. D. S. Adams, Worcester, Mass.—p. 947.
*Comparative Luminal, Bromid, Diet and Eliminative Treatment of Epilepsy. B. L. Ashmore, North Grafton, Mass.—p. 950.
*Fibroma and Sarcoma of Ovary. Report of Two Unusual Ovarian Tumors. J. V. Meigs, Boston.—p. 952.
Lipoma Weighing Two and One-Half Kilograms, Taken from Inner Aspect of Right Arm. A. D. Kirk, Worcester.—p. 956.
*New Method for Estimation of Peptic Activity of Gastric Contents, Suitable to Clinical Application. C. W. McClure and P. L. E. Schabacker, Boston.—p. 957.
Fracture Dislocations of Humeral Head. W. Van Hook, Chicago.—p. 960.

Treatment of Epilepsy by Various Methods.—A group of fifty male patients varying in age from 19 years to 66 years, with an average age of 41.1 years, and duration of epilepsy ranging from three and one-half years to fifty-eight years preceding treatment, with an average of twenty years during which seizures have taken place in the thirty-seven cases, having reference to the time when seizures were first noted, were placed under this drug and diet treatment by Ashmore for six months. In cases of both phenobarbital and the bromids, active treatment periods completed, the seizures were more nearly controlled with the former drug. From the standpoint of numbers and oftentimes in regard to severity, cases of idiopathic origin were more responsive. The diet and elimination treatment group obtains last place on the list, but this treatment is very important, either alone or in conjunction with other recognized methods of treatment. No particular laxative or cathartic appeared to be superior in effect to others during this period. Special care to avoid autointoxication in one group played a very important rôle in the reduction of seizures obtained. Beneficial effects were noted in all groups during posttreatment observation period.

Fibroma and Sarcoma of Ovary.—The two cases reported by Meigs are interesting because they combine fibroma with two different types of tumors, a fibrosarcoma in one case and a malignant papillary cystadenoma in the other. The opposite ovaries were involved in both cases, the first containing small fibromas and the other a malignant papillary cystadenoma.

Estimation of Peptic Activity of Gastric Contents.—McClure and Schabacker present a practical method for the estimation of peptic activity of gastric contents, conforming to the general principles of enzyme action as at present understood and describe the application of the method to the determination of peptic activity of the stomach contents of human beings.

Journal of Medical Research, Boston

August-October, 1922, **43**, No. 4

*Lymphoid Metaplasia (Hyperplasia?) in Mammalian Bone Marrow. E. B. Krumbhaar, Philadelphia.—p. 369.
Focal Infection; Bacteriologic Study of Gums in Two Hundred Cases. R. A. Keilty, Danville, Pa.—p. 377.
*Group of Virulent, Poison Producing Diphtheroids, Isolated Especially from Postscarlatinal and Other Cases of Otitis Media. F. Parker, Jr., New York.—p. 387.
Relation of Hemophages to Antibody Production. W. E. Cary, Chicago. —p. 399.
Preparation of Bacterial Antigens. C. O. Melick, Chicago.—p. 405.
Fixed Tissue Phagocytosis. S. Motohashi, Chicago.—p. 419.
*Sensitization Experiments with Tubercle Bacillus and Protein Extracts. M. I. Smith, Washington, D. C.—p. 435.
*Histology of Superior Lacrimal Gland in Mental Disease and Defect. M. M. Canavan, Boston.—p. 447.
Quantitative Studies on Wassermann Reaction. L. G. Hadjopoulos, New York—p. 455.
*Effect of Splenectomy on Production of Antibodies. S. Motohashi, Chicago.—p. 473.

Lymphoid Metaplasia in Bone Marrow.—In a monkey that had undergone splenectomy and partial myelectomy and nodectomy, two years previously, and had received injections of camphorated oil shortly afterward, the bone marrow was found by Krumbhaar at necropsy to be studded with lymphoid follicles, with well developed germ centers. He thinks it is

probable that these lymphoid follicles developed in response to a demand for more lymphoid tissue, as the result of one or more of the experimental procedures.

New Poison Producing Diphtheroids Isolated.—A bacillus previously undescribed has been isolated by Parker from subacute and chronic lesions in human beings, that is pathogenic for rabbits, guinea-pigs and white mice. The bacillus is evidently a poison producer as it always remains localized and also a poison can be produced in vitro giving the same pathologic changes as the living organisms. This poison is neutralized somewhat by normal horse serum and to a greater extent by diphtheria antitoxin, but not to such a degree as by its own antiserum. That this organism is definitely not an atypical diphtheria bacillus has been shown by immunologic tests.

Sensitization Experiments with Tubercle Bacillus.—The results of Smith's experiments would seem to indicate that the existence of a state of general hypersensitiveness to the protein of the tubercle bacillus in the tuberculous organism is not an essential of the infection. On the contrary, the development of the anaphylactic state in experimental infection appears to be conditional on the parenteral introduction of tuberculoprotein coincidentally with the infection. Whether or not general sensitization by the protein of the bacilli it harbors occurs in the tuberculous animal at some period of the disease cannot be stated definitely; the evidence at hand seems against it. It is further evident, Smith says, that there is no apparent relation between the tuberculin reaction and the anaphylactic state which may or may not exist in the experimentally infected animal. The fact disclosed by these experiments that "old tuberculin" is devoid of sensitizing properties further fails to lend support to the assumption that the tuberculin reaction is an anaphylactic manifestation.

Histology of Lacrimal Gland in Mental Diseases.—In a series of forty superior lacrimal glands removed from patients from 6 to 82 years of age, Canavan failed to find that the measurements equaled the one specified by Piersol as being the average, except in three cases of twenty-four measured. Distinct differences in size may occur on the two sides. Fat cells invade the gland at all ages. Fibrous tissue increases in amount as age increases. The glands do not react histologically to meningitis or encephalitis, appearing to be in no sense a phagocyte station. Lymphocytes and plasma cells are present between the acini in this series of cases of mental disease and defect, without regard to age. It is possible that these cells presage the formation of connective tissue. It is not impossible that these cells have an internal secretion.

Effect of Splenectomy on Antibody Production.—Motohashi states that the removal of the spleen from rabbits profoundly modified the production of specific hemolysins, both as to the site and as to the concentration in the blood stream. When, however, the amount of antigen employed is large, the resulting concentration of the antibody in the serum is equal in splenectomized and nonsplenectomized rabbits. When by splenectomy the macrophage activity of the bone marrow and liver is increased, there is a corresponding increase in the antibody producing power in these tissues.

Journal of Parasitology, Urbana, Ill.

December, 1922, **9**, No. 2

*Effects of Changes in Diet on Incidence, Distribution and Numbers of Certain Intestinal Protozoa of Frog and Toad Tadpoles. R. W. Hegner.—p. 51.
Phases in Parasitism of Unionidae. A. D. Howard and B. J. Anson, Fairport, Ia.—p. 68.
Prevalence of Hookworm and Other Intestinal Nematodes in Adult Filipinos. B. Schwartz and M. A. Tubangui.—p. 83.
Trypanosoma Brucei as Filterable Virus. W. W. Reich and T. D. Beckwith, Berkeley, Calif.—p. 93.
Larvae of Moniliformis Moniliformis (Brems) Found in African Cockroaches. T. Southwell.—p. 99.
New Methods in Nematode Technic. D. C. Hetherington.—p. 102.

Effect of Diet on Intestinal Protozoa.—Hegner's work was done with tadpoles some of which were fed a diet of flour mixed with gland extracts, and others an animal diet. Lack of food was found to be disadvantageous to the intestinal protozoa. Thyroid feeding results in the decrease both in incidence and numbers of intestine protozoa. It is interesting to note that the two substances that are known to bring about marked modifications in the intestine, namely, extracts of thyroid and prostate, affect adversely the intestinal protozoa. The animal diet seemed to have no effect on the protozoa.

Journal of Radiology, Omaha

December, 1922, **3**, No. 12

Radiotherapy in Carcinoma of Larynx: Radium Needles Through Thyrohyoid Membrane. G. E. Pfahler, Philadelphia.—p. 511.
Surgical Aspect of Cancer. C. Beck, Chicago.—p. 517.
Radium and Roentgen-Ray Treatment in Metastatic Testicular Tumors. H. H. Bowing, Rochester, Minn.—p. 519.
Roentgen-Ray Demonstration of Nasolacrimal Passageways — Normal and Obstructed. H. P. Doub and J. M. Carter, Detroit.—p. 521.
Peptic Ulcer. R. T. Wilson, Temple, Tex.—p. 524.
Bone Diseases; Osteoporosis or Lipomasia from Fixation and Nonuse. J. C. Bloodgood, Baltimore.—p. 528.

Journal of Metabolic Research, Morristown, N. J.

August, 1922, **2**, No. 2

Islands of Langerhans in Elasmobranch and Teleostean Fishes. Part I. The Skate. S. Jackson, Montreal.—p. 141.
*Source of Insulin. Study of Effect Produced on Blood Sugar by Extracts of Pancreas and Principal Islets of Fishes. J. J. R. Macleod, Toronto.—p. 149.
*Physical Measurements of Diabetic Patients. H. F. Root and W. R. Miles, Boston.—p. 173.
*Experimental Studies in Diabetes. IV. Lipemia. 1. Analysis of Blood Lipoids in Diabetic Animals and Patients. M. B. Wishart, New York.—p. 199.
*Id. 2. Production of Diabetic Lipemia in Animals, and Observations on Some Possible Etiologic Factors. F. M. Allen.—p. 219.

Source of Insulin.—As a result of the improved histologic technic introduced by Lane and Bensley and of the recent demonstration by Banting, Best, Collip, Macleod and Noble that an alcoholic extract of mammalian pancreas—known as insulin—profoundly lowers the percentage of blood sugar in normal rabbits, Macleod says, the whole question as to the significance of the islet tissue, and particularly whether it is the source of insulin, is reopened for investigation. There are two aspects to the problem, the one being to compare by modern histologic methods the exact cytologic structure of the islets in the mammalian and the *Elasmobranch* pancreas with that of the principal islets found by Rennie in the *Teleostei*, and the other, to study the effect of extracts prepared from these sources on the percentage of blood sugar in normal rabbits. In general, the plan of investigation has been to observe from time to time the amount of blood sugar in normal rabbits injected with extracts prepared from the following sources: (1) the pancreas of representative *Elasmobranchii* [*Squalus* (dog fish) and *Raja* (skate)]; (2) the principal islets of representative *Teleostei* [*Myoxycephalus* (sculpin) and *Lophius* (angler fish)], and (3) the zymogenous (acinar) pancreatic tissue, as free as possible from islets, in the same and certain other *Teleostei*. Potent insulin preparations were readily made from the pancreas of the cartilaginous fishes—the dog fish *(Squalus acanthias)* and the skate *(Raja)*. Still more so was this the case with the principal islets of Rennie, which are found in many of bony fishes, the Angler *(Lophius)* and the sculpin *(Myoxocephalus)*. Since these are readily available fishes, they may serve as a practical source of insulin. No insulin could be prepared from the pancreatic tissue proper (zymogenous or acinar) of the representative bony fishes *(Lophius myoxocephalus* and *Zoarces)*. Although the anatomic relationships of these tissues are still somewhat obscure, these results, in Macleod's opinion, afford strong direct evidence for the hypothesis that insulin, as its name implies, is derived from the insular and not the zymogenous tissue of the pancreas.

Physical Measurements of Diabetics.—A group of 133 diabetic men and women have been compared by Root and Miles with both Dreyer's and the medico-actuarial weight standards. Although normal in stature, they are found to have been, on the average, 20 per cent. overweight prior to the onset of the disease, and at the time of examination they were about 10 per cent. underweight. The fifty-six women showed more severe diabetes than the seventy-seven men, and as a class had much lower tolerance per kilogram of body weight, whether expressed as total available glucose,

or as the carbohydrate, in the diet. Glucose tolerance per kilogram of body weight is more uniform between different diabetic patients than is the carbohydrate tolerance. The latter appears, therefore, the more definitive expression for tolerance in diabetes. The older diabetics have been more obese, have lost a larger percentage of their maximum weight, and demonstrate the longer durations. Diabetics who have never been obese, according to medico-actuarial standards, are found to have been 10 per cent. overweight when compared with Dreyer's standard. They are distinguished by abnormally narrow chests and probably have been fat for their build. Obesity is closely related to the onset of diabetes mellitus, in fact, it is almost invariably present, but the intensity of the disease frequently appears inversely proportional to the amount of excess fat. The average diabetic patient is not physically fit, using body weight as an index. His vital capacity may be as large as that of normal persons, notwithstanding his bodily weakness. Vital capacity measurements in cases of uncomplicated diabetes are not clinically helpful.

Lipemia in Diabetes.—The combination of active severe diabetes and a high fat diet in Wishart's opinion is undoubtedly most conducive to lipemia. Some degree of lipemia, however, may be reckoned among the most stubborn symptoms of severe diabetes, and may persist for at least several weeks after disappearance of both hyperglycemia and acidosis, on diets very low in fat and total calories. Diets high or low, respectively, in cholesterol or lecithin have shown no decisive influence in either producing or clearing up lipemia. Diabetic patients or animals, known to be subject to lipemia, have not shown any remarkable retention of cholesterol in the blood when fed cholesterol or cholesterol rich foods. No uniform parallelism has been found between the sugar or acetone in the blood or urine and the accompanying degree of lipemia. The same is true of the carbon dioxid capacity of the plasma. Also, the giving of carbohydrate or its exclusion from the diet seems not to be a determining factor in lipemia. When active diabetic symptoms are restored by an excessive caloric diet composed essentially of protein, carbohydrate and alcohol, a definite though moderate lipemia seems to result as one of the active symptoms. It is undecided whether alcohol has any specific influence in lowering lipemia, comparable to its occasional temporary action in reducing hyperglycemia and glycosuria.

Experimental Diabetic Lipemia.—Severely diabetic dogs which digest high fat diets regularly develop some degree of abnormal lipemia, and in a minority of such animals this lipemia becomes extreme (15 per cent. or more of blood fat). It is known that the chemical peculiarities so far as the relations of neutral fat, cholesterol, lecithin, etc., are concerned, resemble those in human diabetic lipemia, though the great mass of the analytic results were lost. The chief positive result of Allen's investigation, therefore, is the establishment of a complete similarity between clinical and experimental diabetes in regard to lipemia. Apart from a sufficient supply of fat in the diet, the one indispensable prerequisite for diabetic lipemia is the existence of active severe symptoms in the form of glycosuria and severe cases with glycosuria abolished by diet never exhibit any extreme grade of lipemia, however high the fat intake. Diabetic lipemia evidently represents some secondary breakdown in fat metabolism, not directly connected with the endocrine function of the pancreas and not due merely to excess of fat in metabolism or loss of sugar from the body. There are wide variations in individual susceptibility to this disorder among both animals and patients. Tests with a wide variety of endocrine, dietary and other influences failed to reveal the nature of the disturbance or the origin of the susceptibility.

Journal of Urology, Baltimore

December, 1922, **8**, No. 6

Case of Double Kidney and Double Ureter; Review of Literature. C. M. Harpster, T. H. Brown and H. A. Delcher, Toledo, Ohio.—p. 459.

*Case of Extreme Dilatation of Ureters. T. F. Laurie, Syracuse, N. Y.—p. 491.

Supernumerary Ureters with Extravesical Openings. H. D. Furniss.—p. 495.

*Pathologic Complications with Duplication of Renal Pelvis and Ureter (Double Kidney). W. F. Braasch and A. J. Scholl, Jr., Rochester, Minn.—p. 507.

Double Kidney and Double Ureter.—The important facts concerning Laurie's case are that the patient, aged 37, had had infantile paralysis at 2½ years of age; that he has a curvature of the spine which began at 14; that in the urinary tract he has no apparent obstruction to urinary outflow and no interference with the mechanism of urination; the bladder is markedly contracted, the ureters and pelves markedly dilated. There are no signs of infection. He urinates about every hour during the day and about every two hours during the night. The desire to urinate is rather urgent.

Complications with Duplication of Kidney Pelvis and Ureter.—The 144 patients, whose cases are discussed by Braasch and Scholl, may be divided, according to incidence of pathologic conditions, into: Group 1, those who were operated on, 30; Group 2, those having definite pathologic lesions who were not operated on, 24; Group 3, those in whom the evidence of pathologic lesions was doubtful, 29, and Group 4, those without evidence of pathologic complication in whom the discovery of the condition was purely accidental, 61. Fifty-four patients were found to be suffering with definite pathologic complications. In the 30 patients in Group 1 who were operated on, the various lesions described were: ureteral obstruction with hydronephrosis or pyonephrosis in 8, renal tuberculosis in 6, renal lithiasis in 7, ureteral lithiasis in 3, and atrophic pyelonephritis in 4. In 1 case the aberrant ureter from the upper segment opened into the vagina; in another an anomalous vessel crossed the ureter causing obstruction. The lower segment of the kidney was primarily involved in 9 cases, and the upper segment in 5 cases; both segments seemed equally involved in 13 cases. It is evident that the pathologic complication is confined largely, if not entirely, to one segment in about one half of the cases, and, furthermore, that the lower segment is more often affected than the upper. Of the 24 patients in Group 2 who were not operated on, essential hematuria occurred in 4; unilateral infection in 2; bilateral infection (1 incomplete bilateral duplication) in 9; ptosis in 3; ureteral stones passed after manipulation in 3; and stone in the lower pelvis of a double kidney, left intact because of various complications in 3 cases.

New Orleans Medical and Surgical Journal

December, 1922, **75**, No. 6

Acute Appendicitis a Surgical Problem. P. Graffagnino, New Orleans.—p. 277.

Importance of History in Diagnosis of Tubal Pregnancy. E. L. King, New Orleans.—p. 288.

Observations with Roentgen Ray on Appendix. A. Henriques and L. J. Menville, New Orleans.—p. 292.

Diagnosis and Treatment of Flat Foot. E. S. Hatch, New Orleans.—p. 294.

Diagnosis of Foreign Bodies in Bronchi. R. C. Lynch.—p. 300.

Organization of 312th Medical Regiment. R. B. Shackelford, New Orleans.—p. 307.

Unusual Eruptive Disease in Childhood (Ecanthem Subitum): Report of Seven Cases. R. Crawford and G. R. Williamson.—p. 309.

New York Medical Journal and Medical Record

Dec. 25, 1922, **116**, No. 12

Alleviation of Pain in Severe and Fatal Illness. J. L. Corning, New York.—p. 677.

Physiologic Iodin. Essential Element in Animal Organism: Influence on Normal Metabolism: Relation to Glandular Activity, Control of Blood Pressure and Senility. A. J. Quimby, New York.—p. 680.

Neurosyphilis and Neurotropic Strains. J. A F Pfeiffer, Baltimore.—p. 683.

Amyostatic Syndrome: Lenticular, Striate or Dyskinetic Disease. J. V. Haberman, New York.—p. 687.

Surgical Treatment of Chronic Sciatica. W. J. Taylor, Philadelphia.—p. 693.

Urinary Methods of Value. J. Rosenbloom, Pittsburgh.—p. 696.

Rôle of Traumatic Factor in Pathogenesis of Pericolic Bands and Membranes. P. A. D'Acierno, West Hoboken, N. J.—p. 699.

Removal of Sharp Pointed Foreign Bodies from Rectum. A. A. Landsman, New York.—p. 703.

Primary Nodular Cancer of Pancreas. H. I. Goldstein, Camden, N. J.—p. 704.

Cancer of Rectum in Presence of Four Plus Wassermann. M. Golob, New York.—p. 706.

Treatment of Renal Affections by Mineral Waters and Baths. F. Kisch.—p. 709.

Law and Concern of Public Health. S. D. Hubbard, New York.—p. 711.

Drug Addicts and Riker's Island. J. A. Hamilton, New York.—p. 715.

New York State Journal of Medicine

December, 1922, **22**, No. 12

Cholecystitis; Its Relation to Infection of Liver and Pancreas. W. H. Barber, New York.—p. 543.
Urinary Calculi. T. F. Laurie, Syracuse.—p. 549.
Treatment of Bladder Tuberculosis After Nephrectomy. E. L. Keyes, Jr., New York.—p. 553.
Use of Radium in Treatment of Uterine Bleeding Other Than Cancer. H. B. Matthews, Brooklyn.—p. 556.
Incidence of Miscarriage in Private Obstetrical Practice with Discussion of Pathology. J. L. Huntington, Boston.—p. 559.
Pregnancy Complicating Heart Disease. H. E. B. Pardee, New York.—p. 564.
Digestive Complaints of Cardiac Patient. T. F. Reilly, New York.—p. 568.
Quackery and Causes for Its Growth. M. Nicoll, Jr., New York.—p. 572.

Pennsylvania Medical Journal, Harrisburg

December, 1922, **26**, No. 3

Doctor of Old School. E. J. G. Beardsley, Philadelphia.—p. 133.
Concerning University Extension Postgraduate Medical Work. G. H. Meeker, Philadelphia.—p. 140.
Physiologic Consideration of Nephritis. G. A. Clark, Scranton.—p. 144.
Postoperative Insanities. D. J. McCarthy, Philadelphia.—p. 153.
Acute Empyema of Thoracic Cavity. E. C. Winters, Ford City.—p. 159.
State Control of Syphilis. S. L. Gans, Harrisburg.—p. 162.
State Control of Diphtheria. J. B. McCreary, Harrisburg.—p. 163.
State Control of Puerperal Sepsis. E. B. Piper, Philadelphia.—p. 164.
*Napkin Eruption of Jacquet. S. Crawford, Pittsburgh.—p. 165.
*Human Tuberculosis of Bovine Origin. I. H. Alexander, Pittsburgh.—p. 173.
Abnormalities of Nose and Throat of Interest to General Practitioner. H. M. Goddard, Philadelphia.—p. 177.

Napkin Eruption of Jacquet.—Crawford advises washing the buttocks with a solution of boric acid. After careful drying, a dusting powder may be used, consisting of 2 per cent. boric acid powder in talc; or the mopping on of a powdery lotion composed of 5 per cent. each of calamine and zinc oxid powders in lime water, to which 2 per cent. boric acid may be added, is good. A lotion of 5 per cent. each of bismuth subnitrate and zinc oxid in lime or rose water, or one of equal parts each of milk of magnesia, black wash, and lime water may be indicated. In some cases dusting powders and powdery lotions do not act so well, and in these Lassar's paste, either half or full strength, may be applied as a thin protective coating. The parts should be cleansed gently with a mild soap and warm water, dried and then treated with one of the above or similar lotions. The diapers should be of some soft, nonirritating material, should be scrupulously clean always, and careful watch made for their soiling, when they are immediately changed. Diapers should never be washed in strongly alaline soaps, and after washing should be rinsed in a weak solution of boric acid, phenol or cresol, etc. Indigestion, fermentation and other gastro-intestinal disturbances are to be corrected. Any suspected reflex disturbance should be corrected, if possible. Alkalis by mouth often prove of value. In the treatment of infectious conditions such as impetigo, vacciniforme ecthyma, etc., milk antiseptic washes, such as a 5 per cent. solution of boric acid or a 1:5,000 mercuric chlorid solution, followed with a mild antiseptic ointment, such as a 1 per cent. ammoniated mercury, will bring about prompt healing. Infantile seborrhoeic dermatitis responds readily to a milk (1 per cent.) sulphur ointment.

Human Tuberculosis of Bovine Origin.—The transmutation of type has not been proved to the satisfaction of the great majority of students of internal medicine, but, Alexander says, the question of human tuberculosis of bovine origin is now generally accepted. Bovine tuberculosis, as found in man, is due to the drinking of milk from tuberculous cows. The use of meat of animals having tuberculosis is of very little, if any, importance in producing tuberculosis in man. The remedy is to make examination of all dairy cattle compulsory and to refuse a permit to sell milk to all dairymen whose herds are not free from reactors. This would not only be a great aid to public health, but would benefit the beef raising industry tremendously. The city should require all milk to be pasteurized according to whatever method necessary, to reduce the danger of infection to the minimum. The present practice of permitting diseased animals to be slaughtered in private slaughter houses and sold to the public as healthy food products, should be overcome by requiring all animals to be slaughtered under competent inspection, and the smaller butchers whose business is not sufficiently large to require a full-time inspector, should have their animals slaughtered in a municipal slaughter house where competent inspection could be carried out.

Public Health Journal, Toronto

December, 1922, **13**, No. 12

Industrial Hygiene. H. A. Chisholm, Halifax, N. S.—p. 529.
Some Phases of the Mental Hygiene Problem. E. K. Clarke.—p. 536.
Source of Infection. J. J. Cameron, Antigonish, N. S.—p. 543.
Value of Quarantine in Communicable Disease. J. J. Middleton, Ontario.—p. 547.
Social Case Sheet Investigation. Result of Survey of Venereal Disease Patients in Hospital Clinics in City of Toronto During Months of July and August, 1922. M. Kensit.—p. 553.
Church as a Social Agency. F. N. Stapleford.—p. 563.

South Carolina Medical Association Journal, Greenville

December, 1922, **18**, No. 12

Relation That Legislation Should Have to True Medical Profession. D. M. Crosson, Leesville.—p. 342.
Treatment of Chronic Diarrhea. F. M. Durham(Columbia.—p. 346.
Gastric and Intestinal Flatulence; A Digestive Bugbear. G. M. Niles, Atlanta, Ga.—p. 349.
Cholecystitis. T. B. Reeves, Greenville.—p. 351.

Southwestern Medicine, Phoenix, Ariz.

December, 1922, **6**, No. 12

Importance of Diagnosis in Some Lesions of Genito-Urinary Apparatus. C. S. Vivian and W. W. Watkins, Phoenix.—p. 415.
Chronic and Subacute Appendix Disease. W. W. Watkins, Phoenix.—p. 426.
Development, Reestablishment and Maintenance of Breast Milk. E. M. Tarr, Phoenix.—p. 435.
Bacterial Growth in Gastro-Intestinal Tract. E. C. Prentiss, El Paso.—p. 439.

Tennessee State Medical Association Journal, Nashville

December, 1922, **15**, No. 8

Heart Disease from Standpoint of Prevention. W. H. Witt, Nashville.—p. 345.
Diagnosis of Early Pulmonary Tuberculosis. W. S. Rude, Ridgetop.—p. 350.
Diagnosis of Extra-Uterine Pregnancy. J. A. Crisler, Memphis.—p. 354.
Pyelitis. C. F. Anderson, Nashville.—p. 358.
Present Status of Pyloroplasty. W. M. McCabe, Nashville.—p. 363.

Virginia Medical Monthly, Richmond

December, 1922, **49**, No. 9

Deficiency Diseases: Diseases Resulting from Faulty Diets. J. Goldberger, Washington, D. C.—p. 489.
Pediatric Aspects of Nutritional Diseases. L. T. Royster, Norfolk.—p. 494.
Orthopedic Aspects of Nutritional Diseases. T. Wheeldon and J. B. Fitts, Richmond.—p. 498.
Neurologic Aspects of Nutritional Diseases. F. H. Redwood, Norfolk.—p. 503.
Cutaneous Aspects of Nutritional Diseases. T. W. Murrell, Richmond.—p. 505.
Certain Aspects of Medical Education. T. Hough, University.—p. 509.
Diphtheria in Virginia. A. H. Straus, Richmond.—p. 513.
Changes in Small Town Brought About by Health Department. B. B. Bagby, West Point.—p. 517.
Layman in Public Health. R. K. Flannagan, Richmond.—p. 519.
Oxygen Supply and Demand in General Anesthesia. R. C. Whitehead, Norfolk.—p. 523.
Spondylitis Deformans (Marie-Strümpell Type). A. F. Voshell, University.—p. 525.
Vertigo. J. Dunn, Richmond.—p. 528.
Chronic Gastric and Duodenal Ulcer. P. S. Smith, Abingdon.—p. 532.
Surgical Treatment of Chronic Gastric and Duodenal Ulcer. A. P. Jones, Roanoke.—p. 537.
Roentgen-Ray Phases of Chronic Gastric and Duodenal Ulcer. J. F. Armentrout, Roanoke.—p. 539.
Rectal Surgery. E. H. Terrell, Richmond.—p. 540.

Wisconsin Medical Journal, Milwaukee

December, 1922, **21**, No. 7

Challenge of Chronic Patient to Medical Profession. L. T. Brown, Boston.—p. 253.
Relationship of Goiter to Chronic Patient. H. G. Sloan, Cleveland.—p. 257.
Relationship of Pulmonary Tuberculosis to Chronic Patient. W. H. Swan, Colorado Springs, Colo.—p. 261.
Relationship of Abdominal Symptoms to Chronic Patient. J. A. Lichty, Pittsburgh.—p. 266.
Relationship of Surgical Abdomen to Chronic Patient. E. Andrews, Chicago.—p. 273.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Dec. 23, 1922, **2**, No. 3234

*Hodgkin's Disease. J. Galloway.—p. 1201.
*Surgical Treatment of Nontraumatic Affections of Spleen. J. Carslaw, E. H. Kettle and K. Dalziel.—p. 1204.
*Five Years' Survey of Routine Treatment of Fractures by Operative Methods. A. Young.—p. 1209.
*Temporary Plating of Fractures of Long Bones. G. H. Edington.—p. 1214.
Treatment of Ununited Fractures by Bridge Grafts. D. Duff.—p. 1215.
*Extrapleural Thoracoplasty in Treatment of Pulmonary Tuberculosis. P. Bull.—p. 1217.
Chronic Duodenal Ileus. D. P. D. Wilkie.—p. 1219.
Infection by Bacillus Pyocyaneus Simulating Leprosy. S. Mallannah.—p. 1223.
Hereditary Deformities. G. T. Kevern.—p. 1223.
Vagina Infra Septa, Supra Simplex. S. M. Lawrence.—p. 1223.

Bence-Jones Protein in Hodgkin's Disease.—A case of so-called Hodgkin's disease is related by Galloway in which there was constantly present in the urine a protein similar to the "Bence-Jones albumin" in that it is coagulated on heating, redissolves on further heating, and reappears on cooling. It differed in that it did not coagulate below 75 C. Full coagulation occurred from 79 to 82 C. It only coagulated in the presence of a considerable amount of acids and salts like sodium chlorid or ammonium sulphate and became quite insoluble if kept at 80 C. (in the presence of acid and salt) for some minutes. It was not precipitated by hydrochloric acid under any conditions. The new protein is best detected by noting the precipitate in the cold with sulphosalicylic acid—the urine itself failing to give a heat coagulum under optimum conditions of reaction (that is, just acid to brom-cresol-purple). The new protein often separated in flocculi as the urine cooled. Microscopic and other investigations of the urine gave no evidence of true nephritis. The necropsy completely confirmed the diagnosis in the case. The kidneys were unusually affected; the capsules were greatly thickened, but stripped off easily. There were cysts in both kidneys; microscopic examination showed that the cortices of the kidneys contained small areas of the characteristic overgrowth of the disease. In another case the temperature was a perfect example of the relapsing type. With respect to roentgen-ray treatment of this disease, Galloway says, it seems to be possible in certain cases, and apparently when too rapid resolution of the lymphoid masses takes place under this irradiation, that very severe reactions with serious rise of temperature and other untoward results may follow these exposures. This phenomenon, in Galloway's opinion, suggests that alien protein poisoning occurs as the result of the breaking down and absorption of the newly formed cells. However, the tumors of Hodgkin's disease do not always diminish under roentgen-ray treatment. In some cases the application has little or no beneficial effect; it is possible that in these cases much fibrous change has taken place in the glands, so that little beneficial effect from roentgen rays can be expected.

Surgical Treatment of Nontraumatic Affections of Spleen.—In Carslaw's opinion the mere finding of splenomegaly is not an excuse for operation, neither are malaria and syphilis, although trauma of the spleen in the subject of malaria may necessitate operation. He discourages operation also in leukemia and in Hodgkin's disease. In pernicious anemia he is not convinced that operation is called for; certainly not if the spleen is small. It may be, he says, that there are various types of pernicious anemia and that some of them are more suitable for operation than others. But in splenic anemia, if the patient's health and development are chronically poor, if repeated attacks of splenic pain occur, if from its size the spleen is distressing, and above all, if the danger of hemorrhage seems to have supervened, the spleen should be removed, and that without waiting too long. For if the disease is allowed to advance to the latter stage when cirrhosis of liver and, perhaps, ascites have developed, not only is the operation more difficult but the chances of ultimate success are lessened owing to the changes in the liver. The greatest successes of splenectomy seem to have been achieved in cases of acholuric jaundice. There are, however, mild cases of this disease which may not require operation. But if hemolysis is extreme and the patient's condition is seen to be deteriorating, the operation should be recommended.

Fixation of Fractures Endorsed.—Young endorses the direct fixation of fracture fragments by open operation and cites his experiences in proof of his contention.

Temporary Plating of Long Bone Fractures.—Temporary plating is recommended by Edington in the case of the tibia, femur and humerus as being a reliable form of internal splinting. With the object of encouraging the formation of callus, the periosteum should be reflected from the area to which the plate is to be applied. Plates and screws should be removed in from three to four weeks. Looseness or fixity of screws at the time of removal is in proportion to the reaction or sluggishness of the bone, and would seem to be an index to the progress of repair.

Extrapleural Thoracoplasty for Pulmonary Tuberculosis.—In unilateral or mainly unilateral cases of pulmonary tuberculosis in which a cure is not effected by rational expectant treatment or pneumothorax, Bull is convinced that good results can be achieved by means of extrapleural thoracoplasty. Resection of the ribs should be carried out, under local or general anesthesia, through a paravertebral incision so that the posterior part of the ribs from the eleventh, or in any case from the tenth, to the first inclusive can be removed. If a cavity remains, it can be collapsed by means of intrathoracic transplantation of fat. The procedure will save one third of the patients who, without the operation, would be doomed.

Edinburgh Medical Journal

December, 1922, **29**, No. 6

Early Anatomic Instruction at Edinburgh. J. D. Comrie.—p. 273.
Old Time Reminiscence of Trench Foot. D. M. Greig.—p. 297.
Chronic Interstitial Nephritis in Childhood: Renal Infantilism (?). H. L. Watson-Wemyss.—p. 300.
Case of Solitary Cyst in Humerus. K. P. Brown.—p. 306.

Journal of Tropical Medicine and Hygiene, London

Dec. 15, 1922, **25**, No. 24

Synopsis of Family Linguatulidae. L. W. Sambon.—p. 391.

Lancet, London

Dec. 23, 1922, **2**, No. 5182

*Surgery of Spinal Cord. W. Thorburn.—p. 1313.
*Treatment of Lupus by Diathermy Condenser Spark. A. E. Milner.—p. 1316.
*Effect of Radiation with Mercury Vapor Quartz Lamp. E. M. Hume.—p. 1318.
*Effect of Radiation with Mercury Vapor Quartz Lamp on Growth of Rats Fed on Diet Deficient in Fat Soluble Growth Promoting Factor. H. Goldblatt and K. M. Soames.—p. 1321.
*Drugs in Treatment of Diabetes Mellitus. P. J. Cammidge, J. A. C. Forsyth and H. A. H. Howard.—p. 1324.
Cases of Obscure Infection. R. Fielding-Ould.—p. 1328.

Surgery of Spinal Cord.—Thorburn's paper is based on the following cases: recent injury, 7 cases; remote injuries, 18 cases; gunshot injuries, 10 cases; caries of the spine, 19 cases; syphilitic pachymeningitis, 7 cases; malignant tumors of the vertebrae, 5 cases; tumors between the laminae and dura mater, 3 cases; intrathecal tumors of the spinal cord, 7 cases; spina bifida occulta, 2 cases; rhizotomy for the relief of pain, 6 cases; exploration and drainage, 12 cases.

Treatment of Lupus by Diathermy.—The total number of cases of lupus vulgaris treated by Milner with the diathermy condenser spark and the careful use of roentgen-ray radiations to soften the resulting scar tissue was fifty-two. Of these twenty-four patients remain cured after from one to two years; twenty-eight are still under treatment. The average number of operations for each case cured was 3.1.

Effect of Radiation with Mercury Vapor Quartz Lamp.—From the experiments reported by Hume it is apparent that irradiation with the mercury vapor quartz lamp can prolong normal growth on a diet almost free, or free, from vitamin A. Whereas without irradiation growth ceased to be normal

after from seven to ten days, with irradiation it continued to be normal for from thirty-five to fifty days. Symptoms of vitamin A deficiency then began to appear, and symptoms of xerophthalmia set in earlier than in control animals. Attempts to revive growth and to cure xerophthalmia by irradiation of animals which had long (over ninety days) been on a deficient diet failed completely; the animals seemed, if possible, to go to pieces more rapidly. Irradiation of rats which had been for shorter periods (from seventeen and thirty-five days) on a vitamin A deficient diet produced a growth response which appeared to be inversely proportional, in its duration and extent, to the length of the previous period of deficient diet. The general conclusion drawn is, that there is an interaction between vitamin A and light for the growth of rats, but that the action of the light is not to produce a photosynthesis of the vitamin.

Effect on Growth of Radiation with Mercury Vapor Quartz-Lamp.—It is shown by Goldblatt and Soames that young rats, if irradiated with the mercury vapor quartz lamp from the time they are put on a diet very deficient in fat soluble vitamin A grow more rapidly, reach a higher maximum weight, continue to grow for a longer period, and, finally, show a general condition better than that of control rats from the same litter receiving the same diet but no irradiation. Similar differences between irradiated animals and controls were observed even in the case of a litter of rats brought up by a mother who was fed on the same deficient diet during the latter part of pregnancy and the entire period of lactation. It is apparent that irradiation with the mercury vapor quartz lamp cannot act as a substitute for the fat soluble growth promoting factor which is a necessary element of the diet.

Drugs in Treatment of Diabetes Mellitus.—In the opinion of Cammidge et al. treatment by drugs will never replace control of the diet in diabetes. They endeavor to show that if the food tolerance has been accurately determined and is found to be inadequate, then, and only then, the aid of appropriate drugs may be invoked to enable a maintenance diet to be taken and prolong the patient's existence under more comfortable conditions. They record experiments, indicating the way in which various drugs control carbohydrate metabolism, thus laying the foundations of a rational therapy.

Medical Journal of Australia, Sydney

Nov. 18, 1922, **2**, No. 21

Clinical Symptoms of Enlargement of Spleen in Children. H. D. Stephens.—p. 575.
*Bile Pigments in Blood. M. Cowen and S. W. Patterson.—p. 581.
Fractures. A. Aspinali.—p. 582.
Complete Case of Leukemia in Childhood. W. D. Upjohn and H. B. Graham.—p. 585.

Bile Pigments in Blood.—Cowen and Patterson regard the Van den Bergh test as being a delicate reaction for bile pigments in the serum. It is more sensitive to bile pigment than Gmelin's test. They carried out the test on the serum of patients with obvious or suspected hepatic disease and patients suffering from anemia. Bilirubin is usually present in appreciable quantities in the blood. Jaundice and a direct reaction with Van den Bergh's test were found together in all instances but five of thirty-two cases. One of these patients was not clinically jaundiced at the time of testing, but stated that he had been jaundiced some time previously; his serum gave the biphasic reaction and quantitatively an increased amount of bilirubin was present. At operation a pyloric carcinoma with secondary deposit in the liver was found. In a case of cirrhosis of the liver the patient was not jaundiced and the reaction was biphasic. These cases are compatible with Van den Bergh's explanation of the biphasic reaction occurring when there is combined obstruction of ducts and functional alteration of the liver cells. Two patients suffered from catarrhal jaundice and, although jaundiced, gave no direct reaction in the serum, pointing to a functional alteration of liver cells rather than an obstruction in this disease. Another patient presented symptoms of biliary colic; he was jaundiced, but his serum did not give the direct reaction. He refused operation and the final diagnosis was not completed.

Medical Journal of South Africa, Johannesburg

November, 1922, **18**, No. 4

Gastric Ulcer. P. N. Vellacott.—p. 83.
Surgical Treatment of Gastric Ulcer. R. Daly.—p. 92.
Skin Diseases. C. Pijper.—p. 93.

Gynécologie et Obstétrique, Paris

October, 1922, **6**, No. 4

*The Hypogastric Plexus. A. Latarjet and Rochet.—p. 225.
*Experimental Radium Treatment. A. Kotzareff and M. Mollow.—p. 244.
*Pneumococcus Puerperal Septicemia. C. Monckeberg.—p. 274.
*Amputation of Cervix Above the Isthmus. H. Hartmann.—p. 277.

The Hypogastric Plexus.—Latarjet published in 1913 a study of this plexus in man, and he here reports research on this plexus in connection with the innervation of the uterus. Among the practical points brought out is the possibility of local anesthesia for operations on the uterine cervix by blocking the nerve branches passing to the lower uterus. The cervix is drawn down after the side culdesacs have been exposed well with the speculum. A fine needle is then introduced on each side of the cervix, to a depth of 2.5 or 3 cm., parallel to the cervix, and at the point where the lateral culdesac joins the wall. About 5 c.c. of the 2 per cent. solution of procain is then injected fan-wise. Another practical suggestion is the necessity for special care not to injure at operations the bladder nerves passing through the base of the broad ligament. Injury of these nerves explains the urinary disturbances which sometimes complicate abdominal hysterectomy or the Wertheim operation. The damage is done when the ureter is being freed, or the uterine artery ligated, or the bladder is being detached from the vagina. Loosening up the ureter from within outward usually molests less these external satellite cords which form the greater part of the bladder nerves at this point. Ligation of the uterosacral ligaments may likewise injure nerve filaments and explain postoperative pelvic neuralgia.

Action of Radium on the Uterus.—Radium emanations applied to the uterus and ovaries of guinea-pigs induced phenomena of shock. No effect on the tissues was apparent with doses less than 2 millicuries and sixty-two hours of exposure. Above this dose the effect is seen in degeneration and necrosis, with hyperemia and hemorrhagic foci and proliferation of connective tissue. The effect is the same whether the emanation is injected in a fluid vehicle or a needle applicator is used. The blood becomes radioactive; this induces phenomena of shock and organic lesions when injected into untreated animals. This radium-treated blood or blood serum was injected subcutaneously into other untreated animals, and it seemed to vaccinate them, as it were. After this, exposure to the radium emanations the same as before was not followed by shock, but otherwise the resulting organic lesions with the same doses seemed to be the same as in the untreated guinea-pigs, although less intense.

Pneumococcus Puerperal Septicemia.—The woman of 33 developed fever the third day after normal delivery, and the pneumococcus was found in the lochia but not in the mouth or nose. The midwife who had attended the woman was found to have chronic left tonsillitis, and her sputum contained numerous pneumococci. An autogenous vaccine was injected in the parturient, but pneumococcus pneumonia and peritonitis developed and proved fatal the thirteenth day.

Cervicectomy.—Hartmann reproduces Dartigue's five large illustrations showing the various steps of the operation with which he restored clinically normal conditions in a case of massive atresia of the cervix which had followed too intense application of Filhos' caustic. The operation is the reversal of the usual supracervical amputation, the cervix being cut away and leaving the uterus with a new portio. The bladder-uterus pouch is pushed up, without incising it, through an anterior transverse colpotomy. The uterus is then slit on the median line, thus leaving the uterine artery unmolested. Then the cervix is resected with a tapering point on each side of each stump. The triangular gap left in the cervix stumps is closed by suturing the mucosa lining of the cervix with the vaginal mucosa. He calls the operation a supra-isthmus cervicectomy and stomatoplasty by bilateral vertical évidement.

Journal de Médecine de Bordeaux

Nov. 25, 1922, **94**, No. 22

Diagnosis of Aortic Aneurysms. Cassaet and Secousse.—p. 731.
Total Inversion of Uterus and Necrotic Polyp in Vagina. F. and R. Villar.—p. 734.

Dec. 10, 1922, **94**, No. 23

*Congenital Scoliosis. H. L. Rocher and R. H. Noirit.—p. 767.

Congenital Scoliosis.—Rocher and Noirit describe six new cases of varying degrees of congenital scoliosis.

Journal de Médecine de Lyon

Dec. 5, 1922, **3**, No. 70

*Deficiency Diseases. E. Weill and G. Mouriquand.—p. 715.
*Latent Otitis in the New-Born. P. Chatin.—p. 727.

Prevention and Cure of Deficiency Diseases from Qualitatively Deficient Food.—Weill and Mouriquand believe that the laboratory results cannot be applied in nutrition in spite of their mathematical aspect, unless "filtered" by clinical experience, which is the only measure of their practical value. The vitamins are not the only substances lack of which may cause disease by qualitative deficiency of food. They discuss beriberi, scurvy, xerophthalmia and pellagra as the four certain examples of such diseases. Beriberi is not without practical interest since the authors proved that it may be provoked in pigeons by any cereals, beans or peas, sterilized or deprived of the outer layer. Together with Michel they showed that a similar syndrome may occur in cats fed on sterilized meat. Beriberi can be prevented by other substances, not only by the hulls of rice. While beriberi seems certainly to be an avitaminosis, no such thing is proved for scurvy, another typical disease of this group. At least no antiscorbutic vitamin has yet been isolated. While beriberi occurs in an infant nourished by a mother suffering from the disease, scurvy is not transmitted by nursing. Oranges, lemons, fresh tomatoes prevent scurvy. They do not consider pellagra a simple avitaminosis, but rather a disease due to multiple deficiencies. The lack of certain amino-acids seems to play a part. The conditions which precede these diseases are of more importance than the stage of full development. Variety in food is not sufficient; it must be well selected. The authors have shown that a mixture of different decorticated cereals causes beriberi just as certainly as any one of them alone.

Frequency and Severity of Latent Otitis in Nurslings.—Chatin surveys the frequency of otitis media in necropsies on nurslings. It varies from 75 to 100 per cent. He publishes the history of nineteen nurslings who died from different diseases (bronchopneumonia, enteritis, athrepsia, etc.). In sixteen cases pus was found in the middle ear (thirteen times on both sides). Two had mucopus, and only one child, 1 day old, had a healthy middle ear. Pneumococci, staphylococci and other organisms were found in the fluid. He believes that otitis aggravates the condition of the infants, and may cause meningism indirectly. The tympanic membrane does not always present changes in these cases. Paracentesis may be valuable.

Journal d'Urologie, Paris

October, 1922, **14**, No. 4

*Epitheliosarcoma of the Bladder. C. Lenormant.—p. 273.
*Pleural Metastasis of Kidney Cancer. C. Roubier.—p. 285.
*Pyocyaneus Urethritis. A. Grimberg and M. Uzan.—p. 289.
*Some Minor Points in Treatment of Gonorrhea. J. Janet.—p. 291.
*Transactions of French Urologic Congress.—pp. 293-341.

Mixed Tumor of Bladder.—The epitheliosarcoma growing from the bladder of a woman of 55 weighed 570 gm. Its base was in the wall of the bladder, and the top of the bladder had to be resected with the tumor. The operation was concluded with suprapubic cystostomy. In a little more than a month the bladder was functioning approximately normally, and the woman has been in good health since, with clinically normal micturition. There never had been any symptoms calling attention to the bladder; the disturbances had been entirely from the pressure on the genital organs, principally, recurring metrorrhagia. It did not return after the operation. The tumors of this type seem to be more benign than tumors of the bladder proper; some aberrant embryonal tissue seems responsible for them.

Kidney Cancer in Young Pregnant Woman.—The malignant disease in the kidney and the multiple involvement of glands and huge metastatic tumor in the left pleura ran their entire course from the first symptoms to death in three months. The pregnancy became spontaneously interrupted at the sixth month, and the woman died three days later.

Pyocyaneus Urethritis.—Grimberg and Uzan banished the gonococcus by injection of large amounts of a stock antigonococcus vaccine. Then they applied an autogenous vaccine to get rid of the other micro-organisms involved in the urethritis. In the young man whose case is described, this included the pyocyaneus as well as the staphylococcus. This dual vaccine therapy cured him completely.

Treatment of Gonorrhea.—Janet discusses how to reenforce treatment when the ordinary measures are not promptly effectual. The strength of the permanganate solution can be increased from 0.25 per 1,000 to 0.3 or 0.4, and for the anterior urethra even to 0.5 or 0.75. Or some other drug might be used instead of the permanganate. He prefers for this mercury oxycyanid, using it in progressive doses, from 0.15 to 0.5 per 1,000.

Diverticula of the Bladder.—This was the subject appointed for discussion at the Urologic Congress, the transactions of which are given in full.

Paris Médical

Nov. 25, 1922, **12**, No. 47

*Roentgen Ray Epithelioma Cured by Diathermy. H. Bordier.—p. 469.
Piece of Glass in the Knee Joint. J. Madier.—p. 471.
*Vaccine Therapy and Mixed Infections. A. Grimberg.—p. 474.
*Dystrophic Syndrome. C. Papastratigakis (Athens).—p. 475.
Senile Tuberculosis and Fixation of Complement. P. Gros.—p. 476.
*The Cerebrospinal Fluid During Herpes Zoster. R. Targowla.—p. 480.

Roentgen-Ray Epithelioma of Fingers Cured by Diathermy.—Bordier reports the favorable result of this method used by himself on himself.

Vaccine Therapy and Mixed Infections.—Grimberg points out that many infections are combined. In the preparation of vaccines, all the organisms should be included in equal amounts.

Dystrophic Syndrome.—Papastratigakis describes a man aged 22 with total alopecia, cataract of the right eye, and trophic lesions of the finger nails. He regards it as a new dystrophic syndrome.

The Cerebrospinal Fluid in Herpes Zoster.—Targowla confirms the presence of inconstant and slight changes in the cerebrospinal fluid in herpes zoster. They consist in increased pressure, lymphocytosis, and increase in albumin (not in globulins). The benzoin reaction is negative.

Presse Médicale, Paris

Nov. 25, 1922, **30**, No. 94

*Retention of Nitrogen in the Blood. H. Chabanier et al.—p. 1017.
*Extraglobular Parasites of Blood. Blanchard and G. Lefrou.—p. 1020.
Treatment of Pulmonary Tuberculosis in the German Tuberculosis Conference. L. Cheinisse.—p. 1021.

Prognosis in Retention of Blood Nitrogen.—Chabanier, Lobo-Onell and Marquezy studied the prognosis of cases with chronic retention of nitrogen. Widal's determination of prognosis according to the amount of urea in the blood gives only average results. Men with more than 0.3 per cent. of urea have survived for more than four years. The renal insufficiency is comparatively constant; the patients usually die from sudden attacks of increased azotemia. The prognosis has to consider the probability of such crises. The occasion may be an infection—even a slight one—intoxication (mercury, anesthetic), or heart failure, especially in hypertension. The increase in azotemia is sometimes due to oliguria, sometimes to a direct alteration of the function of the kidneys (lowering of the maximal concentration). This latter type is more dangerous. Besides this there is some extrarenal factor, which may cause severe trouble in patients with 0.2 per cent. of nitrogen in the blood, while others live with 0.5 per cent.

Extraglobular Parasites of Blood.—Blanchard and Lefrou recommend Bruce and Nabarro's method, modified by Martin, Lebœuf and Roubaud: 1 c.c. of sterilized 20 per cent. solu-

tion of sodium citrate and 10 c.c. of blood are mixed and centrifugated for ten minutes at 1,500 turns per minute. The plasma is taken off and centrifugated for the second time. In this second sediment most of the filarias can be found. The third sediment contains trypanosomes and spirochetes.

Nov. 29, 1922, **30**, No. 95

*Edema in Laennec's Cirrhosis. A. Lemierre and J. Lévesque.—p. 1029.

Edema in Laennec's Cirrhosis.—Lemierre and Lévesque describe a case of atrophic cirrhosis of the liver with ascites and severe edema. On a salt-free diet the edema gradually disappeared after repeated tapping of the ascites. The weight remained stationary between the punctures so that it is apparent that the fluid from the anasarca was used to reproduce the ascites. Salt-free diet has a very good influence in edema but not on the ascites. The ascites recurs and takes the necessary salt from the blood. The patients become depressed and lose appetite if the treatment is continued. The authors discuss the possible causes of edema in atrophic cirrhosis, and emphasize the bad prognostic significance.

Progrès Médical, Paris

Dec. 2, 1922, **37**, No. 48

Case of Late Infantilism. A. Philibert.—p. 561.
*The Liver in Chronic Infections of Children. Lereboullet.—p. 564.
Case of Syphilis of the Liver. L. Giroux and G. Lory.—p. 568.

The Liver in Chronic Infections of Children, Especially in Syphilis and Tuberculosis.—Lereboullet reviews extensively the liver changes in syphilis and tuberculosis. Other chronic infections, except malaria, are of no importance for the liver.

Archivio Italiano di Chirurgia, Bologna

October, 1922, **6**, No. 1

*Scleroma of Larynx and Trachea. G. Forni.—p. 1.
*Accidental Surgical Injury of Colic Arteries. G. B. Macaggi.—p. 28.
*Purulent Pleurisy. O. Cignozzi.—p. 39.
*Symmetrical Lipomatosis of the Neck. M. Bufalini.—p. 73.
Case of Papilloma Cancer of the Bladder. N. Giannettasio.—p. 96.

Scleroma of the Larynx and Trachea.—Forni reports three cases in which scleroma began to induce symptoms at the age of 27, 28 and 20. The gradual onset of the difficulty in breathing aids in differentiation. Operations to remove the hardened patches do not cure permanently as the tendency persists. In his cases the two men of 28 and 61 and the woman of 27 had had tracheotomy and laryngofissure repeated twice and the patches scraped out, but they kept forming again. The man of 28 had worn a tracheal tube for several years but was able finally to discard it. Return of the suffocation compelled an emergency low tracheotomy, but the operation showed the walls of the trachea much thickened, and the man succumbed to dyspnea and cyanosis. The others are still living and both have derived great benefit from postoperative roentgen treatment.

Surgical Injury of Arteries of the Colon.—Macaggi's experiments on ten dogs have demonstrated that surgical injury of the arc of anastomosis between the middle and the left colic artery does no harm. If the trunk of the middle colic artery or of the homonymous artery is cut, or both at once, a hemorrhagic infarct may follow, but the consequences are never severe enough to compromise the nourishment of the colon, and the parts rapidly recuperate. Hence at operations involving the mesocolon, especially posterior retrocolic gastroenterostomy, accidental injury of these vessels need not be regarded as of grave import.

Operative Treatment of Purulent Pleurisy.—Cignozzi analyzes his experiences with 100 cases. He always operated without local or general anesthesia; only to a few adults he gave an injection of morphin an hour beforehand. He thinks that his experience confirms the superior advantages of an incision in the back, 9 or 10 cm. long, the center on an extension of the angle of the scapula; resection of not more than 5 cm. of the eighth rib; incising the pleura for 2 or 3 cm.; placing the patient horizontal as rapidly as possible, reclining on the side of the operation. He has the patient sit on the edge of the table, the sound side supported slightly slanting by the raised end of the table. The arm on the empyema side is placed on the vertex of the head, and over the ear of the other side. This spreads the interspaces and throws into relief the angle of the scapula. The immediate introduction of a gauze plug as the pleura is incised allows only small amounts of fluid to escape as it drains out under the influence of gravity. In the 20 fatal cases the suppuration had been under way for from thirty-one to sixty-five days; the deaths occurred between the sixth and tenth day after operation. The article is illustrated.

The capillary drainage at first is superseded by tube drainage after the first two days.

The general toxic condition is combated with subcutaneous injection of horse serum from horses previously treated with nucleoproteins. He injects 100 c.c. of the horse serum in 250 or 300 c.c. of physiologic solution, with 30 drops of epinephrin solution, repeating this daily for three to five days. The complete cure without deformity of the chest, the full expansion of the lung in about three weeks, and the regeneration of the rib, as the periosteum is left entire, insure prompt healing without deformity.

Symmetrical Lipomatosis of the Neck.—Bufalini did not find any spirochetes in the symmetrical lipomas removed from the neck of the syphilitic man of 57. The microscope indicated a chronic inflammatory process involving lymph glands and aponeurosis, probably of syphilitic origin.

Pediatria, Naples

Dec. 1, 1922, **30**, No. 23

*Vaccine Treatment of Typhoid. G. Sillitti.—p. 1099.
*Reflexes in the New-Born. F. de Angelis.—p. 1107.
*Varicella Following Herpes. A. Gismondi.—p. 1114.
Pathology of Bones. A. F. Canelli and G. B. Audo-Gianotti.—p. 1126.

Anaphylaxis and Antianaphylaxis in Typhoid Patients Treated with Vaccines.—Sillitti publishes seven cases of infants with typhoid fever treated with vaccines. The reaction seems to be of anaphylactic nature, and in subsequent injections one can sometimes observe even a state of anti-anaphylaxis.

Reflexes in the New-Born.—De Angelis examined the reflexes in eighty-eight healthy infants in the first week of life. He found that all the reflexes are usually present, although the pupil reflexes may be sluggish, and the plantar in 43 per cent. inverted. Yet it is very difficult to determine the quality of the plantar reflex because of spontaneous movements.

Varicella Following Herpes.—Gismondi reports varicella in an infant occurring fourteen days after an attack of herpes zoster in the child's aunt. No other case of varicella was in the surroundings at the time. Gismondi reviews the literature on the question of the etiologic relation between the two diseases.

Policlinico, Rome

Dec. 4, 1922, **29**, No. 49

*Copper Sulphate Reaction in Cerebrospinal Fluid. A. Medi.—p. 1589.
*Thoracocentesis and Pneumothorax. F. Rossi.—p. 1592.

Copper Sulphate Reaction in Cerebrospinal Fluid.—Medi finds the reduction test with cerebrospinal fluid very valuable. To 2 c.c. of cerebrospinal fluid 3 drops of each of the two solutions of Fehling are added. Purulent meningitis gives a slight or no reduction. He observed that purulent meningitis fluids give an amethyst color before boiling, owing to the presence of peptones. Tuberculous meningitis gives a less distinct color, but causes reduction. Tumors, hydrocephalus and serous meningitis give a blue color, and reduce strongly.

Thoracocentesis and Pneumothorax.—Rossi describes a new apparatus for thoracocentesis followed by artificial pneumothorax.

Dec. 1, 1922, **29**, Medical Section No. 12

*Hereditary Ataxia. P. Mino.—p. 615.
*Sthenic Function and Myasthenia Gravis. Calligaris.—p. 662.

Hereditary Ataxia.—Mino publishes one case and reviews extensively the literature on the etiology of the disease. Exogenous factors are unimportant. Hereditary ataxia seems to be a genetic complex, inherited as a recessive character.

The Sthenic Function and Pseudoparalytic Myasthenia Gravis.—Calligaris emphasizes the sthenic, as well as tonic, function of the extrapyramidal motor apparatus.

Riforma Medica, Naples

Nov. 27, 1922, **38**, No. 48

*Implantation of Nerves in Suprarenal Capsules. D. Maragliano.—p. 1133.
*Determination of Bilirubin in Blood. A. de Martini.—p. 1136.
*Spontaneous Separation of Dermoid Cyst. L. Fioravanti.—p. 1137.
Treatment of Carbuncle by Extirpation. D. Taddei.—p. 1139.

Implantation of Nerves in Suprarenal Capsules.—Since free transplants of suprarenal capsules are absorbed in a few weeks, Maragliano tried to prevent it by implantation of splanchnic or spinal nerves into the organs. Yet the nerves did not proliferate, if he left the capsules in place, nor if he transplanted them with the nerve. The absorption of the transplanted capsule was not prevented by this proceeding.

Method of Determination of Bilirubin in Blood.—Martini's modification of Hijman ven den Bergh's method consists in the acidification with acetic acid and the use of a mixture of eosin and methylene blue as the standard.

Spontaneous Separation of a Dermoid Cyst from the Ovary.—Fioravanti describes a case of ovarian dermoid which separated spontaneously from its peduncle, and continued to grow in the omentum.

Dec. 4, 1922, **38**, No. 49

*Lipoma of the Mammary Region. L. Torraca.—p. 1157.
*Action of Roentgen Rays on Tuberculosis. E. Musante.—p. 1160.
*Williams' Symptom in Tuberculosis. C. Guarini.—p. 1162.
Anomalies of Articulation of Teeth. B. de Vecchis.—p. 1163.

Lipoma of the Mammary Region.—Torraca describes a rare case of a large lipoma situated in the deep mammary region (subpectoral) in a man.

Action of Roentgen Rays on Tuberculosis.—Musante irradiated with small doses of roentgen rays the apices of the lungs and the spleen, or the spleen alone, in tuberculous patients. He found especially an increase in complement and agglutinins lasting for twenty-four hours.

Significance of Williams' Symptom in Early Roentgenologic Diagnosis of Pulmonary Tuberculosis.—Guarini is skeptical about the value of Williams' diaphragm phenomenon.

Archivos Españoles de Pediatría, Madrid

October, 1922, **6**, No. 10

*Hypospadias and Epispadias. I. Sánchez-Covisa.—p. 577.
Dietetic Treatment of Gastro-Intestinal Derangement in Infants. J. Bravo Frias.—p. 614.

Treatment of Hypospadias and Epispadias.—Sánchez-Covisa reviews the various methods for correction of congenital deformity of the urethra as he has applied them and analyzes the advantages and the drawbacks of different technics. He bases the indications for operating on the size of the organ, rather than age, but always before puberty, when possible. He reports two cases in adults in which the results of the Duplay-Marion technic were perfect, both as to aspect and function, although a long segment of the urethra had to be reconstructed. Thirty-seven illustrations accompany the article. He disapproves of any attempt to operate for minor deformities, which do not alter the genital or urinary functions, unless the patient or the family insist. He found the Hamilton-Roussel operation delicate and difficult. Young's method of treating epispadias is superior to all others, he says, both theoretically and in the simplicity of the technic and the rapid healing. He has applied it in two cases, both adults, with absolute incontinence of urine. In future he will supplement it with Young's latest autoplastic procedure to remove the last trace of the tendency to incontinence. He has encountered at Madrid 55 cases of hypospadias among 6,500 urologic cases, but scarcely a dozen instances of epispadias.

Archivos Latino-Amer. de Pediatría, Buenos Aires

October, 1922, **16**, No. 10

*Artificially Fed Infants. L. Morquio.—p. 609. Conc'n.
*Malaria in Infant. M. H. Bortagaray.—p. 640.
Diverticulum Binding Down Infant's Intestine. M. Valabrega.—p. 646.
Banti's Disease in Child. S. Satanowsky.—p. 654.
*Gangrene of Lung in Young Child. F. Rodriguez Gómez.—p. 658.
*Sarcoma of Omentum in Girl of Ten. A. Segers.—p. 662.
Aortic Insufficiency of Rheumatic Origin. E. Portu Pereyra.—p. 667.
*Age as Affecting Measles. A. Olarans Chans.—p. 670.

Digestive Disturbances in Artificially Fed Infants.—Morquio emphasizes the four classes of disturbances to which the artificially fed are liable, the dyspeptic, the toxic-infectious, the trophic and the parenteral. We have to bear in mind also congenital and acquired taints and various etiologic causes which differ according to locality, customs and individuals. The great lesson he draws from his extensive data is that treatment of digestive derangement—aside from breast feeding—has to be strictly individual. The tolerance for food, even when more or less complete, is above all influenced by the one factor, the season. There is no pathology of alimentary origin during the winter, with rare exceptions. Breast milk in lung and bronchial affections is not only the best food but the best medicine for the infant. He warns against treating the digestive disturbances which accompany otitis, pneumonia, measles and other parenteral affections. The green stools may mislead the physician to restrict the child to a water diet and purge it. But this, he declares, is wrong; the parenteral affection is what must be sought and treated, and the child should not be taken from the breast. The gastro-intestinal indications are entirely subordinate.

Malaria in Four Months' Infant.—The mother had chronic malaria. The child seemed healthy during the first week of life but then developed extremely grave malaria. This subsided promptly under quinin, given by the rectum for two days, and then by the mouth.

Gangrene of Lung in Child.—Subsequent to Vincent's angina in the girl, aged 2½, both purulent pleurisy and pulmonary gangrene developed, fatal in about six weeks from the first symptoms. The spirilla and fusiform bacilli were cultivated from the effusion in the pleura.

Sarcoma of Omentum.—The onset of the fibrosarcoma was febrile in the girl of 10 years, and the diagnosis was "typhoid fever with enlarged spleen," until the child reached the hospital on the twenty-first day. The tumor could be palpated through the rectum, and was safely removed two months after the first symptoms. The child soon gained 9 kg. in weight.

Prognosis of Measles.—The great importance of age in the prognosis of measles and the advantages of delaying it as much as possible are emphasized. Convalescents' serum provides a means for sparing at least the younger children.

Brazil-Medico, Rio de Janeiro

Sept. 16, 1922, **2**, No. 37

*Century of Progress. Afranio Peixoto.—p. 155.

A Century of Progress in Public Health Matters.—In this centennial address, Peixoto reviewed the medical history of Brazil. The death rate now in many Brazilian cities is lower than in certain cities in western Europe. Bahia (22.24) is lower than Dublin (24.95); Rio de Janeiro (19.62) than Nice (19.65); Florianopolis and Curityba have a death rate below 16. He describes the history of various diseases in Brazil: cholera with its 200,000 victims in 1867; plague introduced in 1899; yellow fever known in Brazil since 1685 but absent from Rio since 1908. He says that progress requires the education of the public, the inculcation of hygiene, the wearing of shoes, sanitary provisions, etc. "Of what avail is the work of the Rockefeller Commission, of the sanitary authorities, the system of 'rural prophylaxis,' etc., in administration of chenopodium, thymol or naphthol, to those infested with parasites, so long as there are no provisions for hygiene. Reinfestation is inevitable, and begins the very day the cure is complete. It is like carrying water in a basket."

Revista Española de Medicina y Cirugía, Barcelona

September, 1922, **5**, No. 51

*Reconstruction of the Beard Region. J. F. S. Esser.—p. 499.
*Conduction of Electric Current in Diathermy. L. Cirera Salse.—p. 504.
Interpretation of Urine Findings. Vellvé Cusidó.—p. 509.

Autoplastics of Bearded Region.—Esser's illustrations show his method of twisting around a flap from the scalp to use in reconstruction of the chin and cheek.

Mechanism of Diathermia.—Cirera Salse discusses the conductibility of the human body for the high frequency current, as affecting diathermia.

October, 1922, **5**, No. 52

Typhoid Fever in Barcelona. A. Salvat Navarro and F. Proubasta.—p. 563.
*Prostatectomy. M. Serés.—p. 577.
Therapeutic Dietetics. A. Arteaga Pereira.—p. 593. Cont'n.

Transvesical Prostatectomy.—Serés reviews the indications, technic and results of transvesical prostatectomy as he has applied it in 170 cases.

Semana Médica, Buenos Aires

Oct. 26, 1922, **2**, No. 43

*Hydatid Cyst of the Liver. M. R. Castex.—p. 837.
Serologic Tests in Hydatid Cysts. Fernández Ithurrat.—p. 857.
*Biologic Reactions in Hydatid Cysts. Fernández Ithurrat and B. N. Calcagno.—p. 864.
*Suprarenal Insufficiency. Washington Alvarez.—p. 869.
*Prophylaxis of Scarlet Fever. A. B. Ribeyrolles.—p. 872.
Radiography of Gallstones. Carlos Heuser.—p. 875.
Retention of Placenta from Continuous Spasm. A. Borton.—p. 876.
Symptomatology of Respiratory Apparatus. A. Viton.—p. 879.
Reformatories for Inebriates. V. Delfino.—p. 882.

Hydatid Cysts of the Liver.—This was the official address opening the discussion on echinococcus disease at the recent national medical congress at Buenos Aires.

Biologic Reactions in Echinococcus Disease.—From the extensive experiences related it is evident that the diagnosis can be based with confidence on the Imaz-Lorentz seroreaction, supplemented by examination of the blood for eosinophilia, and the intradermal hydatid reaction. It is instructive further to repeat the seroreaction with unheated serum. To interpret the findings better, the hemolytic index of the blood should be recorded.

Suprarenal Insufficiency.—Washington Alvarez relates that two girls, 10 and 12 years old, presented intense pure suprarenal insufficiency. One was convalescing from typhoid, and the agonizing pains suggested perforation of a viscus. Under 4 drops of epinephrin solution, three times a day for six days, all the symptoms promptly subsided. In the other case, the child had both malaria and typhoid, but she recovered under epinephrin kept up for nine days. A third patient was a man of 50 with chronic malaria and signs of suprarenal insufficiency. He improved under epinephrin and quinin, but the periods of weakness, hypertension and other signs of suprarenal deficit have returned at times during the year since. The necropsy findings are described further in an infant, aged 6 months, who had succumbed to acute chloroform intoxication. Both suprarenals showed extensive hemorrhages.

Seroprophylaxis of Measles and Scarlet Fever.—Ribeyrolles is a navy medical officer. He reports favorable experiences with the Milne method in warding off contagion, and also with passive serotherapy by injection of convalescent serum, in persons who had been exposed to these diseases. He declares that as the serum is homologous, there are no contraindications to its use. The persons thus immunized never displayed any tendency to serum sickness or anaphylaxis.

Siglo Médico, Madrid

Oct. 28, 1922, **70**, No. 3594

*Death of Child from Tetanus. Martinez Vargas.—p. 413.
Etiology of Puerperal Endometritis. L. G. Gret.—p. 415.
Fibroma of Lobule of Ear. C. Jiménez López et al.—p. 420.
Tetanus from Slight Scratches. F. Sánchez Grangel.—p. 421.

Death of Child from Tetanus.—Martinez Vargas does not hesitate to declare that the cabinet minister in Spain who cut off the appropriation this year, compelling the abandonment of the bureau of standardization of serums, vaccines and pharmaceuticals, is responsible for the death of the child whose case he reports. It is the first case of tetanus in his service in fifteen years, and the first death. He gave the usual preventive course of tetanus antiserum after the accident. Its complete failure can be explained only, he says, by the poor quality of the antiserum. Something similar occurred several years ago, when the diphtheria death rate rose as a result of defective preparation of the antitoxin.

Archiv für Verdauungs-Krankheiten, Berlin

October, 1922, **30**, No. 3-4

*Gastroscopy. R. Schindler.—p. 133.
Potato Test Meal. E. Gabbe.—p. 167.
Treatment of Peptic Ulcers with Deformity of Stomach. M. Einhorn.—p. 175.
*Antipepsin in Stomach Contents. L. Jarno.—p. 191.
Functional Test of Sugar Metabolism. Offenbacher and Hahn.—p. 203.
Insufflation of Intestine Through Stomach for Roentgen-Ray Diagnosis. Fuld and O. Weski.—p. 207.
*Amebic Dysentery. I. Hansen.—p. 209.
*Technic for Prevention of Vicious Circle. F. Ehrlich.—p. 219.
Comment on "Quantitative Determination of Pepsin." O. Gross.—p. 227. Reply. L. Jarno.—p. 229.

Gastroscopy.—Schindler reviews critically the different gastroscopes, and describes his own. He mentions a case in which a physician introduced the instrument by mistake into the larynx and right bronchus, and perforated the lung.

Antipepsin in Gastric Juice.—Jarno believes that the antipeptic action of the gastric juice is due to sodium taurocholate, glycocholate and other substances, regurgitated into the stomach. All of them are capable of inhibiting the digestion of solid proteins, which explains the indigestibility of hard boiled eggs.

Amebic Dysentery.—Hansen reports four cases of amebic dysentery treated successfully with emetin.

Constriction with Strip of Fascia of Afferent Leg Between Gastro-Enterostomy and Entero-Anastomosis. — Ehrlich reports eleven cases influenced favorably by this method, but avows that he is opposed to any operative treatment as long as the patient is able to work, and without great discomfort.

Deutsche medizinische Wochenschrift, Berlin

Dec. 1, 1922, **48**, No. 48

*Diet in Kidney Disease. H. Strauss.—p. 1603.
Symptoms Remaining After Appendectomy. L. Kuttner.—p. 1604.
*Physiology and Pathology of Spleen. G. Lepehne.—p. 1606.
Progressive Torticollis After Trauma. W. Schmitt.—p. 1607.
Skin Phenomena in Diseases of the Myeloid System. E. Zurhelle.—p. 1610.
*Bruck's Serodiagnosis of Syphilis. W. Teichmann.—p. 1612.
*Bladder Symptoms and Low Position of Right Testicle. Adler.—p. 1612.
Expectorants. G. Joachimoglu.—p. 1613.
*Treatment of Tuberculosis with Camphor. B. Alexander.—p. 1614.
*Dosage of Codein in Children. W. Salomon.—p. 1614.
Band for Venous Stasis. C. O. Leege and W. Schmidt.—p. 1615.
Compulsory Vaccination and the "Conscientious Objector." A. Grotjahn.—p. 1616. Idem. F. Prinzing.—p. 1618. Idem. Gins.—p. 1619.

Diet in Kidney Disease.—Strauss limits his paper to the discussion of treatment of degenerative affections (nephrosis) and of nephrosclerosis. Increased fluid intake is to be recommended only in cases which have a lowered power of concentration. In other cases, especially heart failure and some hydropic forms, restriction of fluids may be indicated. Restriction of proteins is necessary if the functional tests demonstrate a tendency to retain their products. One should not forget that excessive restriction may do harm. Salt has to be restricted in cases with a tendency to edema. The diet can be made agreeable by the use of spices, which are harmless if given in small amounts. Alcohol may be given only exceptionally as a remedy. Bouillon should be replaced by vegetable soups. Milk should be given in amounts which give consideration to its protein content. Cheese may be useful for rendering certain other dishes more palatable. An appetizing crust on meat is a valuable aid in salt-free diet. Well boiled eggs are allowed; sweets and dishes prepared with flour are to be recommended. Butter may be freed from salt by kneading it in water.

Physiology and Pathology of the Spleen.—Lepehne reviews the function of the spleen as an organ which serves partly as a "regionary lymphatic gland of the blood" (Helly), partly as an endocrine organ influencing the production of blood cells, and partly in relation to the metabolism of iron and cholesterol. The destructive action on red corpuscles and platelets and the question of production of antibodies are especially discussed.

Bruck's Centrifuge Method in Serodiagnosis of Syphilis.—Teichmann reports favorably on Bruck's method of centrifugalizing a mixture of serum and extract in a 10 per cent. solution of sodium sulphate. The suspension of the extract

must always be tested first with a positive and negative serum.

Nervous Bladder Symptoms and Low Position of Right Testicle.—Adler found among twenty-two cases with low position of the right testicle only four without enuresis. He sees in the low position of the right testicle (lower tonus of the right cremaster) a sign of functional debility of the lowest part of the spinal cord.

Treatment of Tuberculosis of Lungs with Camphor.—Alexander recommends his method of treatment of tuberculosis with injections of camphorated oil. He gives up to 5 c.c. daily, but stops for some days if the patient feels better. Alexander claims that it enables patients to feel better and to work. In early cases camphor is given only in periods of fever or hemoptysis.

Dosage of Codein in Children.—Salomon finds that the usual doses of codein for children are so small that they are without any effect. He used in several hundred cases the following doses: In the first half year of life 2 to 3 mg. pro dosi (1/20-1/30 grain); second six months 4 to 6 mg. In the second year from 6 mg. to 1 cg. In the fifth year, about 0.014 gm; in the tenth, 0.02 gm. (1/3 grain). The dose is best given at night, and it is better not to divide it.

Jahrbuch für Kinderheilkunde, Berlin

October, 1922, **99**, No. 6

*Ulcer of Urethral Orifice. J. v. Bokay.—p. 303.
*Bacteria in Stools of Infants. J. Zeissler and R. Käckell.—p. 308.
*Fever in Children. K. Dajceva.—p. 321.
Comment on "Leukolysins." G. Caronia.—p. 327. Reply. Stransky. —p. 336.
*False Passage in Intubation. C. v. Ujj.—p. 337.
Report on First Munich Congress for Orthogenics. Eliasberg.—p. 343.

Ulcer of Urethral Orifice.—Bokay draws attention to this affection of the external urethral orifice of boys aged less than 7 years. Almost all of them had been circumcised and live in poor, very unhygienic surroundings. Incontinence of urine may be one of the etiologic factors. Dysuria is present, but stops after removal of the crust. Silver nitrate and boric acid ointment cure the affection.

Bacteria in Stools of Infants.—Zeissler and Käckell consider Gram's method absolutely inadequate for bacteriologic examination of feces. The differentiation between *Bacillus acidophilus, bifidus* and other gram-positive bacilli can be made only by special methods of cultivation.

Fever in Children.—Dajceva divides feverish children into two types according to the reaction to antipyretics: One group reacts quickly and strongly, no matter whether drugs or baths are used. The other group reacts slowly or not at all. Most of the children belonging to the second group present nervous (meningo-encephalitic) symptoms, which may be based upon either anatomic conditions or only symptomatic. Some of the children in this group are neuropaths; many are rachitic.

False Passage in Intubation.—Ujj describes a case of diphtheria in which forcible introduction of the tube resulted in the formation of a false passage. Cricotracheotomy saved the child, though a little time was lost because the diagnosis was not made immediately, and artificial respiration was tried first. An examination for a false passage should always be made if the child shows a tendency to suffocation after intubation.

Monatsschrift für Kinderheilkunde, Leipzig

October, 1922, **24**, No. 1

*Anemia in Children. H. Lehndorff.—p. 1.
*Calcium in Blood in Spasmophilia. K. A. Zahn.—p. 45.
*Blood Picture Changes in Children. E. Nassau and E. Schohl.—p. 51.
Treatment of Whooping Cough. K. Ochsenius.—p. 60.
Comparison of Different Diagnostic Tuberculins. M. Frenzel.—p. 70.
*Action of Atropin on Stomach of Infants. A. Salomon.—p. 75.
Survey of Dermatology in 1921. C. Leiner.—p. 84.

Anemia in Children.—Lehndorff reviews the differences between the blood corpuscles and the reactivity of the hemopoietic organs in children and adults, and gives a survey of the present status of diagnosis and treatment of the diseases of these organs. The main feature in children is the exaggerated reaction to toxic agents. Megaloblasts do not signify in them a pernicious anemia, but simply a reversion to the embryonic type, which is possible during the first two years. The youngest forms of leukocytes in anemia pseudoleukemica infantum are not a sign of leukemia here. The disease may disappear completely. Predisposition accounts for the fact that we see these reactions only in certain infants. The anemia of premature births is of two types: One is almost physiologic and lasts for three months, irrespective of the treatment. The other type is not fully explained, and may be due to some action of the fats of the milk or lack of vitamins. One should not forget the possibility of endogenous factors and of infection. This type of anemia is usually cured by a diet almost free from milk and containing plenty of vegetables.

Calcium in Blood in Spasmophilia.—Zahn examined the blood of three children with tetany, fifteen with a positive facialis phenomenon, and eight with other diseases. Only one case of tetany showed a lowered concentration of calcium ions by Trendelenburg and Goebel's method, although all three had very low total calcium content. In latent spasmophilia some cases had a low calcium content, but others were normal.

Blood Picture Changes in Children.—Nassau and Schohl find that in fever of long duration a normal blood picture speaks for chronic pharyngitis and against tuberculosis of glands. The latter brings younger forms of neutrophils into the circulation. "Umbilical colic" does not change the proportion between the younger and older forms of neutrophils, while appendicitis does change it. Yet, confusion with other diseases, for instance pleuritis, is possible.

Action of Atropin on Stomach of Infants.—Salomon found that atropin lowers the tonus of the stomach in infants, and slows the peristalsis. It does not alter the secretion of acid, nor act on the pylorus. He explains the favorable results of large doses of atropin in the treatment of pylorospasm by its action on the musculature of the whole stomach. While a normal infant shows a reddening of the scalp after one to two drops of a 0.1 per cent. solution of atropin sulphate, when it is indicated (vagotonia), the infants may tolerate much larger quantities—up to 6 drops, six or eight times daily. Atropin very often gives excellent results in the habitual vomiting of infants.

Münchener medizinische Wochenschrift, Munich

Nov. 17, 1922, **69**, No. 46

*Perlingual Administration of Drugs. F. Mendel.—p. 1593.
Comment on Engel's "Blood in Lead Poisoning." G. Seiffert.—p. 1595.
*Prophylaxis of Roentgen Ray Injuries. G. Holzknecht.—p. 1597.
Spasm of Vessels During Delivery. H. Hinselmann.—p. 1598.
Staining of Spirochetes with Silver and Neosalvarsan. W. Krantz.—p. 1598.
Dold's Turbidity Reaction in Syphilis. K. H. Kiefer.—p. 1600.
*Thyroid Treatment for Uterine Hemorrhage. R. Kräuter.—p. 1601.
Murder by Quickly Repeated Introduction of Arsenic; Death in Fifty Hours from First Dose. Goroncy.—p. 1606.
Case of Embryotomy in Unrecognized Transverse Presentation. Durlacher.—p. 1607.
*History of Influenza and Encephalitis. J. E. Kaiser-Petersen.—p. 1608.
Indications for Surgical Treatment of Ulcer of Stomach. A. Krecke. —p. 1609.

Perlingual Administration of Drugs.—Mendel points out that many drugs, especially lipoid-soluble drugs, are easily resorbed from the surface of the tongue. This is of therapeutic significance. The action of nitroglycerin, if it is swallowed, is uncertain. One drop of a 1 per cent. alcoholic solution of it smeared over the tongue acts quickly. No habit formed, taken thus, and the drug keeps its influence. Atropin sulphate applied in a similar way acts as if it had been given by injection, as well as strychnin nitrate, other alkaloids, and narcotics in an alcoholic solution. Two drops of a 1 per cent. solution of strophanthin smeared over the tongue with the finger acted in fifteen to thirty minutes. It was not possible, however, to disguise the taste of it.

Prophylaxis of Roentgen-Ray Injuries.—Holzknecht discusses the reasons for the increasing frequency of injuries by roentgen rays. The acute necrotic ray ulcer is usually due to forgetting to insert the filter. He recommends the use of automatic devices that will shut off the current if the filter is forgotten. The constant potency of the tubes is

not so perfect as the manufacturing plants pretend. Of all the regulators, only the one which controls the primary current seems to be good. Therefore it is necessary to measure not only the time of exposure, but to apply a dosimeter besides, if one wishes to avoid an overdose. The serious local injuries to the bowel, larynx, brain and other organs happen in strong irradiations of several fields, with errors in computing the homogeneity in the depths. As yet, we can avoid them only by giving lower doses. The late necrosis is due to the tendency to shorten the intervals between the applications. A full cutaneous dose needs in the average eight weeks of rest. If a cosmetic effect is to be considered, this interval should be doubled. In urgent cases (cancer), the pause may be reduced to one half. The severe general reactions are justified only when we can expect a good result. They increase the cachexia of hopeless cases. The results of modern intensive treatment are far from being as good as some roentgenologists promise. "Not one case of certain cancer has been cured." Holzknecht does not believe in the irritating action of smaller doses and recommends therefore with the exception of some cancers of the uterus, to divide the irradiation and not to give the highest possible doses. The giving of two thirds or one half of it is beneficial, although the results are not ideal, and the patients do not suffer from the general injury.

Thyroid and Bleeding from Uterus.—Kräuter finds that some cases of menorrhagia and metrorrhagia which present signs of a lowered function of the thyroid can be influenced favorably by thyroid gland treatment.

History of Influenza and Epidemic Encephalitis.—Kaiser-Petersen shows that in eight epidemics of influenza occurring between the years 1580 and 1833 there were always cases presenting symptoms of lethargic encephalitis.

Zentralblatt für Gynäkologie, Leipzig

Dec. 2, 1922, **46**, No. 48

Significance of Cells Within Zona Pellucida. H. Hinselmann.—p. 1906.
A Peculiar Case of Postoperative Hemorrhage. A. Sippel.—p. 1909.
Subcutaneous Emphysema in Parturients. K. Riediger.—p. 1910.
Statistics on Febrile Abortion. H. A. Dietrich.—p. 1912.
Eclampsia Statistics of Baden for Year 1920. Gessner.—p. 1914.
*Radium in Treatment of Uterine Affections. H. Schaedel.—p. 1918.

Radium in the Treatment of Benign Uterine Affections.—Schaedel discusses the technic employed and the results secured by the use of radium in the treatment of 500 cases of benign uterine affections. The os uteri is widened by means of laminaria tents. For diagnostic reasons, a curettage is done, and the radium preparation is then introduced within the body of the uterus by means of forceps. Iodoform gauze is inserted within the cervix to prevent the radium from slipping out, but a free passage for the uterine secretions must be left. The vagina itself is plugged with tampons. The intervention takes place under ethyl chlorid anesthesia and requires only two minutes at the most. The radium is left in place from thirty-six to forty-eight hours. The radium preparation was employed up to thirty-eight hours in all hemorrhages of the climacteric, provided there had been no recent inflammation of the adnexa. Radium was used, up to forty-eight hours, in myomas that were not larger than a good-sized fist, ninety-eight being thus treated. Radium was employed also in hemorrhages that occurred as the result of disturbances of internal secretion. During the application of the radium, 62 per cent. of the patients complained of slight nausea, loss of appetite and a mild headache; in 18 per cent. sedatives were administered. In one patient the radium had to be removed after eight hours because of severe vomiting, restlessness and diarrhea. The other patients had no bad symptoms. In all, the symptoms disappeared promptly after removal of the radium. In 60 per cent. of the patients the menses were completely arrested; 18 per cent. had one period, somewhat weaker than usual, and 22 per cent. had a second menstruation, the longest duration of which was three days. The radium does not affect the graafian follicles but only the uterine mucosa. Amenorrhea never alternated with oligomenorrhea or polymenorrhea, as occurs after roentgen irradiation. The after-effects were also more favorable in the case of radium.

Zentralblatt für innere Medizin, Leipzig

Dec. 2, 1922, **43**, No. 48

*Duodenal Contents in Pancreas Diagnosis. L. R. Grote.—p. 777.

Diagnosis of Pancreas Function from Duodenal Contents.—Grote made comparative studies on twenty-five cases, with the duodenal fluid obtained after application of 2 to 4 c.c. of ether through the tube, and examination of feces after a test meal. The results were in many cases contradictory. First of all, the estimation of ferments (trypsin and diastase) in the duodenal contents gives such widely different results, even in healthy persons, that no normal value can be stated. Ether induced a good secretion, but Grote points out that this is no proof that the gland can always produce a sufficient amount of fluid, especially on physiologic stimulation. Cases which showed poor digestion of meat in the feces had sometimes very good ferments in the duodenal contents. Yet he admits that cases with a pancreatic lesion had little juice before ether was applied. There was also in some cases an interesting dissociation between diastase and trypsin (much diastase and little trypsin), although this diastase may originate in the saliva. The methods of pancreas diagnosis by the duodenal juice have too many sources of error. The differences in the juices taken from different parts of the duodenum are great, and the action of ferments depends very much on the hydrogen ion concentration and the presence of products of digestion. It is not possible to analyze satisfactorily the single factors. Clinically, we need to know the function of the bowels as a whole. This problem is solved in an ideal way by the test meal and subsequent examination of the stool. The determination of ferments in the duodenal juice cannot replace it.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 11, 1922, **2**, No. 20

*Brain Disease with Eye Symptoms. F. S. Stibbe.—p. 2142.
*The Connective Tissue. II. G. C. Heringa.—p. 2148.
*Movements of the Uterus. I. A. Wijsenbeek and A. Grevenstuk.—p. 2155.
*Radiotherapy of Rectal Cancer. G. F. Gaarenstroom.—p. 2165.
*Gnawing of Fingers. I. Bak.—p. 2170.
Vaccine Therapy of Whooping Cough. L. K. Wolff.—p. 2174.

Localization of Brain Disease from the Ocular Symptoms.—Stibbe theorizes to show that a gumma in the right peduncle would explain the paresis of the sphincter of the right pupil, associated with left hemiparesis—the syndrome in the first case he describes. In the second, softening from syphilitic endarteritis in the posterior cerebral artery would explain the homonymous hemianopsia without atrophy of the optic nerve.

The Connective Tissue.—Heringa presents evidence which upsets some of the present views as to the structure and significance of the connective tissue.

Movements of the Uterus.—Research on rabbits with a window in the abdomen has shown that the regular movements of the normal uterus are much reduced during the first half of gestation. They become progressively more marked in the second half.

Radium and Roentgen-Ray Therapy of Cancer of the Rectum.—Gaarenstroom reports two cases of cancer of the rectum, in a woman aged 53 and a man aged 29. Both cancers were inoperable when first seen, but after an artificial anus was made, under radium combined with roentgen-ray treatment the malignant disease subsided to such an extent that the earning capacity was regained, and they have been free from disturbances now for five and six years. The radium therapy had been vigorous, up to 4,000 and 3,300 milligram elements, and the patients had displayed exceptional fortitude and perseverance in completing the full course.

Febrile Autophagia.—In Bak's case the Java coolie died in coma after an acute febrile disease with somnolence and motor disturbances. In the course of the disease he ate the soft parts entirely from the terminal phalanx of some of the fingers. Instead of the anticipated findings of epidemic encephalitis, nothing pathologic could be found anywhere at necropsy. Bak records the case merely as a disease the chief characteristic of which was autophagia.

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THE RESPONSE TO THE THERAPEUTIC APPLICATION OF EXTERNAL HEAT *

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In a recent contribution there were reported the results of studies on the blood gases and the blood flow in arthritis, and on the nature of the response to external heat.[1] The present contribution reports a continuation of these studies, together with certain other matters arising out of them.

There has long been a widespread impression among medical men as well as laymen that rheumatism and arthritis are often accompanied by an acid sweat. There are few, if any, records in the literature, however, of attempts to establish this by modern methods. In the effort to obtain accurate data on the subject and at the same time to ascertain what physiologic changes accompany the beneficial effects of bakes, hot packs and similar methods of treatment, a series of studies has been carried on in this connection on normal and arthritic persons.

Bazett and Haldane[2] have shown that subjects immersed to the neck in a bath at 38 C. experience a rise in body temperature accompanied by hyperpnea, giddiness and faintness; they also noted a fall in the alveolar carbon dioxid, a profuse alkaline sweat and a marked alkaline diuresis. This alkaline wave they compare to the changes occurring after voluntary forced breathing. Haggard[3] has observed a drop in alveolar carbon dioxid with increased temperature in a person immersed for twenty minutes in a bath at 40 C. He observed a fall in the dissolved carbon dioxid but no change in the carbon dioxid combining power of the blood, and deduces that the concentration of hydrogen ion (C_H) of the blood must be presumably lowered. Pemberton, Hendrix and Crouter[1] have observed a similar fall in alveolar carbon dioxid in normal and arthritic persons subjected to "electric bakes"; and a rise above normal in alveolar carbon dioxid after the bake in nearly every instance. In eight cases the carbon dioxid combining power of the blood was determined before, during and after the bake; and the stability reported by Haggard in this respect was not encountered, there being considerable fluctuation in both directions.

There is also a paucity of references in the literature bearing on studies by modern methods on the reaction of the sweat and the changes, if any, which it may undergo. Thus, Talbert[4] has reached the conclusion that all sweat is acid. Kittsteiner[5] found varying degrees of acidity in sweat from different parts of the body. On the other hand, Bazett and Haldane report an alkaline sweat, as just mentioned. There were therefore undertaken on normal and on arthritic persons a series of observations, which included the p_H of the sweat during the bake; the p_H of the urine before and after the bake, and the p_H of the saliva before and after the bake, together with observations in some instances on the percentage oxygen saturation and the carbon dioxid content of the blood.

The bakes were given in the usual manner, lasting from a half to one hour according to the rapidity with which the subjects started sweating. The body temperature and bake temperature were taken at ten minute intervals, and the time of the first appearance of sweat, as well as that of the subsequent samples obtained, was noted. The forehead was cleansed with alcohol and ether to remove all traces of sebaceous material, and the sweat was taken up from it into carefully cleansed blood pipets such as are used for making red cell counts. These pipets were convenient, not only on account of their size and shape, but also because the small bore afforded something of a safeguard against subsequent evaporation and loss of carbon dioxid on standing.

In general, three samples were taken at five minute intervals, and the p_H value was obtained within half an hour, sometimes immediately, by Felton's[6] modification of Clark and Lub's indicator method. This requires only a drop of fluid, and is accurate to within 0.1 p_H. Samples of saliva and of urine were obtained just before and immediately after the bake, and the p_H was determined by the same method. The mouth of the subject was thoroughly rinsed before the experiment was started. The work of Starr[7] has indicated that the saliva acquires a reaction which is determined largely by the alveolar carbon dioxid in its passage through the mouth. He found that by collecting the saliva under oil, loss of carbon dioxid was prevented and a lower p_H value was obtained. In the present

* From the Laboratory of Clinical Chemistry, Presbyterian Hospital.

* Reported in outline before the Boston Orthopedic Association, March 20, 1922.
* The work here reported is part of a study on arthritis in collaboration with R. B. Osgood, M.D., Boston.

* The expense of the present investigation was defrayed by contributions from several sources, including a number of patients. Obligation should be particularly expressed for the gift of the late Mr. John H. McFadden.

1. Pemberton, Ralph; Hendrix, B. M., and Crouter, Caroline Y.: Studies in Arthritis: The Blood Gases and Blood Flow, J. Metabol. Res., to be published.
2. Bazett and Haldane: J. Physiol. **55**: iv, 1921.
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4. Talbert, G. A.: Am. J. Physiol. **61**: 493 (Aug.) 1922; **50**: 433 (Dec.) 1919.
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investigation this precaution was not taken, and the specimen of saliva presumably came into equilibrium with the air. Since the alveolar carbon dioxid with which the saliva becomes equilibrated in the mouth is constantly fluctuating during and after the bake, the p_H of saliva in equilibrium with the air gives possibly a more constant basis of comparison.

The arthritic patients as a group had a very slightly more acid reaction in the urine, saliva and sweat than did the supposedly normal persons. It is of more interest, however, to note that during the course of the bakes in each group there is a decrease in the acidity of the urine, and a decrease in the acidity or increase in the alkalinity of the sweat as the result of the bake; but these changes are more marked and are nearly invariable in regard to the sweat. There is a tendency for the p_H of the saliva to move in the same direction in the normal persons but not in the arthritic patients. These changes are feebly reflected in the averages for the urines, and not at all in those of the saliva.

The percentage of normal persons showing this tendency to increased alkalinity in urine, saliva and sweat was greater than was the corresponding percentage

TABLE 1.—FINDINGS IN NORMAL PERSONS

Subjects * Normals	Type	Time After Temp. = 100 F. in Bake Before Sweat, Sample 1, Min.	Highest Body Temperature	Urine	Saliva	Sweat
1 ♂	Thin	30	98.3	6.6-7.2	6.2-7.2	5.6-6.9
2 ♂ (two)	Medium	33	99.1	5.4-5.6	7.4-7.6	7.7-8.0-8.0
3 ♂	Medium	45	99.2	5.9-6.2	7.3-7.4	7.9-8.0-8.1
4 ♂	Stocky	45	99.4	6.8-7.2	7.0-6.8	7.0-7.6-8.0
5 ♀	Stocky	30	100.6	7.6-6.6	7.2-6.4	7.6-7.8
6 ♂	Stocky	30	99.2	.....	7.6-7.0	7.4-7.8-7.8
7 ♂	Thin	10	100.1	5.0-5.2	7.4-7.6	6.6-7.8-8.0
8 ♂	Thin, nervous	33	99.3	.....	7.8-8.0	6.2-6.6
9 ♂	Normal, stocky	30	98.4	6.0-5.8	6.6-6.8	6.2-7.2-7.6
10 ♀	Medium	30	100.5	6.4-7.4	7.5-7.2	7.4-8.0-8.0
Average		31.6	99.4	6.2-6.4	7.2-7.2	7.0-7.6-7.9
Percentage becoming more alkaline				75%	60%	100%
Range				5.0-7.6	6.2-8.0	5.6-8.0

* Subjects who were men are indicated by the symbol ♂; women by ♀.

of arthritic persons in the ratios of 75, 60 and 100 to 70, 43 and 91 per cent.

There appears to be no direct relation between sweat alkalinity and either the height or the rate of rise of body temperature.

The difficulty of obtaining perfectly normal subjects was present here, as always, and there is some suggestion that in the cases of normal persons giving acid or less alkaline figures after the bake, there were departures from health in the way of focal infections, hay-fever, and the like. If these cases were eliminated, the contrast between the groups would become more striking, although, on the other hand, two marked arthritic patients gave distinctly alkaline sweat. Table 3 shows the changes in the sweat and urine as developed by a number of observations on the same person on varying diets during the course of electric bakes.

As far as we have searched the literature there is no record by modern methods of the difference between normal persons and arthritic patients which these figures suggest. It is also believed that the constant progressive change toward alkalinity or increased alkalinity of the sweat during the course of a bake shown by normal persons and by most arthritic patients has not been previously observed. It is of interest to note that two cases of arthritis giving extremely acid sweats (p_H 4.6) underwent no change in this respect during the bake, and in each case the ingestion of from 15 to 20 gm. of sodium bicarbonate before the bake in no way altered the reaction.

TABLE 2.—FINDINGS IN PATIENTS WITH ARTHRITIS

Subjects	Condition	Time After T = 100 F. Before Sweat, Sample 1, Min.	Highest Temperature	Urine	Saliva	Sweat
11 ♂ (15 bakes)	Active, chronic	10	99.1	6.0-6.1	7.3-6.9	6.4-7.3-7.5
12 ♂ (2 bakes)	Slightly active arthritis, thin	0	99.8	6.0-6.3	.....	7.1-7.4-7.8
13 ♀ (from foot, 6)	Chronic, thin	15	99.7	6.6-6.4	7.1-7.0	6.1-6.8
14 ♀ (5)	Medium	20	99.7	7.1-7.3	7.3-7.1	5.8-6.4
15 ♀ (5)	Medium, acute	20	99.6	5.2-5.6	6.4-6.5	5.7-7.2-7.4
16 ♀ (3)	Acute, thin	20	98.8	6.6-7.2	6.9-6.6	7.4-7.4
17 ♀ (2)	Chronic, thin	35	100.8	5.7-6.1	8.2-8.2	8.0-8.4-8.4
18 ♀ (2)	Acute, medium	35	100.3	7.0-7.2	7.3-7.2	7.4-8.0
19 ♀ (2)	Active, medium	25	100.4	6.0-5.9	6.3-6.2	7.5-7.9
20 ♂	Mild case (?), thin	25	100.2	5.0-5.0	6.6-6.8	7.4-8.0-8.2
21 ♂ (2)	Subacute (?)	10	99.2	6.1-6.6	6.2-6.4	4.6-4.6-4.7
22 ♀	Active, medium	25	101.4	6.2-7.0	6.2-6.4	6.0-7.6-8.0
23 ♂ (2)	Mild, medium	10	99.5	5.7-6.1	.....	7.3-7.9-8.1
24 ♀	Thin, acute	10	101.2	6.2-7.5	6.8-7.4	8.0-8.4-8.4
25 ♂ (2)	Medium, subacute	5	98.4	5.0-5.0	8.0-8.0	6.1-7.3-7.4
26 ♀	Subacute, thin	20	99.4	6.8-6.4	7.2-7.4	7.4-8.0
27 ♀	Thin, chronic	30	100.9	5.2-6.4	7.4-7.0	6.7-7.2
28 ♀	Stout, chronic	40	98.6	5.0-5.2	6.0-6.4	4.6-4.6
29 ♂	Stout, gout (?)	30	98.7	5.8-5.8	6.8-7.2	5.8-6.4-6.8
30 ♂	Acute	5	99.4	7.4-6.4	6.2-6.2	6.9-7.6-7.6
31 ♂	Severe ankylosis	5	102.0	6.6-7.6	6.2-6.2	7.4-7.6-7.6
32 ♂	Active (?)	15	99.5	4.6-4.6	7.1-7.1	6.8-7.2-7.4
33 ♂ (4)	Active	15	100.7	5.7-6.4	6.8-6.3	5.8-6.8-7.3
Average		18	99.8	6.0-6.3	6.9-6.9	6.6-7.2-7.5
Percentage becoming more alkaline				70	43	91
Range				4.6-7.6	6.0-8.0	4.6-8.4

With the aim of influencing the acid sweat, five patients with arthritis were given from 10 to 20 gm. of sodium bicarbonate within the hour preceding the bake; but in none of these cases was the change in p_H markedly greater than without the bicarbonate. Table 4 gives the results obtained.

The nature of the acidity of the sweat remains to be determined; but it may be due to carbon dioxid, some alpha-hydroxy acid, phosphoric acid or fatty acids elaborated by the sebaceous glands. The failure to influence the reaction of the sweat with sodium bicarbonate is perhaps suggestive of the last mentioned mechanism, but this evidence is by no means conclusive.

TABLE 3.—CHANGES IN ONE PERSON ON VARYING DIETS DURING BAKES

Date	Diet	p_H of Sweat Collected During Electric Bake	p_H of Urine Before Bake	p_H of Urine After Bake	Date of Bake
11/18-11/26	General	6.4-7.2	...	...	11/25
11/26-12/ 6	Graham crackers, milk, butter; total calories, 2,370	6.4-7.2 6.2-7.4	5.4	5.6	11/29 12/ 3
12/ 6-12/23	Graham crackers, milk, butter; total calories, 1,500	6.4-7.0 7.0-7.0	... ...	... ...	12/ 7 12/21
12/23- 1/ 1	General; total calories, 1,500	6.8-7.4 7.2-8.0 7.4-8.0	5.6 7.1 7.4	6.5 6.7 6.8	12/23 12/28 12/30
1/ 1- 1/ 7	Bread, milk; total calories, 1,430	5.6-7.4	5.6	5.8	1/ 5
1/ 7- 1/25	General	5.6-7.4 5.6-6.8 6.9-8.0	5.6 5.6 5.6	5.6 5.6 5.6	1/11 1/13 1/25

On the other hand, it is accepted that to some degree at least the sweat may play the rôle of an eliminative organ, and Ryffel and Barber [8] and others refer to the sweat glands as having the function of eliminating acids as well as certain other substances. According

8. Ryffel and Barber: Quart. J. Med. 13, No. 49 (Oct.) 1919.

to Starling,[9] "at a temperature of from 29 to 33 C., the carbon dioxid output by the skin is about 0.35 gm. an hour, i. e., about 8.4 gm. in the twenty-four hours. When the external temperature rises above 33 C., the carbon dioxid output increases so that at 34 it is doubled and at 38.5 it may mount to as much as 1.2 gm. an hour (Schierbeck). It is just at this temperature of 33 C. that a secretion of sweat begins to be noticeable; so it has been suggested that the increased carbon dioxid output may be due directly to the increased work and metabolism of the sweat glands during their activity."

It is conceivable that a decrease in acidity during a bake, as noted above, may be due to a large initial and lower subsequent output of carbon dioxid and Pemberton, Hendrix and Crouter[1] have suggested that part of the benefit of bakes in arthritis and, indeed, in certain other conditions, may be due to the heightened carbon dioxid output. There is no suggestion from the appearance of the various samples of sweat during a bake that sebaceous matter and fatty acids play an important rôle. Again, the increased alkalinity may be due to an "alkaline wave" resulting from the bake. The question is being further studied.

conduction of a bake there is, under the conditions described, a rise in the percentage saturation of the venous blood with oxygen. The mechanism of this is not entirely clear, but it seems probable that it is related, in some part at least, to a heightened blood flow. Thus, it has been shown[13] that blood coming from a hyperemic part contains more oxygen and less carbon dioxid than does blood from normal regions. In view of the fact that a rise in the percentage saturation may accompany the demonstration of a lowered sugar tolerance,[1] it was thought that it might be possible to induce a lowered sugar tolerance by accelerating the blood flow if the cause of a lowered sugar tolerance was to be found in a heightened circulation. It has been previously noted, however, in studies on bakes conducted by us in collaboration with Dr. B. M. Hendrix, that, in the course of six bakes, in five the blood sugar fell very little but constantly; in five, the percentage oxygen saturation rose.

Three patients with arthritis were given 100 gm. of glucose during the course of a bake, their sugar tolerance having been previously determined to be normal. In one, the blood sugar rose higher with the

TABLE 4.—RESULTS OF GIVING SODIUM BICARBONATE PRECEDING BAKE *

Subjects		Amount Taken	No. Min. After Bake, T. = 100 F. Before Sweat, Sample 1	Highest Body Temperature	Urine p_H		Saliva p_H		Sweat Taken at 5 Minute Intervals During Bake	Change in Sweat p_H
					Before Bake	After Bake	Before Bake	After Bake		
21	♂	No bicarbonate	10	99.2	6.1	6.6	6.2	6.4	4.6-4.6-4.7	0.7
		15 gm. taken 35 minutes before bake	10	99.2	5.2	8.4	6.2	6.7	4.6-4.6	0.0
13	♀	No bicarbonate	15	99.7	6.6	6.4	7.1	7.0	6.1-6.8	0.7
		15 gm. taken in 5 gm. doses during hour before bake	25	99.5	6.6	8.4	8.2	6.6	5.0-5.2	0.2
14	♀	No bicarbonate	20	99.7	7.1	7.3	7.3	7.1	5.8-6.4	0.6
		10 gm. taken after first sweat sample	15	99.4	5.0	7.0	7.0	6.8	6.6-7.4	0.8
28	♀	No bicarbonate	40	98.6	5.0	5.2	6.0	6.4	4.6-4.6	0.0
		20 gm. taken in 10 gm. doses an hour and a half before bake	40	99.2	6.9	8.4	6.4	6.2	4.6-4.9	0.3
33	♂	No bicarbonate	15	100.7	5.7	6.4	6.8	6.3	5.8-6.8-7.3	1.5
		20 gm. taken in 10 gm. doses 15 and 30 minutes before bake	15	100.5	6.0	7.8	6.8	6.4	6.4-7.6-7.8	1.4

* The first urine and saliva specimens were collected before the sodium bicarbonate was taken.

While Henderson and Palmer[10] have observed an increased alkali tolerance in acute rheumatic fever, there has been nothing in the previous studies on arthritis by us or our associates to indicate that chronic arthritis is accompanied by systemic acidosis; but in order further to investigate this point the amount of sodium bicarbonate necessary to render the urine alkaline was determined in eight fasting arthritic patients in varying types and degrees of involvement. A urine specimen was taken before and an hour after the ingestion of 4 gm. of sodium bicarbonate in 150 c.c. of water, from 4.5 to 5 gm. being the amount given by Sellards[11] and others as the maximum required to produce alkalinity in normal persons. All eight cases fell within this limit. These results are in accordance with the normal values for the blood carbon dioxid content obtained in the previous series of seventy-two arthritic patients.[12]

RELATION OF SUGAR TOLERANCE TO BLOOD FLOW

In the studies on bakes, previously referred to,[1] attention was directed to the fact that during the bake than without, although remaining within normal limits. In two, the blood sugar did not rise so high with the bake as without, though within normal limits. In two, the percentage saturation rose higher in the bake; in the third, the percentage saturation was not determined.

Two patients were then given 100 gm. of glucose, and in each case one arm was placed in cold water, (17 C.) the other in hot water (40 C.) and the sugar tolerance was determined in each arm. The percentage oxygen saturation rose in the arms subjected to hot water, and fell in those placed in cold water. The sugar rose to practically the same degree in the two arms, varying only with the individual and not with the temperature.

One of these patients (Subject 19) had a low sugar tolerance and a high percentage saturation to start with; the other, had a high percentage saturation and a normal sugar tolerance.

Meakins and Davies[14] have shown that the effect of external heat on a part is to increase the percentage oxygen saturation of the venous blood, and we have shown that this is apparently true during the course of a systemic bake. While there is therefore no doubt that the percentage saturation rises with an increase

9. Starling: Human Physiology, 1920, p. 1218.
10. Palmer, W. W., and Henderson, L. J.: Clinical Studies on Acid Base Equilibrium and the Nature of Acidosis, Arch. Int. Med. **12**: 153 (Aug.) 1913.
11. Sellards: Bull. Johns Hopkins Hosp. **23**: 289, 1912.
12. Pemberton, Ralph; Foster, G. L.; Robertson, J. W., and Tompkins, Edna H.: Studies on Arthritis in the Army, Based on Four Hundred Cases, Arch. Int. Med. **25**: 230, 241, 242 (March); 335, 351 (April) 1920.
13. Wells, H. G.: Chemical Pathology, Ed. 4, Philadelphia, W. B. Saunders Company, p. 313.
14. Meakins, J. C., and Davies, H. W.: J. Path. & Bacteriol. **23**: 451 (Dec.) 1920.

in local or body temperature from external heat, there is only a slight indication of a relative change in the blood sugar, and this is in the opposite direction. The influence of an increased combustion of sugar because of the increased metabolism from the bake was not of enough moment to interfere with the experiment, as the three normal cases gave normal responses. It would also appear that the phenomena of a lowered sugar tolerance and the high percentage saturation of oxygen which accompanies it are referable to different mechanisms.

Attention has been previously directed[15] to the undoubted beneficial effects, in some forms of arthritis, of the application of a low caloric diet. In connection with this form of treatment and the study of its modus operandi we repeated some observations made during a complete fast of four days.[12]

The case previously studied was one of nearly complete fibrous anklyosis in which the patient recovered a large degree of motion in the four days mentioned. The patient also presented a greatly lowered sugar tolerance, which became increasingly lowered coincidentally with the acidosis incidental to the fast. The observations of Zuntz, Hofmeister and subsequent workers have shown, on several grounds, that acidosis

TABLE 5.—PERCENTAGE SATURATION OF VENOUS BLOOD, SUGAR TOLERANCE, p_H OF URINE, CARBON DIOXID COMBINING POWER OF BLOOD, AND DISSOCIATION CURVE

	Blood Sugar Values During Sugar Tolerance Test, Gm.	Oxygen Percentage Saturation	p_H of 24 Hour Urine Specimens	Acetone in Urine	Carbon Dioxid Content of Blood per Cent.
Before fast.....	0.084	58.19	5.4	None	64.85
	0.134				
	0.09				
Fast of 87 hours	.....	.....	5.6	None	
			5.3	Present	
			5.3	Present	
After fast.....	0.044	53.82	5.8	Present	39.93
	0.093				
	0.15				

tends to prevent the utilization of sugar and the storage of glycogen.[16] It has also been suggested that a lowered sugar tolerance is referable to the same mechanism, and it was therefore determined to study a comparable case under similar circumstances. In the present case, however, there were very few active symptoms, and there was also a normal sugar tolerance. There was marked anklyosis, probably bony, as well as fibrous, and during the course of a similar four-day fast there was discernible a small, though distinct, increase in the range of motion of the hip and knee under observation.

As Table 5 shows, observations were conducted on the percentage saturation of the venous blood, the sugar tolerance, the p_H of the urine, the carbon dioxid content of the blood, and the carbon dioxid dissociation curve. The percentage saturation obtained after momentary use of a tourniquet was slightly lowered during the progress of the fast, coincidentally with the improvement noted; the sugar tolerance was slightly lowered, the p_H of the urine remained fairly constant around 5.4, and there was marked acetonuria; the alkali reserve was greatly lowered, and this was also reflected in the dissociation curve. The blood carbon dioxid content fell from 64.85 to 39.93. It would appear, therefore, that the acidosis produced by fasting caused a slight lowering of the sugar tolerance, though not at all commenserate with that observed in the case referred to, in which there was a greatly lowered sugar tolerance from the outset. The percentage oxygen saturation did not increase with the slightly lowered sugar tolerance in the manner referred to elsewhere in this text. The fall in the percentage saturation was slight, and may have been merely an expression of the lowering of the oxygen dissociation curve produced by the acidosis.[17] There is therefore no evidence from study of this case that systemic acidosis, per se, is the cause of a lowered sugar tolerance or of an increase in the percentage saturation of the blood which may accompany the demonstration of a lowered sugar tolerance. It is hoped to pursue the question further, however.

OXYGEN THERAPY

In connection with the conception of arthritis as a disease in which there is a difficulty in some phase of the local or general oxidative metabolism, oxygen was administered to two patients with arthritis, at regular intervals and over a fairly long period. One patient inhaled pure oxygen for fifteen-minute periods twice daily for almost three weeks by means of the Meltzer method.[18] This consists in the respiration of oxygen through a tube fitted with valves and connected with a rubber bag and a tank, the whole so arranged that the pure oxygen respired was under pressure from the distended bag. The second patient was given oxygen three or four times a day for an even longer period, but in neither was any benefit observed. The failure of benefit is in keeping with the observation that arthritic patients as a class, and under the conditions described, tend to have a slightly higher percentage saturation of the peripheral venous blood than do normal persons, and the addition of further oxygen would therefore not appear, *a priori,* to improve the situation. Different results, however, might follow subjection of patients to increased positive pressure of oxygen over longer periods of time in a closed chamber.

p_H OF STOOLS

During the studies on the p_H of the sweat and the urine, observations were also conducted on three or four stools from each of eight patients with arthritis, and two normal persons. McClendon[19] found that the average p_H of the contents of the small intestine in two persons, obtained by lowering a tube, were 4.9 and 5.4, and that the hydrogen ion concentration became less as the tube descended into the small intestine. Five of the eight patients now under consideration were on restricted and fixed diets; three were not. Three of the patients showed marked improvement under the restricted diet. The p_H varied from 6.4 to 7.4, each individual maintaining a constancy to within 0.4, as a rule. The normal persons studied gave the same results. One arthritic patient who showed marked improvement on a lowered diet was studied when on and off this fixed diet, and gave no marked variation in the p_H of the stools. There is therefore, in these observations, no indication that the benefit from the application of restricted diet, in which the carbohydrate fraction is most reduced, is referable to any change in the reaction of the bowel content, so far, at least, as the feces and the method reflect this.

15. Pemberton, Ralph: The Use of Diet in the Treatment of Arthritis, Am. J. M. Sc. **161**: 517 (April) 1921.
16. Lusk, Graham: Elements of the Science of Nutrition, Ed. 3, pp. 261, 421, 447.
17. Barcroft, Joseph: The Respiratory Function of the Blood, New York, G. P. Putnam's Sons, 1914.
18. Rudolph, R. D.: Am. J. M. Sc. **160**: 10 (July) 1920.
19. McClendon: Science **52**: 566, 1920.

Through the courtesy of Dr. John Eiman, pathologist to the Presbyterian Hospital, Philadelphia, observations were also conducted as to the presence of streptococci; but from none of the cases could any be isolated.

The present paper is in the nature of a preliminary communication, to be followed later by the report of further studies now being conducted.

CONCLUSIONS

1. A series of ten supposedly normal persons and twenty-three patients with arthritis in various stages of the disease was studied in respect to the hydrogen ion concentration of the urine, saliva and sweat during the course of "electric bakes" administered in the usual therapeutic manner.

2. The urine of the normal persons, obtained before and after the bake, showed a very slightly less acid reaction on the average than did that of the arthritic patients in the ratio of p_H 6.2 and 6.4 to p_H 6.0 and 6.3. The reaction of the saliva was also very slightly less acid in the case of the normal persons, in the ratio of p_H 7.2 to p_H 6.9. The average differences are so small as to be almost negligible.

3. The study of the sweat from the forehead obtained before, during and after the bake, however, showed consistent and more marked differences between the two groups in the average ratios of p_H 7.0, 7.6 and 7.9 for normal persons and p_H 6.6, 7.2 and 7.5 for the arthritic patients. The reaction of the sweat of some of the patients with arthritis reached figures much more acid than were encountered among the normal persons.

4. The average initial reaction of the forehead sweat of the normal persons studied corresponds to a p_H of 7.0, which is just on the acid side of the blood reaction, though there may be departures to either side. The reaction of the sweat at different sites may vary, and it is important that conclusions regarding it be based on a number of persons.

5. During the course of a therapeutic bake there is a consistent and marked tendency for the reaction of the sweat to change toward the less acid or more alkaline range, irrespective of whether it was acid, neutral or alkaline at the outset. This tendency was invariable among the normal persons, and marked among the patients with arthritis. In two arthritic patients the very acid reactions of the sweat underwent no modification as the result of the bake. Administration of from 10 to 20 gm. of sodium bicarbonate was without influence on the reaction of the sweat in five patients with arthritis whose sweat was on the acid side of the blood reaction.

6. The percentage oxygen saturation of the peripheral blood tends to rise with increased local or body temperature when this is caused by external heat. Under these circumstances the blood sugar falls slightly. Attempts to reproduce the blood findings of a lowered sugar tolerance by administering glucose during a bake were unsuccessful.

7. Following the administration of glucose, similar observations made after placing one arm in hot and the other in cold water resulted in practically the same sugar figures in each arm, although the percentage oxygen saturation rose in the arm placed in hot (40 C.) and fell in the arm placed in cold (17 C.) water.

These observations suggest that the rise in percentage oxygen saturation which may accompany the demonstration of a lowered sugar tolerance is referable to an independent mechanism. They do not strengthen the view that a lowered sugar tolerance is due to a heightened blood flow.

8. Studies of the p_H of the stools of two normal persons and of eight patients with arthritis in various stages of disease revealed no significant differences. The p_H varied from 6.4 to 7.4, each individual maintaining a constancy to within 0.4, as a rule. One patient studied before and after convalescence on a lowered caloric diet, and another patient studied after convalescence from the same therapy, gave no marked variation. It seems fair to conclude that the benefits from the application of a reduced dietary do not depend on changes in the p_H of the intestinal tract, so far as the feces and the method reflect this. The foregoing series of stools were examined for streptococci, but none were detected.

9. Alkali tolerance tests administered to eight fasting patients with arthritis gave normal results in every case.

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ORTHOSTATIC ALBUMINURIA

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During the investigation, study and teaching of nephritis and allied conditions, there have come under our observation and been available for hospitalization or accurate control in the office numerous cases of so-called orthostatic or variable albuminuria, which have been made the subject of a special study. In our experience, every case of orthostatic albuminuria, with very rare exceptions, will become and remain albumin free, regardless of posture, exertion, time of day or urinary concentration, as long as the urine remains neutral or slightly alkaline. In three cases, alkalization failed to prevent the appearance of albumin, and, at present, we believe that, while there was no evidence of renal disease demonstrated, these cases include some slight or early element of nephritis, or belong to the group later referred to as "leaky kidneys." However, we do not claim that every case of pure orthostatic albuminuria will necessarily respond to alkalization by becoming albumin free, though the failure to do so in a given case leads us to suspect that we are dealing with another condition. It is to be noted, however, that several cases which persistently showed albumin in urine neutral to litmus at the time of voiding became immediately albumin free when the urine was neutralized to phenolphthalein, to which it had previously remained acid.

Concerning this condition, there is still much controversy regarding the factors in its production, and the time and causes of its appearance, these differences of opinion being reflected in the variety of names applied, intermittent, cyclic, postural, variable, adolescent and orthostatic albuminuria being the most frequently used. For the sake of briefness, the condition under discussion will hereafter be referred to as orthostatic albuminuria, which will be understood to designate a condition in which the urine excreted while lying down is albumin free, with the subsequent presence of albumin at times after rising, the amount

or presence varying with numerous factors to be discussed later.

Following Richard Bright,[1] in 1827, the presence of albumin in the urine was regarded as unquestionable evidence of kidney disease, until 1870, when Ultzmann[2] reported eight cases of albuminuria with no clinical findings that could be considered pathologic, and suggested the possibility of albuminuria without an accompanying nephritis. Work on this question was eagerly taken up, especially in England, and for the next twenty years numerous cases were reported and various theories advanced regarding its etiology and significance.

Hooker[3] carries the literature up to 1910, giving a chronological, critical and comparative summary of the various advances and changing conceptions; and from that date until the present there have been no noteworthy contributions. A great deal of the controversy has resulted from two or three fundamental misconceptions of the problem, and from confusion of terminology. Thus, Jehle[4] claims that lordosis in the twelfth dorsal and the first and second lumbar vertebrae is the cause; others claim it is due solely to the upright position, regardless of the presence or absence of lordosis, citing examples of marked artificial (orthopedic) or pathologic curvatures without albumin, while numerous writers see indications of an albuminuria which appears in the standing position, but is cyclic in character, appearing regularly at certain times of the day, or bearing a definite relationship to meals. Each of these, according to its progenitors, is an entity, deserves a special name and is honored with a distinct etiology.

It now appears possible to explain, on a relatively simple basis, the appearance of nonnephritic albumin, and to show how each of the several factors cited as etiologic may be more or less primary in the condition. One cannot, however, ignore certain questions that will persist and that we make no attempt to answer finally.

FREQUENCY AND PREDISPOSING FACTORS

Certainly, age is not the paramount factor; for, while orthostatic albuminuria appears most frequently in the period of adolescence, it is frequently found in the earlier years, and persists through middle life, occasionally to old age. There is no disagreement, however, on the relative frequency in early life, though some observers state that it is most frequent at or before the eighth year, while others present statistics to prove the more common occurrence between the ages of 10 and 16, or between 12 and 20, with a great decrease in frequency after maturity.

In the absolute frequency, writers again differ: Leube[5] reported the condition in 16 per cent. of 119 healthy soldiers; Capitan,[6] in 44 per cent. of healthy soldiers and 40 per cent. of children; Langstein,[7] in 12 per cent. of all children over 5 years old; Chateaubourg and Gull, in the same proportions, and Saito,[8] twenty-six cases in 150 girls examined. Recently, a study of the schoolchildren of Lausanne gave figures as high as 39 per cent., while Senator[9] states that he finds albumin in the urine of all healthy men, and that orthostatic albuminuria is only an exaggerated form of the normal.

On the other hand, MacLean, in 60,000 recruits examined for the British draft, observed albuminuria unassociated with other defects in 5 per cent., which coincides with the results obtained by Lee[10] and Parmenter[11] on the students at Harvard. In examining 5,000 men, aged 16 to 24, eliminating inflammatory processes of the genito-urinary tract and accepting as positive only cases in which the albumin was definite, Lee found, in specimens passed at the time of examination, 5 per cent. albuminurias, with only 0.1 per cent. actual nephritics. In reexamining any 100 unselected students, albumin was constantly found in 5 per cent., but not always in the same individuals as in previous examinations. Three would show albumin both times; two who had albumin the first time would have none, while two others previously negative would prove positive. Furthermore, while the freshman class (average age, 18) constantly showed 5 per cent., the upper classes (averaging 20 +) gave only 3.5 per cent.; but the outcome could not be predicted in any given individual. Parmenter found 4, 11, and 15 per cent., respectively, in candidates for track, hockey and football; but the "stars" were always negative. There is no doubt that the observers finding constantly high percentages are using very delicate methods, and with the ordinary technic the figures will run much lower. It is also clear that the condition is found frequently in early youth, decreasing progressively to maturity.

The relation to sex has not as yet been satisfactorily settled. It is generally considered more frequent in boys, though Heubner[12] and Langstein deny this. Moor,[13] writing in 1921, agrees with them. Schlaps[14] finds it four times as frequent in girls as in boys, while Jeanneret,[15] who should speak with authority, states that it is slightly more frequent in girls. It would appear from personal observations that, in the second and third decades, the condition appears relatively more frequently in the male, while our experience is too limited to draw any conclusions regarding the earlier years.

However, there is universal agreement as to the type of individual in which orthostatic albuminuria is most frequent. So characteristic is the habitus that the condition can often be correctly predicted from mere inspection. Young children are thin, rapidly growing, of the weedy, frail or lanky type; the chest is long and narrow, the intercostal angle narrow, the scapulas and abdomen prominent, and the heart, which on percussion is apparently hypertrophied, is actually long and dropped, as shown by the fluoroscope.[16]

There is widespread evidence of vasomotor instability: pale skin, red lips, moist, cold, cyanotic hands, dilated pupils, subjective lassitude, headaches, dyspnea, faintness, palpitation, vertigo, sensitiveness to cold, and sound sleep, but with attendant tiredness in the morning; and, altogether, evidence that the subject is a high-strung, irritable child. In England, there is a well recognized type of boy, called "chapel fainter," among whom the proportion of albuminurias is high. Jeanneret, standing alone in this position, believes that the foregoing characteristics are due to the loss of albumin,

1. Bright, Richard: Guy's Hosp. Rep., 1827.
2. Ultzmann: Wien. med. Presse **11**: 81, 1870.
3. Hooker, D. R.: Postural or Orthostatic Albuminuria, Arch. Int. Med. **5**: 491 (May) 1910.
4. Jehle: Die lordotische Albuminurie, Leipzig, 1909; Ergebn. d. inn. Med. u. Kinderh. **12**: 808, 1913.
5. Leube: Virchows Arch. f. path. Anat. **72**: 145, 1878.
6. Capitan: Thesis, Paris, 1883.
7. Langstein: Die Albuminurie älterer Kinder, 1908.
8. Saito, Hideo: Clinical Investigations on Orthostatic Albuminuria, Am. J. Dis. Child. **22**: 388 (Oct.) 1921.
9. Senator: Deutsch. med. Wchnschr. **30**: 1833, 1904.
10. Lee, R. I.: M. Clin. N. America **3**: 1059 (Jan.) 1920.
11. Parmenter, D. C.: Boston M. & S. J. **183**: 677 (Dec. 9) 1920.
12. Heubner, O.: Lehrbuch der Kinderheilkunde, Leipzig, 1911.
13. Moor, F.: Brit. M. J. **1**: 671, 1921.
14. Schlaps: Arch. f. Kinderh. **35**: 41, 1903.
15. Jeanneret, L.: Arch. de méd. d. enf. **18**: 461, 1915.
16. Bass, M. H.: M. Clin. N. America **4**: 1595 (March) 1921.

causing a state of fatigue, depression and apathy, regardless of the fact that many such children show no albumin.

In adults, Teissier [17] notes a tendency to urticaria, chilblains, purpura, eczema and various erythemas. Lee, who found 5 per cent. in the entire freshman class, found 2 per cent. in candidates for the freshman squad, 1 per cent. in candidates for the varsity squad and no cases in the athletic "stars."

The most recent controversy is over the functional state of the nervous system. Eppinger and Hess,[18] in 1909, stated that all cases of orthostatic albuminuria in their experience showed sympathicotonia. More recently, Schleyer and Saito state definitely that all cases exhibit vagotonia. In our experience the manifestations of sympathicotonia and vagotonia are associated in these cases.

A few hereditary and familial cases have been reported, but no particular significance has been attached to them.

PROGNOSIS AND SIGNIFICANCE

The significance and prognosis of orthostatic albuminuria present, with a few outstanding exceptions, no great ground for debate. Quite alone, but certainly to be heard with consideration, is Senator, who states that an irritation or inflammation which may progress to recovery or to diffuse chronic nephritis is responsible for most, if not all, cases of cyclic or orthostatic albuminuria, and considers the eventual outcome as relatively grave. Opposed to him is Jehle, who believes that this form of albuminuria is not associated with renal pathology, and Heubner,[19] who also believes it does not signify the existence of any permanent underlying renal disease, with Politzer [20] maintaining a middle ground. Lee followed his cases five years, and in no known cases that did not present other evidence of nephritis did it develop; and the few cases with casts, found inconstantly, which were classified as orthostatic, were not more persistent than the others. With Parmenter, he concludes that the condition tends to disappear. Mason and Erickson [21] believe the prognosis is good, but suspect that the continued passage of large quantities of albumin may in itself finally give rise to irritative changes of the kidney. Mackenzie Wallis, describing cases of longstanding proteinuria, states that these kidneys show no evidence of progressive or organic disease. Gardner likens the presence of albumin to a cardiac murmur which persists without other evidence of disease, or to a tuberculous induration of a lung. Insurance companies are intensely interested in this question, and their statistics bear out the common beliefs in this regard. Fox,[22] who has devoted much time to insurance work, quotes Dukes, who followed 300 cases from Rugby, and Sir J. Goodhart, with thirty-eight cases after five years, and confirms their favorable opinion with a report of twenty cases followed over an average of thirty years. Of these twenty patients, five were dead: two from accidents, two from tuberculosis and one from chronic arthritis. Of the remaining fifteen, all were well, with an average age of 56, and after careful examination were pronounced clinically normal, none showing evidence of nephritis.

Barringer [23] examined 396 men, passed for life insurance, dividing them into three groups: 115 with albumin and no casts, 203 with albumin and a few hyaline casts and fifty-three with albumin and a few granular casts. Eleven years later, seventy of the original 396 were reexamined, twenty of whom had shown albumin alone. Of these twenty, twelve had normal urine; eight had albumin, and four of these eight had casts, with no evidence of cardiac or vascular disease. In the original group of 115 simple albuminurias, four patients had died, an increase of 37 per cent. over the expected deaths, and of the four deaths, two were from tuberculosis. From these and other insurance statistics, Barringer concludes that simple albuminurias are five times more frequent before 20 years of age than after; that only exceptionally is albumin evidence of incipient nephritis, but that it is evidence of lowered general resistance, predisposing to tuberculosis and an increased mortality.

Theoretically, then, orthostatic albuminuria might be regarded as a precursor of more severe renal disease; but, on the evidence of numerous observers, this does not seem to be the case. Personal observations support the opinion of those who have found that orthostatic albuminuria is not an indication of approaching renal disease.

The use of various renal function tests confirms the impression that the condition is benign. Numerous workers, with a variety of functional tests, all report normal findings. Mason and Erickson, with the Mosenthal test meal, find a marked oliguria and high concentration in the upright position, contrasted to normal results in bed, and a phenolsulphonephthalein test entirely inconclusive, some excreting more dye in the horizontal, others in the orthostatic, position, but excretion good in all cases. The kidneys appear hypersensitive in the upright position, as evidenced by an increased rate of urea excretion, with a slightly heightened chlorid threshold. This may be an indication of the increased production of urea in the upright position and should be checked by a determination of the urea in the blood. In fact, their own figures indicate that there is a heightened chlorid threshold, which may be accepted as evidence of such a change in the general chemistry of the body as might be associated with the increased urea production.

Artificial lordosis in the horizontal produces no definite deviation. Barker and Smith [24] report six cases: two in patients described as "spare," the others having no record of weight or nourishment, but all presenting accentuation of lumbar lordosis. In two, the phenolsulphonephthalein excretion was tested in the lying and standing positions, one patient excreting 64 per cent. in both positions, the other 69 per cent. lying and 54 per cent. standing. There was no accompanying record of albumin. The four other cases gave normal figures for the lying position. At present, there is no means of determining whether this variation in phenolsulphonephthalein excretion in the lying and standing positions is due to changes in the kidneys or changes in general body tissues, or both. Loeb,[25] using Koryani's quotient $\Delta/NaCl$, shows that, in orthostatic albuminuria and cardiac diseases, there is an increased $\Delta/NaCl$, with a lessened sodium chlorid and water output in the upright position as compared to the lying,

17. Teissier: Semaine méd. **19**: 425, 1899.
18. Eppinger and Hess: Ztschr. f. klin. Med. **67**: 68, 1909.
19. Heubner: Berl. klin. Wchnschr. **44**, 1907.
20. Politzer: Ren juvenum—Beitrage zur Kentniss der orthostatischen Albuminurie, Berlin, 1913.
21. Mason, E. H., and Erickson, R. J.: Am. J. M. Sc. **156**: 830 (Dec.) 1918.
22. Fox, R. H.: Lancet **1**: 116 (Jan. 15) 1921.
23. Barringer, T. B., Jr.: The Prognosis of Albuminuria With or Without Casts, Arch. Int. Med. **9**: 657 (June) 1912.
24. Barker, L. F., and Smith, F. J.: Am. J. M. Sc. **151**: 44 (Jan.) 1916.
25. Loeb: Deutsch. Arch. f. klin. Med. **83**: 452, 1905.

a condition not found in nephritis. English workers, using the diastase method, report normal findings, and there is practical agreement on this subject. Teissier describes an albuminuric cycle on arising, the urine showing increased amounts of coloring matter, then albumin, then increased amounts of urine, followed, by increased amounts of urea. This deserves further investigation, and may explain the divergent reports of urea, chlorid, phosphate and water secretions, leading as well to further knowledge of the mechanism.

We have had under observation during the last four years several cases of true orthostatic albuminuria in which appropriate laboratory and chemical tests have been carried out, including the phenolsulphonephthalein, nonprotein nitrogen, urea, creatinin, chlorids and sugar of the blood, the nitrogen index (modification of Ambard's coefficient), and modifications of Mosenthal's procedure, with particular reference to the variation of specific gravity, as well as alkali reserve (Van Slyke) and bacterial cultures and examination of the urine. Any detailed report of the results would be superfluous, as without exception they were within the limits of normal variation.

CHARACTER OF ALBUMIN FOUND

In the recent British literature, "proteinuria" is rapidly displacing "albuminuria," in references to the type of cases under discussion, owing to the adoption of the word by Mackenzie Wallis [26] in his clinical work and biologic chemistry, and to his belief that the substance in the urine of these cases is largely globulin. In a paper read in May, 1920, before the Royal Society, Wallis thus explains his position: "Physiological albuminuria, occurring after severe exertion, is largely serum albumin, which may leak through the kidney with excessive amounts of normal urinary constituents, especially urea, acting as a diuretic." In addition, he makes three more classes of nonnephritic proteinuria, the functional (adolescent, or postural), the familial intermittent, in which, for periods unrelated to any known factors, protein will be continually in the urine and the condition known as leaky kidney, defined as permanent, long-standing, profuse proteinuria showing no evidence of organic or progressive disease.

The blood serum contains two proteins: serum albumin and serum globulin, the former much in excess in organic renal disease, but not the sole constituent of the urinary protein, the latter usually overlooked. According to Wallis, the various classes of proteinuria contain certain proportions of serum albumin and serum globulin, respectively: functional albuminuria, 2:1, leaky kidney, 1:2, chronic nephritis, 6:1, and toxic nephritis, 6:1.

This is true globulin, often called euglobulin, an insoluble lipoglobulin formed by the combination of the water soluble pseudoglobulin with a lipoid and called commonly nucleo-albumin. Thus, in organic renal disease, the less viscous, more diffusible serum albumin predominates, while in the so-called functional and variable proteinurias, the globulin is in relative excess. The albumin of nephritis is thus similar to an inflammatory exudate in which serum albumin is abundant, while the globulinuria of the nonnephritic is of the nature of a transudate, which abounds in euglobulin. Furthermore, the proteinuria of eclampsia abounds in globulin, which decreases rapidly after delivery or with subsiding symptoms, while in nephritis an increased globulin of urine and blood is distinctly unfavorable, but here the globulin is the pseudoglobulin. Wallis concludes that the protein precipitated by acetic acid in the cold is euglobulin, which occurs in nonnephritic cases and tends usually to disappear in later life; that the condition "leaky kidney" is an excessive globulinuria and tends to remain, but shows no renal disease or structural changes, and that, in the true orthostatic type, both albumin and globulin are present, but during the course of the day or during improvement the globulin may fade and leave small amounts of albumin alone.

As early as 1886, Jaccoud [27] and Maguire [28] reported globulin in these cases, confirmed in 1905 by Teissier, but its presence has been largely ignored. In 1921, Saito found that this body precipitated by acetic acid varies absolutely and relatively in the same person, and Harrison [29] found no constant proportion of lipoglobulin, the variation being from 0 to 100 per cent. in the same person at different times. We have noted the frequent occurrence of the so-called nucleoalbumin, and sometimes have been struck by the large proportion of it, but have made no systematic quantitative comparisons with the amount of serum albumin.

ETIOLOGY

Regarding the etiology and mechanism of orthostatic albuminuria, there is less unity of opinion, and discussion centers about seven or eight theories, apparently more or less incompatible. The principal causes held partially or wholly responsible for the condition by various writers are: (1) lumbar lordosis, causing venous stasis of the renal vessels; (2) a subnormal type of constitutional and vascular development; (3) lesions of the renal substance; (4) vasomotor instability with renal hyperemia; (5) deficiency of some normal constituents of the blood; (6) reflection of a general lowered condition, and (7) foci of infection, with diminished respiratory function of the blood.

1. Jehle believes that in addition to orthostatism, or the upright position, lordosis of the twelfth dorsal and first and second lumbar vertebrae is the sole cause of this type of albuminuria, and he names it lordotic. The albuminuria he attributes to venous stasis of the renal vessels. Supplementary evidence confirms the important rôle of lordosis, but proves as well that it is by no means the sole factor, since, in many cases of severe albuminuria, inspection and roentgen-ray examination fail to reveal any lordosis; while the lordosis may exist in marked degree without albuminuria, both in otherwise normal cases and in spondylitis and cast fixations causing an artificial lordosis, and extreme provocative lordosis usually fails to cause the appearance of albumin. Lee finds albumin in three times as many students rated "D" in posture as in those who stand well. Bass states that there is usually present a postural defect causing lumbar lordosis and consequent renal congestion; he believes that the type is prone to lordosis, with albuminuria an expression of the curvature, and he succeeds in eliminating the albumin in many cases by applying a suitable brace. Saito found lordosis in 55 per cent. of forty-four patients of this type, whereas the average for a large number was 32 per cent. Also, among 150 girls were found twenty-six with orthostatic albuminuria, of whom fifteen had lordosis and eleven none, and nine extreme lordotics had no albumin.

26. Wallis, R. L. M.: Proc. Roy. Soc. Med. (Sect. Med.) **13**:96 (May) 1920.

27. Jaccoud: Clin. med de la Pitre, 1887.
28. Maguire: Lancet **1**:1106, 1886.
29. Harrison, G. A.: Lancet **2**:991 (Nov. 12) 1921.

2. Politzer and Teissier believe that the condition is due to a subnormal constitutional or vascular development that precludes the upright position being maintained with normal physiologic functions, Politzer adding a second factor of a small renal lesion, and Teissier and Leube classifying kidneys as unpermeable, semipermeable and permeable and locating the permeability in the glomeruli, a result of this developmental defect.

Schlaps declares the condition is four times as frequent in girls as in boys, ascribing this to the frequency of developmental anomalies in girls. Teissier later ascribes the condition to abnormal metabolic processes and consequent nutritional disturbances of the kidney, causing increased permeability, and adds rheumatism and gout to the list; while later he and von Noorden [30] state that it is always a pretuberculous condition. In regard to permeability, the question arises, why does not the colloid of the blood always pass through the walls of the blood vessels of the kidney into the urine? Since urea, uric acid and bile salts pass, why not glucose and albumin, for egg albumin injected intravenously will pass into the urine? The only answer at present is that there is some selective activity associated with living cells, and the kidney normally excretes those substances which the blood brings and which are of no further use to it.

3. Heubner, Posner [31] and Pribram [32] believe the albumin is due to slight lesions of the renal substance, with no evidence of disease other than the presence of albumin in the upright position, but the mere assertion that the albuminuria is due to the upright position is not an explanation of the phenomenon.

4. The theory that orthostatic albuminuria is due to a vasomotor instability or a so-called neurosis developed from clinical observations before the facilities for determining blood pressure, and was carefully investigated without the present instruments. First among these workers were Erlanger and Hooker,[33] whose results follow in some detail. They found that in these cases the pulse pressure in the upright position was lower than in the horizontal, owing to a diastolic rise, the systolic remaining practically constant, as contrasted with a systolic rise in normal individuals, in whom the pulse pressure remains practically constant, and that in orthostatic albuminuria the pulse pressure and albumin vary inversely. Furthermore, when one takes the upright position in water at body temperature or in a pneumatic suit under pressure to overcome "gravity bleeding," the pulse pressure shows no decrease, with consequently no albuminuria. They show that pulse pressure is decreased by immersion in cold water and increased by immersion in warm water and by moderate and severe exercise and eating, and note a gradual increase during the day, with the albumin varying accordingly.

The amplitude of pulse pressure determines the degree of pulsation of current, and they show that a pulsating pressure is much more efficient than a steady pressure of the maximum pulsation. In a perfused, excised kidney, a satisfactory circulation is obtained with a much lower pulsating pressure than with a steady one, and, in an artificially perfused organ, edema which develops with a steady pressure can be prevented or reduced by an intermittent pressure. In addition to the improved renal circulation, the expansile movements of the glomeruli must be of value in the process of excretion. Mason and Erickson entirely confirm these findings, and in addition assert that they observed a decrease in pulse pressure while in the horizontal position by artificial lordosis, while Bass and Wessler [34] fail to find any indication of these blood pressure changes, working, however, with much younger children. Gesell [35] showed that, with the same rate of flow but with lowered pulse pressure, the nutrition of the kidney cells was markedly altered; and several workers have shown that during and immediately after exercise the diastolic and systolic pressures are much increased, the systolic more than the diastolic, this condition giving way to a fall of both with a decreased pulse pressure, at which time albumin appears, regardless of the actual systolic and diastolic pressures; and as the pulse pressure again reaches normal the albumin disappears.

Edel [36] found that diuretics, hot baths and dieting cause the albumin to disappear, and he emphasizes the vasomotor instability, resulting in an inability of the cardiovascular system to respond to ordinary changes.

Lee found wide variations in blood pressure, and, with critical observations, concluded that the alteration was inconstant and associated with the nervous disturbance attendant on the examination, that is, it represents types of labile blood pressure; but he found the incidence of albumin twice the normal in these cases. Sterling [37] notes the adolescent nervous development, which is notoriously unstable and may produce reflex hyperemia of the kidneys, particularly with a vascular system not yet fully developed. Dukes believes it is a renal hyperemia just held in check. Here, then, we begin to find a scientific basis, with well correlated attempts to arrive at a rational explanation of the situation.

5. Recently, the English [38] workers have attempted to show that the albuminuria is based on an abnormality of the blood related to lack of calcium, since many cases were reported cured by administration of calcium lactate: a condition of hypocoagulability and disordered calcium metabolism related to rapid growth of the bony system and characterized by certain skin conditions, such as chilblains, urticaria, eczema and purpura.

6. Parmenter, Pavy and others relate the condition to fatigue, digestive disorders, migraine and generally lowered conditions of vitality and resistance, and from Denmark come reports of a unilateral type, the albumin always appearing in the left kidney.

7. One other point we wish to bring out was first made by Jeanneret, who shows the marked influence of immobility of the body in causing albumin.

With such a variety of factors at work there is only one conclusion to be reached: this variable appearance of albumin is not an entity, but the result of two or more causes, none of which alone is able to produce the condition, but it may appear as the combined effect of several other factors. The condition may be regarded as a stasis of renal circulation as well as a stasis of other portions of the body, producing analogous results in body tissues and in the blood stream itself. Although there are at present no methods of demonstrating them, it is not unlikely that during the

30. Von Noorden: Ztschr. f. Urol. **1**: 1017, 1907.
31. Posner: Ztschr. f. klin. Med. **3**: 42, 1904.
32. Pribram: Deutsch. Arch. f. klin. Med. **90**: 367, 1907.
33. Erlanger and Hooker: Johns Hopkins Hosp. Rep. **12**: 145, 1904.
34. Bass, M. H., and Wessler, H.: A Study of the Blood Pressure in Children Showing Orthostatic Albuminuria, Arch. Int. Med. **13**: 39 (Jan.) 1914.
35. Gesell, R. A.: Am. J. Physiol. **32**: 70, 1913.
36. Edel: München. med. Wchnschr. **48**: 1833, 1901.
37. Sterling: Lancet **2**: 1157, 1887.
38. Luff: Brit. Med. J. **1**: 261, 1909.

period of albuminuria there are taking place in the pancreas, spleen, liver and splanchnic areas changes which correspond to those identified in the kidney function. Pressure above the umbilicus, deep enough to compress the vena cava, results within three minutes in an albuminuria similar in every respect to the orthostatic variety and probably results in some perverted function of numerous other tissues whose circulation is similarly disturbed. From this point of view, then, it is easier to understand the contradictions with which the literature is replete, for in no two individuals will the same factors be equally important. Fat or lean, short or tall, there may or may not be an adequate number of sufficiently potent factors operating synchronously to produce an albuminuria. Lordosis or the upright position may be important in one, while there are well developed cases of albuminuria which are definitely cyclic regardless of position.

Tentatively accepting the stasis hypothesis, it is necessary to examine the numerous elements in its production and roughly evaluate them. The upright position clearly is of primary importance, and reference again to Jeanneret aids in its explanation. A girl, aged 11, normal physically, had albumin at noon after school, but none after three hours in bed and none after playing for an hour in the garden. But albumin appeared after three minutes' standing immobile with artificial lordosis, and failed to appear under the same conditions if the legs were kept in motion.

Experiments in 204 unselected cases were carried out over a period of several months, with these results: Exaggerated lordosis, prone with immobility, gave albumin in 3 per cent. of cases; exaggerated lordosis, prone with movement of legs, in none; upright position alone in 1.3 per cent.; upright position, lordosis and movement of legs in 1.6 per cent.; upright position, lordosis and immobility in 49 per cent. He concludes that lordosis may create some obstacle by pressure on the vena cava or renal veins, but the effect is slight and more than compensated by lying prone, even in a position of maximum artificial lordosis, and lordosis in addition to the gravity slowing of the venous current rarely causes albuminuria without immobility. Bass and Wessler suggest that only those children react to lordosis by the excretion of albumin in whom the vasomotor system is unable to prevent renal congestion.

The muscular factor aiding the venous circulation is evidently as important as the upright position alone. Without it, the lumbar muscles empty into a renal territory embarrassed by a venous current already slowed by immobility of the leg muscles, with a marked stasis resulting. When this is overcome through mechanical means, as by support of the body in water or in a pneumatic suit, the effect of immobility is overcome.

One of the protections against renal venous stasis is the elasticity of the capsule. An insufficient capsule, a dysharmony of development between the capsule and parenchyma, is supposed to exist in all infants and youths and to a pronounced degree in some children. Consequently, a child showing this debility of renal capsule will be more likely to exhibit an orthostatic albuminuria. Concerning the so-called cyclic albuminurias, which appear and disappear regardless of posture, it may not be possible to separate and analyze the distinct factors in their production; but it is safe to say that on a fixed vasomotor basis there have been temporarily added factors important enough to produce, through their combined effects, an albuminuria. These factors are neutralized later by some compensating activity of the organism or are themselves withdrawn. Thus we can better understand Dubreuihl's classification as (1) transitory, accidental or acute, (2) chronic without periodicity and (3) periodic, intermittent or cyclic. Thus with the generally accepted disappearance or diminution of albumin following the noon meal, the most obvious factors are a decreased acidity of the urine and an improved venous circulation due to activity of the various viscera and increased mesenteric circulation. Also the decrease of albumin in the afternoon and evening is explained when we learn of a progressive increase of pulse pressure during the day.

In enumerating the factors in the production of this condition, we will accept the vasomotor instability, with decreased pulse pressure on standing, and the description of the type of individual and his reactions which generally accompany it, as present in a large proportion of cases, but not essential, as well as the possibility of small renal lesions; remembering that the albumin of a small organic kidney lesion may be postural in type, owing to drainage.

Altered metabolism, due to intoxication from frequent or chronic infections, must receive consideration. There is increasing emphasis being placed on the influence of infections and intoxications on the respiratory function of the blood and tissues, that is, the exchange of blood gases. It is when considered on this basis that these infections are such prominent clinical features in this group of albuminurias; and, in a majority of the cases coming under our observation, there have been distinctly infected tonsils, adenoids, infected processes about the teeth, or prolonged pulmonary or intestinal infection. Eradication of these infections has seemed to be an important step in the remedial program.

A physicochemical basis probably underlies the explanation of all these factors in the production of variable albuminurias, whether they affect the kidney tissue itself, the proteins of the blood or other tissues of the body. In cases in which the mechanical factors leading to an alteration of pulse pressure are prominent, is it not the asphyxiation of tissues through suboxidation, with resultant production of relative acidity, that alters the blood or other body tissues so that they become filtrable through the kidneys? Similarly, in cases of infection, is it not the intoxication which leads, through suboxidation, to the change in the character of the proteins that permits them to pass through the kidneys?

There must be a distinction between those cases in which the kidney tissue alone is involved by these various factors and those in which the blood and other tissues are involved. At the present stage, our facilities for investigation are not sufficiently developed to make this distinction clear, but the field promises to be fruitful for investigation.

TREATMENT AS RELATED TO ETIOLOGY

Experience has taught us that these cases are benefited by hygienic measures which bear direct or indirect relationships to the kidney or to circulation. Among these are the removal of sources of infection or intoxication, sufficient sleep, moderate exercise, fresh air and an adequate, balanced diet, though, within reason, the amount of protein taken is of no immediate importance. Closer analysis shows that, by these procedures, we are removing causes disturbing the normal condi-

tion of the kidneys, improving general circulation of the entire body and restoring the integrity of the blood in its ability to carry and distribute oxygen and nutrition, i. e., establishing normal physiologic efficiency.

That the appearance of albumin in the urine can be controlled by keeping the urine neutral or slightly alkaline we have determined to our own satisfaction. We ascribe this result not to the change in reaction of the urine but to the decreased relative acidity of the body tissues and fluids, of which the urinary reaction is only a consequence. So far, no references to this fact have appeared in the literature on orthostatic albuminuria, but Edel [36] came very close to the question in attempting to show that the development of albumin was prevented by saline diuretics. For this purpose, he used potassium acetate and determined the beginning and end of the diuretic action by the alkalinity of the urine. He does not, however, ascribe the absence of albumin to the alkalinity of the urine or to the decreased relative acidity of the body fluids, but to the increased quantity, decreased specific gravity and decreased coloring matter of the urine. The recent British literature contains many references to the inhibition of the appearance of albumin by calcium lactate, which in ordinary doses has no effect, but in repeated doses of from 30 to 60 grains (2 to 4 gm.) will temporarily prevent an albuminuria which otherwise would appear. As a result, the entire condition is being enthusiastically ascribed to a disordered calcium metabolism, with perversion of coagulation, etc. No references have been made to the reaction of the urine as a result of the medication.

In a number of our cases in which the appearance and disappearance of albumin in the urine closely followed the acid-alkaline reaction, calcium was fed in various forms. Only those calcium salts which neutralized or alkalized the urine were able to prevent the appearance of albumin. The same calcium salts, when given with or following doses of acid sodium phosphate sufficient to prevent this neutralization of the urine, failed to prevent the albuminuria, and other salts, such as calcium chlorid, which permitted the acid reaction to persist, failed entirely to prevent albuminuria. It is probable that the explanation of our observation concerning urinary reactions in relation to albuminuria can be found in the light of Martin Fischer's work. In vitro at least certain degrees of acidity dispose protoplasm to a state of colloid dispersion in which the integrity of the protein is decreased, with a tendency toward actual solution, and a decrease of its solidarity; in other words, an increased permeability. It is highly probable that in the kidney, owing to the combined result of venous stasis resulting from any of the accepted causes, in addition to the local increase of acid produced under such conditions, the integrity of the renal membrane is so far destroyed as to allow the passage of constituents of the blood which normally are held back, and that, by the addition of alkali sufficient to correct the acid condition, the permeability of the renal tissue or the physicochemical condition of the blood is so far restored as to prevent the further escape of albumin. It is also fair to suppose that, in our few cases which did not promptly respond to alkalization, there were factors present sufficient to produce a condition that was not corrected by such alkalization.

That urinary acidity beyond a certain degree is of little importance in the appearance of albumin is shown by Barach,[39] who examined the urines and blood pressures of numerous athletes before and after exertions, such as a marathon race, track meets and practice and baseball, and concluded that the height of urinary acidity does not determine the presence or amount of albumin, red blood cells or casts, but that these depend entirely on the degree of circulatory disturbance shown, as evidenced by the fall of pulse pressure.

SUMMARY

Observations covering approximately forty cases of orthostatic albuminuria indicate that the appearance of variable amounts of nucleo-albumin and serum-albumin in the urine in such cases is analogous to changes taking place in the blood and body tissues.

The condition, which appears most frequently in the young, in certain types of individuals, particularly the undernourished, rapidly growing ones, with unstable venous and vasomotor mechanisms and frequent or chronic infections, is accompanied by a pulse pressure smaller in the upright than in the lying position, is aggravated by immobility, and presages no progressive renal disease.

Repeated and accurate functional tests and blood chemistry observations reveal neither constant deviations from the normal nor constant variations between the upright and horizontal positions.

CONCLUSIONS

1. Neutralization or mild alkalization of the urine produces changes in the kidney, blood or body tissues which are followed by disappearance of nucleo-albumin and serum albumin from the urine, by restoring to normal the physicochemical state of the proteins and preventing their escape into the urine.

2. Neutralization may be brought about by administration of various alkaline salts, such as sodium or potassium acetate, or sodium citrate or calcium lactate, and similarly by the vegetables and fruits in the diet that contain alkalizing salts.

3. Other factors influencing this form of albumin in the urine are: circulatory efficiency in the kidney itself or in the body itself, and metabolic efficiency in the blood and body tissues as influenced by other factors than circulation, such as the conditions producing rapid growth in youth, and by infections and intoxications.

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39. Barach, J. H.: Am. J. M. Sc. **159**: 398 (March) 1920.

Conservatism.—Such is the conservativeness of our species that a new idea requires, often not decades but centuries to penetrate thoroughly the public mind. It is nearly sixty years since Darwin brought the theory of evolution into serious consideration and showed the folly of belief in special creation, yet it is not exaggeration to say that a very large majority of people at the present time do not believe in evolution. It is 250 years since the idea that living organisms do not spontaneously spring into existence from nonliving matter was first promulgated, and nearly sixty years since the last vestige of possibility was torn from the theory of spontaneous generation; yet even today the prevalence of such beliefs as that "horsehair snakes" develop out of horsehairs in water is nothing short of astonishing. It is 120 years since Jenner proved the efficacy of vaccination against smallpox, yet there exist at the present time numerous antivaccination societies whose sole purpose is to denounce vaccination as an unpractical and illogical proceeding. How can we expect popular belief in the mosquito transmission of malaria which was demonstrated only twenty years ago?—Chandler: Animal Parasites and Human Disease, 1922.

OBSERVATION ON THE RESULTS OF ROENTGEN THERAPY IN CHRONIC TONSILLITIS

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Great interest in roentgen therapy has been aroused in recent years by remarkable results in many and various pathologic processes. The enthusiastic claims by some advocates of this method of treating chronic inflammation of lymphoid tissue, particularly the tonsils, has stimulated this summary of the results observed in a series of cases, so treated, occurring in the practice of Dr. C. G. Coakley and myself. The cases have been carefully observed clinically, and pathologic and bacteriologic studies have been made, chiefly at Columbia University, by Drs. W. C. Johnson, Hans Zinsser and J. H. Mueller, for whose help I am indebted.

So far as can be judged from published articles, the effects to be expected from roentgen therapy in chronic tonsillitis is a reduction in size, due to diminution of the lymphoid tissue, and an increase, relative if not actual, of connective tissue, resulting in an opening of the mouths of the crypts and their sterilization by improved drainage. This should result in removal of any symptoms due to mechanical obstruction or absorption of toxins or bacteria. Other lymphoid tissue in the pharynx and nasopharynx is also supposed to disappear. A strong point is made of this, as it is difficult or impossible to remove all of this tissue surgically.

To quote Dr. Witherbee,[1] "The absorption of the lymph tissue in the tonsil, adenoid and lymph tissue of the nasopharynx not only drains the infected crypts, but also leaves only fibrous and connective tissue, which nature utilizes in her defense in all local infections." He gives a table showing the growth of from fifty to a hundred colonies of streptococci from the secretion expressed from the tonsils before one roentgen-ray treatment, and the growth of none from a culture made two weeks later. Also a reproduction is given of a section of a tonsil, showing very considerable replacement of lymphoid tissue by a rather homogeneous substance in a tonsil excised four months after one roentgen-ray treatment. He also states that the final results of roentgen-ray treatment of the tonsils can be determined in any given case only after eight exposures have been made at two week intervals, and two months have elapsed after the eighth treatment. This is a modification of earlier statements, when a minimum of four treatments at two-week intervals was advised, and favorable results were observed before the completion of the treatment.

Roentgen therapy would be the treatment of choice on account of the lack of pain, loss of time from business and the admitted possibility of some more or less dangerous complication of an operation, if the results obtained were satisfactory. Dr. Coakley has felt for some time that these results were not satisfactory, and my own observations and those of others agree with his. He has therefore desired that records of some of his cases be included in this article, to bring the subject to the attention of the medical profession. While it is true that patients who have been really cured by roentgen therapy might not again come under the observation of a laryngologist, it would be strange, when results were satisfactory, if not a single instance reached the attention of a man with the extensive experience of Dr. Coakley. Dr. F. L. Lederer[2] has observed a series of cases of tonsillar disease treated by roentgen ray and he noted no marked change in their condition. He points out that, when diseased tonsils are causing such conditions as rheumatism, endocarditis and nephritis, the long duration of the course of roentgen-ray treatments might jeopardize the life of the patient.

From our observations, we feel that roentgen therapy, as now advocated, may cause more or less diminution in the size of tonsils or other lymphoid tissue in the pharynx or nasopharynx, but the residue has been observed acutely inflamed, and much increased in size while inflamed. It has been demonstrated that it is the small fibrous tonsil that is as likely to serve as a focus of infection with remote symptoms. The observations on tonsils excised indicate that they are not made free of pathogenic bacteria; that there is no evident increase in connective tissue, diminution of lymphoid tissue, lack of activity of the germinal centers or widening of the crypts. Neither the adenoids nor the hypertrophic lymph nodules on the posterior wall of the pharynx disappear; nor do they change in any appreciable way; and they are subject to occasional inflammations similar to those preceding roentgen therapy. General symptoms, involving the heart and joints, have not been relieved in these cases by roentgen therapy, and, in some of the cases, have improved following an operation some time after roentgen therapy. Dr. Zinsser has called attention to the possibility of bacteria, present in the mouth, rather rapidly invading tonsil tissue between the time of tonsillectomy and delivery of the tonsils at the laboratory. This may be true; but Dr. Witherbee's suggestion as to boiling the tonsil for one minute would tend to discourage the growth of most bacteria, whatever their origin.

The case histories and findings are summarized, to support the conclusions offered. We feel that these should be published, as undue enthusiasm about any therapeutic measure is liable to cause injury to those it is designed to benefit, either directly or by supplanting more effective measures. Until it is more definitely shown that diseased tonsils and other lymphoid tissue in the pharynx and nasopharynx can be eradicated as efficiently by a less unpleasant process, reliance must be placed on surgery.

REPORT OF CASES

CASE 1.—*History and Operation.*—Mr. P. H. B., aged 29, had had several attacks of tonsillitis and one of quinsy. There were intermittent symptoms of toxic absorption, chiefly of the gastro-intestinal tract. Six roentgen-ray treatments of the tonsils, at two-week intervals, were given in the winter of 1921. The quinsy occurred six months later. The tonsils were removed by Dr. Coakley under general anesthesia, Oct. 11, 1921, with smooth convalescence. When the patient was seen four months later, the general symptoms were improved, and there were six or seven scattered lymph nodules on the posterior pharyngeal wall.

Pathologic Report.—The epithelium covering the tonsils, where present, was unusually thick. The germinal layer, of dark-staining cells, was thicker than usual, and sharply demarcated from the superficial cells. Lymphoid tissue was abundant. Germinal centers were large and contained many mitotic figures. Connective tissue septums and capsule were slightly infiltrated with lymphocytes. There was no increase

1. Witherbee, W. D.: New York State J. Med. **21**: 14 (Jan.) 1921; also a paper read before the American Electrotherapeutic Society, Sept., 1922.

2. Lederer, F. L.: The Roentgen Ray in Tonsillar Disease, J. A. M. A. **79**: 1130 (Sept. 30) 1922.

of connective tissue in or around the tonsils. The crypts contained cornified epithelium and lymphocytes.

Bacteriologic Report.—Cultures were taken from the center of the tonsils after careful incision with a sterile knife, and *Streptococcus viridans* was found in both of them. In one of them, *Staphylococcus albus* was also present.

CASE 2.—*History and Operation.*—Mr. W. A. B., aged 57, had had frequent colds, sore throat and sinusitis. He received twelve roentgen-ray treatments of the tonsils from March to September, 1922. No improvement was noted, and a thin secretion remained in the tonsil crypts. Tonsillectomy was performed, Oct. 5, 1922, by Dr. Coakley, under local anesthesia, with smooth convalescence.

Pathologic Report.—The crypts were rather large and contained epithelial cells mixed with lymphocytes and polymorphonuclear leukocytes. Surrounding the crypts was a moderate amount of lymphoid tissue with germinal centers. At the periphery of the lymphoid tissue, extending diffusely into the adjacent fibrous tissue, were numerous plasma cells, with a moderate number of lymphocytes and a few eosinophils. Broad bands of connective tissue passed through the tonsils, separating the regions of the crypts with their adjacent lymphoid tissue into what appeared as islands. This was probably only a relative increase of fibrous tissue, due to condensation from loss of lymphoid tissue. There had evidently been a marked decrease in lymphoid tissue, which it did not seem possible to ascribe to treatment, unless the tonsils were known to be distinctly hypertrophic before roentgen-ray exposure. If there had been any necrosis of lymphocytes from the roentgen ray it is possible that the dead cells and nuclear fragments would have been completely removed in the two months which had elapsed since the last treatment.

CASE 3.—*History and Operation.*—Mr. B. L. S., aged 56, suffered rheumatic pains, especially in the shoulders. He also had diabetes. The tonsils were large, with buried crypts. Roentgen-ray treatment of the tonsils was given July 15 and Aug. 10 and 25, 1920. October 25, the tonsils seemed slightly smaller, but the crypts still contained a secretion which showed *Streptococcus viridans* and staphylococci on culture. The pains in the shoulders persisted. Nov. 8, 1922, the patient was still having attacks of arthritis; the tonsils were moderately large, and there were buried injected pillars and crypts yielding a thin secretion. There was no glycosuria. Tonsillectomy was performed, Nov. 14, by Dr. Coakley, under general anesthesia. Convalescence was smooth and the pain in the shoulders improved.

Pathologic Report.—The tonsils were covered with normal epithelium. They were surrounded by thick capsules of dense, fibrous connective tissue. The crypts were not dilated, and most of them were comparatively free from evidence of infection. One crypt, however, contained a small amount of pus, and the wall was infiltrated with leukocytes. The lymphoid tissue was moderate in amount, and contained many distinct germinal centers. The change appeared to be, in part at least, what might be expected in a man 56 years of age; slight atrophy of lymphoid tissue and relative fibrosis. Inflammation may have been a factor, but the present evidence of infection was slight. Apparently, there was no change which could definitely be ascribed to roentgen-ray treatment.

CASE 4.—*History and Operation.*—Mr. R. G., aged 50, suffered from malaise, loss of weight and anemia, suggesting malignant endocarditis, but no positive evidence of this was obtained. The tonsils were suspected, as the crypts contained thin pus, and were treated eight times by roentgen-ray at two-week intervals during the fall of 1921. No change was noted except some sore throat, a week or ten days after each treatment. Cultures of the tonsils taken July, 1922, showed only staphylococci; but thin pus was still present in the crypts. Tonsillectomy was performed, July 17, by Dr. Coakley, under local anesthesia, with smooth convalescence. Two months later, the patient had gained 12 pounds (5.5 kg.) and was greatly improved in appearance and vigor.

Pathologic Report.—The tonsils were covered with stratified squamous epithelium which showed no abnormal change. The crypts were large and contained many polymorphonuclear leukocytes, clumps of bacteria and desquamated epithelial cells. The walls of the crypts were in places densely infiltrated with leukocytes. The crypts were surrounded by a moderate amount of lymphoid tissue, with numerous distinct germinal centers. At the periphery of the lymphoid tissue, extending for a variable distance into the connective tissue, were large numbers of plasma cells, with a few polymorphonuclear leukocytes and eosinophils. The tonsillar tissue was surrounded by a thick connective tissue capsule, and several septums of connective tissue separated the masses of lymphoid tissue which surrounded the crypts. There was no definite "scarring" of the tonsils.

CASE 5.—*History and Operation.*—S. B., a youth, aged 17, had had chronic cardiac valvular disease since childhood. He was undersized and underweight and had had chorea and frequent tonsillitis, but no attack in the last three or four years. The tonsils had been treated by roentgen ray five times, eighteen months before. No improvement was noted. The tonsils and a moderately large mass of adenoids were removed, May 3, 1922, by Dr. Babcock, under general anesthesia, with smooth convalescence. Six months later, the patient had made a marked gain in weight, strength and activity.

Cultures showed *Streptococcus viridans* in great numbers in both crypts and tissue, and a few hemolytic streptococci in the crypts.

Pathologic Report.—The tonsils showed abundant lymphoid tissue, with numerous germinal centers. The crypts were not enlarged, and contained only a few lymphocytes and red blood cells. There was no fibrosis.

CASE 6.—Mrs. E. W. C., aged 38, underwent incomplete tonsillectomy in Chicago in 1919, a portion of the lower pole being left in the right fossa. Three treatments by roentgen ray failed to produce any appreciable change in this tissue, which was periodically inflamed, in association with colds resembling vasomotor rhinitis. The remainder of the right tonsil was removed May 26, 1922, with apparent cure to date.

CASE 7.—Mr. C. Z., aged 23, had had malaise and irregular, slight fever four or five months when first seen by Dr. Coakley in February, 1920. Occasionally, he had sore throat. The tonsils were moderately large and buried, with cheesy secretion crypts. There was no cervical lymphadenitis. Two treatments by roentgen ray were given in April, 1920. In December, the patient felt somewhat improved; the tonsils seemed smaller, but still contained thick and thin secretion in crypts, showing *Streptococcus viridans* and *Staphylococcus aureus.* The cervical lymph nodes were now palpable. Symptoms recurred, and the tonsils were removed in the fall of 1921. The patient has been well since.

CASE 8.—W. P. E., a youth, aged 17, had had several attacks of acute rheumatic fever with endocarditis. The tonsils and adenoids were removed by Dr. Coakley in 1915. The patient suffered attacks of rheumatism with cardiac involvement in 1918 and 1921, and a fatal atttack occurred in 1922. He was in fairly good shape between attacks. He had considerable lymphoid tissue on the posterior pharyngeal wall, which became acutely inflamed at intervals. This was treated by five roentgen-ray treatments during the early spring of 1921 and one in the fall of 1921. The attack in 1922 came on subsequent to roentgen-ray treatment. This also showed no appreciable effect on the pharyngeal lymphoid tissue, which became acutely inflamed with his attacks of rheumatism.

CASE 9.—I. M. F., a boy, aged 11, had three operations on the left mastoid at the age of 2, and there had been occasional discharge since. There was frequent acute rhinitis. An early operation on the tonsils left a small portion of the right tonsil. There was great hypertrophy of the lymph nodules on the posterior pharyngeal wall. He received several treatments by roentgen ray between November, 1920, and March, 1921, without any change being noted except that which occurred before roentgen-ray treatment in that the tissue was more swollen when inflamed than when not inflamed. Colds and attacks of pharyngitis have persisted to the present. The ear, however, does seem improved, but it is hard to tell whether the roentgen ray benefited this or not.

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EGGS AS A SOURCE OF VITAMIN B*

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That hen's eggs contain vitamins is evident from experiments conducted long before the importance of these food factors in nutrition was recognized. Thus, in 1891, Socin [1] reported having successfully fed mice on a mixture of starch, cellulose and egg yolk for ninety-nine days, and he believed that they could have continued to thrive on this diet. Following the discovery of experimental polyneuritis in birds, egg products were repeatedly tested, with successful outcome, for their antineuritic potency.[2]

As the white of egg is said to contain no vitamin,[3] the yolk acquires the preeminent interest in respect to this factor. One finds the statement that the yolk is "especially rich" in both vitamin A and vitamin B.[4] Eggs are frequently classed with milk in such generalizations. Our experience with the latter food has shown that its content of vitamin B, while noteworthy, is by no means invariably as large as students have been led to assume.[5] Feeding tests with commercial desiccated eggs showed us that the amounts required to promote growth at a normal rate on a diet adequate except with respect to vitamin B were nearly twice as large as is the quantity needed of a dried green vegetable, such as spinach.[6] Not until the admixture of dried whole egg with a ration of casein, from 11 to 16 per cent., starch from 38 to 52 per cent., butter fat, 9 per cent., lard, 16 per cent., and inorganic salts, 3 per cent., exceeded 15 per cent. of the food was the rate of growth satisfactory. As the solids of the yolk constitute about 70 per cent. of the total egg solids, this means a content of more than 10.5 per cent. of dry egg yolk in the successful feeding tests.

The outcome of these earlier incidental tests was surprising, in view of the impression which we had gained from published statements regarding the richness of the water extract of boiled egg yolk in vitamin B. McCollum and Davis [7] have stated that the water-soluble substances, mostly inorganic salts, and amounting to 4.5 gm., extracted from 200 gm. of dry egg yolk sufficed to render 3.12 kg. of ration efficient for growth in the case of rats on a diet devoid of vitamin B. The extracted product thus represented only 0.14 per cent. of the food—an order of magnitude approaching that requisite in the case of the most potent yeast extract fractions prepared in our laboratory.[8] Calculated in terms of dry egg yolk, the figures of McCollum and Davis represented an equivalent $^{200}/_{3120}$ or 6.4 per cent. of their ration. They themselves state that 5 per cent. of desiccated egg is not sufficient to supply the water-soluble accessory.

As the percentage of a component in a ration gives no adequate quantitative index of its nutritive potency, unless the comparisons are made between equal ingested quantities of food mixtures of equivalent energy value and otherwise suitable, it will be preferable to state our experience in feeding egg yolk as a source of vitamin B to rats in terms of the absolute daily intake. Rats weighing 100 gm., living on a standard food mixture, of which they consumed about 50 gm. per week, have required not less than 0.8 gm. of dried egg yolk a day (equivalent to 10 per cent. of this food mixture) fed apart from the rest of the ration, to secure even an approximation to the normal rate of growth; and in every case the rate of gain was increased when 0.2 gm. of dried brewers' yeast replaced the egg yolk preparation. For the 100-gram rat, an intake of 0.8 gm. of dried egg yolk is equivalent to about 4 gm. of fresh whole egg. As an average sized egg weighs 43 gm., or ten 100-gram-rat doses of vitamin B, and we have found that such a rat requires about 15 c.c. of cow's milk for its daily allowance of vitamin B, a simple calculation indicates that one (average) hen's egg is equivalent to about 150 c.c. of cow's milk in vitamin B potency.

We have prepared a water extract of egg yolk as follows:

> The yolks were separated from hard boiled eggs and repeatedly extracted with distilled water. The extracts were then centrifugated, and the fluid was filtered through paper pulp. The filtrate was concentrated and dried in vacuo. In this way, 5.66 gm. of dry egg yolk extract was obtained, in one case, from the moist yolks (415 gm.) of twenty-four eggs, or 1.4 gm. for each hundred grams of moist egg yolk; another lot of eggs yielded 1.5 gm. of dry extract for each hundred grams of moist egg yolk.

A daily intake of 33 mg. of this dried extract product (equivalent to 2.25 gm. of moist or 1.12 gm. of dry egg yolk), fed apart from the ration free from vitamin B, permitted growth at less than normal rate; when 66 mg. of the same product was fed daily as the sole source of vitamin B, the increments in body weight were demonstrated over a period of a month or more to be satisfactory. This dosage is equivalent to about 4.5 gm. of moist egg yolk a day, a requirement somewhat higher than that indicated by our feeding trial with dried egg and egg yolk, and due doubtless to the incomplete extraction of all the vitamin B in the preparation of the residue from the water extract of the yolks, or to the adsorption of some of it on the surfaces with which it was brought into contact in filtration.

SUMMARY

By extraction of egg yolk with water, it is possible to secure a product comparatively rich in vitamin B, the daily dose required for a 100-gram rat being considerably less than that of the most potent dried yeast hitherto examined. The content of the egg yolk in vitamin B is not large, a daily intake of at least 1.5 gm. of the fresh yolk being required when it furnishes the sole source of vitamin B to a 100-gram rat. The

* From the Laboratory of the Connecticut Agricultural Experiment Station and the Sheffield Laboratory of Physiological Chemistry of Yale University. The expenses of this investigation were shared by the Connecticut Agricultural Experiment Station and the Carnegie Institution of Washington, D. C.

1. Socin, C. A.: Ztschr. f. physiol. Chem. **15**: 93, 1891. Similarly E. V. McCollum (Am. J. Physiol. **25**: 127, 1909) states that mice grew well on boiled egg yolk as the sole food.
2. Eijkman, C.: Arch. f. Schiffs- u. Tropen-Hyg. **15**: 698, 1911. Cooper, E. A.: J. Hyg. **12**: 436, 1912. Steenbock, H.: J. Biol. Chem. **29**: xxvii, 1917. Funk, Casimir: München. med. Wchnschr., 1913, p. 2614.
3. Plimmer, V. G., and Plimmer, R. H. A.: Vitamins and the Choice of Food, London, Longmans, Green & Co., 1922, p. 149.
4. McCollum, E. V.: Newer Knowledge of Nutrition, New York, the Macmillan Company, 1919, p. 81.
5. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **34**: 537 (June) 1918, **41**: 515 (April) 1920; Biochem. J. **16**: 363, 1922.
6. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **37**: 191 (Jan.) 1919.
7. McCollum, E. V., and Davis, M.: J. Biol. Chem. **23**: 181, 1915.
8. Osborne, T. B., and Wakeman, A. J.: J. Biol. Chem. **40**: 383 (Dec.) 1919.

whole egg is accordingly not exceptionally rich in vitamin B, when contrasted with other foods already investigated. Judged by the comparative trials on rats, the average sized hen's egg is equivalent in vitamin B potency to about 150 c.c. of cow's milk, or a quart of milk and six or seven whole eggs of the average sort have an approximately equivalent vitamin B value.

CAPILLARY PERMEABILITY IN ANAPHYLAXIS

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The acute anaphylactic shock in dogs is characterized by a sudden pronounced fall in arterial blood pressure. This fall usually begins about forty seconds after the beginning of the intravenous protein injection. The pressure usually reaches a minimum of about 25 mm. of mercury by the end of ninety seconds. In shocks of moderate severity, the pressure remains at this low level for about twenty minutes, and then gradually increases, reaching normal in from one to two hours, depending on the severity of the reaction. With highly sensitized dogs, injected with relatively large doses of the specific foreign protein, little or no recovery takes place, the pressure remaining at a low level till the death of the animal, which usually occurs in about forty minutes.

This characteristic fall in arterial blood pressure does not take place in dehepatized (Eck-fistula) dogs. This is true, not only for the mildly sensitized dogs previously reported,[1] but also for highly sensitized dogs giving the fatal type of anaphylactic shock. From this fact, we have concluded that the characteristic fall in arterial blood pressure is in some way dependent on liver function. The theory we have proposed to account for this relationship assumes that the characteristic fall in arterial pressure is due to an explosive hepatic auto-intoxication, the formation or liberation of hepatic products having a histamin-like reaction on the extra-hepatic blood vessels.

As a preliminary to the study of these hypothetic, anaphylactic, hepatic internal secretions, we have tested anaphylactic reactions in various isolated canine tissues. It is our hope to find a tissue that will serve as a reliable reacting index for the hypothetic hepatic products. The present report is based on reactions observed in isolated canine lungs. The lungs were tested by perfusion methods.

To make the perfusion test, the inferior vena cava is ligated close to the heart, and an afferent cannula is tied in the superior vena cava. The ascending aorta is then ligated within the pericardial sac, and an afferent cannula is placed in the left auricular appendage. The lungs are now inflated to their midrespiratory volume, and the trachea is clamped. The perfusion fluid is well aerated Ringer's or Locke's solution, with a temperature of 38 C. and a perfusion pressure of from 25 to 30 mm. of mercury.

1. Manwaring, W. H.: Intestinal and Hepatic Reactions in Anaphylaxis, J. A. M. A. 77: 849 (Sept. 10) 1921.

If the lungs of a normal dog are perfused for about three minutes with Locke's solution, followed by Locke's solution containing from 0.25 to 1 per cent. of horse serum, no recognizable pulmonary reaction takes place. The rate of perfusion flow remains constant on change from the Locke's solution to the dilute serum. When the tracheal clamp is released, the lungs collapse promptly and normally. No frothy fluid escapes from the trachea. If, however, the lungs of a sensitized dog are similarly perfused, very marked pulmonary reactions occur. For example, the rate of perfusion flow, which usually varies from 1,200 to 1,500 c.c. a minute in medium sized dogs, is rapidly reduced to about 300 c.c. a minute. With smaller serum doses, a slight tendency to recovery is occasionally noted after the third minute.

During this reaction, the lungs increase in size and take on a rubber-like consistency. When the tracheal clamp is released, practically no pulmonary collapse takes place. A large amount of clear, frothy fluid escapes from the trachea. If the perfusion is now continued, fluid continues to pour out of the trachea almost as rapidly as it escapes from the efferent cannula.

To us, the most striking feature of these reactions is the marked increase in capillary permeability thus demonstrated. We believe that increased specific capillary permeability will ultimately be shown to be the dominant fundamental physiologic change in protein sensitization, to which all other anaphylactic reactions are secondary. This view is in accord with clinical evidence.

SUMMARY

If the lungs of a dog previously sensitized to horse serum are perfused with Locke's solution, followed by Locke's solution containing from 0.25 to 1 per cent. of horse serum, these reactions are observed: (*a*) a 75 per cent. reduction in the rate of perfusion flow; (*b*) noncollapse of the lungs when the tracheal clamp is released, and (*c*) the escape of large amounts of fluid from the trachea when this clamp is released.

We believe that the increased capillary permeability thus demonstrated will ultimately be shown to be the dominant fundamental physiologic change in protein sensitization, to which all other anaphylactic reactions are secondary.

Medical Aid in Russia.—A communication from the secretary of Dr. Nansen, from Geneva, November, 1922, states that Dr. Haigh, a member of the epidemics commission of the League of Nations, who visited the provinces of Nikolaieff, Kherson, and Odessa, Russia, describes the serious situation of the medical and health institutions in a report addressed to Dr. Nansen. The hospitals lack everything necessary for good work, drugs, linens, soap and disinfectants are all needed; even clinical thermometers are very scarce. Dr. Haigh fears that the lack of preventive equipment will result in a grave extension of the epidemics of typhoid, typhus and relapsing fever during the winter. The medical staff, badly equipped, and even suffering from hunger, is making a desperate struggle with the situation.——It is stated that the American Relief Administration at one time supplied 1,663 hospitals in Russia, containing 120,858 beds, with supplies: 818 ambulatories, serving daily 75,329 patients, and 819 children's homes totaling 60,031 inmates. In addition, the organization distributed 97,110 boxes, barrels, bales and cases of medical equipment; supplied vaccines and serums for the inoculation of millions of the population, and distributed bed linens, rubber goods, bandages and laboratory equipment. At one time, 11,000,000 were being fed by the administration, and it is expected that it will continue to function during this winter, feeding about 3,000,000 people.

PRESENCE OF THE "ALKALINE TIDE"

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AND
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In two recent papers we [1] have reported certain conclusions based on the results of studies of the alkaline tide in urine. In neither of these papers is there a detailed presentation of the results on which the conclusions were based; and, since the presence of the alkaline tide has been questioned in a communication [2] recently published in THE JOURNAL, we wish to present a summary of our results and a brief discussion of the methods used. We shall not attempt to discuss the literature dealing with the subject, as that has been discussed in an earlier publication.[3]

The conclusions were based on twenty experiments carried out on nineteen subjects who did not show evidences of acidosis by clinical or laboratory tests, and who were not receiving alkali or acid therapy. The urine voided during a twenty-four hour period was collected in seven portions. From 7 a. m. to 7 p. m. a specimen was taken every two hours, and all voided from 7 p. m. to 7 a. m. the next morning was combined as a single specimen. Each sample was analyzed separately for the amounts of acid and ammonia which it contained; the reaction (hydrogen ion concentration) of each was determined with a fairly high degree of accuracy. As the excretion of ammonia in this series has been discussed already,[3] we shall confine ourselves here to a discussion of the reaction and acid content.

TABLE 1.—AVERAGE VALUES

Time	Reaction p_H	N/10 Acid Per Hr., C.c.	Volume Per Hr., C.c.
7- 9	5.56	11.83	59
9-11	5.79	9.59	68
11- 1	5.86	10.58	80
1- 3	5.45	14.89	54
3- 5	5.87	14.65	71
5- 7	5.69	13.21	58
7- 7	5.50	13.80	42

The amount of acid present was determined by the method of Folin.[4] In this method an aliquot of the urine is titrated with alkali to the first pink color with phenolphthalein after the addition of an excess of neutral potassium oxalate. Calcium phosphate is precipitated when alkali is added to urine; part of the acid (acid phosphate) is therefore removed, so that it is not included in the acid determined by this titration. When a large excess of oxalate is present, the calcium combines with it instead of with the phosphate, and all the acid in the urine can be determined by titration.

The reaction (hydrogen ion concentration) was determined by a method approximately the same as that recently described by Marshall.[5] A series of tubes was prepared, each of which contained 20 c.c. of a solution whose reaction (hydrogen ion concentration) was known; the differences between the reactions of the solutions in the different tubes was small (0.2 or in some cases, 0.1 p_H); to each of these tubes a measured amount of an appropriate indicator was added. For each indicator there is a definite reaction at which it shows a maximum development of color, a range of differences in reaction over which it shows differences in tint; these facts determine the appropriate indicator to use in estimating the hydrogen ion concentration in any given range. The indicators used in this work were methyl red for the distinctly acid range, brom cresol purple for the slightly acid range, and phenolsulphonephthalein for the neutral to alkaline range. Ten cubic centimeters of the urine under examination was diluted to 20 c.c. with distilled water, and the amount of indicator used in the standard tubes was added. The diluted urine plus indicator was then compared with the series of standard tubes in an apparatus (comparator block) designed to correct for the color of the urine. In no instance were urines found outside the range of the indicators used in the standard tubes, but it was often necessary to carry through more than one determination because the correct one of the three indicators was not chosen at first.

TABLE 2.—MAXIMUM AND MINIMUM VALUES

Time	Reaction Max. p_H	Reaction Min. p_H	N/10 Acid per Hour Max. C.c.	N/10 Acid per Hour Min. C.c.	Volume Max. C.c.	Volume Min. C.c.
7-9	4.8	6.4	28.2	2.9	245	10
9-11	4.9	7.1	23.3	4.3	205	9
11-1	4.9	7.7	25.3	3.7	325	10
1-3	5.0	6.7	29.7	0.75	143	11
3-5	4.9	7.7	25.0	1.5	208	11
5-7	4.9	8.0	21.6	2.1	173	13
7-7	4.9	6.4	20.1	7.1	92	12

This use of different indicators for different reactions is familiar. Many samples of urine are alkaline to litmus but are acid (not alkaline) to phenolphthalein. Again, specimens of gastric juice, especially from patients with achylia, are often alkaline to Töpfer's reagent which are acid to phenolphthalein.

The three tables show the results of the determinations made in this series. The first table shows the average values of the reactions, amount of acid excreted per hour, and of the hourly volumes of urine of all specimens collected during the different periods; the second table shows the maximum and minimum values of the amount of acid, reaction, and volume found for any specimen collected during each period; the third table shows the number of specimens which showed different reactions, arranged in groups not varying from each other by more than 5.0 p_H and the times during the day when these specimens were voided. The amount of acid is expressed as the number of cubic centimeters of tenth normal acid which

TABLE 3.—SPECIMENS THAT SHOWED DIFFERENT REACTIONS

Reaction Range p_H	Total No.	Time 7-9 No.	9-11 No.	11-1 No.	1-3 No.	3-5 No.	5-7 No.	7-7 No.
Above 5.0	10	1	1	1	1	1	2	3
5.5-5.0	58	9	6	8	11	6	10	8
6.0-5.5	33	5	6	4	4	3	4	7
6.5-6.0	23	5	4	1	3	7	1	2
7.0-6.5	8	0	2	4	1	1	0	0
7.5-7.0	5	0	1	1	0	1	2	0
8.0-7.5	3	0	0	1	0	1	1	0

1. Hubbard, R. S., and Munford, S. A.: A Comparison of the Alkaline Tide in Urine, with the Results of Fractional Gastric Analysis, Proc. Soc. Exper. Biol. & Med. **19**: 429, 1922; The Excretion of Acid and Ammonia, J. Biol. Chem. **54**: 465, 1922.
2. Benedict, A. L.: "The 'Alkaline Tide' in Urine," J. A. M. A. **79**: 2021 (Dec. 9) 1922.
3. Hubbard and Munford (Footnote 1, second reference).
4. Folin, Otto: Laboratory Manual of Biological Chemistry, New York, 1916, p. 103.
5. Marshall, E. K., Jr.: The Effect of Loss of Carbon Dioxide on the Hydrogen Ion Concentration of Urine, J. Biol. Chem. **51**: 3 (March) 1922.

were excreted in an hour, and the volume as the number of cubic centimeters of urine which were eliminated during the same period. The reaction is expressed as "p_H", that is, as the negative logarithm of the actual hydrogen ion concentration. The figures representing hydrogen ion concentrations are fractions with very large denominators, and the negative logarithms of the values have been accepted as a convenient way in which results may be recorded. The values of this expression increase as acidity decreases (or as alkalinity increases), and decrease as acidity increases.

Table 1 shows the presence of the alkaline tides. The reaction was less acid (more nearly alkaline) during the forenoon and afternoon periods than it was in the morning, at night, or during the period which corresponds to the time when the noon meal was taken. The average figures for the amount of acid excreted show a similar decrease in the morning and again in the afternoon. The change in the afternoon was slight, possibly because the acid produced from the catabolism of the food taken in the morning obscured the tide. The figures for the average volumes of the specimen show that this change in the amount of acid was independent of changes in volume, for during the forenoon period, when the amount of acid excreted showed a marked decrease over that excreted in the morning, the volumes of the specimens increased.

Table 3 shows that the number of specimens which showed alkalinity or decreased acidity increased during the forenoon and afternoon periods, as did the average alkalinity of the specimens. There were only eight samples out of the 142 collected which gave an alkaline reaction—that is, which showed a p_H greater than 7.0, the reaction of absolutely pure (negative conductivity) water. These specimens would all have given an alkaline reaction with litmus; but only one of them, which showed a p_H of 8.0, would have given a slight pink color if tested with phenolphthalein. Specimens were not tested with phenolphthalein; the satements just made are based on the tables given on page 74 of the war manual.[6]

A study of the average values of the reactions, and hourly excretion of acid in these cases, and of the times at which alkaline and nearly alkaline specimens of urine were voided shows that the reduced acidity following meals, commonly known as the "alkaline tide," was shown. This accords with the observations made by many others.[2]

6. Laboratory Methods of the United States Army, Medical War Manual 6, Philadelphia, 1918.

Correct Estimate of One's Own Surroundings.—It is so difficult to form any correct estimate of one's own surroundings, largely on account of our very familiarity with them, that historical students have generally evaded this responsibility. They have often declared it was impossible to do so satisfactorily. And yet no one will ever know more than we about what is going on now.—Robinson: The Mind in the Making.

CYSTIN CALCULI: A COMPLEX SURGICAL PROBLEM

REPORT OF CASE OF MULTIPLE CYSTIN CALCULI *

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Cystin calculi are comparatively rare. Until 1882 only fifty cases of cystinuria had been reported in the literature. Kretschmer,[1] in his comprehensive study of the subject of cystinuria and cystin stones, found reports of only 107 cases of the stones, including two cases of his own, which occurred in twin boys, aged 9 years. The chemical examination of these two cases demonstrated that they were pure cystin, the diagnosis having been made in each case before operation. Both patients had vesical stones.

Watson and Cunningham [2] report one case of cystin calculus in thirty-two cases of cystinuria, Morris,[3] two in seventy-seven, and Sir Henry Thompson three in 114 cases. That cystinuria is a constitutional problem and the etiologic factor in cystin calculi is well known.

According to Abderhalden,[4] "the metabolism of the cystinuria patient is always normal, and urinary stones are frequently found in the disease." That these stones may be multiple and located in several portions of the urinary tract simultaneously is quite evident from the case here reported.

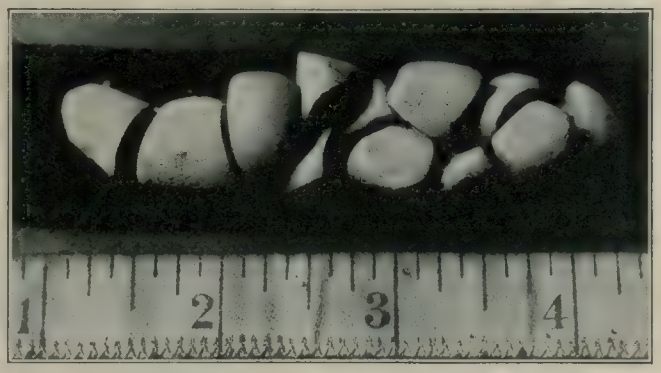


Fig. 1.—Twelve cystin stones from right ureter.

Cystinuria tends to run in families, there having been found in twenty-two cases compiled by Poland a group of ten occurring in four families. The disease has also been found in three successive generations.

From the diverse views appearing in the literature, it is evident that there is little known as to the etiology of cystinuria, and much confusion as to the frequency and character of stones occurring in this disease.

Kayser [5] says:

> I can find no figures showing the relation of cystinuria to cystin calculi, but the impression is that it is usually accompanied by calculus formation. This may be due to the fact that the cases unassociated with calculus formation escape notice, as the metabolic error seems to be accompained by no other serious or constant complication.

The case here reported is presented with the hope that it may be an aid in the final solution of this intricate problem.

REPORT OF CASE

Miss R. B., aged 21, was referred by Dr. T. R. Love for acute appendicitis, with a provisional diagnosis of cystinuria

* Read before the Western Surgical Association, Minneapolis, Dec. 8, 1922.

1. Kretschmer, H. L.: Cystinuria and Cystin Stones, Urol. & Cutan. Rev. **20**, No. 1 (Jan.) 1916.
2. Watson, F. S., and Cunningham, J. H.: Diseases and Surgery of Genito-Urinary System, Philadelphia, Lea & Febiger **2**: 107, 1908.
3. Morris, Henry: Surgical Diseases of the Kidney and Ureter, Chicago **2**: 58, 69, 1901.
4. Abderhalden, Emil: Further Contribution to the Knowledge of Cystin Ocurring in the Urine and Urinary Stones, Ztschr. f. physiol. Chem. **104**: 129-132, 1919.
5. Kayser, L. D.: Personal Communication to the author.

on account of the presence of cystin in the urine. Her average weight was 119 pounds (54 kg.). The family history was unobtainable, as she had been adopted when an infant. Menstruation began at 14 years, and was regular, of twenty-eight day type; the flow was profuse for six or seven days, with much clotting. The patient was always delicate as a child,

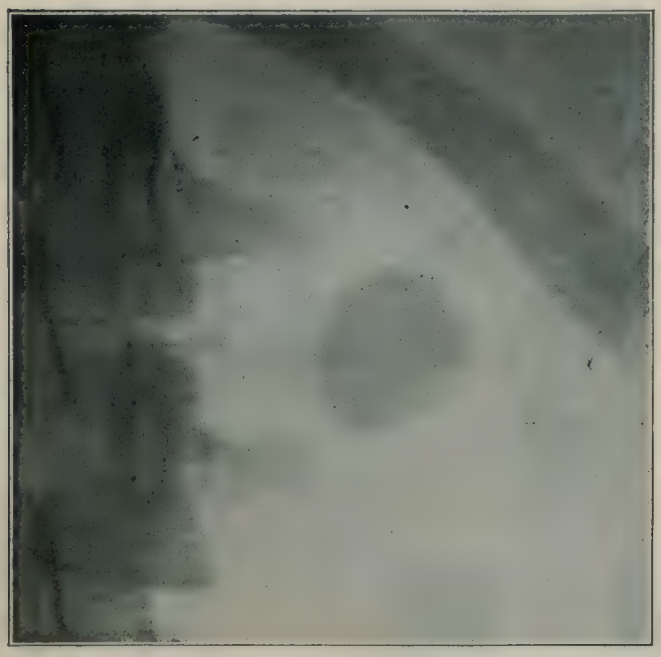


Fig. 2.—Cystin stone in left kidney.

being bottle fed and having malnutrition in infancy. She had not been active, and did not play as other children. She passed blood in the urine several months at the age of 4 and again at 10. The appetite was usually good. She was especially fond of meat, but ate no butter, or milk containing cream. For several years she had had painless swelling of the feet and ankles. She had influenza in 1918. In the early part of 1919 the left foot and ankle were in a cast for several weeks. For the last year she had had a feeling of distress (pain) in the right side. The eyes filled with tears occasionally during urination, but there were no other urinary symptoms except the hematuria noted. There were no gastric symptoms, and no constipation or diarrhea. The patient usually drank only a little water. June 24, 1921, she was taken with severe pain in the right side, but no nausea or vomiting. The pain gradually became worse, although the temperature and the leukocyte count were within normal limits. Rigidity was well marked, and was high up and far out to the right, suggesting a retrocecal appendix since it was too far out for the ureter. Cystin crystals had been found in the urine, but on account of the location of the pain and the fact that the patient kept her right leg elevated for comfort, the diagnosis of appendicitis seemed more reasonable than that of cystin calculus.

The abdomen was opened by a median incision. Fluid escaped, and a moderately acutely inflamed appendix was removed. A series of twelve stones was palpated in the right ureter, extending from a point 2 inches above the brim of the pelvis downward to the ureterovesical junction. As the patient was in good condition, an intraperitoneal opening was made into the ureter, and with light common duct forceps, ten stones, each approximating 1 cm. in diameter, were removed. Two at the ureterovesical junction beyond reach were pressed upward, along the ureter, by the hand of an assistant placed in the vagina. When they came within reach of the operator's hand within the abdomen, they were stripped upward to the opening, from which they were successfully removed (Fig. 1).

A probe passed upward within the lumen of the ureter then disclosed a stone in the right kidney, which on palpation gave evidence of being of unusual size and located above the pelvis of the kidney. Further operative work was not done at this time. The ureter was closed; the ureteral mucosa was infolded and sutured with plain catgut; the margins of the peritoneal coats were everted and also sutured with plain catgut. A strip of soft rubber dam was then placed in close apposition to this sutured area, but not in contact with it, and the abdomen was finally closed. The rubber drain was removed on the fourth day, and the wound healed by first intention as though merely an interval appendix operation had been performed. The patient returned home on the fourteenth day.

The pathologist, Dr. W. S. Dennis, reported a mild grade of acute appendicitis, and stated that the twelve calculi were composed of a central core with two distinguishable layers surrounding them. The layer adjoining the core was

BLOOD CHEMISTRY

	Mg. to 100 C.c.	Normal
Nonprotein nitrogen	33.3	30 to 35
Urea nitrogen	20.0	12 to 15
Creatinin	1.0	1.25
Sugar	80	80 to 100

yellowish gray, while the outer layer was more grayish and slightly rough. The consistency of the mass was uniform, and was easily scraped with a knife blade. Chemical analysis of the two layers and central core revealed that the scrapings burned on platinum with a bluish flame and gave off a sharp odor. The scrapings were dissolved in ammonia, and on evaporation of the ammonia, six sided, thin, transparent crystals formed which, morphologically, were identical with cystin crystals. The total weight of the twelve stones was 14 gm.

Following this, a series of roentgenograms of both kidneys and ureters was made, one stone being found in the left kidney and two in the right with both ureters negative (Figs. 2 and 3).

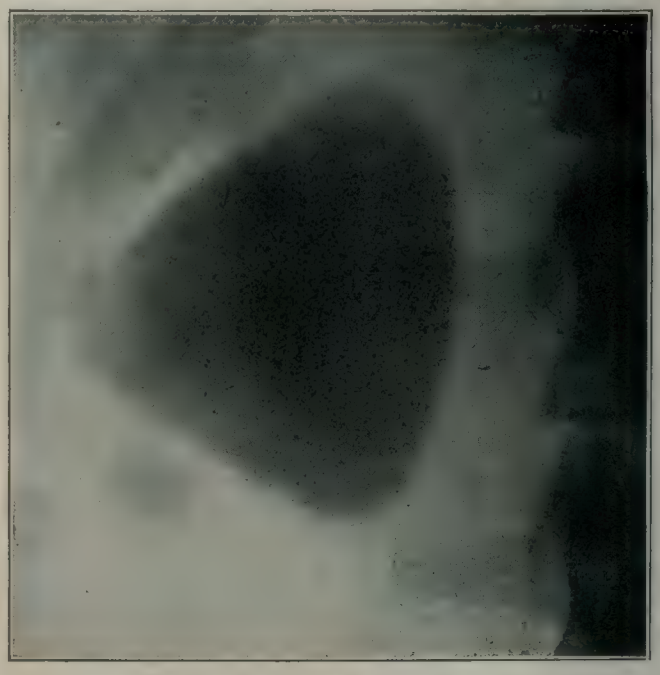


Fig. 3.—Cystin stones in right kidney.

Plans were then made for the removal of the stones from both kidneys. Feb. 12, 1922, a blood chemistry and phenolsulphonephthalein test was made for the purpose of operating on the better functioning kidney first. The phenolsulphonephthalein test resulted in elimination of 20 per cent. from the left kidney in thirty minutes, and less than 5 per cent. from the right kidney in the same length of time.

At this time her weight was 108 pounds (49 kg.), and she was complaining of weakness and sleeplessness, with a drawing sensation in both flanks when urinating, but without smarting and burning. There was constant pain and soreness in the area over both left and right kidneys and in the back, and constipation had prevailed since the first operation. She had been on a limited protein diet, hoping by this means to curb further cystin concretions.

She returned to the hospital, February 14, and a stone was removed from the pelvis of the left kidney through an opening in the kidney pelvis. This was quite difficult, owing

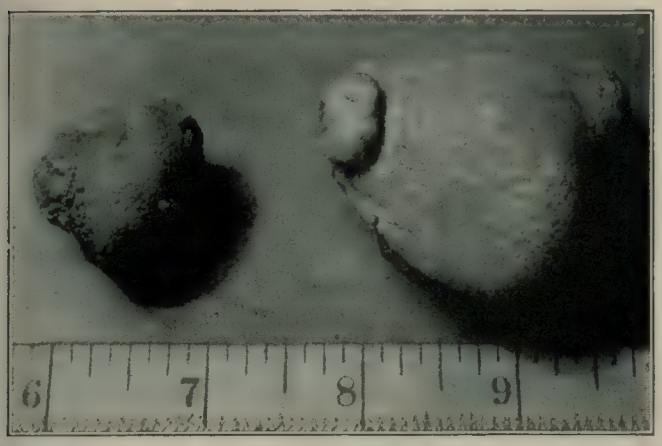


Fig. 4.—Cystin stones from right kidney, weighing 50 gm.; smaller cystin stone from left kidney, weighing 9 gm.

to the size of the stone, and a piece of fascia and fat was used as a flap to cover this rent in the pelvis after it had been sutured with plain catgut. Drainage was used and continued for ten days, the incision finally closing on the fourteenth day. The patient returned to her home on the seventeenth day.

Although thirteen stones had already been removed from the right ureter and the left kidney, a problem was still present in this case, because of the large and medium sized stones remaining in the right kidney, and a right renal efficiency which had been very low.

The left kidney was now coming up to its normal functional test, however. April 22, the patient was again placed in the hospital for her final operation, and the same Mayo incision was made on the right side as had been made on the left, care being taken to duplicate the curve in order that there might be symmetry in the scars. The right kidney was then exposed.

In this instance it proved necessary to remove the two stones from the cortex of the kidney, as these stones were located in this portion of the right kidney. A vertical incision was made from the convex border on the posterior aspect down to the pelvis. The cortex here was but one-fourth inch in thickness, owing to the enroachment of the stones on the parenchyma.

Delivery of the stones was easily made, the capsule sutured with plain gut, and drainage instituted as before, the patient leaving the hospital, May 1, eight days after the operation. All discharge disappeared after the thirteenth day (Fig. 4).

Only once during any of the operations did the temperature go above 101, and this occurred on the third day after the appendectomy and the simultaneous removal of the ureteral stones. This fact would suggest that operation in cases of cystin calculi can be done with reasonable safety, since cystin calculi are due to perverted metabolism and are not associated with or the product of infection.

The left kidney stone weighed 9 gm., the right kidney stones, 50 gm., and the right ureteral stones, 14 gm., a total of 73 gm.

Since the third and last operation, I find that the urine still carries heavy deposits of the cystin crystals. Three major operations on a woman, aged 21, for the removal of fifteen large stones, involving both kidneys and one ureter, constitute, in my judgment, a complex surgical problem.

Empire Building.

AN UNUSUAL CASE OF TRAUMATIC URETHRAL STRICTURE*

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The treatment of injuries to the urethra is one of the most interesting fields of the surgery of the genito-urinary tract, and it is well recognized that there are few cases which require a nicer choice of operative procedure and, especially, more careful postoperative treatment, if satisfactory and permanent results are to be obtained. In most of these cases, the diagnosis is, of course, self-evident, and the extent and location of the injury can be accurately determined by simple diagnostic methods, so that the indications for operation are usually quite definite. The aim of the operation should, of course, be complete restoration of function with a minimum of scar tissue formation. Cicatricial contraction along the course of the urethra is very difficult to prevent, and it is the chief cause of the disappointing results which so often follow operation in this type of case.

When a recent injury to the urethra is first seen, it is most important to determine, as far as possible, the exact extent of the injury and any existing complications. Injury to the urethra, however, is usually accompanied by injuries to other nearby structures, and, in the majority of cases, instrumental examination is quite impossible. Prompt operative interference should be undertaken at once to control the spread of extravasation; attempt should be made to repair the torn urethra, and ample provision for drainage must be provided.

The after-care of the wound requires constant and painstaking attention, if one is to avoid excessive formation of scar tissue, which so often leads to dense traumatic strictures of the urethra. Infection must



Fig. 1.—*a*, excision of margins of fistulas and intervening septum; *b*, closure of vesical orifices of fistulas in two layers.

be actively combated, and every effort must be made to establish normal flow of urine through the urethra and to avoid a persistent perineal fistula, which, together with infection, is one of the most important factors in the production of scar tissue. Frequent irrigations of the perineal incision and of the fistula with the new mercurial antiseptic solutions, such as mercurochrome-220 soluble or potassium permanganate, has, in our experience, led to a much more rapid healing

* From the Brady Urological Institute, Johns Hopkins Hospital.

of the incision and closure of the fistula, provided, of course, that the urethra has been properly repaired.

In cases of long standing traumatic stricture, great care must be exercised to obtain as much preoperative knowledge as possible in regard to the nature and the extent of the injury. In most of these cases, however, the urethra will be found to be impermeable, so that instrumental examination and endoscopic and cystoscopic studies are impossible, and the operator must be guided almost entirely in his choice of procedure by the operative findings.

Most commonly, a constricted, tortuous urethra is found at operation, the extent of the stricture depending on the injury and on the amount of scar tissue present. In these cases, increasing difficulty in urination, and sometimes complete obstruction, is invariably present. Incontinence following trauma to the urethra results usually from a very extensive injury which has involved both the internal and external vesical sphincters, with either destruction of these sphincters or their fixation in scar tissue. A recent unusual case of incontinence following extensive injury to the urethra, in which the true cause of the incontinence was not recognized prior to operation, presented many unusual and instructive features, and the excellent result obtained is an illustration of what can be accomplished by the proper choice of operative procedure and by painstaking after-care. This case has already been briefly reported by Dr. Young,[1] but the later history of the case is so instructive that a more detailed report has been undertaken.

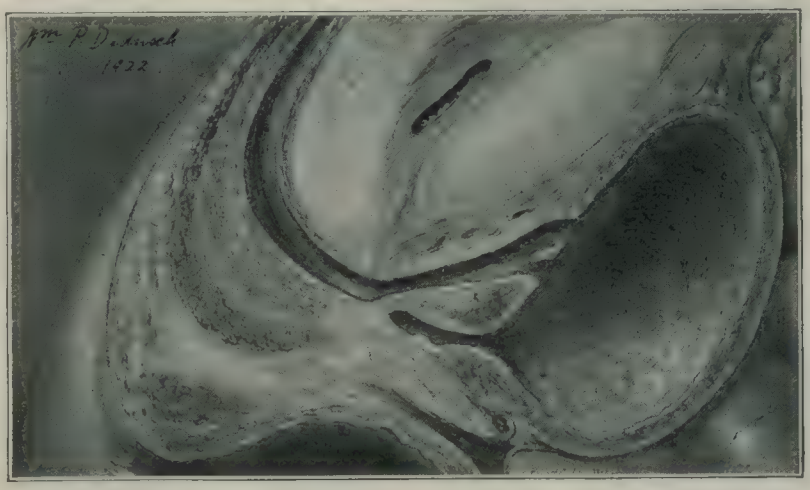


Fig. 2.—Longitudinal section showing preprostatic medical urethral fistula with two orifices in the bladder; obliterating stricture at the apex of the prostate.

REPORT OF CASE

History.—J. F., referred, March 17, 1922, complaining of incontinence of urine following an injury sustained three years previously, gave no history of venereal disease and had never had any urinary symptoms prior to his injury. In November, 1919, while following his occupation as telephone lineman, a pole fell with him, with a resultant fracture of the right ischiopubic ramus and severe injury to the perineum. An external urethrotomy was done immediately, and the bladder was drained by a perineal tube. A persistent perineal fistula and complete incontinence of urine resulted, so an external urethrotomy was performed in May, 1921. As a result of this operation, the perineal fistula closed temporarily, but incontinence persisted. The fistula, however, soon reopened and for the last four months the patient had had increasing difficulty in starting urination, with overflow incontinence. During this time, he had been using a catheter almost daily and had noticed more and more difficulty in introducing it. Sexual power had been destroyed as a result of the accident.

Examination.—The patient was a sparely nourished but healthy looking man. No abnormalities were revealed on general physical examination. The external genitalia were normal. In the perineum, there was a broad scar midway between the anus and the scrotoperineal juncture, in the center of which was a raised projection of granulation tissue about a small fistula.

On rectal examination, no abnormalities were noted except marked adhesions and infiltration about the membranous urethra and the apex of the prostate.

A catheter met some irregularity in the prostatic urethra but finally passed, and found 300 c.c. residual urine. The bladder was filled with thorium solution, and the cystogram revealed a large dilated bladder, with regurgitation of the solution into the posterior and anterior urethra. With the patient standing, the fluid dribbled out of the urethra, and he was in no way able to control it.

On cystoscopic examination, study of the vesical orifice revealed a smooth and normal outline anteriorly, to the left and posteriorly. On the right side anteriorly, an irregular cleft was seen, and it was possible to draw the cystoscope out into the urethra for a distance of several centimeters and still get a good view of the surface. Numerous ridge-like projections were seen in this cleft, the whole giving the appearance of an old contracted scar. The trigon was not seen. The bladder mucosa, aside from slight trabeculation, was normal.

As a result of the cystoscopic findings, it seemed evident that as a result of the accident, the internal sphincter had been torn completely through on the right side of the orifice.

Operation.—Suprapubic cystostomy was undertaken, March 23, 1922, with the object of repairing the injury to the internal sphincter. With the bladder opened, two orifices were immediately encountered on the anterior bladder wall, separated from one another by a thick bridge of tissue. About 2 cm. below the lower orifice another opening was found, which was readily recognized as the true prostatic orifice. The trigon could now be seen in proper relationship, and the ureteral orifices identified and seen to function. These relations can be plainly seen in Figure 1*a*. With the finger in the true orifice, it was found to end blindly about 2 cm. from the surface. A large sound introduced through the urethra entered the bladder through the lower of the two anterior openings. This sound was gradually removed until its tip could be felt by the finger in the blind prostatic urethra, from which it was separated by a fairly thick septum of tissue. This septum was incised and the sound forced through, thus joining the anterior to the blind posterior urethra somewhere in the region of the apex of the prostate.

The urethra thus reconstructed was dilated to No. 30 F.; as much as possible of the scar tissue at the site of the junction was excised, and a large catheter was fixed in place in the urethra. The bridge of tissue between the two anterior openings was then excised and the fistulous tract followed down to the urethra, with which it was continuous in the region of the apex of the prostate. This tract was then excised as thoroughly as possible with knife and curet, and closed, as shown in Figure 1*b*, by two layers of chromic catgut. The placing of the deeper sutures would have been impossible without the use of the boomerang needle, described by Dr. Young.[2] The bladder was then closed in the usual way about a large tube.

Outcome.—The postoperative convalesence was somewhat slow, but urination without obstruction and with perfect con-

1. Young, H. H.: The Operative Cure of Incontinence of Urine, with Illustrated Cases, J. Urol. **8**: 361 (Nov.) 1922.

2. Young, H. H.: An Operation for the Cure of Incontinence of Urine, Surg., Gynec. & Obst. **28**: 84 (Jan.) 1919.

trol was established on the thirty-first day. The urethra was dilated at intervals. Following one of these treatments, a right epididymitis developed, which further delayed progress.

The patient was discharged, June 16, fifty-four days after operation, with the suprapubic wound still leaking small amounts of urine at intervals. He was able to void with perfect control and without difficulty about every four hours.

It was evident that, as a result of the accident, the urethra in this case had been torn completely across somewhere in the region of the apex of the prostate. At the same time, a tear had occurred in the bladder wall, the urine finding its way out through this avenue, and, in the process of cicatrization, this fistulous tract had become connected with the anterior urethra. In the meantime, the prostatic urethra had been completely obliterated by scar tissue. These relations can be best seen in Figure 2.

The subsequent history of this case is of especial interest, as it so well illustrates the difficulties which may occur from contraction of the scar tissue which had been left in the region of the membranous urethra.

At the time of operation, the question of the advisability of doing an external urethrotomy with resection of scar tissue was considered, but, on account of the duration of the operation and the probability that the urethral constriction could be controlled by subsequent dilation, it was considered best to do nothing further.

Subsequent History.—A few days after the patient arrived at his home, the suprapubic fistula closed, and the patient was in excellent condition for several weeks. He then began to experience increasing difficulty in urination, and the fistula reopened at intervals. The urinary stream became smaller and smaller, and the patient had several attacks of acute retention, which were relieved by the opening of the fistula.

He returned to the hospital, September 19. Examination revealed the presence of a small suprapubic fistula in the middle of the old scar. The patient was able to express a few drops of urine through the urethra by straining, but a filiform encountered a dense stricture in the region of the membranous urethra and could not be introduced into the bladder.

Second Operation.—September 20: External urethrotomy was performed in the usual manner, following the technic described by Cecil,[3] in which methylene blue is used as a urethral injection to faciliate the exposure of the tortuous urethral canal. The operation was rendered somewhat more difficult by the fact that the usual landmarks of the perineum were distorted by scar tissue. As much as possible of this scar tissue was excised, and the urethra was reconstructed over a large catheter introduced through the anterior urethra into the bladder.

Outcome.—Following operation, the patient made an uninterrupted recovery, and the suprapubic fistula closed firmly in a few days. After removal of the catheter on the seventh day, the patient was able to void a stream of normal size and force, and a small perineal fistula healed on the fifteenth day.

Cystoscopic examination revealed a normal prostatic orifice, with slight hypertrophy of the trigon. The ureteral orifices were normal, and the bladder mucosa showed slight trabeculation, with depressed scars in the region of the suprapubic incision.

The patient left the hospital on the twenty-fourth day, with suprapubic and perineal wounds firmly healed. He was able to void a good stream of urine at normal intervals.

In a letter received three months after operation, the patient states that he has had no further difficulty in urination, has normal control and has been able to take up his former work.

3. Cecil, A. B.: A Method of Performing External Urethrotomy in Impassible Strictures, J. A. M. A. **60**: 1606 (May 24) 1913.

COMMENT

This case was most instructive to all who saw the patient. The distressing nature of the injury had had a marked psychic effect on him which rapidly disappeared with the restoration of normal urinary flow. A permanent ultimate result was not obtained until the urethra had been freed by the excision of the excess of scar tissue by which it was constricted.

It is interesting to note that there had been a total destruction of the patient's sexual powers as a result of the accident. This phenomenon was probably caused by laceration of the nerves in the posterior sheath of the prostate and by direct injury to the verumontanum and ejaculatory ducts. Although the patient reported a distinct improvement, it seems probable that a complete restoration of normal sexual function cannot be expected, in view of the extensive injury which had been suffered by the prostate, ejaculatory ducts and verumontanum.

THE TREATMENT OF OLD, UNUNITED FRACTURES OF LONG BONES

WITH SPECIAL REFERENCE TO THE USE OF THE OSTEOPERIOSTEAL GRAFT *

HENRY BASCOM THOMAS, M.D.
CHICAGO

Of the great number of factors of importance in the technic of transplantation in ununited fractures of long bones, only four will be mentioned here:

1. The length of time which should elapse between the healing of a compound infected fracture and the time of transplantation.
2. A method of fixing a transplant in selected cases without screws, pins or suture.
3. The use of the periosteal-compacta transplant, or wafer graft.
4. The care of the hard ends of an old ununited fracture.

WHEN TO TRANSPLANT IN FORMERLY INFECTED WOUNDS

It is said that mild infection stimulates osteogenesis and thus favors repair; but the latent infection present in the majority of cases of healed compound ununited fractures threatens the success of transplantation. If it is not molested by trauma or operative interference, it generally gives no trouble and will remain latent even when it is situated within or extremely close to the operative field. If it is cut or torn into, however, it is liberated from its encapsulation, a flare-up results, and in most instances the operative repair is a failure.

During the war it was at first considered safe to open a formerly infected fracture defect for repair six months after closure of the wound; but in many cases in which operation was performed at the end of that length of time by what was believed to be a faultless technic, severe infection resulted. Therefore, the time was extended to a year, and as a further precaution the operation was performed in two stages. In the first stage the bed was prepared for the transplant in the fractured bones and the wound then closed. A few days later—usually five, if all went well—the

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second stage, the placing of the transplant, was done. If infection set in, the wound was opened wide and irrigated with surgical solution of chlorinated soda (Dakin's solution). It was found that the prospects of success were greatly improved if, before the first stage of the operation, a greater blood supply was gained by removing all scar tissue and sliding thick, well-vascularized skin over the area thus denuded.

A case in which operation was performed successfully in the presence of unrecognized encysted infection was a fracture of the ulna treated by a stage operation at Camp Upton in March, 1919. The tentatively prepared sutured wound remained clean, and the transplant from the tibia was successfully placed. Three weeks after the operation the patient was sent to Plattsburg, and the operator was transferred to Fox Hills. Four months later, after a wrestling match which resulted in

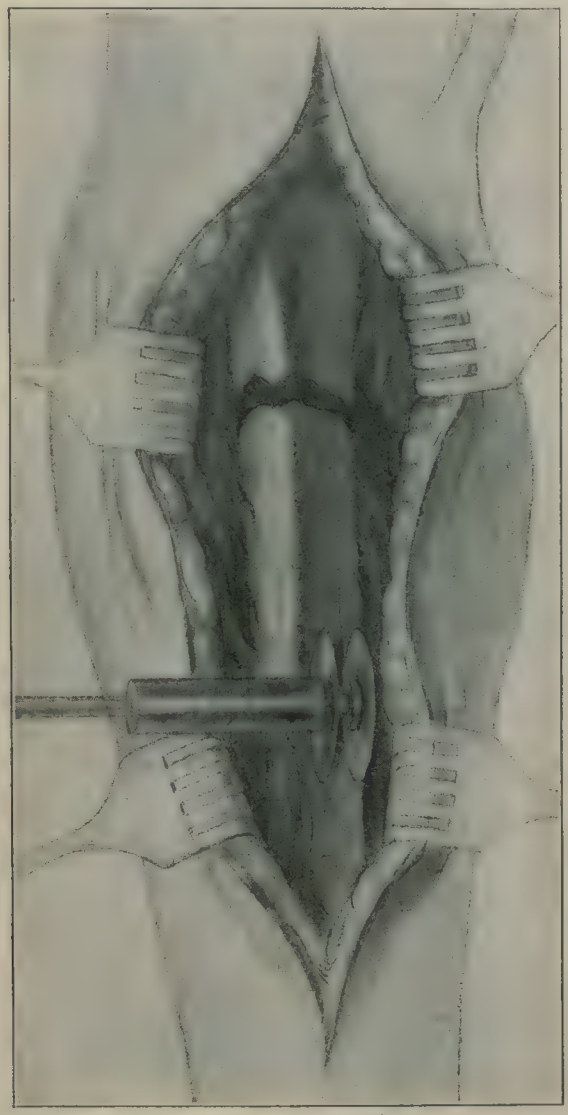


Fig. 1.—Double saw marking out the width of the proposed bed over and near the ends of the ununited fracture. The ebony bone has been only slightly disturbed in preparation. To remove this bone for the graft, the single saw is kept precisely on the guiding line so that the bed will be smaller than the graft. The graft is obtained by sawing on the outside of the guiding line. We could easily make a sliding graft here, using no bone from the opposite leg, but it would be loose-fitting, involving the use of screws, or wedges or pegs of bone for fixation, and would have the disadvantage of the presence of ebony bone. The wider tight-fitting bone from the opposite leg is therefore preferable.

fracture of the transplant in the arm and of the leg from which it had been taken, the patient was transferred from Plattsburg to Fox Hills. Exposure of the graft in a second two-stage operation revealed that one end was broken near its insertion in the radius. Very near this fracture, and within a quarter of an inch of the previous incisions, was a very small area of encysted pus which undoubtedly had been in the

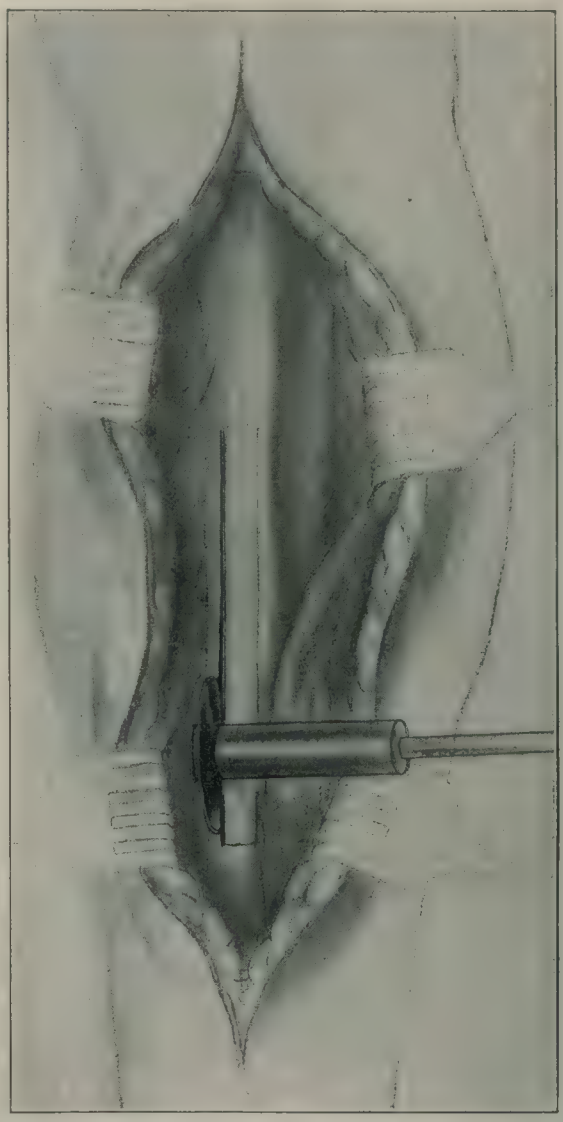


Fig. 2.—Single saw removing the graft as outlined by the double saw. The cuts are made outside the guiding lines. The cuts to free the ends and the opposite side will also be made in the same manner in order to make the graft larger in all dimensions than its bed.

field at the two previous operations but had not been disturbed either then or during the wrestling match.

After this experience, operation and manipulation in the preparation of transplant beds were restricted to the minimum. The ends of old fractured bones were no longer dug out, freed and exposed as formerly, unless this was strictly necessary. There was no cleaning away of old callus. One fourth of the surface of the bone was exposed very gently and with the least possible disturbance of the surrounding soft tissues and bone callus. By such a technic, virulent bacteria were not released, and the successful results of operative bone repair were greatly increased.

TRANSPLANTS IN SELECTED CASES FIXED WITHOUT SCREWS, PINS OR SUTURE

In the effort to reduce the trauma of the tissues to the minimum, attempts were made also to avoid the

boring of holes for sutures, pegs or screws with which to fix the transplant. In making the bed for the transplant, the exact size of the proposed graft was marked out superficially with the twin saw (Fig. 1), and these markings were followed exactly with the single saw (Fig. 2). In taking the graft we varied the technic by guiding the single saw along the outer border (Fig. 3) of the lines marked off by the twin saw. The resulting graft was therefore slightly broader than its bed, and could be forced into it so snugly that no further fixation was necessary. The success of this technic was particularly gratifying in those cases in which the ends of the fractured bones were old and hard, but in fair to good alinement. The hard bone made a bed with strong side walls between which the graft could be forced safely and tightly.



Fig. 3.—*A*, the slightly wider and longer graft, placed in its smaller bed, is wedged in; no screws, pegs or side chips are needed; *B*, removal of the periosteal wafer graft from the upper inner side of the tibia.

THE OSTEOPERIOSTEAL OR WAFER GRAFT

Of great value in stimulating osteogenesis, especially in the neighborhood of ebony bone, is the periosteal-compacta, or wafer graft, a graft of periosteum with a thin layer of the underlying bone. It was my pleasure to see Chutro use this method of bone repair when he worked in New York City for the government at the close of the war. The results in war wounds were most gratifying.

Such a graft can often successfully take the place of a bone transplant, thereby eliminating much trauma and decreasing the chances of infection.

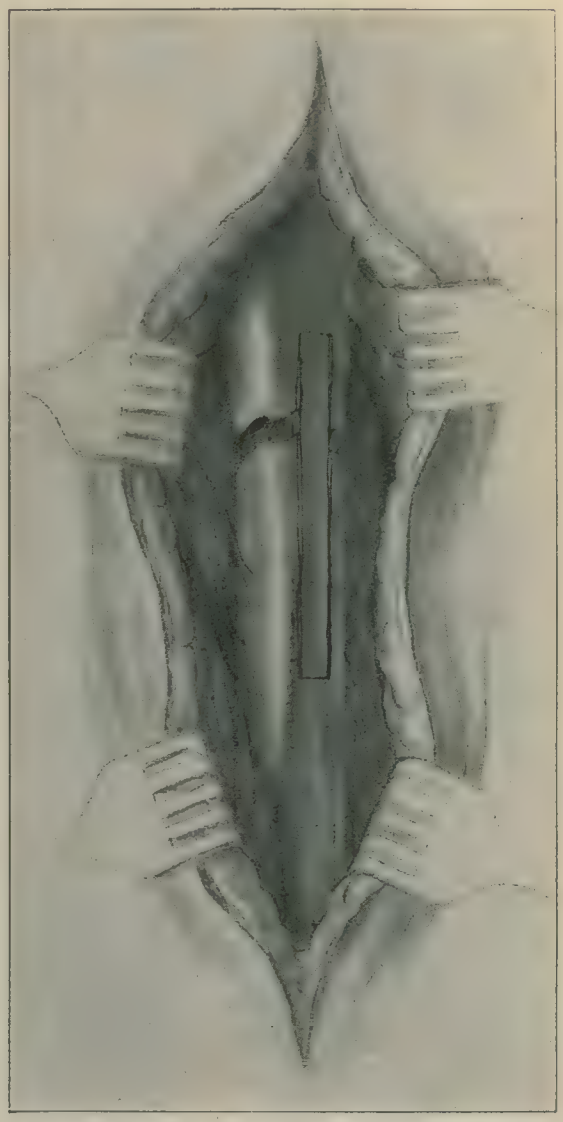


Fig. 4.—An insert placed in its bed. Insert was sawed by the same twin saw set exactly as it was in making the bed. The insert is loose and needs suturing, pegging or screwing. Note chips of bone placed between the edges of the bed and the transplant. Sutures and pegs are often employed also to immobilize when the graft is smaller than its bed.

According to Delagénière,[1] the idea of repairing losses of bony substance by means of a periosteal graft was due to Ollier, who reported a case of transplantation of a piece of tibial periosteum in 1835. Ollier failed to obtain the results obtained today because, in stripping the periosteum, he robbed it of some of its osteogenic cells, and placed it under abnormal physiologic conditions. In present practice a strip of the underlying bony tissue is taken with the periosteum.

An excellent area from which to obtain such a graft is the anterolateral inner side of the upper third of the tibia (Fig. 4). The outline of the graft is made with a bistoury, and the graft is then removed with a chisel,

1. Delagénière, H.: Repair of Loss of Bony Substance and Reconstruction of Bones by Osteoperiosteal Grafts Taken from the Tibia (with 118 New Personal Cases), Am. J. Surg. **35**: 281 (Sept.) 1921; Greffes ostéopériostiques: technique et applications, J. de chir. **17**: 305 (April) 1921.

its thickness being controlled by inclining the chisel more or less toward the center of the bone. Care must be taken not to hold the chisel obliquely enough to loosen the bony lining, or perpendicularly enough to penetrate the bony canal.

The graft may be laid over a bony defect, such as an ununited fracture with loss of bony substance, applied over and around the ends of a transplant where it is attached to the host bone, or placed over the entire transplant, including its body, so that it spreads over the area of lost bone and covers the ends of the transplant where they are fixed (Fig. 5). The wafer graft has been used frequently also for repair when the transplant bridging the gap between the fractured ends of two bones has been broken from one of its attachments or pulled out from a medullary bed. Instead of traumatizing the tissues in an attempt to unite the end of the transplant to the fractured bone, the graft is laid over the gap and, if it is easily done, applied also around the faulty area. The limb is then fixed by plaster of Paris.

Delagénière [2] states that in the roentgen-ray examination, after the graft has been put into place, the two bony extremities are first seen to be separated by a clear space. In about a month there appears a clouding, in the center of which is a bony track which resembles a twisted cord stretched between the fragments. In rapid cures the bone requires about two or three months to resume a normal outline; in slow cures, about six months. The new bone secreted by the graft takes the form of the graft. When ossification is complete, the new bone seems to resemble that which it has replaced. The clinical evolution of the case is equally interesting. After the operation, the skin and tissues have an inflamed appearance if the wound has not been drained. In a few days the inflammation is confined to the limits of the graft. The wound is then united as an ordinary wound, and the graft grows normally. If the wound is drained, all that flows out is a little blood mixed with lymph. In 200 cases in which this type of graft was used, Delagénière has not seen a single case in which the graft was absorbed.



Fig. 5.—The placed wafer graft of periosteum with its attached compacta. It covers the ebonized ends of the ununited fracture. It also covers the transplant as shown in Figure 3 *a*.

Imbert and Jourdan [3] state that in two pieces examined by them after twenty and thirty days, respectively, in cases in which the bony tissue and periosteum remained alive, the appearance of the transverse cut of the graft was somewhat like that of spongy tissue. The haversian spaces had small medullary cavities. The bony canals were often deprived of their osteoblasts, and the bony corpuscles were gone except near the periosteum. These medullary cavities were enclosed by numerous polykaryocytic cells in the sinus which fringed the cross section of bony canals. At certain points, veritable nests of these cells were found under the periosteum. It was evident that in the process of extracellular digestion, which appeared to be the activity of these cells, the inclusion of the bony débris completed the destruction of the tissue. Imbert and Jourdan believe that in the osteoperiosteal graft the bony tissue is, in a way, a regression. Simultaneously, a bony tissue of new formation appeared under the periosteum. The building activity of the periosteum was shown by the line of osteoid tissue of the new formation which appeared at the border of the subperiosteal bony canals, and also by the osteoblasts which, arranged in series, lined the edges of these canals.

Chutro [4] and Dujarier [5] use the osteoperiosteal graft with the segmentary graft in certain cases of injury of the humerus and femur. Mauclaire, Gosset and Willems recommend its use in cases of loss of bony substance not exceeding 3 cm. Leriche and Policard [6] state that the only cases in which it is contraindicated are those in which it is necessary to maintain rigidity to hold the reduced bones in place, as in the humerus and femur. For all other cases, they consider it the best of all transplantations. Of 254 cases reviewed by Ramsdell,[7] the results were successful in 237, and partially successful in eleven.

2. Delagénière, H.: Méthode générale et technique des greffes ostéopériostiques prisés au tibia pour la reconstitution des os ou la réparation des pertes de substance osseuse, d'après 188 nouvelles observations personelles, avec présentation de blessés, Bull. et mém. Soc. de chir. de Paris **93**: 2288, 1917; Des greffes ostéopériostiques prisés au tibia pour servir à la reconstitution des os ou à la réparation des pertes de substance osseuse, en particulier pour réparer les pertes de substance du crane suite de trépanation et les pseudarthroses des membres (41 observations), ibid. **42**: 1048-1076, 1916; Des greffes ostéopériostiques prisés au tibia pour la réparation des pertes de substance osseuse et la reconstitution des os: Méthode générale, technique, et résultats d'apres 159 observations, J. de méd. et de chir. prat. **89**: 81-88, 1918.

3. Imbert and Jourdan: Sur l'état d'évolution de tissu osseux dans les greffes ostéopériostées, Compt. rend. Soc. de biol. **82**: 115-118, 1919.

4. Chutro, M. P.: Quelques cas de greffes osseuses du tibia et de l'avant-bras, Bull. et mém. Soc. de chir. de Paris **44**: 1331-1337, 1918.

5. Dujarier, C.: À propos de 17 cas de greffes osseuses, Bull. et mém. Soc. de chir. de Paris **43**: 1389, 1917; Des pseudarthroses des deux os de l'avant-bras, ibid. **45**: 327, 1919; Des pseudarthroses du membre inférieur, ibid. **45**: 582, 1919.

6. Leriche, R., and Policard, H.: Résultats eloignés de 19 transplantations osseuses de divers types, Lyon chir. **17**: 428, 1920.

7. Ramsdell, E. G.: The Delagénière Bone Graft, M. Rec. **94**: 776, 1919.

McWilliams [8] analyzed all graftings reported in the literature, and the results as indicated by the replies to a questionnaire. A comparison of the various methods of bone grafting shows definitely that the procedure that gives greatest promise of success is the osteoperiosteal method. The advantages of the latter, McWilliams thus summarizes: (1) increased likelihood of success of the grafting; (2) greater simplicity of technic in obtaining the graft, there being no necessity for the use of complicated motor saws; (3) less liability of fracture of the tibia from which the graft is taken.

Forgue,[9] professor of clinical surgery at the Faculté de médecine of Montpellier, also recognizes the superiority of the Delagénière graft in the majority of cases.

Would it not be wiser to keep in mind the special importance and adaptability of both the osteoperiosteal and the rigid autobone graft, each in particular cases? In this connection I agree with the opinion expressed by Cuneo and Rouvillois,[9] who hold that these two forms of technic should not be allowed to exclude each other but should rather supplement each other, and that, in complex cases, the more rational solution would be to combine the two methods, and to proceed in stages as developments indicated.

We must employ both methods, but we must select the osteoperiosteal or the rigid graft or both combined, according to the demands of the particular case.

THE CARE OF THE HARD ENDS OF OLD UNUNITED FRACTURES

The idea that there must always be thorough denudation of old ends of bone and removal of all cicatricial tissue is wrong, dangerous, and very often fatal to the good result sought. Many poor results due to overcautious preparation of the hard ends of old ununited fractures have taught us to be satisfied with only fair alinement of the bones, and frequently no denudation of fresh bone in or around the area in which the wafer graft is to be used. The army results with such preparation surprised us by the absence of infec-



Fig. 6.—Appearance in case reported, Aug. 30, 1920, four and one-half years after injury: Bismuth paste in soft tissues; infection in paste area; deformity of united fibula; ebony bone in ununited ends of tibia; loss of tibial substance; gap of considerable size.



Fig. 7.—Appearance, May 23, 1921, eight months after operation: Paste is gone; one tight-fitting bone graft from the opposite leg was placed in one side of the tibia to bridge the gap; a wafer osteoperiosteal graft from the opposite tibia was placed over the transplant and over the gap between the ends of the tibia; the planned second transplantation to support the opposite side of the tibia was abandoned; wafer graft has covered the gap; the growth is on very hard bone; the ebony bone was not removed; it was denuded.



Fig. 8.—Appearance from same angle in same case, Feb. 21, 1922, eighteen months from time Figure 6 was taken and ten months from time Figure 7 was taken. Patient walks without crutch or cane; no motion can now be produced in the tibia. It must be admitted that either the transplant or the graft or both have grown firmly in and about the ebony bone, and that the space between the fractured ends of the tibia at least look as though it were filling in with good bone.

8. McWilliams, C. A.: The Values of the Various Methods of Bone Graftings Judged by 1,390 Reported Cases, Ann. Surg. **74**: 286-293 (Sept.) 1921.

9. The Thirty-First French Congress of Surgery, abstr. J. A. M. A. **79**: 1532 (Oct. 28) 1922.

tion and flare-ups, the great osteogenic stimulation exerted by the wafer graft, the ability of the wafer graft to become a part of the ebony bone, and the efficiency of the wafer-graft bridge in gaps, even when no autogenous transplant was used.

POSTOPERATIVE CARE

The operating room application of the splint following open reconstruction, which, in some cases, may include bone grafting of fractures, is frequently neglected, though it is of great importance. Many are convinced, however, that it is the ability and patience to observe these points in the technic that make or mar the results. Those who do not have the inclination to see the case through postoperatively should not undertake the operative treatment. An example of careless management was that of a case of fracture of the femur. Excellent coaptation and alinement had been obtained, and the dressings applied. The surgeon then walked out, leaving the plaster fixation of the leg, a very important part of the work—considered by some the most important—to his assistant. Moreover, as the operation was performed on an ordinary operating table instead of a fracture table, it was necessary to move the patient after the operation and before the application of the cast. When this moving was done, the screws of the metal plate were ripped out so that overriding occurred. In such cases the patient cannot be blamed if he refuses to submit to a second necessary operation by the same surgeon.

A case of fracture is selected for report because it is in itself an example of the methods and technic here considered:

1. The removal of scar tissue and the use of the sliding skin graft to provide nourishment for a prospective superficial bone graft, as for example, a graft placed in a tibia.
2. Closure of a persisting osteomyelitic sinus.
3. Care of ebonized ends of an ununited fracture.
4. The employment of an autograft without pegs, screws or sutures.
5. The utilization of the osteoperiosteal graft as a support for the autograft.
6. The problem of muscle and joint fixation following the transplantation.
7. The presence of latent infection near the operative field. Its flare-up without damage to the transplant or to the osteoperiosteal graft.



Fig. 9.—Healed right leg, with multiple scars, and left leg, from which bone grafts were taken.

REPORT OF CASE

History.—A man, aged 24, sustained a severe compound infected fracture of both bones of the right leg in April, 1916. In November, 1920, the patient appeared healthy, and walked on the left leg with the aid of crutches. There was a discharging sinus over the junction of the upper and middle thirds of the right tibia which was surrounded by a large area of scar tissue. Motion and loss of bone substance in the tibia were apparent. The fibula had healed with overlapping, shortening, and the characteristic bowing which follows loss of bone in an ununited tibia when the fibula is normal or nearly normal and longer than the tibia.

The roentgen-ray examination substantiated the clinical findings, and revealed a considerable loss of tibial substance and a large mass of bismuth paste encysted in the soft tissues.

The usual laboratory tests, including the Wassermann test and a coagulation test, were negative.

Treatment.—The sinus was injected with methylene blue mixed in bismuth paste to give it body. The use of antiseptics, as advocated at some of the army hospitals, is not considered safe. (The color guidance for thorough dissection is more important than the disinfection, offers no danger, and usually meets all requirements.) A local anesthetic was used.

The walls of the sinus were dissected out, and the encysted mass of paste was removed. The presence of infection necessitated the introduction of a drain posteriorly and through new tissue. The scar tissue was dissected out, the skin undermined, and a sliding skin graft applied. Closure was effected through the aid given by a second incision 3 inches medial and parallel to the first, which allowed freer and fuller sliding of the skin. The small drain placed posteriorly from the bed of the encysted paste was taken out the fourth day. Healing followed. The sutures for the closure were removed the ninth day. Primary healing resulted.

Instead of waiting a year after closure for the walling off of all latent infection, we performed the grafting operation four months after the closure. There was no bone infection.

An incision was made on the tibia, and the ununited fracture was exposed, but the ends were not dug out or freed from their scar beds. One of the beds for the proposed transplants across the gap between the ends of the tibia was outlined with the double saw, but sawed with the single saw, the tissue being disturbed as little as possible. The second bed, which was planned at first to bridge the other side of the bone separation, was not made. It was decided during the operation to defer this transplantation.

The question now presented itself as to whether the operation should be continued or the wound closed for a few days, as indicated in most war wounds.

The good condition of the parts favored a one-stage operation. Therefore, the transplant was measured and marked out from the other tibia with the double saw, but sawed out with the single saw, and the cuts were made just outside the twin saw marks. The transplant was then transferred to the bed in the fracture and forced into place. It fitted snugly and needed no other fixation.

A wafer graft, 2½ by 3 inches, was then taken from the upper inner surface of the left tibia and laid over the entire field of the graft, over the ends as well as the space between the fractured bones, and tucked over the crest of the tibia and its posterior border. One or two sutures were used to hold it down.

The dressings were so made and so placed that when the window was cut in the cast for inspection of the wound and removal of the stitches, the delicate superficially placed grafts were not disturbed. The wound was closed with due care and respect for the grafts, and healed by first intention.

The leg, including the foot and knee, was enclosed in a properly fitting plaster cast extending to the trochanter, the knee being slightly bent.

The building of the cast met the requirements of proper reinforcements to facilitate window cutting and stability.

The Flare-Up.—Three months after the transplantations, there were indications of infection. The cast was still on.

Roentgenograms gave no indication of any bone infection in or about the grafts, and clinical examinations indicated no trouble in the neighborhood of the incision. Tenderness, swelling and redness were found on the upper third of the inner side of the leg, and above the upper end of the graft incision on the side of the leg opposite the drain which had been placed to safeguard the bismuth paste injection.

As the graft appeared to be uninjured, it was determined to protect it by continued cast fixation and noninterference. The abscess was drained by two incisions made without the use of an anesthetic, and the cast, which had been carefully removed for examination, was replaced. Observation at daily careful dressings soon showed the disappearance of all suspicious signs indicating further infection, and the wounds were healed after a period of three weeks. Both grafts took perfectly, and steady improvement is reported with ever-increasing weight-bearing. The plan for the second transplant, opposite the first, has been abandoned, as the functional results make it unnecessary.

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EXPERIMENTAL HYDRONEPHROSIS

SIGNIFICANCE OF COMPENSATORY HYPERTROPHY AND DISUSE ATROPHY TO REPAIR *

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Evidence of some experimental work and a greater amount of speculation is found in the medical literature on the degree of recovery that may be expected from repair procedures in cases of hydronephrosis. The generally expressed experimental opinion is frankly pessimistic; and, while experimental results cannot be too closely applied to clinical problems, in this case they seemingly correspond. Technical difficulties and complicating infections are factors often held responsible by surgeons for many of their clinical failures, which have been so frequent that there is a pronounced reluctance to attempt the surgical repair of hydronephrotic sacs. The experience of persistent urinary fistulas and the occasional necessity of later nephrectomy is a real discouragement to one conservatively minded, and forms the chief argument of the radical class for an initial nephrectomy. Ureteropyeloplastics, pyeloplications, lateral ureteral anastomoses, ureteropyeloneostomies, nephrocystoneostomies, pyelorenal orthopedic resections, and other plastic repair procedures have fallen into general disfavor.



Fig. 1.—Normal kidney of a dog, injected with collodion preparation: How distention of the calices will strangle and pinch the arterial branches coursing between them. Ureter and pelvis, light; arterial tree, dark.

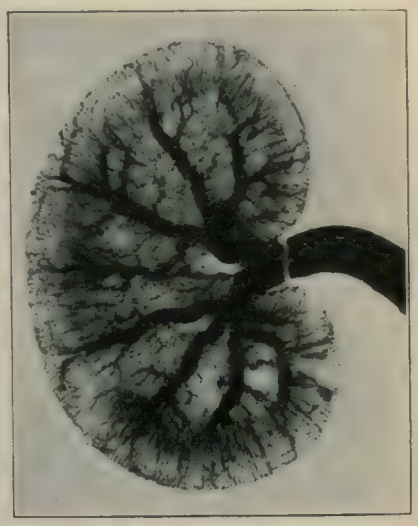


Fig. 2.—Roentgenographic appearance of normal kidney of a dog after barium sulphate injection of arterial tree, showing the remarkably rich blood supply to the cortex; for comparison with Figures 3 and 4, in which the kidneys were injected with the same pressure and similar solution.

The problem of repair in hydronephrosis has interested me for many years, and in this time sufficient experimental and clinical data have accumulated to give an entirely new outlook on the subject and to establish that a pathologic and physiologic principle is involved which is fundamental and has been heretofore insufficiently realized. It is my purpose in this paper briefly to present some experimental work indicative of this fundamental principle.[1]

The experimental investigation of the recovery, both functional and anatomic, of a hydronephrotic kidney after the obstruction causing it has been removed has not been extensive. Anatomic recovery obviously is of the first importance, as without it there cannot be any lasting recovery of function, and, in order to have any sort of a control of the findings, complete ureteral obstruction rather than partial obstruction, which is not possible of uniform application and may be therefore quite variable in its effects, is required. There have been, however, several valuable contributions relative to the effects of partial obstruction on function and the behavior to diuretics.[2] Complete obstruction of the ureter gives fairly uniform results in experimental animals, so that one has with it a basis for comparison in a repair series. But too close an analogy to clinical hydronephrosis cannot be taken, as the latter almost invariably follows partial or intermittent types of obstruction. Furthermore, it is questionable whether one can consider the hydronephrotic atrophy of partial and complete block even as relative, for anatomically similar degrees of dilatation will not show analogous histologic changes, though the differences are slight. A kidney with complete obstruction may be more injured both functionally and anatomically than

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1. Complete experimental results, with protocols and bibliography and consideration of related clinical problems, will shortly be presented in the form of a monograph entitled "Renal Counterbalance." An experimental study of this subject was presented at Washington, May 3, 1922, before the Association of Genito-Urinary Surgeons, and is published in the transactions of that meeting.

2. Keith and Snowden, Keith and Pulford, Hermann, Lepine and Porteret, Lindemann, Schwartz, Filchul and Ruschaupt, Brodie and Culles. The reader is referred to the monograph for the bibliography.

one with only a partial hindrance to urinary outflow, even though in gross appearance there is a similar degree of dilatation and atrophy. Nevertheless, there is a sufficient similarity between the experimental and the clinical conditions to render of interest all experimental results.

The few investigations of this particular problem fall into one of two groups. In one group the opposite kidney has not been disturbed in the course of the repair experiment, but has been allowed to hypertrophy and thus compensate for the total loss of function of the side with a completely occluded ureter. This compensatory hypertrophy must later have a considerable influence on the process of repair after the ureteral obstruction is removed. In the other group, the opposite and compensatory kidney has been removed either at the time of the ureteral repair or at some time later, thus throwing at once the complete load of total renal work on the injured repair side. This sudden and often overwhelming burden is a very unphysiologic test of repair possibilities. In the accompanying table are listed, according to this grouping, the actual experiments which we have been able to find reported that have been performed for the purpose of testing repair after hydronephrosis. It will be seen that the results do not offer very much encouragement to the conservative surgeon. Donati rather indefinitely concludes that the usefulness of the conservative treatment of hydronephrosis is not great, and Rautenberg's eighteen experiments apparently show that the repair parenchyma is not viable, but that the injury of even a fourteen days' obstruction is that of a true progressive toxic degeneration with ultimate destruction similar to nephritis. Johnson found that kidneys, the obstruction of which had been removed within two weeks, regained their normal structure except for varying amounts of atrophy in the lateral portions, and that these repair kidneys also regained the ability to compensate for the

DURATION OF PERIOD OF REPAIR

Name of Experimenter	Animal Used	Duration of Complete Ureteral Obstruction	Ureteral Transplantation to	Group 1 Opposite Kidney Undisturbed	Group 2 Nephrectomy	Group 2 Ureteral Ligation	Group 2 Resection	Group 2 Subsequent Period	Result	Comment
Donati	12 rabbits, 2 dogs	10 to 100 days	Bladder	.....	.....	.....	.....	.....	.....	In 11, a fragment from kidney removed for comparison with late result
Amas	Rabbits	14 days	Skin	35 days	.....	.....	.....	.....	Killed	Opposite kidney showed no change
Bortzel	Rabbits	21 days	Bladder	15 hours	.....	.....	.....	.....	Killed	Studied excretion of toluidin blue; repair of ability to excrete it up to 20 to 30 days
		21 days	.....	15 hours	.....	.....	.....	.....	Killed	
		22 days	.....	17 hours	.....	.....	.....	.....	Killed	
		22 days	.....	24 hours	.....	.....	.....	.....	Killed	
		27 days	.....	48 hours	.....	.....	.....	.....	Killed	
		31 days	.....	68 hours	.....	.....	.....	.....	Killed	
		40 days	.....	68 hours	.....	.....	.....	.....	Killed	
Hinman	White rats	14 days	Bladder	146 days	.....	.....	.....	.....	Killed	Studied reaction to intravital stain, diamin blue and anatomic changes of repair
		60 days	Bladder	119 days	.....	.....	.....	.....	Killed	
		60 days	Bladder	165 days	.....	.....	.....	.....	Killed	
		95 days	Bladder	99 days	.....	.....	.....	.....	Killed	
		120 days	Bladder	116 days	.....	.....	.....	.....	Killed	
		120 days	Bladder	92 days	.....	.....	.....	.....	Killed	
Rautenberg	Rabbits	21 days	Bladder	24 days	.....	.....	.....	.....	Killed	
		42 days	Bladder	34 days	.....	.....	.....	.....	Killed	
		42 days	Bladder	70 days	.....	.....	.....	.....	Killed	
		45 days	Bladder	86 days	.....	.....	.....	.....	Killed	
Bradford	Rabbits	11 to 40 days	Bladder	7 to 50 days	.....	.....	.....	.....	Killed	
Ederlein	Dogs	After some time	Bladder	At various periods	.....	.....	.....	.....	Killed	Quoted by Rautenberg
Latcham	Dogs	14 days	Bladder	311 days	.....	.....	.....	.....	Killed	
		14 days	Bladder	326 days	.....	.....	.....	.....	Killed	
Corbett	Rabbits	24 hours	Bladder	.....	8 days	.....	.....	Not stated		
		6 days	Bladder	.....	7 days	.....	.....	Not stated		
		*22 days	Bladder	.....	Same time as ligature removed	.....	.....	37 days	Killed	
		*23 days	Bladder	.....	Same time as ligature removed	.....	.....	55 days	Killed	
Fiori	Rabbit	28 days	Bladder	.....	.....	At same time	.....	26 hours	Died	
	Rabbit	90 days	Bladder	.....	.....	10 days	.....	7 days	Died	
	Dog	160 days	Bladder	.....	At same time	.....	.....	9 days	Died	
Rautenberg	*Rabbits	14 days	Bladder	.....	9 days	.....	.....	49 days	.....	Living
		15 days	Bladder	.....	19 days	.....	.....	9 days	Died	
		16 days	Bladder	.....	15 days	.....	.....	49 days	Died	
		21 days	Bladder	.....	11 days	.....	.....	5 days	Died	
		21 days	Bladder	.....	23 days	.....	.....	26 weeks	Died	
		*21 days	Bladder	.....	22 days	.....	.....	1 year	Died	
		21 days	Bladder	.....	28 days	.....	.....	3 days		
		*22 days	Bladder	.....	31 days	.....	.....	1 year	.....	Living
		28 days	Bladder	.....	24 days	.....	.....	2 days	Died	
		29 days	Bladder	.....	16 days	.....	.....	2 days	Died	
		42 days	Bladder	.....	155 days	.....	.....	4 days	Died	
		42 days	Bladder	.....	.....	74 days	.....	4 days	Died	
		42 days	Bladder	.....	.....	74 days	.....	4 days	Died	
		42 days	Bladder	.....	117 days	.....	.....	4 days	Died	
Donati	Rabbit	10 days	Bladder	.....	.....	15 days	.....	16 days	Died	
	Rabbit	14 days	Bladder	.....	.....	16 days	.....	3 days	Died	
	Rabbit	.....	Bladder	.....	.....	.....	½ kidney	6 days	Died	
	Rabbit	.....	Bladder	.....	.....	.....	½ kidney	4 days	Died	
	Rabbit	24 days	Bladder	.....	35 days	.....	.....	4 days	Died	
	Rabbit	40 days	Bladder	.....	15 days	.....	.....	3 days	Died	
	Dog	70 days	Bladder	.....	136 days	.....	.....	24 hours	Died	
	Dog	80 days	Bladder	.....	160 days	.....	.....	2½ days	Died	
Johnson	Rabbits	3 days	Bladder	.....	5 days	.....	.....	23 days	Died	
		* 7 days	Bladder	.....	16 days	.....	.....	40 days	Killed	
		*14 days	Bladder	.....	35 days	.....	.....	152 days	Killed	
		17 days	Bladder	.....	14 days	.....	.....	9 days	Died	
		19 days	Bladder	.....	3 days	.....	.....	4 days	Died	
		19 days	Bladder	.....	18 days	.....	.....	3 days	Died	
		21 days	Bladder	.....	11 days	.....	.....	6 days	Died	

* Animals successfully surviving opposite nephrectomy.

loss of their opposite healthy partner as measured by phenolsulphonephthalein; but it took forty days for a seven-day and 152 days for a fourteen-day hydronephrosis thus to regain normal function. These kidneys, however, had been subjected to a sudden and almost overwhelming burden at the very onset of their repair periods. In our own experiments on rats, the repair nodules developing after the removal of sixty days' obstruction were insignificant in comparison to the needs of the animal, although anatomic evidence of considerable recovery was present, and the behavior of these repair nodules to intravital stains evidenced a marked functional restoration.



Fig. 3.—Roentgenographic appearance after barium sulphate injection of the arterial tree of a forty-two day hydronephrosis (dog): The kidney has been cut sagittally after injection, but before roentgenography, so as better to show the blood supply of the two portions; the same injection pressure and similar solution as in Figure 2 were used; extravasation into the parenchyma from rupture of middle artery is seen; capillary supply is very limited.



Fig. 4.—Roentgenographic appearance after barium sulphate arterial injection of a forty-two day hydronephrosis three days after ureterocystoneostomy, showing a remarkable revascularization on relief of ureteral and intrapelvic pressure; capillary supply, in comparison to that of kidney in Figure 3, is surprisingly reestablished.

THREE GROUPS OF REPAIR HYDRONEPHROSIS

The great objection to most of this experimental work is that it deals with short-time experiments. The evidences of repair, both functional and anatomic, must have a certain basis of permanence to be of value; and, while Rautenberg's contention of the regressive changes of repair is well taken, we differ with him in the explanation of this progressive degeneration. Our point of view may be best expressed by a consideration of repair hydronephrosis in three groups in place of two.

1. *Ureterocystoneostomy with Nephrectomy.*—If the ureteral obstruction is removed after about fourteen days or less, and opposite nephrectomy is performed, there will be a certain number of animals which will fully recover and the repair kidney not only regain normal function but so hypertrophy as to care for total function. We have successfully performed this experiment in cats. The success or failure is proportional to the absence or degree of infection present in the hydronephrosis at the time of the repair procedure, and Rautenberg and Corbett have reported successes even after twenty-one, twenty-two and twenty-three days' complete ureteral block (as shown in the accompanying table).

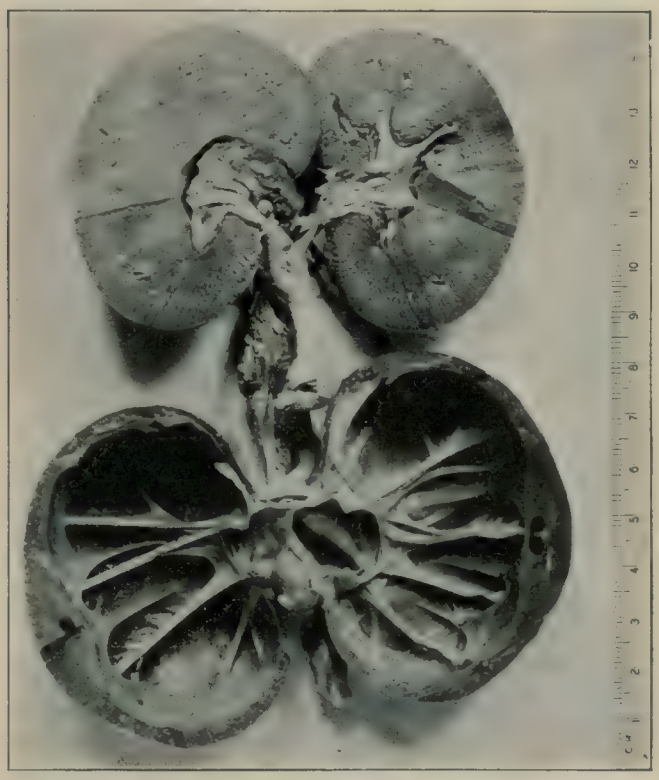


Fig. 5.—Gross specimen of a thirty-day hydronephrosis after complete ureteral obstruction in a dog; the opposite hypertrophic kidney is shown; for comparison with Figures 6 and 7.

2. *Ureterocystoneostomy Without Nephrectomy.*—If, in these short-time hydronephroses, the opposite kidney is not removed or in any way disturbed at the time of the ureterocystoneostomy, and the animal is killed after a relatively long interval of repair, say from one to two years after ureterocystoneostomy, the repair

kidney will be found to have undergone various degrees of atrophy and necrosis, the least when infection is absent and marked when infection is present; but, provided there was a healthy kidney on the opposite side to start with, the repair kidney will never be anatomically or functionally its equal.

In the long-time hydronephroses, from thirty to sixty days, these differences are much exaggerated. None of these animals will survive opposite nephrectomy. Examination of such animals, in which the opposite kidney has not been disturbed, say in from one to two months after ureterocystoneostomy, i. e., early in the repair period, will disclose a complete compensatory hypertrophy of the healthy side and varying degrees of repair of the hydronephrotic side, which may often be considerable. If, however, these animals with a thirty-day hydronephrosis and an undisturbed opposite kidney, as stated above for short-time hydronephroses, are killed from one to two years after ureterocystoneostomy, this kidney, which previously showed considerable repair, will be found invariably to have undergone complete atrophy and degeneration. This atrophy corresponds to Rautenberg's progressive toxic degeneration, which, if a true pathologic condition, should be uninfluenced by alterations or changes in the opposite kidney.



Fig. 6.—Gross specimen of a thirty-day hydronephrosis in a dog 360 days after ureterocystoneostomy: Complete atrophy has occurred; only a few atrophic glomeruli remain; the ureter is freely patent.

3. *Ureterocystoneostomy with Gradual Destruction of the Opposite Kidney.*—In a third group, if the opposite kidney is gradually injured, as by a partial ureteral block, at or shortly after the time of ureterocystoneostomy so as slowly but progressively to shift the burden of renal work from the healthy compensatory side to the injured repair side, a most wonderful readjustment will be found to take place, and in from one to two years, instead of a complete atrophy of a thirty-day hydronephrosis, a complete compensatory repair has occurred, and the opposite kidney, which was the compensatory side in the beginning, has itself undergone complete destruction from hydronephrotic atrophy.

By way of illustration of this very instructive experiment, attention may be drawn to the accompanying illustrations. The importance of blood supply is demonstrated by injected specimens as shown in Figures 1, 2, 3 and 4. Simple thirty-day hydronephrosis in a dog is shown in Figure 5; a repair of such a thirty-day hydronephrosis when the opposite kidney is undisturbed, as it appears three days after, in Figure 4, and as it appears 360 days after ureterocystoneostomy in Figure 6; and a repair of a thirty-day hydronephrosis 390 days after ureterocystoneostomy when the opposite ureter has been partially obstructed at the time of ureterocystoneostomy in Figures 7 and 8. The difference in these kidneys of the same period of complete ureteral obstruction (thirty days) is striking. Figure 5 shows hydronephrotic atrophy (thirty days); Figure 4 shows the early repair (three days), and Figure 6 the late atrophy (360 days) of such a hydronephrosis when the opposite kidney is undisturbed; whereas, in contrast, Figures 7 and 8 show the remarkable counterbalance 390 days later of such a hydronephrosis when given the proper opportunity and stimulus.

COMMENT

The foregoing experimental studies not only confirm the fact that renal reserve and compensatory hypertrophy effect a counterbalance following unilateral nephrectomy, but also demonstrate that in unilateral diseases without nephrectomy an additional factor, which may be termed renal competition, is active in the final anatomic readjustment. There is created by the unilateral lesion an unequal ability to work; one side is healthy and active, the other diseased and less active. Activity is just as essential to renal growth as exercise is to muscle hypertrophy. A gradually increasing demand for more work stimulates renal tissue to greater activity, and results in renal hypertrophy. So, too, inactivity is just as significant to renal atrophy as to muscle atrophy, and a diseased renal mass in competition with a hypertrophic mate gets less and less stimulation as the other side becomes more and more efficient, and this progressive inactivity leads to a disuse



Fig. 7.—Specimen in the experiment illustrating renal counterbalance: The small kidney had a complete obstruction of its ureter for thirty days, and was then the duplicate of the kidney shown in Figure 5; the ureter was then transplanted to the bladder, and the patent ureterovesical orifice is shown with a white straw projecting out of it; five days later a rubber band was placed around the lower end of the opposite ureter belonging to the healthy and compensatory kidney so as partially to obstruct it; the animal was killed 390 days later, having been in perfect health and shown normal renal function by repeated retention and excretion tests.

renal atrophy. Furthermore, just as overexercise of muscle leads to muscle atrophy, so an overwhelming demand for work produces renal inactivity, and renal atrophy would result and be demonstrable if it were

not for the occurrence of early death from renal insufficiency in these experimental cases.

The conception of renal reserve power and compensatory hypertrophy, on the one part, and of renal competition and disuse atrophy, on the other, is important for thorough consideration in contemplation of renal surgery. Their significance in relation to repair operations is obvious. Such procedures throw a hitherto



Fig. 8.—Same kidneys shown in Figure 7 after bisection: Remarkable reparation of cortex and medulla of the thirty-day hydronephrosis is obvious, as is the complete hydronephrotic atrophy of the opposite and earlier compensatory kidney.

inactive injured and inefficient renal mass into direct competition with an active and hypertrophic fellow already accustomed to and thoroughly capable of doing all the renal work. The initial response on the diseased side to the changed condition for better work is one of repair, but this tendency is too feeble to withstand the strain of active competition. Stimulation of its latent reserve power is insufficient to effect a permanent hypertrophy of its remnants. The final atrophy is not wholly a progressive toxic degeneration, as Rautenberg believes, but largely an atrophy of disuse. This difference would seem to be proved by the fact that inhibition of the capable hypertrophic kidney by means of partial obstruction of its ureter, which gradually increases the stimulus given the diseased side, prevents the late atrophy of this diseased kidney, and produces, instead, a remarkable compensatory repair which appears in every way capable, permanent and healthy.

One can conclude that the bad results of repair procedures in hydronephrosis are not always due to technical failures. The fundamental principles of compensatory hypertrophy and disuse atrophy must be taken into account. Attempts to repair a unilateral hydronephrosis in the presence of a complete compensatory hypertrophy on the opposite side are always doomed to failure, and success is uncertain even with a partial compensation of the healthy side in case the diseased side has been much injured or infected, or the repair procedure in any way imperfect. In bilateral disease, conservative surgery is always indicated; but in view of the necessity of repairing the two kidneys in two separate operations, the second operation cannot be safely delayed for too long a period because the initial repair operation may have placed this kidney in such favorable conditions as to allow it to undergo complete compensatory hypertrophy, and an atrophy of the unoperated side from gradually increasing inactivity would then surely result.

516 Sutter Street.

Clinical Notes, Suggestions, and New Instruments

A NEW SPLINT FOR FRACTURED PATELLA

H. C. MASLAND, M.D., PHILADELPHIA

Splints for the fractured patella have been generally unsatisfactory. The adhesive plaster used in making traction on the bones must pull on the skin and the soft tissue before it starts to draw on the bone. There is, in consequence, a redundancy, a wrinkling and compression of the soft tissues in the area between the broken fragments. The correct application of the splint here illustrated will give a direct grip and pull on the bones, while the superficial soft tissues can be drawn from under, both above and below the clutches. This gives a sufficiently taut superficial tissue covering the patella to prevent encroachment between the bones, which can be manipulated to coax out any synovial membrane that might be caught between them.

As a preliminary, the splint should be trued. It can be placed on a table or other flat surface. The upright arms are placed vertical, and opposite their respective mates. The thumb screws should be tightened, clamping the arms rigidly to the side arms in this position. The cross arm should be left free until the splint strips are adjusted to the width of the limb. The middle section of the side strips can be bent above the clutch brackets to fit a large thigh diameter.

The plaster on the leg should extend above and below the maximum diameter of the calf. This prevents lengthwise slipping. In none of my splints do I use padding of any description under the plaster. Mechanically, padding allows

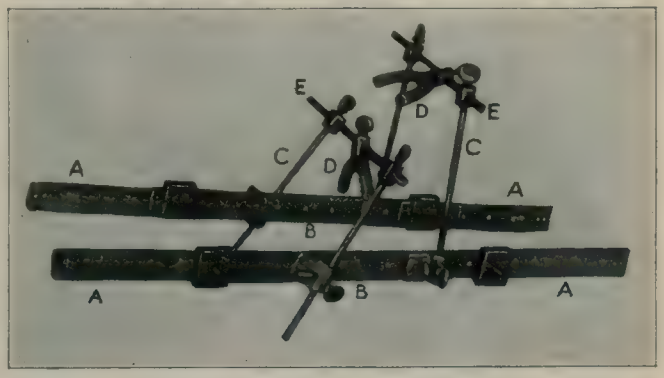


Fig. 1.—*A*, end splint sections; *B*, middle splint sections; *C*, side bracket arms; *D*, patellar clutches; *E*, cross arms.

some slip. It also sweats and macerates the skin, and encourages ulceration.

Each side splint is in three sections. The end sections are buried in the plaster on the leg and the thigh. The parts attached to the middle section should be left exposed. The middle section can thus be removed completely, or disconnected at either end from the end sections. When the side splints are in place, the thumb screws are freed, that the clutch may be moved up and down and lengthwise. The clutch is freed to move on the cross arm, and the jaws of the

clutch are bent to engage, but not to pinch, the edge of the patella.

The jaws are caught with the thumb and index fingers of one hand, and serve as would the thumb and finger of that hand. With the thumb and index finger of the other hand, and the clutch following immediately after, the skin and soft tissue are coaxed away and the bone drawn into position. The lower fragment is adjusted first, as the patellar ligament gives this a stable position. As soon as a clutch holds a bone

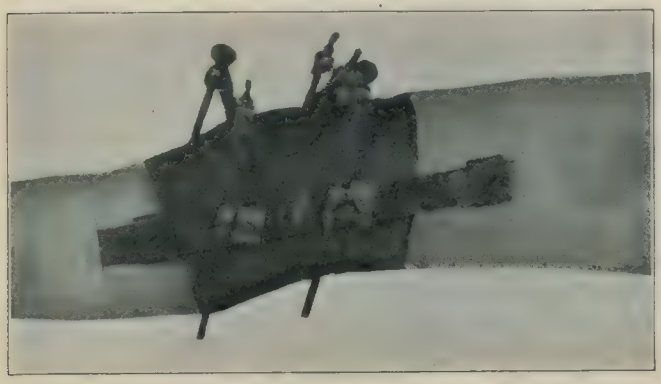


Fig. 2.—Splint in usual position.

properly, all its thumb screws are made tight, so that the clutch cannot move in any direction. The clutch can be used either in a vertical position, catching the bone with its ends, or in a more horizontal position, engaging the bone over a greater area. In cases in which considerable traction is exercised, varying the position will relieve the pressure.

It cannot be emphasized too strongly that the prompt reduction of any fracture is most important. Treated early, most fractures can be reduced as to both anatomic and functional position. In cases of delayed treatment, it may prove beneficial to use continued elastic traction on the upper clutch. This operates to exercise compression and ultimate absorption of the intervening plastic tissue. Elastic traction can be applied by attaching rubber bands or tubing to the cross arms at the side brackets and drawing downward by attaching the other ends of the bands to the side splints. This operates best when the brackets on the splints are placed to give a vertical



Fig. 3.—Splint disconnected at thigh junction to permit passive motion.

direction to the side arms, and the side splint brackets are left free to permit a forward movement. This absorption of new tissue by compression was beautifully illustrated in a case of downward dislocation of the scaphoid and cuboid, unreduced twenty-three days after injury. I succeeded in causing the absorption of the soft tissue and the reduction of the dislocation.

If a fracture is completely reduced and held in this position one week, the soft tissues will have so bound the parts that subsequent retention is easy. I am convinced that early passive movement of the joints will yield normal function almost if not quite as quickly as bone reconstruction.

Figure 3 illustrates how the joint can be manipulated by simply freeing the sleeves that bind the middle section to the thigh section of the splint. The clutches are not disturbed in their grip on the patella. As the patellar ligament holds the patella in fixed lengthwise relation to the tibia in flexion or extension of the limb, so the splint mechanism, being rigidly attached to the tibia, maintains a similar lengthwise relation. Naturally, the surgeon exercises due skill in this manipulation. He can perform it as early as his judgment indicates.

When an open operation is necessary, this is a good fixation splint. The middle section can be removed during operation. It can then be reapplied, and without disturbing dressings or handling the limb, we have full immobile extension.

This splint can be used for certain fractures of the olecranon process. Here, we would use but one clutch, bending the jaws to engage the fractured process.

2130 North Nineteenth Street.

ELECTROCARDIOGRAPHIC FILM EXAMINING ILLUMINATING BOX

MORRIS H. KAHN, M.A., M.D., NEW YORK

Heretofore, it has been customary for physicians reading electrocardiographic films to hold them up to the artificial light and move them back and forth. This position is not conducive to accurate analysis, and is not practicable for demonstration to a class.



Illuminating box for electrocardiographic films.

The illuminating box that I have perfected for the reading of electrocardiographic films is essentially analogous to that used for the reading of roentgenograms, except that the light here, which is in the upper compartment, is reflected from an inclined mirror placed on the floor of the cabinet. Vent openings are placed to the rear of the upper compartment. With this arrangement, the film may be studied for a considerable time without perceptible heating.

The accompanying illustration shows the translucent glass plate over which the film is inserted. The two drawers are a convenience: one to contain the electric cord and the other for the measuring instruments and magnifying lens.

The apparatus was manufactured at my suggestion and perfected with fine architectural skill and excellent finish by Mr. Samuel Katz of 48 West Forty-Sixth Street.

I have used the apparatus with great satisfaction in demonstrating electrocardiographic films to a large number of physicians and students at one time.

140 West Sixty-Ninth Street.

Artificial Pneumothorax.—Artificial pneumothorax is not a new method of treatment. In 1822 Dr. James Carson of Liverpool suggested its use in the treatment of disease, and the previous year he made a series of experiments showing the effects of artificial pneumothorax on the circulation. It was noticed that patients in whom spontaneous pneumothorax occurred did well, but little is heard of artificial pneumothorax until the end of the last century. Caley treated a case of hemoptysis at the Middlesex Hospital by this means in 1885, and about this time Forlanini began to use the treatment in Italy. It was not, however, until the beginning of this century that it became at all extensively practiced.—Medical Research Council, London, 1922.

A DIFFERENTIAL SIGN IN ABDOMINAL RIGIDITY

C. FREMONT VALE, M.D., DETROIT

Abdominal signs and symptoms in diaphragmatic pleurisy have been emphasized times innumerable. Let us add chest injury to the pleurisy. There are few internists who have not placed the lesion in the peritoneal cavity, and few surgeons who have not operated in such cases for appendicitis or other acute abdominal condition—all of which means that the differential diagnosis is often extremely difficult.

It is hoped that the simple sign here described may be of value to some in such cases when rigidity is present. So far as I have been able to learn, it has not been mentioned in the literature. When the lesion is intrathoracic, the rigidity of the abdominal muscles momentarily relaxes at the end of expiration. This is typical, and is not present regularly at any other period of the respiratory excursion. When the lesion is intraperitoneal, the rigidity is usually constant; but, if intermittent, is not regularly so, as in the chest condition. When the signs are marked, there is also a pause often prolonged, between the end of inspiration and the beginning of expiration, with a rapid excursion.

This was first observed and is best demonstrated in traumatic chest conditions. Here it is often greatly exaggerated, and cannot be mistaken. The abdominal rigidity is so marked as almost or quite to equal the characteristic boardlike rigidity of perforated ulcer, and at first one feels sure that serious intra-abdominal injury has occurred. I operated in one such case, and my surprise at finding no injury led to the more careful study of this type of rigidity.

This sign has been observed in a great many traumatic cases, and fewer chest infections. So far we have not seen it fail. It is now used as a routine in the emergency department of Receiving Hospital as the main differential diagnostic sign.

613 David Whitney Building.

A SAFE METHOD OF ANESTHETIZING CHILDREN WITH ETHYL CHLORID

JOSEPH E. LUMBARD, M.D., NEW YORK

Ethyl chlorid is a serviceable anesthetic, though it has limitations. Its proper field is in the induction stage, as a preliminary to ether anesthesia for children. For adults, I have found that nitrous oxid is better; but it may also be used as an adjunct to ether for adults. Its greatest field is with children under 10 years of age. Most of the textbooks on general anesthesia rely on the loss of consciousness as the indication to stop its administration. This is too indefinite and dangerous.

PROCEDURE

To administer ethyl chlorid, a Yankauer mask is covered with eight or ten layers of gauze for children under 8 years of age, and from ten to fifteen layers for older children. The mask is placed over the mouth and nose, and the child is asked to count slowly. The ethyl chlorid is slowly dropped, never sprayed, over different parts of the mask, until the count becomes confused. Then the anesthetist immediately changes to ether as in the usual "drop ether" method. When children are too young to count, the cry is used as a guide, and the anesthetic switched at once to ether when the cry begins to diminish. Occasionally one will encounter children who neither count nor cry. This may be overcome by tickling the feet, pinching the skin of the neck, or pushing the jaw forward. At all times if there is any doubt as to the depth of anesthesia, one should switch to ether, and if it is not tolerated, simply add a few more drops of ethyl chlorid. My old anesthesia slogan applies here: "It is easier to add than subtract, when administering anesthetics."

One should be sure to use ethyl chlorid from a glass container having a good dropper attachment.

By this method we have a safe, simple, quick and easy way of using ethyl chlorid for children.

1925 Seventh Avenue.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 253)

[NOTE.—This is the fifth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

CARE AND FEEDING OF PREMATURE INFANTS

Preparation for the care and protection of premature infants, in order to insure them the best opportunity for survival, must be started with the first intimation that labor is to begin, if spontaneous; and, when labor is to be induced, the infant, as well as the mother, should receive the best thought of the physician. The infant must be protected from the dangers of refrigeration, skilled nursing care must be supplied, and it must receive a suitable diet.

PRESERVATION OF BODY TEMPERATURE

Even though the mother may be so situated as to receive proper attention in the home, if facilities for caring for the infant are not at hand, the confinement should be conducted in a properly equipped hospital.

Syphilis should be suspected as a possible cause in all cases of premature birth.

The labor should be conducted with the strictest attention to asepsis, because of the high mortality following infections in this class of infants. Every effort should be made to prevent chilling of the infant immediately after birth. Owing to the instability of the heat-regulating centers, the infant's body temperature is rapidly affected by its surroundings. It should be received in a heated blanket and placed in an improvised heated basket or incubator bed, as soon as possible after the cord has been severed. The face alone should be left exposed. Protection is best afforded by a cotton pack, or, better still, by woolen garments. A nurse or another person experienced in the handling of infants should be assigned to the care of the baby and give it her entire attention so that spells of asphyxia and cyanosis may receive the immediate attention of the physician. As a rule, the initial bath should be omitted until the infant, if it is a small one, has adapted itself to its new environment. Every effort should be directed to the prevention of overheating and burning infants, as they do not resist high temperatures to much better advantage than they do refrigeration, and they are easily burned; and burning, even though slight, would be associated with a high mortality. The room in which the infant is placed should be light and easily ventilated, without being cooled to a greater degree than may be desired. If the room temperature can be kept between 72 and 75 F., a well protected basket or crib can be temporarily heated to meet the infant's needs by surrounding it with hot water bottles placed a sufficient distance from and properly protected so that contact with the infant will be avoided. An electric pad protected by an insulated copper jacket will answer the purpose when placed under the pillow on which the infant rests. Suitably equipped obstetric departments are usually furnished with a heated bed as part of their permanent equipment. It is rarely necessary to surround the infant with a temperature greater than

from 85 to 88 F., and usually it can be reduced to 80 F. in a few days except in the case of the smallest infants. A thermometer should be placed alongside the baby under the robes used as a covering.

Aseptic nursing is imperative to the welfare of these small infants. This applies to linens, clothing, thermometers and also utensils used in the care of the baby. During the bath, whether by sponging or by tubbing, it must be protected from chilling and infection, and of equal importance is the prevention of scalding. The water should be tested by allowing the hand to remain in the water for at least thirty seconds before placing the baby in the bath tub, if it is to be tubbed. The baby should be bathed in a warm room. After the first dressing, all garments which come in contact with the body, except the napkin, should be made of a medium weight flannel, as the infant is best protected by woolen garments. As an outer garment it may be wrapped in a woolen blanket or one made from non-absorbent cotton between cheesecloth which has been quilted to protect it. A more permanent gown may be made of blanket material or eider-down in the form of a rectangle of sufficient size to surround the body and permit pinning over the feet. To this may be attached a smaller square at the top which will fold over the head and allow the face to remain exposed. A more permanent sleeping bag may be made of similar material. These have a disadvantage of requiring considerable handling of the infant for changing napkins and inspecting the genitalia. The most practical garments for the infant consist of a light-weight wool flannel undershirt with blind sleeves, so that the hands remain covered. Above this an overshirt of a heavier flannel or French piqué is to be worn. The extremities are wrapped in a flannel pinning skirt or blanket, fastened to the overshirt by small safety pins. The advantage of this type of clothing is that soiled napkins can be removed without exposing the upper part of the body, and the handling of the infant is at a minimum. A small pad of cotton should be placed inside the napkin so that the outer clothing may be better protected. The diaper should be changed as soon after soiling as possible, and this in itself will require regular inspection. It should therefore be dressed accordingly. The importance of properly clothing these infants becomes evident when consideration is given to the fact that they stand handling very poorly. As the infant becomes older, its clothing should be similar to those used in full term infants so that it may have freedom for its extremities. The position of the infant should be changed at stated intervals in order to prevent hypostasis.

WORK OF THE NURSE

The nurse should appreciate the requirements of her charge. She must be willing to make necessary sacrifices while the infant is passing through its first critical days, and must be properly instructed to meet the emergencies of asphyxia and to counteract the spells of cyanosis. These will require almost constant diligence. She must also be possessed of good judgment in the matter of feeding, in order to avoid both underfeeding and overfeeding. She must also be able to appreciate the indications for and the methods of administering catheter feeding, as well as the simpler methods by use of the medicine dropper or miniature feeding flasks. She should be instructed in the proper preparation and tubbing of the infant for its bath, the giving of low colonic flushings, and the application of artificial respiration.

FEEDING

The majority of prematurely born infants will not survive artificial feeding; therefore, the difficulty in the interpretation of the needs of the individual infant should lead to the conclusion that a supply of breast milk is imperative to fulfil the food requirements of these infants in order to insure a low mortality. The administration of the feedings offers no difficulties which cannot be overcome if the infant is viable, persistent vomiting is absent, and breast milk is at hand. No definite rules can be outlined as to the quantity to be given at each feeding, and the same statement applies to the interval between feedings. This statement implies that each infant must be fed to meet its *individual* needs.

For the purpose of feeding, premature infants must be divided into two large classes: (1) those able to nurse directly from the breast, and (2) those which will require hand feeding. If the infant is sufficiently developed to nurse from a well formed nipple, it should be placed at the mother's breast two or three times during the second twelve hours after birth and, following this, at three-hour intervals. The nursing period should, however, be short at first, beginning with two or three minutes at the breast, as this will soon educate the child to expect its food at regular periods. It will also help to stimulate the mother's breasts, as well as to develop the infant's sucking muscles.

During the first days, until there is sufficient flow of milk, the infant must receive its breast milk from another source. The necessity of an early supply of food cannot be overemphasized, as even the better developed infants do not withstand prolonged starvation. When a wetnurse is available and her infant is at hand, her baby can be used to stimulate the breasts of the mother, and the premature infant can be placed on one of the breasts of the wetnurse. In the case of very weak infants, the breast designated for its use can be made to secrete more freely by placing the wetnurse's baby on the opposite breast during the feeding period. As a weak infant may receive only a very limited amount of milk, even after a prolonged period at the breast, a proper scale is a necessary part of the equipment, so that it may be weighed before and after feeding. There is far less danger from overfeeding because a too rapid flow or an excessive amount usually results in regurgitation, and this can easily be remedied by shortening the period at the breast. The capacity of the stomach in some of the smaller infants, even though they are able to nurse at the breast, is such that shorter intervals may be necessary. They may be nursed at two or two and one-half hour periods.

FEEDING DURING THE FIRST DAY

During the first day, milk may be withheld for twelve hours until the respiratory and circulatory functions are well established. During the second twelve hours, from one to three feedings of breast milk may be started if the infant's condition warrants.

FEEDING FROM THE SECOND TO THE TENTH DAY

For practical feeding purposes, the second to the tenth days may be grouped as the second feeding period.

From the second day the infant should be fed regularly, day and night, the number and time of feedings depending to a great extent on (1) whether the food is given with or without the use of a catheter; (2) the gastric capacity, and (3) the infant's general condition.

Further fluids, preferably inert, such as water or 1 per cent. lactose solution, are administered to compensate for the loss of body fluids through the kidneys, bowels, lungs and skin. The infant requires about one sixth of its body weight of water, inclusive of that contained in the milk, in twenty-four hours while in the heated bed. Such quantities, however, should not be attempted on the first days; usually it will be possible to approximate one eighth of the body weight by the fourth day. The early feedings must necessarily be small, and the increases gradual.

Each infant must be fed individually, as it is impossible to formulate definite rules for feeding, at least during the first ten days. The physician must have a definite idea of (1) the minimal food requirements for life; (2) the amount of food necessary to maintain at least a stationary weight, and (3) the amount of food needed to meet the requirements for growth and development.

Approximately one seventh of the body weight of fluids and human milk of a food value of 70 calories per kilogram every twenty-four hours are required to maintain life. Little can be expected in the way of weight increase until 90 calories is reached; and, depending on the weight, body surface, and physiologic development, the later needs of infants will approximate from 100 to 140 calories per kilogram of body weight.

Infants, to fulfil all their needs, will therefore require from 140 to 200 c.c. of breast milk per kilogram, or from one seventh to one fifth of their body weight daily. They can, however, maintain life on 100 c.c., and hold their weight in most cases on 130 c.c. per kilogram.

Beginning (in most cases by the second day) with from 20 to 40 c.c. of human milk per kilogram of body weight, the quantity may be increased by from 8 to 15 c.c. daily per kilogram until, usually by the tenth day, feedings averaging from 80 to 140 c.c. per kilogram can be fed.

These feedings should, as rapidly as possible, be supplemented by water or sugar-water by mouth, or saline by rectum to meet the required 140 to 200 c.c. per kilogram of fluids required daily.

After the *tenth day,* in larger infants the milk can be increased more rapidly, usually by 15 and occasionally 20 c.c. per day, until from 140 to 200 c.c. per kilogram are fed, the methods of giving the food, as well as its frequency, being dependent on the general development of the infant.[12]

The *size of individual feedings* will vary with the method of feedings. When the infant is *catheter* fed, from six to eight feedings a day are given, with an average of from 4 to 6 c.c. for each feeding during the second day. The feedings are now increased daily by an average of 2 c.c. at each feeding. When feeding from the *bottle* or by *dropper* is employed, smaller feedings are usually given more frequently, usually from eight to ten daily, although twelve may be needed when larger feedings are not retained. Beginning with from 2 to 4 c.c., one may increase by 1 or 2 c.c. each feeding on each succeeding day, until from 140 to 200 c.c. per kilogram daily is reached.

The food and water to be administered should be noted in writing for the nurse's instruction each day, after a thorough inspection of the infant and its clinical chart.

12. One kilogram equals 2⅕ pounds; 30 c.c. equals 1 ounce; 4 c.c. equals 1 dram; 1 ounce of breast milk contains 21 calories; 100 c.c. of breast milk contains 70 calories.

The diet of a premature infant making a satisfactory gain in weight should not be changed arbitrarily without a well-defined indication.

Initial Weight Loss.—The lower the birth weight, the greater is the percentage of weight loss to be expected. Artificially fed infants lose more weight than breast-fed infants in whom the diet is started early. An average loss of not more than 8 to 12 per cent. of the birth weight may be considered satisfactory. By regular administration of inert fluids during the first days, the total loss can frequently be reduced to 5 per cent.

Daily Gains.—These are not necessarily in proportion to the changing quantity of milk administered, as many factors—the condition of the bowels, the quantity of urine passed, the temperature of the infant's surroundings, and numerous others — will necessarily influence the weight.

An average daily gain greater than 20 gm. is unusual when the infant's food is limited to one fifth of its body weight. Although occasionally an infant holds its birth weight, most infants do not regain their birth weight before the end of the second or third week.

In the very small premature infants, an average daily gain of from 10 to 15 gm. with a doubling in birth weight in from seventy-five to 100 days may be considered satisfactory. In the larger infants, a gain of from 15 to 20 gm. may be expected with a doubling in birth weight in from fifty to 100 days. The birth weight is frequently trebled within 180 days.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BACILLUS ACIDOPHILUS MILK-LEDERLE.—Whole milk cultured with *Bacillus acidophilus.* It contains not less than fifty million of viable organisms (*B. acidophilus)* per cubic centimeter.

Actions and Uses.—See Lactic Acid-Producing Organisms and Preparations (New and Nonofficial Remedies, 1922, p. 156). During recent years reports have been published which indicate that the growth in the intestinal canal of the normally present *Bacillus acidophilus* may be increased so as to make it the predominating organism by the administration of milk inoculated with *B. acidophilus,* by the administration of viable cultures of the *Bacillus acidophilus* in conjuction with lactose, or by the administration of lactose alone. The therapeutic value of the administration of cultures of *B. acidophilus* is still in the experimental stage.

Dosage.—For adults, 1,000 Cc. of bacillus acidophilus milk-Lederle per day, increased or decreased to meet requirements. When employed in infant feeding, it may be diluted with boiled water. Bacillus acidophilus milk-Lederle must be kept on ice and should be used within one week of the expiration date which appears on each package.

Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Whole milk is sterilized at 100 C. for 2 hours, cooled to 37 C. and inoculated with a twenty-four hour culture of *B. acidophilus.* After inoculation, the milk is kept at 37 C. for from 20 to 24 hours until an acidity is reached so that 10 Cc. will require for neutralization 11 Cc. of tenth-normal sodium hydroxide solution, using phenolphthalein solution as indicator. The product is then cooled to 5 C., agitated until homogeneous and transferred to 200 Cc. bottles, which are closed with seals. The strain of *B. acidophilus* used is one isolated by Rettger. To insure its adaptability to intestinal implantation, the bacillus is freshly isolated from intestinal contents as frequently as is necessary.

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SATURDAY, FEBRUARY 3, 1923

ANIMAL AND VEGETABLE PATHOLOGY IN RELATION TO HUMAN DISEASES

At the recent meeting of the British Medical Association, a special session was devoted to the relation of animal and vegetable pathology to human diseases.[1] Vegetable diseases, so far as we know, have no significance as sources of human disease, if intoxication with the products of fungus infection, as in ergotism, is excepted. These diseases do, however, offer many problems that are of importance as sources of information concerning human pathology. Thus, several plant diseases are produced by filtrable viruses. Much of our knowledge concerning these important pathogenic agents we owe to the discovery, made as long ago as 1892, that the mosaic disease of tobacco is produced by an invisible agent that passes through filters that are impervious to ordinary bacteria. Several infectious diseases of plants share with animal diseases the peculiarity of insect transmission, and in at least one of them, it seems, part of the life cycle of the ultramicroscopic organism is consummated within the insect host. Thus, the "curly top" disease of beets cannot be conveyed by the insect until several hours after the virus has been taken up, presumably because this period is required to accomplish a certain part of its life cycle. Although the filtrable viruses, in plants as in animals, are usually not microscopically visible, in some mosaic diseases bodies have been found that resemble such structures as Negri bodies, *Cytorrhyctes variolae* and *Rickettsia*. Even if plant infections are not transmissible to man, the plant pathologists can lay claim to having been first to show that a disease may be produced by a filtrable invisible virus, and that diseases may be transmitted by insects. They were first to show that either resistance or susceptibility to infection may be hereditary, and that this property may be transmissible in strict accordance with the mendelian principles, as Maud Slye claims for mouse cancer. However, despite many examples of natural immunity in plants, no examples are known in plant pathology of the conferring of artificial immunity by inoculation of a susceptible plant with a weak strain of an otherwise virulent parasite. Parasitic attack in plants is usually localized, and there is no mechanism for the circulation to other parts of the host plant of any antibodies that may be produced in consequence of this attack. Plants attacked by parasitic diseases not infrequently recover, but this is no guarantee against attack again in the immediate future.

In this country the important work of Erwin Smith on the crown gall disease of plants is well known. Notwithstanding the numerous points of resemblance which the lesions of crown gall bear to animal tumors, the British plant pathologists who participated in this discussion seem unwilling to accept the conclusion that it is established as a true neoplasm; hence observations on its etiology cannot be accepted as evidence as to the etiology of human neoplasms. Brierly says:

> The unbridgeable gulf between the morphology, anatomy, and physiological processes of animals and plants resulting from the complete divergence in their evolutionary sequences must be recognized. There is in animals nothing comparable with the rigid-walled cells of plants, and in plants nothing comparable with the blood vascular system, the lymphatic, alimentary, nervous, muscular, and skeletal systems. It is these characteristic features that give rise to and make possible the specific pathological responses associated with disease. Occasionally interesting but purely superficial general parallels exist; but to find exact analogies in development and structure, and even more to trace exact correspondences in the details of the morbid histology of diseased host tissues of animals and plants, and to reason from one to the other is to falsify and confuse every issue. These differences are fundamental, and comparative investigations can only have value if they are borne acutely in mind. The conclusion to which I am drawn from a comparative review of diseased states in animals and plants is that as regards the host tissue responses there is little if anything in common save the most general reaction of wound healing.

With animal diseases the matter is altogether different. Hobday recalls that even in Great Britain there are at least these infectious diseases of animals which are indisputably communicable to man: glanders, rabies, anthrax, tuberculosis, foot-and-mouth disease, cowpox, mange of all animals (horses, cattle, dogs and cats), ringworm (especially of the horse, calf, cat and mouse), and certain forms of seborrhea (such as blacksmiths contract from handling horses with greasy legs). To this group must be added, as diseases or infections common to the two, which animals may transmit to man, diphtheria, infections with *Bacillus enteritidis* and *Bacillus paratyphosus* B, tetanus, and gas bacillus infection, to say nothing of the numerous animal parasites, such as trichinae, echinococcus and the tapeworms. In this country we must also consider plague, Rocky Mountain spotted fever, Malta fever and infectious with *Bacterium tularense*. *Bacillus abortus* of Bang is also under suspicion as a source of contagion from cattle, and apparently is related to the organism that causes Malta fever, if not identical with it.

Glanders and rabies, two of the most horrible diseases that can affect man or beast, show what can be done by organized collaboration of the medical and the

1. Brit. M. J. 2:955 (Nov. 18) 1922.

veterinary professions. Each is primarily a disease of animals, and comes to man only from them. Let the veterinary scientist eradicate glanders from his patients of the horse tribe, and rabies from the canine race, and neither of these diseases will appear in man. As evidence of this, the story of rabies in Great Britain is most instructive. Aided by their island location and adequate laws, the energetic watchfulness of the veterinary officials of the ministry of agriculture kept Great Britain free from rabies for nearly twenty years; and until some thoughtless person committed the stupid and criminal offense of surreptitiously smuggling a dog (which happened to be infected and in the incubative stage) into the country, the much dreaded disease existed in that country only in name. The first case was reported in the district of Plymouth about May, 1918, and in 1919 alone 179 persons were bitten by animals in the scheduled areas, forty-six of them by animals proved to be rabid. It is a triumphant tribute to the memory of Pasteur that there have been no deaths in England from hydrophobia since his day.

The record of glanders is not much less brilliant. Twenty years ago, 2,370 horses were destroyed in Great Britain for glanders in one year, whereas in the first half of 1922 no case was reported. Not a single case of human infection from glanders was reported in the British army during the war, despite the great amount of contact between men and horses. The mallein test is entitled to a large part of the credit for virtually eliminating glanders as a human disease. The foregoing examples emphasize the importance of the development of the field of comparative pathology or, better, of comparative medicine, in order that all progress made in one branch of pathology may find its application in the other branches without fail and without undue delay.

GOATS AND MALTA FEVER IN THE UNITED STATES

According to a recent report,[1] goat's milk is being sold in a number of cities in the United States, usually as a fancy article and at a high price. It is consumed largely by infants and invalids, particularly by patients with tuberculosis. This may come as a surprise to readers who have never considered the fact that in some parts of the world the milch goat is a competitor of the dairy cow. The small quantity of milk that is used, chiefly by children, in the dry summer countries of Europe is largely supplied by goats, which can live on a poorer and drier diet than is possible for the cow. It was recently reported[2] that in the whole of Greece there are only 4,000 cows, most of them near Athens, goats being more important as a source of milk. Some varieties of milch goats in Mediterranean countries are said to give a greater amount of milk in proportion to their weight and food consumed than does any other milk producer. From the standpoint of chemical composition and nutritive value, in which it closely resembles the mammary secretion of the cow, goat's milk has much to recommend it. For some time, however, it has been known that this fluid may carry the infectious agent of Mediterranean, undulant, or Malta fever. How this disease, due to *Micrococcus melitensis* of Bruce, disappeared from Gibraltar, pari passu with the disappearance of Maltese goats, has become an instructive chapter in the history of preventive medicine.[3] That Malta fever is spread chiefly through the use of goat's milk was clearly established in the reports of the British commission for the investigation of the disease. Before the conclusions of this commission were announced in 1905-1907, this common mode of infection was not appreciated. Our present knowledge makes the prevention of the disease a comparatively simple problem. The infection should be eliminated from goats; but until this is done, all milk from this species should at least be pasteurized before being applied to human dietary uses.

That the United States is not free from the menace of Malta fever was made clear by the investigations of Gentry and Ferenbaugh[4] of the U. S. Army, who reported in 1911 that the disease had in all probability been present for a quarter of a century in the older goat raising sections of Texas. This endemic center embraced an area approximately 300 miles along the Rio Grande, extending 90 miles to the north. Serologic tests on more than 100 goats gave positive reactions for the organism of Malta fever in about one fifth of these animals. The human patients gave a history of drinking unboiled milk, or were associated with the goat-raising industry. Even today the menace continues. Surgeon Lake[1] of the U. S. Public Health Service has reported fully a recent outbreak, of which mention was made several weeks ago in THE JOURNAL. More than thirty authentic cases were discovered at Phoenix, Ariz., and Lake concludes that conditions favorable for the existence and spread of Malta fever are present in all the southwestern states. He asserts that goat's milk is being sold in a number of cities in the United States. As Malta fever, according to the government experts, has in all probability existed in Texas for at least thirty-six years and in Arizona for at least fourteen years, and absolutely authentic cases have been known in Texas since 1911 and in Arizona since 1912, effective measures for prevention are clearly called for. Lake suggests that the prohibition of the sale of goat's milk in cities where an ample supply of cow's milk is available should be seriously considered by health officers. Where it is necessary to allow the sale of goat's milk to secure sufficient fresh milk, efficient pasteurization under constant supervision by

1. Lake, G. C.: Malta Fever in Southwestern United States, Pub. Health Rep. **37**: 2895 (Nov. 24) 1922.
2. Smith, J. R.: The World's Food Resources, New York, Henry Holt & Co., 1919, p. 249.
3. Bruce, D.: Osler's Modern Medicine **3**: 17, 1907.
4. Gentry, E. R., and Ferenbaugh, T. L.: Endemic Malta Fever in Texas, J. A. M. A. **57**: 889, 1045, 1127 (Sept. 9, 23, 30) 1911.

the health authorities should be required. If such a provision seems unduly drastic, it should be recalled that from the clinical symptoms alone the disease may remain unrecognized for a long time or may be confused with other infections. It is particularly insidious in infants. Consequently, prophylactic or preventive measures need to be doubly exacting; and the goat certainly is not indispensable as a source of milk in this country.

THE BILE AND PANCREATITIS

Although the phenomena of the occurrence of pancreatitis have been extensively observed and made the subject of exhaustive reports, the actual cause of the disease still remains one of the unsolved problems of pathology. Various sorts of experimental interference with the normal functions of the pancreas may lead to pathologic conditions and symptoms characteristic of pancreatitis; in fact, the agencies that lead to these manifestations may be so varied and seemingly unrelated in character that this fact of itself has served to confuse the student of the subject. At one time it seemed as if the entrance of infectious micro-organisms through the duct of Wirsung must be the predisposing cause of pancreatitis, whether acute or chronic. Some writers are strongly of the opinion that the possible infecting organisms are brought to the pancreatic tissue by way of the lymphatics. Such views were formulated at a time when bacteriology was the favorite domain from which to recruit the causes for obscure diseases. There seems to be little doubt, however, that cases of hemorrhagic pancreatitis occur in which infection has not been demonstrable despite careful search.

Other theorists have charged to trauma the stasis of the pancreatic juice, the acute inflammation of the gland and the consequent escape of enzymes held responsible for the fat necrosis. Experimentally, this outcome has followed injections of quite unlike substances into the ducts of the pancreas. By others, who perhaps constitute the majority of the writers on this subject, particular emphasis has been placed on the etiologic importance of gallstone and gallduct disease. They postulate a reflux of bile into the pancreatic duct, with the consequent sequence of familiar untoward symptoms. An elaborate investigation of such a possibility has been completed recently at the Mayo Foundation laboratories by Mann and Giordano.[1] They studied the relationship of the common bile duct to the pancreatic duct and their mode of entrance into the duodenum in man in order to determine the percentage of instances in which there would be an anatomic basis for the foregoing hypothesis. The data conclusively prove that the number of instances in which the anatomic arrangement in the relationship of the two ducts would permit bile to pass into the pancreatic duct is very small. The other possibility that the sphincter at the duodenal end of the common bile duct could contract and convert the two ducts into a continuous channel has been investigated. Here, too, it is shown that in most instances in man the sphincter is located at a point at which contraction will close both ducts and will not convert them into a continuous channel. In a very small percentage of instances a small bundle of muscle fibers is found in a position where possibly it could convert the two ducts into a continuous channel.

Even when sterile bile is introduced into the pancreatic duct at a pressure comparable with the maximum that might be expected in the common bile duct, the resulting damage was in no case identical with typical hemorrhagic pancreatitis. Indeed, on careful investigation the indications are that reflux of bile into the pancreatic duct is at most rarely the cause of the disease. This negative outcome of the search should not disappoint or discourage the investigator. It is a step in advance when one knows what not to expect. He can then look farther.

1. Mann, F. C., and Giordano, A. S.: The Bile Factor in Pancreatitis, Arch. Surg. **6**: 1 (Jan.) 1923.

NEW FACTS ABOUT SALICYLATES

The widespread use of salts and other derivatives of salicylic acid in medical practice, as well as by the undirected layman, justifies the conviction that these drugs have therapeutic potencies of real worth. Their vogue is not merely a passing fad stimulated by popular advertisements or some other temporary device of exploitation. The compounds of salicylic acid continue to retain recognition, not because their pharmacology has been clearly formulated, but rather because somehow they seem to "produce results." For this reason it is interesting and all the more provocative of further study to learn how the traditional or assumed explanations of therapeutic reaction are being shattered by the results of current investigations. Thus the claims made for a superiority of the "natural" salicylates derived from oil of wintergreen or oil of sweet birch versus the "synthetic" manufactured in the chemical laboratory have been negatived in the extended investigation of the subject undertaken under the auspices of the Council on Pharmacy and Chemistry of the American Medical Association.[1] Hewlett,[1] who summarized results of a clinical investigation (carried out by physicians with hospital facilities who had been supplied with "natural" sodium salicylate and "synthetic" sodium salicylate in such a way that they did not know which of their samples were "natural" and which were "synthetic") reported that there is no difference between the natural and the synthetic product so far as observable results are concerned. The natural salicylic acid has been many times as expensive as the synthetic.

1. Waddell, J. A.: A Comparative Investigation of the Effects and Toxicity of Sodium Salicylate of Natural and Synthetic Origin, Arch. Int. Med. **8**: 784 (Dec.) 1911. Eggleston, Cary: The Relative Value of the "Natural" and the Synthetic Salicylates, J. A. M. A. **59**: 2057 (Dec. 7) 1912. Hilpert, W. S.: The Purity of Commercial Sodium Salicylate, ibid. **60**: 1137 (April 12) 1913. Hewlett, A. W.: Clinical Effects of "Natural" and "Synthetic" Sodium Salicylate, ibid. **61**: 319 (Aug. 2) 1913. Report of the Council on Pharmacy and Chemistry: Natural and Synthetic Salicylates, ibid. **61**: 979 (Sept. 20) 1913.

Salicylic acid is known to be inhibitory to bacterial development. Consequently, it seemed likely at first glance that the salicylates exert some antiseptic effect on micro-organisms that have invaded the tissues, as is the case in some of the rheumatic fevers. The bactericidal action of salicylic acid is far more pronounced than that of salicylates, in vitro. The newer studies, already reported [2] in THE JOURNAL, indicate clearly, however, that the reaction of the body fluids, even in localities where foci of bacterial invasion may affect the immediate environment of the bacilli, is never adequate to insure a hydrogen ion concentration requisite for the development of bactericidal power from salicylates. In other words, it is impossible for the free acid to occur in the tissues or body fluids in sufficient concentration to exert any marked bactericidal action.

Again, it has been conceived that the salicylates may increase the resisting power of the body by stimulating the formation of immune substances. In this way the drug might have a most potent influence in lowering the vigor of the etiologic microbial agents in cases like rheumatic fever. Swift [3] has been unable to substantiate such an hypothesis. When animals injected with *Streptococcus viridans* were treated with sodium salicylate, they showed diminished complement-fixing antibodies, agglutinins and hemolysins, compared with the untreated controls. Swift therefore frankly asserts that the beneficial effects of sodium salicylate in rheumatic fever patients probably cannot be attributed to an increased production of circulating immune substances against the infectious agent. It is a significant fact that few if any drugs or chemicals are known definitely to enhance the formation of immune substances in the organism, although the records of attempts in this direction are so few as to make any generalizations at present unjustified, if not hazardous. Many substances are, of course, well known to depress immune substance formation.

The antiphlogistic effect of salicylates in the polyarthritis of rheumatic fever remains undenied; and their antipyretic action, due to an increased loss of body heat in febrile patients, is clearly demonstrated through Barbour's [4] researches. Swift reminds us that from clinical observations alone it would seem that salicylates either lower the infectivity of the etiologic agent of rheumatic fever by a direct action on the virus, or increase the ability of the body to react against infection. For the latter alternative the evidence is now unfavorable. The drug may, of course, have a bacteriostatic power. Swift properly points out—and this should be clearly emphasized—that the facts at hand offer no contraindication to the administration of salicylates to patients suffering from infectious diseases. There is nothing in his experimental findings to indicate that the salicylates are deleterious in infection simply because they decrease immune substance formation. The decreases observed were never profound; and the salicylated animals always still produced some immune substances. It is probable, Swift adds, that the latter in the circulating fluids are not the only factors concerned in the process of recovery. The same mechanism, he concludes, that makes an infectious agent less antigenic might, at the same time, make it less pathogenic. It is possible that this effect may be more marked in rheumatic fever than in other infections; hence the more striking effect of the drug seen in this disease.

2. Clinical Effects of "Natural" and "Synthetic" Sodium Salicylate, Current Comment, J. A. M. A. **61**: 352 (Aug. 2) 1913; "Natural" and Synthetic Salicylates, ibid. **61**: 968 (Sept. 20) 1913; Salicylates, Uric Acid and Gout, ibid. **65**: 881 (Sept. 4) 1915; The Action of Salicylates, ibid. **66**: 122 (Jan. 8) 1916; The Fate of Salicylates in the Body, ibid. **73**: 1289 (Oct. 25) 1919; Is Free Salicylic Acid Liberated from Salicylate in the Circulation? ibid. **77**: 2064 (Dec. 24) 1921; The Rôle of Salicylates in Acute Rheumatic Fever, ibid. **78**: 1897 (June 17) 1922.

3. Swift, H. F.: The Action of Sodium Salicylate upon the Formation of Immune Bodies, J. Exper. Med. **36**: 735 (Dec.) 1922.

4. Barbour, H. G., and Devenie, M. M.: Acetylsalicylic Acid and Heat Regulation in Normal Individuals, Arch. Int. Med. **24**: 617 (Dec.) 1919. Barbour, H. G.: Acetylsalicylic Acid and Heat Regulation in Fever Cases, ibid., p. 624.

Current Comment

COMBINED URIC ACID IN THE BLOOD

Nearly a century and a half has elapsed since Scheele first isolated uric acid from urine and from urinary calculi. Only a few years later, Pearson demonstrated the presence of the same substance in the tophi of gout. In the subsequent period, various hypotheses regarding the physiologic significance of uric acid in the organism have been promulgated. Many of them have been almost fantastic in character, so that they have survived their period of advocacy by a short time at most. Others have persisted longer; thus, only a few years ago uric acid was held responsible for many of the ills to which human flesh is heir. Still other conceptions have become part of the enduring structure of knowledge regarding this unique biochemical substance. Instead of regarding uric acid as an incomplete product of the oxidative disintegration of simple proteins in the body, we have learned to recognize in it an end-product of the metabolism of purin precursors in man. Whatever the intermediate reactions may be, an increased output of uric acid is demonstrably an indication of an increased transformation of purin-yielding products, whether the latter are derived from the diet or have an endogenous origin in the cells and tissues of the body. Another acquisition of more recent years has been the demonstration that uric acid circulates in fairly constant concentration in the blood of man, an increment in the amount being indicative of a pathologic condition. The latest contribution is the proof of the presence of "combined" uric acid in the blood—a result clearly suggested by S. R. Benedict [1] several years ago. His investigations [2] demon-

1. Benedict, S. R.: Uric Acid and Its Relations to Metabolism, Harvey Society Lectures for 1915-1916, Philadelphia, J. B. Lippincott Company, p. 362.

2. Davis, Alice R.; Newton, Eleanor B., and Benedict, S. R.: The Combined Uric Acid in Beef Blood, J. Biol. Chem. **54**: 595 (Nov.) 1922. Newton, Eleanor B., and Davis, Alice R.: The Distribution of the Combined Uric Acid in the Corpuscles of Beef Blood, ibid. **54**: 601 (Nov.) 1922; Combined Uric Acid in Human, Horse, Sheep, Pig, Dog and Chicken Blood, ibid. **54**: 603 (Nov.) 1922.

strate the substance to be, in the case of beef blood, a compound of uric acid and a pentose sugar, ribose. Curiously enough, it is present only in the red corpuscles. Evidences of the presence of combined uric acid have been found in each species of animal studied. The quantity in beef blood far exceeds that in any other animal blood so far analyzed. Next in quantity would appear to be that of human blood. The physiologic significance of this newly demonstrated compound remains to be elucidated. In any event, the story of uric acid in the body has not yet been completely unfolded.

GINSENG

Ginseng is a plant of the genus *Aralia*, the root of which is highly valued as a medicine among the Chinese. It has found no place in our modern therapy, and one will search in vain for reference to it in the present day books on pharmacology. However, every product which has a reputation of having attained use in folk medicine will be found mentioned in recurring suggestions as to possibly neglected drugs. The feeling is widespread—and not entirely without historical justification—that plants which have secured some reputation for remedial potency, even though it may have been attained in the days anteceding modern scientific research, deserve careful consideration. The persistence of certain customs in the healing art, so it is argued, is more likely to be associated with some useful potency. In the case of ginseng, the attempts to establish this have been essentially unfruitful. Occasionally it has been reported that infusions or extracts of the root are diuretic. The most recent study of Inada and Takamizu [1] at the Keijo Medical College in Chosen shows that large quantities of extracts of ginseng may slightly increase the output of the urine, but that there is no effect whatever on nitrogen metabolism. Even the quack would find it difficult to discover a tenable potency on the basis of which the use of ginseng could be "boosted."

Association News

THE SAN FRANCISCO SESSION

Rates and Routes of Transportation to San Francisco and Return

The American Medical Association is advised that effective May 15 and daily thereafter until September 30, western railways will place on sale round trip tickets to San Francisco with a return limit of October 31. These tickets will permit stopovers at any point on the going or return trip merely by informing the conductor at which points passengers desire to stop. Rates from the cities named are:

From Chicago	$86.00
From Kansas City	72.00
From St. Louis	81.50
From Omaha	72.00
From St. Paul	87.50

Pullman rates from Chicago are:

Lower berth, Chicago to San Francisco	$23.63
Upper berth, Chicago to San Francisco	18.90
Compartment, Chicago to San Francisco	66.75
Drawing room, Chicago to San Francisco	84.00

If stopovers are made on the outward trip, a small additional sum is to be added to the Pullman rates quoted.

1. Inada, S., and Takamizu, J.: Studies on the Influence of Corean Ginseng on Metabolism, Japan M. World **2**: 343 (Dec. 15) 1922.

Lines east of Chicago made low rates to the Pacific Coast and return in the summer of 1922, and it is thought that such rates will be announced for the summer of 1923.

Those who go to San Francisco from Chicago have the choice of a large number of routes, some of which are as follows:

1. C. B. & Q. Railroad to Denver; D. & R. G. W. Railroad to Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.
2. Rock Island Railroad to Denver; D. & R. G. W. Railroad to Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.
3. C. & N. W. Railroad to Omaha; Union Pacific Railroad to Ogden; Western Pacific or Southern Pacific Railroad to San Francisco.
4. C. B. & Q. Railroad to Denver; Union Pacific to Ogden or Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.
5. C. B. & Q., Rock Island, or C. & N. W. and Union Pacific Railroad to Denver; D. & R. G. W. or Union Pacific Railroad to Salt Lake; Union Pacific to Los Angeles; Southern Pacific to San Francisco.
6. Santa Fe Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.
7. Rock Island Railroad to El Paso; Southern Pacific Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.
8. I. C. Railroad to New Orleans; Southern Pacific Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.

Going by any of the above named routes, passengers may return the same way or by any of the following routes, without additional charge:

1. Southern Pacific Railroad to Los Angeles; Santa Fe (Grand Canyon Route) to Chicago.
2. Southern Pacific Railroad to Los Angeles and El Paso; Rock Island Railroad to Chicago.
3. Southern Pacific Railroad to Los Angeles; Southern Pacific to New Orleans; I. C. Railroad to Chicago.
4. Southern Pacific Railroad to Los Angeles; Union Pacific to Salt Lake; D. & R. G. W. Railroad to Denver; C. B. & Q., Rock Island Railroad or any direct line to Chicago.
5. Southern Pacific to Los Angeles; Union Pacific Railroad to Ogden; Union Pacific to Omaha; C. B. & Q., C. & N. W., or C. M. & St. P. Railroad to Chicago.
6. Southern Pacific Railroad to Los Angeles; Santa Fe (Grand Canyon Route) to Denver; any line to Chicago.

Those who wish to return from San Francisco by way of Portland, Seattle and the North Pacific Coast will be required to pay $18 additional to the rates quoted, and tickets may be secured to read returning from San Francisco by the following routes:

1. Southern Pacific Railroad, San Francisco to Portland; Northern Pacific (Yellowstone Park Route) to St. Paul; any line to Chicago.
2. Southern Pacific Railroad, San Francisco to Portland; Great Northern (Glacier Park Route) to St. Paul; any line to Chicago.
3. Southern Pacific Railroad, San Francisco to Portland, S. P. & S. Railway to Spokane (Columbia River Route); Northern Pacific or Great Northern to St. Paul; any line to Chicago.
4. Southern Pacific to Portland; Northern Pacific, Great Northern or Union Pacific Railroad to Seattle; Great Northern or Canadian Pacific Steamship Company to Vancouver; Canadian Pacific Railroad to St. Paul; any line to Chicago.
5. Southern Pacific Railroad, San Francisco to Portland; Union Pacific Railroad to Ogden or Omaha; any line to Chicago.
6. Southern Pacific Railroad, San Francisco to Portland; Union Pacific Railroad to Salt Lake; D. & R. G. W. Railroad to Denver; any line to Chicago.

Any who wish to go to San Francisco and then to Los Angeles and return to San Francisco, Portland, Seattle and North Pacific Coast points will be required to pay $11.40 additional, besides the $18 required for the return trip by the northern routes.

An Invitation from the New Mexico Medical Society

The annual meeting of the New Mexico Medical Society will be held in Albuquerque, June 19-21. The local commit-

tee of arrangements for that meeting and the secretary of the New Mexico Medical Society cordially invite Fellows of the American Medical Association going to the annual session in San Francisco to stop over at Albuquerque. Entertainment will be provided for them by the local committee of arrangements and the chamber of commerce of Albuquerque. Parties on special trains en route to San Francisco are invited to arrange their schedules so that at least one day may be spent at Albuquerque. Dr. J. W. Elder, secretary of the New Mexico Medical Society, extends for that society an invitation to the members and Fellows of the American Medical Association to spend as much time as can be arranged at Albuquerque during the meeting of his state medical society.

Special Trains to San Francisco

MICHIGAN GOLF SPECIAL.—Dr. W. T. Dodge, president, and Dr. F. C. Warnshuis, secretary, of the Michigan State Medical Society, have made tentative arrangements for a special train to the San Francisco Session. This train will be made up of compartment sleepers, diners, club car and observation car, and will have a barber, valet and maid. Leaving Chicago at 8 p. m., June 17, the Michigan Golf Special will arrive at San Francisco on Saturday morning, June 23. Each day stops will be made at places where good golf courses are to be found. An opportunity will be afforded for playing eighteen-hole matches. Reservations have already been made at these golf courses, and very complete arrangements have been perfected for the convenience of the passengers on this train. Members of the Association are invited to join this party and to bring their wives and other members of their families. The cost will be $235. This will include a round trip railroad ticket, half a compartment going, meals en route, taxi and automobile charges, green fees, caddy fees and other incidentals. The party will disband at San Francisco, and the return trip may be made over one of several optional routes. The Pullman fare returning will be extra. The cost of this trip is only $55 greater than the regular round trip fare. The party will be limited. Requests for reservations from states adjacent to Michigan may be sent to Dr. F. C. Warnshuis, Powers Theater Building, Grand Rapids, Mich.

OHIO STATE ASSOCIATION SPECIAL.—A special train to San Francisco has been arranged for the benefit of the members of the Ohio State Medical Association who will attend the annual session. Mr. Don K. Martin, Executive Secretary, Physicians' Building, Columbus, Ohio, will answer inquiries concerning reservations.

THE "MEDICAL SPECIAL DE LUXE."—The Harlan Tours, 202 South State Street, Chicago, will operate a special train to be known as the "Medical Special De Luxe," which will leave Chicago on the evening of June 16 and Minneapolis over the Soo Line on the morning of June 17. Special Pullman cars will be operated from Des Moines, St. Louis and Omaha, and will be attached to the special at St. Paul. Stops will be made at Banff, Lake Louise and Glacier in the Canadian Rockies, and interesting side trips have been arranged. Other stops will include Victoria, Seattle and Portland. One full day is to be spent on a steamer between Vancouver and Seattle, while at Portland the famous Columbia River Highway trip is planned. This train will arrive in San Francisco on Monday, June 25, but any members of the House of Delegates who may be on board will reach San Francisco on Sunday evening, June 24. Two return routes are offered, one overland direct, and the other leaving San Francisco on Friday, June 29, by way of the Big Trees, Santa Cruz, Del Monte, Santa Barbara, Los Angeles, Pasadena, Catalina Island, Salt Lake City, the Grand Canyon of the Arkansas, the Royal Gorge and Colorado Springs. In addition to this special train, the Harlan Tours will operate special cars overland direct to San Francisco, and tours by way of the Canadian Rockies and the Shasta Route, which will arrive in San Francisco before the beginning of the session. Reservations, information as to rates and schedules, and descriptive matter may be secured by addressing the Harlan Tours, 202 South State Street, Chicago, or L. H. McCormick, General Agent of the Rock Island Lines, Chicago.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Tributes to Physicians.—At a meeting of the state board of health in Montgomery, January 8, resolutions were passed paying tribute to Dr. S. W. Welch, state health officer, for educating the people to the extent that the death rate in Alabama from infectious diseases, notably typhoid and malaria, had been materially lowered.——Friends of the late Dr. M. W. Murray of Albany are sponsoring a movement which has as its purpose the erection of a maternity wing to the Albany Hospital, as a memorial to the physician. The estimated cost of the maternity annex would be $50,000. Dr. Murray practiced for thirty-two years in Albany.——Dr. J. D. Dowling, health officer of Birmingham, and Dr. George A. Cryer, health officer of Calhoun County, have been appointed members of the Royal Institute of Public Health of Great Britain by Col. Sir William Smith, president of the organization.

CONNECTICUT

State Public Health Association.—At the annual meeting of the association, January 10, in New Haven, the following officers were elected for the ensuing year: president, Dr. Thomas E. Reeks, New Britain; vice president, Dr. William H. Coon, Bridgeport; treasurer, James A. Marr, Bridgeport; and secretary, Dr. Charles P. Botsford, Hartford.

Society News.—At the annual banquet of the Bridgeport Medical Society, January 9, at the University Club, more than $2,000 was subscribed to a fund for the erection and maintenance of a home for the society. Following the banquet, Dr. William H. Curley was elected president; Dr. F. Winthrop Pyle, vice president, and Dr. Daniel P. Griffin, secretary.——Dr. E. Everett Rowell was elected president of the Stamford Medical Society to succeed Dr. Charles B. Keeler of New Canaan, at the annual meeting.——Drs. John B. Boucher and Arthur B. Landry were elected president and secretary, respectively, of the Hartford Medical Society at the annual meeting, January 1.

DELAWARE

Would Merge Health and Welfare Bodies.—A measure will be presented to the 1923 session of the legislature, authorizing the consolidation of all health and welfare commissions of the state into one body, to be known as the state health and welfare commission. This measure, which was outlined by the Delaware State Medical Society and the Homeopathic Society of Delaware and Peninsula, provides for the appointment of seven persons to act as the state health and welfare commission, four of whom shall be physicians, the other three members to be citizens representing Kent, Sussex and New Castle counties. Each member shall receive $10 for attending a meeting, but shall not receive pay for attending more than twenty meetings. The proposed commission would be vested with all the rights, powers, duties, obligations and authority of the child welfare commission, the mothers' pension commission, the tuberculosis commission and the state board of health, and would be authorized to take over all the property, rights, credits and records of these commissions.

DISTRICT OF COLUMBIA

Bill to Regulate Optometry.—The senate has passed a bill regulating the practice of optometry in the District of Columbia. The measure went through the upper body of Congress without a dissenting vote. The bill calls for the appointment of a board that shall have power to hold examinations and issue licenses for the practice of optometry in the district.

Medical Society of the District of Columbia.—At the annual meeting of the society held in Washington, January 3, under the presidency of Dr. Archie W. Boswell, the following officers were elected for the ensuing year: president, Dr. Luther H. Reichelderfer; vice presidents, Drs. J. Russell Verbrycke, Jr., and Edith L. Coale; recording secretary, Dr.

Coursen B. Conklin; corresponding secretary, Dr. Prentiss Willson, and treasurer, Dr. Edward G. Seibert.

Department of Public Welfare Proposed.—A bill to establish a department of public welfare for the District of Columbia has been introduced by Senator Spencer of Missouri. In addition to setting up a system with centralized authority for the handling of the welfare problems of the city of Washington, it contains proposals for the organization into four divisions of the functions of the department. These divisions would include mental diseases, child guardianship, corrections and administration. The bill would empower the new department to provide aid and assistance to deserving mothers with dependent children, provide for the commitment of insane and other mental defectives, establish a home for such persons in Maryland or Virginia and inaugurate clinics for the treatment and care of delinquent, dependent and neglected children.

ILLINOIS

Three Members of State Board of Pharmacy Suspended.—It is reported that D. P. Siebert, D. D. Moore and R. R. Barnes, members of the state board of pharmacy, were suspended, January 29, by the director of registration and education after they had been accused by two applicants for druggists' licenses of having accepted bribes to "fix" examination grades.

Jury Decision in License Scandal.—It is reported that William H. H. Miller, former head of the department of registration and education, was found guilty, January 27, of selling physicians' and pharmacists' licenses to persons unfit to receive them, of raising examination grades and of selling questions in advance of the state examinations. He was fined $1,000. Dr. N. Odeon Bourque, head of the "Chicago Medical School," where, it is asserted, doubtful candidates prepared for the examinations, was fined $250. His license has since been revoked. Miller's son-in-law, K. A. Fries, a former official in the department, was found not guilty.

Court Sustains Vaccination Order of Local Health Board.—January 16, the Lee County circuit court refused to grant an injunction which was sought for the purpose of preventing the Dixon school board from carrying out an order issued by the Dixon Board of Health. The board of health order was issued at the request of field physicians of the state department of public health who had found a number of cases of smallpox in the city; it required all children to be vaccinated against smallpox or be excluded from the public schools. The plaintiffs, a group of antivaccinationists, contended that an epidemic of smallpox neither impended nor existed in Dixon; that the disease present was not smallpox; that the order of the local board of health was not technically legal, and that vaccination did not necessarily have to be external in order to meet the requirements of the ruling of the board of health. A large number of witnesses were examined, the points enumerated being particularly emphasized. The court upheld the board of health at every point and dismissed the bill for lack of equity.

Chicago

Dinner in Honor of Dr. Hall.—Local physicians, graduates of Northwestern University, and students under Dr. Winfield Scott Hall, professor of physiology at Northwestern University School of Medicine, Chicago, gave a dinner in his honor at the Plaza Hotel, Danville, January 17.

Influenza and Pneumonia Deaths.—Fifty cases of influenza, with four deaths, and eighty-two cases of pneumonia, with fifteen deaths, reported over the week end, brought the total of influenza and pneumonia deaths in Chicago, since January 1, to 481, it was announced by Dr. Herman N. Bundesen, health commissioner.

Memorial Services for Dr. Haines.—Memorial services for Dr. Walter Stanley Haines, who died, January 27, were held in the upper amphitheater of Rush Medical College, January 31. Before the services the body lay in state in the laboratory of the college from 9 to 11 o'clock. All college activities were suspended for the day. Family services were held later in the week and were private. The funeral took place in the chapel at Rosehill Cemetery, February 2.

Criminal Defectives to Be Segregated.—Another attempt will be made to induce the Illinois Legislature to enact the bill providing for the establishment of a farm colony for criminal defectives, according to statements by Judge Trude of the morals court and Dr. William J. Hickson of the Chicago Psychopathic Laboratory. It is estimated that the experiment will cost about $1,000,000, but that the reduction in crime and court expenses will offset the expenditure.

Personal.—Dr. Carl F. Bertschinger, for more than thirty years a practitioner in Chicago, has been appointed vice consul by the Swiss government for the Chicago district. Dr. Bertschinger was born in Switzerland.——Dr. Edward H. Hume, dean of the Hunan-Yale College of Medicine, Changsha, China, addressed the Chicago Medical Society, January 24, on conditions in China.——Dr. Hiram H. Bay, for the last three years tuberculosis consultant for the U. S. Veterans' Bureau, Chicago, has resigned to accept the position of medical director of the Chicago Tuberculosis Institute.

Survey of Charitable Organizations.—Under the auspices of a committee appointed by the Chicago Council of Social Agencies and representatives of 158 social service agencies, and financed by the Commercial Club of Chicago, an intensive study of methods of financing the philanthropic and charitable organizations and institutions of Chicago will be undertaken. For the purposes of this study, organizations whose financial support comes from private sources have been classified in eight functional groups: child welfare, family welfare, health service, homes for adults, neighborhood welfare, protective, correctional and legal service, work for boys and girls, and miscellaneous organizations.

INDIANA

Ophthalmologists Elect.—At the annual meeting of the Indiana Academy of Ophthalmology and Otolaryngology, in Indianapolis, January 18, the following officers were elected: president, Dr. C. Norman Howard, Warsaw; vice presidents, Drs. A. L. Marshall, Indianapolis, and Dr. R. W. Cochran, Madison, and secretary-treasurer, Dr. B. J. Larkin, Indianapolis. Dr. John Green, Jr., St. Louis, addressed the meeting.

MAINE

City Health Officers Appointed.—Dr. Frederick M. Cole, Gardiner, has been appointed city physician.——Dr. Harry D. McNeil has been appointed full-time health officer of Bangor.——Dr. Lewis L. Mann has been elected city physician of Augusta.

Bowdoin Awards Fifty-One Scholarships.—Medical scholarships amounting to more than $6,000 were recently awarded by Bowdoin Medical School, Portland, from the Garcelon-Merritt Fund. A large number of these scholarships were awarded to former students of the Bowdoin Medical School who are pursuing their medical education elsewhere.

MARYLAND

Personal.—William Walter Cort, Ph.D., associate professor of helminthology, Johns Hopkins School of Hygiene and Public Health, has been appointed exchange professor in parasitology in the Peking Union Medical College, China, for the academic year beginning, October, 1923. Professor Cort is also planning to carry on an extensive study of hookworm disease in South China. He will head a party of four scientists to carry on research work under the auspices of the Peking Union Medical College. The expedition will be financed by the International Health Board of the Rockefeller Foundation. The other members of the expedition are Dr. George B. Grant, associate professor of hygiene at the Union Medical College; N. G. Stoll, a graduate student at Johns Hopkins School of Hygiene, and a native Chinese student. Ernest C. Faust, Ph.D., associate professor of parasitology at the Union Medical College, will exchange professorships with Dr. Cort.——Dr. Arthur M. Stimson, assistant surgeon general, U. S. Public Health Service, delivered a lecture on "Public Health Lessons from Rabies," January 23, and J. A. Le Prince, senior sanitary engineer, U. S. Public Health Service, delivered a lecture on "Malaria Control Problems" before the Johns Hopkins School of Hygiene and Public Health, January 23 and 29, respectively.——Dr. William H. Welch, director of the Johns Hopkins School of Hygiene and Public Health, has recently been elected an honorary member of the Societé royale des sciences médicales et naturelles of Brussels, Belgium.——Dr. William T. Pratt has been appointed full-time county health officer for Montgomery County by the state board of health. The only other county having a full-time health official is Allegany, but the possibility of placing a full-time officer in each county in the state is under consideration by the board of health.——Dr. George Walker and Dr. Herbert C. Blake have been appointed members of the board of supervisors of city charities of

Baltimore.——**The governor** appointed Dr. Arthur P. Herring, Baltimore, commissioner of mental hygiene, January 13. Dr. Herring has been secretary of the state lunacy commission for the last fifteen years.

MASSACHUSETTS

Physician's License Suspended.—The board of registration in medicine has suspended the certificate of registration as a physician of Dr. Arthur Stanton Hudson, Boston, for one year, following a hearing based on a complaint that Dr. Hudson was associated with an unregistered practitioner of medicine. The man alleged to have been associated with Dr. Hudson was arrested, and his case will be presented to the grand jury.

Maternal and Infant Welfare.—The state department of public health has appointed an advisory committee to assist in the maternal and infant hygiene work in the state. This study will be made under an appropriation of $15,000, and the educational campaign will be carried out by means of newspapers, motion pictures and lectures. Drs. Edmond F. Cody, New Bedford; Halbert G. Stetson, Greenfield; Richard M. Smith, Boston; Fritz B. Talbot, Boston, and Dr. Robert L. DeNormandie, Boston, are members of the committee.

Society for Mental Hygiene.—Under the auspices of the Massachusetts Society for Mental Hygiene, the first of a series of seven weekly lectures to be given under the direction of the Connecticut Valley committee of the society was given at Springfield, January 3, by Dr. Pratt on "What Is Mental Hygiene and Why Does It Concern Everyone?" William A. Neilson, Ph.D., president of Smith College, presided. Arrangements have been made with the division of university extension of the state department of education to grant a credit certificate to students who satisfactorily complete the course. Other speakers include Drs. Douglas A. Thom, Abraham Myerson, George E. McPherson and Albert Warren Stearns.

MICHIGAN

Large Fine for Physician.—According to reports, Dr. Birch J. Hamilton, formerly physician at the house of correction, Detroit, was fined $1,000 in the federal court, recently, when he pleaded guilty to violation of the Harrison Narcotic Law.

Sentence for Chiropractor.—It is reported that F. O. Logic, chiropractor of Iron Mountain, under suspended sentence from the November term (THE JOURNAL, Nov. 11, 1922, p. 1195), following his violation of the court's injunction to stop practicing, has been sentenced to ninety days' hard labor in the county jail.

University Fees Increased.—Regents of the University of Michigan, Ann Arbor, announced, January 26, that advanced student fees will be in effect, dating from the autumn semester. The greatest increase will be paid by students in the medical school and dental college, where the increase is $38 for residents of Michigan and $58 for all others. For other schools and colleges, the increase is $3.

New Marine Hospital Proposed for Detroit.—Detroit is to have a new marine hospital if the bill introduced by Representative Brennan successfully passes both houses of Congress. The measure presented this week authorizes the Secretary of the Treasury to sell the present United States marine hospital reservation and its properties at Detroit, and to use the proceeds for the acquisition of a new site and the construction of a new hospital with all needed facilities.

Prof. Boldyreff at Battle Creek.—Prof. William Nikolai Boldyreff has taken a position at the Battle Creek Sanitarium, where he will conduct research along lines similar to those followed by him with Pawlow in Petrograd. Professor Boldyreff was an assistant to Pawlow from 1902 to 1912. From 1912 to 1917 he was professor of pharmacology in Kazan, Russia. During the war, he did research work on gas poisoning, in collaboration with French and English scientists, under the direction of the Red Cross. Before coming to America, he lectured in several Japanese universities on physiology. Of about 100 contributions by him to the literature, forty have concerned problems of nutrition and the physiology of digestion.

MISSISSIPPI

State Medical Meeting.—The annual meeting of the Mississippi State Medical Association will be held at Vicksburg, May 7-9, instead of at Jackson, May 8-9, as previously announced. Lack of hotel accommodation in Jackson is the reason given by Dr. Sydney W. Johnston, president of the association, for the change.

MISSOURI

Health Show.—Under the auspices of the health department, a show to visualize the fundamentals of healthful living and environment will be given in the Coliseum, St. Louis, February 24 to March 4, with the cooperation of local organizations. Thirty-five per cent. of the proceeds will be used for public health work.

American Library Association.—The St. Louis chapter of the association met at the Washington University School of Medicine, January 24. Dr. H. S. Gasser, professor of pharmacology, spoke on "William Beaumont," and Dr. Major G. Selig, professor of clinical surgery, spoke on "Personal Recollections of Prof. Julius Pagel." The Beaumont collection of manuscripts and books, and the Pagel collection on the history of medicine, were on exhibition.

NEW HAMPSHIRE

Personal.—Dr. John M. Gile, dean of the Dartmouth Medical School, Hanover, has been appointed a life member of the board of trustees of the college, to succeed Gen. Frank S. Streeter, Concord, who died recently.——Dr. William M. Parsons, Manchester, recently celebrated his ninety-seventh birthday. Dr. Parsons is still in practice.

City Physicians Appointed.—At the recent elections of various boards of health, Dr. Patrick J. Kittredge was appointed city physician of Portsmouth; Dr. Deering G. Smith was reelected city physician of Nashua, and Dr. Allen P. Richmond was appointed city physician of Dover, Dr. Walter H. Lacey of Keene and Dr. Charles Henry Cook of Concord.

NEW YORK

Illegal Practitioners Fined.—It is reported that Philip Kaiser, an optician of Baldwin, L. I., was fined $250 in the court of special sessions, December 22, when convicted of practicing medicine without a license.——Reports state that Walter S. Hidder, Saranac Lake, was fined $25, January 9, for posing as a physician in order to obtain narcotics for another man.

A New Drug Bill.—A bill was introduced into the legislature, January 24, by Assemblyman Maurice Bloch of Manhattan, which provides for regulation of the distribution of habit forming drugs in this state. The proposed legislation is to take the place of the Whitney Narcotic Law, the repeal of which, according to the sponsors of the bill, has resulted in an alarming increase in the number of addicts and dope sellers. The new bill would permit the commitment to an institution for treatment of persons who are habitual drug users.

State Hospital Commission.—Miss Harriet M. Mills, Syracuse, has been named by Governor Smith a member of the state hospital commission to succeed the late Cyrus E. Jones. This commission consists of three members—a physician, a lawyer and a layman. Miss Mills, the lay member, is the first woman appointed on the commission. Her term is for six years. Dr. C. Floyd Haviland, chairman, is the representative from the medical profession and Arleigh Richardson, the legal member. More than half of the 40,000 inmates of the thirteen civil hospitals for the insane are women, it is stated.

New York City

Suicides and Homicides.—In a preliminary report for the year 1922, Dr. Charles Norris, chief medical examiner, presents statistics showing that deaths due to violence or mishap in this city have not materially increased during the past year. There were 663 suicides. The number was greater among married than among single persons, there being a total of 315 married men and 141 married women as against 151 single men and 56 single women. There were 350 homicides in 1922, as against 307 for the year 1921.

Decision Reserved on Medical Whisky.—The suit of Dr. Samuel W. Lambert and other physicians for an injunction restraining the government from enforcing the medical provisions of the Volstead Law was tried in the United States district court, January 26, before Judge John C. Knox. Judge Knox accepted briefs from Joseph S. Auerbach, attorney for the complainants, and John Holley Clark, Jr., assistant United States attorney, who was the defendant, but decision was

reserved. He suggested that the proper course in the case would be for the physician to violate the law, confess his fault and make it a test case.

Health Center Completes First Year.—The East Harlem Health Center, which represents a consolidation of health agencies in that locality, working in cooperation with the American Red Cross and the New York City Health Department, has recently completed its first year of work. Six organizations in 1921 made expenditures of about $175,000 for health and family relief. Last year, under the direction of the health center, an immensely increased service added only $15,000 to the total expense. The plan has made it possible to serve a much larger number of people, thereby reducing the per capita cost of health service.

Hospital News.—Plans have been completed for a new seven story stone and brick building to take care of 400 nervous convalescent patients who are now quartered in the original building, opened at Bellevue in 1916. The cost of the new building will be met by a fund of $2,500,000, for which application is pending before the board of estimate. ——The New York Nursery and Children's Hospital, in its annual report, shows that, for the year ending Sept. 30, 1922, only four of the 2,395 mothers who availed themselves of the obstetric service of the hospital died. Thus, the death rate was 17 per ten thousand patients for the year, while the death rate in the registration area of the United States was approximately 90 per ten thousand. There was not a death during the year among the 635 mothers cared for in their homes by the hospital outpatient obstetric department, it is stated. The hospital will celebrate its centennial this year. When founded in 1823, its plant consisted of a house rented for $5.50 per week. Today the property is valued at $400,000. More than 25,000 babies have been born in the hospital.

NORTH CAROLINA

Board of Health Elections.—Dr. Sidney E. Buchanan, Concord, was reappointed county physician for another term of two years, January 8.——Dr. George B. Nance, Monroe, has been reelected county physician and quarantine officer of Union County.——Dr. Robert G. Wilson, Biltmore, was unanimously reelected health officer of Buncombe County at the annual meeting of the board of health.——Drs. Robert L. Gibbon, Charlotte, and Edgar H. Hand, Pineville, have been appointed members of the board of health of Mecklenburg County.

NORTH DAKOTA

Fargo Selected for Health Survey.—Fargo has been chosen as the first demonstration center in child health work by the Commonwealth Fund Appropriations Committee, it was recently announced. The Commonwealth Fund of New York, it was announced sometime ago in THE JOURNAL, will finance a child health program in three typical cities of the United States for a period of five years, for the purpose of studying maternal and infant mortality.

OHIO

Hospital News.—The new addition to the Mercy Hospital, Columbus, was formally opened to the public, December 15. This addition, the third in as many years, was erected at a cost of $60,000. Ground will also be broken early this year for a new nurses' home, to cost $150,000.——A new $50,000 building will be erected at the state feebleminded institution, Columbus, it is announced by Dr. L. J. Everich, director of the institution.——Bids closed, January 25, for a $75,000 hospital building for Miami University, Oxford.——Dr. John H. Berry, superintendent of the Athens State Hospital for the Insane, assumed charge of the Dayton State Hospital, January 5, succeeding E. A. Baber, who recently left to take charge of the Longview Hospital, Cincinnati.

OKLAHOMA

Hospital News.—The contract has been let for the new maternity hospital to be erected in Tulsa at a cost of $125,000. The Woman's Hospital Association is the donor.

Personal.—Dr. John T. Wharton, Miami, has resigned as county health officer of Ottawa County to accept the appointment of superintendent of the Soldiers' Tuberculosis Sanatorium at Sulphur, a newly completed institution.——Dr. William P. Mills was recently elected president of the Rogers County Medical Society.——Dr. Martha L. Beldsoe, Chickasha, has been reelected president of the Grady County Medical Society.

OREGON

Sentence for Dr. Standard.—It is reported that Dr. D. Everette Standard, Huntington, formerly of Nampa, Ida., was sentenced in the federal court at Portland to thirteen months' imprisonment at McNeils Island Penitentiary, for fraudulent use of the mails, when he was convicted on a charge of sending drugs intended for illegal purposes through the mail.

PENNSYLVANIA

Philadelphia County Medical Society.—At the annual meeting of the society, Dr. David Riesman was elected president for 1923; Dr. Edwin S. Cooke, vice president; Dr. Henry G. Munson, secretary, and Dr. Edward A. Shumway, treasurer.

Personal.—Dr. Benjamin H. Patterson, Wilkinsburg, has been elected to the Pennsylvania legislature from the twelfth district of Allegheny County.——Dr. Francis D. Patterson, Harrisburg, chief of the division of industrial hygiene and engineering of the state department of labor and industry, has resigned to engage in consulting work and industrial medicine.——Dr. Lawrence Litchfield, Pittsburgh, president of the Medical Society of the State of Pennsylvania, gave an address at the annual meeting of the Armstrong County Medical Society, January 10, at Kittanning.

Graduate Courses at Home.—An elaborate program whereby physicians in all parts of the state will be given all the advantages of modern graduate medical instruction without leaving their homes has been put into operation by the graduate school of medicine of the University of Pennsylvania, Philadelphia. Dr. George H. Meeker, dean of the school, is working out the details of the project. Professors of the graduate school will be sent out at stated intervals to lecture and conduct clinics, and to describe recent phases in the progress of medicine and surgery, in various parts of the state.

Philadelphia

Community Health Center Dinner.—Dr. Michael M. Davis, Jr., New York, spoke, January 7, at the annual meeting of the community health center at the St. James Hotel, when plans for the continued relief of malnutrition among the schoolchildren of South Philadelphia were among the subjects discussed. Stanley Folz, president of the institution, tendered a dinner to the officers and directors. Dr. David Riesman of Philadelphia presided.

UTAH

Personal.—Dr. Frederick E. Straup, Bingham Canyon, has been appointed county physician of Salt Lake County to succeed Dr. Alfred Cyril Callister of Salt Lake City.——Dr. LeRoy C. Potter, Provo, has been reappointed physician of Utah County.——Dr. Roy H. Wilson, Ogden, has been reelected city and county physician.

WASHINGTON

King County Medical Society.—At the annual meeting of the society at Seattle, January 8, the following officers were elected for 1923: president, Dr. Charlton E. Hagyard; vice president, Dr. John Hunt, and secretary-treasurer, Dr. Raymond F. Hain.

Personal.—Dr. George W. Wimberly, Toppenish, sustained a crushed leg recently when his automobile started backwards, pinning his leg beneath it.——Dr. Charles M. Doland, Spokane, was recently elected president of the Spokane County Medical Society.

State Board of Health Meets.—The semiannual meeting of the state board of health was held, January 15, at Olympia. The legislature was requested to appropriate $8,000 for a survey of the Yakima Valley, in which there has been an annual epidemic of typhoid fever and enterocolitis.

Hospital News.—Following a nine-year campaign for funds, the new Norwegian Hospital, Seattle, has been completed. It was formally dedicated, January 7, with appropriate exercises. Although dedicated primarily to the need of Norwegians, the institution is open to all and is nonsectarian. Miss Gertrude Anderson, formerly of the City Hospital, Seattle, has been appointed superintendent of the new hospital. It is a fifty-bed institution.——Buildings will be erected by the House of Providence and St. Vincent's Home for the Aged, Seattle, at a cost of $1,000,000.

WEST VIRGINIA

Four Year Course for West Virginia.—A committee of the West Virginia Medical Society appeared before the state board of education at Charleston, January 18, to urge the inauguration of a four years' medical course at the West Virginia University School of Medicine, Morgantown. If necessary, the project will be placed before the legislature, it was stated by Dr. J. N. Simpson, dean of the medical school and president of the state medical society.

WISCONSIN

Health Exposition.—A health show will be conducted in Milwaukee during the week, April 21-28, under the auspices of the state board of health. A citizens' committee has been created, and directors and officers have been elected. The exhibits shown at the Chicago Pageant of Progress will be on view. Any profits from the exposition will be used to promote child welfare in the city, Dr. George C. Ruhland, health commissioner, states, and in the event of financial failure of the show, citizens backing the movement will incur no expense.

WYOMING

State Medical Society Dues.—The annual dues of the Wyoming State Medical Society have been increased to $10, and are made payable during January each year. The secretary writes that if a member does not pay his annual dues during that month, he will not be entitled to the benefits of the medical defense of the society.

CANADA

Hospital News.—Dr. Archibald McCausland, St. Thomas, has been appointed assistant superintendent of the Homewood Sanatorium, Guelph, Ont., to succeed Dr. Ray L. Whitney, resigned.——The Ancrum Brae Hospital, Stratford, owned by Dr. Michael Steele, formerly member of the Canadian parliament, was recently practically destroyed by fire. Dr. Steele had only recently remodeled the institution.——Dr. Abraham Groves has presented his private hospital, the Royal Alexandra, to the town of Fergus.——The War Memorial Hospital for Sick Children, London, Ont., was formally opened recently, and handed over to the city to be operated in connection with the Victoria Hospital. Colonel Gartshore, the chairman of the Victoria Trust Hospital, donated $10,000 toward the endowment of the new institution.——The Sydenham Hospital, Kingston, will be closed permanently and the patients will be transferred to Toronto, and St. Anne de Belleville, Quebec, on account of the recent fire which partially destroyed the buildings.

Personal.—Dr. William H. Hattie has resigned as health officer for Nova Scotia, to accept the chair of public health and hygiene at Dalhousie University.——Dr. F. G. Banting of Toronto University spoke on "Insulin in the Treatment of Diabetes," before the Orange Mountain (N. J.) Medical Society, December 22.——Prof. Howard B. Whidden, president of Brandon (Manit.) College, has resigned to accept the position of chancellor of McMaster University, Toronto. ——Dr. Wilfred Grenfell, medical missionary from Labrador, lectured in Williamsport, Pa., January 12, at a dinner given in his honor by the Williamsport Ministerial Association.—— Dr. W. P. Tew has been appointed demonstrator of gynecology at the Medical Faculty of Western University.——Dr. Graham Campbell, formerly superintendent of buildings and grounds of the University of Toronto, has offered the governors of the university $5,000 to found a memorial scholarship in pathology, to be known as the John J. Mackenzie Memorial Scholarship.——Dr. William Duane, professor of biophysics at Harvard University, Boston, recently gave a lecture on the treatment of cancer to a large number of physicists and students at the University of Toronto.

HAWAII

Donations for Clinics.—Business men of Honolulu have raised a fund of $20,000 for nutrition work in the islands, it was recently announced by Dr. William R. P. Emerson of Boston, who has just returned from conducting an institute in Honolulu. In connection with the work, a tonsil-adenoid clinic will be established, for which an additional sum of $15,000 was donated.

GENERAL

Japanese Physicians Coming.—Baron Yoshihiro Tagaki, chief surgeon of the Tokio Charity Hospital, is one of six physicians who have planned to tour the United States and Canada at the invitation of the Rockefeller Foundation. The party will sail for San Francisco, February 23.

Typhoid Death Rate in Large Cities in 1922.—In summarizing the deaths from typhoid fever in 1922 in forty-three large cities, the United States Public Health Service found a rate of 3.1 per hundred thousand population against a rate of 3.6 in 1921. The highest rate shown for 1922 is 16.7 for Nashville, Tenn. The lowest rate was zero for Providence, R. I., and New Bedford, Mass., in which cities no deaths occurred from typhoid during the year.

Committee to Consider Bill on Prevention of Conception.—A subcommittee, consisting of Senators Cummins, Colt and Ashurst of the Committee on Judiciary, has been appointed to consider Senate Bill 4314 which proposes to repeal that portion of the federal code making it a crime to ship through the mails, advertise or deal in or import any article for the prevention of conception. This bill was originally introduced at the instance of the Voluntary Parenthood League.

Fund for German and Austrian Laboratories.—A fund is being raised for German and Austrian laboratories, the desperate financial condition of which is well known, by those who have worked in them. The fund has reached $1,315. If any one desires to help a specified laboratory or a specified head of a laboratory, any contribution given will be sent directly to the person in charge. Checks of $5 or more will be welcomed, made payable to Dr. Graham Lusk, treasurer, 477 First Avenue, New York.

Relief Bills for the Blind.—At the fourth annual meeting of the Federation of Workers for the Blind, held in Albany, N. Y., recently, the compulsory education of the blind child and the possibility of legislation to enforce medical treatment for specific diseases were discussed. Proposed changes in the recently enacted relief bill were also discussed. This law permits the state commission for the blind to appear before the board of county supervisors (and in Greater New York before the New York City Board of Estimate and Apportionment) to ask relief for blind persons. The supervisors may give or withhold aid, since the law is not mandatory. —— Senator Spencer of Missouri has introduced an amendment to the District of Columbia appropriation bill, providing $5,000 for the National Library for the Blind, and another giving an additional appropriation of $1,500 for the Columbia Polytechnic Institute for the Blind.

Children's Bureau Answers Questions on Child Labor.—In response to requests for information regarding child labor in the United States the Department of Labor, through the Children's Bureau, has issued a pamphlet on this subject the text of which takes the form of answers to ten questions. The pamphlet shows that over one million children 10 to 15 years of age were reported by the 1920 census as gainfully employed, 378,063 of whom were less than 14 years old. These figures indicate a considerable decrease from 1910, but a large part of the decrease is apparent rather than real, since it was due to changing the census date from April, as in 1910, to January. In farm work and certain other seasonal occupations fewer children are employed in winter than in spring. A census taken at the present time would doubtless show a larger number of employed children than in January, 1920, when a period of industrial depression began and the federal child-labor tax law which tended to discourage the employment of children was in effect. The cover map shows that only seventeen states have as high requirements with respect to children's employment in factories, mills, canneries, and workshops as had the two federal laws, now declared unconstitutional. Other maps show the varying standards in force in the states with respect to child labor. The minimum age, for example, at which children may be employed in factories varies from 16 years in two states, and 15 years in five others, to 12 years for boys in one state and no age minimum at all in two others. Single copies of this pamphlet, "Child Labor in the United States: Ten Questions Answered," may be obtained free of charge from the Children's Bureau, U. S. Department of Labor, Washington, D. C.

Bequests and Donations.—The following bequests and donations have recently been announced:

Youngstown City Hospital and Lakeside Hospital, Cleveland, $100,000 each, under the will of William G. Pollock of Cleveland.

Santa Barbara (Calif.) Cottage Hospital, $100,000 for a new nurses' home, by Mr. and Mrs. G. O. Knapp of Montecity.

Exeter Hospital, Exeter, N. H., $50,000 for improvements to the institution, by an anonymous donor.

Kewanee (Ill.) Public Hospital, $38,000, by subscriptions.

St. Agnes', St. Mary's, St. Joseph's, St. Vincent's and the Misericordia hospitals, Philadelphia, share in $25,000, donated by Gimbel Brothers of Philadelphia, January 1.

New Hampshire Orphan's Home, Franklin, $20,000; Boston Floating Hospital, $10,000, and the Cottage Hospital, Woodsville, N. H., $5,000, by the will of Charles B. Henry of Lincoln.

Sharon (Mass.) Sanatorium, $20,000, for the establishment of a free bed for women and children, as a memorial to Louis Agassiz Shaw; and a further sum of $1,000.

Hahnemann College and Hospital and the Samaritan Hospital, Philadelphia, equal shares of the estate on the death of his mother and sister, by the will of Edward H. Herbein.

Salvation Army Hospital, New York, $19,000; St. Anthony's Hospital for Tuberculous Patients, Woodhaven, L. I., and the Sanatorium Gabriels, Gabriels, N. Y., each $10,000; the Free Industrial School for Crippled Children, New York, and St. Joseph's Association for the Blind, Jersey City, each $5,000; the residuary estate to be divided equally among the Flushing, St. John's Hospital, Long Island City, St. Joseph's Hospital, Far Rockaway, and St. Vincent's Hospital, Manhattan, by the will of John W. Rapp.

Montefiori Home and Hospital, New York, $10,000, under the will of Adolphus S. Bendheim.

The Jewish Charities and the Cleveland Jewish Orphan's Home, $5,000 each, under the will of Philip Stein of Chicago.

Lankenau Hospital and the Methodist Episcopal Hospital, Philadelphia, $5,000 each, for the establishment of free beds, by the will of Henry O. Deshong.

Cooper Hospital, Camden, N. J., $5,000, the result of a benefit ball.

Bradbury Memorial Hospital, Belfast, Me., $5,000, to endow a free bed for the town of Northport, by the will of Mrs. Norman H. White.

William Major Hospital, Shelbyville, Ind., $1,000, and $500 to the county tuberculosis association, by the will of David L. Wilson of Shelbyville.

Quincey City Hospital, $500 and one third of the residue of the estate, and $500 to the graduates nurses' association of the training school of the hospital, by the will of the late Richard L. Harper.

The Babies' Hospital, Newark, N. J., $100, in memory of the late Dr. Miller R. Whitenack, by his friends.

Grant County Hospital, Marion, Ind., funds for the establishment of a laboratory, to be known as the Barbara Bedell Memorial, by Mr. and and Mrs. Harry Bedell of Marion, in memory of their daughter.

Ten acres of land near Barstow, Calif., for a tuberculosis sanatorium, on condition that a building or cottages are erected by others, by Mrs. L. E. Arnold of Los Angeles.

Catawba Sanatorium, Catawba, Va., funds for the permanent support of a free bed will be provided by the Lions' Club of Roanoke.

LATIN AMERICA

Personal.—Dr. A. Brioso Vasconcelos has been appointed professor of public health in the army medical school of Mexico City.

Mexican Society Elects Officers.—The Merida branch of the Mexican Medical Association has elected the following officers: president, Dr. F. Saurí Reyes; vice president, Dr. A. Rivero Trava; secretary, Dr. V. Rodríguez Arjona; undersecretary, Dr. Silvio Hernández; treasurer, Dr. S. Díaz y Díaz; members, Drs. R. Pinto Manzanilla, Mauro Buenfil, Adolfo Ganzález, C. González Ortiz, O. Carpizo Montero, D. Hernández Faiardo, Eulalio Montero, Esteban Encalada, Antonio Aguilar P. and A. Bolio y Bolio.

Personal.—Dr. Leonidas Avendaño, professor of legal medicine at the University of Lima, and delegate from Peru to the recent Latin American Medical Congress at Havana, was the guest of honor at a gala breakfast arranged by the Medicolegal Society of Cuba. The *Revista de Medicina Legal* reproduces the speeches.——Dr. M. V. Quiroga, professor of pathology at the University of Buenos Aires, member of the Argentine legislature, and surgeon major in the army, has retired from his academic position, having reached the age limit.——Dr. Karl Reuter of Hamburg, known for his research on conservation of animal and vegetable tissues by refrigeration, is visiting at Buenos Aires.——Dr. F. M. Fernández of Havana, secretary of the recent Latin American Medical Congress at Havana, has been elected a corresponding member of the Caracas Medical Society. The *Revista,* published by the society, recalls that he is the founder of the *Revista Cubana de Oftalmología* and editor of the *Crónica Médico-Quirúrgica,* is on the editorial staff of three other journals, and is a member of several American and international medical and ophthalmologic societies.

Organization of the Profession in Brazil.—The recent National Congreso dos Praticos in Brazil has given a great impetus to the movement for organization of the profession. The *Folha Medica* explains that the medical societies for scientific purposes do not have time or inclination to discuss the practical problems involving the material interests of the profession. Some countries, such as Germany and Spain, and now Czechoslovakia, compel the enrolment of all physicians in such an organization, the *Aerztekammer* or *colegio,* and Argentina and Uruguay have taken the lead in organizing a syndicate which is rapidly enlarging its membership, and doing good work in a number of lines. The *Folha Medica* remarks that the first tasks of such an organization are to draw up a code of ethics, and to serve as intermediary between the profession and the government, the spokesman and legal representative of the profession. Permanent committees should be entrusted with the task of systematic denunciation of quacks to the authorities, and the regulation of minimal fees. "All for each and each for all—this is the synthesis of the proposed syndicate." The editorial continues, "The degree of civilization attained in a country may be estimated by its capacity for organization," and points to Germany as an illustration of the noncrushable vigor conferred by close and long continued organization.

FOREIGN

Another Centennial.—The world-wide use of Esmarch's bandage recalls that Jan. 9, 1923, is the centennial of the birth of the surgeon Friedrich von Esmarch. He died at Kiel in 1908.

English-American Hospital in Madrid.—The English and American colonies in Madrid are about to open a hospital. There will be an English physician at its head, but the rest of the staff will be Spanish.

The Dejerine Foundation.—The minister of hygiene, the dean of the medical faculty and others are to join in the official inauguration of the Dejerine foundation and neurologic museum at Paris this month.

Cancer Prize at Vienna.—The *Wiener klinische Wochenschrift* states that the Austrian Cancer Research Society has offered a prize of 2,000,000 crowns for a work by some German-Austrian scientist, in the course of 1923, which represents fundamental progress in the cancer problem.

Advertising of Medical Articles in Paris.—Again the date has been postponed for the enforcement of the municipal regulation forbidding the advertising in the comfort stations of Paris of medical or pharmaceutical articles. The regulation was the result of discussion in December, 1919, but the days of grace for the advertisements have been extended to March 31, 1923.

The Pasteur Centennial in Norway.—The celebration at the University of Christiania was imposing, with music and an address. It was announced that the Pasteur fund established in 1892 in honor of the seventieth birthday of Pasteur had received many donations. It provides stipends for Norwegians making a special study of the causes of infection or industrial applications of fermentation.

Jenner Centenary Exhibition.—The Wellcome Historical Medical Museum, London, arranged a special exhibition of personal relics, pictures, engravings, drawings, documents, manuscripts, and letters relating to the discovery of vaccination, in connection with the commemoration, January 26, of the centenary of the death of Dr. Edward Jenner. The exhibition will remain open for some months.

Flügge Foundation.—In honor of the seventy-fifth birthday of Dr. Karl Flügge, professor emeritus of hygiene at the University of Berlin, the Flügge endowment has been founded by the Koch Fund for Combating Tuberculosis. The list of Flügge's works is a long one, but his name is best known for his research on droplet infection. The *Zeitschrift für Hygiene und Infektionskrankheiten,* which he founded, with Robert Koch, in 1885, issued a special volume as a *Festband* on the occasion.

Pasteur Centennial at Berlin.—The Institute for Infectious Diseases at Berlin organized a centennial celebration, with addresses by Neufeld, the director, and by Wassermann. The latter said that Pasteur's research with silkworms was the first systematic epidemjologic work on a scientific basis for the combating of infectious diseases. The meeting concluded with a visit to the Robert Koch mausoleum in the building, where there is a memorial tablet to Koch presented by the officials of the Paris Pasteur Institute at the time of his death.

Community Health Survey in China.—Community health surveys are sufficiently uncommon in this country to attract attention. A few have been made in large cities and in counties. THE JOURNAL recently commented on the Cleveland Hospital and Health Survey, which after two years, the time of reporting, had contributed to important city improvements. It is interesting to note that Kuling, China, has had a community health survey "made by public-spirited residents under the direction of physicians." The full report covers sixty pages.

Seventy-Fifth Anniversary of the French Biologic Society.—It is announced that the French Société de biologie, at

Paris, will celebrate its seventy-fifth anniversary, May 26, 1923. Delegates are expected from its affiliated societies, seven in France and one at Petrograd, Buenos Aires, Lisbon, Athens, Copenhagen, Bucharest, Cluj and Jassy, Stockholm and Lithuania, and from the Société belge de biologie. Three questions have been appointed for discussion: "Generation and Fecundation"; "Physiologic Action of Potassium and Calcium," and "Immunity in Invertebrates."

Dangerous Drugs Act.—The home office has recently issued a memorandum defining the duties and obligations of registered physicians and dentists in regard to the Dangerous Drugs Act of Great Britain. It states that a physician or dentist who obtains, or attempts to obtain, the drugs for a purpose not covered by his authorization, or who infringes any of the regulations, if convicted, is liable to a fine of £200 ($950), or imprisonment for six months, or both. Further, the home secretary has power, after the conviction of any physician or dentist, to withdraw his authorization, which would deprive him of the right to possess or supply drugs.

Drugs Required by Merchant Shipping Acts.—Article 15 of the Dangerous Drugs Regulations (Great Britain) authorizes the master of a ship not carrying a duly qualified medical practitioner to obtain supplies of the drugs required by the Merchant Shipping Acts. This provision does not apply to other than British ships. It is now suggested, however, that port medical officers of health be authorized by the Secretary of State to grant certificates for the supply to American and other foreign ships of a quantity of the drugs sufficient for the period of the voyage to the home port. The minister of health of Great Britain has addressed to port sanitary authorities a circular inquiring whether they would be willing to allow their medical officers to give the necessary certificates.

New Danish Law on Marriage and Divorce.—The *Ugeskrift for Læger* publishes the paragraphs of the new law which affect physicians, and comments on the opposition some of them have roused in medical circles. Marriage is prohibited to the insane and feebleminded, and the decision as to the mental condition must be certified by a duly authorized physician. The physicians regarded as "duly authorized" are only the state medical officials and the physicians connected with institutions for the insane and feebleminded. Marriage is also forbidden to persons with venereal disease or epilepsy unless both parties are thoroughly informed of the diseased condition and its dangers for the consort and the offspring. The editorial declares that this setting of venereal disease apart, in a class by itself, is directly contrary to what is being aimed at in the general preventive and curative measures against venereal diseases.

The Netherlands Council on Pharmacy and Chemistry.—The fourth report has just been issued. It forms a pamphlet of about fifty pages, and discusses an ethical proprietary preparation of digitalis, and a large number of other proprietaries, mostly nostrums. It is emphasized that in seventy proprietaries investigated, of the most diverse origins, not one new point of view for therapeutics was discovered. The remedies are said to have proved to be either inert substances, obsolete drugs revived or modern drugs, such as physicians are using, but given a fanciful name, and the correct dosage disregarded. Especial stress is placed on the proprietaries offered to combat a certain symptom, fever, diarrhea, headache, pain in the throat, and smarting urine. There is danger in this for the patient as the symptom may be a manifestation of poisoning, diphtheria, cancer or the like. The symptoms of beginning typhoid, scarlet fever, diphtheria or dysentery may be thus masked until infection is spread broadcast.

Prizes of French Academy of Medicine.—The Academy of Medicine at Paris had fifty-nine endowed prizes to award in 1922, and 133 articles were received in competition. This year again the secretary commented on the handicap resulting from too specific directions in regard to the awarding of a prize, as conditions change rapidly from year to year. During the year, two new prizes were endowed: one pertaining to questions of general hygiene and the other to the medical treatment of facial neuralgia. The Herpin prize, for the "Abortive Treatment of Poliomyelitis," was awarded to Dr. A. Pettit of the Pasteur Institute, for his wonderful results with his antipoliomyelitis serum. He takes for the antigen the virulent medulla of monkeys. This year again the Audiffred prize "for a sovereign remedy for tuberculosis," consisting of a 3 per cent. government bond and representing an income of 24,000 francs, was not awarded, although six competing works were received. Nineteen of the prizes were not awarded; no competing articles were received for four of them. The recipients of the prizes were all physicians in France or the French colonies, with the exception of Prof. C. Pezzi of Milan, who shared with Laubry of Paris a prize for their "Manual on Congenital Heart Disease." All but ten of the prizes are open to international competition. Competing articles must be in French or Latin, and must be in the hands of the secretary by March 1. The *Bulletin* of the academy for December 12, gives the conditions of the competition.

Personal.—Dr. I. de Villa, president of the *Colegio de Médicos*, was recently elected mayor of Valladolid.——Prof. Ricardo Lozano of the chair of surgery at the University of Saragossa has been lecturing in Paris as interchange professor.——The Société des sciences médicales of Montpellier and Languedoc recently elected Dr. Euzière as president and Drs. Guiber and Maffre as vice presidents. Dr. G. Giraud was continued as secretary.——Sir Edward S. Schafer, professor of physiology since 1899 at the University of Edinburgh, was recently presented with a token of esteem by his present and past demonstrators and fellow research workers in London and Edinburgh, in the form of a life-sized bronze plaque mounted in stone, which will eventually be placed in the university, by Sir Edward's desire. Medals will be presented to each of the many subscribers. The obverse bears in relief the bust of Sir Edward and the reverse carries a dedicatory inscription.——Dr. W. H. Hamer, health officer for the County of London, has been knighted by the king of England.——Major A. M. Dicken has been appointed principal of the Medical School of Armritsar, India.——Dr. E. E. Wynne, health officer of Sheffield, England, was the winner of the 100 guinea prize offered by the London *Daily News* for the best essay on the problem of male infant mortality.——The local medical society of Dresden recently held a gala meeting in honor of the eightieth birthday of its honorary member, the pediatrician Prof. O. Heubner of the University of Berlin.——Dr. Lydia Rabinowitsch-Kempner has been granted 50,000 marks by the Prussian ministry of public instruction to continue her research on tuberculosis. ——Dr. Massip Budesca of Madrid was recently presented with an engraved silver tablet in tribute to his zeal on behalf of the organization of the physicians of the civil service.—— The physicians of the League of Nations, as the Italians call the visiting group of public health officials, recently visited the Clinic for Occupational Diseases at Milan, in charge of Professor Devoto.

Deaths in Other Countries

Dr. **H. F. Sadler** at St. Luke's Hospital, Sydney, Australia, from epidemic (lethargic) encephalitis.——Dr. **Andrew Deane**, lieutenant-colonel Indian Medical Service; for nineteen years superintendent of the Royal Victoria Hospital, Belfast.—— Dr. **H. Rainy**, lecturer on the principles and practice of medicine at the University of Edinburgh; vice president of the Royal College of Physicians of Edinburgh and examiner in medicine at the University of Aberdeen; January 4, aged 59. Dr. Rainy was joint author with Dr. R. Hutchinson of "Clinical Methods."——Dr. **D. G. Thomson**, president of the Medico-Psychological Association; in Norwich, England, aged 66.——Dr. **Alfred M. Williamson**, health officer of the city of Edinburgh, Scotland.——Dr. **Nuno de Andrade**, formerly professor of hygiene and then of clinical medicine at Rio de Janeiro, a brilliant writer for the medical and lay press through several generations, director-general of the public health service in 1897 and member of the cabinet.—— Dr. **J. Braquehaye**, surgeon in chief of the French Hospital in Tunis, a notable figure in the French colony. He was formerly professor of surgery at Bordeaux.—— Dr. **K. B. Hofmann**, formerly professor of medical chemistry at Graz, noted for his research on the chemistry of the urine.——Dr. **K. Alt** of Magdeburg.—— Dr. **J. Grinda Forner**, professor emeritus of clinical medicine at the University of Madrid. ——Dr. **E. Ficalbi**, director of the zoologic anatomy institute at the University of Pisa.

CORRECTION

Federation of American Societies for Experimental Biology. —In the item published under the foregoing head (THE JOURNAL, Jan. 20, 1923), it should have been stated that Prof. A. J. Carlson, University of Chicago, was elected president of the American Physiological Society, C. W. Green, Missouri, reelected secretary, and Drs. John R. Murlin, Rochester, N. Y., and Arno B. Luckhardt, University of Chicago, elected to the council. There is no council of the federation.

Government Services

Navy Department Reorganizing Base Hospitals

The Bureau of Medicine and Surgery, Navy Department, is in process of reorganizing the Navy base hospitals. Units have been organized at Los Angeles, Seattle and Toledo. Units will be organized in other cities from time to time. Numerous physicians and dentists have been nominated for enrolment in the Naval Reserve Force, Class Six, in these cities.

Medical Supplies for Army

The annual supply bill carrying appropriations for the War Department contains many items relating to medicine and the health of the personnel of the Army and the public in general. Among other moneys appropriated in this bill are the following:

Reserve Officers' Training Corps, $3,250,000.
Civilian military training camps, $2,000,000.
Pay and allowances of contract surgeons, $41,000.
Pay of nurses, $650,000.
Construction and repair of hospitals, $497,000.
Quarters of hospital stewards, $10,000.
Medical and hospital department, $975,000.
Hospitals care, Canal Zone garrisons, $40,000.
Army Medical Museum, $7,500.
Library of Surgeon-General, $15,000.
Office of Surgeon-General, $215,000.
National Home for Disabled Volunteer Soldiers, $4,354,000.
Artificial limbs, $95,500.
Medical and Surgical History of World War, $16,600.

United States Veterans' Bureau News

Dr. Arthur E. Brides, director of the New England branch of the U. S. Veterans' Bureau, Boston, has resigned. Col. John F. J. Herbert has been named acting district manager until further notice. Capt. William J. Blake, chief administrative officer, is relieved from further duty and is ordered to report to Washington, D. C. He is succeeded by Capt. Malcolm L. Stoddard of Portland, Me. Dr. Winthrop Adams, Cambridge, Mass., has succeeded Dr. David J. Flanagan, who was relieved from duty as district medical chief. Fred T. A. MacLeod, chief of the rehabilitation division, is relieved from further duty and is ordered to report to Washington.

Prohibition Commissioner Issues Statement on Prescriptions in Influenza

Acting Prohibition Director J. E. Jones announced that there was no foundation for the reports published that all prohibition state agents would be authorized to take off the limit on prescriptions for liquor, if the influenza epidemic continued to become more virulent. Mr. Jones states that the department is meeting this situation by authorizing an additional supply of liquor to communities which require it. This is done on the statement of state or local health officials. On presenting proper evidence, any individual physician can obtain an extra book of prescriptions. Each case is acted on by the state prohibition officer, and no blanket orders are contemplated at Washington.

Narcotic Division Appeals for Increased Appropriation

Citing an amazing increase in drug law violations, the narcotic division of the Treasury Department has appealed to Secretary of Treasury Mellon for a larger force of field agents adequately to enforce the law. The report of the drug bureau to Secretary Mellon reads as follows:

During the fiscal year 1921-22, the number of arrests for the illegal use and sale of drugs increased 65 per cent. over the figures for the previous fiscal year. The number of convictions in the same period increased 100 per cent. The great increase in the number of arrests is partly attributable to the better organized force of field agents, but, of course, the arrests could not be made if the habit of drug addiction was not dangerously prevalent. The force of men engaged in this work is altogether too small to do the job well. In most of the states we have only one or two men, who are expected to cover the state thoroughly. It is obvious that they cannot do much along the border and seaport states, where smuggling is being carried on on such a great scale. Drugs may be more easily smuggled than whisky, and it is extremely difficult to prevent it unless there is a larger force of men on hand. We should be promptly advised when a shipment of drugs is admitted to this country so that our agents may be sure that it does not fall into the wrong hands. The customs service can give us this information and greatly facilitate our work. It would also be most helpful if physicians could be cautioned against giving a patient the first opiate to relieve sufferings as this is the way most addicts begin.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 8, 1923.

Prevention of Trypanosomiasis by Altering Vegetation

One learns from a valuable official publication, *The Kew Bulletin of Miscellaneous Information*, a project to prevent the propagation of tsetse flies by cultivating a plant which should prove a useful tropical fodder, the Efwatakala grass (*Melinis minutiflora*) found growing in Angola by Mr. M. T. Dawe in 1921. It grows with other and coarser grasses in virgin country, but on abandoned farm land or newly cleared areas it spreads rapidly almost to the exclusion of other kinds of vegetation. From October to May, it forms an excellent pasture, and even in the dry season retains its verdure when other grasses dry up. It has a strong odor, which is distasteful to tsetse flies. Researchers at Kew show that the odor is due to an aromatic oil secreted in minute drops by glandular hairs on the stems and blades. The natives of the Portuguese Congo make use of its insectifugal qualities in constructing nests for their sitting fowls, and litters for dogs. It is also found in South America, where it is known as stink grass. It is being cultivated at Kew, and seeds are being sent to Nigeria and Uganda. Against the tsetse fly, which in these regions is the carrier of the trypanosome of sleeping sickness and of nagana, a disease of wild and domesticated animals, various measures have been proposed. One was the extermination of the magnificent wild game of Africa, followed by the killing off of water fowl and crocodiles. Another was the segregation of the natives. The new scheme may render such proposals unnecessary, and allow large districts, now almost useless, to come under cultivation. The tsetse flies are creatures of the lakeside and the thick bush that grows there. They seldom leave their shady haunts or fly far except when following man or animals. A clearing 50 yards wide has been found a great protection, and every addition to it increases the safety. But clearings are not easy to keep open in the tropics. Efwatakala grass is said to flourish on exactly such clearings, choking the regrowth of bush. The fodder is so good that it will soon repay the cost of clearing.

Centenary of the Lancet

With pardonable pride, the *Lancet* announces that in this year it will complete its centenary. The first number appeared, Oct. 5, 1823, when the founder, Thomas Wakley, a reformer of the radical school of those days, announced his intention to produce a work that would convey to the public and to distant practitioners, as well as to students in medicine and surgery, reports of the metropolitan hospital lectures, and, secondly, give a correct description of all the important cases that might occur, whether in England or on any part of the civilized continent. He added: "Our columns will not be restricted to medical intelligence, but, on the contrary, we shall be indefatigable in our exertions to render the *Lancet* a complete chronicle of current literature." This project is extraordinary, for he had only thirty-six small octavo pages in his earlier numbers. His successor of today explains it by "the audacity of youth," for Wakley was then only 28. The other part of the program now seems quite ordinary, but only because the example set by Wakley has been followed by the medical journals of this and other countries. He was a great pioneer and a doughty fighter, who rejoiced in conflict. The reporting of hospital lectures was regarded, strange as it may seem, as a most objectionable innovation, and was strongly resisted by the lecturers.

The destruction of nepotism in hospital appointments was another of Wakley's aims. He succeeded all along the line; abuses withered under his fierce strictures. But in his campaign he indulged in personalities to an extent which today we would consider outrageous even in the lay press. In one of his excursions into general politics, he described the younger Pitt as "an official coxcomb, regardless of everything but the gratification of his own senseless, remorseless, and petty ambition." But such methods must be judged by the standard of his age. He ranks as the first and the greatest medical reformer. His successors have continued the campaign of reform in many directions—the analysis of quack medicines, the detection of food adulteration, the improvement of workhouse infirmaries, and the insistence on medical evidence at coroners' inquests.

Books on the Prevention of Venereal Disease Banned in New Zealand

In a letter to the daily press, Sir G. Archdall Reid, the writer on heredity, calls attention to the banning of books on the prevention of venereal disease in New Zealand. His book on the subject, as well as that by Miss Ettie Rout, entitled "Safe Marriage," is banned. No bookseller will stock the former unless he has a guarantee from a local physician. Sir Archdall Reid points out that formerly all disease, especially when widespread, was regarded as a manifestation of divine wrath, to be combated by prayers and offerings. Attention was thus diverted from sanitation. These ideas, though evidently still current in New Zealand and Africa, are being abandoned in civilized states. They linger among certain classes in England, but are being much less confidently expressed than formerly. It is generally becoming recognized that the desire to prevent sin is one thing; a desire to secure the poisoning of the sinner quite another. Often those who suffer have not sinned at all—witness the thousands of women and children suffering from venereal diseases. Further, the zeal of the virtuous slumbers profoundly unless some one tries to prevent venereal disease. Then their zeal flames into passion, and passion is translated into action by banning such books as those mentioned.

The Centenary of Jenner

On the 28th of this month, we should be commemorating the centenary of the death of Jenner and, strange to say, just after a smallpox outbreak. As the antivaccinationists are still with us, the figures showing the decline of smallpox in successive decades during the period of general vaccination may be given:

1867-1876	58,614 deaths
1877-1886	18,026 deaths
1887-1896	4,892 deaths
1897-1906	4,763 deaths
1907-1916	139 deaths

Insurance Against Penalties for Refusing to Violate Professional Secrecy

The unsatisfactory law of this country which does not respect professional secrecy has been referred to from time to time in these letters. Underwriters at "Lloyds" have decided to offer policies covering losses that may be incurred if a physician is sent to prison for contempt of court because he refuses to disclose matters confided to him in his professional work. The premiums are: limit of loss not exceeding $100 a week, $5; not exceeding $150 a week, $6.25; not exceeding $200 a week, $7.50; not exceeding $250 a week, $7.50. The payments to the insured are limited to fifty-two weeks.

Insurance Physicians Remove Telephones

One of the defects of the National Health Insurance Act is that, as patients pay by a capitation fee, whether they do or do not choose to obtain medical advice makes no difference in their expense, and there is no check on calling in the physician for very trivial complaints. The physicians in Coalville, a town of 20,000 population in Leicestershire, have found the calls for trifling matters such a nuisance that they have had the telephones removed from their offices and residences. The Coalville Friendly Societies' Council, representing 7,000 members, has made a protest, contending that absence of telephonic communications may prolong patients' sufferings. The Insurance Committee has decided to inform the physicians that the removal of the telephones tends to a less effective medical service than is desired.

PARIS

(From Our Regular Correspondent)

Jan. 5, 1923.

Professorial Chairs in the Universities

The minister of public instruction recently pointed out to the rectors of the universities the disadvantages that arise from making too many changes in the faculties, whereby professorial chairs that may be regarded as essential are at times caused to disappear completely. The minister stated that he recognized the difficulty that had often to be faced when it seemed desirable to bestow worthy titles on eminent teachers, either owing to the fact that no suitable chair becomes available in their own faculty or because their specialty covers too narrow a field for them to procure a chair easily. He proposed that two kinds of professorial chairs be established: (1) the chairs which must be considered fundamental and which must be maintained without transformations within the faculty; (2) appointive chairs. The latter could be abolished or transformed in any manner that seemed desirable when relinquished by their incumbents, and might even be shifted from one faculty to another. They would be, in a certain measure, the reward for outstanding work in some particular field, or would provide for those deserving advancement. As regards rights, privileges, salary and advancement, there would be no difference between the two kinds of chairs.

It has also been suggested that it might be advisable to establish certain chairs that would not be regarded as belonging to any faculty in particular. Such a plan, in spite of the difficulties that its realization seemed to imply, might be worthy of consideration, as the interests of general instruction, especially in the matter of research, might thus be promoted and an unusual liberty of movement be accorded.

Resumption of Scientific Relations with Austria

The request of the French minister to Austria, made to the medical "bloc" in parliament, to bring about the resumption of scientific relations between French physicians and surgeons and their Austrian and Hungarian confrères, was supported by Pinard both from the scientific and the diplomatic point of view. The speakers who took part in the discussion were of the opinion that it is not advisable to erect an impassable barrier between nations and especially between men of science, and that the suggestion of the French minister to Austria should therefore be given the most careful consideration.

Counterfeited Medical Prescriptions

Dr. H. Luys gives in the *Concours médical* an account of counterfeited medical prescriptions which concerned him directly. His name, address and telephone connection were correct, but the days and hours designated for office consultation were incorrect. The prescription called for a heroin formula that he never prescribed, and the signature was quite unlike his own. Dr. Luys learned later that the lady

who had forged his name was an old acquaintance who for years had been a heroin addict. Dr. Luys proposes, as a remedy, the following measures: 1. Printers should be prohibited from printing medical prescription blanks for any party unless they are sure of his identity and know that he is a bona fide doctor of medicine. 2. Prescription blanks should have at the bottom the name of the printer. 3. Every authorized general practitioner should be provided with a stamp for the purpose of authenticating his signature with a seal. Such stamps should be made and delivered by engravers only to such persons as are entitled to use them, the same control being exercised as in the case of prescription blanks.

An Ovation to Professor Arnozan

On the occasion of the last lecture of Dr. Arnozan, professor of clinical medicine at the Faculté de médecine of Bordeaux, who is about to retire from active service, the pupils and friends of the professor presented him with a bronze plaque bearing his likeness.

Importation of Smallpox Vaccine

The *Journal officiel* published recently an order of the president of the republic to the effect that every shipment or entry of foreign smallpox vaccine into France must be accompanied by a declaration, to be filed with the Institut supérieur de vaccine of the Academy of Medicine at Paris, concerning the origin, the nature and the quality of the vaccine to be introduced, together with the address in France of the agent handling the vaccine. Every tube of the vaccine imported must give the address of the sender and the address of the recipient, together with the last date on which the vaccine may be used (thirty days from the date of manufacture). Furthermore, the depositories of foreign vaccines in France are subject to the authorization and the supervision of public authority, in accordance with the rulings laid down by the minister of public health.

The Bulletin of the Friends of Hygiene

The Société des amis de l'hygiène, founded recently for the purpose of promoting the progress of public health in France and in the colonies, has just published the first number of its monthly bulletin, which is intended to serve as a means of communication and as a connecting link between the members of the association.

BUCHAREST

(From Our Regular Correspondent)

Dec. 27, 1922.

Anthrax Among Animals

Owing to the uncommon drought last summer, and to the consequent insufficient feeding of animals, the number of cases of anthrax is much greater than in corresponding periods of other years. In some parts of the country there was absolutely no grass or water. If the animals did not die of thirst, their resistance was so reduced that they readily developed diseases, of which the most prevalent was and is also at present anthrax. According to Roumanian sanitary law, animals suffering from anthrax must not be treated at all, but immediately slaughtered and buried; but the peasants, in order to decrease their losses, take off the hide of the animals, for which they get almost as much as for the animal itself. Many recent cases of anthrax have resulted from this practice. Severe penalties have now been instituted for the infringement of these laws. Luckily, the number of human patients suffering from anthrax is relatively low, and those who become infected with anthrax are instructed to seek at once medical aid, which, thanks to the reliable anthrax serums distributed to physicians by the state, saves the majority of patients.

Unreliability of a Negative Wassermann Reaction

Dr. Franz Veress, professor of venereology at the University of Cluj, says that most unfortunate consequences attend the practice of attaching importance to a negative serum reaction. It is still worse if a patient goes directly to a laboratory and not to a specialist. Basing his statement on details of several thousand cases, he asserts that a positive reaction is the sign of active syphilis, necessitating energetic treatment, but he is emphatic in warning against the drastic treatment of old latent cases of syphilis, in which reaction should be gradually induced by means of mild treatment with mercury or iodin. A negative Wassermann reaction alone means nothing at all—the disease may be either nonexistent or latent. The reaction can be negative in all stages of syphilis, whether mild or severe. In the estimation of cures, clinical symptoms are to be relied on but not the negative Wassermann reaction. It may be necessary to give a course of treatment even when the reaction is negative.

Treatment of Sleeplessness

Dr. Cajal of Bucharest, in dealing with the treatment of sleeplessness, points out that a number of patients consult their medical advisers on account of "sleeplessness"; but on closer investigation it appears that the symptoms which lead them to seek treatment is a limitation of the duration of sleep and the fact that they are unrefreshed in the morning. Simple disturbances of sleep seldom occur unless associated with some body disturbance, either past or present. In a few cases the disturbance is periodic and is a kind of psychotic affection. It should be the duty of the practitioner to discover the other symptoms with which the sleep disturbance is connected. It is common for nervous children to sleep badly. The exciting causes may be some extraordinary excitement, bodily exertion, or tiring and emotional causes. The treatment of severe cases of this kind should be directed to strengthening the nervous system and regulating the hygienic conditions of life. Psychic influences from the parents and the physician do much good, but care must be exercised that neither severe unkind treatment, nor exaggerated mildness be employed. Narcotics are rarely needed. The possibility of worms must be borne in mind in these cases. The disturbance in adults may be secondary to affections of the lungs, heart or skin, or there may be a painful nervous disease, such as neuralgia, neuritis, tabes or cerebral syphilis. At times, organic diseases of the nervous system are manifested only by disturbance of sleep at first. It is not uncommon for a patient with general paralysis to come to the medical practitioner on account of this symptom. The next category of cases belongs to the poisonings. Chronic alcoholism, nicotin poisoning, intoxication with tea and coffee and the like may be responsible for the disturbance, and Dr. E. Meyer of Germany stated some years ago that sleeplessness may arise in the course of morphinism. The disturbance of sleep in marked mental disturbances is well known. In functional neuroses, such as hysteria and neurasthenia, sleeplessness is not infrequently encountered. The type of the disturbance in these cases is very definite. Finally, he mentions the sleeplessness of the climacteric. The treatment of the symptoms must consist, first of all, in the treatment of the primary condition causing it. In the second place, much good can be done by paying attention to the hygiene of sleep and of the bedroom. The physician may be able by simple means to remove the symptom altogether in nervous patients. Next, hydrotherapeutic measures may be adopted. Wet compresses, packs and partial baths are useful. Baths often work well in the sleeplessness of the climacteric. Hypnosis is often an excellent soporific, but as a rule the practitioner is not experienced in this. Electrotherapeutic measures may

do good. Before giving hypnotics or narcotics, the physician should remember that he is merely dealing with a symptom; at times, however, it is impossible to get on without them.

VIENNA

(From Our Regular Correspondent)

Dec. 28, 1922.

Dismissal of Medical Officers of the Hospital Staffs

In view of the financial stress in the new era of the republic, which necessitates a sharp reduction of all expenditures incurred by the state, the hospitals also will be considerably affected by the activities of the "economy dictator," appointed by the League of Nations. In Vienna alone, two hospitals will be closed, and the others will undergo a marked diminution of capacity. At least 75 per cent. of the nurses and attendants will thus be superfluous, to say nothing of the administrative staff. The medical staff of these hospitals has already been cut down, as more than 100 physicians have received a fortnight's notice that their appointments, terminating December 31, will not be renewed. While the officials and attending personnel are fighting against this sudden dismissal, backed by their political organizations, the physicians have no political party behind them. In vain, the medical organization has pointed out to the ministry of finance that a real "cut" in the administrative body and the number of nurses is necessary and possible, while the number of physicians is even now insufficient, and a diminution of their number is wrought with harm and danger to the patients. The view of the ministry is that, since a number of beds (about 25 per cent.) are continually not in use, a uniform dismissal from all classes of persons salaried by the hospitals is required and possible.

The situation of these physicians in the capital is most distressing. They are unable to establish themselves in private practice, as this now involves an expenditure of many millions of kronen; and, worse still, they cannot find flats or lodgings for that purpose, as the housing problem is a great problem in this city. The ministry is not opposed to continuation of the work by the physicians if they will consent to work without being paid, but the salaried appointments were for the most part the only means enabling the young physician to keep up his studies and obtain the knowledge and practical experience required by him in his future position as a member of the corporation of public health. As nearly 80 per cent. of all hospitals in this country are owned and run by the government, the openings in the private hospitals and nursing homes are few. The average number of inmates of public hospitals has grown less every year since 1919, partly because the charges are so high and partly because the institutions were built to accommodate the population of a large empire (55,000,000), and the population is now only 6,000,000. The situation is unavoidable as far as the state is concerned; but as regards the profession it is a dangerous procedure for the present government not to individualize the acts of economy.

Difficulties of the Anatomic Institute

The Anatomic Institute of the Vienna University, whose world-wide reputation has every year attracted hundreds of students from all parts of the world, has been forced to diminish its work to a considerable extent. The yearly grant by the government is hardly sufficient for minor administrative expenditure, and all other expenses must be covered either by the students' fees or by grants and contributions from other sources (Rockefeller Foundation, Swiss Aid). These contributions from abroad include the necessary apparatus and a full outfit of linen for working purposes, and equipment for the library, as well as chemicals for the laboratories. But bodies, which are one of the chief requirements of an anatomic institute cannot be obtained by money. While in former years the vaults of the institute held sufficient anatomic material for at least two years, there is now a distinct scarcity. The public hospitals can supply only such bodies as are not claimed. Previously, more than 200 bodies were prepared in the laboratories each year by injection of phenol (carbolic acid), and were kept in this liquid until wanted for use. Now scarcely fifty can be counted on, while at least seventy or eighty whole cadavers are required for the work of the inland students alone.

There are more than 700 students working in each of the two institutes, of whom more than 60 per cent. are foreigners, chiefly from the Balkans, but also from the United States. In order to utilize the small number of cadavers to the utmost it has been arranged that only inlanders work on the whole body (six at a time) while foreign students dissect only separate parts; and only a limited number of students of the first year (400) are admitted. There are three dissecting theaters, with eight dissecting tables in each. The fees for the work in the institutes are about 60,000 kronen for each term (less than $1) for the inland student, while foreigners have to pay ten times as much. Still, these sums do not suffice to pay expenses. The institute requires more than half a ton of raw phenol alone every year, costing about $400, to say nothing of fuel and lighting.

In order to obtain more working material, arrangements have been made with the hospitals in the country and the provinces that will insure a supply of from twenty to thirty bodies each year. But the transportation of this material will be so expensive that special fees will have to be charged for the dissection of bodies obtained in this way. These will of course be obtained from the foreign students, of whom there are at present here sixteen Egyptians, eight Chinese and Japanese, and one Hindu, a woman.

Opening of a Crematorium in Vienna

An old prejudice was done away with a few days ago in this city by the present democratic government, and now the body of any person who desired to be cremated need not be transported to Germany, formerly the only way to have this wish fulfilled. The government, being under ecclesiastic control, tried, to the very last moment, to prevent the opening of the crematorium, which had been erected at a great cost by the municipality. But the magistrates refused to consider the governmental order, and there is little doubt that the final decision of the upper court of administration will be in favor of cremation. From the medical point of view, cremation is preferable to interment, except that detection of a criminal death is made most difficult by it. The furnaces of the crematorium are regulated in such a way that about 750 kg. of coal are required to reduce the body to ashes within two hours. In case of death from infectious disease, and in any case when cemeteries are situated near drinking wells, cremation should be the method of choice for the disposal of dead bodies, as was the practice during the war.

It is expected that the existence of this institute in the capital will give a strong impetus to a more general adoption of cremation in this country.

Report of the Work Done by the Municipal Board of Health

Professor Tandler, at present head of the board of health of Vienna, recently reported the work done by the board last year, in a long speech on the budget. The expenditures were high, about one billion kronen ($79,000) a day, an enormous sum for our city. The principal idea was to diminish the unproductive expenditures and to increase the

productive ones. In other words, it was the duty of society to save the poor from the poorhouse, not to erect beautiful poorhouses for them. This was effected by procuring work for the unemployed, by encouraging mothers to take their children out of the children's homes, by establishing homes for aged people, where they could improve their situation by doing light work. Some statistics were worth recording. In the first eleven months of the year 1922, Vienna had 27,185 live births as against 26,134 deaths, or a gain of only 1,050, a poor outlook for the future. More than 60,000 aged persons were recipient of monthly grants enabling them to stay with their family instead of seeking help in the poorhouse. The expenditures for the inmates of the asylums for the insane were enormous. The poor inmates, especially those who are subjects of the successory states, were a source of heavy burdens to Vienna. They cost more than three billion kronen per year and could not be got rid of, as their countries refused to take them over or to pay for them.

In cooperation with the housing office, energetic efforts had been made to meet the housing problem; 370 cottages and 1,470 flats, mostly for the working classes, had been erected and slums pulled down, within one year. More than 42,000 persons were still looking for lodgings, while 600 families were threatened with a collapse of the houses they live in. Great care was taken to obtain playgrounds for schoolchildren, and every kind of sport and athletics was encouraged. Swimming in the municipal baths was made possible for schoolchildren; even in winter, by a generous coal supply. A number of old cemeteries were closed and will be converted into public gardens, while an important item in the work was the final replacing of the oldfashioned dust-van, a potent source of infection, by a modern refuse collector, dustproof and hygienic. A reform in the old slaughter houses was being instituted, and an up-to-date system of meat inspection and market control aided in keeping down infectious outbreaks.

BERLIN

(From Our Regular Correspondent)

Jan. 6, 1923.

Rules as Affecting Medical Directors of Hospitals

A committee of the Prussian *Aerztekammern* ("chambers of physicians") has drawn up a set of rules applicable to medical directors of hospitals: 1. The medical director of a hospital should be by contract engaged for a period of at least five years. The contract may not be dissolved, nor may a renewal be refused, except for important reasons. If differences of opinion arise as to whether such reasons exist, the matter will be decided either by arbitrators or by the ordinary courts of justice. 2. In case the medical director is not the executive head of the institution, he is at least responsible for its management so far as the care of patients is concerned, and more particularly for the general medical service rendered to patients and for the hygienic measures to be applied. In this connection, he must be accorded the necessary authority. 3. If the institution has a board of trustees (administrative board or committee), the medical director (or his locum tenens) should have a seat and vote at its deliberations. 4. In all questions pertaining to medicine, hygiene and building arrangements, the opinions of the medical director must be heard before any final action is taken. He should also assist in the administration of the institution. 5. The medical director is ex officio the head not only of the medical personnel and the nursing personnel, but also of the household personnel and the administrative personnel, in all matters pertaining to the care of patients. 6. All rules and regulations adopted by a board of trustees (administrative board or committee) with respect to the hospital personnel, in connection with the care of patients, must pass through the hands of the medical director, and their execution remains subject to his supervision. Likewise, all other documents, orders and reports affecting the hygiene of the hospital or the care of patients, which are sent to the board of trustees or which are issued by it, must be brought to the notice of the medical director or presented for the addition of his signature, as the case may be. 7. The medical director has the right to demand that he be allowed sufficient medical assistants for the performance of his tasks, such as anesthesia, assistance at operations, locum-tenency and operations by specialists. The engaging of medical assistants in a hospital lies in the hands of the administration or the board of trustees, in accordance with the recommendations of the medical director or of the independent chief physician of a special service. Such assistants are then subject, as to their service, to the orders of the chief physician of the department to which they were delegated. 8. The medical director must also control the distribution of the medical assistants and the attending personnel throughout the various departments, and likewise the activities of this personnel. In case the rules of a cloister or of a foundation give the lady superior the authority to assign the nurses or transfer them to other services, it should be understood that the lady superior before taking such action should come to some agreement with the medical director. 9. Before a new patient is admitted, the sanction of the medical director should be secured. The medical director must decide to what ward or room a patient is to be assigned, and also in regard to the dismissal of a patient. No patient may be dismissed without the consent of the medical director—not even for disciplinary reasons. 10. The medical director should receive an adequate fixed salary, which, if it is the physician's chief source of income, should increase with length of service and should be subject to a pension. Any other compensation will be in accordance with special agreements, as expressed in the contract. While the fundamental principles as here laid down apply more particularly to medical directors of hospitals, they are, in a measure, applicable also to the chief physicians of departments or special services.

Personal

Trendelenburg of Tübingen has refused the call to Berlin to serve as the successor of Rubner for the chair of physiology. A call has been sent to F. Hofmann of Bonn.

Professor Poll of Berlin has secured a chair for general biology and theory of heredity.

Marriages

EUGENE JOHN TRUSCHEL, Pittsburgh, to Miss Helen Mildred Rupp of Edgewood, Pa., November 23, at Wilkinsburg.

ARTHUR W. M. ELLIS, Toronto, Canada, to Miss Winifred Rose of Essex, England, recently, in England.

RODERICK JAMES MCDONALD, JR., Loveland, Colo., to Miss Hazel Dell Chaffee of Boulder, December 28.

JAMES H. HOWELL, Galt, Ont., Canada, to Miss Lillie Murray of Kingston, Ont., recently.

THOMAS W. BALLANTYNE to Miss Marion Karn, both of Woodstock, Ont., Canada, recently.

OLIVER H. SWARTZ, Middletown, Pa., to Miss Mary Frances Moore of Harrisburg, December 2.

EDWARD W. JEW, Pittsburgh, to Miss Elsie M. Seeman of Wilkinsburg, Pa., November 30.

WILLIAM A. CARDWELL to Miss Jessie Lord, both of Niagara Falls, Ont., Canada, recently.

FRANK E. SEYMOUR to Miss Olga Larson, both of Fort Dodge, Iowa, November 28.

EDWIN J. BARNETT to Miss Agnes O'Neil, both of Spokane, Wash., November 21.

Deaths

Walter Stanley Haines ⊕ beloved teacher of students of Rush Medical College since 1876, died, January 27, at the Presbyterian Hospital from bronchiectasis complicated with chronic nephritis. Dr. Haines was born Sept. 27, 1850, in Chicago. His father, John G. Haines, was for two terms mayor of the city. Dr. Haines attended the Chicago High School, graduating first in his class, and then attended the Massachusetts Institute of Technology from 1869 to 1871. While there he fell ill with pleurisy and was compelled to give up his work; since then he suffered constantly with a lung disturbance. In 1871 Dr. Haines entered the Chicago Medical College, from which he graduated in 1873. Even before his graduation he showed great promise in his chosen field, and was offered the chair of chemistry in his Alma Mater while still a student, holding the position from 1872 to 1876. During this period, having completed his medical education, he served an internship in Mercy Hospital and spent several months in Europe in study. In 1876 he was called to the chair of chemistry in Rush Medical College, succeeding Dr. Henry L. Lyman. Since that time Dr. Haines had devoted himself to teaching and there passed before him a vast body of students who not only respected him for his scientific attainments but loved him greatly for the beauty of his personal character. It has been said of him that his gentle spirit, his standards of care and accuracy, his consideration for his fellow men, whether colleagues, students or janitors, made him, not only the best loved man in the college, but a constant beneficent influence on the whole place.

Dr. Haines was a member of the committee of revision of the United States Pharmacopeia from 1900 to 1920. He was a member of the Illinois State Food Standard Commission since 1909, and was a member of the American Chemical Society and of the Chemical Society of London. He contributed widely to the literature of his subject. With Peterson of New York he prepared a textbook of legal medicine and toxicology which passed through several editions; he also wrote chapters on special toxicologic subjects in various systems of toxicology and legal medicine. He was especially noted for his service as expert witness in many important legal cases, in which his calm demeanor, dignity, incisiveness and broad information commanded wide admiration.

In 1916, the alumni of Rush Medical College joined in the raising of a fund for presentation to the college of a portrait of Dr. Haines, and for establishment of a Haines fund for the college. Last year, in recognition of his fifty years of service in the teaching of medicine, the alumni presented him with a watch; the graduating class placed a tablet in his honor in the college amphitheater, and the Walter S. Haines Library fund was established for the library of Rush Medical College, to which he had given greatly of his service. In concluding his address on that occasion, he said:

> It is for my students, however, that is reserved the warmest place in my heart and the largest measure of my thought. I have seen more than 6,500 of them go forth to every state of this nation, to nearly every town of the land, and to almost every country of the globe, to give comfort to the sick and to stay the hand of the fell destroyer—to teach, to investigate, and to make great discoveries. My one fondest hope is that perhaps I have done a little to prepare them for that work and that possibly I have helped them, even though slightly, in their splendid careers.

John Henry Larkin, New York; Medical Department of Columbia College, New York, 1894; member of the American Association of Pathology and Bacteriology, the New York Pathological Society and the New York Academy of Medicine; assistant professor of pathology at his alma mater; consulting pathologist to St. Francis', St. Joseph's, Misericordia, Sydenham, Lincoln and Harlem hospitals; since 1911 director of the pathologic laboratories of the City Hospital, Welfare Island; aged 53; died, January 17, from pneumonia.

Franklin Deuel Skeel, New York; New York University Medical College, New York, 1881; member of the New York Academy of Sciences, the New York Academy of Medicine, the New York Ophthalmological Society, the New York Zoological Society, the New York Botanical Society, the American Association for the Advancement of Science, the American Museum of Natural History, and formerly president of the New York Microscopical Society; aged 71; died, January 15, at his home in Bedford Hills.

John Williamson Caldwell, New Orleans; Medical College of Virginia, Richmond, 1864; Civil War veteran; Stewart professor of natural sciences, Stewart College (Southwestern Presbyterian University), Clarksville, Tenn.; emeritus professor of chemistry and geology at Tulane University of Louisiana School of Medicine, and formerly curator of the college museum; aged 80; died, January 2, from senility.

Henry H. Flood, Catonsville, Md.; Baltimore University School of Medicine, Baltimore, 1896; member of the Medical and Chirurgical Faculty of Maryland; for nearly thirty years port medical attendant to the Norwegian, Swedish and Danish vessels under the maritime regulations of those countries; aged 50; died suddenly, December 14, at the St. Agnes Hospital, Baltimore.

William Jordan Taylor ⊕ Cincinnati; Miami Medical College, Cincinnati, 1900; formerly lecturer on electrotherapeutics at his alma mater; member of the Cincinnati Academy of Medicine; the Cincinnati Society for Medical Research, and the American Roentgen Ray Society; served in the M. C., U. S. Army, during the World War; aged 48; died, January 13.

Frederic Albert Jewett ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1883; member of the Brooklyn Pathological Society; for more than twenty years connected with the board of health, and chief inspector of the Bureau of Contagious Diseases; formerly on the staff of the Bushwick Hospital; aged 70; died, January 18, from cardiac dilatation.

Edouard Julien Dubois ⊕ Indianapolis; Central College of Physicians and Surgeons, Indianapolis, 1905; member of the Society of American Bacteriologists; served in the M. C., U. S. Army, during the World War; for twelve years city bacteriologist; aged 55; died suddenly in his office at the U. S. Veterans' Bureau, January 17, from cardiac asthma.

Andrew David Nesbit ⊕ Tekamah, Neb.; Jefferson Medical College of Philadelphia, 1887; formerly president of the Nebraska State Medical Association; member of Missouri Valley Medical Association; at one time county coroner; member of the board of education; aged 62; died, January 13, from cerebral hemorrhage.

Langley St. A. Whitley ⊕ Godfrey, Ill.; St. Louis Medical College, St. Louis, 1884; was given the degree of LL.D. from the University of Virginia, Richmond; formerly member of the state legislature; aged 59; died, January 15, following an operation for carcinoma of the stomach.

Arthur Bernheim Prince, Kingsland, Ga.; University of Georgia Medical Department, Augusta, 1912; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 34; died, December 25, from a bullet wound in the brain, presumably self-inflicted.

Edgar Clarence Taylor, Pretty Prairie, Kan.; University Medical College of Kansas City, Mo., 1909; member of the Kansas Medical Society; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 46; died, December 28, from tuberculosis.

Milton C. Wilson, Lafayette, Ind.; Medical Department Butler University, Indianapolis, 1882; member of the Indiana State Medical Association; county physician; formerly president of the Tippecanoe County Medical Society; aged 71; died, January 14, from heart disease.

William Scott Rofe, Denver; Rush Medical College, Chicago, 1874; formerly a practitioner of Chicago, where he served as chief surgeon of the stockyards; aged 80; died, January 12, from heart disease, subsequent to a fall, January 11, when he fractured his wrist.

Samuel Rufus Moyer ⊕ Monroe, Wis.; Chicago Medical College, Chicago, 1883; formerly lecturer on diagnosis at the Marquette University School of Medicine, Milwaukee; president of the Green County Medical Society; aged 68; died, January 15, from cholemia.

Enos Walter Dickson Wright, Langley, S. C.; Baltimore Medical College, 1894; aged 50; died, December 4, at the Margaret Wright Hospital, Augusta, Ga., from a fractured skull, received when the automobile in which he was driving was struck by a train.

John H. McCreary, Highland Park, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1866; Civil War veteran; formerly superintendent of the Pittston, Lancaster County, Harrisburg and Wernersville hospitals; aged 79; died, January 16.

John Bradner Cassady, Burlington, N. J.; Medico-Chirurgical College of Philadelphia, 1889; member of the Medical Society of New Jersey; president of the board of health; surgeon for the Pennsylvania Railroad; aged 56; died, November 29.

⊕ Indicates "Fellow" of the American Medical Association.

John H. Metzerott, Washington, D. C.; Medical Department of Columbian University, Washington, D. C., 1891; member of the Medical Society of the District of Columbia; aged 57; died, January 3, at the Sibley Memorial Hospital, following an operation.

Washington Franklin Elliott, Beaver Falls, Pa.; Jefferson Medical College of Philadelphia, 1887; member of the Medical Society of the State of Pennsylvania; chief of staff of the Providence Hospital; aged 66; died, January 10, from pneumonia.

Sylvester Gwaltney ⊕ Los Angeles; Marion-Sims College of Medicine, St. Louis, 1892; formerly instructor of clinical medicine at the College of Physicians and Surgeons, Los Angeles; aged 58; died, January 2, in his office from heart disease.

Lloyd L. Hurst, Philadelphia; Jefferson Medical College of Philadelphia, 1921; served during the World War; on the staff of the Samaritan Hospital; aged 36; died, January 7, at Maple Shade, N. J., from influenza and pneumonia.

Willard George Steadman, Southington, Conn.; Bellevue Hospital Medical College, New York, 1874; member of the Connecticut State Medical Society; formerly city health officer; aged 69; died, January 10.

Otto Frenzel, Pigeon, Mich.; Starling Medical College, Columbus, Ohio, 1891; member of the Michigan State Medical Society; aged 52; died, January 6, at the Saginaw General Hospital, Saginaw.

James Crooks, Paterson, N. J.; New York Homeopathic Medical College and Hospital, New York, 1887; member of the Medical Society of New Jersey; aged 61; died, January 13, from heart disease.

Hugo A. Gabert, Mandeville, La.; Medical College of Louisiana, New Orleans, 1879; member of the Louisiana State Medical Society; aged 70; died suddenly, January 10, from heart disease.

Samuel M. Henry, Toronto, Ont., Canada; Victoria University Medical Department, Toronto, 1868; formerly mayor and chairman of the board of education of Harriston; aged 73; died recently.

Tilmon Leroy Noblitt, Erick, Okla.; Eclectic Medical University, Kansas City, Mo., 1902; member of the Oklahoma State Medical Association; also a minister; aged 49; died, December 22.

Florence Ellen De L'horbe McCormick, Toronto, Ont., Canada; American Medical Missionary College, Chicago, 1904; aged 40; died recently, from intestinal stasis and peritonitis.

John Howard Nixon, Springfield, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1888; member of the Missouri State Medical Association; aged 60; died, January 9.

William Thomas Duncan, Des Moines, Iowa; National Medical University, Chicago, 1895; Medical Department of Drake University, Des Moines, 1899; aged 47; died, January 13.

John A. Biles ⊕ Del Norte, Colo.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; formerly member of the state legislature; aged 70; died, January 9, following a long illness.

James Darrach, Philadelphia; Pennsylvania Medical College, Philadelphia, 1852; formerly consulting physician at the Germantown Hospital; aged 94; died, January 17, from senility.

Harley Jones Butte ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1900; aged 52; was found dead, January 12, from accidental asphyxiation.

Edward Maguire, Pullman, Wash.; Kansas City (Mo.) Medical College, 1900; served as mayor of Pullman for two terms; aged 52; died, January 2, from cerebral hemorrhage.

Samuel Joseph Smith, Iowa City; Iowa State University of Iowa College of Medicine, Iowa City, 1885; member of the Iowa State Medical Society; aged 63; died, January 11.

James Merit Melton ⊕ Crozet, Va.; Vanderbilt University Medical Department, Nashville, Tenn., 1901; aged 51; was instantly killed in an automobile accident, January 10.

Omar E. Amos, Jefferson City, Mo.; American Medical College, St. Louis, 1904; member of the Missouri State Medical Association; was shot and killed, January 9.

Anna E. Rhoads, St. Louis (licensed, years of practice); formerly a practitioner of Indiana; aged 80; died, December 20, at the Christian Church Home, from senility.

Ayman E. Kean, St. Louis; St. Louis College of Physicians and Surgeons, 1903; also a dentist; aged 48; died, January 7, from injuries received in an automobile accident.

Frederick Raymond Kitterman, Tiskilwa, Ill.; Medical Department of the University of Illinois, Chicago, 1902; aged 47; died recently from pulmonary thrombosis.

Spotswood Hayes Parker, University, Va.; University of Virginia Department of Medicine, Charlottesville, 1904; aged 41; died, January 8, following a long illness.

Harvey Jenner Chadwick ⊕ Grand Junction, Mich.; Michigan College of Medicine, Detroit, 1881; aged 65; died, November 5, from cerebral hemorrhage.

John Henry Long, Lincoln, Neb.; Minnesota Hospital College, Minneapolis, 1888; also a druggist; aged 68; died, January 11, at St. Elizabeth's Hospital.

George Allen McCormick, Hennepin, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; aged 76; died, January 5, from angina pectoris.

Anna Mary Morgan, Toledo, Ohio; Physio-Medical College of Indianapolis, 1898; aged 64; died, January 4, at the home of her son in Westville, N. J.

Orion Baum, Vine, Va.; College of Physicians and Surgeons, Baltimore, 1885; member of the Medical Society of Virginia; aged 64; died, January 9.

Frank P. Gray, Lafayette, Ind.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; member of the city board of health; aged 65; died, January 18.

Prince Cooper, Van, W. Va.; College of Physicians and Surgeons, Baltimore, 1915; aged 36; died, December 7, at the county hospital, from meningitis.

Daniel Pool ⊕ St. Paul; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1885; aged 66; died, January 4, following a long illness.

John L. Smith, Clarksburg, Ind.; Cincinnati College of Medicine and Surgery, Cincinnati, 1877; formerly postmaster; aged 70; died, January 15.

Arthur Howard Nichols ⊕ Boston; Medical School of Harvard University, Boston, 1866; aged 82; died suddenly, January 9, from heart disease.

Leland S. Weaver, White Cloud, Mich.; University of Michigan Medical School, Ann Arbor, 1864; aged 79; died, January 9, from pneumonia.

Wilbur Phelps Morgan ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1862; aged 81; died, December 20, from senility.

Sarah Brooke, Atascadero, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1874; aged 83; died, January 4, from paralysis.

Edward Philip Koch, Chicago; Missouri Medical College, St. Louis, 1881; aged 68; died, January 25, from heart disease and chronic nephritis.

John Babington, Detroit; Hahnemann Medical College and Hospital of Chicago, 1881; aged 67; died suddenly, January 6, from heart disease.

George Draper Kelley, Lexington, Ky.; Medical School of Harvard University, Boston, 1892; aged 56; died, January 8, from heart disease.

John B. Mathiesen ⊕ Eau Claire, Wis.; University of Christiania, Norway, 1898; aged 50; died, January 17, from pleuropneumonia.

Sevier E. Snodgrass, West, Texas; Missouri Medical College, St. Louis, 1879; aged 73; died suddenly, January 2, from acute indigestion.

Emil Kuder, Coffeyville, Kan. (licensed, Kansas, 1901); veteran of the Franco-Prussian War; aged 71; died, January 2, from uremia.

Homer Lafayette Mershon, Saxonburg, Pa.; Bellevue Hospital Medical College, New York, 1878; aged 72; died, November 27.

Peter C. Bradley, Shawnee, Okla.; Medical Department University of Louisville, Louisville, Ky., 1891; aged 69; died, January 9.

Charles Rawling, New Haven, Conn. (licensed, Connecticut, 1893); Civil War veteran; aged 88; died, January 10, from senility.

James R. Williams, High Point, N. C. (licensed, years of practice); aged 88; died, January 2, from senility.

Henry Shepard, Tahona, Okla. (licensed, years of practice); aged 75; died, December 10.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Healing Springs Water.—The Virginia Hot Spring Co., Hot Springs, Va., shipped in interstate commerce in May, 1922, a quantity of "Healing Springs Water" that was misbranded. The federal chemists reported that analysis of a sample of the water showed it to be a moderately mineralized water, the principal dissolved constituents being the bicarbonates of calcium and magnesium and magnesium sulphate (Epsom salt). The product was labeled in part "a medicinal water recommended in the case of gout, rheumatism, insomnia, kidney and bladder troubles and for the nervous system." These statements were declared false and fraudulent for the reason that the article did not contain any ingredient or combination of ingredients capable of producing the effects claimed. In August, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10677; issued Nov. 23, 1922.*]

Bick's Sarsaparilla.—The Palestine Drug Co., St. Louis, Mo., shipped (among other products) during the summer of 1920 a quantity of "Bick's Sarsaparilla" that was misbranded. The federal chemists reported that the preparation contained less than 1 per cent. sodium salicylate, 0.7 per cent. potassium iodid, plant drugs extractives, including sarsaparilla and a laxative drug, sugar, alcohol and water. It was falsely and fraudulently labeled as a blood purifier. In May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10693; issued Nov. 23, 1922.*]

Yerk's Wine Extract of Cod Liver Oil.—The Yerk's Chemical Co., Winston-Salem, N. C., shipped in October, 1921, a quantity of this preparation that was misbranded. The Bureau of Chemistry analyzed the product and reported that it consisted essentially of compounds of sodium, potassium, calcium, iron, quinin, strychnin and phosphorus, extracts of plant drugs, possible traces of cod-liver oil, malt extract, sugar and alcohol. It was flavored with benzaldehyde. The product was falsely and fraudulently labeled so as to create in the minds of purchasers the impression that the article was an effective remedy for "General Debility, Nervous Prostration, Tuberculosis, Emaciation, Scrofulosis, Winter Cough, Bronchitis, etc." In June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10729; issued Dec. 18, 1922.*]

Anemia Tablets.—In March, 1920, a quantity of these tablets consigned by Carlos M. Rivoll, Laredo, Texas, and shipped from Texas to California were declared misbranded. The federal chemists reported that the tablets consisted of milk sugar (95 per cent.) and small quantities of cinchona alkaloids, charcoal, sulphur, gum and compounds of arsenic, phosphorous, iron and sodium. The circulars accompanying these tablets declared that they would "restore lost vigor, relieve mental disorders, neurasthenia, etc.," and that they would also "produce an appetite," cure rickets and menstrual disorders. These and similar claims were declared false and fraudulent and in April, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10824; issued Dec. 23, 1922.*]

Correspondence

DEATH RATE OF PHYSICIANS

To the Editor:—The statement in the editorial on the deaths of physicians in the United States in 1922 (THE JOURNAL, January 6) was to the effect that the death rate of physicians in 1922 was 17.73 per thousand, making it appear that this was a rate comparable in some respects to the death rates usually quoted for general population groups. Would it not perhaps be well in future statements with regard to physicians' death rates to indicate quite clearly that this is a selected age and sex (mainly) death rate, as physicians are still preponderantly males. As a matter of interest, I obtained, through the courtesy of Dr. Dublin of the Metropolitan Life Insurance Company the death rates for males at all occupations and at different age groups in 1920. It will appear from the table that, although the death rate of physicians is slightly higher than that of lawyers, judges and justices of the ages 25 to 44, it is strikingly less than the death rate of all occupations of men at this age group. When, however, we reach the age group 45-64 we find the excess of physicians' death rate over that for all occupations notable, and at the ages 65 and over and for all ages the physicians' death rate far exceeding the death rate of other occupations. So, in spite of the fact that we are dealing with a special age and occupation group, which might justify our expecting a higher rate in comparison with other males at these ages, we find a specific excess of deaths for physicians.

DEATH RATES, REGISTRATION STATES, 1920
RATES PER HUNDRED THOUSAND MALES

	10 to 13	14 to 19	20 to 24	25 to 44	45 to 64	65 and Over	All Ages 10
All occupations...	142.2	424.5	521.7	706.4	1648.4	8482.9	1260.1
Physicians and surgeons	.....	.....	527.7	568.0	1960.9	10053.7	1900.9
Lawyers, judges and justices....	.....	.....	401.2	519.9	1964.6	9320.8	1781.7
Clerks (except in stores)	.....	438.9	548.2	801.3	2082.2	7933.5	1023.1

DEATH RATES PER THOUSAND AMONG PHYSICIANS, 1921 AND 1922

J. A. M. A. (1-6-1923).....	17.73	
J. A. M. A. (1-7-1922).....	14.65	(Includes physicians of Canada)
J. A. M. A. (1-1-1921).....	15.46	(Includes physicians of Canada)

HAVEN EMERSON, M.D., New York.

"INTESTINAL WORMS AND APPENDICITIS"

To the Editor:—In the editorial on "Intestinal Worms and Appendicitis" (THE JOURNAL, January 27, p. 256), which gives a review of recent work on the agency of worms, particularly the ordinary pinworm, in the production of this trouble, no reference is made to work which was done a number of years ago, and for that reason I am calling attention to it.

This subject was discussed quite fully by Metchnikoff in his Harben Lectures, published under the title of "The New Hygiene" in 1907. He quotes Desprès as pointing out in 1868 the frequent presence of worms in what were then called "stercoral" abscesses localized in the region of the cecum and ascending colon. Metchnikoff gives a number of observations of his own, one of which concerns a professor of hygiene who apparently contracted appendicitis from his wife through the agency of worms. Another striking instance is that of an estate on which many cases of appendicitis

occurred. A few months' residence on this estate seemed to suffice to bring on an attack of appendicitis. Members of the family, as well as the servants, suffered. It was found that the feces of these people abounded in intestinal worms, and the conclusion was that food must have been frequently contaminated by human execreta containing eggs of worms.

More unusual and equally interesting is the report on necropsies of some fifty chimpanzees in which five cases of acute or chronic appendicitis were found. In one case particularly, which ran an acute course ending in death and which presented characteristic symptoms, intestinal worms were found.

Metchnikoff considered that the injury to the intestinal wall done by worms is entirely comparable to the breaks in the skin caused by insects in furnishing entrances for pathogenic organisms.

It has always been a source of surprise to me that the surgeons of America, who, I believe, have done more than any other surgeons in the world in regard to appendicitis, have not followed the indications pointed out in these lectures of Metchnikoff. The attention now being given to the matter in Germany illustrates the old saying that "there is nothing new under the sun."

MAZYCK P. RAVENEL, M.D., Columbia, Mo.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MERCUPRESSEN

To the Editor:—I would appreciate any information which you may be able to give me regarding Mercupressen and Neo-Mercupressen. These articles are manufactured by the Barsa Chemical Company, Inc., 28 West Twenty-Third Street, New York City.

GEORGE EDWARD PERKINS, M.D., Boston.

ANSWER.—From the advertising issued by the Barsa Chemical Company, Inc., 28 West Twenty-Third Street, New York City, for Mercupressen, this product is essentially the same as the product which the Spirocide Corporation, 28 West Twenty-Third Street, New York City, marketed as "Spirocide."

Spirocide is claimed to be composed of metallic mercury, copper sulphate, cypress cones, henna, nutgalls and dried pomegranates. The product was sold in the form of tablets. For use, the tablet was ignited, and the fumes were inhaled by the patient. The Council on Pharmacy and Chemistry held that the claims for Spirocide were unproved and unwarranted, and that the routine use of an inexact method for the administration of mercury is detrimental to sound therapy (THE JOURNAL, Jan. 22, 1921, p. 259). The Council's rejection of Spirocide was subsequently fully sustained by the reinvestigation of the inhalation treatment of syphilis carried out by Cole, Gericke and Sollmann (THE JOURNAL, March 4, 1922, p. 654).

WOOD'S METAL

To the Editor:—Please give the formula for Wood's metal, used in making casts of blood vessels, as described by A. A. Ghoreyeb (*J. M. Res.* **35**: 87 [Sept. 16] 1916).

H. H. TURNER, Louisville, Ky.

ANSWER.—Bismuth, 50 per cent.; lead, 25 per cent.; tin, 12.5 per cent.; cadmium, 12.5 per cent. Thorpe's Dictionary of Applied Chemistry gives this formula: bismuth, 8 parts; lead, 4 parts; tin, 4 parts, and a little cadmium.

Autolysis.—"Autolysis" has quite generally been used to designate a process of cell or tissue deterioration in which the more complex nitrogenous substances, particularly proteins, are reduced to simpler form through the agency of enzymes which have been elaborated by the cells or tissues themselves.—Sturges and Retther, *J. Bacteriol.*, November, 1922.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

GRADUATE INSTRUCTION IN TUBERCULOSIS

With Particular Reference to the University of Minnesota *

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Statistics recently compiled by Dr. Bosworth[1] of the Minnesota State Advisory Commission show that of all the tuberculous patients (5,786) discharged from the county sanatoriums of Minnesota, the condition in 17.2 per cent. was incipient, in 35.6 per cent. moderately advanced, and in 47.2 per cent. far advanced on admission. From the time of the opening of the Minnesota State Sanatorium to Jan. 1, 1922, there had been discharged from that institution 3,921 pulmonary tuberculosis patients. The disease in 17.3 per cent. of this number was incipient, in 47.1 per cent. moderately advanced, and in 35.6 per cent. far advanced on admission. The figures from the state sanatorium are especially significant, since this institution was established by law for the treatment of incipient tuberculosis. It is plainly evident that something is wrong with our present educational system and methods of diagnosis and treatment of tuberculosis when 82.7 per cent. of the patients being admitted to these county and state sanatoriums have lost their best chances of complete recovery before admission.

Krause,[2] Klotz,[3] McRae,[4] Dock,[5] Thayer[6] and others have shown that there is an opportunity for much improvement in the teaching of tuberculosis to undergraduates in our medical schools, but it is obvious that because of the crowded curriculums in these schools, students cannot become experts during the time they are at work as candidates for the medical degree. It seems necessary, therefore, that considerable time be spent after graduation in an intensive study of tuberculosis. This also holds true in other branches, such as surgery, general medicine, obstetrics, otolarynology and pediatrics. Concerning graduate instruction in such subjects, Lyon,[7] Frazier and Lewis,[8] Litzenberg,[9] Shambaugh,[10] Hamil-

* From the Department of Internal Medicine, University of Minnesota Medical School.
* Read before the Tenth Annual Meeting of the Mississippi Valley Conference on Tuberculosis, Oct. 9, 1922, Milwaukee.

1. Bosworth, Robinson: Personal communication to the author.
2. Krause, A. K.: Undergraduate Instruction in Tuberculosis, Am. Rev. Tuberc. **1**: 233 (June) 1917; Some Problems of Medical Education in Tuberculosis, ibid. **5**: 755 (Nov.) 1921; Tr. Nat. Tuberc. **17**: 202, 1921.
3. Klotz, W. C.: Undergraduate Instruction in Tuberculosis, Am. Rev. Tuberc. **5**: 751 (Nov.) 1921; Tr. Nat. Tuberc. **17**: 194, 1921.
4. McCrae, Thomas: The Separation of Tuberculosis from General Medicine, Tr. Nat. A. Study & Prev. Tuberc. **12**: 83, 1916.
5. Dock, George: The Relation of the General Hospital to Tuberculosis, Tr. Nat. A. Study & Prev. Tuberc. **12**: 89, 1916.
6. Thayer, W. S.: Observations on the Teaching of Tuberculosis, Tr. Nat. A. Study & Prev. Tuberc. **12**: 92, 1916.
7. Lyon, E. P.: Graduate Education in the Clinical Branches, and the Minnesota Experiment, J. A. M. A. **69**: 1307 (Oct. 20) 1917.
8. Frazier, C. H., and Lewis, Dean: Report of the Committee on Postgraduate Instruction in Surgery, J. A. M. A. **76**: 732 (March 12) 1921.
9. Litzenberg, J. C.: The Graduate Degree in Obstetrics and Gynecology, Am. J. Obst. **78**: 404 (Sept. 18) 1918.
10. Shambaugh, G. E.: An Experiment in Graduate Training in Otolaryngology, J. A. M. A. **79**: 365 (July 29) 1922; Graduate Instruction in Oto-Laryngology (Report of Committee on Graduate Training), A. M. A. Bull., Jan. 15, 1921.

ton,[11] Muller,[12] Sedgwick[13] and Wilson[14] have contributed valuable reports and articles. The popularity of such work after graduation has increased until now we find many physicians expressing a desire to register for one or more years in a graduate school of medicine. Such institutions as the universities of Harvard, Pennsylvania, Tulane, California and Minnesota have already developed graduate schools in medicine to train just such physicians.

Baldwin[15] has called attention to the fact that there are two principal reasons why graduate instruction in tuberculosis is necessary: 1. Most teachers are not especially interested in tuberculosis; therefore, their students receive no special training in this subject. 2. In the average medical school, there are few cases of tuberculosis under observation, since the majority of such cases are sent to sanatoriums and to chronic wards, and are no longer available for special study. Since these facts have obtained in the past, Baldwin further points out that most of the men who have applied for graduate instruction in tuberculosis at the Trudeau School have had their interest aroused because they have developed the disease themselves, or have some connection with an institution which demands more knowledge of tuberculosis. This statement of Dr. Baldwin's is gratifying: "There is an increasing demand on the part of the men who have no special connection with tuberculosis institutions, who wish to perfect themselves in the diagnosis and treatment of tuberculosis."

In the large graduate schools, arrangements may be made for considerable study in tuberculosis. However, in most of them, no attempt has been made to organize work for the training of specialists in this field.

Tuberculosis has become a specialty, and much of the future success in the fight against this disease depends on the training of specialists. This fact is being recognized more and more, as shown by these two statements:

"If any real advance is to be made in the organization and administration of an effective tuberculosis service, some adequate system will have to be devised, whereby both medical undergraduates and graduates, and especially those who propose to take up the responsible duties of a tuberculosis officer, are thoroughly trained."[16]

"All the available resources for giving intensive, and yet comprehensive, practical instruction in tuberculosis should be organized and placed within the reach of all who wish to specialize in this subject, and any others who would care to avail themselves of the opportunity."[17]

The income from the Trudeau Foundation makes available annually from three to five fellowships in tuberculosis. These fellowships are granted to tuberculous physicians, medical students or other scientific workers who are engaged in the sanatorium clinical work as members of the staff or in the laboratories as research workers. Dr. Baldwin[18] has informed me that there is always a waiting list for these fellowships, and that the average time each fellow spends in study is approximately eight months.

There are several short graduate courses in tuberculosis offered in the United States. The leading courses of this kind are given at the Trudeau School of Tuberculosis, at Saranac Lake, N. Y., the Colorado School of Tuberculosis, at Colorado Springs, Colo., and the United States Public Health Tuberculosis School, at Oteen, N. C. Each summer these schools offer well organized, intensive courses of from four to six weeks' duration. In some of them the number of applicants far exceeds the capacity of the school. In fact, in one of them, the registration is completed nearly a year in advance of the course.

From the foregoing, it is obvious that there is a real need, and a demand, for well organized graduate instruction in tuberculosis. Therefore, an attempt has been made in the University of Minnesota to organize all available material so as to make graduate study profitable for physicians who desire to become better acquainted with tuberculosis or to prepare for special work in this particular field.

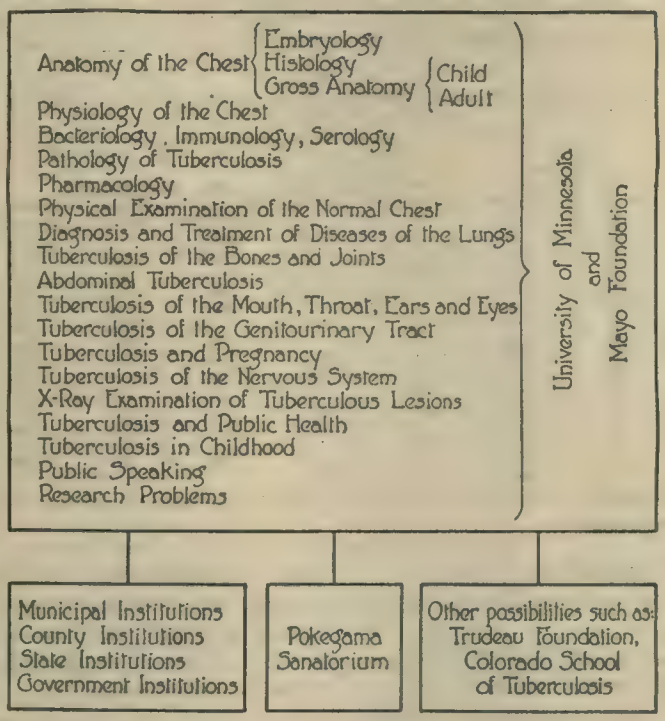


Fig. 1.—Schema of graduate work in tuberculosis.

THE FUNDAMENTALS

In organizing this work in the University of Minnesota, the fundamental subjects have been given due consideration (Fig. 1). In anatomy, the student may devote considerable time to the microscopic and gross study of the chest and its contents in the embryo, fetus, child and adult. The department of physiology offers opportunities for special study of the functions of the organs of the chest. It provides also for the study of the chemistry of respiration, blood, etc. In the department of bacteriology, the isolation, growth, staining and morphology of the tubercle bacillus may be thoroughly studied. Special inoculation work, preparation of vaccines, immunity studies, complement fixation and agglutination tests are taught. The department of pathology provides facilities for the study of experimental tuberculosis. A wealth of gross and microscopic preparations are available which show the different stages of the disease and its effects on the various organs of the human body. There is an opportunity for participation in an adequate number of necropsies on patients dying of tuberculosis. The department of pharmacology offers facilities for the study of the effects of drugs on tuberculous lesions.

11. Hamilton, A. S.: Graduate Training in Nervous and Mental Diseases, J. A. M. A. **77**: 659 (Aug. 27) 1921.
12. Muller, G. P.: Graduate Instruction in Surgery, J. A. M. A. **77**: 503 (Aug. 13) 1921.
13. Sedgwick, J. P.: The Requirements for the Higher Degree in Pediatrics, Tr. A. Am. Teachers Dis. Child. **11**: 12-20, 1917.
14. Wilson, L. B.: Report of Committee on Graduate Medical Education, A. M. A. Bull. **14**: 45-49 (July 15) 1920; Teaching the Fundamentals of Surgery from the Point of View of the Graduate School, J. A. M. A. **79**: 120 (July 8) 1922.
15. Baldwin, E. R.: Post-Graduate Education in Tuberculosis, Tr. Nat. Tuberc. A. **17**: 198, 1921.
16. Woodhead, G. S.: Training in Tuberculosis, Brit. J. Tuberc. **15**: 53 (April) 1921.
17. King, D. B.: Post-Graduate Instruction in Tuberculosis, Brit. J. Tuberc. **15**: 55 (April) 1921.
18. Baldwin, E. R.: Personal communication to the author.

Just as fast as funds permit, books, periodicals and reprints devoted to tuberculosis are being added to the medical school library. During the present year, the graduate school granted a special fund for the collection of a bibliography on tuberculosis. A committee is engaged in this work at the present time, and it is hoped that time and funds will permit such a complete work that the burden of collecting reference titles, which so often falls on graduate students, will be lessened for those specializing in tuberculosis.

CLINICAL MATERIAL

The clinical material for this work is found chiefly in municipal, county, state, government and private hospitals and sanatoriums for the tuberculous.

The Minneapolis General Hospital operates a sanatorium for the tuberculous with a capacity for 135 adults.

The St. Paul City and County Hospital operates a tuberculosis pavilion with a capacity for 110 adults.

The Lymanhurst School for Tuberculous Children maintains a clinic where more than 300 schoolchildren were examined for tuberculosis, and more than 200 other tuberculous children were treated and given instruction in this special school last year. The Trudeau School, serving as a preventorium, cares for ninety-six pupils during the school year.

In the St. Paul Preventorium, seventy-five children are receiving excellent care and training throughout the year.

In the state of Minnesota, there are fourteen county sanatoriums and one state sanatorium. These institutions are under the supervision of the state advisory commission. The resolution contained in a recent communication from Dr. Robinson Bosworth[1] of the advisory commission shows the attitude which this commission has toward the teaching of tuberculosis:

> *Resolved*, That the dean of the medical department of the University of Minnesota be advised that the several tuberculosis sanatoria of the state offer their facilities for the teaching of tuberculosis by their medical staffs to the students of the medical department of the university and urge that the medical department of the university accept and use these facilities so offered.

Table 1 shows that these institutions make available for study 886 tuberculous adults and 140 tuberculous children.

The state hospital for crippled children offers excellent facilities for the diagnosis and treatment of bone and joint tuberculosis. One hundred beds are available for such cases.

The state sanatorium is equipped to care for 260 early cases. Although other favorable cases are admitted, this institution offers excellent opportunities for the study of minimal tuberculosis.

The United States Veterans' Bureau, District No. 10, with headquarters in Minneapolis, operates tuberculosis clinics in Minneapolis and St. Paul where approximately 8,000 examinations were made last year. This bureau also provides beds for the observation and treatment of 159 patients in Minneapolis, and 115 such patients in St. Paul.

Pokegama Sanatorium is a private institution located near Pine City. It has a capacity for fifty tuberculous patients, and contains modern equipment for the study and treatment of the disease. It has arranged to support two fellowships for the graduate study of tuberculosis

The Mayo Clinic offers facilities for the diagnosis of diseases of the chest. The roentgen-ray department offers unusual opportunities for the study of tuberculous lesions of various parts of the body. Here the student may also receive excellent training in surgery of the thorax.

Figure 2 shows the distribution of the institutions for the tuberculous throughout the state. The distance from the university to some of these institutions may be offered as an objection; yet there is sufficient material in several of them to justify the trip, and the expenditure of considerable time in them.

In Table 2 it will be observed that there are already available for study approximately 2,100 cases. This number will be materially increased through the new building program at the Glen Lake Sanatorium and at new county sanatoriums which already have been proposed. In addition to this material, Table 3 shows that tuberculosis clinics exist in close proximity to the university where more than 15,000 visits are made each year.

TABLE 1.—COUNTY SANATORIUMS OF MINNESOTA, THE FACILITIES OF WHICH ARE AVAILABLE TO GRADUATE STUDENTS

Sanatorium	Capacity		Staff		Laboratory Facilities	Roentgen-Ray Equipment	Heliotherapy	Artificial Pneumothorax	Postural Rest	Approximate Distance from University, Miles
	Adults	Children	Physicians	Nurses						
Buena Vista	30	0	1	4	Yes	No	Yes	Yes	Yes	80
Deerwood	30	0	1	4	Yes	No	Yes	Yes	Yes	100
Fair Oaks Lodge	30	0	1	4	Yes	No	Yes	Yes	Yes	150
Glen Lake	202	60	14*	39	Yes	Yes	Yes	Yes	Yes	15
Lake Julia	40	8	1	5	Yes	No	Yes	Yes	Yes	260
Mineral Springs	40	0	1	5	Yes	Yes	Yes	No	Yes	50
Oakland Park	32	0	1	4	Yes	Yes	Yes	Yes	Yes	300
Ottertail County	45	0	1	6	Yes	Yes	Yes	Yes	No	125
Nopeming	130	70	4	27	Yes	Yes	Yes	Yes	Yes	165
Riverside	50	0	1	8	Yes	Yes	Yes	Yes	Yes	120
Sand Beach	45	2	1	7	Yes	Yes	Yes	No	Yes	150
Ramsey County Pavilion	110	0	2	12	Yes	No	Yes	Yes	Yes	10
Southwestern Minnesota	52	0	2	7	Yes	Yes	Yes	Yes	Yes	175
Sunny Rest	50	0	1	7	Yes	Yes	Yes	Yes	Yes	250
					Yes	No	Yes	Yes	Yes	
Total	886	140	32	139						

* This number includes medical consultants.

INSTRUCTION

Candidates for an advanced degree may select tuberculosis as their major subject. They are then required to select a closely allied or supporting subject as a minor. Such students are strongly advised to spend at least one third of their time in anatomy, physiology, pathology and bacteriology, and the remaining time in clinical studies. The method of instruction is thus described by Dean Lyon:[7]

"There is no hand feeding, no formal reciting, no reporting of absences, no routine laboratory exercises. The essential environment consists of libraries, laboratories and clinical material, with competent supervision, and above all, criticism. The student with his adviser as a guide, is turned loose to educate himself. Mostly he learns by doing, which is the natural way."

Figure 1 shows some of the subjects which are emphasized, as well as various opportunities for study outside the university. In special cases, arrangements may be made for the student to spend some time in institutions in other states, such as the Trudeau and the Colorado schools of tuberculosis. It will be seen that the research problem has been given a prominent place. As pointed out by Webb,[19] there is much

19. Webb, G. B.: Tuberculosis: The Rationale of Research, Am. Rev. Tuberc. 5:271 (June) 1921; Tr. Nat. Tuberc. A. 17:26, 1921.

that we do not know about tuberculosis. Therefore, there are many interesting problems on which much time may be spent with profit. Students who remain more than one year may equip themselves with a knowledge of the fundamentals of original investigations so that they are prepared to carry on research work throughout the active years of their lives.

Provisions have been made for students of three groups:

Group 1 consists of students who hold medical degrees, and who desire to spend from one to three years in the study of tuberculosis. Each student selectes a research problem, either laboratory or clinical, which is pursued throughout the course. In addition to this, students choose certain courses in anatomy, physiology, bacteriology and pathology, as well as courses in physical findings in the normal chest, and diagnosis and treatment of diseases of the lungs. Students interested in special phases of tuberculosis may spend considerable time in institutions where such special material is available. For example, students interested in tuberculosis of childhood spend a considerable time in the institutions for children, while students especially interested in surgery of the thorax devote a good deal of time to this subject at the Mayo Clinic, the state hospital for crippled children, and the Glen Lake Sanatorium. Other students whose problems require that they see many patients may do so by spending short periods in several of the institutions. Each student in this group must acquire a working knowledge of tuberculosis as a whole.

The students in this group, on the satisfactory completion of their work, are granted the degree of Master of Science in Medicine or Doctor of Philosophy in Medicine, depending on the length of time spent, and the results accomplished.

Group 2 consists of students who are majoring in some other field, such as obstetrics, pediatrics, surgery or general medicine, and who desire to spend some time in the study of tuberculosis. Such students are permitted to select for study any phase of tuberculosis they desire.

Group 3 consists of general practitioners and recent medical graduates who wish to spend a short time, possibly not more than one quarter, in the study of tuberculosis. Arrangements are made whereby such physicians may devote their entire time during this period to the graduate study of tuberculosis. Other general practitioners who are unable to spend this much time may soon avail themselves of a four to six weeks' intensive course in tuberculosis. An attempt is being made to organize this course to cover approximately the same time and subjects as the short courses at the Trudeau, Colorado and Oteen schools of tuberculosis.

Three graduate fellowships in tuberculosis are in existence at the University of Minnesota. The first of these is supported by the Hennepin County Tuberculosis Association. This fellowship pays the student $750 the first year, and a somewhat larger amount may be allowed for the second and third years. Two other graduate fellowships are supported by Dr. H. Longstreet Taylor. Students holding either of these two fellowships are required to spend one half of their time at the Pokegama Sanatorium, while the greater part of the remaining time is spent at the University of Minnesota. These fellowships pay from $1,000 to $1,500 a year.

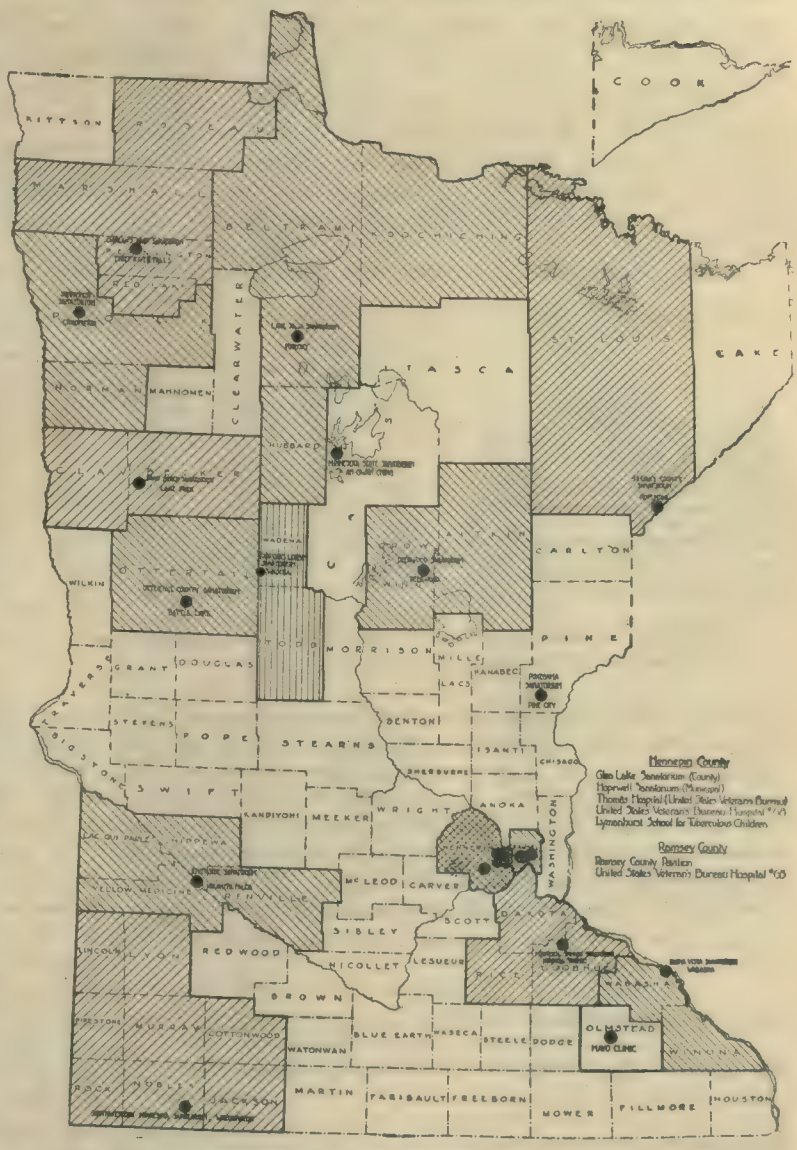


Fig. 2.—Distribution of Minnesota institutions for tuberculous patients.

TUBERCULOSIS AS A LIFE WORK

In talking with senior medical students and recent graduates in medicine, one hears many objections to tuberculosis as a life work. Probably one of the reasons for these objections is that in many medical schools the work in tuberculosis is poorly organized, and the students do not catch a vision of the possibilities in this field. Many physicians have stated that they have no desire to deal with a hopeless disease. Here the fault does not lie with such physicians but with their undergraduate training in tuberculosis. It is gratifying to be aware of the interest that is being manifested in undergraduate instruction in tuberculosis in various parts of the country at present, and it is hoped that the efforts being made in this direction soon will be productive of more graduates in medicine who know that a greater percentage of those infected recover from tuberculosis than from any other major disease.

Other physicians object to tuberculosis work on the ground that they themselves may become tuberculous through long association with tuberculous patients. To be sure, physicians always take the risk of becoming infected while dealing with any communicable disease. It has been shown that adult infection does occur in tuberculosis. However, the danger is not great to any physician who exercises intelligently the ordinary precautions. The report of Toan [20] of the Michigan State Sanatorium shows that in twelve years there have appeared only three cases of active tuberculosis among 857 nontuberculous employees who had lived at the sanatorium for periods of from three months to twelve years. Furthermore, in these three cases it was very unlikely that their

20. Toan, J. W.: A Study of Employees of the Michigan State Sanatorium for a Period of Twelve Years, read before the Mississippi Valley Conference on Tuberculosis, Sept. 12, 1921.

disease was contracted at the sanatorium. "The stay of two years and over on the part of twenty-nine apparently well employees has not produced a single authentic case of active tuberculosis." Similar reports have been made from other institutions for the tuberculous. It is much safer for the physician or the layman to associate with a patient whose sputum is positive, and who has been trained to prevent the spread of bacilli, than to be found in public gatherings where many unrecognized and untrained patients may exist.

Still other physicians state that the financial returns are too poor from treating tuberculous patients. They add also that public health and other organizations are operating so many free clinics and institutions for the diagnosis and treatment of tuberculosis that the future offers little or no opportunity in this field for the private practitioner. It is true that the financial remuneration from tuberculous patients is not so great as in some other fields of medicine, particularly surgery; but the organizations operating clinics throughout the country, as well as other educational organizations, are instructing the public as to the dangers of tuberculosis. The result is that many persons already are reporting every six to twelve months for examination in order to make sure that they are free from tuberculosis. Such a procedure will be adopted, doubtless, by large numbers of people as the educational work is continued and increased. It is questionable, however, whether a physician who places too much stress on financial returns should specialize in tuberculosis—or in any other phase of medicine, for that matter. The service to be rendered to the individual, the community and humanity at large always must occupy first place in the minds of trustworthy physicians.

TABLE 2.—MINNESOTA INSTITUTIONS FOR THE TUBERCULOUS, THE FACILITIES OF WHICH ARE AVAILABLE TO GRADUATE STUDENTS

Sanatorium	Capacity		Staff		Laboratory Facilities	Roentgen-Ray Equipment	Heliotherapy	Artificial Pneumothorax	Postural Rest	Surgical	Knopf's Physiologic Adjuvant	Approx. Distance from University, Miles
	Adults	Children	Physicians	Nurses								
Hopewell Sanatorium	135	0	2	18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	5
Lymanhurst School	0	125	22*	7	Yes	Yes	Yes	No	No	No	No	2
St. Paul Preventorium	0	75	2	7	No	No	Yes	No	No	No	No	10
Trudeau School	0	96	1	1	No	No	No	No	No	No	No	½
County sanatoriums (combined)	886	140	32*	139	See Table 1							
State Hospital for Crippled Children.	0	100	35*	22	Yes	Yes	Yes	No	No	Yes	No	10
State Sanatorium	231	29	2	14	Yes	Yes	Yes	No	Yes	No	Yes	202
United States Veterans' Bureau — Thomas Hospital	75	0	2	12	Yes	Yes	Yes	Yes	Yes	No	No	½
United States Veterans' Bureau — Asbury Hospital	84	0	4	8	Yes	Yes	Yes	Yes	Yes	Yes	No	1
United States Veterans' Bureau — Aberdeen Hospital	115	0	3	7	Yes	Yes	Yes	No	Yes	Yes	No	10
Pokegama Sanatorium	50	0	7*	13	Yes	Yes	Yes	Yes	Yes	Yes	No	75
Total	1,576	565										

* This number includes medical consultants.

TABLE 3.—TUBERCULOSIS CLINICS IN CLOSE PROXIMITY TO THE UNIVERSITY OF MINNESOTA

	Approximate Number of Visits Yearly
Minneapolis General Hospital	1,760
University of Minnesota	1,700
St. Paul City Clinic	3,500
United States Veterans' Bureau, Minneapolis and St. Paul	8,000
Lymanhurst School for Tuberculous Children	500
Student Health Service, University of Minnesota	400
Total	15,860

Is the objection to free clinics justified? Both affirmative and negative answers may be given to this question. It is true that organizations operating such clinics will defeat their end if their members become too enthusiastic. Some of these organizations are in the control of laymen or salaried medical men who have not seen the dangers of overdeveloping the free clinics. Unless some specific treatment for tuberculosis is discovered, we must continue our fight somewhat along the present lines for generations to come. The more well trained specialists we produce, the easier will be the fight and the sooner the victory will be won. If the free clinic is developed to the extent of discouraging candidates for graduate education in tuberculosis, the present generation will not be affected greatly, but two or three generations hence will find us with few or no scientifically trained specialists in tuberculosis. On the other hand, the free clinic properly organized and controlled cannot help but be a splendid educational agent helpful to patients and special workers, and playing a most effective rôle in the campaign against tuberculosis.

The prospective graduate student in tuberculosis inquires as to what positions are available when his special training is completed. In discussing what attracts young physicians to enter on a scientic medical career, Krause [21] recently said:

"It is, besides the facilities and opportunities for work, the possibility of ultimately attaining a position of dignity and influence in their chosen work. This is, and always will be, the incentive: the opportunity to make money, to 'cash in' will always be subsidiary, and when it comes and is grasped, it usually plays havoc with a man's usefulness as an investigator. Without the incentive I have mentioned, we can look forward to but little advance in real tuberculosis education; for we will not be in a position to train teachers of the same grade, say, as those who now occupy our chairs of medicine, surgery, pediatrics, etc."

At present, we are able to point the student to a very few chairs of tuberculosis in the medical schools of America. Moreover, in most medical schools, there is not a division of tuberculosis, but this subject is taught as a part of the course in general medicine. It is obvious, therefore, that at the present time we have little or no attraction to offer the student who desires to become a teacher of tuberculosis. Just appearing on the horizon, however, is what promises to change this condition in the next few decades. The public is already beginning to ask why our medical schools do not place more emphasis upon tuberculosis.

When such visions are translated into realities, in all probability we shall experience little difficulty in securing the proper type of students for graduate work in tuberculosis. On the other hand, so little interest has been manifested in graduate work in tuberculosis in the past that, as Krause has pointed out, if every medical school in the country were to open a new department, or even division of tuberculosis, it is really questionable whether enough scientifically trained men, that is, men qualified for teaching and research, in this field could be found to occupy the positions.

There are more than 500 sanatoriums for the tuberculous in the United States, many of which offer positions to physicians well trained in tuberculosis. It is true that the majority of these positions pay poorly in terms of dollars and cents;

21. Krause, A. K. (Footnote 2, second reference).

but some of them offer excellent opportunities for study and are good stepping stones for those seeking advancement. The sanatorium is often objected to on the ground of being so isolated from great cities and society. We must admit that in former days gross errors were made in selecting sites for such institutions; but present tendencies are toward placing them where their facilities will be available for the development of special tuberculosis departments in our medical schools.

SUMMARY

1. Tuberculosis has become a specialty in the field of medicine.

2. The present teaching facilities in this country are inadequate to train a sufficient number of specialists.

3. Owing to the crowded condition of the medical school curriculums, graduate work in tuberculosis is essential for the proper training of specialists.

4. The University of Minnesota Graduate School of Medicine has access throughout the state to approximately 1,500 tuberculous adults and more than 500 children in sanatoriums and preventoriums for special study. In addition, there are tuberculosis clinics in close proximity to the university where more than 15,000 visits are made annually.

5. The anatomy, physiology, bacteriology, pathology and pharmacology laboratories offer special advantages for the study of general tuberculosis, other diseases of the lungs, and closely allied subjects.

6. The objects of the graduate work in tuberculosis in the University of Minnesota are: (1) to offer general practitioners special training in the diagnosis of early tuberculosis; (2) to produce special laboratory and roentgen-ray workers in tuberculosis; (3) to produce productive research workers in various phases of tuberculosis, and (4) to produce scientifically trained specialists with a working knowledge of tuberculosis as a whole.

Alaska September Examination

Dr. Harry C. DeVighne, secretary, Alaska Territorial Medical Examining Board, reports that one candidate, a graduate of the St. Louis University School of Medicine, was licensed at the written examination held at Juneau, Sept. 5, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass.

West Virginia October Examination

Dr. W. T. Henshaw, secretary, West Virginia Public Health Council, reports the oral, written and practical examination held at Charleston, October 10, 1922. The examination covered 11 subjects and included 132 questions. An average of 80 per cent. was required to pass. Thirteen candidates were examined, all of whom passed. Ten candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Emory University		(1922)	89.3
Chicago Medical School		(1920)	80
University of Louisville Medical Department		(1922)	91.7
Tulane University		(1921)	85
College of Physicians and Surgeons, Boston		(1915)	81.7
St. Louis College of Physicians and Surgeons		(1922)	80
University of Cincinnati		(1920)	80
Western Reserve University		(1920)	82.2
Jefferson Medical College		(1922)	89.3, 91.3, 92.2
Medical College of Virginia		(1921)	82.4
University of Virginia		(1920)	86.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Louisville Medical Department		(1921)	Kentucky
Baltimore Medical College		(1906)	Penna.
Barnes Medical College		(1907)	Illinois
Jefferson Medical College		(1916)	Penna.
University of Pittsburgh		(1914)	Penna.
Medical College of the State of South Carolina		(1918)	S. Carolina
Vanderbilt University		(1899)	Virginia
Medical College of Virginia		(1917), (1919)	Virginia
University College of Medicine, Richmond		(1899)	Virginia

Social Medicine and Medical Economics

THE DIFFICULTIES OF DR. HADWEN

Some months ago THE JOURNAL commented on the arrival in this country of Dr. Walter J. Hadwen, M.D., J.P., who is apparently the chief propagandist for the antivivisectionists throughout the world. It is now an old story that the efforts of Dr. Hadwen, and the group he represents, were overwhelmingly defeated in Colorado and California, in which antivivisection was submitted to a decision by the people during the last election. Dr. Hadwen has now returned to England and is publishing in the *Abolitionist*, a British antivivisection magazine, a record of his trip. We regret to learn that Dr. Hadwen feels that he was very unkindly treated while here. Thus of his visit to Chicago:

> I did not expect much sympathy from the Press in this city, and I thought I might get some opposition. Chicago is the publishing centre of the *Journal of the American Medical Association*, and I had scarcely put my foot on American soil when an abusive, ill-bred, personal attack upon me appeared in its columns from the editorial pen, probably induced by an announcement of my coming by the Associated Press of Washington, sent to all American newspapers. I am so accustomed to these unscrupulous attacks that they have not the least effect upon me; they fulfil the old maxim: "Bad case, abuse plaintiff's attorney." These men could not fight fair to save their lives.
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> UNFAIRNESS OF THE MEDICAL PRESS
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> Last year, the Editor of the same journal published an attack upon me by Surgeon-General Ireland, the medical chief of the American Army, who was backed up by a weak and very long communication from Sir Thomas Goodwin, the Medical Chief of the English War Office; but although I forwarded what I considered a crushing reply to these officials, the Editor declined to publish it. Consequently I have had that attack thrown up at me again and again in the States by medical opponents, and have been gibed at because I "never answered" my traducers! Apparently, it is thought in America that the medical fraternity are not to be trusted to form a judgment of their own, so they have to be mothered and spoon-fed by their literary nurses. I have occasionally experienced a similar lack of justice in England, but I am glad to see that the *British Medical Journal*, which published (from Philadelphia) one of Dr. W. W. Keen's characteristic attacks upon me during my absence in America, courteously allowed Miss Kidd space for a complete answer in my defense.
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> But there was no opposition at the Chicago meeting. It was held in a huge hall—the Aryan Grotto Theatre—and there was a splendid audience, presided over by Dr. E. B. Beckwith, who has come out very boldly on the side of truth. But the meeting was not well reported, though there were several good interviews published. One leading paper had a record in the early edition, but it was replaced in later editions by an official medical communication of the same length on the "Diphtheria peril"! ["This was the most unkindest cut of all!"—ED.] The serum and vaccine manufacturers hold shares heavily in newspapers throughout the States, and in some cases have their own censor who overrules the Editor and runs the blue pencil through all copy that would interfere with the sale of their wares, and furnishes all the news necessary to promote it. The medical bureaucracy in America is the biggest tyranny that has ever disgraced the history of medicine, and unless the people rise up against it they will presently be completely under its power.

REPORT OF CORNELL PAY CLINIC

The Cornell University Pay Clinic has just issued a report on the first year of its work. During this period, 113,981 visits were made to the clinic by 22,409 different persons. The attendance in various departments varied greatly, the greatest attendance being in medicine, 14,797; in urology, 13,655; in skin, 15,411, and in nose and throat, 14,380. In order to protect the private practitioners of the community and not to duplicate the field covered by the free dispensary, all those visiting the clinic were classified into certain economic groups. Of the 20,000 consecutive cases first admitted, 10,000 were classed as regularly qualified for the clinic. Of these patients, 207 were considered temporary because their applications were due to unemployment, previous illness or a financial emergency; twenty-six required unusual expenses for making of diagnosis; 3,085 were classed as being on a borderline, but admitted for various reasons; 874 were doubtful, but admitted temporarily for a single examination; 117 were not rated, and three were admitted because of special interest as teaching cases. Five thousand and thirty-eight cases were rejected. Of these, 4,520 were capable of meeting the fees of private physicians, and 196 were rejected for miscellaneous reasons. Special studies are being made of the data on which the classification was made, and will be published

later. The medical staff of the clinic included 122 physicians in addition to the consulting faculty. It is pointed out that the patients visiting the clinic represent a larger percentage of problem cases requiring specialist consultants than is usually the case in the free dispensary.

During the first year, 1,360 cases were referred by 824 physicians for diagnosis and then referred back for treatment. This diagnostic clinic is considered a close bond between the clinic and the medical profession.

Rejected applicants are referred either to free clinics or to private practitioners. Patients sent back to their own communities are given lists of four physicians having hospital affiliations in the community.

FINANCES

Exclusive of the cost of new equipment, the 113,981 visits cost $231,875.40. The income from patients was $179,685.09. The average visit, therefore, cost the clinic $2.03, whereas the average income for each visit from patients was $1.57. It is obvious that the deficit must be reduced or the fees raised if the clinic is to meet its obligations of giving patients service at cost.

These are the conclusions of the report:

"At the end of the first year of the pay clinic, it is still too soon to speak with finality. The pay clinic is a sincere effort to meet a real medical need felt by many thousands of persons in this great community. During its first year, the clinic has surpassed the expectations of the Cornell faculty, both on the medical side and in the number of patients. The one permanent essential to the success of any such enterprise is the rendering of a high quality of service. If, in addition, the clinic can contribute to medical instruction and research, can cooperate with the practicing physician, can be made self-supporting, can be so managed as to eliminate the unfavorable, so-called "charity" atmosphere commonly associated with clinics, there is a great gain. But the clinic stands or falls on the rendering of a higher grade of medical service than can otherwise be secured by patients of moderate means at any rate which they can afford."

Book Notices

THE PRINCIPLES OF RADIOGRAPHY. By J. A. Crowther, M.A., Sc.D., F.Inst.P., University Lecturer in Physics Applied to Medical Radiology. Cloth. Price, $2 net. Pp. 138, with 55 illustrations. New York: D. Van Nostrand Company, 1922.

This is an admirable exposition of the physical principles involved in roentgen-ray work. It also enters into the details of construction of the individual items of apparatus used in the production of roentgen-ray exposures. The author states that the several chapters presented are an elaboration of the lectures that he gives on this subject in medical radiology and electrology at Cambridge. The thoroughness of the text is commendable. That it represents English practice is quite evident, which, of course, is to be expected. Several points of difference from modern American procedures are noted, such as the question of spark gap measurement of potential, which the author passes over rather superficially, referring only casually to sphere gaps, and the value of the Coolidge tube, which, he states, does not produce fine shadow detail such as is obtained by the ordinary gas tube. He also gives information regarding the Coolidge tube which is not up to date, and several incorrect statements appear as to the action and behavior of this tube. American readers will find much valuable information on the gas tubes, which, however, are rapidly going into disuse on this side of the Atlantic. As a matter of fact, there are many American roentgen-ray technicians who have never seen a gas tube in action, having always used the Coolidge tube, which, under proper conditions, gives as fine shadow detail as does the gas tube. An obvious error is the legend of Figure 25, which purports to be an injury to the humerus, whereas the shadows are those of a knee, the lower end of the shaft of the femur being fractured. A glaring omission in the text on accessory apparatus is that of the Potter-Bucky diaphragm. This moving grid has become one of the most valuable items in the modern roentgen-ray laboratory, and no book on this subject can be regarded as complete which does not accord it the prominent place it deserves. No reference is made to roentgen-ray film, which is largely displacing the glass plate in all modern laboratories. Present day practice is such that a book of this kind should detail the value of the double coated film, and describe the handling, developing and other technical features of its use. The author entirely avoids the field of roentgen-ray diagnosis and interpretation of shadows, confining the work to the title subject.

GRUNDLAGEN DER OSMOTHERAPIE. Von. Prof. Dr. Karl Stejskal, Physikus und Primarius des Spitales der Barmherzigen Brüder in Wien II. Mit Anhang: Zur Technik der intravenösen Injektion, von Dr. Friedrich Eckhart, Assistent der inneren Abteilung des Spitales der Barmherzigen Brüder in Wien II. Boards. Pp. 215. Vienna: Josef Safár, 1922.

Stejskal has furnished us a diligent outline of what is known about "osmotherapy." Under this heading might be included all those remedial measures that act chiefly by producing osmotic changes. In the widest sense, hypotonic as well as hypertonic measures, local as well as systemic in action, would properly be classified under it. This book, however, deals chiefly with the study of the changes produced by intravenous injection of hypertonic solutions, especially of dextrose, as no other substance can be injected in such dose and concentration. The greater part of the book is occupied with an exhaustive discussion of the theoretical and experimental foundation of this procedure, which is so recent in origin that the first attempts at it date from 1884. Prior to this, hypertonic infusion was considered too dangerous to be employed in the human body. Since then a voluminous literature on the subject has become available, and the limits within which it may be safely practiced, as well as indications for it, have become elaborated. Even though the physical changes following infusion of hypertonic solutions are identical, no matter what substance is injected, the effects differ quantitatively from one another, because of specific properties of the various bodies. Thus, infusion of hypertonic saline or dextrose solution increases the coagulability of the blood, but calcium chlorid solution has a decidedly greater effect in this direction. Salt and dextrose solution are diuretic; but sodium sulphate solution is much more diuretic than these. The second, or practical, part of the book, introduced by a good chapter on the technic of intravenous injection by Friedrich Eckhart, deals with the therapeutic indications. These are classified under the headings of increase in resorption processes; influence on the circulation; diuretic action; influence on secretions; in infectious diseases; sedative effects on the nervous system; effect on lung tissue, and influence on the actions of medicaments, especially general and local anesthetics. The book furnishes a good introduction into a new and possibly rich field; and, by collecting and systematizing the work done in it, clears the way for further advance.

EL MÉTODO OPERATORIO DE LA DERIVACIÓN Urinaria y sus Aplicaciones Terapéuticas. Por el Dr. Pedro Cifuentes, del Hospital de la Princesa. Paper. Pp. 98, with illustrations. Madrid: Editorial "Saturnino Calleja" S. A., 1922.

Urinary derivation is the name coined by the French for the diversion of urine when conditions require that another outlet for this product be furnished, either temporarily to permit the healing of a wound, or permanently in case of incurable injuries or organ removal. In this brief monograph, the subject is succinctly but authoritatively presented as regards history, and various technics and indications, in its chief aspects of nephrostomy, ureterostomy, permanent ureteral catheterization and ureteral transplantation. Some omissions may, however, be noted. In discussing nephrostomy, no mention is made of the possibility of secondary hemorrhages and uremic poisoning, admittedly the great disadvantage of the method. In ureterostomy, the author has overlooked Legueu and Papin's recent recommendations in favor of an opening in the inguinal region, and substitution of a glass device for the rubber catheter. Cifuentes is apparently not familiar with experimental work done in this country on ureteral transplantation through the pancreatic

duct and into the duodenum. Among the indications of cystostomy, he is apparently unacquainted with Lichtenberg's use of the method in urethral stenosis complications. The bibliography is incomplete and not up to date. A number of valuable illustrations, although several of them are not original, throw light on the text.

A TREATISE ON MATERIA MEDICA AND THERAPEUTICS, Including Pharmacy, Dispensing Pharmacology and Administration of Drugs. By the Late Rakhaldas Ghosh. Ninth edition by B. H. Deare, C.I.E., Principal and Professor of Medicine, Medical College of Bengal, and Birendra Nath Ghosh, F.R.F.P.S., Examiner in Pharmacology, University of Calcutta. Cloth. Price, 10 shillings, 6 pence, net. Pp. 712. Calcutta: Hilton & Co., 1922.

"Materia Medica," says the author, "is not an attractive subject; but it must be learned." He has therefore "endeavored to minimize the labor of the student," with what seems doubtful success. The use of small type, close spacing and thin paper makes this apparently small book really a fairly large treatise, and rather difficult to read. It is not likely to become available as a textbook in the United States, because of the exclusive use of the British Pharmacopeia as the standard. Also, characteristic of British provincialism is the exclusive use of the old system of weights and measures. For us, the most valuable portions of the book are probably those which deal with drugs employed by the Hindus. These the author discusses familiarly, and in many cases from personal experience. Information, elsewhere difficult to obtain, is given on such drugs as adhatoda, bael fruit, betel, turpeth, kaladana resin, alstonia, picrorhiza, Indian azadirach, myrobalanum and ispaghula. He also gives the Hindu synonyms for a number of drugs. The book may be recommended especially to those who wish to prepare for medical practice in East India.

ZUR BIOLOGIE DER LIPOIDE MIT BESONDERER BERÜCKSICHTIGUNG IHRER ANTIGENWIRKUNG. Von Privatdozent Dr. Hans Schmidt. Paper Price, 60 cents. Pp. 91. Leipsic: Curt Kabitzsch, 1922.

This monograph constitutes one section of a treatise on "Modern Biology," edited by Prof. Hans Much of "Partigen" fame. Naturally, it constitutes a piece of special pleading for his views as to the importance of lipoids as antigens, with much emphasis on the priority of Much. The text is given by the statement that "today the lipoids play in many respects an even greater rôle in immunity than protein." Evidence supporting this theme is presented; very little of the evidence to the contrary is even suggested. Little of the not inconsiderable work done outside of Mitteleuropa is considered. Nevertheless, what is presented is given well, and it is a good statement of the views of Much and his followers. It is admitted that isolated lipoids have little capacity for immunizing, but lipoid-protein compounds that occur in nature are believed to be highly antigenic, and the assumption is that the chief function of the proteins is to secure the necessary dispersion of the lipoidal particles to which their antigenic capacity is attributed.

LA URETEROPIELOGRAFÍA Y SU IMPORTANCIA CLÍNICA. Por el Dr. Eduardo Ibarra Loring. Jéfe de la Clínica de Vías Urinarias de la Universidad de Chile. Paper. Pp. 123, with 52 illustrations. Santiago, Chile: Imp. y. Lit. "La Ilustracion," 1921.

The author is chief physician at the urologic clinics of the University of Chile and the Salvador Hospital, the most important in Chile. His book is the thesis submitted when he applied for the position of supernumerary professor of urology at the university. It is divided into two parts, the first dealing with the development of pyelography, technic, objections and the normal anatomy of the pelvis and the ureter. The second concerns itself with pelvic, ureteral and renal anomalies and changes which may be shown by pyelograms. The author insists that many objections to pyelography may be obviated with care on the part of the operator. Dr. Ibarra shows knowledge and sense in his discussion of the various points involved, and is not averse to stating how and why he came to his conclusions. The book is profusely illustrated with samples of the author's work, several of which are interesting. Throughout, he used Weld's 25 per cent. sodium bromid solution, considering it far superior to all other pyelographic mediums.

Medicolegal

Good Causes of Action Against Physicians

(Griffin v. Bles et al. (N. Y.), 195 N. Y. Supp. 654)

The Supreme Court of New York, Appellate Division, Third Department, says that one Pearl Griffin was operated on at a hospital and died on the fourth day thereafter. The plaintiff was administratrix of her estate. The defendants were physicians. One of them was the proprietor of and conducted the hospital; another performed the operation, and a third was a consultant. The plaintiff's complaint alleged three causes of action: (1) fraud and deceit, consisting of misrepresentation and concealment of conditions, made and practiced to induce the patient to consent to the operation suggested, by which she was assured of its simplicity and the relief it would accomplish; (2) the operation performed was not the operation suggested to the patient, but was more complicated and dangerous, and was not, therefore, consented to by her, and it amounted to an assault on her; (3) malpractice, which was not questioned. Motions were made to strike from the complaint the first and second causes of action, on the ground that they did not state facts sufficient to constitute a cause of action, it being contended that they did not survive the patient and that an action could not be based thereon. But the court holds otherwise, under the decedent estate law of New York, and affirms an order denying the motions to dismiss the first and second causes of action. The court thinks that the fact that the patient could have maintained an action, if she had lived, on either the first or second cause of action, and death having resulted in connection with the acts complained of, as shown by the allegations, the decision of the lower court was correct. But one judgment for damage could be obtained in this action under any pleading, and allegations setting up the criticized causes of action were necessary to that end.

Mandamus Case of Physician Expelled from Society

(State ex rel. Hyde v. Jackson County Medical Society (Mo.), 243 S. W. R. 341)

The Supreme Court of Missouri, Division No. 1, says that this was a proceeding in mandamus seeking to compel the society to rescind its action in expelling the relator from membership in the society and to restore his name on the roll of members. It appeared that there was a medical library club made up of members of the medical society, and that the relator made application for membership in the club, but his application was refused. He then wrote a letter to one of the members of the club, which he requested to be transmitted to the club. In the letter, he made references to members of the club, and used some obscene expressions. On account of the letter, the medical society instituted proceedings to expel him from the society, but lacked one of the requisite three-fourths majority of votes. The society took an appeal to the state medical society, which directed the county society to expel him. It was unanimously done. These proceedings were then instituted. The circuit court of the county denied the relator a writ of mandamus. He appealed to the Kansas City Court of Appeals, a majority opinion of which reversed the judgment of the circuit court; but one of the justices of the court of appeals wrote a dissenting opinion, which, except as to one paragraph, is adopted by the supreme court in affirming the judgment of the circuit court, the case having been certified to the supreme court for final determination.

In the adopted opinion it is said that, in considering the expediency of the writ of mandamus, the primary question is by no means confined to what the respondent has done to the complaining relator. It may well be said that a thing of equal importance is to ascertain what has been his conduct, as it relates to the matter in controversy. Mandamus, in its exceptional traits, partakes, in some respects, of the nature of equity, in which forum it is a maxim that he who applies for relief by this writ must come with "clean hands," else the law, regardless of merits, will decline to interfere

in his behalf. Yet, unless his misconduct connects with the matter in controversy, he is not to have his prayer denied. But when, as in this case, the misconduct consists in writing an obscene letter referring to, connecting with, and indeed, wholly made up of, the identical matter in controversy, there is no dissent from the proposition that he shall not have relief by mandamus.

Another reason why the writ should be refused was that the relator had not that severable, proprietary interest in the respondent society which was a necessary requisite to his right to relief. It was alleged that the society owned a piece of real estate worth $12,000 and that he paid his dues. But that did not show a right in him sufficient to ground an application for a writ of mandamus. A member of a voluntary association, such as the one before the court, not organized for profit, with no severable, pecuniary interest in the property which it possesses merely as an incident to its existence, has no such pecuniary property right as will justify the extraordinary remedy by mandamus. Otherwise, the court, through that writ, would be called on to test the expulsion of members of churches or social associations. The membership of such associations may change, but it has not been thought that they, their creditors or their heirs, as the case may be, have any interest in the property of the society.

In the majority opinion, it was said: "The evidence shows that membership in the respondent corporation was valuable to the relator in a professional and business way and that the relator has been deprived of his corporate rights, which we think is a pecuniary right as that term is used in the cases." But, scrutinizing the authorities cited, the supreme court finds that *State ex rel.* v. *Georgia Medical Society*, 38 Ga. 608, 611, 626, was the only case which confirmed the proposition enunciated, while, as pointed out in the minority opinion, that case fails to follow the better considered rule that the property right which is violated must be a severable, proprietary right.

Failure of Action Against Automobilist for Fees

(Sheehy v. Nordyke (Ia.), 188 N. W. R. 882)

The Supreme Court of Iowa says that a boy was injured by an automobile driven by the defendant. The plaintiff was the police surgeon of the city in which the accident occurred, and met the defendant and the injured boy at one of the local hospitals. It was the claim of the plaintiff that the defendant requested and employed the plaintiff to give the boy the necessary medical aid and assistance, saying that he "would take care of the expense in the case"; that the plaintiff gave the necessary medical assistance to the boy; that he charged the fee to the defendant, and that, by reason of the medical service rendered, the defendant was indebted to him in the sum of $250, which was the reasonable value of the service. The defendant denied every material allegation in the plaintiff's petition, except that the plaintiff was a qualified physician and surgeon. He also pleaded that the injured boy subsequently to his recovery instituted suit against him, and recovered damages for the injuries received, the judgment including the reasonable value of the medical services performed by the plaintiff. The jury found a verdict for the defendant, and a judgment for costs was entered thereon; which is affirmed.

Evidence, the supreme court goes on to state, was introduced to sustain the allegation of the defendant's answer with respect to the suit for damages; but the trial court, by instruction, removed this defense from the consideration of the jury, and it was instructed to disregard said evidence. It must be presumed that the jury obeyed the admonition of the court.

It was the primary contention of the plaintiff that no fact question was presented by the evidence, and that he was entitled to a directed verdict in the amount stated in his petition. True, he introduced evidence tending to prove that the professional services alleged in his petition were rendered by him, and that the reasonable value thereof was $250. He, however, did not move the court for a directed verdict at any stage of the proceeding, but, after the verdict was returned, finding for the defendant, he filed his motion for judgment, notwithstanding the verdict. There was no defect in the pleadings of the party in whose favor the verdict was returned. The serious claim made by the plaintiff was that the testimony was insufficient to support the verdict; but this question was properly raised on a motion for a new trial, which, as indicated, was not made.

It was clear under the pleadings and the record that a fact question existed for the jury to determine. The reasonable value of the medical services, although unchallenged and undisputed by the evidence, presented a jury question. Neither court nor jury was bound by witness' estimate as to values.

Again, whether or not the plaintiff was the owner of the claim in suit presented a fact question. Another physician, one of the plaintiff's witnesses, testified: "If the bill is paid, I receive a certain amount of it. I am interested in receiving a certain amount from the bill." This showed that it was at least a joint account of the plaintiff and his associate.

The case was properly submitted under correct instructions. The credibility of the witnesses was a matter for the jury. It is quite evident that the jury did not believe that the material allegations of the plaintiff's petition were sustained by a fair preponderance of the evidence. This court can easily understand the disappointment to both the client and his counsel in the outcome of this case, but it finds no legal reason for disturbing the verdict.

Previous Condition of Injured Employee Unimportant

(Springfield District Coal Mining Co. v. Industrial Commission et al. (Ill.), 135 N. E. R. 792)

The Supreme Court of Illinois reverses a judgment which affirmed an award of the industrial commission, under the workmen's compensation act, in favor of a miner, of a certain sum per week for 359 weeks and thereafter a pension of $23.33 a month for life, for injury alleged to have been caused by his having been subjected to bad air in the mine on a certain date. There was evidence that he had been previously affected with miner's asthma, and, according to the court, the most that could be said from the record was that the bad air to which he testified he was subjected in the mine on the date in question might have aggravated his preexisting physical condition, so as to entitle him to compensation for a temporary disability. The evidence furnished no basis for finding to what extent the bad air contributed to the man's incapacity or the relative proportions which the preexisting disease and bad air contributed to the cause of his physical incapacity. The possibility of the bad air being the cause of his condition at the time of the finding was not sufficient to justify such a finding as was made.

Under the decisions, whatever the preexisting physical condition of the applicant for compensation may be, if an accident or condition of the employment is the immediate occasion of the injury, it will be held that the injury arose out of the employment, because it develops within it; that when the exertion or condition of the employment acts on the weakened condition of the employee or on an employee predisposed to suffer injury, in such a way that a personal injury results, the injury must be said to arise out of the employment, if the preexisting condition is accelerated in a material degree by the accident or condition. It has long been held that an employee is entitled, under the workmen's compensation act, to be compensated for every accidental injury in the course of his employment and arising out of the same; that the measure and limit of his right is that the injury sustained is the proximate cause of the incapacity for which compensation is sought; that the previous physical condition of the employee is unimportant, and he may recover for permanent incapacity which results from an accident independently of preexisting disease, but is not entitled to compensation for a condition resulting from a preexisting disease, and not from an injury suffered in the course of the employment and arising out of it; that, if there is a preexisting disease, the employee is entitled to recover for all the consequences attributable to the injury by the acceleration or aggravation of the disease, and that the aggravation or acceleration, permanent and progressive in its nature, would entitle the employee to compensation to the extent and in the proportion in which the preexisting disease is increased.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

December, 1922, 4, No. 6

*Test of Labor in Relation to Cesarean Section. Comparative Results Obtained by Elective and Secondary Operations Based on Personal Experience of Ninety-Two Cases. R. W. Holmes and A. L. Burdick, Chicago.—p. 579.

*Pregnancy in Tuberculosis. C. C. Norris, Philadelphia, and D. P. Murphy, Rutherfordton, N. C.—p. 597.

*Further Experience with Pituitary Extract in Induction of Labor. B. P. Watson, Toronto.—p. 603.

*Action of Ergot and Solution of Hypophysis on Uterus. C. C. Haskell and M. P. Rucker, Richmond, Va.—p. 608.

Intra-Uterine Rupture of Velamentous Umbilical Cord. G. W. Kosmak, New York.—p. 619.

*Interference Justifiable After Twenty-Four Hours of Labor When No Other Indication is Present. A. C. Beck, Brooklyn.—p. 623.

Rubin Test and Its Therapeutic Application. J. C. Hirst and C. Mazer, Philadelphia.—p. 628.

*Improved Method of Supporting Bladder and Vagina After Vaginal Hysterectomy for Procidentia. A. Heineberg, Philadelphia.—p. 634.

*Postabortal Hemolytic Streptococcemia. P. F. Williams, Philadelphia. —p. 636.

Is Usual Method of Preparing Patients for Delivery Beneficial or Necessary? R. A. Johnston and R. S. Sidall, Baltimore.—p. 645.

*Does Ovum or Corpus Luteum Control Ovarian and Uterine Cycle? H. Schiller, Chicago.—p. 651.

Test of Labor in Relation to Cesarean Section.—A few of the points emphasized by Holmes and Burdick are: Cesarean section is far more dangerous for the woman than spontaneous labor—even an operative delivery of some difficulty. The sum total of discomfort, distress, malaise associated with cesarean section is as great or greater than the inconveniences and pain of labor; one certainly offsets the other. These facts, joined to the increased mortality demand that sections shall be done only for clear indications.

Pregnancy in Tuberculosis.—This paper is based on a study made by Norris and Murphy of 166 cases. The combination of pregnancy and pulmonary tuberculosis is a common one. Pulmonary tuberculosis exerts little or no influence against conception. Pulmonary tuberculosis exerts but little influence on the course of pregnancy, and except in the advanced stages exerts little or no influence toward causing abortion, miscarriage, or premature labor. From 20 to 30 per cent. of mild, quiescent cases of pulmonary tuberculosis and from 70 to 90 per cent. of more advanced cases exhibit exacerbations during pregnancy or the puerperium. Marriage is worse for the tuberculous woman than for the tuberculous man owing to the dangers incident to pregnancy. Unless the pulmonary lesions have been quiescent for a moderately prolonged period, tuberculous women should not marry. Tuberculous women should not become pregnant unless the disease is in the first stage, and has been quiescent for a minimum period of two years. Prior to the fifth month of pregnancy, the uterus should be emptied if the disease manifests any evidence of becoming active. After the fifth month of pregnancy, it is generally advisable to treat these patients expectantly. Infants should not nurse from tuberculous mothers, and should be especially guarded from infection. Hygienic and dietary treatment should be employed at all times. In the great majority of cases the tuberculosis precedes the pregnancy.

Use of Pituitary Extract in Induction of Labor.—In the 195 cases of induction of labor reviewed by Watson in which pituitary extract was used as the inducing agent, 90 per cent. were successful. The maternal mortality was nil. There were no cases of laceration of the cervix and no greater proportion of pelvic floor lacerations than in ordinary labor. There were two cases of retained placenta and two cases of rather severe hemorrhage accompanied by shock following the birth of the placenta. Both the latter women were primiparas over 39 years of age. There were twelve fetal deaths, giving a fetal death rate of just over 6 per cent. Three of these children were monsters. Two died in utero apparently from placental infarction due to pregnancy toxemia. Three died of cerebral hemorrhage, two died of atelectasis within three days of birth and in two a necropsy could not be obtained to ascertain the cause of death.

Action of Ergot and Hypophysis Solution on Uterus.—It can readily be demonstrated by animal experimentation, Haskell and Rucker assert, that the action of ergot and hypophysis solution on the uterus are the same if large enough doses of ergot are used. The action of pituitary preparations is much more powerful than that of ergot. This is readily shown both by experiments on animals and by accurate observations on human beings. The action of both drugs varies greatly with different persons. This is a common clinical experience and is abundantly substantiated by laboratory experiments.

When to Interfere in Prolonged Labor.—Beck advocates conservation in these cases. As soon as the membranes rupture, if the cervix is fully or almost fully dilated, a snug abdominal binder is adjusted and the voluntary efforts are encouraged. It aims to conserve the patient's strength for the second stage. The only additional measure employed by Beck in a prolonged labor is the use of liberal doses of morphin. Whenever the character of the contractions shows that the uterus is fatigued, sufficient morphin is given to stop the labor and allow the patient to sleep. Maternal exhaustion seldom occurred when these long labors were handled in this manner and aside from the anxiety experienced by the attending obstetrician very little added difficulty was observed.

Supporting Bladder and Vagina After Vaginal Hysterectomy.—Heineberg removes the uterus in the usual manner. The broad ligaments are ligated close to the uterus. The uppermost ligature should include the uterine end of the tube and round ligament. If the tubes and ovaries are removed, the infundibulopelvic ligament should be drawn over and its inner end be included in the ligature applied to the uterine end of the round ligament. The upper stumps of the broad ligament thus formed are brought across the median line of the pelvis so that the stump of the left ligament may be sutured to the cut edge of the right vaginal wall and, vice versa, that of the right ligament to the left vaginal wall. The stumps are not brought into the vagina but are inserted into a pocket, external to the upper end of each lateral vaginal wall. The advantages claimed for this crossing of the broad ligaments and attaching each to the vaginal wall of the opposite side are: (*a*) to form a shelf for the bladder; (*b*) to close the opening in the vagina by means of the oblique traction on its walls; (*c*) to prevent dilatation of the vaginal vault and consequent lessening of the support to the base of the bladder.

Postabortal Hemolytic Streptococcemia.—Four cases of postabortal bacteremia, hemolytic streptococcic, with recovery under the use of polyvalent antistreptococcic serum, are recorded by Williams.

Control of Ovarian and Uterine Cycle.—Schiller asserts that corpus luteum extract, as on the market, produces hypertrophy and hyperemia of the uterus and tubes, but only in the presence of ovaries. Theoretically, its greatest therapeutic result ought to be expected in menorrhagia, metrorrhagia and hypoplasia.

American Journal of Physiology, Baltimore

December, 1922, **63**, No. 1

*Relation of Blood Volume to Tissue Nutrition. IV. Effect of Hemorrhage and Subsequent Intravenous Injection of Gum-Saline Solution on Response of Anesthetized Dog to Alternate Administration of Room Air and of Mixture of Carbon Dioxid in Room Air. R. Gesell, C. S. Capp and F. Foote, Berkeley, Calif.—p. 1.

Id. V. Effect of Changes in Blood Volume Elicited by Hemorrhage and Intravenous Injection of Gum-Saline Solution on Total Oxygen Consumption of Anesthetized Dog. R. Gesell, F. Foote and C. S. Capp, Berkeley, Calif.—p. 32.

Studies of Exophthalmic Goiter and Involuntary Nervous System. IV. Vascular Response of Pithed Cat to Single Intravenous Injections of Epinephrin. C. C. Lieb and H. T. Hyman, New York.—p. 60.

Id. V. Vascular Responses of Pithed Cat to Repeated Intravenous Injections of Equal Doses of Epinephrin. C. C. Lieb and H. T. Hyman, New York.—p. 68.

Id. VI. Attempts to Alter Vascular Response of Pithed Cat to Repeated Injections of Similar Doses of Epinephrin. C. C. Lieb and H. T. Hyman, New York.—p. 83.
Id. VII. Mechanism of Sensitization to Subcutaneous Injections of Epinephrin. C. C. Lieb and H. T. Hyman, New York.—p. 88.
*Measurements of Pulse Wave Velocity. H. C. Bazett and N. B. Dreyer, Philadelphia.—p. 94.
Cytolysis and Protoplasmic Structure. I. Resistance Reversal Phenomena in Saponin Hypotonic Cytolysis. I. H. Page and G. H. A. Clowes, Woods Hole, Mass.—p. 117.
*Influence of Various Stimuli on Human Saliva. J. R. McClelland, New Haven, Conn.—p. 127.
Influence of Water Deprivation on Changes in Blood Concentration Induced by Experimental Shock. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 142.
Influence of Pituitary Extracts on Absorption of Water from Small Intestine. II. Action of Pituitary Extracts When Introduced into Alimentary Canal. M. H. Rees, Boulder, Colo.—p. 146.
*Studies of Thyroid Apparatus. VIII. On Alleged Exogenous Source of Poisons Giving Rise to Tetania Parathyreopriva. F. S. Hammett, Philadelphia.—p. 151.
Effects on Circulation and Respiration of an Increase in Carbon Dioxid Content of Blood in Man. E. C. Schneider and D. Truesdell, Mitchel Field, L. I., N. Y.—p. 155.

Effect of Hemorrhage on Pulmonary Ventilation.—The results of nine experiments are reported by Gesell et al. They found that the pulmonary ventilation during the administration of carbon dioxid was greater after hemorrhage than during the administration of the same mixture before hemorrhage. The effects of hemorrhage on pulmonary ventilation during the administration of room air varied considerably. In some instances a large hemorrhage had little or no effect on the pulmonary ventilation of room air and in other instances a small hemorrhage markedly increased the ventilation. Injection of gum-saline solution subsequent to hemorrhage decreased the respiratory response to the administration of the carbon dioxid mixture. In those instances in which hemorrhage increased the pulmonary ventilation of room air, the injection of gum-saline solution decreased this ventilation. The changes in the respiratory response elicited by hemorrhage and injection varied with the extent of the changes in blood volume. Hemorrhage and injection which elicited the usual respiratory responses not infrequently were accompanied by no or small alterations in the mean blood pressure.

Measurements of Pulse Wave Velocity.—Measurements of pulse wave velocity made by Bazett and Dreyer showed that the velocity of transmission of the pulse wave is much slower in the large vessels than in the smaller and more peripheral vessels. While a velocity of the pulse wave of about 7 meters a second is confirmed from a comparison of carotid and radial pulses, such a velocity is merely an average between a velocity of about 4 meters a second in the brachial and 8.5 meters a second or more between the elbow and wrist. The velocity of transmission in the carotid, aorta and possibly the femoral artery is of about the same rate as that found for the brachial artery. The rate of transmission is much more variable in the more peripheral parts of the arterial system and is, in all probability, much more dependent on local conditions of vasoconstriction or dilatation.

Influence of Stimuli on Saliva. — McClelland states that human saliva varies in hydrogen-ion concentration, amylolytic index, alkaline and acid reserves, buffer index and mucin content both with different subjects and with the same subject at different times. Therefore, no general conclusion can be drawn as to the response of saliva to any stimulant.

Endogenous Poisons Cause Tetania Parathyreopriva. — Hammett asserts that his studies yield evidence justifying the conclusion that endogenous metabolism, particularly the catabolic phase, is a source of the poisons giving rise to tetania parathyreopriva, and that the statement of Luckhardt and Rosenbloom that "the source of the poisons responsible for tetany is of exogenous origin (particularly the meat of the diet)," fails to express the actual state of affairs.

Annals of Surgery, Philadelphia

December, 1922, **76**, No. 6

*Treatment of Acute and Chronic, Simple, Traumatic Synovitis (Hemarthroses and Hydarthroses) by Repeated Aspirations and Immediate, Active Mobilizations without Splinting. C. A. McWilliams, New York.—p. 677.
*Metastasizing Malignant Tumor of Thyroid. F. L. Meleney, Peking, China.—p. 684.
*Suppurative Osteomyelitis Due to Colon Bacillus. N. Winslow, Baltimore.—p. 695.
Treatment of Chronic Empyema Where Recognized Surgical Procedures Have Failed to Produce Obliteration. W. L. Keller, Washington, D. C.—p. 700.
Chronic Catarrhal Cholecystitis with Lipoid Deposit. J. R. Corkery, Spokane, Wash.—p. 736.
*Aseptic Resection of Intestine. F. K. Collins, Los Angeles.—p. 739.
*Id. C. F. Horine, Baltimore, Md.—p. 745.
*Involvement of Lymph Nodes in Carcinoma of Rectum. J. R. McVay, Rochester, Minn.—p. 755.
*Solid Carcinoma of Ovary. M. R. Hoon, Rochester, Minn.—p. 768.
Double Lip: Surgical Removal. G. M. Dorrance, Philadelphia.—p. 776.
Submaxillary Salivary Calculus: Report of Two Cases. B. F. Buzby, Philadelphia.—p. 778.

Treatment of Traumatic Synovitis. — Repeated aspirations combined with active (never passive) motions, and walking without splints, in McWilliams' opinion afford the best method of treatment of acute and chronic, traumatic, joint synovitis, provided there be no joint mouse nor a dislocated meniscus present. He advocates immediate aspiration in all types of traumatic joint effusions as it relieves pain immediately, renders a correct diagnosis more certain, prevents stretching of the ligaments with their consequent weakening, and avoids subsequent muscular atrophy. Such treatment makes unnecessary all other subsequent physiotherapeutic measures, hence its simplicity makes it applicable to all classes of patients. It produces a more perfect cure in one half of the time that is required by the old immobilization method. To leave fluid in a knee (the result of trauma) is just as irrational as to leave fluid in a chest. Aspiration of the knee is a more simple and less dangerous procedure than aspiration of the chest. It can be performed in a doctor's office or in a dispensary, and the patient can be sent home walking immediately thereafter. The effects of physiotherapeutic measures have been overestimated, being used empirically and without foundation. They are makeshifts to excuse procrastination in not applying a radical, curative procedure, such as aspiration.

Metastasizing Tumor of the Thyroid.—Meleney records a case of carcinoma of the thyroid with metastases in the cervical lymph glands. This case is interesting in that the patient was only 17 and the tumor had existed for six years.

Suppurative Osteomyelitis Caused by Colon Bacillus.—Winslow reports a case of osteomyelitis due to an organism which has been but seldom isolated either in pure or mixed culture from the pus of bone abscess. Bacteriologic studies of pus obtained from the abscess showed exclusively the colon bacillus. Though no animal inoculations were made, the organism had all of the cultural and morphologic characteristics of *B. coli*. Whether the bone infection had any connection with an attack of typhoid twenty years previously or not is open to doubt, but the association of the colon bacillus with an osteomyelitis is of clinical interest.

Aseptic Resection of Intestine. — The success of Collins' operation depends on the proper application of a looped ligature, a single slip knot, of strong linen or silk, holding the ends of the intestine until such a moment as the end to end anastomosis is completed, when by a gentle pull this looped ligature is removed, fully opening the lumen of the intestine. It is said that the method can be applied to any portion of the intestinal tract except the lower rectum, and permit of the removal of any number of inches or feet. No handling of the remaining intestine, through its lumen or externally, is required. All of the advantages of an end to end anastomosis are gotten without contamination.

Aseptic Resection of Intestine.—Horine also describes a method of blind end to end anastomosis with the release of a purse string suture after the anastomosis is completed.

Involvement of Lymph Nodes in Cancer of Rectum.—One hundred specimens were studied by McVay. From these specimens 623 glands were obtained. Fifty-three per cent. of the specimens did not show glandular involvement; 30 per cent. showed slight glandular involvement, and 17 per cent. showed marked glandular involvement.

Solid Carcinoma of Ovary. — Thirty-seven cases of solid carcinoma and two cases of solid sarcoma of the ovaries were found in the examination of malignant tumors of the ovary at the Mayo Clinic between Jan. 1, 1910, and Aug. 1,

1921. These tumors were solid throughout or contained only relatively small cysts, due to degeneration and necrosis or retention. During this time 4,175 tumors of the ovary were removed. Thus, solid malignant tumors comprise 0.93 per cent. of all ovarian tumors. During the same period 540 malignant ovarian tumors were removed; of these 0.086 per cent. were solid. In 66 per cent. of the cases the tumor was unilateral. The general history is similar to that of ovarian fibroma with the additional symptoms of malignancy, loss of weight, strength and appetite, and secondary anemia. The growth of the tumor is usually rapid. Ascites cannot be considered a criterion of malignancy, as it was present in 35 per cent. of the solid carcinomas and in 25 per cent. of the benign fibromas. The treatment of solid carcinoma of the ovary is surgical removal followed by the use of the roentgen ray and radium, if total removal of malignant tissue is impossible. Metastasis and local recurrence indicate a hopeless prognosis, but palliative treatment may be given by radium and the roentgen ray.

Boston Medical and Surgical Journal

Jan. 4, 1923, **188**, No. 1

Progress of Mouth Hygiene Movement. W. R. Woodbury, Rochester, N. Y.—p. 1.
*Nutrition and Growth in Children. W. R. P. Emerson, Boston.—p. 8.
*Osteomalacia: Etiology and Report of Case Occurring in an Imbecile with Psychosis. N. A. Dayton, Wrentham, Mass.—p. 10.
Case of Subcutaneous Emphysema Due to Pneumatic Rupture of Rectum. P. J. Finnegan, Salem, Mass.—p. 15.
*Cesarean Section in Presence of Double Pneumonia. Report of Case. W. C. Seelye, Worcester, Mass.—p. 16.

Nutrition and Growth in Children.—The forces affecting the child's health, which in Emerson's opinion must be coordinated to insure success, are: the home; the school and other agencies; medical care; and the child's own interest. The program, in summary consists of (1) weighing and measuring as a means of identification; (2) diagnosis based on complete physical growth, mental and social examinations; (3) removal of physical defects as a prerequisite for successful treatment; (4) measured feeding (forty-eight hour diet record); (5) midmorning and midafternoon lunches; (6) midmorning and midafternoon rest periods; (7) regulation of physical, mental and social activities to prevent overfatigue (forty-eight hour list of activities); (8) nutrition classes for the treatment of malnutrition; (9) nutrition or diagnostic clinics for problem cases; average weight for height as a minimum standard of nutrition and growth.

Osteomalacia in Imbecile with Psychosis.—Dayton cites the case of a woman, aged 36 (mental age about 7) who always had been peculiar and who had to be cared for throughout her life "like a child of 3." She attended school until 10 years of age, but made no progress. The psychosis was gradual in onset, dating from several months before admission, but a notable point was the rapidity of mental and physical deterioration from the onset of the psychosis. During her stay of about seven years in the institution, twenty-nine casualty reports were recorded. Twenty-two of these were minor injuries, the result of falls without apparent cause. That is, the patient fell because of inability to manage the lower extremities rather than from an impediment. Gross changes in the bony skeleton were noted, and a fracture of the left tibia and fibula confined the patient to bed. The patient died soon afterward. A necropsy was held and the findings are reported by Dayton. The bone changes were those of osteomalacia. The ovaries were interesting. They were considered as fibrotic ovaries with degenerated follicles, refuting the theory that osteomalacia is due to hyperactivity of the ovaries.

Cesarean Section in Case of Double Pneumonia.—When Seelye's patient was admitted to the hospital she was at full term of her third pregnancy and already a few hours in labor. She was acutely ill with double pneumonia of the influenza epidemic type. It was evident from her condition on admission, together with her previous history, that she could not survive normal labor. The baby was large, with overriding at the symphysis. The choice, therefore, lay between a rapid destructive delivery, and cesarean section. The latter course was considered the quicker and to give less shock. It was decided to operate entirely under local anesthesia, 0.12 per cent. cocain. The operation was performed without any difficulty or delay, but the baby was dead on delivery. It was evident from its condition that it had been dead in utero for about twenty-four hours, and that death was probably due to the profound toxemia of the mother. The patient made a complete recovery after a convalescence lasting several months.

Georgia Medical Association Journal, Atlanta

December, 1922, **11**, No. 12

Present Status of Surgery and Hospitals in South Georgia. A. D. Little, Thomasville.—p. 471.
Lord Lister and His Priceless Gift to Man. J. A. Hunnicutt, Jr., Athens.—p. 473.
Blood Pressure; Case Reports. J. W. Simmons, Brunswick.—p. 475.
Focal Infection; Report of Cases. C. Thompson, Millen.—p. 479.
Principles Underlying Management of Osteomyelitis. M. Harbin, Rome.—p. 484.

Iowa State Medical Society Journal, Des Moines

December, 1922, **12**, No. 11

Injuries to Spine Not Involving Cord. O. J. Fay, Des Moines.—p. 481.
Vertebral Fractures with Cord Involvement. J. W. Martin, Des Moines.—p. 184.
Tumors of Breast from Standpoint of General Practitioner and General Surgeon. A. D. Bevan, Chicago.—p. 489.
Program of American College of Surgeons. F. Martin, Chicago.—p. 496.
Ethics in Fractures. F. A. Hennessey, Calmar.—p. 498.
Mistakes in Treatment of Fractures. H. L. Beye, Iowa City.—p. 500.
Laboratory Practice of Medicine. H. E. Robertson, Rochester, Minn.—p. 503.

Journal of Experimental Medicine, Baltimore

December, 1922, **36**, No. 6

*Studies on Endothelial Reactions. VI. Endothelial Response in Experimental Tuberculous Meningo-encephalitis. N. C. Foot, Boston.—p. 607.
*Spirocheta Eurygyrata. M. J. Hogue, Baltimore.—p. 617.
*Insusceptibility to Sensitization and Anaphylactic Shock. W. T. Longcope, New York.—p. 627.
Leukocytic Secretions. A. Carrel and A. H. Ebeling, New York.—p. 645.
*Loss of Circulating Erythrocytes in Certain Types of Experimental Pneumonia. C. D. Leake and T. K. Brown, Madison, Wis.—p. 661.
Supravital Staining of Vaccine Bodies. E. V. Cowdry, New York.—p. 667.
*Experimental Studies of Nasopharyngeal Secretions from Influenza Patients. X. Immunizing Effects in Rabbits of Subcutaneous Injections of Killed Cultures of Bacterium Pneumosintes. P. K. Olitsky and F. L. Gates, New York.—p. 685.
Studies on Disease of Guinea-Pigs Due to Bacillus Abortus. W. A. Hagan, Princeton, N. J.—p. 697.
Value of Heat Killed Cultures for Prevention of Bacillus Abortus Inoculation Disease of Guinea-Pigs. W. A. Hagan, Princeton, N. J.—p. 711.
Susceptibility of Mice and Rats to Infection with Bacillus Abortus. W. A. Hagan, Princeton, N. J.—p. 727.
*Action of Sodium Salicylate on Formation of Immune Bodies. H. F. Swift, New York.—p. 735.

Endothelial Response in Experimental Tuberculous Meningo-Encephalitis.—Foot asserts that experimental cerebral and meningeal tubercles in the rabbit are formed from cells of endothelial origin. These cells are derived apparently from other sources than the neighboring capillary endothelium alone. The circulating macrophages, which, in this case, are capable of multiplying by mitosis while still free in the blood, are drawn on in the formation of the cerebral tubercle. Splenectomy has not materially decreased the available supply of circulating macrophages in this experiment. While these cells may originate in the endothelium of the liver and bone marrow, the lung appears to play a much more important rôle in this respect than has been hitherto suspected.

Diarrhea Caused by Spirochaeta Eurygyrata.—The patient from whom Hogue obtained the material containing *Spirochaeta eurygyrata* was a woman who had been suffering with chronic diarrhea for thirteen years. All attempts to control it failed. There was a triple infection of *Chilomastix mesnili, Trichomonas hominis,* and *Spirochaeta eurygyrata.* Pure strains of *Spirochaeta eurygyrata* were isolated and cultivated. They lived longest in a medium which was made up of sodium chlorid and pig serum water. They stained readily with iron-hematoxylin, Giemsa's stain, Cross' stain and carbolfuchsin. They did not stain with the vital dyes used. Cats were fed cultures of *Spirochaeta eurygyrata* but did not become infected with them.

Insusceptibility to Sensitization.—Attempts to produce anaphylactic shock in white rats by second intravenous or subdural injections of horse serum failed. It was impossible to demonstrate either by skin reactions or by the uterine reaction that white rats can be sensitized to horse serum. It was not possible to sensitize guinea-pigs passively with the serum of white rats presumably immunized to horse serum. In spite of the fact that the white rat could not be made anaphylactic to horse serum, the tissue of the animal reacted with the horse serum to form precipitins in fair concentration and the antigen disappeared from the circulation soon after the precipitins reached their greatest concentration in the blood. These experiments would indicate that in the white rat anaphylaxis and precipitin formation are independent and represent different types of immunologic processes.

Erythrocytes in Experimental Pneumonia.—Erythrocyte counts, blood volume, hemoglobin and hematocrit determinations on a series of dogs suffering from experimental pneumonia induced by the tracheal insufflation of *Bacillus bronchisepticus* and *Bacillus mucosus-capsulatus* indicate that in this condition there is an actual loss of circulating erythrocytes, without compensatory regeneration. Postmortem examination of the organs of these animals revealed red cells in various stages of degeneration in the capillaries and tissue spaces of the lungs, liver, spleen and intestinal walls.

Experimental Studies with Bacterium Pneumosintes.—A series of rabbits was subcutaneously injected by Olitsky and Gates with three measured doses of killed cultures of two strains of *Bacterium pneumosintes* derived from the nasopharyngeal secretions of influenza patients. These rabbits were subsequently tested for the development of serum antibodies and for the presence of an induced immunity to the living organisms. The serum of eleven of fifteen rabbits, tested from ten to twenty-seven days after the final subcutaneous injection, specifically agglutinated *B. pneumosintes*, whereas normal rabbit serum did not. Nineteen vaccinated rabbits were subjected to protection experiments. Two of them were unaffected by an intratracheal injection of *B. pneumosintes*, contained in the lung tissues of previously infected animals, in a dose which typically affected the control rabbits. Fifteen of the other seventeen proved to be completely resistant when tested by intratracheal injections of *B. pneumosintes* cultures that produced typical infections in the controls. Ten of these fifteen rabbits were injected intravenously with living cultures of pneumococcus, *Streptococcus hemolyticus*, or *Bacillus pfeifferi* in doses which were noninfective under normal conditions, but infective, as experience has shown, in the presence of a primary lesion caused by *B. pneumosintes*. In none of these animals did infection develop. The two remaining rabbits of the seventeen were not protected against *B. pneumosintes* by the vaccination, and they further developed a secondary pulmonary infection with *B. pfeifferi* after its intravenous injection. Control rabbits similarly injected intratracheally with *B. pneumosintes*, and then intravenously with the pneumococcus, streptococcus, or *B. pfeifferi* in doses that had proved noninfective for normal rabbits, uniformly developed a secondary infection with these organisms. The mildness of the local reactions and the absence of general signs, following vaccination with *B. pneumosintes*, the authors assert, indicate that similar injections would be well tolerated in man. There is no evidence that the subcutaneous injection of large doses of the heat killed organisms reduces the resistance of the animal body to infections with other bacteria. In single rabbit experiments the resistance to intravenously injected pneumococci, streptococci, or *B. pfeifferi* has been found unreduced immediately after vaccination with *B. pneumosintes*.

Action of Sodium Salicylate on Formation of Immune Bodies.—Rabbits treated with sodium salicylate, in daily doses of from 0.16 to 0.2 gm. per kilogram of body weight and at the same time immunized with intravenous injections of *Streptococcus viridans*, both living and in the form of vaccines, and also with washed sheep red blood cells, showed diminished complement fixing antibodies, agglutinins and hemolysins when compared with controls similarly immunized. If the antigens were treated with sodium salicylate in vitro and subsequently injected intravenously into rabbits, the animals usually showed lower antibody curves than did rabbits that received the untreated antigen intravenously and sodium salicylate by stomach tube. Therefore, Swift is of the opinion that the beneficial effect of sodium salicylate in rheumatic fever patients probably cannot be attributed to an increased production of circulating immune bodies against the infectious agent. This is, however, no contraindication to the administration of salicylates to patients suffering from infectious diseases.

Laryngoscope, St. Louis

December, 1922, **32**, No. 12

Hare-Lip and Cleft Palate. M. N. Federspiel, Milwaukee.—p. 909.
Pulmonary Aspects of Tonsillectomy Under General Anesthesia. M. C. Myerson, Brooklyn.—p. 929.
Some Physical Intranasal Conditions Favoring Involvement of Nasal Accessory Sinuses. M. Metzenbaum, Cleveland.—p. 943.
Bronchoscopic Tack and Pin Forceps. G. Tucker, Philadelphia.—p. 948.
Investigation of Nystagmus Arc in Case of Congenital Nystagmus. H. H. Vail, Cincinnati.—p. 952.
Intratracheal Abscess. C. A. Campbell, Steubenville, Ohio.—p. 955.
Tonsil Enucleator. D. H. Jones, New York.—p. 956.
Personal Experiences of Some Details of Older Otology. J. Dundas-Grant, London.—p. 958.
Observations After Six Years of Constant Use of Sluder Method for Tonsillectomy. E. J. Stein, Lancaster, Pa.—p. 961.
Case of Bilateral Frontal Sinus Empyema, Subdural and Subperiosteal Abscess with Recovery. M. B. Waltz, Fort Smith, Ark.—p. 966.

Maine Medical Association Journal, Portland

December, 1922, **13**, No. 5

Vital Statistics. C. F. Kendall, Augusta.—p. 119.
Cross Fire in Roentgen-Ray and Radium Treatment of Malignant Disease. R. B. Josselyn, Portland.—p. 128.

Michigan State Medical Society Journal, Grand Rapids

January, 1923, **22**, No. 1

*Relation of Diet to Development of Dental Caries. G. L. Bliss, Kalamazoo.—p. 1.
Rôle of Acidified Milk in Infant Feeding. R. M. Greenthal, Milwaukee, Wis.—p. 9.
*Simple, Practical Method for Feeding of Infants. D. M. Cowie, Ann Arbor.—p. 10.
Treatment of Alimentary Intoxication and Report of Cases. E. W. May, Detroit.—p. 14.
Feeding of Infants and Children. B. R. Hoobler, Detroit.—p. 16.
Causative Factor of Vessel Compression in Upper Urinary Obstruction. G. C. Burr, Detroit.—p. 21.
Lethargic Encephalitis: Study of Ten Cases. S. Wilson and F. A. Weiser, Detroit.—p. 24.
Advancement of Medicine in Detroit. J. E. Davis, Detroit.—p. 27.
Nontuberculous Infections of Kidney. F. H. Cole, Detroit.—p. 32.
Mental and Behavior Changes in Children Following Encephalitis. H. T. Clay, Grand Rapids.—p. 37.

Relation of Diet to Development of Dental Caries.—The various phases of this problem as they are presented in man and in animals, naturally and experimentally, are discussed by Bliss as proof that the various diseases to which mankind is prey are due to deficiencies in the various articles of diet. He concludes by stating that a man living on cereals, meat, potatoes and fruit is not on a balanced ration. Physicians should avoid fads, patent vitamin foods and tablets, predigested foods and extremes of all kinds. If they will apply as much ingenuity and thought to dietetics as they do to the mechanical phase of dentistry and medicine, they will cure one defect which hastens the deterioration of civilization.

Simple Method for Feeding Infants.—Cowie states that the normal infant requires 45 calories per pound, or 100 calories per kilogram, body weight to maintain its weight. After determining on one ounce of sugar as a constant factor, and accepting all sugars as containing 120 calories per ounce, it became a very simple problem to know how much milk was necessary for the balance of the daily food. For example, if an infant weighed 10 pounds, he would require 10 times 45, minus 120, which equals 330, or the number of calories that must come from milk. If there are 21 calories in an ounce of milk (4 per cent. milk), 330 divided by 21 equals 15½ ounces, the amount of milk necessary to balance the energy requirement. The rest of the formula is made up with water. A chart illustrates how an infant can be fed up to the end of the first year with milk, sugar and water, although in the actual handling of a case vegetables and cereals are necessary after the eighth month.

Ohio State Medical Journal, Columbus

January, 1923, **19**, No. 1

*Carcinoma of Colon. G. W. Crile, Cleveland.—p. 5.
Carcinoma of Colon. J. Phillips, Cleveland.—p. 7.
*Treatment of Hyperemesis Gravidarum. W. D. Inglis, Columbus.—p. 11.
Spinal Therapy in Syphilis. J. G. Marthens, Dayton.—p. 14.
Nature and Extent of Surgical Intervention in Acute Nasal Accessory Cavity Suppuration. J. E. Brown, Columbus.—p. 16.
Etiology and Treatment of Maxillary Sinusitis. H. V. Dutrow, Dayton.—p. 18.
*Protein Sensitization and Its Relationship to Focal Infection. J. J. Coons, Columbus.—p. 21.
Contagium Vivum. R. H. Grube, Xenia.—p. 26.
*Physician and Tuberculosis Clinic. J. A. Frank, Columbus.—p. 29.

Treatment of Cancer of Colon.—Short circuiting the fecal stream to exclude the field of operation; the two stage operation; the iodoform gauze pack to prevent contamination of raw surfaces and to protect the retroperitoneal space against infection; wide resection of the cancer and use of radium and deep roentgen-ray therapy to prevent recurrences, are the leading features of the plan by which Crile and his associates have performed 389 operations on the large intestine and rectum for cancer, including a personal series of 117 operations, of which eighty-seven, including thirty-nine radical operations, have been done with only two deaths.

Treatment of Vomiting of Pregnancy.—Inglis places all patients with this condition in favorable hospital surroundings, and withholds food and water until vomiting has ceased for from eighteen to twenty-four hours. Stomach lavage and enemas of sodium bicarbonate solution are used as indicated, as well as rectal feeding. He states that patients improve more quickly and suffer less if they are kept in a slightly somnolent condition, so sedatives are pushed. Unless a marked improvement is apparent in a few days, Inglis dilates and packs the cervix and lower segment of the uterus with gauze and completes the termination of pregnancy the following day under light gas-oxygen anesthesia, if necessary.

Protein Sensitization and Focal Infection.—Coons believes it entirely rational to regard nasal infections, adenoids, infected sinuses, catarrhal conditions and infections in general as being the primary cause of such related conditions as bronchitis, asthma, hay fever, angioneurotic edema, the eczemas, urticaria and certain gastro-intestinal manifestations; or they may act secondarily by lowering the resistance of the patient to other infections. After eliminating all foci of infection, Coons believes that the rôle of protein sensitization in diagnosis reaches its maximum value and stands as the last step in the complete study of the case.

Physician and Tuberculosis Clinic.—Frank is chief of the bureau of tuberculosis of the Ohio State Department of Health. He gives a summary of the activities of this bureau to date. Eighteen clinics have been held, to which patients have been admitted from forty health districts. All told, 1,145 persons have been examined, of whom 324 have been found positive, 189 suspected, and 632 negative. From preliminary reports, approximately 238 persons with positive and suspected tuberculosis are being treated by their physicians. Physicians have examined about 288 contacts in families, in which there are known or suspected cases of tuberculosis. The clinics have been visited by 205 physicians and 213 county officials, members of boards of health, nurses and others interested in public health activities. Medical society meetings have been attended by 268 physicians and 273 others. The organization nurse has visited 462 physicians, 197 public officials, school superintendents and others. This work has been carried out by the chief of the bureau, one organization nurse and one clinic nurse, together with the indispensable services of the diagnosticians for the sum of $6,100. This includes equipment, salary and traveling expenses of the department's personnel since Oct. 1, 1921, and traveling expenses of diagnosticians.

Rhode Island Medical Journal, Providence

January, 1923, **6**, No. 1

Lung Abscess Following Tonsillectomy. F. N. Bigelow, Providence.—p. 1.
Chronic Empyema and Its Treatment. F. V. Hussey, Providence.—p. 6.
*Dermatitis Medicamentosa (Mercury). H. P. B. Jordan.—p. 13.

Mercuric Dermatitis.—Jordan reports the case of a man who had a pustular eruption covering the body, excepting the face, back and posterior aspect of lower extremities and the feet. The chest, arms, legs and abdomen were entirely covered with a confluent pustular eruption, the eruption on the penis, scrotum, groins and axillae being of the bullous type. Two days previously the patient had applied blue ointment freely to the chest, abdomen, groin, axillae and penis, and less freely to the lower extremities, to cure pediculosis pubis. On arising the following morning he noticed an eruption which was sore to touch. It became steadily worse. The man became extremely prostrated and remained in this condition for eight days. Recovery was accompanied by profuse desquamation confined to the areas of inflammation. He was discharged well on the twenty-sixth day. The patient at no time showed any of the ordinary symptoms of mercurial poisoning.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

December, 1922, **3**, No. 6

*New Medium for Isolation of Diphtheria Bacillus. S. R. Douglas.—p. 263.
*Nonspecific Desensitization. C. H. Kellaway and S. J. Cowell.—p. 268.
*Occurrence of Toxic Substance in Blood in Cases of Bronchial Asthma, Urticaria, Epilepsy and Migraine. W. Storm van Leeuwen and Zeydner.—p. 282.
Application of Absorption of Agglutinin Test to Serologic Study of Pneumococci. R. R. Armstrong.—p. 287.
Influence of Quality of Meat Used on Reaction Curve of Nutrient Medium. C. G. L. Wolf.—p. 295.
*Vitamin Underfeeding. W. Cramer.—p. 298.
Laboratory Preparation of Purified Hematoxylin. A. H. Drew.—p. 307.

Medium for Isolation of Diphtheria Bacillus.—The medium used by Douglas consists of agar and serum, of which the antitryptic action is neutralized, together with potassium tellurite as an indicator

Nonspecific Desensitization.—Kellaway and Cowell assert that the intravenous injection of normal guinea-pig serum into actively sensitive guinea-pigs causes a degree of protection against the specific antigen which is only of short duration. This loss and subsequent return of the sensitiveness of the anaphylactic animal is explained by parallel changes in the sensitiveness of the plain muscle. The changes in the sensitiveness of the plain muscle are probably due to physical changes occurring in the muscle cells. The demonstrable antibody of the serum is greatly diminished in amount very soon after the injection of serum, and is not restored till long after the sensitiveness of the plain muscle has returned to its original value. The injection of guinea-pig serum into guinea-pigs with a high titer of circulating antibody is followed by the appearance of enhanced sensitiveness of the whole animal during two periods—one shortly after the injection and a second after the restoration of the sensitiveness of the plain muscle but before the return to normal of the demonstrable circulating antibody.

Toxic Substances in Blood in Asthma, Urticaria, Epilepsy and Migraine.—In this study by van Leeuwen and Zeydner, blood drawn from a vein was at once mixed with alcohol, the alcoholic extract was evaporated and the residue taken up with saline solution. The effect of the extract on loops of isolated cat's intestine was tested. Normal blood extracts had no effect, but extracts made from the blood of patients suffering from asthma, urticaria, migraine and epilepsy caused contraction comparable with that produced by pilocarpin (equal to from 1 to 5 mg. pilocarpin per liter of blood). It is suggested that this toxic substance is related to the allergic disposition.

Vitamin Underfeeding.—Observations have been made by Cramer on a stock of rats which have been kept through many generations on a natural diet, the vitamin content of which, though restricted, is adequate to enable them to grow and breed and to prevent the occurrence of obvious ill health. A comparison of rats from these stocks with animals from a stock fed on the same diet supplemented with an abundant sup-

ply of vitamins shows that there is such a condition as "vitamin underfeeding" and that it may occur on a natural diet. Such vitamin underfeeding does not lead to any obvious ill health: the animals are in appearance normal, healthy animals. But vitamin underfeeding, especially if it has occurred in infancy, impresses itself on the organism as a lasting weakness which only manifests itself when the organism is exposed to a strain. Hence the importance of insuring an abundant supply of vitamins in the food, especially to the pregnant and lactating mother and to the growing child. The fact that vitamins have a positive, stimulating druglike action and thus act as food hormones is put forward to replace the present conception of their mode of action. These conclusions suggest that the physical make-up of a community is determined largely by the ease and regularity with which an abundant supply of vitamins is secured to the pregnant and nursing mother and to the growing child.

Journal of Tropical Medicine and Hygiene, London

December, 1922, **25**, No. 23

Case of Human Infection with Eimeria Oxyspora, Dobell, 1919. J. G. Thomson and A. Robertson.—p. 369.
New Genus Alofia of Family Linguatulidae. Anatomic Account of A. Ginae. G. Giglioli.—p. 371.
*Case of Blackwater Fever Complicated by Retinal Hemorrhage. R. E. W. Connell.—p. 378.

Retinal Hemorrhage Complicating Blackwater Fever.—Connell's patient developed a severe attack of estivo-autumnal fever, during which the blood showed numerous parasites, often two in one erythrocyte. A week later he was found to have blackwater fever. On the fifth day of this illness the man complained that there was a dark spot in the center of the eye, which at 8 feet distance was found to cover a roughly circular area 6 inches in diameter. A paracentral hemorrhage was detected. The condition gradually receded and after two months the eyes were still weak and spots were seen at times, one of which in each eye, paracentrally placed, was somewhat persistent.

Medical Journal of Australia, Sydney

Nov. 25, 1922, **2**, No. 22

General Principles in Psychotherapy. L. P. Lowson.—p. 603.
*Dysentery Bacilli of Sonné Type. S. W. Patterson and F. E. Williams.—p. 608.
Practice of Medicine in Imaginary City of Utopiaville. E. Sirois.—p. 610.
Some Dislocated Lenses. J. L. Gibson.—p. 615.

Dysentery Bacilli of Sonne Type in Colitis.—Patterson and Williams have found in cases of colitis occurring in Australia, examples of a bacillus which constitutes a third group of dysentery bacilli, other than the Shiga and Flexner-Y groups. It is pathogenic for man and animals. Bacteriologically, it is easily confused with dysentery bacilli of the Flexner-Y type, but it is a slow fermenter of lactose. It is agglutinated in low dilution by Flexner-Y agglutinating serum and up to a dilution of 1:1,600 with a polyvalent dysentery serum which is made with an antigen containing representatives of this group. In a series of observations of normal persons and diarrheic patients, the authors found that agglutination of the patient's serum with this bacillus at a dilution of 1:100 or more may mean that the patient is showing a specific response to that organism.

Practitioner, London

December, 1922, **109**, No. 6

Prescience in Tuberculosis: Bearings on Treatment. R. Philip.—p. 413.
Mental Aspects of Tuberculosis. O. M. Holden.—p. 418.
*Cerebral and Cerebellar Hemorrhages in Apparently Healthy Adolescents and Children. C. O. Hawthorne.—p. 425.
Auricular Fibrillation. A. J. S. Pinchin.—p. 436.
Treatment of Indigestion. J. Taylor.—p. 447.
Reconstructive Surgery. G. R. Girdlestone.—p. 456.
Perils from Perishing Parasites. F. G. Cawston.—p. 460.
Value of Rectal Feeding in Illness. A. E. Rouse.—p. 463.

Intracranial Hemorrhage in Apparently Healthy Adolescents.—Hawthorne records two examples of swift and sudden death from intracranial hemorrhage in two boys, aged 17 and 14 years, respectively; each was regarded, until the day of his death, as in good and even vigorous health, and neither case was there any history or evidence of violence. In one case there was a considerable hemorrhage deep in the substance of the midcerebellum but no sign of injury and no other evidence of disease. In the other case there was a large hemorrhage in the left frontal lobe and both lateral ventricles were full of blood.

South African Medical Record, Capetown

Nov. 25, 1922, **20**, No. 22

Sterility. E. R. Snyman, Kroonstad.—p. 430.
*Filter Passing Micro-organism Associated with Epidemic Influenza. S. Lister.—p. 434.

Bacteriologic Study of Influenza.—The nasopharyngeal washings from fifteen cases of influenza obtained in eleven instances within twenty-four hours of the onset of the disease were studied bacteriologically by Lister. After a period of from six to eight days minute bodies were observed from some of the tubes inoculated with the filtrates from five out of the fifteen cases under investigation; in some specimens these bodies were present in enormous numbers. They are minute, measuring about 0.15 microns and are uniform in size; they stain a deep blue, and give a peculiar impression of "hardness"; under a magnification of 1,000 they resemble pin points. They usually occur singly, but chains are sometimes present composed of from three to five individuals. Lister has succeeded in subculturing them to the fourth generation both by direct subculture and by the subculture of filtrates from positive cultures. These organisms correspond with those described by Olitsky and Gates. A preliminary attempt was made to infect human beings with this organism. The experiment was carried out on eighteen natives and on the author. Seven subjects received the filtrate, six the unaltered culture and six received the heated culture. Of the nineteen volunteers only one complained of any discomfort; he was in the unaltered culture group and had a typical attack of uncomplicated influenza, beginning nineteen hours after the spraying. The minute bodies were observed in smears of his nasal secretion. A nasal washing was taken and filtered through a Berkefeld candle, the filtrate being planted into Smith-Noguchi medium. Five days later a profuse growth of this minute organism had developed.

Tubercle, London

December, 1922, **4**, No. 3

*Position of Colony in Tuberculosis Campaign. S. Tinker.—p. 97.
Two Manometers in Apparatus for Inducing Artificial Pneumothorax. W. P. Morgan.—p. 104.
*Tuberculosis as Deficiency Disease. V. F. Soothill.—p. 108.
Duration of Sanatorium Treatment. R. C. Macfie.—p. 111.

Position of Colony in Tuberculosis Campaign.—The growing tendency to discredit the colony as a method of obtaining the desired permanent welfare of the tuberculous working man is controverted by Tinker. In his opinion the colony offers a period of extended treatment, each month of which reduces materially the danger of relapse. It is a stepping stone between sanatorium and home. The author emphasizes that the colony must not be an isolated institution, but must work in harmony with the public health authorities and find its appointed place in the whole problem. Some form of protection is necessary after colony treatment is completed. The municipal workshop offers the possibility of this protected labor in a large number of cases; in rural areas a cooperative system of marketing the goods made by patients in their own homes is essential. The village settlement offers but limited help, and although a method of dealing with individual cases (i. e., the very infective), it is too expensive to be of material assistance in the whole problem. Industrial colony life reestablishes the mental as well as the physical well being of patients, fostering initiative and bringing the ment out of the hopeless attitude which continuous unemployment has caused. Although initial results may be small, they will increase with time and experience.

Tuberculosis a Deficiency Disease.—It is suggested by Soothill that future generations might be better protected through increasing individual resistance by an abundant supply of fat soluble vitamin to the developing child, before and after birth.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 1, 1922, **46.** No. 34

*Diagnosis of Addison's Disease. A. Sézary.—p. 1572.
*Intravenous Infusion by Drip Method. J. Thiroloix.—p. 1575.
*Addison's Disease and Pigmentary Cirrhosis. C. and J. Oddo.—p. 1578.
*Gangrene of Hepatic Flexure in Amebic Dysentery. E. Lenoble and Y. Jegat.—p. 1582.
*Acute Scleroderma. Laignel-Lavastine et al.—p. 1586.
Chronic Multiple Synovitis of Tendons. R. A. Gutmann.—p. 1590.
*Contagiousness of Whooping-Cough. H. Barbier and Renard.—p. 1592.
Multiple Spontaneous Perforation of Lung. Terris.—p. 1595.
*Sympathicotonia in Tachycardia. Gilbert and Coury.—p. 1596.
Cutaneous Leishmaniasis. Plessier.—p. 1609.
*Cervical Myotonia in Nurslings. G. Variot.—p. 1613.
Familial Myoclonic Epilepsy. Crouzon et al.—p. 1620.
*Kala-Azar in France. J. Renault et al.—p. 1624.
Chronic Syphilitic Arthropathy and Vitiligo. Brouardel et al.—p. 1632.
*Red Thyroid Spot. G. Marañon.—p. 1635.

Diagnosis of Addison's Disease.—Sézary believes that even the simultaneous presence of asthenia, arterial hypotension, Sergent's white line, pigmentation of skin and mucous membranes, does not always point to Addison's affection of the suprarenal capsules. Asthenia, if evidenced by a rapidly increasing fatigue of muscles during work, is the most important finding. Yet even this sign is present in myasthenia gravis and perhaps in some other conditions.

Intravenous Infusion.—Thiroloix demonstrates an apparatus ("rhéostill"), by means of which very slow intravenous injections of large quantities of fluid can be made. The injection may be fractioned and this may prevent anaphylaxis if the first pause lasts five minutes.

Addison's Disease and Pigmentary Cirrhosis.—Oddo and Oddo report two cases of a combination of Addison's disease with pigmentary cirrhosis (one of them without diabetes) with anatomic findings.

Gangrene of Hepatic Flexure in Amebic Dysentery.—Lenoble and Jegat publish a case of amebic dysentery leading to death in spite of emetin treatment. The patient had ascites, edema, no fever, a positive Wassermann reaction. The clinical diagnosis was: chronic peritonitis after atrophic cirrhosis of the liver in an old syphilitic. The necropsy showed gangrene of the hepatic flexure, extending into the liver, a small liver, and localized peritonitis. No amebic cysts were found after death.

Acute Scleroderma.—Laignel-Lavastine, Coulaud and Largeau report a case of acute generalized scleroderma with severe pains in the joints. Three rabbits injected with the blood of the patient developed bronchopneumonia with tendency to necrosis and changes in the thyroids. A streptococcus was cultivated from the rabbits (not from the patient). It failed, however, to produce lesions in other rabbits.

Contagiousness of Whooping Cough.—Barbier and Renard believe that whooping cough is hardly infectious after three weeks. Such children could be allowed to attend school, but great care should be taken to isolate brothers or sisters, if they have even a slight cough. In one case of typical pertussis they were unable to cultivate the Bordet-Gengou bacillus from the patient. Yet the bacillus grew in pure culture from the pharyngeal mucus of a brother who was coughing but did not have a real attack of the disease.

Sympathicotonia in Tachycardia and Melanoderma.—Gilbert and Coury's patient was a syphilitic with hypertension and mitral insufficiency, who had attacks of paroxysmal tachycardia and marked pigmentation of the skin. They are inclined to attribute both of these symptoms to increased sympathicotonia.

Cervical Myotonia with Plagiocephaly and Craniotabes in Nurslings.—Variot demonstrated four infants with these symptoms. The unilateral myotonia is the cause of plagiocephaly (asymmetric shape of the skull with depression of one parieto-occipital region).

Kala-Azar in France.—Renault, Monier-Vinard and Gendron describe a case of leishmaniasis in a child who recovered after injections of sodium acetyl-para-aminophenylantimonate.

Red Thyroid Spot.—Marañon reports on this sign, which is present in 85 per cent. of cases with hyperthyroidism. Gentle rubbing of the anterior part of the neck provokes in many neurotic subjects a reddening of the skin. In cases with hyperthyroidism this redness is limited or localizes quickly just above the thyroid gland. He discusses the relation of this sign (which he described in 1919) to Lian's local hyperesthesia in hyperthyroidism.

Journal de Chirurgie, Paris

October, 1922, **20.** No. 4

*Remote Sequelae of Cholecystectomy. H. Hartmann and D. Petit-Dutaillis.—p. 349.
*Experimental Study of Omentum Grafts. P. Brocq et al.—p. 358.

Remote Sequelae of Cholecystectomy.—Hartmann and Petit-Dutaillis have reexamined 100 patients long after cholecystectomy, and state that 92 per cent. of this total number were rid of all the disturbances they had been suffering for several years. The relief was immediate or not until after medical treatment following the operation. In one case they were obliged to operate later for a calculus in the common bile duct. This shows the importance of exploring the ducts during cholecystectomy. In more than 8 per cent., appendicitis complicated the cholecystitis, tending to prove that the appendix region also should be examined during cholecystectomy. After the operation, a secondary intervention may be required for adhesions, although it is exceptional; this was required only twice in their 100 cases.

Experimental Study of Omentum Grafts.—Brocq, Ducastaing and Reilly describe a few of the main practical applications of the plastic power of the omentum. They experimented on dogs, sheep, rabbits and guinea-pigs. They chose the bottom of the cecum to apply the graft as this point is easy to find in further operations. It may be premature to draw practical conclusions from their experiments, but one fact seems acquired; namely, that the free omentum graft survives, while preserving its specific character. They believe that they are the first to establish by histologic data this remarkable persistence of the endothelium. Their experimental research demonstrates that we cannot rely very much on the omentum graft to insure that the suture is watertight. However, it is bound to be useful in gastro-duodenal surgery, but the main and great value of the free omentum graft is in prevention of adhesions and to prevent the reforming of adhesions. We can use it wherever operations leave an oozing surface and peritonization is impossible. Pedunculated grafts should not be used, as retraction may occur later and entail stenosis. It is in the treatment of certain forms of pericolitis, with the sticking together of parts of the colon, that the omentum graft is chiefly indicated, especially after correction of a kink bound down by adhesions. All their experiments were on a strictly aseptic basis, and their conclusions do not apply in case of infection.

Nourrisson, Paris

November, 1922, **10.** No. 6

*Inorganic Heart Murmurs in Infants. G. Blechmann.—p. 353.
*Antiscorbutic Power of Different Milks. Lesné and Vaglianos.—p. 377.
*Prophylaxis of Tuberculosis in Infants. R. Dubost et al.—p. 386.
*Maternity House. A. Thierry.—p. 392.
Second Congress of French Pediatrists. H. Lemaire.—p. 398.

Inorganic Murmurs in Infants.—Blechmann reviews the functional murmurs of the heart which are not as rare in young children as it is supposed. After discussing the differential diagnosis, he concludes that time (sometimes a year) is the only safe criterion for diagnosis, if an orthodiagram does not show a distinct organic lesion. Eight cases are described.

Antiscorbutic Power of Different Milks.—Lesné and Vaglianos prepared milk in different ways, and tested its power to prevent scurvy in guinea-pigs. Ten minutes of boiling did not hurt the milk, nor heating below 80 C. after addition of sugar. Pasteurization is also good, but the milk is not completely sterilized. They conclude that the best way to prevent scurvy in infants nourished with sterilized milk consists in the addition of a little orange or lemon juice to the food, beginning from the second month.

Prophylaxis of Tuberculosis in Infants.—Dubost, Blechmann and François describe the remarkable results obtained by the rural center for babes at Mainville-Draveil. This center took care in 1920-1921 of ninety-five infants, thirty-

seven of whom were born from tuberculous parents. The infants are placed in private homes at a maximum distance of 1¼ mile from the center. The nurses are paid 150 francs per month. The daily expenses are from 6 to 7 francs per child. The mortality was 4.3 per cent. in 1921.

Maternity House.—Thierry describes the institution of the maternity house at Tours, with an annex for new-born babes and their mothers. In a village 15 km. from Tours, infants are received without mothers.

Paris Médical

Dec. 2, 1922, **12**, No. 48

Therapeutics in 1922. F. Rathery.—p. 485.
*Local Vaccination. A. Besredka.—p. 496.
Artificial Pneumothorax in Pulmonary Gangrene. Emile-Weil.—p. 500.
*Treatment of Visceral Hemorrhages. P. Carnot and P. Blamoutier.—p. 503.
*Treatment of Streptococcus Infections. A. Mauté.—p. 506.
Present Status of Bismuth Treatment of Syphilis. Emery and Morin.—p. 509.

Local Vaccination.—Besredka examined the mode of action of vaccines. He found that after an intravenous or even a subcutaneous injection of living Shiga bacilli in a rabbit, the organs are sterile, but the bacilli are present in the contents of duodenum and ileum. If killed cultures are injected, we can conclude from the swelling of the mucosa that even dead bacilli are excreted there. Similar experiments were made with living and dead cultures of the typhoid-paratyphoid group and cholera. On account of this affinity for the intestinal wall, we can assume that such vaccines, in part at least, reach the bowels. Consequently it is possible to immunize against these diseases by giving the vaccines by the mouth, although it is necessary to add bile to all, except the Shiga. Such immunity is not associated with the presence of antibodies in the blood. Yet it allows us to assume that, even in the other case, the main factor is the local vaccination of the intestine by the excreted vaccine. Besredka points out that smallpox vaccination is a good precedent. He finds that it will be always advisable to consider the receptive organ of the infection. Results with anthrax were encouraging; plague gives some hopes, and it seems that Malta fever immunity is also local, not humoral. It would be advisable to try the intracutaneous instead of the subcutaneous method in staphylococcus infections. He believes that perhaps opsonins are no more important than other humoral antibodies.

Intravenous Injections of Calcium Chlorid in Treatment of Visceral Hemorrhages.—Carnot and Blamoutier found that intravenous injection of calcium chlorid is superior to oral ingestion in a number of hemorrhagic states.

Treatment of Streptococcus Infections with Cocci Dissolved in Sodium Hydroxid.—Mauté used a vaccine prepared by dissolving streptococci with sodium hydroxid. No results were obtained in ulcerative endocarditis, and more failures than successes in puerperal infections. Good results are reported in lymphangitis, lymphadenitis, purulent pleuritis, erysipelas and chronic tonsillitis.

Presse Médicale, Paris

Dec. 2, 1922, **30**, No. 96

*Carbophosphaturia. A. Martinet.—p. 1037.
Indications for Ouabain and Digitalis in Treatment of Heart Disease. R. Lutembacher.—p. 1038.
*Modern Classification of Nephritis. Wolf.—p. 1040.

Carbophosphaturia.—Martinet discusses the different conditions under which phosphates and carbonates are precipitated in heating unacidified urine. The first group consists of patients with respiratory troubles leading to an excess of carbon dioxid in the blood. This carbon dioxid is neutralized by the alkali of the blood, and is eliminated in this form through the kidneys. The second group are patients with hyperacidity of the stomach, especially if they are vomiting the acid gastric juice. It is clear that this leads to an alkalinosis. A very common reason for the reaction mentioned is alkalinity of the urine. People using carbonates as a remedy, and patients suffering from urinary infections with ammoniacal fermentation, may void turbid urine. Some relation of the pneumogastric nerve to carbophosphaturia is probable. Martinet believes also, that the hyperacidity of the gastric juice may be a reaction of defense against alkalinosis of blood.

Modern Classification of Nephritis.—Wolf reviews the new German clinical and anatomic researches in nephritis.

Revue Médicale de la Suisse Romande, Geneva

November, 1922, **42**, No. 11

*Erythema Nodosum After Delivery. E. Gueissaz.—p. 706.
Pernicious Anemia Due to Bothriocephalus. A. Cramer.—p. 718.
Case of Anemia Due to Bothriocephalus. A. Montandon.—p. 727.
Two Cases of Desquamative Erythroderma. Brun and Perrier.—p. 734.
Two Cases of Lethargic Encephalitis in Nurslings. Perrier.—p. 737.

Erythema Nodosum After Delivery.—Gueissaz describes five cases of erythema nodosum developing shortly after delivery, and recommends that search be made for the porta of infection. Angina precedes the attack quite frequently. The prognosis of idiopathic erythema nodosum is better than of secondary cases (tuberculosis, gonorrhea, syphilis).

Archivio Italiano di Chirurgia, Bologna

November, 1922, **6**, No. 2

*Squamous Epithelioma of Lower Lip. A. Miliani.—p. 105.
*Blocking Splanchnic Nerves. R. Gandusio and G. Pototschnig.—p. 125.
The American Cystoscopes. E. Pirondini.—p. 140.
*Cylindromas. B. Anglesio.—p. 153.
*Traumatic Rupture of Spleen. L. Baccarini.—p. 166.
*Experimental Growth of Bone and Cartilage. B. Polettini.—p. 179.
*Retractile Mesenteritis. R. Falcone.—p. 192.
Appendicectomy in Chronic Colitis. O. Cignozzi.—p. 205.

Epitheliomas of Lower Lip.—Miliani's photomicrograms confirm the view that the granulation tissue represents the highest degree of resistance opposed to the invading growth. He declares that study of the mode of production of this granulation tissue will throw light on the origin and treatment of malignant disease.

Blocking the Splanchnic Nerves for Abdominal Surgery.—Gandusio and Pototschnig have been applying Kappis' method of four injections of 30 or 40 c.c. of a 1 per cent. solution of procain, with a little epinephrin. The details are tabulated from their eighteen cases. A little ether to complete the anesthesia was required in three cases; these were a cancer of the papilla of Vater, a case of supposed gastric ulcer in which the findings were negative, and a case of cancer of the liver and duodenum. In all the others the nerve blocking was a complete success. The list includes several cases of resection of the stomach. The chief benefit of splanchnic anesthesia is seen after the operation. The operative shock is minimal, the local pains slight, the patients free from nausea. The pulse was the same as before the operation. No respiratory complications were observed, but local and regional anesthesia does not guarantee against postoperative pneumonia and bronchitis. They state that the anesthesia obtained by blocking of the splanchnic nerves is so perfect and lasting that the longest and most extensive operations can be performed under it. Several of the operations described took an hour and forty minutes and one, two and a half hours. The splanchnic analgesia was perfect throughout. Kappis' publication on this method of regional anesthesia was summarized here, April 10, 1920, p. 1060.

Cylindromas.—Anglesio found that three so-called cylindromas examined were unmistakably endotheliomas.

Rupture of Spleen.—The boy of 8 had fallen from a tree, and symptoms developed suggesting incipient peritonitis, but the laparotomy revealed only extravasation of blood. Its source could not be discovered although the liver, spleen, etc., were palpated. Necropsy revealed rupture of the spleen with acute hemorrhage. A clot had plugged the crack in the spleen and there was no pain at any time to call attention to the spleen, and no stiffening of the abdominal wall.

Experimental Grafts of Cartilage and Bone.—Polettini reports research on rabbits with subcutaneous and subfascial implantation of scraps of cartilage from the ear or of bone from the scapula. The grafts had all been kept in alcohol or a solution of formaldehyd. The technic was similar to Nageotte's, but the outcome differed widely in the different animals. In some, the implants were partially or totally absorbed, while in others they persisted unchanged, and in

still others (two of the twelve cartilage and four of the nineteen bone implants) there was active proliferation of the cartilage or bone tissue, actual neoformations. These neoformations, however, were never found in direct connection with the implants. The literature on heteroplastic bone formation is reviewed.

Retractile Mesenteritis.—Falcone discusses three cases in which the mesentery had been the seat of inflammatory processes which had entailed diffuse shriveling of the mesentery. This retraction pulled loops of intestines upward and back toward the spine. The viscera are not involved in the inflammatory process of this retractile mesenteritis. In his three cases there was considerable ascites, and in one tuberculous nodules were scattered over the omentum. Nothing could be done in any case, and the abdomen was sutured.

Rivista di Clinica Pediatrica, Florence

October, 1922, **20**, No. 10

*Butter-Flour Mixture in Infant Feeding. A. Gismondi.—p. 577.
*Typhoid in Infants. A. Medi.—p. 597.

Butter-Flour Mixture in Infant Feeding.—Gismondi has very favorable results with the use of Czerny-Kleinschmidt's butter flour pap in infant feeding. It is well tolerated, especially in mixed nursing, acts well in hypotrophic and convalescent infants, and is contraindicated only in acute dyspepsia and diarrhea.

Typhoid in Infants.—Medi believes that the rarity of typhoid infection in the first months of life is due partly to a certain immunity at this stage and the lack of exposure to infection, but partly to the diagnostic difficulties. In cases of congenital typhoid, lesions of the intestine are scarcely ever present, while ulcerations are frequent in typhoid contracted during the first months. The prognosis is not always good.

Brazil-Medico, Rio de Janeiro

Nov. 18, 1922, **2**, No. 46

*The Dangers from Purgatives. A. Pedro.—p. 313.
Biologic Differentiation of Cobras by Precipitins. L. de Assumpção.—p. 315.
Nutritional Index in Children. E. Meirelles.—p. 318.
Mosquitoes of Matto Grosso; New Species. A. Neiva and C. Pinto.—p. 321.

Nov. 25, 1922, **2**, No. 47

Sarcoma of the Choroid. Abreu Fialho.—p. 329.
Tests of Heart Action in Children and in Hookworm Disease. A. de Almeida Junior and S. B. Pessoa.—p. 331.
Symbionts in Brazilian Ticks. A. Godoy and C. Pinto.—p. 335.
A Case of Mycosis. M. Mourão.—p. 335.
Bismuth in Treatment of Syphilis. M. Krone.—p. 338.

Purgatives.—Pedro remarks that the medical science of the early nineteenth century rested on the tripod, blood-letting, emetics and purgatives. Blood-letting and emetics have fallen from their high estate as panaceas, but the purge is still in high honor. Anybody can give a purgative, and this inherited habit is maintained by physicians. The family sees that the first thing the physician does is to prescribe a purgative. The reaction to the purgative may be severe. Pedro says that he will never forget a case in which he had prescribed a purgative—"like every one else"—and the patient died of heart syncope as the bowels moved. The man might have died without the purge, but Pedro is convinced that it was an important factor in the fatality. In a case of mitral defect, he had always succeeded in tiding the patient through his attacks with heart tonics, but during an absence from town another physician was called in during an attack, and the patient died while the bowels were responding to the purge that had been ordered. In the typhoid group all purgatives are strictly contraindicated. The intestine irritated by the purgative drug absorbs toxins more readily. In Burlureaux' twelve cases of accidental food poisoning, the five treated without purgatives recovered much more rapidly than the others who had been purged. Pedro agrees with those who denounce purgatives in uremia for various reasons, chief among them the fact that the purge reduces diuresis and upsets the balance between the nonprotein and the other nitrogen in the blood and urine. The traditional purge before operations is now omitted by many surgeons, and none, he says, have had reason to regret this action.

Revista Médica del Uruguay, Montevideo

October, 1922, **25**, No. 10

*Acidosis Without Glycosuria. E. Claveaux.—p. 733.
Multiple Lesions in Unrecognized Syphilis. J. May and C. Rodriguez Estevan.—p. 738.
Tuberculous and Cerebrospinal Meningitis. M. Ponce de León.—p. 749.
*Typhoid and Diphtheria. J. P. Urioste.—p. 760.
Depigmentation in Half-Breed. B. Vignale and J. Estapé.—p. 764.

Acidosis without Glycosuria.—Claveaux's patient was a woman, aged 48, with aortic insufficiency, high blood pressure, and retention of chlorids, with tube-casts in the urine and rebellious oliguria. As the oliguria progressed, there was a phase of mental confusion, generalized pruritus, and other symptoms. The urine was hyperacid but there was no glucose or acetone or diacetic acid. After failure of all other measures, sodium bicarbonate treatment was followed by great improvement. Systematic courses, up to 12 gm. of sodium bicarbonate daily, restored comparative health. Now, a year and a half later, the urine is tested with litmus paper, and when it gives an acid reaction, the patient takes the bicarbonate anew; otherwise not. The diuresis increased from 600 gm. to 2.5 liters as soon as 12 gm. of the bicarbonate had been taken.

Typhoid and Diphtheria.—Urioste reports a case of this grave association, which is five times more fatal than typhoid alone. It was frequently observed during the war. Joltrain, examining all the typhoid patients entering the hospital, found that a large proportion were diphtheria bacilli carriers (1 in 35). Even when the diphtheria was recognized promptly and treated with antitoxin, the mortality was three times that of typhoid alone. Urioste recalls Huchard's saying "We find what we look for; we look for what we know about."

Semana Médica, Buenos Aires

Nov. 2, 1922, **2**, No. 44

Biologic Methods in Tuberculosis. G. Aráoz Alfaro.—p. 889.
Angio-Endothelioma of the Ear. J. Layera.—p. 894.
*Rôle of the Maternity. A. Peralta Ramos and J. P. Garrahan.—p. 898.
Appendectomy. E. Matons.—p. 904.
Traumatic Aortic Insufficiency. Emanuel and Roncoroni.—p. 908.
Intra-Uterine Puericulture. V. Delfino.—p. 909.
Vaccines and Serums in Acute Respiratory Diseases. Helmann.—p. 915.
Cough as a Symptom. A. Viton.—p. 916.
Institution for Foundlings. O. L. Bottaro.—p. 918.
Psychophysiologic Tests of the Senses. J. Ramon Beltran.—p. 921.
Illegitimate Maternity. J. A. Beruti and D. Iraeta.—p. 923.
Medicolegal Aspect of Birth Injury. F. A. Deluca.—p. 929.
Experiences with Hydatid Cysts. Calcagno and Collivadino.—p. 932.
Fibroma of Lobule of Ear. C. Jiménez López et al.—p. 934.
Nepiology, the Science of Infant Care. V. Delfino.—p. 935.

Rôle of Maternity Hospitals.—The new Maternity at Buenos Aires is almost ready for inauguration. It adjoins the Rivadavia Hospital and cost over two million pesos. It is designed to include, besides the lying-in hospital, welfare work for mothers and infants, with prenatal and postnatal care and advice. It is equipped with 206 beds for adults and 126 for infants, and has twelve distinct departments. One section is devoted to assistance in the home, and one is entitled the puericulture institute. Every maternity home practices prenatal puericulture, but very few continue the care after birth. This one will give shelter to nursing women, provide a milk station, and social service with trained workers.

Siglo Médico, Madrid

Nov. 11, 1922, **70**, No. 3596

Contraindications to Mineral Waters. H. Rodriguez Pinilla—p. 461.
*Experimental Chorea and Athetosis. G. R. Lafora.—p. 463.
Digestive Derangement in Infants. García del Real.—p. 464.

Nov. 18, 1922, **70**, No. 3597

Traumatic Gangrene. Carrasco.—p. 485. Conc'n No. 3598.
Interpretation of Apical Findings. B. López Durán.—p. 488.
The Sanitary Service in the Morocco Campaign. E. Slocker.—p. 489. Conc'n No. 3598.

Experimental Chorea and Athetosis.—In experiments on twenty-seven cats Lafora drove a needle into the red nucleus, the hypothalamus, or the superior cerebellar peduncle. In twelve of the cats, symptoms of chorea or athetosis developed. Puncture of both lenticular nuclei was not followed by any tendency to chorea or athetosis. Sometimes the movements occurred on the same side as the puncture, and sometimes on the opposite side. Some of the animals developed nystagmus, ophthalmoplegia or more or less transient cere-

bellar syndromes. The movements in some developed soon after the puncture and persisted for two or three days or even for fifteen or twenty days. In others they did not appear till after an interval of a month but then continued indefinitely for months. The exact localization of the extrapyramidal lesions responsible for chorea and athetosis is thus demonstrated by his findings. They harmonize with Kleist's statements as to subcortical centers for movements.

Archiv für Kinderheilkunde, Stuttgart

Nov. 18, 1922, **72**, No. 2

*Nutrition of Children in Orphanages. E. Rost et al.—p. 81.
*Roentgen Examination of Alimentary Tract. I. Buchheim.—p. 100.
*Protein Treatment in Pediatrics. Barabás and Torday.—p. 111.
*Enterogenous Salt Fever. H. Schönfeld.—p. 120.
*Blood Picture in Congenital Syphilis. W. Nitschke.—p. 136.

Nutrition of Children in Orphanages.—Rost, Herbst and Weitzel examined the food and its utilization in fifty boy inmates of an orphanage in Berlin. They found the food sufficient in organic substances and salts. A further addition of calcium did not influence the children.

Roentgen Examination of Alimentary Tract in Children.—Buchheim examined the gastro-intestinal tract of children over 1 year of age. She quotes the literature and publishes her own results in twenty-three cases. The stomach empties, on the average, in two hours, the small intestine in from two to four hours.

Protein Treatment in Pediatrics.—Barabás and Torday put very narrow limits even to a tentative protein treatment in infants.

Enterogenous Salt Fever.—Schönfeld confirms the finding of relative constancy of the level of chlorids in the blood (except after the meal). Ingestion of 3 gm. of salt in 100 c.c. of water caused fever in some infants. The amount of salt in the blood increased immediately before the fever, but some cases with high chloridemia did not have an increased temperature. In some children the salt produced all the symptoms of alimentary dyspepsia.

Blood Picture in Congenital Syphilis.—Nitschke examined the blood of fifty syphilitic children of different ages. The number of erythrocytes and the hemoglobin percentage were normal. There was a slight tendency to an increased number of white corpuscles, especially lymphocytes. The younger forms of neutrophils appeared in a larger proportion than the older forms.

Archiv für klinische Chirurgie, Berlin

Nov. 30, 1922, **122**, No. 1

*Resection of Urethra. N. Petroff.—p. 1.
Appendicular Abscess in Cecum Wall. A. Szenes.—p. 12.
*Access to Subphrenic Abscess. K. Nather.—p. 24.
*Electronarcosis. K. v. Neergaard.—p. 100.
*Spontaneous Healing of Cancer. N. P. Trinkler (Charkoff).—p. 151.
*Sugar Content of Blood During Anesthesia. H. Dewes.—p. 173.
*Volvulus During Pregnancy. E. König.—p. 188.
*Resection of Lesser Curvature. E. Borchers.—p. 198.
*Etiology of Muscular Caput Obstipum. O. Beck.—p. 218.
*The Peripheral Sympathectomy Question. E. Seifert.—p. 248.
*Primary Movable Duodenum. H. Miyake.—p. 269.
Rupture of Pancreas, Stomach and Liver. Recovery. Wildegans.—p. 276.
"Purulent Osteomyelitis of Vertebrae." E. Fraenkel.—p. 280.

Treatment of Cicatricial Strictures and Fistulas in the Urethra.—Petroff remarks that progress in plastic surgery has been one of the reasons why simple resection of the stricture with end-to-end suture of the urethra has been neglected in favor of more complicated operations. They are not needed. The urethral stumps with their encircling spongiosa are easily mobilized to bridge a gap of 6 cm. or more. Successful bridgings of gaps of 8, 12 and even 16 cm. have been published. Diversion of the urine is the first step, and the operation proper should not be attempted until infection has been conquered. Then the stricture or fistula is resected through the perineum, aided by a metal catheter in the proximal stump, which has been introduced through the incision in the bladder. A soft catheter in the distal stump is passed into the bladder as the metal one is drawn back. Petroff gives his experiences with eleven cases, and emphasizes the necessity for refraining from leaving a catheter in the urethra after the stumps have been sutured with fine catgut.

Access to Subphrenic Abscess.—Nather reviews the anatomic conditions which determine the localization of subphrenic abscess. He warns against the liability to overlook the insidious spread of the infection to other spaces than the one first found, and describes the technic for access by an incision over and parallel to the costal arch in front, or by an incision in the back with resection of the twelfth rib. He extols the advantages of these routes, and describes in detail fifteen cases to throw light on the differential diagnosis and the outcome of these operations.

Electronarcosis.—Neergaard reports extensive research on the application of the electric current by Leduc's technic to induce general anesthesia in animals. The narcosis could be maintained for hours; in one case up to nine hours, and ten minutes afterward the dog was eating again. Two of the thirty-five animals died in the course of the narcosis; in the others the narcosis was usually pushed to asphyxia. No attempt was made to apply it to man as the safe limit is too narrow. He recalls, however, that this form of narcosis acts on the most primitive building stones of the organism, and hence for man it seems as if it would be more effectual than in animals. But the experimental basis must be built up more solidly before electronarcosis can be safely tried in the clinic. The numerous advantages of electronarcosis justify further research. The complex factors involved call for systematic concerted action, and he surveys the special lines along which research seems promising.

Spontaneous Cure of Cancer.—Trinkler relates that he applied gastro-enterostomy in two cases of large inoperable cancer of the pylorus with extensive involvement of the lymphatics. One of the patients was a woman physician, aged 43. An excised gland in each showed malignant disease, but the tumors retrogressed and the women have been apparently in good health during the subsequent ten and seven years. He compares with these cases what has been published on spontaneous subsidence of cancer, saying that research on the tissues and organs involved in the organism's fight against malignant disease might reveal means to reenforce the natural defensive forces.

Sugar Content of the Blood During Anesthesia.—Dewes ascribes to the anesthetic alone the slight increase in the glycemia during local anesthesia for extraperitoneal operations. The increase is much higher with laparotomies under local anesthesia or ether—possibly as high as two or four times the normal figure. The factors inducing this are probably complex.

Volvulus in Pregnancy.—König adds another case to the five on record in which the small intestine had become twisted in the course of gestation. The sigmoid colon was involved in sixteen of the total twenty-eight instances on record of volvulus occurring in the pregnant. In his case the woman died twenty hours after the laparotomy. The volvulus had evidently been induced by a mesenteric cyst. The entire small intestine was involved.

Resection of the Lesser Curvature of the Stomach.—Borchers analyzes the effect on the shape and motor function of the stomach after lengthwise or doorstep resection of this portion of the organ. All of the seven patients thus treated have been freed from their former symptoms. The group includes one case of a small scirrhous carcinoma of the pylorus.

Muscular Torticollis. — Beck rejects all the theories advanced to explain this anomaly. He ascribes it to a congenital deformity of the muscle.

Periarterial Sympathectomy. — Seifert applied Leriche's method of peripheral sympathectomy without much benefit in a case of traumatic injury of the hands with suspicion of syringomyelia. The improvement afterward was slight although the changes induced at first were striking. In a case of trophoneurosis in a man, aged 35, the immediate and persisting benefit was pronounced, both subjectively and objectively. Reports as to the durability of the improvement are contradictory. Possibly a difference in the technic may be responsible for this diversity in the outcome. He describes two cases in which trophic disturbances followed the severing

of the femoral or popliteal artery and immediate suture of the stumps. The periarterial sympathetic fibers had evidently been injured and trophic disturbances followed. The conditions were thus exactly the reverse of the intentional periarterial sympathectomy to cure trophic disturbances. He declares that besides the mustard test, the blood pressure, and test hyperemia below a constricting band, we must examine the capillary circulation with the microscope and also the histologic findings, as further functional tests. The cases of gangrene after ligation of arteries should be revised from this standpoint of injury of periarterial sympathetic fibers. His final conclusion is the need for caution in operating on arteries.

Primary Movable Duodenum.—Miyake describes ten cases of colic for which a primary, abnormally movable duodenum was responsible—"a new clinical picture." He says that the immediate and durable cure by fastening the duodenum in its normal place has confirmed the correctness of his assumptions and procedure.

Beiträge zur klinischen Chirurgie, Tübingen

1922, **127**, No. 2

*Diagnosis of Knee Disease. E. Bircher.—p. 239.
*Reaction of Bone to Mechanical Influences. W. Müller.—p. 251.
*Blood Pressure During Operations. A. Lehrnbecher.—p. 291.
*Perforation of Ulcer on Rear Wall of Stomach. W. Cloos.—p. 331.
*Pathogenesis of Chronic Duodenal Ulcer. C. Rohde.—p. 340.
*Postoperative Peptic Ulcer. H. Erckenbrecht.—p. 365.
*Perforation of Gallbladder. F. C. Hilgenberg.—p. 399.
Inflammatory Tumor in Abdominal Wall. F. Schankies.—p. 405.
*To Lengthen Spermatic Cord. Welti.—p. 410.
*Operation for Exstrophy of Bladder. E. Brattström.—p. 419.
*Fracture of Neck of Femur. C. E. Jancke.—p. 422.
Rotation of Leg with Hip Disease. Kehl.—p. 438.
Irritation from Aluminum Acetate. W. Speck.—p. 445.
Operative Treatment of Radial Paralysis. V. Dumpert.—p. 457.
Isolated Rupture of Pancreas from Contusion. A. Nast-Kolb.—p. 462.
Intramuscular Lipoma. A. Nast-Kolb.—p. 465.
*Chronic Perienteritis. A. Lehrnbecher.—p. 468.

Diagnosis of Injury of Semilunar Cartilage.—Bircher comments on the misleading findings with roentgenography of the knee by the usual technic. In a series of 68 operative cases there were signs of arthritis deformans in 20 when reexamined later. In 41 the joint had been known to be free from inflammatory processes before the operation. In 15 cases a fragment of the outer condyle was chipped off for examination, and the microscope revealed inflammation in 70 per cent. of the cases in which the roentgen ray showed only normal conditions. Bircher then applied to the knee Jakobæus' laparoscope, after injecting oxygen or nitrogen into the joint by the artificial pneumothorax technic. This procedure is harmless and extremely effectual, he says, and reveals conditions inside the joint with precision. In 20 cases thus examined, the diagnosis was confirmed by the operation in 8 of the 9 cases of laceration of a semilunar cartilage; with arthritis in 3 of 4 cases, and with osteochondritis in one case. The operation confirmed the diagnosis further in a case each of serous gonitis, a loose body, a tuberculous process or a villous body. The suspicion of tuberculosis was disproved in one case. His experiments on the cadaver seem to show that this method of endoscopy cannot be applied to any of the other large joints, but for the knee it promises to become as indispensable as cystoscopy for the bladder.

Modification of Structure of Bone Under Mechanical Strain.—Müller cut out a segment of the radius in animals, thus throwing unusual mechanical strain on the ulna. Typical changes in structure developed, corresponding to the roentgen ray findings in coxa vara, genu varum and genu valgum.

Blood Pressure During Operations.—Lehrnbecher had the blood pressure taken repeatedly before, during and for a day or two after operations. A total of 320 patients were thus examined. He asserts that the control of the blood pressure during an operation is the control of life itself. The lowering of the blood pressure is the very earliest sign of collapse and shock, and gives warning before there is any other sign of danger. The blood pressure directly after the operation is of little moment for the prognosis, but the pressure in the evening and the next morning tells whether the forces are rallying or the vitality is ebbing. The work issues from Burkhardt's service; he is an advocate of intravenous anesthesia, especially for operations on the head and neck. The blood pressure record is said to demonstrate the good analeptic action of this form of anesthesia. He makes a practice of testing the functional capacity of the heart before the operation when feasible. Among the measures for this is walking up a flight of stairs. A physician accompanies the patient, ready to arrest the test at the slightest sign of overdoing. The Katzenstein method was abandoned as the patients did not like the application of the constricting band to their legs, and this made its influence felt on the blood pressure. In 40 patients tested with the stair climbing, the findings corresponded to what was anticipated from the clinical picture in all but nine. The effect of digitalis is not instructive, as the healthy and the practically hopeless cases respond alike. The same may be said of saline infusion in diffuse peritonitis. The exposure of the vein may excite the patient and cause a misleading rise in the blood pressure.

Perforation of Ulcer on Rear Wall of Stomach.—Cloos quotes Boas' recent statement that he has had only three cases of perforation of a gastric ulcer in all his extensive experience. In Cloos' service at Stuttgart there have been twenty-six cases during the last ten years. Perforation of an ulcer in the posterior wall occurred in one case, the woman aged 53 having been apparently healthy for the preceding ten years, after a period of stomach disturbance. Symptoms suggesting ileus then appeared suddenly, but subsided under medical measures. Then an abscess developed in the lumbar region but its source was not ascertained until profuse bleeding occurred from both the bowel and the abscess. This was interpreted as from perforation of an ulcer in the posterior wall of the stomach, which was confirmed at necropsy, the woman succumbing to a second hemorrhage from the same source the day after. If it had been possible to discover the perforation earlier and to suture it and drain the abscess, the fatal outcome might have been averted. The perforation might possibly have been utilized for a posterior gastroenterostomy.

Pathogenesis of Chronic Duodenal Ulcer.—Rohde has been investigating this subject on the cadaver supported in an upright position. This has shown that certain organs press on the duodenum, compress its wall at these points, and thus expose the mucosa to various mechanical injuries, and to corrosion from the action of the digestive juices. The duodenal ulcer is a local lesion. This is true also of gastric ulcer and of certain gallstone disturbances. Mechanical, anatomic and functional factors combine alike in all these three affections.

Postoperative Peptic Ulcer.—Erckenbrecht cites Denk's compilation in 1920 of 309 authentic cases of postoperative peptic ulcer in the jejunum, and adds thirteen new cases to the list, all in men between 18 and 60. He comments on this preponderance of males in all compilations of cases of peptic ulcer. His material confirms the connection between ulcers close to the pylorus and peptic ulcers; some even deny that a peptic ulcer can develop after an operation for an ulcer remote from the pylorus. Some primary injury of the jejunum wall undergoes corrosion from the digestive juices, and a peptic ulcer is the result. Resection of the stomach, by reducing production of gastric juice, has a prophylactic influence, but even this is not infallible: In one of the thirteen cases tabulated, the peptic ulcer followed resection of one half of the stomach. The main thing is not to injure the wall of the jejunum during the operation, and to regulate the diet afterward to keep production of gastric juice at a minimum. The food must be thoroughly chewed; milk must be taken in abundance; and meat, and food with much waste must be proscribed.

Perforation of the Gallbladder.—Only 4 of 30 patients with perforation of the gallbladder were men; the others were women from 19 to 69 years old. The experiences with this material teach the necessity for early operation in gallstone disease, instead of waiting until the gallbladder and bile ducts have become so diseased that operation is difficult. In only one case did grave peritonitis follow the perforation. The symptoms in this case did not appear till ten days after the contusion entailing the perforation. In 20 cases preexisting adhesions had walled off the perforation area. In

23 cases the gallbladder was removed; in the others the subjects were too much debilitated to permit this radical procedure. Seven of the patients died, including 4 of the 10 with diffuse peritonitis.

To Lengthen the Spermatic Cord with Undescended Testicle.—Welti has applied Sievers' method in thirteen cases. The spermatic cord is drawn through the obturator foramen. This lengthens the cord in an adult by fully 7.5 cm. The first incision is as for inguinal hernia, and the foramen is reached from here after the spermatic cord has been thoroughly loosened up. Then a second incision is made in the thigh, to reach the foramen from outside, the 10 cm. incision extending from the spine of the os pubis outward. The adductor longus and the gracilis are separated and also the fibers of the adductor brevis. Through the breach thus made, forceps are introduced and are worked through the obturator foramen. The testicle is then drawn through the foramen. Sievers commends this technic not only for undescended testicles but also for the complete suture of the inguinal canal in cases of inveterate hernia. The only drawback is that the spermatic artery and the veins of the pampiniform plexus have to be severed. This does not seem to have any serious consequences. Otherwise the results are apparently perfect. This operation seems to ward off the tendency to malignant degeneration of ectopic testicles.

Exstrophy of the Bladder.—Brattström reports the application of the Maydl operation as modified by Borelius in three of five cases of exstrophy of the bladder. One boy aged 14 was cured, continence being perfect. A girl infant died on the day of the operation. One boy aged 2½ years at the time of the operation (1920), shows satisfactory condition. All the urine is voided through the rectum, and continence is perfect during the day, but not at night.

Fracture of Neck of Femur.—Jancke states that recent reexamination of fifteen patients who had been under treatment for fracture close to the head of the femur showed extremely good results. The extension treatment had been followed by restoration to full earning capacity; advanced age rendered the prognosis a little less favorable. In the total of fractures of the neck of the femur—76 women and 47 men—66 per cent. were left with a usable hip joint. Extension prevents adduction contracture and outward rotation; the rest of the joint retains its function.

Chronic Perienteritis. — Lehrnbecher reports cases of *Zuckergussdarm* in which the necropsy findings were the same though the clinical pictures had been different. The patients were a girl aged 21 and a man aged 46. The former had presented symptoms for three years which simulated gastric ulcer. The man's symptoms for ten years had suggested stenosis of the bowel. This is the first known instance of the condition having been diagnosed during life. On the old chronic affection with adhesions there suddenly developed an acute phase, with a tumor in the left side which could be nothing else than a clump of bowel loops welded together. Tubercle bacilli were found in the first case but nothing was discovered to explain the condition in the other.

Klinische Wochenschrift, Berlin

Dec. 2, 1922, **1**, No. 49

*Significance of the Liver in the Circulation. O. Hess.—p. 2409.
*Physical Chemistry of Blood Sedimentation. Höber and Mond.—p. 2412.
*The Antagonists in Voluntary Movements. K. Wachholder.—p. 2414.
*Early Prognosis of Poliomyelitic Paralysis. P. Erlacher.—p. 2415.
Bárány's Cerebellar Localization. B. Fischer.—p. 2417.
*Relation of Pneumonia to Influenza. G. Elkeles.—p. 2421.
*Treatment of Central Luxation. O. Wassertrüdinger.—p. 2423.
*Symptom-Free Children of Syphilitic Mothers. W. Patzschke.—p. 2424.
Simple Improvement on Manson's Staining. L. Schwarz.—p. 2426.
Comment on Roth's "Bronchial Asthma" in No. 30. Scimone.—p. 2427.
Reply to György's Comment on "Tetany." H. E. Lorenz.—p. 2427.
Proteolytic Property of Human Serum. M. Schierge.—p. 2427.
Endogenous Infection of Small Intestine in Infants and Its Influence on the Organism. K. Scheer.—p. 2427.
Histology of Experimental Sporotrichosis in Rats. Jessner.—p. 2428.
Psychic Disturbances After Splenectomy in Pernicious Anemia. P. Neumann.—p. 2429.
Two Cases of Abscess and Hydrocephalus in Infants. Walter.—p. 2430.
Technic of Nutrition of New-Born. A. Reuss.—p. 2431.
Duties and Limits of Medical Welfare Work for Infants and Children. T. Hoffa.—p. 2436.
Clotting of Blood. B. Stuber.—p. 2440. Cont'd.

Significance of Liver in the Circulation.—Hess emphasizes the importance of the liver as an organ, which protects the right heart from congestion.

Physical Chemistry of Blood Sedimentation.—Höber and Mond confirm and continue Fåhræus' investigations on blood sedimentation. The negative charge of the corpuscles is comparatively great in a solution of serum albumin, smaller in serum globulin, and smallest in fibrinogen. In pregnancy and other conditions with increased speed of sedimentation, more globulins than usual are adsorbed to the corpuscles. The hydrogen ion concentration in which the tendency of globulins to flocculate is maximal (isoelectric point of globulins), lies near that of the blood. Therefore their adsorption to the corpuscles makes the suspension less stable, than is the case with albumins. The influence of globulins is also partly due to their greater viscosity, which causes the corpuscles to cling together.

Rôle of Antagonists in Voluntary Movements of Man.—Wachholder concludes from electromyograms, that antagonists are not passive, though this does not mean that there could be no inhibitory impulses.

Direct Test for Prognosis in Poliomyelitic Paralysis of Muscles.—Erlacher introduces needles into the muscle, and determines the strength of faradic current necessary to induce a contraction. He concludes from his small number of tests, that cases which do not lose more than two thirds of the normal irritability during the first months, have a good prognosis.

Relations of Pneumonia to Influenza.—Elkeles finds that statistics do not point to any etiologic relation between influenza and lobar pneumonias occurring during epidemics of influenza. No influenza bacilli are found in the parenchyma of the lungs in these cases, though they are always present in typical lobular pneumonias of influenza. Experiments on animals show also fundamental differences.

Treatment of Central Luxation of Hip Joint.—Wassertrüdinger reports two favorable results obtained by extension with Steinmann's nail driven into the femur.

Symptom-Free Children of Syphilitic Mothers.—Patschke recommends treatment even if the babies have no symptoms. One may individualize if the mother has only a positive Wassermann reaction without other symptoms.

Münchener medizinische Wochenschrift, Munich

Nov. 24, 1922, **69**, No. 47

*Roentgen Rays in Gynecologic Diagnosis. O. Polano and C. Dietl.—p. 1621.
Histologic Physiology of the Stomach Glands. F. Groebbels.—p. 1622.
Heredity of Morbid Agents in Insects. W. H. Hoffmann.—p. 1623.
*Abortive Treatment of Syphilis. W. Bruck.—p. 1624.
*Lumbar Anesthesia. Seyffardt.—p. 1625.
Attack of Malaria Provoked by Arsphenamin. Wesener.—p. 1626.
Serology of Cantharidin Blister Fluid. Thomas and Arnold.—p. 1627.
*Pregnancy in Leukemia. E. Hausam.—p. 1627.
Apparatus for Saturation of Fluids with Gases. Quetsch.—p. 1629.
Nomenclature in the Science of the Constitution. M. Vogel.—p. 1631.
Talents and Assiduity in Pupils. Rheins.—p. 1634.
Treatment of Enuresis in Children. Rietschel.—p. 1635.
Financial Distress of Tuberculosis Sanatoriums. C. Schelenz.—p. 1636.

Roentgen Rays and Pneumoperitoneum in Gynecologic Diagnosis.—Polano and Dietl find that a combination of roentgen rays with pneumoperitoneum is very valuable in the diagnosis of diseases of the pelvis. They describe the precautions which are necessary for good results.

Abortive Treatment of Syphilis.—Bruck finds it necessary to apply at least three series of neo-arsphenamin and mercury treatments, separated by from six to eight weeks, in cases of primary syphilis with negative Wassermann reaction.

Lumbar Intraspinal Anesthesia.—Seyffardt finds that it is harmful to remove spinal fluid before the injection.

Pregnancy in Leukemia.—Hausam reports a case of pregnancy in the fourth year of a myelogenous leukemia. Although there was a history of torpid hemorrhages after extraction of teeth, there was no abnormal bleeding from the uterus after delivery. During the pregnancy the patient felt very well, but died shortly after delivery. The child is so far (15 months) perfectly normal.

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OBSERVATIONS AND REFLECTIONS ON THE ETIOLOGY OF PELLAGRA*

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CHICAGO

It would be useless to enumerate the various views advanced to explain the cause of pellagra. Most of them have been discussed repeatedly, editorially, and in special articles in THE JOURNAL during the last few years. The idea that the disease is due to a faulty diet has been held almost from the beginning by many of those investigating its nature. At first, there was very little positive evidence in support of this view; but the results of the preventive and feeding experiments conducted by Goldberger,[1] and his associates, in orphanages in the South and elsewhere, were sufficiently suggestive to convince these workers that pellagra is due to a lack of the proper kind of proteins in the diet.

Other observers in this country[2] besides ourselves[3] are not convinced that this explanation will account for certain epidemiologic observations. In addition, we have seen pellagra patients whose animal protein intake previous to the onset of the disease apparently was above criticism.

It is not easy to explain by the food deficiency theory why the disease should have increased so rapidly from 1909 to 1913, and then rapidly declined, so that now it is rare in localities where formerly it was very prevalent. It is difficult to believe that the diet of people living in an area as large as that of our Southern states has changed radically twice during a period of seven or eight years; and, even if we grant this possibility, this increase and decrease during a limited period of time fits in more readily with our knowledge of the course of an infectious disease.

It has been stated that this decrease in pellagra after 1913 is due to the fact that the average person in these communities received larger incomes and had better food; but it is doubtful whether the larger incomes have compensated for the decreased purchasing value of the dollar. The officials of the Public Health Service evidently had this in mind last spring when they predicted that there would be a great increase in pellagra the past summer. The great increase did not occur, however, at least not in the localities we studied.

It is customary to say that a faulty diet may cause disease (1) through an insufficient amount of all essential substances, resulting in general malnutrition, or (2) from the lack of some one essential—vitamin, amino-acid or inorganic substance—the others being present in sufficient amounts. It is possible that excessive amounts of one or more of the essentials may make a diet faulty, even though the others are present in sufficient quantity. Thus, an excess of carbohydrates with just the necessary amount of proteins, or the reverse, may furnish an excellent culture medium in the intestinal tract for an organism which, under these circumstances, would become pathogenic because of the production of unusual amounts of toxins; while with a properly balanced diet such an organism would probably be inoffensive.

Hirschler[4] was apparently the first to observe that certain carbohydrates—sucrose, dextrin and starch—inhibited intestinal putrefaction, and this observation has been confirmed by others, including Herter,[5] Kendall,[6] and Rettger and Horton.[7] In the later work, microscopic and cultural methods were used in determining the changes in bacterial flora of the intestine caused by changes in diet. Thus, the results obtained by Goldberger in his preventive experiments do not disprove the possibility that pellagra may be due to an infectious agent; for it is obvious that the change to a larger amount of protein, with a decrease in carbohydrates, would make conditions less favorable for the development of an organism requiring large amounts of the latter substance.

The Italian investigators were probably the first to note changes in the intestinal flora of pellagra patients. They observed an increase in hyphomycetes, and supposed that these molds were in themselves toxic, or produced a toxin when grown on corn. They were never able to identify any one of these molds as a causative factor in pellagra.

Our general impression of the disease would lead us to the conclusion that pellagra is not a deficiency disease, comparable to beriberi and scurvy, but one in which a definite intoxication, arising most probably from the intestinal tract, forms the basis of the pathologic condition.

The point has been made repeatedly that the failure of physicians, nurses and other attendants of pellagrous patients to develop the disease indicates that it is not due to a specific organism. Those making this state-

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5. Herter, C. A.: Brit. M. J. **2**: 1847, 1897.
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7. Rettger, L., and Horton, G. D.: Centralbl. f. Bakteriol., 1, Orig. **73**: 362, 1914.

ment, however, apparently do not take into consideration the question of individual susceptibility, personal hygiene, food, etc. Thus, it is doubtful whether tuberculosis is more frequent among attendants in sanatoriums for tuberculous patients than in other hospitals. Brown [8] states that during the thirty-six years the Trudeau Sanitarium has been in existence only one among many hundreds of employees has developed tuberculosis despite the demonstrated fact that they were continually exposed to infection. He also states that for years no native of Saranac Lake (population about 5,000) has died of pulmonary tuberculosis. If the causative agent of tuberculosis were not so well known, Brown's observations might equally well be used to support the assertion that tuberculosis is not due to a specific organism. It is also well to remember that the attendants in leprosariums practically never develop leprosy.

It seems rather a curious fact that the influence of light on the development and progress of the disease has been almost completely ignored during the last few years, though it is a common observation that the skin lesions are most prevalent on the exposed parts of the body and develop usually in the spring or summer months, following exposure. The majority of our patients ascribed the skin changes to sunburn, and Enright [9] and Bigland [10] have recently referred in some detail to the influence of the sun on the skin lesions. We believe that such patients do better when kept in a dark room.

It is now eighteen years since Heinrich von Tappeiner [11] and his associates, Raab and Jodlbauer, observed that certain fluorescent dyes developed marked toxicity for infusoria when directly activated by light rays. These investigators developed the field to a considerable extent, noting the effect on laboratory animals, on tissues and ferments and on bacteria. Apart from the general biologic importance of these investigations, a certain clinical bearing was found, and the dermatologic field offered particularly alluring applications in the possible explanation of some of the still hidden causes of various dermatoses.

Among the problems attacked were those of fagopyrismus and hydroa aestivale. In the former, a fluorescent substance has been isolated from buckwheat which is able to sensitize animals to light,[12] while alcoholic soluble fluorescent and photodynamic substances have been isolated by Gay and McIver [13] from corn, rye, oats and buckwheat. In hydroa aestivale, Hausmann [14] was able to demonstrate the presence of an active photodynamic substance, hematoporphyrin, in the urine.

The suggestion that pellagra might be a photodynamic intoxication was made almost simultaneously by four different investigators: Hausmann,[14] Lode,[15] Horbaczewski [16] and Raubitschek.[17] Their experiments, also those of Umnus,[18] were made with photodynamic substances obtained from corn; but, since in this country quite a number of those developing pellagra have been consuming only a minimum of corn products, we must obviously seek some other explanation. Nor must we fall into the error of assuming that the mere entrance of photodynamic substances into the intestinal tract is sufficient to set up a light sensitization, for chlorophyl (as shown by Hausmann, a strongly fluorescent and photodynamic substance), is, of course, a common constituent in the normal diet.

That human beings may be made hypersensitive to photodynamic substances is shown by the interesting experiment of Meyer-Betz,[19] who sensitized himself with hematoporphyrin. He found that exposure to sunlight caused marked edema and erythema of the exposed parts—face, hands, neck, etc.—indicating in a suggestive manner that a photodynamic intoxication can, under certain conditions, be induced in the human being. It is interesting to note that he remained hypersensitive for at least six weeks, though no traces of the sensitizing substance, hematoporphyrin, could be found after seventy-two hours.

For several years, we have been impressed with the possibility that pellagra may be due to a photodynamic substance produced by an organism located in the intestinal tract. The observations supporting the low protein theory may be readily explained by the assumption that this hypothetic organism can produce the light sensitizing substance only when growing in a favorable medium, consisting of an excess of carbohydrates. Such a theory would explain not only the skin manifestations of the disease, but also the results obtained with a high protein diet, and the epidemiologic observations made by ourselves and others. It would also explain why healthy individuals with a normal diet failed to develop the disease when fed with infected material.

The point has been made that negroes, because of their dark skin, should not be affected by pellagra if it is due to the action of a photodynamic substance. Those holding this view apparently believe that the dark skin affords complete protection against the light rays. Such is not the case, as those living in the South are aware, since negroes, though less susceptible than white people, also suffer from overexposure to the summer sun. We have found that dark colored mice are susceptible to the action of hematoporphyrin, though requiring larger doses than white mice; while Hess and his associates,[20] in their study of the influence of light in rickets, found that the ultraviolet rays protected both dark and white rats from this disease, but that the former required longer exposures to the rays. Thus, the protection afforded by a dark skin is relative, and not absolute.

These studies were begun in 1919 in Nashville, Tenn., but the disease became so rare that in 1922 the work was transferred to Memphis, Tenn. Here, conditions were little better than at Nashville. During the summers of 1920, 1921 and 1922, we saw only sixteen patients with active symptoms of pellagra, and, as the technic described below was not developed until the latter part of 1920, we might properly confine this report to the work done in the summers of 1921 and 1922, during which we saw only nine acute cases. This striking decrease in pellagra in the localities where we were working explains why we are making the present

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incomplete report, as the expense and time entailed in further work does not seem justified at this time. We realize that the evidence submitted is not conclusive, but hope that others, more fortunately situated, may become sufficiently interested to make additional studies along these lines.

We first endeavored to extract photodynamic substances from the feces and urine, but without avail. It is known, of course, that certain of the bile pigments are fluorescent, and possibly photodynamic; but the suggestive character of some of our epidemiologic findings caused us to ignore these for the present.

Our next efforts were devoted to an attempt to isolate organisms able to produce photodynamic substances, and here we were more successful. In the beginning, it was thought best to concentrate our work on the fungi of the intestinal tract, as the Italian observers had noted an increase of these organisms in the feces of pellagra patients. Raulin's medium [21] was used at first, but this was subsequently replaced by a medium used by Currie [22] for studying the production of citric acid by fungi. This synthetic medium was easily made, and we were able to make very thick seedings on the plates, since few of the intestinal bacteria will grow on it. For the purpose of limiting the number of organisms to be investigated, they were transferred from the plates to test tubes containing the Currie medium, to which had been added 3 per cent. potassium iodid, 1 per cent. starch and 2 per cent. agar. The potassium iodid and starch were added because mixtures containing a photodynamic substance, potassium iodid and starch turn blue when placed in a bright light, while the controls kept in the dark remain unchanged. Synthetic mediums containing no protein must be used for this purpose, as proteins inhibit the reaction. It was soon found that apparently any organism producing oxalic acid would give blue colonies on this special medium, and subsequently we found that oxalic acid itself was strongly photodynamic. This medium was of great assistance to us, however, for with its aid we were able to discard many of the organisms isolated.

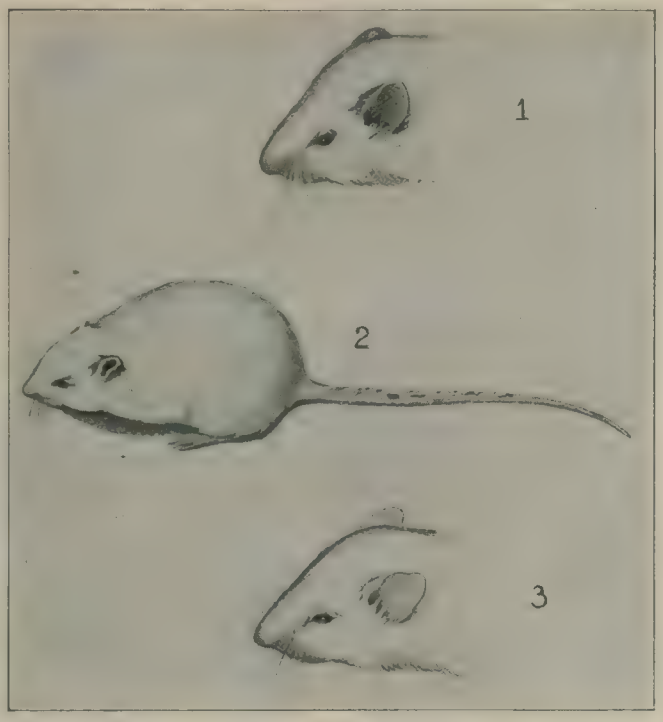


Fig. 1.—Appearance of ears, showing reddening and thickening following exposure to sun after two injections of photodynamic extracts.

Fig. 2.—Appearance following several injections of active substance and four days' exposure to bright light, showing scaly tail, loss of ears and some thinning of hair over face.

Fig. 3.—One of controls, kept in same cage during light exposures.

The organisms giving blue colonies were then transferred to flasks containing a fluid medium of the same composition, placed in the incubator at 30 C. for two to three weeks, and then examined for fluorescence. Cultures showing fluorescence were finally examined for their photodynamic action. It was found that the fluorescence is brought out more strongly in the cultures when the medium is rendered slightly alkaline. By the adoption of this technic, it is possible that we have missed organisms which belong to this group, but the large number isolated made it essential that we limit the scope of the work.

During the summer of 1920, when we were developing our technic, many of our plates were overgrown with either bacteria or fungi, but we obtained from the fungi isolated one strain that produced a strongly fluorescent substance. During the summer of 1921, we studied three acute cases and six so-called chronic cases. In some of the latter, the subjects had been free from the disease for a year; some presented doubtful recurrences; others, except for their clinical history, gave no indications that they had ever suffered from the disease. From this group, three positive cultures of the same organism were obtained; two pure cultures from the three acute cases and one mixed culture from a doubtful case. The mixed culture in the fluid medium became actively fluorescent, but we were unable to separate the active strain. This difficulty was encountered in three instances, and will be appreciated by those who have worked with mixed cultures of fungi.

At Memphis, we studied five acute, four subacute and fifteen so-called chronic cases. Most of the latter group were examined because we could not obtain active cases. Of this group, two pure cultures and one mixed culture were obtained from the five acute cases, one pure culture from the four subacute cases, and one mixed culture from the fifteen so-called chronic cases.

During the fall of 1921, a patient with pellagra was admitted to the Presbyterian Hospital, New York. This case, while atypical in some respects, presented symptoms which caused us to make a definite diagnosis of pellagra, and this diagnosis was confirmed by others who are familiar with the disease. In this case, the same fluorescent fungus was isolated repeatedly from the feces, and when the patient subsequently came to necropsy, the organism was isolated from the middle and lower portion of the small intestine and from the large intestine.

Thus, during the summers of 1921 and 1922, strains of fungi producing fluorescent substances were isolated from the feces in five of nine acute cases, including the New York case, one of six subacute cases, and two of twenty-three so-called chronic cases. In the latter group, some of the subjects had not presented any symptoms of the disease for more than a year. At Nashville and at Memphis, fifty nonpellagrous persons were studied, and in no instance did we isolate a

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fluorescent fungus. A series of individuals were studied in New York as controls on the case seen here, but all were negative.

The fungus apparently belongs to the *Aspergillus glaucus-repens* group. More intensive studies of its biologic properties are now being made in two separate institutions, with the idea of determining its identity. The fungus may prove to be a well known organism that becomes pathogenic only under certain limited conditions.

The fluid medium in which the fungus has been growing for from two to three weeks becomes light brown and is strongly acid in reaction. When the medium is made slightly alkaline, it becomes strongly fluorescent. Frequently, a red pigment is also produced. The fluorescent substance was soluble in nearly all of the lipoid solvents. It can be readily extracted from the medium by means of ether or ethyl acetate. The medium must be acid in reaction at the time of extraction with the solvent. From the solvent, it can be easily removed by means of weak alkalis. In these alkaline washings, which are, of course, now free from most of the other constituents of the medium in which it has been growing, the fluorescence is very marked.

Photodynamic experiments were conducted with the extracts obtained with ether or ethyl acetate. The ether extracts obtained by extracting the cultures were evaporated over a small amount of sodium chlorid solution at a low temperature. The photodynamic action of the extracts thus obtained was tested first on the potassium iodid-starch mixture, and was found to be active in the light and inactive in the dark. When a series of mice were inoculated, those exposed to the light soon developed edema and reddening of the ears, and swelling and edema of the eyelids. In a few experiments, death quickly followed exposure to sunlight. If the inoculations were continued daily, with repeated exposure to bright light, the ears became gangrenous and dropped off, the tail became rough and scaly and there was some loss of hair from the face and head. The greatest difficulty encountered in these experiments was in determining the strength of the solutions used, for we had no way of standardizing them. Dr. Johnson showed that paramecia also were susceptible to the photodynamic action of these extracts. Attempts were made to infect the animals by feeding, but without success.

CONCLUSIONS

Our observations will not permit us to agree that in all cases of pellagra there was an insufficient amount of animal protein in the diet previous to the onset of the disease; but we do believe that the individuals observed probably consumed an excess of carbohydrates, and, for this reason, we favor the idea advanced above. Those conversant with the diet of people living in the Southern states must have been impressed with the excessive amount of carbohydrates consumed, and this appears to hold true for the warmer countries throughout the world. This does not mean that these people do not obtain a sufficient amount of animal protein.

We have given some of the results obtained during the last three years in the attempted development of a hypothesis which we believe will reconcile some of the opposed views about pellagra. It is not our desire to claim, or even to suggest, that we have discovered the cause of pellagra. We realize that such a claim could be made only after it had been demonstrated that the organism could be isolated in the majority of a large number of pellagra cases, and that it does not occur in nonpellagrous individuals. The decrease in the disease renders this task impossible for us, so it was thought best to report the results we have obtained up to date, and let others, if they so desire, carry on the work.

ROENTGENOGRAPHY OF URINARY TRACT DURING EXCRETION OF SODIUM IODID*

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There is need of a simple and painless method of depicting the urinary tract, bladder, kidneys and ureters. By the use of catheters and various opaque



Fig. 1.—The patient received 200 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made two hours later revealed a perfect outline of the full bladder.

mediums, success has been attained so far as the bladder, ureters and pelves of the kidney are concerned. Cystography and urography, while of great importance, are not without drawbacks and limitations. The use of the urethral or ureteral catheter is subject to obvious objections from both the physician's and the patient's standpoint. Technically, ureteral catheterization is at times very difficult, and it often subjects the patient to excruciating pain and occasionally to serious reactions. While pyelography may clearly delineate the renal pelves, it may fail to reveal the outline of the kidney itself. In surgical and medical diseases of the kidney, information concerning the size and location of these organs is of paramount interest. In nephritis, for example, it would be of decided value to be able to ascertain definitely during the patient's life whether his kidney is large, small or contracted, or of normal size. While the kidneys may be clearly outlined by inducing a pneumoperitoneum, and possibly by injecting air locally into the renal

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regions, these procedures, for obvious reasons, are not likely to be practiced generally.

It occurred to one of us (L. G. R.) that if, in roentgenography of the urinary tract, advantage could be taken of the fact that sodium iodid, after its introduction into the body, is normally excreted in the urine, roentgenograms of the kidneys, ureters and bladder might be secured without the need of catheterization. An ideal opportunity for the clinical testing of this idea presented itself in the section on dermatology and syphilology of the Mayo Clinic, where one of us (E. D. O.) was utilizing intravenously from 50 to 250 c.c. of a 10 per cent. solution of sodium iodid in the study of the pharmacology and therapeutics of iodids. This circumstance made possible an immediate and direct clinical study, eliminating the necessity of carrying out time-consuming preliminary investigations on animals. The patients were informed of our interest in this problem, and many of them volunteered to undergo the roentgen-ray studies.

THE INTRODUCTION OF VARIOUS MEDIUMS IN THE URINARY TRACT

Voelcker and Lichtenberg,[1] in 1906, were the first to report the use of an opaque roentgenographic medium, injected into the pelvis of the kidney for the purpose of determining the pelvic outline. Colloidal silver, the medium suggested by them, was dirty and expensive, and it often caused severe reactions. In 1915, Burns [2] reported very satisfactory results with thorium nitrate. Various other chemical compounds were suggested, but none were satisfactory. The proprietary preparations were expensive and often caused marked reactions. The work of Braasch and Mann [3] has demonstrated that practically all the silver compounds, when retained in the pelvis of the kidney or injected under pressure, produce areas of cortical necrosis. In some instances, it has been possible to find definite deposits of the metal in the renal cortex. Praetorius,[4] who suggested the use, as a medium, of a preparation claimed to contain colloidal silver iodid, cites twelve deaths, previous to 1917, from the use of colloidal silver. Later, Schüssler [5] and Barreau [6] reported severe reactions from the use of the preparation claimed to contain colloidal silver iodid.



Fig. 2.—The patient received 135 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one and one-half hours later contained shadows of the pelvis, the major calices and a portion of the ureter on both sides.

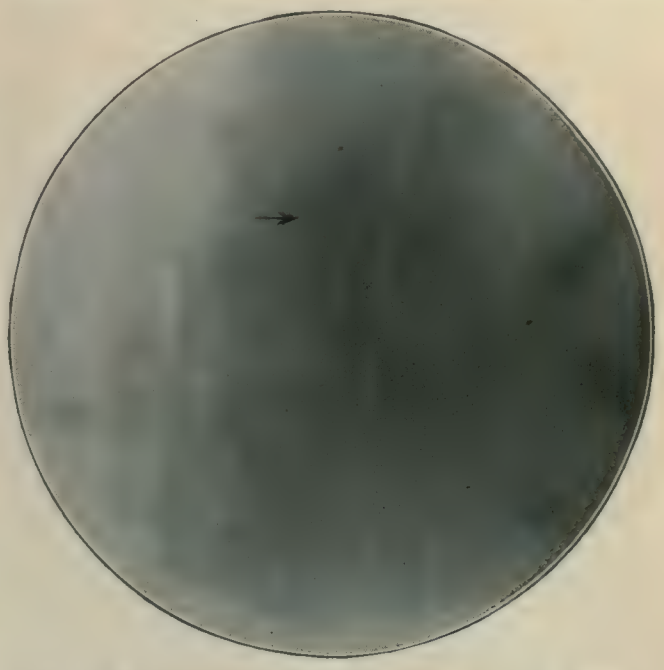


Fig. 3.—The patient received 100 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one hour later contained a definite outline of the pelvis of the left kidney, with the ureter from 4 to 6 cm. distant from the kidney hilus.

Kelly and Lewis,[7] in 1913, were the first to suggest the use of an iodid as a medium. They recommended silver iodid emulsion. Sodium iodid as a medium in roentgenography was introduced by Cameron [8] in 1918. The striking lack of toxicity of sodium iodid has long been known, but not fully appreciated. Enormous doses have been used clinically by syphilologists in the treatment of syphilis. Experimentally, the lack of toxicity of the iodids was illustrated recently by Weld,[9] who found that toxic effects did not follow the administration intravenously of 50 c.c. of a 25 per cent. solution to dogs weighing 6 kg. Weld suggested the use of sodium bromid, which is now generally used for depicting the renal pelves and ureters in urologic examinations at the Mayo Clinic. Sodium bromid causes fewer reactions than sodium iodid, but does not give such clear roentgenographic outlines. Sodium

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bromid, like sodium iodid, is of such low viscosity that it often runs from the pelvis and ureter before the roentgenogram is completed.

METHOD OF ADMINISTRATION OF SODIUM IODID

Intravenous Administration.—The method of intravenous administration of sodium iodid has been employed in the section on dermatology and syphilology since 1918. The patient is first given 15 grains (about 1 gm.) of potassium iodid by mouth, three times a day for two days, in order to determine whether there is an idiosyncrasy to the drug. If no symptoms of acute iodism occur, the intravenous injection of a 10 per cent. solution is begun, the third day.



Fig. 4.—The patient received 100 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one and one-half hours later revealed a perfect outline of a full bladder, and an outline of the pelvis of the left kidney with a suggestion of the calices and the ureter for a distance of from 3 to 4 cm. below the hilum of the kidney. The right kidney area was obscured by gas in the colon.

Various dosages have been employed, ranging from 5 to 20 gm. of a 10 per cent. solution of chemically pure sodium iodid. As Osborne has pointed out, 10 gm. may be given to practically every patient without untoward symptoms, provided the injection is not too rapid, that is, not completed in less than four or five minutes. With a dose of more than 10 gm., symptoms appear, probably due to osmotic changes resulting from large amounts of the hypertonic salt solution. It would seem that 10 gm. is a fair dose for the average routine case. Naturally, the usual contraindications to iodids apply here; that is, patients with tuberculosis, adenomatous thyroids, exophthalmic goiter and marked debility are not good subjects for this form of treatment. Generally speaking, our results following the intravenous administration of sodium iodids may be summarized thus:

1. Satisfactory roentgenograms of the bladder were secured in practically every case with doses of from 5 to 20 gm. intravenously.

TABLE 1.—IODIN IN THE URINE AFTER SODIUM IODID INTRAVENOUSLY

	Sodium Iodid, 5 Gm.			Sodium Iodid, 10 Gm.			Sodium Iodid, 20 Gm.		
		Iodin Excreted			Iodin Excreted			Iodin Excreted	
Time After	Urine, C.c.	Per Cent.	Mg. per 100 C.c.	Urine, C.c.	Per Cent.	Mg. per 100 C.c.	Urine, C.c.	Per Cent.	Mg. per 100 C.c.
15 min.	9.5	1.2	5.6	43.0	1.2	2.5	55.0	0.5	1.6
30 min.	17.5	3.5	**8.5**	21.5	1.9	7.8	40.0	0.6	2.8
45 min.	16.5	2.9	**7.4**	21.5	2.5	**10.0**	26,0	0.5	3.8
1 hr.	14.0	2.0	6.3	22.5	2.7	**10.2**	25.5	1.0	7.0
2 hrs.	77.5	8.8	4.9	95.0	8.7	7.7	146.0	8.4	9.8
3 hrs.	54.0	5.4	4.4	106.0	5.2	4.2	104.0	7.7	**12.7**
4 hrs.	43.0	6.4	6.2	93.0	2.5	2.2	133.0	**10.4**	**13.3**
6 hrs.}	....	...	...	25.0*	1.9	5.9}			
7 hrs.}	218.0	16.5	3.2}	....	...	...}	225.0	15.6	11.8
8 hrs.	....	...	...}	102.0	8.7	7.2			
18 hrs.	490.0	19.5	1.6	473.0	17.6	3.2	375.0	23.4	10.5
24 hrs.	245.0	10.0	1.7	590.0	6.6	0.9	151.0	8.1	7.5
48 hrs.	1055.0	14.7	0.59	965.0	15.5	1.4	1080.0	13.9	1.2
72 hrs.	960.0	2.8	0.12	1005.0	4.6	0.3	1030.0	3.7	0.6
96 hrs.	995.0	0.5	0.02	1120.0	0.3	0.02	975.0	0.1	0.01
120 hrs.	1010.0	Trace	....	945.0	Trace	....	950.0	Trace	
In 24 hrs.....		76.2	....	.....	59.5	....	.....	76.2	
In 48 hrs.....		90.9	....	.....	75.0	....	.....	90.1	
In 72 hrs.....		93.7	....	.....	79.6	....	.....	93.8	
In 96 hrs.....		94.2	....	.....	79.9	....	.....	93.9	

* Approximately four fifths of this specimen was lost.

2. Ten gram doses of sodium iodid intravenously gave fair roentgenograms of the kidneys and ureters in approximately 50 per cent. of the cases, and occasionally of the liver and spleen.

3. The best roentgenograms of the upper urinary tract and of the spleen and liver were secured with the use of large doses, that is, from 15 to 20 gm.

The time elapsing between the administration of the sodium iodid and the taking of the roentgenogram is of vital importance. Table 1 shows the amount and concentration of iodin in the urine at varying intervals following the intravenous administration of 5, 10, and 20 gm. doses of a 10 per cent. solution of sodium iodid. The highest point of concentration following a dose of 5 gm. is in the second fifteen minute interval, when 8.5 mg. of iodin was excreted in each cubic centimeter of urine. With a dose of 10 gm., this amount rose to 10.2 mg. of iodin for each cubic centimeter of urine during the third fifteen minute interval, and following the 20 gm. dose, to 12.7 mg. during the second hour and 13.3 mg. during the third hour. From

TABLE 2.—URINARY EXCRETION OF IODIN AFTER SODIUM IODID BY MOUTH

	Sodium Iodid, 1 Gm.			Sodium Iodid, 5 Gm.			Sodium Iodid, 20 Gm.		
		Iodin Excreted			Iodin Excreted			Iodin Excreted	
Time After Before	Urine, C.c. Sample	Per Cent.	Mg. per 100 C.c.	Urine, C.c. Sample	Per Cent.	Mg. per 100 C.c.	Urine, C.c. Sample	Per Cent.	Mg. per 100 C.c.
1 hr.	59.0	5.3	0.76	77	7.3	**4.03**	296	10.9	**6.34**
2 hrs.	46.0	8.6	**1.58**	52	7.1	**5.80**	122	6.2	**8.42**
3 hrs.	52.0	7.1	**1.29**	119	9.9	**3.51**	63.5	1.6	**4.24**
4 hrs.	45.5	6.3	**1.32**	212	6.8	1.35}			
6 hrs.}				}365	18.5	2.14}	252	4.4	2.97
10 hrs.}	300	24.0	0.75	}226	11.0	2.06	886	30.9	5.9
24 hrs.	470	26.7	0.53	433	23.7	2.32	734	23.6	5.4
48 hrs.	910	12.6	0.13	843	12.1	0.61	1120	14.2	2.1
72 hrs.	...	....	....	895	2.4	0.10	955	5.7	0.8
96 hrs.	...	....	....	990	0.4	0.01	885	0.2	0.04
120 hrs.	...	....	....	1120	Trace	Trace	1060	Trace	Trace

these data, it is seen that the roentgenograms should be taken one-half hour, one hour and two or three hours after doses of 5, 10, and 20 gm., respectively. Our best results have been obtained by following this procedure, based on an actual determination of the rate of excretion of sodium iodid.[10]

Administration by Mouth.—It was at first thought that roentgenograms of the urinary tract, following administration of sodium iodid by mouth, would be of no value because of the shadows cast by the drug in the stomach and in the small intestine. The contrary has been shown, however, when the proper technic is employed and attention is paid to the time interval between the administration of the iodid and the making of the roentgenogram. Satisfactory roentgenograms have been obtained at one and two hour intervals following a single large dose of 10 gm. of sodium iodid. This method, however, is not applicable to routine cases because of the local gastric upset following the ingestion of such large amounts of the salt. Our best results have been obtained by administering 3 gm. of sodium iodid hourly for three hours and taking the roentgenograms from one hour to two hours after the last dose. The rationale of this procedure is shown in Table 2. The urinary concentration of iodin following the oral administration of sodium iodid becomes highest during the one hour to three hours after the ingestion of from 1 to 5 gm. of the salt.

The patient is prepared in the routine manner for roentgen-ray examination of the urinary tract. At 8 a. m. he is instructed to take the first powder, consisting of 3 gm. of the sodium iodid, well diluted in from one to two glasses of water. He is instructed to empty the bladder at this time and not to pass more urine until the examination is completed. At 9 a. m. and at 10 he repeats the procedure, and at 11 the first roentgenogram is made, after which he is instructed to void as much urine as possible. This is measured and a second roentgenogram is made. It may be that the administration of large doses of sodium iodid will yield uniformly better results, but such has not been our experience. The employment of less than 3 gm. for each dose has not yielded satisfactory results except in a few instances.

In case the bladder alone is to be studied, the administration of a single dose of from 3 to 5 gm. of sodium iodid, without previous preparation, is all that is necessary. In this case the patient should be instructed not to void and the roentgenogram should be taken three hours after the ingestion of the drug. Results following the oral administration of sodium iodid may be summarized thus:

1. Very satisfactory roentgenograms were secured of the kidneys, pelves of the kidney, ureters and bladder in approximately 50 per cent. of cases, with repeated doses.
2. In a few cases the liver and spleen were also strikingly outlined.
3. Uniformly excellent results were obtained in the roentgenography of the bladder, following the repeated doses and after a single dose.



Fig. 5.—The patient received 100 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one hour later contained a definite shadow of the pelvis of the left kidney and the ureter for a distance of from 4 to 6 cm. below the hilum of the kidney. There was also a definite suggestion of the major calices.

ROENTGENOLOGIC TECHNIC

In the first studies the technic routinely employed in the examination of the kidneys, ureters and bladder was used. Preliminary control roentgenograms were made before the administration of the sodium iodid. Plates 5 by 7 inches were used, without intensifying screens, one roentgenogram being made of each kidney area and one of the bladder area. A medium focus, standard Coolidge tube was used, with 60 kilovolts, 50 milliamperes, an average distance of 67.5 cm. from the target to the plate, and the time was varied from two to eight seconds according to the thickness of the patient. An aluminum compression cap, 12.5 cm. in diameter, fitted over the bottom of the cone, was clamped down as far as could be comfortably borne by the patient. Fairly satisfactory roentgenograms of thin, normal and even moderately stout subjects were obtained by this technic. The plates were marked with the patient's registration number and with the number of hours intervening since the administration of the sodium iodid. In some cases a series of roentgenograms was made at varying intervals after the administration. Another series of studies was made using duplitized films in intensifying screens, varying the kilovoltage and milliamperage according to the thickness of the subject, with uniformly better results, particularly in stout subjects. Control films were also made. Still another series was made using 14 by 17 inch duplitized films in intensifying screens with the Potter-Bucky diaphragm. A single film was made in a few cases; in the majority, two films were made, one high, to include the complete kidney area, and the other to include the bladder area. In this series, many films were made after the subjects had held the urine the allotted time; after they had emptied the bladder and the amount voided had been measured, a second film was made and marked with the amount voided. When actual retention occurred, it was depicted in the roentgenogram. The best uniform results were obtained with the Potter-Bucky diaphragm technic.

10. These data and those dealing with the oral administration have been taken from work already published and work now in the process of publication by Osborne on the general subject of the pharmacology and therapeutics of iodids (Osborne, E. D.: Iodin in the Cerebrospinal Fluid, with Reference to Iodid Therapy, J. A. M. A. **76**: 1384-1386 (May 21) 1921; Contributions to the Pharmacology and Therapeutics of Iodids, ibid. **79**: 615-617 (Aug. 19) 1922; Contributions to the Pharmacology and Therapeutics of Iodids, II, to be published).

INTERPRETATION OF THE RESULTS

In some of the films and plates, because of gas in the colon or because of the thickness of the patient, it was not possible positively to identify the kidney and other solid organs. On the majority of the films



Fig. 6.—The patient received 100 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one hour later revealed a definite shadow of the partially filled bladder. The density of the kidneys, the spleen and the lower margin of the liver appeared to be increased over the normal. The pelves of both kidneys and the ureters for a distance of from 4 to 6 cm. from the hilum of the kidney were definitely outlined. On the right, there was a suggestion of the lower major calices.

and plates, the shadows of the kidneys, the lower margin of the liver and the spleen were sharply outlined, and it was our impression that, comparing the control plates and films with those made after the administration of the sodium iodid, there was a slight increase in the density of the shadow cast by these organs in the second plates and films of the series.

The pelvis of the kidney filled with iodid solution to varying degrees and the ureters could be traced in a number of instances, while in a few there was even a suggestion of the calices. In all of the plates and films the bladder was distinctly outlined and, as we have mentioned, retained iodid solution could be seen in patients with urinary retention. Obviously, only some of the better plates are shown in the accompanying illustrations.

COMMENT

The method described offers numerous possibilities in the field of research, not only with regard to the urinary tract, but also with regard to other systems, organs and tissues. We are firmly convinced that this investigation will serve as a stepping stone in other fields of study. The method affords an approach to the study of the physiology of the bladder, its form and position under varying degrees of distention, and the phenomena associated with distention and with emptying. It should also prove of decided value in the study of pathologic conditions of the bladder, such as diverticula, tumor and diseases secondary to disturbances in its innervation, or to obstruction in the lower urinary tract, such as stricture and enlarged prostate. In the study of the kidneys, the success of the method is only partial. It will be of assistance in a limited way, especially in determining the size, shape and position of these organs. It is too early and our results are too uncertain to determine whether the method has any value in the study of the liver and spleen.

Much is offered by this method in the study of the vascular system. Under the fluoroscope, the cephalic vein has the appearance of a steel wire, from the point of injection of the iodid at the elbow to the juncture of the cephalic vein with the subclavian. This has been noted following the use of 10 and 20 per cent. solutions of sodium iodid. In all probability, with variations in the technic, important results will be obtained with regard to the venous returns and the peripheral arterial circulation. In the study of aneurysm and of arteriovenous anastomosis, it should also be of value.

CONCLUSIONS

1. By the method described, it is possible to obtain roentgenograms of the urinary tract during the excretion of sodium iodid following its intravenous or oral administration.



Fig. 7.—The patient received three 3 gm. doses of sodium iodid by mouth. Roentgenograms were made two hours after the last dose, and a shadow of the full bladder was obtained. The patient voided 125 c.c. of urine, and a roentgenogram was made which revealed retention that had not been suspected clinically. Further clinical study revealed the existence of a cord bladder.

2. The method uniformly gives excellent and accurate shadows of the urinary bladder and renders reliable information relative to its size, shape and location.

3. It has been partially successful in depicting the renal pelves and the ureters in a limited number of cases.

4. In a number of cases it assists in revealing the kidney itself through intensifying the renal shadow.

5. It has been proved a success in revealing the existence of residual urine in the bladder and in furnishing approximate information of the amount, thus eliminating the necessity of catheterization and its attendant dangers of infection.

6. Oral administration of the drug will prove satisfactory for routine use in making roentgenograms of the bladder, while for shadows of the ureters and kidneys intravenous injection of large doses of sodium iodid is desirable.



Fig. 8.—The patient received one dose of 5 gm. of sodium diodid by mouth, and a roentgenogram was made three hours after the ingestion of the drug. A perfect outline of the full bladder was revealed.

ACUTE BARBITAL (VERONAL) POISONING

REPORT OF CASE WITH FATAL OUTCOME

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Acute poisoning from barbital is apparently becoming more common in this country. This is probably due to the fact that the drug is so easily obtained without a physician's prescription. It is also due to the increase in the number of persons who seek hypnotic drugs in order to procure sleep; for it seems that the symptom of insomnia is becoming more common among all classes of our population.

That serious symptoms may arise from overdosage or prolonged use of barbital does not seem to be generally recognized even by the profession, but that this is so is attested by the cases reported in recent medical literature by Littell,[1] Hassin and Wein,[2] Taub[3] and Macleod.[4] Boenheim[5] states that, in a series of 286 cases of acute poisoning observed in Sick's service at Stuttgart in thirteen years, barbital was the drug taken in 5.7 per cent. of the cases, and five of the patients died. All of these had taken barbital in excess of 10 gm.

Acute barbital poisoning, in the absence of a history, may be easily mistaken for a number of other diseases giving rise to comatose states. This is especially true of epidemic (lethargic) encephalitis and certain cases of meningovascular syphilis. The case here reported illustrates most of the salient features in the symptomatology.

REPORT OF CASE

History.—R. H. M., a man, aged 39, married, white, an American, was admitted to the Anaheim Hospital, Oct. 16, 1921, in a state of profound coma. Friends who accompanied the patient stated that he had been found in a shack in the oil fields in this condition, and it was thought that possibly he had been overcome by carbon monoxid gas from a leaky gas stove used to heat the shack. Search of the patient's effects revealed a box containing twenty 5-grain (0.3 gm.) tablets of barbital, and a note to his wife expressing his intention of committing suicide. The patient's wife said he had always been in good health except for an attack of influenza in February, 1921, following which he had been subject to many "colds" and occasional attacks of mental depression. During the summer of 1921, his work had been very arduous, and he had undergone a good deal of mental strain.

Four weeks prior to admission, he consulted a physician on account of insomnia, and the latter prescribed barbital, 5 grains, to be taken at bedtime. He took one tablet each night for a week. At the end of the week, he had the prescription refilled, and he took two tablets each night for another week. Two weeks before admission, he went on a vacation, but he could not enjoy it because of insomnia, so he returned home after three days. October 11, he consulted another physician, who prescribed barbital. He also bought a box of barbital himself in Pasadena. His wife stated that he was at home every day for the six days preceding admission, and he appeared to be in normal health except that he looked worn out and was quite depressed because of insomnia. She said that he had taken six or seven of the tablets each day for the five days preceding his admission to the hospital. October 16, he resumed his work. That afternoon he was found unconscious and was brought to the hospital.

Physical Examination.—The patient was well developed. He was in profound coma. The temperature was 101 F. The face was cyanosed and the breathing stertorous, with the mouth open and the maxilla drawn down almost on the chest. The tendon reflexes were very lively. Muscular rigidity was marked. The pupils were round and equal, and reacted to light and to painful stimuli, such as pinching the neck. Hippus was present. No nystagmus was noted. The fundus oculi was normal. The Babinski sign and variants were negative on both sides, as was knee and ankle clonus. The cremasteric reflexes were present. The epigastric and abdominal reflexes were not obtained. At intervals, the patient moaned and moved the limbs. Shouting in his ears elicited no response. Painful stimuli of any degree failed to rouse him. Strong ammonia applied to the nostrils produced no defense movements or wrinkling of the face.

The radial pulse rate was 100. Both radial pulses were full, equal and regular. The blood pressure was: systolic, 145; diastolic, 95. The heart showed no abnormalities. At intervals, there was profuse perspiration. Respirations were 30 a minute, changing at times to the Cheyne-Stokes type. There was marked dyspnea and diaphragmatic breathing. Tracheal râles were heard over the lungs. The mouth was open, the tongue swollen and congested. The patient was able to swallow fluids. Mucus tended to collect in the throat, and increased the degree of dyspnea and cyanosis already present. The abdomen was negative. The urine and feces were passed involuntarily.

Laboratory Data.—Examination of the blood revealed: erythrocytes, 4,450,000; hemoglobin (Dare), 93; smear, nor-

1. Littell, J. J.: Veronal (Barbital) Poisoning, J. A. M. A. **77**: 1333 (Oct. 22) 1921.
2. Hassin, G. B., and Wien, M. S.: Case of Acute Veronal (Barbital) Poisoning Simulating Epidemic ("Lethargic") Encephalitis, J. A. M. A. **75**: 671 (Sept. 4) 1920.
3. Taub, S. J.: Acute Veronal Poisoning, J. A. M. A. **74**: 459 (Feb. 14) 1920.
4. Macleod, Ernest: Med. Rec. **98**: 985 (Dec. 11) 1920.
5. Boenheim, F.: Acute Barbital Poisoning, Med. Klin. **17**: 1263 (Oct. 16) 1921; abstr., J. A. M. A. **78**: 76 (Jan. 7) 1922.

mal; leukocytes, 7,600; carbon monoxid hemoglobin, absent; differential leukocyte count: polymorphonuclears, 68 per cent.; small mononuclears, 25; large mononuclears, 2; eosinophils, 1; transitionals, 4; blood Wassermann test, negative; blood culture, negative; chemical analysis of blood: creatinin, 2.75 mg.; uric acid, 3.1 mg.; urea nitrogen, 19 mg.; nonprotein nitrogen, 39 mg.; chlorids, 0.7 mg.; blood sugar, 0.12 per cent.

Cerebrospinal fluid examination revealed: Wassermann, Nonne, Noguchi and Ross-Jones tests, negative; cell count, 8; colloidal gold curve, negative. The urine and cerebrospinal fluid contained no hematoporphyrin. Urinalyses, October 16, 17, 18 and 19, were all completely negative.

Clinical Notes.—October 17, the patient's general condition was much the same. Increasing difficulty in respiration was relieved by oxygen inhalations. The patient moved his head more than on the day of admission. A lumbar puncture did not cause any movement of the patient, nor did it rouse him in the least degree from coma. Feces and urine were passed involuntarily. The temperature range in twenty-four hours was from 99 to 103.8 F.

October 18, the temperature rose to 104.5 F. at 8 p. m., and remained high all day. The muscles were now flaccid. The limbs took the position determined by gravity. The tendon reflexes were now diminished. Cyanosis was marked at times, and there was much tracheal rattling. Coarse mucous râles were heard throughout both lungs. Dyspnea was increasing. The twenty-four hour temperature range was from 99.5 to 104.5 F.

October 19, the patient was in very poor condition, sweating profusely, with extreme dyspnea and cyanosis. Oxygen inhalation failed to give relief. At noon, breathing was definitely of the Cheyne-Stokes type, and the lungs were full of mucous râles. The patient died at 3:10 p. m.

Treatment.—Frequent inhalations of aromatic spirits of ammonia were ordered; strychnin sulphate one-thirtieth grain, hypodermically, every four hours and camphor in oil hypodermically, as required. Hot coffee enemas, 6 ounces (178 c.c.) every six hours, were prescribed. Sodium bicarbonate solution, 3 per cent., by proctoclysis, was given every other hour. Fluids were given by mouth. The colon was washed out with high soda enemas, morning and evening. Oxygen inhalation was prescribed as required, for dyspnea and cyanosis, and caffein sodiobenzoate, 7 grains (0.46 gm.) hypodermically, also as required. Tepid sponge baths were given frequently to reduce temperature, and on account of the sweating.

COMMENT

It was estimated that the patient had taken more than 300 grains (20 gm.) of barbital in a period of less than four weeks, 175 grains (11.6 gm.) of which was taken four or five days preceding admission. On admission, the usual conditions giving rise to coma had to be considered; namely, cerebral hemorrhage, alcohol and drug poisoning, epidemic encephalitis, carbon monoxid poisoning, brain tumors, diabetic coma, cerebral syphilis, uremia and unrecognized brain injury.

Blood and serologic tests ruled out syphilis and carbon monoxid poisoning.

Urinalysis and blood sugar examination excluded diabetes. The previous history of good health and freedom from bad habits practically excluded brain tumor, alcoholism and kidney disease.

History and physical examination eliminated trauma.

Carbon monoxid poisoning seemed a plausible explanation for the symptoms at the time of admission, but a more detailed history and the negative blood examination vetoed this opinion.

Epidemic encephalitis was simulated very closely, but the definite history of ingestion of large amounts of barbital, together with the extreme degree of coma, which is not the rule in epidemic encephalitis, led to a definite diagnosis of barbital poisoning.

This case, so far as I can ascertain, is the only one reported in recent American medical literature which had a fatal outcome.

AN OPERATION FOR INGROWING TOE NAILS *

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Ingrowing toe nail is a very common disorder. It is caused either by tight fitting shoes or by the bad practice of cutting the angles of the nails, allowing the sharp corners to jut into the soft parts, producing an eroded area that soon becomes infected. This condition usually occurs on the mesial side of the great toe, and less commonly the side near the second toe. Frequently the nail is markedly convex, and the edge curved toward the toe, cutting into the flesh and producing an erosion. The toe becomes not only painfully inflamed, but also thickened, as a result of the nail's acting as an irritant.

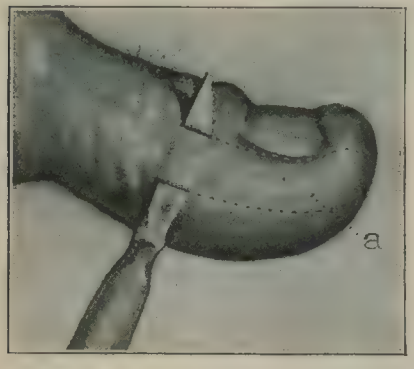


Fig. 1.—*a*, superolateral pedicle graft.

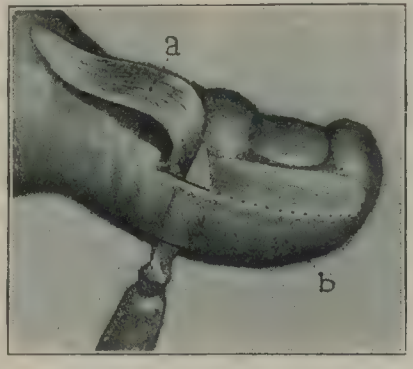


Fig. 2.—*a*, superolateral pedicle graft thrown back; b, inferolateral pedicle graft.

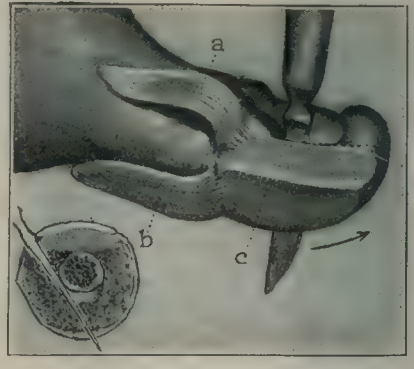


Fig 3.—*a*, *b*, two pedicle grafts laid back for protection; *c*, knife inserted obliquely to excise tissue; inset, direction in which knife should be inserted.

The palliative treatment is effective, provided the soft parts have not become eroded or infected. Even after recovery from the palliative procedures, the condition is prone to recur. Most of the operations for ingrowing toe nails have to do with the removal of a portion of the nail. The operation commonly performed consists of excising a V-shaped portion with the apex at the root of the matrix of the nail. This wedge contains the inflamed, tender tissue, and a portion of the nail with its underlying matrix.

This operation has several objections. It denudes an area which, owing to its location anatomically

* From the Surgical Clinic of the Hebrew Hospital.

and physically, is slow to heal. Some cases take from two to three months to epidermatize completely. If the operator is not thoroughly experienced with the procedure, the matrix is not completely removed, the nail grows, and the patient has a recurrence of the ingrowing toe nail. After the wound is completely healed, a portion of the nail remains which has an irregular contour, and is bothersome.

The operation here described is done solely on the soft parts, and the nail is not disturbed. In seventy-five cases there has been no recurrence. A tourniquet is placed around the base of the toe for two purposes: to make the field bloodless, and to act as a partial nerve block. The side of the toe is well anesthetized with 0.5 per cent. procain; the injection is begun half way between the base of the toe and the matrix of the nail, and is extended well round to the middle of the toe, both anteromesially and posteromesially. A small, sharp knife blade is then slipped under the skin, as shown in Figure 1, and a fairly thin pedicle graft is cut from the superolateral side of the toe. Another similar pedicle graft is cut immediately below it from the inferolateral side of the toe, as shown in Figure 2. The two pedicle grafts are thrown back and carefully protected so as not to be injured by the next procedure. The knife is then inserted in an oblique direction in the cutaneonail fold, as shown in Figure 3.

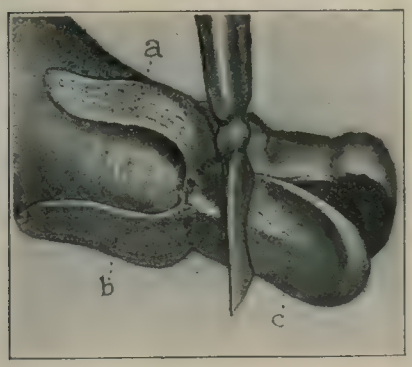


Fig. 4.—*c*, knife cutting tissue from side of toe.

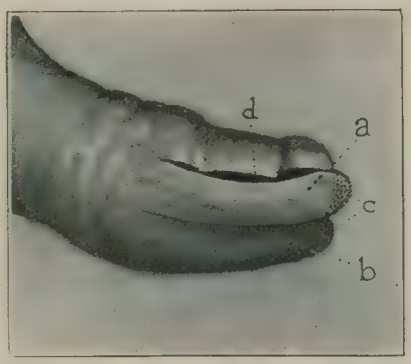


Fig. 5.—*a*, *b*, superolateral and inferolateral pedicle grafts laid over denuded area; *c*, tissue trimmed from grafts to suit the size of the denuded area; *d*, nail elevated with cotton, and graft placed under the nail.



Fig. 6.—Healed toe.

The knife should be inserted immediately in the angle and close to the bone. The incision should be continued to the tip of the toe, and the tissue should be snipped off as high up as possible. The two pedicle flaps are then placed over the denuded area and trimmed to suit the size and shape of the raw surfaces, as shown in Figure 4.

The anterior flap is placed just beneath the nail, and the nail is elevated with a piece of cotton. The toe is covered with a piece of rubber protective coated with petrolatum, and a large gauze dressing applied.

The wound should not be dressed until the sixth day after operation. Frequently the pedicle attachment of the graft has sloughed, but it has already accomplished its purpose. The implanted skin remains, and covers the raw area in a surprisingly short time.

If, previous to operation, the toe has not been infected, healing should take place in from two to three weeks, but in infected cases the period of healing may extend to seven weeks. Naturally, the delicate grafts take better if the patient does not walk.

The operation is painless, and the patients do not suffer postoperatively. After the first week, if the patients are disinclined to remain in bed, they are permitted to walk, using a cut-out shoe. In the elderly and debilitated, the time of recovery may be proportionately prolonged. Figure 6 shows a healed, uncomplicated case, seventeen days after operation.

2401 Linden Avenue.

FIBROLIPOMA OF LEFT LABIUM MAJUS

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Lipoma of the vulva is of sufficiently rare occurrence to make the report of a case worth while.

REPORT OF CASE

A widow, aged 40, who had given birth to two children, both normal deliveries, was a native of New Mexico. There was nothing in the family or personal history which had any bearing on the condition under discussion. Except for the usual diseases of childhood, she had always enjoyed perfect health, up to the time the growth appeared.

Examination.—The patient was well nourished, 5 feet, 6 inches tall, and weighed 200 pounds. The blood pressure was systolic, 130; diastolic, 85. The abdomen was flat and without rigidity. No tumor masses could be felt anywhere. All the organs were normal and appeared to be functioning properly. The appetite was good, and the patient suffered no pain before or after eating. She said that she slept well. The knee jerks were slightly increased; all other reflexes were normal.

Suspended from the left labium majus was a pedunculated tumor, covered by elastic, hypertrophied skin, which at many points showed pitting on the surface. Two or three small areas of epidermis presented a thin glistening appearance, which was evidently due to friction. This mass had attained such an enormous size that it hung down to the patient's knees like an apron, as shown in the accompanying illustration. The patient said that she had first noticed the growth in February, 1919, three years and a half before the photograph was made.

On palpation, the tumor seemed to consist of rather firm tissue, with the characteristic fluctuations of a fatty growth. Pressure did not produce pain, the only sensation mentioned by the patient being a "slight smarting," which had, at times, been noticed.

Treatment.—The diagnosis was fibrolipoma. Excision was advised, and the tumor was removed.

Pathologic Report.—The tumor weighed 44 pounds (20 kg.). The pathologist, Dr. James R. Scott of Albuquerque, reported that, on section, he found that the epidermis was underlaid by a layer of dense, glistening, white fibrous tissue, about 1 inch (2.5 cm.) in thickness. Deeper in the specimen were large collections of lobulated adipose tissue, surrounded by a framework, together with a number of large veins which

bled freely on incision. There was no evidence of enlarged lymphatics. Plugs were taken from the thickened skin and underlying fibrous tissue, also from a characteristic island of fat surrounded by fibrous tissue. These were hardened in 10 per cent. liquor formaldehydi. Sections, stained by the hematoxylin and eosin and hematoxylin and van Gieson methods, showed the tumor mass to be covered with a fairly normal appearing epithelium. Immediately beneath the epithelium was a thick layer of firm fibrous tissue. In this fibrous tissue were many local aggregations of small round inflammatory cells, grouped about the small blood vessels especially, but also occurring as local aggregations at isolated points in the fibrous tissue. The small blood vessels appeared normal. Still deeper in the tumor mass, there were large deposits of adipose tissue. In the net work of this adipose tissue was considerable infiltration, caused by small, round inflammatory cells, which were particularly numerous in the vicinity of the small blood vessels. The sections showed no evidence of malignancy. The diagnosis was fibrolipoma.

CASES REPORTED IN THE LITERATURE

According to Lynch's [1] recent study of pelvic neoplasms, lipoma of the vulva is a rare occurrence, and this is all the more surprising because lipomas in general are very common. "The infrequency of these cases is well shown by the fact that no operator has yet recorded more than a single case in his own experience." In 1893, Howard A. Kelly [2] compiled nineteen cases from the literature, to which he added a case of his own. In 1914, A. L. Goodman [3] published an account of a lipoma of the vulva, occurring in a child, aged 11, and mentioned nineteen other reports which he had found recorded. Ten of these are included in Kelly's list, of which Goodman evidently had no knowledge. Lynch mentions six authors who have published reports of cases since the appearance of Kelly's paper; but his references are so incomplete and unreliable that they cast doubt on the accuracy of this statement. Churchill Carmalt,[4] writing in 1902, after mentioning Kelly's list, says that he found seven cases among those patients first treated for hernia, in a report on this subject by Jonathan Hutchinson, Jr.,[5] and that three cases were reported to him verbally by T. G. Thomas and W. S. Stone, making, with his own, fourteen additional cases.

Assuming the correctness of Lynch's statement, reports of less than forty-five cases of lipoma of the vulva have so far appeared in the literature. The tumor in the case reported by Balls-Headley [6] weighed 21 pounds (9.5 kg.), although Lynch quotes it as 24 pounds (10.9 kg.). Balls-Headley says in his article that Stiegele removed one that weighed 101 pounds (45.9 kg.). Kelly and Goodman, and also Senn in his textbook on tumors, in quoting Stiegele's case give the weight as 10 pounds (4.5 kg.). I have been unable to see Stiegele's original text; but it seems likely that Balls-Headley's statement is a misprint. If this is so, the tumor which I report here is the largest lipoma of the vulva on record.

All authors agree that labial lipomas are a very rare occurrence. Sturmdorf,[7] who reported one that had to be removed to permit delivery, calls it "one of the rarest of gynecologic affections." According to Lynch, "we know little of the etiology, save that they occur usually during the child-bearing age." In general, lipomas of the labia majora present practically the same characteristics as similar growths elsewhere in the body. The lipoma is a firm, elastic, rounded, usually multilobulated growth, sharply circumscribed from the surrounding tissue, but without encapsulation. It consists of normal fat tissue, lipoma molle; but this density may be reduced by secondary changes, or more often increased by admixture with fibrous tissue or by forms of metaplasia. It may exhibit an excess of fibrous tissue, because of atrophy of fat with fibrous replacement, or from admixture with true fibroma (fibrolipoma), as in my case. More frequently, true myxoma is combined with lipoma.[8] Virchow was of the opinion that irritation and trauma played an important part in the etiology of lipoma of the vulva. Carmalt's patient gave a history of falling astride a chair and striking the left labium majus. This injury was followed by a painful swelling, on the subsidence of which there remained a rather hard nodule, which gradually developed into a lipoma. Levings [9] remarks that "the very frequent occurrence of fatty tumors at places which have been subjected to irritation, injury, or chronic inflammation is seemingly well established. The production of lipomas is closely related to the formation of normal adipose tissue, as, with very few exceptions, they both occur in the same tissue layers, and are identical in histologic structure. Thoma says that the tendency in individuals to obesity favors the production of lipomata." This is interesting in connection with my patient, who weighed 60 pounds (27 kg.) more than is normal for a woman of her height.



Fibrolipoma of left labium majus.

ETIOLOGY

No doubt, lipomas occasionally arise when there is a general increase in body fat; but it is likely that this

1. Lynch, F. H., and Maxwell, A. F.: Pelvic Neoplasms, New York, D. Appleton & Co., 1922.
2. Kelly, H. A.: Lipoma of the Labium Majus, Johns Hopkins Hosp. Reports **3**: 321, 1892-1894.
3. Goodman, A. L.: Lipoma of the Vulva, Am. Med. **9**: 47 (Jan.) 1914.
4. Carmalt, Churchill: Lipoma of the Vulva, Am. J. Obst. **45**: 688, 1902.
5. Hutchinson, Jonathan, Jr.: Lipomata in Hernial Regions, Tr. Path. Soc. London, **37**: 451, 1886.
6. Balls-Headley, Walter: Case of Lipoma of the Labium and Adjacent Parts, Autralian M. J. **10**: 345, 1888.
7. Sturmdorf, A.: Lipoma of the Labium Majus, Am. J. Obst. **61**: 311, 1910.
8. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1919.
9. Levings, A. H.: Tumors, Chicago, Cleveland Press, 1903.

is only because the pathologic production of fat in the form of tumors occurs coincidentally with a predisposition toward the physiologic formation of fat. We are still ignorant of just why lipoma develops, or why the formation takes place in any given part of the body. Vulvar lipomas are prone to become pedunculated, because of their location, the tissues to which they are attached being stretched out to form a broad thin base. In this connection, a case of lipoma in a man, reported by Christopherson [10] is of interest. His patient was an Arab sheik, aged "approximately" 65. He could with difficulty waddle along with his staff, owing to the weight of a mass of fat in his abdominal parietes. The skin hung down from the umbilicus to the middle of the thigh like a bag, enclosing a mass of fat, and behind, becoming continuous with the abdominal skin again over the pubis. This fatty apron could be flapped up toward the chest, and, buried deep in the folds of fat and behind it, was the penis, retracted and hidden. . . . The fatty deposit in the abdominal parietes became pendulous and apron-like, because there was no support, such as cloth trousers give to the western race. Calico garments, loose as they are, afford no support." According to Christopherson, this type of lipoma is quite common in the Sudan, and the possibility of customs of dress having a bearing on the location of dependent fatty tumors is worth considering.

DIAGNOSIS

The diagnosis of labial lipoma is ordinarily quite simple. Kelly points out, however, that these tumors may readily be taken for cysts when the fat is soft in the interior, because of the diminished amount of fibrous tissue, and the deceptive sensation of fluctuation which they give. They may also be mistaken for elephantiasis when the fibrous tissue in their septums is in excess, giving them a hard, even dense, feel. A large lipoma, with its pedicle extending over, or through, the inguinal canal, may easily simulate an inguinal hernia, demanding a careful examination to establish the differential diagnosis. Goodell [11] first thought the growth presented by his patient was a cystic tumor, because of the marked fluctuation, "but an exploratory plunge of an aspirator-needle resulted in a dry tapping," and he "came to the conclusion that it was an adipose tumor."

Carmalt believes that "confusion of these tumors with the smooth lymphangiectatic tumors, known as elephantiasis, would probably be easy; with the tumor reported by Andrews and quoted by Bland-Sutton as 'adrenal rest,' with sebaceous cysts which Winckel reports in the labia." He is also cognizant of an instance in which confusion arose because of "blind internal rectal fistulas entering the labis"; but he considers the chief difficulties are those encountered in differentiating this growth from epiplocele or omental enlargements.

The progress of these lipomas is usually very slow, and, as they are quite painless and very seldom cause inconvenience until they attain considerable size, it is perhaps not strange that no larger number have been brought to the attention of surgeons. The woman whose case is reported by Emmet [12] had learned to accommodate herself so comfortably to the presence of the labial lipoma, "which she carried in a bag attached to her waist," that, once assured that the growth was not malignant, she refused all intervention, and would not even allow another examination that a sketch of the growth might be made.

TREATMENT

Operation is simple. The tumor shells out easily from its attachment, and the wound ordinarily heals by first intention. Especial aspetic precautions must, however, be exercised, as the site of such a growth is peculiarly liable to infection. In Carmalt's case, even the scar was invisible beneath the pubic hair, the labium perfectly regaining its normal appearance. In Sturmdorf's case, the growth was extirpated during labor, while "the fetal head was pointing at the vaginal outlet"; but, although the tumor's "surface was transversed by a network of tortuous and dilated veins," it was successfully removed, permitting "prompt spontaneous delivery."

I have found no record of any labial lipoma recurring after removal, and no report of serious or fatal consequences. The fact that such a growth may easily become large enough to interfere with walking and the sexual functions seem to offer abundant reasons for its early removal.

10. Christopherson, J. B.: A Curious Case of Lipoma, J. Roy. Army Med. Corps **6**: 355 (March) 1906.
11. Goodell, W.: Lessons in Gynecology, Ed. 3, Philadelphia, F. A. Davis Company, 1891, lesson 45, p. 87.
12. Emmet, T. A.: Principles and Practice of Gynecology, Ed. 2, Philadelphia, H. C. Lea's Son & Co., 1880, pp. 601-602.

CHRONIC OBSTRUCTIVE JAUNDICE (NONCALCULOUS)

REVIEW OF NINE CASES TREATED BY CHOLECYSTOGASTROSTOMY *

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It is unusual for growths involving the head of the pancreas to produce obstruction to both the common bile duct and the duodenum to such a degree that, if benefit is to be derived from an operation, it will be necessary to drain the stomach as well as the biliary passages. For this reason, I shall report the history of a patient suffering from such a growth, in whom symptomatic relief was obtained by combining cholecystogastrostomy with gastrojejunostomy. At the same time, I shall review briefly the histories of eight other patients operated on for the relief of chronic obstructive jaundice. If it is possible to establish suitable drainage sufficiently early in these cases, symptoms resulting from the obstruction will be relieved; but the final outcome will depend on the nature of the primary disease. Should chronic pancreatitis, or other nonmalignant condition, be the cause, a cure may result. Fortunately, in nearly all cases of noncalculous obstruction of the common bile duct, the gallbladder is large and freely movable. The walls are usually in good condition, and an anastomosis to some part of the intestinal tract, preferably the stomach or duodenum, is a fairly simple and safe procedure. Diseases producing the symptoms for which this type of operation is advised or undertaken are often malignant in character, and, for this reason, these operations are usually referred to, and generally thought of, as palliative operations.

Since the diagnosis in many cases of chronic jaundice remains doubtful, even after the abdomen is

* Read before the Southern Surgical Association, Memphis, Tenn., December, 1922.

opened, because it is not always practicable or even desirable to remove a portion of tissue for microscopic examination, a supposed palliative operation may prove to be a curative one. The symptoms are relieved, and the patient is restored to health, while Nature in some way makes provision for the disabled organ which causes the trouble. The final outcome in every case of obstructive jaundice, unless relieved by operation, is so certain that all those in reasonably good condition deserve the benefit of an exploratory operation.

The first patient in this series was operated on, four and one-half years ago. The preoperative diagnosis was common duct obstruction, probably due to stone. At operation, the gallbladder and common duct were greatly distended; but no stones were found. The pancreas was moderately enlarged, nodular and hard as stone throughout. The diagnosis was carcinoma of the pancreas. This patient made an uninterrupted recovery. Jaundice disappeared entirely in three weeks, and he has remained well to the present time. It is evident that this condition was chronically inflammatory and not malignant.

Since operating on this patient, I have performed the operation of cholecystogastrostomy eight times for the relief of chronic obstructive jaundice. Four of the nine patients suffered one or more attacks of pain. Two of these had calculi in the gallbladder; one, a number of small stones, and the other, a single large stone. In none of the cases was a stone found in the common duct. The gallbladder and ducts were distended in all cases—some to only a moderate degree, others, enormously. The walls of the gallbladder were described as thinned or thickened in varying degrees. The pancreas showed definite pathologic changes in eight of the cases. In two, it was symmetrically enlarged throughout. In one, the midportion was the seat of a bulky tumor. In one, the head was thickened but smooth, and there were areas of yellowish subperitoneal fatty deposits, suggestive of fat necrosis. In four instances, it was hard as stone, nodular and irregular. On two occasions, it was thought that a separate nodule could be palpated at the location of the diverticulum of Vater; but these observations were not verified by exploratory incision into the duodenum. In one case, the pancreas appeared to be perfectly normal, and the obstruction was due to an anomalous vessel, an artery about the size of the radial, which crossed the common duct just as it disappeared behind the duodenum. The jaundice was classed as moderate in five cases and severe in four. Its duration was from three weeks to three months, except in the patient with the anomalous vessel, in whom it had been intermittent for more than ten years. Weakness, loss of weight and digestive disturbance either preceded or soon followed the jaundice. Nausea and vomiting occurred to a certain extent in all cases; but, in one instance, they were so severe that the patient was unable to retain food of any sort. Two patients gave a history of chills and fever, and itching was a distressing symptom in five.



Fig. 1 (Case 8).—Appearance of gastro-intestinal tract, twenty minutes after the ingestion of a barium meal.

During the period in which these nine patients were observed, a number of other patients with chronic jaundice were operated on for one cause or another; but, as the methods adopted were different, the histories are not included in this report. Suffice it to say that in all cases in which an anastomosis of the gallbladder to the intestinal tract seemed to offer the hope of draining the bile passages, cholecystogastrostomy was performed. The stomach was chosen as the site for the anastomosis for the reason that it is easier and safer, in the average case, to suture the gallbladder to this viscus than to the duodenum. All nine patients on whom this operation was performed made good operative recoveries. Technically, the operation offered little difficulty, as the gallbladders were large and freely movable—the fundus lying over the pyloric end of the stomach at about the point where the union should be formed.

TECHNIC OF OPERATION

The gallbladder is aspirated and a transverse incision, 1½ inches (3.8 cm.) long, is made just below the apex of the fundus. This opening is united by three rows of sutures to one of a similar length in the stomach, just proximal to the pylorus. No clamps are used. Use of the suction apparatus aids greatly in keeping the field clean. Apparently, the thinness or thickness of the gallbladder wall is not significant so far as obtaining union is concerned.

RESULTS OF OPERATION

The convalescence of most of these patients was unusually smooth. The presence of bile in the stomach did not cause discomfort or increase the tendency to postoperative vomiting. As a matter of fact, the bedside notes show that five patients did not vomit following the operation; two vomited only once; one, several times during the first week, and in one, there was considerable vomiting on the twentieth day. This patient developed an acute dilatation of the stomach, which was promptly relieved by lavage. It is a general observation of all surgeons who have performed cholecystogastrostomy that the passage of bile through the stomach is harmless. The average stay of the patients in the hospital was twenty-six days. At the time of

discharge, the jaundice had entirely disappeared in all but one patient. This was undoubtedly a case of carcinoma of the diverticulum of Vater, which was almost a mahogany color—a slight tinge remaining on the twenty-fifth day.

The general symptoms, such as itching, dryness of the skin, nausea and vomiting, were entirely relieved. There was marked improvement in the strength of all but two patients. The histories of the patients since leaving the hospital reveal that four are perfectly well—one, four and one-half years after operation; one, nearly four years; one, two years and eight months, and one, eight months. One died at the end of one and one-half years. This man had resumed his work as a carpenter and was apparently in good health. He died suddenly following an unusual effort. Two died four months after operation, from extension of the disease. The two remaining patients (Cases 8 and 9) have been operated on too recently to warrant an opinion as to the outcome. One of these (Case 8) is the one in whom there was obstruction to the descending portion of the duodenum, as well as to the common bile duct. A brief history of this case is reported herewith.



Fig. 2 (Case 8).—Appearance of the gastro-intestinal tract, five and one-half hours after the ingestion of a barium meal.

REPORT OF CASE

History.—F. T., a man, aged 56, was admitted to St. Luke's Hospital, Sept. 14, 1922, complaining of nausea, vomiting, weakness and itching of the skin. The present illness had begun about six months previously with indigestion and a tendency to tire easily. Careful examination at that time, including a barium meal, was negative, except for the presence of slight anemia. Early in the preceding summer he had gone to Scotland, and, although he suffered from a severe attack of diarrhea on the way over, he was much improved. In August, however, indigestion became worse and was soon followed by nausea and vomiting, so that by the time he returned home (September 1) he was unable to take, or to retain, solid food. About this time, jaundice appeared, which had gradually increased up to the present time. Recently, itching had become so troublesome that it kept him awake at night. The urine was very dark, and the stools were clay-colored. He had suffered no pain at any time. He had lost from 20 to 30 pounds (9 to 13.5 kg.) in weight. He had suffered from chronic constipation and occasional atacks of indigestion.

Examination.—The patient was a well-developed man, who appeared to be chronically ill. There was evidence of loss of much subcutaneous fat. The skin and sclera showed a marked yellowish tinge. The head and neck were normal. The lungs were clear. The heart was not enlarged, and there were no murmurs. The contour of the abdomen was normal. The presence of fluid was not demonstrated. The liver and gallbladder were not felt. There was a definite mass, about 2 by 3 inches (5 by 7.6 cm.), which was hard and movable, immediately to the right of the median line, at about the normal location of the pancreas. The extremities were normal.

Laboratory Findings: The red blood cells numbered 4,704,000; hemoglobin, 50 per cent.; white blood cells, 70 per cent.; polymorphonuclears, 70 per cent.; neutrophils, 30 per cent. The morphology was normal. The Wassermann reaction was negative. Examination of the urine was negative; that of the stool was positive for blood.

Roentgen-Ray Findings: There was a lesion involving the pyloric end of the stomach and the second portion of the duodenum, with a twenty-four hour retention of barium in the stomach and duodenum. The possibility of a pancreatic lesion was considered, and it was believed that these findings merited surgical exploration. The diagnosis was carcinoma of the head of the pancreas, and obstruction of the common bile duct and second portion of the duodenum.

Pathologic Findings: The gallbladder and common duct were greatly distended. The head and body of the pancreas were hard, nodular and enlarged. The duodenum felt normal to the touch, but the descending portion was fixed to the pancreas. The liver appeared to be normal. The gallbladder did not contain stones, nor could stones be palpated in the common duct.

Operation and Result.—Sept. 22, 1922, a cholecystogastrostomy, combined with gastrojejunostomy, was performed, employing a button for intestinal anastomosis. The gallbladder was united to the anterior wall of the stomach, just proximal to the pylorus, by three rows of sutures—the two outer rows being silk and the inner row, chromic catgut. Before completing the anastomosis, one half of the button was dropped into the stomach. The posterior wall of the stomach was then exposed through a small opening in the transverse mesocolon, and the anastomosis to the jejunum rapidly completed by the use of the button.

Blood transfusion was given on the fifth day after operation. Convalescence was slow but satisfactory. All evidence of jaundice had disappeared at the end of three weeks. The patient did not vomit following the operation, and he is now able to take all sorts of food. Two weeks after discharge from the hospital, there was a definite increase in the size of the pancreas, accompanied by pain in the back. The patient was then referred by his physician to Dr. Pfahler of Philadelphia for deep roentgen-ray therapy. Under this treatment, there has been marked reduction in the size of the growth, with general improvement in health.

In 1916, Erdmann and Heyd[1] reported a case in which cholecystogastrostomy and gastrojejunostomy were performed at one operation. The patient was in good condition, six months later. More recently, Spencer[2] of London described a case in which cholecystoduodenostomy was followed in three weeks by gastrojejunostomy, and the man lived for five years, dying of scirrhous cancer of the pancreas. Such results

1. Erdmann, J. F., and Heyd, C. G.: Am. J. M. Sc. **152**: 174 (Aug.) 1916.
2. Spencer: Brit. J. Surg. **10**: 303.

in a class of cases usually looked upon as hopeless warrant the risk involved in undertaking these operations.

Reviewing the histories of the cases forming this report and checking up the findings at operation with the subsequent history of the patients, I am impressed by the fact that in only three of the first seven cases in which operation was performed was I able to make a prognosis with a fair degree of certainty. Ordinarily, the failure to differentiate, in less than 50 per cent. of cases, a malignant from a nonmalignant tumor by the feel would be embarrassing; but, if one recalls the variations in size, density and shape of the apparently normal pancreas, such mistakes are more easily forgiven.

Certain procedures, such as forced fluids by mouth, if possible, glucose solution by rectum, and saline solution injected under the skin, employed over a period of days, are of great value in the preliminary preparation of these patients for operation. It is important to have the blood grouped, and to be prepared to give blood transfusion, either before or after operation. Furthermore, it is very important to avoid unnecessary trauma during operation. The abdomen should be explored, and the various organs palpated with great care. Hemorrhage, started from lacerating the tissues, or from the forcible separation of adhesions, may be difficult or impossible to control. When one is in doubt, the common bile duct or duodenum should not be explored. It is better to leave an occasional stone than to cause the death of the patient by searching for it. I doubt the wisdom of ever cutting into the pancreas in deeply jaundiced patients for the purpose of removing specimens for pathologic examination. Such incisions serve no useful purpose, so far as the individual is concerned, and may lead to irremediable harm.



Fig. 1.—Anatomic model showing gasserian ganglion, internal carotid artery, carotid sympathetic plexus and related structures. The circle encloses the paratrigeminal area.

CONCLUSIONS

All patients suffering from chronic obstructive jaundice should be operated on, as surgery offers the only hope of relief. Internal drainage of the bile ducts is preferable to external drainage, just as it is desirable, when possible, to anastomose around inoperable growths in the intestine in order to avoid the formation of an artificial anus. The slightly greater risk involved in anastomosing the gallbladder than in establishing simple drainage is more than offset by the increased comfort of the patient, plus the added advantage of retaining the biliary secretion. Besides, in the event of a cure by external drainage, a secondary operation is necessary in order to close the fistula. I have found it easier to unite the gallbladder to the stomach than to the duodenum, and, since the passage of bile through the stomach is harmless, I consider cholecystogastrostomy the operation of choice.

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LESIONS OF THE PARATRIGEMINAL AREA

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The results of the surgical treatment of trigeminal neuralgia are brilliant and extremely gratifying to patient and surgeon alike. Section of the sensory root of the fifth cranial nerve offers immediate and lasting relief from an excruciating pain which defies description. Among an appreciable number of patients suffering from a true major neuralgia involving the trigeminal nerve there is a small number complaining of pain in the face which must be differentiated from typical trigeminal neuralgia. These patients offer a real differential diagnostic problem because surgical measures directed toward the fifth cranial nerve usually offer no relief.

The history given is that of a deeply situated, dull ache occurring in one or more of the areas supplied by the divisions of the trigeminal nerve. It may be more or less continuous and attended by exacerbations, and it may spread from one divisional area to another. The important point to be noted is that there are no sudden attacks of severe neuralgic pain causing untold agony and suffering; there are no dolorogenic zones, the slightest stimulation of which occasions a paroxysm of pain; there is not that state of apprehension in which the patient feels that the examiner may touch the face and produce a pain. These patients do not reach that state of mental depression induced by suffering which welcomes death as a relief from the pain. In short, the complaint and the appearance of patients with trigeminal neuralgia are entirely lacking.

Yet this group of patients suffer pain, often prolonged, and to dismiss them with the diagnosis of an indefinite infection headache is an injustice. They have been subjected to numerous roentgen-ray examinations of the teeth and accessory nasal sinuses; they have had their tonsils removed, and still they suffer. It is usually after such procedures that they are referred to the surgeon for resection of the sensory root, only to be told, after careful examination, that resection cannot definitely promise relief. Sluder [1] has described a group of patients presenting symptoms of such a nature, and has attributed the pain to a sphenopalatine ganglion neuralgia. He has given relief to these patients by injection of the ganglion. He has offered preliminary cocainization of the ganglion as a differential diagnostic point between this class and those suffering from a major neuralgia, for the application of a swab of cocain solu-

1. Sluder, Greenfield: Concerning Some Headaches and Eye Disorders of Nasal Origin, St. Louis, C. V. Mosby Company, 1918.

tion on the mucous membrane overlying the sphenopalatine ganglion offers immediate relief.

Three cases are here reported presenting pain in the distribution of the trigeminal nerve, entirely unlike a major neuralgia, none of which belong to the group described by Sluder. One of these cases was differentiated by the use of cocain applied to the sphenopalatine ganglion; in another, the lesion was verified at necropsy, and the description of the third case, found in the literature, excludes this condition very definitely.

REPORT OF CASES

CASE 1.—Mrs. E. S., aged 73, gave a history of a dull, heavy ache in the right maxillary and ophthalmic areas, which seemed to be deeply situated. The pain had been present for ten months. It had never involved the area supplied by the mandibular division. The patient suffered more or less continuously, but careful examination of the external surface of the face and within the mouth did not detect any dolorogenic zones. She was quite positive that there were no particular stimuli which produced the pain.

She had many roentgenograms taken of the accessory nasal sinuses and had all of her remaining teeth removed, without relief. Her tonsils were present, but examination did not reveal any inflammation or infection, and gave no indication for tonsillectomy as far as the tonsils themselves were concerned. Examination of the nasal accessory sinuses failed to detect any pathologic condition, and repetition of the roentgen-ray examination confirmed the previous negative results. A careful physical and neurologic observation revealed a moderate degree of generalized arteriosclerosis, a right enophthalmos with drooping of the right upper eyelid, a slightly smaller pupil on the right, and increased lacrimation on the right. The extra-ocular muscle movements were perfectly normal; there was no diplopia, and the pupils reacted to light and accommodation. There was no paresis or paralysis of the muscles supplied by the motor division of the fifth nerves, and sensation over the face was quite normal to all stimuli. The ciliospinal reflex, producing dilatation of the pupil by pinching the skin of the neck, was present on the left side but absent on the right. One drop of a 5 per cent. cocain solution in each eye produced unmistakable dilatation of the left pupil, but no change in the right. Under the influence of this solution, both pupils reacted to light. No other cranial nerves were involved, and otherwise the examination was entirely negative.

Four months prior to coming under observation, the patient had submitted to an alcoholic injection of the ophthalmic and maxillary divisions at their peripheral foramina. Loss of sensation was produced for three months, but the pain continued unabated, and she had resorted to the use of barbital (veronal) for relief. To rule out a possible sphenopalatine neuralgia, a pledget of cotton saturated with cocain solution was placed on the mucous membrane over the sphenopalatine ganglion. No relief from the pain was obtained. The maxillary division was then reached through a deep injection of alcohol, and loss of sensation was produced in the maxillary area. A later report from the patient stated that her pain was still present, unchanged.

We were dealing in this case with a lesion producing pain in the supply of the ophthalmic and maxillary divisions of the right trigeminal nerve and, in addition, with a paralysis of the sympathetic fibers innervating the right orbit, as evidenced by failure of pupillary dilatation on the application of the cocain solution, narrowed palpebral fissure due to enophthalmos, and the absence of the ciliospinal reflex on the right side.

CASE 2.—Mrs. J. N., aged 65, gave a history of attacks of pain lasting six weeks. The pain, which was paroxysmal and momentary, was located in the left lower jaw, but frequently spreading upward, involving the maxillary and ophthalmic areas. These pains were situated deeply and could be brought on by firm pressure of the tongue against the gums of the lower jaw and by pressure on the eyeball. Following the last attack of severe pain, two days prior to hospital entrance, pain of a less severe and an aching character had been almost constantly present in the same location. Physical and neurologic examinations revealed that the right pupil was smaller than the left, and both were slightly irregular. The right pupil reacted promptly to light and accommodation, but the left was slightly sluggish. There was a ptosis of the left upper eyelid, with paralysis of the extra-ocular muscles supplied by the left oculomotor nerve. The retinal veins in both eyes were dilated. There was no loss of sensation over the area supplying either trigeminal nerve, and the function of the muscles supplied by the motor division of this nerve was perfect. No other cranial nerves were involved, and examination otherwise was entirely negative. The Wassermann reaction on the blood and spinal fluid was negative.

The patient suddenly became unconscious, with the eyes drawn to the left; and loss of superficial reflexes and an increase in the deep reflexes, with a bilateral Babinski phenomenon, were noted. Death ensued within twelve hours. Postmortem examination revealed a small tumor the size of a pea on the outer coat of the left carotid artery, at the point within the skull where it turns forward to give off the middle cerebral and ophthalmic arteries and just medial to the gasserian ganglion. There was a diffuse hemorrhage between the dura and arachnoidea at the base, and the meninges were adherent to the vault of the skull. Section of the tumor mass revealed that it was an aneurysm of the wall of the carotid artery.

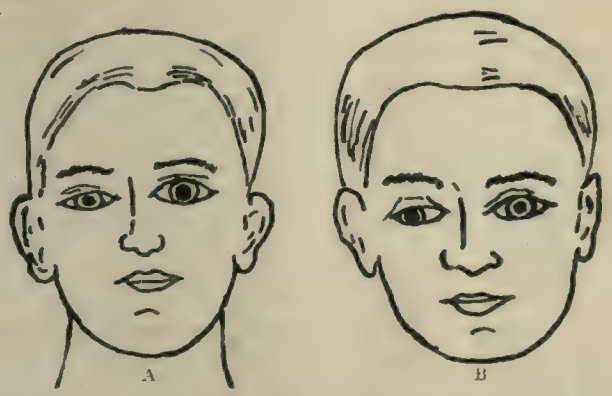


Fig. 2.—*A*, enophthalmos in Case 1, with narrowed palpebral fissure and failure of the right pupil to dilate after the application of cocain solution; *B*, ptosis in Case 2, with paralysis of the extra-ocular muscles supplied by the oculomotor nerve and dilated pupil.

This case is the exact opposite of the previous one. A patient suffering pain in the left trigeminal area was believed to have trigeminal neuralgia. However, the ptosis and dilatation of the pupil, and the paralysis of the extra-ocular muscles supplied by the third cranial nerve pointed unmistakably to a paralysis of the left oculomotor nerve.

CASE 3.—Ræder,[2] in 1918, reported the case of a youth, aged 18, who complained of pain in the left eye that radiated to the entire left trigeminal area. The left pupil was small, there was a slight drooping of the upper lid, the eyeball was somewhat sunken, and the left palpebral fissure was narrowed. Intra-ocular tension was decreased in the left eye, and, on instillation of cocain solution, the pupil of this eye did not dilate. The left pterygoid and masseter muscles were paretic, and movements of the eyeball in every direction were somewhat impaired, although the patient did not complain of diplopia. There were no vasomotor changes present on the left half of the face. A diagnosis was made of a paratrigeminal lesion involving the region between the gasserian ganglion and the internal carotid artery, with infiltration of the sympathetic fibers passing from the carotid plexus to join the oculomotor and trigeminal nerves. Necropsy revealed a small, grayish red tumor occupying the space between the left

2. Ræder, G.: Report of a Case of Endothelioma in the Paratrigeminal Area, Norsk Mag. f. Lægevidensk. **79**, 1918; abstr., Practical Medicine Series **8** (Neurology and Psychiatry), 1918.

gasserian ganglion and the hypophysis. The oculomotor nerve passed above the tumor, which infiltrated the sympathetic fibers and completely surrounded the internal carotid artery except on its medial surface. Histologic examination of the tumor proved that it was an endothelioma.

COMMENT

Many instances are on record of involvement of the sympathetic fibers in the spinal canal and in the neck, due to trauma, or pharyngeal or cervical gland tumors. These cases are characterized by excessive sweating and other vasomotor phenomena on the affected side, in addition to the presence of Horner's syndrome. The cases under discussion lacked these symptoms and other symptoms of spinal or cervical pathologic changes, which has led us to believe that the sympathetic fibers surrounding the external carotid artery were intact and the lesion, consequently, was within the cranium. Likewise, tumors originating within the gasserian ganglion have been reported wherein the surrounding structures have been involved by an extension of the growth. The previously cited cases involved the trigeminal nerve incompletely, and the involvement was secondary to pathologic conditions originating elsewhere in the paratrigeminal area.

Ræder failed to find a report of a similar case in the literature. To his case, I wish to add Case 1, which clinically is quite similar, and Case 2, which was proved to be the result of a lesion in the same anatomic area, but the pathologic changes of which involved the oculomotor nerve instead of the sympathetic fibers, thus producing an opposing clinical picture. Each of these three cases presented pain in the distribution of the trigeminal nerve, but not typically a major neuralgic pain, and at least two had been referred for operative procedures directed toward the trigeminal sensory root. In addition to the presence of pain, these cases are characterized by the presence of symptoms directly attributable to involvement of the structures immediately adjacent to the gasserian ganglion. Figure 1, the reproduction of a model, presents the anatomic relations of the structures in the paratrigeminal area; and it can be readily seen that it would be possible for a very small lesion to involve the sympathetic fibers, and the oculomotor, trochlear and the abducens nerves in various combinations with the gasserian ganglion.

It is probable that the extent of the pain in these cases depends on the amount of involvement of the gasserian ganglion. Langley [3] has shown that stimulation of the caudal end of the cervical sympathetic trunk does not produce any changes in respiration or blood pressure that might be taken as evidence of pain. He failed to find any facts supporting the presence of a reflex action within the cervical sympathetic trunk; and histologic examination of the cervical sympathetic has demonstrated the absence of fibers that might transmit pain impulses. Nevertheless, it is true that alcoholic injections which relieve the pain of a true trigeminal neuralgia do not materially benefit these patients. There is the possibility that the pain present in the eye, situated deeply, may be transmitted by fibers of deep sensibility that are present in the nerves innervating the extra-ocular muscles.

SUMMARY

Attention is directed to two syndromes of the paratrigeminal area: The one characterized by paralysis of the sympathetic fibers passing from the carotid plexus, plus pain in the trigeminal area, of which we have two examples; the other characterized by pain in the trigeminal area plus paralysis of the oculomotor nerve. No doubt other combinations of nerve involvement may occur in this particular area.

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3. Langley, J. N.: Remarks on the Results of Degeneration of the Upper Thoracic White Rami Communicantes, Chiefly in Relation to Commissural Fibers in the Sympathetic System, J. Physiol. **25**: 468, 1900.

TORSION OF UTERINE ADNEXA BEFORE PUBERTY

REPORT OF A CASE *

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History.—Lillian T., aged 13, was admitted to Lebanon Hospital, in the service of Dr. Henry Roth, April 25, 1922, complaining of abdominal pain and vomiting. Her past history was uneventful. She had never menstruated, and had been well up to the onset of her illness, four days prior to admission to the hospital. At that time she was seized suddenly with sharp pain in the right lower quadrant of the abdomen. This pain soon became generalized, but on the second day the pain localized in the right lower quadrant and became very severe. The patient vomited several times after onset of the pain. On the third day of her illness, her temperature was 103 F. She complained of frequent and painful micturition, and had a feeling of soreness in the epigastrium. Before entering the hospital, the child had received numerous cathartics, which resulted in frequent fluid stools.

Examination.—On admission, the child appeared to be well nourished. She was apparently in severe pain. The eyes, ears, nose, mouth and throat presented no abnormalities. There was no enlargement of lymph nodes anywhere. The lungs were clear, and the heart sounds were rapid, regular and of good quality. The abdominal wall moved regularly with respiration, and there were no irregularities of outline. The right lower quadrant was rigid and very tender, and no masses were palpated. A rectal examination was not made. A blood examination revealed 17,800 leukocytes per cubic millimeter, with a differential count of 89 polymorphonuclears and 11 lymphocytes. Urinary analysis revealed a faint trace of albumin, but was otherwise negative. On admission, the temperature was 102.8 F. and the pulse rate, 100 a minute. Respirations were 26 a minute. A diagnosis of acute appendicitis was made, and the child was prepared immediately for operation.

Operation.—A right rectus incision was made, and when the peritoneal cavity was opened there was a flow of a moderate amount of serosanguineous fluid. In the lower angle of the incision, there appeared a large, bluish black, sausage-shaped mass, which at first sight impressed me as being a strangulated loop of intestine. This mass was carefully manipulated and traced to its point of origin—the adnexa of the right side. The mass was delivered without difficulty. It was an ovarian tumor, twisted on its pedicle, and it included the right fallopian tube and mesosalpinx. The pedicle was untwisted, and both tube and ovary were removed *en masse*. Torsion in this case followed the direction of the hands of a clock. The appendix appeared inflamed at the tip, where it was covered with fibrin and was in close contact with the adnexal mass. The appendix was removed. The anterior layer of the broad ligament on the right side was covered with patches of fibrin. The adnexa on the left side were examined, and they appeared to be normal. A cigaret drain was placed in the pelvis, and the abdominal incision was closed in layers. Recovery was uneventful, and the patient was discharged as cured, May 9.

Pathologic Report.—The appendix appeared pale, except at the tip, which was acutely inflamed. No fecaliths were

* Read before the Society of Alumni of Lebanon Hospital, Nov. 14, 1922.

present. Microscopically, the appendix appeared normal except for the serosa, which was considerably congested. The adnexal mass consisted of a horseshoe or kidney-shaped tumor measuring 12 by 6 by 3 cm. Along the concave side of the specimen was attached a uterine tube, which appeared acutely inflamed. On section, the mass felt solid. It appeared hemorrhagic. Microscopically, the section was unrecognizable as ovarian tissue. It was composed entirely of blood cells, with an occasional thin strand of connective tissue.

COMMENT

Torsion of uterine adnexa before puberty is a condition that occurs infrequently, as may be judged by the very few cases reported in the literature. Smith and Butler [1] have compiled reports of twenty-six cases of torsion of ovarian tumors before puberty; and in a review of torsion of normal adnexa, they have abstracted the histories of four cases occurring in children under 12 years of age. Of the first group, only one third were diagnosed correctly, while in another third the diagnosis of appendicitis was made. Of the four cases of twisted pedicles of normal adnexa, one was diagnosed as acute appendicitis, and the remaining three as appendical abscess.

An analysis of the thirty-one cases, including the one that I report, shows that in nine instances in which torsion occurred on the left side the correct preoperative diagnosis was made five times, and in twelve instances in which torsion occurred on the right side the correct preoperative diagnosis was made only once. There remain ten cases unclassified as to the side involved, in which the correct preoperative diagnosis was made twice. Appendicitis was the preoperative diagnosis twice in the nine cases in which the left side was involved, six times in the twelve involving the right side, and five times in the ten unclassified cases. This shows that when signs and symptoms pointed to a lesion in the lower abdomen, particularly on the right side, there was a tendency to diagnose the condition as appendicitis.

These cases emphasize the fact that, in a girl presenting signs and symptoms of acute intra-abdominal disease, torsion of the adnexa must be given serious consideration. Also, in view of the fact that symptoms of torsion of the adnexa may simulate those of various other conditions, a rectal examination may aid greatly in the establishment of a correct diagnosis. Although rectal examination of children is at best unsatisfactory, in some cases such a procedure may help considerably toward arriving at a proper diagnosis. In the case reported, it was only when the abdomen was palpated during anesthesia that the presence of a tumor was detected. A rectal examination would have modified our diagnosis, if not completely, at least to the extent of leading us to consider seriously other possibilities in addition to a probable acute appendicitis.

Smith and Butler raise the question as to whether normal adnexa can undergo torsion, and in their paper they present summaries of fourteen reported cases of torsion of normal adnexa at various ages, four of which occurred in children under 12 years of age. Whether, in the case that I report, the torsion involved a normal ovary or one modified by cystic degeneration is difficult to say; for even the pathologic examination of the removed specimen did not give us the slightest clue as to what the condition of the ovary was before torsion had taken place.

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1. Smith, R. R., and Butler, N. J.: Am. J. Obst. & Gynec. **2**: 507-521 (Nov.) 1921.

OBSERVATIONS ON THE PRECIPITIN REACTION FOR SYPHILIS *

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OMAHA

From time to time, numerous discrepancies in the Wassermann test for syphilis have been reported, and though standardization of the test has been many times attempted, no method of standardization is as yet generally accepted. To meet this difficulty, several precipitation tests have been developed, the latest and simplest being that of Kahn, [1] modified by Herrold.[2]

The latter test is even more simple and economical than the Kahn test. It is based on the formation of a ring of precipitation of antigen when in contact with serum from a patient with syphilis. To determine the value of this precipitation reaction in the diagnosis of syphilis, parallel observations on Wassermann and precipitin tests have been made.

The antigen used was prepared according to the method described by Kahn. For the test, the antigen is diluted rapidly 1 : 10 or 1 : 12 with physiologic sodium chlorid solution, as outlined by Kahn and Herrold. A small amount of antigen is then placed in a precipitin tube (0.5 by 3 cm.), and serum (heated or unheated) is allowed to run slowly into the bottom of the tube in order to give a sharp ring of contact. Blood serum tested by Herrold [2] was unheated. In my titrations, serum heated to 56 C. for thirty minutes was used, with apparently identical results. After standing at room temperature for from one to two hours, the tubes are read against a dark background. Proper light is necessary to obtain the most accurate interpretation, and while some experience is essential, most rings are readily identified.

COMPARISON OF ONE THOUSAND FIVE HUNDRED WASSERMANN AND PRECIPITIN REACTIONS

No. of Serums	Wassermann	Precipitin
222	Positive	Positive
1,261	Negative	Negative
14	Positive	Negative
3	Negative	Positive
1,500		

In the accompanying table are the results of parallel tests of Wassermann and precipitin reactions on 1,500 serums. Complete agreement occurred in 1,483 serums; the Wassermann reaction was positive and the precipitin negative in fourteen instances, and the Wassermann was negative and precipitin positive in three. In three instances in which the Wassermann was positive and the precipitin negative, the tests were repeated and the reactions were found to agree (positive). In one case, the Wassermann was negative and the precipitin positive, and at necropsy syphilitic aortitis with aneurysm was found. In one instance with repeated tests, the Wassermann was always positive, and at no time could any trace of precipitation be made out. It is assumed that failure to agree the first time in the three serums was due to error in technic or in interpretation. It may also be noted that among the discrepancies the majority occurred early in the study and so may in large part be due to inexperience.

* From the Laboratory of the Cook County Hospital, Chicago.

1. Kahn, R. L.: A Simple Precipitation Reaction for Syphilis, Arch. Dermat. & Syph. **5**: 570-578 (May) 1922; **5**: 734-743 (June) 1922; **6**: 332-341 (Sept.) 1922.

2. Herrold, R. L.: A Ring or Contact Precipitation Test for Syphilis, a Modification of the Kahn Test, J. A. M. A. **79**: 957 (Sept. 16) 1922.

Numerous tests were made on cerebrospinal fluids, without success, the precipitin test being very unreliable. Positive reactions occurred clearly only when considerable traumatic blood was present.

In all Wassermann tests, the antisheep system was used, with amounts of serum, antigen and complement approximating 0.1 c.c., and with three antigens (10 units).

No attempt has been made to correlate the clinical findings and the results of the serologic tests, the study being limited only to the comparison of the two reactions; however, the close agreement between the Wassermann and precipitation tests on blood serums (98 per cent of 1,500 tests) renders the latter worthy of further consideration. The technic of the Wassermann test is somewhat complicated and laborious, and it is subject to modifications of such nature that among several observers varying results may be obtained on the same serums. The precipitin test is far more simple to set up and is readily interpreted. Because of its simplicity, accuracy and economy of materials and time, the precipitin test may be used to advantage parallel with the Wassermann, as an aid in the interpretation of results. When the tests agree, reasonable accuracy is assured; when there is disagreement, the tests should be repeated, and if there is still discrepancy, for the present at least, the result of the Wassermann test should be accepted.

In instances in which the two tests fail to agree, it is possible that further study of the antigens and their dilution, together with the clinical history and findings, may result in such accuracy that the precipitin test will serve as an aid in the diagnosis of syphilis.

Brandeis Theater Building.

THE USE OF CREATININ AS A TEST OF RENAL FUNCTION *

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Many new tests for the functional activity of the kidneys are being introduced from time to time. Most of these tests are carried out by studying the excretion of a foreign substance, usually a dyestuff, by the kidneys. One notable exception is the employment of urea as a functional test by Addis and Watanabe [1] and by McLean and de Wesselow.[2]

The frequent addition of new tests does not necessarily imply any dissatisfaction with those tests now in use, but indicates an increasing appreciation of the complex process usually designated as "renal function." Most students of kidney diseases have noted and emphasized the peculiar variability of different kidneys in the excretion of different substances. This variability calls for the employment of several tests if we wish a composite picture and not a fragmentary view of the kidney's functional activity.

Creatinin seems for many reasons to be an excellent substance for testing the functional response of the kidney. Its concentration in the blood in health is remarkably constant: its hourly excretion by the kidney is so constant that Austin, Stillman and Van Slyke [3] have advocated its use as a means of checking the accuracy of urine collections, and its daily excretion in the same individual is so uniform that Shaffer [4] has estimated its excretion to be from 20 to 30 mg. per kilogram of body weight, and has introduced the term "creatinin coefficient" to express this constant relationship.

Although creatinin is readily excreted by the normal kidney, in nephritis this daily excretion may be diminished; and, as Myers and Lough [5] have emphasized, there is often in this disease an increase in the amount of creatinin in the blood, which is of both diagnostic and prognostic value.

TABLE 1.—FINDINGS IN NORMAL CONTROLS

Case	Age, Years	Creatinin Excretion, Mg. Specimen 1	Specimen 2	Specimen 3	Phenolsulphonephthalein Percentage 1 Hour	2 Hours	Total
1	24	68	197	130	4	10	50
2	28	88	246	125	25	5	30
3	38	61	205	124	50	25	75
4	25	75	273	99	60	10	70
5	26	45	224	133	25	15	40
6	35	42	175	109	25	10	35
7	28	87	260	175	30	7	37
8	34	85	286	164	50	18	68
9	28	31	111	88	40	10	50
10	24	55	167	77	50	5	55
Average excretion		64	214	113			

Recently, we have been interested in studying the excretion of creatinin in health and in disease, and particularly the response of the kidney to a sudden increase of creatinin in the blood.

The creatinin used in these studies came from two sources: urine, and a by-product obtained in the manufacture of meat juice.[6] Identical results were obtained from the three samples of creatinin.

The following procedure was carried out in making the test: The patient voided, this specimen was thrown away and he was given a glass of water; and promptly at the end of an hour urine was obtained and labeled Specimen 1. The patient was immediately given an intravenous injection of 0.5 gm. of creatinin, drank a glass of water and again voided at the end of an hour, and this was labeled Specimen 2. He then drank another glass of water and again at the end of an hour voided, this urine being labeled Specimen 3.

TABLE 2.—VARIOUS DISEASES

Case	Age, Yrs.	Diagnosis	Creatinin Excretion, Mg. Specimen 1	Specimen 2	Specimen 3	Phenolsulphonephthalein Percentage 1 Hr.	2 Hrs.	Total
1	35	Dilatation of esophagus.	26	142	85	50	13	63
2	65	Syphilis of liver.....	73	266	123	50	10	60
3	30	Infectious arthritis.....	42	198	164			
4	45	Infectious arthritis.....	19	169	43	13	13	26
5	49	Exophthalmic goiter.....	41	113	99	17	18	36
6	50	Myxedema.....	54	198	140	43	20	63
7	67	Exophthalmic goiter.....	16	108	127			
8	41	Pernicious anemia.....	50	221	58	20	8	28
9	42	Diabetes.....	41	212	128	50	15	65
10	74	Carcinoma of lip.....	76	226	163	40	10	50
Average excretion of creatinin.....			42	186	103			

* From the Department of Internal Medicine of the University of Kansas School of Medicine.

1. Addis, Thomas, and Watanabe, C. K.: The Rate of Urea Excretion, J. Biol. Chem. **27**: 249 (Oct.) 1916.

2. McLean, H., and de Wesselow, O. L. V.: On the Testing of Renal Efficiency with Observations on the "Urea Coefficient," Brit. J. Exper. Path. **1**: 53 (Feb.) 1920.

3. Austin, J. H.; Stillman, Edgar, and Van Slyke, D. D.: Factors Governing the Excretion Rate of Urea, J. Biol. Chem. **46**: 91 (March) 1921.

4. Shaffer, Philip: Protein Metabolism in Exophthalmic Goiter, J. Biol. Chem. **3**: 13, 1907.

5. Myers, V. C., and Lough, W. G.: The Creatinin of the Blood in Nephritis, Its Diagnostic Value, Arch. Int. Med. **16**: 536 (Oct.) 1915.

6. This by-product was supplied through the courtesy of Mr. C. B. Valentine. Prof. Graham Edgar of the University of Virginia kindly sent some creatinin prepared from the same by-product.

Care was taken that the patient emptied the bladder completely each time he voided, and that the glass of water taken each time was uniform in size, measuring 200 c.c. The creatinin solution was both prepared and autoclaved just before injection.

For the purpose of comparative study, the phenolsulphonephthalein test was employed, the dyestuff being injected intravenously. In a few of the earlier observations, the phenolsulphonephthalein test was carried out on the day following the creatinin injection, but in most instances the dye was injected simultaneously with the creatinin, and the determinations of the excretion of both substances were made during the identical periods. No untoward reactions on the part of the patient were encountered in any tests.

The creatinin determinations in the urine were made by the method of Folin; the phenolsulphonephthalein estimations were made with the Dunning and Duboscq colorimeters.

In all, more than fifty observations have been made. The first group shown in Table 1 consisted of ten normal controls. The urine of these subjects was negative, and the blood chemical findings for nonprotein nitrogen, urea and creatinin were normal.

A summary of this group of cases shows that the average excretion of creatinin during the hour following injection was three times the amount of that excreted during the hour preceding injection, and that the total excretion at the end of two hours was five times the amount.

The average values were 64 mg. for the preinjection hour, 214 for the first hour after excretion during the preinjection hour, and 113 for the second hour. The amount of urine voided varied greatly with different individuals, and some subjects showed an increased urinary output after injection. All showed an increase in the creatinin concentration of the urine; the individuals not showing any increased amount of urine had a very marked increase in this concentration, often as great as 700 per cent. This indicated an ability of the normal kidney to excrete the excess creatinin by increasing its concentration in the urine when there was no increase in urinary output.

Three of these controls gave a phenolsulphonephthalein excretion of less than 40 per cent. in two hours. Subsequent phenolsulphonephthalein tests, with no creatinin injection, yielded an excretion of more than 60 per cent. in two hours. No satisfactory explanation of this variation is apparent.

Table 2 presents the results obtained in a group of patients suffering from various diseases. None of this group had any indication of kidney disease. The urine was clear, and the blood nonprotein nitrogen, urea and creatinin showed normal values. The average excretion of creatinin following injection was even greater here than in the normal controls, as four times the preinjection value was obtained in the hour after injection, and six times as much was excreted in the two hours as during the preinjection hour. The average values were: Specimen 1, 42 mg.; Specimen 2, 186 mg., and Specimen 3, 103 mg.

A group of ten patients with arterial hypertension was studied. The results are presented in Table 3. All of these patients, when the test was carried out, had normal values for blood nonprotein nitrogen, urea and creatinin. In one patient there was a trace of albumin, with casts, in the urine, and in another a faint trace of albumin in the urine. In the eight others urinary findings were normal. In all of these patients except one, when first studied, there was an excretion of creatinin similar to that described for normal individuals. The average values for the three specimens of urine were 48, 180 and 82 mg.

One patient (Case 10) deserves especial comment. The test when first carried out gave normal values. Four days later, during an attack of acute renal insufficiency associated with edema and increase in the blood nonprotein nitrogen, urea and creatinin, the amount of creatinin recovered one hour after injection was only approximately 40 per cent. more than that excreted during the previous hour. A third test after subsidence of these symptoms indicated an almost normal excretion.

Four patients suffering from cardiac disease were studied. The results are presented in Table 4. In two of these patients, the creatinin excretion after the

TABLE 3.—ARTERIAL HYPERTENSION

Case	Age, Years	Blood Pressure: Systolic	Blood Pressure: Diastolic	Blood Chemistry, Mg. per 100 C.c.: Nonprotein Nitrogen	Urea	Creatinin	Urine: Albumin	Urine: Casts	Creatinin Excretion, Mg.: Specimen 1	Specimen 2	Specimen 3	Phenolsulphonephthalein Percentage: 1 Hour	2 Hours	Total	Comment
1	42	180	100	31	15	1.4	—	—	39	228	161	45	10	55	
2	64	200	90	24	11	1.0	—	—	65	126	31	55	15	60	
3	60	175	90	16	17	1.4	—	—	19	250	81	13	12	25	
4	67	160	90	40	18	1.7	—	—	81	112	106	23	12	35	
5	41	165	100	41	18	1.4	—	—	40	258	70	50	10	60	
6	62	182	90	43	21	1.0	—	—	40	152	79				
7	42	180	120	30	10	1.7	—	—	58	245	130	50	10	60	
8	49	150	90	..	12	1.5	—	—	20	123	85	25	12	37	Later, phenolsulphonephthalein 70 per cent.
9	45	155	80	28	13	1.2	+	—	42	184	102	15	10	25	
10	50	220	120	44	19	1.9	+	+	40	128	79	22	15	37	
				92	45	2.9	++	++	6½	90	83	10	5	15	Marked edema
					15	...	+	+	27	78	64	20	15	35	Improved

TABLE 4.—HEART DISEASE

Case	Age, Years	Diagnosis	Urine: Albumin	Urine: Casts	Creatinin Excretion, Mg.: Specimen 1	Specimen 2	Specimen 3	Phenolsulphonephthalein Percentage: 1 Hour	2 Hours	Total
1	35	Aortic insufficiency	—	—	53	140	160	35	15	50
2	40	Myocarditis	—	—	28	284	106	60	10	70
3	40	Myocardial insufficiency	—	—	60	180	86	45	10	55
4	42	Mitral insufficiency	—	—	29	137	77	35	20	55
			++	++	39	60	49	8	10	18

test was greatly increased; one patient with a very marked edema showed an excretion slightly less than that usually obtained in normal controls, while a fourth patient (Case 4) showed at first an adequate excretion, but later, with the development of a marked anasarca, and a reduction of the total daily urine output to 300 c.c., only a 50 per cent. increase in excretion at the end of one hour. The last patient had normal values for blood nonprotein nitrogen, urea and creatinin.

A summary of the cases of nephritis is presented in Table 5. Two of the patients had a relatively mild acute nephritis and responded normally to the test. In addition to these, fourteen cases of typical chronic nephritis were studied, two of which came to necropsy.

The results of the creatinin test in these patients were uniform. In none was there an increase of creatinin excretion exceeding 50 per cent. one hour after injection; in some there was no increase, and in others an actual decrease. The average values for the creatinin excretion in this group were 43 mg. for the preinjection hour, 51 mg. for the first hour following injection, and 62 mg. for the second hour after injection.

TABLE 5.—NEPHRITIS

		Blood Pressure		Blood Chemistry, Mg. per 100 C.c.			Urine		Creatinin Excretion, Mg.			Phenolsulphonephthalein Percentage			
Case	Age, Years	Systolic	Diastolic	Nonprotein Nitrogen	Urea	Creatinin	Albumin	Casts	Specimen 1	Specimen 2	Specimen 3	1 Hour	2 Hours	Total	Comment
1	38	158	100	..	..	1.7	+	+	104	272	176	45	11	56	Acute
2	17	130	75	22	9	1.4	+	+	41	201	160	30	10	40	Acute
3	44	200	150	41	22	1.8	+	+	70	63	71	32	11	43	
4	70	145	90	..	16	1.5	+	+	27	8	38	30	10	40	
5	70	200	120	131	81	5.0	+	+	36	7	19	5	2	7	
6	56	210	135	..	13	1.7	+	+	30	45	50	8	10	18	
7	22	180	115	..	20	1.4	+	+	56	...	142	23	17	40	
8	35	180	120	34	11	2.0	+	+	16	12	12	..	..	Trace	Died, necropsy
9	52	220	135	46	26	1.5	+	+	91	122	95				
10	56	220	160	70	46	2.7	+	+	45	46	70	..	..	Trace	Died, necropsy
11	68	150	100	20	13	1.2	+	+	37	17	31	40	10	50	
12	65	160	80	..	14	...	+	+	43	63	66				
13	70	220	120	34	18	2.8	+	+	138	179	44	8	15	23	Arteriosclerosis
14	44	170	60	..	..	2.0	+	+	30	39	25				
15	56	150	80	40	22	1.0	+	+	25	9	40	15	10	25	
16	47	190	110	80	46	4.2	+	+	48	60	64	3	Trace	3	
Average excretion of creatinin in chronic nephritis (Cases 3 to 16).....									43	51	54				

Only four of the patients gave blood creatinin values above 2 mg. for each hundred cubic centimeters; six gave normal values for blood creatinin, but at the same time were unable to excrete the excess creatinin thrown into the circulation. This failure to excrete an increased amount of creatinin was apparently due to inability to concentrate this creatinin in the urine, and also to inability to make up for the failure in concentration by an increased output of urine.

SUMMARY

In normal persons and in patients suffering from various diseases with no renal lesions, the intravenous injection of 0.5 gm. of creatinin was followed by an increased excretion in one hour amounting to three times that excreted during the hour preceding injection. The total excretion at the end of two hours amounted to five times that of the preinjection hour.

In chronic nephritis, the kidney fails to respond in this manner, and in the cases studied this increase has been less than 50 per cent. In a number of these patients, no increase at all was seen.

Registered Physicians in Great Britain.—The total number of names mentioned in the British Medical Register for 1921 is reported as 45,408 for an estimated population in the United Kingdom of 46,000,000, or one physician to every 1,013 people.

THE PRECIPITIN REACTION OF THYROGLOBULIN *

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Thyroglobulin, first isolated by Oswald, is a comparatively constant compound in different species, except, of course, for variations in the iodin content. So far as we can learn, the antigenic properties of thyroglobulin have not been studied, and it occurred to us that it would be of interest to study them. Accordingly, we prepared thyroglobulin from beef, swine, and human thyroids in the usual way, but with special efforts to obtain as pure a product as possible.

The thyroids were freed from fat and connective tissue and torn into small pieces, which were washed in water until almost white, and then extracted in the icebox with salt solution containing a little thymol. After being filtered through paper several times, the extract was precipitated with an equal quantity of concentrated ammonium sulphate solution, and the precipitate was washed with a 50 per cent. ammonium sulphate solution, dissolved in salt solution, and reprecipitated as before. The ammonium sulphate was removed by dialysis, and the final solution given a concentration of 0.85 per cent. sodium chlorid.

For injecting rabbits, a 1 per cent. solution of swine and human thyroglobulin by weight was used, 10 c.c. being given intravenously every day for three days. Five days after the last injection of swine thyroglobulin, the serum of the rabbits gave a fairly strong precipitin titer, while the serum of the rabbits injected with human thyroglobulin was without any action. Beginning on the seventh day after the last injection, these rabbits were given a second series of three daily injections of 10 c.c., and, on the fourth day after the last injection, the serum gave a very high precipitin titer. In the case of beef thyroglobulin, 10 c.c. of a 1:250 solution was injected intravenously daily, three times; and, on the fourth day after the last injection, the serum was found to have a good precipitin titer.

The results of the tests with the antiserums prepared as outlined are given in the accompanying table, the figures of which indicate the highest dilutions of the thyroglobulins and of serums with which the antiserums would form precipitates by the contact or ring method after one hour at the room temperature. In all cases in which negative results are recorded, the tests were carried through with a series of progressive

* From the John McCormick Institute for Infectious Diseases.

dilutions of the thyroglobulin or serum in question; we did this in order to avoid the danger of being misled by failure of reaction in low dilutions of antigen due to the so-called prozone effect.

The results show that, in these experiments, beef and swine thyroglobulins acted as strictly specific precipitinogens, the resulting precipitin serums being apparently specific, each for the corresponding thyroglobulin, while the human thyroglobulin, besides a rich output of specific precipitin, also called forth, but in far smaller quantities, precipitins for swine and beef thyroglobulins and for human serum. As indicated in the table, the serum precipitins in the original antiserum for human thyroglobulin were removed by an equal amount of a 1:200 dilution of normal human serum. Appropriate tests showed that the human thyroglobulin used as antigen contained small amounts of serum proteins, but sufficient to account for the serum precipitins in the antiserum. The precipitins in this antiserum for swine and beef thyroglobulin were probably of

TITERS OF ANTITHYROGLOBULIN PRECIPITIN SERUMS

Serums of Rabbits Injected Intravenously with Beef, Human or Swine Thyroglobulin	Titers of Antiserums in					
	Beef Thyroglobulin	Beef Serum	Human Thyroglobulin	Human Serum	Swine Thyroglobulin	Swine Serum
Antibeef serum...	8,000	0	0	0	0	0
Antihuman serum, original.....	8,000	0	1,000,000	1,600	25,000	0
Antihuman serum, after mixing with equal quantity of 1:200 dilution of human serum and removing the precipitate that formed on standing.....	2,000	0	640,000	20	25,000	0
Antiswine serum..	0	0	0	0	128,000	0
Normal rabbit serum.....	0	0	0	0	0	0

the nature of so-called minor precipitins; at any rate, mixing the antiserum with two parts of swine or beef thyroglobulin solution 1:3,000, and removing the precipitate that formed on standing, deprived the antiserum of all power to react with either of these thyroglobulins, while it still reacted with human thyroglobulin solution at 1:256,000. Similar treatment of the antiserum with human thyroglobulin, on the other hand, removed all precipitins completely. Even mere dilution of the antiserum with three parts of salt solution was enough to suppress the reactions with swine and beef thyroglobulins, the titer in human thyroglobulin being reduced merely in proportion to the dilutions.

The injecting of rabbits with extracts in salt solution of thyroids removed from exophthalmic goiter patients (by Dr. George W. Crile in Cleveland and Dr. J. F. Jaros in Chicago) caused the formation of precipitins for human thyroglobulin, from normal as well as exophthalmic thyroids; and in such antiserums, too, minor precipitins acting on swine and beef thyroglobulins were present also.

SUMMARY

The results of this work indicate that human thyroglobulin, prepared as described, contains a main, strictly specific antigen and also lesser antigens that in the rabbit may call forth precipitins for thyroglobulins of other species. Perhaps closer study may reveal several thyroglobulins in other species also; but the beef and swine thyroglobulins used in these experiments acted as strictly specific antigens.

DENGUE FEVER IN LOUISIANA

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NEW ORLEANS

The epidemic of dengue fever that prevailed in Louisiana from the early part of September until the latter part of December, 1922, was doubtless introduced into the state from Texas. Reports indicate that Galveston and Houston had been suffering from this disease for some time, and the case dissemination followed closely the course of the Southern Pacific Railroad, the main line of communication between the two states.

Shortly after the invasion of southern Louisiana, the epidemic spread diagonally northwest, toward Shreveport, closely approximating the Texas and Pacific line. Subsequent invasion of other cities to the right and left of both railway systems followed in due course.

It is quite impossible to know accurately the actual number of cases that occurred; the official reports so far received show less than 8,000. A survey made during the early part of the epidemic indicated that only a fraction of the cases that occurred were reported by the practitioners. The reasons are at once apparent when one remembers that the physicians in many localities were suddenly overwhelmed with work, and that the slight danger resulted in an indifference, so that many persons were seen not at all or, at most, only once or twice.

During the survey it was noted, and as the epidemic progressed it became increasingly clear, that this acute infectious disease did not always present the typical symptoms of dengue. In fact, there was such great variation that physicians were often in doubt as to what they were really handling. Coupled with the ever present specter of yellow fever in Louisiana was the tradition that the latter disease followed closely on the heels of a dengue outbreak. It is probable that there is some rational basis for this tradition, a fact which has only been recently appreciated, viz., that both diseases are transmitted by the same vector, *Aedes aegypti*. This insect, formerly known as *Stegomyia fasciata, S. calopus* and *Aedes calopus,* and commonly called the "yellow fever," "tiger," "house," "day" and "calico" mosquito, is widely disseminated throughout all sections of the state. It breeds exclusively in cisterns and back yard litter, such as empty cans, bottles, jars, troughs, sagging or blocked gutters—in fact, any receptacle that will contain a teaspoonful of water long enough for the eggs to develop. Not infrequently this plague of the Louisiana rural districts is found breeding in the water pitchers within the house itself. Flying by day, it is encountered with monotonous frequency in the living and bedrooms of unscreened dwellings, between the hours of 9 or 10 in the morning and 4 or 5 in the afternoon. During the survey, *Aedes,* gorged with the blood of dengue patients or in the process of feeding, was observed very often.

PREPARATION OF A QUESTIONNAIRE

The variation in symptoms and degree, and the fact that occasionally the conviction was expressed that the prevalent disease was an aborted or modified form of yellow fever, led to the preparation of a questionnaire, a copy of which was sent to every physician in Louisiana. Altogether, about 2,000 physicians were circularized:

of this number, 442 replied. Since a number of the replies contained the simple statement that no cases had been encountered, or were otherwise unsuitable, 333 were selected as being representative, and the information obtained from them forms the basis for the present article. The results represent approximately 6,000 points.

In the formulation of the questionnaire it was necessary that the principle of brevity be in accord with the clarity of purpose of each question, a combination which it was hoped would at once induce the physician to take the trouble of answering, at the same time giving the maximum amount of useful data. The shortcomings were more easily recognized after the answers had been received and the contents tabulated. Many other points, such as relative percentages, could have been required without sacrificing space; as a matter of fact, they were frequently offered voluntarily, though for lack of definite request there was lack of uniformity.

The questionnaire asked for a general impression, based on personal experience, of the course of the disease. The number of cases reported is naturally only an approximation, but I venture to think it is a fairly accurate estimate of the number of cases that occurred in the state. In a large group of figures such as was supplied by the questionnaires, the exaggerations above and below the true status would tend to equalize one another in the general averages. As the data can be expressed numerically for the most part, this principle would hold for each reply.

It was believed that the twenty questions here reproduced would sufficiently cover the situation, while physicians were invited to offer additional remarks on points not covered by the questions on the reverse side of the questionnaire blank:

1. How many dengue patients did you attend?
2. Did there appear to be an incubation period (how long)?
3. What was the nature of the prodromal symptoms (how long)?
4. Did headache, pains or fever predominate in ushering in the acute onset?
5. Temperature: height and variations; relation to pulse?
6. Nature of pains (joint or muscular)?
7. Was there conjunctival injection?
8. Were there oral, nasal or gastro-intestinal symptoms (nature)?
9. Was there a flush or cyanotic condition of face or body preceding onset (nature, location)?
10. Were there remissions?
11. On what day did the remissions occur, as a rule?
12. Was there a rash present (day of disease, nature of rash, location)?
13. Was there any icterus? If so, at what period of the attack?
14. Any "black vomit" unaccounted for?
15. How long (days) did the attack last?
16. Was convalescence prolonged (great depression, etc.)? Any relapse?
17. Have you reason to suspect that dengue was an aborted or atypical form of yellow fever?
18. Were *Stegomyia* ("tiger," "day") mosquitoes numerous in houses of patients?
19. To what do you assign the cause of the decrease in number of cases (weather, screening, etc.)?
20. Were there any deaths attributable to dengue (ages, complications)?

NUMBER OF CASES

The number of cases estimated to have occurred within the state by 333 physicians is close to 30,000; actually, 29,827 were reported on the questionnaires, while additional unclassified reports bring the total to 31,955. The number reported so far to the Louisiana State Board of Health up to date is 7,560. The impression derived during the survey is that the estimate is more nearly correct. On the basis of the final estimate, approximately 1.74 per cent. of the population of Louisiana suffered from the disease, i. e., there was a morbidity rate of 1,740 per hundred thousand. The rapidity with which it spread to virtually all sections of the state makes this feature in the epidemicity of dengue comparable to influenza; indeed, the questionnaires contain many expressions to the effect that the two diseases were in other respects very similar.

The geographic distribution of the cases, according to the southern, central and northern divisions of the state, is quite distinct. Taking the southern part of Louisiana as that part extending from the Mississippi line to the Gulf, including those parishes east of the Mississippi River, we find that 57 per cent. of the cases occurred in this district. Assuming the central section to be the territory northward from the southern Mississippi state line up to the approximate level of Vicksburg, the figures indicate very close to 10 per cent. of the total, while the northern part contains the remaining 32 per cent. It is quite obvious that the distribution depends to a great extent on the relative density of population, including, as the northern and southern divisions do, the large cities of Shreveport and New Orleans. Even though this is the case for the territory as a whole, it is quite probable that other conditions influenced the number of cases occurring in these two cities. Whatever these may be, the fact remains that the number of cases estimated to have existed in Orleans Parish is less than half the number of those given in the questionnaires for Caddo Parish, where the city of Shreveport is located, though the ratio between the populations is, respectively, 4.5 to 1. It is possible that attention to the eradication of the back yard mosquito breeding places has been more concentrated and effective in New Orleans than it has been in Shreveport. This would naturally be expected, since the demand and attainment of this objective has, in the case of New Orleans, the background of past experience with yellow fever epidemics which Shreveport has never had to even approximately the same degree.

INCUBATION PERIOD

The limits fixed for the incubation period vary between 3.4 and 6.7 days. This gives a general average of five days from 59.16 per cent. of definite answers to this question; while 16.22 per cent. answered in the negative, meaning probably that no period was perceptible, and 12.31 per cent. stated that the incubation was either uncertain or unknown. The same percentage offered no comment whatever.

It will be readily understood that this question can be very difficult to answer with any degree of accuracy, and the opinion will depend on a number of factors, the most uncertain of which will be the statement of the patient regarding a possible exposure.

PRODROMES

The prodromal symptoms, according to the records of the physicians, vary from four hours to six days. Obviously, the latter period is due to faulty observation and conclusions. The average seems to be about 1.8 days, or forty-three hours, though they may vary with the individual. Only twenty-eight answers to this phase of the question were given, so that the result

cannot be said to be dependable. Approximately 19.82 per cent. of the replies stated that the onset was either sudden, without any noteworthy prodromes, or the simple statement was made that none were noted.

Malaise is an expression by which the preliminary symptoms are described, though it is qualified in many cases, and, it may be assumed, comprises a number of manifestations not ordinarily included in the definition of the term. Thus the prodromal symptoms may be present as a mild conjunctivitis or coryza, together with indefinite aches and pains, sore throat, headache, nausea, anorexia, muscular soreness and backache, lassitude, languor, dizziness, and a slight chill or at least a feeling of chilliness. Two or three or more of these symptoms were noted by 51.35 per cent. of the practitioners, while 33.63 per cent. gave no answer whatever to the question. It is clear that none of these symptoms is in any way characteristic, but they are the heralds of nearly every infectious disease.

SYMPTOMS CHARACTERIZING THE ONSET

The acute attack is ushered in with headache, fever and pain. Sometimes a rigor precedes or accompanies the other three symptoms. The headache may be intense, with a feeling of tension in the eyeballs, or it may appear to be localized in the supra-orbital or occipital region. The pain in the eyeballs is often intensified on exposure to light. Again, the pains in the head are described as being neuralgic in character. Pain in the muscles, especially the lumbar group, and joint and long bone pains are almost invariably accompaniments in some degree of the three initial symptoms. These will be discussed later.

The relative percentages of observations of concomitant initial symptoms have been derived by grouping them as nearly as the replies would allow. First, the headache, fever and pain were accompanied or preceded by a chill in 9.31 per cent. of the instances. Secondly, headache, fever and pain alone as initial symptoms were noted by 86.29 per cent., while fever and pain alone, unaccompanied by headache but by a rigor, were observed by 2.7 per cent. of the physicians. Altogether, 12.01 per cent. of the replies show that a chill was present. The remaining 1.2 per cent. of the practitioners gave no answer to the question.

TEMPERATURE AND PULSE

Reports on the temperature are very complete and quite constant. The limits vary between 100.9 and 103.8 F., with a general average, which includes isolated figures arrived at by the observer himself, of 102.5. In certain instances a subnormal temperature has been observed during the period of invasion and frequently during convalescence. Exceptional temperatures as high as 106 were noted.

The pulse has been found to increase conformably with the temperatures in 44.74 per cent., and to be slower than would normally be expected in 25.53 per cent. of the cases, while the remainder of the questionnaires contained no observation on this point.

The actual pulse rates as given in the questionnaires are of no particular value in themselves, aside from the conclusions that one may derive. They varied during the fever period between 70 and 150.

JOINT AND MUSCLE PAINS

General pains in the body, which are so characteristic of dengue fever, are described in a variety of ways, which, however, leave no doubt what is meant. The muscular variety is usually localized in the muscles of the back, especially in the lumbar region. It is called backache and "spinal irritation." Aching pains in the muscles of the legs are also frequently noted.

The bone and joint pains are described as "a feeling as though the bone was being broken." The long bones, especially those of the limbs, appear to be principally involved. The joint pains are indefinite, and seem to be generally apprehended more as a feeling of soreness. No instance of swelling or inflammation of a joint is given.

These pains have been classified according to occurrence, together or as one or the other variety predominated. The percentages noted were: joint and muscle together in 37.54 per cent.; joint alone in 14.42 per cent., and muscular alone in 46.55 per cent. of the replies.

CONJUNCTIVAL INJECTION

The presence of injection of the conjunctiva was noted frequently at the beginning and during the course of the disease. It appeared in about 35 per cent. of the infections. No effort is made to interpret its significance here; it would appear, however, to be a fairly constant symptom. Affirmative replies were received from 71.17 per cent. of the physicians, while 27.03 per cent. did not see this symptom. Only 1.8 per cent. gave no answer to the question.

PRESENCE AND NATURE OF ORAL, NASAL AND GASTRO-INTESTINAL SYMPTOMS

The oral symptoms commonly noted were perverted taste, the complaint being frequently encountered that everything, even water, tasted bitter. Very competent observers noted this aberration in themselves and in their patients, and it occurred frequently as an outstanding phenomenon among the replies.

Other oral symptoms are a heavily furred tongue, ulcerated and bleeding gums, and stomatitis with hemorrhage.

The nose and throat symptoms noted were epistaxis, coryza, inflammation of the nasopharynx, often with bleeding, and tonsillitis.

The gastro-intestinal manifestations are the most constant and characteristic. Anorexia and nausea, accompanied by vertigo and severe vomiting, were by far the most frequent. Vomiting of blood and bile, tarry and bloody stools, and severe diarrhea are also frequent occurrences. Abdominal pain, apparently without special localization, and diarrhea approximating acute dysentery were also noted. According to the reports, vomiting averaged about 31 per cent. of the infections. One physician noted abdominal pain in 20 per cent. of his cases, while the reports of four physicians show an average of 12 per cent. of their patients as having diarrhea. Apparently about 45 per cent. of all patients had gastro-intestinal symptoms of some kind, though the percentages are not reliable. It is unfortunate that the percentage of patients having certain symptoms was not specified in the questionnaire. Those cited are averages of voluntary statements only, and are doubtless much fewer than would have been given had space been allotted. However, in summing up the replies to this question the results prove quite satisfactory. Thus, 38.49 per cent. of the physicians report having observed gastro-intestinal symptoms alone; 29.73 per cent., gastro-intestinal complicated by oral and nasal symptoms, and 15.02 per cent., only oral

and nasal symptoms; 9.31 per cent. either saw none at all or failed entirely to answer this question.

INITIAL FLUSH OR CYANOSIS

A flushed or cyanotic appearance of the face or body was not infrequently observed. It was thought that possibly this phenomenon might be classed as an initial manifestation, though there is some doubt as to whether it was not due to the febrile reaction. Among the replies received, 49.25 per cent. were in the affirmative, 44.45 per cent. negative, and 2.40 per cent. made no observation; at least, no definite cyanosis was seen. The remainder, 3.90 per cent., made no comment whatever.

THE REMISSION

The question of remission is an important one, because it is stated as being a characteristic of the dengue infection. Twenty physicians report the percentage of remission noted among their cases. The average is approximately 19 per cent., though the estimates vary between 2 and 60 per cent. for different localities. The percentage of replies, however, shows that remissions were observed very frequently. Thus, 76.27 per cent. of the observers noted a remission, and the remainder, 22.52 per cent., did not.

The number of days that elapsed from the commencement of the fever before the remission occurred varies between 3.2 and 4.9. The general average, taking isolated estimates, is 3.6. Roughly, this means that the remission may be expected on the third or fourth day of the disease.

The remission lasts only a short time, during which the patient may feel comparatively well; it varies from a few hours to a day or more, and the attack begins anew. No reliable data were collected on this phase of the infection, though voluntary statements were occasionally included in the replies. The fact that remissions do occur, the relative frequency of observation, and the period, is of much more importance than the length of the remission. Sometimes the question was answered by the statement that the remissions occurred daily. These replies were taken to refer to the difference between the evening and morning temperatures, and cannot be said to constitute a typical remission as the term is ordinarily understood.

THE ERUPTION

The eruption that occurs in dengue fever is of considerable differential diagnostic importance. It assists materially in deciding whether a patient is attacked by influenza, or whether the physician is dealing with an atypical case of yellow fever. Unfortunately, it is not a constant symptom; 61.86 per cent. of the questionnaires contain the observation.

The rash has been described as morbilliform, scarlatiniform, as resembling the eruption of German measles, as consisting of papules, macules or rose spots, or as being erythematous and petechial. An eruption resembling urticaria is occasionally mentioned. It may appear, or prevail, on the face, forehead, arms, trunk and limbs, or it may be disseminated over the head, face and body and the extensor surface of the arms; it may be localized on the abdomen, the chest, the back or the forehead.

The rash may appear during the febrile period, or it may occur after the fever declines. It generally terminates with desquamation and intense itching.

Though it may be earlier or later, the average period of development is on the fourth day of the disease.

The replies may be divided roughly into three types most frequently mentioned: an eruption resembling measles, which was noted in 18.32 per cent. of the answers; the scarlatiniform, in 5.11 per cent., and the urticarial form in 2.4 per cent. No eruption was seen by 10.51 per cent., and 1.8 per cent. gave no reply.

Thirty-eight physicians report the approximate percentage of their cases in which an eruption of one sort or another occurred. They vary between 5 and 75 per cent., with a general average of approximately 15 per cent.

ICTERUS

The question of the presence or absence of icterus and the day of appearance has some importance. Icterus was noted in 28.23 per cent. of the answers. The remainder of the practitioners did not see it. It seems to have been observed at very different periods of the disease, from the fourth to the seventh day, during convalescence, just after the fever declined, or shortly after it began. Furthermore, it was found diffuse or confined to the sclera and conjunctivae.

"BLACK VOMIT"

In view of the impression that many gained while noting the course of the disease, and of the rumors and reports that "black vomit", so characteristic of yellow fever, was occurring in many cases, it was decided to ask the physicians in general regarding their experience with this symptom. Of the total number replying to the questionnaire, 15.32 per cent. observed "black vomit" in some form, while 84.40 per cent. answered in the negative. Four physicians reported the percentage of their cases, and these figures vary between 2 and 10 per cent., with an average of 6 for the four observations.

It seems probable that some of these instances were true "black vomit" in the sense that the material vomited consisted of blood originating within the stomach itself, acted on by the gastric juice, while no doubt the majority owed the origin of the vomited material to blood from the pharynx, the gums, the nose or the tonsils. What part hemorrhage from gastric ulcer played is, of course, not known; but it will be recalled that hematemesis occurred frequently enough among the gastro-intestinal symptoms to make hemorrhage from the gastric mucosa and the formation of the acid hematin within the stomach, i. e., typical "black vomit," a possibility. The mention of dark colored bile as a constituent of the vomitus leads one to believe that this may have been the reason for the observation in many instances.

DURATION OF THE ATTACK

The length of an attack was often difficult to define with accuracy. Many cases were extremely mild, and seemed to last only one or two days. Probably a large number were complicated with malaria, which appreciably altered the duration and course of the dengue infection.

The average of the duration limits as recorded in the questionnaire replies varies between three and nine-tenths and eight days. The general average of the limits, together with isolated estimates, puts the duration at six days. Probably both results represent fairly correct averages for the duration of the infection, and they are borne out very well by independent averages taken on five series of from sixty-three to sixty-five replies each.

CONVALESCENCE AND RELAPSE

Prolonged convalescence with a greater or lesser degree of depression was observed by 85.59 per cent. of the physicians answering the questionnaire. Only 11.41 per cent. saw no depression, and 3 per cent. offered no reply. Weakness and asthenia frequently followed the attack, and insomnia during convalescence, was comparatively frequent. Convalescence may be prolonged for as much as three weeks.

Relapse was reported in 33.33 per cent. of the questionnaires, and 25.22 per cent. of the replies stated that no relapses had been noted. Some patients are reported as having had dengue before.

EXCEPTIONAL COMPLICATIONS AND SYMPTOMS

There appear not to have been any complications attributable to dengue as the inciting cause. The disease itself, however, was frequently superimposed on some other malady, more especially malaria in those regions in which the latter is particularly prevalent, and, of course, tuberculosis, pneumonia and organic diseases. The deaths due to the interaction of dengue with other ailments will be considered later on.

Exceptional symptoms have occurred only in women. Menorrhagia and premature menstruation were reported a number of times, and it was found by some observers that pregnant patients suffered more severely than others, though there appear not to have been abortions, and the women were delivered at term. Deaths during pregnancy complicated by dengue and other diseases have occurred. In two instances in which blood counts were made, very marked leukopenia was observed.

IS DENGUE AN ABORTED OR ATYPICAL FORM OF YELLOW FEVER?

This is the question on which it was hoped the questionnaire would throw light. In fact, it was rumors of "black vomit" as well as the atypical course so frequently spoken of as not conforming to the textbook description of dengue that instigated the questionnaire. The basis for the tradition of yellow fever succeeding the outbreak of an epidemic of dengue has already been explained.

The overwhelming mass of opinion was negative, there being 285, or 85.59 per cent. of the 333 physicians, answering with a decided no. Nevertheless, twenty-one, or 6.3 per cent., believed that it was, and some of these answers were from those with experience in yellow fever and dengue epidemics in the past. Twenty-three, or 6.91 per cent., were doubtful, and four, or 1.2 per cent., failed to respond.

That the majority opinion must be accepted in this case does not nullify the weighty arguments of others who maintain that the striking similarity of the two diseases in many cases and the mode of transmission by *Aedes aegypti* in both instances indicate not a specific organism for each one, but two organisms belonging either to the same genus or to the same family. The courses of benign and malignant tertian malaria is taken as an analogy in point.

PRESENCE OF STEGOMYIA (AEDES) MOSQUITO WITHIN THE HOUSES

Aedes aegypti, formerly known as *Stegomyia calopus* and *Aedes calopus*, and familiar to large numbers of people by the colloquial terms "little house," "tiger," "day," "calico" and "yellow fever" mosquito, is sufficiently well known to the medical profession of the state to make their replies carry weight. At any rate, if any mosquitoes were detected within the homes by the attendant physicians during their day visits, it is reasonably certain that these were *Aedes*. At any rate, 212, or 63.67 per cent., answer that mosquitoes were found in the homes of the patients, 25.22 per cent. say that none were noted, and 11.11 per cent. were either doubtful whether the species was *Aedes*, or declined to express any opinion.

CAUSES FOR THE DECREASE

Though there may have been some doubt in the mind as to the presence of mosquitoes in the houses of the patients, there is none regarding the causes leading to the decrease in the number of cases in which alterations in weather conditions prevailed or prophylactic measures were adopted. Thus, 44.45 per cent. attribute the decrease to the weather or temperature change; 11.41 per cent. to a combination of weather and screens; 10.21 per cent., to screening, and 0.6 per cent., to mosquito eradication measures. Thirty-one physicians, or 9.31 per cent., attribute the decrease to the fact that all the susceptibles had contracted the disease; 21.62 per cent. know of no definite reason for the decline, and 2.4 per cent. report no decrease.

The answers to this question show that two thirds of the observers believe that weather and screening, including, of course, the isolation of the patients under mosquito bars, as is frequently pointed out in the replies, either considered separately or as acting together, reacted to prevent the spread of the disease and to stamp out the epidemic. It is a tacit admission of the vectorship, regardless of whether they are able to make a positive identification, for the hypothesis of an air-borne dengue epidemic would certainly not be regarded as tenable by the modern physician.

DEATHS ATTRIBUTABLE TO DENGUE

No deaths attributable to dengue as the immediate cause have occurred, though there were thirty-eight in which dengue was a concomitant of some other disease. This is based on the answers of twenty-eight, or 8.41 per cent., of those who replied to this question.

The original diseases, the lethal termination of which dengue appears to have hastened are: kidney trouble, two cases; diseases of the heart and arteries, five cases; cholecystitis, one case; pneumonia, five cases; ileocolitis and gastro-intestinal disturbances in infants, two cases; diabetes, one case; tuberculosis, three cases; meningitis, one case; malaria and pneumonia combined, one case; influenza, one case; pregnancy with gastro-intestinal complications, four cases, and, finally, twelve deaths due to indefinite or undetermined causes, including those patients suffering from exposure, improper care or malnutrition. The ages varied from new-born infants to the aged. It appears that, in general, the latter have borne the infection less readily than younger persons.

SUMMARY

The data obtained from the questionnaires I believe justify the following general clinical picture of dengue fever as it occurred during the epidemic in Louisiana:

The period of incubation or invasion may vary between three and seven days, with an average of five days elapsing from the time of possible exposure until the appearance of the prodromal symptoms.

The prodromes may last from a few hours to about two days as an average, occasionally longer. They may consist of a feeling of indisposition without precise symptoms, or there may be a sensation of chilliness, indefinite aches and pains, a slight headache or a rise in temperature. There frequently is loss of appetite. In approximately 20 per cent. of the reports, the onset without noticeable prodromes is mentioned.

The acute attack is ushered in by a fever, pains, headache or chill, either two or three or perhaps all four of these symptoms being present at the same time. Chill, accompanying fever and pains or fever, pains and headache occurred forty times (12.01 per cent.) among the questionnaires. The headache may be mild or very severe, with a tendency to localization. The pain may or may not be localized in the eyeball, or it may be the muscular and joint pain which is so characteristic.

The temperature during an attack has an average approximate variation between 101 and 104 F., with a general average of 102.5. The higher average variation may be exceeded in isolated cases, reaching, in some instances, 106.

The pulse has usually been found to increase fairly proportionately to the temperature (44.74 per cent.), but many instances of a slow pulse have also been noted (25.53 per cent.). The rate varied between 70 and 150.

The muscular pain was more pronounced than the joint and bone pains, there being 14.42 per cent. accorded to the latter, and 46.55 per cent. of the replies to the former variety. Frequently (37.54 per cent.) bone and muscular pains occurred together and apparently were indistinguishable in degree of intensity. The muscular pains are most frequent in the muscles of the back, and seem to be most pronounced in the lumbar region.

The bone and joint pains are referred to the long bones and to joints more frequently used. There is no sign of acute inflammation of the joints noted.

Conjunctival injection may or may not be present. It is recorded in 71.17 per cent. of the replies.

Oral, nasal and gastro-intestinal symptoms are very frequent. They may consist of coryza, epistaxis, pharyngitis with hemorrhage, and stomatitis; bleeding and ulcerated gums and aberration in the taste sense have been noted. Nausea with intense vomiting of bile and blood are of common occurrence. Further symptoms of gastro-intestinal disturbance are the diarrheal and bloody stools. Gastro-intestinal symptoms predominate to the extent of 38.44 per cent.

A flush or cyanotic condition of the face or chest was noted in 49.25 per cent. of the replies.

Remissions were comparatively frequent, 49.25 per cent. of the answers being in the affirmative. They occurred, as a rule, between the third and fourth day of the disease.

Rash was noted by 206 observers (61.85 per cent.). It is variously described, but the morbilliform and scarlatiniform eruptions were distinguished, respectively, in 18.32 and 5.11 per cent. of the instances. It seems probable that, if the many other forms of rash had been properly described, they would have fallen for the most part within these two categories.

The rash appeared, on an average, on the fourth day.

Icterus occurred with relative frequency; ninety-four, or 28.23 per cent., of the replies note this symptom. The time of its appearance may vary from the second to the seventh day, averaging about the fourth, but these figures are unreliable. It has been known to appear after convalescence had begun.

"Black vomit," which apparently could not be accounted for as having originated from local oral, nasal or pharyngeal conditions, was remarked by fifty-one, or 15.32 per cent., of the observers. The presence of tarry and bloody stools accompanied the hematemesis frequently.

The attack may last from four to eight days, with a general average course of six days. Occasionally the duration was only two or three days, sometimes from eight to ten days, and even longer.

Convalescence was prolonged as a rule (85.59 per cent.), sometimes for two or three weeks. Depression was very frequent. In 11.41 per cent. of the instances, convalescence without marked depression is recorded. One hundred and one physicians (30.33 per cent.) report relapses.

Only twenty-one, or 6.30 per cent., of the observers suspected that the dengue fever epidemic in Louisiana was an atypical or aborted form of yellow fever; the overwhelming majority (85.69 per cent.) do not.

The presence of *Aedes aegypti* within the houses of patients was noted by 63.67 per cent. of the physicians; and, while there is no proof that it is the sole vector, it is doubtless a very active one.

Cold weather and screens were responsible for the decline of the epidemic (66.07 per cent.), while thirty-one replies (9.31 per cent.) indicate that it disappeared because all those in a community who were susceptible had had the infection.

There were no deaths directly due to dengue fever, so far as is known. Of the thirty-eight that were recorded, it was always superimposed on some other disease, though the correct diagnosis of the latter could not always be secured.

CONCLUSIONS

Comparing the general course of dengue fever in Louisiana with the standard textbook descriptions of that disease, the following conclusions seem justified:

1. With one exception, the syndrome as observed by the physicians in general throughout the state conforms very closely to the clinical entity called dengue fever. More or less deviation from the type in many instances does not in any way modify the conclusion.

2. An exception occurred in the remarkably frequent occurrence of gastro-intestinal symptoms, notably hematemesis, regardless of the source of the blood and of melena.

3. While the fact that a few of the practitioners regarded the cases as an atypical form of yellow fever is worthy of consideration, it does not warrant the acceptance of this view; the verification of such an hypothesis would demand experimental evidence.

4. The insect known as *Aedes aegypti* and commonly called the "tiger," "yellow fever," "house," "little day" or "calico" and *Stegomyia* mosquito was the principal if not the sole vector of the disease, and its widespread distribution constitutes an ever present menace, which would be acutely appreciated should one or more unrecognized cases of yellow fever be introduced into the state.

5. The principal causes of the decline and cessation of the epidemic were the sudden change to colder weather which halted mosquito breeding, and screening, including protection of patients by mosquito netting,

or both. It is possible that sanitation and destruction of mosquito breeding places around homes played a rôle.

6. Finally, the death rate from dengue itself has been nil, though as a complication of other diseases dengue may have materially hastened the outcome.

DIAGNOSIS AND RELIEF OF STERILITY

A NEW PROCEDURE *

ARTHUR H. CURTIS, M.D.
CHICAGO

Sterility in the absence of a clinically demonstrable pathologic condition of the pelvis is of common occurrence. It is probable that infection, in contrast with noninfective conditions, may be held responsible for most of these cases, if carefully employed therapeutic measures fail to relieve the sterility.[1]

In further attempts to find evidence of pathologic changes in the pelvis in women who fail to become pregnant, we have carefully searched for minor tubal lesions. A study of fallopian tubes removed from a series of 300 patients revealed that tubes without evident gross alteration, or at the most presenting only slight adhesions, quite often are crippled by healed inflammatory changes of the mucous membrane. Such lesions within the tubes easily escape detection in the operating room; palpable thickening may be wanting, and probing of the tube is a gross procedure at best.

During the last two years, when it has been necessary to open the abdomen of sterile patients, we have employed Luer syringe air inflation of apparently patent fallopian tubes. Under favorable circumstances this simple procedure is helpful in several ways; it reveals the presence of otherwise undemonstrable obstructions within the tube; minor strictures, when discovered, may be overcome by forcible syringe pressure; the anatomic limitations of grossly palpable obstruction, possibly amenable to plastic operation, may be more definitely determined, and, at the completion of plastic operations on the tube, it is possible to test the patency of the reconstructed lumen.

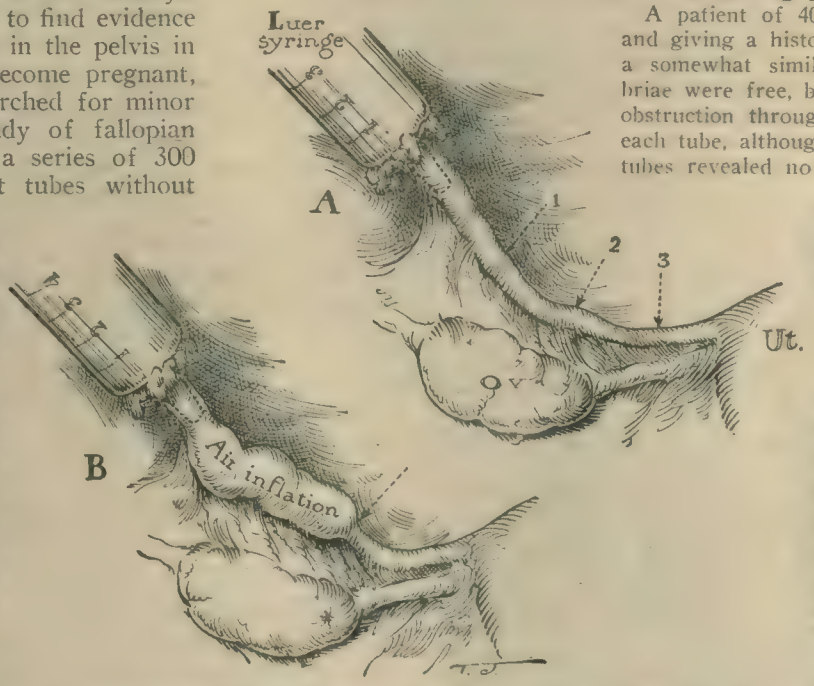
The records of a few selected patients are worthy of brief mention:

In one case of great interest, a woman, aged 34, married four and one-half years, suffered from persistent pelvic pain and complained of sterility. The husband gave a history of chronic gonorrhea, which disappeared shortly after marriage. At operation, the right tube, which was found greatly thickened, distorted and adherent, was removed. The left tube presented a few cobweb adhesions, but otherwise was grossly normal. Syringe inflation of this tube revealed obstruction 3 cm. from the uterus. Employment of considerable additional pressure resulted in free passage of air through the place of constriction, with reestablishment of the lumen. This patient is now eight months pregnant.

On three other occasions, it has been possible to demonstrate moderate obstruction of the tube associated with open fimbriae and freedom from palpable induration.

An illustration of the helpfulness of air inflation in determining the choice of surgical measures is afforded by the case of a patient, sterile since performance of an instrumental abortion, who presented a tube which appeared constricted in only one limited region. Syringe inflation demonstrated much more extensive obstruction than was anticipated, thus contraindicating plastic operation.

A patient of 40, with a uterine fibroid, and giving a history of sterility, presented a somewhat similar condition. The fimbriae were free, but inflation demonstrated obstruction throughout the mesial half of each tube, although direct palpation of the tubes revealed no more than a suggestion of thickening. Plastic operation would have been attempted if inflation had not demonstrated its futility.



A, a grossly normal fallopian tube, such as is often found when surgery, performed for relief of other lesions, permits intra-abdominal examination of sterile patients: *1*, *2* and *3*, points of tubal obstruction which may escape diagnosis by direct palpation; *B*, air inflation of the tube, revealing an obstruction. Additional pressure may overcome moderate degrees of occlusion, with complete reestablishment of the lumen.

COMMENT

If one fallopian tube requires removal, a second slightly diseased tube, suspected of being sterile, need not be sacrificed at the time of operation provided its lumen can be opened to the free passage of air. This conservative measure must, of necessity, be dependent on assurance that the patient will be free from exposure to subsequent venereal infection. Such tubes should be distended wih air only after complete disappearance of infection.

CONCLUSION

Air inflation of the fallopian tubes, by means of a Luer syringe placed at the fimbriated extremity of the tube, is of diagnostic and therapeutic value in selected sterile patients who are being subjected to abdominal operation.

104 South Michigan Avenue.

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* Read before the Chicago Gynecological Society, Jan. 19, 1923.
* From the pathologic laboratory and the gynecologic service of St. Luke's Hospital.

1. Symposium on Sterility, Tr. Am. Gynec. Soc. **45**: 129, 1920. Reynolds, E., and Macomber, D.: Certain Dietary Factors in the Causation of Sterility in Rats, Tr. Am. Gynec. Soc. **46**: 99, 1921.

Household Remedies for Jaundice.—F. Fernández Martínez calls attention to an ancient Greek work which advocates the juice of *Cucumis silvestris*, the wild bitter cucumber, in treatment of jaundice and for pain in the ears and for local application to bruises. The description of its application and action in the days of Cleopatra are almost exactly the same as in our modern pharmacopeia for elaterium. His article is published in *Archivos Españoles de Enfermedades del Aparato Digestivo* **3**:593, 1920.

PROTEIN SENSITIZATION *

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During the college year 1921-1922, a diagnostic and prophylactic study was made of the majority of male students having histories of hay-fever, asthma, eczema or recurring urticaria, at Cornell University. An attempt was made to diagnose these cases by means of allergic reactions to pollen, epidermal, food or bacterial proteins, and to desensitize the students by subcutaneous injections of the offending protein or by having them avoid the offending protein or proteins. The results of both studies are of interest, because of some new additions to the field, and because of their general agreement with the results of other investigators.

HAY-FEVER DIAGNOSTIC STUDY

Of the four kinds of disease studied, hay-fever offered the easiest approach to diagnosis. It was rare indeed to find an uncomplicated spring hay-fever case which did not respond to one or more of the group of pollen proteins which are listed in Table 1. Very satisfactory work was done with the fall cases by the five pollen proteins listed in Table 2.

TABLE 1.—REACTIONS IN FOURTEEN CASES OF UNCOMPLICATED SPRING HAY-FEVER

Pollen	Positive	Negative
June grass	11	3
Red-top	12	2
Orchard grass	9	5
Timothy	10	4
Rose	2	12
Clover	5	9
Daisy	1	13

The tests were made by the cutaneous method, the scratches being kept constantly moist with the pollen protein solutions. Readings of the reactions were taken at the expiration of twenty minutes. The first applications of the pollen protein solutions were well rubbed into the scratches. Since the scratches were kept constantly moist for the twenty minute period, I believe the size of the reactions was larger than if the first applications had been allowed to dry on the scratches before the end of the twenty minute period. Since positive and negative reactions are distinguished by their relative sizes, and since of two pollens belonging to the same botanic family the one giving the larger skin reaction is selected for prophylaxis, it seemed essential to obtain as large diagnostic reactions as possible in order to make the diagnosis and pollen selection for prophylaxis as easy as possible.

TABLE 2.—REACTIONS IN TWENTY-FIVE CASES OF UNCOMPLICATED FALL HAY-FEVER

Pollen	Positive	Negative
Ragweed, short	24	1
Ragweed, giant	17	8
Goldenrod	9	16
Daisy	15	10
Corn	2	23

SIZE OF DIAGNOSTIC REACTIONS

Reactions less than 3/16 inch in diameter were considered due to trauma, and hence negative. Those from 3/16 to 3/8 inch in diameter were called one plus; from 3/8 to 9/16 inch, two plus; from 9/16 to 3/4 inch (size of dime), three plus; from 3/4 to 7/8 inch (size of five cent piece), four plus, and from 7/8 to 1 inch (size of quarter) or larger, five plus.

From Tables 1, 2 and 3 it will be seen that the chief pollen offenders in the spring were the grasses, whereas the ragweeds and the daisy were the chief offenders in the fall. Corn reactions were frequently found in the fall hay-fever cases. These were important in cases of individuals who lived in rural districts or spent the months of August and September in the country. The large size of the corn pollen limits the distance it can be carried by the wind, as noted by Scheppegrell.[1] It is not likely that corn pollen even in the highest winds is blown more than several hundred yards. The limited amount of corn grown in the cities made the corn pollen reaction negligible in persons who spent the months of August and September in the city. Persons who lived in the country districts and showed corn pollen reactions received the benefit of this reaction as a diagnostic factor.

TABLE 3.—REACTIONS IN EIGHT CASES OF COMBINED SPRING AND FALL HAY-FEVER

Pollen	Positive	Negative
June grass	6	2
Red-top	6	2
Orchard grass	5	3
Timothy	6	2
Rose	0	8
Clover	2	6
Daisy	4	4
Dandelion	1	7
Ragweed, short	8	0
Ragweed, giant	6	2
Goldenrod	2	6
Corn	5	3

TABLE 4.—SIZE OF REACTIONS IN FORTY-SEVEN CASES OF HAY-FEVER

Pollen	5 Plus	4 Plus	3 Plus	2 Plus	1 Plus
June grass	2	4	8	3	1
Red-top	1	2	4	7	4
Orchard grass	0	4	4	5	2
Timothy	0	3	8	3	2
Clover	0	0	0	3	6
Rose	0	0	0	0	2
Daisy	0	1	5	8	8
Ragweed, short	8	13	4	3	4
Ragweed, tall	0	1	10	11	4
Goldenrod	0	0	2	5	5
Corn	1	1	2	2	3
Dandelion	0	1	0	0	0

June grass, red-top, orchard grass, and timothy all belong to the family of *Gramineae*. In persons reacting to more than one of these grasses, no attempt was made to desensitize with pollen extracts of all the positive grasses, but only with the one which showed the largest diagnostic reaction. A similar botanic grouping occurs in the plants of the fall hay-fever cases. In persons reacting to members of more than one botanic family, an attempt was made to desensitize with the representative member of each family, as determined by cutaneous tests. It is interesting to note, in Table 4, how the size of the reactions varied in the forty-seven cases studied.

Rose pollen, it is seen, was negligible as a hay-fever factor. Many believed that roses caused their hay-fever, and they often spoke of their spring hay-fever as "rose fever." A negative or small reaction sufficed

* From the Department of Hygiene and Preventive Medicine, Cornell University.

1. Scheppegrell, William: Hey-Fever and Asthma, Philadelphia, Lea and Febiger, 1922, pp. 128 and 159.

to convince them of their error. Goldenrod tests also were superfluous, as the pollen of the goldenrod is sticky, and is not carried by the wind, the plant being insect pollinated. The individual may have had hay-fever if he smelled the goldenrod, but it is more likely that he inhaled some ragweed pollen that had fallen on the goldenrod.

In several cases, I found reactions to the daisy pollen extract alone, and attempts to desensitize with the daisy pollen extract have been effective. Scheppegrell [2] states that daisies "do not cause hay-fever, although a reaction may result in sensitized nostrils by direct contact with the flowers." My patients have not been in direct contact with daisies and have had hay-fever each year until the last, when they received prophylaxis with the daisy pollen extract, with marked benefit. The number of my cases is small, and perhaps their relief was a coincidence, but I am inclined to believe that there is a true daisy pollen hay-fever, occurring without direct contact with the flowers.

HEREDITY IN HAY-FEVER

In my forty-seven cases of hay-fever, 31 per cent. of the patients had immediate relatives who were hay-fever victims.

TABLE 5.—RESULTS OF PROPHYLACTIC STUDY OF FOURTEEN CASES OF UNCOMPLICATED SPRING HAY-FEVER

Pollen Protein Used	Series Completed or Not	Size of Diagnostic Reaction	Percentage of Prophylaxis
1. Red-top	yes	3 plus	75
2. June grass	yes	4 plus	75
3. Clover	yes	2 plus	90
4. June grass and daisy	no	3 plus each	90
5. June grass	no	4 plus	75
6. June grass	no	5 plus	75
7. Timothy	yes	3 plus	75
8. Orchard grass	no	4 plus	50
9. June grass	no	4 plus	75
10. Orchard grass	yes	4 plus	100
11. Orchard grass	no	4 plus	70
12. June grass	no	5 plus	50
13. Red-top	no	4 plus	90
14. Orchard grass	no	2 plus	100

Of Scheppegrell's [3] 1,000 patients, 37 per cent. had immediate relatives who had hay-fever.

The two series agree very well.

PROPORTION OF SPRING AND FALL HAY-FEVER CASES

Scheppegrell's [4] series showed this ratio: 7 per cent. spring; 38 per cent. fall, and 55 per cent. spring and fall combined. These cases covered a wide range of ages.

My series, much smaller in number, and more selected as the patients were, with three exceptions, between the ages of 17 and 25, showed the following ratio: 30 per cent. spring; 53 per cent. fall, and 17 per cent. spring and fall combined.

These figures compare very favorably with Williams' [5] series, which showed a ratio of 25 per cent. spring; 58 per cent. fall, and 16 per. cent. spring and fall combined.

HAY-FEVER

Prophylactic Study.—Hypodermic injections were made at intervals of five days with the specific pollen protein extracts, in dilutions of 1:10,000, 1:5,000, 1:1,000, 1:500 and 1:100. Skin tests of the dilution to be injected were watched for twenty minutes. If any reaction was noted at the site of the test, the previous injection was repeated, in order to prevent any constitutional reaction. The injections were begun approximately seventy-five days before the expected onset of the hay-fever season. The amounts injected were: 1:10,000: 0.1, 0.2, 0.3 c.c.; 1:5,000: 0.2, 0.3, 0.4 c.c.; 1:1,000: 0.2, 0.3, 0.4 c.c.; 1:500: 0.2, 0.3, 0.4 c.c.; 1:100: 1 minim, increased by 1 minim every five days until 5 minims had been given at one time.

TABLE 6.—RESULTS OF PROPHYLACTIC STUDIES OF TWENTY-FIVE CASES OF UNCOMPLICATED FALL HAY-FEVER

Pollen Protein Used	Series Completed or Not	Size of Diagnostic Reaction	Percentage of Prophylaxis
1. Ragweed, short	yes	2 plus	100
2. Ragweed, short	yes	3 plus	85
3. Ragweed, short	yes	5 plus	50
4. Ragweed, short	yes	5 plus	50
5. Ragweed, giant, and clover	yes	2 plus each	50
6. Ragweed, short	yes	4 plus	60
7. Ragweed, short	yes	5 plus	35
8. Ragweed, short	yes	5 plus	10
9. Ragweed, short, and corn	yes	4 plus and 2 plus	50
10. Ragweed, short	no	4 plus	50
11. Ragweed, short	no	4 plus	50
12. Ragweed, short	no	5 plus	25
13. Ragweed, short	yes	5 plus	70
14. Ragweed, short	yes	4 plus	80
15. Ragweed, short	yes	4 plus	100
16. Ragweed, short	yes	4 plus	40
17. Ragweed, short	no	5 plus	95
18. Ragweed, short	yes	4 plus	20
19. Ragweed, short	yes	3 plus	50
20. Ragweed, short	yes	4 plus	70
21. Ragweed, short	yes	3 plus	zero
22. Ragweed, short	yes	4 plus	25
23. Ragweed, short	yes	4 plus	80
24. Radweed, short	yes	5 plus	75
25. Ragweed, giant	yes	3 plus	100

This is the first year that I have used the 1:100 dilution. I believe that it has been of distinct benefit. Some individuals were unable to tolerate this strength, as shown by their skin test of it, and had to be content to stop prophylactic measures when they had received the 1:500 dilution.

I have expressed the results obtained in the prophylactic study, by the percentage of hay-fever relief obtained. This percentage is entirely subjective and is the student's estimate of the amount of benefit he derived from the attempted desensitization. This is not an accurate way of determining results of a scientific procedure, yet in hay-fever studies I know of no better way.

TABLE 7.—RESULTS OF PROPHYLACTIC STUDIES IN EIGHT COMBINED SPRING AND FALL HAY-FEVER CASES

Pollen Protein Used	Series Completed or Not	Size of Diagnostic Reaction	Percentage of Prophylaxis
1. Red-top	yes	5 plus	90
Corn	yes	5 plus	90
2. Clover	yes	1 plus	85
Daisy	yes	3 plus	85
3. Timothy	yes	1 plus	90
Ragweed, short	yes	2 plus	50
4. Dandelion and timothy	yes	4 plus and 3 plus	100
Ragweed, short, and corn	no	4 plus and 3 plus	75
5. June grass	yes	2 plus	zero
Ragweed, short	no	3 plus	50
6. June grass	yes	3 plus	70
Ragweed, short, and corn	no	4 plus and 3 plus	zero
7. June grass	yes	3 plus	70
Ragweed, giant	no	2 plus	100
8. Timothy	yes	4 plus	90
Ragweed, short, and corn	yes	2 plus	40

It can be seen that all but three received 75 per cent. or more of benefit, and that these three did not receive the entire prophylactic series of injections.

The results in the fall series were on the whole not as good as in the spring series; which corresponds with the findings of other investigators.

2. Scheppegrell: Hay-Fever and Asthma, p. 90.
3. Scheppegrell: Hay-Fever and Asthma, p. 117.
4. Scheppegrell (Footnote 1, p. 127).
5. Williams, W. C.: Hay-Fever and Its Treatment with Pollen Extracts, Mil. Surgeon, October, 1921.

Summary of Results.—Of my patients, 12.5 per cent. received 100 per cent. relief; 38 per cent., between 75 and 95 per cent. relief; 31 per cent., between 50 and 74 per cent.; 12.5 per cent., between 20 and 49 per cent., and 6 per cent., little or no relief.

Vander Veer's[6] series showed 25 per cent. entirely relieved, 50 per cent. quite comfortable, 15 per cent. slightly relieved and 10 per cent. not helped.

Williams'[5] series of fall hay-fever cases showed 18 per cent. to have 100 per cent. relief; 27 per cent., 80 per cent. relief; 36 per cent., 50 per cent. relief, and 18 per cent., no benefit.

In general, the three series agree very well.

DIAGNOSTIC AND PROPHYLACTIC STUDY OF ASTHMA CASES

True bronchial asthma is caused by sensitization to some of the proteins of pollens, foods, animal epidermis (including hair, feathers, wool and dander) or bacteria, or to any combination of these proteins.

Hence, the study of the asthma cases was more complex than the stndy of the hay-fever cases. The number of pollen protein tests made was the same in the two diseases; but the number of food protein tests that could have been made were almost limitless. Some of the patients reacted to the protein of a food so common as wheat or milk, others to one so infrequently eaten as mustard or buckwheat.

The tests were made in the same manner as those in the hay-fever cases. Reactions with food proteins usually appeared within an hour, but rarely so soon as with pollen proteins.

In this series of seven asthmatics, it seemed easier to remove the offending food from the diet than to try desensitization with the protein of the food.

REPORT OF CASES

CASE 1.—C. gave positive reactions to horse dander, wheat, tomato, pea, cabbage, bean, mustard, pecan, oyster, rice, short ragweed, giant ragweed, goldenrod and daisy. He received the entire prophylactic series of horse dander protein extract. Shortly after completing this series, we visited the artillery stable to see the effect of the prophylaxis. Within ten minutes, he was as asthmatic as ever. In spite of this attempt at desensitization and of his leaving the offending foods out of his diet, no benefit could be noticed. Self-administration of epinephrin keeps him comfortable after an attack appears. Repeated chest examinations by several physicians failed to show any abnormalities other than a slight amount of emphysema. Recently, his sputum has contained tubercle bacilli and a roentgen-ray examination of his chest revealed a tuberculous process.

CASE 2.—W. reacted markedly to mustard, buckwheat, oats, grapefruit and ragweed, short. An amount of mustard undetectable by taste would produce intense asthma when eaten. He wished to be able to eat mustard, but willingly gave up buckwheat pancakes. I fed him ground mustard mixed with sugar of milk in the form of capsules, dividing the daily amount into three equal parts and placing them each in a capsule. The first daily amount was 2 mg., which was increased by 2 or 3 mg. per day. At 170 mg., he developed asthma immediately after taking the noon capsule (containing one third of the 170 mg.). The amount was reduced to 150 mg. per day and kept there for one week. Then the daily amount was increased to 185 mg., without producing any asthma. At this point, he tolerated mayonnaise dressing without ill effect and soon was able to eat sardines put up in mustard. He now eats mustard in ordinary amounts without having asthma.

CASE 3.—M. reacted only to egg yolk. Omission of all forms of foods involving eggs in their cooking or manufacture failed to relieve him. Tonsillectomy gave him some relief from the asthma, as the attacks were less frequent. A correction, surgically, of several nasal abnormalities completely eradicated the asthma attacks. I believe that the surgery cleared up a focus of infection, the bacterial proteins of which were responsible for his asthma, although he failed to give a positive reaction to the skin tests with the common organisms found in the nose or throat of the majority of persons.

CASE 4.—D. had asthma at all times of the year. He reacted only to corn pollen and to dog hair. He had no dog, nor was there one near his home. There were no articles made of dog hair in his home. He refused corn pollen prophylaxis. He was advised to have some much needed nose and throat correction, but this he has failed to do, and his asthma continues. Bacterial proteins failed to react.

CASE 5.—R., a faculty member, has had asthma almost nightly for at least ten years. He reacted to lamb, chicken, and egg white. Removal of these foods from his diet were of no avail. Physical examination revealed no abnormalities bearing on his condition. His habits of living were gone into thoroughly and somewhat revised, without relief of his asthma. An autogenous vaccine was prepared from his sputum raised after an attack. This vaccine consisted of *Streptococcus hemolysans* and *Staphylococcus pyogenes-aureus,* which in Walker's[7] experience gives good results. It failed to give any relief, after being used over a period of three months. A second autogenous vaccine prepared by Walker promises to give some relief. The attacks now occur only twice a week and are shorter in duration. The patient does not raise any sputum after an attack. The series of vaccine injections are only half completed.

CASE 6.—F. had had asthma for years. It was worse in August and September. He reacted to corn (food), coffee, tomato, lettuce and onion, and to both ragweeds. He did not report until August, but received ragweed prophylaxis during August, September and part of October. He had several asthmatic days in August, but has had none since, a new record for him.

CASE 7.—Mc. had asthma throughout the year, and hay-fever in August and September. He reacted to pork, banana and beans. These were omitted from his diet. He also reacted to chicken feathers and horse dander. Removal of his pillows, which contained chicken feathers, relieved him somewhat. He further reacted to both ragweeds and goldenrod and very slightly to daisy and corn pollen proteins. He received prophylaxis with ragweed pollen protein, which gave him 100 per cent. relief from his hay-fever and marked relief from his asthma. He has graduated from the university, but in answer to a letter states that he has had no asthma since September. He attributes the relief to treatment by one of the drugless practitioners whom he has consulted.

SUMMARY OF ASTHMA CASES

One patient was fed mustard and was entirely relieved of mustard asthma. Two patients were entirely relieved of asthma by pollen protein prophylaxis and by the removal of offending foods from their diets. One patient was entirely relieved by surgical correction of the upper respiratory tract. One patient failed to cooperate, and hence could not be helped. In two cases, the treatment was an utter failure, one patient receiving horse dander prophylaxis plus a corrected diet, the other, a corrected diet plus autogenous vaccine. One of these has since shown evidence of tuberculosis, and the other is responding to a second autogenous vaccine.

This series is too small to form a basis for conclusions; yet it is interesting to note that four out of seven patients, or 55 per cent., received entire relief of their asthma by prophylaxis and improved personal hygiene.

6. Vander Veer, Jr. A.: The Present Status of the Treatment of Hay-Fever and Asthma, Am. J. M. Sc. **164**: 97 (July) 1922.

7. Walker, I. C.: Bronchial Asthma, Oxford Medicine **2**: 239.

ECZEMA AND RECURRING URTICARIA

Protein Sensitization.—Fifteen cases of eczema and recurring urticaria were studied through their reactions to food protein extracts. All of these showed cutaneous reactions to the extracts. The majority of the cases showed multiple sensitizations.

A New Cutaneous Reaction to Food Protein Extracts Seen in Eczema Cases.—This reaction occurs at the site of the cutaneous test and shows itself usually within one-half hour. The appearance is as if the upper layer of epidermis had been removed, leaving a reddish abraded appearing surface, which exudes minute droplets of serum. In some ways, it looks like a minute area of weeping eczema. The lesion does not heal for several days and then becomes covered with the characteristic scab of all abraded surfaces.

I have considered this type of reaction positive, because the omission from the diet of foods giving this type of reaction has been followed by improvement in the eczematous condition.

I have not seen mention of this type in the literature of protein desensitization. I. Chandler Walker [8] states that he has also noticed this type of reaction. He considers it as a positive reaction.

Results of Protein Desensitization.—All foods reacting positively were omitted from the diets of the respective patients. Those patients reacting to foods that were very easily abstained from quickly responded and were soon relieved of their eczema. Those who reacted to foods such as wheat, milk and egg, would improve for a short time and then relapse, probably because of some dietary indiscretion. The average college man does not have a very clear conception of dietetics or of the composition of foods. One student who had been told to eliminate eggs in all forms from his diet did not improve and was quite surprised to find that ice cream and cake contained eggs. Some students would rather have the eczema than live on a restricted diet.

I believe that as good results can be obtained in eczema in adults as have been obtained in treatment of this condition in infants and young children, provided the adult will cooperate rigidly and has sufficient knowledge of the composition of foodstuffs so that he can completely eliminate from his diet the offending proteins.

8. Personal communication to the author.

Diet as a Cause of Constipation.—Unbalanced dietary is a cause of constipation. The effect of this condition is seen most often in infants, but its results are often very noticeable in adults as well. It always results in portal congestions, and eventually in colitis.—R. M. Clarke, *California State J. M.* **21**:23 (Jan.) 1923.

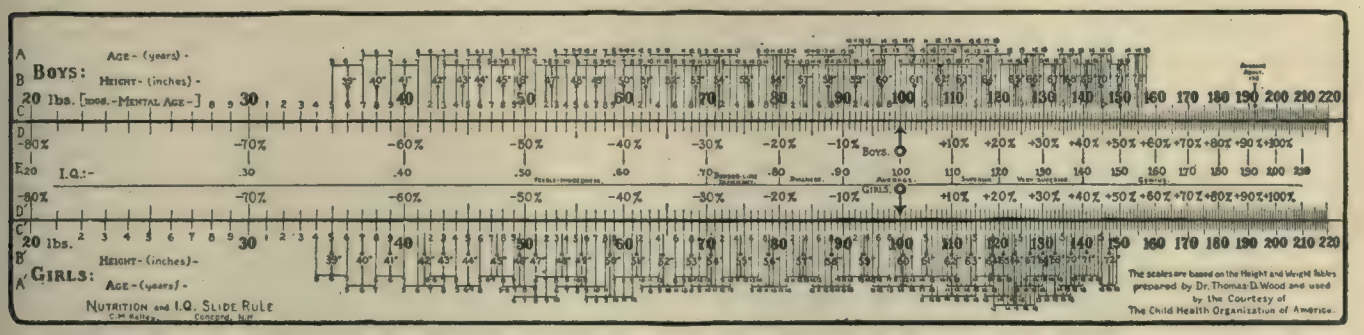
Clinical Notes, Suggestions, and New Instruments

A "NUTRITION" AND INTELLIGENCE QUOTIENT SLIDE RULE

C. M. KELLEY, M.D., CONCORD, N. H.
Medical Inspector, Department of Hygiene, Union School District

This device was designed to simplify the "nutrition" calculations in which deviations from average weights of children are expressed in terms of percentages of such averages. Although the slide rule may seem formidable at first glance, practice with a few examples will disclose the ease and expedition with which such arithmetical problems can be solved, in spite of a multiplicity of factors. It has served as a time saver and as a chart for quick reference during the last two years, and its use has been quickly mastered by clerks and others not accustomed to slide rules.

The data of the design are those of the height and weight tables prepared by Dr. Thomas D. Wood, and the Child Health Organization of America has courteously sanctioned publication in this form. Weights in pounds are represented by a fixed logarithmic scale, with the average weights for respective heights and ages indicated by auxiliary scales. A corresponding logarithmic scale on the slide is graduated to represent



Slide rule for simplification of calculating nutrition and intelligence quotient.

percentages below and above zero. Thus, by setting zero at a given height and age on the fixed scale, i. e., at the average weight, the deviation is read in percentage opposite the actual weight. The standards for boys are represented on the upper part of the slide rule, and the standards for girls on the lower.

The range of the scales lends itself readily to the determination of intelligence quotients by letting the fixed scale represent months, and the scale on the slide, decimals with 1.00 at zero. By setting 1.00 at the chronological age on the fixed scale, the intelligence quotient is found opposite the mental age.

The design is submitted for publication on the recommendation of certain authorities on health conservation, not only for use with the present standards but also as a suggestion which may be employed with other data.

METHOD OF FINDING PERCENTAGE OF VARIATIONS IN NUTRITION CALCULATIONS

1. Set the arrow on the slide (Scale D or D′) at the given height (Scale B or B′).

2. Reset the arrow to the given age for that height (Scale A or A′).

3. Opposite the given weight (Scale C or C′), read on the slide (Scale D or D′) the deviation in per cent. from the average weight for height and age.

Use Scales A, B, C, and D for boys and Scales A′, B′, C′, and D′ for girls.

EXAMPLE.—*Find in per cent. the variation from average weight in the case of a boy 59 inches in height and 14 years of age, who weighs 79 pounds.*

1. Set the arrow (Scale D) at 59 inches (Scale B).

2. As the age mark, 14, Scale A, for this height is at the same point, no correction for age is necessary.

3. Opposite 79 pounds (Scale C), read on Scale D — 14 per cent., indicating that the boy is 14 per cent. underweight.

NOTE.—Variations within a "zone" between 10 per cent. below and 20 per cent. above average weight may be considered satisfactory.

EXAMPLE.—*What is the variation in per cent. from average weight of a girl 51 inches tall and 11 years old, who weighs 82 pounds?*

1. Set the arrow (Scale D) at 46 inches (Scale B).

2. Reset the arrow to the 11-year mark for 51 inches (Scale A'); i. e., at 63 pounds (Scale C').

3. Opposite 82 pounds (Scale C') read + 30 per cent. on Scale D', indicating that the girl is 30 per cent. overweight.

Half pounds may readily be represented in the calculations by taking the reading half way toward the next higher weight mark (Scale C or C'). Half inches in height may be represented by setting the arrow half way between the age mark (Scale A or A') for the whole number of inches in height and the corresponding age mark for the next height.

EXAMPLE.—*A boy, 9 years of age and 46½ inches tall, weighs 45 pounds. Find in per cent. his variation from average weight.*

1. Set the arrow (Scale D) at 46 inches (Scale B).

2. Reset the arrow to 9 years for 46 inches (Scale A), i. e., at 51 pounds (Scale C); and again advance the arrow half way toward the 9-year mark for 47 inches, i. e., at 52 pounds (Scale C).

3. Opposite 45 pounds, the actual weight (Scale C), read on Scale D — 13 per cent.

INTELLIGENCE QUOTIENTS

Let Scale C represent months of age; and Scale E (on the slide), intelligence quotients. Set the arrow (Scale D) at the chronological age in months (Scale C); and opposite the mental age in months (Scale C), read the intelligence quotient on Scale E.

EXAMPLE.—*The mental age of a child 8 years, 7 months (103 months) old is found to be 82 months. Find the intelligence quotient.*

Set the arrow (Scale D) at 103 months (Scale C), the chronological age.

Opposite 82 months (Scale C), the mental age, read 0.79 on Scale E.

THE RUBIN TUBAL INSUFFLATION TEST IN PRIMARY STERILITY *

MURRAY L. BRANDT, M.D., NEW YORK

The tubal insufflation test was performed in a series of fifty-five patients, average age 27 years and average duration of marriage four years, who had never been pregnant. In most cases, the test was repeated several times. Twenty-eight were positive, i. e., the tubes were patent, and twenty-two negative. In five cases that were negative at the first test, patency was demonstrated in subsequent tests. In other words, 40 per cent. of the primary sterility cases showed closed tubes that were an absolute bar to conception.

In twenty-four of the thirty-three cases in which the tubes were patent or became patent, the semen was examined. In sixteen, there were numerous actively motile, well-formed spermatozoa; while in eight, there were either no spermatozoa or a very few nonmotile bodies.

The insufflation test is made according to the original Rubin technic. Carbon dioxid gas is employed because it is quickly absorbed; and with this gas we do not have any cases of prolonged shoulder pain resulting from the presence of gas intraperitoneally. Fluoroscopy must be done soon after the test; otherwise, the gas will be absorbed and will not be seen even if a roentgenogram is taken.

In the cases in which the tubes were patent, the average pressure before the gas passed through the tubes was 110 millimeters of mercury. In some, the gas passed through at a pressure as low as 50, while in others it passed through at 140 and even 160. In these cases, we allow three excursions in the siphon-meter, equal to 100 c.c., to pass into the peritoneal cavity. The patients invariably complain of typical shoulder pain either immediately on rising from the examining table or within a short time, after walking around. It is a positive diagnostic sign to see the patient put a hand to the right shoulder as she sits up on the table after the test is completed.

In those cases in which the pressure rises to 140 or 160, and then drops, there is almost always lower abdominal pain on one or both sides, lasting for a minute or two, while the patient is still in the dorsal position. It seems that in these cases the pressure has been sufficient either to blow out viscid secretions or to straighten out kinks of the tube, or possibly also to overcome some fine velamentous adhesions at the fimbriated end of the tube. In subsequent tests in these cases, the pressure does not rise as high as on the first test.

In twenty-eight cases in which the tubes were patent at the first test, the gynecologic examination revealed: in three, negative findings; in nine, acute anteflexion of the uterus; in seven, retroversion; in six, enlarged ovaries; in one, infantile uterus; in one, parametritis, and in one, endocervicitis.

In five cases in which the tubes were not patent at the first test, they later became patent. One of these patients had considerable lower abdominal pain accompanying two tests resulting in nonpatency. At the third test, the pressure rose to 120 and dropped to 80. The passing of the gas through the tubes was unattended by lower abdominal pain, but was followed by typical shoulder pain, an indication that patency was established.

These five cases indicate that insufflation of the tube may be used as a therapeutic agent in some cases. Apparently, there was a definite occlusion of the fallopian tubes. The high pressure, 200 mm., must have caused considerable distention of the tubes, possibly stretching adhesions and straightening out tortuous tubes. It will be interesting to follow up these cases to see whether any of the patients become pregnant.

Of the twenty-two cases in which the test was negative, there were ten in which the gynecologic examination did not show any gross pathologic lesion to account for the closure of the tubes.

In six cases in which operation was performed, the tubes proved to be nonpatent. The operations were: (1) removal of the left diseased adnexa; (2) trachelorrhaphy and ventrosuspension of the uterus; (3) removal of one tube; (4) Dudley operation and ventrosuspension of the uterus; (5) appendectomy and ventrosuspension, and (6) appendectomy.

Of ten patients on whom dilatation and curettage were performed for the relief of sterility, two had closed tubes, and in two in whom the tubes were closed at first, they later became patent.

It is interesting to note that, in one case, severe abdominal pain followed the insufflation test, which was made on the last day of menstruation, requiring a three days' stay in bed.

Another interesting case was that of a woman in whom, on insufflation, the pressure rose to 140, dropping to 60 mm. She had very severe abdominal pain and was in bed for two days. She returned three months later, not having menstruated since the test. It was found that she was three months pregnant.

In one case of thickened tubes, in which the pressure rose to 160, dropping to 140, the patient had severe pain in the left iliac region, as well as typical shoulder pain. One week later, the patient had a tender mass, the size of a lime, in the right adnexal region, which gradually subsided. There were no other untoward results in this series, although in many instances we allowed the pressure to rise to 220.

CONCLUSIONS

In 40 per cent. of fifty-five cases of primary sterility in which examination was made by the tubal patency test, the fallopian tubes were closed.

In 60 per cent. of these cases, the tubes were patent. In twenty-four of these thirty-three cases, the semen was examined. Sixteen of the specimens were satisfactory, indicating male potency; in the remaining eight, there was either oligonecrospermia or azospermia, i. e., the husband contributed 20 per cent. of the cause of sterility.

Carbon dioxid is the gas of choice in tubal insufflation.

Negative gynecologic examination does not rule out possible closure of the tubes.

Tubal insufflation resulting in demonstrating nonpatency must be repeated three times before it is stated that the patient cannot conceive.

Operations on the genital organs for the relief of sterility are not justifiable without a preliminary tubal patency test.

Tubal insufflation may be a therapeutic agent in some cases of sterility, by making closed tubes patent.

Tubal insufflation should not be done just before, during or soon after the menstrual period.

161 West Eighty-Sixth Street.

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* From the Gynecologic Clinic of Mount Sinai Hospital.

* Read before the Bronx County Medical Society, Nov. 15, 1922.

INTRAVENOUS NEEDLE WITH VACUUM CUP

HENRY W. ABELMANN, M.D., CHICAGO

This instrument is useful for the administration of intravenous medication, such as arsphenamin, for taking blood for various tests, and for blood transfusion or bloodletting, for which the needle was originally devised. The chief and unique feature of the needle is the vacuum cup, which possesses the distinct advantage of absolutely fixing the needle and holding it firmly in place after its introduction into the vein. Every physician who does intravenous work will at once appreciate this feature, as it eliminates the trouble of the needle's slipping out of the vein or becoming dislodged during the operation.

Other important advantages aside from fixation are that:

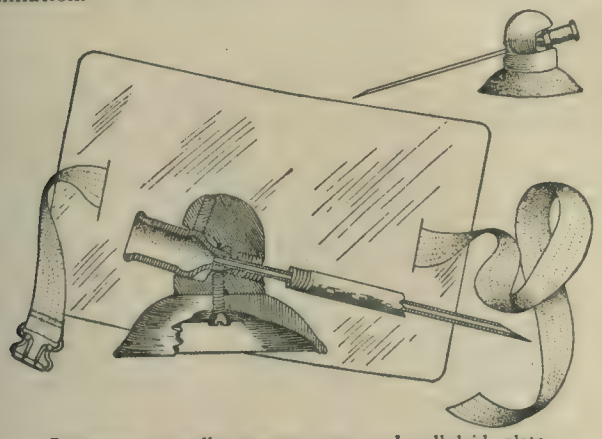
The needle is economical to use, being so constructed that the holder will accommodate any size gage Luer needle. The operator can, therefore, interchange needles easily or replace the old, worn-out needle with a new one.

The needle can be used with any apparatus, thus adding to convenience and economy.

The needle is extremely simple in design, and is easily kept clean and sterilized.

The holder of the needle insures firmness of grasp and precision in manipulation.

Connections can be made with tube or syringe without contamination.



Intravenous needle, vacuum cup and celluloid plate.

The posterior wall of the vein is held down by the combined action of the vacuum cup and the angle at which the needle is placed in the holder. This is of importance because the opening at the needle's end is not so likely to become occluded by the anterior vein wall which is drawn in by aspiration of blood, as is frequently the case with the employment of other needles.

The needle is protected with a sheath so that it can be handled rather carelessly when not in service without fear of dulling the point or contaminating the needle or rubbing off the anticoagulant ointment (citrate ointment) with which I coat the needle. The celluloid plate shown in the illustration makes it possible to apply the vacuum cup needle to any arm.

6152 Kenmore Avenue.

ETHER INTRAMUSCULARLY FOR THE RELIEF OF HICCUP

CHARLES L. GIBSON, M.D., NEW YORK

For the last two years, all cases of hiccup coming under my observation, more particularly after operation, have been treated by the intramuscular injection of 25 or 30 minims of ether. Dr. Allen M. Thomas of New York called my attention to its use in children for stopping the paroxysms of whooping cough, and it occurred to him that it might likewise be useful in the paroxysm of hiccup. If the original dose is not immediately successful, it is repeated one or more times at several hours' interval. Its administration is not painful, and has never been attended with unpleasant circumstances.

The first patient on whom I tried it was an elderly and feeble man who, shortly after a gastro-enterostomy for pyloric stenosis, developed hiccup of moderate severity but of great persistency. The other time-honored remedies had no effect. After the first administration of ether, the hiccups diminished in severity and frequency; the second caused them almost to disappear, and the third was followed by complete cessation.

The method was reported at a meeting of the Practitioners' Society, and from time to time members have reported to me their use of it, with a certain amount of success. It has been successful in probably a third of all the cases in which it has been tried. In some instances, relief after the first administration is almost dramatic, the hiccup stopping at once, without recurrence. The remedy is bound to fail in conditions presenting a definite organic condition, such as intestinal obstruction, uremia and exudate under the diaphragm.

I am aware that the number of remedies for hiccup is numbered by the hundreds, and while it is acknowledged that this is not a cure-all, it certainly is more often successful than anything that I have ever tried.

72 East Fifty-Fourth Street.

ATYPICAL SURGICAL MASTOIDITIS: REPORT OF A CASE

J. L. JOHNSON, M.D., PRESQUE ISLE, MAINE

That surgical mastoiditis may be a grave menace, without any syndrome that would be apparent to a casual examiner, was recently shown by Phillips and Friesner.[1] My impression is that this is more apt to be found typically in adults than in children. The case here reported is, I feel, fairly representative of this condition. Also it is especially interesting from the standpoint of the duration of the process, which by history was three, and to my own observation two months.

REPORT OF CASE

R. J., aged 68, a farmer, seen first, Sept. 9, 1922, complained of deafness in the right ear. One month before he had experienced a sharp, sudden pain in the ear. The canal was washed with warm water, whereupon the pain ceased; but the patient had been deaf in the ear since that time. There had never since been any pain. There had never been any discharge. The patient had no ill feeling of any kind. He had never had any previous trouble with the ear.

Examination revealed a normal canal. There was no drooping of the posterior wall. The drum was very red, and all the landmarks were obliterated. There was no tenderness over the mastoid region or any other part of the head. The temperature and pulse were normal. A myringotomy was advised, but I did not see the patient again until November 10. He still complained only of deafness; his condition had remained unchanged so far as he could tell, except that, the day before, he had developed a slight headache over the right parietal area, and during the preceding few hours he had had a slight feeling of malaise.

The appearance of the canal and of the drum was unchanged. There was a slight amount of tenderness to hard pressure over the antrum. The temperature was 100 and the pulse 104. The patient could hear a conversational voice at 3 feet; bone conduction was increased; on the Weber test the sound was referred to the right.

I sent the patient immediately to the hospital, where roentgen-ray examination revealed a medium sized, clear, pneumatic left mastoid. The right was smaller, very dense and typical of sclerotic bone, except for one large cell continuous with the antrum and extending to the knee of the sinus. This cell was not clear.

Operation revealed a dense, sclerotic mastoid except for the large cell that showed on roentgenoscopy. This cell was filled with granulations and about two drops of free

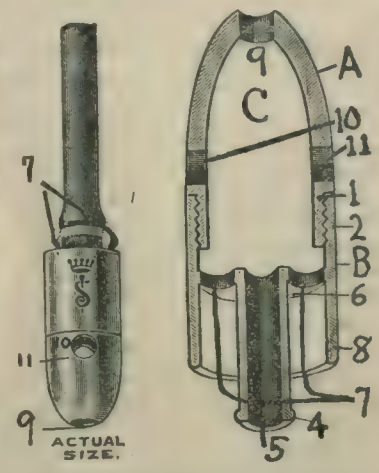
1. Phillips, W. C., and Friesner, Isidore: Report of Five Cases of Mastoiditis with Atypical Symptoms, J. A. M. A. 78: 1796 (June 10) 1922.

pus. The bottom of this cell, however, held what appeared like a partly broken down blood clot. This clot rested on the sinus wall, which, at the knee, was entirely bare over a space about 5 mm. square. The sinus itself appeared normal and filled readily from either end, so I contented myself with a simple mastoid operation. The recovery was rapid and uneventful. The patient now hears a low whisper at 15 feet.

A NEW DUODENAL TUBE AND TIP

N. PHILIP NORMAN, M.D., NEW YORK

Einhorn, Jutte, Rehfuss, Lyon, Palefski, Kohn and Buckstein are names that are associated with apparatus designed for duodenal intubation and drainage. The Einhorn tip is a small, olive-shaped, fenestrated piece of metal. The Jutte tube has a blind tip with the fenestrations in the body of the tube. The Rehfuss tip is a large, olive-shaped tip, with slits leading to the center of the tip and then to the tube. The Lyon tip is pear-shaped, with slits, much the same as the Rehfuss tip. The Palefski tip is globular, with fenestrations through the body of the tip. The Kohn tube has small rubber bags attached, one at the tip and another in an intermediary position on the tube so as to sequestrate a certain portion of the small intestine when the bags are inflated. The Buckstein tube and bucket is simply a Jutte tube to which a bucket is attached by a piece of catgut or silk thread.



Duodenal tip in outward appearance and in section.

There seems to be a widespread interest in duodenal intubation because of its diagnostic and therapeutic possibilities. The efficacy of the procedure is dependent in large measure on the apparatus used. The number of devices on the market suggests that none of them are mechanically perfect. Study of the technic of duodenal intubation has led to the conclusions that there is need of (1) a tube of larger caliber; (2) a tip mechanically constructed so as to prevent closure of the fenestrations by intestinal peristalsis, and (3) a tip that is easily swallowed.

The construction of the duodenal catheter nozzle here illustrated is such that the fenestrations toward the rear remain open regardless of intestinal peristalsis. The cartridge shape of the tip facilitates the swallowing of a large tip without straining the muscles of deglutition. In practice, this duodenal aspirating apparatus has shortened the time of the duodenal drainages.

The tip, or discharge nozzle, in outward appearance resembles a cartridge. It is a hollow shell comprising two separate portions, *A* and *B*, the portion *A* having a reduced flange, *1*, threaded to take into the complementary threaded sleeve *2*, so that, when the parts are assembled, an interior fluid distributing chamber, *C*, is formed. The nipple, *4*, provides a ready attachment for the catheter, and is of materially smaller diameter than the entire nozzle, the conduit, *5*, of the nipple centrally entering the chamber from the rear, while the nipple is mechanically united with the entire nozzle by a spider, *6*, secured interiorly of the ring-shaped portion, *B*, to provide rearwardly discharging and aspirating fenestrations, *7*, which are protected from accidental closure by secretions or folds of the duodenum by means of the overhanging skirt or flange, *8*. Forward and laterad are discharge and intake means for fluids as provided by the usual forward and lateral fenestrations *9*, *10* and *11* formed in the forward portion, *A*.

265 West Seventy-Second Street.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 323)

[NOTE.—This is the sixth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

SPECIAL FEEDING RULES

1. Food requirements which have been recommended must of necessity be considered as relative, variations being to a great extent influenced by the physiologic and anatomic developments and to a not inconsiderable extent by the temperature and humidity of the air surrounding the infant and the type of clothes in which it is dressed.

2. Each day the total amount of food as indicated for the individual infant is to be estimated, in order that the required food and water may be properly administered. The number and amount of feedings will of necessity vary, but each must also be estimated for each day.

3. When a number of infants are to be fed by one wetnurse, careful calculation of the day's needs of each infant must be made by the floor nurse for the information of the nurse in charge of the milk supply.

4. Expression of breast milk should be performed at regular intervals, preferably six times a day at four-hour periods day and night. The sixth expression during the night may, however, be omitted if the supply is in excess. It is only by regular and complete emptying of the breasts by expression that a milk supply can be maintained for an indefinite period, unless there is a second baby which can be placed at the breast.

5. Human, as well as cow's milk, must be obtained under aseptic conditions and kept clean and cool until feeding time. To preserve milk properly, the icebox must register less than 50 F. The food should be slowly warmed before feeding.

6. The amount of water to be fed must be carefully calculated, and it must represent the difference between the total fluids indicated, which will usually average from one eighth to one fifth of the body weight of the infant for twenty-four hours and the amount of fluid given as milk. *The water for each day should be measured and set aside in an individual stoppered bottle each morning.*

It should be administered between the milk meals; or, occasionally, there may be an indication for diluting the milk with part of it. In order to administer the full day's water supply in some of the small infants and those who vomit, it may be necessary to give water in small quantities one, two and even three times between milk feedings. If the infant is unable to swallow properly, water must be given by catheter. In larger infants only a few water feedings a day may be needed, and usually by the second or third week, one seventh or one fifth of the body weight in milk can be fed daily. At this time the water may be discontinued unless it is necessary to supply external heat of considerable degree, or the infant has a fever, both of which necessitate increased amount of fluids.

FEEDINGS AFTER THE TWENTY-FIRST DAY

Usually by the twenty-first day, the food requirements of the infant are quite well established, and a

careful observation of the infant's weight, stools, disposition and, equally important, its body temperature will decide the future requirements.

The water requirement will to a great extent be dependent on the supply of artificial heat and the presence of fever. Ordinarily by the beginning of the fourth week, from one seventh to one fifth (140 to 200 c.c., or from 100 to 140 calories per kilogram) of the infant's body weight in the form of breast milk is needed to maintain proper growth. Rarely is it necessary to exceed these amounts, even in the poorly nourished premature infant. If the physiologic functions are seemingly normal, *the scale* is the deciding factor in indicating food increases or decreases.

As the infant takes on weight and becomes fat with a rounding of the features and the body, as is the case in premature infants successfully fed with breast milk, the total milk administration can be held at one sixth and not infrequently one seventh of the body weight, and normal weight increases may still be maintained.

MIXED FEEDING

When human milk, even though in small quantities, is available, it should form the basis of the diet, and cow's milk mixtures should be supplemental.

ARTIFICIAL FEEDING OF PREMATURE INFANTS

A much higher mortality is to be expected when cow's milk replaces human milk in the feeding of premature infants.

When it becomes necessary to resort to artificial feeding, the quality of the cow's milk and other ingredients, the preparation of the mixture, and the quantity to be administered must all be given careful consideration.

Many different diets, such as simple milk dilutions, cream and skim milk mixtures, skim and buttermilk mixtures, malt soup preparations, condensed milk and evaporated milk, have been suggested. With each food, results are in large part dependent on the physician's knowledge of the results that should follow its use.

Ordinary milk, water and sugar mixtures are not well taken unless, by boiling or alkalizing the mixture, it is so modified that the curd becomes finely subdivided. Our best results have been obtained by the use of low fat and moderately high protein and carbohydrate mixtures.

A boiled buttermilk or skim milk mixture [13] to which dextrinized flour and cane sugar are added may be used to advantage. For use during the first weeks it may be prepared according to the formula given in Table 2.

TABLE 2.—MIXTURE FOR USE DURING THE FIRST WEEKS

Buttermilk or skim milk	1,000
Flour (dextrinized)	10
Sugar (cane)	40

The foregoing formula provides for 16 calories for each ounce, or 540 per liter.

13. The buttermilk and skim milk mixture is thus prepared: To a few tablespoonfuls of buttermilk or skim milk, 2½ level tablespoonfuls of dextrinized flour is added to make a paste. This is made up to 1 liter with buttermilk. (1) The whole is brought to a boil, and withdrawn from the fire. (2) It is brought to a boil again, and withdrawn from the fire a second time. (3) Four level tablespoonfuls of cane sugar is added and the mixture is brought to a boil for the third time. This process should take about twenty minutes. The mixture should be stirred constantly with an egg beater while over the flame. It is made up to 1 liter with boiled water, if the quantity has boiled away to a less amount. It is then put on ice. It is well to start with one-half the amount of sugar and increase as indicated, in the presence of loose stools. Maltose dextrin preparations may be used to replace the cane sugar.

For later use it may be prepared as in Table 3.

TABLE 3.—MIXTURE FOR LATER USE

Buttermilk or skim milk	1,000
Flour (dextrinized)	15
Sugar (cane)	60

This formula provides for twenty calories per ounce or 700 per liter.

All of the rules suggested for feeding with human milk must be rigidly observed both as to quantity and to frequency of feeding. In many instances it will be necessary to increase the diet even more slowly than suggested, and the infants must be carefully observed for evidence of overfeeding. It should also be evident that there is always great danger of underfeeding these infants when on an artificial diet. As soon as the infant's condition warrants the fat-free diet, buttermilk or milk is to be replaced in part by whole milk, or small quantities of cream should be added.

Cream can be added to the foregoing mixtures as indicated in Table 4.

TABLE 4.—FORMULA WITH CREAM

Buttermilk or skim milk	950
Cream, 16 per cent	50
Flour (dextrinized)	15
Sugar (cane)	60

Whenever it is possible to obtain even small quantities of human milk, the artificial food should be used only to supplement the breast milk.

Other Dietetic Requirements.—To counteract the effects of boiling, orange juice feeding should be instituted by the third week, beginning with 0.5 c.c. (8 drops) and increasing from 2 to 4 c.c. (from ½ to 1 dram) daily by the eighth week, in order to avoid scurvy. Cod liver oil as an antirachitic should be fed by the fourth week, beginning with 0.5 c.c. (8 drops) daily, divided into two feedings and increased to 2 c.c. (30 drops) daily by the eighth week. It may be mixed with the orange juice. To counteract the low iron content of these diets, ferrous carbonate, 0.03 gm. (½ grain), or iron and ammonium citrate, 0.03 gm. (½ grain), once daily should be started by the fourth week. The latter may be prescribed in solution.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

THEOPHYLLIN SODIO-ACETATE (See New and Nonofficial Remedies, 1922, p. 357).

Theocin Sodium Acetate.—A brand of theophyllin sodio-acetate-N. N. R.

Manufactured by the Bayer Co., Inc., Rensselaer, N. Y. (Winthrop Chemical Co., New York, distributor). U. S. patent 716,994 (issued Dec. 30, 1902; expired). U. S. trademark 39,135.

A Fairer World Possible.—We have available knowledge and ingenuity and material resources to make a far fairer world than that in which we find ourselves.—Robinson: The Mind in the Making.

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Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, FEBRUARY 10, 1923

HYGEIA: ARE YOU FOR IT?

Next month there will appear on the news stands the first number of the medical magazine for the people—*Hygeia: A Journal of Individual and Community Health.* This journal will be a departure in scope, in character and in make-up from any periodical on health heretofore published. It will not be a "public health" journal—that is, one to appeal to workers in public health; it will be a popular medical magazine. It will not make a special appeal to the intelligentsia or to the scientist, nor will it be a journal to attract the uneducated. It will be a periodical, however, that will make an appeal to the average intelligent layman—the man and woman on the street. And while it is not to be published for the physician, it will, we believe, contain much that will interest him and, occasionally, something that he will find instructive. In any event, whether or not he himself needs it, it will be a periodical that should be on the doctor's reception room table. A special introductory offer to physicians has been appearing in the advertising pages of THE JOURNAL for the last six weeks. The responses are encouraging, but this periodical should have the support of the entire medical profession if, in its introduction to the public, it is to be an immediate success. While it might be introduced through the ordinary channels—and these channels will be utilized—it is surely the duty of the medical profession to support this enterprise. In asking physicians' support, we do not ask for a sacrifice: the actual cost of production of this journal to the Association will be far greater than the introductory price at which it is being offered to them. The periodical will be profusely illustrated and will be printed on coated paper throughout. As it will be issued and offered to the public about the end of the first week or ten days in March, this special offer will terminate on March 1. After that date the regular price will prevail. See advertising page 17, this issue.

THE HISTOLOGIC BACKGROUND OF BRONCHIAL ASTHMA

The foremost symptom of bronchial asthma and the one that most clearly characterizes it is the paroxysmal dyspnea associated with a disturbance of the bronchioles. The offending stenosis of these respiratory channels may come about in several ways: There may be obstruction caused by secretion from the bronchial glands, swelling and exudation of the bronchial mucosa, or spasm of the bronchial smooth muscular tissue. Since the suggestion has been made that asthma is a manifestation of anaphylaxis, which is characterized in certain species by bronchiospasm, the latter possibility has received a prominence in most considerations of the subject which it never had before. However important hypersusceptibility to protein may be in the causation of asthma, the thesis that anaphylaxis will explain every case can scarcely be defended at the present time.

Recently, Huber and Koessler [1] of the University of Chicago have focused attention on other phenomena than the respiratory crisis of asthma by attempting to determine what morphologic background may be associated with the disease. To the few microscopic studies heretofore actually recorded for cases of true bronchial asthma, they have added further histologic observations destined to elucidate the problem of causation to a considerable extent. It appears from their examination of the finer structure of the bronchi that there is a certain parallelism between the clinical picture and the structural changes seen at necropsy. When there was abundant secretion or bronchorrhea, the anatomic picture presented a striking hypertrophy of the mucous gland system of the bronchi. When there was an "unproductive" cough leading to the attacks of bronchospasm, the chief pathologic change was hypertrophy of the smooth muscular system and atrophy of the mucous gland.

The outstanding feature of these studies is the evidence that the actual thickness of the walls of bronchi and of bronchioli of more than 0.2 mm. outside diameter is increased, as compared with similar structures in nonasthmatic persons. This difference, according to Huber and Koessler, is due to increased thickness of all layers from the epithelium to the outer fibrocartilaginous layer. Hyperemia and cellular infiltration of the wall, and increased activity of the glands, lead to swelling and thickening; and this can produce, mechanically as well as chemically, irritation of the peripheral nerve endings in the tube, which may indirectly cause bronchospasm. The abundant secretion of the epithelium and the hyperactive glands obstruct, in some instances completely, the already narrowed lumen of the middle-sized and small bronchi and the bronchioli. In this way the Chicago pathologists conclude that both systems, the exudative and the bronchomus-

1. Huber, H. L., and Koessler, K. K.: The Pathology of Bronchial Asthma, Arch. Int. Med. **30**: 689 (Dec.) 1922.

cular, act simultaneously in the production of the stenosis, in some cases one more than the other, but always both to some extent. The anatomic substratum of the bronchospasm, however, is furnished mainly by the hypertrophy of the smooth muscle fiber system.

ANNOUNCEMENTS ON THE CAUSE OF EPIDEMIC INFLUENZA

Newspapers throughout the United States have carried announcements of the discovery at the Rockefeller Institute of an organism, called *Bacterium pneumosintes,* which it was stated had been shown to be the causative agent of epidemic influenza. The announcement received first page attention in newspapers and the omniscient Arthur Brisbane burst forth in the Hearst papers with a full column Sunday editorial lauding the achievement and calling attention to the significance of the fact that this most recent and possibly greatest of medical discoveries had been broadcast by radio, the most marvelous of recent inventions. THE JOURNAL telegraphed to Dr. Simon Flexner, director of the Rockefeller Institute asking for the facts. Dr. Flexner replied: "The article prepared for the New York State Department of Health consisted of a routine summary of papers by Olitsky and Gates on influenza, published in the *Journal of Experimental Medicine* over the past three years and it was headlined by the state publicity department without my knowledge." After the telegram was sent, THE JOURNAL received the regular "Health News Service" issued by the New York State Department of Health. It was dated February 1 and released for newspapers for Saturday, February 3. The headline read: "Cause of Influenza Discovered at Rockefeller Institute, says Dr. Flexner." It then continued:

> In a radio health talk broadcast from Schenectady last night under the auspices of the New York State Department of Health, Dr. Simon N. Flexner, Director of the Rockefeller Institute for Medical Research, announced the discovery of the cause of influenza as the result of researches conducted by members of the staff of the Institute. Dr. Flexner's statement, as prepared at the request of Dr. Hermann M. Biggs, State Commissioner of Health, follows.

The statement referred to is simply a recapitulation of the articles of Drs. Olitsky and Gates which, as he says, were published in the *Journal of Experimental Medicine* and abstracted in THE JOURNAL. The organism concerned has been isolated from the noses and throats of patients with influenza, during the last three years; it has been successfully cultivated on artificial mediums; and when injected into rabbits it has been found to produce influenza-like symptoms. When injected into the trachea it also produces changes in the lung tissues which the observers believe make the lung more susceptible to attack by the bacteria, chiefly streptococci and pneumococci, which regularly inhabit the throats and respiratory tracts of human beings. The work has not, apparently, been confirmed by other observers, and the organism cannot be said to have been conclusively shown to be the cause of the condition known as epidemic influenza; this is particularly the case, since other organisms have, in the belief of their discoverers, produced similar pathologic conditions.

In the present instance, the newspapers are not primarily to blame for having sensationalized the announcement which they received from the radio. All too frequent, however, are statements concerning discoveries in the treatment of such conditions as cancer, tuberculosis, epilepsy and other menacing diseases, which lead thousands of sufferers to false hope, to the unwarranted spending of money and to the ultimate discredit of real advances in medical science. The need of authoritative sources of information for the public on new medical discoveries was never so great as at the present time.

PLEURAL AND PERITONEAL PAINS

Among the symptoms with which a physician is accustomed to deal, few, if any, approach pain in importance. The sensation of pain directly interests the patient. He requires no special training or complicated apparatus to discover it. Imagination may be its cause, Emerson [1] remarks, but the pain thus produced hurts just as truly as pain produced by a real disease. Pain is only a phenomenon of consciousness; but it is always real, Emerson adds, even that felt in a dream.

Clinicians are familiar with so-called "referred" pains which are localized at some distance from the seat of injury, disease, or stimulation of the nervous tissue responsible for the transmission of the sensation. In certain types of heart disease, pain may be referred to the arm; in gallstone colic the sensation may be projected into the shoulder or elsewhere away from the organ directly involved. Such "projection" of pain may easily lead to errors of diagnosis, so that obviously it becomes of the utmost importance to have adequate information about the subject. It is complicated by the fact that in certain of the interior organs the sense of pain seems to be entirely lacking. Pain and pressure or tactile sensations do not always occur simultaneously; they must therefore not be identified or confused.

According to Capps,[2] in man mechanical irritation of that portion of the pleura which covers the lungs does not cause pain. The parietal pleura, on the other hand, is very sensitive to mechanical irritation, and pain is experienced directly over the spot that is irritated. When the diaphragmatic pleura is touched, the localization of the pain varies according to the portion of the diaphragm irritated. If the outer peripheral portion is irritated, the patient experiences pain over the lower thorax, the lumbar region or the abdomen, localities which correspond to the distribution of the lower six intercostal nerves. When the central portion of the diaphragm is irritated, on the other

1. Emerson, C. P.: Essentials of Medicine, Philadelphia, J. B. Lippincott Company, 1920.
2. Capps, J. A.: An Experimental Study of the Pain Sense in the Pleural Membranes, Arch. Int. Med. 8: 717 (Dec.) 1911.

hand, pain is experienced in the neck above the clavicles, a region that corresponds to the distribution of the nerves coming from the third and fourth cervical segments of the cord. Irritation of the pleura which lines the outer pericardium may also cause pain in this region. While irritation of the pleura lining the thoracic wall causes pain in the immediate neighborhood, irritation of the diaphragmatic pleura causes pain at some distance, either below the thorax or in the neck.

The problem of pain in the peritoneal region is, if anything, even more important in the domain of diagnosis. Reference is frequently made to the classic studies of Lennander,[3] who has maintained that the hollow viscera and the omentum give no sensation response to heat, cold or injury; on the other hand, he found that the parietal peritoneum was sensitive to irritation, especially when inflammation was present. This pain sense he explained by the rich supply of cerebrospinal nerves to the parietal peritoneum and its subserosa, in contrast to the sympathetic nerve supply of the insensitive viscera. Capps and Coleman[4] of Chicago have lately investigated further the localization of pain from stimulation of the parietal and diaphragmatic peritoneum, by direct tests with freely movable probes passed through trocars inserted into the peritoneal cavity for drainage in cases of ascites. The parietal peritoneum, as well as that covering the diaphragm, was found to be devoid of pressure sense when objects are gently applied. However, the parietal peritoneum, and its underlying serosa, so far as explored, namely, all the anterior median areas and the lateral areas as far as the anterior superior spines, are sensitive to pain from strong pressure of a smooth point or light pressure or lateral movement of a rough point of wire. The pain elicited by stimulation of the parietal peritoneum is localized with considerable accuracy by the patient, the error being less than an inch. On the other hand, the localization of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself. It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion produces pain over a sharply limited point somewhere along the trapezius ridge. These impulses, Capps and Coleman suggest further, are doubtless carried by afferent fibers of the phrenic nerve to the cervical cord, and thence referred to the neck by the sensitized cutaneous nerves of the fourth cervical segment. This pain has not been observed along the course of the phrenic nerve itself. Studies of this sort are not easily conducted, and they require careful control. It seems to be well established now that pain from the parietal peritoneum is always direct and not referred, in contrast to that of the diaphragm.

3. Lennander, K. G.: Mitt. a. d. Grenzgeb. d. Med. u. Chir. **21**: 125, 1910.
4. Capps, J. A., and Coleman, G. H.: Experimental Observations on the Localization of the Pain Sense in the Parietal and Diaphragmatic Peritoneum, Arch. Int. Med. **30**: 778 (Dec.) 1922.

VITAL STATISTICS IN PROGNOSIS

It has been well said that prognosis is the map by means of which the physician leads his patient through the barren land of disease. To the patient, a favorable prognosis affords immeasurable courage and fortitude. Still, such figures as 50 per cent. mortality in cerebrospinal meningitis, leave us, in the face of any one case, in a position suspiciously like that of the gamester who knows only that the next turn of the wheel must be red or black; and we must welcome any basis in addition to the clinical picture on which we may prognosticate. Pearl's[1] recent monograph on the biology of death commends itself for this and other reasons.

The death of an individual results essentially from failure of some one organ system, and Pearl has classified the causes of death on the basis of failure of organ systems rather than pathologic agents. Pneumonia, for example, is considered in terms of (and in company of other causes of) failure of the respiratory system rather than in terms of bacterial invasion. Such classification, to possess prognostic value, must be backed by two premises: first, that the inherent strength or weakness of an organ is more important than the specific pathologic agencies in determining whether and when this organ will break down, and, second, that this strength or weakness is directly inherited. Pearl presents much evidence of the truth of each of these premises.

A comprehensive analysis of death rates reveals that "the probability of any particular organ system breaking down and causing death is mathematically definite at each age, and changes in a strikingly orderly manner as age changes."[2] Thus, for the first year the digestive system, from 1 to 60 years the respiratory, and from 60 to 90 years the circulatory system is most likely to give out and cause death. And, further, the death rates in widely separated environments (as the United States, England and Brazil) are essentially the same. Such constancy in time and percentage of organ failure in essentially inconstant environments strongly suggests some determining factor intrinsic to the organs themselves. This factor is the inherited constitution.

Definite correlation data for each organ system between parent and offspring are not yet available, but the closely related correlation of longevity of parent with that of offspring has been amply demonstrated by Pearson[3] and others, and from their figures it has been concluded that the average duration of life of the persons studied was from 25 to 50 per cent. dependent on environmental factors, and from 75 to 50 per cent. dependent on inherited constitution. This germane comparison will emphasize the importance of the foregoing conclusion.

"If all that medicine and hygiene know today were put into reasonably effective operation, and nobody

1. Pearl, Raymond: The Biology of Death, Philadelphia, J. B. Lippincott Company, 1922.
2. Pearl: The Biology of Death, p. 135.
3. Beeton, M., and Pearson, K.: On the Inheritance of the Duration of Life, and on the Intensity of Natural Selection in Man, Biometrica **1**: 50-89, 1901.

died except when and from such causes as could in no way be influenced by what medical science, good environment, etc., have to offer: by how much *then* would the expectation of life be greater than it now is?" Bell has shown, as regards the factor of heredity, that the expectation of life for a person whose parents died at 80 or over is twenty years longer than that for a person whose parents had died at 60 or under. The answer to the question of environmental importance comes from data gathered by Fisher [4] from "a group of the most prominent medical authorities in this country . . . and . . . tabulated in an extremely conservative manner." "The total increase in expectation of life, if Fisher's ratios of preventability were fully realized, is just under thirteen years! . . . No more striking demonstration could be found of the overwhelming importance of heredity in determining duration of life. For if all the deaths which reason will justify one in supposing preventable on the basis of what is now known were prevented in fact, the resulting increase in expectation of life falls seven years short of what might reasonably be expected to follow the selection of only one generation of ancestry for longevity." [5]

Nor is the evidence limited to vital statistics. Experimental studies on the fruit fly have shown that longevity is inherited in accordance with the classical mendelian laws, long and short lived strains segregating out in a perfectly regular manner. And, be it noted in passing, fly populations kept entirely free from bacteria had a slightly shorter average life than those exposed freely to the vicissitudes of a normal environment.

It is manifest from the foregoing that knowledge of a person's heredity—the age of his forebears at death and the causes of their deaths—would be of signal value. This has not been unrecognized in the past, but it has surely been underrecognized. As a slight example of what might be done, the 1918 influenza epidemic might be cited.

It has been shown [6] that the death rate from influenza in thirty-four of our largest cities was significantly related to the preexisting death rate from heart diseases and, except for a possible correlation with latitude, with no other of fourteen variables considered. The inference is that those persons with weak hearts died when attacked by influenza; others recovered. Clinical experience of the desirable action of heart stimulants in influenza is in accord with this conclusion. The prognosis in any case would have been simplified if the family records showed the presence of a sturdy or a weak heart.

A final word is necessary concerning such records. For prognosis and treatment as well as for the broader eugenic and sociological uses, carefully gathered and adequate genealogies will be invaluable. It is to ourselves as the ones from whom the raw data are obtained that we and others must look for the accurate information and leadership necessary to exploit this rich material.

4. Fisher, Irving, cited by Forsyth, C. H.: Vital and Monetary Losses to the United States Due to Preventable Deaths, Quart. Pub. Am. Stat. A. **14**: 758-789, 1915.
5. Pearl: The Biology of Death, p. 165.
6. Pearl, Raymond: Influenza Studies, II, Further Data on the Correlation of Explosiveness of Outbreak of the 1918 Epidemic, Pub. Health Rep. **36**: 273-289 (Feb. 18) 1921. The familial tendency of cancer is well known (Slye, Maud: The Inheritability of Spontaneous Tumors of the Liver in Mice, J. Cancer Res. **1**: 503 [Oct.] 1916), and is another case in which adequate ancestral data would be invaluable in prognosis.

Current Comment

THE PATENT OFFICE—A FEDERAL RIP VAN WINKLE

At various times, in season and out of season, THE JOURNAL has protested against the lack of intelligence shown in the administration of the patent law relative to agents, chemical or mechanical, for the alleged cure or relief of human ailments. In an editorial published June 23, 1917, THE JOURNAL said:

> The splendid conception of the framers of our constitution in providing a plan for promoting progress in science and useful arts by granting to inventors for a limited time the exclusive use of their inventions, in exchange for the publication of full knowledge thereof, is being debased. No branch of our government is of greater importance to the progress of the country than the patent office, provided that office is intelligently administered. When the patent office is used, however, for an extension of the nostrum business, founded on the abuse of patent and trade-mark laws, it becomes a menace to the public health. The objects of the patent law are being defeated by the practices of the patent office.

In January, 1918, there was published a report of the Committee on Patent Law Revision of the Council on Pharmacy and Chemistry. This report, in addition to recapitulating the efforts that had been made for years by the American Medical Association to bring about either an amendment of the law governing the issuance of patents on medicinal preparations or a revision of the procedure under which such patents are issued, also detailed briefly some of the cruder examples of patent office inefficiency in the granting of patents for medicaments without thorough and scientific investigation of the claims advanced by the patentee. THE JOURNAL has at various times called attention to the fact that the United States Patent Office has issued patents on medicinal products that could have been patented in practically no other country in the world. The case of acetylsalicylic acid comes to mind as one of the most flagrant instances. No other country, not even the original home of the preparation, would grant a patent either on the product, acetylsalicylic acid, or on the process for making that product; the United States Patent Office granted patents on both. As a result it was impossible for seventeen years for any one else to manufacture or sell acetylsalicylic acid in the United States and we had to pay more than ten times as much for aspirin as did the medical profession or the public in practically any other civilized country. The propaganda department of this issue details another flagrant case of unintelligent action on the part of the patent office. It concerns the issuance of a patent for a preposterous mixture of squill root, bitter almonds, nettle and red poppy flowers in olive oil,

providing "a remedy which will prove effective in the treatment of tuberculosis." Isn't it about time that the United States Patent Office realized that this is 1923, that we are living in an age of steam trains, telephones and aeroplanes, and that we no longer travel by stage-coach nor practice the voodooism of the witch doctor or the Indian medicine man? The patent office carries a great power for good or evil—good, when it issues patents for devices or substances which will increase national efficiency, and evil, when it grants patents on things the sale of which must operate against the public health. Both common sense and considerations of the health of the public suggest that the patent office, before it issues patents on medicinal preparations, should consult with and get the cooperation of scientific departments of the United States government conversant with medicines and therapeutics.

BAYER 205

Considerable interest has been aroused by reports of the preparation known as "Bayer 205" which is said to be a specific trypanosomicide. Trypanosome infections are not frequent in man but are common in domestic and other animals. Probably one of the best known examples in man is the so-called African sleeping sickness—trypanosomiasis. This disease does not occur in this country and, as may be unnecessary to say here, must not be confounded with lethargic encephalitis, popularly spoken of as sleeping sickness, with which of course it has nothing in common. African sleeping sickness is transmitted through bites of the tsetse fly and is so fatal to horses and cattle that it has been impossible to raise these animals in districts where the fly is prevalent. The remedy is said to have no effect on organisms other than the trypanosomes, even those which are somewhat nearly related such as the spirochetes and those of kala-azar. It is, however, hinted that there are possibilities for other chemical combinations which may extend the sphere of usefulness. Most of the work so far reported with this remedy has been carried out with small laboratory animals, but some has been done with larger animals, and the successful treatment of two cases of human trypanosomiasis is recorded. It is said that experimentation with man and domestic animals is being actively prosecuted in Africa and that the results with mice and guinea-pigs are striking and full of promise. The chemotherapeutic index for mice is said to be 1:60 while that of atoxyl, which has been extensively used in the treatment of these conditions, is 1:2. Warnings are also given that severe toxic results in the form of hemorrhagic, hemolytic, and toxic nephritis may follow its administration to man. The composition of the preparation is secret. It is reported [1] as a "complex organic combination which contains neither mercury, arsenic, antimony, nor other inorganic agent. It belongs to a new group which presents endless possibilities for variation, and hence hope for further results." "Its composition cannot be given more exactly." A hint as to the chemical composition has been discovered by Barger [2] who found that the Bayer Company had secured patents on the "preparation of carbamides of the naphthalene series which are stated to be trypanosomicidal." It is hoped that, in the near future, the nature and composition of this substance will be declared so that scientists will feel justified in undertaking control, study and investigation. For the present the preparation must be regarded as in the experimental stage and it will be necessary to await further scientific data before judgment can be pronounced as to its efficacy and applicability.

1. Mayer, Martin: The New Trypanosome Remedy "Bayer 205" and Its Significance for Chemotherapeutic Investigation, Deutsch. med. Wchnschr. **48**: 1335 (Oct. 6) 1922.
2. Quoted in Prescriber **16**: 252 (July) 1922.

STRYCHNIN AND DISTURBANCES OF THE VISION

The use of strychnin in the treatment of such conditions as amaurosis, toxic amblyopias, optic neuritis of varying origin, headaches from a variety of disturbances of vision, and retinal anesthesia appears to be extensive. Its use in ophthalmology was introduced by Thomas Shortt [1] of Edinburgh in 1830, who applied it directly to blistered surfaces. Textbooks of therapeutics and ophthalmology have perpetuated and even extended the original ideas of Shortt, the claims running from mere assertions regarding the usefulness of the drug in certain eye conditions to statements that it actually increases the acuity and widening of the field of vision within an hour after injection of therapeutic doses. Occasionally there is a statement to the effect that the good results from strychnin are due to psychic influences; and now, ninety-two years after Shortt, it appears that this opinion is probably correct. This is indicated by the completely negative results of Schlagintweit [2] of the University Eye Clinic at Munich under Hess, who took the trouble to ascertain by means of a variety of ophthalmologic tests and proper controls on man and animals whether the claims of Shortt and the extensive practice of French, English and German ophthalmologists are justified. Schlagintweit found that the hypodermic injection of from 2 to 3 mg. in adults did not increase the field of vision for blue and colorless light, or its sharpness. There were no differences in sensitivity to white and colors. The application of 1 and 3 per cent. concentrations of strychnin nitrate up to a total quantity of 12 mg. to the eyes of persons and young rabbits had no influence on the sensitivity to light and the size of the pupil. The anatomic elements, such as the pigment, of frogs' eyes were unaffected. There seems to be no question that the alleged beneficial effects of strychnin in therapeutic doses on disturbances of vision have no foundation in fact, and that any beneficial results that may be obtained are to be attributed to purely subjective or psychic factors which cannot be readily controlled. Thus, the usefulness of objective data instead of wasteful speculation and carelessness, it is hoped, may be learned once again. But, in view of the simplicity of the tests that can be applied, and the practical nature and easy availability of subjects for testing, in this case, it is difficult to understand why it was necessary to wait ninety-two years before a just and reasonable appreciation of the

1. Shortt, Thomas: Remarks on the Treatment of Amaurosis by Strychnine, with Several Successful Cases, Edinburgh M. & S. J. **2**: 415, 1830.
2. Schlagintweit, E.: Ueber Strychninwirkung auf die Sinne, insbesondere auf das Auge, Arch. f. exper. Path. u. Pharmakol. **95**: 104, 1922.

therapeutic usefulness of strychnin in the treatment of disorders of vision was attained. Other agents in other conditions have had a similar history, and if the truth about newer and less promising agents than strychnin is to be known eventually, why not now? For economic, scientific and humanitarian reasons, the answer is obvious.

Association News

THE ACADEMY OF MEDICINE OF ATLANTA, GA.

For many years the Fulton County Medical Society has cherished the ambition to own a home suitably located and of a dignity befitting its purpose. In spite of the financial difficulties involved, the problem was attacked with enthusiasm and the cooperation of virtually every member of the society was secured. The outcome has been the purchase of a spacious building at 32 Howard Street, which has been remodeled to provide an adequate assembly hall, an attractive library, several committee rooms and a number of smaller rooms suitable for offices or living apartments. The name selected is the Academy of Medicine of Atlanta, Georgia.



Home of the Academy of Medicine of Atlanta, Ga.

The first meeting in this new home was held Dec. 7, 1922, when Dr. J. Shelton Horsley of Richmond, Va., delivered an address on "The Relation of Biology to Medicine." The dedicatory services took place, December 15, when the hall was filled to capacity. Rev. C. W. Daniel, in an eloquent address, dedicated the Academy of Medicine to the advancement of science, and to the development of a fraternal spirit and the upbuilding of morale in the medical profession. The assembly hall has been named in memory of the late Dr. Abner W. Calhoun, and was fittingly dedicated by Lucien L. Knight. The library has been named the John C. Westmoreland library, and was dedicated by Bishop Warren A. Chandler. Dr. Westmoreland was one of the pioneers of medicine in Atlanta, founded the Atlanta Medical College in 1853, and assisted in the organization of the Fulton County Medical Society, which has now grown to be the largest medical organization in the South.

The Fulton County Medical Society is proud of its Academy of Medicine, and realizes fully that its establishment marks but the beginning of effort. The aims of the Academy are "to foster a real bond of union among its members, to stimulate scientific study and to be a real home for the medical profession of Atlanta, of Georgia and of the South." Visitors will be heartily welcome, and every effort will be made to create an atmosphere of real hospitality in addition to that of scientific endeavor.

THE SAN FRANCISCO SESSION

Omission from List of Published Routes

In THE JOURNAL, February 3, appeared a list of routes by which physicians may go to San Francisco to attend the annual session of the Association. The Chicago, Milwaukee and St. Paul Railroad was omitted from this list. This route operates trains from Chicago to Spokane, Seattle and Tacoma, and also the Pacific Limited from Chicago by way of Omaha and Ogden to San Francisco.

Automobile Routes to San Francisco

Many motorists in single cars, small parties and motor caravans from various parts of the United States are already in correspondence with the Local Committee on Arrangements. California is the motorists' paradise. Any part of the state is now easily accessible from anywhere. Nothing could be more delightful than to combine vacation and pleasure by coming from anywhere to the annual session by motor. There are four main transcontinental motor road arteries from Eastern and Midwestern states to California.

The Lincoln Highway alone will be traveled by more than 60,000 cars this year. This is the most direct route from New York and Chicago to San Francisco. It passes through Omaha, Cheyenne, Salt Lake City and Reno.

The National Old Trails route is through Kansas City, Trinidad, Colorado, Albuquerque, N. M., Flagstaff, Ariz., Needles, Los Angeles and San Francisco.

The Yellowstone Trail is from Chicago through Milwaukee, Minneapolis, Aberdeen, across Montana, Idaho, and into Seattle or Portland by way of Spokane or Pendleton, and thence down the west coast into California.

Victory Highway makes good California connections from Denver through Salt Lake City. Salt Lake City is the key position between coast cities and most of the main motor arteries from the Eastern and Midwestern states. From Salt Lake City motorists can turn north through Pocatello, Idaho, Boise and Walla Walla to Portland, and thence south over excellent boulevard roads into California, or one can turn south at Salt Lake and follow the Arrowhead Trail through Provo, Beaver, St. George and Las Vegas to the National Old Trail through Goffs, and into Los Angeles and thence to San Francisco.

There are other good routes leading to the coast and into California. Once in the state of California, the motorist encounters a veritable network of splendid roads leading to all cities and points of interest. Those interested in this method of transportation to the session should write for information or help of any character.

Address communications to Dr. W. E. Musgrave, California Headquarters 1923 American Medical Association Convention, 806-809 Balboa Building, San Francisco.

APPROPRIATION FOR SCIENTIFIC RESEARCH

The Board of Trustees of the American Medical Association has made the usual appropriation to further meritorious research in subjects relating to scientific medicine and of practical interest to the medical profession, which otherwise could not be carried on to completion. Applications for small grants should be sent to the Committee on Scientific Research, American Medical Association, 535 North Dearborn Street, Chicago, before March 15, when action will be taken on the applications at hand.

The Dangerous Constitutional Psychopathic Inferior.—Constitutional psychopathic inferiors should be prevented from engaging in occupations that endanger the lives of themselves and of others, especially in work about trains and in a host of other occupations.—William House, *California State J. M.* **21**:29 (Jan.) 1923.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALASKA

Alaska Territorial Medical Association.—A letter from Secretary DeVighne states that, owing to the distances and difficulties of transportation, a meeting of the association will not be held until some time next summer. The officers for 1923 are: president, Dr. Joseph H. Romig, Nenana; vice president, Dr. Remaldo V. Ellis, Ketchikan, and secretary-treasurer, Dr. Harry C. DeVighne, Juneau.

ARIZONA

Personal.—Dr. Harry R. Carson, Phoenix, has resumed his practice after a year's illness, following a nephrectomy.——Dr. Harry Felch, Phoenix, has succeeded Dr. Grant S. Monical as health officer of Maricopa County.——Dr. Douglas S. Duncan, formerly in the Indian Service, Fort Defiance, has been appointed to the Indian School Hospital, Phoenix, to succeed the late Dr. Augustus E. Marden.——Dr. Frederick S. Spearman, Rifle, Colo., has been appointed to take charge of the U. S. Indian Service Hospital, Rice.

CALIFORNIA

Personal.—Dr. J. M. McDonald, San Francisco, sailed from New York, January 22, for a round-the-world cruise.——Dr. Edwin J. Riche has been appointed health officer of Watts.—Col. Robert Stanley, medical officer in charge of the U. S. Veterans' Bureau Hospital at San Jose, has been appointed in charge of the new hospital at Tuskegee, Ala. Col Frank E. Leslie of Fort Mackensie, Sheridan, Wyo., will succeed Dr. Stanley.——Dr. Samuel S. Bogle, Santa Rosa, has been appointed county health officer of Sonoma County to succeed Dr. Fred O. Pryor, who resigned recently.

DISTRICT OF COLUMBIA

Bill for Public Health Work.—A bill passed the House, January 8, containing the following appropriations for the District of Columbia:

Instruction of the deaf and dumb at Columbia Institution, $20,250.
Hygiene and sanitation, $32,700.
Health department, $96,390.
Prevention of contagious disease, $69,000.
Medical charities: Freedmen's Hospital, $42,500; Columbia Hospital for Women, $17,000; Children's Hospital, $15,000; Providence Hospital, $15,000; Garfield Memorial Hospital, $15,000; Central Dispensary and Emergency Hospital, $22,000.
Columbia Hospital and Lying-in Asylum, $15,000.
Tuberculosis Hospital, $75,000.
Erection of nurses home at Tuberculosis Hospital, $35,000.
Gallinger Municipal Hospital, $200,000.
Equipment of Psychopathic Buildings, $10,000.

Memorial to Women.—A bill was introduced by Representative Fess, December 29, by which an appropriation of $150,000 is made as part contribution toward a memorial building in the District of Columbia to commemorate the services and sacrifices of the patriotic women of the United States during the World War. The bill stipulates that this memorial shall cost $300,000 and that it shall be used as a permanent model chapter house of the American Red Cross under the charge of the District of Columbia chapter. Another section specifies that the $150,000 given by the government shall not be available until another $150,000 has been raised by private subscription. The bill was referred to the Committee of the Library.

GEORGIA

Personal.—Dr. John B. Fitts, Atlanta, was recently elected secretary of the Southern Gastro-Enterological Association.——Dr. Stewart R. Roberts, Atlanta, has been elected president of the Southern Hospital Association.——Dr. Alice Moses, Atlanta, has been appointed director of child hygiene of Georgia under the state department of health, to succeed Dr. Dorothy Bocker, who resigned recently to return to her home in New York.——Dr. Roger C. Swint has been appointed superintendent of the Georgia State Sanatorium, Milledgeville, to succeed the late Dr. Lodrick M. Jones.——Dr. Conrad E. Keorper, retired lieutenant-colonel, M. C., U. S. Army, has resigned as acting health officer of Savannah.——Dr. Thomas W. Reid, Jr., Thomasville, was recently appointed physician to Thomas County.

ILLINOIS

Physician Convicted of Fraud.—A verdict of guilty was returned by the jury, January 18, in the case of Dr. John G. Massie of Belleville, accused of operating a confidence game in connection with the sale of stock in the defunct Ilgahoma Petroleum & Gasoline Company.

Habits of Typhoid Carriers Regulated.—In an effort to prevent the recurrence of typhoid fever epidemics traced to carriers and, at the same time, avoid the necessity and hardship of quarantining those demonstrated to be carriers, the state department of public health has drawn up a contract which all known carriers of typhoid fever will be required to sign and comply with in order to escape continuous quarantine. The contract simply constitutes a signed agreement to the effect that the carrier will practice the most rigid personal hygiene rules and will not engage in occupations that make the handling or preparation of food necessary. It further requires a semi-annual report from the carrier to the department and a notice to the local health officer of any contemplated change in address. There are about thirty known typhoid fever carriers in the state at present, and eight of these have signed the contract. The others will be given an opportunity to sign as soon as is practical.

Chicago

Institute of Medicine.—At a meeting of the institute, February 9, Dr. F. G. Banting, Toronto, read a paper on "The Value of Insulin in the Treatment of Diabetes"; Prof. J. J. R. McLeod, Toronto, spoke on "The Physiological Functions of Insulin."

Chicago Medical Society.—At a recent meeting of the Chicago Medical Society, Dr. Martin M. Ritter was elected chairman of a propaganda committee organized for the purpose of arranging for the care and treatment of drug addicts at little or no cost to the sufferers. Need for their care in other than penal institutions was brought to the attention of the council of the society. Other members of the propaganda committee are: Drs. George C. Amerson, William S. Bougher, John William Davis, Robert Emmet Keating, Paul E. Kelly and Clarence L. Wheaton.

INDIANA

"Healer" Convicted.—Hubert E. Habig, who claimed that he had the power to heal all diseases, was found guilty of practicing medicine without a license by Judge Mungovan, at Fort Wayne, January 23, and was fined $200 and costs.

Memorial to Physician.—A campaign for funds will be conducted in Lima for the erection of a $500,000 city hospital, which will be dedicated as a monument to the memory of the late Dr. S. B. Hiner, founder and former president of the present Lima City Hospital, it was recently announced by Mr. Rickoff, president of the board of trustees.

KENTUCKY

Reciprocity with South Dakota and Texas.—The state board of health reports that it has completed negotiations for reciprocity with South Dakota, and has concluded an additional agreement with Texas whereby reciprocal relations exist on the basis of either an examination or a diploma.

MAINE

Public Health Association Issues Booklet.—The Maine Public Health Association has issued a booklet, entitled "The Ten Book or How to Keep Well," and the Metropolitan Life Insurance Company has made possible the distribution of 30,000 copies in Maine. The booklet contains ten subjects pertaining to health promotion, and each subject has ten points. The subjects are: the family physician, the public health nurse, social hygiene, mental hygiene, child hygiene, builders of Maine, your body, your eyes, your teeth, cancer and tuberculosis.

MARYLAND

All Physicians as Health Officers.—Letters have been sent to all physicians in Maryland by the state board of health, containing a copy of a law passed at the last session of the legislature conferring on individual physicians the powers of

a county health officer in cases of emergency. This action was taken in view of the present emergency existing in the large number of influenza cases throughout the state.

MASSACHUSETTS

Cutter Lecture.—Dr. Béla Schick, professor of pediatrics, University of Vienna, delivered the Cutter lecture on preventive medicine at the Harvard Medical School, February 8, on "Prevention and Control of Diphtheria."

MICHIGAN

Illegal Practitioner Arrested.—Miss Erma Parks, chiropractor of Hillsdale, was found guilty in the circuit court, January 16, on a charge of practicing medicine without a license.——Peter Kanss, an itinerant practitioner, was arrested recently in Detroit for practicing medicine without being registered. He pleaded guilty and was fined $100.

Physician's Appeal Refused.—Dr. Joseph C. R. Charest, Detroit, formerly of Plummer, Minn., convicted last June in Detroit for practicing medicine without a license, applied to the supreme court for mandamus proceedings to compel the medical board to indorse his Minnesota medical license. His application to the Michigan board had been refused for the reason that the college from which he graduated is not an accredited medical college in Michigan, and also for the reason that he had violated the medical practice act by practicing in the state prior to registration. His application for mandamus was recently vacated and he has returned to Minnesota.

MINNESOTA

Personal.—Dr. Isaac F. Seeley, Northfield, has been appointed city physician to fill the vacancy left by the death of Dr. John G. Philips.——Dr. Albert H. Parks, Minneapolis, chief surgeon at the Minneapolis General Hospital, has been appointed to the board of public welfare, to succeed Dr. Archa E. Wilcox, who resigned recently.——Dr. James Frank Corbett, Minneapolis, and Stanley R. Maxeiner, Minneapolis, were elected president and secretary-treasurer, respectively, of the Northwestern Medical Officers' Association.

Medical Society's Charter Revoked.—A decision in favor of the Minnesota State Medical Association was filed recently in the Ramsey County Court in answer to the suit brought against the state association in regard to the legality of its action in revoking the charter of the Brown-Redwood Medical Society in 1918. The charter was revoked because of the refusal of the society to expel Dr. Louis A. Fritsche of New Ulm, after he had been pronounced guilty of disloyalty by the state public safety commission. The petitioners asked for a writ of mandamus to compel the state association to reinstate the charter, and Judge Catlin's ruling was made in denying the writ.

MISSOURI

Prof. Lefevre Dies.—Prof. George Lefevre, Ph.D., professor of biology at the University of Missouri School of Medicine, Columbia, since 1899, died, January 24, from pneumonia.

NEBRASKA

Personal.—Dr. Charles W. M. Poynter, professor of anatomy, University of Nebraska College of Medicine, Omaha, spoke on "Pre-Indian Anthropology," before the Douglas County Medical Society, January 23.——Dr. A. C. Colman, Chappell, has been elected to the state legislature.——Dr. Lynch is having his private hospital building at Fairbury remodeled at a cost of $25,000.——Dr. Hamilton B. Lowry, Lincoln, has been elected president of the Nebraska State Historical Society.——Dr. Joseph Bixby, Geneva, was injured recently when his automobile collided with a locomotive tender.

Society News.—At a meeting of the Omaha section of the American Chemical Society, December 19, Dr. Charles F. Crowley, Omaha, was elected chairman.——The Interstate Society of Radiology and Physiotherapeutics was organized at Omaha, December 16. Dr. Charles L. Mullins, Broken Bow, was elected president, and Dr. Roland G. Breuer, Lincoln, secretary-treasurer.——The Lancaster County Medical Society gave a farewell dinner in honor of Drs. Ira H. Lockwood and Harold F. Morrison, at Lincoln, January 18. Dr. Lockwood, for several years roentgenologist at Green Gables, has gone to Kansas City, Mo., and Dr. Morrison will locate in Cedar Park, N. Y.

NEW JERSEY

Chiropodist Fined.—The state board of medical examiners reports that Jennie L. R. Hardy was fined $200 for practicing chiropody without a license, recently.

Hospital Additions.—The new addition at St. Barnabas Hospital, Newark, has recently been opened.——Plans are being made for the erection of new additions to St. Michael's Hospital, the Homeopathic Hospital and the Newark Maternity Hospital, all of Newark.

Personal.—Dr. Michael Vinciguerra has been appointed president of the board of health of Elizabeth.——Drs. Albert Cuskaden and Joseph Poland, both of Atlantic City, sailed recently on the White Star liner *Homeric* for Mediterranean ports.——Dr. Alfred Gordon, Philadelphia, addressed the Cumberland County Medical Society at Vineland, January 23.——Dr. H. Frances B. Tyson has been appointed health officer of Englewood.

NEW YORK

Hospital News.—A $100,000 pyschiatric building at Rochester State Hospital is planned for teaching purposes in connection with the new medical school of the University of Rochester.——The U. S. Hospital Fund campaign, January 14-23, to raise funds for the Rochester General, the Highland and the Rochester Homeopathic hospitals, ended three days ahead of time with $1,300,000, exceeding the quota by $37,000.——Henry A. Bowman of Webster has been appointed superintendent of the Monroe County Tuberculosis Sanatorium, Rochester, at a salary of $3,000 a year. Dr. John J. Lloyd will devote his full time to the medical work of the sanatorium as physician-in-chief.

Society Elections.—The Italian Medical Society of Brooklyn elected Dr. Joseph A. Manzella president for 1923, and Dr. John B. D'Albora, secretary.——At the annual meeting of the Metropolitan Medical Society, Dr. S. Philip Goodhart was elected president; Dr. Herman Schwarz, vice president and Dr. Morris Grossman, treasurer.——Dr. Siegfried Block was elected president of the Brooklyn Medical Society; Dr. Benjamin F. Maggio, vice president, and Dr. Adolf Von P. Fardelmann, secretary.——At the annual meeting of the Erie County Medical Society at Buffalo, December 18, Dr. Charles E. Abbott was elected president; Drs. Marshall Clinton and Charles Borzilleri, vice presidents, and Dr. Levi Franklin Anderson, treasurer.——At the thirty-fifth annual meeting of the Associated Physicians of Long Island, January 27, in Brooklyn, the following officers were elected for the ensuing year: president, Dr. Hough Halsey, Southampton; vice presidents, Drs. Herbert Dana Schenck, Brooklyn, Arthur David Jaques, Lynbrook, L. Howard Moss, Richmond Hill, and W. C. Garvin, superintendent of King's Park State Hospital; secretary, Dr. James Cole Hancock, Brooklyn, and treasurer, Dr. Henry C. Courton, Richmond Hill.

Increase in Alcoholism.—Dr. S. Dana Hubbard, director of public health education of the department of health, has recently made public figures showing that, since the last year before the prohibition law went into effect, there has been a constant increase in this city in the number of arrests for drunkenness, the number of deaths due to wood alcohol poisoning and the number of persons admitted to Bellevue and Kings County hospitals suffering from acute alcoholism. The figures show that during the last year 5,624 persons suffering from acute alcoholism were admitted to those two hospitals, as against 3,345 for the preceding year. Likewise the number of deaths from alcoholism nearly doubled last year. For 1922, the deaths numbered 295 as against 141 for 1921. The number of deaths, however, is smaller than it was in the years preceding prohibition. In 1916, for example, 690 persons died in this city from alcoholism. The low mark was reached in 1920 with 127 deaths but since that time there has been a rapid increase. Dr. Hubbard's figures have been verified by those of the police department, which show that 7,866 persons were arrested in this city for drunkenness in 1922, as against 6,233 in 1921. In 1920, the number of arrests was 5,936. Dr. Hubbard's interpretation of the figures is that prohibition has increased the number of immoderate drinkers, and that those who drink have switched from beer to spirits.

New York City

Physician's License Revoked.—The state board of medical examiners reports that the license of Dr. Leopold Harris was revoked following conviction in the federal courts for violation of the Harrison Narcotic Law.

Evening Clinics at the Post-Graduate Hospital.—Evening clinics in gynecology and in diseases of the nose and throat have been established at the Post-Graduate Hospital. These clinics are held on every Wednesday and Friday evening.

Influenza Warning.—The New York City Health Department has issued a warning urging the public to guard against the spread of influenza. The records of the department show that 131 cases of influenza were reported on February 1, making a total of 1,114 cases since January 1. Most of the cases have been mild.

Farewell Dinner to Dr. Copeland.—Friends of Health Commissioner Dr. Royal S. Copeland, United States Senator-Elect, are preparing to give him a farewell dinner at the Hotel Astor, February 12, prior to his leaving for Washington. George Gordon Battle is chairman of the dinner committee and Bainbridge Colby will act as toastmaster.

New Ambulance for Fire Department.—A new ambulance, especially equipped with pulmotors and other appliances required to meet conditions likely to be met with in those engaged in fighting fire, has been presented to the New York Fire Department by honorary Deputy Chief William F. Kenny. The ambulance, which was designed by Dr. William H. White and Dr. H. M. Archer, cost $15,000 and the donor has provided a fund of $25,000 for its maintenance.

Expansion of Academy of Medicine.—In connection with the announcement that the trustees of the New York Academy of Medicine have acquired an option on a site for a new building at Sixtieth Street and Park Avenue, it is announced that on condition that the members of the academy acquire an appropriate site the Rockefeller Foundation will contribute $1,000,000 for the erection of a new building and that the Carnegie Foundation will contribute an endowment fund sufficient to care for the increased needs of its library and the enlarged educational activities that the institution is planning to carry on.

Cornell University Clinic to Establish Health Clinic.—Dr. G. H. Biglow, director of the clinic of the Cornell University Medical College, announces that it is proposed in the near future to establish a health clinic. Patients will fill out a brief questionnaire in advance and receive a thorough physical examination, especial attention being given to defects of posture, diet and exercise. In the questionnaire the name of the family physician is asked and if need of medical attention is found, the patient is referred to his physician and report of the findings is sent to him. The charge for the examination is announced as $5 and the attending physician is expected to give about forty-five minutes to each examination. Physicians in the clinic doing this work are compensated and, when necessary, follow-up visits are made at the regular clinic rates. As was stated in the notice published concerning the report of this clinic for the first year, the average cost per visit was $2.08 while the average cost to the patient was $1.57. It is stated economies within the clinic are being instituted and the question of increasing the fees is under consideration.

NORTH CAROLINA

Marriage License Bill.—A bill has been introduced into the house by Representative Mabry which provides that no officer charged by law with the issuing of marriage licenses shall issue a license to any male applicant, unless the applicant shall first file a certificate of a reputable physician stating that he is free from all venereal disease (the certificate not to date more than ten days prior to the date of application). The certificate of health shall be filed together with the marriage license as part of the record of the marriage. Any false statement made in any such certificate, or any other violation of the act, shall be deemed a misdemeanor and will subject the offender, on conviction, to a fine of not more than $100 or imprisonment of not more than thirty days, the bill further stipulates.

Public Health News.—For the last four years, the state of North Carolina has had a very effective system of medical inspection of schoolchildren, because provision is made through a small appropriation from state funds for treatment of those children found needing attention on account of remediable physical defects, such as diseased tonsils and decayed teeth. Acceptance of the treatment offered by the state is altogether optional on the part of the parent. In his annual report for the year 1922, Dr. G. M. Cooper, director of the division of medical inspection of schools, states that dental clinics were held in thirty-nine counties and 32,382 children received free dental treatment. More than 40,000 teeth were permanently filled. The work has the unqualified support of the North Carolina Dental Society. Tonsil clinics were held in twenty-eight counties, most of them in sections having no hospitals or throat specialists. In these clinics, 2,488 children were successfully operated on by twenty of the leading specialists of the state. The operations were performed in a temporary hospital equipped with the most modern appliances, including twenty-five beds for the overnight care of the little patients. This equipment is, of course, portable.

OHIO

Obstetricians Elect.—At the annual meeting of the Obstetrical Society in Cincinnati, January 11, Dr. Louis Schwab was reelected president and Dr. Franz Miketta, secretary-treasurer.

Gift to Establish Medical Scholarship.—It was announced at the last board meeting of the University of Cincinnati College of Medicine that a gift of $3,000 to establish a medical scholarship in memory of his wife had been donated by Judge Harry M. Hoffheimer. The annual net income is to be awarded yearly to the graduating student who, on a majority vote of the faculty, is selected as first in rank in scholarship.

OKLAHOMA

Personal.—Lieut.-Col. Arthur M. Whaley, M. C., U. S. Army, stationed at Fort Sill, has been awarded the distinguished service medal in recognition of his work in the care and evacuation of the wounded in France.——Drs. Charles L. Reeder, Robert S. Wagner and Francis C. Myers were unanimously elected members of the board of health of Tulsa, January 19.——Dr. Harvey E. Rappolee, Madill, has been appointed health officer of Marshall County to succeed Dr. Thomas A. Blaylock.——Dr. A. E. Davenport, Oklahoma City, has been appointed state health commissioner of Oklahoma to succeed Dr. Arthur R. Lewis.——Dr. Isaac N. Cottle, Oklahoma City, was recently elected health officer of Oklahoma County.——Dr. George E. Hartshorne, Tulsa, has been appointed county health officer to succeed Dr. C. L. Reeder.

PENNSYLVANIA

Society News.—The Mahoning County Medical Society celebrated its fiftieth anniversary, February 1, by holding a joint meeting with the Lawrence County Medical Society at the Youngstown Country Club. Dr. Charles D. Humes, Indiana University, addressed the meeting.

State Health Commissioner Appointed.—Dr. Charles H. Miner, Wilkes-Barre, has been appointed state health commissioner of Pennsylvania to succeed Dr. Edward Martin. He will have the cooperation of Dr. Victor G. Heiser, New York, who recently declined the position because he wished to retain his connection with the Rockefeller Foundation.

Diphtheria Week.—The public relations committee of the state medical society, at a recent meeting in Harrisburg, planned a "Diphtheria Week" in April, when it proposes to enroll local authorities, school, state, church, business, civic and welfare organizations, industry and labor, in an effort to carry the message of diphtheria prevention and cure to every citizen of the state.

State Society Purchases Home.—The Medical Society of the State of Pennsylvania purchased the property at 230 State Street, Harrisburg, January 23, from Dr. Jesse L. Lanker, for $17,000, it is announced. The society will make a number of improvements on the property; and, after April 1, the offices of the *Pennsylvania Medical Journal* and those of Dr. Frederick Van Sickle, executive secretary of the state medical society, will be moved into the building. The name of the journal will be changed to the *Atlantic Medical Journal* (THE JOURNAL, January 27, p. 262), and the Delaware State Medical Society will unite with the Medical Society of the State of Pennsylvania, in its publication.

Philadelphia

New Quarters for Medical Society.—The offices of the Philadelphia County Medical Society have been moved to the Real Estate Trust Building, Philadelphia.

New Building of Methodist Hospital Opened.—The new building of the Methodist Episcopal Hospital, Philadelphia, was formally dedicated, January 1, by Bishop Berry. Dr. Charles M. Boswell, secretary, also gave an address. It is a five-story building, located at the south end of the administration building. It will increase the capacity of the hospital by providing fifty-two cribs in the children's wards; eighty-four beds in private rooms and thirty-two beds in semiprivate rooms. Mr. and Mrs. Keene provided funds for one of the

children's wards by a gift of $20,000 and Mr. and Mrs. Haddon for the other by a gift of like amount. A donation of $5,000 was received as a New Year's gift, and Mrs. Freeman made a gift of $1,000; an anonymous Philadelphian stated that he will donate $70,000, in addition to the $5,000 he has already given, on condition that the entire cost of the building, $400,000, be secured. The amount to the credit of the new building up to the present is $275,000.

RHODE ISLAND

Society News.—Dr. LeRoi G. Crandon, Boston, chief surgeon of the Boston City Hospital, the Chelsea Memorial Hospital and the Home Memorial Hospital of New London, was the principal speaker at the annual meeting of the Washington County Medical Society at Westerly, January 11. Officers elected for 1923 were as follows: president, Dr. John E. Ruisi; vice presidents, Drs. Francis E. Burke and Michael H. Scanlon, and secretary-treasurer, Dr. William A. Hillard.——Dr. Lee W. Dean, dean of the State University of Iowa College of Medicine, Iowa City, gave an address before the eastern section of the American Laryngological, Rhinological and Otological Society at Providence, January 27..

TEXAS

Hospital News.—Three new units have recently been constructed at the Parkland Hospital, Dallas, at a cost of $525,000. These are the pay ward, the contagious ward and a ward for general cases.——A hospital to be known as the Richmond Freeman Hospital will be erected in Dallas by the First Presbyterian Church, at a cost of $45,000. The contract has already been let.——Bids have been called for the first three units of the Herman Hospital, which is to be erected at Dallas at a cost of approximately $700,000.

VERMONT

Personal.—Dr. Donly C. Hawley of the University of Vermont, Burlington, addressed the physicians of the Rutland County Medical and Surgical Society in Burlington, January 9. Dr. Ralph B. Seeley presided.——Dr. William T. Slayton, Morrisville, has resigned as a member of the state board of health.

WEST VIRGINIA

Personal.—Dr. Melville L. Casselberry, Morgantown, celebrated his ninety-second birthday recently. He has been in practice more than seventy years and still continues his office practice.——Drs. R. H. Edmonson and William B. Scherr, Morgantown, were elected president and secretary, respectively, of the Monongalia County Medical Society at the annual meeting. Dr. Luther S. Brock, aged 78, was made a life member of the society.——Dr. Irvin Hardy, Morgantown, has recently returned from attending clinics in Edinburgh, London, Paris and Vienna.——Dr. Alexander C. Abbott, professor of bacteriology and hygiene at the University of Pennsylvania, Philadelphia, addressed the Ohio County Medical Society at Wheeling, January 12. His subject was "Carriers as a Public Health Problem."

WISCONSIN

Wisconsin Surgical Association.—The next annual session of the association will be held in La Crosse, May 9-10. All members of the state medical society are invited to attend.

Hospital News.—The Portage Hospital, Portage, will reopen in April with Dr. W. J. Thomson in charge. He has been in Chicago taking graduate work and acting as locum tenens for Dr. William S. Fisher, who has gone to India.——A $45,000 hospital will be erected at Edgerton in memory of the men who fought in the World War.

CANAL ZONE

Medical Association of the Isthmian Canal Zone.—The annual meeting of the association was held in Ancon, December 15, under the presidency of Dr. Cornelius D. Briscoe, Ancon. The following officers were elected for the ensuing year: president, Major Edgar A. Bocock, superintendent of the Santo Tomas Hospital, Ancon; vice president, Dr. Raymond W. Runyan of the Panama Hospital, Ancon, and secretary-treasurer, Dr. Dillon G. O'Neil of the Corozal Hospital, Corozal. The secretary reports that Dr. Leland S. Chapman has left the Ancon Hospital and will reside in Los Angeles, and that Dr. Louis Wender of the Corozal Hospital has gone to Brooklyn.

CANADA

Campaign Against Latin Prescriptions.—John Charles Buckley, a member of the Alberta Provincial Legislature, has inaugurated a war against Latin names used by physicians and druggists. Mr. Buckley intends to introduce an amendment to the medical act, requiring the medical profession to eliminate "doctors' English" from their prescriptions.

Society News.—The annual meeting of the Canadian Medical Association will be held in Montreal, June 12-14, under the presidency of Dr. David H. Arnott, London, Ont.——The New Brunswick Medical Society will establish a new precedent this year by holding its annual meeting outside the boundaries of the province. In conjunction with the annual meeting of the Maine Medical Association, the New Brunswick organization will hold a combined meeting at Houlton, Maine, June 12-13.——The next annual meeting of the British Columbia Hospital Association will be held at Penticton, August, 1923.

Hospital News.—The Toronto General Hospital operated in 1922 with a deficit of $68,762, exceeding the deficit of the previous year by $4,000. After some discussion, the board of trustees decided to make representations to the special university committee in connection with the controversy now in progress as to the relations between the university medical faculty and the General Hospital.——On condition that the citizens of Montreal raise $150,000, the city of Montreal and the provincial government of Quebec will establish a $1,000,000 tuberculosis hospital in Montreal, with an endowment representing a cash expenditure of nearly $2,000,000. The Mont LaSalle site and building in Maisonneuve, and cash grants, have already been donated by the city.

Personal.—Dr. Edwin J. Rothwell, New Westminster, president of the Fraser Valley Medical Society has resumed office work following a prolonged illness.——Dr. Gordon S. Mundie, Montreal, sailed, January 15, on the *Megantic* for a cruise to South America.——Dr. Linsly R. Williams, director of the National Tuberculosis Association, has accepted an invitation to lecture at McGill University, Montreal, on "Industrial Work from the Standpoint of Tuberculosis." His will be one of a course given during the spring of 1923 on the general subject of industrial medicine.——Dr. T. O. Martin, Montreal, Que., has been appointed inspector of hygiene for that city.——Dr. H. M. Robinson of Victoria, B. C., has been elected president of the Victoria Medical Society.

GENERAL

American Society for Experimental Pathology.—Dr. Eugene L. Opie, St. Louis, was elected president, and Dr. Wade H. Brown, New York, was elected secretary-treasurer, of the American Society for Experimental Pathology, at the annual meeting in Toronto, recently.

Radiology Journal Changes Title.—Commencing with the January issue, the *American Journal of Roentgenology* will be known as the *American Journal of Roentgenology and Radium Therapy;* when founded in 1906 it was called the *American Quarterly of Roentgenology.*

Relief for German Children.—The American Red Cross, in response to urgent representations by the German Red Cross, has sent $5,000 to relieve distress among German children. Reports from various sources indicate that children in Germany are suffering privation this winter owing to the lack of milk and foods essential to their health.

American Society for Pharmacology and Experimental Therapeutics.—At the annual meeting of the society in Toronto, Canada, recently, the following officers were elected for the ensuing year: president, Dr. Charles W. Edmunds, Ann Arbor, Mich.; secretary, Dr. Edgar D. Brown, Minneapolis, and treasurer, Dr. Hugh McGuigan, Chicago.

Public Health Among the Indians.—A bill passed the Senate, January 5, containing an appropriation of $370,000 for hospitals, for medical treatment and for the care and preservation of public health among the Indians. An item of $25,000 for the suppression of liquor and drugs, including peyote, was struck out.

Commission for Greek Relief Named.—The chairman of the American Red Cross has announced the appointment of Lieut.-Col. William N. Haskell as American Red Cross commissioner to Greece and Major Edmund L. Daley as deputy commissioner. The appointment of a commission to Greece was made on request of Dr. A. Ross Hill, vice chairman in charge of foreign operations, who has been in Greece since October, 1922, in charge of the American Red Cross refugee work.

Bill Proposes Parental Court.—A bill was introduced into the House by Senator Brookhart, January 6, which provides that all children under 18 years of age who commit acts in violation of any of the laws of the United States shall be legally designated as infants. They are taken out of the jurisdiction of the regular criminal courts and placed under a U. S. parental court, established by this bill. The court is given power to act as guardian for such offenders and a United States parental guardian is authorized, to be appointed by the President.

National Health Council.—Plans have been completed for the issuance of bi-weekly bulletins on state health legislation during 1923 by the National Health Council. They will be published by the U. S. Public Health Service with the cooperation of the health council, and will be under the direct supervision of Surg. Mark J. White, U. S. Public Health Service, and Drs. D. B. Armstrong and James A. Tobey, Washington, D. C. The bulletins will be distributed without charge to a mailing list limited to 200, including the state health officers, members of the National Health Council and a few others. The first issue appeared January 20.

American Library Association.—It is announced by the association that a book on "The Hospital Library" will be published if a real demand for such a publication is evidenced by advance orders. The book has been edited and in large part written by Edith K. Jones, general secretary, division of public libraries of the department of education, Boston. The material brought together for the book includes chapters on the scope of hospital library service; hospital library organization and administration; book selection; the medical library; serving the children's wards; stories to read aloud, and a list of more than 2,000 books to meet the needs of hospital patients and nurses. The book will be illustrated with photographs of hospital library rooms, equipment and activities.

A Warning.—THE JOURNAL has published several announcements warning physicians against impostors who have been victimizing physicians in various cities by representing themselves as visiting physicians who have been unfortunately robbed and who desire to obtain money for transportation home. This particular method of securing money has been worked in Philadelphia, St. Paul, St. Louis, Chicago, Milwaukee and other cities. A letter has just been received from Dr. Jacques Holinger, Chicago, stating that among recent victims have been Dr. Vilray P. Blair, St. Louis; Dr. Harry Ritchie, St. Paul; Dr. Robert Ivy, Philadelphia, and Dr. G. V. I. Brown, Milwaukee. Physicians should be on the lookout for any one personally unknown to them who desires to borrow money under the name of a physician; it would be desirable to apprehend and cause the arrest of the impostors.

National Industrial Conference Board.—The thirty-sixth annual meeting of the Conference Board of Physicians in Industry was held in New York, January 20, under the presidency of Dr. John J. Moorhead. Among the subjects discussed was that of industrial medical records and roentgenray examinations. In a report submitted on the roentgenray examination of the chests of more than 3,000 employees in one factory, it was stated that, by refinements of technic, it had been possible to make these exposures at the rate of about one per minute. A specially devised caliper was shown for measuring the depth of the chest, thus enabling a more accurate exposure. This study showed that 3.7 per cent. of those examined had positive or suspicious symptoms of pulmonary tuberculosis; 3.2 per cent. presented abnormalities of the heart or aortic arch, and 0.8 per cent. had miscellaneous chest abnormalities; a total of 7.7 per cent. of those examined having some abnormality of the chest.

National Hospital Day Committee.—E. S. Gilmore, superintendent of the Wesley Memorial Hospital, Chicago, has been appointed chairman of the national hospital day committee to succeed Dr. Lewis A. Sexton, superintendent of the Hartford (Conn.) Hospital. Dr. Malcolm T. MacEachern, superintendent of the General Hospital, Vancouver, B. C., Canada, who is on a year's leave of absence to conduct a survey of Canada for the Victorian Order, succeeds Mr. Gilmore as vice chairman and is Canadian director for the movement. C. J. Cummings, superintendent of the Tacoma General Hospital, and Dr. Albert S. Hyman, superintendent of the Mount Sinai Hospital, Philadelphia, are the two new members appointed to the committee, of which Dr. Hugh S. Cumming, surgeon-general, U. S. Public Health Service, is also a member. The committee has issued the first call for names of hospitals planning to observe the third annual hospital day, May 12, 1923. Suggestions for programs and other information will be sent, on request, by the secretary, Matthew O. Foley, 537 South Dearborn Street, Chicago.

Carnegie Corporation.—A remarkable group of varied activities, together with gifts during the last eleven years of nearly $58,000,000, is disclosed in the annual report of the Carnegie Corporation, made public, February 5. The major interests at present receiving support wholly or largely from this corporation are: the Institute of Economics, Washington, D. C.; the food research institute at Stanford University, San Francisco; the National Research Council, Washington; the Potter Metabolic Laboratory, Santa Barbara, Calif.; the American School of Classical Studies, Athens, Greece. A total of $5,254,000 had been paid to beneficiaries during the year ended, September, 1922, of which $2,578,000 went to universities. Of nearly $58,000,000 expended during the eleven years of the corporation's existence, $23,415,000 has been given to Carnegie institutions: the Institute at Pittsburgh, the Foundation in New York, and the Institution, and the Peace Endowment in Washington, D. C. Schools and colleges have received $9,276,000; medical and health education, $3,266,000, and scientific research, $1,511,000. It is announced that the board of trustees will be enlarged from ten to fifteen members. The assets of the corporation amount to $130,000,000, which will be increased by about $10,000,000 on the final settlement of Mr. Carnegie's estate.

Importation of Narcotics Temporarily Suspended by Control Board.—Temporary but complete suspension of all applications to import narcotic drugs into the United States was put into effect this week through an order issued by the federal Narcotics Control Board. The official notice was sent out to all persons permitted under the law to import narcotics, including manufacturers actually engaged in manufacturing from crude opium or coca leaves products for the wholesale trade, for medical or other legitimate purposes. This step was taken to prevent the legal importation of narcotics until the board can determine the amount needed by the United States during the year for "medical or other legitimate purposes." Notice that the embargo has been laid down has been sent to all persons permitted to import, in the form of invitations to attend hearings in Washington looking toward determination of the amount of drugs needed for this country during the present year. The board consists of the Secretary of State, Secretary of Treasury and Secretary of Commerce. Decision to exclude all imported drugs under the act was declared by Mr. Hayward, secretary to the Narcotic Control Board, to be an important and far-reaching step in the war on narcotic drugs. As the importation of all narcotics except crude opium or coca leaves was prohibited by the Jones-Miller Act of May 26, last, leaving only two raw materials importable under the law, the action of the board effectively shuts down completely on all importations whatever of narcotic and habit-forming drugs into the United States. Under the Jones-Miller act such drugs as heroin, codein and cocain were prohibited from import under any conditions, only the crude materials being admitted by permission of the Federal Control Board.

LATIN AMERICA

Yellow Fever Eradicated from Peru.—It is announced by Dr. Henry Hanson, director of public health for the Republic of Peru and of the Peruvian yellow fever campaign carried out by the Rockefeller Foundation and the government, that Peru is free from yellow fever for the first time in history. There have been no cases reported since August, 1921, so practically the whole western coast of the Western Hemisphere may be said to be cleared of the disease.

FOREIGN

Clinical Research Association.—The *Journal of the Clinical Research Association* (Great Britain) has resumed publication for the first time since 1915. An improved design has been adopted, and, in addition to the scientific literature, space is now available for correspondence. Comments will be welcomed.

Alory-Gillois Prize.—The School of Medicine, Nantes, has offered a prize of 800 francs, with a medal, for the best essay on "Pulmonary Phthisis." The essay must be written in French, and the author's name enclosed in an envelop together with his qualifications. Competitors should forward their work to the Secretariat de l'Ecole de Médecine, Nantes, before June 30, 1923.

Personal.—Prof. C. Firket, of the chair of pathologic anatomy at Liége, has been elected president of the Royal Academy of Medicine at Brussels.——Dr. L. Asher, professor of physiology at the University of Berne, Switzerland, is planning to visit this country in the spring to deliver some addresses in medical centers.——Dr. B. A. Nocht, director of the Institute for Marine and Tropical Diseases, at Hamburg, has been asked to join the public health council of the League of Nations, and has gone to Geneva to take part in the discussions.——Dr. Gräff, privat-dozent for pathologic anatomy at the University of Heidelberg, has been invited to deliver a course of lectures in Japan.——Dr. Fedor Krause, professor of surgery at the University of Berlin, has returned from a long visit to South and Central America, his second visit within three years.——Dr. H. García Lagos, chief surgeon of the British Hospital at Montevideo, who has been visiting in this country, sailed from New York for Europe on the *America*, January 20.

Lisbon's Institute for Scientific Research.—A Portuguese merchant, who had amassed a fortune in Brazil and returned to Lisbon to live, recently bequeathed his fortune to found an institute for scientific research, naming Prof. Ferreira de Mira as the one to have charge of the institution. No specifications as to site, scope or other details were made, and no scientists knew of the provisions of the will in advance. As Prof. Ferreira de Mira had no personal acquaintance with the testator, and as he is the incumbent of the chair of biology, the council that was organized by the state for the creation of the institute decided that Lisbon should be the location, and the biologic sciences the field of the Bento da Rocha Cabral Institute for Scientific Research. The *Medicina Contemporanea* gives the details of the undertaking, and congratulates the country on this son, who was not only philanthropic but supremely intelligent. "He realized that the basis for all progressive civilization is in the development of the sciences, creating better conditions of living for all classes." The money will soon be available, and work will be begun at once.

Medical News from South Africa.—At a meeting of the Eastern Province Branch of the British Medical Association, held under the presidency of Dr. W. Duncan Miller, it was resolved to ask the South African Medical Association to meet in Grahamstown in 1924 instead of in October, 1923, as previously arranged.——Dr. T. W. Lowden of Johannesburg, was found dead from hyoscin poisoning (suicidal intent being indicated), December 19.——Dr. J. A. Kesier has been appointed medical inspector of schools for the Transvaal, to succeed Dr. Leipold.——The foundation stone of a new tuberculosis clinic was laid in Johannesburg in December by the mayor of the city.——Dr. Mackenzie has been appointed lecturer on skin diseases at the new University of Witwatersrand.——A limited liability company is reported to have been formed at Cape Town for the purpose of taking over a large, established undertaking business, with the object of combining with the business a funeral club and a medical aid branch, through which people will, for a fixed subscription, receive medical attention in case of illness, and burial in case of death. Of the three provisional directors, one is a physician and one a dentist.

Deaths in Other Countries

Dr. **David L. Davies,** justice of the peace and mayor of Neath, Wales.——Dr. **J. B. Haycraft,** emeritus professor of physiology at the University of Wales, aged 65.——Lieut.-Col. **A. A. Lyle,** R.A.M.C., at Douglas, Isle of Man, Jan. 9, aged 67.——The death is reported of Dr. **Johannes Orth,** Virchow's successor as director of the Pathology Institute at Berlin, professor emeritus of pathologic anatomy at the University of Berlin, and president for many terms of the Berlin Medical Society, aged 76. He read a paper on "Pathology and Its Relation to Other Sciences," at the St. Louis International Congress in 1904.——Dr. **José Madinaveitia,** the leading internist and psychiatrist of Bilbao.——Dr. **A. Carruccio,** professor of zoology and parasitology at the University of Rome.——Dr. **E. Cavazzani,** professor of physiology at the University of Ferrara.——Dr. **W. Hauser,** prominent in the public health service of Baden, aged 73.——Dr. **A. Kirstein,** noted for his autoscopy of the larynx. He retired from the practice of medicine some time ago to devote himself to painting.——Dr. **O. Dornblüth,** author of textbooks on internal medicine, psychiatry, dietetics and neurology, proprietor of a sanatorium at Wiesbaden, aged 62.——Dr. **A. Paetz,** director of the state institution for the insane at Alt-Scherbitz, aged 71.

Government Services

Shortage of Navy Medical Officers

Difficulty is being experienced in filling vacancies in the Medical Corps of the navy. A campaign is being inaugurated by the navy department for the purpose of inducing civilian physicians to enter the navy service. Letters are being sent out calling attention to the opportunities afforded. The shortage of medical officers has prevented the Surgeon-General of the navy from carrying out plans for advanced educational courses. Notwithstanding this shortage, several medical officers are undergoing special study and instruction in advanced professional work at the Massachusetts General Hospital, Boston, and at the Mayo Foundation at Rochester, Minn. Regular classes of navy medical officers are being assembled for a graduate course at the Naval Medical School in Washington, D. C., and in the army school for flight surgeons at Mineola, L. I. In connection with the class to be sent to the latter school, Surgeon-General Stitt is desirous of receiving applications for assignment to the next class, to replace the present class of eleven officers now taking the course. Flight surgery has become an important activity of the Naval Medical Corps. Sixty-five medical officers will be assigned for duty in the aviation branch of the naval establishment.

Chemists Awarded Medals

Distinguished service medals for meritorious work by officers in the Chemical Warfare Service serving with the Expeditionary Force during the World War were awarded to chemists who were connected with or assigned to the dangerous work of coping with the deadly effects of gas in both defensive and offensive warfare. The officers selected are cited for marked scientific attainments. The list includes: Cols. R. F. Bacon and E. W. Johnston, Corps of Engineers; Col. J. W. Schulz, Chemical Warfare Service; Lieut.-Cols. J. H. Hilderbrand, B. C. Goss and H. L. Gilchrist, Medical Corps; Lieut.-Cols. G. W. Lewis, R. M. Smith and J. E. Zanett, Chemical Warfare Service; Major S. Karl Connell, Medical Corps, and A. M. Prentiss, Chemical Warfare Service.

New Bill Follows President's Veto

The new Senate bill providing for increased pensions for veterans, their widows and nurses, of the Mexican and Civil wars was favorably reported to the Senate this week by the Committee on Pensions. It eliminated many objectionable features that caused President Harding to veto a similar piece of legislation that had passed both the Senate and the House.

Veterans' Bureau Medical Corps

In retiring as medical director of the Veterans' Bureau, Lieut.-Col. R. U. Patterson advocated the establishment of a medical and dental corps for the bureau. He paid high tribute to the cooperation in the medical division of the bureau by medical officers in other branches of the government and by civilian physicians, but said the "salvation" of the medical department of the Veterans' Bureau lay in establishing and maintaining its own corps of medical and dental officers. He pointed out the necessity of keeping high the standards of the medical personnel of the bureau, and expressed the belief that this could best be achieved if appointment to the corps were made by strict examination only.

Medical Supply Depots

Pursuant to instruction of the Secretary of War, the organization of an army medical supply depot, organized reserves, to be known as Army Medical Supply Depot No. 16 (Fourth Corps Area Unit) has been authorized; also Base Medical Supply Depot No. 3 (Illinois State Unit); Army Medical Supply Depot No. 18 (Eighth Corps Area Unit) and Army Medical Supply Depot No. 17 (Eighth Corps Area Unit).

Bill for Retirement of Emergency Officers Tabled

The Bursum bill, authorizing the retirement of disabled volunteer and emergency officers who served during the World War on the same basis as Regular Army officers

with reference to pay, allowances and other privileges, was defeated in the House of Representatives Committee on Military Affairs by a vote of 8 to 7. The measure passed the Senate several months ago. It is one of the pieces of legislation being urged by organizations of World War veterans, including the American Legion. A party caucus was recently called in the House to consider the advisability of passing the bill, but no action was taken, because of lack of a quorum.

Status for Sanitary Engineers

A bill was introduced into the Senate, December 27, by Senator Watson of Indiana which provides that sanitary engineers of the U. S. Public Health Service shall be appointed and commissioned in the regular corps of the service with the same pay, allowances and rank as medical officers.

Evacuation Hospitals Authorized

Pursuant to instructions of the Secretary of War, the organization of the following hospitals has been authorized: Evacuation Hospital No. 22 (Milwaukee Surgical Society Unit, Milwaukee); Evacuation Hospital No. 4 (Washington University School of Medicine, St. Louis), and Evacuation Hospital No. 1 (Johns Hopkins Hospital Unit, Baltimore).

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 15, 1923.

Differentiation of the School Curriculum for Boys and Girls

The Consultative Committee on the Differentiation of the Curriculum for Boys and Girls in Secondary Schools, whose operations were suspended during the war, has now presented a report. The committee was appointed by the board of education. It consists mainly of educationists, but includes Dr. J. G. Adami, chancellor of the University of Liverpool, formerly professor of pathology at McGill University. Though the problems are educational, they have an important medical aspect. In consequence of the eminence of the members and the thorough nature of the inquiry, the report will long remain the most authoritative pronouncement on the subject. It begins with an exhaustive history of the curriculums for boys' and for girls' schools, with a consideration of the objections and criticisms that have been directed against them, especially on the tendency in the second half of the last century to make the curriculum for the girls conform to that for the boys. It is pointed out that the education of the girls has passed through two stages and perhaps is now entering on a third. To 1850, and even later, it was assumed that the education of girls must be different from that of boys, because they belonged to the "weaker" sex. This was the stage of feminine accomplishments and of educational inefficiency. In the next stage, perhaps now drawing to a close, efficiency was held to depend on identity of education of the sexes, which was based on their equality. It was marked by a great advance in efficiency. But if new strength was gained, old and delicate graces were perhaps lost. The committee holds that we are now entering on a third stage in which we can afford to recognize that equality does not demand identity, but is compatible with, and even depends on, a system of differentiation under which each sex seeks to multiply its own peculiar talents.

The committee is not convinced that there are clear and ascertained differences between the sexes on which an educational policy can readily be based, but considers that it would be fatal, at the present juncture, to prescribe one curriculum for boys and another for girls. It would prescribe as little as possible for either, because it is convinced that both should be free to find and follow their tastes, and because they desire that teachers be free to aid and guide the development of their pupils. In view of medical and other evidence, the committee urges that the pace of education in girls' schools be adjusted to the strength and opportunities for study of the average pupil. Not that it pleads for any special consideration or the establishment of a lower standard for the "weaker" sex, for it is convinced that, given the same conditions, girls can match the achievement of boys. But the conditions of health are not the same and there is much less freedom from other demands for girls. The growing tendency to organize and emphasize school activities are modern developments which stand in need of criticism and control, particularly in girls' schools. They may check what is meant to be fostered—the full and free development of individual initiative and vigor.

Games for girls occupy much of the report. As the general conscientiousness of girls extends to their sports, there is a danger that some pupils who are overconscientious and docile may exhaust themselves physically and mentally for the supposed good of the school. Due regard should be paid to the strain undergone by the girls in the ordinary normal daily routine at home and in the journey to and from school. While thinking that games should form part of the ordinary curriculum for girls, the committee is not convinced that they should be made compulsory. They favor hockey, lacrosse, tennis and ricket, but not football.

The physiologic evidence and a large part of the evidence from teachers disclosed that girls are more liable to physical and mental fatigue than boys. Most boys, especially at adolescence, have a habit of "healthy idleness," and thus can protect themselves against overpressure; whereas girls are more amenable to authority and more industrious. Therefore, the traditional arrangement by which girls' school hours are shorter than boys' is sound. On the differences of achievements, the report states that girls as a rule show equal or superior originality and capacity in English literature, history, modern languages and possibly biologic sciences, but are inferior to boys in ancient languages, especially Latin, and in mathematics and the dependent sciences.

The more important recommendations of the committee were: The school time tables should be modified to allow boys and girls more free time in which to develop their individual interests. The first school examination for girls should be about a year later than for boys. More attention should be devoted by school physicians and others to protecting girls against physical fatigue and nervous overstrain. In girls' day schools, the amount of home preparation should be reduced, as it is in some instances excessive, in view of heavy domestic duties.

The Dangers of the Use of Water Gas for Illumination

In a letter to the *Times*, Prof. W. A. Bone calls attention to the dangers of the prevalent use of water gas. Recently, three persons in a house were poisoned during sleep by gas which, escaping from a broken mainpipe in the roadway, percolated into a house not piped for gas. A straight coal gas contains only 7 or 8 per cent. of carbon monoxid, which in ordinary circumstances is not dangerous; but water gas, which is now frequently mixed with coal gas, contains from 42 to 45 per cent.—a highly dangerous proportion. Professor Bone calls for an inquiry into the subject of gas poisoning, which has increased of late.

The Medical Research Council

The Medical Research Council was appointed under the National Insurance Act. The report for the year ending September, 1922, has just been issued. The sum provided by Parliament for the year was $650,000. A large number of highly important researches have been carried out or are

proceeding. The difficulty in experimentally investigating the diseases attributed to filtrable viruses has led to arrangements being made for an experimental study of distemper in dogs. Other researches, of which only a few can be mentioned, are on the effect of overdoses of light on the resistance of tissues to bacteria, the effects of balneotherapy on metabolism, improvement of microscopic methods, the standardization of pathologic methods, with a view to uniformity of results, the standardizing of arsphenamin compounds, the dietetic factors causing abnormal development of the thyroid, and research work in clinical medicine at various centers.

Great Reduction in the Mortality from Diarrhea and Enteritis

The accompanying table shows a remarkable diminution in the mortality from diarrhea and enteritis in recent years:

LONDON: MORTALITY FROM DIARRHEA AND ENTERITIS

	All Ages per Thousand Living	Under 1 Year per Thousand Births
1911	4.28	127
1912	0.66	20
1913	1.50	43
1914	1.93	59
1915	1.34	45
1916	0.78	24
1917	0.86	29
1918	0.61	23
1919	0.64	22
1920	0.42	13
1921	1.26	43
1922	0.15	5

The mortality of the last year is not only the lowest, but it has never been approached. The diminution is to be explained by improved sanitation and, above all, by the widespread instruction in disease prevention given by various health agencies. There is more sterilization of milk, more careful cleansing of bottles and feeding cups, and better personal hygiene. The breeding places of flies are being destroyed with care and enthusiasm. The change from horse-drawn vehicles to motors has led to the disappearance of stables and manure heaps.

The Prevention of Venereal Disease in New Zealand

Some striking recommendations are contained in the report of the committee of the board of health, appointed in New Zealand to advise as to the best means of combating and preventing venereal disease. Their legislation is far in advance of that of the mother country, but resembles that of Australia, which was described in THE JOURNAL some time ago. The outstanding recommendation is the adoption of what is known as the system of conditional notification embodied in the West Australia act. The cases are notified by the physician to the health department by number or symbol; the name of the patient is not sent in unless he discontinues treatment before he is free from infection, and refuses to go either to a clinic or to another physician. The names of those who conform to the regulations thus never pass beyond the physician attending them. Even when the names of those who do not are sent to the health department, in order that steps may be taken in the interest of public health, they are given only to officers, who are pledged to keep them confidential. It is also recommended that all proceedings taken under any act having reference to venereal disease should be held in private unless the defendant applies for a hearing in open court. The committee suggests that in any legislation which may be passed there shall be a provision that every physician, on finding that a patient is suffering from venereal disease in a communicable form, shall give notice to the director general of health on a prescribed blank, stating age, sex and occupation, and the nature of the disease, but omitting the patient's name and address.

The committee lays stress on the duty of self-control and also on the duty of parents in instructing and training their children. The classification and, when necessary, the segregation of mentally deficient adolescents is also recommended. Clinics should be made more available by being open continuously. Every effort should be made to insure privacy. A specially trained nurse should be in attendance at women's clinics for prompt preventive treatment of those who have exposed themselves to infection. Woman patrols should be appointed to perform in other centers the kind of work that is being carried on at Christchurch. The work, especially of an educational nature, which is being done by the social hygiene society of Christchurch, is recommended as a model. The committee is entirely opposed to the continental system of licensed brothels or a revival of the contagious disease act in any shape or form. When a recalcitrant patient refuses to be examined by the physician appointed by the director general of health, the latter should be empowered to apply for his arrest and detention in a public hospital or other place of treatment until his condition becomes noninfectious. The committee recommends further provisions for persons suffering from venereal disease who are not under medical treatment and are likely to infect others.

If the director general of health has reason to believe that any person is suffering, he may call on him to produce a medical certificate, which may be obtained free from any hospital or venereal disease clinic. If the person refuses, he may be taken before a magistrate, who may order a medical examination. Penalties, including detention in a prison hospital, should be provided for recalcitrant cases. The proceedings in all these cases are to be held in private, unless the defendant desires a public hearing. The committee recommends that before license to marry is issued, the parties sign a blank, answering certain questions as to freedom from communicable disease and from mental disease, making a sworn statement that the answers are true. They recommend the adoption of a provision of the Queensland act making venereal disease a ground for annulling a marriage contracted while one of the parties was suffering from venereal disease in an infectious stage, provided the other party was not informed of the fact; also, that it should be the duty of a physician attending a case of venereal disease, if he believes that the patient intends to marry, to warn him or her against doing so; and if he or she persists, it should be the duty of the physician to notify the case to the director general of health, whose duty it would be to inform the other party or the parents or guardian. Strengthening of the law prohibiting treatment of venereal disease by unqualified persons is recommended. While regarding these legislative measures as of great importance, the committee earnestly emphasizes the moral and social aspects of the question. With the changing social conditions, especially in large towns, it states that the home influence and training, which is the best safeguard for the young, is being lost.

PARIS

(From Our Regular Correspondent)

Jan. 12, 1923.

The League of Nations' Health Conference

The fifth session of the League of Nations Health Conference has just opened at Geneva. For the first time, Professor Nocht, of the Institute for Tropical Diseases, Hamburg, the delegate from Germany, and Dr. Semachko, public health commissioner of soviet Russia, will be present and take part in the deliberations. At this session, a representative of the United States Public Health Service will be appointed a member of the conference, and it is also planned to establish a collaboration with the international bureau at Wash-

ington. Dr. Rajchmann reported an increase of epidemics in Russia, due, to a great extent, to the recrudescence of the famine; but the appearance of a tropical type of malaria is also playing a part. Also the epidemics that were already present have spread farther.

High Mortality Among Wards of the State

The *Journal officiel* has published a circular letter addressed to the prefects of the departments by M. Strauss, minister of public health, in regard to the measures to be taken to check the mortality among children in ward of the state, which has of late reached an extremely high figure, the average being above 38 per cent. The main cause of this situation is the gradual disappearance of wetnurses. Ten years ago, the department of the Seine had 1,400 wetnurses, whereas now there are only 150. As additional causes, congenital debility due to syphilis, tuberculosis and constitutional inferiority may be mentioned. The minister recommends that in every department of France there be established retreats and welfare centers for prospective mothers, mothers during convalescence from childbirth, and nursing mothers who are homeless. The value of such welfare work for mothers is seen in its tendency to prevent, or at least to diminish, abandonment, and sixteen departments have already learned to appreciate the remarkable results that are secured by the establishment of *maisons maternelles*. He advises further that the number and the scope of the foundling homes be increased, that the means of transporting children in ward be improved, and that, as far as possible, wards of the state be reared in rural centers established on a similar plan to the foundations of the Oeuvre Grancher. The hospitalization of mothers should be prolonged, and societies, under private control, that endeavor to prevent the abandonment of the new-born should be encouraged. Special protection should be given to weak children from the time of their birth, and emphasis should be placed on the prophylaxis of venereal diseases.

The Traffic in Narcotics in 1922

The executive department of the service of judiciary research, as established by the Sûreté générale, which is the agency that collects information pertaining to the suppression of the illegal traffic in narcotics throughout the territory of France, has just issued an annual report of its work, for the information of the League of Nations. It appears from this report that, during the year 1922, the police services subject to the control of the Sûreté générale arrested or incriminated 314 persons, who were brought before the competent courts on the charge of having been engaged in the illegal sale, possession or consumption of narcotic substances. During this period, 446 different cases were examined into by the same services, and the court proceedings that followed resulted in the seizure of quantities of drugs: 51.848 kg. of opium, 1.290 kg. of hashish, 24.781 kg. of cocain, 3.433 kg. of morphin, and 112 gm. of heroin. These toxic substances represent a mercantile value of approximately 300,000 francs.

Intellectual Relations with the United States

A Frenchman who is traveling at present in the United States, where he comes in contact with university and art centers, recently sent a communication to the *Temps*, to which he is an occasional contributor, in which he gives some interesting observations, especially as regards the circulation of French books in the United States. He holds that French books are not as widely used in the United States as they would be if our publishers would take the trouble to send to the American universities catalogues of books in certain special fields, such as medicine, law, sociology and history. Another group of books that would awaken great interest in America would be books published in France on the United States or on American subjects. The American Library Association publishes every month a bulletin containing lists of new books, which is relied on by American public libraries, at least 800 in number, for basic information with respect to their purchases. The library association has expressed a willingness to list in this bulletin fifteen French books each month, on condition that a carefully selected list be prepared and copies of the fifteen books recommended be sent them. The books thus far recommended have not been selected with the necessary care, and the copies for examination have not been received regularly.

The Centenary of the Death of Jenner

At the meeting to be held, Jan. 23, 1923, the Academy of Medicine will commemorate the centenary of the death of Jenner. Papers and addresses on the subject of vaccination will be on the program. An exhibit of relics and various documents pertaining to the history of vaccination will be held at the academy headquarters.

The Influence of Environment on Height

For a number of years, Prof. E. Pittard of Geneva, together with several collaborators, has been making comparative studies on the height of the inhabitants of Switzerland. He has studied by cantons the height of men called to the colors, and has considered the possible effects of environment on variations with respect to this hereditary character. Pittard recently presented to the Société de physique et d'histoire naturelle of Geneva the results of a study made by Mlle. M. Ginsberg on the height of 30,301 recruits in the canton of Bern. The height was considered in relation to the geographic division according to districts; classification according to language, the general physical characteristics of the canton (Jura, plateau, Alps), the geologic nature of the soil inhabited, altitude, the grouping (whether urban or rural), and according to the social conditions of the persons concerned. The investigator found the average height of the men from the canton of Bern to be 1.652 meters, which is considerably above the average height of men in Switzerland as a whole (1.629 meters). From the standpoint of linguistic groups, the height ranged from 1.654 meters in the German districts to 1.661 meters in the French districts (1.657 meters in the mixed districts). The average height varies distinctly with the geologic nature of the soil. Height diminishes as altitude increases, at least up to 1,000 meters. For altitudes between 400 and 600 meters, the average height was 1.659 meters; between 600 and 800 meters, 1.649 meters; between 800 and 1,000 meters, 1.646 meters. Height increases with the density of the population: from 1 to 1,000 inhabitants, 1.636 meters; from 1,000 to 5,000 inhabitants, 1.648 meters; from 5,000 to 10,000 inhabitants, 1.654 meters; more than 10,000 inhabitants, 1.677 meters. Height varies also according to occupation or social environment. The height of agriculturists was 1.642 meters; laborers, 1.653 meters; merchants, 1.664 meters; liberal professions, 1.695 meters.

The Celebration at Strasbourg of the Centenary of Pasteur

The centenary of Pasteur will not be celebrated at Strasbourg until several months hence. It will be marked by: 1. The unveiling of a monument erected to the memory of Pasteur in front of the University of Strasbourg by an international subscription. 2. The establishment of a Pasteur museum intended to show the various stages in Pasteur's progress by means of a retrospective view of the works, apparatus and instruments that were created or utilized by the scientist. In this museum will be shown also the evolution of microbiology: technic, documents, anatomic preparations, apparatus and results. The scientists of the world are

invited to take part in this celebration, and are requested to send to the committee on arrangements (Comité d'organisation) any works, documents or technical apparatus that they are desirous of exhibiting to the public. 3. The inauguration of a general exposition to be called the "Exposition internationale du centenaire de Pasteur," which is intended to illustrate the effects that a knowledge of things infinitesimally small has exerted on all branches of human activity, such as theoretical and applied hygiene, science, industry, habitation, alimentation and agriculture. The address of the commissioner in charge of the exposition is: Commissariat général de l'exposition pastorienne, Institut d'hygiène, 3, rue Koeberlé, à Strasbourg, France.

The Abuse of Pharmaceutic Specialties

I have mentioned in several letters the regrettable fact that pharmaceutic specialties or proprietaries are coming to be used in France to an inordinate extent. In the *Concours médical,* Dr. Damey raises an energetic protest against those specialties that are manufactured according to secret formulas. It is a curious circumstance that secret remedies are prohibited in France, but nevertheless, for fiscal reasons, a tax has been imposed on pharmaceutic specialties the formulas of which have not been published. The law tolerates, therefore, what it seems to prohibit.

Damey points out the serious objections to this tolerance. A mother calls hastily a physician to treat an infant that she fears she has poisoned. She states that, for several days, the child has not seemed well. She had suspected (often owing to the suggestions of some kind friend) that such and such a disease was the cause of the condition of the infant, and had administered such and such a remedy that her kind friend had recommended, or possibly that she had seen advertised in glowing terms in her fashion journal. As the child does not get better but appears weak and out of sorts, the mother begins to worry, becomes excited, and finally hastens to the physician and asks, as she hands the physician the bottle of medicine, "Tell me, doctor; do you think that this medicine can have made the baby sick?" The physician inspects the bottle, which is covered with a beautiful label, and reads the high sounding, semiscientific and semifantastic name of the remedy, usually a conglomeration of French, Greek and Latin, but not throwing any light on the composition of the contents.

Damey states that every day—through pamphlets, the daily papers, postal cards, blotters, and even through our professional journals—we receive announcements that certain proprietary articles have been put on the market; but, in spite of the fact that much of this "literature" is directed to physicians, it never deigns to mention the composition or the nature of the product concerned. Are we to believe, by reason of the frequency and the persistence with which these methods are employed, that there are physicians who use these products without further guarantee than the mere affirmation by the manufacturers that they constitute "the best treatment known?" Damey concludes, and with reason, it would seem, that, although the law authorizes tacitly the existence of such proprietaries in that it imposes a tax on them, it is the duty of physicians to protest and to form the resolution to prescribe nothing with which we are not sufficiently familiar to assume the responsibility. He urges that we demand that, in addressing us, manufacturers of pharmaceuticals shall treat us as scientific men and use language such as is becoming to us, instead of the vapid commercial style that now prevails.

In further support of this idea, in a letter addressed to the *Presse médicale,* several physicians of Biarritz complain that the inordinate use of proprietaries secured without a prescription has become a menace to public health and is analogous to alcoholism. As a result, chronic diseases may pass the stage at which they are still curable, and contagious affections are allowed to develop without a physician being called in.

BERLIN

(From Our Regular Correspondent)

Jan. 12, 1923.

Undernutrition and Scurvy

The state of undernutrition existing in many countries of Europe is made apparent by the appearance of cases of scurvy. During recent months, 386 cases of scurvy, which was formerly unknown in Germany, have been reported from Prussia alone. The lack of coal has caused an increase in the diseases associated with "colds." For the first quarter of 1922 the number of deaths from pneumonia (17,785) shows a marked increase over the mortality for the first quarter of 1921 (14,549). The lack of shirts and underwear, poorer bathing facilities, and the high cost of soap, make the proper care of the body more difficult, whereby many skin diseases, especially furunculosis, are induced.

Coloration of Cocain and Other Toxic Alkaloids to Prevent Error and Misuse

According to the statements of Dr. W. Köhler in the *Zntralblatt für Chirurgie,* the prophylactic coloration of cocain is carried out by means of a trisulphonated and phenylated fuchsin of "water blue 2 R." A request for the general introduction of this form of protective coloration has been sent to the central public health office. Further experiments in the coloration of other alkaloids with other dyes are to be made. If all producers were compelled by an international agreement to color cocain in this manner, it would reduce considerably the extensive misuse of cocain. The cocain addict snuffs cocain up the nose in heavy doses. Cocain that has been colored blue causes a marked coloration of the nostrils. This stigmatizing mark will cause addicts to discontinue the use of cocain.

Psychology of Witnesses' Testimony

Weygandt, director of the Hamburg hospital for the insane, following out an idea of the psychologist W. Stern, has had a special film prepared to illustrate the psychologic value of witnesses' testimony. At a recent meeting of the Hamburg forensischpsychologische Gesellschaft, a report of which Rittershaus gives in the *Psychiatrischneurologische Wochenschrift,* a film was shown representing a scene in a tavern; a fight develops; one of the guests draws a large pocket knife and opens it, but is thrown out of the room by the other guests before he has a chance to use it. One of the guests remaining suddenly discovers that some one has taken his hat and left another in its place. This incident has nothing to do with the scene in which a knife was drawn. When the last guest has gone, there still hangs a lone silk hat on the hat rack. It belongs to no one visible in the picture. The experiment covered about twenty questions that those who assisted in the experiment had to answer after the film had been shown. Four of the participants, who endeavored to be extremely cautious and therefore answered only a fourth of the questions asked, had nevertheless 26 per cent. of the answers wrong; while sixteen participants, who answered from six to ten questions, had 43 per cent. of errors. Twenty-two participants, who answered from eleven to fifteen questions, had 36 per cent. of their answers wrong, and thirteen participants, who answered more than three fourths of the questions, had 32 per cent. of wrong answers. A series of questions as to what actually happened produced 53 per cent. of correct answers. Those most careful with their replies and who answered only a few of the questions had 48

per cent. wrong answers, whereas the keenest observers, who had answered three fourths or more questions, gave 40 per cent. wrong answers. Rittershaus discusses, among other things, also the value of children's testimony. He cites two instances in point. In one case the crucial testimony was to be given by a boy. He could not be heard as a witness, however, because, at the beginning of the hearing, he had an attack of what appeared to be hysterical convulsions. Any psychiatrist will naturally be inclined to question the credibility of this probably hysterical child. In the second case, psychopathologic factors did not play any part. It was a question as to what some children actually saw and what imagination and other factors led them to believe they saw. Rittershaus says: "The imagination of the children, stimulated by the horrors recounted in the press, and likewise doubtless by the stories they had heard their elders tell, was still further aroused by the things they had found in the gipsies' camp, and by the time they got back to town the ragged shirt, the old pasteboard box and the 'bloody knife' had metamorphosed into the mutilated body of a child."

Personal

Dr. Alfred Kirstein, known for his invention of autoscopy of the larynx, died recently at the age of 60. For some time past, Kirstein had been devoting himself wholly to the art of painting.

Sanitätsrat Otto Dornblüth, the nerve specialist, died in Wiesbaden, January 5, at the age of 62. He was the author of a widely used compendium on internal medicine, and also of a dictionary of clinical terms. He wrote also a compendium of psychiatry, a dietetic cook book, and numerous treatises on the treatment of nervous and mental diseases.

January 9 was the centenary of Frederick von Esmarch, the surgeon of Kiel, who was the inventor of the Esmarch bandage with which to expel the blood from the part to be operated on.

Marriages

Harrison Warner Stuckney, Major, M. C., U. S. Army, Fort Hancock, N. J., to Miss Cornelia Lansing of New York, December 16.

William Dulaney Anderson, Chattanooga, Tenn., to Miss Rosalie Slaughter of Lynchburg, Va., December 16.

Francis Ernest Le Jeune, New Orleans, to Miss Anna Lynn Dodds of Clarksdale, Miss., recently.

Joseph Frederick Prinzing, Denver, to Miss Gertrude Norman of Raton, N. M., December 9.

Hans O. Foucar, Rochester, Minn., to Miss Janet Stevens of London, Ont., Canada, December 14.

Fred Montz, Lowden, Iowa, to Miss Charlotte Mallart of Cedar Rapids, at Tipton, November 4.

Lehman William Williams to Miss Metta Martha Harr, both of Savannah, Ga., November 22.

Homer Raymond Blincoe, New Orleans, to Miss Elizabeth Hahn of Mobile, Ala., December 30.

Roy E. Swanson to Miss Katherine Jacobson, both of Alexandria, Minn., December 28.

Eslie Asbury to Dr. Mary S. Knight, both of Rochester, Minn., at Cincinnati, January 2.

Joseph C. Baird, Eau Claire, Wis., to Miss Amalia C. Olson of Minneapolis, December 10.

Baldwin Borreson, Bemidji, Minn., to Miss Alice Graves of Duluth, December 30.

Julian Holt Buff to Miss Joyce Louise White, both of Atlanta, Ga., January 4.

Eric Julien, Turlock, Calif., to Miss Mabel Botham of Berkeley, December 31.

Anton H. Nerad to Miss Florence Meisch, both of Argyle, Minn., November 30.

Deaths

Robert Thaxter Edes, Springfield, Mass.; Medical School of Harvard University, Boston, 1861; formerly professor of materia medica and clinical medicine at his alma mater, and at various times lecturer on nervous diseases at Columbian University, Washington, D. C., materia medica and therapeutics at Dartmouth Medical School, Hanover, N. H., and diseases of the kidneys at Georgetown University School of Medicine, Washington, D. C.; member of the Massachusetts Medical Society, the Association of American Physicians; Fellow of the American Academy of Arts and Sciences, and first president of the American Neurological Association; Civil War veteran; at one time physician to the Boston City Hospital, the Garfield Memorial Hospital, Washington, D. C., and the Adams Nervine Asylum, Boston; author of "Physiology and Pathology of the Sympathetic or Ganglionic Nervous System," "Therapeutics and Materia Medica," and "The Therapeutic Handbook of the United States Pharmacopoeia"; aged 84; died, January 12, from senility.

Carlos Montezuma ✠ Chicago; Chicago Medical College (Northwestern University Medical School), 1889; instructor of clinical medicine at his alma mater; died, January 31, on the McDowell Indian Reservation, Ariz., from pulmonary tuberculosis. Dr. Montezuma was born in Arizona in 1867 of Apache Indian parents. He served at various Indian agencies as surgeon for the Interior Department from 1889-1896. He was formerly instructor in stomach and intestinal disease at the Post-Graduate School, and instructor in medicine at the College of Physicians and Surgeons, Chicago. He was editor of the Indian magazine *Wassaja*, and author of "The Indian of Today and of Tomorrow."

Ernest Boyen Young ✠ Boston; Medical School of Harvard University, Boston, 1896; instructor in gynecology at his alma mater; member of the American Gynecological Society, the Obstetrical Society of Boston, the American Urological Association, the New England Branch of the American Dermatological Society; chief surgeon to the Boston City Hospital, and formerly staff member at the Massachusetts General Hospital, and the Hospital for Women and Children; served during the World War; aged 53; died, January 17, from pneumonia.

Max Wachsman, Brooklyn; Albany (N. Y.) Medical College, 1901; member of the Medical Society of the State of New York; attending physician to the Nose, Throat and Ear Department of the Eastern District Dispensary and the Long Island College Hospital; aged 46; died, January 19, as the result of an attack of lethargic encephalitis, contracted three years ago.

Oldron Aloysius Mitchell, St. Mary, Ky.; Kentucky School of Medicine, Louisville, 1905; member of the Kentucky State Medical Association; served in the M. C., U. S. Army, during the World War; aged 39; was found dead beneath his automobile which had plunged over a 50-foot embankment near Raywick, January 12.

Samuel Hess Heller, Lancaster, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1899; member of the Medical Society of the State of Pennsylvania; formerly on the staff of the Lancaster General Hospital; aged 49; died, January 21, from cerebral hemorrhage.

Theodore Clarke Miller, Massillon, Ohio; Charity Hospital Medical College, Cleveland, 1867; Civil War veteran; formerly on the faculty of Western Reserve University School of Medicine; for forty years city health officer of Massillon; aged 80; died, January 21, from senility.

Robert S. Stewart, Washington, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1869; member of the Medical Society of the State of Pennsylvania; Civil War veteran; formerly on the staff of the Washington Hospital; aged 85; died, January 10, from senility.

Albert H. Kunst, Parkersburg, W. Va.; Starling Medical College, Cincinnati, 1868; member, and former president, of the West Virginia State Medical Association; for many years superintendent of the Weston State Hospital; aged 79; died, January 17, from heart disease.

James W. Hill, Hopkinsville, Ky.; Medical Department University of Louisville, Louisville, 1889; formerly superintendent of the State Institution for the Feeble-Minded, Frankfort; served during the World War; aged 53; died, January 19, from chronic nephritis.

James Edgar Yarbrough ✠ Erick, Okla.; University of Arkansas Medical Department, Little Rock, 1909; secretary of the Beckham County Medical Society; served in the M. C., U. S. Army, during the World War; aged 46; died in December, from heart disease.

Embry Pryor Wilson, Houston, Miss; Memphis Hospital Medical College, Memphis, Tenn., 1902; member of the Mississippi State Medical Association; served in the M. C., U. S. Army, during the World War; aged 46; died, January 12, from influenza.

Frederick J. Schug, Tacoma, Wash.; Columbus (Ohio) Medical College, 1876; member of the Washington State Medical Association; for twelve years city health officer; surgeon, U. S. Public Health Service, since 1897; aged 68; died, January 17.

David J. Chaffee, Rochester, N. Y.; Cleveland-Pulte Medical College, Cleveland, 1863; Homeopathic Medical College of Pennsylvania, Philadelphia, 1867; practitioner in Rochester for more than half a century; aged 87; died, January 28, from senility.

George Banker Schwachtgen, Aurora, Ill.; Rush Medical College, Chicago, 1910; formerly city health commissioner; proprietor of the Lincoln Hospital; aged 38; died, January 16, from injuries received when his automobile was struck by a train.

Wallace M. Brackett, Independence, Iowa; Chicago Medical College, Chicago, 1876; Civil War veteran; for several years mayor of Livermore; former editor of the *Hancock County Democrat;* aged 76; died, January 11, from uremia.

Charles E. Woodward ✠ West Chester, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1874; formerly secretary of the city board of health and registrar of vital statistics; aged 76; died in January, from pneumonia.

Robert Berrien Ridley, Sr., Atlanta, Ga.; Jefferson Medical College of Philadelphia, 1869; Civil War veteran; formerly on the staffs of the St. Joseph Infirmary and the Grady Hospital; aged 80; died, January 22, from pneumonia.

Francis Daniel Merchant, New York; Columbia University College of Physicians and Surgeons, New York, 1890; member of the Medical Society of the State of New York; aged 56; died, January 13, from carcinoma of the liver.

Frank E. Seymour, Fort Dodge, Iowa; State University of Iowa College of Medicine, Iowa City, 1879; president of the Fort Dodge National Bank; aged 70; died, January 14, in Long Beach, Calif., from cerebral hemorrhage.

Francis B. Loring, Washington, D. C.; Medical School of Harvard University, Boston, 1874; member of the Medical Society of District of Columbia and of the American Ophthalmological Society; aged 72; died, January 14.

Frank Wolf Wood, Portland, Ore.; Rush Medical College, Chicago, 1897; member of the Oregon State Medical Association; aged 50; for many years secretary of the state board of medical examiners; died, January 16.

Daniel Eugene Eagle, Statesville, N. C.; Johns Hopkins University Medical Department, Baltimore, 1922; aged 26; intern at Johns Hopkins Hospital, Baltimore, where he died, January 22, from abscess of the liver.

Charles Inches, Scribner, Neb.; New York University Medical College, New York, 1868; member, and former president of the Nebraska State Medical Association; aged 78; died, January 11, from heart disease.

Geronimo Carreras Delgado ✠ San Juan, Porto Rico; University of Seville, Spain, 1880; president of the board of medical examiners of Porto Rico; aged 67; died, January 21, from cerebral hemorrhage.

John Henry Musser, Lampeter, Pa.; Jefferson Medical College of Philadelphia, 1866; member of the Medical Society of the State of Pennsylvania; aged 77; died, January 19, from cerebral hemorrhage.

Harry Wright McKee, New Castle, Pa.; Jefferson Medical College of Philadelphia, 1887; member of the Medical Society of the State of Pennsylvania; aged 60; died, January 13, from heart disease.

Clyde C. Wallace, Cruger, Miss.; University of Tennessee College of Medicine, Memphis, 1912; died, January 15, from injuries sustained when the automobile in which he was driving overturned.

Charles M. Morrill ✠ Havana, Ill.; Eclectic Medical Institute, Cincinnati, 1876; aged 71; died, January 19, from the effects of burns received when his clothes ignited from sparks from his pipe.

William M. Craig, Petersburg, Ill.; Missouri Medical College, St. Louis, 1887; member of the Illinois State Medical Society; aged 65; died, January 19, from pneumonia and heart disease.

Robert P. Muellenbach, New York; New York University Medical College, 1887; member of the Medical Society of the State of New York; aged 72; died, January 14, from cerebral hemorrhage.

Elton Mayrant Johnson ✠ Portland, Ore.; State University of Iowa College of Medicine, Iowa City, 1897; aged 52; died suddenly, January 18, at the Emanuel Hospital, from cerebral hemorrhage.

Louis Bush Simpson, Fairfield, Ohio; Ohio Medical University, Columbus, 1898; member of the Ohio State Medical Association; aged 46; died, January 17, from pleuropneumonia.

Benjamin Matthias Bartilson, Braddock, Pa.; Jefferson Medical College of Philadelphia, 1893; on the staff of the Braddock General Hospital, where he died, January 18, aged 57.

Charles Henry Frederick, Lorain, Ohio; Western Reserve University School of Medicine, Cleveland, 1891; member of the Ohio State Medical Association; aged 54; died, January 22.

Ban S. Brown, Kerens, Texas; University of Texas Department of Medicine, Galveston, Texas, 1900; member of the State Medical Association of Texas; aged 53; died, January 13.

Zaphney Orto, Pine Bluff, Ark.; Miami Medical College, Cincinnati, 1872; president of the Simmons National Bank; veteran of the Spanish-American War; aged 80; died, January 22.

Irving Sylvester Fogg, Norwood, Mass.; Medical School of Harvard University, Boston, 1877; member of the Massachusetts Medical Society; aged 70; died, December 29, from senility.

Harry A. Stout ✠ Wenonah, N. J.; Jefferson Medical College of Philadelphia, 1886; member of the state board of medical examiners; aged 58; died, January 14, from heart disease.

Thomas A. Roy ✠ Mansura, La.; Louisville Medical College, Louisville, Ky., 1890; member of the state board of health; aged 56; died, January 24, from cerebral hemorrhage.

W. R. Owen, Los Angeles; Homeopathic Medical College of Missouri, St. Louis, 1877; former president Colorado State Board of Medical Examiners; aged 78; died, January 14.

James H. Wysong, Cleveland; Louisville Medical College, Louisville, Ky., 1880; Tulane University of Louisiana School of Medicine, New Orleans, 1886; aged 73; died, January 15.

Thomas T. Broyles, Jonesboro, Tenn.; University of Nashville Medical Department, Nashville, 1888; aged 81; died, December 18, at Embreeville, from carcinoma of the face.

Benjamin F. Few, Greer, S. C.; Medical College of the State of South Carolina, Charleston, 1861; Civil War veteran; also a druggist; aged 93; died, January 21, from senility.

William Pinkney Atchley, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1897; member of the Tennessee State Medical Association; aged 53; died, January 12.

Joseph A. Belanger ✠ Grosse Point, Mich.; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1895; aged 51; died suddenly, January 13, at Paris, France.

Charles N. Nolan, Nashville, Ind.; Pulte Medical College, Cincinnati, 1884; member of the Indiana State Medical Association; aged 63; died, January 22, from heart disease.

Edward Clarence Traver, Upton, Mass.; University of Vermont College of Medicine, Burlington, Vt., 1888; aged 56; died, December 23, from acute dilatation of the heart.

Robert A. Tate, Bolivar, Tenn.; Medical College of the State of South Carolina, Charleston, 1869; Confederate veteran; aged 78; died, January 12, from senility.

Charles McRae Morgan, Tucker, Ark.; College of Physicians and Surgeons, Chicago, 1903; formerly a medical missionary in Belgium; aged 50; died, January 14.

Joseph Ellwood Blanck, Green Lane, Pa.; Jefferson Medical College of Philadelphia, 1886; formerly member of the state legislature; aged 59; died, January 19.

Charles Pierce Bean, Boston; Bellevue Hospital Medical College, New York, 1891; member of the Massachusetts Medical Society; aged 58; died, January 12.

Horace Benjamin Coblentz, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1896; aged 51; died, January 24, from heart disease.

Waverly McGee Hume, Coalgate, Okla.; Medical Department University of Louisville, Louisville, Ky., 1884; aged 59; died, January 20, at Sherman, Texas.

Simon Willard Oley, Danbury, Conn.; New York Homeopathic Medical College, New York, 1886; aged 68; was found dead from heart disease, January 17.

George W. McKown, Osceola, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1883; aged 64; was shot and killed, January 11.

Edward W. Jones, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1890; aged 60; died, January 27, from heart disease.

William F. Hazelton, Enid, Okla.; Eclectic Medical Institute, Cincinnati, 1873; aged 79; was found dead, December 31, from cerebral hemorrhage.

Joseph C. Egbert, Wayne, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1880; aged 69; died, January 17, from heart disease.

John L. Sowards, Greenup, Ky.; Kentucky School of Medicine, Louisville, 1891; aged 54; died, November 28, from chronic interstitial nephritis.

Wellington H. Willcox ⊕ Columbus, Ohio; Ohio Medical University, Columbus, 1897; aged 52; died suddenly, January 18, from chronic nephritis.

George Humphrey Tichenor, Sr., New Orleans (licensed, years of practice); Civil War veteran; aged 85; died, January 14, from heart disease.

Godfrey M. Crowell, Hammonton, N. J.; Jefferson Medical College of Philadelphia, 1882; aged 66; died, January 26, from chronic nephritis.

Ernest Everett Lowry, Westerville, Ohio; Starling Medical College, Columbus, 1896; aged 55; died, January 17, from cerebral hemorrhage.

John Byron Sweet, Jewett City, Conn. (licensed, Connecticut, 1893); formerly member of the state legislature; aged 68, died, January 21, from beriberi.

Frederick L. Nisbet ⊕ Meadville, Pa.; New York University Medical College, New York, 1887; aged 60; died, January 12, from erysipelas.

William Bennett Turnbow, Pittsville, Mo.; Eclectic Medical Institute, Cincinnati, 1891; aged 60; died, November 8, from heart disease.

James J. Wingard ⊕ Lexington, S. C.; University of Virginia Department of Medicine, Charlottesville, 1895; aged 58; died, December 4.

John V. Albert, Pine Grove, Pa.; Jefferson Medical College of Philadelphia, 1870; aged 74; died, January 23, from heart disease.

Robert W. Bucke, Windsor, Ont., Canada; Western University Faculty of Medicine, London, 1905; aged 41; died, January 15.

Elizabeth H. Cassel, Berkeley, Calif.; Woman's Medical College, Chicago, 1883; aged 58; died, January 13, from heart disease.

Asa Adgate Arthur, Roxbury, Mass.; Bellevue Hospital Medical College, New York, 1865; aged 79; died, December 25.

William E. Duncan, Chicago; Rush Medical College, Chicago, 1881; aged 70; died, January 29, from pneumonia.

Frank Jesse Thorp, Rocky Mount, N. C.; Bellevue Hospital Medical College, New York, 1874; aged 70; died, January 13.

Sarah Helen Fitzbutler, Chicago; Louisville National Medical College, Louisville, Ky., 1892; aged 60; died, January 12.

William H. Blair, Erie, Pa.; Western Reserve University School of Medicine, Cleveland, 1873; aged 78; died, January 7.

Philip Angus Fox ⊕ Milwaukee; Rush Medical College, Chicago, 1902; aged 43; died, January 30, from pneumonia.

E. James Blair, Los Angeles; Kentucky School of Medicine, Louisville, 1882; aged 63; died, January 9, from senility.

Edward Edwards ⊕ Delphos, Ohio; Jefferson Medical College of Philadelphia, 1894; aged 63; died, January 21.

Correction.—Dr. W. A. Jones, formerly of Hamilton, Canada, writes to state that the obituary in the *Canadian Practitioner* for January from which a notice in THE JOURNAL was copied, was incorrect, since he is still among the living.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

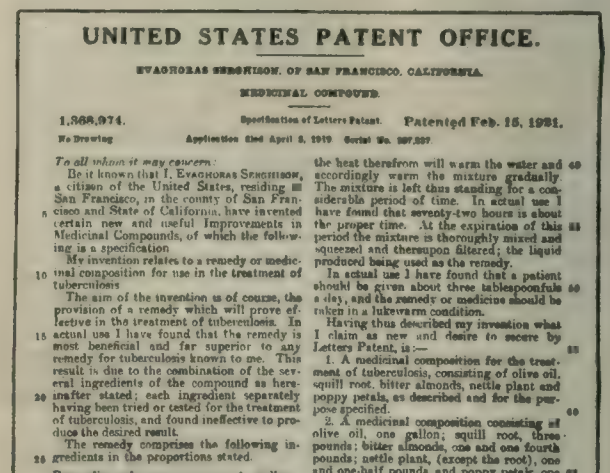
A PATENTED CONSUMPTION CURE

The United States Patent Office Again Demonstrates Its Ignorance of Modern Medicine

When the United States Patent Office issued a patent for a device to attach to the business end of the domestic hen, in order to mark with some identifying character, each egg as it is laid, it added to the gaiety of nations, but possibly did little harm. When it issued a patent for a special tapeworm trap that was to be baited and let down into the intestinal depths of the human economy, it demonstrated its conception of therapeutics. No, this is not written facetiously. The patents in question were actually issued; the former, No. 970,074, was granted Sept. 13, 1910, while the latter, No. 11,942, was issued Nov. 14, 1854.

SOME FREAK PATENTS

In February, 1796, the United States granted a patent to one Elisha Perkins for certain "metallic points to remove pain." Perkins' Tractors had their day; they flourished bravely on a wave of lay and medical credulity but in a few years were relegated by public indifference to the limbo of forgotten fads. In 1897 the United States Patent Office issued a patent (No. 587,237) to one Hercules Sanche for a preposterous piece of charlatanry that later became known as the Oxydonor. This piece of nickel-plated gas-pipe, which had no more therapeutic value than an empty tomato tin, had a



UNITED STATES PATENT OFFICE.

EVAGHORAS SERGHISON, OF SAN FRANCISCO, CALIFORNIA.

MEDICINAL COMPOUND.

1,368,974. Specification of Letters Patent. Patented Feb. 15, 1921.

No Drawing. Application filed April 3, 1919. Serial No. 287,227.

To all whom it may concern:

Be it known that I, EVAGHORAS SERGHISON, a citizen of the United States, residing in San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Medicinal Compounds, of which the following is a specification.

My invention relates to a remedy or medicinal composition for use in the treatment of tuberculosis.

The aim of the invention is of course, the provision of a remedy which will prove effective in the treatment of tuberculosis. In actual use I have found that the remedy is most beneficial and far superior to any remedy for tuberculosis known to me. This result is due to the combination of the several ingredients of the compound as hereinafter stated; each ingredient separately having been tried or tested for the treatment of tuberculosis, and found ineffective to produce the desired result.

The remedy comprises the following ingredients in the proportions stated.

Pure olive oil	1 gallon.
Squill root	3 pounds.
Bitter almonds	1½ pounds.
Nettle (the plant except the root)	1½ pounds.
Red poppy flower (petals)	1 pound.

In preparing the remedy the several ingredients are placed in a suitable container and thoroughly mingled by shaking or agitation. The container is then corked or closed in an air-tight manner and placed in water contained in a receptacle. The receptacle is placed adjacent a stove so that the heat therefrom will warm the water and accordingly warm the mixture gradually. The mixture is left thus standing for a considerable period of time. In actual use I have found that seventy-two hours is about the proper time. At the expiration of this period the mixture is thoroughly mixed and squeezed and thereupon filtered; the liquid produced being used as the remedy.

In actual use I have found that a patient should be given about three tablespoonfuls a day, and the remedy or medicine should be taken in a lukewarm condition.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. A medicinal composition for the treatment of tuberculosis, consisting of olive oil, squill root, bitter almonds, nettle plant and poppy petals, as described and for the purpose specified.

2. A medicinal composition consisting of olive oil, one gallon; squill root, three pounds; bitter almonds, one and one fourth pounds; nettle plant, (except the root), one and one-half pounds, and poppy petals, one pound; as described and for the purpose specified.

3. A medicinal composition comprising substantially equal proportions of bitter almonds and nettle and poppy flower and a larger proportion of squill root, all in a menstruum of olive oil.

In testimony whereof I affix my signature in presence of two witnesses.

EVAGHORAS SERGHISON.

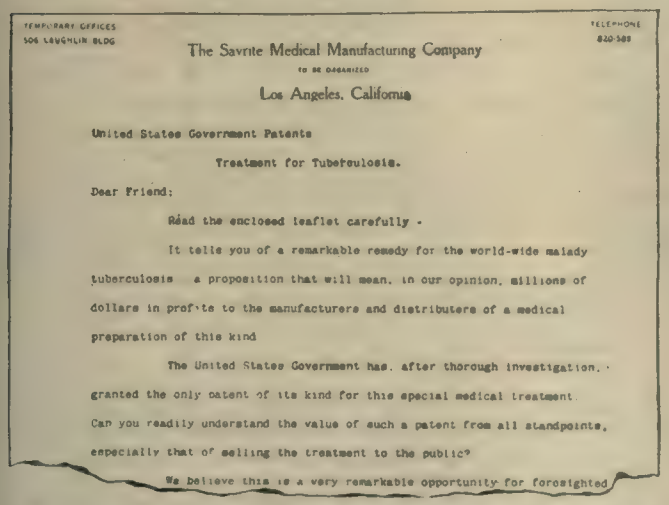
Witnesses:
HAROLD CHANCEY,
CHARLES N. GILLORY.

Photographic reproduction (reduced) of the patent specification for Sävrite, the alleged consumption cure.

world-wide sale among the gullible until 1915 when another branch of the United States Government declared the thing such an utter fraud that its transportation through the United States mails was barred. In 1900, the United States Patent Office granted a patent (No. 647,101) on a similar device (later called the Oxygenor) which also brought in easy money to its exploiters for some years until the fraud order department of the United States Post Office put it out of business.

In 1913 United States Patent No. 1,081,069 was granted on a preparation that, according to the specifications, would

confer immunity against diphtheria, pneumonia, scarlet fever, cerebrospinal meningitis, syphilis, goiter, tuberculosis and several other conditions. In 1917, U. S. Patent No. 1,212,888 was issued for a method of flavoring Epsom salts! If one wanted to go into the subject more thoroughly it would be easy to show that the Patent Office has issued patents for many preparations to be used in medicine for which there has been not the slightest scientific justification.



TEMPORARY OFFICES
506 LAUGHLIN BLDG

TELEPHONE
820-505

The Savrite Medical Manufacturing Company
TO BE ORGANIZED
Los Angeles, California

United States Government Patents

Treatment for Tuberculosis.

Dear Friend:

Read the enclosed leaflet carefully.

It tells you of a remarkable remedy for the world-wide malady tuberculosis - a proposition that will mean, in our opinion, millions of dollars in profits to the manufacturers and distributors of a medical preparation of this kind

The United States Government has, after thorough investigation, granted the only patent of its kind for this special medical treatment.

Can you readily understand the value of such a patent from all standpoints, especially that of selling the treatment to the public?

We believe this is a very remarkable opportunity for foresighted

Photographic reproduction (reduced) of the opening paragraphs of a form letter sent out by the Savrite Medical Manufacturing Company in an attempt to get capital to float the "consumption cure." Note the way in which the United States patent is capitalized.

PATENTING A "CONSUMPTION CURE"

The most recent and flagrant example of lack of intelligent patent law administration is to be found in a case recently brought to the attention of THE JOURNAL. The Savrite Medical Manufacturing Company, Los Angeles, California, has recently circularized the public in an attempt to get money to manufacture "Savrite," an alleged cure for tuberculosis. The talking point of those who are soliciting subscriptions for this purpose—but let them speak for themselves:

"The United States Government has issued the patent on this compound ONLY after thorough investigation, and it is the only patent ever granted in the United States for a preparation in liquid form, ESPECIALLY as a remedy for Tuberculosis."

According to the prospectus, the preparation was "invented" by one Serghison, an alleged sufferer from tuberculosis and one who, it is needless to say, had been "given up entirely by prominent physicians as incurable" but who took his own remedy and "was completely cured of the disease." To quote:

"The inventor of 'Savrite' has discovered what he has proven to be a specific remedy for Tuberculosis. To countless thousands this 'Medical Marvel' will prove a veritable Godsend once its wonderful work becomes known.

"The inventor has tried and tested the Remedy in many cases.

"HE HAS NEVER YET HAD A FAILURE."

We learn, too, that an "eminent physician" stands sponsor for the preparation. Thus:

"The eminent physician, William Kingston Vance, M.D., has used the remedy successfully. This physician has given a sworn affidavit as proof positive that the Serghison treatment for tuberculosis is a success and has curative effects."

The only William Kingston Vance whose name appears in our records lives at Fresno, Calif. He was born in 1852 and was graduated by Bennett College of Eclectic Medicine and Surgery in 1887. His "eminence" has, evidently, been conferred by the Savrite Medical Mfg. Co., as a rather careful search of medical literature and other sources of information fails to disclose that he has any other claim to note. The only record in our files regarding this man occurs in clippings from Fresno and other California newspapers of last November alleging that the federal authorities charged William Kingston Vance with the illegal prescribing of liquor.

The patent for Savrite is No. 1,368,974 issued Feb. 15, 1921, to one Evaghoras Serghison of San Francisco. The "invention," according to the patent specifications, lies in providing "a remedy which will prove effective in the treatment of tuberculosis" and the patentee considers the remedy "most beneficial and far superior to any remedy for tuberculosis known to me."

What is this "Medical Marvel" that produces cures in tuberculosis and has "never yet had a failure"? Let the specifications issued by the United States Patent Office, answer:

"Pure olive oil	1 gallon
"Squill root	3 pounds
"Bitter almonds	1¼ pounds
"Nettle (the plant except the root)	1½ pounds
"Red poppy flower (petals)	1 pound"

These various ingredients are to be mixed, put into a closed container, gradually warmed and left standing for about seventy-two hours. At the end of this time the mixture is squeezed, mixed and filtered; the filtrate comprises the "cure"! The dose, we are told, is "about three tablespoonfuls a day" to be taken in a lukewarm condition.

QUESTIONS FOR THE PATENT OFFICE

On Jan. 6, 1923, THE JOURNAL submitted the following questions to the Commissioner of Patents relative to the granting of this particular patent:

1. What evidence was submitted to the Patent Office of the therapeutic usefulness of this alleged "new and useful Improvements in Medicinal Compounds"?
2. Which one of the forty-odd genera or five hundred species of "nettle" is referred to in this patent?
3. Does the Patent Office consider that the specifications in this patent are sufficiently definite and specific to make it possible on the expiration of the patent for the public to duplicate the product described by the patentee?
4. Was this formula for an alleged effective treatment of tuberculosis submitted to any department of the government that might be expected to have some knowledge of therapeutics?
5. What consideration was the public health given in this matter?

The Commissioner was told that THE JOURNAL would appreciate hearing from him on these points. This was more than a month ago. At the time of going to press (February 7) no reply has been received.

Correspondence

"THE CARE AND FEEDING OF INFANTS"

To the Editor:—The prevention of the initial loss of weight during the first week of extra-uterine life by the administration of sugar solution has been mentioned by the writer of the valuable series of papers on the care and feeding of infants (THE JOURNAL, January 13, p. 109), and credited to Schick. Dr. Charles Herrman, in a later issue (January 27, p. 273), claims priority, showing that in 1915 he published a paper in which he reported that the initial loss of weight may be prevented by the administration of a 10 per cent. solution of lactose every three hours. With a view of saving valuable space from further priority claims, may I intrude with the following facts drawn from ethnology, a field far removed from pediatrics, yet offering at times sound suggestions to those engaged in the care of infants, to the same extent as the Peruvian Indians offered a remedy to malarial patients, and an old woman in Shropshire, England, suggested to Withering digitalis, the best remedy we have for heart failure.

The administration of sugar or of substances containing sugar to infants during the first few days of extra-uterine

life is very widespread among primitive, barbarous and civilized peoples. Many primitive tribes do not permit their new-born infants to take the breast for from two to five days after birth, and feed them with substances containing sugar, such as honey, coconut milk, fruit juices and sugar cane. This is the case among the natives of Samoa, who feed their new-born coconut or sugar cane, which is first well masticated by the mother and then directly transmitted to the infant's mouth (Turner, Samoa, p. 81). Likewise, the natives of Vitis in East Africa give their new-born the juice of sugar cane during the first three days of life. The inhabitants of the Fiji archipelago, too, have the same custom, according to Ploss (Das Kind, Ed. 3, 1911, **1**:458), who quotes many authorities as to numerous other primitive races who feed their new-born with honey, sugar, and the like.

According to Susruta (Susruta Ayurvedas, Ed. Hessler **2**:43), the new-born infant in ancient India was not given the breast, but was made to take honey, butter and various plants containing sugar for three or four days. Ploss also found that honey was given by ancient Aryan tribes in India to their new-born infants. The Romans, too, thus fed their infants during the first week of life. Soranus of Ephesus, a Greek physician who practiced in Rome during the second century A. D., and who wrote a noteworthy treatise on the care and feeding of infants, insisted that it is best to place the new-born at the mother's breast, and that the administration of sweets, particularly honey, is harmful; which goes to show that this custom was prevalent in ancient Rome. Many writers have mentioned that the Persians have been in the habit of giving new-born babies honey over a period of several days.

Among the inhabitants of eastern Europe today the administration of sugar solution to new-born infants during the first week is routine. This can be seen among the Slavonians of southeastern Europe, and the Hungarians, Serbians, Letts, Esthonians, Poles and Russians. The immigrants in this country derived from these regions of Europe have been giving sugar solution to their new-born, and they say that it is best for the nutrition of their babies. They do it because their ancestors have found it useful for generations.

MAURICE FISHBERG, M.D., New York.

"INTESTINAL WORMS AND APPENDICITIS"

To the Editor:—In the editorial, January 27, on "Intestinal Worms and Appendicitis," this statement occurs: "It has been objected that very few of the thousands of appendixes removed are reported to contain parasites." F. K. Noack is quoted as having found nine appendixes out of fifteen infested; the work was evidently done on European patients. It may not be amiss to supplement the editorial with the following note: I recently dissected ninety-six appendixes removed at operation with the express purpose of obtaining some definite percentage figures as to parasitic infestation of the organ. Four of the ninety-six, or 4.16 per cent., harbored *Oxyuris vermicularis*. The infestation varied widely. The most lightly infested appendix had one large adult female; the most heavily infested had twenty-five worms—larvae, adult males and females. Histologically, the organs showed an acute or subacute inflammation, with many polymorphonuclear leukocytes and a few to numerous eosinophils. No other species of worms were found. While it was impossible to obtain histories, all of these were presumably from Minnesota. Incidentally, only one appendix showed a foreign body (other than soft fecal matter). In this case the organ contained two raspberry seeds.

L. N. GARLOUGH, St. Paul.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF SCABIES

To the Editor:—What is considered the best, quickest and most efficient treatment for scabies? Please omit my name.

R. A. L., Illinois.

ANSWER.—Various radical methods for the rapid cure of scabies have been suggested, but their value is questionable, and certainly they are not to be recommended for general use. The treatment for scabies as outlined in any standard textbook of dermatology gives one a reliable and efficient method of treatment. A suitable prescription for use consists of:

	Gm.	or	C.c.
Precipitated sulphur Balsam of Peru Soft soap, U. S. P.	āā	2	3 ss
Zinc oxid Prepared calamine	āā	2	5 gr. xl
Petrolatum	ad	30	ʒ i

The strength of the active drugs contained can be varied to suit the requirements of the individual case, being reduced for the treatment of children, or increased when necessary.

One thing that frequently complicates the treatment of scabies is the development of a sulphur dermatitis. Failure to recognize this complication often leads to the institution of more vigorous treatment, with unsatisfying results. When such dermatitis develops, the striking nocturnal character of the itching is usually lost. The eruption present consists of diffuse patches of dermatitis developing in sites not particularly involved by the scabies itself. With proper recognition of this complication, treatment of scabies is usually eminently satisfactory if conducted along the lines indicated in the dermatologic textbooks.

ARTICLES ON GRANULOMA INGUINALE

To the Editor:—I would be very glad to have a list of leading original articles in English on granuloma inguinale.

C. C. WILEY, M.D., Birmingham, Ala.

ANSWER.—

Ross, C. F.: Granuloma Inguinale, *Virginia M. Month.* **48**: 579 (Jan.) 1922.
Morrissey, P. G.: Granuloma Inguinale, *J. Tennessee M. A.* **15**: 105 (June) 1922.
Parounagian, M. B., and Goodman, Herman: Ulcerating Granuloma (Granuloma Inguinale): Report of a Rare Example, *Arch. Dermat. & Syph.* **5**: 597 (May) 1922.
Randall, A.; Small, J. C., and Belk, W. P.: Granuloma Inguinale, *Surg., Gynec. & Obst.* **34**: 717 (June) 1922.
Beeson, B. B.: Granuloma Inguinale with Lesion on Lower Lip, *Arch. Dermat. & Syph.* **6**: 342 (Sept.) 1922.
Goodman, Herman: Ulcerating Granuloma of Pudenda, *Arch. Dermat. & Syph.* **1**: 151 (Feb.) 1920; Ulcerating Granuloma (Granuloma Inguinale), THE JOURNAL, Sept. 2, 1922, p. 815.
Aragão, H. de B.: Granuloma Venereum, *New Orleans M. & S. J.* **70**: 369 (Oct.) 1917.
Pardo, V.: Ulcerating Granuloma of Pudenda, *J. Cutan. Dis.* **36**: 206 (April) 1918.
Campbell, M. F.: Granuloma Inguinale, THE JOURNAL, March 5, 1921, p. 648.
Lynch, K. M.: Granuloma Inguinale, THE JOURNAL, Sept. 17, 1921, p. 925.
Symmers, Douglas, and Frost, A. C.: Granuloma Inguinale in the United States, THE JOURNAL, May 8, 1920, p. 1304.
Walker, E. L.: Etiology of Granuloma Inguinale, *J. M. Res.* **37**: 427 (Jan.) 1918.
Friedlander, D.: Granuloma Inguinale Tropicum, *California State J. Med.*, April, 1913.
Gruidon, J.: Granuloma Inguinale Tropicum: Report of Three Cases, *J. Cutan. Dis.*, April, 1913.

DEFINITION OF MAJOR OPERATION

Supplementary to the reply published January 20, the medical practice law for Ohio, Section 1288, as amended in 1917, thus defines major surgery:

Neither shall the certificate permit the holder to perform major surgery, which is hereby declared to be all operative procedures requiring the use of the knife or other surgical instruments for the opening of any natural cavity of the body or the amputation of any member or part of the body. Such certificates may be refused, revoked or suspended as in the case of certificates to physicians and surgeons.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

Hawaii October Examination

Dr. G. C. Milnor, secretary, Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Oct. 9-12, 1922. The examination covered 10 subjects and included 50 question. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Georgia		(1914)	80
St. Louis University School of Medicine		(1906)	91
University of Pennsylvania		(1922)	84, 88
Kumamota Special Medical School		(1915)*	75
	FAILED		
Tokyo Charity Hospital Special Medical School		(1916)*	62

* Graduation not verified.

Nevada November Examination

Dr. Simeon L. Lee, secretary, Nevada State Board of Medical Examiners, reports the written examination held at Carson City, Nov. 6-8, 1922. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Ten candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, San Francisco		(1904)	82
Howard University		(1904)	81.9
College of Physicians and Surgeons, Keokuk		(1896)	83.5
Detroit College of Medicine and Surgery		(1896)	78.9
Kansas City College of Medicine and Surgery		(1922)	83.9
Kansas City University of Physicians and Surgeons		(1922)	77.7
University and Bellevue Hospital Medical College		(1903)	89.7
Nagasaki Special Medical School		(1922)*	84.8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles		(1917)	California
University of California Medical School		(1919), (1922)	California
Illinois Medical College		(1903)	Illinois
Loyola University		(1919)	Idaho
Rush Medical College		(1882)	California
Medical School of Maine		(1908)	Maine
Barnes Medical College		(1903)	Missouri
Jefferson Medical College		(1891)	Penna.
Texas Christian University		(1914)	Texas

* Graduation not verified.

Utah November Examination

Mr. J. T. Hammond, director, Department of Registration of Utah, reports the written examination held at Salt Lake City, Nov. 23, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Five candidates were licensed by reciprocity, and one candidate received an osteopath license by reciprocity. One candidate was licensed on government credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Maryland		(1922)	82.7
Creighton University		(1921)	77.2
Jefferson Medical College		(1921)	84.8
University of Pennsylvania		(1920)	84.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University		(1921)	California
Harvard University		(1920)	Ohio
Columbia University		(1920, 2)	New York
Jefferson Medical College		(1916)	Penna.
Osteopath			Missouri

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Michigan Medical School		(1910)	U. S. Navy

Book Notices

ANIMAL PARASITES AND HUMAN DISEASE. By Asa C. Chandler, M.S., Ph.D., Instructor in Biology, Rice Institute, Houston. Second edition. Cloth. Price, $4.50. Pp. 572, with 254 illustrations. New York: John Wiley & Sons, Inc., 1922.

The discoveries mentioned in this outline of parasitic diseases are only a few of the more conspicuous milestones on the path of progress of modern medicine as related to animal parasites. A dry subject has been made interesting, and, at times, amusing. Chandler says, "Potton and Craig found the inside of a hat in which a kitten had slept overnight so full of flea eggs that it looked as if it had had sugar sprinkled in it from a sifter." The necessity for intravenous injections of quinin in certain cases of malaria, as against oral administration, is emphasized by saying, "Many a man has died with enough quinin in his stomach to have saved his life had it been properly given." The subject matter lends itself well to striking statements. Language is seldom more forceful than this: "According to the writer's investigations, the sausage which was the cause of a recent epidemic in Portland, Oregon, contained over 2,000,000 larvae (of trichina worms) to the pound at a very conservative estimate, and in a bit of human muscle from the diaphragm of an Italian who fell victim to the disease the number of worms was even greater." The author's choice of words is poor, however, when he says, "In 1905 Schaudinn discovered *Spirochaeta pallida*, which is believed to cause the disease." Some might infer, unless better informed, that Schaudinn's work in discovering the cause of syphilis had never been confirmed. The author does not hesitate to say, in the case of yellow fever, "The organism causing the disease was discovered by Noguchi at Guayaquil in 1918, and was found to be a spirochete-like organism closely related to, and very closely resembling the spirochete of infectious jaundice." As a matter of fact, doubt still exists concerning the cause of yellow fever, but none whatever concerning the cause of syphilis. The illustrations are almost all pen and ink drawings by the author from specimens or from illustrations of other authors, and are well adapted to the text.

CLINICAL AND OPERATIVE GYNÆCOLOGY. By J. M. Munro Kerr, Professor of Obstetrics and Gynæcology, Glasgow University (Muirhead Chair). Cloth. Price, $15. Pp. 832, with illustrations. New York: Oxford University Press, 1922.

It is rare to take up a book wherein one agrees with so much and dissents from so little. Kerr presents the subject of gynecology in a clear, well drawn and comprehensive picture. He shows the anatomy, the physiology and the pathology adequately in the foreground, and then with coherent thought and lucid expression he opens up the perspective in an orderly and methodical progression. The clarity of the picture is greatly enhanced by the occasional summaries, the frequent cross references, and especially by the cases taken from the author's experience wherein success and failure find equal representation and emphasis. The volume is just as desirable for the student and practitioner as for the specialist; but the specialist who combines gynecology with obstetrics will find it invaluable. The interdependence of the two arts is everywhere recognized and accentuated. It is refreshing to meet the honest statement that an entire absence of lacerations will be found in no more than 15 per cent. of primiparas, as well as the opinion, so slow to win credence, that salpingitis arises from gonorrheal and puerperal infections in the proportion of about 2 to 3, respectively. The tendency has been to give about 70 per cent. of primiparas an intact introitus, and to regard virtually all tubal infections as gonorrheal. We are delighted also to have modern authority in support of more conservative treatment of retropositions. In these days of furious knife-whetting it is a novel comfort to encounter an eminent technician who is willing to try at first such old, undramatic, but none the less valuable agents as pessaries. Fabre himself could not show a more scientific approach to his problem, than Kerr. Thorough asepsis is inculcated and insisted on, not only for operative interferences but also for vaginal examinations.

The latter injunction ought to be unnecessary; but who of us has not shuddered with disgust as an intern or a practitioner begins to paw over a clean woman with his hands unwashed? The maneuver not only is a violation of surgical laws and a repellent ordeal for the patient, but it is a serious reflection on the rearing, refinement and training of the examiner. It may seem invidious in so large and so excellent an accomplishment to mention technical activities which differ from ours. The wonder is that the occasions are so few. We wish the author had made it plainer that he shaves the vulva in his operative preparations. We almost fear that he omits this invaluable procedure at times. His use of the intra-uterine douche in saprophytic and septic conditions of the uterus is at variance with the custom here. Practically all disturbance of the endometrium has been abandoned except in cases in which the presence of a putrid remnant in the cavity is well assured. Hysterectomy for acute peritonitis also is never done for the reason that the operation can rarely be undertaken before the septic agents have passed the walls of the uterus and entered regions inaccessible to the knife. In puerperal cases, as the author very well shows, the bacteria spread along the lymphatics rather than by contiguity, and therefore enter the peritoneal cavity (hence the peritonitis) before the infection is definitely recognized. We must question, too, the author's faith in superfetation. The chapters on venereal diseases, nervous disorders, the development of the reproductive organs, anesthesia and the technic of transfusion have been done most acceptably by associates of the author. These valuable and pertinent contributions could not well be spared. The illustrations of the operative maneuvers are unusually welcome in their clearness and comprehensibility. The veriest tyro could scarcely go astray in the presence of such fine and elaborately detailed charts. The author's opinions have the definition which come from the shrewd interpretation of his abundant material. The book is printed in the best English manner; it is large, but complete; there is no excess. The style is unusually simple and clear, and over it all, text and plan, comment and illustration, is felt the wide culture, the scholarly background, the trained mind and the dominant personality of its author.

DIATHERMIE ET DIATHERMOTHERAPIE. Par le Dr. H. Bordier, Professeur Agrégé a la Faculté de Médecine de Lyon. Préface de M. Le Professeur Bergonié. Correspondant de L'Institut (Académie des Sciences). Paper. Price, 30 francs. Pp. 481, with 137 illustrations. Paris: Librairie J. B. Baillière et Fils, 1922.

This publication evidently originated in the demand for a textbook on diathermy in the French language. The theoretical part seems to contain a superabundance of electrotechnical details and formulas. Of value for the appreciation of electrocoagulation is its comparison with the results gleaned by the actual cautery, and the demonstration of the technical superiority of this method over the Paquelin cautery and the galvanocautery. To the surgical use of electrocoagulation, considerable space is devoted; the different electrodes are shown in pictures, and the administration is discussed according to the various parts of the anatomy and the nature of the pathologic changes. This is also true of the form of discussion of the application of the so-called medical diathermy, the raising of the temperature of the structure of the body without transgressing the physiologic limit. The illustrations do not come up to the standard laid down by American medical textbooks and periodicals.

INNERE SEKRETION. Ihre physiologischen Grundlagen und ihre Bedeutung für die Pathologie. Band I. Von Prof. Dr. Artur Biedl, Vorstand des Institutes für allgemeine und experim. Pathologie und der propädeutischen Klinik an der deutschen Universität in Prag. Fourth edition. Band III: Literatur. Paper. Price, 540 marks, each. Berlin: Urban & Schwarzenberg, 1922.

The war and its sequels has delayed the appearance of the fourth edition of this standard work, and we have as yet only the first part of the first volume. Of this, a considerable portion is given over to general considerations, especially to methods of investigation. Only the parathyroid system receives detailed consideration, but the exhaustive character of the work is shown by the fact that more than 200 pages are given to these structures. No marked changes from the previous editions of the work are to be noted. It is the most painstaking, exact compilation of existing literature on the ductless glands that we have, and is an indispensable source of information to any one studying this field. Probably it would be more useful, and certainly it would be more interesting, if the author's own convictions were more clearly and succinctly indicated. Despite the obstacles to international communication that have existed for several years, non-Teutonic literature has been considered, and all but the most recent American work seems to have been discussed. Among works on the organs of internal secretions, Biedl's handbook is noteworthy for its unemotional objectivity and scientific soundness; speculation is absent, and there is little encouragement for the practitioners of what Marine has aptly termed "endocriminology."

Volume III is a bibliography of the subject of internal secretions, and comprises 480 pages. Although it makes no pretense of being complete, it does list most of the important publications on the subject during the last fifty years.

BACTERIOLOGIC STUDIES. I. Review of Recent Work on Pneumococci. By A. Eastwood, M.D. II. Types of Pneumococci. By F. Griffith, M.B. III. Serological Differences Amongst Pneumococci. By A. Eastwood, M.D. IV. Distribution and Serological Characters of Influenza Bacilli. By W. M. Scott, M.D. Ministry of Health Reports on Public Health and Medical Subjects, No. 13. Paper. Price, 2 shillings, 6 pence net. Pp. 89. London: His Majesty's Stationery Office, 1922.

These studies comprise four papers on subjects connected with respiratory disease. 1. A review of recent work on pneumonia (eighteen pages) by Eastwood, which is primarily a survey of the question of serologic races among pneumococci. The problem of pneumococcus types is well outlined in this article. 2. A laboratory study (twenty-five pages) by Griffith of types of pneumococci obtained from cases of lobar pneumonia in man, mostly in the London area. The conclusion is reached that the American Types I, II and III are serologically distinct and occur in cases of lobar pneumonia in England in almost the same proportion as in the United States. 3. A discussion (thirty pages) by Eastwood of the significance of serologic differences among pneumococci, at the end of which the author expresses his belief that Neufeld's views about the significance of serologic differences among pneumococci ought not to be accepted as final. 4. A summary (fourteen pages) by Scott of observations on the distribution and serologic character of influenza bacilli, from which the author concludes that the serologic diversity of influenza bacilli cannot be used as an argument either in favor of or against their etiologic relationship to influenza. Although the observations reported are not very novel and the critical discussions not remarkably illuminating, the paper will be found useful by those interested in the investigation of respiratory disease.

LECTURES ON DIETETICS. By Max Einhorn, M.D., Visiting Physician to the Lenox Hill Hospital. Cloth. Price, $2.25 net. Pp. 244, with 8 illustrations. Philadelphia: W. B. Saunders Company, 1922.

The author presents in simple language some common sense observations on the principles of diet and on the physiology of digestion. Dr. Einhorn is an apostle of normalcy. He is against fads of all kinds, against eating fast or slowly, against vegetarianism and high meat diets, against too many meals or too few. He is for adopting the diet commonly followed by the large majority of persons with some attention to those elementary principles of nutrition that physiology has incontrovertibly proved to have a place. In addition to the diet in health, special chapters concern such diseases as diabetes and gout, in which diet is an especially important factor. Dr. Einhorn has succeeded in including a large amount of material in small compass and in an unusually readable form.

NUTRITIONAL PHYSIOLOGY. By Percy Goldthwait Stiles, Assistant Professor of Physiology in Harvard University. Fourth edition. Cloth. Price, $2 net. Pp. 300, with 22 illustrations. Philadelphia: W. B. Saunders Company, 1922.

In this work the author presents an account of the processes of digestion, with special consideration of the lessons learned by the war and by studies carried out in nutritional research in many institutions. The book is exceedingly well written; it has a social as well as a scientific point of view, and it should be of interest to the lay as well as to the medical reader.

Miscellany

EDWARD JENNER: 1749-1823

Edward Jenner, who died a hundred years ago, will ever be remembered as the conqueror of smallpox. Born in 1749 at Berkeley, Gloucestershire, England, the son of a minister, he decided at the age of 13 to study medicine, and was apprenticed by his father to the Drs. Ludlow at Sodbury, with whom he remained six years. It was during his apprenticeship that a patient said when smallpox was mentioned, "I cannot take it, for I have had cowpox." This remark was not forgotten by Jenner. Attaining his majority, Jenner went to London, where he became a house pupil with John Hunter. He often discussed smallpox with the great anatomist, and once expressed a hope of being able to substitute vaccination for inoculation, to which Hunter characteristically replied: "Don't think, Jenner, but try." Tiring of city life, he returned to his native village and settled down as a country practitioner. By this time he had reached the conclusion that the "grease" of horses, cowpox and smallpox were the same disease. He made a drawing of the hand of a milkmaid with cowpox which he took to London, where his theory was beginning to be discussed in medical circles. In 1796, cowpox broke out on a farm near Berkeley, and Jenner seized the opportunity to put his theories to a test. He took pus from the hand of Sarah Neames, a dairy maid, who had contracted the disease, and inserted it through superficial incisions into the arm of James Phipps, a robust lad about 8 years of age. The vaccination was successful, and the result was very similar to that produced by inoculation with smallpox itself. Six weeks later, Jenner inoculated this boy with variolous matter, and was delighted to see that the lad did not contract the disease. When cowpox broke out again the following year, Jenner repeated his experiment successfully on three other persons. He then prepared a paper on the work he had done, and transmitted it to the Royal Society for publication. The council returned the manuscript, however, believing, apparently, that the evidence was insufficient to warrant publication in their transactions. Jenner resolved to publish the paper himself, and it was printed in 1798 as a pamphlet entitled: "Inquiry Into the Causes and Effects of Variolae Vaccinae, a Disease Discovered in Some of the Western Counties of England, Particularly Gloucestershire, and Known by the Name of the Cow Pox."

While in London to attend to the publication of his pamphlet, Jenner called on a Dr. Cline, with whom he left some cowpox virus for trial. Cline vaccinated one of his patients successfully, and later inoculated him in three different places with smallpox, with negative results. He therefore confirmed Jenner's work, and wrote, "I think the substitution of cowpox poison for smallpox promises to be one of the greatest improvements that has ever been made in medicine."

The leading scientific and medical men in London were now discussing vaccination. Several questioned the accuracy of Jenner's observations. Ingenhouz, a well known physician and scientist, opposed the cowpox theory, and cited several cases in which smallpox had been contracted after inoculation with cowpox. Others, such as Pearson and Woodville, adopted Jenner's ideas, but endeavored to exploit them on lines of their own. Jenner returned to London to rescue his discovery from destruction, to find that Pearson had opened an institute of his own for the inoculation of cowpox, in which Jenner refused to accept the offer of a prominent position. Jenner returned again to his native village to complete and publish his second paper: "A Continuation of Facts and Observations Relative to the Variolae Vaccinae."

Vaccination was soon introduced in America by Dr. Waterhouse of Cambridge, Mass., who vaccinated the members of his family, and then inoculated them with smallpox to demonstrate his faith in the procedure and to assist in showing the public the protection it affords. France, Spain, Austria, Italy and Switzerland accepted vaccination eagerly. Spain dispatched an expedition in 1803 to all her possessions in the Old and New worlds to introduce vaccination and to check epidemics of smallpox, which were raging. Twenty-two children were taken along on this voyage in order to preserve the vaccine by passing it from arm to arm. Napoleon, in 1805, ordered all of his soldiers who had not had the smallpox to be vaccinated. The empress of Russia ordered that the first child who submitted to the operation be named "Vaccinoff," and that it be educated at public expense. Jenner's influence was so great that the king of Spain and the emperor of Austria released English prisoners of war at his request. The Royal Jennerian Society was formed, and a grant of £10,000 was bestowed by Parliament.

Notwithstanding the success and support that vaccination received throughout the world, there were many influential persons who still opposed the practice, and pamphlets, lampoons and caricatures were constantly published about its discoverer. Antivaccinationists claimed that various "beastly" diseases common to cattle appeared among the people since vaccination was introduced. A writer quoted a woman who said that since her daughter was vaccinated "she coughed like a cow and has grown hairy over her body." Another said that vaccination had been discontinued in his part of the country because the people who had been vaccinated "bellowed like bulls."

Notwithstanding the most bitter attacks, Jenner was elected a member of nearly all the leading scientific societies of Europe, and was presented with the freedom of Dublin, Edinburgh, London and Glasgow. The Medical Society of London conferred on him a gold medal, and he was granted diplomas from all parts of the world.

A fresh outburst of criticism occurred in 1810 which greatly unnerved and aged Edward Jenner. His life was further saddened by the loss of his wife and son in 1815. At that time he retired to Berkeley, which he did not leave again, except for a day or two, until his death. He wrote in his last letter to his friend Gardner, Jan. 23, 1823: "I have had an attack from a quarter I did not expect, the Edinburgh *Review*. These people understand literature better than physic, but it will do incalculable mischief. I put it down at 100,000 deaths at least. Never was I involved in so many perplexities." The following day he retired in usual health, but was stricken the next morning with apoplexy. He never rallied, and died, January 26.

The principles which Edward Jenner advocated and practiced still remain the one efficient means of protection against smallpox. The most eloquent tribute to his memory are the lives that his discovery has saved.

DEFINING A MISDEMEANOR

It costs only $400 to be party to a murder in Chicago. Anyhow, that is all it cost Frank S. Reed of 5724 South State Street, as the following briefly recapitulated facts taken from the record of the trial in Judge Adams' court will show.

First, we will have to explain that Mr. Reed, or, as he sometimes styled himself, Dr. Reed, was on trial in the court named on two charges. First, for failure to report a contagious disease as the city ordinances require, and, next, for practicing medicine without a license.

On the evening of November 23, according to Reed's own testimony, he was called to see Herbert Cherry, whose parents reside at 5617 South State Street, and was informed that the little fellow had a sore throat and had been complaining for a day or two. After manipulating the vertebrae in the child's neck so that he would open his mouth, Mr. Reed made a brief examination, but prescribed no further treatment. He explained to the court, however, that he noticed that the throat was inflamed and there was a yellow spot on one side, but told the parents to call him in case the child got worse.

According to the testimony of Dr. C. D. Trice, a practicing physician in that neighborhood, who was called in by the family two days later, the child rapidly grew worse, and when Dr. Trice arrived was in a semiconscious state and died two hours later. Dr. Trice diagnosed the case as diphtheria, and promptly reported it; also he stated that, according to his best judgment, the case had been running for several days.

Before the case was called in court, "Dr." Reed, in a statement made to Dr. Spalding, chief of the Medical Bureau in the Department of Health, stated he suspected the child had diphtheria and that he manipulated the vertebrae on the back of the neck for the reason that such manipulation tended to control diseases of the throat. He also stated that he did not report the case, that the parents did not recall him, and he heard no more about the case. "Dr." Reed further stated that he was a licensed embalmer and under that license he had been treating cases in this way for the last six months.

It was also disclosed in the testimony that the sign on Reed's office door read "Doctor Frank S. Reed, Chiropractor," but after his interview with Dr. Spalding of the Department of Health, he had removed the word "Doctor," leaving the remaining part of the sign as it was. . . .

The attorney for the defendant entered a plea for leniency on the ground that his client had been perfectly frank and truthful in the statements he had made to the court. This plea, however, the court ignored and in passing sentence said: "This defendant had no business there at all. He is fined $200 and costs on each charge, making a total of $400 and costs." Then turning to the defendant, the court said: "You lock up your business and go out to the stockyards and get a job where you belong."—*Bulletin, Chicago School of Sanitary Instruction.*

Medicolegal

Request for Services for Injured Child

(Fruin v. Glassnap (Conn.), 117 Atl. R. 547)

The Supreme Court of Errors of Connecticut, in setting aside a judgment obtained by the plaintiff, and ordering a new trial, does so on the ground that the charge to the jury was inadequate and prejudicial to the defendant. The court says that the plaintiff offered evidence to prove that a child was injured by an auto truck driven by the defendant, and was carried by a third person into the office of the plaintiff, and left in his care. The plaintiff immediately administered first aid to the child, and by examination discovered that she was seriously injured and would have to be confined in a hospital for eight or ten weeks and receive constant medical attendance. Soon afterward, the defendant came into the office and the plaintiff told him these facts, and that treatment of the child would entail expense; that he should like to know by whom he would be paid, and asked the defendant if he wanted him to take the case. The defendant answered that he did, and told the plaintiff to go on with the treatment. He then gave him $10 to cover the expense of a roentgenogram, telling the plaintiff to credit the remainder, if any, on his bill for services. On the other hand, the defendant denied that he had any conversation with the plaintiff concerning payment for services rendered or to be rendered to the child by the plaintiff, and denied that he had paid the plaintiff any money. He offered no other evidence to contradict the evidence offered by the plaintiff. It was admitted that the defendant stood in no relationship to the injured child which put an obligation on him to furnish her with necessary medical care. On this evidence, under proper instructions, the jury could reasonably find the issues for the plaintiff. Therefore the trial court committed no error in denying the defendant's motion to set aside the verdict

In the conditions in which these parties stood, the burden rested on the plaintiff to prove, either an express promise by the defendant to pay the plaintiff for his services, or circumstances or language from which his promise to pay might fairly be implied from the request he made. A simple request would not fix liability on the defendant, because he was in no relationship to the injured child which bound him to supply her with necessary surgical treatment. It must appear that by something said or done that obligation was put on him. From the evidence relating to the conversation between the parties, and the time and circumstances in which it took place, and also to the payment of $10 on account, it might reasonably be found either that the defendant made an express promise to employ and pay the plaintiff for his services, or that he made a request of the plaintiff for his services which implied a promise to pay for them. But, as to the difference between these alternatives, the trial court did not sufficiently instruct the jury. It did not define an express promise or an implied promise. It said nothing about a request from which a promise might legally be implied. Its repetition of the words "request or promise" was so insistent that the jury must have been impressed with the belief that a mere request of the defendant, without a promise of any kind, would be sufficient to hold him liable to pay for the plaintiff's services. That is not the law. In this particular, also, the charge was not fitted to the issues before the jury. The defendant did not deny that he requested the services rendered, but only that he promised to pay for them. Whether such a promise might be implied from the request was therefore a question which the jury, if they found the evidence insufficient to prove an express promise, would be called on to determine.

The rule of law that from the mere summons and request of a physician in an emergency to care for a person who is ill the law does not imply a promise to pay for the services rendered by the physician had no application to this case, as the defendant was not the person who summoned the plaintiff to care for the injured child.

"Hearsay" in Qualification and Cross-Examination of Experts

(Laird v. Boston & M. R. R. (N. H.), 117 Atl. R. 591)

The Supreme Court of New Hampshire overrules in this action for negligence the defendant's exception to the plaintiff's having been permitted on cross-examination to ask an expert witness called by the defendant whether he would modify his opinion if a certain admitted authority stated differently in his textbook. The court says that the use of standard authorities to discredit such a witness is a matter on which there is much diversity of opinion. The objection to such procedure on the ground that it violates the hearsay rule and permits the use of opinions which are not subject to cross-examination is unsound, or else it proves too much. If the opinion of one who is an authority cannot be used at all unless the holder of it is sworn and is subject to cross-examination, by what logic can the same inadmissible opinion be used as a basis for the admissible opinion of the expert witness? The opinion of the expert, qualified by study, is admitted as an exception to the hearsay rule. It is known to be founded on the assertions of others. Whether it shall be admitted or rejected depends on the witness' familiarity with the hearsay. Unless he is thoroughly versed in that hearsay, he is not qualified to testify. The reasoning of courts excluding inquiries about the authorities, on the cross-examination of the expert, leads directly to the conclusion that the opinion of the expert should be excluded. If the cross-examination puts before the jury the unsworn opinion of the authority, the direct testimony of the expert does the same thing, with the added infirmity involved in his recollection of what the authorities say.

The objection to this procedure is unsound for another reason. It appearing that certain printed books are received by the profession as authorities and as truly setting forth the views of certain authors, opinions based thereon are admitted in evidence. When the witness is confronted with the contents of one of these books that denies the views he has expressed, the issue presented is not whether the book states the true opinion of the author, but whether the witness has honestly and intelligently read and applied what is set down in the books. The view that the opinions used on cross-examination thereby become positive evidence leaves wholly out of consideration the fact that such opinions, being the foundation for the witness' opinion, are used solely to test its value, and assumes that trial courts and juries are either unable or unwilling to deal intelligently and fairly with restricted evidence.

Opinions are received in New Hampshire whenever it appears that they will be helpful, and the just and reason-

able corollary is that their value is open to investigation. The opponent may be permitted to test this value for various reasons and in various ways. There may be occasion to inquire whether the opinion is an honest one. Does it really express the views of the witness? If it be honest, does it represent the unanimous hearsay conclusion, or only a fragment of it? Has the witness made himself familiar with all the useful hearsay on the subject, or only a part? Having testified to the sum of the useful hearsay, he may justly be questioned concerning the units of which the sum is composed. No fact which tends directly to qualify or discredit the opinion given by the witness can be held to be inadmissible on his cross-examination, as matter of law. The whole field of hearsay knowledge on the subject is open to such investigation because of the nature of the opinion that has been received. How far this field can profitably be explored in a given case is a matter to be determined by the justice who presides at the trial.

Cases in which there was an evident abuse of this right in the reading of extended extracts from the authorities under the pretense of asking questions, or the standing of the author rested on the assertion of counsel, were not in point here, it being proved that the author was an eminent authority, while the question objected to related directly and simply to the point in issue.

Disease Contracted in Employment Not an "Injury"

(Industrial Commission v. Cross et al. (Ohio), 136 N. E. R. 283)

The Supreme Court of Ohio says that the question presented in this case was whether a disease contracted in the course of employment is an "injury," within the meaning of a statutory provision for compensation, when an employee is injured in the course of his employment. Thus far, this court has not been called on to determine whether the term "injury" was intended by the legislature to include diseases generally, although it did declare that the original voluntary workmen's compensation act, passed prior to the adoption of the present state constitution, did not contemplate compensation for occupational disease. The constitutional provision is that "for the purpose of providing compensation to workmen and their dependents, for death, injury or occupational disease, occasioned in the course of such workmen's employment, laws may be passed," etc. After that, the present workmen's compensation law was passed, and it may be presumed that, when it uses the same words or terms as does the constitution, it uses them in the same sense as they are used in the constitution. Consequently, as the constitution differentiates between "injury" and "occupational disease," and if injury did not include occupational disease it did not include disease generally, and disease generally was excluded from its contemplation by the specific inclusion of occupational disease, it is held that the term "injury," as used in the statutory provision under consideration, does not include diseases which are contracted, as distinguished from diseases which are occasioned by, or follow as a result from, physical injury. In the instant case, it was alleged that the employee contracted typhoid fever by drinking contaminated water from a spring near where he was employed, which was the only water available for use as drinking water. Compensation was denied by the industrial commission. The court of common pleas decided against the commission, and that court's judgment was affirmed by the court of appeals. But, construing the law as above, the supreme court reverses the judgments of those two courts, and sustains a demurrer to the claimants' petition. The supreme court holds that, if the scope of cases compensable is to be extended, it should be done by unambiguous legislative enactment rather than by judicial construction. For it must be recognized that, if the term "injury" is to be construed to include typhoid fever contracted in the course of employment, it may as well include influenza, pneumonia, tuberculosis, smallpox, ordinary colds, rheumatism and practically every disease which may be contracted by workmen in the course of employment; and the workmen's compensation department will become a health and life insurance department for workmen, compulsorily supported by employers, and the constitutionality of the whole scheme be endangered.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Roentgenology, New York

December, 1922, **9**, No. 12

Scientific Basis of Short Wave-Length Therapy. W. Duane, Cambridge, Mass.—p. 781.
*Function of Muscles of Stomach. A. E. Barclay, Manchester, England.—p. 792.
*What Is Best Method for Treatment of Uterine Fibromyoma by Means of Roentgen Rays? M. Béclère, Paris, France.—p. 797.
Protection in Radiology. G. E. Pfahler, Philadelphia.—p. 803.
Treatment of Cancer of Pelvic Organs with Moderate Radium Irradiation. J. G. Clark and F. E. Keene, Philadelphia.—p. 808.
Statistics and Technic in Treatment of Fibromyoma of Uterus by Radiotherapy. J. A. Corscaden, New York.—p. 812.
Estimation of Cardiac Volume by Roentgenology. C. R. Bardeen, Madison, Wis.—p. 823.

Function of Muscles of Stomach.—Experiments on the function of the muscles of the stomach are quoted by Barclay which he believes go a very long way toward confirming his hypothesis that the oblique band of muscle can act entirely independently of the circular and longitudinal coats; and if this is correct, gastroptosis is due to elongation of the oblique band, while hypotonus, or so-called atony, is the relaxation, lengthening and possibly stretching of the fibers of the circular and longitudinal coats, the oblique band retaining its normal length. The chief function of the oblique band is to carry the weight of the stomach and its contents. The functions of the other two coats are concerned with peristalsis and with that ligamentous action of muscle called tonic action, but which is better described as posture.

Roentgenotherapy of Uterine Fibromyoma.—For the large majority of cases of uterine fibromyoma Béclère prefers the treatment with small doses of roentgen ray given at short intervals.

American Review of Tuberculosis, Baltimore

December, 1922, **6**, No. 10

*Cauterization of Adhesions in Artificial Pneumothorax Treatment of Pulmonary Tuberculosis. H. C. Jacobaeus, Stockholm, Sweden.—p. 871.
*Compression of Lung by Paraffin Oil in Pleural Cavity. E. Archibald, Montreal.—p. 898.
Treatment and Organization for Combating Surgical Tuberculosis at Surgical University Clinic of Frankfurt-Am-Main, Germany. M. Flesch-Thebesius.—p. 900.
*Laryngeal Tuberculosis From Point of View of Pulmonary Specialist. C. L. Minor, Asheville, N. C.—p. 914.
*Effect of Six Weeks' Bed Rest on Patients Entering Trudeau Sanatorium. L. Brown and F. H. Heise, Trudeau, N. Y.—p. 920.
*Sodium Morrhuate in Treatment of Pulmonary Tuberculosis. W. D. Tewksbury, Washington, D. C.—p. 929.
*Treatment of Pulmonary Tuberculosis with Sodium Morrhuate. M. J. Fine, Newark, N. J.—p. 934.
*Action of Cod Liver Oil on Tubercle Bacillus. H. B. Campbell and J. Kieffer, Norwich, Conn.—p. 938.
Dorset's Egg Medium for Cultivation of Tubercle Bacilli, and Its Modifications. C. G. Burn, Philadelphia.—p. 950.

Cauterizing Adhesions in Artificial Pneumothorax Treatment of Lung Tuberculosis.—Jacobaeus discusses the technic and indications of his method of cauterization with the galvanocautery to remove adhesions in the artificial pneumothorax treatment of lung tuberculosis and presents his results. Of seventy-eight cases, published thus far, in fifty-five this method has been technically and completely successful in removing adhesions which prevented complete collapse of the lung. The clinical result has not been so favorable, as only forty-nine patients, or two thirds of all cases, have been symptom free. Although it has been impossible by this method to obtain as high a percentage of clinically improved cases as in cases of simple, uncomplicated pneumothorax without adhesions, Jacobaeus feels that the procedure ought to be of permanent value in, perhaps, a limited number of pneumothorax cases with stringlike or membrane-like adhesions.

Compression of Lung by Paraffin Oil.—In order to overcome the necessity of frequent refills and the danger of pleural effusions, sometimes infected, leading to adhesions

and the not infrequent loss of the pleural space in the production of an artificial pneumothorax, Archibald injected liquid petrolatum into animals and noted the results. He found that from the standpoint of the necessity of refills, paraffin oil cannot be relied on to remain inert in the pleural cavity because one half or more of the amount injected was later recovered from the chest. The experiments also showed that in a majority of the cases there occurred a slight aseptic inflammatory reaction, as the result of which minute nodules of fibrinous exudate become attached to the pleura and were ultimately organized. Most of these gave rise to no adhesions between the pleural leaves, but some did. The greater part of the pleural space remained free; but pocketing would occur chiefly in the lower third of the thorax. In a few cases the exudate of fibrin was found to be very considerable, and adhesions were extensive. In none of these latter cases could infection be demonstrated by cultures. A third point concerned the possibility of estimating the degree of lung collapse by roentgen-ray examination. It was found that liquid petrolatum allowed the rays to pass about as freely as does normal lung tissue. This study served to emphasize the advantage of air for pneumothorax work, particularly in such matters as roentgen-ray control, comparative lack of pleural irritation, manometric control of tension (found impossible, by the way, to register in the case of oil) and ease of removal in the event of unfavorable pressure symptoms.

Laryngoscopy Important in Tuberculosis Cases.—If the use of the laryngoscope were more general in cases of pulmonary tuberculosis, Minor is convinced that the early changes which are to be found in so large a number of these cases, and which with experience are not difficult of recognition, could easily be found. The lung specialist should always use the laryngoscope to confirm his diagnosis of pulmonary trouble, and then send the patient to the throat specialist for treatment.

Effect of Bed Rest in Pulmonary Tuberculosis.—While no striking evidence is produced by Brown and Heise to show the benefit of six weeks' bed rest to patients entering the sanatorium, under the conditions existing relative to selection of cases and time of beginning treatment, the authors feel, nevertheless, that under more favorable conditions, especially when treatment can be begun immediately on diagnosis, intensive bed rest will prove of benefit to the patient, although symptoms of definite activity are absent. A much more impressive idea of the seriousness of the disease and of the necessity of proper care is inculcated and this should, in later days, months or years, show beneficial results in the prevention of relapse.

Sodium Morrhuate in Pulmonary Tuberculosis. — The experimental work reported on by Tewksbury was done in the Tuberculosis Hospital, Washington, D. C., and was suggested by reports made in the British medical literature on the use of sodium morrhuate in tuberculosis. A 3 per cent. watery solution of sodium morrhuate, containing 0.5 per cent. phenol, was used, beginning with 7 minims of the solution given subcutaneously and increasing each injection 2 minims, up to 30 minims; then back to 7 minims intravenously, and increasing gradually to from 30 to 60 minims, depending on the patient's reactions and the progress of the case. The injections were given every fourth day. Of the eighteen patients treated, sixteen had an unfavorable and two a fair prognosis. All were in the moderately advanced or far advanced stage of the disease. The results obtained were: nine patients improved; six unimproved and three died. The most striking feature was the apparent breaking up of tubercle bacilli in the sputum and the tendency to their diminution in number or disappearance. This was noted in ten patients, and in two of these the sputum became entirely negative. It is not stated definitely that the improvement noted in the nine cases is due to the treatment, as patients of this type often will display periods of temporary improvement without any treatment, but Tewksbury feels that it is, at least, possible that the sodium morrhuate had some beneficial effect.

Sodium Morrhuate in Pulmonary Tuberculosis.—Of fifteen patients treated by Fine with subcutaneous injections of from 7 to 10 minims of sodium morrhuate, twice a week, five showed some improvement. Of these, two made a complete recovery. The sputum cleared completely in two cases. Three patients showed a local reaction. Seven patients coughed more after the injections; and in some instances treatment had to be discontinued on this account. One patient expectorated blood; and the question arises whether it is advisable to give treatment in cases with a history of hemorrhage. Four patients gained weight. Three showed improvement in chest signs. These results lead Fine to conclude that results obtained with the usual form of treatment are as effective as, and probably more so, than those obtained with sodium morrhuate; but that the sodium morrhuate deserves further trial and may be placed in the category of aids in the usual treatment of tuberculosis.

Action of Cod Liver Oil on Tubercle Bacillus. — In the manner in which it was used by Campbell and Kieffer, cod liver oil had a definite inhibitory and bactericidal action on virulent tubercle bacilli. Cod liver oil also inhibited the growth of a lepra bacillus, an avirulent tubercle bacillus and *Bacillus typhosus*. The aqueous extract of cod livers had no true inhibitory or bactericidal action on the tubercle bacillus. The most interesting and definite finding has been the increased granular appearance and granulation of tubercle bacilli and allied bacteria after contact with cod liver oil, especially in view of the fact that similar changes have been observed in the bacilli from sputum of patients treated with sodium morrhuate. Cod liver extract had the opposite effect on the tubercle bacilli. Cod liver oil, extracted with as little heat as possible and not refined in any way, seemed to have had a more potent action than commercial refined oil or oil extracted by heat.

Archives of Occupational Therapy, Baltimore

December, 1922, **1**, No. 6

Crafts Adaptable to Occupational Needs: Their Relative Importance. L. J. Haas, White Plains, N. Y.—p. 443.
Study in Occupational Therapy for Psychoneuroses. L. H. Ziegler, Waukesha, Wis.—p. 457.
Experiences in Directing Occupational Therapy Association. I. Kidder —p. 473.
Occupational Therapy in Tuberculosis Hospitals for Ex-Service Men. B. W. Carr, Washington, D. C.—p. 481.

Colorado Medicine, Denver

December, 1922, **19**, No. 12

Six Cases of Acute Perforation of Chronic Duodenal Ulcer. W. A. Kickland, Fort Collins.—p. 253.
Treatment of Malignancy by Radiation. W. W. Wasson, Denver.—p. 257.

Illinois Medical Journal, Oak Park

January, 1923, **43**, No. 1

Multiplex Pathology and Cancer Problem. W. S. Bainbridge, New York.—p. 20.
How Can a State Medical Journal Best Serve Its Readers? C. J. Whalen, Chicago.—p. 24.
*Ectopic Pregnancy. A. Hall, Mt. Vernon.—p. 33.
How to Meet Obstetric Emergencies. G. Gellhorn, St. Louis.—p. 37.
Cesarean Section Under Local Anesthesia. E. C. Roos, Decatur.—p. 42.
Experiences with Nonsurgical Drainage of Gallbladder. J. Mayer, Chicago.—p. 47.
*Syphilis of Lung; Review of Reported Cases. A. Egdahl, Rockford.—p. 50.
*Complement and Syphilis, with Special Reference to Biologic Action of Arsphenamin and Mercury. F. Herb, Chicago.—p. 54.
Benign Neoplasms of Larynx. J. A. Cavanaugh, Chicago.—p. 59.
Roentgen-Ray Treatment of Thyrotoxicosis. I. S. Trostler, Chicago.—p. 64.
Disturbances of Knee Joint. M. A. Bernstein, Chicago.—p. 70.

Ectopic Pregnancy. — Hall has seen twenty-one cases of ectopic pregnancy. Many of them were acute. In one case operation was refused and the patient died from hemorrhage the next day. The remaining twenty women were operated on and nineteen recovered. The only death that occurred was that of a double ectopic patient who had been treated by another physician six or seven days before a diagnosis was made. She had bled until she was almost pulseless. Her abdomen was filled with blood. She died five days following operation from peritonitis. Two cases were of more than usual interest. In one of these, a case of left tubal pregnancy, the rupture did not occur until the twentieth week, and when it did occur, there was no shock and no

hemorrhage. The fetus, nine inches in length, was found underneath the liver. The tube was removed with the placenta intact, and the woman made an uninterrupted recovery. The other case was one of twin pregnancy, an intra-uterine pregnancy combined with a tubal pregnancy. The tube was ruptured at the eighth week, accompanied with pain, internal hemorrhage and shock. The woman was operated on at once, and the diseased tube was removed. Not until the abdomen was opened was the uterine pregnancy discovered. The woman made an uninterrupted recovery and seven months later was delivered of a normal baby.

Syphilis of Lung.—Egdahl's patient had a negative history for syphilis but the blood Wassermann was four plus. The first symptom was cough, which was followed by night sweats, pains in both sides of the chest, and shortness of breath. There was no expectoration of blood. Examination of the chest disclosed signs indicating the presence of some pathology on the left side. The sputum was negative for tubercle bacilli and elastic tissue. This patient was given six injections of neo-arsphenamin followed by intramuscular injections of mercury. She improved markedly for about two years, when she had a severe attack of pain in the left side while at work, with symptoms of collapse. No lung disturbance that could explain her syncopal attack could be found. A markedly enlarged heart was demonstrated, indicating that an acute dilatation had occurred. As she still had a positive Wassermann reaction, she was given another course of neo-arsphenamin injections, with good results. This is being followed by the administration of mercury and iodids. Egdahl reports that his patient was feeling very well when last seen.

Complement and Syphilis.—The primary stage of syphilis, Herb asserts, is characterized by a sufficiency of ferments and complement and a negative Wassermann reaction. The secondary stage of syphilis and the positive Wassermann reaction are ushered in by the exhaustion of the ready supply of complement. It is characterized by a relative insufficiency of ferments, or complement, or both. The tertiary stage of syphilis is characterized by a total insufficiency of complement. Arsphenamin and mercury act biologically as complement. The lack of complement makes syphilis a formidable disease. In Herb's opinion, not stronger spirocheticides, but a less harmful complement is needed to combat syphilis.

Journal of Biological Chemistry, Baltimore

December, 1922, **54**, No. 4

Studies on Enzyme Action. XXI. Banana Gel and Banana Sucrase. K. G. Falk and G. McGuire, New York—p. 655.

Esterification of Creatin. A. W. Dox and L. Yoder, Detroit.—p. 671.

*Colorimeter for Bicolorimetric Work. V. C. Myers, New York.—p. 675.

*Relations Existing Between Arterial and Venous Blood of Dog with Special Reference to Plasma Chlorids. E. A. Doisy and J. W. Beckmann, St. Louis.—p. 683.

Nonprotein Organic Constituents in Blood of Marine Fish. W. Denis, New Orleans.—p. 693.

Behavior of Chlorids Introduced into Blood under Normal and Nephritic Conditions. F. P. Underhill and E. T. Wakeman, New Haven, Conn.—p. 701.

Influence of Subcutaneous Injections of Indol and Skatol on Nitrogenous Metabolism of Rabbit. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 717.

*Preparation of Nucleic Acid from Nucleoprotein of Tubercle Bacilli (Tuberculinic Acid). T. B. Johnson and E. B. Brown, New Haven, Conn.—p. 721.

Pyrimidins Contained in Tuberculinic Acid. Nucleic Acid of Tubercle Bacilli. T. B. Johnson and E. B. Brown.—p. 731.

*Quantitative Aspects of Rôle of Vitamin B in Nutrition. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 739.

*Studies in Inorganic Metabolism. IV. Influence of Yeast and Butter Fat on Magnesium and Phosphorus Assimilation. L. J. Bogert and R. K. Trail, Manhattan, Kan.—p. 753.

Vitamin A Content of Lard Obtained from Hogs on a Control Ration. M. G. Mallon and M. Clark, Lafayette, Ind.—p. 763.

*Comparison of Du Bois and Harris and Benedict Normal Standards for Estimation of Basal Metabolic Rate. W. M. Boothby and I. Sandiford, Rochester, Minn.—p. 767.

*Summary of Basal Metabolism Data on 8,614 Subjects with Especial Reference to Normal Standards for Estimation of Basal Metabolic Rate. W. M. Boothby and I. Sandiford, Rochester, Minn.—p. 783.

Diacetone Glucose. P. A. Levene and G. M. Meyer, New York.—p. 805.

Introduction of Benzylidene-1- Ethyl-2- Diazogluconate. P. A. Levene, New York.—p. 809.

New Colorimeter for Bicolorimetric Work.—A new colorimeter which has been designed chiefly for such bicolorimetric work as the colorimetric p_H determination is described by Myers. Standards are carried in wedges, one, two, or three of which may be employed at the same time. With one wedge the instrument may be used as an ordinary colorimeter. The second wedge provides for bicolorimetric work. To obtain a perfect match with unknown solutions which are slightly turbid or colored a third wedge may be used.

Migration of Hydrochloric Acid in Body.—A positive result in twenty out of twenty-two experiments made by Doisy and Beckmann they believe supports the occurrence of a migration of hydrochloric acid in the blood in the body.

Preparation of Nucleic Acid from Tubercle Bacillus.—Tubercle bacilli (human and bovine) have been carefully extracted by Johnson and Brown with toluene to remove fat, and the cellular structure was subjected to hydrolysis at ordinary temperature with 3 per cent. sodium hydroxid to separate the nucleic acid. The nucleic acid of tubercle bacilli has been precipitated by means of alcohol and 7.7 gm. was obtained which failed to respond to the biuret test for proteins. This specific nucleic acid has been named tuberculinic acid. The protein residue left behind after removal of tuberculinic acid has been analyzed according to the method of Van Slyke and its total nitrogen accounted for.

Rôle of Vitamin B in Nutrition.—In the feeding experiments conducted by Osborne and Mendel on white rats, a food mixture consisting of casein 18, starch 54, lard 15, butter fat 9, and salt mixture 4 per cent., which has demonstrated, as the result of many trials, that it will promote growth to full adult size when an abundance of vitamin B in the form of yeast is supplied, represented the "standard food" which was always furnished to the animals ad libitum, along with tap water. The vitamin B product usually consisted of tablets from a single lot of dried brewery yeast which has been used in the authors' laboratory for several years. The yeast was fed in a separate dish and almost invariably eaten promptly as soon as it was offered. In four groups of one series of experiments, in which 200 mg. of dry yeast were supplied daily to each rat, the animals with few exceptions reached the average adult size within the average normal time. Although the daily dosage of 200 mg. of yeast seems to suffice as a source of vitamin B to facilitate average growth at all periods until adult size is reached, the outcome with 100 mg., particularly after the animals attain a weight of 200 gm., tends to be less satisfactory. When the daily dosage is still smaller (50 mg.; 25 mg.), the rate of growth is more or less retarded from the very beginning of the experiments. In the case of the larger animals, 25 mg. of yeast per day failed in every instance to secure even maintenance of body weight for any length of time, although all of the animals recovered their weight and began to grow when the vitamin B intake was augmented. Even with somewhat smaller animals on the lowest dosage not only was no long continued growth secured, but maintenance became somewhat difficult. The daily requisite per 100 gm. of body weight seemed to approximate what is contained in from 50 to 60 mg. of the dry yeast.

Influence of Yeast and Butter Fat on Magnesium and Phosphorus Assimilation.—Bogert and Trail report that the magnesium and phosphorus balances in two normal women were favorably influenced by the addition of yeast to a diet of white bread, rice, lean beef, skimmed milk powder, purified nut margarine, sugar and starch. The calcium balances, determined over the same period on the same subjects and previously reported, were similarly affected. A third subject failed to show improvement of calcium or magnesium balances on the addition of yeast to the diet, although the retention of phosphorus was favored under these circumstances. The substitution of an equal weight of purified butter fat for the vegetable fat in the basal diet led to diminished fecal and total excretion of magnesium and phosphorus on a constant intake, with a favorable influence on the balances of these elements in all four subjects studied. In every case the calcium balances showed a simultaneous improvement, the metabolism of these three elements being closely parallel

throughout the experiment. Although these facts strongly suggest some relationship between the vitamin content of the diet and the assimilation of calcium, magnesium and phosphorus, the authors admit that the effects produced by the yeast and butter fat may be due to factors other than their vitamin content.

Comparison of Du Bois, Harris and Benedict Standards for Estimating Basal Metabolism.—It is shown by Boothby and Sandiford that there is remarkable agreement between the surface area calculated by the Du Bois surface area formulas and the formulas derived from Harris and Benedict's biometric correlation formulas for the prediction of the basal heat production. The Du Bois formula for the determination of the surface area and the Du Bois normal standards of heat production for each square meter of body surface for age and sex are considered by them the best method at present available for predicting the normal heat production.

Basal Metabolism Standards.—The data presented by Boothby and Sandiford are evidence to the effect that the basal metabolic rate differentiates diseases into those with increased, normal, and decreased metabolism as sharply as the temperature divides diseases into the febrile and afebrile groups. The two points especially emphasized are: first, that a high percentage of persons have a basal metabolic rate within ± 10 per cent. and a very high percentage within ± 15 per cent. of the Du Bois standards for age and sex for each square meter of body surface, provided the subjects have no definite disease that is characterized by a pathologic alteration in the rate of heat production; and second, that in a smaller percentage of these same subjects the basal metabolic rate is within the same limits when the Harris and Benedict standards are used.

Journal of Comparative Psychology, Baltimore

October, 1922, **2**, No. 5

Attention, Distraction and Fatigue. F. C. Dockeray.—p. 331.
*Effects of Cigar and Cigaret Smoking on Certain Psychologic and Physiologic Functions. R. L. Bates.—p. 371.
Instinctive Locomotor Reactions of Loggerhead Turtle in Relation to Its Senses. G. H. Parker.—p. 425.

Effects of Smoking on Function.—Bates' work was done with six reactors, under varying conditions, using the method employed by Carver in his observation of the effect of smoking on the accuracy of throwing darts at a target. As to the effect on the actual distribution of darts, in every case but one, the variation was less for the smoking days. The distribution was more uniform—less scattering—after smoking. The analysis of the quadrants of the target in respect to daily differences and differences in the progressive sets of the hour was likewise productive of negative results.

Journal of Infectious Diseases, Chicago

November, 1922, **31**, No. 5

Factors Influencing Development of Metachromatic Granules in Diphtheria Bacillus. E. Megrail, Cleveland.—p. 393.
*Experimental Botulism in Dogs. R. Graham and S. Eriksen, Urbana, Ill.—p. 402.
Factors Governing Fat Content of Bacteria and Influence of Fat on Pellicle Formation. L. W. Larson and W. P. Larson, Minneapolis.—p. 407.
Velocity of Fixation of Complement with Bacterial Antigens. R. L. Kahn and S. R. Johnson, Lansing, Mich.—p. 416.
*Determination of the Optimum Amount of Antigen in Complement Fixation Tests. VII. R. L. Kahn and S. R. Johnson, Lansing, Mich.—p. 426.
*Effect of Inactivation on Complement Fixing Substances in Syphilitic Serum. VIII. R. L. Kahn and S. R. Johnson, Lansing, Mich.—p. 438.
*Reliability of Sachs-Georgi Test for Syphilis. J. W. Rice, New York City.—p. 444.
*Immunologic Experiments with Platelets of Human Blood. F. R. Menne, Portland, Ore.—p. 455.
*Intestinal Bacterial Flora of Rats on Diet Deficient in Fat Soluble Vitamin A. F. Creekmur, Chicago.—p. 461.
*Direct Injection of Bacillus Typhosus into Gallbladder. T. D. Beckwith, Berkeley, Calif.—p. 468.
*Respiratory Infection and Septicemia of Cats Due to Hemolytic Streptococcus. S. Bayne-Jones, Baltimore.—p. 474.
Modified Gram Stains. N. Kopeloff and P. Beerman, New York.—p. 480.
Variation and Life Cycles of Pathogenic Bacteria. E. Almquist, Stockholm, Sweden.—p. 483.
New Method for Differential Staining of Bacteria (Cotton Blue-Safranin). F. M. Scales, Washington, D. C.—p. 494.
Isolation of Anthrax Bacillus from Shaving Mug. C. Vincent, Baltimore.—p. 499.

Experimental Botulism in Dogs.—Unfiltered type A toxin of *Clostridium botulinum* proved fatal to dogs in doses of 0.1 c.c. or more when administered subcutaneously by Graham and Eriksen. Type A spores, detoxicated by washing and heating, produced no noticeable effects when injected subcutaneously into dogs. Feeding relatively large amounts of unfiltered Type A toxin (100 c.c.) produced illness and death in dogs only when food had been previously withheld for forty-eight hours. The effects of other forms of artificially induced fatigue were not determined. The symptoms of Type A intoxication included loss of appetite, muscular weakness, languor, prostration, salivation, congestion of the mucous membranes of the mouth, and respiratory disturbances. Type A antitoxin apparently protected dogs against lethal amounts of toxin. Unfiltered Type B toxin of *Clostridium botulinum* administered intravenously and subcutaneously in liberal amounts failed to induce manifest symptoms. The internal organ and muscle tissues of horses and pigs which had died of Type A botulism were consumed by dogs without ill effects. Dogs appear to be satisfactory animals for differentiating A and B toxins of *Clostridium botulinum* following subcutaneous injection.

Quantitative Relation Between Serum and Antigen in Complement Fixation.—Studies made by Kahn and Johnson on the quantitative relation between serum and antigen in the Wassermann as well as specific complement fixation tests led to the evolvement of a simple titration method for the determination of the optimum amount of antigen for these tests. The widely employed method of titrating antigen for complement fixation tests consists of determining the so-called unit or smallest amount which will produce complete fixation of complement with a strongly positive serum and employing in the tests as many units as possible, providing the final amount is free from anticomplementary and hemolytic properties. This method is, in the authors' opinion, based on the wrong assumption that the greater the concentration of antigen, keeping the other constituents the same, the stronger the reaction. It was observed that with alcoholic extract antigens and syphilitic serums there exists an optimum range of antigen which will give complement fixation reactions of high sensitiveness with comparatively weak serums. This optimum antigen range may readily be determined with each antigen by a simple titration indicated in the text. This titration also indicates that the employment of excessive amounts of antigen may render weak or moderate reactions, negative. It was further observed that with bacterial antigens and specific immune serums similar antigen titrations did not disclose any optimum range of fixation for these tests. It could be readily discerned, however, that there is no advantage in employing excessive amounts of bacterial antigens. There appears, on the other hand, to be an important disadvantage since unnecessarily large amount of antigen may lead to nonspecific absorption of complement.

Effect of Inactivation on Complement Fixing Substances in Syphilitic Serum.—The inactivation of syphilitic serum for one-half hour at 56 C. was found by Kahn and Johnson to enhance the complement fixation reaction in many cases, providing the period of fixation was no less than four hours at icebox temperature. A small loss in antibody content following inactivation was observed in some cases. The proportional antibody gain, however, due to inactivation, was greater than the antibody loss.

Results of Sachs-Georgi Test for Syphilis.—When roughly classified into "positive" and "negative," the Sachs-Georgi tests agreed with the Wassermann tests in 94.4 per cent. of 1,000 cases tested by Rice. The Sachs-Georgi test appears to be less sensitive than the Wassermann reaction in patients receiving antisyphilitic treatment and in cases of cerebrospinal syphilis. The Sachs-Georgi test is just as sensitive as the Wassermann test in untreated cases of primary, secondary and tertiary syphilis.

Immunologic Experiments with Human Blood Platelets.—The immunologic reactions of human blood platelets, Menne

asserts, indicate the presence in platelets of specific antigenic constituents, and results of the precipitin test point to a definite difference in the constitution of the platelets and the leukocytes in human blood. The observations on human platelets support the views of Bedson and others that the platelets differ in their constitution from other elements of the blood.

Intestinal Flora of Rats on Diet Deficient in Vitamin A.—In a study made by Creekmur of the fecal bacteria of a group of rats on a diet so deficient in fat soluble vitamin A as to result in xerophthalmia and other conditions characteristic of this deficiency, as compared with a group on an adequate control diet, no change occurred in the relative proportions of gram-negative rods, gram-positive rods, gram-positive cocci, and gram-negative cocci, as determined by smears made from standard emulsions of the freshly collected feces. On the deficient diet, the feces of the majority of the animals became dry and hard, and the total number of viable bacteria was greatly decreased. When these animals were given fat soluble A in an amount sufficient to cause a disappearance of lesions, the feces became moist and soft and the total number of bacteria increased strikingly. In most of the animals on the deficient diet, streptococci disappeared completely. This may have been due to the unfavorable conditions brought about in the intestinal canal by the inadequate diet, the less resistant streptococci disappearing while the more hardy species merely decreased greatly in number. There was no change in the proportions of bacteria which fermented glucose, lactose and saccharose. The proportion of hydrogen sulphid forming bacteria remained constant.

Results of Injection of Bacillus Typhosus into Gallbladder.—Injection of *Bacillus typhosus* directly into the gallbladder of the rabbit was followed by prompt appearance of agglutinins within the circulation. This response was stimulated by dead as well as by living organisms. Typhoid bacilli implanted within the gallbladder pass through the lining epithelium and appear shortly in other organs, such as the spleen, liver, lung and kidney, but they were not isolated from the peripheral circulation. It seems likely to Beckwith that lymph is at least partially responsible for this distribution. Migration of *Bacillus typhosus* through the epithelium into the tunica is attended after appropriate lapse of time by the formation of lesions which are characteristic of those found in the typhoid carrier.

Epizootic in Cats Caused by Hemolytic Streptococcus.—An unusual epizootic in cats due to a variety of hemolytic streptococcus is described by Jones. The disease began as an infection of the upper respiratory tract and ended with septicemia. Pneumonia did not occur. The infection spread rapidly among associated animals and had a high mortality. The organism causing the disease, *Streptococcus hemolyticus*, resembled the human types of hemolytic streptococci more closely than the bovine type, but differed immunologically from the strains of both of these varieties, with which they were compared. All the strains of this streptococcus were identical.

Journal of Nervous and Mental Diseases, New York

January, 1923, **57**, No. 1

*Pathology of Senile Psychosis. Differential Diagnostic Significance of Redlich-Fisher's Miliary Plaques. S. Uyematsu, Boston.—p. 1.
*Structural Basis of Neuroses and Psychoses. L. B. Alford, St. Louis.—p. 26.

Diagnostic Significance of Redlich-Fisher Miliary Plaques.—One hundred cases of senile psychoses were subjected to a clinico-anatomic investigation by Uyematsu. Effort was made, particularly, to determine the differential diagnostic significance of the Redlich-Fisher miliary plaques, which Uyematsu regards one of the most important problems related to the presenile and senile psychoses. Apparently the plaques encountered in senile brains are not uniform in structure but consist of various components, differing by types and locations. The structure common to all is the court (Hof) which consists of dark stained fibrils of indefinite character. This part represents, in all probability, a destructive process of the ground tissue following the primary thickening of the neuroglia reticulum. The primary thickening of the reticulum is considered to be a reaction to the various degenerative processes of the ectodermal and mesodermal element, such as ganglion cells, neurofibrils, glia cells, glial fibers, blood vessels, products of pathologic metabolism, etc. So far as the nature of the pathologic metabolism is concerned Uyematsu has no definite conceptions although the ganglion cell origin is suspected by him. The abnormal reaction of the reticulum, which seems to be the basis of the entire process, is the characteristic feature of the senile brains. It may be primary exhaustion of nutritive energy, or a secondary characteristic caused by specific exogenous agencies. Although a great many plaques are found around the vessels, the reticulum reaction is not considered to be dependent directly on malnutrition of the parts supplied by altered vessels. Although many points remain unexplained, it seems to be certain, from what has been studied by others and by Uyematsu, that the plaques under discussion represent a specific degeneration of senile brains and their equivalent.

Structural Basis of Neuroses and Psychoses.—An attempt is made by Alford to explain the nature of the structural changes which have been assumed to be the basis of mental deviations. The method is that of comparative study. Taking for comparison such obscure nervous affections as progressive muscular atrophy, paralysis agitans, Little's disease and color blindness, it is shown that they fall into two groups: (1) the progressive and acquired, and (2) the stationary and congenital conditions. Evidence is offered to prove that they all have a structural basis and that in each case the degeneration or deficiency affects structures subserving one or a few closely related functional units. Through further comparisons, mental deviations are shown to fall into one or the other of these groups.

Kentucky Medical Journal, Bowling Green

November, 1922, **20**, No. 11

Accidents in Industries. J. G. Sherrill, Louisville.—p. 733.
Causes of Blindness in Kentucky School for the Blind. I. A. Lederman, Louisville.—p. 751.
Congenital Syphilis of Nervous System. F. G. Speidel, Louisville.—p. 755.
Pyelitis in Children. J. F. Dunn, Arlington.—p. 757.
Diarrhea in Children. W. L. Mosby, Bardwell.—p. 758.
Lacerated Perineum. E. S. Allen, Louisville.—p. 761.
Intussusception in Children; Report of Case. T. E. Craig, Fairdale.—p. 763.
Multiple Neuritis in Children and Its Treatment. H. T. Crouch, Bardwell.—p. 765.
Endocrines in Gynecology. J. J. Rodman, Owensboro.—p. 767.
Summer Diarrhea in Infants. J. W. Bruce, Louisville.—p. 771.
Brain Tumor: Case Report. L. W. Frank, Louisville.—p. 774.
Compression Fracture of Spine: Case Report. H. H. Hagan, Louisville.—p. 776.
Hydronephrosis, Hydro-ureter: Case Reports. O. Grant, Louisville.—p. 778.
Constipation in Adult. W. J. Shacklette, Glendale.—p. 779.
Canine Antirabic Vaccine for Prevention of Rabies in Dogs. L. H. South, Louisville.—p. 780.

New York Medical Journal and Medical Record

Jan. 3, 1923, **117**, No. 1

Modern Commentaries on Galen. Physiology of Voice and Organs of Respiration. J. Wright, Pleasantville, N. Y.—p. 1.
Establishment of Temporary or Permanent Pulmonary Lip Fistula in Conservative Treatment of Advanced Bronchiectatic Lung Abscess. W. Meyer, New York City.—p. 7.
Nine and One-Half Years' Experience with Artificial Pneumothorax. P. H. Ringer, Asheville, N. C.—p. 14.
Value of Roentgenogram in Diagnosis and Prognosis of Pulmonary Tuberculosis. G. G. Ornstein, New York.—p. 19.
Value of Complement Fixation Test in Tuberculosis. Hecht-Weinberg Modification. H. R. Upham and A. J. Blaivas, Brooklyn.—p. 22.
Tuberculosis and Poison Gas. A. P. Francine, Harrisburg, Pa.—p. 25.
Shall We Tell Our Tuberculous Patients the Truth? A. Minnig, Denver.—p. 27.
Abscesses Descending from Upper Air Passages. O. Glogau, New York.—p. 29.
Climate in Treatment of Pulmonary Tuberculosis. H. Schwatt, New York.—p. 32.
Roentgen-Ray Study of Tuberculous Lungs. T. Frazer and J. D. MacRae, Asheville, N. C.—p. 34.
Present Status of Radiation Treatment of Tonsils. C. F. Robinson, Barre, Vt.—p. 39.
Case of Ludwig's Angina. D. H. Levy, New York.—p. 40.

Peritonsillar Abscess of Unusual Location. A. I. Schwartz, New York.—p. 41.
Diagnosis of Optic Neuritis Due to Sinus Disease. J. N. Hoffman, Canton, Ohio.—p. 42.

Oklahoma State Medical Association Journal, Muskogee

December, 1922, **25**, No. 12

Tuberculous Infection in Children. R. M. Balyeat, Oklahoma City.—p. 343.
Tuberculosis of Kidney. J. Z. Mraz, Oklahoma City.—p. 345.
Pyelitis in Pregnancy and Puerperium. J. A. Hatchett, Oklahoma City.—p. 348.
Pyelitis. L. A. Mitchell, Frederick.—p. 353.
Acute and Chronic Salpingitis and Treatment. J. L. Shuler, Durant.—p. 355.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

October-December, 1922, **19**, No. 226-228

*Prenatal Hygiene and Problems of Maternity and Child Welfare. W. M. Feldman.—p. 169.
*Severe Blood Diseases of Childhood: Purpura. F. J. Poynton, H. Thursfield and D. Paterson.—p. 178.
*Pel-Ebstein Type of Hodgkin's Disease. E. Cautley.—p. 185.
Cerebral Hemorrhage in Newborn Child. C. F. T. East.—p. 189.

Prenatal Hygiene.—Feldman urges that prenuptial clinics should be established where persons of both sexes can get expert advice as regards their fitness to marry, and no person knowingly suffering from syphilis should be allowed to marry; breach of such a rule should be made a penal offense. All cases of prenatal syphilis should be thoroughly supervised and treated as soon as diagnosed. Feldman also stresses the need for and value of prenatal hygiene and care. All expectant mothers should, as far as possible, refrain from using alcohol (at any rate in excess) or excessive smoking throughout pregnancy. They should be protected from exposure to infectious disease or dangerous industries, such as lead, phosphorus or tobacco factories. Attention to the teeth, bowels and kidney functions is of great importance during pregnancy. Careful watch should be kept of the relative size of the fetus and the maternal pelvis, and any abnormal presentation should be converted into a vertex presentation before labor. Antenatal wards or beds should be provided in connection with all antenatal clinics for the purpose of treating abnormalities of pregnancy, as well as for the purpose of carrying out properly directed and well coordinated biochemical, pathologic and statistical research.

Primary Purpura in Children.—Ten cases of idiopathic or primary purpura are analyzed by Poynton et al. They are divided into three groups: (1) purpura hemorrhagica; (2) Henoch's purpura, and (3) cases in which there were subcutaneous hemorrhages with little or no constitutional disturbance. The onset of the purpura was always sudden, but the duration varied; some of the children had repeated attacks and were for years never free of some hemorrhage. It would appear from this study that the essential point in the purpura formation is not the diminution of blood platelets, but some poison acting on the vital capillary walls, damaging their integrity. The prognosis in the simple cases was good, but two fulminating examples of purpura hemorrhagica were both rapidly fatal. The cases of the Henoch type showed the well known tendency to recurrence, and dragged on for some yars. Treatment was unsatisfactory, apart from rest.

Pel-Ebstein Type of Hodgkin's Disease.—The characteristic features of the illness in the case cited by Cautley, occurring in a girl, aged 8, were: a prolonged local stage of glandular hyperplasia in the neck and a generalized stage of pyrexia, which assumed a relapsing type, severe and progressive anemia, a yellowish-gray tint of the skin, enlargement of the cervical glands, liver and spleen, slight bronchitic attacks with breathlessness, sometimes semidelirium, erythropenia and leukopenia, and a fatal issue. There was no evidence of tuberculosis—an alternative diagnosis—and the Pirquet reaction was negative. Treatment proved unavailing. Permission to hold a necropsy was not granted.

British Medical Journal, London

Dec. 30, 1922, **2**, No. 3235

Clinical Significance and Treatment of Heterophoria. A. S. Percival.—p. 1249.
*Case of Ophthalmic Migraine with Unusual Symptoms. A. R. Moodie.—p. 1256.
Education of Partially Blind Children in Myope Classes. H. W. Thomson.—p. 1257.
*Relation of Optic Nerve to Sphenoidal and Posterior Ethmoidal Sinuses. G. Young.—p. 1258.
Ophthalmic Progress in Egypt. A. F. MacCallan.—p. 1259.
*Cerebrospinal Fluid in Disease of Fundus. W. J. W. Ferguson.—p. 1259.
Monocular and Binocular Vision. T. S. Barrie.—p. 1260.
"Open" Treatment in Eye Operations. W. B. I. Pollock.—p. 1262.
Review of Work of Venereal Diseases Center of Glasgow Eye Infirmary. E. J. Primrose.—p. 1263.
Conjunctivitis Artefacta. H. Caiger.—p. 1264.

Ophthalmic Migraine with Unusual Symptoms.—The case reported by Moodie is one of the ophthalmic type of migraine, with scintillating scotoma. It was associated with epileptic convulsions. The Wassermann test was negative.

Relation of Optic Nerve to Sphenoidal and Posterior Ethmoidal Sinuses.—Young examined by dissection the sphenoidal sinuses in thirty subjects. In twenty-seven cases the bone between the nerve and the sinus was so thin, in at least part of its course, that the suture was easily apparent through it. In four specimens there was actually a hiatus in the bone covering the nerve, while in one of these specimens there was more hiatus than bone in the posterosuperior and lateral walls of the sinus—so much absorption had taken place. With regard to the relative size of the sphenoidal sinuses, the intersinus septum was markedly deflected in many cases, making one sinus much larger than the other. This difference in size was sometimes so great that the larger sinus was found to be in relation to the heterolateral optic nerve or cavernous sinus, or both. The actual figures were, that in thirteen cases the sphenoidal sinus of one side was in relation to the heterolateral cavernous sinus, and in nine cases the sphenoidal sinus was in relation to the heterolateral optic nerve. The sclerotic type of sinus was in a very small minority, three cases being in this category, the walls of the remaining twenty-seven being very thin. Ostia in the bone were very commonly found in the lateral wall of the sphenoidal and ethmoidal masses, the boundary between the nose and the orbit. These led into the sinuses, giving passage to numerous blood vessels. Numerous blood vessels were noted occupying these ostia as the lining membrane was stripped from the nasal wall of the orbit. Young believes these facts may be applied to support the clinical evidence that optic neuritis may arise from diseased postnasal sinuses.

Cerebrospinal Fluid Worthy of Investigation.—In Ferguson's opinion the condition of the cerebrospinal fluid would be worthy of investigation in a large group of cases, in particular those of young adults suffering from diplopia, optic atrophy, or retrobulbar neuritis. The colloidal gold reaction, he thinks, is of undoubted value as indicating the first definite sign of organic disease of the central nervous system. Additionally, it may enable one to say whether a transient diplopia is or is not purely functional, and may help to differentiate cases of retrobulbar neuritis and optic atrophy, indicating those in which the condition is part of a more general nervous disorder, and more especially those which may be followed after a considerable period by disseminated sclerosis.

Indian Medical Gazette, Calcutta

December, 1922, **57**, No. 12

Therapeutics of Cinchona Alkaloids. R. N. Chopra.—p. 441.
Analysis of Clinical Picture in Kala-Azar. L. E. Napier.—p. 446.
*Exceptional Hernias. J. W. Wanless.—p. 452.
Ether In Tropics: Pinson's Apparatus. A. Hootan.—p. 455.
Relapsing Fever in Bhavnagar. B. N. Mehta.—p. 456.
Foreign Body (Fish) in Air Passages, Removed by Laryngotracheotomy. Maung Po Pe.—p. 457.
*Case of Traumatic Aneurysm of Spleen. W. L. Harnett.—p. 457.
One Hundred and Seventy-Nine Cases of Ancylostomiasis Treated with Chenopodium in Penang. D. C. Richards.—p. 460.
Case of Congenital Absence of Spleen. R. S. Grewal.—p. 461
Case of Tetanus. H. R. Wadhwani.—p. 462.
Case of Cataract in a Child Following Lightning Stroke. W. V. Coppinger.—p. 462.
Cases Treated with Electrolytic Chlorogen (E. C.) at the Pusa Hospital. Michael.—p. 463.

Points of Importance in Performing Herniotomy.—Emphasis is laid on three points by Wanless which he says should always be borne in mind in operations for the radical cure of inguinal hernia, namely: (1) indirect hernias are seldom scrotal; (2) the bladder is often in contact with or occasionally within the sac of an indirect hernia and liable to injury in dissection; (3) in indirect hernias a double sac frequently exists with the bladder fundus in close contact with the lower one and therefore also liable to injury or inclusion by sutures in making the plastic closure. This is particularly the case when there is a weak or attenuated conjoined tendon.

Traumatic Aneurysm of Spleen.—The case related by Harnett is one in which the aneurysm developed slowly and no treatment was sought until nearly three years after the injury which caused the trouble. The man had fallen between an engine and the station platform but managed to extricate himself, though the abdomen was so severely contused that he was laid up for a month after this accident. For the last six months he had suffered from attacks of pain in the left iliac fossa, lasting about half an hour and passing off gradually. The attacks came on quite suddenly at regular intervals and were not related to taking food. They were of a griping character and he felt nauseated, but did not actually vomit during the seizures. He was quite well between the attacks; the bowels were rather constipated and there were no urinary symptoms. There was an oval, freely mobile tumor, measuring about 4 by 2 inches, in the left iliac fossa. On the outer side of the tumor a blunt edge could be felt, toward the lower extremity of which was a notch. The tumor was firm, elastic, dull on percussion and not tender. It could be moved freely in the left half of the abdomen, down into the left iliac fossa and across as far as the middle line. It could be replaced under the left lower ribs and once placed there could only be extruded again by the patient sitting up. Handling the tumor did not cause any pain. The other abdominal organs were normal. The patient stated that the tumor sometimes disappeared for a few days and then suddenly reappeared. No splenic dulness could be percussed when the tumor was free in the abdomen, but impairment of resonance could be demonstrated when the tumor was replaced under the ribs. The swelling proved to be the spleen, enlarged to about twice its normal size and having attached to its inner aspect a cystic, thin walled, fluctuating swelling, of a yellowish-white color, incorporated with and appearing to protrude from the splenic substance. The swelling, which was about the size of a tangerine orange, was too intimately incorporated with the spleen to admit of excision; so splenectomy was decided on. The case appears to have been one of what was originally a hematoma of the spleen, probably sustained at the time of abdominal injury three years previously. The abdominal injury appears to have caused rupture of a splenic blood vessel which led to the subsequent formation of the false aneurysm.

International Journal of Psycho-Analysis, London

December, 1922, **3**, No. 4

Study of Artistic Preference. J. Varendonck.—p. 409.
Tobacco and the Individual. A. A. Brill.—p. 430.
Prenatal Psychisms and Mystical Pantheism. T. Schroeder.—p. 445.
Rescue and Murder of Father in Neurotic Phantasies. K. Abraham.—p. 467.
Tobacco. E. Hiller.—p. 475.
Tongue. D. Bryan.—p. 481.

Lancet, London

Dec. 30, 1922, **2**, No. 5183

*Hypersthenic Gastric Diathesis, and Pathology, Prophylaxis and Treatment of Duodenal Ulcer. A. F. Hurst.—p. 1369.
Emetin Bismuthous Iodid in Treatment of Amebiasis. P. M. Rennie.—p. 1374.
*Syphilis of Lung. W. T. Munro.—p. 1376.
*Serologic Classification of Staphylococci. T. G. M. Hine.—p. 1380.
*Three Thoracic Emergencies. G. A. Stephens.—p. 1382.
Case of Pott's Disease Associated with Injury. F. B. Hobbs.—p. 1383.
Case of Oral Sepsis. G. Steele-Perkins.—p. 1383.

Hypersthenic Gastric Diathesis; Duodenal Ulcer.—Hurst is convinced that duodenal ulcer should still be regarded as a medical and not a surgical disease. Recognition of the diathesis, which predisposes to it, and of the primary and accessory exciting causes which lead to its actual development, should encourage medical men to think more of its prevention than its cure; even if they are only consulted when it is too late to talk of prevention. They should no longer remain content with the treatment of the active ulcer, but should regard the prevention of recurrence as a matter of equal importance.

Syphilis of Lung.—In order to determine the incidence of syphilis among a presumably tuberculous population, a Wassermann reaction has been done by Munro on all admissions to a sanatorium. Of the first 100 persons examined, 6 per cent. had syphilis of the lungs; 11 per cent. had a positive Wassermann reaction and tubercle sputum plus; 3 per cent. had tuberculosis, with Wassermann reaction positive and tubercle sputum minus; 2 per cent. had positive Wassermann reaction with diagnosis other than tuberculosis. Acquired syphilis of the lung may occur in three conditions: (1) gummas; (2) fibroid induration; (3) areas of consolidation and catarrh. Fibroid induration is the most common. In these six cases analyzed the initial lesion appeared to be at the right base. No patient of this type was under 35 years of age. The shortest time between infection by the spirochete and symptoms referable to the chest was three and a half years. Antisyphilitic treatment in the early stages is recommended by Munro but when bronchiectasis is well established he says, treatment is not likely to lead to improvement. Two cases of focal disease were found. Both patients improved on treatment.

Serologic Classification of Staphylococci.—Hine contends that there are two main groups of staphylococci: Group I being pyogenic and almost always forming acid with mannite, while Group II resembles the so-called *S. epidermidis-albus*, usually failing to make acid in mannite broth and generally forming white colonies. The first group contains, at least three serologic types, of which Type I is the most common, representing 90 per cent. of the examples of the group. The second group (resembling the old *S. epidermidis-albus*) contains two serologic types, the second of which was not so common in Hine's series as the first, and appears also to have some pathogenic properties; the group is more irregular in its biochemical and chromogenic qualities than the first or pyogenic group.

Enlarged Thymus; Ruptured Heart; Ruptured Superior Vena Cava.—A man, aged 25, discharged "fit" from the army, collapsed when at work and expired immediately. Postmortem examination showed all the organs to be healthy save two—namely, the cardiac apparatus, in which the intrapericardial pressure was atmospheric, and the thymus, which was 9 inches long, extending downward over the pericardium. There was no evidence of injury or of inflammation. Another case cited by Stephens is that of a boy, aged 16, who was standing near a crane from which was suspended a heavy steel tube. As the tube was lowered it pressed against his chest and abdomen; he then stepped back a few paces and fell down dead. Postmortem examination showed that the intrapericardial pressure was atmospheric, and on opening the sac it was found to be full of blood. In the right auricle was a tear 1 inch long. A man, aged 42, was found dead in a cellar into which he had fallen through a manhole. Postmortem examination showed the sternum to be fractured at the sternal angle. On opening the chest a marked extravasation of blood was found behind the seat of the fracture due to a tear in the superior vena cava.

Medical Journal of Australia, Sydney

Dec. 2, 1922, **2**, No. 23

Obstetric Experiences During Fifteen Years of General Practice. H. Gilbert.—p. 631.
Value of Complement Fixation Reaction in Gonococcal Infections. A. S. Walker.—p. 634.
Rectovaginal Adenomyoma with Chronic Endometritis. A. N. Krakowsky.—p. 642.

Dec. 9, 1922, **2**, No. 24

*Hemangioma (Endothelioma) of Breast, etc. B. T. Edye.—p. 663.
Asthma. G. C. Willcocks.—p. 668.
*Unusual Kidney. T. K. Potts.—p. 670.
Case of Hydatid of Lung. W. A. R. Sharp.—p. 671.
Antistreptococcal Serum in Puerperal Infection. W. Upton.—p. 672.
Puerperal Septicemia Treated with Blood Transfusion. H. Leaver.—p. 673.

Multilocular Cystadenoma of Retroperitoneal Origin.—Edye reports one case each of hemangioma (endothelioma) of the breast; tumor of the carotid body, and multilocular cystadenoma of retroperitoneal origin. Microscopically, the cysts in the third case were seen to be lined by papillary processes covered by columnar cells; an arrangement similar to that observed in some cystadenomas of the ovary. Many of the cells were separating and becoming rounded in shape. In the solid portions the tumor had assumed malignant characters. The cells were spherical or oval and were supported in a papillary manner by a scanty stroma with delicate capillaries.

Fibrotic Type of Kidney Tuberculosis.—With a wholly negative previous history Potts' patient, aged 42, had a sudden attack of pain in the left kidney region which persisted for one week and ceased suddenly. The pain was not very severe, did not radiate along the course of the ureter and was not accompanied by vomiting or any disturbance of micturition. The patient remained well for the next six months and then had a similar attack, except that it lasted only twenty-four hours, but was more severe. During the first five months of this year she had similar mild attacks at intervals of from two to three weeks, lasting on an average about twenty-four hours. The roentgen-ray report was negative as was also the analysis of the urine. The kidney was exposed and removed. The kidney surface was studded with whitish nodules which were numerous in three sectors of the cortex, one at each pole and one in the center. Under the microscope these nodules were found to be fibrocellular in structure, with a few scattered and imperfectly developed giant cells, suggesting a fibrotic type of tuberculous infection, which is unusual in the kidney. Nodules of similar structure were also found in the kidney substance close up to the renal pelvis, but the nodules there were much fewer than in the cortex. The renal pelvis itself was not obviously involved. Sections stained by the Ziehl-Neelsen method failed to reveal tubercle bacilli. In Potts' opinion, the infection is tuberculous, but of a type rare in the kidney.

Archives Franco-Belges de Chirurgie, Brussels

August, 1922, **25**, No. 11

Dermoid Cyst of the Anterior Mediastinum. E. Moons.—p. 959.
Regional Anesthesia of Neck and Arm. Brunin and Vandeput.—p. 965.
Metal Aids in Fractures and Pseudarthrosis. Charbonnel.—p. 994.
Primary Resection of Astragalus and Malleolus. G. Miginiac.—p. 1005.
*Experimental Research on Snake Bites. G. Bolognesi.—p. 1010.
Spina Bifida Occulta. H. J. J. Blauwkuip.—p. 1018.
The Albee Graft and Pott's Disease in Adults. F. Lambrichts. —p. 1023. Idem. Moreau.—p. 1030.
The Albee Implant in Children. Marique.—p. 1027.

Experimental Research on Snake Bites.—Bolognesi experimented on rabbits with snake venom, either by direct bite from the reptile or through inoculation in the hind legs. He states that the aim of his study was to attract attention to the local histopathologic findings, which, he says, have not yet been described on the basis of systematic experimental research. The lesions explain the local clinical syndrome of patients bitten by venomous reptiles. He remarks that Phisalix has studied mainly the effect of snake venom on the nervous system, the heart and circulation, respiration, blood and temperature, while Houssay and Sordelli have devoted attention mainly to the coagulation of the blood.

Archives des Maladies du Cœur, Paris

November, 1922, **15**, No. 11

*Therapeutic Use of Physostigmin. J. de Meyer.—p. 749.
Auricular Extrasystole with Paroxysmal Tachycardia. L. Gallavardin. —p. 774.
*Basophilic Inclusions in Neutrophils. J. Sabrazès.—p. 778.

Therapeutic Use of Physostigmin.—De Meyer used physostigmin sulphate partly by the mouth (1 to 1.5 mg. per day or 10 drops of a solution of 3 cg. (½ grain) in 30 c.c. of water two or three times daily), and partly by intravenous injections of 0.5 to 1 mg. in 2 c.c. of water. It is important to make the injections as far from the meals as possible, as 1 mg. may produce vomiting. The results were very good in simple and thyrogenous tachycardia. Combination with strophanthus had a marked effect on sino-auricular paroxysmal tachycardia, but less of an influence on ventricular tachycardia. Auricular fibrillation was so well influenced that he preferred it in some cases to digitalis. Cases which are refractory to quinidin should be treated with physostigmin. Respiratory arrhythmia disappears after physostigmin, and since its action seems to consist exclusively in a stimulation of the autonomic system, it could replace, to advantage, the oculocardiac test. Tachycardias due to hypertension or hypotension, aortitis, nephritis or toxic conditions are not suitable for this medication.

Basophilic Inclusions in Neutrophils.—Sabrazès dissolves 0.5 gm. of toluidin blue in 10 c.c. of 95 per cent. alcohol and adds 90 c.c. of 3 per cent. aqueous solution of phenol. The dry, unfixed smears treated with this solution show the basophil inclusions in the neutrophils in a grayish blue color.

Archives de Médecine des Enfants, Paris

December, 1922, **25**, No. 12

*Local and Spinal Anesthesia in Children. H. L. Rocher.—p. 705.
*Acquired Chronic Hydrocephalus. J. C. Navarro et al.—p. 720.

Local and Spinal Anesthesia in Children.—Rocher uses a solution of 1:300 of cocain in Hayem's fluid with addition of epinephrin for local and regional anesthesia, and procain for spinal anesthesia. Cocain is well tolerated by children, and it can and should be employed for local and regional anesthesia. Spinal anesthesia with procain has been used by Rocher in 125 children from 4 to 15 years old without any accident.

Acquired Chronic Hydrocephalus.—Navarro, Beretervide and Garrahan publish thirteen cases, and review of acquired hydrocephalus. The etiology is almost always syphilitic, and the treatment should be energetic. Lumbar puncture must be made periodically to relieve the tension of the fluid. The results are sometimes excellent.

Bulletin de l'Académie de Médecine, Paris

Dec. 5, 1922, **88**, No. 40

*Public Health in the United States. L. Bernard.—p. 378.
*Levulose in Diabetes. M. Labbé.—p. 393.
*Osteoperiosteal Grafts. H. Delagenière.—p. 396.
France's Consumption of Cereals. L. Lapicque.—p. 417.
*Blood Crisis After Ligature of an Extremity. J. Le Calvé.—p. 422.
*Law on the Mentally Defective. J. Roubinovitch and E. Debray. —p. 424.

Public Health in the United States.—This report by Bernard was summarized in the Paris Letter in THE JOURNAL, January 13, p. 122.

Levulose in Diabetes: Acidosis from Inanition and from Diabetes.—Labbé admits that glucose is less well burned than other carbohydrates, but finds that nothing proves that levulose is better utilized than other carbohydrates, including starch. The tests by oral ingestion depend on the rapidity of absorption. Therefore, small repeated doses are better tolerated than large ones. Labbé maintains that the acidosis arising in healthy persons from lack of carbohydrates is fundamentally different from the acidosis of severe diabetes. One can even produce a benign acidosis in light cases of diabetes. It disappears with the ingestion of carbohydrates. This acidosis is never as high as that of real diabetes. The largest amount of acetone bodies observed in fasting healthy persons was less than 19 gm., while 100 gm. of acetone bodies are not uncommon in severe diabetes. He found once as much as 247 gm. in a day. The inanition acidosis is a pure ketosis: The excretion of ammonia is only slightly increased, and there is no greater excretion of amino-acids nor of other organic acids except aceto-acetic and beta-oxybutyric. In the urine in diabetic acidosis there is much ammonia and amino-acids and many other organic acids (butyric, acetic, lactic, propionic, etc.). The addition of carbohydrates to the diet reduces inanition acidosis, but Labbé never saw a diabetic acidosis disappear after addition of carbohydrates.

Osteoperiosteal Grafts.—Delagenière's method consists in transplantation of a piece of periosteum and underlying bone, from 2 to 3 mm. thick. He takes the graft from the inner aspect of the patient's tibia, and uses care to bring it into good contact with living tissue. Scars or sclerotic tissue should be resected, although even in them the graft takes, but not as well, and less rapidly. Immobilization is necessary. In two or three weeks a soft callus forms which becomes

solid in two or three months. Even grafts which become contaminated usually take, at least partially, and may give good results. He describes the technic in different typical operations (cranioplasty, pseudarthrosis, etc.). His experience extends over 296 cases.

Blood Crisis After Constriction of an Extremity.—Calvé observed typical hemoclastic crises in some patients after constriction of an extremity. He used the method clinically to preserve against shock (injection of serum, colloidal metals, arsphenamin). For this purpose it is recommended to make the constriction ten to fifteen minutes before the injection. It has also a desensitizing effect. If an extremity is constricted each morning for ten minutes, good results may be obtained in alimentary intolerance, angioneurosis, migraine, asthma and perhaps in epilepsy.

Law on Social Adaptation of the Mentally Backward.—Roubinovitch and Debray report very favorably on the results of this law. The patients earn as much as an average worker of their class. Although admitting that agriculture is to be preferred, the authors quote Rocher's observation that defectives from towns suffer in the country from nostalgia. They believe that the facultative law of 1909 has proved beneficial, and it should be made compulsory for these *arriérés perfectibles.*

Encéphale, Paris

November, 1922, **17**, No. 9

Origin and Nature of Hallucinations. E. Bleuler.—p. 537.
*Pituitary Tumor. P. Sainton and E. Schulmann.—p. 554.
*Bilateral Pontine Syndrome. Dide and Peytou.—p. 563.
*Cerebrospinal Fluid in General Paresis. R. Targowla.—p. 567.
Essential Bases for a Reform of Psychiatry. R. Mourgue.—p. 570.

Case of Pituitary Tumor of Fourteen Years' Standing.—Sainton and Schulmann describe an unusual case of epithelioma of the anterior lobe of the pituitary. The patient was kept alive for fourteen years by roengen-ray treatment.

Bilateral Posterior Pontine Syndrome.—Dide and Peytou report the clinical findings in the unique case of a bilateral lesion of the posterior part of the pons. It started possibly as an encephalitis in childhood, and the 37 years old patient had a complete loss of lateral movements of the eyes, asynergy, and tremors of the head and extremities, normal sensibility except for impaired hearing on the right side, and an infantile state of mind.

Reaction of Cerebrospinal fluid with Paregoric in General Paresis.—Targowla mixes 5 drops of distilled water, 15 drops of cerebrospinal fluid, and 15 drops of paregoric. In a control tube the cerebrospinal fluid is replaced by distilled water. The total precipitation is noted as three plus, a partial by two plus, and a feeble by one plus. He examined eighty-eight fluids from sixty-five patients with general paresis; eighty-four fluids (sixty-three patients) were positive. In one case the reaction was positive in spite of a negative Wassermann reaction and negative benzoin test. One of the negative results turned positive at a second trial. Three other negative patients were in a state of prolonged remission, with very feeble reactions to other tests.

Gynécologie et Obstétrique, Paris

November, 1922, **6**, No. 5

*Constitution and Uterine Myomas. A. Rosner.—p. 305.
*Inversion of Uterus During Childbirth. Dantin.—p. 310.
*Otitis Media in the New-Born. Mahu and E. Chomé.—p. 313.
Bilateral Tubal Pregnancy. Z. do Amaral.—p. 319.
Uteroparietal Fistula After Cesarean Section. R. Loicq.—p. 322.
*Autohemotherapy in Pregnancy Dermatitis. E. Lévy-Solal.—p. 330.

Localization of Uterine Myomas and Constitution of Sexual Organs.—Rosner examined 340 cases of myomas: 107 submucous and 283 interstitial or subperitoneal. All the women with submucous myomas had a normal or strong constitution. Not one was infantile, hypoplastic or masculine. Only 10 per cent. of them were sterile. Fully 60 per cent. of the women with subperitoneal myomas were constitutionally defective, and 73 per cent. were sterile.

Case of Acute Uterine Inversion in Delivery.—Dantin reports a fatal case of uterine inversion. It was caused by the midwife who tried to extract the placenta by traction on the cord immediately after delivery.

Middle Ear Infections in the New-Born.—Mahu and Chomé report a case of otitis media in a new-born child infected during a prolonged delivery. The infection probably occurred during inspiration or a swallowing movement. They emphasize Renaud's findings of otitis in every one of his seventy necropsies in infants. They recommend instillation of a few drops of an antiseptic in the nose, especially when delivery is prolonged in infected cases.

Autohemotherapy in Dermatitis of Pregnancy.—Lévy-Solal publishes four cases of different dermatoses of pregnancy, three of which were cured and one (psoriasis) ameliorated by injections of the patient's own blood. In one case of urticaria the second injection increased the itching very strongly, but it subsided after the third injection.

Journal de Médecine de Bordeaux

Oct. 25, 1922, **94**, No. 20

*Diagnosis of Ascites by Percussion. G. Chavannaz.—p. 667.
Constipation in Nurslings. J. Boisserie-Lacroix.—p. 668.
Medicine and Aviation. R. Cruchet.—p. 673.

To Aid Percussion in Diagnosis of Ascites.—Chavannaz applies percussion when the trunk is bent, and twists the body on its transverse rather than on its longitudinal, axis. In twenty years of experience he has found this instructive in difficult cases.

Médecine, Paris

November, 1922, **4**, No. 2

Syphilis and Dermatology in 1922. H. Gougerot.—p. 85.
*Myopathies Due to Hereditary Syphilis. E. Jeanselme.—p. 96.
*Treatment of General Paresis. J. A. Sicard.—p. 102.
*Early Diagnosis of Syphilitic Chancre. L. Hudelo.—p. 107.
*Lilac Arch on Nails in Syphilis. G. Milian.—p. 112.
*Treatment of Syphilis Before the Chancre. L. Spillmann.—p. 114.
*Abortive Treatment of Syphilis. Levy-Bing and Gerbay.—p. 119.
*Syphilitic Origin of Diabetes. M. Pinard. —p. 123.
Acquired Syphilis in Children. P. Fernet.—p. 125.
Salts of Bismuth. M. Pomaret.—p. 130.
*Mixed Affections of Skin. L. Brocq.—p. 132.
*Scar-Forming Affections of Scalp. R. Sabouraud.—p, 138.
Autohemotherapy in Dermatology. J. Nicolas et al.—p. 147.
Incomplete Forms of Mycosis Fungoides. Louste.—p. 150.

Progressive Myopathies Due to Hereditary Syphilis.—Jeanselme presents the first clinically well studied case of a primary dystrophy of muscles of the Leyden-Moebius type (affection of spinal cord excluded by electric reactions) in a young man with a weak positive Wassermann reaction. His father is a syphilitic. Jeanselme assumes that syphilis can influence the muscular system like other organs, and does not discuss the possibility of a coincidence.

Treatment of General Paresis.—Sicard discusses the reasons for the resistance of spirochetes in general paresis, and sees the only way to change it is in drawing the spirochetes from the brain into the general circulation. One of these methods consists in a series of shocks provided by injections of horse serum during the course of arsphenamin treatment. Some good results were obtained by him with this method. Some hopes are attached to his other method: injections of arsphenamin and similar products in an ether narcosis. Possibility of using heroic surgical proceedings is suggested—perhaps craniectomy, to transform the circulation in the brain—because he believes that any therapeutic method which looks sensible is justified in an established general paresis.

Early Diagnosis of Syphilitic Chancre.—Hudelo emphasizes the importance of early recognition of syphilis for the abortive treatment. In every case of soft chancre one should suspect syphilis. The seroreaction is necessarily negative in this stage (except for some possibilities with the use of serum from the lesion), but the presence of spirochetes is decisive, and should be looked for every day or two; by 0.5 to 2 mm. deep scarifications, followed by expression of the serum. The border between the lesion and the healthy skin may be crowded with spirochetes. The diagnosis before the tenth day of the disease should be the rule, not the rare exception.

Lilac Arch on Nails in Syphilis.—Milian finds that older syphilitics have on some fingers an arch 0.5 to 1 mm. broad, lilac colored, about 4 to 5 mm. behind the free border of the nail and parallel with it. The outer border is well defined, and sometimes there is a white zone. He says it is a living witness to active syphilis, inherited or acquired.

Treatment of Syphilis Before the Appearance of Chancre.—Spillmann discusses a case of a syphilitic soldier on furlough who had sexual intercourse with his wife. He recommends to start the treatment if one can prove the sexual contact with a person presenting contagious lesions. A mere positive Wassermann reaction in the partner is not a sufficient indication. He warns against persons with syphilophobia.

Abortive Treatment of Syphilis.—Levy-Bing and Gerbay believe that abortive treatment of syphilis is possible only before the disease is generalized. Before thirty-eight days after the infection a perfect cure is not difficult. After forty-five days it is usually impossible.

Syphilitic Origin of Diabetes.—Pinard had among twenty-three diabetics, eleven with acquired and five with probable hereditary syphilis. He believes that many of the complications of diabetes (loss of reflexes, mal perforant, neuritis, so-called pseudotabes) are in reality manifestations of syphilis. He believes that the same explanation can be given in conjugal and familial diabetes. He rates the syphilitic etiology at 80 to 90 per cent. of diabetics.

Mixed Affections of Skin.—Brocq exposes a new class of affections of skin which he calls *dermatoses complexes*. It is not a mere complication, like pyoderma in scabies. Brocq's new class gives the impression, from the start, of being a simple affection, but is formed in reality by an intimate mixture of two or more affections. Many therapeutic failures can be explained by overlooking this. A lupus mixed with syphilis may present the appearance of simple lupus. In other cases lupus may be associated with phagedenism which can be influenced by hot air, methylene blue, etc. Other complex dermatoses can result from two different cutaneous reactions, for example, urticaria in a papulo-vesicular eczema. Others may be due to a mixture of a real disease with a cutaneous reaction; parasitic affections of the skin can be hidden by eczema or parakeratosis. The physician who does not recognize both factors makes the mistake either of paying attention only to the eczematous reaction, which he cannot heal, or he tries to treat the infection too energetically, and irritates the eczema. Many dermatoses, like psoriasis, are favorably influenced by different remedies, changing according to the actual state of the patient. One should never despair.

Diagnosis of Scar-Forming Affections of Scalp.—Sabouraud gives an instructive paper on these diseases. The exact distinction is important for the treatment. In favus one never should forget to examine the hair around the scar for parasites which may persist for a long time. Impetigo may lead to formation of scars if it is neglected. The scar following a sycosis capillitii resembles the favus scar, but it presents, as long as the disease lasts, new attacks of purulent folliculitis at the edges, while favus is always quiet and torpid. A similar disease due to infection of single follicles by staphylococci is usually overlooked, until the little scars and alopecia appear, because the infection does not cause violent reactions. Acne of the neck can last for years, advance slowly, and may leave a scar of the size of the palm. Yet it could have been cured by epilation and ointments containing sulphur. When erythematous lupus attacks the scalp, it always causes from the very start alopecia, and it progresses towards a complete atrophy of the skin. It progresses by a few spots of different size, resembling a geographic map, forming sometimes islands. The border is always red. Carbon dioxid snow and infrared rays give good therapeutic results.

Presse Médicale, Paris

Dec. 6, 1922, **30**, No. 97

*Provocation of Angiospasm. A. Thomas.—p. 1049.
Dysenteriform Enteritis by Amoeba Coli. Orticoni and Gazzola.—p. 1052.
Experiments on Hydrocephalus. A. Chiasserini.—p. 1053.

Provocation of Angiospasms in Arteritis and Intermittent Claudication.—Thomas was able to produce spasms of the vessels in intermittent claudication by different means. Slight massage for a few seconds made the limb extremely pale. Passive movements and pressure on the malleoli gave the same result, if the patient was reclining. If the extremity is lowered, the color returns quickly and much more effort is necessary to induce the spasm. The extremity blanches before the claudication starts. It is remarkable that not only active and passive movements, but also pressure on the malleoli or the iliac crest, and even exposure to cold air, leading to goose-skin, may provoke the spasm. A healthy subject making quick flexions and extensions of his lower extremity differs from the pathologic only quantitatively. The extremity becomes pale, and the oscillograph may reveal smaller excursions of the pulse for a short time. The venous circulation is increased by movements of the muscles, and the arteries of untrained persons do not supply a sufficient quantity of blood; this leads to the local anemia.

Revue Franç. de Gynécologie et d'Obstét., Paris

November, 1922, **17**, No. 11

*Actinotherapy in Gynecology. F. Jayle.—p. 561.
*Wassermann Reaction in Obstetrics. Gaujoux and Foulquier.—p. 589.

Radiotherapy in Gynecology.—Jayle reviews the use of radium and roentgen rays in gynecology. There is no better method than rays in cases of inoperable cancer, but surgery remains the method of choice, when possible. After-treatment with rays following an operation has given wonderful results in some cases, but Jayle gives final results and asks a careful study of the question. In uterine fibromas not influenced by pituitary extract, roentgen rays may be tried, although they are neither harmless nor infallible.

Wassermann Reaction in Obstetrics.—Gaujoux and Foulquier emphasize that complement fixation, valuable as it is, may be negative in cases of unquestionable syphilis.

Archivio Italiano di Chirurgia, Bologna

November, 1922, **6**, No. 3

*Tumors of Carotid Gland. F. Fedeli.—p. 217.
*Hydatid Cyst in Spleen. O. Cignozzi.—p. 258.
*Treatment of Hypospadias. U. Camera.—p. 277.
*Peptic Ulcer of the Jejunum. R. Brancati.—p. 297.
"Nourishment During Operations." P. Bastianelli.—p. 331.

Tumors of the Carotid Gland.—Fedeli illustrates the findings in a tumor removed from the bifurcation of the common carotid in a man of 59, and gives brief summaries of ninety cases in the literature. In seven the tumor was a necropsy surprise. He remarks that nearly every one who has studied these tumors has given them a different name, as there is still so much uncertainty as to the significance of the carotid body.

Echinococcus Disease of the Spleen.—Cignozzi found the hydatid cyst in the spleen in 4 of his 62 cases of echinococcus disease, while the liver was involved in 44. The cysts in the spleen in his cases, had a capacity of from 200 to 600 c.c. and the outline of the spleen was characteristic. The general health was good, but albumin and tube-casts were found in the urine as also in his liver cases. In both they disappeared in from four to six days after the operation. He advocates splenostomy as the only treatment; adhesions generally interfere with splenectomy in these cases, but suturing the lips of the incision to the skin answers every purpose, he adds. He gives an illustrated description of the technic for the operation, and emphasizes the necessity for plastic repair of the breach in the abdominal wall. His simple and effectual method for this was summarized in these columns June 18, 1921, p. 1803.

Treatment of Hypospadias.—Camera describes with illustrations what he says is a new method for correction of penoscrotal hypospadias. He applied it in the case of a boy of 13, and extols the advantages of the ample nourishment of the flap he uses, and the absence of any deep sutures, while the extensive contact of raw surfaces insures prompt healing. He diverts the urine through the perineum, and cuts out the skin over a rectangular area, like an inverted U, in the anterior surface of the scrotum. This denuded area is 3.5 cm. wide, and 2 cm. longer than the penis. A strip of skin is left intact in the center of the inverted U. The penis is then incised its entire length on each side of the urethra, and the soft parts are loosened up, the raw surface of the flaps turned back forming a broad extension of the raw surfaces on the scrotum. The rectangular area from which the epidermis has been removed in the scrotum is then cut

through the layers down to the vaginalis. This provides a thick flap with a broad peduncle at the top. This flap is then turned over upward, which brings the skin-covered stretch opposite the urethra bed, and the raw surface each side against the raw surface of the penis side flaps. The skin-covered stretch fits over a sound introduced through the hypospadias opening and perineal fistula. To keep this skin-covered stretch in place, to form the new urethra, four stitches are taken on each side to suture it to the fascia of the penis on each side of the sound. He gives further an illustration of a little cork splint, a kind of frame, which fits over the new urethra in its entire length, and holds everything in place during the healing process.

Genesis of Peptic Postoperative Ulcers.—Brancati states that a peptic ulcer developed in 5 of 10 dogs after resection of the pylorus and part of the stomach. The findings in 90 animals after various operations on the stomach are analyzed. They demonstrate beyond question, he says, that peptic ulcers are invited by removal of the prepyloric portion of the stomach and by dysfunction of the loop of the bowel connected with the pancreas and biliary system. The gastric juice altered in its composition, or not sufficiently modified by the pancreatic juice and bile, or abnormal from both these factors combined corrodes the wall of the jejunum.

Revista Española de Medicina y Cirugía, Barcelona

November, 1922, **5**, No. 53

*Vaccination Against Typhoid. F. Gallart Monés.—p. 627.
Face Presentation. J. Ruiz-Contreras.—p. 633.
*Cesarean Section in Infected Cases. F. Proubasta.—p. 639.
Spinal Anesthesia. E. Matons.—p. 643.
Modern Drugs of Vegetable Origin. F. Bascompte.—p. 646.
Medicinal Melanuria. Idem.—p. 648.

Typhoid at Barcelona.—Gallart Monés summarizes the experiences in a number of towns in Spain in which recent epidemics of typhoid have been arrested by compulsory anti-typhoid vaccination. In several other towns many persons took advantage of the free vaccination offered. At Barcelona the typhoid death rate per thousand inhabitants has ranged from 3.641 in 1914 to 0.382 in 1921, the 272 typhoid deaths in 1921 being the smallest figure ever reached. He urges that the prophylaxis of typhoid should be enforced along the same lines as vaccination against smallpox.

Porro's Operation.—Proubasta expatiates on the supreme recourse at our disposal in Porro's operation, even in the most deplorable conditions of dystocia and infection. He makes a point of severing the vascular pedicles of the uterus; this allows more thorough packing with gauze to protect the peritoneum. To reduce the shock as much as possible, he partly sutures the abdominal incision as soon as the uterus is drawn out, without waiting further. In one of his cases even panhysterectomy did not remove all the foci of infection. Thrombophlebitis, pneumonia and phlegmasia alba dolens followed the Porro, with final recovery.

Semana Médica, Buenos Aires

Sept. 21, 1922, **2**, No. 38

*Pyelolithotomy. R. Finochietto.—p. 574.
*To Reduce Infant Mortality. P. Rueda.—p. 575.
*Symptoms with Disease of the Kidneys. C. H. Niseggi.—p. 579.
Sexology the Mother of Eugenics. E. Accame.—p. 585.
Present Conceptions of Physical Training. V. Delfino.—p. 600.
Treatment of Tuberculosis. Gumersindo Sayago.—p. 602.
Opsonic Index in Vaccine Treatment of Tuberculosis. J. A. López. —p. 605.
*Treatment of Varicocele. E. Ferrando.—p. 609.
Deep Roentgen-Ray Therapy. C. Heuser.—p. 612.
*Periodic Precipitation in Biology, etc. A. L. Herrera.—p. 615.
Psychophysiology of Hearing. V. Ribón.—p. 622.

Pyelolithotomy.—Finochietto emphasizes the necessity for ascertaining the shape and size of the calculus before operation. Carelli's method of insufflation of a gas around the kidney—perirenal emphysema—is of great assistance. A large branching calculus is usually broken in removal, and he makes a practice of deliberately cutting it. He uses stout shears for this, and cuts off the branch close to the main body of the calculus. This generally allows the branch and the main body to be easily extracted separately. His illustrations show the forceps grasping each half of the calculus in turn. A small supplementary slit can be made in the kidney proper if either part of the calculus is too broad at the tip.

Puericulture.—Rueda was the founder of the infantorium at Rosario. He urges direct medical inspection in the home or hospital of every new-born child. He insists that medico-social efforts in this line would aid materially in reducing infant mortality.

The Manifestations of Disease of the Urinary Apparatus.—Niseggi recalls that the slightest derangement of kidney function is liable to cause disturbances throughout the organism, even at points remote from the urinary apparatus. On the other hand, the patient in describing his symptoms—especially pain in the lumbar region—may ascribe everything to the kidney, when in reality the kidneys may be sound. Impairment of vision and hearing, pruritus, digestive disturbance from elimination of the retained toxins through the mucosa of the alimentary tract, dyspnea from autointoxication, uremic asthma, and nervous disturbances in the eyes, the muscles, and elsewhere, are all useful in differential diagnosis. The most instructive clue is a history of some acute infection with transient nephritis or of an intoxication with lead, arsenic, phosphorus, iodoform, or from an extensive burn. Tuberculosis of the kidney may develop without pain; when present, the pain is spontaneous, irregular, and not influenced by movements. It is aggravated by eating, by the menses, by pressure on the kidney, and is relieved by lying down. Sometimes the pain takes the form of lumbar neuralgia, or kidney colic from the migration of a clot or cheesy scrap into the ureter. The diseased kidney may be free from pain while the sound kidney may be painful; the sound kidney hypertrophies, and this may be responsible for the discomfort. Niseggi describes in detail the tender points with kidney disease, and urges their differential importance; two in the back, five in front, and two in the side.

Treatment of Varicocele.—Ferrando describes Marenco's technic which has been applied successfully in twenty cases since 1916. The veins in the anterior bundle of the spermatic cord are resected for 3 or 4 cm., and the testicle, enclosed in its vaginalis, is drawn through a slit in the parietal layer of the serosa. The serosa is then inverted and a stout catgut thread is passed through each end of the wound. The testicle is restored to place and supported at the proper height, and the catgut is tied on each side and fastens it thus to the cellular tissue of the root of the scrotum, to Poupart's ligament, or to the rectus muscle. The testicle is thus left of good size and shape, held immovable at the proper height by a cicatricial envelop, and the stretched scrotum usually shrinks to normal size.

Biologic Importance of Sedimentation.—Herrera declares that rhythm, which presides over all the functions of organic life, is normal also in inorganic formation, and interests the mineralogist and the geologist as well as the biologist and physician. Sedimentation is a biologic factor which, as yet, has not been sufficiently heeded.

Nov. 9, 1922, **2**, No. 45

*Urethrotomy. J. Nin Posadas.—p. 945.
Abdominal Surgery. Jaime Salvador.—p. 947.
Pneumoperitoneum for Diagnosis of Ovarian Tumors. A. Chueco. —p. 948.
Alcoholic Cirrhosis and Psychosis in Boy Aged 5. J. M. Obarrio. —p. 951.
Protein Therapy in Infectious Diseases. M. Angel Marini.—p. 956.
Pemphigus of Mouth and Throat. R. Becco.—p. 971.
Factors in Infant Mortality. E. Accame.—p. 972.
Mechanism of Contraction of Mammalian Heart. T. Padilla.—p. 974.
Relations Between the Tonsils and the Pituitary. Lagomarsino.—p. 983.
Certain Symptoms That Yield to Ferrán's Alpha Vaccine. J. A. López.—p. 985.

Urethrotomy.—Nin Posada's urethrotome cuts the stricture at two opposite points; the blades are sharp on both edges. He has not had menacing hemorrhage in its use, except in two cases, one of them hemophilic.

Siglo Médico, Madrid

Dec. 9, 1922, **70**, No. 3600

Means to Combat Infant Mortality. Martínez Vargas.—p. 557.
*Epinephrin in Treatment of Burns. Arsenio Plaza.—p. 560.
Anthrax in a Diabetic. Carlos A. Vago.—p. 562.
The Diagnosis and Prognosis in Pediatrics. Suñer.—p. 565.

Epinephrin in Treatment of Burns.—Plaza expatiates on the advantages of giving epinephrin systematically to tide patients with severe burns over the period of nervous shock. In the three cases he describes, the benefit was pronounced. When the epinephrin was suspended, the condition grew worse, and improved again on its resumption.

Dec. 16, 1922, **70**, No. 3601

*Brain Traversed by Bullet. C. Juarros.—p. 581. Cont'd.
Case of Agoraphobia in a Girl. B. Gil y Ortega.—p. 584.

Syndrome from Injury of the Centrum Ovale.—The bullet had traversed the brain, passing horizontally through the left frontal and emerging through the left parietal bone. Disturbance in speech, which resembled the scanning speech of multiple sclerosis, and slight paresis of the entire right side were associated with reduction of the power of association and thought.

Beiträge zur klinischen Chirurgie, Tübingen

1922, **127**, No. 3

*Calvé-Legg-Perthes' Disease. G. Perthes and G. Welsch.—p. 477.
*Recurrence of Goiter. Enderlen and Hitzler.—p. 526.
Dissecting Osteochondritis of Knee. E. Roesner.—p. 537.
Chorio-Epithelioma. E. Forster.—p. 562.
Malignant Chordomas. Linck and Warstat.—p. 612.
Tumors from Aberrant Mammary Gland Tissue. Sonntag.—p. 627.
Sensibility of Skin After Section of Nerve. L. Franz.—p. 641.
*Epithelium Grafting. K. Reschke.—p. 647.
*Spontaneous Arrest of Bleeding. H. Stegemann.—p. 657.
*Treatment of Defects in Dura and Skull. P. Drevermann.—p. 674.
*Mechanism of Acute Atony of Stomach. W. Koennecke.—p. 698.
Malignant Lentigo. G. Kob.—p. 709.
Synostosis of Radius and Ulna. Sonntag.—p. 716.
Surgery in Hippocrates' Day. E. Melchior.—p. 721.

The Calvé-Legg-Perthes' Affection of the Hip-Joint.—Perthes here brings down to date his experience with what he calls osteochondritis deformans of the hip joint, with which his name has been connected since 1913 and Legg's since 1910. His fifty-one illustrations show the course and outcome in fourteen cases under continuous roentgen control. The course averaged four and a half years. The complete healing and excellent functioning of the joint confirm the benign nature of this osteochondral trophopathy. No appreciable benefit was manifest from immobilization or extension.

Recurrence of Goiter.—Statistics are given showing recurrence in 29 per cent. of 795 cases followed to date, with operative treatment of the recurrence in 9 per cent. To avoid recurrence, a change to a region free from endemic goiter might be considered. It is possible that the absence of recurrences in the records of certain surgeons may be due in part to the locality being free from endemic goiter.

Active Epithelial Implants on Wound Surfaces by Pels-Leusden's Method.—This is a method of grafting with a mash of epithelial particles, blood and serum scraped up from the skin after the outer layer has been scraped off. It was described in The Journal, Oct. 21, 1922, p. 1465. The epithelium in this pulpy condition is injected, with a thumb-screw syringe, under the granulations, either at scattered points or in a passage as long as the needle. The proliferating epithelium then makes its appearance in islands or strips. One great advantage of the method is that the surface does not have to be cleaned for it. The proliferation occurs regardless of the secretions covering the surface of the granulating area. A colored plate shows the aspect of a leg ulcer with eight large islands of new-formed epithelium, seven days after injection of the *epithelbrei*. Peschke adds that another advantage is the rapid healing of the area from which the epithelium mash was scraped up. It heals much faster than the defect left by a Thiersch flap, and the whole procedure takes much less time than Braun's seedling method or any other mode of promoting healing of granulating areas. The healing has been excellent even in large traumatic defects of the skin over joints, and in lining cavities in bones. It has failed only in three instances; one was a burn on the sole, and one a defect after removal of a sarcoma of the thigh that had been given intensive roentgen-ray treatment.

Arrest of Bleeding in Surgery.—Stegemann remarks that practically the same measures are used now to arrest bleeding that were used by Celsus and Galen. Recent research has demonstrated that the active contraction of the injured capillaries or other blood vessels is an important factor in hemostasis.

Treatment of Defects in Dura and Skull.—Drevermann reviews the experiences in Lexer's service with various substances to cover a gap in the dura and skull. In 24 of the total 60 cases the interval since has been less than three years. In 30 of the others, a loose flap of fat was used to close the gap in the dura. In the 13 cases with already developed epilepsy, the seizures persisted unmodified in all but a group of 6, in which 5 were cured and one materially improved. In the 17 cases in which there had been no epilepsy at the time of the operation, no attacks developed afterward except in one case. Five pages of bibliography, set solid, are appended.

Acute Atony of the Stomach.—Koennecke's experimental research has refuted the assumption that mechanical factors alone are responsible for the occlusion of the duodenum and acute atony of the stomach. The latter is the primary. Some disturbance in the innervation entails the atony and dilatation of the stomach. The stretched stomach then kinks the duodenum at the point where it is most firmly fastened.

Deutsche medizinische Wochenschrift, Berlin

Dec. 8, 1922, **48**, No. 49

*Adaptation of Research. W. His.—p. 1635.
*Emaciation in Diseases of Intestine. L. Kuttner.—p. 1637.
*Endocarditis Lenta. E. Hassencamp.—p. 1638.
*Cancer of Uterus. H. Küstner.—p. 1640.
*Blood Transfusion in Pernicious Anemia. H. Götting.—p. 1641.
*Treatment of Pyelitis. G. Daniel.—p. 1642.
Diseases of Female Bladder. I. v. Büben.—p. 1643.
*Myxedema with Lipomatosis. F. Kisch.—p. 1644.
*Roentgen Ray Sickness and Cachexia. H. Hirsch.—p. 1646.
*Hypertension After Electric Injury. W. Pfalz.—p. 1647.
Active Principle of Antigens in Serodiagnosis of Syphilis. E. Epstein and F. Paul.—p. 1648.
Median Fistula of Neck. G. Takeda.—p. 1649.
Illumination of Vagina. E. Kantorowiz.—p. 1650.
*Febrile Abortion. M. Henkel.—p. 1650.
Examination of Nose. Finder.—p. 1651.
Birth and Death Rate of Children in East Africa. R. Lurz.—p. 1652. Conc'n.

Adaptation of Research to New Conditions.—His discusses the ways to continue research in spite of new conditions.

Loss in Weight in Diseases of the Intestine.—Kuttner warns physicians against making the diagnosis of tuberculosis of the intestine too lightly. The symptoms may be due to inflammatory diseases, for instance a chronic dysentery with insidious onset, or to functional troubles. Achylia gastrica leads to nutritional disturbances only when the stomach is obstructed, or when the intestine does not work properly. Fermentative and putrefactive diarrhea may lead to loss of weight. Thyrogenous diarrhea is a very important cause. Constipation, especially in young anemic and chlorotic girls, may induce a loss in weight. Endocrine disturbances and a neuropathic disposition may be contributory causes. Such women often believe they cannot eat because they have not enough bowel movements.

Endocarditis Lenta.—Hassencamp discusses this disease the frequency of which is increasing in Germany, especially among ex-soldiers. The diagnosis is not difficult: Valvular (usual aortic) lesion, fever between 37 and 38 C., tumor of spleen, anemia, embolic processes, especially in the kidney. He does not believe in the strict specificity of *Streptococcus viridans*.

Surgery and Roentgen Rays in Treatment of Uterine Cancer.—Küstner operates when possible and irradiates subsequently. Fifty c.c. of an antistreptococcus serum is given before the operation. The abdominal operation is the method of choice.

Blood Transfusion in Pernicious Anemia.—Götting injects from 500 to 1,000 c.c. of blood, and reports favorably on the results.

Treatment of Pyelitis.—Daniel commends the Meyer-Betz-Haas' diet, which consists of restriction of fluids, and of sweating to obtain a concentrated, acid urine. Hexamethylenamin, salicylates and phosphoric acid are given in addition. He follows four days of this diet by three days of increased fluid intake (2 to 3 quarts of tea), and then repeats.

Myxedema in Lipomatosis.—Kisch finds almost always a hypofunction of the thyroid in cases of constitutional obesity (except in dystrophia adiposogenitalis).

Roentgen-Ray Sickness and Cachexia.—Hirsch treated these conditions by injections of extract of the anterior lobe of the pituitary, an epinephrin-free extract of the cortex of suprarenal capsules, and an extract of an organ which had been irradiated (ovary). The results were good from this diverse organotherapy for these acute and chronic roentgen-ray injuries.

Hypertension After Electric Shock.—Pfalz describes the case of a young man with periods of hypertension after a severe injury by electricity. Pfalz attributes it to an increased irritability of the vasomotor center, due to the injury.

Febrile Abortion.—Henkel rates clinical signs above the bacteriologic finding. The main question is whether the infection is limited to the ovum or is progressing to the uterus or has become generalized. He recommends expectant treatment as far as possible. The remnants of the fetus are removed with the finger, instead of with the curet.

Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1922, **175**, No. 1-6

*Concussion of the Brain. A. Ritter.—p. 1.
*Supracondylar Fracture of Humerus. H. Kälin.—p. 45.
*Fracture of Styloid Process of Ulna. H. R. Schinz.—p. 81.
*Causes of Postoperative Weakness of the Heart. E. Brack.—p. 138.
*Lymph Capillaries. G. Magnus.—p. 147.
Chronic Stenosis of Duodenum. Koennecke and Meyer.—p. 179.
Hernia on Spigel's Line. A. Sohn.—p. 204.
Treatment of Appendicitis with Complications. E. O. Schmidt.—p. 213.
*Bronchial Fistulas. W. Gast.—p. 219.
*Progressive Ossifying Myositis. W. Löhr.—p. 238.
*Perforation of Duodenum After Contusion. A. Furtwaengler.—p. 261.
Thoracic Access to Foreign Body in Esophagus. L. Heidenhain.—p. 292.
*Acute Edema of the Pancreas. H. Zoepffel.—p. 301.
Genital Complications of Appendicitis. F. de Gironcoli.—p. 313.
Peptic Jejunal Ulcer. H. Els.—p. 327.
Idem. Jenckel and Schüppel.—p. 337.
Pyogenic Infection of Blood. A. Buzello.—p. 370.
*Origin of Ischemic Contracture. A. Schubert.—p. 381.
*Operation for Floating Liver. F. J. Kaiser.—p. 411.
*Incarceration of Intestine in Slit in Mesentery. Borbe.—p. 454.

Injury of the Brain.—Ritter discusses the injuries of the brain with which general symptoms predominate. The article is based on 626 cases at Zurich in the last twenty years. Analysis of the cases shows a pronounced difference in the clinical manifestations according as the commotion involved the medulla oblongata or other parts of the brain or the whole brain. This classification is important in estimating the consequences of the injury for proper treatment at the time and later, as well as from the accident insurance standpoint. The true concussion fatality is due to arrest of the respiration by the blow on the medulla oblongata, pressing on the respiration center. No organic injury is found at necropsy. The longer the interval before death, the greater the probabilities of pathologic anatomic findings. The medulla concussion cases have a favorable prognosis, unless immediately fatal. In a year and a half at latest, all the disturbance had disappeared in the cases reexamined. In the cases of concussion of other parts of the brain the disturbances persisted long but finally all disappeared in an average of nearly twenty months. The cases of diffuse contusion of the brain showed still longer persistence, from three to ten years, but final recovery was the rule. Treatment is mainly symptomatic, artificial respiration, lowering the head, etc., and as stimulants, whiffs of ether, pouring hot water on the body, the faradic brush to the soles, etc. Of supreme importance for the later course is strict bed rest, at least for three weeks. Lumbar puncture is never needed in pure medulla concussion cases.

Supracondylar Fracture of Humerus.—An abnormal position of the forearm is manifest in twenty of fifty cases of low fracture of the humerus reported by Kälin. It seems to be a growth anomaly which it is impossible to prevent.

Fracture of the Wrist.—Five pages of bibliographic titles, three plates, and forty illustrations in the text accompany Schinz' study of fracture of the styloid process of the ulna.

Unusual Causes for Heart Failure After Abdominal Operations.—Both patients were robust men, and merely a minor operation had been done. Adhesions kinking the portal vein were responsible for the paralytic ileus in one case. It could easily have been avoided if the portal vein had been inspected at the operation. In the second case the fatal collapse after the simple gastro-enterostomy was explained by pneumopericardium. It had been overlooked at the operation. The case teaches that pneumopericardium should be among the possible causes suspected when the heart weakens suddenly after an operation on the stomach. Puncture might safely release the gas.

Research on Origins of Lymphatics.—Magnus' remarkable photomicrograms of what he calls the roots of the lymphatics were obtained by distending them with a gas. The gas was the oxygen liberated when hydrogen peroxid came in contact with lymph. They throw light on the mechanism of edema, hydrocele, etc.

Bronchial Fistulas.—Gast remarks that many small bronchial fistulas heal spontaneously and escape discovery. Eight cases are described. Each required individual treatment, and two of the patients sucumbed to the causal disease.

So-Called Progressive Ossifying Myositis.—Löhr concludes from the case of which he gives an illustrated description, that a single type of process is responsible for the typical clinical manifestations. It is not a muscle disease but a multilocular proliferation of connective tissue in periosteum and fascia. Calcification and true bone production follow. Surgical treatment and trauma seem to stimulate to more active ossification. The roentgen rays seem to offer the only possible chance of relief.

Tardy Perforation of Duodenum After Contusion.—Furtwaengler compares a case in a young woman with 123 from the records. He tabulates the details of all these cases. Only fourteen terminated in recovery. The grave symptoms in his case developed suddenly five weeks after the contusion, and a second perforation proved fatal soon after the operative repair of the first.

Acute Edema of the Pancreas.—Zoepffel states that in 10 per cent. of his 115 gallstone operations, he encountered acute necrosis of the pancreas—eight cases in 1921. In four it had not progressed beyond the incipient (edema) stage. In this stage there is a zone of intense tenderness and muscular stiffening in the middle and left side of the upper abdomen due to the primary gallbladder affection. With pronounced necrosis, the symptoms due to this mask the gallbladder affection. In the edema cases the operation followed the first symptoms in from twelve to twenty-four hours, and all recovered. In eight others the interval was two to four days, necrosis was pronounced, and all died.

Ischemic Contracture.—Schubert presents arguments to prove that disturbance in the capillary circulation in the muscle is the primary cause of the contracture. Irreparable damage may be done in a few hours. A circular plaster bandage should never be applied to the arm, and never anywhere if the pulse is not good, especially if there are signs of nerve injury. Treatment can aim only at surgical correction of the contracture.

Operation for Floating Liver.—Kaiser's method of lifting up and supporting the liver from below was summarized in these columns, Dec. 9, 1922, p. 2044. He describes his technic here with fuller details and ten illustrations, and extols its superiority over other methods of hepatopexy.

Incarceration of Intestine in Slit in Mesentery.—Borbe reports three cases of ileus and volvulus from this cause. There was no history of trauma in any instance.

Jahrbuch für Kinderheilkunde, Berlin

November, 1922, **100**, No. 1-2

*Milk-Free Diet for Infants. Moll and Stransky.—p. 3.
*Influenzal Croup in Children. Zschocke and Siegmund.—p. **15.**
*Immunization Against Acute Articular Rheumatism. Brunthaler.—p. 34.
*Limits of Intubation. M. Hohlfeld.—p. 42.
Etiologic Diagnosis of Umbilical Tetanus. Zeissler and Käckell.—p. 53.
*Red Cell Sedimentation and Specific Gravity. Opitz and Frei.—p. 55.
*Treatment with Casein. B. Asal-Falk.—p. 61.

*Congenital Syphilis with Symptoms of Ataxia. C. Linder.—p. 65.
Alkalosis and Acidosis. E. Freudenberg and P. György.—p. 86.

Milk-Free Diet in Nutritional Disturbances of Infants.—Moll and Stransky use in cases of nutritional disturbances due to milk, dyspepsia and spasmophilia, a pudding prepared from crackers, sugar and eggs. The pudding is useful for infants, beginning from the third month.

Influenza Croup in Children.—Zschocke describes eleven cases of severe laryngitis in children, due to influenza. Children who were younger than one year died. Of the other cases, 50 per cent. terminated fatally, as also three cases in which stenosis was present before the fourth day of the disease. Intubation may injure the inflamed larynx, and tracheotomy should be resorted to only if there is no hope of relief by other means. Usually it does not help either. Siegmund reviews the necropsy findings.

Active Immunization Against Acute Articular Rheumatism.—Brunthaler used a gonococcus vaccine in five cases of febrile polyarticular rheumatism, because he believes that acute articular rheumatism is caused by a micro-organism kindred to the gonococcus. None of the four children or the one adult developed any heart complications.

Limits of Intubation.—Hohlfeld illustrates, with cases from his clinical experience, different conditions which interfere with the success of intubation. Spasm of the glottis may be a cause, although it can be sometimes overcome by using a smaller tube, after which a larger tube is tolerated. Pharyngeal dyspnea cannot be cured by the intubation, even if the larynx is also affected. If the stenosis reaches very far down, tracheotomy is preferable, although the intubation may help a little by distending the air passages. The tube (especially a small one) may get between the trachea and the membranes.

Relation of Speed of Sedimentation to Specific Gravity of Plasma and Erythrocytes.—Opitz and Frei found that there is no relation in children between speed of sedimentation and the specific gravity of the plasma and erythrocytes. Only in anemia there seems to be some connection with the color index.

Dietetic Treatment with Casein.—Asal-Falk emphasizes the importance of calcium in the treatment with casein. One has to add it eventually to the protein in treatment of dyspepsia in infants and young children.

Congenital Syphilis with Symptoms of Hereditary Ataxia.—Linder's patient presented symptoms of hereditary ataxia and gave a positive complement fixation. Antisyphilitic treatment influenced the condition favorably.

Klinische Wochenschrift, Berlin

Nov. 18, 1922, **1**, No. 47

*Discrimination of Colors. C. v. Hess.—p. 2313.
*"Hygiogenesis." F. v. Gröer.—p. 2316.
*Narcosis and Acidosis. P. György and H. Vollmer.—p. 2317.
*Gout and the Kidneys. F. E. R. Loewenhardt.—p. 2319.
Electrocardiograms Spoiled by Trembling. E. Mosler.—p. 2321.
Action of Blood Vessels. H. Full.—p. 2322.
*Immunity in "Recurrens" and Arsphenamin. A. Buschke and H. Kroó.—p. 2323.
*Diagnostic Cutaneous Reactions in Infants. P. Grosser and K. Keilmann.—p. 2326.
Action of Acid Mixtures of Potassium Iodid and Hydrogen Peroxid on Bacteria. Jacobitz.—p. 2328. Idem in Treatment of Wounds. Urtel.—p. 2330.
*Chromocholoscopy as Test for Liver Function. Hamid.—p. 2332.
Treatment of Staphylomycoses with Horse Serum. W. Rieder.—p. 2333.
Comment on "Iris Heterochromia." S. Sobel.—p. 2333.
Lactase. E. Freudenberg and P. Hoffmann.—p. 2333.
Etiology of Influenzal Pneumonia. G. A. Iwaschenzoff.—p. 2334.
Liver Function in the Striolenticular Complex. R. Stahl.—p. 2334.
Bone Connection Between Vertebrae in Tuberculous Spondylitis. G. Schipporeit.—p. 2335.
Modern Treatment of Leprosy. Olpp.—p. 2336.
Miners' Nystagmus. J. Ohm.—p. 2339.
Active Principles of Ergot. E. Rothlin.—p. 2341. Conc'n.

Discrimination of Colors.—Hess reviews modern methods which enable us to make very exact determinations of the individual ability of color perception.

Hygiogenesis.—Gröer forms this new term in analogy to "pathogenesis." He means by it the mechanism which unites the chemical and physical processes leading to recovery of health.

Narcosis and Acidosis.—György and Vollmer find in narcosis a tendency of the metabolism to acidosis. They attribute it to slowing down of the oxidations.

Gout and the Kidneys.—Loewenhardt finds that persons suffering from gout are able to reach just as high concentrations of uric acid in the urine as healthy people, if not higher. Uric acid is well eliminated even in persons with severe insufficiency of the kidneys. The theory that gout is due to an isolated disturbance of the excretion of uric acid is without sufficient foundation.

Presence of Spirochetes During Immune Phase of Experimental Recurrentis Infection That Had Been Vigorously Treated with Arsphenamin.—Buschke and Kroó publish very interesting investigations on mice which were in the immune stage after an infection with *Spirochaeta recurrentis*. They injected emulsions of different organs of these animals into healthy mice, and found that all of these immune animals had active virus in some organs. It is a remarkable fact that in every case, it was the brain from which even high doses of arsphenamin had not been able to remove the spirochetes. In spite of the presence of spirochetes in the brain, in some of the mice treated with arsphenamin, reinfection (or, to be more exact, superinfection) was possible. These experiments show that, in recurrentis infection, immunity coexists with the presence of parasites, and it is probable that the immunity lasts only so long as they persist. The authors suggest, with all reservations, the probability that immunity against syphilis—by analogy with these experiments—is likewise a manifestation of the latent stage of the disease. There may also be further interesting analogies with the superinfection in the two diseases.

Diagnostic Cutaneous Reactions in Infants.—Grosser and Kleinmann show that some healthy individuals may react to nonspecific substances in the same way as to tuberculin and diphtheria toxin. An intracutaneous reaction of a diameter of less than 10 mm. and a duration of less than seventy-two hours is not necessarily specific.

Chromocholoscopy as Liver Function Test.—Hamid tested in thirty persons the excretion of methylene blue through the bile. There were no differences in the time of its appearance between the healthy and persons with disease of the liver.

Medizinische Klinik, Berlin

Dec. 3, 1922, **18**, No. 49

Treatment of Diabetes. H. Assmann.—p. 1545.
*Trichophytosis on Extremities. A. Alexander.—p. 1550.
*Treatment of Spastic Conditions. H. Kersten.—p. 1553.
Treatment of Abortion. Bandzauner.—p. 1555.
*Arsphenamin Injuries. E. Meyer.—p. 1557.
Primary Chronic Fibrinous Bronchitis. Pappenheimer.—p. 1557.
*Modified Method of Percussion. F. Schlesinger.—p. 1557.
*Rumpel-Leede's Phenomenon. H. Hoffmann.—p. 1558.
Acute Cystitis. E. Portner.—p. 1559.
Recent Literature on Roentgen Diagnosis. O. Strauss.—p. 1560.

Trichophytosis on Extremities.—Alexander describes trichophytosis localized in the palms and soles. The disease can be either typical or it may appear as a simple desquamating dyshidrosis. It can also resemble pemphigus. Alexander was able to cultivate the germ in nine cases out of thirteen, and considers it as *Trichophyton gipseum*.

Treatment of Spastic Conditions.—Kersten publishes two cases of extirpation of one suprarenal capsule. He attributes to the operation an amelioration of the epileptic condition of the patients.

Arsphenamin Injuries.—Meyer describes a case of death due to syphilitic thrombosis of the artery of the right sylvian fissure. The patient had been treated only with mercury ointment. If arsphenamin had been used, the case would possibly have been considered as another injury due to arsphenamin.

Modified Method of Percussion.—Pappenheimer puts the extended middle finger of the left hand on the body at an angle of 45 degrees, and raps on the proximal end of the last phalanx, vertical to the axis of the finger. The sound is weaker than in the classic method, but stronger than in that of Plesch-Goldscheider.

Rumpel-Leede's Phenomenon.—Hoffmann compared the cutaneous hemorrhages after stasis (Rumpel-Leede's phenomenon) in syphilitics and other patients (887 persons in all). There is not much difference in men, while it is more frequent in syphilitic women. The prognostic value of the reaction for arsphenamin injections is minimal, except perhaps in very pronounced cases.

Münchener medizinische Wochenschrift, Munich

Dec. 1, 1922, **69**, No. 48

*Primary Foci, Miliary Tuberculosis and Immunity. Huebschmann.—p. 1654.
Experiments on Treatment of Syphilis with Bismuth. Müller.—p. 1659.
*Aches in Abdomen and Back. H. Albrecht.—p. 1661.
*Treatment of Callous Ulcers of Legs. F. v. der Hütten.—p. 1663.
Percutaneous Application of Tuberculin. F. Hamburger.—p. 1664.
*Hemorrhagic Erosions of Rectum. M. Pfister.—p. 1664.
German Alexander Hospital in Petrograd. W. Schuele.—p. 1665.
Hueppe's Attitude Toward the Racial Question. F. Lenz.—p. 1666.
Polycythemia and Other Splenomegalias. P. Morawitz.—p. 1666.

Primary Foci, Miliary Tuberculosis and Immunity.—Huebschmann reports his experiences in 329 necropsies, and discusses especially the problem of the independence of miliary tuberculosis from the chronic tuberculosis of lungs.

Aches in Abdomen and Back.—Albrecht emphasizes the psychogenous character of these aches. He points out that objective diseases of the female genital organs produce pains only in a very few well known affections.

Treatment of Callous Ulcers of Legs.—Hütten injects normal saline under and around callous ulcers of the leg, and reports favorable results even in cases of long duration.

Hemorrhagic Erosions of Rectum.—Pfister describes a case of rectal erosions resembling aphthae.

Dec. 8, 1922, **69**, No. 49

*Treatment of Ulcer of Stomach. E. Enderlen and E. v. Redwitz.—p. 1683.
*Fatal Roentgen-Ray Injuries of Larynx. F. v. Hofmeister.—p. 1687.
*Comment on "Roentgen Ray Injuries of Larynx." G. Perthes.—p. 1690.
Diagnosis of Anaphylactic Conditions. W. S. v. Leeuwen et al.—p. 1690. See abstract on page 443.
Wound Scarlet Fever. F. Port.—p. 1691.
*Widal's Liver Function Test. R. Nussbaum.—p. 1693.
*Medium for the Gonococcus. F. H. Lorentz.—p. 1695.
Vaccination Against Tuberculosis. F. F. Friedmann.—p. 1698.
*Treatment of Diseases of the Conjunctiva. A. Peters.—p. 1700.

Surgical Treatment of Ulcer of Stomach.—Enderlen and Redwitz considered the results of different operations from the standpoint of their physiologic effect on the digestion. The treatment should be internal as long as possible. Only if all the therapeutic measures fail, the internal treatment may be interrupted and aided by an operation. The authors are opposed to early operation as method of choice. Where operation is indicated, a typical resection is usually the best. Some cases with or without stenosis of the pylorus may require a gastro-enterostomy.

Fatal Roentgen-Ray Injuries of Larynx.—Hofmeister publishes three cases of death due to roentgen-ray treatment of a laryngeal papilloma and two carcinomas. The injury did not appear for a long time (two and one half to three months after the second irradiation). There resulted not only stenosis of the larynx, but also atrophy of the surrounding parts (esophagus, thyroid, salivary glands), and the tissues were so badly damaged that operation led to necrosis, besides being extremely difficult. The doses of roentgen rays were not unusually large. Besides these cases, it is very probable that two others (out of thirteen) were also injured in a similar way. Hofmeister concludes that late injuries after roentgen rays are more frequent than is realized. The absence of a severe reaction during the first four weeks does not prove that the doses were not too high. Not one carcinoma of the larynx has ever been cured by irradiation. Therefore no operable carcinoma and no papilloma should be irradiated.

Comment on Hofmeister's "Fatal Roentgen-Ray Injuries of Larynx."—Perthes points out that only two were operable of the thirteen cases quoted by Hofmeister as mentioned in the preceding abstract. Perthes believes that it is possible to avoid overdosage, and points out the benefits of irradiation for hopeless cases. He cites Beck's patient who had no recurrence for three years, and one of his own patients who is still living in fair condition after two and a half years.

Widal's Liver Function Test.—Nussbaum discusses and recommends Widal's efficiency test of the liver. Although a negative result does not exclude abnormal conditions in the liver, a positive test should lead to very careful study of the case.

Medium for Gonococci.—Lorentz uses an ascites agar containing 0.02 per cent. of lactic acid.

Treatment of Diseases of the Conjunctiva.—Peters points out the fallacy of supposing that different compounds have a specific action on the micro-organisms in the conjunctiva. Gonococci may continue to grow under treatment with silver preparations, while the mucosa returns to a normal condition. Peters saw good results with parenteral injections of proteins.

Wiener klinische Wochenschrift, Vienna

Dec. 7, 1922, **35**, No. 49

*Early Diagnosis and Treatment of Syphilis. K. Ullmann.—p. 951.
*Cure of Trachoma by Radium. L. Müller and F. Högler.—p. 954.
*Meckel's Diverticulum. L. Kirchmayr.—p. 955.
Relations Between the Biologic Reaction to Roentgen Irradiation and Oxygen. E. Petry.—p. 957.
*Bile Acids in Serum and Urine. A. I. Ignatowsky.—p. 958.
Comment on "Hypnotic and Posthypnotic Analgesia." Kogerer.—p. 961.
French Views on Icterus. F. Stöhr.—p. 961. Cont'n.

Early Diagnosis and Treatment of Syphilis.—Ullmann emphasizes the importance of examination of suspicious lesions for spirochetes. The induration of the base is not always present—especially if the seat is not typical.

Cure of Trachoma by Radium.—Müller and Högler report excellent results in five cases of trachoma treated by radium.

Meckel's Diverticulum.—Kirchmayr saw a retrograde invagination occur after resection of Meckel's diverticulum. He recommends therefore resection of part of the intestine, if the base of the diverticulum is broad, or if there is a difference between the lumen of the intestine proximally and distally to it.

Bile Acids in Serum and Urine.—Ignatowsky measures the surface tension with Czapek's capillary manometer, by which the presence of 0.02 per cent. of bile in the fluid can be detected. Oral ingestion of 0.5 gm. of sodium taurocholate is sufficient to lower the surface tension of urine. He gives an illustration of the manometer and commends to the general practitioner this method of detecting the presence of bile acids in the various body fluids.

Zeitschrift für Kinderheilkunde, Berlin

Nov. 17, 1922, **34**, No. 1-4

*Rachitis and Growth. I. F. Wengraf.—p. 1. Idem. II. F. Wengraf and Barchetti.—p. 14. Idem. III. Ambrozic and Wengraf.—p. 24.
*Liver Function Tests in Children. A. F. Hecht and E. Nobel.—p. 42.
*Tuberculosis of Bronchial Glands in Children. H. Langer.—p. 60.
*Stomach Function Tests in Infants. Demuth and Edelstein.—p. 66.
*Rachitis in Infants. Harriette Chick et al.—p. 75.
*Amino-Acid Content of Infants' Urine. F. Goebel.—p. 94.
*Epituberculous Infiltration of Lungs in Children. H. Langer.—p. 142.
*Food Requirement of Children. Y. Chou.—p. 150.
Sugar and Protein in Bacterial Fermentation. F. Müller.—p. 158.
*Eosinophilia in Children. F. Hahn.—p. 165.
Miliary Necrosis of Liver Caused by Bacteria Resembling Spirochetes. M. Kantschewa.—p. 169.
*Clinical Aspect of Flea Bite. J. Hescheles.—p. 177.
*Diphtheria Antitoxin and the New-Born. F. v. Gröer and Progulski.—p. 185.
Rectal Feeding with Carbohydrates in Children. W. Schäfer.—p. 196.
Biology of Intestinal Flora in Infants. VII and VIII. Adam and Kissoff.—p. 207 and p. 213.
*Congenital Occlusion of Common Bile Duct. S. Paul.—p. 216.

Rachitis and Growth.—Wengraf and Barchetti observed five children, aged from 2½ to 5 years, who were undernourished, underweight, and very much smaller than normal children of their age. All of them were rachitic. The children had been previously nourished on a diet which was very poor in fat and proteins. On a diet with sufficient calories but without foods containing vitamin A no weight was gained except for a short period at the start. Leaving the caloric value of the diet unchanged, and adding milk and butter (instead of American hog fat), the children recovered. Four controls treated from the start with milk and butter improved rapidly. With the improvement in growth, the

rachitic changes became better. This shows that an important part of the rachitic symptoms is influenced by vitamin A.

Rachitis and Growth.—Ambrozic and Wengraf made experiments on white rats with vitamin-free food. They were able to demonstrate in the rats the disturbance in the deposition of calcium which is typical of rachitis. The slowing down of growth further resembled human rachitis.

Liver Function Tests in Children.—Hecht and Nobel tested the function of the liver in children. Galactose tests did not give reliable results. Synthesis of camphor-glycuronic acid was constant in six of the children (about 75 per cent.), although less than in adults if the dose was not too high. Three pathologic cases (icterus, liver stasis in pericarditis, and tuberculosis of serous membranes) gave low values.

Spinal Phenomena in Diagnosis of Tuberculosis of Bronchial Glands of Children.—Langer finds that testing for spinal pain is of no value in children. D'Espine's sign is instructive. He believes that percussion of the spine is important and valuable in the first years of life, especially if one looks also for dulness on the first three dorsal vertebrae as well as on the fifth.

Stomach Function Tests in Healthy Infants.—Demuth and Edelstein tested the effects of different components of milk and of added sugar on the stomach of infants. The time needed for disappearance of food from the stomach was determined chiefly by the amount of casein, both with human and cow's milk. There was no difference in the action of these substances on the acidity of the gastric juice in young infants. In older children, casein decreased, fat increased the acidity.

Rachitis in Infants.—Translation from *Lancet*, July 1, 1922.

Amino-Acid Fraction of Infants' Urine.—Goebel confirms the fact that infants excrete comparatively more amino-acids than adults. The proportion is still greater in prematurely born infants. Yet the amount of amino-acids in the blood is the same as in older children, and Goebel concludes that the increased elimination is due to a peculiarity of the kidneys. This theory is confirmed by the fact that the elimination of amino-acids in infants is increased by increasing the amount of urine. An increase in the amount of amino-acids may occur in alimentary intoxication, but it is not the rule.

Epituberculous Infiltration of Lungs in Children.—Langer observed in a tuberculous child, after the injection of tuberculin, fever and spreading of a previously resorbed infiltration of the lungs. The infiltration disappeared again. He considers it as a typical focal reaction, and believes that the benign infiltrates studied by Eliasberg and Neuland are specific, though he confirms the possibility of their disappearance.

Food Requirement of Children.—Chou studied sixty-nine children, aged from 2 to 14 years. Pirquet's formulas for infants proved to be correct even for older children.

Eosinophilia in Children.—Hahn attributes the frequency of eosinophilia (over 6 per cent.) in children chiefly to the great instability of their blood, and the frequency of the exudative diathesis, and of infections (including intestinal parasites). He found an increase in eosinophils in diphtheria, and attributes it to the injections of antitoxic serum.

Clinical Aspect of Flea Bites.—Hescheles studied the reaction of the skin to flea bites. Three quarters of the persons showed the usual maculo-hemorrhagic form, one quarter an urticarial type. This was due to the individual reaction, and not to differences in the fleas.

Action of Diphtheria Antitoxin on the New-Born.—Gröer and Progulski examined the action of specific antidiphtheric and nonspecific serums on eight new-born babes with a positive Schick test. They found that these babes react specifically and in the same way as adults.

Metabolism in Case of Congenital Occlusion of the Common Bile Duct.—Paul found in a case of aplasia of the gallbladder and choledochus a very low excretion of ammonia and an increased excretion of amino-acids. Fats were well split, because of normal function of the pancreas, but their resorption was very small.

Zeitschrift für Tuberkulose, Leipzig

November, 1922, **37**, No. 2

*War Epidemiology of Tuberculosis. Redeker.—p. 89.
Action of Poisons of Tuberculosis. E. Schulz.—p. 100.
*Leukocyte Formula in Tuberculous Children. C. J. Raffauf and Grimm.—p. 107.
*Staining of Tubercle Bacilli. R. Lommatzsch.—p. 112.
Apparatus for Disinfection of Sputum in Homes. W. Block.—p. 126.
Transactions of Thirteenth Yearly Convention of Association of Physicians in Tuberculosis Sanitariums.—p. 128.

War Epidemiology of Tuberculosis.—Redeker gives a very critical paper on the war statistics of tuberculosis. He believes that the increase in the mortality of children from tuberculosis in Germany is due to the increased frequency of infection, not to undernourishment. The latter makes the disease only more manifest.

Differential Leukocyte Count in Tuberculosis of Bronchial Glands and Lungs in Children.—Raffauf and Grimm examined the blood of sixty-five tuberculous children. They presented changes similar to those in adults. Lymphocytosis and eosinophilia are favorable signs.

Staining of Tubercle Bacilli with Dyes for Fats.—Lommatzsch gives a very extensive review of the staining of tubercle bacilli. He tried different lipoidophil dyes, but the results were negative except with a solution of aniline and nile blue. This solution stained *Bacillus coli* equally well.

Zentralblatt für Gynäkologie, Leipzig

Nov. 18, 1922, **46**, No. 46

Injection of Living Gonococci in Gonorrhea. A. Loeser.—p. 1825.
Abdominal Pregnancy with Viable Child. E. Brugnatelli.—p. 1831.
*Protein Therapy in Febrile Abortion. W. Simon.—p. 1837.
*Atonic Hemorrhages in Cesarean Section. W. Sigwart.—p. 1840.
Forceps in Relation to Child Mortality. F. Heinlein.—p. 1843.
Time Required for Polypous Myomas to Develop. H. Becker.—p. 1847.
*Treatment of Dysmenorrhea. H. Gänssbauer.—p. 1849.

Protein Therapy in Febrile Abortion.—Simon reports the results of parenteral injections of protein in 30 cases of febrile abortion. There were no deaths. Nineteen were incomplete abortions with more than 38.4 C. rectal temperature, the beginning hemorrhage having occurred only three days previously. Only two patients had had fever for more than two days. In five other groups of 30 cases each the average number of days of fever was 4.2; 3.7; 6.1; 3.6 and 4.2, while in the group treated with the protein injections the average course of the fever was 3.1 days. He applied the protein therapy also in 26 cases of septic puerperal affections. There were 4 cases of transverse positions, 2 cases operated on elsewhere, 4 cases of vaginal cesarean section, one case of forceps delivery with eclampsia, 7 cases of fever after spontaneous birth, 2 induced premature births and 5 abortions with complications. Two cases resulted fatally, one case in which an operation had been performed elsewhere and one other case in which the fever had followed a spontaneous birth. His experience leads him to recommend injections of protein in sepsis and especially in febrile abortion.

Use of Ether to Combat Atonic Hemorrhages in Cesarean Section.—Sigwart reports that he has found ether efficacious in stimulating an atonic uterus and bringing about a normal contraction. The ether (50 c.c.) may be poured into the uterus or the surface of the uterus may be swabbed with the ether. He cites cases of interrupted pregnancy and cesarean section in which severe hemorrhage from inertia was promptly checked by the use of ether.

Treatment of Dysmenorrhea. — Gänssbauer describes Beckh's method of inducing prolonged dilatation of the cervix and the cavum uteri in the treatment of idiopathic dysmenorrhea, and in dysmenorrhea in nulliparas with abnormally small uterus. For the dilatation he uses glass rods 5 cm. in length which have the form and thickness of Hegar dilators Nos. 4 to 6. The dilatation is first effected with Hegar dilators, up to size No. 13, or at the most 14. The thickest glass rod is then introduced and held in place by tampons in the vagina. The glass rod remains for about a week. During the application of this technic, elevation of temperature was not observed and recurrences were very rare. He says that during the primary dilatation, before the introduction of the larger Hegar dilators, it is well to make shallow incisions in order to prevent deep laceration of the cervix.

Casopis Lékaruv Ceskych, Prague

Nov. 25, 1922, **61**, No. 47

*Turpentine in Treatment of Adnexa. J. Tuma.—p. 1121.
*Epituberculous Infiltration in Children. J. Mourek.—p. 1124.
Diagnosis of Pituitary Tumors. J. Kurz.—p. 1126. Conc'n.
Survey of Italian Otorhinolaryngology in First Half of 1922. K. Kunc.—p. 1131. Conc'n No. 48.

Treatment of Adnexal Affections with Turpentine Oil.—Tuma reports comparatively favorable results with injections of solutions of turpentine oil in olive oil under the glutei. The method proved useful in exudative and purulent affections of the adnexa.

Epituberculous Infiltration in Children.—Mourek discusses cases belonging to the group described by Eliasberg and Neuland in small children. The physical signs are an intensive dulness, usually over one upper lobe, and loud bronchial breathing, with few râles. The history and tuberculin reaction point to tuberculosis. Yet there are no tubercle bacilli in the sputum, the temperature is usually normal, and the children look well and gain in weight. After a time all symptoms disappear. Mourek discusses the process, and concludes that the affection is best considered as scrofulosis.

Dec. 2, 1922, **61**, No. 48

New Form of Supporting Tissue in Invertebrates. Z. Frankenberger.—p. 1145.
Acute Retention of Urine with Hypertrophied Prostate. V. Janecek.—p. 1149.

Dec. 9, 1922, **61**, No. 49

*Blood Picture in Treatment of Adnexitis. M. Premrou.—p. 1169.
Congenital Metatarsus Varus. A. Sebek.—p. 1176.
Hysteresis During Inanition. A. Svoboda.—p. 1179.

The Blood Picture as Guide to Treatment of Adnexitis.—Premrou finds that the best prognosis is in cases of neutrophil leukocytosis which disappears in two or three days, while the number of eosinophils increases. Absence of a marked leukocytosis and disappearance of eosinophils mark chronic cases which are not suitable for injections of turpentine oil.

Naval Medical Association Bulletin, Tokyo, Japan

July, 1922, No. 36

*Acidosis Among Stokers in Tropics. B. Abe et al.—p. 5.
Experimental Studies on Medication of Calcium Preparations. K. Wakatsuki.—p. 6.
*Three Cases of Appendicitis Caused by Ascaris. S. Hattori.—p. 7.
Bacillary Dysentery on Board H. M. S. Yakumo. A. Tanaka.—p. 8.
On Eighty-Nine Cases of Influenza in January, 1922. A. Tanaka.—p. 9.
Studies on Size of Markers for Determination of Visual Field. H. Nakagawa.—p. 10.

Acidosis Among Stokers.—According to Abe, Fukui and Imai, acidosis among stokers may be prevented by administration of 1.0 gm. sodium bicarbonate after two hours' work.

Appendicitis Caused by Ascaris.—Among seventy-nine cases of appendicitis, Hattori found three cases (3.8 per cent.) due to the ascaris, which had wandered into the cavity of the appendix.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 18, 1922, **2**, No. 21

*Pseudo-Hermaphrodism as Cause of Sterility. Wesselink.—p. 2251.
*Influence of Spleen on Erythrocytes. Bolt and Heeres.—p. 2259.
*The Anemia with Sprue. C. Elders.—p. 2267.
*Diagnosis of Diseases for Which Anaphylaxis is Responsible. W. S. van Leeuwen et al.—p. 2276.
Arteriomesenteric Occlusion of the Intestines. H. L. Coopman.—p. 2280.
Osteochondroma of Forefinger. J. F. O. Huese.—p. 2284.

Pseudohermaphrodism as Cause of Sterility.—Wesselink relates that as women of a masculine aspect are sought less in marriage, their tendency to sterility has not attracted attention hitherto. He describes eight cases, however, in which, when consulted on account of sterile wedlock, he found evidences of pseudohermaphrodism, with tardy and scanty menstruation, and a masculine growth of hair on the body.

Influence of the Spleen on the Erythrocytes.—Bolt and Heeres present evidence that the osmotic resistance of the erythrocytes is reduced in the spleen. The resistance to saponin is increased. They discuss the relation between these facts, and the ratio between cholesterol and phosphatids.

Etiology of Pernicious Anemia.—Elders' tabulated data of anemia in sprue confirm the pernicious type of the anemia in these cases. They suggest that pernicious anemia can be explained better by the assumption that a deficiency factor rather than a toxic factor is mainly responsible.

Diagnosis of Anaphylactic Nature of Diseases.—Van Leeuwen, Bien and Varekamp noted that 67 per cent. of forty-nine patients with asthma responded positively to diagnostic tests with scales from the skin of horses; 53 per cent. of thirty reacted to dog hairs and 39 per cent. of thirty-six to rabbit hairs. Circumstances rendered it extremely improbable that all these persons reacting positively had actual contact with horse scales, dog hair or rabbit hair. Hence they concluded that the hypersensitivity was to skin in general. Tests based on this assumption were positive in 95 per cent. of asthma cases. They call attention to this as a simple, harmless and instructive means for detecting those whose asthma, migraine, epilepsy, etc., are traceable to abnormal sensitivity to some substance which does not affect normal persons. The test extract is made with dandruff scales, ground with ether. After evaporation of the ether, the scales are extracted by ten volumes of a solution containing 0.5 per cent. sodium chlorid and 0.4 per cent. sodium bicarbonate for two days under toluol. The extract is preserved with 0.5 per cent. phenol. Intracutaneous injection of salt solution containing 0.5 per cent. phenol serves as a control. Some extracts contain toxic substances and must be discarded. The test in the normal was constantly negative. They urge dermatologists and neurologists to apply this test extensively in skin diseases, epilepsy, etc. By its use cases can be detected in which desensitization may cure the disturbances. Tuberculin or parenteral injection of milk may accomplish the purpose. With the possible exception of hayfever, it will probably be rarely necessary to resort to the specific protein involved.

Nov. 25, 1922, **2**, No. 22

Treatment of Abortion. J. A. van Dongen.—p. 2346.
*Experimental Compression of Heart. G. van Rijnberk.—p. 2355.
*Determination of Acidity of Stomach Content. H. Vos.—p. 2364.
*Research on Hypnosis. S. Koster.—p. 2370.
Chronic Arsenic Poisoning. M. Elzas.—p. 2383.
*Death of Fetus. P. A. de Wilde.—p. 2386.
Cancer and Heart Disease in Married and Unmarried Women at Rotterdam. D. E. Schouten.—p. 2406.

Experimental Compression of the Heart.—Van Rijnberk discusses the interpretation of the tracings and other findings obtained by connecting the interior of the dog pericardium with a recording drum. He then applied pressure with and without a metal plethysmograph.

Estimation of Acidity of Stomach Content.—This communication from the laboratory for physiologic chemistry in charge of Ringer, presents evidence that Günzburg's reagent is a reliable indicator of the free acid or hydrogen ions so long as the acidity is not below p_H 2.1. The stomach content must not be filtered. Vos tabulates the findings with various methods of analysis in forty-eight solutions of hydrochloric acid and peptone of varying strengths.

Research on Hypnosis.—Koster tested with the ergometer the subject's muscular strength and then repeated the test after hypnotism and the suggestion of extreme strength. These and similar tests of the sense of touch during suggestion under, and subsequent to, hypnosis provided objective findings for estimating the effect of suggestion.

Causes of Death of Fetus.—De Wilde reports three cases which suggest that, when syphilis and kidney disease can be excluded, an abnormally long umbilical cord may be responsible for the death of the fetus.

Dec. 2, 1922, **2**, No. 23, Pasteur Centennial Number

*The Netherlands' Tribute to Pasteur. J. J. van Loghem.—p. 2442.
Pasteur Day in the Netherlands. P. Muntendam.—p. 2443.
Pasteur's First Research. F. M. Jaeger.—p. 2447.
Pasteur, the Founder of Microbiology. A. J. Kluyver.—p. 2457.
Importance of Pasteur's Work for Medical Science. C. H. H. Spronck.—p. 2466.
Influence of Pasteur's Work on Progress of Civilization. A. Calmette.—p. 2480.
Louis Pasteur. 1822-1922. E. Cohen.—p. 2490.

The Pasteur Centennial.—The Netherlands Medical Association appointed a committee of twenty persons to arrange for celebration of the Pasteur centennial. The main celebra-

tion was at Amsterdam, and the addresses are reproduced in this Pasteur number. Calmette, subdirector of the Pasteur Institute at Paris, closed the list, and the committee presented him with an album recording the persons, institutions and societies that had participated in the "Pasteur day."

Dec. 9, 1922, **2**, No. 24

*Dietetic Treatment of Diabetes. J. T. Peters.—p. 2568.
*Familial Splenomegaly. P. H. Kramer.—p. 2585.
History of Collegium Medicum. A. J. van der Weyde.—p. 2600.
A Seventeenth Century Dentist. G. H. Bisseling.—p. 2608.
A Medieval Hospital. M. H. Cohen.—p. 2621.
*The Auenbrugger Bicentennial. M. Neuburger.—p. 2623.
History of Medicine at Centennial of German Society for the Advancement of Science. Van Andel.—p. 2635.
Prophylaxis of Influenza. H. A. Molema.—p. 2649.

Dietetic Treatment of Diabetes.—Peters suggests as a working hypothesis that diabetics have more reserve carbohydrates in their tissues than normal persons. Hence, during periods of fasting, these reserve carbohydrates can serve as antiketogenous substances. This would explain why diabetics excrete less ketonic acids in the urine during fasting than normal persons under similar conditions. Modern treatment limits the ration to about 30 calories to the kilogram. Peters tries to banish the glycosuria by merely reducing the intake of food, especially of fat. If the glycosuria does not subside in two days of this regimen, he reduces the intake still further, and after two days resorts to absolute fasting. Only in very severe cases, in comparatively strong patients, is it advisable to begin at once with the fasting. During this fasting, he allows weak coffee, weak tea and weak bouillon at will, and the patient is kept in bed or lying down. One woman had acetone and 8 per cent. of sugar in the urine. On restriction to 332 calories (no fat; carbohydrates 46, and protein 37), for two days, and then complete fasting for two days, the glycosuria disappeared and did not return when 118, 158 and 250 calories were allowed. At 740 calories, 1 per cent. sugar appeared. The carbohydrates were then reduced from 52 to 40, with 61 protein, and fat was increased from 32 to 155. The calories were then increased to 1,803, and there had been no return of the glycosuria or acetone on this diet two months later. This diet corresponded to 30 calories per kilogram.

Familial Splenomegaly.—Kramer remarks that the brothers and sisters of patients with splenomegaly should be examined. In the family he describes, splenomegaly in the women, aged 20 and 26, and in the boy, aged 14, had been known for nine to thirteen years. All gave a constantly high leukocyte count. In De Lange's case, the splenomegaly was pronounced in four of the seven children in the family. Two were treated by splenectomy in 1916, and have been free from disturbances since. Three persons treated by splenectomy in 1909 and 1912, in another Rotterdam family of eleven children, are also well. The indications with familial splenomegaly are to temporize, and to remove the spleen if the disturbances increase.

The Auenbrugger Bicentennial.—This issue of the *Tijdschrift* contains not only a number of historical articles, but most of the abstracts are from periodicals devoted to the history of medicine.

Norsk Magazin for Lægevidenskaben, Christiania

December, 1922, **83**, No. 12

*Treatment of Prolapse of the Uterus. H. Natvig.——p. 945.
*Traumatic Ossifying Myositis. P. Bull.—p. 992.
*Conjugal Pulmonary Tuberculosis. A. de Besche and Jørgensen.—p. 1000.
*Bronchial Spirochetosis. H. Engelsen.—p. 1016.
*Motor Symptoms. G. H. Monrad-Krohn.—p. 1018.

Treatment of Extensive Genital Prolapse.—Natvig gives an illustrated description of his method, which he calls anterolateral hiatopexy with antesuspension of the interposed body of the uterus. He uses a strong fold of mucous membrane in the vagina, which encloses a stout band of connective tissue, to sustain the uterus when brought up into the interposed position. The antesuspension is accomplished by shortening the broad and round ligaments. The needle is passed through the tissues behind the descending ramus of the pubis, and through the body of the uterus. The suture thread thus embraces the stout fold of connective tissue, the *plica angularis vaginae.*

Traumatic Ossifying Myositis.—The various stages of this affection are shown in the roentgenograms of Bull's four cases. The patients were two young men, one young woman and a boy, aged 14. The traumatisms had occurred during a football game, skiing, snowballing and from knocking the arm against a door-knob. The interval which elapsed before the secondary changes developed from the traumatic hematoma and the subjects applied for treatment, was from three weeks to several months. In one case the bone had been fractured; in another some muscle fibers had been lacerated. Sarcoma had been diagnosed in three cases.

Conjugal Pulmonary Tuberculosis.—Only thirty-nine cases of pulmonary tuberculosis in both husband and wife were found among 742 married couples who had been reported as suffering from pulmonary tuberculosis (notification is compulsory in Norway). Analysis of these thirty-nine cases of conjugal tuberculosis showed that, in a large proportion, the parties had lived in a tuberculous environment before marriage and some had shown signs of tuberculosis before marriage. Only eleven instances were found in which the probabilities were in favor of the disease having been contracted in wedlock. These cases form 1.48 per cent. of the total.

Bronchial Spirochetosis.—The chronic bronchitis of three months' duration in a man, aged 26, had been supposed to be of tuberculous origin, until Castellani's spirochetes were found in the sputum. Under treatment with Fowler's solution, recovery was soon complete.

Motor Symptoms.—Monrad-Krohn reviews recent literature on movements and their disorders.

Ugeskrift for Læger, Copenhagen

Dec. 7, 1922, **84**, No. 49

*Rapid Test for Sugar in Blood. J. Christiansen.—p. 1703.
*Results of Tonsillectomy. F. Norsk.—p. 1708.
Intussusception in Young Woman. H. Thorborg.—p. 1716.
*Hemoglobin-Corpuscle Ratio. A. Norgaard and H. C. Gram.—p. 1721.

Rapid Test for Sugar Content of the Blood.—Christiansen recommends the technic he describes as accurate enough for practical purposes in examining diabetics. His table of the findings in 100 cases shows that they parallel the findings with the Hagedorn test. He precipitates the albumin with the Folin technic, and then compares the reducing power for methylene blue with that of known solutions of glucose. A still more rapid method is to heat 5 c.c. of the Folin filtrate with 5 c.c. of 10 per cent. sodium hydroxid. In the presence of sugar, a yellow or brown tint appears. This test takes only five minutes. It was constantly negative in thirty nondiabetic subjects.

Consequences of Tonsillectomy.—Norsk has investigated the present condition of 229 adults whose tonsils had been removed between 1910 and 1919. He was able to reexamine personally 72 of them. The tendency to peritonsillar abscess did not persist after the tonsillectomy in 94 per cent., and was much reduced in 6 per cent.; the tendency to acute tonsillitis disappeared in 84 per cent. and was much reduced in 9 per cent. Fourteen patients with febrile rheumatism, probably of tonsil origin, have had no recurrence of the rheumatism. In 35 of 144 cases adenoid tissue developed anew in the tonsil region. The singing voice was modified in some and this suggests the need for caution with tonsillectomy in professional singers. Acute pharyngitis with a slight general reaction has occurred frequently in 40 of the patients. This tendency to pharyngitis had probably before been masked by the tonsillitis. One case confirms the liability for tonsillectomy to activate a latent infection. In this case the operation was followed by sepsis with joint and heart symptoms, which incapacitated the patient for several years. Similar cases have been recorded by others. Sepsis following tonsillectomy proved fatal in Mackenzie's case.

Ratio Between Hemoglobin and Corpuscles.—The investigation of ten healthy men and ten healthy women demonstrated that the ratio between hemoglobin and the number and size of the corpuscles was remarkably constant in both men and women. The quotient and index show no essential differences between the sexes.

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TUMORS OF THE BREAST

A STUDY OF TWO HUNDRED AND FIFTY-FIVE CASES

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We have collected in our clinic for the eleven years ending Jan. 1, 1922, 255 histories of breast lesions.

In 1910 no benign tumors were operated on; in 1921, 50 per cent. of the breast tumors removed were nonmalignant. This is a striking illustration of what education has done.

Many women apply for examination who have no lesion at all. This is due to improper palpation by the patient and sometimes by the examiner. Breast tissue, when picked up by the hand, gives an erroneous feel of a tumor; but when the breast is palpated by the tips of the extended fingers, it flattens out over the chest wall, and a lump can then offer definite resistance.

The average age of breast patients was 42.3 years. The youngest patient was a boy, aged 12, with a sarcoma of the left breast. A tumor had been in existence nine years, and involved the whole breast. There was metastasis in the mediastinum, as disclosed by the roentgen ray, and palpable secondary growths in the supraclavicular and infraclavicular glands. The case was inoperable. The oldest patient was a widow, aged 77; this case also was inoperable.

There were only ten males, and their average age was 41.2 years. The youngest patient was 12, the oldest, 59. The latter presented an enormous lipoma of the left breast which was first noticed eight years before. The tumor was about 6 inches (15 cm.) in diameter, and produced no pain except from its weight. The largest number of male patients came in the sixth decade.

The proportion of married women to single women was about four to one, which is the normal ratio.

Thirty-nine per cent. stated that they had had no injury or irritation, while 61 per cent. said that the affected breast had been subject to acute or chronic traumatism which might have accounted for the new growth.

The family history was positive for cancer in 29 per cent., and negative in 71 per cent. of the patients.

Table 1 will illustrate the various types of tumors found in this series.

There were 126 cases of malignancy, or 49.4 per cent. of all the patients, thus distributed: carcinoma, 120 cases; sarcoma, three cases; epithelioma, one case; malignant cysts, two cases.

The average age in the malignant cases was 49.2 years, which is about seven years more than the average age for the entire group including both types of disease. The youngest patient with carcinoma was a married woman, aged 27, with a small tumor about an inch (2.5 cm.) in diameter in the upper and inner quadrant of the right breast. It had been in existence six months. The tumor was apparently not growing, and was symptomless. The patient was treated by excision of the tumor, followed by roentgen-ray exposures. This patient is at present well, five years after the excision. Thus, from our study it is safe to say that a tumor in the breast of a woman under 27 is nonmalignant. If the lump occurs in a woman under 20 and is not growing, it is the only exception to immediate operation, but should be kept under competent and regular observation.

Nine of these patients with a condition diagnosed recurrent carcinoma had an average age of 44.1 years, five years below the average of the primary cases. This bears out the observation that the younger the patients having cancer, the harder they are to cure and the more likely it is to recur.

The malignant group included four males and 122 females. All three sarcomas occurred in males, and the fourth male was a physician with carcinoma of the right breast.

The incidence of cancer was about equally divided between the two breasts. In only one case were the two breasts involved simultaneously. In one third of the malignant cases there was a family history of cancer, and in two thirds there had never been a case of cancer in the family. This is fair evidence that heredity plays little part in the etiology of cancer.

The average duration of the malignant tumors before operation was thirty-three months, the shortest period of time being one week, and the longest forty-two years. The next longest was thirty years. Excluding these two unusually long cases, the average preoperative duration was twenty-six and one-half months. The average duration of the recurrent carcinomas before the original operation was forty-two months, which is about fifteen and one-half months longer than for the primary cases. The shortest duration was eight weeks, and the longest, twelve years.

One hundred and three patients were operated on for various types of malignancy. In nineteen others, or about one in five cases that came under our observation, the condition was considered inoperable. Three of these were recurrent. Three others were operated on elsewhere and came to us for irradiation. In one case the

type of treatment was not recorded in the history. In 20 per cent. there was no palpable metastasis; in 60 per cent. there was axillary metastasis only; in 20 per cent. there was axillary and other metastasis as well.

There were 108 operations done on 103 patients, of which eighty-seven were complete operations (routine axillary dissection). Five of these patients had recurrence in the opposite breast, and a radical operation was performed on the second breast, making a total of 108 operations. Of these five patients, one died in the hospital from cerebral embolus; two died within a year after the second operation; one could not be traced, and one remains well at the present time, fourteen months after the second operation.

Five amputations were done in very early cases in which there were no evidences of malignancy or of metastasis. There were no recurrences. Three others

TABLE 1.—TYPES OF TUMORS

	Number
Adenocarcinoma	83
Recurrent carcinoma	9
Scirrhous carcinoma	18
Encephaloid carcinoma	1
Medullary carcinoma	5
Mucous carcinoma	1
Large cell carcinoma	1
Beginning carcinoma	2
Precancerous	1
Epithelioma	1
Sarcoma	3
Recurrent sarcoma	1
Papillomatous cyst	1
Blue dome cyst	11
Malignant cyst	2
Chronic cystic mastitis	19
Acute mastitis	2
Suppurative mastitis	2
Fibro-adenoma	28
Adenoma	9
Fibroma	10
Neuroma	1
Lipoma	2
Scleroderma	1
Dermoid	1
Galactocele	6
Tuberculosis	2
Wart	1
Glandular enlargement	1
Bleeding from nipple	6
No tumor	5
Abscess	4
Intracanalicular fibroma	1
Intracanalicular fibro-adenoma	5
Intracanalicular myxofibroma	5
Intracanalicular myxo-adenofibroma	1
Intracanalicular papilloma	2
Chancre	1
Total	255

were done merely as a palliative measure, two of these three being recurrent cases. Three excisions were also performed in very early cases. The remaining three were palliative. Including nine radical amputations of the breast for benign lesions and five done for recurrences in the opposite breast, in the malignant cases, there were 101 complete operations. In two instances the pectoral muscles were not removed. In two instances the wound could not be closed and had to be treated with skin grafts. In two other instances the growth was ulcerated and infected to such an extent that the actual cautery was used for purposes of sterilization and excision. Both of these patients died within two years after the operation.

There were 129 benign lesions of the breast. There were eleven instances of blue dome cysts and one papillomatous cyst. Chronic cystic mastitis occurred nineteen times, acute mastitis twice, and suppurative mastitis twice. The cystic process is most frequent at or about the menopause, and gives a nodular or "cobblestone" feeling, caused by the fibrous tissue that surrounds the cysts. There were four abscesses, or 3.1 per cent. of the benign lesions. There were two cases of primary tuberculosis of the breast, or 1.5 per cent. of the benign group. These presented chronic abscesses and multiple sinuses. There were fourteen intracanalicular growths, including two papillomas. Dermoid cyst of the breast occurred once. There was one case of chancre of the breast. The chancre developed near the nipple of the right breast in a married woman, aged 24. This mother had employed a colored woman to look after the child, who was 10 months old. The colored woman infected the child with syphilis, the baby developing a chancre of the lip. The mother allowed the child to nurse, and in this way became infected.

The patients with innocent breast lesions came for treatment at an average age of 36.1 years, which is thirteen years younger than the average among the malignant series. The youngest patient was a youth of 16 with mastitis of the left breast of one year's duration. No operation was performed in these cases. The oldest patient was a married woman, aged 60, who had had an intracanalicular fibro-adenoma of the left breast for about eight years, which was excised.

The average duration of the lesions was fourteen months, as against twenty-six and one-half months for malignant growths. Who can say how many of these benign lesions at fourteen months would have been malignant at twelve and one-half months later?

In the benign group the family history was positive for cancer in 73.8 per cent. of the cases, and negative in 26.2 per cent. This negatively proves that heredity plays little or no part in the occurrence of cancer. It is interpreted to mean that the fact that nearly three fourths of these patients knew of the occurrence and believed in heredity caused them to apply earlier for advice. Only about one third of the cancer patients knew of any heredity, and they delayed operation more than twice as long as the patients with benign growths.

Practically all women over 25 with single lumps in the breast are advised to have them removed. The frank, movable adenomas are generally removed under a local anesthetic. They present a typical appearance on section, and are encapsulated. The blue-dome cyst is easily recognized and always benign. These two groups fortunately comprise the majority of innocent tumors.

Nearly all nonencapsulated tumors are malignant, and if all such are submitted to the radical operation, Bloodgood estimates that only 15 per cent. will be found noncancerous.

Operations were performed on eighty-nine patients with benign lesions. In two patients, tumors were removed from both breasts at one sitting, and two other patients returned later with an innocent growth in the opposite breast, which was removed in a second operation. In all, then, there were ninety-three operations performed.

The radical operation for the removal of the breast was performed nine times for these benign pathologic conditions: chronic cystic mastitis, four times; fibroma (large as child's head), once; intracanalicular fibro-adenoma, once; tuberculosis, once; suppurative mastitis, once, and cyst (papillomatous), once.

The remaining forty patients were not operated on. The clinical diagnoses in the benign cases were: chronic cystic mastitis, 6; intracanalicular papilloma, 2; fibro-adenoma, 14; acute mastitis, 2; abscess, 1; chancre, 1; glandular enlargement, 1; no pathologic condition, 5;

dermoid, 1; scleroderma, 1, and bleeding from the nipples, 6.

In the six cases of bleeding nipples, operation was not performed because there was no tumor and no ulceration; but these patients were kept under surveillance until the discharge ceased with or without treatment.

On the other hand, a number of cases of tumor, symptomless except for a bloody discharge from the nipple, proved to be cancer, and operation was performed.

The clinical diagnosis of the malignant or nonmalignant nature of the breast tumor is not always possible in the early cases. In this series there were thirteeen patients with all the clinical signs of benign tumor. In each of these cases the tumor was excised under local anesthesia for microscopic examination, and proved to be cancer. Eleven of these tumors were excised in our clinic, and two operated on elsewhere and referred to us for the radical operation. All of them had the radical amputation performed except one patient, who refused to submit to any further surgical effort. The longest period of time elapsing between the local excision and the radical operation was five and one-half months, and the shortest was one day. Only nine patients submitted to radical surgery on the day set by the surgeon, which was, on an average, four days after the local excision. Of these thirteen patients, two are now dead. One patient lived three years following her Halstead operation, and died of a recurrence. The other survived two years, and died of cancer of the stomach. Eleven patients are now living and well. Four of them have survived one year; two have remained well for two years; two for four years; one for six years; one for nine years, and one for ten years.

The two-stage operation is not advised. Immediate radical removal after exploratory incision confirms the malignant nature of the growth and is undoubtedly the ideal method. At the present time a frozen section is done on all questionable neoplasms, and a report made within two or three minutes as to the malignant or nonmalignat nature of the tumor. If malignant, the radical operation is proceeded with at once.

When the surgeon cannot be certain, and a trained pathologist is not immediately available, our experience shows that wide excision of the growth, followed by microscopic study and early secondary operation, is not as dangerous as we have been led to believe.

The patients who presented unmistakable signs clinically of cancer are too advanced for an assured expectancy of permanent cure. By the external or clinical signs of malignant tumors is meant such evidence as skin involvement manifested by bulging and dimpling of the skin, retraction of the nipple, fixing of the skin over the tumor, a "pigskin" appearance and, in the more pronounced cases, breaking down and ulceration. Immobilization of the tumor, an unusual degree of firmness to the touch, and nonencapsulation associated with immobilization are clinical evidences of malignancy. Not only must the diagnosis be made, but the operation must be performed before such manifestations appear in order to bring about a permanent cure. To reach a conclusion while the tumor is most amenable to surgery, microscopic evidence alone is of diagnostic importance. It has been shown that malignancy exists in tumors that are small, encapsulated and movable, in tumors without any of the external clinical evidences of malignancy.

The laboratory diagnosis was incorrect in four cases in the entire group. Three malignant cases were reported benign, and a benign tumor in a lactating breast was reported malignant.

The malignant series of cases constituted a group in which the pathologic changes were very far advanced. A great many of these cases were well nigh desperate, and in some, perhaps, operation should not have been performed. A frail, wizened woman with a withered, malignant breast firmly fixed to the chest wall will live longer at that stage if not operated on. A study of the group as a whole brings this out in the following manner:

Nineteen were inoperable.
Four others were recurrent.
Ten were ulcerating.
Two patients had local excision elsewhere and came to the clinic for radical operation after undue delay.
Two patients who had undergone local excision in the clinic wilfully and knowingly delayed the radical operation, in one instance one month and in the other five and one-half months.
Three cases were in lactating breasts, which decreases the chances for cure almost to the vanishing point.
Two cases occurred in diabetics.
Two patients had edema of the arm from large metastatic growths in the axilla.

There were no deaths among the eighty-nine patients operated on for benign conditions, and no known recurrences among the 129 patients of the nonmalignant

TABLE 2.—END-RESULTS IN CASES CONSIDERED SURGICAL AND IN WHICH OPERATION WAS PERFORMED

		Per Cent.
1910-1916	—5 to 11 year cures	45.7
1917	—4 year cures	50
1918	—3 year cures	58.3
1919	—2 year cures	61.5
1920	—1 year cures	64.2

group. There were, however, five deaths in the hospital following operations for malignancy, a primary mortality of 4.2 per cent. One patient died of diabetic coma on the fourth day, after two weeks of the Allen treatment had rendered the urine sugar-free. One died of infection on the fifth day, one of pneumonia on the sixth day, and two of embolus, one on the second day and one at the end of two weeks. Thus, only one patient died of a preventable surgical complication, which would make the actual surgical mortality 0.8 per cent.

Of the 126 patients with malignant disease, 111 were traced. Of the total number, there are living 47.7 per cent. This, however, includes some of the inoperable cases of recent date. Of the patients operated on and living, three are known to have recurrences.

Patients who were operated on and who died, lived on an average a little more than twenty months.

Patients whose conditions were considered inoperable lived, on an average, nine months after their consultation. Two of these patients had palliative operations and an average postoperative life of only two months, or an existence seven months shorter than those who were left alone. The entire course of the disease from beginning to death, in the untreated cases, covered an average period of twenty-five and one-half months, which is shorter than the preoperative duration given by those patients treated surgically, thus showing the relative virulence of the rapidly growing inoperable tumors.

SUMMARY

1. No malignant tumor of the breast occurred in a woman under 27.

2. The average age of patients with cancer of the breast was 49.2 years.

3. In cases of recurrent carcinoma, the patients were five years younger than in the primary cases.

4. All sarcomas occurred in males, and constituted 2.3 per cent. of the malignant cases.

5. In only one third of the malignant cases was there a family history of cancer.

6. In two thirds of the cases in which the lesions were benign, the patients gave a positive family history for cancer which probably caused them to apply for examination even though their lesions were benign.

7. The average duration of cancer before operation was twenty-six and one-half months.

8. One case in five was inoperable.

9. Patients with benign lesions had an average age of 36.1 years, which was thirteen years younger than in the malignant cases.

10. The average duration was fourteen months, as against twenty-six and eight-tenths months for carcinoma cases.

11. From five to ten year cures in 111 traced cases of operations for cancer of the breast occurred in 45.7 per cent.

12. The preventable surgical mortality was 0.8 per cent.

706 Church Street.

THE EARLY TREATMENT OF CANCER*

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DETROIT

An important phase of any discussion of cancer is the campaign of education, which aims to make progress by wider utilization of the facts already at hand regarding the disease rather than by relying on the development of new procedures to increase the number of our cures. We already have sufficient knowledge to alleviate the suffering of many times the number of victims that we help at the present time, yet how much cancer *do* we cure? How soon does the average case become hopeless? How late are we when we ordinarily attack the disease, and therefore how much or how little chance will a given individual have? These are pertinent questions, unfortunately susceptible of only indirect answers; but they indicate the extent of the problem before us and, as such, should demand our attention.

The cancer problem of a community is not how many operative cures have been reported from various surgical centers, but how late cases receive treatment, and the results of treatment, in that particular community. With this point in view, an exhibit was attempted bearing on the treatment of the disease at Harper Hospital, as a cross section of an average situation.

As we had no figures of final three or five year cures, data were compiled for some of the commoner cancers, showing the percentage of total admissions for cancer in which radical treatment at the time of operation could be given, and how many patients survived operation; that is, the number of patients in whom treatment offered a chance of cure. A rough estimate of cures could then be made, based on the reports from the Mayo Clinic [1] of the percentage of resections in which patients remained cured five years. Figures were also available regarding the length of time symptoms were noted, and from these some of the difficulties of early diagnosis can be discussed. The data are from Harper Hospital records, chiefly 1918-1921, and will be presented arranged for stomach, colon, rectum and breast.

STOMACH

Thirteen of the eighty-two gastric carcinomas observed at Harper Hospital during the years 1918-1921 [2] were available for radical resection; i. e., 16 per cent. of the cases were operable (Table 1). Five of these, or 6 per cent. of the total, survived the operation. Estimating that in 25 per cent. of gastric resections the patients survive five years, we have cured less than 2 per cent. of patients with stomach cancers presenting themselves during the last four years. At Receiving Hospital,[3] the city institution, which draws its clientele from the indigent and those persons less able to afford medical service, during the same time there was no case in which radical resection could be attempted. In two thirds of the cases, gastro-enterostomy was impossible because of the extent of the growth. At Henry Ford Hospital, during the same period, there were twelve carcinomas of the stomach. One patient refused operation, five cases were found inoperable at exploratory incision, and five patients had a gastro-enterostomy performed; only one case was suitable for radical resection, and this patient did not survive operation.

Getting stomach cancers early enough to hope for a cure will always be a difficult problem. Lymphatic drainage from the stomach is profuse, as contrasted with the colon, and the lymph glands are accessible for only a short distance, as contrasted with the breast. Hence, cancer of the stomach is operable for a much shorter space of time than is cancer of the colon or breast, or, for that matter, than cancer in most other organs. The average duration of symptoms (Harper Hospital) before operation was 6.7 months—in less than seven months the disease was almost hopeless. This figure agrees with Smithies' [4] statistics. In his series, patients who were in perfect health prior to onset had symptoms for seven months, and those who had antecedent dyspepsia had a cancer symptom period of 6.3 months.

Clinically, there were two types of gastric cancer history: the one with years of antecedent ulcer indigestion, and the one which started suddenly from previous good health. The former type constituted only 24 per cent. (it might have been larger, had more detailed histories been available), the latter 76 per cent. In Smithies' careful analysis of a thousand cases, 47 per cent. showed years of antecedent indigestion, and 32 per cent. had had perfect health prior to the onset of symptoms.

It is significant that a definite time of onset was always stated, as five months or six months. The statement never was "gradual onset," "slowly began to notice." The patients had suddenly noticed that they were not well. Most of the antecedent ulcer histories

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* From the Surgical Service of Dr. Max Ballin, Harper Hospital.
* Read before the Surgical Section of the Michigan State Medical Society, June 9, 1922.

1. Mayo, W. J.: Operative Results in Cancer of the Gastro-Intestinal Tract, Collected Papers of the Mayo Clinic, 1912, p. 135.
2. Data for gastric carcinomas include the first six months of 1922.
3. For the data from Receiving Hospital I am indebted to Dr. C. F. Vale; for that from Henry Ford Hospital, to Dr. John K. Ormond.
4. Smithies, Frank: Cancer of the Stomach, Philadelphia, W. B. Saunders Company, 1916.

gave a definite period when the picture changed: dyspepsia became continuous, there was loss of weight, or some other abnormality was observed. The lesson is, persistent indigestion past middle life is suspicious —the slogan the American Society for Control of Cancer is trying to spread broadcast. Many mild indigestions will have to be thoroughly analyzed to find a few early cases. For the last two years, all the hospitals in Detroit have held special free cancer diagnosis clinics during national cancer week. In 1921, twenty-six gastric cases were examined, and two early cancers found. In 1922, a much larger number were examined, but no stomach cancers found. This may represent the average rewards of effort; but how else will carcinoma of the stomach be detected during the first three months? In six months the disease is hopeless in a large majority of cases.

The indigestion was often mild, and was more continuous and associated more frequently with flatulence and food aversion than is the chronic ulcer dyspepsia, and there was rapid loss of weight. There were a sufficiently large number of cases, however, in which the history was indistinguishable from ulcer to enjoin a heavy responsibility on the continued medicinal treatment of ulcer in middle life.

Every textbook describes carcinoma of the stomach as associated with persistent vomiting of food eaten one, two or three days before, of lactic acid, coffee grounds, etc. In only 15 per cent. of the cases was vomiting noted as a prominent symptom, and many of these had long ulcer-like histories. Long before obstruction develops, the disease is incurable. Rarely was there coffee ground vomitus; bleeding was not a prominent symptom. Medical education must stress the early symptoms, even though vague, rather than the later ones, if we intend to operate on stomach cancer early.

COLON

The average duration of symptoms in cancer of the colon before operation was eleven and one-half months. Of the total number, thirteen, or 28 per cent., were available for radical operation, and only seven patients recovered. That is, in 15 per cent. of the total number of cases there was a chance for cure (Table 1). On the supposition that in 40 per cent. of colon resections the patients were alive after five years, we may estimate that 9.2 per cent. of the patients presenting themselves at the hospital with cancer of the colon may have been cured.

The histories in this group were not detailed enough to classify symptoms. Homans,[5] in a careful analysis of the symptoms of cancer of the colon, notes that the contents of the proximal half of the intestine (cecum, ascending colon, half of the transverse colon) are fluid. Here, early symptoms are intermittent appendicitis-like cramps, and gaseous distention. It is only when the descending colon is reached that obstruction is prominent, for in this region the contents are becoming solid. Here the attacks of obstipation are intermittent, often associated with diarrhea (fermentation or putrefaction). The first portion of the bowel to show classical gradually increasing obstruction is the sigmoid. Gross bleeding first makes its appearance with tumors of the rectosigmoid junction. Thus, the symptoms of cancer of the colon are not obstruction, vomiting and blood in the stools. On the right side they are vague cramps and distention. On the left, gradually increasing obstruction. Only near the rectum is hemorrhage prominent. Again the early signs do not correspond to the classical textbook cancer.

RECTUM

The average duration of symptoms in cancer of the rectum before operation was eight months, a shorter period than in colon, longer than in stomach cancer. Radical operation was possible in sixteen cases, or 26 per cent.; and three quarters of these patients, or 20 per cent. of the total—much higher than in cancer of the colon—recovered. These figures are a bit obscured, however, by the fact that operative indications apparently differed, and the reliance placed on radium differed: where some operators would do extensive resections, others believed in more limited excision and heavy radium therapy.

TABLE 1.—OPERATIVE RESULTS ON APPLICANTS FOR CURE OF CANCER AT HARPER HOSPITAL

Organ	Year	Number of Applicants	Average Duration of Symptoms Before Operation, Months	Per Cent. Operable	Radical Operations			Applicants Recovering from Operation,* per Cent.	Cures 5 Years, Mayo Clinic, per Cent.	Estimated Total Cures of Applicants, per Cent.
					Number	Deaths	Recoveries			
Stomach.....	1918 to June, 1922	82	6.7	16	13	8	5	6.1	25	1.5
Colon.....	1918-21	47	11.5	28	13	6	7	15.0	40	6.0
Rectum.....	1918-21	62	8.0	26	16	4	12	19.0	30	5.7

* This refers to the number of operation recoveries for each hundred applicants

Mayo Clinic figures show 30 per cent. of patients who have had rectal resection alive after five years; therefore, 6 per cent. of our patients may have been cured.

Fourteen per cent. of the cases had a note in the history that hemorrhoids had been diagnosed; often treatment (such as salves or hemorrhoidectomy) had been previously given. Hemorrhoids are a frequent complication of cancer of the rectum, because of the increased vascularity. The impression gained by a perusal of the charts was that the early recognition of cancer of the rectum depends more on the attending physician than on the patient. It seemed that people were more likely to consult a physician for bleeding from the rectum than for constipation, dyspepsia or similar conditions. There were more patients who had noticed symptoms only a short while than in either of the other groups, and the larger number of early operations is perhaps explained by the fact that some of these patients had the proper advice. Routine high rectal examination will probably cure more cancer of the rectum than will popular propaganda.

BREAST

Because most breast cancers can be available for operation, estimates such as given for the stomach, colon or rectum cannot be stated. However, a rough approximation can be given: When the axilla is free from disease, the prognosis has been stated to be 80 per cent. of cures (Table 2). When the axilla is invaded,

5. Homans, J.: Symptomatology of Carcinoma of the Large Intestine, S. Clinics N. America 1: 739 (June) 1921.

published figures show that the chance of cure is from 10 to 25 per cent. Of the patients coming to Harper Hospital from 1914 to 1920, 80 per cent. had metastases in the axilla; in only 20 per cent. was the axilla clinically free. That is, in four fifths of the patients, the chance of cure was 25 per cent.; in one fifth it was 75 per cent. (Table 2).

How early the axillary glands are involved, it is difficult to say. In twelve months they are uniformly infected.

It is easier to get breast cancer early than internal carcinoma, and it is certain that women are coming sooner for operation in this form than they did a few years ago. In 1914, the average duration of the tumor before operation was sixteen and one-half months. In 1920, it was ten months (Table 2).

Other figures are striking in this regard, and constitute an ardent testimonial to the efficacy of popular education. At Johns Hopkins [6] during thirty years, the percentage of benign lesions of the breast had changed from 32 to 59 per cent. of the total tumors of the breast, months). Our problem, therefore, is proper therapy certainly before six months, preferably before three months.

POPULAR EDUCATION

It is not the purpose here to discuss the means of popular propaganda, but two items in the experience of the free hospital clinics held in Detroit during cancer week in 1921 and 1922 may be briefly detailed. "Come early; in the early treatment lies the hope of cure" must be given to vast audiences, and must be periodically repeated. Interest in the subject must often be created, and it is not always easy to present it properly; but these two difficulties are diminishing as the ball of publicity gains impetus in its rolling.

More stress must be laid on the symptoms of the commoner cancers than on the rarer forms. Thus, cancer of the stomach comprises more than one third of all malignancies; cancer of the skin, only 3 per cent. To instruct an audience to beware of rodent ulcers, irritated papules, and the like, will not make for as much control as instructing them to beware of suddenly

TABLE 2.—AVERAGE DURATION OF TUMOR BEFORE OPERATION, AND PROGNOSIS, IN CANCER OF THE BREAST

Duration, Harper Hospital				Prognosis	
Year	Months			Axilla Uninvolved	Axilla Involved
1914	16.5				
1915	13.4		Johns Hopkins Hospital	85% cured (5 yrs.)	25% cured
1916	17.0		Rodman Hospital	80% cured (5 yrs.)	25% cured
1917	15.0	Axilla involved, 80%	Crile Hospital	80% cured (5 yrs.)	12-14% cured
1918	14.0	Axilla uninvolved, 20%	Massachusetts General Hospital		12-14% cured
1919	13.0				
1920	10.0				

TABLE 3.—PERCENTAGE OF CANCER DISCOVERED AT DETROIT FREE DIAGNOSIS CLINICS IN RESPONSE TO PUBLICITY (CANCER WEEK, 1922)

Hospital	Harper	Ford	Grace	St. Mary's	Providence	Receiving	Highland Park	Deaconess	Total	Pittsburgh Clinic
Total cases	98	78	27	38	27	28	12	13	321	122
Cancer cases	11	8	1	4	4	2	0	1	31*	12
Per cent. cancer	11.2	10.3	4	10.5	15	7.1	0	8	9.6	10

* Cancer of skin, eleven; cancer of breast, ten; cancer of uterus, seven; cancer of mouth, three.

and the progression has been steadily accompanied by a shortening in the duration of the disease.

The first operative procedure in acute appendicitis was a stab into the edematous fluctuating abdominal wall just as the pulse was beginning to flicker and respirations were becoming labored. Cures were few, and the operation was in disrepute. That is where these figures place the surgical cure of gastric carcinoma. Many good internists today doubt that gastric cancer is ever cured with enough frequency to be called a possible outcome in a given case. The next stage in appendicitis therapy was incision into the edematous wall before fluctuation developed. Cancers of the rectum and colon may be said to stand in about this stage—from 20 to 15 per cent., respectively, surviving operation, and from 9 to 6 per cent. perhaps being cured. In breast cancer, we are perhaps operating in the stage of early abscess formation (to continue the appendicitis simile). The operation is here done from the fifth to the twelfth day, and our patients have some reasonable chance of cure. The clean early appendectomy, in which no worry is given to the prognosis, is, in this series, nowhere in sight. It might be noted that most cancers come for operation between the sixth and twelfth month (stomach, six and one-half months; colon, eleven and one-half months; rectum, eight appearing indigestion. Furthermore, it is easier to deliver the message for external cancers than for internal, just as it is easier to diagnose external than internal cancers. This was noted in the results of the free cancer diagnosis clinics held during cancer week (Table 3). Twenty-eight per cent. of persons applying for examination in 1921, and 22 per cent. in 1922, came because the publicity made them suspicious of skin lesions—respectively, nine and seven times the normal ratio of incidence. Seventeen and 27 per cent. were suspicious of stomach cancers—one half and two thirds, respectively, of the normal ratio of incidence. Lesions of the colon and rectum show figures similar to those of the stomach, and breast and pelvic lesions occupy a middle position between external and internal growths.

The 321 patients of 1922 clinics were examined in eight different hospitals. Of these patients 9.6 per cent. were found to have cancer. It is curious to note how closely different groups of examiners found the same proportion of positive results. Thus, ninety-eight cases in one hospital showed eleven cancers; seventy-eight cases in another showed eight cancers; thirteen cases showed one cancer. In Pittsburgh,[7] in a similar clinic, of 121 patients examined, twelve were found to have cancers, as indicated in the accompanying chart.

6. Bloodgood, J. C.: Binnie Regional Surgery 1.

7. The Pittsburgh figures I have through the courtesy of Dr. J. E. Rush of the American Society for the Control of Cancer.

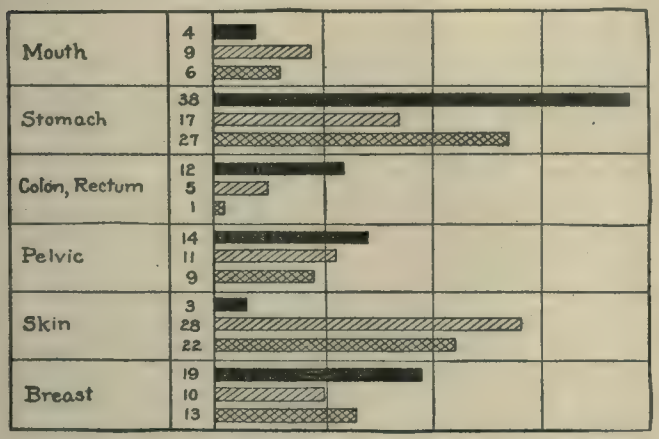
Perhaps further data will establish the fact that 10 per cent. of persons applying for examination in response to such publicity have cancer. Another 12.4 per cent. of these persons in Detroit had precancerous lesions (such as oral irritation, leukoplakia, benign tumors and pigmented mole), making the total cancer and precancerous conditions 22 per cent. In Pittsburgh, 13 per cent. had precancerous lesions, a total of 23 per cent.

CONCLUSIONS

1. The cancer problem of a community should be stated in terms of the lateness of adequate treatment, and results of treatment in that particular community.

2. When thus stated, in the group of cases analyzed, probable cures did not exceed 1.5 per cent. of total hospital admissions for stomach cancer; 6 per cent. for colon, and 6 per cent. for rectum. In 80 per cent. of breast cases there was already involvement of the axilla, with the probable prognosis of from 15 to 25 per cent. of cures.

3. Early rather than classical symptoms must be stressed in considering gastro-intestinal cancer, if cases are to be adequately treated earlier.



Comparison of normal incidence of cancer with response to publicity: black, percentage of incidence of cancer of different body organs (U. S. mortality statistics); shaded, percentage of distribution of lesions (not necessarily cancer) in patients brought to Detroit hospitals by cancer week; diagonal shading, 1921, 162 patients; cross-hatching, 1922, 321 patients.

4. As it is more difficult to diagnose gastro-intestinal cancer, it is likewise more difficult for the public to respond to warnings for gastro-intestinal cancer than for external growths.

5. Ten per cent. of the patients examined at several different clinics in response to cancer week publicity had cancer. Another 12 or 13 per cent. had precancerous lesions.

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Normal Development of the Child.—The way the child functions probably is one of the most important ways in which to determine whether a child is really normal or not. That is a field in which the nurse has peculiar opportunities, perhaps far more in her public health work than has the physician. By the general appearance of the child, the brightness of his eyes, the redness of his lips, the plumpness and rosiness of his cheeks, the way he stands, the way he walks, runs and plays, how soon he is fatigued, how he sleeps, how he eats, how he functions throughout the day and night, these are all points of observation, and also points of fact which have a great bearing on whether a child is really normal or abnormal.—W. P. Lucas, *Hospital Social Service* **7**:5 (Jan.) 1923.

INCIDENCE OF HOOKWORM DISEASE AMONG PERSONS WHO WERE CURED FIVE YEARS AGO*

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This paper reports certain results obtained during a resurvey of an area on the island of Antigua, British West Indies, in which measures for the relief and control of hookworm disease were terminated five years ago. Both the treatment campaign, extending from September, 1915, to June, 1917, and the resurvey, made during April and May, 1922, were conducted under the auspices of the International Health Board of the Rockefeller Foundation. The paper is of interest primarily because it records the results of a careful study of hookworm infection among persons whom microscopic examination had previously shown to be cured of the disease. The findings which it presents are in complete accord with observations made by Smillie [1] under analogous circumstances in Brazil. It demonstrates certain fallacies in campaign procedure, and emphasizes the need for definite measures in order that permanent hookworm control may be attained.

PHYSICAL FEATURES OF THE ISLAND

Antigua is one of the Leeward Islands of the British West Indies. It is located in latitude 17° 5′ north and longitude 61° 50′ west, thus lying within the tropics. The island is 12 miles long, 9½ miles wide, and 70 miles in circumference. Its area is 108 square miles, or about 69,275 acres. Roughly speaking, there are three geologic areas: the limestone area, comprising the northeastern third of the island; the volcanic area, occupying the southwestern third, and, between the two, a broad, flat area called the Central Plain, which is undoubtedly an old sea bottom. This report deals with the entire southwestern third of the island, including practically all of the volcanic area and about half of the Central Plain. All previous hookworm studies indicated that the infection was heaviest in this section of the island, and it was therefore chosen for the resurvey. Without going into burdensome detail, it may be said that the conditions of soil, rainfall and drainage, as well as the physical characteristics of this region, are more conducive to the spread of hookworm disease than are those of other sections.

WORK OF THE ORIGINAL CAMPAIGN

During the treatment campaign of 1915-1917, 7,477 persons were examined in the area which was later resurveyed. Of these, 2,229, or 29.8 per cent., were found infected with hookworm disease. Of the infected persons, 1,972 were cured, so far as this could be determined by the microscope. The anthelmintic used was thymol, exclusively; the maximum dose given was 40 grains (2.6 gm.). Each person was treated until no hookworm ova could be found in the stools. The microscopic technic employed consisted of the examination of four fecal smears on 1½ by 3 inch glass slides; two such preparations were examined before, and two after, centrifuging. If hookworm ova were found on any of the four slides, the specimen was called negative. At the completion of the control cam-

* The studies and observations on which this paper is based were conducted with the support and under the auspices of the International Health Board of the Rockefeller Foundation.

1. Smillie, W. G.: The Results of Hookworm Disease Prophylaxis in Brazil, Am. J. Hyg. **2**: 77 (Jan.) 1922.

paign, all treatment ceased, as no organization was left to carry on the work.

When the treatment campaign was practically finished, the authorities of Antigua built pit latrines throughout the resurveyed area and appointed part-time sanitary inspectors to see that these were properly maintained. No latrines have been constructed since February, 1920, and no organized hookworm-control measures have been in force since June, 1917.

RESURVEY FINDINGS

In April, 1922, a sanitary study of the resurveyed area disclosed certain facts bearing on the hookworm incidence. The region was a rural district, which, except for domestic gardens, was given over entirely to the raising of sugar cane. The population, which numbered 7,166, was made up entirely of negroes of the agricultural laboring class. The water supply, purely of surface origin, was entirely inadequate and was subject to surface contamination of all sorts, especially pollution with human fecal material. Undoubtedly, it plays a part in the dissemination of hookworm disease. Rural sanitation and hygiene were of a very primitive type. One hundred and forty-one latrines, all badly in need of repair, were found; this was one latrine for every fifty people. Of these latrines, ninety-one were built by government and fifty were the result of private initiative. No latrines were discovered in the fields. Overcrowding and the financial limitations of the health department are other factors disclosed by the sanitary survey which have relation to the incidence of hookworm disease.

TABLE 1.—INCIDENCE OF HOOKWORM DISEASE IN RELATION TO AGE AND SEX OF THE 1,234 PERSONS REEXAMINED IN 1922

Age, Years	Total			Male			Female		
	Examined	Infected	Percentage	Examined	Infected	Percentage	Examined	Infected	Percentage
6 to 18	243	44	18.1	121	28	23.1	122	16	13.1
19 to 40	503	116	23.1	191	51	26.7	312	65	20.8
41 to 60	340	65	19.1	147	21	14.3	193	44	22.8
Over 60	148	37	25.0	70	17	24.3	78	20	25.6

During the resurvey, 1,234 (62.6 per cent.) of the 1,972 persons cured in 1915-1917 were reexamined for the presence of hookworm ova. Of the remaining 738 persons, 184 were dead, 279 had left the island, 141 lived in places that were inaccessible during the time available, 34 could not be found, 100 refused to submit specimens, and 66 had failed to return their specimen containers when the survey was terminated. In order that the results might be comparable, identically the same method of examining the specimens was followed in 1922 as in 1915-1917.

In 1915-1917, the general mass rate of infection in the resurveyed area was 29.8 per cent. In 1922, 1,234 of the 1,972 persons who had been freed of hookworm in 1915-1917 were reexamined, and 262, or 21.2 per cent., of them were found infected. All the persons examined in 1922, however, were known to have harbored hookworms five years previously, and it was, therefore, thought probable that some of the infection was continued infection rather than reinfection. In view of this fact, a group of 300 persons was examined who were known to have been free from hookworms in 1915-1917. Of these, 16.3 per cent. were infected. Thus, although the number of persons examined in these two groups is far from equal, it is perhaps permissible to conclude that at least 4.9 per cent. of the infection found in 1922 among those cured in 1915-1917 is continued infection rather than reinfection. This figure is in keeping with results reported by Darling and Smillie,[2] who show clearly that it is futile to expect to eradicate *all* the worms by treatment, and that the microscope is not an infallible index of cure. Of the persons who were cured in 1915-1917, 78.8 per cent. showed no evidence of ova in the stools five years later. In view of the sanitary facilities available and living conditions in general, this cannot be said to be an unfavorable result.

REINFECTION IN RELATION TO AGE AND SEX

The infection rate in relation to age and sex among the 1,234 persons reexamined in 1922 is shown in Table 1. No similar data were collected in 1915-1917, so that a comparison cannot be made. It will be noted that no particular age group or sex shows an outstanding tendency to reinfection; the incidence of the disease is fairly evenly distributed throughout all the groups, although girls from 6 to 18 years of age show less tendency to reinfection than other groups. The great reservoir of present infection, in relation to the number examined, seems to lie in the group from 19 to 40 years of age. This is especially noticeable in the male group of this age.

OCCUPATIONAL INCIDENCE OF REINFECTION

Of the 1,234 persons reexamined in 1922, 894 were field laborers, sixty-three worked indoors, chiefly in sugar factories, fifty were housewives, and 227, who were under 18 years of age, were classed as children. The infection rates within these groups are presented in Table 2. Similar data for 1915-1917 are not available for comparison.

The large majority of the persons examined were field workers, and most of those included in the "housewife" and "children" groups spend considerable time in the fields. It is not surprising, therefore, to find the heaviest infection rates within these groups. But soil pollution is extensive, and there is ample possibility of "dooryard" infection for housewives and children. It is interesting to note that only two of the sixty-three persons who were cured in 1915-1917 and have since worked indoors were reinfected.

TABLE 2.—INCIDENCE OF HOOKWORM DISEASE IN RELATION TO THE OCCUPATION OF 1,234 PERSONS REEXAMINED IN 1922

Occupation	Examined	Infected	
		Number	Per Cent.
Field	894	210	23.5
Indoor	63	2	3.2
Housewife	50	11	22.0
Children	227	39	17.2

SHOE-WEARING A PROTECTION AGAINST INFECTION

The data concerning the infection rate in relation to the wearing of shoes show that of 960 persons who did not wear shoes at all, 214 (22.2 per cent.) were infected; of 245 who wore shoes part of the time, forty-four (17.9 per cent.) were infected; and of twenty-nine who wore shoes constantly, four (13.7 per cent.) were infected. As would be expected, the infection rate was higher among persons who did not wear shoes at all.

2. Darling, S. T., and Smillie, W. G.: Studies on Hookworm Infection in Brazil, Monograph 14, Rockefeller Institute for Medical Research, Feb. 1, 1921.

RELATION BETWEEN INFECTION AND HEMOGLOBIN INDEX

Tallqvist hemoglobin determinations were made by the field men; but as it was not possible to rule out all causes of anemia other than hookworm disease, the hemoglobin must be interpreted only as a very rough index of the intensity of infection. The results of these observations are recorded in Table 3.

Only 1.1 per cent. of the infected persons had hemoglobin readings below 60 per cent., and in these cases the low index may have been due to causes other than hookworm disease. It will be seen also that 24.4 per cent. of the infected persons had hemoglobin readings between 50 and 69 per cent. (no reading was below 60 per cent.), but that 229 (23.5 per cent.) of the noninfected persons had the same values; and 149, or 56.8 per cent., of the infected persons and 559, or 57.5 per cent., of the noninfected persons had hemoglobin readings between 70 and 89 per cent. Of the 251 persons who are known to have been free from hookworm in 1915-1917 and also in 1922, sixty-five, or 25.8 per cent., had hemoglobin readings between 60 and 69 per cent., while 172, or 64.1 per cent., had readings between 70 and 89 per cent. (Four of the 251 persons refused to allow the test.) Forty-six (17.5 per cent.) of the infected persons and 143 (14.7 per cent.) of the noninfected persons had hemoglobin values above 90 per cent. Thus, it is seen that the degree of anemia in infected persons was no greater than in noninfected persons; which is in keeping with the fact that it was almost impossible to differentiate clinically between infected and noninfected persons. This is undoubtedly explained by the brilliant work of Smillie in Brazil, who found that the infection rate was almost exactly the same after four years of hookworm disease prophylaxis as it was before, but the actual number of hookworms harbored by the treated persons averaged only fourteen, a number too small to cause symptoms. He therefore draws a definite distinction between hookworm *infection* and hookworm *disease*, feeling that the disease has been eradicated and that the remaining harmless infection will soon disappear owing to its self-limited nature.

TABLE 3.—HEMOGLOBIN (TALLQVIST) PERCENTAGES IN RELATION TO INFECTION WITH HOOKWORM DISEASE AMONG 1,197 OF THE PERSONS REEXAMINED IN 1922 *

Hemoglobin, per Cent.	Number Not Infected	Number Infected	Total Number Infected, per Cent.
0- 9	...	...	....
10-29	...	...	....
30-49	4	3	1.1
50-69	229	64	24.4
70-89	559	149	56.9
90-100	143	46	17.6

*Thirty-seven of the 1,234 persons reexamined refused the hemoglobin test.

CORRELATION BETWEEN NUMBER OF TREATMENTS RECEIVED AND REINFECTION

In 1915-1917, the only drug used in treatment was thymol. The number of treatments necessary before a "cure" was effected varied from one to seventeen. Table 4 shows the infection rate in 1922 in relation to the number of treatments given the same persons in 1915-1917 before they were pronounced cured.

It is interesting to note that, in the case of only three of the 1,234 persons reexamined in 1922, had hookworms been eradicated in 1915-1917 by one treatment of thymol, and none of these were reinfected. In general, as the number of treatments received in 1915-1917 increases, the rate of reinfection in 1922 increases, especially up to the eighth treatment. Darling and Smillie [2] have shown that the microscope is not a reliable index of cure, and that in persons harboring from five to twenty hookworms the ova may not be discovered in the stools. It is highly probable that many of these apparent reinfections, especially after the fifth or sixth treatment in 1915-1917, were continued infections.

INCIDENCE OF PARASITES OTHER THAN HOOKWORM

Table 5 shows the number and percentage of persons who in 1922 were found infected with intestinal parasites other than hookworm. The incidence of parasites in persons who were cured in 1915-1917 is contrasted with the incidence in persons who were not examined and not treated in 1915-1917. These data, however, do not represent an exhaustive search for parasites other than hookworm, but merely record the ova which were found during examination of specimens for hookworm ova. As soon as the latter were found, the specimen was discarded, and no further search was made for other parasites. In general, the persons who were treated and cured in 1915-1917 did not, in 1922, show a markedly decreased incidence of intestinal parasites other than hookworm, as compared with persons who were not treated in 1915-1917. The percentage of infection with *Ascaris lumbricoides* was less by 10.3 per cent., and with *Trichuris trichiura*, by 7.7 per cent., among those persons who were treated in 1915-1917. In 21.6 per cent. of the persons who were cured in 1915-1917, no parasites were discovered in 1922; while 19.7 per cent. of the persons who were not previously treated had no intestinal parasites in 1922. Five years after treatment for hookworm disease in an inadequately sanitated area, very little change had occurred in the parasitic content of the intestines of treated persons.

TABLE 4.—INFECTION WITH HOOKWORM DISEASE IN 1922 IN RELATION TO THE NUMBER OF TREATMENTS GIVEN IN 1915-1917 BEFORE A "CURE" WAS OBTAINED

Number of Treatments, 1915-1917	Results of Examination of the Same Persons in 1922		
	Number Examined	Number Infected	Per Cent. Infected
1	3	0	....
2	494	71	14.4
3	229	49	21.4
4	162	42	25.9
5	118	33	28.0
6	72	15	20.8
7	46	14	30.4
8	37	17	45.9
9	20	3	15.0
10	12	5	41.7
11	13	2	15.4
12	5	2	40.0
13	6	2	33.3
14	3	1	33.3
15	2	1	50.0
16	1	1	100.0
17	2	1	50.0
Not stated	9	3	33.3

EFFECT OF SANITATION ON RATE OF INFECTION

During the treatment campaign of 1915-1917, there were no latrines in the resurveyed area. In 1922, in the same area, there were 141 latrines and 1,966 inhabited houses, so that 7.1 per cent. of the homes had latrine accommodations. In 1915-1917, the infection rate was 29.8 per cent., and, in 1922, 21.2 per cent. In

other words, with an increase of 7.1 per cent. in the latrine accommodations, there was a fall in the infection rate of 8.7 per cent.

Table 6 is a brief summary of information obtained regarding the use of latrines by 1,234 persons who were cured in 1915-1917 and reexamined in 1922. Of these, it will be seen, thirty-three (2.6 per cent.) said they used latrines, and four of the thirty-three were infected; 1,201 (97.3 per cent.) said they did not use latrines, and 258 were infected. The table also shows that 98.5 per cent. of the reinfection occurred among persons who did not use latrines.

The decrease of 8.6 per cent. in the hookworm infection rate in 1922 cannot be attributed entirely to the treatment and sanitation work of 1915-1917. As already shown, 97.3 per cent. of the people examined did not use latrines; so it does not seem that sanitation could be responsible for much of the decrease. For ten months immediately preceding the resurvey of 1922, the average monthly rainfall in the resurveyed area was 31.2 per cent. less than it was during a similar period immediately preceding the treatment campaign of 1915-1917. Also, during the 1922 observations, the monthly rainfall was 64.9 per cent. less than it was during the 1915-1917 observations. Diminished rainfall and resultant surface conditions nonconducive to the development of hookworm larvae may account for much of the diminished infection rate in 1922. Approximately one-sixth as many persons were examined in 1922 as in 1915-1917, a fact which must also be considered in explaining the lower infection rate found in 1922. For all practical purposes, infection with intestinal parasites among the persons who were cured of hookworm disease five years ago may be said to have reverted to the same incidence existing before any treatments were given.

MEASURES NECESSARY FOR PERMANENT HOOKWORM CONTROL

The foregoing observations emphasize the obvious requirements for permanent results in hookworm control. It is evident that no treatment work should be started in an area which has not been previously sanitated. Varying opinions obtain as to the length of time that should elapse between sanitation and treatment, but a conservative estimate is six months. It is held by some that sanitation should accompany or follow the treatment campaign; but it seems logical to reduce the possibilities of reinfection to a minimum before treatment is undertaken. In a well-organized campaign, sanitation in a given district can always be completed during treatment operations in other districts. If this plan is followed, however, the sanitation campaign must be accompanied by much more educational propaganda than is necessary when it follows the treatment campaign, a measure which in itself is of considerable value to the community. Latrines should be built not only at the homes of the laborers but also in the fields where they work, for it is in the latter places that most of the infection occurs. The skin of the feet and legs should be protected from contact with infested earth by shoes or other covering. Intensive treatment work should not be discontinued until an organization competent to continue control operations is functioning. The construction of latrines is only the beginning of sanitation. Public health education is the power that keeps in motion the machinery of sanitation. An organization competent to maintain unrelaxed public health education, sanitation and treatment is essential to the maintenance of the results of hookworm-disease prophylaxis.

TABLE 5.—PARASITES OTHER THAN HOOKWORM WHICH WERE FOUND IN PERSONS REEXAMINED IN 1922

Parasites Harbored	Type of Case Examined	Infected	
		Number	Per Cent.
Ascaris lumbricoides	Cured*	592	48.0
	New†	175	58.3
Trichuris trichiura	Cured	543	44.0
	New	155	51.7
Strongyloides	Cured	307	24.9
	New	59	19.7
Schistosoma mansoni	Cured	72	5.8
	New	2	0.7
Balantidium coli	Cured	2	0.2
	New	..	....
No parasite	Cured	266	21.6
	New	59	19.7

* Cases of 1,234 persons who were "cured" in 1915-1917.
† Cases of 300 persons who were not examined and not treated in 1915-1917.

TABLE 6.—INFECTION RATE IN 1922 IN RELATION TO THE USE OF LATRINES

Population of the area	7,166
Number of latrines	141
Average number of persons using each latrine	50.8
Number of persons examined	1,234
Number found infected	262
Persons stating that they use latrines	33
Number infected among persons claiming to use latrines	4
Per cent. infected of number claiming to use latrines	12.1
Per cent. of total number infected	1.5
Persons stating they did not use latrines	1,201
Number infected among persons not using latrines	258
Per cent. infected of number not using latrines	21.5
Per cent. of total number infected	98.5

SUDDEN DEATH IN SCARLET FEVER

REPORT OF TWO CASES*

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During a period of nine years (1913-1921), 2,322 patients with scarlet fever were treated at the Durand Hospital, with a total mortality of eighty-five, or 3.7 per cent. In two instances, death occurred suddenly and unexpectedly with only slight premonitory signs, and when each patient appeared to be on the road to convalescence.

REPORT OF CASES

CASE 1.[1]—A previously healthy woman, aged 23, complained of sore throat, March 16, 1914, followed in six hours by a chill, headache, backache, nausea, a temperature of 103 F., a pulse of 110, and respirations numbering 24. The following day a typical scarlet fever rash appeared on the chest and rapidly spread over the body. There was a whitish exudate on the tonsils from which no diphtheria bacilli could be cultivated. The temperature ranged from 102.8 to 104.4 F., and the pulse from 110 to 120. March 18, the fever and pulse were about the same as on the previous day. There was a trace of albumin in the urine, with many leukocytes but no casts. Though next day the fever and pulse continued about the same, a few granular casts appeared in the urine, and the leukocytes in the blood numbered 26,350, of which 85 per cent. were polymorphonuclears. March 20, the temperature was from 101.5 to 102.8 F., the pulse 88 to 120. The cardiac apex was beneath the fifth rib, 2 cm. to the left of the midclavicular line, and hard to localize. As determined by percussion, the cardiac border was beneath the third rib about 3 cm. to the left of the midclavicular line on the left,

* From the Durand Hospital of the John McCormick Institute for Infectious Diseases.
1. This case was referred to by Rosenbaum (Arch. Int. Med. **26**: 424 [Oct.] 1920).

and at the right sternal edge on the right. No murmurs or friction sounds were heard. On the morning of March 21, the sixth day of the illness, the patient felt and appeared better. The temperature ranged from 101.7 to 102 F., and the pulse from 110 to 114. The administration of an enema of 1,000 c.c. of salt solution was completed at 11:30 a. m., and it was expelled ten minutes later. At 11:45 a. m., with no exertion other than the expelling of the enema, the patient became cyanotic, pulseless, gasped a few times, and was dead at 11:50, in spite of stimulation and artificial respiration. No necropsy could be obtained.

CASE 2.—A woman, aged 34, was taken suddenly sick with a sore throat, fever and general aching, Sept. 28, 1921. She continued to have fever, headache and diarrhea, and on October 2, a rash appeared on the neck and chest and rapidly spread over the body. October 3, she was admitted to the Durand Hospital. The trunk and extremities were covered by a pronounced typical scarlet fever rash. The throat was very red, with a thin, grayish white exudate covering both tonsils and extending to the velum palati, from which no diphtheria bacilli could be cultivated, but yielding abundant colonies of hemolyzing streptococci on blood agar plates. The tongue was coated with prominent papillae. There were 25,300 leukocytes in the blood, of which 92 per cent. were polymorphonuclears, 5 per cent. large mononuclears and 3 per cent. small mononuclears. During the day the temperature ranged from 101 to 103.2 F., and the pulse from 110 to 116. Aside from the increased rapidity of the beat, nothing abnormal was found in the heart. October 4, the seventh day of illness, there was pain in the right shoulder and wrist joints, and in the left wrist. The patient seemed better, and the rash was fading. The temperature ranged from 101 to 103.4 F., and the pulse from 100 to 104; the pulse was regular and of good quality. At 9:45 p. m., the patient was made comfortable by her nurse, and said she felt much better and thought she could sleep. At 10 p. m., she was found dead. She had not moved from the position she occupied when last seen by her nurse, and the bed covers were undisturbed.

A necropsy was performed, October 5. The anatomic diagnosis was scarlet fever, fading exanthem, early desquamation about the neck; hyperemia and edema of the larynx and fauces; ulcerative and exudative tonsillitis; cervical adenitis; acute dilatation of the heart, with marked acute degenerative changes; petechiae of the myocardium; passive congestion and cloudy swelling of the liver, kidneys and spleen; splenic tumor, passive congestion and petechiae of the stomach and intestines; old healed pulmonary tuberculosis, with fibrous obliteration of both pleural cavities; chronic interstitial nephritis.

The heart weighed 425 gm., and was dilated, soft and flabby, filling the entire pericardical sac. The foramen ovale was closed. The endocardium was smooth and shiny; the valves were unchanged. The myocardium was red-yellow, and the cut surfaces showed many petechiae throughout. The wall of the left ventricle was 1 cm. across; the right, from 4 to 5 mm.; the interventricular septum, 1.2 cm. The aorta was unchanged save for a few scattered calcareous plaques. Histologic sections from the wall of the right and left ventricle, the interventricular septum, through the bundle region, and near the apex showed marked fragmentation of the muscle fibers, loss of striations, with faint staining nuclei, and congestion of the small blood vessels with hemorrhage. There was no round cell infiltration.

COMMENT

In each of these instances, death occurred very suddenly on the sixth and seventh day of sickness, and on the fourth and third day after the appearance of the eruption.

In the first case the patient suddenly became very cyanotic and pulseless, with gasping and infrequent respirations, and in spite of stimulants and artificial respiration died within five minutes after the first alarming symptoms appeared. In the second case, death occurred without the slightest warning.

Nothnagel[2] says that "sudden cessation of cardiac action preceded by no warning has been observed in scarlet fever very rarely, and not nearly so often as in diphtheria." Trousseau,[3] in his clinics, emphasizes that "of all the exanthematic fevers, scarlatina is the one in which it is least possible to foresee the danger; it presents complications usually unexpected, which the most experienced practitioner cannot foresee, even when they are imminent," and "there is no disease so disconcerting to the physician or in which his previsions so often prove erroneous."

Gouget and Deschaux[4] report a case of a youth, aged 19, who had dull heart tones, bigeminate pulse, and arrhythmia at times, almost from the beginning, the pulse varying from 70 to 142 a minute. This continued irrespective of treatment. The night of the third day the patient got out of bed. The next morning he felt weak but better, when suddenly he threw back his head and became cyanotic, the pupils dilated, and respiration became noisy, irregular and ceased in a few minutes. At postmortem the heart was hypertrophied, especially the left ventricle, which was rather firm, while the right was flabby and little hypertrophied. The myocardium was red-yellow, streaked with yellow. Around the base there was a fresh pericarditis; along the anterior coronary arteries, petechiae were seen. Histologically, there was a myocarditis with round cell infiltration, chiefly perivascular, and also pushing the fibers aside. Near the external surface, particularly, there was a fragmentation of muscle fibers, their nuclei staining faintly, and there was a loss of striations. The other organs were negative. Gouget and Deschaux attribute the cause of the sudden death to an acute myocarditis. They also state that "there usually are no pathologic findings that would account for death; sometmes the tissues are normal, and in others there are lesions which could not account for death, as the histologic findings bear out."

Weil and Mouriquand[5] report a case of sudden death in a girl, aged 18 months. One month before, she was supposed to have diphtheria, but all cultures were negative. On the thirteenth day following a typical onset of a moderately severe case of scarlet fever, she seemed much better; her temperature and pulse were normal. That evening she was found dead in bed. At necropsy the heart was soft, yellow-red, but otherwise unchanged. Histologic diagnosis was acute myocarditis, with perivascular and interstitial round cell infiltration, and also fragmentation of the muscle fibers. Weil and Mouriquand believe that death was due to acute myocarditis with no clinical manifestations; that myocarditis occurs more often in convalescent scarlet fever than one thinks, and that while they do not deny that in some instances sudden death may be due to lesions of the suprarenals, it is absolutely necessary to examine the myocardium, for often one finds there the cause without having to look elsewhere. There are also cases, such as those reported by Goldschmidt[6] and by Roger,[7] in which death came on from three to seven hours after the appearance of grave symptoms. Gouget and Deschaux[8] believe that these mark the transition between the classical cases of malignant scarlet fever

2. Nothnagel: Encyclopaedia of Practical Medicine, 1902, p. 561.
3. Trousseau, quoted by Gouget and Deschaux: Internat. Clin. **3**: 204, 1909.
4. Gouget and Deschaux: Presse méd. **19**: 17, 1911.
5. Weil and Mouriquand: Presse méd. **19**: 641, 1911.
6. Goldschmidt: Bull. et mém. Soc. méd. d. hôp. de Paris **22**: 521, 1905.
7. Roger, H.: Rev. de méd. **21**: 369, 1901.
8. Gouget and Deschaux: Internat. Clin. **3**: 204, 1909.

and those in which death occurs in an unforeseen and sudden manner.

Gouget and Deschaux, in their own cases and in those compiled by Duclos [9] and others from the literature, point out the striking similarity in their histories. "It is always on the fourth or fifth day that the symptoms appear, and in a very short space of time the patient passes from a relatively satisfactory state of health to one of utmost seriousness. The temperature rises abruptly, the pulse can no longer be counted, and in from two to four hours, perhaps a little longer, everything is over." In short, "it is the tableau of a case of malignant scarlet fever reduced to its final phase, and suddenly grafted on a case which up to that time followed normal evolution. Less commonly it may occur later when the disease is beginning to decline." In their cases in which postmortem examinations were made, they were unable to explain the cause of death.

CONCLUSIONS

1. The virus or toxins of scarlet fever seem to have an especially deleterious effect on the heart in some cases, as Welch and Schamberg [10] point out. In those reported by Gouget and Deschaux, by Weil and Mouriquand, and also in ours, direct action on the myocardium is apparent. Broadbent [11] is inclined to believe that it has its action on the heart ganglions. No evidence was found in our case to bear out this view.

2. Since grave myocardial lesions may not be apparent clinically, and since in many of these cases death has followed some slight physical exertion, it would seem that absolute rest in bed is indicated in all cases of scarlet fever, especially during the acute stages, and more particularly in those in which one may suspect myocardial lesions.

DIPHTHERIA PREVENTION AMONG CHILDREN OF PRESCHOOL AGE

IN THE BOROUGHS OF MANHATTAN AND THE BRONX IN NEW YORK *

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Statistics on diphtheria verify the clinical experience as regards the high morbidity and mortality from the disease in young children. From 80 to 85 per cent. of all cases of diphtheria and all deaths from the disease occur in children under the age of 5 years. This group, therefore, represents the most important part of the population that has to be protected against diphtheria, and the most suitable for immunization.

In proportion to its importance are the difficulties that have to be met and overcome. These young children are scattered in the individual homes, and cannot be reached as readily as schoolchildren in large groups. The parents have to be seen and convinced before they will consent to the immunization of their children. All this requires considerable effort and time on part of the health officer, the public health nurse, and others.

The diphtheria prevention work in the schools is a valuable preliminary step to any attempt to immunize the children of preschool age. Through the schools, the parents will soon learn to appreciate the value and the harmlessness of these newer measures of diphtheria prevention. Many homes can thus be reached in a short time. The consent blanks and other literature taken home by the children tell the parents all about the work. The prestige of the school is behind this work, and the parents have to take a definite action by either giving consent or refusing to do so. We found in our school work that the wholehearted cooperation of the principal and teachers was of greatest importance to obtain successful results in a school. In some of the schools we were thus able to obtain consent from fully 60 to 80 per cent. of the parents.

BABY HEALTH STATION

Important Official Notice

DIPHTHERIA PREVENTION

Department of Health City of New York

Protect your young children against Diphtheria! Next week the doctor will vaccinate against Diphtheria the children of the Baby Health Station and also all those who are too young to go to school. Be sure to ask the nurse about this wonderful opportunity as soon as you receive this card. She will give you all the information you need. Also tell your neighbors who have young children about it. These injections may save your children's lives!

This is a special opportunity which the Department of Health offers to you. Will you not take advantage of it?

The doctor will give the protective injections on.....

during the month of.....

Fig. 2.—Folded mailing card.

The campaign of last summer to reach the children of preschool age, therefore, was a logical sequence to the extensive work that was carried out in the public schools of New York City. More than 800,000 homes had been reached with the literature on diphtheria prevention. In the boroughs of Manhattan and the Bronx alone over 150,000 schoolchildren were given the Schick test. Those showing a positive reaction received the injections of toxin-antitoxin. An almost equal number were tested in Brooklyn and Queens. Repeated newspaper publicity had also been of some value. In most of the homes where there are children, the parents knew what modern diphtheria prevention meant. Many of them asked us where they could take their younger children to have them immunized against diphtheria.

The work among children of preschool age, including those between 6 months and 6 years of age, was started July 1, and carried out during the months of July and August and the first two weks of September. In Manhattan and the Bronx, the injections were given in all the baby health stations of the department of health, in five similar stations of the New York Diet Kitchen Association, and in many of the mothers and babies' playgrounds located during the summer in the play yards of the public schools.

CIRCULARIZATION OF THE HOMES

(*a*) The first step was to notify the parents that they now had the opportunity to have their children who were too young to go to school immunized against

9. Duclos: Rev. gén. de clin. et de therap. **9**: 33 (Part 2) 1895.
10. Welch and Schamberg: Acute Infectious Diseases, Philadelphia, 1905, p. 443.
11. Broadbent: Jahrb. f. Kinderh. **30**: 491, 1914.

* Read before the Section on Pediatrics of the New York Academy of Medicine, Nov. 9, 1922.

* This article is abbreviated in THE JOURNAL by the omission of several forms. The complete article will appear in the author's reprints.

* The diphtheria prevention work in New York City, which is under the general direction of Dr. William H. Park, is carried out by two different groups of workers. The boroughs of Manhattan and the Bronx are assigned to the supervision of the author, and those of Brooklyn, Queens and Richmond to Dr. C. M. Schroder. The methods used by the two groups are in most respects the same, but they differ in certain details because of local conditions or the opinions of the immediate supervisors.

diphtheria. A carefully worded circular emphasizing the dangers of diphtheria for young children was distributed through the schools just before the summer vacation. This circular was printed in English, Italian and Jewish, and gave a list of the baby health stations.

Of these circulars, 150,000 were distributed through the public schools of Manhattan and the Bronx. The cooperation of the principals and teachers was solicited in asking the children to take the circulars home to their

DEPARTMENT OF HEALTH—CITY OF NEW YORK

DIPHTHERIA VACCINATION CERTIFICATE

This is to certify that..... Age.....
residing at.....has received the three protective injections of toxin-antitoxin against DIPHTHERIA. The final DIPHTHERIA PROTECTION CERTIFICATE will be issued when the child is given a Schick test after admission to school and shows a negative Schick reaction.

ISSUED BY.....M.D.,
Medical Inspector.

ROYAL S. COPELAND, M.D.,
Commissioner.

DATE.....

Fig. 4.—Temporary diphtheria vaccination certificate.

parents and notify them on what days during the month the physician would give the injections at a neighboring baby health station. Fifty thousand additional circulars were distributed through the nurses at the baby health stations, and also through the nurses of the bureau of preventable diseases, the Henry Street Settlement, the Society for Improving the Condition of the Poor, the Charities Aid Organization and the American Red Cross. Ten thousand circulars were also distributed by private physicians among their patients.

(*b*) An important and effective method of reaching many parents was through a folded mailing card, which was sent to all those mothers whose babies had been registered at the baby health stations during 1920 and 1921, and in some instances also during 1918 and 1919.

Forty-five thousand of these cards, printed in English, Italian and Jewish, were sent out.

Five thousand cards and 10,000 circulars were posted in the hallways of tenement houses, windows of stores, and other available places.

(*c*) We were greatly hampered in our work by the fact that the injections of toxin-antitoxin had to be given in the afternoons, when the baby health stations are ordinarily closed, rather than in the mornings, when the parents come for milk and bring their children to be seen by the physician. This was necessary, however, to avoid overcrowding the stations in the mornings. We utilized the clinic in the morning by assigning to the station a nurse from our group, whose duty it was to speak to parents, notifying them when to come to the stations for the injections, and to distribute circulars and special tickets for each child.

(*d*) A baby health contest in the Bronx and gatherings of groups of parents at the schools also afforded an opportunity for propaganda work.

OUTLINE OF THE WORK

Organization of the Personnel.—In the group working in the boroughs of Manhattan and the Bronx, there were seven part-time physicians, four nurses, and three laboratory assistants. These were divided into seven teams, each team consisting of a physician and a nurse or a laboratory assistant. Four teams were assigned to the baby health stations, and three teams to the mothers and babies' playgrounds. The schedule was so arranged that each team was assigned to a different station during the six days of the week, returning to the stations on the same days during the entire month. In this way, the physicians came back to each station during four or five afternoons in one month.

A printed schedule of the baby health stations was distributed to all the nurses of the department and to the various organizations assisting in this campaign. This helped considerably in coordinating the work.

During the month of July, the injections were given in twenty-four baby health stations and fifteen playgrounds. A similar number of stations and playgrounds were visited during the month of August, the work in these stations being continued through the first two weeks in September.

In the mothers and babies' playgrounds, the preliminary propaganda work was done partly by the teachers in charge of the play yards, and partly by the physicians and nurses of the different teams. Since many of the parents usually left their younger children in charge of the older ones, it was necessary to send home consent blanks, which had to be signed by the parents before the injections could be given.

Toxin-Antitoxin Injections With or Without the Schick Test.—Each child was given the Schick test. The control test was omitted, as children under 5 or 6 years of age seldom show pseudoreactions.

Although each child received the Schick test, we did not guide ourselves by its results in giving the injections of toxin-antitoxin. The first injection was given at the same time as the Schick test, the second injection a week later and the third injection two weeks later. In giving the toxin-antitoxin injections to all children irrespective of the results of the Schick test, we wished to emphasize the advisability of immunizing all children between 6 months and 6 years of age with three injections of toxin-antitoxin.

It is always permissible and frequently advisable to omit the Schick test and give the injections of toxin-antitoxin to all children of preschool age for two important reasons: (1) the high percentage of positive Schick

DEPARTMENT OF HEALTH—CITY OF NEW YORK

DIPHTHERIA PROTECTION CERTIFICATE

This is to certify that..... Age.....
residing at.....has received protective injection against DIPHTHERIA and is protected against the disease, as shown by the Schick Test performed on.....192.. at Public School No.....
Issued by.....
Medical Officer.

ROYAL S. COPELAND, M.D.,
Commissioner.

DATE.....

Fig. 5.—Final Diphtheria protection certificate.

reactions among children under 6 years of age and the high death rate from diphtheria in this age group show how important it is to protect as promptly as possible all young children against diphtheria; and yet many physicians do not give the toxin-antitoxin injections because they hesitate to use the Schick test; (2) in all young children, only a very mild local and constitutional reaction is produced as a result of the injections.

After the injections of toxin-antitoxin, a child should not be pronounced immune to diphtheria until it gives a negative Schick reaction. This test can be made at any time after six months or more following the injections,

or when the child begins to go to school. Sometimes two or three additional injections of toxin-antitoxin are necessary before the child becomes immune to diphtheria.

It is important to remember that the technic of the test and the interpretation of the reactions are easily acquired and that every physician should be capable of utilizing accurately this reliable and excellent clinical test.

Local and Constitutional Reactions After Toxin-Antitoxin.—These reactions were very mild in the young children. In a few children of school age who were also injected with toxin-antitoxin, the reactions were more marked.

Diphtheria Vaccination Certificate.—To each child receiving the full series of three injections of toxin-antitoxin the temporary diphtheria vaccination certificate was issued. The final diphtheria protection certificate is never issued until a child gives a negative Schick reaction.

Records of the Schick Test and Toxin-Antitoxin Injections.—These records were kept for convenience on cards.

SUMMARY OF INJECTIONS

It is interesting to note that in the baby health stations nearly two thirds of the children were brought back for the full series of three injections of toxin-antitoxin. In the playgrounds, where the work was carried out under greater difficulties, a little more than one third received the full series of three injectious.

Diphtheria vaccination certificates were issued to those receiving the three injections of toxin-antitoxin.

It is interesting to note in Table 2 the high percentage of positive Schick reactions in the age group between 6 months and 6 years. The percentage of positive reactions diminished rapidly after the age of 7 years. The percentages in the groups from 7 to 14 years correspond closely with those noted in the schools located in the poorer and more congested sections of this city.

TABLE 1.—NUMBER OF CHILDREN GIVEN SCHICK TEST AND INJECTED WITH TOXIN-ANTITOXIN

Station	Total Number Receiving: 3 Injections of Toxin-Antitoxin	2 Injections of Toxin-Antitoxin	1 Injection of Toxin-Antitoxin	Schick Test Only	Total
Baby health stations	2,785	929	1,261	169	5,144
Mothers and Babies' playgrounds	576	250	498	212	1,536
Total	3,361	1,179	1,759	381	6,680

Frequent exposures and repeated mild infections with the Klebs-Loeffler bacillus are important factors in the development of natural immunity in growing children. The corresponding age groups among children of the more well-to-do, who are kept more segregated from other children, show a very much higher percentage of susceptible individuals. Such large percentages of nonimmunes are also found among children living in small communities and in rural sections, where frequent contact exposure is also less common.

RESULTS OF SCHICK TESTS BY FAMILIES

The testing of the children in the baby health stations afforded us an opportunity of studying the response of several children in the same family to the Schick test. The parents brought not only the younger children of preschool age but also the older ones for the test. A grouping of these families by the number of children and the type of Schick reactions gave interesting data.

Table 3 shows that in seventy-seven families all the children gave negative Schick reactions, and in 103 families all gave positive reactions. In 204 families, there were both positive and negative reactions in each family. By considering the age sequence of the children in each family, we found that in 152 families the reactions were in regular order, the younger children showing positive, the older ones negative reactions.

TABLE 2.—RESULTS OF SCHICK TEST IN BABY HEALTH STATIONS AND VACATION PLAYGROUNDS (MANHATTAN AND THE BRONX)

Age	Total	Schick Positive	Schick Negative	Schick Positive, per Cent.
From 6 to 7 months	53	30	23	56.6
From 7 to 8 months	41	26	15	63.4
From 8 to 9 months	62	52	10	83.8
From 9 to 10 months	58	54	4	93.1
From 10 to 11 months	61	53	8	87.0
From 11 to 12 months	34	31	3	91.1
From 1 to 3 years	1,727	1,438	289	83.2
From 4 to 6 years	1,328	779	549	58.6
From 7 to 10 years	903	330	573	36.5
From 11 to 14 years	235	53	182	22.5
Total	4,502	2,846	1,656	

In only fifty-two families did we find an irregular sequence, the older children giving positive and the younger ones negative Schick reactions. Out of a total of 384 families, therefore, in 332, or 86.4 per cent., the children gave all negative, all positive or regular mixed negative and positive reactions.

Table 4 gives a graphic presentation of the various types of Schick reactions in different families.

In one of our earliest publications [1] on this subject, we drew attention to the striking tendency toward similar Schick reactions, positive or negative, among the children of a family. When the two types of reactions were present in one family, it was the rule to find young children with positive, older ones with negative reactions. This does not apply to children under 6 months of age, who frequently show a temporary negative Schick reaction as a result of antitoxin passively transmitted through the placenta from mother to offspring.

The tendency to develop early a natural immunity was marked in certain families, in which the children gave a negative Schick reaction as soon as they reached 1 or 2 years of age. In other families, this tendency was delayed for a few years. In still other families, there was little or no tendency toward development of a natural immunity, as the children failed to give a negative reaction even when they reached the age of 15 or 16 years. When an older child gave a positive Schick reaction, the younger ones as a rule also gave positive reactions. It is important to remember this fact, as the presence of diphtheria in an older child generally indicates that the younger children in the same family are also susceptible. To wait for the result of the Schick test may not be advisable under such conditions, and the immediate administration of a prophylactic dose of antitoxin is indicated.

The tendency noted in some families for all the children to give a negative Schick reaction may be an indi-

1. Park, W. H.; Zingher, Abraham, and Serota, H. M.: The Schick Reaction and Its Practical Applications, Arch. Pediat. **31**: 481, 1914.

cation that there has been repeated exposure to infection with the diphtheria bacillus as a result of the children living under the same conditions of environment. We have found, however, that the children of families living under very similar conditions gave positive reactions. While our previous results [2] in testing large numbers of public school children have shown us that exposure to infection with the diphtheria bacillus is a most important factor in the development of natural immunity, we must assume that a second factor also comes into play in the form of an inherited family tendency, as a result of which the tissue cells of certain individuals respond either readily and well or slowly and poorly to the same amount of antigenic impulse.

PRIVATE PHYSICIANS AND DIPHTHERIA IMMUNIZATION AMONG CHILDREN OF PRESCHOOL AGE

The important part that the general practitioner plays in the prevention of disease among the young children in his private practice indicates that the ultimate success of the work in diphtheria prevention will depend on the successful cooperation that the health officers can obtain from the family physician. He is the one who will have to be depended on to persuade the parents to have their children protected against diphtheria, just as they are having them protected now by vaccination against smallpox.

We felt that it would be an important phase of the campaign to enlist the aid of the medical profession in the city in the distribution of literature and in giving the injections of toxin-antitoxin to the young children in their private practice. A circular letter was sent to each of the 6,000 physicians in Manhattan and the Bronx, enclosing copies of the circular and the diphtheria vaccination certificate, and offering to send them a supply of these forms on request. A list of the department of health stations where the toxin-antitoxin could be obtained free of charge was also sent to each physician. More than 200 physicians requested the literature. It is hoped that many more will avail themselves of this opportunity to begin a form of prevention work among their patients which depends for its ultimate success so much on their efforts.

TABLE 3.—RESULTS OF SCHICK TEST BY FAMILIES (BABY HEALTH STATIONS AND VACATION PLAYGROUNDS IN MANHATTAN AND THE BRONX)

Family Consisting of	Number of Families: All Negative	All Positive	Regular Mixed, Negative and Positive	Irregular Mixed, Negative and Positive
3 children	54	88	101	24
4 children	19	7	29	18
5 children	3	7	20	6
6 children	1	1	1	3
7 children	..	..	1	1
Total	77	103	152	52 (13.6%)
Grand total		332 (86.4%)		

COMMENT

The diphtheria prevention work that was carried out this summer in the baby health stations and in the mothers and babies' vacation playgrounds has shown the usual difficulties encountered in any attempt to reach the scattered children of preschool age. These very difficulties indicate the necessity for close cooperation on the part of the general practitioner in such a campaign. He is the one to whose advice the parents will listen most readily. When the parents are too poor to afford the services of a private physician, the injections should be given free of charge by physicians connected with the health department. When we consider the financial burden that sickness and death from a case of diphtheria place on the family and the community, we realize that the expense connected with the immunization with toxin-antitoxin is relatively small.

The results obtained with the Schick test this summer show that the children between 6 months and 6 years of age are very susceptible to diphtheria, even among those classes that live in the poorer and more congested sections of the city. This high degree of susceptibility indicates that the injections of toxin-antitoxin should be given either with or without the preliminary Schick test to all children in this age group.

TABLE 4.—THE SCHICK REACTION IN FAMILIES; TYPES OF FAMILY REACTIONS

Type	Ages of Children in One Family: 6 Months	2 Years	5 Years	8 Years	12 Years
All positive	— or +	+	+	+	+
All negative	— or +	—	—	—	—
Regular mixed positive and negative:					
(a) Early natural immunity.	— or +	+	—	—	—
(b) Late natural immunity..	— or +	+	+	+	—
Irregular mixed positive and negative	— or +	+	—	—	+
Irregular mixed positive and negative	— or +	—	+	+	—

The immunity curve begins to rise fairly rapidly in this class of children after they have passed the seventh year. This does not hold true for the children of the more well-to-do and for those who live relatively isolated or in small communities, among whom we previously found a high percentage of susceptible individuals even up to adult age. Frequent exposure to infection with the diphtheria bacillus among the children of the poorer class who live in the larger cities in such congested neighborhoods most probably explains this interesting phenomenon.

Thorough propaganda work by the health department is an important feature in reaching the preschool age groups. It could be started at birth, when the birth certificates are sent to the parents, by enclosing a circular on the new methods of diphtheria prevention. This circular should draw the attention of the parents to the special dangers from diphtheria for all children as soon as they reach their first year. The parents should be urged to take young children to their private physician so that he can immunize them against diphtheria.

The problem of diphtheria control would be much nearer solution if an ordinance could be passed making it compulsory that children on entering school should be given the Schick test and, if they give a positive reaction, immunized with toxin-antitoxin. If this seemed wise to the health department and the board of education, and could be brought about, no doubt most of the children would be Schick tested and immunized against diphtheria long before the time for entering school. This has proved true in the case of smallpox vaccination, and will probably also be true in the case of diphtheria prevention.

Such compulsory legislation would be most desirable, but its passage will depend on the enlightenment

2. Zingher, Abraham: Diphtheria Prevention Work in the Public Schools of New York City, J. A. M. A. **77**: 835-841 (Sept. 10) 1921.

of the community with respect to disease prevention. It is here that the health officer and the health department can accomplish much good by giving expression to the crystallized opinion of the medical profession in the community. These two outstanding facts should be emphasized: The morbidity and mortality from diphtheria were on the increase throughout the country until very recently, and we are now able to avail ourselves of measures that will ultimately stamp out this disease.

CONCLUSIONS

1. The active immunization with toxin-antitoxin of all children of preschool age (from 6 months to 6 years) is of fundamental importance in any general campaign of diphtheria prevention and control.

2. To reach these young children, the health officer can utilize, in larger cities, the baby health stations, day nurseries, mothers and babies' playgrounds, infant asylums, clinics for children, and similar agencies.

3. It is of even greater importance to have private physicians take up this work among the young children in their private practice.

4. Preliminary work in the schools will help by spreading in the homes the knowledge of these newer methods of diphtheria prevention.

5. The high percentage of positive Schick reactions among children of preschool age indicates, under many conditions, the advisability of simplifying the procedure of immunization by omitting the preliminary Schick test in this group and giving the toxin-antitoxin injections to all children between 6 months and 6 years of age. These children should not be pronounced immune to diphtheria after the injections of toxin-antitoxin until they show a negative Schick reaction. This test might be carried out conveniently by the school physician when the children begin to go to school.

6. The injections of toxin-antitoxin produce very little local or constitutional disturbance in young children.

AN IMPROVED PROCEDURE FOR THE STAINING OF ACID-FAST ORGANISMS IN TISSUE*

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Investigators familiar with the demonstration of the bacilli of tuberculosis in tissue are aware of the difficulties attending the customary procedure of section staining, particularly in retaining the counterstain as the tissue is passed through the various dehydrating preparations, or resulting from the failure thoroughly to dehydrate the stained tissue by omitting those dehydrating solutions which attack the counterstain. Satisfactory results are even more uncertain in frozen sections than in sections embedded in paraffin or celloidin. The method described here affords a rapid and simple technic for demonstration of *Bacillus leprae* and *Bacillus tuberculosis* in tissues. Excellent results are also obtained in paraffin sections.

* From the Section on Surgical Pathology.

TECHNIC

Fresh tissue, having been hardened in a 10 per cent. dilution of liquor formaldehydi for at least fifteen hours, is frozen and sectioned. The thinner the section, the more satisfactory is the stain, and the finding of the organism is likewise facilitated. The cut sections are floated in distilled water and mounted on clean slides by means of a small glass elevator. They are then dehydrated by being flooded with 95 per cent. alcohol, after which they are fixed to the slide with celloidin. The superfluous celloidin adhering to the slide is wiped away, and slides are placed in a glass of distilled water. They are now ready for staining. (Care must be taken that the celloidin solution is free from water; otherwise, the section will not adhere to the slide.)

The old, orthodox teaching of heating or steaming in carbolfuchsin has been abandoned. Apparently, there is nothing gained by working with a hot solution, cold carbolfuchsin solution serving just as well, as was brought out by Keilty.[1]

STAINING PROCESS

1. The slide is placed in a vessel containing cold carbolfuchsin, and stained for from five to ten minutes.

2. It is washed in tap water and decolorized for from one to two minutes with 25 per cent. hydrochloric acid (aqueous solution). If some color returns after washing in tap water, the process of decolorizing is repeated, and the slide is washed again in tap water. It is then blotted between filter papers.

3. Counterstaining is done with Loeffler's methylene blue for from one to two minutes. The choice of counterstain is an individual matter. Those in general use, such as malachite green, Bismarck brown, picric acid and methylene blue, give good results.

4. The excess stain is washed off with distilled water, and the slide is blotted between filter papers.

5. Several drops of pure anilin are quickly dropped on. The color of the section should be watched. When the desired blue is obtained, the slide is immersed in a clearing mixture of one part of anilin and two parts of xylene. The slide is lifted out of the anilin mixture from time to time, and the degree of clearing and also the intensity of the blue are observed. Ordinarily, the slide is not left in the mixture longer than three minutes, but this depends on the intensity of the blue desired and the thickness of the section. The anilin and xylene dissolve the counterstain slowly, so that care must be taken not to leave the slide in the mixture too long. When the desired tint of blue appears, the section is transferred to pure xylene, in which it remains until completely cleared. It is then mounted in balsam in the usual manner.

Pure anilin dissolves the dye quite readily, as well as clears it, and care is necessary in removing the excess counterstain not to continue the process too long. With a little practice, the whole section can be run through in from ten to fifteen minutes.

1. Keilty, R. A.: Hydrochloric Acid as a Decolorizing Agent for the Tubercle Bacillus, J. A. M. A. **66**: 1619-1620 (May 20) 1916.

Mountains of Carbon.—The carbonic acid gas exhaled by a man in twenty-four hours is estimated at about 450 liters, which would represent 240 gm. of burnt carbon and 450 liters of oxygen taken from the air to effect this combustion. At this rate the carbonic acid gas produced in a year by the whole human family would amount to about 160 billion cubic meters, which represents 86,270,000 kg. of burnt carbon. Piled in one heap, this carbon would make a mountain a league around at its base and from 400 to 500 meters high. Such is the quality of fuel required for the maintenance of man's natural heat. All of us together eat carbon to this extent, and in the course of a year we breathe it out, a breath at a time, in the form of carbonic acid gas. Then we start on the consumption of another pile of the same size. How many mountains of carbon, then since the world began, must mankind have breathed out into the atmosphere.—Fabre: The Wonder Book of Chemistry.

VENTRICULOSCOPY AND INTRAVENTRICULAR PHOTOGRAPHY IN INTERNAL HYDROCEPHALUS

REPORT OF CASE *

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AND
FRANCIS C. GRANT, M.D.
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In an attempt to find a means of relief in cases of hydrocephalus in children, some interesting observations have been recorded relative to the appearance of the functioning ventricle in the living subject.

With the object of establishing an outlet through the corpus callosum for the relief of the acute internal hydrocephalus presented in the case reported below, an approach through the dilated ventricle with an operating cystoscope was suggested. An opening through the thinned cortex in a silent area of the brain was planned, as being a far safer procedure than the more formidable midline approach between the hemispheres.[1]



Fig. 1.—Appearance of patient on admission, showing marked enlargement of the head and expanse of the forehead.

REPORT OF CASE

A baby boy, aged 10 months, Italian, was brought to the neurosurgical clinic, Nov. 5, 1922, by his mother, who requested that something be done to check the progressive growth of the baby's head. The child's birth had been difficult, labor having continued for three days before the infant was finally delivered by means of forceps. The mother had been torn at the time of delivery, and there was a slight mark on the infant's forehead that was said to have been caused by the application of forceps. The mother had been married for two years. There was a history of a miscarriage at the end of the third month. Both father and mother were in excellent health. The blood Wassermann reaction on each was negative.

Four months after the child's birth, the mother had first noted that his head was larger than normal, and, for the last six months, it had been gradually increasing in size (Figs. 1, 2 and 3).

The head measured 64 cm. in circumference, and 42 cm. from the glabella to the inion. The forehead was massive, compared with the size of the body. The fontanels were wide and fluctuating. The child weighed 20 pounds, 8 ounces (9,298.6 gm.). The face was small. There was no ocular palsy, and no paralysis of the extremities. The general physical condition was excellent. The blood and spinal Wassermann reaction were negative. The child had never been sick. The appetite had been good, and the child had taken all of its feedings regularly. There had been nothing to suggest meningitis.

November 9, under light ether anesthesia, a small trephine opening was made through the skull, on the right side, in the postparietal region. Through a small dural slit, a Cotton cannula was passed into the ventricle, which proved to be only 1 cm. below the cortex. Clear fluid escaped under considerable pressure. The cannula was removed, and a small No. 12 cystoscope was inserted, affording a clear view of the ventricular walls. Sketches were made at this time, and the structures were noted with especial reference to the medial wall, which appeared to be quite free from large vessels near the collosal pathways (Figs. 4 and 5).



Fig. 2. — Appearance of patient after third ventriculoscopy, which resulted in his being somewhat brighter, following relief of pressure.

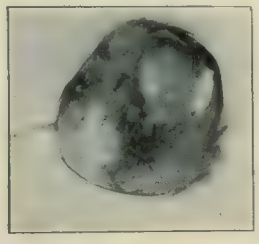


Fig. 3.—The enlarged head when viewed from above eclipses the entire body in size. Two small collodion dressings mark the two areas of approach.

The wound was closed after enough fluid had been allowed to escape to relieve the increased pressure. There was no cortical or ventricular hemorrhage. The dura was closely closed by a button-hole stitch, and the skin edges were closely approximated. The child was returned to the ward in good condition, and, after a slight reaction, returned to the normal in a few days.

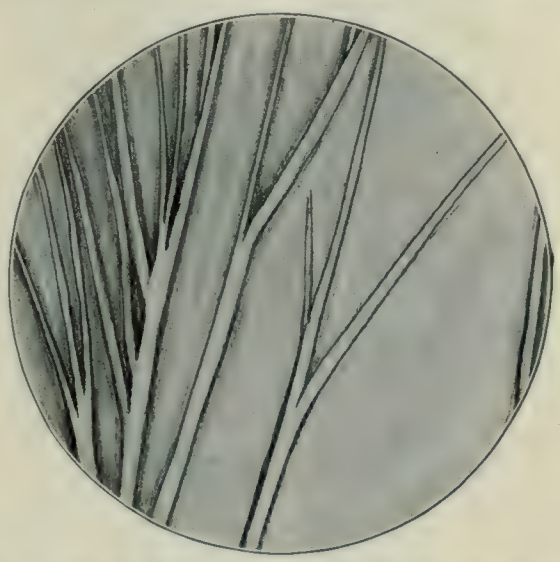


Fig. 4.—Peculiar appearance of the veins that stand out from the ventricular walls.

This procedure disclosed several things of importance:

1. Ventriculoscopy can be performed with little risk and with slight reaction.

2. A satisfactory view of the lateral ventricle can be obtained and the proposed field of future operation carefully inspected.

* From the Neuro-Surgical Clinic of Dr. Charles H. Frazier, University Hospital.

1. This paper is a preliminary report of work being done on the problem of internal hydrocephalus. The condition is by no means rare. It is a frequent sequel of meningitis, and possibly of trauma sustained at birth. Schuchard reports one case in every 743 births, as a complication of pregnancy. Lachapelle and Duges found it once in every 2,903 births, and Merriman once in every 900. In September, 1921, various means and methods of approach were outlined, and experimental work in the laboratory was undertaken to determine the technic for the midline approach between the hemispheres. The results of this work are rapidly nearing completion and will be presented in the near future. The use of ventriculoscopy for inspection as a means of determining the pathologic condition existing in the ventricles and the employment of the photographic cystoscope to record the observation so made, was proposed in September, 1921. Since the inception of this problem, Dandy (Bull. Johns Hopkins Hosp. **33**: 189 [May] 1922) records a case in which he has employed ventriculoscopy but not photography.

3. Some interesting structures may be noted in their normal relationship.

4. Direct ventriculoscopy is of diagnostic value in localizing those subcortical lesions which may cause ventricular distortions and which are often difficult to localize, and for tumors within the lateral ventricles.



Fig. 5.—Appearance of posterior horn of the lateral ventricle, viewed from above. The choroid lying in the foreground has a rich reddish brown appearance, similar to that of a thick velvet rug.

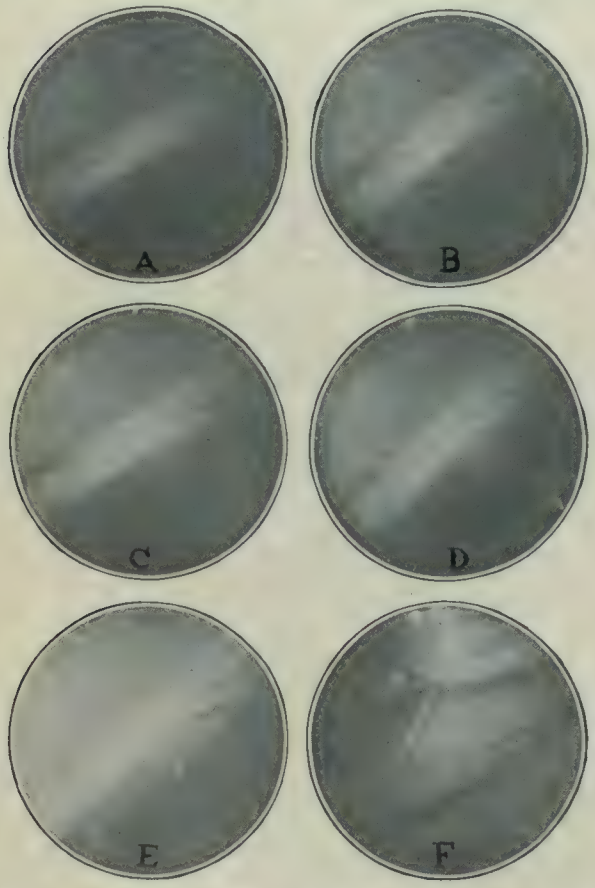


Fig. 6.—Exposures made within the ventricle, showing the choroid as a dark mass along the floor, with the light ventricular wall above. The parallel distribution of the veins is of interest: *A*, exposure for ninety seconds; *B*, exposure for seventy-five seconds; *C*, exposure for sixty seconds; *D*, exposure for forty-five seconds; *E*, exposure for thirty seconds; *F*, appearance of some of the veins on the surface of the septum lucidum, exposure for forty seconds.

Two weeks later, a second exploration was performed, this time on the left side, the posterior horn of the ventricle being entered from the parietal occipital lobe. A photographic cystoscope was used on this occasion, and six exposures were made of structures seen within the ventricle (Fig. 6).

As these photographs were the first of their kind, to our knowledge, the problem of time and the duration of the exposure had to be determined. The presence of the ventricular fluid and the fact that the head was slightly moved with each respiration of the patient also added difficulties to the procedure. Figure 6 illustrates the same view under exposures varying from one and one-half minutes to thirty seconds. When the cystoscope was inserted, a clear view of the ventricles was obtained, and the instrument was focused on an area that showed the choroid plexus and a series of small veins running off to the walls of the posterior horn. This field was chosen because it exhibited the contrast between the dark choroid and the pearly white surface of the ventricular wall. The cystoscope was clamped in place by a fixture attached to the table, and the exposures were made in rapid succession.

After the wound had been carefully closed the patient was returned to the ward in excellent condition. The child showed only a slight reaction following the second operation. This was probably due to the fact that only a small amount of cerebrospinal fluid escaped during the whole operation, the pressure having been relieved before. The reaction was not more than would be expected in a 10 months old child following any ether anesthesia.

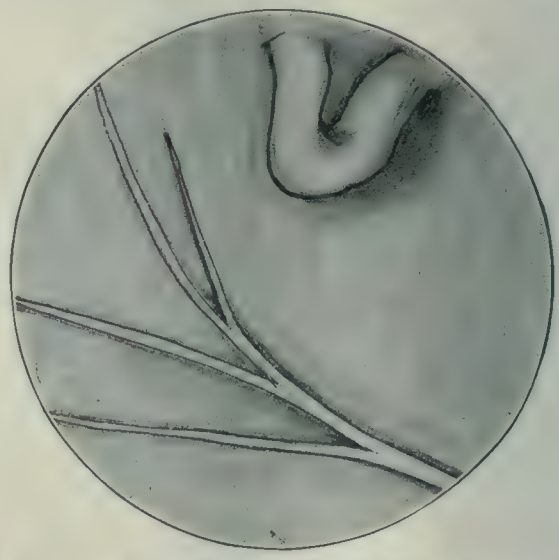


Fig. 7.—Peculiar vein emerging from the lateral wall and passing out again toward the cortical surface.

One week later, the child was again operated on, this time with the object of using an operating cystoscope and creating a permanent fistula through the corpus callosum to permit escape of the ventricular fluid into the subarachnoid space. A "high light" cystoscope was first used, and an entry made through the former opening into the posterior horn so as to familiarize the operator with the field of operation. Two interesting sketches (Figs. 7 and 8) were made at this time. It was found that the instrument which was to be used for cutting through the corpus callosum was defective, so the attempt had to be abandoned. The child was returned to the ward in excellent condition, and had very little reaction following the operation. A favorable opportunity is being awaited for the completion of the final stage of this operation.

CONCLUSIONS

1. Intraventricular photography and ventriculoscopy are possible in the presence of dilated ventricles.

2. Little or no reaction follows such procedure when properly conducted.

3. The diagnostic value of direct inspection of the ventricular cavities may prove of considerable impor-

tance in determining the location and the extent of growth of subcortical lesions causing deformities of the ventricles.

4. A satisfactory approach with regard to area and the extent of opening desired may be made through a dilated ventricle in order to permit callosal puncture under direct observation.

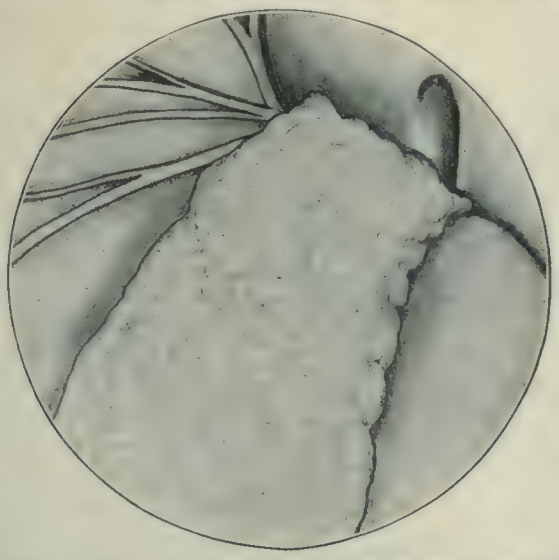


Fig. 8.—Lateral ventricle viewed from behind, showing a large portion of choroid in the foreground, and, in the anterior, inner wall, the enlarged and comma-shaped foramen of Monro, connecting the two anterior horns.

5. Photography for the purpose of reproducing the appearance of structures or lesions within the ventricles requires at least forty seconds exposure.

A METHOD FOR THE CONCENTRATION OF CELLS AND BACTERIA IN PROSTATIC SECRETION *

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In the routine examination of prostatic secretion for the presence or absence of bacteria, and particularly gonococci, it is of the greatest importance to examine the cytoplasm of large numbers of pus cells. The small amount of pus that may be present is often so diluted with prostatic secretion that direct smears of the material are so thin as to make the finding of any number of pus cells a difficult task. The thicker parts of films dry slowly with consequent shrinking of the cytoplasm to a mere band surrounding the nucleus, within which it is almost impossible to recognize the morphologic appearance of organisms that may be present. The normal fluid itself also stains, making the examination of very thick areas impossible. After many attempts to devise a practical method of concentration of the cellular elements in prostatic secretion, the technic here described, which consists essentially of the use of proper size centrifuge tubes, has been found very satisfactory. This method has been in use for some time and has seemed to fill all requirements.

TECHNIC

A length of glass tubing of about one-fourth inch (5 mm.) outside diameter is moistened and wiped dry by a cotton plug pushed through it. It is then cut into lengths of 4 or 5 inches, and the ends are held in the flame, to round the sharp edges. A half inch of the middle is heated while the tube is being rotated in the flame of a small Bunsen burner until it is very pliable. The tube is removed from the flame and pulled into a large-lumen capillary about 5 inches long by slow traction on both ends. It is held taut for a moment until the glass chills. The glass is nicked lightly at *a* and *b*, as shown in Figure 1. (A very small file is used, or a glass cutter made from an old pocket knife by heating the blade to cherry-red and tempering by plunging in cold water. It is sharpened on a coarse grained emory wheel.)

The patient is instructed to wash the glans with soap and water, dry thoroughly, and to empty the bladder. Prostatic massage is then carried out in the usual manner, the fluid being collected as expelled into a medicine glass or small beaker. The short end of the glass tubing is now broken off and fitted with a good rubber bulb (Wright's red rubber bulbs as supplied by laboratory dealers). With the thumb resting partly on the glass tubing as shown at 2 in Figure 1, by rotating this member slightly, just enough vacuum is produced to take up several drops of secretion. With a little practice one soon learns the trick of allowing just sufficient suction to take up the desired quantity of fluid to fill the pipet, with the suction from the bulb diminishing to nil as the pipet fills. A small drop of the fluid for a control is squeezed out on the left hand end of a slide (5, Fig. 1) and spread out with the tip of the pipet. Pressure is now released and the fluid runs up, leaving the tip of the pipet empty so that it may be sealed, without spluttering, by holding it against the side of a Bunsen flame. The tip is removed from the flame, and the bulb is gently squeezed to see whether the tip is well sealed.

The bulb is removed and the tube is dropped in a centrifuge shield which has a good rubber plug in the bottom. It is centrifuged at 1,500 revolutions a minute (with the usual radius from the spindle) for about one minute.

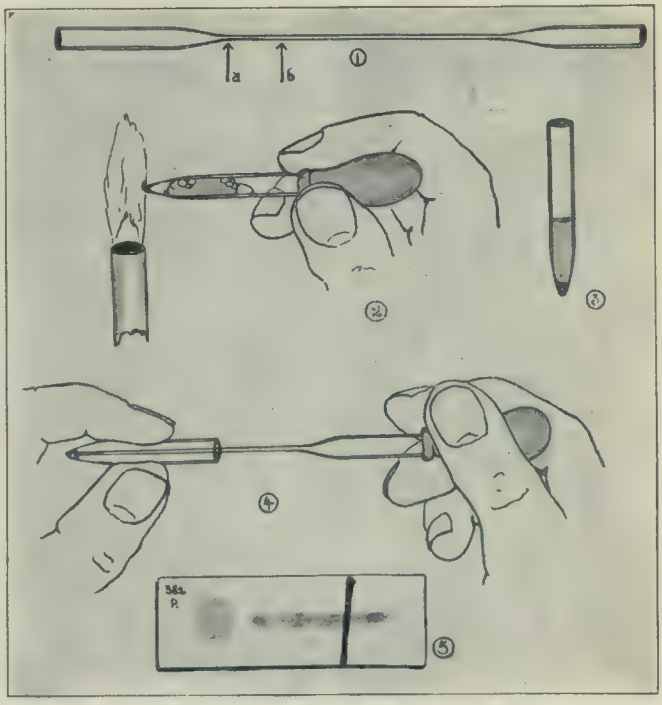


Fig. 1.—Details of technic.

The centrifugal force exerted on a half inch layer swung at this speed and distance from the motor shaft is sufficient to throw down all cells and most of the free bacteria from the most viscid secretions encountered (3, Fig. 1). Care must be taken that the point *a* at which the tube was broken shall be just at the termination of the taper. With too narrow a point, a plug of mucus may adhere and keep the cells

* From the Laboratory of Clinical Medicine, Tulane University School of Medicine.

from packing at the bottom. Slow centrifuging is not entirely compensated for by a longer time. The hand centrifuge cannot be successfully used for this purpose.

The bulb is now attached to the capillary pipet. The supernatant fluid is pipetted off and discarded. The sediment is taken up (4, Fig. 1) and transferred to the middle of the slide and spread out in a long undulating wave of thick and thin places by means of the end of the pipet (5, Fig. 1).

The smear dries quickly. It is fixed with gentle heat. A mark is struck across one end of the concentrated smear with a grease pencil. The short end is stained with carbolfuchsin *"on and off."* It is washed and counterstained with Loffler's methylene blue from twenty to thirty seconds, and dried. A field of proper thickness is selected with a low dry lens, and examined with an oil immersion lens. When bacteria are found and their morphology and cell relationship have been determined, the remainder of the smear may be stained with Gram's method for further differentiation.

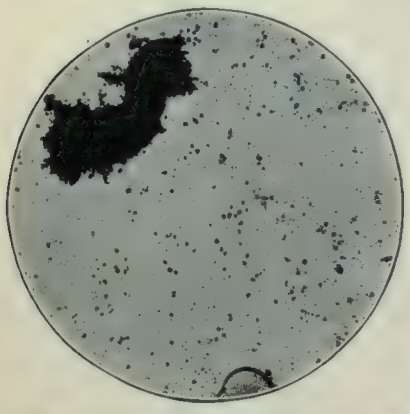


Fig. 2.—Plain prostatic fluid from posterior urethritis two weeks after cessation of the usual course of treatment; low dry lens.

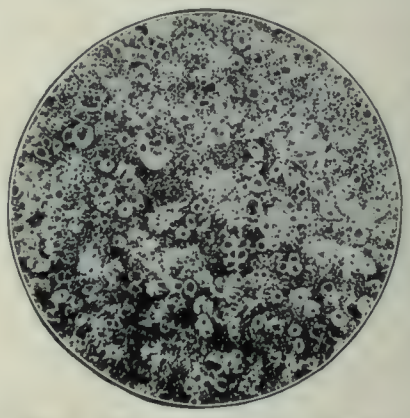


Fig. 3.—The same fluid after concentration; low dry lens.

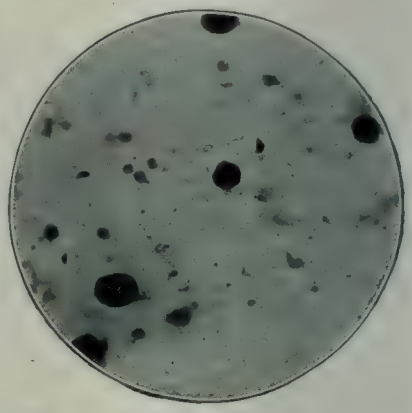


Fig. 4.—A typical field of the unconcentrated fluid under the oil immersion lens.

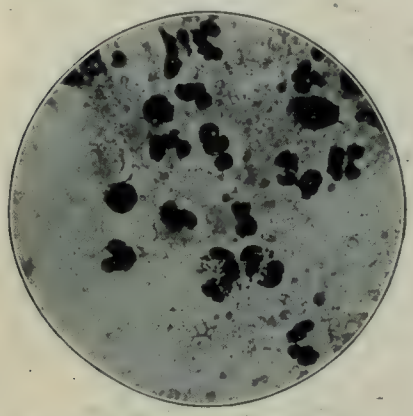


Fig. 5.—Concentrated preparation under oil immersion lens; to be noted are the distinct cytoplasm and nuclei of pus cells and the morphology of intracellular organisms.

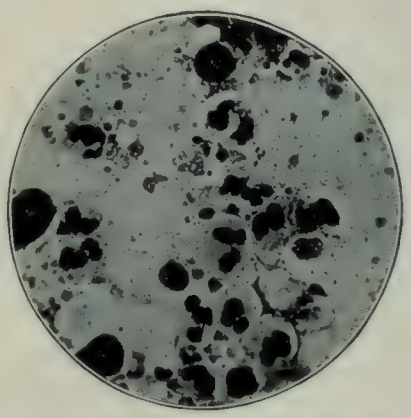


Fig. 6.—Other concentrated preparations; extracellular forms.

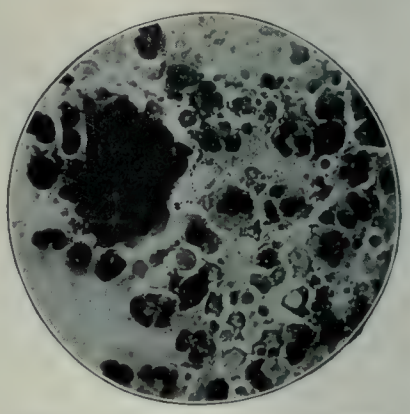


Fig. 7.—Other concentrated preparations; extracellular forms.

COMMENT

While just a little more technical ability is required here than in centrifuging urine, I am convinced that the facility and certainty with which the presence or absence of bacteria may be determined will place the microscopy of prostatic secretions on a parallel plane with the indispensable urethral smear. The description as given above seems rather tedious and much longer than it really is, but the success of any method lies in the observance of the small details.

Gonococci disintegrate very quickly. Prostatic secretion should never be allowed to stand many minutes before smears are made.

PNEUMOPERITONEUM AS AN AID IN THE DIAGNOSIS OF SUBDIAPHRAGMATIC CONDITIONS *

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ST. LOUIS

Since the advent of pneumoperitoneum, or air inserted into the abdominal cavity, as an aid in roentgen-ray diagnosis, much has been done to simplify the technic, and a great deal of investigation has been carried out to determine the full range of possibilities of this method.

Early in our experience with pneumoperitoneum, it was pointed out that this method should prove of great avail in the diagnosis of subdiaphragmatic lesions. The full value of the method was not appreciated, however, until opportunity was afforded for its practical application. Pneumoperitoneum has been of such great aid to us on several occasions, in clearing up doubtful diagnoses, that a brief consideration of its use in these lesions seems advisable. While its application in subdiaphragmatic conditions is not as wide as in some of the other regions of the abdomen, because of the limited range of subdiaphragmatic lesions, the information that it gives is occasionally of such value as to be decisive.

* Read before the Tulsa County Medical Society, Tulsa, Okla., April 26, 1922.

We have found the method of so much value in examination of acute infectious involvement of the subphrenic space that it seems advisable to call attention to this special phase of pneumoperitoneum work. Very little air is necessary in the examination of this region, and, if inflation is carried on with the patient in a recumbent position under the fluoroscope, any involvement of this space can be at once detected, and the inflation discontinued. If the procedure is carried out in this fashion, there need be little fear of breaking any existing adhesion walling off an infectious process, no matter how delicate or recently formed. Information gained in this manner, either establishing the presence of a subdiaphragmatic abscess or excluding its possibility, is of the utmost value in the prognosis and treatment of the condition. This is especially true since the accepted method of surgical procedure for drainage of such abscesses is very extensive and necessarily involves vital structures. A case in point, illustrated by Figure 1, may be of interest:

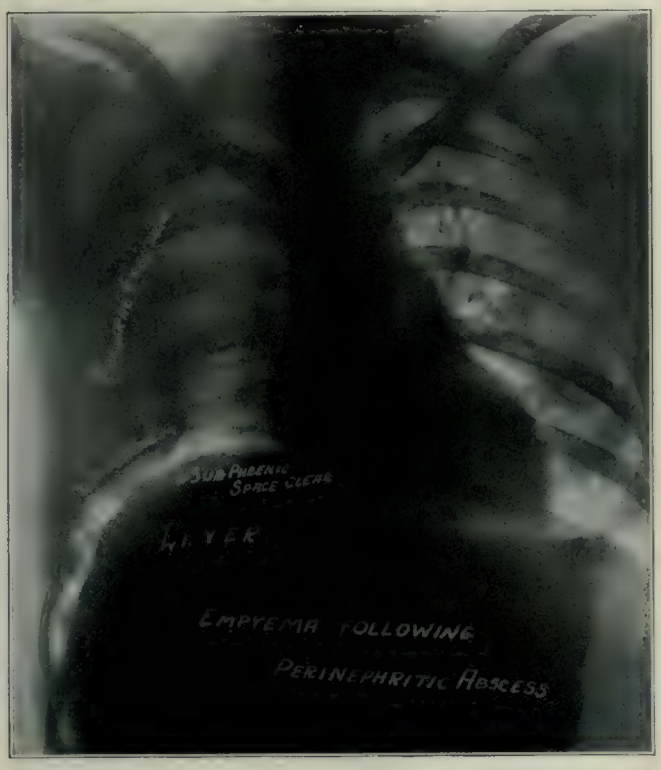


Fig. 1.—Pneumoperitoneum in determining the involvement or freedom of the subdiaphragmatic space in suspected acute infections of this region, as an extension from the pleural cavity or otherwise. In this instance, the subphrenic space is free from involvement, the infectious process being confined to the chest.

A young man was admitted to the hospital with chills, high temperature and pain in the back. Physical examination revealed a perinephritic abscess, which was incised and drained. The temperature fell to normal, and the patient felt quite well. Drainage continued to decrease until, at the end of the seventh day, little if any was present. On the seventh day, however, the temperature again rose suddenly, and there were chills and profuse perspiration. Both physical and roentgenographic examinations revealed a moderate collection of pleural fluid, and there was immobilization of the diaphragm on the affected side. Pus was aspirated from the chest. At this time, hiccup commenced, persisting for several days. This, with high temperature and pain in the abdomen, suggested possible involvement of the subdiaphragmatic space. Examination by pneumoperitoneum revealed that the subdiaphragmatic space was not involved, and simple thoracotomy resulted in cure. Pneumoperitoneum disclosed no definite connection between the perinephritic abscess and the effusion in the chest.

The information gained by the surgeon in this instance, prior to operation, guided him in the surgical procedure and enabled him to perform a much less formidable operation than might otherwise have been the case.

In a similar instance, illustrated by Figure 2, an unsuspected inflammatory process was discovered in the subdiaphragmatic region. Pneumoperitoneum was undertaken for an entirely different lesion, and the subdiaphragmatic condition was unsuspected. At least six similar cases have occurred in which pneumoperitoneum was the decisive factor in the diagnosis.

Other conditions which occur in this region and in which pneumoperitoneum is occasionally of decisive aid are cardiospasm of the lower end of the esophagus, which must be differentiated from an organic lesion in this region; adhesions of the viscera to the diaphragm, and hernia of the hollow viscera through the diaphragm. The diagnosis of cardiospasm by the aid of pneumoperitoneum has been previously referred to by Iglauer,[1] and its aid in this respect is undoubtedly of great benefit in certain cases. When cardiospasm alone exists, the esophageal constriction occurs at the diaphragm, and the regular dilated sac appears above. There is no evidence of involvement of the region between the diaphragm and the cardiac orifice of the stomach, a condition clearly shown by this method, and confirming an observation previously made by Chevalier Jackson[2] that cardiospasm is due to the "pinchcock action of the diaphragm." When a carcinomatous

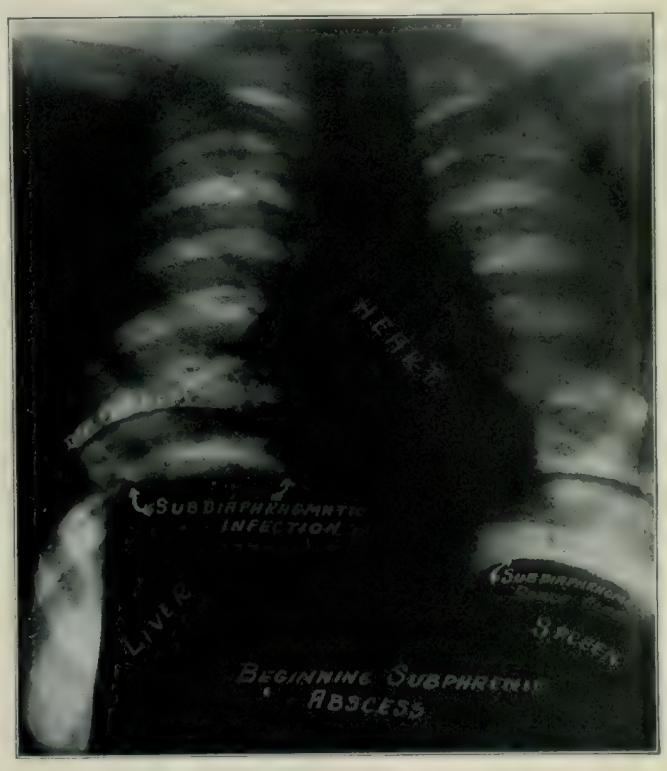


Fig. 2.—Beginning involvement of the subdiaphragmatic space on the right side by an infectious process during a peritoneum examination for another purpose. The subdiaphragmatic area on the right is in contrast with the clear, uninvolved area on the left.

1. Iglauer, Samuel: Pneumoperitoneum as an Aid in the Diagnosis of Cardiospasm, New York M. J. **115**: 745 (June) 1921.
2. Jackson, Chevalier: Diaphragmatic "Pinchcock" in So-Called Cardiospasm, Laryngoscope **32**: 139-142 (Feb.) 1922.

involvement is present, a definite tumor mass can be seen. Barium meal examination reveals the presence of an irregularity and constriction of the esophagus, but does not show the extent of the pathologic growth. On several occasions, complete adhesion of the liver or spleen to the diaphragm has been encountered. Dense adhesions of the spleen necessarily preclude operative removal, and pneumoperitoneum should therefore be performed before any attempt at splenectomy.

The diagnosis of diaphragmatic hernia of the hollow viscera should be readily confirmed by this method.

A SKIN CANCER FOLLOWING EXPOSURE TO RADIUM *

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AND
GEORGE S. WILLIS, M.D.
NEW YORK

The patient, G. S. W.,[1] who was born, Oct. 12, 1876, had attained the age of 46 years in 1922. His father, a physician, died in 1898 at the age of 64, from prostatic hypertrophy complicated by a mitral regurgitation and nephritis. His mother died in 1918 at the age of 70 years, from angina pectoris. The patient is married and has one daughter, aged 21.

The patient has practiced medicine since 1899, and he first began working with roentgen rays in 1905, employing a Wagner static machine with attachment for fluoroscopy. He habitually used his left hand as a test object. In 1909 he became acquainted with Dr. Walter Dodd, and for several summers he worked with Dr. Dodd in the Massachusetts General Hospital. He was, therefore, fully cognizant of the danger of roentgen-ray burns because of Dr. Dodd's experience, the latter having undergone no less than forty-six surgical operations before he eventually succumbed to the sequelae of roentgen-ray burns. During 1911 and 1912 he used roentgen rays daily with the fluoroscope for examination of the stomach. In this work the palms of the hands were exposed to the rays, but always with lead glove protection. Roentgen-ray work was continued on a small scale up to 1915, and since 1917 the patient has not employed roentgen rays at all.

His radium work began in 1912 with the use of radioactive water. In 1913 and 1914 he began to handle radium bromid, radium sulphate and mesothorium in glass tubes, having at his disposal about 50 mg. in all. These preparations were handled daily and very freely without protection. In 1915, much larger amounts were obtained, and he employed about 200 mg. daily, sometimes more. He habitually picked up the glass tubes to place them in metal boxes before applying the radium to the patient. In January, 1919, he obtained 365 mg. of radium in one glass tube. This he handled personally with but little precaution, from three to five times a day, in addition to smaller units in other tubes. The tubes were seized between the thumb and finger tips. This personal handling of the radium continued until 1920. Since June, 1920, he has handled radium very little, and then only with forceps. He is right handed.

The patient observed a curious numbness in the ends of all his fingers late in the year 1918, while continuing his radium work in the army. Along with this he noted a weakness of the left arm, so that he was compelled to give up boxing, a favorite exercise. Sometimes he could not even lift a drinking glass with his left hand. This numbness has persisted up to the present time. In July, 1919, he was discharged from the Army Medical Corps and came to the New York Post-Graduate Medical School and Hospital, where he has continued his radium work. At about this time an acquaintance called his attention to the roughness of his hands, to which he had previously paid very little attention. In the following winter, about January, 1920, more serious troubles began, and ever since the hands have been a constant care. The skin became tender and sore. There was a burning sensation, sometimes an ache and often a neuralgic pain. The skin has remained rough and harsh, and fissures have been almost constantly present. Bathing the hands in hot soda solution, nightly dressing with oil and occasional treatment by exposure to the sun's rays have been a regular part of his life since early in 1920.



Fig. 1.—Section of the first specimen, removed Oct. 28, 1922: irregular whorls of squamous epithelium, largely necrotic; marked inflammatory infiltration.

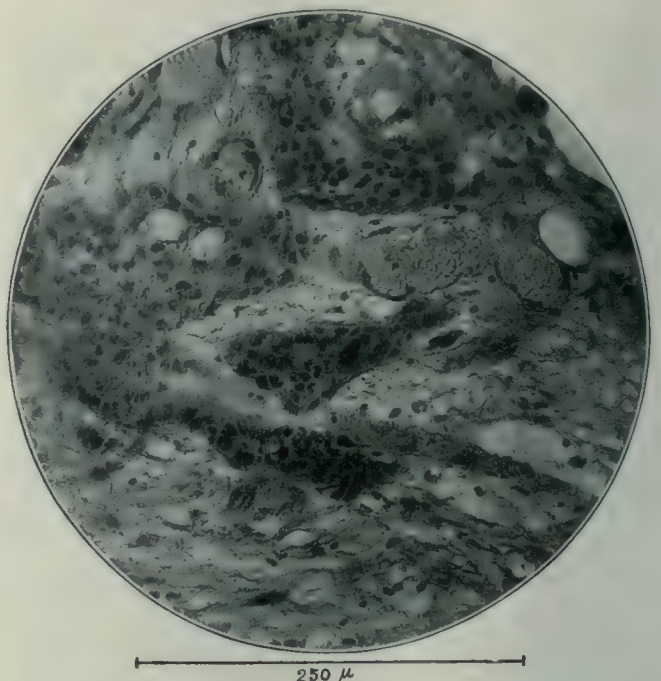


Fig. 2.—Second specimen, removed November 2: portion of vascular granulation tissues containing irregular nests of atypical epithelial cells in close relation to thin-walled blood vessels; near the center, a large cell in mitosis.

* Read before the New York Pathological Society, Jan. 10, 1923.
* From the Department of Pathology and Bacteriology and the Radium Division of the Department of Surgery, New York Post-Graduate Medical School and Hospital.
1. Dr. George S. Willis, one of the authors of this report.

About April 1, 1921, two very troublesome fissures appeared, one on the left thumb and the other on the middle finger of the left hand. At that time the hands were bathed in 5 per cent. phenol (carbolic acid) solution, and the fissures were then treated with solutions of brilliant green and gentian violet for one day. At the end of the day there was considerable redundant granulation tissue which was extremely sensitive. The next day the pain in these fissures was agonizing. Orthoform ointment was applied. At a consultation, possible malignancy was considered, but a diagnosis of infectious granuloma was made. April 10, a culture revealed numerous hemolytic streptococci in the lesions. The patient was confined to bed for three weeks, and suffered indescribable pain. The lesions were treated by exposure to sunlight, to red light and by bathing with iodin lotion. They healed in July. After that hydrous wool fat (lanolin) was applied every night.

Early in January, 1922, daily massage treatment was begun, and was continued for about two months. Later in the month a fissure appeared through the middle of a hyperkeratosis on the ball of the right thumb. From January to June this fissure remained open continuously, and it was protected with adhesive plaster or by a bandage. Various ointments and lotions were tried. Phenol seemed to afford most relief.

In July, a fissure appeared on the middle finger of the left hand at the site of the earlier serious lesion. This was exposed to 7.5 mg. of radium in a platinum-iridium needle for twenty minutes, and it healed about August 1. At this time he applied a similar 7.5 mg. needle of radium to the old fissure in the right thumb for twenty minutes. This was not so successful, and the fissure persisted unhealed. About August 20, this lesion suddenly became much more painful, keeping him awake at night using a bath of phenol every hour. The fissure rmained the same size, but the surrounding tissue became more prominent. The patient went to the seashore, September 1, where he soaked his hands in the sea water all the forenoon and exposed them, especially the

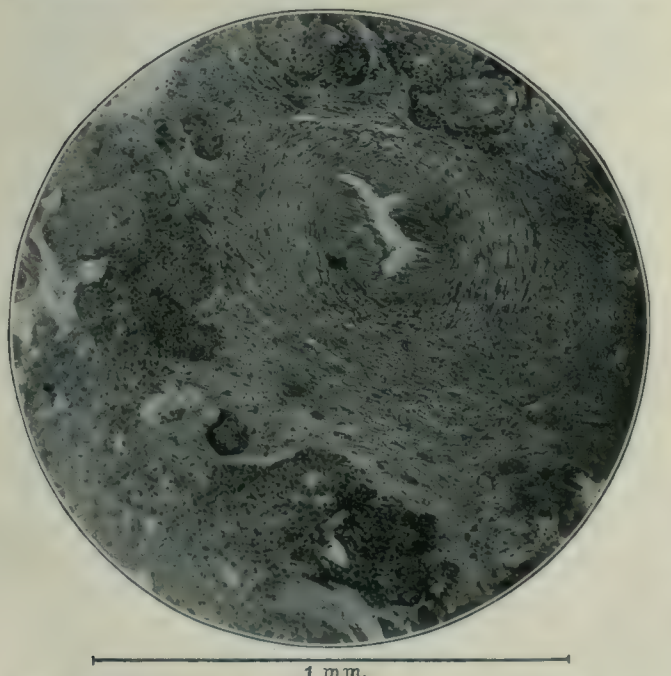


Fig. 3.—Second specimen: small artery almost surrounded by nests of tumor cells; arterial wall thickened, and the lymph spaces in the media distended; this change corresponds to the vacuolizing degeneration of Gassmann, described by him (Fortschr. a. d. Geb. d. Röntgenstrahlen **2**: 199, 1898-1899) as a characteristic arterial lesion in roentgen-ray dermatitis; the close relation of the new growth to a vessel of this size is significant of the deep infiltration which has taken place.

sore thumb, to direct sunlight all the afternoon. At night he put on a dressing wet with a solution of sodium hypochlorite (hyclorite), which seemed to relieve the burning. This was continued for the first two weeks of September, during which time the lesion became transformed to a flat ulcer about 10 mm. square, much larger than before and just about as painful.

September 14, he returned to New York. A dram of scarlet red ointment mixed with an ounce of olive oil was applied for twenty-four hours. The pain at once became worse, and overproduction of granulation tissue appeared.

This treatment was stopped after one day. The pain was now so severe that the patient walked the floor every night,

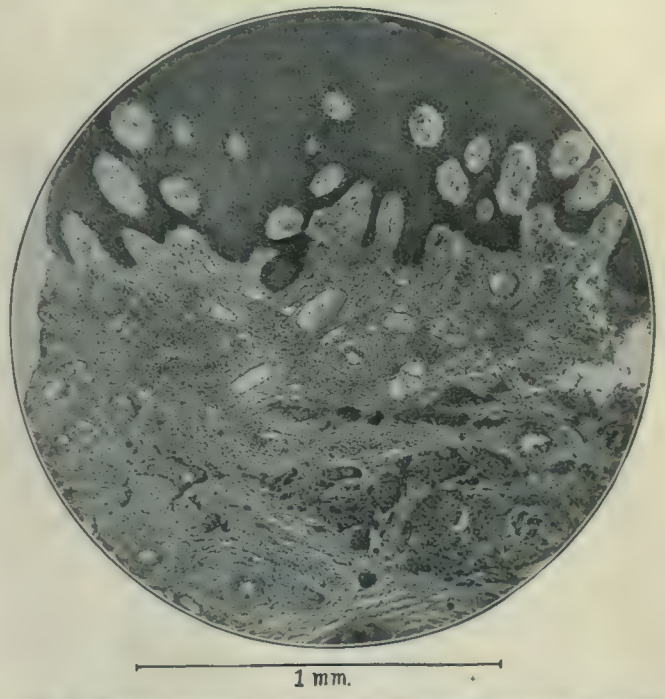


Fig. 4.—Second specimen: skin at extreme edge of specimen; surgical incision is the left border; the carcinoma evidently infiltrates beneath the cutaneous epithelium to the surgical incision.

and was compelled to keep the hand elevated all the time.

The protrusion of granulations continued, and the lesion progressively enlarged until nearly the whole ball of the thumb was involved. Clinically, it resembled the lesions on the left thumb and middle finger of the previous year, lesions which healed. The clinical diagnosis was infectious granuloma.

Excision of the central portion of the lesion was performed by Dr. J. J. Moorhead, October 28. The remainder of the lesion was excised, November 2, and the thumb was amputated by Dr. John F. Erdmann and Dr. J. J. Moorhead at the carpometacarpal joint, November 4. After the third operation there was great relief from discomfort, and the surgical wound healed with reasonable promptness.

At present (December, 1922), the skin over the backs of the hands appears almost normal except over the distal phalanges, where the epidermis is thin, smooth, dry and translucent so that the color is red. The palmar skin of all fingers is markedly altered, rough and hard, and harsh to the touch. On the left hand this alteration extends over the palm back to the wrist. On the right hand the palm is distinctly softer. There is a thick keratosis under the nail of the left thumb, with a healed fissure running through it, and a thick keratosis along the thumb side of the left middle finger. All the nails show exaggerated longitudinal striping, more marked on the left hand.

PATHOLOGIC REPORTS

First Specimen.—This tissue, removed, Oct. 28, 1922, was designated by the surgeon as "ball of right thumb, chronic inflammation of repeated radium irritation."

Gross: One piece measured 22 by 10 by 3 mm. It was mottled yellow, white and gray on one surface, and appeared to be largely necrotic. The tissue beneath was white and firmer than the surface, and showed hemorrhagic and gray markings.

The second piece measured 12 by 10 by 3 mm. This resembled the deeper parts of the first piece. It was generally soft.

Microscopic: Sections revealed the tissue to be necrotic for the most part. In it, however, one could recognize numerous irregular whorls of squamous epithelium. One small bit of tissue, which was viable, was made up of squamous epithelium with atypical cornification. In some places mitotic division figures were moderately numerous, as many as four being found in one oil-immersion field. The specimen did not present any normal tissue, so that the relationship between the normal and the abnormal could not be seen.

The appearance was highly suggestive of disintegrating squamous-cell carcinoma, but one would not be justified in making such a diagnosis without a more satisfactory specimen. It was suggested that a section including the border of the lesion, together with some of the adjacent more normal tissue, be submitted for microscopic examination.

Diagnosis: This was: Inflamed and necrotic papilloma, suggestive of squamous-cell carcinoma. (Specimen unsatisfactory.)

Second Specimen.—This, removed, November 2, included the entire visible lesion and a margin of surrounding tissue.

Gross: The specimen measured 25 by 18 by 12 mm. It presented a gray, mottled, necrotic surface with underlying soft parts. The superficial portion appeared to be more dense than the deeper part.

Microscopic: Sections from various portions of the specimen showed extensive necrosis and infiltration with pus. Everywhere the connective tissue stroma was invaded by irregular nests and columns of squamous epithelial cells, many of which showed cornified centers. Groups of these cells were found infiltrating the lymph spaces close to the large blood vessels. Mitotic division figures were present in moderate numbers, and in some places as many as four could be found in an oil-immersion field. The epithelial new growth extended to the limit of the specimen in all the sections examined.

The extensive necrosis and the great irregularity in form, size and staining qualities of the epithelial cells, as well as their arrangement, all indicated a malignant activity.

Diagnosis: This was: Disintegrating squamous-cell carcinoma extending beyond the limits of the specimen submitted.

On microscopic examination of the sections from this specimen, Dr. James Ewing was consulted, and immediate amputation of the thumb was advised, November 3. This amputation was performed early on the following day.

Third Specimen.—This was the thumb of the right hand, amputated at the metacarpocarpal joint.

Gross: The ball of the thumb had been cut away over an area 37 by 23 mm. In the distal portion, under the nail, the

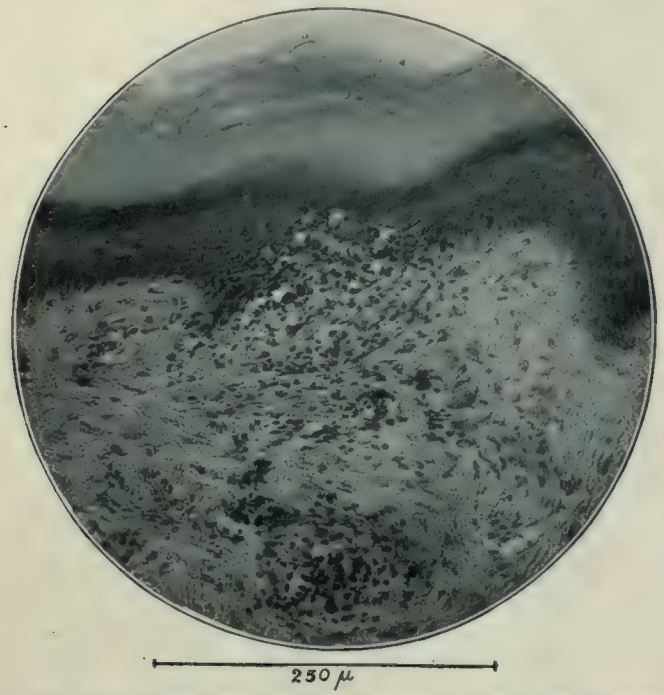


Fig. 5.—Third specimen, removed November 4; from edge of amputation incision at base of thumb; there is general hyperkeratosis, and near the center an edematous area infiltrated with round cells and plasma cells; this area includes the malpighian layer of the epidermis and the underlying dermis; it bears a suggestive resemblance to similar lesions described and figured by Unna in chronic roentgen-ray dermatitis.

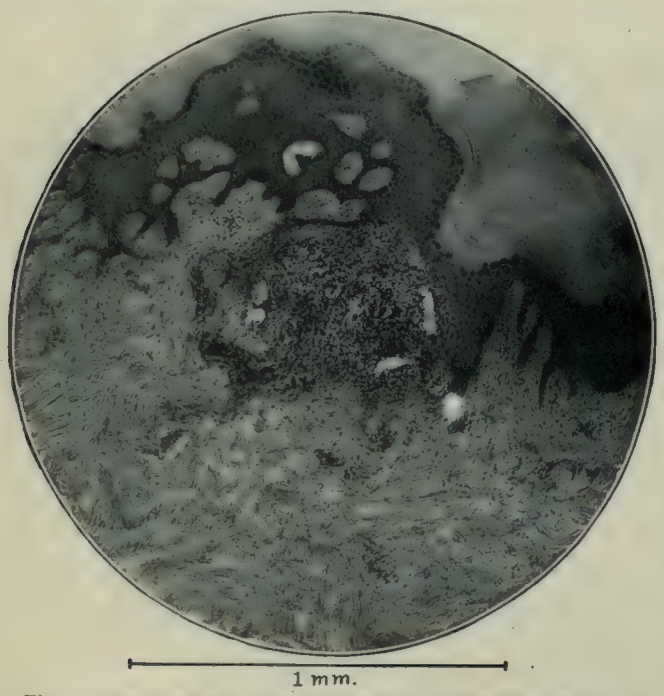


Fig. 6.—Third specimen: from the vicinity of amputation incision; the changes are of a more severe grade than shown in the preceding picture; hyperkeratosis and parakeratosis of the epithelium and exaggeration of the interpapillary epithelial ledges are distinct; near the center is a large edematous area, infiltrated with round cells and plasma cells, and involving the malpighian layer as well as the dermis; such a picture explains in part the roughness and harsh texture of the skin, and suggests a possible point for initiation of malignant activity.

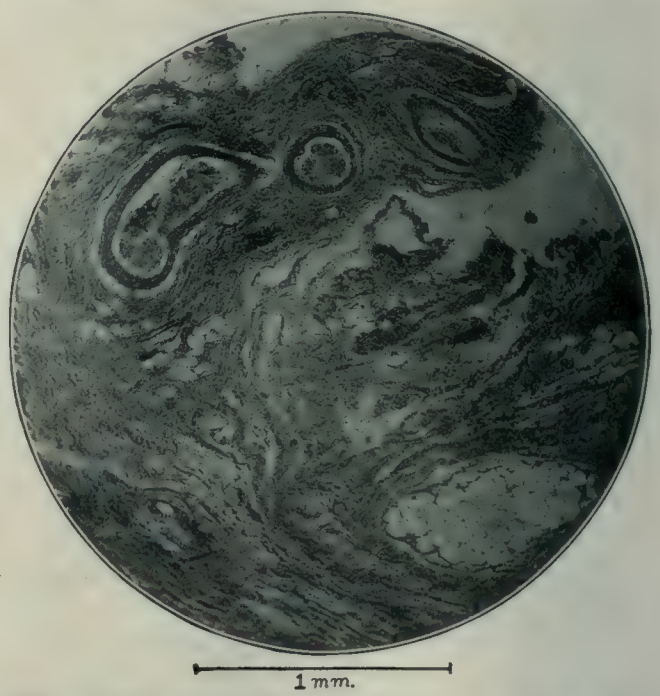


Fig. 7.—Third specimen: in upper part, sections of nerve; the fibrous sheaths are thickened; the changes have not yet been studied in detail, but it appears possible that the numbness of the skin may be related to such alterations in the nerves.

surface was mottled gray and dark brown, and was evidently extensively necrotic.

Microscopic: Sections from the floor of the wound cavity and from various places at its margin showed general inflammatory infiltration, and in several places small groups of the atypical squamous cells of the new growth.

Sections from the skin margin of the amputation wound disclosed that the skin was free from recognizable tumor cells. Even here, however, there was a definite excess of round cells in the lymphatic spaces about the subcutaneous blood vessels. There was also marked hyperkeratosis and parakeratosis of the epithelium.

Diagnosis: This was: Squamous-cell carcinoma of the distal phalanx of the right thumb, extending to the base of this phalanx. Mild inflammatory reaction at the site of the amputation incision at the level of the base of the first phalanx. Hyperkeratosis and parakeratosis of the cutaneous epithelium, even at the edge of the amputation incision.

COMMENT

It will be noted that the skin at a distance from the malignant lesion showed peculiar changes which bear a remarkable resemblance to some of those that have been described by Unna [2] in roentgen-ray dermatitis. The detailed consideration of these changes is beyond the intended scope of the present communication. We believe, however, that they are, in this case, related to radium exposure rather than to exposure to roentgen rays.

The accompanying illustrations are sufficiently explained by their legends. They are photomichrographs, not retouched.

We are willing to admit that the earlier work with roentgen rays throws some doubt on the causal relation of the radium to the lesions in this case. On the other hand, it is also evident that the exposure to roentgen rays was slight and somewhat remote in time in comparison with the more recent intensive exposure to large amounts of radium rays. It is at least clear that this exposure to radium has not sufficed to prevent the development of the carcinoma even if we would deny it any part in the causation. We are strongly inclined to the opinion that radium may, when exposure has been sufficient, give rise to changes in the skin predisposing to development of malignant new growth, much in the same way as roentgen rays are now generally known to do, and that radium has had precisely this effect in the instance before us. The reputation for harmlessness in this respect enjoyed by radium may after all depend on the fact that, so far, not very many persons have been exposed to large amounts of radium by daily handling over long periods. With the use of larger quantities of radium there is good reason to fear that neglect of precautions may result in serious injury to the radium workers themselves. For this reason the present case report has been presented.

SUMMARY

1. The patient worked with roentgen rays in his practice from 1905 to 1917 but not since then. Precautions for self-protection were carefully employed.

2. From 1912 to June, 1920, he handled radium, without precautions for self-protection, in small amounts up to 1915, but in quite large amounts from 1915 to 1920, from 200 to 365 mg. in individual tubes, taken between the right thumb and forefinger almost every day.

3. Various changes, which may be ascribed to the exposure to radium, began to be observed late in 1918, and since early in 1920 the skin changes have required constant care.

4. In September, 1922, a fissure on the ball of the right thumb manifested a peculiar and extremely painful alteration in character, and on excision in October this lesion proved to be a squamous-cell carcinoma.

2. Unna, P. G.: Die chronische Roentgendermatitis der Radiologen, Fortschr. a. d. Geb. d. Röntgenstrahlen **8**: 67-91, 1904-1905.

Clinical Notes, Suggestions, and New Instruments

FRACTURE OF THE HEAD OF THE FEMUR, WITH DISLOCATION ON THE DORSUM OF THE ILIUM

GUY HINSDALE, M.D., HOT SPRINGS, VA.

The great rarity of fracture of the femoral head makes this case worthy of record. It occurred in a woman, aged 55, whose weight was about 160 pounds (72.5 kg.). She fell in attempting to jump from a motorboat to a wharf; she had reached forward to take a hand offered to her, and in jumping tripped over the gunwale of the boat and fell on the wharf, striking her left hip. She was immediately conscious of a severe injury, and stated that she had dislocated the right hip joint. She was unable to rise or move the limb, and was carried a short distance to her home.

I saw her at the landing, and took her to her room, where an examination disclosed the thigh partly flexed; the foot inverted; the limb shortened, and a slight crepitus on effort at rotation. The deformity was typical of dislocation on the dorsum ilii. On rotating the femur with the leg flexed, I could easily feel the rotation of the trochanter. Dr. B. Farquhar Curtis of New York was kind enough to see the patient shortly afterward, and under ether both of us made ineffectual efforts to reduce the dislocation. On a long radius adduction and rotation in the usual manner to effect reduction of the dislocation, it was not possible to effect a permanent reduction. The head could be placed opposite the acetabulum, but would not enter. We thought that some ligament or the capsule intervened. Crepitus was felt in these attempts. The shortening was about 3 inches.

The following morning the patient was taken 30 miles to Portland, Maine, where a roentgenogram revealed a fracture of the femur with the fragment lying on the lower margin of the acetabulum. There was a posterior dislocation of the femur on the dorsum of the ilium. Dr. E. G. Abbott, to whose care the patient was consigned, operated the same morning, and after opening the joint removed the fragment and effected reduction of the luxation. The wound was closed and a Buck's extension applied to the limb.

The fragment comprised about one-third the head of the femur. It measured 15 by 35 by 30 mm., and included the insertion of the ligamentum teres. The roentgenogram showed this fragment plainly on the lip of the acetabulum.

Recovery was prompt and satisfactory. The extension was removed in three weeks and motion instituted at the joint. The patient walked in two months, and in four months was perfectly well.

As to causation, is it not possible that the catching of the foot on the side of boat turned the head of the bone out on the edge of the acetabulum, and in the fall the patient struck the trochanter or fell with bent knee on the lower end of the femur? In either case a violent shock to the femur, driving the head against the brim of the acetabulum, might have split the head, part of it breaking off, while the bulk of it slipped out of the joint, producing a posterior dislocation. Fracture of the head of the femur is so rare that Keen [1] says that only three positive cases have been reported. Cotton [2] states that the only cases he has seen have been associated with dislocation: "The last one was associated with a dislocation, now quite complete, occurring in a Charcot joint then in the early

1. Keen: Surgery, Philadelphia, W. B. Saunders Company **2**: 226, 1914.
2. Cotton, F. J.: Personal communication to the author.

stage." Of course, epiphyseal separations occur in children, but these are not what we are considering at present.

Keen refers to a case reported by Riedel and quoted by Hoffa which "resembled a backward dislocation of the hip, the operation revealing a splitting of the neck and head longitudinally."

In the case I have described, the strain exerted was comparatively slight, a misstep and fall; but the strain was exerted during an extreme position of the limb.

POSTINFLUENZAL HERPES ZOSTER

LESTER HOLLANDER, M.D., PITTSBURGH

The case here recorded presents a number of interesting points, in particular the after-effects of the recent influenza epidemic.

REPORT OF CASE

Mrs. W. D. W., aged 63, American born, a widow, seen, March 2, 1922, presented a marked vesicular eruption along the entire course of the eleventh dorsal nerve, beginning in the median line of the back and extending under the breast to the midclavicular line. The diagnosis of herpes zoster was unquestionable. The patient had been in perfect health during her entire life. There had been one pregnancy.

In March, 1919, she suffered a slight attack of influenza, which kept her in bed for three days. Her symptoms were mild and of the respiratory type. After getting up, she could not go through her daily routine as before, and she felt tired. Occasionally, she experienced vague pains, which her physician attributed to a gastro-intestinal toxemia, although there were no other symptoms except occasional lassitude, early exhaustion and vague pains.

After about a year, the patient was taken to a hospital, where a thorough search for a focus of infection or a manifestation of a metabolic disorder was made. As nothing was found, she was discharged.

In the fall of 1920, the vague pains, which continued, became localized about the sacro-iliac region, running down the left iliac fossa and about the thigh. This was considered from the angle of renal calculi, stricture of the ureter, sciatica and retrocecal appendicitis. The pains and discomfort remained the same for a few months. After a severe coryza, the symptoms became more marked, and they were accompanied by a vesicular eruption along the course of the sciatic nerve of the left side. No diagnosis was made; but the subsequent examination of the scars, their unilateral character, and the previous history stamps the condition as herpes zoster.

She was fairly comfortable from October, 1921, until January, 1922, when she again suffered pain and discomfort, in the right upper abdomen and right lower costal region. Examination, which was made for pleurisy, chronic appendicitis, gallstones, choleocystitis and duodenal ulcer, was without results.

About the middle of February, the patient had an attack of grip, and shortly afterward the pain about the chest became much more severe. It was followed by a herpetic eruption, which diagnosed as stated. A protective dressing controlled the eruption, which lasted about six weeks, drying off very slowly and leaving the skin highly sensitive to pressure, cold or heat. As the patient said, the skin felt "like cigaret paper."

Internally, large doses of neocinchophen were given, and eliminative measures were carried out. The pain, though less acute after the disappearance of the eruption, continued until July.

In June, the patient could not use her right arm on account of pain and discomfort. Shortly, she developed a brachial neuritis (neurologist's report). This increased in severity for about six weeks, and resulted in an ankylosis of the right shoulder, through disuse.

Although a fair amount of motion returned, the patient is at present (Jan. 3, 1923) still suffering with pain in her right arm and shoulder, the motion of which is greatly impaired.

COMMENT

This case presents several points of interest:

1. The history of a mild attack of influenza, with slow recovery.

2. Two attacks of herpes zoster, with a protracted and insidious onset, precipitated in each instance after an intercurrent infection.

3. The appearance of a brachial neuritis, which may again be shown, as on two previous occasions, to be a herpetic manifestation.

4. The apparent continuity and ascent of the involvement of the posterior root ganglions, sacral, dorsal and cervical.

The explanation which suggests itself is that, after the slight systemic influenzal attack, the infection became dormant in the posterior root ganglions and made its appearance as a chronic infection, with exacerbation at a time when the patient's resistance was lessened by an intercurrent infection.

625 Jenkins Building.

CASE OF CEREBRAL NEOPLASM SIMULATING DEMENTIA PARALYTICA, WITH OPERATION AND COMPLETE NEUROLOGIC AND MENTAL RECOVERY

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Neurologist, Hospital for Joint Diseases

That intracranial growths are often responsible for varied psychotic disturbances is well known to neuropsychiatrists. These mental changes may vary from mild alterations to grave psychic defects. Nor is the location of the tumor mass indicative or diagnostic of the psychosis which may be part of the clinical picture. In other words, it would be absurd to attempt localization of an intracranial mass on the evidence furnished by the psychic alterations. One has to depend entirely on the disturbances in neurologic functions for localizing data. Some modifications of these recognized observations may be made, however, in growths involving the frontal lobes. In this area, a fairly well defined psychotic picture unfolds itself, so that, in association with other neurologic signs, one may safely venture a positive localizing diagnosis.

The case here reported presented the neurologic signs and the psychiatric picture in a manner so vivid and clear cut that the diagnosis and localization were a matter of comparative ease. Since the mortality in brain tumors still remains discouragingly high, and this patient survived the operative procedures and made a complete mental and neurologic recovery, one is warranted in giving the sequence of events in an interesting neuropsychiatric syndrome.

REPORT OF CASE

History.—A man, aged 50, a butcher, gave a history that was uneventful until fifteen years ago, when he was struck on the right side of the head with a glass bowl. He was not rendered unconscious, and the scalp wound healed readily. Apparently, there were no disturbing factors until, within a few months after the injury, an insidious headache developed which, as the years went by, became increasingly worse. The pain was little abated by the ingestion of headache remedies in large amounts, taken over a period of fourteen years. The headache was more or less continuous and was worse at night. Although there was some remission in its severity, it was never entirely absent. The idea of suicide was often entertained by the patient as a relief from his miserable condition. Two years ago, he showed for the first time a decided personality change. He neglected and mismanaged his business, indulged in fantastic financial transactions, became unduly generous to friends and strangers, and thus managed to rid himself of all his money and business. Marked irritability of temper also became manifest, and memory defects, particularly for recent events. No gross conduct anomalies intruded themselves in the clinical picture, but an inordinate sense of well-being, particularly noticed by his relatives, became increasingly evident. Defects in the psychic and

* Presented before the Section on Neurology and Psychiatry of the New York Academy of Medicine, Dec. 12, 1922.

emotional sphere now became obvious by the development of alternating periods of depression and elation, indulgence in silly witticisms—the "witzelsucht" of the Germans—and minor infractions of conduct. At this time, a diagnosis of paralytica dementia was seriously entertained by his medical advisors. About one year ago, his vision became affected, and diplopia was complained of a number of times. There was no vomiting, vertigo or gait disturbance at any time during the course of the affection. The constitutional state remained excellent, the digestive system functioning in a normal manner. In spite of his condition, a steady gain in weight was noted. Sleep was disturbed on account of the headaches. Convulsive phenomena were present twice, six weeks before the operative procedure was undertaken. There was complete loss of consciousness both times, recovery being complete without residual phenomena of any type.

Examination.—There were no abnormal attitudes of the voluntary motor system. Gait and station were entirely normal. All coordinative tests were correctly performed. All skilled test acts showed no deviation from the normal. There was no dysmetria or other disturbances of dyssynergia.

The deep reflexes of the upper and lower extremities showed a greater activity on the left side than on the right side.

The superficial reflexes showed normal responses, with the exception of the left abdominal, which were elicited with difficulty and at best responded feebly. A suggestive pathologic extension of the great toe was present on the left side. There were no abnormal involuntary movements or demonstrable abnormal associated movements. The peripheral neural apparatus showed no pathologic alterations or impairment in its behavior.

The general sensory examination revealed no demonstrable deviations from the normal.

Cranial nerves: The pupils reacted promptly to light and accommodation. The fundi oculi showed marked narrowing of the arteries, engorged and tortuous veins, retinal hemorrhages, and edema around the nerve heads, with an elevation of 4 diopters in the right eye and 6 diopters in the left eye. The seventh nerve on the left side showed a central type of palsy, which manifested itself in voluntary efforts and emotional behavior. The rest of the cranial nerves showed complete functional integrity.

Serologic examination of the blood and spinal fluid was entirely negative.

Comment.—Thus, we have a history of trauma (a not uncommon provocative factor in brain tumors), headaches extending over a period of many years, grave psychic changes, which simulated paralytica dementia quite faithfully, and finally the development of left sided hemiplegic phenomena plus marked double choked disks.

Diagnosis.—In view of these findings, a diagnosis of right frontal lobe neoplasm was ventured and the patient was referred to Dr. Elsberg for operation.

Operation and Result.—A large growth occupied the right frontoparietal area, extending from the dura to the base of the frontal fossa, and displacing the brain mass in all directions for a considerable distance. It was readily removed, and proved to be an endothelioma, which had evidently taken its origin from the dura mater.

The patient showed no ill effects from the operation and no disturbing incidents marred his convalescence. There were no further headaches; the mental condition cleared up amazingly within a short time after the operation, and the elevation of the disks receded to normal, although some haziness of the nerve head with slight blurring of the edges still remains as the sole residual of the preexisting papilledema. The hemiplegic phenomena have disappeared, a very slight increase in the reflexes being still discernible as evidence of a former involvement.

At present, a little more than six months since the removal of the tumor, the patient is actively engaged in business and is apparently in excellent physical and mental condition.

370 Central Park West.

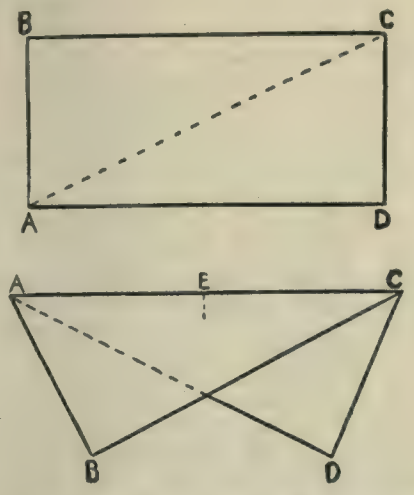
A DOUBLE TRIANGLE TOWEL SHOULDER-CAP

GEORGE DAVID CUTLER, M.D., BOSTON

I have found the folded towel shoulder-cap here described useful to retain dressings on wounds of the shoulder, the axillary region and the groin. It has been used successfully as a shoulder-cap in combination with a swathe following operations on the breast, especially to complete the dressing of the operation wound following amputation of the breast and dissection of the axilla.

A sterile towel measuring 18 by 36 inches is folded along the line *A C*. The folded towel is then placed over the shoulder so that the corner *B* falls back of the arm, and *D*, in front. *A* is tucked under the swathe posteriorly, and *C*, anteriorly. Safety pins are employed for fastening along the line of union of the shoulder-cap and the swathe. Corners *B* and *D* are then overlapped under the arm and pinned, finishing the dressing.

A towel so folded has also been found useful as a head bandage, for which use it varies only slightly from the triangular bandage. In this connection, it may be used as an operating cap. It is valuable for retaining dressings at the groin, as well as in the axilla. In the first instance, the



Double triangle towel shoulder-cap: method of folding.

points *A* and *C* are pinned beneath the opposite axilla. *B* and *D* are pinned under the arm on the affected side, with additional pinning at other points as required, especially in making a dart at *E*. For use at the groin, the points *A* and *C* are pinned together above the opposite hip and *B* and *D* at the inner side of the diseased or wounded thigh.

Its advantages over the triangular bandage are apparent only in the vicinity of the flexures of the body.

270 Commonwealth Avenue.

A CASE OF RENAL GLYCOSURIA

WILLIAM ALLAN, M.D., CHARLOTTE, N. C.

In defining renal glycosuria, Strouse[1] gives four points of differentiation from diabetes mellitus: (1) glycosuria without hyperglycemia; (2) glycosuria almost entirely independent of carbohydrate intake; (3) absence of diabetic symptoms, and (4) no subsequent development of diabetes mellitus. Paullin[2] has added a fifth characteristic in this condition, that sugar shall be constantly present in the urine.

That renal glycosuria shall not later become diabetes mellitus necessitates a prolonged observation of such patients, and this is the reason for reporting a case in which glycosuria was discovered eighteen years ago, the patient having been employed in a hospital for the sake of supervision for the

1. Strouse, Solomon: Renal Glycosuria, Arch. Int. Med. **26**: 768 (Dec.) 1920.
2. Paullin, J. E.: Renal Glycosuria, J. A. M. A. **75**: 214 (July 24) 1920.

last nine years. Bailey[3] has reported a case in which glycosuria has been known for ten years, and says, "The patient's history points strongly to this being a congenital condition." Strouse has observed a case for eight years, Garrod[4] and Bonninger[5] each one for six years, Goto[6] one for five years, and Paullin one for four years. Johnsson[7] has recently reported two cases of ten and sixteen years' duration, respectively.

REPORT OF CASE

History.—A white woman, aged 35, single, who had been sent to a clinic because of infected sinuses, was referred to me, Jan. 25, 1922, with glycosuria. For the preceding six weeks she had fever, headache and stopped nose, with infected left antrum and ethmoids; ten days before I saw her the nose "abscessed again," and the antrum had been washed the day before.

The mother died of heart trouble and cancer of the uterus at 50; the father was healthy at 80. The patient had four brothers, one with asthma, one with lung trouble, one with indigestion, and with some sort of kidney trouble. She lost a sister from chronic interstitial nephritis following childbirth. Two sisters were living, one healthy, one with ulcerated bowels. A third cousin died with diabetes mellitus.

The patient had had pertussis, measles, chickenpox and scarlet fever, but not typhoid or malaria. She had grip in 1912, and her sinus troubles date from this sickness; in 1919 she had influenza. At the age of 12 she had severe colic all one night, and again four years later; she had diarrhea with these attacks, but did not remember having either fever or vomiting. The pain was in the middle of the abdomen. In 1918 she had severe colic across the upper abdomen, requiring morphin. She had had a good deal of colic and constipation all her life. The menstrual history had been normal. At the age of 18 she was weak, nervous and short of breath; she had pruritus vulvae, and sugar was found in the urine. She did not remember having had at any time unusual hunger, thirst or polyuria. Her weight when 18 was 108 pounds (49 kg.); during the last seventeen years it had varied from 85 to 100 pounds (38.5 to 45 kg.). During the first nine years after glycosuria was discovered she took medicine intermittently, and once restricted her diet for a short time. During the last eight years she had been employed in the linen room at a hospital, where she was under medical supervision. She had dieted now and then, but never adhered to a diet long, though she once fasted four days. She said that during the last seventeen years the urine had never been sugar free at any examination; but, on the whole, she thought that she was as well as when sugar was first discovered.

Examination.—Because of the glycosuria, the patient was referred to me for treatment, preliminary to opening the sinuses. She was pale, thin and frail, having no appetite, thirst or polyuria, and suffering steadily and intensely from the infected left antrum. Five years before and again during the preceding year she had some swelling of the ankles. The skin was pale and transparent. The pupils were equal, and reacted to light and distance. The ocular movements were normal; there were no thyroid eye signs. The left antrum and ethmoids were infected. The throat, tongue and teeth were normal. There was no thyroid struma, and no enlargement of the superficial glands. The lungs were clear. The heart size and sounds, rate and rhythm were normal. The blood pressure was: systolic, 120; diastolic, 80. There was no tremor of the extended fingers. The abdomen was normal. The reflexes, joints and spine were normal. The height was 63 inches (160 cm.); the weight was 98 pounds (44.5 kg.). Blood examination revealed: hemoglobin, 90 per cent.; red cells, 4,464,000; white cells, 17,600. The urine was acid, with a specific gravity of 1.035; examination was negative for albumin, bile and indican: 4 per cent. glucose was present; microscopic examination was negative.

Treatment and Course.—Thinking this was a case of diabetes mellitus, I put the patient on a diet of 270 gm. of lean meat daily, and after six days increased this to 360 gm., with 3 ounces of thrice boiled cabbage. She began to show diacetic acid the second day, and edema of the ankles the third day of this regimen, and lost 7 pounds (3 kg.) in as many days. The glycosuria was undiminished, and on the eighth day the blood sugar, two and one-half hours after 90 gm. of lean meat, was 10 mg. for each hundred cubic centimeters, while the urine was still full of sugar. On the thirteenth day she was given 1.68 gm. of glucose for each kilogram of body weight. The blood sugar was 23 mg. two hours later, and 15 mg. three hours later. She was then given bread with each meal, and the diacetic acid disappeared after one day and the edema of the ankles after two days. Her diet was rapidly increastd until she was eating what she pleased, after two weeks of diet restriction in a vain effort to render the urine sugar free. During the following forty-one days on unrestricted diet the urinary output averaged 50½ ounces, with sugar constantly present, the amount excreted in twenty-four hours varying from 16 to 49 gm. Varying the diet had no constant effect on the amount of sugar excreted. On a diet containing protein, 104 gm., fat, 80 gm. and carbohydrate, 62 gm., the urinary glucose amounted to 23.5 gm. On protein, 62 gm., fat, 184 gm. and carbohydrate, 96 gm., only 16.5 gm. of glucose was excreted. On protein, 37 gm., fat, 42 gm. and carbohydrate, 68 gm., 39.5 gm. of glucose was excreted. Fermentation and phenylhydrazin tests confirmed the supposition that the urinary sugar was glucose. The phenolsulphonephthalein output was always above 50 per cent. in two hours. A radical sinus operation was performed under ether, February 18, with uneventful recovery. March 10, the patient was given 3.3 gm. of glucose for each kilogram of body weight. The blood sugar before was 12 mg., and two hours after, 13 mg. for each hundred cubic centimeters. In July and October, 1922, the patient still had marked glycosuria with normal blood sugar.

CONCLUSION

The various postulates for the diagnosis of renal glycosuria are fulfilled in this case, and a patient with known constant glycosuria for eighteen years has not yet developed any signs or symptoms of diabetes mellitus.

3. Bailey, C. V.: Am. J. M. Sc. **157**: 221 (Feb.) 1919; Studies on Alimentary Hyperglycemia and Glycosuria, Arch. Int. Med. **23**: 455 (April) 1919.
4. Garrod, A. E.: Brit. M. J. **2**: 850, 1912.
5. Bonninger, M.: Deutsch. med. Wchnschr. **34**: 780, 1908.
6. Goto, Kingo: Alimentary Renal Glycosuria, Arch. Int. Med. **22**: 96 (July) 1918.
7. Johnsson, A.: Finska Läk.-Sällsk. Handl. **64**: 429 (Sept.-Oct.) 1922; abstr. J. A. M. A. **80**: 70 (Jan. 6) 1923.

HEMATURIA AND APPENDICITIS

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Many cases of stone in the ureter have been mistaken for acute appendicitis, and appendectomy has been performed; but it is rather rare for appendicitis to be mistaken for stone in the ureter.

REPORT OF CASE

History.—C., a farmer, aged 52, was seized with a severe pain in the right upper abdomen, Dec. 23, 1922, which persisted for one hour and was relieved by hot applications. The following day, he had another attack of pain on the right side, radiating to the scrotum and the head of the penis. He took castor oil, and felt relieved. He noticed that blood was present in the urine.

During the night, he had another attack of pain, which was so severe that he called a physician, who gave him a hypodermic of morphin and atropin. It was necessary to give three-quarters grain of morphin in order to relieve the pain. He was advised to enter the hospital, but refused. There was no rigidity of the abdominal muscles, and no nausea or vomiting.

The following afternoon, he had another severe attack of pain, radiating from the lumbar region anteriorly and into the scrotum, and he passed more blood. He now consented to be removed to the hospital.

Examination.—He was admitted at 11 p. m., December 25. At this time, his temperature was 98.8 F.; pulse, 88; respiration, 20; leukocyte count, 10,400. Urinalysis revealed a specific gravity of 1.030, a trace of albumin, a few red blood cells and casts ++++. Otherwise, the physical examina-

tion was practically negative. On account of the findings, a working diagnosis of right ureteral calculus was made.

The following day, however, he passed but 13 ounces (390 c.c.) of urine, which had a heavy trace of albumin and casts ++++. He complained of being drowsy, but felt comfortable otherwise. The blood pressure was: systolic, 130; diastolic, 85. Hot packs were employed, and he was given plenty of fluids, and in forty-eight hours, the urinary output increased to 35 ounces (1,050 c.c.), the casts and blood disappeared, and he felt better in every way. Roentgen-ray examination of the right kidney and ureter regions was negative for ureteral calculi. On cystoscopic examination, a No. 5 French catheter met some obstruction about 4 inches (10 cm.) from the ureteral orifice on the right side, but there was some urine coming from the kidney. The left kidney and ureter were normal. The patient felt comfortable. There was no rise in temperature, and the leukocyte count remained at 10,500. Following cystoscopic examination, there was some local tenderness on deep pressure in the right iliac fossa.

Operation.—A modified Gibson incision was made, and the lower ureter was isolated, but no evidence of a calculus was found. There was no thickening of the ureteral wall and no dilatation. On palpation, a small mass was felt within the peritoneum, and this led us to open the general cavity rather than continue toward the kidney. A gangrenous appendix dipping over the pelvic brim was found, the perforated tip being bathed in about 1 dram of colon pus. This was removed; a cigaret drain was inserted, and the wound was closed in layers.

The patient had an uneventful convalescence.

COMMENT

The case history and urinary findings, together with the lack of fever and local tenderness in the right lower quadrant of the abdomen, were sufficient grounds for a working diagnosis of ureteral calculus. The sudden decrease in urinary output following admission to the hospital also pointed to a kidney lesion.

The position of the appendix, which was lying on the ureter just below the pelvic brim, was probably the cause of the hematuria and the referred pain. It is also possible that there was sufficient congestion of the ureter at this point to interfere with the passage of the catheter.

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A SIMPLE METHOD OF USING GIEMSA'S BLOOD STAIN

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The customary method of using Giemsa's stain by employing the freshly diluted stock solution, 1:10 or 1:15, with distilled water, makes the use of this excellent stain somewhat troublesome and expensive. The procedure here described simplifies the method, saves stain, and makes it almost as easy to use as is Wright's stain or its modifications. The blood film is fixed by immersing the slide in a jar of methyl alcohol or by pouring the alcohol over it. A half minute appears ample time. After drying, the film side is covered with distilled water, and from three to five drops of the stock Giemsa stain is added to the water in different portions of the slide. A slight rocking of the slide insures uniform mixing of the stain and water. The mixture of the stain and water is allowed to act for about fifteen minutes. The stain and water are then washed off with distilled water until the film appears pink. The results appear more uniform and certain than they do in the use of Wright's stain or its modifications for the formed blood constituents, and are particularly good in the case of malaria parasites.

Nucleoprotein in Tubercle Bacilli.—While it has been known for a long time that nucleoprotein constitutes a considerable part of the cell of tubercle bacilli, it was not until 1898 that an attempt was made to separate a nucleic acid from this organism.—Johnson and Brown, *J. Biol. Chem.*, December, 1922.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 401)

[NOTE.—This is the seventh of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

THE ARTIFICIAL FEEDING OF INFANTS

A critical study of the work of the last fifty years in the artificial feeding of infants shows that the morbidity and mortality of infants has been definitely lowered. This has been brought about largely through a better understanding of the biology and chemistry of milk, and through applying to its collection and preservation the knowledge of the laws governing the incidence and growth of bacteria.

The progress during the last decade in the artificial feeding of infants may be summarized in the statement that the one great step that has placed their feeding care on a sound basis is that their physiologic requirements are now given first consideration. This has been made possible through a better understanding of individual needs in fat, protein, carbohydrates, salts, accessory food factors and water, to secure body growth and development.

General rules may be laid down for the average full-weight and robust infant (fortunately, in the majority) who only requires supervision over his reaction to a properly balanced diet. But there remains a considerable number comprising (1) infants born congenitally weak, and (2) infants who have developed pathologic conditions secondary to food disturbances and infections. These will require the *strictest individualization* in the selection and application of their diets.

If conclusions were drawn leading to the belief that our knowledge of artificial feeding is complete, great injustice would be done to the infant. Indeed, much is to be hoped for as our information on this subject advances, and this applies with equal force not only to the feeding of the exceptional and sick infant but also to the feeding of the normal child.

Laxity in the regulation of the feeding care of the infant during its first weeks is one of the greatest obstacles to a more complete success, for in this period the pathologic foundation is laid on which nutritional disturbances develop. The successful feeding of infants depends, therefore, on the recognition of the necessity of (1) a proper interpretation of the needs of the individual infant, and (2) experience on the part of the physician in meeting those needs.

COW'S MILK AND GOAT'S MILK

It cannot be too strongly emphasized that artificial feeding must not be considered as a substitute for breast feeding but only as an emergency measure. The best alternative is feeding with properly modified milk of other animals, and, for practical reasons, cow's milk and goat's milk have been found best suited for this purpose. Because of the marked chemical, physical and biologic differences between human milk, and cow's

and goat's milk, human milk is superior to the others in infant feeding. The differences are greater than Table 5 indicates.

COW'S MILK

Cow's milk is more opaque than human milk, although the latter may contain a greater percentage of fat. This is due to the opacity of the calcium-casein, present in greater proportion in cow's milk. Cow's milk is faintly acid or amphoteric when freshly drawn, but ordinarily is distinctly acid in reaction when consumed. Human milk is amphoteric or alkaline.

TABLE 5.—COMPARATIVE ANALYSIS OF BREAST, COW'S AND GOAT'S MILK

Reaction	Human Amphoteric or Alkaline	Cow's Amphoteric or Acid	Goat's Amphoteric
Specific gravity	1.010 to 1.040	1.029 to 1.034	1.030
Proteins	1.5 to 2.0%	3.5%	3.76%
Caseinogen	0.5 to 0.75%	3.02%	2.87%
Lactalbumin	1.23%	0.53%	0.89%
Effect of rennin	Clots in fine curds	Large curds	Large curds
Fat	3.5 to 4.0%	4.0%	4.0%
Lactose	6.0 to 7.0%	4.5%	4.5%
Salts	0.2%	0.75%	0.85%
Total solids	12 to 13%	13 to 14%	13.0%
Water	86 to 88%	86 to 87%	86 to 87%
Bacterial content	Practically sterile	Never sterile	Never sterile

Three times as much protein is found in cow's milk as in human milk. The reason for this is obvious when we recall that the ratio of growth of the calf to that of the infant is about as 2:1. Furthermore, the protein in cow's milk consists chiefly of casein (3.02 per cent.) and a little lactalbumin (0.53 per cent.), while human milk contains from 0.5 to 0.75 per cent. of casein and 1.23 per cent. of lactalbumin. The sugar in the two milks varies greatly in amount but not in kind. Cow's milk contains more than three times the amount of inorganic salts in human milk.

Infants on whole cow's milk, therefore, live on a higher plane of mineral metabolism than infants on breast milk. Owing to a similar proportionate content of salts in the two milks, simple dilution, while equalizing most of the salts, will leave others either in excess or insufficient. Fortunately, excessive amounts of milk salts are rarely harmful to normal infants, as those in excess of the body needs are excreted. The greater danger lies in mineral starvation or a diet improperly balanced in its mineral content. The importance of salts to body function and growth in the artificially fed infant will be considered later in detail.

There is no great difference in the average amount of fat in the two milks; however, both in human milk and in cow's milk fat is the most variable constituent.

The curd from cow's milk is usually tougher and forms in larger masses than in human milk. There are also differences in antibodies, ferments, etc.

Protein.—The protein in cow's milk consists of insoluble calcium caseinate and soluble lactalbumin, lactoglobulin, mucin and opalisin. Of these, the casein (85 per cent.) and lactalbumin (15 per cent.) form the greater part of the protein content, the others existing in negligible quantities.

Casein.—This is in suspension, and is rapidly precipitated by weak acids and by rennin, but it is not coagulated by boiling. The casein of raw cow's milk precipitates as large, tough curds, thereby differing from the fine, flocculent curd of human milk. The physical properties of cow's milk curds can be changed by boiling the milk, and by adding alkalis, such as sodium citrate, sodium bicarbonate and lime water. Following such additions, the curd becomes finely divided, resembling the curds of breast milk. By the addition of cereal water in the milk dilution, a similar effect is obtained through the mechanical fragmentation of the curd by the interspersed starch particles. Splitting of the curd shortens the period of digestion, the finer curds passing the pylorus more readily, which brings them in contact with the intestinal juices in a shorter time.

Lactalbumin.—This is not coagulated by acids or by rennin, but is coagulated by heating to 72 C. or higher.

Fats.—The fat is suspended in the milk serum as an emulsion. The droplets or globules vary in size; on the average, they are smaller in milk from Holstein than from Jersey, Guernsey or shorthorn breeds. The fat droplets are lighter than the milk serum and therefore rise on standing (gravity cream), or they may be readily separated by centrifugal force (centrifugal cream). The chemical composition of the fat of cow's milk differs from that of human milk in that it contains more tripalmitin and less triolein. This difference is of practical importance, since the calcium and magnesium soaps of palmitic acid are much less readily absorbed from the intestinal tract than are the soaps of oleic acid. Cow's milk also contains a considerable proportion of glycerids of the lower or volatile fatty acids, which under certain circumstances may irritate the intestinal tract, resulting in diarrhea. Not only is there difference in the size of the fat droplets from certain breeds of cattle, but the average total fat content varies very materially. The average fat content for different herds as given by Van Slyke and Publow,[17] is reproduced in Table 6.

Lactose.—This is the principal sugar in both cow's and human milk, its chemical composition in the two being identical. Average human milk contains from 6 to 7 per cent., and cow's milk from 4 to 5 per cent. The larger sugar content of human milk, with its fermentation, accounts for the laxative effect of breast-milk feeding when the milk is abundant.

Salts.—Salts are necessary in digestion and in every step of metabolism, from absorption to secretion and excretion. The rôle of salts in both normal and pathologic conditions has assumed increased importance under the investigative studies of the last few years.

TABLE 6.—FAT CONTENT OF MILK OF VARIOUS HERDS

Breed	Fat Percentage
Holstein-Friesian	3.26
Ayrshire	3.76
American Holderness	4.01
Shorthorn	4.28
Devon	4.89
Guernsey	5.38
Jersey	5.78

Human milk contains 0.2 gm. of ash in 100 c.c., and cow's milk 0.75 gm. The difference in percentage in human and in cow's milk is equalized, as the body uses only what is necessary for its life and growth.

All the salts except those of iron are in larger amounts in cow's than in human milk. Cow's milk contains relatively a very large amount of calcium phosphate, while the amount of iron in cow's milk is less than that in human milk. Human and cow's milk differ greatly in the form of the phosphorus content.

17. Van Slyke and Publow, quoted by Heineman (Footnote 24).

In human milk, three quarters of the phosphorus is in organic combination, while in cow's milk only one quarter is so combined. Neither in human nor in cow's milk is the iron content sufficient to meet the demands in the first year of life; the infant must depend on the iron stored during the fetal life.

The percentages and grams of the different salts of human and cow's milk, as found in 100 parts of ash, are given in Table 7.

TABLE 7.—SALTS OF HUMAN AND OF COW'S MILK

AVERAGE PERCENTAGES OF DIFFERENT SALTS IN THE ASH							
	CaO	MgO	P_2O_5	Na_2O	K_2O	Cl	Fe
Human milk.....	23.3	3.7	16.6	7.2	28.3	16.5	0.00015*
Cow's milk.....	23.5	2.8	26.5	7.2	24.9	13.6	0.00007*

GRAMS OF SALTS FOR EACH HUNDRED CUBIC CENTIMETERS OF MILK							
	CaO	MgO	P_2O_5	Na_2O	K_2O	Cl	Fe
Human milk.	0.0458	0.0074	0.0345	0.0132	0.0609	0.0358	0.00017*
Cow's milk..	0.172	0.02	0.2437	0.0465	0.1885	0.082	0.00007†

* Holt, L. E.; Courtney, A. M., and Fales, H. L.: A Chemical Study of Woman's Milk, Especially Its Inorganic Constituents, Am. J. Dis. Child. **10**: 229 (Oct.) 1915.
† Langstein and Meyer: Säuglingsernährung und Säuglingsstosswechsel, Wiesbaden, J. F. Bergman, 1914, p. 22.

In all the constituents except phosphorus pentoxid and iron, the percentages of the different salts in the two milks are practically the same. The higher proportion of phosphorus in cow's milk is due to the large amount of casein. While the *proportion* of salts in cow's milk is nearly the same as in human milk, the *amount* is about three times as great. Unless, therefore, cow's milk has been diluted with more than twice its volume, these inorganic constituents are furnished to the infant in equal proportion to that in human milk (Holt). Human milk contains about twice as much iron as cow's milk, and dilution of cow's milk results in a decrease in the iron content which must not be carried too far unless supplemented by other iron-containing food.

Ferments.—Cow's milk contains a number of ferments, but little is known of their value to the infant. Escherisch and Hamburger thought that they had a favorable influence on the processes of metabolism. Salge discovered that tetanus and diphtheria antitoxins could be utilized by the infant only when found in human milk, while when contained in the milk of other species they did not get into the body fluids.

Vitamins.—Cow's milk contains fat-soluble A in considerable quantity, and water soluble B and C in lesser amounts.

Bacterial Content.—The bacteria of cow's milk vary in kind and number, depending on the conditions under which the milk is collected, preserved and handled. While human milk may be either sterile or have a low bacterial content, cow's milk is never sterile, and only too frequently, through carelessness, the original flora multiply rapidly. Certified, pasteurized and sterilized milk was the practical outcome of the efforts made to obtain germ-free milk for infant feeding.

The harmful or undesirable micro-organisms occurring in milk are of two classes. (1) Those that are definitely pathogenic and capable of producing infectious disease. Examples are the typhoid and dysentery groups, the tubercle bacilli, the virus of scarlet fever and *Bacillus abortus.*[18] (2) Saprophytic bacteria, some of which decompose milk and form products capable of causing gastro-intestinal disturbances.

18. Fleischner, E. C., and Meyer, K. F.: Bacillus Abortus, Bovinus in Certified Milk, Am. J. Dis. Child. **14**: 157 (Sept.) 1917.

Of the nonpathogenic organisms, those most frequently found are the lactic acid-producing bacteria. The most common types are: *Streptococcus lacticus, Bacillus lactis-acidi, B. Lactis-aerogenes, B. bulgaricus, B. acidophilus* and *B. bifidus.* The micro-organisms producing only lactic acid are mostly harmless, and the lactic acid itself in the amounts produced in milk does not cause diarrhea when fed. In fact, the production of lactic acid leads to the destruction of many of the more harmful varieties of bacteria in milk.

The butyric acid group is also frequently present. This group produces butyric acid by its action on sugar and fat. Another group frequently found in milk are the proteolytic bacteria, which coagulate the milk and may cause a further splitting of the protein. *Bacillus coli,* which, as well as others, has the property of producing lactic acid; *B. proteus, B. alkaligenes,* the hay bacillus, *B. aerogenes-capsulatus* and others belong to this group. Most of the latter are sporebearing.

Slime-forming bacteria occasionally invade the milk. Among the most tenacious of these is *B. lactis-viscosi. Streptococcus lacticus* occasionally causes similar changes. At times the milk becomes bitter, because of the formation of peptones by contaminating organisms. Certain vegetables and plants may cause a similar taste in the milk. Occasionally a milk of reddish color is seen. This may be due to blood from the udder, or to the action of *B. prodigiosus.* A blue milk is even more common, and is due to *B. cyanogenes.* Protein and carbohydrate splitting yeasts and molds not infrequently invade the milk and cause changes that become more evident as the milk grows older.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

DIPHTHERIA IMMUNITY TEST (SCHICK TEST)

(See New and Nonofficial Remedies, 1922, p. 320).

Parke, Davis & Co., Detroit.

Diphtheria Toxin and Control for Schick Test.—Marketed in packages containing one vial of 0.1 Cc. of undiluted, standardized diphtheria toxin, one vial of 5 Cc. of sterile physiologic solution of sodium chloride, one vial of 5 Cc. of diluted control for the Schick test, and one sterile syringe point in a sealed glass tube. The dose is 0.1 Cc. of the diluted toxin or 1/50 of the minimum lethal dose of diphtheria toxin for a guinea-pig of 250 Gm. weight: each package, therefore, contains material sufficient for 50 doses. The control for the Schick test represents diluted diphtheria toxin heated sufficiently to destroy the specific exotoxins.

Course of Training Needed for Physiotherapists.—My suggestion to this organization is to endeavor to establish a course of training and to get this recognized by the state and made acceptable to the medical profession. If you are going to organize this field, the standards must be high enough to keep out the ignorant and unscrupulous. Otherwise, hundreds of people with only a common school education, without any special training, will be brought in, and the name is apt to fall into disrepute and the profession became the refuge of broken-down boxing masters who empirically use its methods in a symptomatic way.—R. L. Wilbur, *California State J. Med.* **21**:25 (Jan.) 1923.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 17, 1923

THE DISTRIBUTION OF METABOLITES IN THE BODY

In a recent essay on the nonprotein nitrogen of the blood in health and in disease, Folin [1] remarked that the reasoning power of the earlier clinical investigators of the blood was necessarily much superior to their analytic skill or their meager laboratory facilities. Furthermore, their analytic data could have been little more than mere ornaments attached to good, logical conclusions. Nevertheless, as Folin points out, the correctness of the concept that waste products must accumulate in the blood when the kidneys fail to perform their function in the formation of urine was established as early as 1821, when Prevost and Dumas showed that extirpation of the kidneys was followed by a gradual increase of the urea content of the blood —a finding repeatedly verified by investigators since that time.

Logic and correct guesses are now being supplanted by accurate analytic observations in the chemical study of the blood, a procedure that is already destined to become a part of the routine of the medical clinic. As an outcome of what has already been ascertained from numerous analyses, it is evident that certain constituents, such as sugar, urea, creatinin and uric acid, which can now be estimated on small samples of blood, are present in the circulation during health in relatively constant and fixed proportions, whereas they are subject to decided changes in concentration in certain diseased states in which they may actually become indicative of the pathologic situation. Whether or not these fluctuations are reflected in changed concentration of metabolites in the tissues also has been ascertained for a few of the substances. There is no doubt that the readily soluble and diffusible urea penetrates speedily to all parts of the body. Recently Rypins [2] of the Department of Medicine at the University of Minnesota has made new comparisons of the distribution of metabolites between the blood and other body fluids. Although his studies with ingested urea indicate that during the period of its elimination there is no constant parallelism in the concentration of nitrogenous metabolites of the blood and tissues, both the estimation of the body fluid metabolites and the comparison of metabolites in the blood and tissues strongly suggest a tendency to equilibrium throughout the organism. This, Rypins adds, does not necessarily mean that a normal concentration of metabolites in the tissues approximates that in the blood; it means that the metabolites are distributed between them in a fairly constant proportion, and that an increase in one is paralleled by a proportionate increase in the other. No characteristic difference in the metabolite concentration of exudates and transudates was observed. In cases in which the blood metabolite level was increased, the metabolite concentration in the fluids varied *pari passu* with the changes in the blood. Pending the contribution of contradictory evidence, it may be tentatively concluded, therefore, that the facts secured by chemical analysis of the blood give an index of the concentration of metabolites throughout the body.

1. Folin, Otto: Non-Protein Nitrogen of Blood in Health and Disease, Physiol. Rev. **2**: 460 (July) 1922.
2. Rypins, Harold: The Distribution of Metabolites in the Blood and Tissues, Arch. Int. Med. **30**: 578 (Nov.) 1922.

SEASONAL VARIABILITY OF DISEASE

It is well known that the frequency, severity and mortality of many diseases vary with different seasons of the year. That acute respiratory infections reach a peak in the late winter months, with a minor peak in the late autumn, is attributed to a lowered local resistance to infection with the unknown virus of "common colds" and the known pathogenic cocci, although as yet we have no satisfactory explanation as to why the exposure to cold lowers the resistance. To be sure, a physical chemist, Schade, would attribute to a decreased dispersion of the tissue colloids on cooling the increased vulnerability to bacteria, but this is pure hypothesis and does not explain how the invading bacteria fail to suffer a correspondingly reduced activity when chilled. In the lower animals, seasonal changes in metabolism are well recognized, such as the hibernation of some species, and the seasonal variation in reproductive activity, as well as the variations in growth of hair, feathers and antlers. Beckmann,[1] in a consideration of the effect of season on disease, attributes the absence of such marked seasonal alterations in man to the fact that with higher development comes a better regulating mechanism against extraneous influences. But even in man there are distinct alterations in metabolic activity at different times of the year. Thus, measurements have shown that in spring the hair grows more rapidly than at other times, while body activity as a whole is lessened in winter, so that the usual amount of time spent in sleep is much increased over the summer sleep among people not too artificially regulated by customs and alarm clocks.

1. Beckmann, Kurt: Jahresschwankungen in der menschlichen Physiologie und Pathologie, Deutsch. med. Wchnschr. **48**: 1409 (Oct. 20) 1922.

Presumably this is related to hibernation in other species. It is said that pulse rate, temperature and respiration are highest in winter, and recently it has been found that the height of the capacity of the blood to bind carbon dioxid is reached with the shortest days of the year. In the spring there is a distinct fall in the carbon dioxid tension of the blood, which implies a decrease in the alkali reserve.

Although these variations are exceedingly small, they gain in the possibility of significance through the fact that they appear at the time of year when most diseases of seasonal variability are making themselves manifest, excluding diseases dependent on such obviously seasonal matters as insect transmission and food supply. Perhaps the reaction change has some influence on the endocrine glands, for there is not a little evidence that hibernation depends on these organs, and the same thing is true of some of the noninfectious diseases that show seasonal variations. For example, Moro found that the incidence of juvenile tetany increases in January and February, rising to a peak in March, and falling nearly to zero in the summer. The galvanic irritability follows a similar curve, and in guinea-pigs a seasonal variation has been found in respect to their sensitiveness to caffein. These facts may be related to the statistical evidence that mental stability may show a seasonal change, for the suicide curve is said to rise in the spring, with a maximum in May or June, in various parts of Europe, despite marked variations in climate. Other mental disturbances follow a similar curve, but in some types with a second rise in the autumn. Hyperchlorhydria is said to show a distinct rise in the spring and autumn, and hyperthyroidism has been placed among the conditions that show such a double curve. The seasonal character of some diseases, such as rickets and certain cutaneous disorders, is explainable on a basis of altered sunlight; with others, the dietary variations are probably responsible. Less clear are those conditions that exhibit a frequency peak in both spring and autumn, among which, besides those mentioned above, Rusznyák [2] lists not only the acute respiratory and throat infections, but also tuberculosis, nephritis and rheumatism, as well as the neuroses, which often have a higher peak in autumn than in spring. This author suggests that the change from winter to summer, or from summer to winter, arouses an adaptive mechanism, the activity of which produces a condition of instability during these transition periods, and hence pathologic conditions become more conspicuous until seasonal adjustment is completed. As yet there can be said to be no approach to a solution of these problems, which so far have not received much consideration as the important factor in human disease which they apparently are. Evidently, in large part, they depend on external influences; but their periodicity does not always correspond to these, and therefore it is probable that some internal influence also is involved, as in the hibernating animals, which do not awake completely if brought into a summer temperature, but continue for some time to manifest the lowered metabolic activity that characterizes their sleeping period.

2. Rusznyák, Stefan: Krankheiten und Jahreszeiten, Wien. Arch. f. inn. Med. **3**: 379, 1922.

PROPOSED LEGISLATION REDUCING FEDERAL NARCOTIC TAX

Through the efforts of the Bureau of Legal Medicine and Legislation of the American Medical Association, and with the cooperation of Dr. John J. Kindred, a fellow of the Association and the representative in Congress from the Second New York Congressional District, a bill has been introduced for the reduction of the tax imposed on physicians and certain related professional groups by the Revenue Act of 1918, to the merely nominal amount, one dollar a year, originally provided in the Harrison Narcotic Law.

The Harrison Narcotic Law was enacted in the discharge of international obligations the United States government had assumed, looking toward the control of the traffic in habit-forming drugs. It took the form of a tax measure, not because of any intention on the part of the government to make the traffic in such drugs a source of revenue, but because in no other way could the federal government obtain the control it had obligated itself to assume. In the execution of the project, it became necessary to obtain jurisdiction over the physician, as one of the agencies through which habit-forming drugs are distributed, and for that purpose alone a nominal tax was imposed. To this, no objection was raised; it was looked on by the profession as a step necessary in the fulfilment of an international obligation, and was accepted accordingly.

When the Revenue Act of 1918 was framed, the United States had incurred a large indebtedness on account of the World War. New sources of revenue were being sought, and taxes already established were being increased; and in the course of its search for increased income, Congress amended the Harrison Narcotic Law, and trebled the tax. Then the tax ceased to be a mere incident to the discharge of certain police duties voluntarily assumed by the federal government, and became nothing more or less than an occupation tax. There was no more reason for imposing an occupation tax on the physician than for imposing such a tax on the lawyer, the architect, and on other professional and vocational groups, except that opportunity was given through the tax already imposed. But it was a war-time measure, and the medical profession, which as a body had probably already contributed proportionately more of its resources to the country's defense than had any other group, hesitated to enter complaint.

The war has been over now for more than four years, and during that time the Revenue Act of 1918 has been revised. Still the three dollar tax is being collected, and it will be collected until Congress other-

wise directs. On the face of the law, the tax is small; in the aggregate, it is not. The records of the Treasury Department do not permit a statement of the amount paid by physicians alone, but from the medical group —comprising physicians, dentists and others engaged in the practice of the healing arts—and from hospitals, in the fiscal year 1922 there was collected $573,413.84.

The imposition of this tax on the practice of medicine cannot be justified on the ground that the revenue is necessary to pay the cost of enforcing the law. The law is for the general good, and there is no reason why the physician should defray any greater share of the cost of enforcement than is paid by others. Moreover, the taxes collected under the law are largely in excess of the amount expended for its enforcement; for the amount collected during the fiscal year 1922, from all sources, was, according to the annual report of the Commissioner of Internal Revenue, $1,269,039.90; and the cost of enforcing the act was but $658,728.77. Even if a liberal allowance is made for overhead and incidental expenses of enforcement, not included in the cost as officially stated, it seems safe to say that the United States, during the fiscal year 1922, under the Harrison Narcotic Law alone and to the exclusion of all receipts from customs revenues on narcotic drugs, realized a half million dollars net profit.

On no sound, discoverable basis can the present tax of three dollars a year on physicians, under the amended Harrison Narcotic Law, be justified. To the extent that the tax is in excess of the minimum necessary to give the federal government jurisdiction over the physician as an agency engaged in the distribution of habit-forming drugs, it is an occupation tax, unjustly discriminating against the medical profession and the allied groups subjected to its exactions. It is for the physicians of the country to see that the tax is discontinued, or at least reduced to the amount named in the original law, one dollar a year: if not by this Congress, then by the next.

DAVID HARUM: MONUMENT TO A PHYSICIAN

One of the literary events of the year, the celebration of the twenty-fifth anniversary of the publication of "David Harum," one of the most popular novels of the last century, has a particular interest for physicians. Its author was the son of a physician; indeed, the quaint character David Harum was a reflection of Dr. Amos Westcott, the author's father. Dr. Westcott was well known as a physician as well as one of the most conspicuous citizens of Syracuse, N. Y., during the mid-nineteenth century. Incidentally, he was the honored and respected mayor of that city during part of the Civil War. Moreover, Edward Noyes Westcott wrote the book while dying of tuberculosis, and would probably never have had the chance to demonstrate the fact that he had the literary power that he possessed except for the enforced leisure that his disease compelled him to take. He had previously been a teller in a bank. When he had to give up work and live outside, he had much time for thought, and the book "David Harum" shaped itself in his mind. In spite of the suffering from laryngeal tuberculosis, which complicated his lung condition and which must have added greatly to the difficulty of writing, he succeeded in getting the manuscript written.

The fact that the book was different, which eventually gave it widespread popularity and immense sale, proved a handicap as regards its acceptance. The manuscript was sent to publisher after publisher, who refused it, usually with a formal note of declination. It is easy to understand how discouraging this must have been for a man who knew that he was seriously ill, and who, in spite of the hopeful attitude, *spes phthisica,* characteristic of his affection, must have had more than an inkling of the fact that his end was probably not far off. Undaunted, he kept on readdressing the manuscript, giving it certain touches at each new rejection, and finally, in January, 1898, it was accepted by Appleton. The cordial words of praise which accompanied the acceptance of the manuscript proved a wonderful tonic. As the author himself said, "They were more welcome than any gift I could have received." It is not surprising that just after this his health seemed to improve, though he was in the last stages of the disease, and the laryngeal complication was making life miserable.

He died without having seen a copy of his book in print. His friend and biographer, Forbes Heermanns, commenting on the possibility that Westcott did not in any way even suspect the wonderful popularity that "David Harum" was to have, cannot help but find a hint of his hopes with regard to it from certain passages in the book itself. He knew enough about life, however, to appreciate thoroughly that romantic anticipations are seldom realized, and that life has at least as many disappointments as fortunate events. Not a few of these are due to the fact that the good things of life do not come in on time. As his biographer said, "Yet when we read in Chapter XLVII his own words 'Many of the disappointments of life, if not the greater part, come because events are unpunctual, they have a way of arriving sometimes too early, or worse, too late'; their pathetic significance is now profoundly impressive."

Even had his book never been published, it is probable that it would have been well worth while for Edward Westcott to write it. No one, probably, would have appreciated this fact better than did the author of "David Harum," for it was his memories of his father, the old-fashioned physician whose patients were his friends and neighbors and whose knowledge of human nature was almost more valuable to him in his practice than his knowledge of medical science, that he recalled for the book. Contact with that father physician must have made the author of "David Harum" realize clearly the value of not allowing the "blue devils" of discouragement to add to his discomfort, decrease his resistive

vitality, and make life much more miserable than even his disease was making it. The author wrote to his publishers, "I have lived with and among the people I have written about. My father was 'born and raised' on Buxton Hill; and a great many of David's peculiar figures and sayings were constantly popping out in my father's diction."

It is this that would make "David Harum" worth the reading by the modern physician now after twenty-five years. Many of the expressions used by the hero smack of the old-fashioned country practitioner whose wisdom so often enabled him to do so much more in his duties as a physician to his patients, than the knowledge of the modern, ever so much better educated scientific physician of our day helps him to accomplish. "Knowledge comes, but wisdom lingers." His wisdom enabled old Dr. Westcott to perform very satisfactorily the three duties dependent on a physician, to cure whenever he could, though that might be rarely enough, to relieve nearly always, even with the meager means at his command, but to console always and give his patients new spirit and vital resistance. As a result of this there are some interesting anticipations of ideas in medicine that are supposed to be the latest things in practice.

Typical examples are not hard to find. David Harum's expression, "You want to change your feed once in a while or you may git the colic," is one instance. It pleads for variety in diet quite as strongly as the modern expert in physiologic chemistry would insist on it. One can just imagine the old country doctor who might not have known very well what was meant by psychotherapy and might have shied at mental suggestion or the necessity for diversion of attention, but who felt in his bones as the result of experience that "A reasonable amount of fleas is good fer a dog—keeps 'em from broodin' over bein' a dog, mebbe." Only the doctor habit of mind would have supplied such a figure as that contained in his reference to his stepmother: " 'T wa'n't so much slappin' an' cuffin' with her as 't was tongue. She c'd say things that'd just raise a blister like pizen ivy." Surely the physician who had had large experience among the poor would be the one above all to formulate that ancient biblical expression in such modern familiar language as brings it home to every one, "Them that has, gits."

The last, but not the least interesting, feature for physicians is that of course his old-fashioned physician father left him no money to speak of, and whatever little savings had been made from the moderate salary of a bank teller in those days were exhausted by the lingering illness and the necessity for special care with its attendant expense. He left his family little at his death, but the sale of his book proved a continued source of income that put them in independent circumstances.[1]

1. The book still sells rather well, and the publishers are bringing out an illustrated edition this year for the twenty-fifth anniversary, which will doubtless add distinctly to the sales record, though some 1,500,000 copies have been sold.

Current Comment

THE VISIT OF M. COUÉ

Emile Coué, druggist of Nancy, France, has come and gone, heralded and accompanied by a campaign of advertising which has rarely been equaled, making promises of hope to the helpless and afflicted. His visit to Chicago gave the opportunity to hear M. Coué and to observe his methods. The man himself gave an impression of sincere, though naive, earnestness. He seemed childishly pleased with the testimonials he had received, and genuinely convinced that he had made a discovery of great benefit to mankind. Of the many cults that have grown up around such methods of healing, this appears to be the first that has not been erected on a religious basis with more or less specific claims of Divine inspiration, a lack of the mystical which will probably result in speedy oblivion. Coué was careful to insist that he is not "a healer" or "miracle worker," and protested against the demands that he exhibit his powers: demands that were an inevitable result of the publicity he has received. M. Coué claimed that much of human suffering and disability is psychic in origin, the outcome of faulty thinking. All that is necessary for its relief is a change in the mode of thought. This can be achieved by the persistent and insistent repetition of a formula, which disavows the trouble. He acknowledged that some things cannot be changed, as for example the loss of a leg, and that it is useless to attempt "the impossible." However, despite the protestations that he will not attempt "the impossible," Coué frequently finds it "impossible" only when he fails. One of the patients subjected to "treatment" at the Chicago meetings was an elderly woman, emaciated, feeble, short of breath, and with every appearance of cardiovascular disease. This poor woman was urged, stimulated and encouraged to walk vigorously, even to run. Under the stimulus of the excitement, she succeeded temporarily by the exercise of every reserve of energy, and after having served the purpose of this ruthless demonstration, retired from view, to sink panting and exhausted in a chair. No more serious result was evident, but risks had certainly been taken without thought to the possible dangers, which were obvious to any physician. The atmosphere of the Coué demonstration contained much to recall the vaudeville hypnotist, now almost extinct; the magic words, the mesmeric passes and even the old parlor trick of suggesting to members of the audience that they could not separate their hands, after they had pressed them tightly together, all bring back memories of the professional hypnotist. Had it not been for the pathetic background of the crippled, deformed and disappointment-doomed dupes that filled the stage, the scene would have been humorous. The methods and theory with which Coué works are as old as history. Nancy, the town from which he came, was the home of a school of scientific hypnotism, under the leadership of Liébeault and Bernheim, which was famous in the sixth and subsequent decades of the last century. It is an error to assume that physicians have ignored such merits as do underlie these practices. The abrupt relief of hysterical symptoms by suggestion

and persuasion is a commonplace in the practice of the average physician. Suggestion has a distinct place in therapeutics; unconsciously, it is used by every successful physician in the form of encouragement and optimistic prediction. It is the basis of Eddyism. But suggestion, while it may, and often does, give temporary relief, does not cure; it must be accompanied by investigation and remedy of the underlying causes, whether psychic or physical.

THE WEIGHT OF CHILDREN

At present, it would assuredly be a rash venture to attempt to set up what might be called ideal standards of nutrition in children of school age. The child welfare programs involve the acceptance of some index of physiologic well-being, but the experts are not yet in accord as to how the latter shall be formulated. Without debating the wisdom or accuracy of the procedure, it must be admitted that the factor most generally used today is the weight of a given child compared with the average weight of children of the same sex, age and height, allowing 7 to 10 per cent. deviation from this standard as normal variation. Children below this standard are classed as underweight and presumably as not physically fit. Weight is so easily measured, and its fluctuations can so readily be grasped, that it has naturally been used as a guide to hygienic procedures and corrective measures.[1] The field investigations in child hygiene conducted by the U. S. Public Health Service[2] on nearly 10,000 schoolchildren from 6 to 16 years of age, inclusive, in South Carolina, Virginia, Maryland, Delaware and New York State indicate some of the limitations which the estimate of physical fitness involves. They show that although, on the average, the children of poorer nutrition weigh less than those of better nutrition, weight alone does not seem to be sufficient for determining the nutrition of a given child. In order to pick out individual cases of poor nutrition, a physical examination by a trained physician should supplement physical measurements. The observations of the government experts indicate that the percentage of children who were "fair" or "poor" in nutrition, as judged from clinical evidence, varied with age, increasing in the 6 to 8 age groups and then declining in succeeding age groups. No significant difference in this respect appeared between boys and girls. The percentage of children who were underweight (10 per cent. below) and the percentage who were overweight (20 per cent. above), as judged by Wood's table of weight for sex, age and height, increased as age increased through the fourteenth year for girls and through the sixteenth year for boys. Girls showed a constantly higher percentage of underweight and a consistently higher percentage of overweight than boys. If average weight is to be used as even a rough index of nutrition, it seems that the percentage deviation allowed for normal variation from the average should vary for different sexes and ages rather than be a constant 7 or 10 per cent., as usually employed in school health work.

1. See, for example, the program of the Bureau of Educational Experiments in Hunt, J. L.; Johnson, B. J., and Lincoln, E. M.: Health Education and the Nutrition Class, New York, E. P. Dutton & Co., 1921.
2. Clark, Taliaferro; Sydenstricker, Edgar, and Collins, S. D.: Weight and Height as an Index of Nutrition, Pub. Health Rep. **38**: 39 (Jan. 12) 1923.

Association News

BOARD OF TRUSTEES

Minutes of a Special Meeting Held at the Association Headquarters, Thursday, February 1, and of the Regular Annual Meeting Held Friday, Feb. 2, 1923

The meeting was called to order at 10:30 a. m. There were present: Drs. Dowling (Chairman), Billings, McDavitt, Mitchell, Phillips, Brown, Williamson, Richardson and Sarles of the Board; the President, Dr. George E. de Schweinitz; the President-Elect, Dr. Ray Lyman Wilbur; the Speaker, Dr. Frederick Warnshuis; the Treasurer, Dr. Austin Hayden; the Secretary, Dr. Olin West; and the Editor and General Manager, Dr. George H. Simmons.

The Chairman announced that a special meeting was called the day preceding the annual session of the Board to afford sufficient time for the consideration of the annual report of the General Manager for the year 1922 and of other business, and to make a general inspection of the work and requirements of the headquarters and the new additions to the building.

The General Manager presented his annual report, which was accepted by the Board with the understanding that those parts including recommendations which require the action of the Board shall be referred to the appropriate committees for consideration and report to the Board on February 2, the date of the annual meeting.

The Chairman appointed Drs. Phillips, Williamson and Richardson a Committee on Elections to fill vacancies on the Council on Pharmacy and Chemistry and on the editorial boards of the special journals.

The General Manager, in his annual report, recommended that at the end of the current year the annual dues and subscription be restored to the former price—$5. The Board decided to incorporate this recommendation in its annual report to the House of Delegates.

Memorial Tablets

Dr. George E. de Schweinitz, chairman of the Special Committee on Memorial Tablets, presented a report which was signed by all members of the Committee. Inasmuch as the Committee expressed the opinion that a memorial tablet naturally would be placed in the assembly room of the new addition to the building, the Committee requested its report to be considered one of progress. The report of the Committee was ordered received, with the understanding that the Board will include in its annual report to the House of Delegates a statement to the effect that arrangements have been made to fulfil the request made by the House to establish at headquarters a suitable memorial tablet to the late Dr. Joseph N. McCormack; but that it will be necessary to postpone its placement until the new addition to the headquarters shall have been completed.

Group Insurance

The question of applying industrial group insurance to the employees of the Association at headquarters, the expense to be borne by the Association, was discussed. The general plan was referred to the Finance Committee for further investigation and study. The fact was brought out that the Association has 320 employees at headquarters, forty-six of whom have been with the Association for from ten to twenty-five years.

Report of the Committee on Elections

The committee recommended the following named individuals to succeed themselves on the Editorial Boards of the special journals, in which the Board concurred:

Dr. W. S. Thayer, *Archives of Internal Medicine.*
Dr. H. F. Helmholz, *American Journal of Diseases of Children.*
Dr. T. H. Weisenburg, *Archives of Neurology and Psychiatry.*
Dr. W. T. Corlett, *Archives of Dermatology and Syphilology.*
Dr. Hugh Cabot, *Archives of Surgery.*

Drs. R. A. Hatcher of New York and W. T. Longcope of Baltimore were elected to succeed themselves, as members of the Council on Pharmacy and Chemistry, and Dr. A. N. Richards of Philadelphia was elected to succeed Dr. Hewlett of San Francisco, who expressed the desire that he be not reelected.

Bureau of Legal Medicine and Legislation

Dr. Woodward, the Executive Secretary of the Bureau, made a report covering the work done since the organization of the Bureau. The report covered the following subjects: the availability of bottled-in-bond whisky for therapeutic purposes; protest against regulations governing therapeutic use of whisky; probationary period for physicians in new locality before permission is given to prescribe whisky therapeutically; reduction of tax under the Harrison law; amendments to narcotic regulations; safeguarding professional secrecy; liability of state medical associations for federal income tax upon accumulated funds; deductibility by physicians of expenses incident to attending medical meetings; the status of legislation on animal experimentation; present status of chiropractic training of disabled veterans under the federal Veterans' Bureau; reclassification bill for physicians in the Indian service; reorganization of federal health activities; medical defense; cooperation of the Bureau with constituent associations; meetings of state legislatures, etc.

The report of Dr. Woodward was fully discussed and ordered placed on file. Dr. Woodward was unanimously commended on the good work accomplished.

American Red Cross

The Secretary of the Board announced the present membership of the Medical Advisory Committee of the American Red Cross as appointed by the Chairman of the Central Committee of that organization: Drs. William H. Welch (Chairman), Baltimore; Herman M. Biggs, Albany; Thomas S. Cullen, Baltimore; Hugh S. Cumming, Washington; Livingston Farrand, Utica; Franklin H. Martin, Chicago; Fred B. Lund, Boston; George M. Piersol, Philadelphia; John H. J. Upham, Columbus, Ohio, and C. E. A. Winslow, New Haven. The Board was informed that the Advisory Committee was at present engaged in the formulation of a proposed public health program for the American Red Cross.

Hygeia

Dr. Victor C. Vaughan, Editor of *Hygeia*, made a report of progress, which was unanimously approved by the Board.

Scientific Exhibit

Dr. D. Chester Brown, chairman of the Committee of the Board on Scientific Exhibit, and Dr. Leech, who has charge of the Bureau on Scientific Exhibit at headquarters, presented a report on the arrangements made for the Scientific Exhibit, including the lantern slide moving picture theater for the San Francisco session. There was every indication of close cooperation of the sections on scientific work with the Scientific Exhibit. This report was received and approved.

Diagnostic Clinics at the San Francisco Session

The Secretary of the Board reported that arrangements had been completed with the Local Committee of Arrangements for the San Francisco session for diagnostic clinics to be given on Monday and Tuesday, June 25 and 26. The tentative plans called for seventy-two clinics in twelve hospitals of San Francisco and Oakland during the two days. California clinicians will give one half of the clinics, and visiting clinicians from various states, and possibly from abroad, will give one half.

Health Exhibit

Dr. D. Chester Brown made a further report upon the proposition to hold a health exhibit at San Francisco during the annual session. This subject had been discussed at the meeting of the Board held in November last, and at this time more definite information upon the subject influenced the Board to decide not to attempt a health exhibit at San Francisco, and that the subject of health exhibits at future sessions of the Association be referred to the Council on Health and Public Instruction with the Board's approval for instituting health exhibits as a part of its work.

The Board adjourned at 6:15 p. m. to meet at 9 a. m. Friday, February 2.

The Annual Meeting of the Board of Trustees

The annual meeting of the Board of Trustees was called to order at 9 a. m., February 2, by the chairman, Dr. Dowling. There were present all members of the Board, the President, the President-Elect, the Speaker of the House, Treasurer, the Editor and General Manager, and the Secretary of the Association.

The minutes of the special meeting held on Thursday, February 1, were read, and by resolution all of the business performed and decisions made by the Board at the special meeting on February 1 were made official as of this date.

Abstracting Reports Contained in the Handbook for Presentation to the House of Delegates

The Secretary of the Board called attention to the feasibility, practicability and economy of time which would be gained by abstracting or condensing the official reports of the Councils and other committees and of the Board of Trustees which are printed in full in the Handbook, so that the salient features and recommendations contained in the several reports may be presented more effectively to the House of Delegates. In this connection, attention was called to the fact that last year the printed Handbook was completed and forwarded to all officers, all known members of the House of Delegates, section officers and others from two to three weeks before the date of the meeting of the annual session in St. Louis. This year the Handbook will be placed in the hands of these officers from two to three weeks before the annual session at San Francisco. This will enable every holdover member of the House of Delegates and every newly elected delegate whose address is forwarded to Association headquarters in time to permit a copy to be mailed to him, to acquaint himself with the business of the Association as represented in the reports contained in the Handbook.

The Board unanimously approved of the adoption of abstracting reports contained in the Handbook for presentation to the House of Delegates.

The Speaker announced that he had addressed a letter to each member of the House of Delegates asking for constructive criticism, suggestions or recommendations regarding the methods of carrying on the business of the House and other details. In connection with this statement he suggested that the Board empower the Executive Committee to cooperate with the Secretary and other officers of the Association to collect and bring outstanding valuable suggestions received from these sources into practical application at the San Francisco meeting. The Board unanimously concurred in the request of the Speaker.

The usual appropriations were made.

The Board adjourned, to meet at the Palace Hotel in San Francisco on Saturday afternoon, June 23.

Frank Billings, Secretary.

THE SAN FRANCISCO SESSION

Convention Diagnostic Clinics and Postconvention Diagnostic Clinics

A resolution governing the selection and conduct of diagnostic clinics was unanimously passed at the regular meeting of the Central Committee of Arrangements, Jan. 22, 1923. The resolution was as follows:

Having heard read the correspondence between Dr. Frank Billings, secretary of the Trustees, American Medical Association, and Dr. W. E. Musgrave, chairman of the California Committee of the American Medical Association Convention, regarding diagnostic clinics, to be held in San Francisco and Oakland, June 24 and 25, to be known as Convention Diagnostic Clinics, and in Los Angeles and other sections of California, July 2 and 3, to be known as postconvention clinics, the Central Committee unanimously approves the plan of conducting said clinics, and the following policy

outlined for these clinics, submitted by the general chairman, Dr. W. E. Musgrave:

1. The chairman of the committee, after consultation with the accredited hospitals or with county medical societies, will appoint a sub-subcommittee on Diagnostic Clinics for each hospital, accredited by the Council on Medical Education and Hospitals of the American Medical Association, of San Francisco, Oakland, Los Angeles and other cities of California which comply with the conditions governing these diagnostic clinics.

2. Each of these sub-subcommittees shall consist of three members of the staff, one representative of the directorate and one of the administration of the hospital. A staff member shall be chairman.

3. The chairman of all these sub-subcommittees shall form ex-officio the Subcommittee on Diagnostic Clinics. The chairman of the Central Committee shall appoint a chairman of the subcommittee, who shall thereby become ex-officio a member of the Central Committee.

4. The Subcommittee on Diagnostic Clinics, working through the Executive Committee, shall cooperate with the Trustees of the American Medical Association in conducting diagnostic clinics in connection with the American Medical Association Convention under the following procedure:

(*a*) The hours from 10 a. m. to 1 p. m. of Monday and Tuesday, June 24 and 25, shall be designated Convention Diagnostic Clinic Periods in each of the cooperating hospitals in San Francisco and Oakland.

(*b*) The same hours on the following Monday and Tuesday, July 2 and 3, shall be Postconvention Diagnostic Clinic Periods for the cooperating hospitals in Los Angeles and other sections of California.

(*c*) The Diagnostic Clinic Period in each hospital shall be divided into three clinics of one hour each.

(*d*) One clinic will be conducted by a member of the California Medical Association, one by an invited Fellow of the American Medical Association, and one will be a combined clinic given by a California physician and a visiting Fellow.

(*e*) The California physicians giving clinics shall be selected by the sub-subcomittee from each hospital and appointed by the chairman of the Central Committee.

(*f*) All visiting Fellows giving clinics shall be approved by the Trustees of the American Medical Association. The sub-subcommittees of the cooperating hospitals may correspond with the secretary of the Trustees of the American Medical Association in securing visiting Fellows whom they desire to have conduct clinics for their hospitals.

(*g*) The program of the various clinics shall be prepared with proper regard for available facilities, the wishes of the local committee of each hospital and the desires of the Trustees of the American Medical Association.

(*h*) The preparation of the program, arrangements with physicians to conduct it, securing an audience and all local arrangements, conveniences and facilities to insure the success of each clinic, are responsibilities of each hospital committee. The facilities of headquarters are open to all committees.

(*i*) County societies and other approved medical organizations in any part of California, and Fellows of the American Medical Association who desire to participate in the Convention Diagnostic Clinics of June 24 and 25 or the Postconvention Diagnostic Clinics of July 2 and 3, are invited and urged to communicate with California Convention Headquarters of the American Medical Association, 805-809 Balboa Building, San Francisco.

Gumma of Heart.—Gummata of the heart are probably much more frequent than even many pathologists think, probably for the reason that they are usually of relatively small size. Diffuse areas of extensive fibrosis may have been originated as a gumma which had absorbed to some degree under healthy condition or as a result of a certain degree of treatment for the specific infection and that the resulting fibrosis really in some instances represents a resorbing or healing gumma.—Harlow Brooks, *Am. J. Syphilis* **5**:224, 1921.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Ground for Hospital Broken.—Ground was broken recently for the new city isolation hospital to be erected in Tucson at a cost of approximately $18,000. The new building will accommodate from sixty to seventy patients.

CALIFORNIA

Summer Work at Stanford University.—From July 1 to October 1, properly qualified graduates in medicine and surgery, either graduates of Stanford University or of other schools, are invited to participate in medical and surgical work, including specialties, in the capacity of special workers at Stanford University Medical School, San Francisco. The workers will be expected to assist in the diagnosis and treatment of disease in the outpatient departments, laboratories and wards. Opportunity to make special studies of clinical and laboratory problems will be offered in certain subjects. The minimum period of attendance will be four weeks and a registration fee of three dollars will be charged. Applications, which should give an outline of the medical experience of the applicant, should be sent to the Dean, 2398 Sacramento Street, San Francisco, before June 1.

CONNECTICUT

Personal.—Prof. George C. Whipple, Harvard University, New Haven, gave four lectures on "The Philosophy of Sanitation," January 6, 13, 20 and 27, at the Wagner Free Institute of Science.——Prof. Marston T. Bogert, professor of chemistry at Columbia University, New York, gave a lecture at the Connecticut College for Women, New London, January 23, on "Synthetic Dyestuffs and Their Bearing on the Life of the Individual and of the State."

Yale University News.—A course of eight lectures on the social aspects of mental hygiene will be given by a group of specialists under the auspices of the department of social and political science of Yale University, and the New Haven Council of Social Agencies. President Angell will act as chairman at the first lecture, which will be given by Clifford W. Beers. Dr. O. G. Wiedman, medical director of the Connecticut Society for Mental Hygiene, and Dr. Paul Waterman, chairman of the state psychopathic hospital commission, will preside at the other lectures. The following subjects will be discussed: "The Mental Hygiene Movement," Mr. Beers; "The Mechanism of Human Behavior," Dr. Frankwood E. Williams, editor of the *Mental Hygiene Quarterly;* "Mental Hygiene and Personal Health," Dr. Thomas W. Salmon of the Rockefeller Foundation; "Mental Hygiene and Education," Dr. C. Macfie Campbell, director of the Boston Psychopathic Hospital; "Mental Hygiene and the Family Life," Dr. Abraham Myerson, Tufts Medical College; "Mental Service for Children," Dr. Arnold Gesell, professor of child hygiene, Yale University; "The Feebleminded in the Community," Dr. Walter E. Fernald, superintendent of the Massachusetts School for the Feebleminded, and "Mental Hygiene in Social Work," Dr. Jessie Taft, director of the department of child study, Children's Aid Society of Philadelphia.——The Yale Engineering Association at a recent meeting announced that it will raise funds for the erection of buildings at the summer camp of the Sheffield Scientific School of Yale University at East Lyme.——It was announced, January 16, by Dean Winternitz of the Yale Medical School, that additional building plans recently adopted call for a new pediatric pavilion, a modern dispensary situated in the center of the hospital plant, rehabilitation of the Gifford ward and extension of the south ward for women at the New Haven General Hospital, which is now part of the medical school plant.——In connection with the curriculum the method of assigning students of the third year to the outpatient clinic and the seniors to the wards has been reversed. The development of psychiatry into a section of work, coordinate with the sections of medicine, surgery, diseases of women and pediatrics, is in progress.

DISTRICT OF COLUMBIA

Vaccination to Be Enforced.—It is announced by Dr. William C. Fowler, District health officer, that all children entering schools for the second term must be vaccinated. Vaccination for smallpox is compulsory, but typhoid and paratyphoid inoculations will be made on request of the parents.

Howard University News.—The *Howardite,* a publication issued for graduates of Howard University School of Medicine, Washington, announces that the sum of $25,000 has been pledged by the students and a like sum by the administration, trustees and faculty of the university in the campaign to raise $250,000 by July 1, in order to receive the same amount from the General Education Board for the school of medicine.

ILLINOIS

Revised Influenza Rules.—A revised edition of rules and regulations relative to the reporting and handling of influenza cases has been published by, and are available for distribution from, the state department of public health, Springfield.

Hospital News.—The American Hospital at Johnston City was formally opened to the public recently. Dr. Fred Greenbaum, West Frankfort, has been appointed superintendent. ——A hospital, to be known as the Roseland Community Hospital, will be erected in that city at a cost of about $500,000.

Demonstration in Medical Inspection of Schools.—Dr. Edith B. Lowry of the U. S. Public Health Service has been assigned to direct a demonstration in the medical inspection of schoolchildren at Elgin. The demonstration was undertaken at the request of the local superintendent of public schools. The local board of health and the state department of public health are cooperating in the project.

Mental Hygiene Conference.—The Illinois Society for Mental Hygiene held a conference in Chicago, February 14-16, in conjunction with the Chicago Medical Society and the Chicago Neurological Society. Among the speakers were Judge Victor F. Arnold of the juvenile court of Chicago; Drs. Hugh N. MacKechnie, president of the Chicago Medical Society; Arnold L. Jacoby, director of the Municipal Psychopathic Clinic, recorders court, Detroit; Archibald Church, professor of neurology, Northwestern University Medical School; Bird Baldwin, Ph.D., director of the Child Research Station at the University of Iowa, and Frank Billings, president of the Illinois Society for Mental Hygiene.

Chicago

House of Correction Issues Report.—A report has just been issued covering the first fifty years of service of the House of Correction. A special section is devoted to the medical department. In this section of the report, methods of handling alcoholics, drug addicts and defectives are given special attention.

New Orthopedic Society.—At a meeting of orthopedic surgeons at the University Club, Chicago, February 2, the Chicago Orthopedic Club was organized. Dr. John Ridlon was elected president; Dr. Edwin W. Ryerson, vice president, and Dr. Henry B. Thomas, secretary-treasurer. Meetings are to be held monthly.

Hospital News.—Nearly 90,000 people passed through the receiving wards of Cook County Hospital during 1922. About 37,000 were admitted as patients, 21,000 were treated at the dispensary and about 28,000 were rejected according to the annual report. Clinics for patients with heart disease were established during the year. The charity ward gave out 200,000 garments to needy persons, a service which cost the county nothing.——A new 150-bed hospital will be erected by Dr. B. L. Ramsay of the Austin Hospital Association, at Central Avenue and Flournoy Street, Austin.——Plans have been drawn for a $350,000 addition to the Washington Boulevard Hospital.——Excavation work has been started for the $50,000 addition to Jefferson Park Hospital, Chicago.

Personal.—Dr. Wilson B. Moody, Chicago, has been appointed resident pathologist at the Methodist Hospital, Omaha.——Dr. B. Barker Beeson, Chicago, has been appointed associate professor and acting director of the division of dermatology and syphilology at Loyola University School of Medicine, Chicago; also dermatologist to the Mercy Hospital.——Dr. Peter S. Winner, assistant superintendent of the Peoria State Hospital, has been appointed superintendent of the Municipal Tuberculosis Sanatorium, Chicago, to succeed Dr. Allen J. Hruby.——Dr. Peter Bassoe, professor of neurology at Rush Medical College, gave a lecture on "Modern Treatment of Epilepsy" before the Elkhart County Medical Society at Goshen, February 1.——Dr. A. J. Carlson addressed the members of the Peoria City Medical Society, February 6.

INDIANA

Large Fine for Physician.—It is reported from Fort Wayne that Dr. James W. Squires of that city, 68 years old, was fined $1,000 and costs, February 1, when he pleaded guilty to violations of the Harrison Narcotic Law.

All-Time Health Officer Bill Fails.—The all-time health officer bill introduced by Dr. John N. Hurty of Indianapolis, which provided for reorganization of the state board of health and the employment of a health officer in each county to devote full time to the work, was defeated in the legislature, February 3, it is reported.

Hospital Cornerstone Laid.—The cornerstone of the new administration building and nurses' home, which are under construction at the Indianapolis City Hospital, at a cost of $425,000, was laid on the afternoon of December 23. Following the exercises, a clinic was held by Dr. Vilray P. Blair of Barnes Hospital, St. Louis.

IOWA

Personal.—Dr. Eula Eno, Des Moines, sailed recently for China, where she will serve as a medical missionary.——Dr. Asaph Arent, Humboldt, has been appointed county coroner to succeed Dr. H. C. Doan, deceased.——Dr. Carl H. Carryer, Des Moines, has been reappointed physician of Polk County. ——Dr. R. C. Milison, Marshalltown, has been appointed city physician to succeed the late Dr. J. F. Battin.——Dr. Don Griswold, professor of hygiene, State University of Iowa College of Medicine, gave an address on "Communicable Diseases Among School Children" at the Teachers' Institute, at Clinton, recently.

KANSAS

Personal.—Drs. Melvin C. Martin and Frank L. Abbey were elected president and secretary, respectively, of the Harvey County Medical Society, at the December meeting.——Dr. Harry R. Bryan, La Crosse, has been appointed health officer of Rush County.——Dr. F. Akin Garvin, Augusta, was recently reappointed health officer of Butler County.——Drs. Thomas L. McCarty, Dodge City, and Walter F. Pine, Dodge City, were elected president and secretary, respectively, of the Ford County Medical Society at the annual meeting.

Tuberculosis Colony.—January 22, Dr. S. J. Crumbine, secretary of the state board of health, inspected the site of the new tuberculosis colony to be established in Kansas City, under the auspices of the city health department. It is planned to erect ten buildings for tuberculous patients on a 21-acre tract just outside the city limits. Construction work will be commenced as soon as the old buildings on the site have been torn down. Lodges and clubs of the city will furnish the one-room cottages, and fresh milk and eggs for the tuberculous patients will be supplied by the city.

KENTUCKY

Hospital News.—The County tuberculosis hospital at Henderson was reopened, January 17. The hospital, which was formerly for tuberculous patients only, has been thoroughly remodeled and furnished with new equipment.

MAINE

New Hospital Opened.—The Bradbury Memorial Hospital, Belfast, was formally opened to the public, December 25. It is a $50,000 structure, the main building of which is the old Charles Bradbury homestead. A 90-foot addition, three stories high, enlarged the residence. Several memorial rooms and the roentgen-ray equipment were donated by summer residents. A nurses' training school will be maintained in connection with the institution. Free eye clinics will be held once a week, under the direction of Dr. Edwin S. Steese, New York, who has a summer residence at Northport. Dr. Eugene D. Tapley is the physician in charge of the new institution.

MARYLAND

Personal.—Dr. Alexius McGlannan, chief surgeon of the Mercy Hospital, Baltimore, has been appointed consulting surgeon for the Fort McHenry Hospital at Baltimore by Dr. L. B. Rogers, chief medical adviser of the U. S. Veterans' Bureau.

Johns Hopkins Building Program Started.—The new $1,000,000 building for the school of hygiene and public health of Johns Hopkins University is under way. The new structure, to be located at Monument and Wolfe streets, will be of Italian architecture, eight stories in height. Work has been completed on the east wing of the new women's clinic of Johns Hopkins Hospital, and the work of tearing down the west wing, preparatory to the erection of the second half of the clinic, is going on. The new pathologic laboratory of the medical school has been completed. The women's clinic and the pathologic laboratory were erected at a cost of $450,000 each, and the funds for the public health building were supplied by endowment from the Rockefeller Foundation.

Mental Hygiene Clinic to Be Established.—Plans for the establishment of a mental hygiene clinic in Baltimore are being formulated by the board of mental hygiene of Maryland. It is planned to establish at the University of Maryland a department of mental hygiene, which will be conducted as a mental hygiene clinic, where the physicians from the state institutions will be in attendance, enabling them to come in contact with patients suffering from mental disorders in the incipient stages. This clinic will be an intermediate step between the home and the hospitals. It should decrease the number of admissions to the state hospitals and increase the number of discharges and paroles. The cooperation of the University of Maryland is assured, and it now remains to work out the details of operation.

MASSACHUSETTS

Board of Registration in Medicine.—Dr. Samuel H. Calderwood, Boston, has been elected chairman of the state board and Dr. Charles E. Prior, Malden, secretary.

Estate Willed to Harvard.—Under the will of Mrs. Alice H. Plimpton, who died in Norwood, recently, $50,000 is donated to Harvard University, of which $30,000 will go to Harvard College and $20,000 to the medical school.

Hospital News.—John B. Lewis, Boston, has offered his estate in Reading consisting of a large house and several smaller buildings, together with ample grounds, for use as a city hospital.——A group of hospital buildings, made possible by the gift of Miss Amelia Jones, will be erected on the Jones farm in South Dartmouth for crippled children. The first unit of the group to be erected is the hospital proper, which will have a capacity of fifty beds. Later a school and workshop will be provided. The entire project will be carried out by the board of trustees of St. Luke's Hospital.——The state legislature has issued an order directing the department of public health to make a general survey of all tuberculosis work in the state, it is stated, as a result of the introduction into the last session of the legislature of several bills to take over all tuberculosis institutions by the state department of health. The state health commissioner has appointed a special board, of which Dr. Sumner H. Remick is chairman, to carry out the work.

MICHIGAN

Chiropractor Sentenced.—It is reported that F. W. Barkdall, a chiropractor of Big Rapids, was sentenced to serve ninety days in the county jail, and fined $50, at Cadillac, January 28. Following insulting remarks by Barkdall regarding the law, the judge stated that twenty days would be added to the jail sentence if the $50 fine was not paid within ten days.

Influenza Closes Town.—City health authorities of Bessemer have issued strict quarantine orders in an effort to curb the epidemic of influenza now prevailing there. All public and parochial schools, dance halls, skating rinks, moving picture theaters and other public places have been closed for an indefinite period. Social gatherings have been forbidden and no church services will be held.

MINNESOTA

Infant and Maternity Hygiene.—A course of fifteen lessons in the hygiene of maternity and infancy will be offered to the women of the state under the auspices of the division of child hygiene of the state board of health and the extension division of the state university, it is announced. The course will be given to groups of from fifteen to twenty women under the leadership of the county or district nurse, rather than to individuals. On the satisfactory completion of the course, the university will present each woman with a certificate.——The division of child hygiene has prepared an obstetric package that can be used in rural work, containing the minimum of sterile supplies used for delivery in the home. These packages can be prepared at a cost of $2.

MISSOURI

Personal.—Dr. Borden S. Veeder, professor of clinical pediatrics, Washington University School of Medicine, St. Louis, has been named a director of the new American Child Health Association.——Dr. Robert J. Terry, professor of anatomy, Washington University School of Medicine, St. Louis, was recently elected secretary of the anthropological section of the American Association for the Advancement of Science.——Dr. Evarts A. Graham, professor of surgery, Washington University School of Medicine, St. Louis, has accepted an invitation from the California Academy of Medicine, San Francisco, to speak on the "New Phases of Thoracic Surgery."——Dr. George A. McCulloch, Excelsior Springs, suffered fractures of both legs and one arm and internal injuries, January 28, when the automobile in which he was driving was struck by a train.——A banquet was given in honor of Dr. Murray C. Stone and Dr. William R. Beatie, respectively outgoing and incoming presidents of the Green County Medical Society, at Springfield, January 26.

MONTANA

Personal.—Dr. Earl C. Kading, Belgrade, surgeon to the Chicago, Milwaukee and St. Paul and the Northern Pacific railroads, has been appointed chief surgeon of the Pacific liner *Alexandria* plying between San Francisco and Honolulu.——Dr. Daniel L. High, chief of the medical division, U. S. Veterans' Hospital, Helena, addressed the Fergus County Medical Society at the annual meeting. Dr. Harry K. Wilson, Lewiston, was elected president.

NEW JERSEY

Memorial to Dr. Whitenack.—Dr. Carl E. Sutphen is chairman of a committee which will conduct a campaign to raise from $60,000 to $75,000 for the purpose of erecting a wing at the Newark Babies' Hospital, as a memorial to Dr. Miller Royal Whitenack, who died recently from septicemia, incurred while treating a child for throat trouble.

NEW YORK

Scarlet Fever Closes College.—Bates College at Lewiston has been placed under quarantine for scarlet fever. Eight cases have been reported among the students. No further spread of the disease is anticipated.

Bill to License Chiropractors.—A bill to permit the licensing of chiropractors has been prepared for presentation to the New York State Legislature. Two hundred members of the New York State Chiropractic Society have adopted a resolution condemning the recent action of the state board of charities for closing the chiropractic section of the East Side Clinic for Women and Children. The chiropractors claim that absence of a law licensing chiropractors enables charlatans and fakirs to ply an illicit trade in the name of chiropractic.

Rural Health Centers Urged.—The state health department is making more vigorous efforts than ever before to induce the legislature to adopt laws establishing rural health centers. The legislation desired would provide for the establishment of hospitals fully adequate for the needs of smaller communities. These hospitals would be maintained partly by local appropriations and partly by state aid, and also by payments from patients, who would be charged according to their means. Officials of the health department cite figures showing that in 1911 in thirty rural localities there were 1,010 physicians, whereas today there are only 829 physicians, and of this number only twenty-six could be called young men. It is believed that the needs are so serious that opposition to the proposed legislation can be easily overcome.

New York City

Health Welfare Course.—The Washington Square center of New York University opened its first course on "Labor and Employment Management," February 4. Among the subjects to be covered are accident and fire prevention, management of a medical department, the use of emergency hospitals, illness prevention in industrial plants, plant hygiene and sanitation, including consideration of rooms and food for workers, wages and wage systems, employees' representations, profit sharing and life insurance.

Harvey Society Lecture.—The seventh Harvey Society Lecture will be delivered by Dr. Leon Asher, professor of physiology, University of Berne, at the New York Academy of Medicine, February 24. His subject will be "The Building Up of the Organism by Chemical and Nervous Coordination and Regulation." The lecture by Dr. E. V. Cowdry of the Rockefeller Institute of Medical Research on "The Significance of the Internal Reticular Apparatus of Golgi in Cellular Physiology" has been postponed to March 10.

Hospital Notes.—The Bronx Hospital, located at the corner of Fulton Avenue and One Hundred and Sixty-Ninth Street, has enlarged its holdings by purchasing the Bronx branch of the Young Men's Hebrew Association on the west side of Franklin Avenue, between One Hundred and Sixty-Eighth and One Hundred and Sixty-Ninth streets.——The Hospital for the Ruptured and Crippled has bought two four-story houses at 311 and 313 East Forty-Third Street, adjoining its present holdings.——A two-story fireproof building is being added to the House of St. Giles the Cripple at Garden City, L. I., at a cost of $50,000. The new structure will provide accommodations for sixty children.——The Samaritan Hospital, Brooklyn, has under construction a six-story building adjacent to the present hospital building and replacing a part of that structure. The new building will cost about $200,000.——The new wing to Roosevelt Hospital, which when completed will cost $1,000,000, is in the process of construction.

NORTH CAROLINA

Physical Education Course.—The North Carolina College, Greensboro, has adopted a four years' course in hygiene and physical education to meet the demand for trained directors in physical education throughout the state.

Hospital News.—The North Carolina Orthopedic Hospital for Crippled Children, Gastonia, has received as appropriation from the government of $25,000 for improvements, and $65,000 annually for the next two years for maintenance. The age limit of children who can enter the hospital has been raised from 14 to 16 years.——A well equipped orthopedic clinic has been established at Charlotte, as an adjunct of the health department. It was opened to the public, February 1, with Dr. Alonzo Myers, who gives his services free, in charge.

OHIO

Heart Clinic Opened at Hospital.—A clinic for patients with heart disease has been opened at the Cincinnati General Hospital, under the direction of Dr. Julien E. Benjamin. This is the first of a series of clinics to be established over the city in a campaign against heart disease. The work is under the auspices of the Public Health Federation. Under the direction of the board of health, a clinic will also be established in one of the public schools to care for children in certain districts. Dr. William H. Peters, health officer, is arranging to have persons suspected of having heart disease reported to the clinic, where free treatment and advice will be given.

Chiropractors to Serve Prison Sentences.—It is reported that four chiropractors were sentenced to the Canton workhouse and one to Trumbull County Jail, January 27, by Squire Matteson at Warren, when they refused to pay $500 fines for practicing without a license.——Ten of the seventeen chiropractors awaiting trial at Youngstown for practicing medicine without a license state that they will go to prison rather than pay fines which go to the state medical board for their further prosecution.——Fifteen chiropractors have been arrested in Cincinnati and are now awaiting trial; nine were arrested in Columbus, January 27.——It is reported that all unlicensed chiropractors in Dayton will be arrested.——Hearings of cases against chiropractors are also scheduled at Girard and Niles.

OKLAHOMA

Academy of Science.—The annual meeting of the Oklahoma Academy of Science was held at the University of Oklahoma, February 10. In addition to the reading of scientific papers detailing research work done in the state, the one hundredth anniversaries of the birth of Gregor Mendel and Louis Pasteur were celebrated.

OREGON

Personal.—Dr. Lawrence Selling was recently elected president of the Portland Academy of Medicine.——Dr. Clarence W. Keene has been appointed health officer of Silverton.——Dr. Robert A. Jayne has been elected mayor of Philomath for the second term.——Dr. Albert H. Ross, Eugene, was reelected president of the Lane County Medical Society at the annual meeting and Dr. Gaven C. Dyott, secretary-treasurer.——Dr. W. Ross Eaton, Oregon City, is seriously ill with epidemic (lethargic) encephalitis at the Emanuel Hospital, Portland.

PENNSYLVANIA

Tablet to Dr. Forwood.—A memorial tablet was unveiled by the Keystone Club of Chester in honor of Dr. Jonathan L. Forwood, first president of the Delaware County Medical Society, at a watch service on the evening of December 31, to which the members of the Delaware County Medical Society and their families were invited.

County Medical Society Provides Lecture on Vivisection.—February 1, under the auspices of the Pittsburgh Academy of Science and Art, a lecture provided by the Allegheny County Medical Society, was delivered in Pittsburgh by Mr. Ernest Harold Baynes, entitled "The Truth About Vivisection." Following this lecture, a resolution was offered to the effect that Mr. Baynes had proved conclusively that the main contentions of the antivivisectionists have no foundation in fact, and that it was the sense of the audience that "animal experimentation, including vivisection, has been and is of incalculable value to mankind and to animals through medicine and surgery, and that its practice should be allowed to continue unhampered by ignorance and prejudice."

Philadelphia

Warrants for Sixteen Physicians.—Warrants for sixteen physicians have been issued by Magistrate Grelis at the instance of R. J. Brauner, an inspector connected with the state health department, charging each with failing to report within ten days births that have occurred under their professional care. A fine of from $5 to $50 is assessed for each offense.

City Physicians Rebel Against Vice Quarantine Duty.—Mayor Moore's order for the department of health to supervise medical inspections in a city-wide vice quarantine has resulted in open rebellion in that department. Dr. George Ernest H. Johnson, for fourteen years chief diagnostician, has resigned. Dr. Henry A. Strecker, assistant chief medical inspector, has protested to the director of public health, Dr. Charles L. Furbush. Other physicians also believe they should devote their duties to the regular routine of the department. The inspections, which were to have been started ten days ago, still are under discussion. Dr. Furbush has appointed Dr. Anna G. Young for the examination of women.

Wyncote Bird Club Adopts Resolutions on Vivisection.—The Wyncote Bird Club held a special meeting, January 23, to hear an address by Mr. R. R. Logan, president of the American Antivivisection Society. Following the lecture, an open discussion was held in which Mr. Ernest H. Baynes defended vivisection. At the close of the discussion the society adopted the following resolutions:

Resolved, That it is the sense of this club that Mr. Logan has entirely failed in his attempt to show that vivisection is immoral and unethical and unnecessary to the welfare of human beings or of animals, and, be it further

Resolved, That we heartily endorse Mr. Ernest Harold Baynes' stand on animal experimentation and sane humane education in general.

Society News.—At the annual meeting of the Association of Industrial Medicine, Dr. Earle H. Ingram was elected president, and Dr. George H. Hughes, secretary.——Dr. William E. Parke was elected president, and Dr. Charles S. Barnes, secretary, of the Obstetrical Society of Philadelphia, recently.——The American Congress of Internal Medicine will convene in Philadelphia during the first week in April. Clinics and demonstrations will be given at the various hospitals of the city.——At the annual meeting of the Pathological Society of Philadelphia, Dr. Oliver H. Perry Pepper was elected president and Dr. Edward Weiss, secretary.——Drs. William H. Mackinney and Stirling W. Moorhead were elected president and secretary, respectively, of the Philadelphia Urological Society, at its annual meeting.

SOUTH CAROLINA

Chiropractic Bill Is Killed.—The bill introduced into the House of Representatives by Edgar Brown, to create a state board of chiropractic examiners in South Carolina, was killed by a vote of 65 to 46, January 31. A similar bill was killed by the House in 1922.

TEXAS

Hospital News.—The new city hospital at Teague was opened in December.——It is announced by Col. M. A. W. Schockley, commanding officer at the William Beaumont General Hospital, Fort Bliss, that improvements involving an expenditure of $50,000 will be made at that institution.

State Public Health Association.—At the annual meeting of the Texas Public Health Association, February 8, at Austin, the following officers were elected for the ensuing year: president, J. W. Butler, Galveston; vice presidents, Drs. Elva A. Wright, Houston, and Joseph B. McKnight, Sanatorium, and secretary, Dr. Zachary T. Scott, Austin.

WASHINGTON

Surgical Society Elections.—At the annual meeting of the Seattle Surgical Society, January 19, Dr. Otis F. Lamson was elected president; Dr. Walter C. Woodward, vice president, and Dr. Hubbard T. Buckner, secretary-treasurer.——At the annual meeting of the Seattle Academy of Surgery, January 24, Dr. E. Weldon Young was elected president; Dr. Frederick R. Underwood, vice president, and Dr. William C. Kintner, secretary-treasurer.

Personal.—Dr. Frederick J. Cullen, health officer of Puyallup, has been appointed health officer of Pierce County, to succeed Dr. Philip B. Swearingen, Tacoma.——Dr. Milton G. Sturgis, Seattle, read a paper on "Unrecognized Fracture of the Spine" before the Victoria (B. C.) Medical Society, recently.——Dr. J. A. McNiven, Aberdeen, suffered a fractured skull when he was knocked down by an automobile, January 11.——Dr. Ottar A. Thomle was reappointed county physician of Snohomish County at the annual meeting of the board of county commissioners, January 11.

WEST VIRGINIA

Health Officer Appointed.—Dr. Edward C. Bennett has been appointed health officer of Richwood to succeed Dr. Ernest F. Flora.

Hospital Merger.—It is announced that the Charleston General Hospital merged with the Sheltering Arms Hospital, February 1. Dr. John E. Sanaday, is superintendent of the combined institutions, which now have a capacity of 200 beds.

WISCONSIN

State Board of Health Elects.—At the annual meeting of the Wisconsin State Board of Health at Madison, Drs. William F. Whyte, Madison, and Edward S. Hayes, Eau Claire, were reelected president and vice president, respectively, for the ensuing year.

PORTO RICO

Radio Concerts for Lepers.—An anonymous gift of $100 from New York City and added local contributions have made possible the installation of a radio receiving set at Cabras Island, the leper colony of Porto Rico. The local telephone company installed the instrument free of charge, and concerts and news broadcasted from San Juan, Havana, and the United States can be received. There are thirty-six lepers now stationed on the island.

CANADA

Toronto Academy of Medicine.—The annual library and historical night of the academy was held, January 2. Dr. O. Fraser Harris, professor of physiology of Dalhousie University, Halifax, delivered the historical lecture. Dr. Primrose presented some early medical diplomas from the University of Edinburgh. Dr. James A. Temple presented a photograph of the late Dr. Edward M. Hodder, once professor of obstetrics and gynecology at Trinity Medical College. A volume of the *Consolidated Statutes of Great Britain* of the twenty-third year of Queen Elizabeth's reign was donated by Dr. Thomas W. G. McKay of Oshawa.

Hospital News.—An addition to St. Justine's Hospital, Montreal, which was recently opened, increased the capacity of that institution from eighty to 150 beds. The new structure was erected at a cost of $300,000.——During the fire in Ontario last October, the general hospital in Haileybury was completely destroyed. A site has been purchased with the assistance of the Daughters of the Empire and the Ontario Red Cross, and a building with modern equipment will be erected as soon as possible. Following the fire, the Ontario Red Cross placed at the disposal of the town an emergency hospital in which patients will be cared for until the new general hospital is erected.

Public Health News.—A proposed "Public Health Campaign" on an extensive scale is under consideration by the educational and publicity committee of the British Columbia Medical Association. Apart from a systematic press campaign, a series of public addresses will be given throughout the province shortly.——A comparative table issued recently by the provincial officer of public health in Ontario shows a remarkable decrease in the number of cases of smallpox and several other communicable diseases. Scarlet fever and diphtheria also show a falling off. Whooping cough, however, has increased. In January, 1922, there were only eighty-nine cases, while last month 376 cases were reported. Influenza, of which there is much in Toronto, shows 115 cases for last month, with twenty-nine deaths, while for the same month last year no cases were reported. Venereal diseases of all types show a downward trend in the number of cases.

GENERAL

Fraudulent Vender of Medicines.—An individual who falsely claims to be connected with Rush Medical College of Chicago is traveling through the Southwest and fleecing the public by collecting $1.98 from each, which he tells them covers the cost of medicines which will be sent to them by the college named. A stream of letters received by the college indicates that he is deceiving many people.

Convalescent Homes Listed.—The Sturgis Research Fund of the Burke Foundation for Convalescents, White Plains, N. Y., has recently issued a directory of 162 convalescent homes in the United States. They have a total of 8,980 beds, including 4,525 used during the summer months only. It is noted that one third of all convalescent beds in the United States are in New York City.

Clinical Society of Genito-Urinary Surgeons.—The third annual meeting of this association was held in Chicago, January 26-27. The following officers were elected for the ensuing year: president, Dr. E. L. Keyes, Jr., New York; vice president, Dr. Hugh H. Young, Baltimore, and secretary-treasurer (reelected), Dr. William C. Quinby, Boston. Clinics were held by Dr. Louis E. Schmidt at the Michael Reese and Alexian Brothers hospitals, and by Dr. Herman L. Kretschmer at the Presbyterian and U. S. Veterans' No. 76 hospitals.

Alpha Omega Alpha Issues Catalogue.—The first general catalogue of the Alpha Omega Alpha, the medical honorary fraternity, a volume of 250 pages, has been issued recently. In addition to a roster of 3,780 names with addresses, the publication contains a list of the general officers and committees, also a history of the organization since it was formed in 1902. Dr. William W. Root, Slaterville Springs, N. Y., secretary-treasurer of the society, is the editor. There are twenty-six chapters in the organization, two of which are in Canada, at Toronto and McGill universities.

Influenza Epidemic.—Twenty-four states reporting through their health offices to the U. S. Public Health Service gave a total of 17,593 influenza cases occurring in the country for the week ending, Feb. 3, 1923, according to the report of the U. S. Public Health Service issued this week. The same states for the preceding week reported 15,328 cases. Both figures show an increase over the same period for the years 1921 and 1922. In 1920 more than 170,000 cases were recorded. Surgeon-General Cumming stated that the present spread of influenza really amounts to an epidemic, but the disease is manifesting itself only in a mild form.

Deaths from Influenza and Pneumonia in Large Cities.—The number of deaths from influenza and pneumonia combined in certain large cities of the United States for the last four weeks of 1922 and the first week of 1923 has in nearly each instance steadily increased. New York City had the greatest number of deaths (208) in the first week of January, with Philadelphia a close second (178). Chicago came third, with 117 deaths, and Detroit fourth, with seventy-six deaths. Boston had only fifty-eight deaths, and Baltimore fifty-two. Cincinnati had forty-four deaths, and Atlanta forty. Since December 1, the mortality from influenza and pneumonia has increased week by week in each of the cities named.

Punishment for Narcotic Drug Violators.—A large reward will be given for information leading to the arrest and conviction of violators of the Federal Narcotics Drug Import and Export Act, according to amendment presented in the House this week by Representative Lineberger. The measure

fixes a fine of not less than $500 and not more than $5,000, with a prison term of from one to ten years for fraudulent importation of narcotics into the United States or for facilitating in any manner the transportation, concealment or sale of any narcotic drug after importation. Amendment provides that portions of fines paid by the offenders and of bail forfeited by offenders shall be used to pay rewards for information.

The Sofie A. Nordhoff-Jung Cancer Research Prize.—An annual prize of $500 bearing this title has been founded by Dr. Sofie A. Nordhoff-Jung of Washington, D. C. The prize is offered to encourage researches in the etiology, prevention and treatment of cancer. It will be awarded by a committee composed of members of the University of Munich, Bavaria, and will be granted for the first time in December, 1923. The committee consists of Professors Borst, Doederlein and Sauerbruch, with Professor von Romberg as chairman. This body is empowered to elect successors. The award will be made as a recognition of the most conspicuous work in the literature bearing on cancer research, done previously to the allotment of the award. Though the prize will not be awarded on a competitive basis, the commission invites all research workers in cancer to submit literature on this subject.

Case Against Sheppard-Towner Law.—The Secretary of the Treasury and his codefendants petitioned this week, in the District of Columbia Supreme Court, that the action of Mrs. Harriet A. Frothingham of Massachusetts attacking the validity of the Sheppard-Towner Maternity Act be dismissed. The defendants asserted through United States Attorney Gordon that the case cannot be maintained because it is in effect against the United States; that there is no equity in the bill, and that no facts are alleged which, if true, would entitle the plaintiff to relief. Congress has the power, counsel for the defendants claim, to act for the public welfare in matters the regulation of which belongs exclusively to the states. The law does not attempt to force the acceptance of its provisions, but leaves it optional with the states. It is anticipated that the hearing of this case will be expedited to enable it to reach the United States Supreme Court in time to be argued with the case brought there by the state of Massachusetts, which also attacks the validity of the act.

American Medical Association and Public Health.—During the proceedings at Chicago, March 5 to 7, of the Annual Congress of the Council on Health and Public Instruction of the American Medical Association, a meeting will be held on the afternoon of March 7 with the Public Health Service for the discussion of public health. At this meeting, over which Surg.-Gen. H. S. Cumming has been asked to preside, the following program will be given: "Education of Sanitarians and the Future of Public Health in the United States," by Dr. H. S. Cumming; a report on the activities carried on by the Public Health Service since the conference of last March on the education of sanitarians, by Asst. Surg.-Gen. W. F. Draper; "Recruiting and Training of Sanitarians," by Dr. C. E. Winslow; "Steps Already Taken in Standardization of Public Health Training," by Dr. J. A. McLaughlin, U. S. Public Health Service, and "The Course in Public Health and Hygiene for Medical Students," by Dr. D. E. Edsal of Harvard University. These addresses will be discussed by Dr. John Sundwall of the University of Michigan and by Dr. E. O. Jordan of the University of Chicago. The closing address, "Education of the Partly Trained Sanitarian Now Employed," by Dr. W. F. Sears of Syracuse University, will be discussed by Dr. E. G. Williams, state health officer of Virginia, and Dr. W. S. Rankin, state health officer of North Carolina.

Bequests and Donations.—The following bequests and donations have recently been announced:

Lying-In Hospital, Providence, R. I., $800,774, the proceeds of a campaign for funds; Esmond Mills, $3,000; Mr. and Mrs. E. B. Merrian, $1,500; Providence Fire Department, $1,200; Queen Dyeing Company, $1,000; in memory of the late Mrs. M. C. Dart, $900, and Mrs. Horace Kimball, $600.

Roosevelt, St. Luke's and the New York hospitals are the chief beneficiaries of the $3,000,000 estate of the late Miss Emily F. Southmayd.

Memorial and St. Joseph's hospitals, Nashua, N. H., Hopewell Society of Brooklyn, Home of St. Giles the Cripple, New York Association for the Blind, Faith Home for Incurables, Brooklyn, Servants for the Relief of Incurable Cancer, Trudeau Sanatorium, Trudeau, N. Y., and the American Red Cross, each $25,000, and a share of the residuary estate, under the will of Mrs. Sarah J. Robinson.

Twenty New York institutions will share in the distribution of the $580,471 estate of the late Alfred Blumenthal, recently killed in a railway accident in Spain. Mount Sinai Hospital will receive one-fifth of the estate.

Brown University, Providence, R. I., $50,000 from the estate of Robert P. Brown, to endow a professorship in biology; in honor of Professor Appleton of the university, $3,800, subscribed to provide annual lectures on pure or applied chemistry, to be known as the John Howard Appleton Lectureship Fund.

New York Skin and Cancer Hospital, $25,000, by the will of Mary A. Palmer Draper.

Iroquois Hospital, Watseka, Ill., $25,000, by the will of Mrs. Sarah Kay.

Trudeau Sanatorium, Trudeau, N. Y., and the Hospital for Ruptured and Crippled, New York, each $5,000, by the will of Mrs. Cora M. Perkins.

American Society for the Control of Cancer, $3,719, by the will of Mrs. Kate H. P. Roberts of Chicago.

American Welfare Association, Wieboldt Department Stores and Mrs. Wieboldt, Chicago, $4,000; Samuel Insull, $1,200; Armour and Company, Albert Breitung, Paul F. Mueller, Henry Schoellkopt, Teich and Roessler and Emil and Carl Eitel, all of Chicago, each $1,000.

Two lots at Clovis, California, for the erection of a hospital for Indians, money for which will be collected by subscription.

Society News.—The forty-fifth annual congress of the American Laryngological Association will be held at the Hotel Ambassador, Atlantic City, N. J., May 16-18, under the presidency of Dr. Emil Mayer of New York. Dr. George M. Coates of Philadelphia is the secretary.——The next annual meeting of the American Society for the Control of Cancer will be held in New York, March 3.——The American Association of Orificial Surgeons will hold its thirty-sixth annual convention in Chicago in September, under the presidency of Dr. Paul C. Goodlove, Detroit, it is announced. Garth Hyatt, former Chicago newspaper man, has been elected secretary of the research bureau of the association. ——The seventy-eighth meeting of the New England Pediatric Society was held in Boston, February 9, at the Boston Medical Library. Dr. Edwards A. Park, professor of pediatrics, Yale Medical School, presided. Dr. Ruth A. Guy, New Haven, spoke on "The Use of Cod Liver Oil in Rickets; Its Action as a Regulator of the Calcium and Phosphorus Metabolism," and Dr. Ethel C. Dunham, New Haven, read a paper on "A Study of Diets and Living Conditions of Rachitic Children with a Report of the Earliest Case of Rickets on Record."——The thirty-ninth session of the American Association of Anatomists will be held in Chicago, March 28-30, under the presidency of Dr. Clarence M. Jackson, professor of anatomy at the University of Minnesota Medical School, Minneapolis.——The third annual convention of the Pacific Northwest Medical Association will be held in Seattle, June 19-21, under the presidency of Dr. H. D. Dudley, Seattle. Among the speakers will be Drs. A. J. Carlson, Peter Bassoe, Dean Lewis, Oliver S. Ormsby and R. T. Woodyatt of Chicago and Drs. F. W. Peabody and Channing Frothingham of Harvard University Medical School, Boston.

LATIN AMERICA

Personal.—Dr. P. D. Rodríguez Rivero has been appointed Director General of Health of Venezuela, to succeed Dr. L. G. Ghacín Itriago.

A Physician Elected President.—One of the most prominent Central American physicians, Dr. A. Quiñones Molina, was elected president of El Salvador, at the recent election held in that country. Dr. Quiñones Molina graduated in 1897. He has filled many positions of importance, and until recently was vice president of El Salvador.

New Cuban Journal.—The Medical Association of Camaguey, Cuba, has begun the publication of a journal entitled *Camagüey Médico.* The editor is Dr. J. Agulló Sánchez. He will be assisted by Drs. A. A. Agüero G. and F. Martinez Lamo. New officers were recently elected by the medical society as follows: president, Dr. R. V. Guerrero Betancourt; vice president, Dr. V. Rodríguez Barahona; secretary, Dr. A. Agüero García. Of sixty physicians at Camagüey, thirty attended the meeting.

FOREIGN

Death of Roentgen.—The cable reports the death of Prof. Wilhelm Konrad Roentgen, whose discovery of the rays which he modestly named the *x* rays—the unknown rays—has made his name immortal. He was born, March 27, 1845, at Lennep, near the Ruhr district. He was graduated at Zurich, and became professor of physics at Strasbourg, later at Giessen and Würzburg, and finally at Munich. His great discovery was made at Würzburg in 1895. He retired from the chair of experimental physics at Munich in 1920, at the age of 75.

Congress on "Logopädie."—The *Münchener medizinische Wochenschrift* relates that an international gathering is being planned to discuss the nature and treatment of aphasia and other disturbances in speech, of central and peripheral origin. This Kongress für Logopädie is to be held this year at Vienna. Dr. Froeschels, dozent, Ferstelgasse 6, Vienna, is

the secretary, and he appeals for communications and summaries on these topics. He extends his invitation to all countries, but urges that, in the interest of scientific discussion, the delegates selected by other countries should be able to speak German.

The Heubner Prize in Pediatrics.—It is announced that the triennial prize offered by the Heubner endowment for the most important work in pediatrics of the last three years is to be awarded to Dr. Rudolf Degkwitz of the children's clinic of the University of Munich. His name has been prominent in the literature of late on account of his success in preventive serotherapy of measles, utilizing convalescents' serum. This is the third awarding of the Heubner prize. The first recipient was Pfaundler, also of the Munich pediatric service, for his research on body measurement ratios. The prize at the second awarding was given to Dr. Ylppö of the Berlin pediatric service for his studies on the pathology of the prematurely born.

International Health Course.—The health section of the League of Nations recently brought to a successful conclusion an international health course for medical officers, in which twenty-two officials from the health departments of Austria, Belgium, Bulgaria, Italy, Poland, Russia and other countries took part. The course was held in Belgium and Italy during two and one-half months, under the auspices of the directors of the Belgian and Italian health services, respectively, through the aid of a grant from the Rockefeller Foundation. On the completion of the course, those who took part met at Geneva, where a discussion was held as to the benefits derived. The next course of this kind will be held in England.

The Jenner Centennial at Paris.—Supplementary to the public meeting of the Académie de médecine at Paris in honor of the centennial of the death of Jenner, Jan. 26, 1823, the delegates to the celebration were the guests of the Académie at a banquet at a private clubhouse. M. Paul Strauss, minister of hygiene, was toastmaster, and Sir Ronald Ross and two others responded on behalf of England. Professors Willems and Rutter spoke for Belgium, and Dr. Haccius for Switzerland. Delegates from the Netherlands and from Tunis also paid tribute to the discoverer of vaccination. Lantern slides and a museum presenting the history of vaccination were features of the public centennial celebration at the Académie. It still treasures the deposit bequeathed to it by Jenner a century ago.

Personal.—Dr. R. A. Peters has been elected to the Whitley professorship of biochemistry at the University of Oxford. ——The Milroy lectures on "Canned Foods in Relation to Health" will be delivered, February 22 and 27 and March 1, by Dr. W. G. Savage.——Dr. Geoffrey Evans will deliver the Goulstonian lectures, March 6, 8 and 13, on "The Nature of Arteriosclerosis," and Dr. Arthur J. Hall will give the Lumleian lectures on "Encephalitis Lethargica (Epidemic Encephalitis)," March 15, 20 and 22. All these lectures will be delivered at the Royal College of Physicians of London.—— The king of the Belgians has conferred the Order of Leopold II on Dr. Alexander Granville, president of the sanitary, maritime and quarantine council of Egypt.——The king of England has conferred knighthoods on the following physicians: Dr. David Drummond, professor of the principles and practice of medicine in the University of Durham; Dr. William Hamer, chief medical officer of the London County Council; Dr. Norman Walker, representative for Scotland in the General Medical Council and lecturer on diseases of the skin at Edinburgh University; Dr. Hilarion Marcus Fernando, member of the legislative council of the Island of Ceylon and Dr. Bernard Spilsbury, lecturer of morbid anatomy at St. Bartholomew's Hospital Medical College.——The Kaisar-i-Hind medal has been conferred on Dr. Robert Harper, medical missionary of the American Baptist Mission, Burma.

Deaths in Other Countries

Dr. **John B. Haycraft,** emeritus professor of physiology at University College, Wales.——Dr. **T. W. Fowler,** former mayor of Coventry, England, and president of the Coventry Division of the British Medical Association; aged 61.—— Dr. **Bernard Pickering,** secretary of the Bolton (England) Medical Association, December 18.——Dr. **John J. Pringle,** lecturer on dermatology at the Middlesex Hospital; secretary of the Dermatological Society of London; formerly president of the dermatologic section of the Royal Society of Medicine, and the British Medical Association; at Christchurch, New Zealand, in December; aged 67. Dr. Pringle was a corresponding member of the Société française de dermatologie, of the Wiener and Berliner dermatologische Gesellschaften and of the Societá Italiana di dermatologia. He edited the *Portfolio of Dermochromes* and the *British Journal of Dermatology.*——Dr. **F. P. Nunneley,** at Bordighera, December 17.——Dr. **Horatio P. Symonds,** formerly lecturer on surgery at the University of Oxford and president of the surgical section of the British Medical Association; January 16, aged 71.——Dr. **H. Hartmann,** aged 60, the leader of the movement for organization of the profession in Germany, which resulted in the foundation of the Leipzig League, now renamed the Hartmann League. As a general practitioner at Leipzig, he early appreciated the evils of contract practice in the absence of concerted action by physicians, but he found it uphill work in 1900 to rouse the profession to the advantages of organization. The general acceptance of the principle of the "free choice" of a physician by the insured was his latest and greatest triumph.——Dr. **Vaclac Pitha,** professor of gynecology and obstetrics at the University of Prague, aged 65.——Dr. **Francisco Rueda,** an otolaryngologist, at Madrid. ——Dr. **Manuel L. Sanguinetti,** surgeon to the Garibaldi Hospital at Rosario.——Dr. **Clément Philippe** of Brussels, aged 67.——Dr. **Gennaro D'Errico,** instructor in experimental physiology at the University of Naples.——Dr. **Leonel Plasencia,** professor of biologic and medical chemistry, eminent in laboratory research, and Dr. **Rafael Pérez Vento,** professor of physiology, both at the University of Havana. ——Dr. **Edmundo Lacerda** of Petropolis.——Dr. **P. Müller,** formerly director of the gynecologic clinic at Berne, aged 86. ——Dr. **F. Schanz,** an ophthalmologist of Dresden.——Dr. **Victor Bovet,** at an advanced age. He was an authority on military medicine in his day, and instructor at the University of Berne.

Government Services

Hospital to Be Discontinued

Dr. J. E. Dyer, head of the government hospital, Colfax, Wash., received orders from Washington, February 1, to close the institution at once. The thirty men still under treatment will be transferred to Knoxville or other government hospitals, it is announced. The Colfax institution has been in operation about two years.

Examination for Commissions

An examination for those who desire to obtain commissions in the Medical Corps of the regular army is announced for July 16-20, 1923, at the Office of the Surgeon General in Washington, D. C.

Bill to Repress Prostitution

The bill pending in the Senate to enlarge the powers of the Department of Justice for the repression of prostitution for the protection of the Army and Navy has been favorably reported from the Committee on Judiciary. The purpose of this bill is to revive the functions formerly exercised by the U. S. Interdepartmental Social Hygiene Board, and to authorize agents of the Department of Justice to inquire into vice conditions in the vicinity of army and navy posts, forts or hospitals. The bill proposes an expenditure of $325,000 a year for carrying out its provisions.

Hearing on Narcotics Before House Committee

The Committee on Foreign Affairs of the House of Representatives, Tuesday, February 13, began hearings on House Joint Resolution No. 430, which requests the President to urge certain foreign governments to limit the production of narcotic drugs and raw materials of which they are made to the amount actually required for medicinal and scientific purposes. The resolution states that the annual production of opium is approximately 1,500 tons, of which less than 75 tons is required. It also asks the President to request Great Britain, Persia and Turkey to limit the growth of the poppy and the production of opium and its derivatives, and to call on the governments of Peru, Bolivia and the Netherlands to eliminate the production of coca leaves and their derivatives. It is expected that physicians and officials from the Federal Narcotic Bureau, and from the Department of Justice will be called to testify before the committee.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 26, 1923.

The Jenner Centenary

The centenary of the death of Jenner has been commemorated in various ways. This notice in memoriam appeared in the *Times:*

JENNER.—In honoured memory of EDWARD JENNER, M.D., LL.D., F.R.S., Physician Extraordinary to His Majesty King George IV, Foreign Associate of the National Institute of France, &c., the discoverer of vaccination, born at the Vicarage, Berkeley, Glos., 17th May, 1749, died at Berkeley, 26th January, 1823. This notice is inserted by descendants of Dr. Jenner's sister Ann, who married the Rev. William Davies, Rector of Eastington, Glos.

But the very efficacy of his discovery has led people to forget its value, for the universal devastation once caused by smallpox is forgotten. It is well to recall that in his time the disease was regarded as one that none might expect to escape. "A mother's son is never her own till he has had the smallpox" was a current saying. At the Royal Society of Medicine, the president, Sir William Hale White, delivered an address on "Jenner and His Work." Mr. Edward Jenner Davies of Stonehouse, Gloucestershire, a great-grandson of Jenner's sister Ann, placed a laurel wreath on the statue of Jenner in Gloucester cathedral. Other descendants of Jenner present were a great-granddaughter and two great-great-granddaughters. An Indian physician, Dr. M. L. Bangara, placed on the statue a gift of flowers inscribed "An humble tribute from India." A commemorative exhibition of personal relics, medals, books, manuscripts, engravings, caricatures and other objects connected with Jenner is being held at the Wellcome Museum, and will remain open for some months.

Maintenance of Illegitimate Children

An influential deputation laid before the home secretary evidence as to the unsatisfactory position of unmarried mothers and illegitimate children. They contended that the unfair proportion of the financial burden thrown on the mother was an important factor in the morbidity and mortality of illegitimate children, and also tended to a further moral lapse on the part of the mothers. They urged the home secretary to introduce a bill making it possible for unmarried parents by their subsequent marriage to relieve the innocent child of the stigma of illegitimacy, as in every other civilized country. They also proposed that the bill include provision for an increase in the maximum amount payable under an affiliation order, the present sum of $2.50 weekly being inadequate in view of the present cost of maintaining a child. The home secretary considered that the deputation had put before him a very strong case, and he expressed sympathy with the objects in view. Though want of time prevented him from promising that the government would introduce a bill this session, that would not prevent the introduction of a private member's bill, if successful in the ballot. In such circumstances, the government might see its way to furnish facilities for the passage of such a measure.

Control of the Drug Traffic

Sir William Collins, who, at The Hague in 1911-1912, assisted in drafting the measures of the International Opium Convention, has during the last five years published in the *Times* several communications urging their effectuation and the need of world-wide control of the production of opium, morphin, cocain and other drugs of addiction, if the growing abuse of these drugs and their employment for other than legitimate purposes are to be prevented or checked. In a letter to the *Times,* he now points out that it is the excess of production over any conceivable legitimate use that contributes largely to the misuse of these drugs. A report laid before the assembly of the League of Nations, last September, recommended control of production so as to limit it to the amount required for medical and legitimate purposes, as the most effective way of stopping illicit traffic. But it has not been found easy to determine with accuracy what the legitimate requirements of these drugs are (1) for the world's consumption and (2) to meet the demands of each particular nation. At the Hague Conference of 1911, Sir William Collins stated that, at a London hospital treating 138,000 patients annually, the consumption of opium was less than 13 pounds, and of morphin less than 5 ounces. Recently, with the assistance of Mr. Langford Moore, dispenser to St. Bartholomew's Hospital, he has ascertained that at ten large London hospitals, which treated more than 70,000 inpatients and more than 550,000 outpatients in the year 1921, the amount of opium used was less than 42 pounds; of morphin, less than 5½ pounds, and of cocain, a little more than 9 pounds. These relatively modest amounts tend to show that of the hundreds of thousands of kilograms of opium produced and of the tons of morphin manufactured and exported annually, there must be an ample margin available for illicit purposes.

The Elixir of Life

In a previous letter (THE JOURNAL, Jan 13, 1923, p. 121), the arrival in London of Dr. Conrad Burchardi, for the purpose of performing Steinach's operation, was announced. An evidently inspired article in the lay press informs us that, in the six weeks he has been in London, he has had 150 patients, among whom are a number of physicians. Dr. Burchardi is described as "the blond giant from Vienna," who is "no crank and performs a straightforward operation." He is "highly qualified, with diplomas from Heidelberg, Freiberg and Bonn." He is reported to have said: "We cannot cure everybody. The patient must have a sound heart, lungs and liver, and I have had already to turn down about 200 people. The operation is undoubtedly successful in most cases of neurasthenia, and there is no limit to age. I have had cures with men whose ages varied from 28 to 78. On women, we cannot operate. In their case, roentgen-ray treatment is necessary, but also is successful. I had the pleasure of enabling a society woman to return to the abandoned joys of the hunting field." Dr. Burchardi is described as born in Vienna of Danish parents, the grandson of a former prime minister of Denmark. He says that he is quite prepared to lecture to the profession. So far, neither the profession nor its journals have taken any notice of his work.

Dangerous Drugs Regulations in Victoria

New regulations governing the manufacture, sale, possession and distribution of certain poisonous drugs have come into force in Victoria. Poisons are divided into three classes: dangerous, specified and potent drugs. The first class includes morphin, cocain, ecgonin, diamorphin and other opium preparations, provided the preparation contains not less than 2 per cent. of cocain, ecgonin or diamorphin. The only persons authorized to possess, sell or distribute dangerous drugs are registered physicians, dentists, pharmacists, veterinary surgeons, licensed dealers in poisons, persons holding a special permit, and licensed manufacturers. Records must be kept of all purchases and sales, and the names and addresses of all purchasers must be entered. Dentists and veterinary surgeons are required to indicate on prescriptions that the drugs are required for local, dental or animal treatment, as the case may be. A physician must indicate on his prescription the number of times the prescrip-

tion may be dispensed, the number being limited to four. The prescription must be stamped or marked on each occasion on which it is dispensed, and when dispensed for the last time, as indicated by the maximum number marked on the script, the pharmacist must stamp or write the word "canceled" across the prescription.

When a prescription is dictated either over the telephone or over the counter, a written and signed prescription must be delivered to the pharmacist without delay. The prescription must bear the full signature in writing (a rubber stamp may not be used for this purpose), the date, and the name of the patient. Physicians who dispense their own prescriptions must keep records of all stocks of the drugs named and of all use of them. The second class (the specified drugs) includes chloral, ergot, paraldehyd, diethylbarbituric acid and sulphomethane. The pharmacist may not dispense prescriptions containing them more than twice unless the physician indicates the number of times they may be dispensed. After the prescription has been dispensed the maximum number of times, it must be marked "canceled." These drugs may not be supplied without a physician's prescription, but they may be sold to nurses in immediate charge of a public hospital or a nurse employed by the Victorian Bush Nursing Association, on a written order of a medical officer of this association. The third class (potent drugs) includes acetanilid, suprarenal, pituitary and thyroid extracts, serums or vaccines, and oil of tansy. These drugs may be sold by a pharmacist or licensed dealer in poisons, provided the label carries the words: "This preparation is a potent drug and care must be exercised in using it."

PARIS

(From Our Regular Correspondent)

Jan. 19, 1923.

Prohibition in America

I have already referred to the campaign against prohibition that is being waged in the European press, and to the ridiculously exaggerated stories that the newspapers are printing on the subject (The Journal, July 24, 1920, p. 255, and April 2, 1921, p. 947). Dr. G. Linossier, of the editorial staff of the *Paris médical,* recently began in the journal he represents a series of articles entitled, "In Dry America." He also makes reference to recent fantastic accounts that have appeared in the daily papers, which tend to discredit prohibition in general. For instance, a telegraphic dispatch dated New York, October 13, which has made the rounds of the press, affirms that prohibition has increased the number of deaths from alcohol. The number is said to have increased from eighty-three to 173 for an equal period of time. Linossier states that such a result is too improbable to be convincing, but the opponents of prohibition lose no opportunity to emphasize that the Americans, no longer having ready access to alcoholic beverages of good quality such as are found in profusion in the cabarets of France, have recourse to adulterated products, with the result that many deaths ensue. A few weeks ago, a popular illustrated journal stated that the majority of the American people regarded with impatience all Draconian legislation, and that not a week passes without some secret depository of whisky being pillaged by the mob. These disorderly scenes are said often to degenerate into regular pitched battles. In order to arouse the imagination of its readers still further, the journal printed a large colored picture representing a crowd, in a street of New York, fleeing after such a raid. The fugitives have their arms full of the stolen goods, while many bottles lie broken on the ground; a policeman, personifying "hideous" prohibition, is beating a woman crazed with drink. As Linossier remarks, all those in France (and the number is very great) who, directly and indirectly, make their living from the sale of alcoholic beverages have an interest in spreading the belief that prohibition is a failure; for, in case it proves a success in other countries, a contagious influence on France is feared. On the other hand, nearly every person in France has been reared from childhood with the false idea that wine is a generator of energy and strength quite indispensable to manual laborers and mental workers alike. In view of such mentality, it is only natural that they have wrong conceptions in regard to prohibition. Even those who do not make almost a religious cult of their wine worship, and do not regard wine as indispensable, are so accustomed to the hesitating policy of our public authorities that they are not a little surprised at the heroic decision of the American people. They are therefore ready to believe the newspapers that tell them that prohibition in America meets with great resistance and brings about disastrous results.

The Future Problems of Chemotherapy

At the close of his term as president of the Academy of Medicine, Professor Béhal delivered an address on the rôle of chemistry and the part it should play in therapeutics. He holds that the time has arrived when chemistry should be applied to the study of organotherapeutic products, vitamins, and even serums. Practitioners cannot give too much attention to the use of organotherapeutic medicaments. It is true that it is difficult to determine the dosage, for the reason that the active principles that the medicaments contain are not fully known and understood, which gives rise to much uncertainty in their use. Being derived from the organs of different animals, sometimes not belonging to the same species, their therapeutic activity may be highly variable. It should be noted that some organs contain a reserve supply of the active principle, and that others, on the contrary, contain only a very small amount, which is generated, from time to time, as needs require. Certain glands possess multiple functions depending on the diverse products that they elaborate, and it would be possible for one of these secretions to be, therapeutically, an antagonist of another produced by the same gland. In some glands the quantity of active products that they contain seems to vary greatly. Thus, Kendall has discovered that the quantity of thyroxin in the thyroid gland of the hog, during the months of January, February and March, is so slight that practically none can be extracted.

Viewing the matter from another angle, since the effects of some organotherapeutic products cannot be perceived except after some time has elapsed, it seems advisable to consider whether troubles may not develop that will escape observation. Has not the administration of thyroid gland, which produces such marvelous results in myxedema, sometimes occasioned grave accidents?

Béhal has no intention of advising that the use of these products be discontinued, for some of them have an incontestable value; but he holds that there is urgent need of trying to establish the correct dosage of their active components. It would be better still to isolate them and reproduce them synthetically. Isolation does not seem impossible, for most of these products cannot be very complicated, to judge of them after their analogy with the definite active principles of plants. The greater the number of plants of a given family, or, the greater the number of different families, in which a given product may be found, the less complex its chemical structure is, and one is entitled, with some appearance of reason, to apply the same principle to products produced synthetically by animal cells. Substances of complex chemical composition are found in only one species, one genus or one family. Then, as the number of carbon atoms in substances decreases, we find them in several families, and, finally, if their composition is very simple, they are found in

a very large number of families. Quinin, which contains twenty carbon atoms, is produced only by certain species of *Cinchona.*

Morphin, which contains seventeen carbon atoms, is found only in *Papaver somniferum-album.* Atropin is somewhat less complex, and we find it in several genera of the *Solanaceae* family: *Atropa, Datura, Scopolia.*

Tyrosin, which has nine carbon atoms, exists in a large number of plants belonging to widely different families. From this we may conclude that, if the same secretion is produced by animals belonging to different species, it is probable that the active substance is not of great molecular complexity. We have already two examples that confirm this view: epinephrin, produced by the suprarenal capsules, and thyroxin, derived from the thyroid glands of mammals.

The same conception is applicable also to vitamins, which are derived from very diverse plants, including brewers' yeast, and to animals that are considered incapable of producing them. Béhal cites a fact that shows how much the light of chemistry is needed to elucidate the question of vitamins, which is still so obscure. G. Bertrand has shown recently that an exceedingly minute quantity of zinc is necessary to assure the existence of mice, and that a still larger quantity is indispensable for gestation and parturition. If it were not known that the ingested substance is zinc, it would doubtless be regarded as a vitamin. The solution of these various problems cannot be found except through the collaboration of physiologists and chemists. The former must guide the latter in the extraction of the active substances.

MADRID

(From Our Regular Correspondent)

Jan. 12, 1923.

Pasteur Centennial

On December 17, a meeting in honor of Pasteur was held in the Atheneum. Sr. Salvatella, secretary of education, Professor Carracido, president of the Central University, Dr. Gimeno, professor of medicine, former cabinet member and Spanish representative in the League of Nations, Dr. Maranon, physician in the General Hospital and vice president of the Atheneum, the French ambassador to Spain, and Professor Pettit, representing the Pasteur Institute of Paris, were present. Dr. Maranon read an address by Dr. Turro of Barcelona, and other addresses were delivered by Drs. Carracido, Gimeno and Pettit, the last in French. Dr. Pettit made the announcement, received with applause, that the Pasteur Institute had confirmed Dr. Ferran's conclusions as to the saprophytic etiology of tuberculosis, which is a modification of Koch's classical concept. Physicians, who had hitherto paid no attention to Ferran's views, now learned in French what they had overlooked in Spanish. This is not an exceptional occurrence in this country, where we discovered Cajal when his works were translated into Spanish from German.

Leprosy in Spain

Spanish sanitary authorities have had to overcome the indifference not only of politicians, but even of physicians. Spanish apathy is difficult to overcome in sanitary campaigns, and the few physicians who struggle with congress to improve public health conditions are faced with the ignorance of politicians and the distrust of physicians. Dr. Pulido failed to secure from Congress an appropriation of 100,000 pesetas ($16,000) for the campaign against leprosy. Dr. Fernandez Criado, secretary of the Spanish Dermatologic Society, has therefore now published facts as to the prevalence of the disease in Spain. He stated that, last year, he saw two new cases of leprosy in Madrid. One was a boy, aged 19, who has lived in a suburb of Madrid since he was 2 years old, and who works for a street paving company. The second was a well-to-do woman, aged 50, who has lived in Madrid more than six years. Neither patient had been in contact with other cases. Four years before, Criado had diagnosed leprosy in another patient, aged 26, who claimed that she had had no previous disease, except a cold in the head, during the preceding four years. She was employed as a nurse, and before that had been wet nurse in another family. She came from Pastrana, Guadalajara, where there are other leper families. The laboratory confirmed the diagnosis, and the patient disappeared as soon as she learned the nature of her illness. A few months afterward, he came across her in the street.

In Spain, leprosy is either increasing, or diagnosis has improved. The authoritative book on the disease here is Dr. Benito Hernando's "La Lepra en Granada." In addition, there are several papers by Dr. Azua and a contribution from the late Dr. Garcia del Mazo, which gives the first statistics on leprosy in Spain. Garcia del Mazo compiled 898 cases, which Azua increased to 987, and there are probably over 1,000. No province is free. The colonial wars of a quarter of a century ago and the 1900-1910 immigration of indigents from Latin America caused the appearance of a number of foci in the provinces of Salamanca, Zamora and Leon. This American immigration and the yearly African migration to and from Valencia, Alicante, Murcia and Almeria, to supply farm labor, are responsible for the increase.

The people object to compulsory notification and isolation, the importance of which is appreciated only by physicians. Criado cited the cases of lepers who accept seclusion in San Juan de Dios Hospital at Madrid only when they are absolutely unable to pursue their calling. He mentioned two cases; one patient was suffering from leprous pemphigus and extensive scabious ulcers on the legs, which were dressed with dirty rags; the dressing of the sores was alternated with the sale of fish. The other case was in a pedler. Some time ago, a newspaper described a "strike" of more than twenty lepers who ran away from the hospital at Seville as a protest against the poor quality of the food. In Almeria, the lepers have the run of the streets; some beg alms, others, better off, visit saloons, and return at night to the hospital, where they sleep in the mortuary. Even Goya has no more gruesome picture. In May, 1912, when Criado was in charge of the skin clinic of the Madrid medical school, he saw a patient, from Toledo, aged 45, who appeared strong and healthy. A confluent tuberculoleprous rash covered both thighs. The diagnosis was confirmed by Dr. Azua. There were no cases of leprosy in the patient's native town, and he had probably been infected at one of the Andalusian communities, which he visited regularly as a buyer of cereals and oils, and which are noted as leprous foci. The eruption had begun two months before, and he was treated by a local physician, who prescribed cathartics, bloodletting and restriction of diet. As the tubercles did not vanish, arsenical injections were advised; but they were not given, as the patient went on to Madrid. The local physician was informed of the diagnosis in order to prevent further spread of the disease. The local board of health instructed the patient to stay away from all public places. A pit was dug in a condemned cemetery where the leper was supposed personally to bury all food leavings, wash and toilet water, and all house refuse. The news soon spread in the small town, and the baker, dairyman and butcher rejected his custom; the maid left, the barber refused to wait on him, and when the poor fellow went out, his neighbors ran away. Eight days afterward he came in tears to ask for a certificate of freedom from leprosy, which he thought might solve the problem. He had even considered suicide, and was kept from it only

by a sense of duty to his wife, who was an invalid, helpless with chronic rheumatism. He solved the problem by disappearing overnight, leaving no clue to his next abode.

In a previous address, Dr. Juarros complained that he had lost track of a soldier who had been discharged for leprosy. Criado reported the employment of a leper in the postal service and the fact that in 1912 an attendant in the Ocana penitentiary had leprous lesions on both legs. To avoid such happenings, he pleaded for better teaching in dermatology, the creation of modern leprosariums, the issuance of proper regulations as to isolation and prevention for patients who prefer to stay at home, and, finally, the redrawing of the leprosy map of Spain.

BUDAPEST

(From Our Regular Correspondent)

Jan. 17, 1923.

Meeting of the Medical Society of Oebreczen

At the recent meeting of the Medical Society of Oebreczen, Dr. Kenezi read a paper on obesity from the point of view of etiology. Most commonly the condition is due either to overfeeding or to lack of exercise, and frequently these two causes are combined. There is another group of cases in which obesity develops in spite of the fact that food and exercise are taken in proper amounts. This has been termed constitutional obesity. After prolonged discussion and study, the conclusion has been reached that in such cases the oxidation power of the organism is deficient. This, as stated years ago by Professor Noorden, bears a direct relationship to thyroid function. Temporary changes in this gland may raise or depress the power of oxidation. Dr. Kenezi therefore designated constitutional obesity "thyreogenic obesity," and classified the types as: (*a*) primary thyreogenic obesity, dependent on actual changes, such as atrophy, degeneration and functional weakness in the thyroid, and (*b*) secondary thyreogenic obesity, due to functional anomalies of the thyroid which depend on the action of other organs, such as the pancreas, hypophysis, suprarenals, thymus, and pineal gland. These questions not only have theoretical interest, but also possess important bearings on therapeutics; for anomalies of metabolism known as obesity can be treated rightly only when the origin of the anomaly has been correctly diagnosed.

HYSTERIA AND PSYCHANALYSIS

Dr. Paul Grosz objected to the present tendency of many practitioners to treat without judgment all cases of hysteria by psychanalysis. He criticized Freud's theory of hysteria, with its many additions. According to Freud, Steckel and Ferenczi, the disease is always caused by psychic trauma, which subconsciously continues the neurosis until it is brought into consciousness, when it is cured. Ferenczi has further maintained that the psychic trauma is always of a sexual nature, and agrees with his teacher, Freud, that a "lesion" of this description is at the basis of all neuroses and that there is no neurosis without disturbance of sexual life. Dr. Grosz pointed out the grave risks of a course of psychanalytic treatment, which often extends over months. He emphasized the uncritical nature of this psychologic or sexual cure as applied to all neuroses.

THE CLINICAL AND MEDICOLEGAL ASPECTS OF IMBECILITY

Dr. Strehlinger, who studied the clinical and medicolegal aspects of imbecility in the clinic of Professor Sommer in Giessen, concluded that: 1. Idiots in institutions resemble the inmates of reform schools in many bodily and mental characteristics. 2. It is therefore desirable that there should be a uniform method of investigating all such cases. 3. In studying feeblemindedness, a great many psychologic and psychophysical methods might be usefully applied for the purpose of obtaining a better insight into the mental processes in addition to those outlined in the examination blanks. 4. The improved system of classification was valuable medically, psychologically and educationally; moreover, it led to better cooperation between the medical and the educational authorities. 5. The earlier correct inferences are drawn as to the mental capacity and suitability for institutional treatment, the more positively can a case be definitely grouped in accordance with clinical and bodily peculiarities. 6. In the investigation of juvenile delinquency it must be remembered that some inmates of reform schools are obviously imbecile; if these are eliminated, the ordinary methods of investigation often fail to detect the defect; on the other hand, in cases with apparently normal mentality, more particularly as regards intellectual capacity, there are likely to be hysterical and epileptoid manifestations, as well as evidence of moral defect. 7. Possession by a juvenile offender of mental capacity sufficient to comprehend the culpability of an act is a bad sign. 8. When juvenile offenders were of apparently normal mental capacity, the investigation of environmental and inherited characters, and of family circumstances, often led to the recognition of external or internal causes for the delinquency. 9. Analysis of the external or internal factors will probably tend more and more to prove that juvenile delinquency, both in its individual and in its social relations, must be regarded as due to disease. 10. For the practical purposes required in judicial decisions and in questions connected with administrative protection of imbeciles, the particular nature of the defect must be considered first, because the different types exhibit various degrees of educability and unfitness for social existence.

ARTERIOSCLEROTIC NEURASTHENIA

Dr. Brokes said that arteriosclerotic neurasthenia is common, especially between the ages of 50 and 55; it is characterized by anxiety and depression (in association with cardiac symptoms), insomnia, heaviness and numbness of the head, fatigability and incapacity for work. On the mental side it is distinguished by apathy, ill humor and irritability. From this stage the transition is gradual to arteriosclerotic dementia, in which the memory is greatly impaired, all psychic processes are slower, the patient becomes stupid, his opinions and judgments are mechanical and elementary, his imagination atrophies, and his will-power diminishes.

BERLIN

(From Our Regular Correspondent)

Jan. 20, 1923.

International Conference on Standardization of Serums

In December, 1921, an international health conference was held in London, under the auspices of the League of Nations, to discuss the standardization of serums and serum reactions; in December, 1922, a second conference for the same purpose was held in the Pasteur Institute, Paris, at the suggestion and under the chairmanship of Professor Madsen, president of the health committee of the League of Nations. Professor Neufeld, director of the Robert Koch Institute for Infectious Diseases, Berlin, who, with Wassermann, Kolle and Sachs, took part in the conference, gives a report of the proceedings in the *Deutsche medizinische Wochenschrift,* Jan. 5, 1923. The transactions were carried on by subcommittees. The first dealt with the standardization of tetanus and diphtheria antitoxins. These investigations are nearly complete, and it is expected that an agreement will soon be reached as to a generally acceptable method of titration and standardization. Heretofore, not only have other countries used standards (immunity units) different from those of Germany, but there have been fundamental differences in titration.

For example, in France, not only is Ehrlich's procedure used for the titration of diphtheria serum (combinations of toxin and antitoxin), but the effect on living diphtheria cultures is also tested.

A second subcommittee took up the question of dysentery serum, which, with us, is not required to be tested. It is certain that many unfavorable observations on dysentery serum in Germany have been due largely to the use of defective serums, and that results would be improved by a standard titration approved by the state public health service. Investigations of the antitoxin test on rabbits and mice are still being carried on.

The largest subcommittee, under the chairmanship of Bordet and Wassermann, discussed the serodiagnosis of syphilis, and several reports were read on comparisons between the original method of complement fixation, and the flocculation or precipitation methods of Sachs-Georgi, Meinicke and Dreyer. These investigations are to be continued in certain definite directions by one laboratory of each of the several countries. In Germany there have been many complaints of evils arising from the serodiagnosis of syphilis, and, in consequence, an attempt was begun last year to prevent as far as possible the injuries and untoward effects that may arise from the improper application of this delicate and practically important procedure, by adopting an officially recognized and uniform method of application of the Wassermann test. This regulation has encountered considerable opposition, especially from directors of laboratories, and it is hoped that the investigations of the health committee of the League of Nations will be of great value in preparing a revision of existing regulations, which will be necessary before long.

Two other subcommittees are engaged in investigation of the antipneumococcus and the antimeningococcus serums, respectively. With regard to the former, the subcommittee expressed the opinion that an opinion as to their efficacy would at this time be premature; however, we possess reliable methods of titration, and if antipneumococcus serums of high value according to these standards are tested in pneumonia cases which are not too far advanced, we may expect, within a reasonable time, a final and reliable judgment on the value of this form of serotherapy.

With the antimeningococcus serums, serotherapy is likewise much complicated by the fact that there are several different types of causative agent, and corresponding variations in antibodies. In Germany the state has already established standards for meningococcus serum. These standards, however, give no consideration to the different serologic types, and there is therefore need for revision. Cultures and serums of the various types of organisms are being exchanged by the laboratories conducting the investigation, and the question as to what antibodies (bacteriotropins, antiendotoxins, agglutinins, antibodies causing complement fixation) shall be used to establish the titer of a given serum is being studied according to definite standards set up by the committee. We should await the results of these investigations before we revise the official standards in Germany. This is an exceedingly important, practical question; for, in the opinion of Professor Neufeld, the antimeningococcus serum is possibly the most effective therapeutic serum yet used in the treatment of human diseases.

Amplified Audibility of Heart Sounds

Refinements in the technic of electric high tension currents have served as a stimulus to physicians to attack the problem of utilizing these currents for the clearer elucidation of the heart sounds. In an address before the Medizinische Gesellschaft recently, Dr. Leo Jacobsohn explained his experiments in this direction. He uses a type of vacuum tube such as is employed in wireless telegraphy for the amplification of impulses, and which burns like an incandescent lamp. With a comparatively small apparatus, sound units can be amplified a thousandfold or more. For instance, the ticking of a watch can be heard from the farthest corner of a large hall. Dr. Jacobsohn places a microphone on the chest, and, with his apparatus, every one in the room can hear the heart sounds distinctly. They are not as yet perfectly clear, but this was true for the first impulses transmitted by the first telephone or the first phonograph; but even now, the volume of the separate sounds, their rhythm and their frequency can be presented simultaneously to a good-sized audience. In the administration of anesthetics, an assistant to watch the condition of the pulse can be dispensed with, and in dealing with a difficult obstetric case the physician can be informed by a bell signal whether the fetal heart is still beating.

Death of Johannes Orth

Professor Orth, for many years director of the Berlin Pathologic Institute, died recently just one day before his seventy-sixth birthday. During recent years, he had suffered much from gallstones, and a few years ago Bier removed the gallbladder. In spite of this operation, he had frequent attacks of fever, but the immediate cause of death was given as cardiac insufficiency. He resigned his position as director soon after his seventieth birthday. He was the successor of Virchow, and he performed the duties of the post in the spirit of his great teacher. Orth distinguished himself, as did Virchow, by a very strong sense of responsibility to the scientific world, and exhibited painful exactitude in his scientific investigations and publications. Only the most complete conviction of the reliability of his findings could ever induce him to bring his researches on a given problem to a close and to make his results known to his fellow scientists. In his entire personality, as well as in his scientific work, he was upright and influenced in his opinions and acts solely by love of truth and not by personal considerations. He therefore enjoyed the esteem of all men of science. In addition, he won the admiration of those who did not allow themselves to be affected by his gruff outward manner, but penetrated the rough exterior and learned to know the kind heart that lay beneath. His scientific researches extended to most branches of pathologic anatomy and pathology. In recent years he devoted himself more especially to research on tuberculosis and cancer. In his studies on tuberculosis he opposed Robert Koch's belief in the slight importance of bovine tuberculosis. Probably the last article he wrote was on tuberculosis, and appeared in the *Deutsche medizinische Wochenschrift*, Oct. 27, 1922, p. 1437, under the title, "The Problem of the Unity or the Duality of Tuberculous Processes in the Lung." He devoted much attention to infectious diseases. His textbooks have been widely used, especially "Pathologisch-anatomische Diagnostik," which appeared first in 1876 and was followed by many subsequent editions. In this work particularly, we find evidence of Orth's great capacity for scientific instruction and delineation. In exceedingly clear and concise form, he gives only the established facts of pathologic diagnosis. I still remember with gratitude the great benefit that I derived as a student from this book. His large textbook on "Spezielle pathologische Anatomie" was unfortunately not completed. Orth was the first pathologist to be admitted to the Prussian Academy of Sciences. Like Virchow, he served for many years as president of the Berliner medizinische Gesellschaft, and after withdrawal from active participation, two years ago, he was appointed "president emeritus." Among other official positions, he held the office of vice president of the Robert Koch Foundation for the Combating of Tuberculosis.

Marriages

THEODORE L. HAZARD, Iowa City, Iowa, to Miss Nellie Maude Black of Drummond, Okla., at Kansas City, Mo., January 22.

FORREST NELSON ANDERSON, Lawrence, Kan., to Miss Anna E. Spradling of Kansas City, Mo., January 20.

ALFRED E. P. ROCKWELL, Worcester, Mass., to DR. KATHERINE FRENCH of Framingham, January 15.

HERBERT A. BRADY to Miss Elizabeth M. Goble, both of Grand Rapids, Mich., January 10.

ELDO HORACE M. CLAUSER, Muncie, Ind., to Miss Cora Benson of Westfield, January 19.

EDWARD WALTER ST. PIERRE to Miss Marjorie McGuire, both of Portland, Ore., December 16.

LEON BLOCK, Denver, to Miss Bertha May Levy of Ocean Springs, Miss., January 7.

CARROLL LEE SMITH to Miss Lucille Barrett, both of Spokane, Wash., January 27.

WILLIAM F. BECKER to Miss Bertha Dudey, both of Milwaukee, December 23.

A. R. SPINDLER to Miss Ethel Blanche Hoyt, both of Akron, Ohio, January 19.

L. B. WARD, Shaw, Miss., to Miss Vivian McCool of Greenville, January 5.

Deaths

Caroline M. Purnell ⊕ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1887; member of the Obstetrical Society of Philadelphia; associate professor of gynecology at her alma mater; special commissioner for the American Women's Hospitals in France during the World War; gynecologist to the Woman's Hospital, the West Philadelphia Hospital for Women, the Friends' Hospital, the Norristown State Hospital for Insane, Norristown, and the State Hospital for Chronic Insane, Wernersville; aged 57; died, February 3.

Clinton Wayne Kelly, Louisville, Ky.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1867; emeritus professor of anatomy at the University of Louisville Medical Department, Louisville; Civil War veteran; practitioner in Louisville for more than a half a century; aged 78; died, January 26, from pneumonia.

Luman Moody Giffin ⊕ Boulder, Colo.; Rush Medical College, Chicago, 1875; emeritus professor of surgery and dean from 1883-1911 of the University of Colorado School of Medicine; at one time superintendent of the University Hospital (Community Hospital); aged 72; died, January 23, from cerebral hemorrhage.

David William McPherson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1895; lieutenant-colonel, Canadian Army Medical Corps; served during the World War in France and England; aged 51; died recently, at the Wellesley Hospital, from bronchopneumonia.

Frank Green Simmons, Richmond, Va.; Vanderbilt University Medical Department, Nashville, Tenn., 1890; member of the Medical Society of Virginia; formerly instructor of pediatrics at the Medical College of Virginia, Richmond; aged 53; died, January 27, following a long illness.

Anna R. Osmond ⊕ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1897; formerly on the staff of the Woman's Hospital of Philadelphia, and for twenty years physician to the woman's department of the Philadelphia County Prison; aged 65; died, February 1.

Walter Guy Law, Ashland, Wis.; Rush Medical College, Chicago, 1896; member of the State Medical Society of Wisconsin; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 50; died suddenly in his office, January 25, from cerebral hemorrhage.

Charles Victor Fisher, Klamath Falls, Ore.; Willamette University Medical Department, Salem, 1898; member of the Oregon State Medical Association and the Pacific Coast Oto-Ophthalmological Society; aged 52; died, January 19, from carcinoma of the prostate.

Oscar George Cowley, Saginaw, Mich.; Detroit College of Medicine and Surgery, Detroit, 1904; member of the Michigan State Medical Association; aged 41; on the staff of the Woman's Hospital and the Saginaw General Hospital; died, January 30, from heart disease.

Myron Edwin Lane, Chicago; College of Physicians and Surgeons, Chicago, 1887; formerly on the staff of St. Joseph's Hospital, New York City; member of staff of the Chicago Municipal Tuberculosis Sanitarium; aged 60; died, January 17, from heart disease.

Daniel Hopkinson ⊕ Milwaukee, Wis.; Milwaukee Medical College, 1901; member of the American Society of Clinical Pathologists; professor of pathology at Marquette University School of Medicine; state pathologist; aged 46; died suddenly, February 1.

Alexander Horton Travis ⊕ New York; Medical Department of Columbia College, New York, 1887; formerly on the staff of St. Joseph's Hospital for Consumptives; aged 60; died, February 1, from cerebral hemorrhage.

Frederick A. Dudley, King Ferry, N. Y.; Yale University School of Medicine, New Haven, Conn., 1862; formerly member of the state legislature; Civil War veteran; aged 81; died, January 14, from senility.

Elmer Harley, Seeley, Calif.; University of Colorado School of Medicine, Denver, 1914; member of the Medical Society of the State of California; aged 46; died, January 28, from pulmonary tuberculosis.

George T. Shower, Baltimore; Hahnemann Medical College of Philadelphia, 1882; formerly president of the state homeopathic society; Civil War veteran; aged 81; died, February 2, from senility.

Griffy Benjamin Ward, Fairbank, Iowa; University of Michigan Medical School, Ann Arbor, 1880; member of the Iowa State Medical Society; aged 65; died, January 27, from heart disease.

John Edward King, Eldora, Iowa; Hahnemann Medical College and Hospital of Chicago, 1867; former president of the state homeopathic association; aged 97; died, January 23, from senility.

William Oliver Skinner, Griggsville, Ill.; University of Pennsylvania School of Medicine, Philadelphia, 1874; member of the Illinois State Medical Society; aged 74; died, January 26.

Willard Shepard Everett, Newton, Mass.; Medical School of Harvard University, Boston, 1864; member of the Massachusetts Medical Society; aged 91; died, January 31, from senility.

John Henry McMullan, Edenton, N. C.; University of Maryland School of Medicine, Baltimore, 1876; aged 73; died, December 10, at Norfolk, Va., following an appendectomy.

Edwin DeMoss Lunn, Houston, Texas; Medical Department University of Louisville, Louisville, Ky., 1890; aged 51; died suddenly, January 20, from carbolic acid poisoning.

G. C. Chandler, Shreveport, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1888; for ten years city health officer; aged 57; died, January 25.

Edwin Elvin Deal, Winchester, Mass.; Medical School of Harvard University, Boston, 1890; member of the Massachusetts Medical Society; aged 57; died, January 21.

Frank Edwin Moyer, Montpelier, Ind.; University of Michigan Medical School, Ann Arbor, 1894; aged 59; died, January 23, from heart disease and arteriosclerosis.

Frederick D. Porter, Chicago; Detroit Medical College, Detroit, 1877; member of the Illinois State Medical Society; aged 72; died, February 4, from heart disease.

James M. McCallum, Leeds, S. C.; Medical College of the State of South Carolina, Charleston, 1859; Confederate veteran; aged 87; died, January 21, from senility.

Walter Alexander Rose ⊕ Rochester, Pa.; University of Buffalo (N. Y.) Department of Medicine, 1867; aged 80; died, January 1, from bronchopneumonia.

Donald W. Campbell, Atchison, Kan.; University of Michigan Medical School, Ann Arbor, 1880; aged 60; died suddenly, January 20, from heart disease.

Henry Gerkey Pyle, Long Beach, Calif.; Cleveland University of Medicine and Surgery, Cleveland, 1894; aged 56; died, January 15, from carcinoma.

James Eneu Loughlin, Norwood Station, Pa.; Jefferson Medical College, Philadelphia, 1868; aged 76; died, January 27, from cerebral hemorrhage.

Harrison Pettit Huntsinger, Pinckneyville, Ill.; Rush Medical College, Chicago, 1879; Civil War veteran; aged 80; died, January 22, from senility.

Stanley P. Newsham, Westville, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1869; aged 73; died, January 27, at Camden.

Joseph Palmer Johnson, Lynn Haven, Fla.; Rush Medical College, Chicago, 1876; Civil War veteran; aged 84; died, December 9, from senility.

Irving Smith Coburn ⊕ Milton, Vt.; Baltimore Medical College, Baltimore, 1901; state senator, aged 48; died, January 20, from septicemia.

Charles McKenna, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1865; aged 78; died, January 8, from senility.

Scott Harrison Abbott, McKinley, Texas; Eclectic Medical Institute, Cincinnati, 1883; aged 64; died, December 22, from chronic nephritis.

Charles P. Brightwell, Maxeys, Ga.; University of Georgia Medical Department, Augusta, 1899; aged 47; died, December 25, from influenza.

Valentine Kocinski, Cleveland; Warsaw Medical College, Warsaw, Russia, 1887; aged 65; died, January 22, from bronchopneumonia.

Fred Clinton Thornley, Newark, N. J.; Jefferson Medical College of Philadelphia, 1888; aged 57; died, January 24, from mastoiditis.

J. H. Forest, Murray, Ky.; Medical Department University of Tennessee, Memphis, 1896; aged 68; died, December 11, from pneumonia.

Howard R. Hopkins, Hillsboro, Md.; Jefferson Medical College of Philadelphia, 1882; aged 70; died, January 25, from influenza.

William Henry Martin, Poindexter, Ky.; Jefferson Medical College of Philadelphia, 1851; aged 92; died, January 23, from senility.

Edwin H. Hayes, Chicago; Hahnemann Medical College and Hospital of Chicago, 1884; aged 72; died, February 11, from pneumonia.

James A. Lyons, Appleton, Wis.; College of Physicians and Surgeons, Chicago, 1894; aged 56; died, January 19, from heart disease.

George Edward Potter, Irvington, N. J.; Eclectic Medical Institute, Cincinnati, 1880; aged 67; died, January 23, from encephalitis.

Samuel Finley Smith ⊕ Indian Orchard, Mass.; University of Michigan Medical School, Ann Arbor, 1873; aged 75; died, January 22.

J. Epps Pegram, Tiplersville, Miss. (licensed, years of practice); aged 72; died, December 24, from intestinal obstruction.

Eugene Henry Howard ⊕ Pittsfield, Mass.; Medical School of Harvard University, Boston, 1898; aged 49; died, January 19.

Calvin F. Hess ⊕ Madison, Wis.; Rush Medical College, Chicago, 1894; aged 57; died, January 2, at St. Petersburg, Fla.

William Wade Ray, Springfield, Ky.; Bellevue Hospital Medical College, New York, 1877; aged 70; died, January 18.

Charles A. Stammel, Cincinnati; Medical College of Ohio, Cincinnati, 1896; aged 63; died, January 29, from paralysis.

Theodore Cole, Lansing, Mich.; University of Michigan Medical School, Ann Arbor, 1869; aged 81; died, December 19.

J. R. Howell, Florence, Ala.; Memphis Hospital Medical College, Memphis, Tenn., 1888; aged 71; died, January 24.

Joseph C. Hughes, Ottawa, Kan.; Starling Medical College, Columbus, Ohio, 1869; aged 79; died, January 24.

Samuel E. Reynolds, Clay Center, Kan.; Medical College of Ohio, Cincinnati, 1873; aged 77; died, January 22.

John William Huffman, Prescott, Iowa; Medical College of Ohio, Cincinnati, 1879; aged 72; died, January 15.

Jacob D. Graybill, New Orleans; Pulte Medical College, Cincinnati, 1878; aged 74; died, February 1.

Isaac L. Davis, Walling, Tenn. (licensed, Tennessee, 1889); aged 74; died, January 14, from senility.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

BROWN'S NEW CONSUMPTION REMEDY

The Post Office Department Effectively Protects the Public from Another Fraudulent Consumption Cure

On Feb. 2, 1923, Postmaster General Work issued a fraud order against D. H. Brown, M.D., of Jacksonville and St. Augustine, Fla., and Brown's Magnolia Remedy Company. Brown, who is a negro, was, according to our records, born in 1868 and graduated by the Meharry Medical College at Nashville, Tenn., in 1898, receiving a Florida license in 1899. For some time he has been advertising an alleged consumption cure under the name "Dr. Brown's New Consumption Remedy." He has made his appeal especially to those unfortunate members of his own race who are afflicted with tuberculosis.

BROWN ADMITTED FRAUD IN 1917

As long ago as November, 1916, the federal authorities got after Brown under the federal Food and Drugs Act. The officials of the Department of Agriculture charged that the claims that this preparation was a remedy for consumption, pneumonia, la grippe and all diseases of the lungs and bronchial tubes were false and fraudulent. In December, 1917, Brown pleaded guilty and was fined a trivial $50 and costs. The case was reported in this department of THE JOURNAL, Feb. 22, 1919. Presumably after his brush with the Food and Drugs Act Brown ceased making his lying and fraudulent claims on the trade package but continued making them in newspaper advertisements and in circulars that were sent to those who answered these advertisements. The scope of the federal Food and Drugs Act, unfortunately, does not extend beyond the claims made on or in the trade package.

THE POST-OFFICE ACTS

Fortunately for the public, the Post-Office Department was able to reach Brown and in October, 1922, charges were filed against him and Brown was called on to show cause on or before Nov. 9, 1922, why a fraud order should not be issued against the Magnolia Remedy Company. Through his attorney, Cromwell Gibbons of Jacksonville, Brown asked that the hearing in the case be postponed until after November 21; this postponement was agreed to and November 23 set as the date for the hearing.

At that time Mr. Gibbons appeared at Washington and, before any evidence was offered, indicated that his client would be perfectly willing to eliminate those features of his business that were objectionable. The attorneys for the government replied that if Brown would cease making claims for his preparation to the effect that it would cure consumption, bronchitis, pneumonia, la grippe and influenza and would do no more than represent that the nostrum had expectorant and alterative value in the treatment of colds, coughs, etc., the matter might be disposed of. On this basis the hearing was adjourned in order that Brown might submit revised literature on or before Dec. 11, 1922. An extension of time was again asked by Brown to Jan. 2, 1923. Just before this date Brown's attorney forwarded to the Post Office Department a statement by Brown in which the man attempted to justify the fraudulent claims made in his literature. Brown was told, through his attorney, that unless he filed with the department on or before January 22, his revised literature and advertising matter, the case would again be taken up. Another postponement was made at Brown's request until January 24 when the matter came up for hearing.

THE INEVITABLE TESTIMONIALS

A sample of the preparation that had been sold through the mails was filed in evidence by the government, together

with a report by Dr. L. F. Kebler, Chief of the Drug Division, Bureau of Chemistry, U. S. Department of Agriculture. In addition to Dr. Kebler's testimony, William F. Kunke, the chemist who analyzed the preparation, testified on behalf of the government. Brown's attorney offered the usual batch of testimonials from persons claiming to have been benefited by taking the preparation and the attorney also examined Dr. Kebler on certain alleged medical authorities dealing with the use of creosote in the treatment of tuberculosis. In his answer to the government's charge, Brown had stated that his nostrum consisted principally of "a compound of creosote, Donovan's Solution and extract of malt." The federal chemists testified that the preparation had been especially tested for arsenic and mercury, the two drugs that are in Donovan's Solution (Liquor Arseni et Hydrargyri Iodidi) and it was definitely established that those drugs were not present. The chemists found that the principal ingredients of Brown's nostrum were creosote and maltose.

The government produced statements from a number of well-known physicians, specialists in the treatment of tuberculosis, regarding the uses and limitations of creosote in the treatment of that disease. The physicians were unanimous in declaring that creosote is not in any sense a cure for tuberculosis and that this fact is universally accepted by those who specialize in the treatment of this disease. Brown, in his defense, quoted from an alleged medical authority to justify his claims. The quotations were taken from an old book on materia medica, the last edition of which was issued more than a quarter of a century ago. Even this book did not claim that creosote was a cure for tuberculosis.

In view of all the evidence, the Hon. H. J. Donnelly, Acting Solicitor of the Post Office Department, recommended in his memorandum to the Postmaster General that a fraud order be issued against the Magnolia Remedy Company and also against D. H. Brown. The order was issued.

Correspondence

"THE CARE AND FEEDING OF INFANTS"

To the Editor:—In your statistics relating to breast-fed and bottle-fed babies, I see nothing definite with regard to mothers. Through long years of experience I have found that very few mothers who are in good health fail to nurse their babies. Then, in giving statistics of deaths from bottle feeding and breast feeding, why not take into consideration the fact that nonstrenuous mothers beget nonstrenuous babies, and that this fact may cause the difference in the statistical death rate—weakness?

J. J. Leiser, M.D., Lakebay, Wash.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MADURA FOOT

To the Editor:—I should like to get all available information concerning mycetoma (Madura foot). I should like to know whether any cases of this disease have been reported in this country. I have a faint idea that some cases were reported from Texas.

A. F. C., Florida.

Answer.—Two cases of mycetoma were reported recently from Texas by Pagenstecher (The Journal, May 6, 1922, p. 1363). In his article on Madura foot in America (*Ann. Surg.* **66**:496 [Oct.] 1917), Winslow stated that until the publication of his paper, there had been reported seven cases of this condition in the United States and Canada. Three had occurred among Mexicans living in Texas; one in a French-Canadian living in Canada; one in a young man born in Iowa; one in a girl living in Kansas, and one in an Italian who had been in this country for several years. In addition to Winslow's and Pagenstecher's papers and the standard textbooks on tropical diseases, the following references may be consulted:

Adami and Kirkpatrick: *Tr. Am. Phys.*, 1895.
Hyde, Senn and Bishop: *J. Cutan. & Gen.-Urin. Dis.* **45**: 1, 1896.
Sutton, R. L.: Mycetoma in America, The Journal, May 3, 1913, p. 1339.
Burres, W. T.: Madura Foot in Western Panama, *Am. J. Trop. Dis.* **3**: 611 (May) 1916.
Solari, E. F.: Madura Foot in Argentina, *Semana Méd.* **24**: 573 (Nov. 22) 1917; abstr. The Journal, March 30, 1918, p. 967.
Navarro, Horatio: Madura Foot, Report of a Case, The Journal, Sept. 21, 1918, p. 967.
Díaz, Albertini and Desvernine: Madura Foot in Cuba, report to the Third Pan American Congress, 1901, *Sanidad y Beneficencia*, March-April, 1918, p. 319; abstr. The Journal, March 15, 1919, p. 817.
Welchman, W., and Pirie, J. H. H.: South African Case of Mycetoma, *M. J. South Africa* **17**: 6 (Aug.) 1921; abstr. The Journal, Oct. 15, 1921, p. 1288.

A letter was published by Dr. Mark F. Boyd of Galveston, Texas, in The Journal, Nov. 6, 1920, p. 1286, requesting that he be informed of unreported cases of mycetoma, as he was compiling data on the subject.

DEATH FROM ELECTRIC SHOCK FROM HOUSE CURRENT

To the Editor:—I was called recently with Dr. F. W. E. Henkel of this place to see a man, aged 53, height 5 feet 10 inches, weight about 180 pounds, who was reported to have received an electric shock. On arrival we found that he had been dead for a number of minutes, and all efforts at resuscitation failed. He had been sorting apples in an outside cellar, and the floor, and his feet and clothes were wet. He clutched an electric lamp in his hands which were held tightly on his chest. No marks were found on the body. The lamp was a 75 Watt Type C Mazda, attached to the ceiling by a long No. 18 lamp cord. The fuses at the meter were not of more than 30 amperes. The lamp was still burning when the first man reached the spot, and was not blackened. The fuses were intact. The current is brought to the ranch at 2,300 volts, and transformed to 110 volts for lighting purposes. It is alternating, 60 cycle. The day was stormy with snow and some wind. The injured man had always been strong, and had not complained in the last few months. There was no necropsy. We wish to learn whether death from a 110 volt current is at all common, as we never before heard of a well authenticated case.

W. J. LeRossignol, M.D., Rifle, Colo.

Answer.—Death from shock by a 110 volt electric current is not an uncommon accident. Indeed, it has been said that no current at a pressure of more than 50 volts is really safe. Alternating currents are more dangerous than direct currents. Accidents of this kind are prone to occur when the skin is moist and the body is in contact with a good "ground." They have been somewhat frequent when electric bulbs or sockets have been handled when the person was in the bath tub. Several reports of fatal accidents of this kind have been recently abstracted in The Journal:

Balthazard, V.: Electric Accidents from House Currents, *Paris méd.* **12**: 361 (Oct. 21) 1922; abstr. The Journal, Dec. 30, 1922, p. 2255.
Zimmern, A.: Electric Accidents with House Currents, *Bull. de l'Acad. de méd.* **87**: 155 (Feb. 7) 1922; abstr. The Journal, March 25, 1922, p. 925.
Langlois, J. P.: Electric Accidents with House Currents, *Bull. de l'Acad. de méd.* **87**: 158 (Feb. 7) 1922; abstr. The Journal, March 25, 1922, p. 925.
Zimmern, A.: Electric Accidents with House Electric Current, *Presse méd.* **28**: 25 (Jan. 10) 1920; abstr. The Journal, Feb. 28, 1920, p. 635.
Heydrich, C.: Fatal Accident from Contact with Low Tension Wires, *Zentralbl. f. Gewerbehyg.* **8**: 239 (Dec.) 1920.
Mieremet, C. W. G.: Death from Shock from Incandescent Bulb, *Nederlandsch Tijdschr. v. Geneesk.* **2**: 1951 (Dec. 1) 1917; abstr. The Journal, March 2, 1918, p. 661.
Morrow, C. H.: Accidental Electrocution by a Weak Current, The Journal, June 13, 1914, p. 1889.

CAUSE OF ITCHING IN WOUND HEALING

To the Editor:—What is the cause of the itching sensation so frequently felt in wounds that are healing?

Adolf Bowski, New York.

Answer.—Sensations of itching are due to stimulation of nerve endings in the skin. Physiologists are not agreed as to whether the nerve endings involved in this sensation are specific, or whether, as some maintain, they are identical with those that serve for touch, and the itching is the result of overstimulation. In a wound that is healing, the local reaction or inflammation results in a state of hypersensitiveness in the nerve endings, with the consequence that such stimulations as are caused by contact with dressings or air currents, or even possibly by the increased circulation, will give rise to sensations. When the wound is recent or infected and not healing, the shock or the tonic effects render the nerve endings hyposensitive, and it is only when a more healthy state appears in the wound that function is resumed, and it is often temporarily overactive.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.
IOWA: Des Moines, March 8-10. Sec., Dr. Rodney P. Fagen, State House, Des Moines.
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

REPORT OF THE FOURTEENTH EXAMINATION OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The fourteenth examination of the National Board of Medical Examiners was held in twenty-two Class A medical schools, Sept. 25, 26 and 27, 1922, in Part I, which comprises written examinations in each of the six fundamental medical sciences. The subjects of the examination and the relative value of each were: anatomy, 100; physiology, 75; materia medica and pharmacology, 75; pathology, 75; physiologic chemistry, 50, and bacteriology, 50, making a total of 425 counts for this part.

Part I

A candidate taking Part I must earn at least 75 per cent. of this total. The number of counts earned in any subject depends directly on the ratings of the answered papers. Falling below 65 per cent. in two subjects, or below 50 in one subject, constitutes a failure.

Under the new plan of examination, a candidate is allowed to take an incomplete examination, omitting one of the subjects if the instruction in this subject is not completed in the medical school of attendance by the end of the second year.

One hundred and fifty-nine candidates appeared for examination in Part I; of these, ninety-six passed, twenty-seven took an incomplete examination, and thirty-eight failed to pass the examination.

EXAMINATION, PART I

ANATOMY

Answer eight questions out of the ten: 1. Discuss ovulation, menstruation and fertilization. 2. Discuss epithelial and connective tissues. 3. Make a diagram of the lymph glands of the axilla, naming regions drained. 4. Make a diagram of the lumbar plexus, labeling fully. 5. Describe the eyeball and its structures. 6. Describe the liver. 7. Describe the shoulder joint. 8. Make a diagram showing the topography of the liver, gall bladder, and their ducts. 9. Draw a medial sagittal section of the pelvis in the female; label all structures. 10. Describe the nervous mechanism involved in seeing.

PHYSIOLOGY

Answer any five questions: 1. What are the advantages and disadvantages of physiologic salt solution when injected intravenously under conditions of dangerously low blood pressure? 2. Describe the venous pulse, giving the cause of the various waves which form it. 3. Describe the circulatory and respiratory reactions which attend the breathing of 5 per cent. carbon dioxid. 4. Describe the movements of the stomach. 5. What is meant by the filtration and absorption theory of urine production? 6. Define: (*a*) respiratory quotient; (*b*) alveolar carbon dioxid; (*c*) alkaline reserve.

PHYSIOLOGIC CHEMISTRY

Any five of these questions may be answered: 1. Give in detail: (*a*) the chemistry of the red blood corpuscle; (*b*) the chemistry of the white blood corpuscle. 2. Discuss: (*a*) the chemistry of striped muscle; (*b*) the chemistry of the gray matter of the brain. 3. Give: (*a*) the chemistry of bone; (*b*) the chemistry of cartilage. 4. Discuss the chemical functions of the liver. 5. Discuss the chemistry of the thyroid gland and describe its functions. 6. Discuss the chemistry of bacterial cells. 7. Give the chemistry of the fats which we ordinarily eat, and discuss the chemical changes which take place in the fatty molecules during digestion, absorption, assimilation, and elimination. 8. Give the most prominent theories concerning anaphylaxis or protein sensitization. 9. Starting with CO_2 as present in exhaled air, follow the carbon atom through the plant and through the animal until it is returned to the air as CO_2. 10. Trace the sulphur atom taken into the body when eggs are eaten, through its digestive, absorption, assimilation, and elimination changes.

PATHOLOGY

Answer any five of these seven questions: 1. Describe the structure of a thrombus. How may a thrombus be distinguished from a postmortem clot? 2. Describe changes which occur in association with cirrhosis of the liver, omitting those which occur in the liver itself. 3. Describe the fate of bone which has undergone necrosis as the result of osteomyelitis. 4. Describe conditions under which phagocytosis occurs in human pathology. State how the process is modified by factors outside of the phagocyte and cite evidence in proof of the statement. 5. Under what conditions does cerebral softening occur? Describe the changes which are found and the end-result should death fail to occur. 6. Describe in some detail the healing of a tuberculous lesion of the lungs; of a lymph node. 7. Discuss the pathology of heart-block.

BACTERIOLOGY

Answer any five of these six questions: 1. (*a*) What is meant by p_H as used in measuring acidity and alkalinity? (*b*) To what p_H point would you adjust the reaction of culture mediums for general bacteriologic purposes? (*c*) Discuss acidity and alkalinity as they affect the metabolism of bacteria. 2. You are called on to assist in the management of a threatened epidemic of diphtheria in a home for children containing 100 children. Three children about 6 years of age are ill: one moderately, not later than the second day of the disease; the second more severely, third day; the third extremely ill, about the fifth day. (*a*) How will you confirm the diagnosis? (*b*) How will you treat each sick child, including dosage and methods of administration of therapeutic agents prescribed? (*c*) What steps would you take to prevent the spread of the disease to other children in the home? 3. (*a*) What are the symptoms of botulism? (*b*) In what classes of food products is *Bacillus botulinus* most frequently found? (*c*) How would you confirm the diagnosis, and, if confirmed, what further steps should be taken to prevent other cases of the disease? 4. (*a*) Name five bacteria which are common causes of acute intestinal infection. (*b*) How would you isolate and identify the causative bacteria in one of these diseases? (*c*) On what would you base your final laboratory diagnosis? 5. (*a*) How is smallpox vaccine virus prepared? (*b*) Give the technic of vaccination and the after-treatment. (*c*) Describe the evolution of the lesion with inert vaccine in a previously unvaccinated child; with fully potent vaccine in a previously unvaccinated and susceptible child; with fully potent vaccine in a child successfully vaccinated about two years previously. 6. (*a*) Describe the immunologic principles underlying active and passive immunity. (*b*) Give two examples of each as applied in the treatment of disease.

MATERIA MEDICA AND PHARMACOLOGY

Answer all questions: 1. Atropin: (*a*) Give its source. (*b*) Discuss its pharmacologic action. (*c*) Give the signs of an overdose. 2. (*a*) Describe the effect of chloral on the central nervous system. (*b*) Discuss the analgesic action of morphin. 3. Cocain: (*a*) Give its source and physical properties. (*b*) Discuss its action on the central nervous system. 4 Digitalis: (*a*) Discuss its pharmacologic action on the heart muscle. (*b*) Discuss its diuretic action. 5. (*a*) Discuss the action of antipyretic drugs. (*b*) Give the source of salicylic acid, three therapeutic preparations, and dosage of each. (*c*) Describe the effect of large doses of the salicylates. 6. (*a*) Name three therapeutic preparations of iron and give the dosage of each. (*b*) Discuss the pharmacologic action of epinephrin and its therapeutic indications.

Part II

Part II of the examination was held in twenty-one of the medical schools mentioned above, Sept. 28 and 29, 1922. This was also a written examination in the following subjects and with the relative values assigned: medicine, 75; surgery, 75; obstetrics and gynecology, 50, and public health, 25, making a total of 225 counts for this part.

A candidate taking Part II must earn at least 75 per cent. of this total. The number of counts earned in any subject depends directly on the rating of the answered papers. Falling below 65 per cent. in two subjects or below 50 in one subject constitutes a failure.

Twenty-seven candidates appeared for examination in Part II. Of these, twenty-one passed and six failed.

PASSED, PART II

Names and Colleges	Year of Grad.
Walter Jackson Freeman, Univ. of Pennsylvania School of Med...	1920
Hugh L. Robinson, Harvard Medical School	1922
Abram E. Burnett, University of Nebraska College of Medicine	1921
Edward G. Waters, Harvard Medical School	1922
Claude G. Drace, Johns Hopkins University Medical Department	1922
Allen R. Foss, University of Minnesota Medical School	1921
James C. Potter, Johns Hopkins University Medical Department	1921
George Thomas Pack, Yale University School of Medicine	1922
Ruth N. Miller, Woman's Medical College of Pennsylvania	1922
Lee DeCady, Washington University School of Medicine	1922
William J. VanDenBerg, Harvard Medical School	1920
David T. Smith, Johns Hopkins University Medical Department	1922
Wayne J. Stater, Harvard Medical School	1921
Henry L. Darner, Johns Hopkins University Medical Department	1920
David T. Ford, University of Nebraska College of Medicine	1921
Frank G. Moore, Johns Hopkins University Medical Department	1922
Paul B. Sheldon, Washington University School of Medicine	1922
C. Chester Chianese, Univ. of Pennsylvania School of Med	1922
Horace E. Campbell, University of Nebraska School of Medicine	1922
Oscar H. Stover, University of Buffalo Medical Department	1922
Myrta M. Wilson, Rush Medical College	1922

FAILED

Names of Colleges	
Rush Medical College	1918
Harvard Medical School	1922
University of Oregon Medical School	1922
University of Nebraska Medical School	1921
University of Zurich	1910
Johns Hopkins University Medical Department	1922

AVERAGES OBTAINED IN PART II*

Candidate's Number	Medicine, Value, 75	Surgery, Value, 75	Obstetrics and Gynecology, Value, 50	Public Health, Value, 25	Final Averages
23	80.5	88	90	73.5	189.7
27	73	72	88	70.5	170.4
34	76.5	87	87	75	185
51	77.6	75	75	57.5	166
79	73	89	85	79	183.9
82	78	91	80	85.8	188.2
83	69	90	80	78.4	178.9
92	77	52	88	63.6	156.7
97	72	86	80	69.5	175.9
123	89.5	82	90	81.8	194
144	86	75	85	77	182.6
154	76	68	84	79.5	169.9
155	75	72	80	79.5	170.2
162	76.5	79	80	80.7	176.9
176	85	91	88	78	191.6
180	85	93	94	85.5	201.9
195	77	60	85	81.5	165.7
304	80.5	78	91	84.5	185.5
306	63.5	81	80	65	164.7
350	88	98	85	79.9	201.9
491	71	82	86	80.5	177.9
494	56.5	88	67	64	157.9
627	75	88	82	76.5	182.5
832	83.5	88	79	79.5	188
852	80	75	78	71	173.1
879	87.5	81	60	73.5	174.8
903	69	77	90	55	168.4

* The general average of the candidates is based on subject values as rated by the board. The averages in each subject are on a basis of 100; 1,000 is the total perfect mark as rated by the board for the entire examination; 225 is the maximum mark on this basis for Part II.

EXAMINATION, PART II

MEDICINE

Answer all seven questions. No credit will be allowed on questions not answered. Read the questions carefully and answer concisely what is asked. Quality will count more than quantity in marking the answers, and an intelligent understanding of the disease more than a mere array of memorized facts. The time allowance is three hours. If you use for each question the time suggested in parenthesis, you will still have thirty minutes for review and corrections. The time given with each question also indicates roughly the relative value of the question. It is unnecessary to repeat the questions when writing your answers, for you should file a printed copy of the questions with your examination papers.

1. (Twenty minutes.) (*a*) Describe a typical paroxysm of tertian malarial fever. (*b*) You are called to a patient who has a chill and find the rectal temperature 103 F. What other evidence, without an examination of the blood, would satisfy you that you are dealing with a case of malaria? (*c*) Describe your treatment of the case from this time on. 2. (Thirty minutes.) A shopgirl, 26 years of age, ordinarily in good health but subject to "head colds," had a slight sore throat and "head cold" come on four days before the time for her vacation. A slight cough followed, but without expectoration. She had malaise, chilly sensations and slight fever, but kept at work. At the beginning of her vacation exposure to wet and cold aggravated her trouble; she was obliged to go to bed; temperature, 101. She reports that the "country doctor" found râles in her chest and abnormal breathing. She was confined to bed one week. Slight fever is reported; considerable cough; expectoration, at first yellowish green and thick, soon became whitish and then ceased. It was never tinged with blood. After a week of convalescence she returns to the city. She still coughs occasionally, but has no expectoration; she is easily tired and lacks energy; she consults you because "not fit to work." Pulse, 104; temperature, 99.4; slight dulness at right apex. Any attempt to take a deep breath brings on a cough, but no expectoration results. High-pitched, whistling râles are heard throughout the chest with inspiration; their intensity is slightly greater at the dull area. The spoken and the whispered voice are slightly increased over this area, but vocal fremitus is not increased and the respiratory murmur is not modified. No other râles are heard. Heart, normal. Hemoglobin, 75 per cent. Physical examination is otherwise negative. (*a*) Discuss the question as to tuberculosis in this case on the evidence at hand. (*b*) Direct treatment for patient at this visit, writing prescriptions for any medicines ordered. (*c*) How would you handle the problem of determining later whether tuberculosis exists? 3. (Fifteen minutes.) (*a*) Describe the symptoms and course of diabetic coma. (*b*) What laboratory tests give warning of the approach of such coma? (*c*) How does the age of the patient influence the prognosis in diabetes? 4. (Fifteen minutes.) Describe (*a*) the early symptoms and (*b*) the early physical signs of tabes dorsalis. 5. (Thirty minutes.) A woman, 42 years of age, neurasthenic, rather poorly nourished, moderately anemic (hemoglobin, 75 per cent.), has had recurrent attacks of "colitis" for the last three years, and has been much worse during the last three weeks. For the last ten days she has taken one or two enemas daily to relieve the severe cramp-like pains in abdomen. Following an enema she has passed considerable gas; the fecal matter has varied from hard, scybalous lumps to loose material, and generally there is much mucus. Before her colitis her bowels moved regularly without medicine; since then there has been a marked tendency to constipation, for which she has used various "strong" medicines. The bowels have been irregular, varying from constipated to loose movements, and generally contain considerable mucus. Physical examination of the abdomen reveals nothing abnormal except tenderness on deep pressure over the colon and spastic contraction of the descending colon. (*a*) Outline a course of treatment for this patient for colitis. (*b*) Assume that later you have relieved the colitis and have chronic constipation to deal with — how would you proceed? (Write prescriptions for any medicines employed.) 6. (Twenty minutes.) In the case of a woman, 39 years of age, the abdomen is distended to about the size it would be if she were seven months pregnant. Name the four conditions that you think most likely to have caused this enlargement and tell how you would differentiate between them. 7. (Twenty minutes.) (*a*) Give the usual period of incubation of measles, scarlet fever, diphtheria, chickenpox and whooping cough. (*b*) On what day of the disease is the appearance of the eruption to be expected in measles, scarlet fever, and chickenpox?

SURGERY

Answer any five questions. 1. Give the differential diagnosis and outline the surgical management of: (*a*) concussion; (*b*) contusion and (*c*) acute compression of the brain. 2. Discuss (briefly) chronic mouth infection. 3. Give the diagnosis and treatment of bronchiectasis. 4. Give the symptoms of and outline the surgical management of a case of acute appendicitis (*a*) in a child of 10 years; (*b*) in an adult male. 5. Discuss the differential diagnosis of hypernephroma, carcinoma of the kidney and stone in the kidney. 6. Discuss the diagnosis and treatment of sarcoma of the femur.

OBSTETRICS

1. What is the corpus luteum? Give its structure, origin and supposed functions. 2. Under what conditions is spontaneous birth impossible in a woman with normal pelvis and generative organs and a child of average size? Give reasons in each instance. 3. What is the special significance of venereal disease in obstetrics? 4. What is a tubal abortion? State how it differs from tubal rupture. Outline its clinical course and treatment. 5. What is pituitary extract? Give the indications and contraindications for its use.

GYNECOLOGY

1. Define acute and chronic endometritis. State how our conception of the latter has changed in recent years. 2. What are the anatomic prerequisites for the development of prolapse of the uterus? 3. Define the terms submucous, intramural, and subserous myoma of the uterus. What symptoms and clinical findings should indicate operative removal in the last-named variety? 4. Give differential diagnosis between a large ovarian cystoma and hydramnios at the eighth month of pregnancy. 5. Discuss the symptoms, diagnosis and treatment of cystitis due to the colon bacillus.

PUBLIC HEALTH

HYGIENE

1. Name insect-borne diseases, and discuss the transmission of one of them. 2. Give the object, advantages, and disadvantages of the pasteurization of milk. 3. Discuss the chief factors in anemia in the Gulf states and discuss the methods of dealing with them. 4. Discuss the etiology and prevention of lead poisoning. 5. Give the differential diagnosis between smallpox and other eruptive diseases with which it may be confused.

MEDICAL JURISPRUDENCE

1. What are the requirements for medical practice in your home state? 2. What is the legal procedure for commitment of an insane person in your state? 3. What aid does rigor mortis give you in determining the time elapsed since death? 4. Give definition of "medical jurisprudence" and indicate four of its chief applications. 5. What are the signs of death by carbon monoxid poisoning?

Minnesota October Examination

Dr. Thomas S. McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Oct. 3-5, 1922. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Fourteen candidates were examined, all of whom passed. Thirty-three candidates were licensed by reciprocity. Two candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists		(1922)	90.1
Northwestern University		(1922)*	90.4, 91.2
Rush Medical College		(1922)	94
Tufts College Medical School		(1919)	82.7
Boston University		(1922)	93
Harvard University		(1919)	87.1
University of Minnesota		(1918) 90, (1922)†	76.2, 88.2
Washington University		(1922)	86.2
New York Homeopathic Med. Coll. and Flower Hosp.		(1920)	92.2
Syracuse University		(1920)	89.7
University of Cincinnati		(1920)	87.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Stanford University		(1921)	California
George Washington University		(1904)	Dist. Colum.
Hahnemann Med. Coll. and Hosp., Chicago		(1910), (1920)	Illinois
Northwestern University		(1917)	Illinois
Rush Medical College		(1916), (1921, 2)	Illinois, (1922) Wisconsin
Indiana University		(1919)	Indiana
State University of Iowa College of Medicine		(1891), (1914), (1918), (1919), (1920), (1921, 2)	Iowa
Johns Hopkins Univ.		(1918), (1920)	Maryland, (1921) California, Ohio
University of Michigan Medical School		(1917), (1921)	Michigan
St. Louis University School of Medicine		(1922)	Missouri
Washington University		(1918)	Missouri
Creighton University		(1921, 2)	Nebraska
University of Cincinnati		(1920), (1921)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia		(1907)	Iowa
University of Pennsylvania		(1911)	New Jersey
University of Pittsburgh		(1921)	Penna.
Marquette University		(1922)	Wisconsin

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College		(1917)	N. B. M. Ex.
Woman's Medical College of Pensylvania		(1921)	N. B. M. Ex.

* These candidates have finished the medical course, and will obtain the M.D. degree after they have completed a year's internship in a hospital.

† These candidate have finished the medical course, and received their M.B. degrees, and will obtain the M.D. degree after they have completed a year's internship in a hospital.

Medical Economics

THE PHYSICIAN'S INCOME TAX

Every person whose gross income was $5,000 or more during 1922 must file an income tax return, no matter what his net income may have been. A person whose gross income was less than $5,000 must file a return if, being married, his net income was $2,000 or more, or, being unmarried, his net income was $1,000 or more. Returns must be filed on or before March 15, 1923. A person who is required to make a return and who has not received the proper blank for such return, should make application for such a blank to the collector of internal revenue in the district in which he resides. If his net income was $5,000 or less, form 1040 A should be requested; if more than $5,000, then form 1040. The fact that a collector of internal revenue has not on his own initiative supplied the proper blank does not excuse tardiness or failure in making such a return. Full instructions as to what constitutes gross income and what net income, and as to allowable deductions, applicable to taxpayers generally, accompany the blank form supplied by the collector. There are printed here, therefore, only such instructions as have a peculiar bearing on the physician.

I. GROSS INCOME: WHAT IS IT?

A physician's gross income is the total money received for professional work during the year, regardless of when the services were rendered for which the money was paid, plus such income as he may have received from investments, speculation and other sources.

II. PROFESSIONAL EXPENSES: WHAT MAY BE DEDUCTED?

Deductible professional expenses are all expenses necessary for carrying on practice. This includes office rent and maintenance, services, supplies, and certain incidentals. With reference to expenses other than professional expenses, the rules applicable to physicians are the same as those applying to all other persons; full information concerning them is printed on the blank supplied for the making of returns.

Office Rent and Maintenance.—Office rent and maintenance are deductible, provided the office is not in a building owned by the physician. If a physician maintains an office in his own house, or in an office building which he owns, he cannot charge himself rent and deduct the amount. If he rents an office for business purposes alone, in a building outside his residence, then the entire rental may be deducted. If his office is located in a rented house or apartment in which he has his residence also, then a part of the rental, in proportion to the amount of space used for business purposes, may be deducted as office rent. The same principle applies to expenditures for heating, lighting and maintenance. If a physician, having his office at his residence, has a servant, part of whose time is devoted to office work, then part of her wages may be deducted. Salaries of office attendants, assistants, stenographers and the like are deductible. The fact that a physician occasionally sees a patient at his house or apartment does not justify him in making a deduction, even though the house or apartment may not be owned by him; in order to be entitled to deduct expenses for office maintenance, he must actually have an office, with regular office hours, in his house.

Expendable and Nonexpendable Property.—A distinction is made between expenditures for expendable and for nonexpendable property. Expendable property is property that is ordinarily consumed in the using, such as dressings, clinical thermometers, drugs and chemicals. Nonexpendable property may ultimately be used up, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed"; rather, it "wears out." Money spent for expendable property for professional use may be charged as an expense. Money spent for nonexpendable property is looked on as an investment, and cannot be deducted. The loss incident to the ordinary use of nonexpendable property, through wear and tear or through normal deterioration, however, if such property is maintained for professional use, may be deducted as depreciation.

No hard and fast rule can be laid down as to the amount that may be deducted on account of depreciation; everything depends on the nature and extent of the property, and on the use to which it is put. Five per cent. per annum has been suggested as a fair figure for depreciation on an ordinary medical library. Depreciation on an automobile would obviously be much greater. So, too, with respect to laboratory apparatus. The physician must in good faith use his best judgment, and make such allowance for depreciation as the facts justify. Depreciation should be computed on the basis of the amount paid for the article, or, if purchased before March 1, 1913, when the first income tax went into effect, then on its estimated value at that time. Elaborating somewhat on the foregoing statement, the following paragraphs are submitted:

Drugs, Dressings, Instruments, Etc.—The cost of drugs, dressings and other materials used in the treatment of patients is an expense, and may be deducted. The cost of instruments, appliances and equipment, which constitute a part of the physician's professional outfit and are to be used over a considerable period of time, is an investment and cannot be deducted. Under the latter heading, nondeductible expenses, would come money paid for office furniture and equipment, instruments and apparatus; but on such articles depreciation may be charged.

Transportation.—The cost of maintaining an automobile or a team for professional use is an expense, and may be deducted. The original cost of the automobile, or horse and vehicle, however, is an investment and may not be deducted, although depreciation may be charged against it. The cost of maintaining an automobile includes gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeur's wages, etc. Allowable depreciation must be a reasonable depreciation, based on the actual diminution in the value of the car resulting from obsolescence and the use to which it is been subjected. If it is computed on the basis of an average, that average must cover the entire estimated life of the car, not merely the life of the car during the time when it is in the possession of the physician. If the automobile is used for professional and for personal purposes, or if it is used by the physician or his family for recreation, then the proportion of expense of operating the car for business purposes alone may be deducted. A physician doing an exclusive office practice, who uses his car merely to go to and from his office, cannot deduct depreciation or operating expense, since he is said to be using the car for his personal convenience and not as a means of gaining a livelihood. What has been said above with respect to automobiles applies with equal force to horses and vehicles, and the equipment incident to their use.

Books and Journals.—Medical journals are regarded as expendable supplies, and money paid for them is looked on as an expense and is deductible. Medical books are looked on as nonexpendable; money paid for them is regarded as an investment, and is not deductible. Depreciation may be charged.

Medical Society Dues.—Dues paid to medical societies of a strictly professional nature are looked on as a legitimate expense, and may be deducted. Dues for social organizations, however, even though their membership is limited to medical men, is looked on as a personal expense, and is not deductible.

Traveling Expenses.—The interpretation of the income tax law published last year (THE JOURNAL, Feb. 4, 1922, p. 373), that a physician's traveling expenses incident to attendance at meetings of medical societies were deductible, was denied by a ruling of the Commissioner of Internal Revenue, June 26, 1922, to which attention has heretofore been called (THE JOURNAL, Dec. 2, 1922, p. 1937). Briefly, the commissioner's ruling denies that such expenses are ordinary and necessary expenses arising out of the practice of medicine, and denies the right of a physician to take credit for such expenses in computing the income tax he is to pay. On behalf of the American Medical Association, urgent representations have been made, claiming that this ruling is not in harmony with the statute and urging that it be rescinded. The matter is now pending before the Commissioner of Internal Revenue, and a decision is expected at an early date. It will be

reported in THE JOURNAL immediately on its receipt. It is advised that in the meantime, and up to a reasonable time before the date when returns must be filed, March 15, those physicians who desire to take credit for traveling expenses incident to attendance at meetings of medical societies, postpone the filing of returns. Physicians who are not confronted with the problem of traveling expenses should file their returns as soon as possible.

Cost of Postgraduate Study.—The Commissioner of Internal Revenue holds that money expended for postgraduate courses is an investment, not an expense, and is not deductible.

Laboratory Expenses.—Physicians maintaining laboratories may deduct rental and maintenance expenses. They may deduct, also, salaries paid to laboratory assistants, and the cost of chemicals, breakable apparatus, roentgen tubes and plates. Expenditures for apparatus, equipment and furniture, of a permanent nature, are looked on as an investment, and cannot be deducted; but a reasonable deduction may be made on account of depreciation each year.

Miscellaneous.—Oculists who furnish glasses for patients may charge as a part of their incomes the money received for such glasses, in which event they may deduct as one of the expenses of their practice the amount paid by them for the glasses they supply. Entries on the physician's account books should in such cases show the charge for professional services separate and apart from the charge for glasses.

Uninsured and unrecoverable loss by fire, theft or other means, of strictly professional equipment, provided satisfactory evidence of the loss can be produced, and premiums for insurance against fire or other losses, of strictly professional equipment, are deductible.

Miscellany

THE ADVISORY COMMITTEE ON ANTHRAX

The Advisory Committee on Anthrax, appointed by the International Labor Conference, met in London, Dec. 5, 1922. The committee was composed of Prof. Oliver of Australia; Dr. Glibert, Belgium; M. Boulin, France; Dr. Frey, Germany; Sir William Middlebrook, chairman of the Departmental Committee on Anthrax, Great Britain; Dr. Loriga, Italy; Colonel Hutchinson, India; Dr. Konai, Japan; Dr. Dixon, South Africa; Professor Rocca, Spain; Mr. Ribbing, Sweden, and Dr. Dorset, observer for the United States.

The committee was charged with inquiring into and reporting on the prevention of anthrax contracted through hides, skins and other animal products, and the disinfection of wool and hair suspected of being infected with anthrax. It was agreed that the hair used in the brush-making and upholstering industries should be disinfected before using, and that wool and hair used in the textile industry should be disinfected before being handled industrially except: (1) when the country of origin is included in the list of countries where the danger is slight; (2) when the material to be imported has already been disinfected by a recognized process; (3) when wools and hair have to be sorted before washing, unless these products are not included in the list of harmless products, and (4) in such other cases as may be determined by the committee. The processes of disinfection must be approved by the International Labor Conference and conform with the opinion of the Health Committee of the League of Nations. A list of countries where the danger is slight will be brought up to date annually by the Advisory Committee on Industrial Hygiene of the International Labor Office, which committee will be guided by these criteria: (1) for importing countries: raw materials, the country of origin of which is known, and which have not caused a case of anthrax in the importing countries, or the absence of anthrax spores after bacteriologic examination; (2) for countries of origin: the absence of anthrax among animals, or the application of strict measures for stamping out any outbreaks at the source.

The committee was of the opinion that the best precaution against anthrax among flocks is: the compulsory notification and official verification of cases of anthrax; the isolation of animals suffering from or suspected of suffering from anthrax; the destruction of the entire carcasses of animals dead or suspected to have died from anthrax, and disinfection of the immediate surroundings where the animal died as well as the premises where it was kept; and preventive inoculation against anthrax. It was decided that, in order to reach a practical conclusion of international character concerning disinfection, the International Labor Office should study this question in conjunction with the International Institute of Agriculture at Rome.

This resolution was adopted:

The committee is of the opinion that in most countries the principal danger of industrial anthrax arises in the manipulation of hides and skins, and recognizes the impossibility of securing at the present time complete disinfection to protect against this danger. The committee therefore recommends that regulations be laid down in the different countries having for their object the protection of the workers and the soil against infection by anthrax from hides and skins. The committee further suggests that the International Labor Office, in conjunction with the Health Committee of the League of Nations, should organize international research and invite nations and organizations chiefly interested to undertake such research in their respective countries. The committee considers that, in view of the fact that all countries using infected materials will be benefited by the discovery of a satisfactory process of disinfection, it is desirable that the governing body should take into consideration the possibility of finding grants in aid of research undertaken for that purpose.

The final report of the committee was adopted unanimously with the exception of one abstention, and two votes withheld on a point concerning wool.

THE BOY WHO WONDERS WHY

Sir: In after centuries will not this generation be known as "The Silly Age"? Or have they all been that way?

M. Coué gave four performances at Orchestra Hall, seating about 3,700 persons, with a top price of $2. On the one side of the footlights, 3,600 persons there to see a new show, something different to please their appetites sated with foxtrot dancing, cats and canaries, and Ziegfollies. On the other side of the footlights, the man who earnestly tries to tell them all that he is no miracle worker; behind him more than 100 cripples. Whether he cures some or not, I have a mental picture of a mother who sat in the front row on the stage, directly behind the man from Nancy, on her knees an 8-year-old boy whose eyes have never seen. The boy sat with bowed head, patiently, now and then twisting his slender fingers, an eager smile on his lips. He had been told he would be made to see.

There come storms of applause from the other side of the footlights.

"What is it?" the blind boy asks eagerly.

"Some one has been cured," he is told.

Outside, half an hour later, the boy patiently asks why M. Coué did not make him see with his eyes that have never seen.

On Saturday M. Coué sails for France, for Nancy. He will probably build himself a new chateau. Fifteen thousand persons at four Coué performances had a new thrill. The 8-year-old blind boy still sits patiently twisting long fingers and wondering why.

Yes, this will be the silly age.

XYLOID, in "Hit or Miss," Chicago *Daily News.*

Mental Attitude as a Cause of Constipation.—The mental attitude is no small factor in the cause of constipation. The laity do not understand that the colon is made to be a garbage can, and that its walls and mucous surfaces are prepared by nature to handle the fecal matter without harm to themselves or the body. They think only of the "harm" and "injury" coming to them from the retention of such matter as the feces. Naturally, they look upon the function of the tract from the mouth to the anus as one of absorption, and when constipated they conjure up in their minds wonderful mental pictures of the condition they are getting into by lack of bowel movement.—R. M. Clarke, *California State J. Med.* **21**:22 (Jan.) 1923.

Book Notices

THE HISTORY OF HUMAN MARRIAGE. By Edward Westermarck, Ph.D., Hon.LL.D., Martin White Professor of Sociology in the University of London. In three volumes. Fifth edition. Cloth. Introductory price, $9.50. New York: The Allerton Book Company, 1922.

In 1891 appeared the first edition of this anthropologic work, which was destined to become one of the classics of its subject. The small volume of that period—200 pages—with an introduction by the renowned Alfred R. Wallace, has now grown to a three volume work with more than 1,800 pages. There is a bibliography over 125 pages in length, and an elaborate index. The author's approach to his subject is biologic. His consideration of secondary sexual character, of primitive means of attraction and of the effects of environment on life bears the stamp of this point of view. The effects of economic conditions on marriage and the social aspects of the subject, which chiefly concern the sociologist, are not, however, neglected. It is the broad presentation of a vast amount of data which marks this book as a scientific work. The author draws no morals from his inquiry into the customs of primitive peoples and of modern savages. He places his facts before the reader, and he interprets the facts in the light of evolution and the development of the various races. Professor Westermarck, who holds the Martin White Professorship in Sociology in the University of London, had access, in the preparation of this edition, to the vast material available in the reading room of the British Museum. The books are not, however, mere storehouses of data and description. The author's style is pleasant, and he has an instinct for passages in the authorities whom he cites that convey actual pictures of life in the communities described. The aim of the work has been completeness. Beginning with the method of the study, the author considers the hypothesis of promiscuity, and celibacy, sexual attraction, endogamy, exogamy, marriage by barter, marriage rites, monogamy, polygyny, polygamy, polyandry, group marriage and the duration and dissolution of marriage. The subject is fundamental to an understanding of the history and the most vital problems of the human race. Professor Westermarck's earlier editions have been translated into almost every language in the world. It is gratifying to have available a convenient, new fifth edition in English.

LEHRBUCH DER GRENZGEBIETE DER MEDIZIN UND ZAHNHEILKUNDE FÜR STUDIERENDE, ZAHNÄRZTE UND AERZTE. Bearbeitet und Herausgegeben von Dr. Julius Misch. Second edition. Volumes 1 and 2. Paper. Price, 1,200 marks. Leipsic: F. C. W. Vogel, 1922.

The close relationship between affections of the mouth, especially of the teeth and gums, and those of the rest of the body has been known for a long time. Only too frequently are the teeth made to suffer for woes attributed to them when the cause lies elsewhere. A clear understanding of what this relationship consists, what the limitations of dental practice are, and under what conditions dental aid is required would be a great boon to mankind. What is required by the physician is a clear-cut description of oral complications he may encounter in practice, and by the dentist, when to call medical aid. The authors have tried to meet this requirement, but unfortunately have put this information in two bulky volumes. One cannot criticize unfavorably the results of their labor. The whole domain of medicine is covered: internal medicine, pediatrics, rhinology, otology, laryngology, obstetrics and gynecology, dermatology, syphilis and occupational diseases. The illustrations, most of which are borrowed from the most authoritative sources, are reproductions of roentgenograms, colored histologic drawings and the like, and are excellent. As a textbook for the dental student, it would be admirable were it not for the innumerable excursions into unnecessary fields, such as the technic of auscultation, percussion, rhinoscopy, otoscopy, bronchoscopy and intubation. As a textbook for the physician, it would be far more valuable if only the oral or dental conditions of the diseases under consideration were described. The section on pediatrics is complete and profusely illustrated. The importance of careful prophylaxis in various conditions affecting childhood cannot be overemphasized. A whole chapter is devoted to syphilis of the mouth. It is interesting to note that in the section on hysteria the authors point out the necessity of a careful diagnosis before embarking on dental work, in order to avoid any legal complications that may arise for unnecessary work when the symptoms, really of psychic origin, are attributed to an organic condition in the mouth. Dentists who still have a fear of plying their trade on pregnant women with teeth defects can take heart and proceed with their work after reading that nowhere is it more necessary to take care of the teeth than in pregnancy, and thereby avoid distressing after-effects. In spite of its bulk, this work is an excellent reference book. There is an exhaustive bibliography and a complete index.

LAWSON TAIT: HIS LIFE AND WORK. A Contribution to the History of Abdominal Surgery and Gynæcology. By W. J. Stewart McKay, M.B., M.Ch., B.Sc. Cloth. Price, $7.50 net. Pp. 579, with illustrations. New York: William Wood & Co., 1922.

This can scarcely be regarded as a biography, for of its 575 solid pages only twenty-five or thirty contain material that can be designated biographic. In the opening paragraph it is said that Tait was the son of Archibald Campbell Tait; yet in three different places in the body of the book the old story that Tait was the natural son of Sir James Y. Simpson is repeated, and in one place photographs of Tait and Simpson are reproduced on opposite pages, evidently to show the similarity of features and of physical characteristics of the two men. Casually the reader is told that "Tait is now [1897] living in Wales," but no reason is given for his leaving Birmingham. But while the book may not be an ideal biography, it is definitely what is claimed by its subtitle, "A Contribution to the History of Abdominal Surgery and Gynecology." The life and work of few medical men has left a greater impress on gynecology and surgery than did that of Lawson Tait. His personality, however, especially his aggressiveness and his intolerance in discussion, embittered many of his confrères against him and prevented that recognition which he otherwise would have received.

Tait was fortunate in that he commenced his professional work at the time when anesthesia had made surgical procedures painless, when the work of Pasteur and Lister had given the clue to safety in radical surgery, and when "hospital gangrene" and "laudable pus" were becoming things of the past. It was the ideal opportunity for the ambitious surgeon. It was during the quarter century from 1870 to 1895—approximately the period of Tait's active work in Birmingham—that abdominal and gynecologic surgery had its first great development, and in which were worked out the fundamental principles and procedures on which modern surgery has developed. This book is a record of this development; and though Tait's connection with it is the central idea, full credit is given to others. Naturally, diseases of, and operative procedures on, the ovaries and all the acrimonious discussion relating thereto, not forgetting the method of treating the pedicle, take a prominent place. Ectopic pregnancy, hysterectomy for fibromyoma, chronic inversion of the uterus, pelvic suppuration and evolution of hysteromyomectomy, the subjects of a few of the chapters, indicate the scope of the work and the variety of the subjects considered.

Of course Listerism was the vexed question of forty or fifty years ago. When Lister's views were finally being accepted in England, Tait came out in opposition and advocated absolute cleanliness—asepsis—and vigorously opposed the use of chemical antiseptics. Tait, as this author intimates, must be called the father of aseptic surgery.

An interesting chapter, and one well worth reading even now, is that on Tait's operation for the repair of the female perineum. It is well illustrated, and contains details of Tait's method. The chapter on cholecystostomy is an excellent review of the subject. The text for the review is a paper by Tait, "The Surgical Treatment of Gall Stones," 1879, in which he reported what he claimed to be "the first successful case on record." The present author goes back almost to prehistoric times, and finally shows that Bobbs of Indianapolis "was the first to perform the modern operation

of cholecystostomy." Other subjects are treated in similar manner, and the author has tried to be fair and give credit where due.

This book will be read with profit not only by those interested in Lawson Tait, but also by all who have any interest whatever in the history of the development of abdominal surgery.

A Manual of Pharmacology and Its Applications to Therapeutics and Toxicology. By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University. Second edition. Cloth. Price, $7 net. Pp. 1066. Philadelphia: W. B. Saunders Company, 1922.

The second edition of Dr. Sollmann's work contains all the admirable features which made the first contribution preeminent. But the present work also contains the author's estimates of the advanced therapeutic and pharmacologic data up to January, 1922. There have been incorporated important additional changes in all parts of the text; also introduced are excellent discussions of new topics, such as the "war-gases," the new antiseptics (hypochlorite derivatives, acridine dyes, mercury compounds, protargins) cuprein derivatives, and paraffin for films. The author states that these additions have enriched the bibliography alone by more than twelve hundred titles. Throughout the text American names as well as the newer nonproprietary designations are used; this is a particularly valuable feature to teachers of materia medica. The subject matter is of large scope; the broad conceptions, generalizations and certain detailed conclusions—all of great and practical pharmacologic importance—are printed in larger sized type; a large mass of minute detail—data for consultation—appears in smaller type. Thus may the manual serve for both study and reference. It is reliable and a distinct credit to American medicine as well as to pharmacology. Not only is it a work for the student and laboratory worker, but it is equally valuable for the practitioner. Progressive physicians realize that the estimate of a drug cannot be based on uncontrolled clinical observations or on uncritical statements handed down from book to book. Physicians abreast the times demand that all the scientific evidence concerning drugs—chemical, pharmacologic and clinical—shall have been considered. For their purpose, there could be no better addition to the library than Sollmann's Manual of Pharmacology.

Untersuchungen über die Eigenreflexe (Sehnenreflexe) menschlicher Muskeln. Von Paul Hoffmann, Privatdozent für Physiologie in Würzburg. Paper. Price, $1.20. Pp. 106, with 38 illustrations. Berlin: Julius Springer, 1922.

This is a scientific discussion of tendon reflexes by a physiologist. He objects to the term tendon reflexes and prefers to call them Eigenreflexe (proper muscle reflexes, idiomuscular reflexes). The tendon plays no important part, the reflex being produced by a sudden pull in the long axis of the muscle, and it is immaterial whether this is produced by tapping the tendon or moving the joint suddenly. The author deplores the use of the term "reflex" for such complicated phenomena as Pawlow's "conditional reflexes," in which association is involved. He shows that recent physiologic investigations have removed the objection to the true spinal reflex nature of the so-called tendon reflexes raised on the ground that the reaction time is too short. Apparatus and recording methods for the fine study of reflexes are described in detail.

Die epidemische Encephalitis. Von Professor Dr. Med. Felix Stern, Oberarzt der Universitätsklinik für Psychische und Nervenkrankheiten Göttingen. Paper. Price, $2.80. Pp. 228, with 12 illustrations. Berlin: Julius Springer, 1922.

This is No. 30 of the monograph series edited by Foerster and Wilmanns. It is a carefully worked out monograph discussing all features of the disease, based on the extensive clinical and pathologic work of the author and a critical review of the entire literature. American, English and French observations are considered as fully and impartially as those by German authors. It is by far the most comprehensive book on this disease published so far, and it enters more deeply into pathogenic problems than any other. While calling attention to all of the manifold symptoms and lesions encountered, the main effort is centered on presenting a picture of the disease as a whole and to establish scientifically its nosologic entity. The discussion of its relationship to influenza is very fascinating and convincing, though no positive conclusion is reached except that a close relationship exists. It is thought that the filtrable encephalitic virus exists in a harmless form in the nasal mucosa of a great many persons and that it requires activation by the influenza virus and possibly by others of unknown nature. The possible relation to ordinary herpes is discussed. Much attention is given to the chronic and recurring forms, especially the parkinsonian form, and it is considered possible that toxins from the liver, kidneys or ductless glands may participate in their pathogenesis. So far very little material from old cases has been available for study, and it is not considered settled that we are dealing with the action of persistent encephalitic virus, as is the case with spirochetes in paretic dementia.

Functional Nervous Disorders: Their Classification and Treatment. By Donald E. Core, M.D., M.R.C.P., Honorary Assistant Physician, the Manchester Royal Infirmary. Cloth. Price, $6. Pp. 371, with 21 illustrations. New York: William Wood & Co., 1922.

This is an extremely difficult book to read because the author has developed a language of his own in which he uses many words such as "psychic dissociation" and "atmosphere" in a quite special sense, which is not always obvious. This very decidedly interferes with the purpose of the author in writing the book, which was the introduction of order into the chaotic vagueness which at present stamps the classification and conception of functional nervous disorders. Dr. Core, on premises of his own, which contain much food for thought, divides these disorders into regressive and progressive types. The former contains only hysteria, which is divided into primary, secondary and tertiary varieties dependent on "the atmosphere" in which the condition develops. The progressive disorders present symptoms referable, essentially, to disturbances in the sympathetic system. They are subdivided into "instinct-distortion neuroses or dysthymias," and "mnemoneuroses." The latter are usually end-stages of the dysthymias, and are fundamentally dependent on memory. There is also much discussion of the relation between functional disorders and structural disease. Great stress is laid on the causation of the latter by the former, and yet the reasoning is difficult to follow and ignores some facts of histopathology. The involved phraseology is distinctly unfortunate, because close study reveals original thought, and suggests constructive possibilities. There is much that is worth the labor of reading for the specialist, but the book cannot be recommended to the general reader.

The Process of Diagnosis Including the Method of History-Taking, and Physical Examination of Surgical Cases. By E. Stanley Ryerson, M.D., C.M., F.A.C.S., Associate in Surgery and Secretary of the Faculty of Medicine, University of Toronto. Cloth. Price, $1. Pp. 109. Toronto: University of Toronto Press, 1922.

This little book would be especially suitable reading for the intern entering on his hospital service. Such reading could not fail to improve the quality of the examinations of patients and of the histories written. The difficulty of eliciting facts by interrogation of the patient is well brought out by the author. He quotes Mlle. Borst, who found that "the degree of fidelity of the hesitating witness may be put down as 56 per cent.; of a confident witness, 86 per cent.; of a sworn witness, 92 per cent.," but considers these results too favorable, as those examined knew they were going to be tested, and endeavored to fix the facts in their memory. A similar test applied to fifty-four students, who had no warning, showed an average fidelity of 27 per cent. "The practice by many physicians of giving the history 100 per cent. value and making a diagnosis on this alone and prescribing treatment in accordance with this diagnosis is scarcely justifiable if the facts elicited really have only 27 per cent. truth in them." The subject is taken up chiefly from the standpoint of the surgeon; but the author does not intend to present a systematic treatise on surgical diagnosis. He aims merely to assist students in the process of diagnosis by suggesting the exercise of logic and the application of system.

Medicolegal

Medical Services for which Employer Is Not Liable

(Gainesville Limestone Co. v. Robertson (Ga.), 113 S. E. R. 98)

The Court of Appeals of Georgia, Division No. 2, in reversing a judgment obtained by plaintiff Robertson against the defendant company, gives no further information about the case than is contained in the syllabus by the court that, in a suit in quantum meruit (a suit to recover the reasonable value of services), when it does not appear that the services rendered by the plaintiff were rendered to the defendant, or for the defendant's benefit, or, if rendered to a third person, were rendered in the performance of a duty which the defendant owed to such third person, no promise by the defendant to pay for the services will be implied.

Medical services rendered to an injured employee, such as the performance of an operation for the purpose of relieving him of the effects of the injury, and in giving him medical attention generally, are not services for the benefit of the employer when they are not rendered until after the injured person has reached his home and been cared for by another physician; and are not rendered in the performance of any duty which the employer may at the time of the injury owe to the employee, in the nature of emergency treatment, by way of a humanitarian or legal duty to minister immediately to and care for the injured employee.

When, at the time of injury to an employee, and after the employee had been informed that a certain physician had been summoned to treat his injury, the employee requested a fellow servant to summon the plaintiff, who was his own family physician, and the plaintiff was accordingly summoned, and, in company with the other physician, treated the employee's injuries, and continued in attendance on him; when, several days afterward, an authorized agent of the employer stated to the physician who had first been summoned that he desired that everything be done for the benefit of the injured employee, including the procurement of other physicians if necessary, and when this physician did cooperate with the plaintiff, the inference was not authorized that there was an express contractual relation between the plaintiff and the employer, obligating the employer to pay the plaintiff for any medical services rendered to the employee.

The verdict rendered for the plaintiff, being without evidence to support it, should have been set aside on the defendant's motion for a new trial.

Invalid Ordinance and Revocation of License

(Moorehouse v. Hammond (Utah), 209 Pac. R. 883)

The Supreme Court of Utah says that a complaint in writing was filed in the office of the defendant, as director of registration, in which it was charged that plaintiff Moorehouse had been guilty of unprofessional conduct in that he had wilfully failed to report to the health officer in writing a case of infectious disease which he had treated on a certain date, and that, having been charged with this offense before a justice of the peace, he had pleaded guilty and been adjudged to pay a fine of $25. Thereafter, a hearing was had before the defendant and a committee of physicians, as provided by statute, and the committee, after hearing the evidence, reported that it found the accused guilty of unprofessional conduct as charged, and recommended that his license to practice medicine and surgery be revoked; after which the defendant entered an order of revocation.

The plaintiff was charged with violating a town ordinance that required a report "in writing," while the state statute merely requires a physician to report "the existence of any contagious or infectious diseases . . . to the local board of health." The ordinance required more from the physician than did the statute. While the cities and towns, including boards of health, in Utah, are given ample power to pass and enforce ordinances, to promulgate and enforce rules and regulations respecting the public health and to require certain things to be done in case of contagious and infectious diseases; when, as here, the statute specifically defines what act or acts of commission or omission on the part of a physician shall constitute unprofessional conduct authorizing the revocation of his license to practice medicine, an ordinance, in the absence of express statutory authority, cannot impose greater or different duties in that regard than the statute imposes.

However, if it was held that the ordinance in question could impose the duty of reporting contagious and infectious diseases in writing, yet, in view of the fact that it did not denounce the omission or failure to report as unlawful nor impose any penalty or punishment for a failure to make a report, the ordinance was clearly unenforceable, and the imposition of the fine by the justice was beyond his power and constituted manifest usurpation.

Besides, a member of the board of trustees of the town testified that he was the authorized quarantine officer of the town; that he was present at the house of the afflicted person; that the plaintiff informed him, as quarantine officer and trustee, that the patient was afflicted with smallpox, and that, immediately on receiving this information, he put up a sign quarantining the house in which the patient was confined. The provisions of the statute were thus substantially complied with, and that is all that the law requires.

In concluding its opinion, the court desires to add that it is very reluctant to interfere with the orders of the boards of health in carrying into effect the rules, regulations and ordinances relating to the prevention of disease and the protection of the public health. In enforcing these rules, regulations and ordinances, the boards of health are exercising the highest functions of government, and they should not be interfered with unless it is clear that they have exceeded the bounds of their authority. When, however, as here, the rights of a citizen have been invaded and he has been condemned without authority of law and has had his license to practice his profession revoked, the court has no alternative but to correct the wrong by annulling and setting aside the order by which his privileges have been denied him.

Physician Not Liable for Death of Child from Eating Tablets Left for Adult

(Walker v. Chase (Ia.), 190 N. W. R. 397)

The Supreme Court of Iowa, in reversing a judgment for $3,500 damages that was rendered against the defendant, a physician, for the death of a child, alleged to have been caused by the physician's negligence, says that the case was unique in that it had no precedent as an authority; that the court had examined the authorities cited in the brief for the plaintiff and found none that could fairly be called an authoritative precedent in support of a recovery in this action, which was brought by the father of the child as administrator of its estate. The evidence disclosed that the defendant was called to the home of a patient, 22 years of age, who was being attended by the mother of the child. He left in a china cup on the table twelve or fifteen pink tablets for the patient, each tablet containing one-sixtieth grain of strychnin. On the following morning, the child, who was 17 months old, was discovered in a chair at the table after she had eaten all of the tablets, less four. She went into convulsions and died within an hour. The plaintiff sought to make a point of the fact that the tablets were pink and therefore attractive to a child, and he argued that, in putting the pink tablets into the china cup and leaving the cup on the table within the possible reach of the child, the defendant exposed her to a danger which he ought to have foreseen and against which he ought to have guarded.

If, instead of setting the cup on the table, the defendant had placed it in the hand of the child's mother or of the other attendant, this circumstance would have wholly undermined the argument on the proposition that it was negligent for the defendant to put the tablets in a cup and to leave the cup on the table, and that his responsibility for this act continued as long as the tablets remained where he left them. In legal effect, the cup with its contents was put into the custody and control of the child's mother as effectively as by any other conceivable method. It was at her hand and in her care. In order to carry out the instructions of the defendant to give the contents to the patient in doses of

one tablet every four hours, she must necessarily handle the cup and assume control of it. It was not wrong for the trial court peremptorily to instruct the jury that the act of the defendant amounted to a delivery of the tablets to the child's mother. The care, custody and control of the cup with its contents passed that evening to her, and from that time forward, she, and not the defendant, was responsible for whatever method of care, custody and control she chose to adopt.

Nor was the defendant negligent in that he failed to warn the mother that the tablets, if taken by her child, would be injurious and dangerous. A formal warning to the mother would have been a mere formality, which would have added nothing to the knowledge she already had that it would be extremely dangerous for a child of the age of the one in question to swallow ten or a dozen doses of medicine. Though the petition charged a failure to label the tablets, it was not contended that the failure to do it was a violation of the statute. It was urged as a circumstance on the question of negligence. But an instruction was technically erroneous which implied that the burden of proof was on the defendant to show that the mother knew that the tablets contained drugs that were dangerous to the health and life of her child. On this question, the burden was on the plaintiff, not on the defendant. The conclusion of the supreme court is that the record disclosed no evidence of negligence on the part of the defendant, and that his motion for a directed verdict ought to have been sustained.

Duty as to Reporting Result of Physical Examination

(Kelman v. Union Ry Co. (N. Y.), 195 N. Y. Supp. 313)

The Supreme Court of New York, Appellate Division, First Department, reverses an order that was obtained by the defendant requiring the plaintiff, who was seeking to recover damages for personal injuries, to submit to a physical examination by two physicians named, which in its final form was in accord with an opinion that the physicians should file their report with the referee, and that they could furnish a copy of the report to the attorney for the plaintiff, as well as to the attorney for the defendant. The court says that the right to a physical examination of an adverse party did not exist in the state of New York prior to the adoption of the amendments to Section 873 of the Code of Civil Procedure. That section does not require the physican to make a report to any one. As the examination is made in behalf of the defendant, at its expense, and because it is ignorant of the nature and extent of the plaintiff's injuries, unless the physician communicated the result of the examination to the defendant's attorney, the attorney would be as ignorant of the plaintiff's physical condition after the examination as he was before. It is therefore to be expected that the results of the examination will be communicated to the defendant's attorney. The physician cannot be required to file a report, either with the referee or with the clerk of the court, nor can he be compelled to make a formal report to either party. Although the physicans are appointed by the court, they are not thereby constituted a commission to hold an inquisition on the physical condition of the plaintiff. They are simply to testify on the trial as other witnesses to the facts they ascertained from such examination.

Valid Ordinance to Protect Food from Flies and Dust

(Barrett et al. v. Rietta et al. (Ala.), 93 So. R. 636)

The Supreme Court of Alabama, in holding valid Sections 1099, 1101 and 1119 of the code of the city of Birmingham, says that the capacity of dust and flies to transmit or to disseminate disease germs or other infectious matter is generally appreciated. The municipal police power to preserve the public health comprehends the authority to enact ordinances to protect public consumption from the harmful or hazardous consequences of eating food that may become infected through exposure to dust and flies. Section 1099 makes it unlawful to sell or offer for sale any contaminated, adulterated or unfit food intended for human consumption "or any food which has been exposed to dust, flies or vermin." The alternative clause quoted must be referred to "any food" that has been so exposed while under the control or possession of the offender. This clause was not intended to penalize a dealer for exposures to dust, flies or vermin that had been accomplished before the food came into the possession of the local dealer. "Contaminated, adulterated, or unfit" food is forbidden sale by the preceding provisions of the section; hence, the court's conclusion that the section is not unreasonable, oppressive, or otherwise invalid as imposing irrational restraint on the sale of foods. Section 1101 makes it unlawful to maintain or conduct any place where food, milk, ices or beverages are manufactured, prepared, or served, unless all of the doors, windows or other openings are properly screened; provided, however, that screen doors may be kept open if electric fans are effectually used and effectually prevent flies from coming in. Considering Sections 1099 and 1101 together, the exposure to flies that these sections inhibit is not an exposure that contemplates perfect immunity from contact with flies. The inhibited exposure is that which results from failure to observe the provisions of Section 1101, or that which results from unnecessary or unreasonable subjection of articles of food to the contact of flies. So construed, these sections are valid. Section 1119 requires that foods sold or offered for sale be kept indoors, and all doors, windows or other openings be kept closed or screened as provided in Section 1101. This requirement that foods shall be kept inside the building is a reasonable regulation. Its design is to avoid the contaminating effect of dust and flies, an obviously reasonable precaution; and this section is valid. Furthermore, give the valid exercise of the authority to define offenses of the present nature, and to penalize infractions thereof, the ascription of a distinct offense to each day's failure to observe the municipal mandate is, manifestly, a valid exercise of the power conferred.

Damages for Mental Suffering—Injury to Pregnant Woman

(Davis, Agent, v. Murray (Ga.) 113 S. E. R. 827)

The Court of Appeals of Georgia, Division No. 2, holds that there may be a recovery for mental suffering resulting directly from a physical injury. Thus, a pregnant woman, who has, as a result of another's negligence, received a physical injury of such a nature as to produce within her mind a fear and apprehension that she will give birth to a deformed child as a result of the injury, may, whether such deformity actually occurs, recover damages for mental suffering resulting from the injury.

The fetus of a pregnant woman being part of her person, she is entitled to recover for any actual physical injury sustained by the fetus, including mental pain and suffering proximately resulting therefrom. When, as a result of an injury to such fetus, the child is born deformed, the mother is entitled to recover damages, not only for the physical injury, but also for her mental suffering on account of the mortification and disappointment at the birth of a deformed child. The pain and suffering to the mother thus caused may be continued throughout her entire life, and therefore be permanent, and in computing damages for the injury the permanency of the pain and suffering may be considered. The mother, however, cannot recover damages for any mental suffering which she may undergo occasioned by the child's deformed condition continuing after birth, nor for any pain and suffering which the child may undergo.

The foregoing principles of law were properly given in the charge to the jury in this case, in which Mrs. Murray sued for damages claimed by reason of a collision between a train and an automobile in which she was riding at a time when she was pregnant about two months, which was followed seven months' later by the birth of a child with two toes missing from the left foot. Demurrers to the plaintiff's petition were properly overruled. But, since there was no evidence which would authorize the jury to infer that the deformed condition of the child at its birth was caused by the physical injuries received by the plaintiff and alleged to have been inflicted by the defendant, it was prejudicial to the defendant for the court to instruct the jury on the assumption that there was an issue of fact as to whether or not the deformity was caused by the defendant's negligence, and for this reason the judgment obtained by the plaintiff is reversed, and a new trial is awarded the defendant.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Dermatology and Syphilology, Chicago

January, 1923, **7**, No. 1

*Experimental Study of Pathogenic Acid Fast Actinomycete (Nocardia). D. J. Davis and O. Garcia, Chicago.—p. 1.
*Contributory Factors in Postarsphenamin Dermatitis. J. H. Stokes and E. P. Cathcart, Rochester, Minn.—p. 14.
*Infantile Eczema and Examination of Stools. C. J. White, Boston.—p. 50.
*Treatment of Arsphenamin Dermatitis and Certain Other Metallic Poisonings. W. L. McBride and C. C. Dennie, Kansas City, Mo.—p. 63.
Brief for More Accurate Classification of Industrial Skin Disease. C. G. Lane, Boston.—p. 77.
Dermatitis Venenata; Study of Tropical Plants Producing Dermatitis. V. Pardo-Castello, Havana, Cuba.—p. 81.
Case of Lacquer Dermatitis. W. A. Pusey, Chicago.—p. 91.
Resistance of Hair to Certain Supposed Growth Stimulants. M. Trotter, St. Louis.—p. 93.
Report of Committee on Statistics of American Dermatological Association for 1921. S. Pollitzer, New York.—p. 99.

Pathogenic Acid Fast Actinomycete.—The actinomycete described by Davis and Garcia was isolated from a human case. It was acid fast and pathogenic for animals. It belongs in the general group of *Nocardia*. The extracted organism is practically gram-negative and nonacid fast. The extracted fatty substance is acid fast and gram-positive. The organism is pathogenic to rabbits, rats, guinea-pigs and mice. Intravenous injection into rabbits produces typical tubercles in the lungs and other organs, containing characteristic raylike bodies. The organism may show striking conidia-like forms in liquid mediums which may be of value in identification. The antiformin method must be avoided in a suspected case of acid fast actinomycete (*Nocardia*) infestation.

Postarsphenamin Dermatitis.—It has been the experience of Stokes and Cathcart that cutaneous reactions to arsphenamin, in general, are not a function of the amount of the drug administered; and that they show a distinct tendency to occur early in the course of its administration, rather than late. Comparative and direct clinical analysis indicates that postarsphenamin cutaneous reactions have no clinically demonstrable connection with the administration of mercury (except as an external irritant in inunctions); neither do they seem dependent on any renal abnormality or injury detectable by the ordinary laboratory tests. In other words, no clinical evidence was found that arsenic retention due to renal injury by mercury is a cause of arsphenamin dermatitis. In a large proportion of cases there is evidence that chronic focal and acute prodromal or intercurrent infections form a part of the complex on which arsphenamin cutaneous reactions develop. The severity of the cutaneous reactions observed has stood in a rough direct relation to the extent of the infection factor. Circumstantial evidence is submitted which seems to render still more plausible the conception of infection as an important part of the causative background of the exanthematic and exfoliative syndromes complicating the administration of arsphenamin. The authors propose a theory of the mechanism of postarsphenamin dermatitis based on an allergic instability or idiosyncrasy produced either by colloidal changes secondary to arsphenamin injection, especially if accompanied by repeated reaction, or by chronic or sudden absorption of a bacterial sensitizing protein from a focal or acute infection, as the fundamental premise.

Treatment of Infantile Eczema.—The proper use of crude coal tar paste, rightly prepared, with the most conscientious regard to necessary general precautions, White asserts, will cure and cure promptly the great majority of cases of infantile eczema treated in private practice.

Treatment of Arsphenamin Dermatitis.—McBride and Dennie assert that sodium thiosulphate, given intravenously and by mouth, rapidly shortens the course of arsenical dermatitis. It is a successful neutralizing agent for acute and chronic mercurial poisoning. To secure the best results, it must be given intravenously. In its pure form, it is nontoxic up to 2 gm. doses. Certain conditions which impair the liver or kidneys are predisposing factors in the production of arsphenamin dermatitis. Seven cases are reported. Two cases were due to neo-arsphenamin, and one case each to potassium arsenite, arsphenamin, sodium cacodylate, mercuric chlorid and mercuric salicylate.

Boston Medical and Surgical Journal

Jan. 11, 1923, **188**, No. 2

*Value of Animal Experimentation to Physician in His Daily Work. W. B. Cannon, Boston.—p. 30.
*Aspects of Antitoxins in Relation to Animal Experimentation. E. H. Place, Boston.—p. 32.
*What Animal Experimentation had done for Exotic and Tropical Medicine. R. P. Strong, Boston.—p. 33.
*Benefit to Animals of Medical Experimentation. G. H. Parker, Boston.—p. 36.
*How Animal Experimentation has Assisted in Control of Contagious Diseases Among Animals. L. H. Howard, Boston.—p. 37.

Value of Animal Experimentation.—It is very important, says Cannon, that the public should know that the animals used in laboratories for experimental purposes are not treated cruelly or carelessly. To secure relief from pain and disease is the central purpose of medical investigation. In every medical school and in every institute for medical investigation in the United States rules governing the care of animals have been formally adopted—rules providing for the comfort and sanitary surroundings of the animals, and requiring all operations to be approved by the laboratory director. He is held responsible for the problems studied and the methods used in studying them. Further, the rules require that all operations likely to cause greater discomfort than going under an anesthesia shall be done under anesthesia and shall be followed by painless death. Only the director is permitted to make exceptions to these last provisions, and he is allowed to do so only in the rare cases in which anesthesia or death of the animal would defeat the object of the experiment. So confident are the directors of the laboratories that the condition of the animals and the uses to which they are put in medical investigation would be regarded as satisfactory by reasonable people that all the medical schools and medical research institutions in the country have publicly declared that representatives of humane societies may visit the laboratories and see for themselves what is going on.

Relation of Antitoxins to Animal Experimentation.—The lives saved by diphtheria antitoxin since 1895, Place states, are to be numbered by the million. The deaths from diphtheria, due to failure to receive antitoxin or to receiving it too late, in this country alone probably number about 15,000 yearly. It is possible scientifically, even if it may be impracticable, to live in good nutrition and health without the use of animal food. It is, however, absolutely impossible to provide a safeguard of any degree against diphtheria without the use of animals. With this use a thorough, practical means is at hand of removing the diphtheria menace almost completely with the saving of millions of lives, enormous suffering, and great economic loss, and this with less suffering and death of the animals than occur under natural conditions in the life of wild animals.

What Animal Experimentation Has Done for Exotic and Tropical Medicine.—Strong says that there is today, apparently, a great deal of misunderstanding on the subject of animal experimentation. Many people who have become violently opposed to animal experimentation have been brought to their belief by misrepresentation or misunderstanding of facts, or by ignorance. Sincere people are attending and holding meetings or are supporting and even issuing publications in opposition to animal experimentation in general, and are doing so solely because they are really unenlightened on the actual facts in regard to the necessity for animal experimentation in connection with the progress of medicine and the prevention and relief of suffering. Unless there is greater popular education on the subject, unless the general public can acquire a more correct knowledge of the value of animal experimentation in relation to human welfare, Strong says, misrepresentation by the misguided opponents

of animal experimentation and vivisection bids fair to have a clear field, and ignorance and error will be liable to play havoc in the combat for the prevention of disease and the protection of the public from it.

Benefit to Animals of Medical Experimentation.—Whenever preservation measures are undertaken, Parker points out, the knowledge gained by physicians from centuries of observation on human beings and from years of experimental work on animals is immediately made available in bettering the conditions in wild animal life. Wild animals, therefore, profit as much from the advancement of medical science through observation and experimentation as man does himself.

How Animal Experimentation Has Assisted in Control of Contagious Diseases Among Animals.—Veterinary science, on which is based all animal disease control work, according to Howard, depends for its advancement at the present day largely on the new truths which scientific investigators reveal to it, and the day which sees the restriction or prohibition of animal experimentation by competent men will also mark the decline of veterinary science and of the veterinary profession in its chosen field of service to the animal kingdom.

Jan. 18, 1923, **188**, No. 2

Opportunity to Enlighten Hospital Trustees. C. Frothingham, Boston. —p. 57.
Epinephrin Therapy. A. Worcester and D. O'Hara, Waltham, Mass. —p. 58.
What We Owe to Past Investigators for Our Present Methods of Prevention and Treatment of Tuberculosis. E. O. Otis, Boston.—p. 59.
Medicine and Law. H. L. Shattuck, Boston.—p. 63.
*Case of Torsion of Greater Omentum. M. A. McIver, Boston.—p. 65.
Preventorium and Its Relation to Tuberculosis in Childhood. R. Clifford, Boston.—p. 66.

Torsion of Omentum.—The main symptom in McIver's case was pain, localized just to the right of the umbilicus. It was sharp and knifelike in character, and did not radiate. There was no nausea or vomiting. The temperature was 102 F. A diagnosis of acute appendicitis was made. On opening the abdomen, an area of necrotic omentum was seen lying just to the right of the incision. At the base was a very definite twist which had evidently cut off the blood supply. The appendix, gallbladder and stomach were perfectly normal. The gangrenous portion of the omentum was resected. The patient was discharged well on the thirteenth day.

Colorado Medicine, Denver

January, 1923, **20**, No. 1

Report of Three Years' Public Health Work of Denver Venereal Disease Clinic, Women's Division. M. C. T. Love, Denver.—p. 5.
Causes and Prevention of Rickets. E. L. Timmons, Colorado Springs. —p. 11.
Pasteur's Influence on Medicine. C. E. Edson, Denver.—p. 15.

Journal of Infectious Diseases, Chicago

December, 1922, **31**, No. 6

*Experimental Study of Methods Available for Enrichment, Demonstration and Isolation of Bacillus Botulinus in Specimens of Soil and Its Products, in Suspected Food, in Clinical and in Necropsy Material. B. J. Dubovsky and K. F. Meyer, San Francisco.—p. 501.
*Distribution of Spores of Bacillus Botulinus in California. II. K. F. Meyer and B. J. Dubovsky, San Francisco.—p. 541.
*Distribution of Spores of Bacillus Botulinus in Soil of a Restricted Area in California. III. G. E. Coleman, Santa Barbara, Calif.—p. 556.
*Distribution of Spores of Bacillus Botulinus in United States. IV. K. F. Meyer and B. J. Dubovsky, San Francisco.—p. 559.
*Distribution of Spores of Bacillus Botulinus in Territory of Alaska and Dominion of Canada. V. B. J. Dubovsky and K. F. Meyer, San Francisco.—p. 595.
*Occurrence of Spores of Bacillus Botulinus in Belgium, Denmark, England, The Netherlands and Switzerland. VI. K. F. Meyer and B. J. Dubovsky, San Francisco.—p. 600.
*Occurrence of Spores of Bacillus Botulinus in the Hawaiian Islands and China. VII. P. Schoenholz and K. F. Meyer, San Francisco. —p. 610.
*Occurrence of Bacillus Tetani in Soil and on Vegetables. VIII. B. J. Dubovsky and K. F. Meyer, San Francisco.—p. 614.
Safe Method for Securing Anaerobiosis with Hydrogen. IX. A. C. Richardson and C. C. Dozler, San Francisco.—p. 617.
*Pathogenicity of Bacillus Botulinus. X. G. E. Coleman and K. G. Meyer, San Francisco.—p. 622.
*Heat Resistance of Spores of Bacillus Botulinus and Allied Anaerobes. IX. J. R. Esty and K. F. Meyer, San Francisco.—p. 650.

Isolation of Bacillus Botulinus.—In this paper Dubovsky and Meyer describe the methods employed for the enrichment and demonstration of *Bacillus botulinus* in specimens of soil and its products. The composition of the medium, the preparation and heating of the samples, the period of incubation and storage, the identification of the toxin and the isolation of the organism from toxic enrichment cultures are discussed and their value considered in the light of numerous experiments. It is emphasized that inexperienced workers should question their results until they eliminate the danger of laboratory contamination by continuous, painstaking vigilance, proper sterilization of the culture mediums, glassware, etc., and by repeated control examination. The methods applicable for the examinations of suspected food, clinical and necropsy material are described in detail.

Bacillus Botulinus in California.—The examination by Meyer and Dubovsky of 624 specimens of soil, vegetables, fruits, feeds, manure and sewage collected in thirty-six counties of California and studied by means of 894 cultures definitely indicates that the spores of *Bacillus botulinus* are very widely distributed. Approximately 30 per cent. of the samples produced toxic cultures; 74.8 per cent. of the identified toxins were neutralized by a Type A; 22.1 per cent. by a Type B, and 3.1 per cent. by a polyvalent antitoxin. The evidence strongly suggests that the natural habitat of *B. botulinus* is found in virgin mountain or forest soil. *B. botulinus* is also present in cultivated garden and field soils and their products. Vegetables and fruits bought in various cities and towns of California carry the spores of *B. botulinus*. *B. botulinus*, Type B, occurs predominantly in cultivated and manured soils and is probably a mutant of the fixed Type A.

Bacillus Botulinus in California.—It is shown by Coleman that the cultivated soils of a narrow strip of coast line in Santa Barbara County, California, are heavily contaminated with the spores of *Bacillus botulinus*, Type A, as well as with those of *B. tetani* and that the virgin soil from the mountain range behind this strip of land also contains the spores of *B. botulinus*, Type A.

Bacillus Botulinus in United States.—A general survey made by Meyer and Dubovsky, during which 1,538 soil, vegetable, feed and manure specimens of every state of the United States, except Virginia, have been studied for the presence of the spores of *Bacillus botulinus*, reveals that *B. botulinus* is a common soil anaerobe of the Western states of the Cordilleran system. It is less frequently encountered in the Atlantic states and is relatively rare in the Middle states, the great plains and the Mississippi Valley. The soil of the Western states, inclusive of the great plains, yields, mainly, *B. botulinus*, Type A, while the Mississippi Valley and Great Lakes region is characterized by a striking predominance of Type B. Similarly prevalent is this latter type in the Atlantic states of Maryland, Delaware, New Jersey, Georgia and South Carolina, while scattered findings of Type A in Maine, New York and Pennsylvania indicate the existence of breeding places in virgin forests and mountains. Soils which are subjected to intensive cultivation and fertilization contain, as a rule, *B. botulinus*, Type B. *B. botulinus* spores are far more prevalent in virgin and pasture soils than in dirt, soil or manure collected from animal corrals, pig pens, etc. Vegetables, fruits and feeds are frequently contaminated with the spores of *B. botulinus*. String bean pods and leaves, moldy hay, ensilage and decayed vegetation may yield a relatively high percentage of positive cultures. Human and animal botulism is not infrequent in those states in which *B. botulinus*, Type A, predominates, or in which the percentage figures of positive cultures exceeds from 20 to 30 per cent. From a practical standpoint, however, *B. botulinus* is ubiquitous, and this survey gives no assurance that heat resistant spores cannot be found anywhere and at any time. The theory which claims that all the pathogenic anaerobes are regular inhabitants of the intestinal canal of animals, the authors assert deserves renewed investigation in the light of this survey on *B. botulinus*.

Botulinus Spores in Alaska and Canada.—*Bacillus botulinus* has not been demonstrable in the coast land soil of the Aleutian Archipelago. *B. botulinus*, Type A, and occasionally

Type B, has been cultivated in moraine, glacier and mountain soil collected around Lake Louise in the Canadian Rockies. Soil samples obtained from the provinces of Prince Edward Island, Nova Scotia, Quebec, Ontario and British Columbia have also furnished positive cultures.

Botulinus Spores in Belgium and Other Countries.—*Bacillus botulinus,* Type B, has been demonstrated in soil and vegetable specimens collected in Belgium, Denmark, England, the Netherlands and Switzerland. *B. botulinus,* Type A, has been found consistently absent. The spores are widely distributed, but they are neither numerous nor very resistant to heat.

Botulinus Spores in Hawaiian Islands and China.—*Bacillus botulinus,* Type B, is frequently found in the soils obtained from the Island of Oahu, in the territory of Hawaii, and from the provinces of Chilili and Shansi, in China. Type A has been found only in two Hawaiian and in one Chinese soil specimen.

Bacillus Tetani in Soil and on Vegetables.—The spores of *Bacillus tetani* are frequently encountered in well manured, cutivated or garden soil, and on vegetables obtained from several states east of the Mississippi, Switzerland and China. In the United States even virgin forest soil has yielded cultures of *B. tetani.* The soil of the Western states is relatively free from this anaerobe.

Pathogenicity of Bacillus Botulinus.—Coleman and Meyer assert that massive doses of toxin-free spores of *Bacillus botulinus* are pathogenic when introduced into the animal body. These spores and the vegetative forms arising from them are rapidly disseminated throughout the tissues of the body. Toxin-free spores of *B. botulinus* germinate, and the vegetative forms arising from this germination multiply and liberate toxin in the animal body.

Heat Resistance of Bacillus Botulinus Spores.—The heat resistance of *Bacillus botulinus* spores in the juices of seventeen varieties of canned food examined by Esty and Meyer shows a variation from less than ten minutes to 230 minutes at 100 C.

Kentucky Medical Journal, Bowling Green

December, 1922, **20,** No. 12

County and Community Diagnosis Laboratory. V. R. Jones, Shelbyville.—p. 836.
Arteriosclerosis and Hypertension. J. W. Morris, Louisville.—p. 841.
Present Views Regarding High Blood Pressure. F. C. Askenstedt, Louisville—p. 845.
Deafness from Wax Impactions. Three Cases. S. G. Dabney, Louisville.—p. 854.
Partial Report of Examination of Eye, Ear, Nose and Throat of Patients in Eastern Kentucky State Hospital. J. A. Stucky, Lexington.—p. 855.
Case of Pernicious Anemia of Aplastic Type; Remarks on Pernicious Anemia. J. R. Morrison, Louisville.—p. 856.

Missouri State Medical Association Journal, St. Louis

January, 1923, **20,** No. 1

*Arterial Hypertension. L. S. Milne, Kansas City, Mo.—p. 1.
Paralysis Agitans. D. S. Booth, St. Louis.—p. 4.
Scopolamin-Morphin Seminarcosis in Second Thousand Deliveries in Barnes Hospital. O. S. Krebs and L. R. Wilson, St. Louis.—p. 12.
Scarlet Fever. H. B. Norton, Center.—p. 22.
Endocrine Balance. M. L. Sands, Warsaw.—p. 24.

Arterial Hypertension.—Having determined the cause of the hypertension and the extent to which it has caused secondary systemic changes, Milne says that a rational dietary, calculated to support the nutrition and strength of the subject, should be adopted, in addition to the necessary limitation of exercise and various hygienic, psychopathic, eliminative, hydrotherapeutic, electrotherapeutic, and sometimes surgical remedies, administered to combat the etiologic factors involved and to lower the existing state of hypertension and so at least prevent the incidence of the serious terminal events of this disease.

Nebraska State Medical Journal, Norfolk

January, 1923, **8,** No. 1

Epigastric Hernia. A. J. Brown, Omaha.—p. 1.
Focal Infection. A. D. Dunn, Omaha.—p. 5.
Suprapubic and Perineal Prostatectomy; Advantages of Each. E. Davis, Omaha.—p. 9.
Medical Legislation; Public and Doctor. W. H. Wilson, Lincoln.—p. 14.
Twentieth Century Obstetrics—Criticism. A. B. Somers, Omaha.—p. 16.
Chronic Cystic Mastitis. M. Emmert, Omaha.—p. 24.
Peritoneal Infections of Female Pelvis. B. A. Bobb, Mitchell, S. D.—p. 28.

New York Medical Journal and Medical Record

Jan. 17, 1923, **118,** No. 2

Migratory Tumors of Abdomen. A. W. Collins, San Francisco.—p. 65.
Iodin and Iodotherapy Based on New Iodin Preparation. H. J. Novack, Philadelphia.—p. 69.
Biochemical Explanation of Iodin Molecule. P. R. Vessie, Gowanda, N. Y.—p. 74.
Immobility of Diaphragm; Report of Cases of Bilateral Immobility. J. H. Pryor, Buffalo, N. Y.—p. 75.
Rhinologic Surgeon's Position in Diseases of Maxillary Sinus and Relation of Antra to Affections of Other Sinuses. H. M. Hays, New York.—p. 79.
Case of Perisinus Abscess. J. C. Scal, New York.—p. 83.
Suicide Among American Physicians—Its Causes and Suggestions for Prevention. S. A. Knopf, New York.—p. 84.
Significance of Protein Skin Reactions in Bronchial Asthma. M. M. Peshkin, New York.—p. 88.
Fractional Test Meal Method of Rehfuss Versus Single Test Meal of Ewald. M. Golob, New York.—p. 94.
Gallbladder Surgically Considered. H. Cohen, New York.—p. 97.
Aseptic Local Anesthesia as Applied to Anal Region: With Especial Reference to Anesthetic Composition. E. G. Martin, Detroit.—p. 100.
*Thoracic Abdominal Gate. J. J. Rectenwald, Pittsburgh.—p. 102.
Dawn of Surgery. Ritual Mutilations of Primitive Magic and Circumcision. J. Wright, Pleasantville, N. Y.—p. 103.

Thoracic Abdominal Gate.—The object of the instrument devised by Rectenwald is said to be to make a gate or trapdoor for the pleura, lung, stomach, liver, colon, cecum, ovaries, uterus and bladder. By means of this instrument the thorax and abdomen can be opened and closed at will and treatments may be made over an extended period of time without repeated incisions. The conception of the instrument was brought about by Rectenwald's desire to apply radium directly to cancer of the stomach in the form of needles, tubes or plates over an extended period of time and avoiding repeated incisions.

New York State Journal of Medicine

January, 1923, **23,** No. 1

*Use of Schick Test and of Toxin-Antitoxin Injections in Prevention of Diphtheria. W. H. Park, New York.—p. 1.
*Results of Active Immunization with Diphtheria Toxin-Antitoxin in the Public Schools of New York City (Manhattan and the Bronx). A. Zingher, New York.—p. 6.
Gonococcic Vulvovaginitis in Children as a Hospital Problem. E. J. Wynkoop, Syracuse.—p. 7.
Trend of Attitude Toward Heart Disease in Children. G. R. Irving, New York.—p. 11.
*Effect of Quinidin Sulphate on Ambulatory Case of Auricular Fibrillation. W. B. Farnum, New York.—p. 15.
Treatment and Prevention of Certain Mental Disorders. H. A. Cotton, Trenton, N. J.—p. 18.
*The Problem Child. S. R. Leahy, Brooklyn.—p. 23.
Remarkable Freedom from Local Recurrence Following Chemical Removal of Advanced Cancerous Breast. C. W. Strobell, New York.—p. 27.

Use of Schick Test and of Toxin-Antitoxin Injections in Prevention of Diphtheria.—The New York Department of Health has under observation and has indexed 180,000 children, of whom 90,000 have been Schick tested. Of these 90,000 about 60,000 gave the negative Schick test originally; about 20,000 were negative on the retests after the injections of toxin-antitoxin, while about 10,000 of those who were originally positive and who received two or three injections, have either not been retested or, on retest, were found to be positive. During January, February and March, in 90,000 untreated schoolchildren, there occurred fifty-four cases of diphtheria and in 90,000 who had been Schick tested, and when positive were given two or three injections of toxin-antitoxin, there were only twelve cases. Therefore, among 90,000 untreated schoolchildren there developed four and one-half times as many cases of probable diphtheria as developed in the 90,000 tested children. Among 8,200 children who were originally Schick positive and were not retested after the injections, four cases of diphtheria developed. These 8,200 were, as a rule, among the latest to receive the injections. The 1,800 children who in spite of the injections developed insufficient antitoxin to prevent on a retest a moderately

positive Schick reaction, showed the highest incidence of the disease. This result emphasizes the necessity of a Schick test several months after the completion of the injections. Those children who still give the positive reaction should receive a second series of injections. As corroborative of these results, it is interesting to note that during the past six months diphtheria cases and deaths in New York City have been less numerous than ever before. Every effort is to be made to complete the immunization of every school child in New York City.

Results of Active Immunization with Diphtheria Toxin-Antitoxin.—The results of the retests for active immunity in injected children show that with the same mixture of toxin-antitoxin the immunity response in the schools has varied in different groups of children as much as from 21 to 75 per cent. A second series of one or two injections of toxin-antitoxin given at the time of the retest to the children who had failed to become immune after the first series of two injections was followed by the development of an active immunity in from 60 to 80 per cent. of the children so treated. Altogether the children in the various schools who are injected with from two to four doses of toxin-antitoxin developed an active immunity in the proportion of from 70 to 90 per cent. No symptoms of anaphylactic shock were noted with the giving of the second series of toxin-antitoxin injections. There are now being given in the schools three injections of toxin-antitoxin instead of two. The dose is 1.25 c.c. The injections are given at an interval of two weeks instead of one.

Effect of Quinidin Sulphate on Ambulatory Cases of Auricular Fibrillation.—Of twenty-two ambulatory cases of auricular fibrillation reported on by Farnum, only three responded to quinidin sulphate with normal auricular ventricular sequence. Of these three cases, one case remained regular for only a few days. The remaining two cases are still regular, the quinidin sulphate having been given about six weeks ago. In the three cases which became regular, the compensation was not bettered to the extent hoped for or reported by other investigators. In cases with unstable cardiac mechanism, with rapid rate, pulse deficit, and little cardiac reserve, no benefit was derived from the administration of quinidin sulphate. The patients were in some instances made worse. All were glad to return to digitalis, and soon regained their former compensation under that drug.

The Problem Child.—It is Leahy's opinion that the future usefulness of psychiatry lies in preventive measures. These preventive measures, in order to have their greatest effect, must be applied early in the life of the individual when he is still learning to face reality and to emancipate himself from his former egocentricity. This means that the problems presented in the conduct disorders of early childhood are not exclusively disciplinary but often entirely psychiatric.

Southern Medical Journal, Birmingham, Ala.

January, 1923, **26**, No. 1

*Transformation of Intestinal Flora. C. C. Bass, New Orleans.—p. 1.
Problem of Negro Child. J. R. Snyder, Birmingham.—p. 8.
Relation of Radiology to Cancer Control. T. A. Groover, Washington, D. C.—p. 11.
*Case of Epilepsy with Megacolon (Hirschsprung's Disease) and Polymastia. E. B. Block, Atlanta, Ga.—p. 15.
Science vs. Magic in Evolution of Preventive Medicine. S. W. Welch, Montgomery, Ala.—p. 18.
Our Southern Problem. E. G. Williams, Richmond, Va.—p. 20.
Posthospital Care of Surgical Patients. H. H. Trout, Roanoke, Va.—p. 26.
Future of Orthopedic Surgery in South. W. B. Owen, Louisville.—p. 31.
Railroad Surgeon: Present, Past and Future. L. E. Burch, Nashville.—p. 33.
*Torsion of Appendices Epiploicae; Report of Case. S. O. Black, Spartanburg, S. C.—p. 35.
Certain Anatomic and Physiologic Considerations Bearing on Heterophoria. W. B. Lancaster, Boston.—p. 38.
*Dermoid of Conjunctiva; Report of Case. C. M. Miller, Richmond, Va.—p. 42.

Transformation of Intestinal Flora by Lactose.—Bass again calls attention to his work with lactose given to transform the intestinal flora. Daily ingestion of sufficiently large amounts of lactose results in rapid increase of *Bacillus acidophilus* and in due course of time, if the quantity is sufficient, all other bacteria in the intestinal flora are reduced to a negligible quantity. In some instances, however, it required more than 300 gm. of lactose per day to establish *Bacillus acidophilus* as the predominating organism. Unfortunately the quantity of these sugars necessary is too large to be continued over long periods of time, hence the practical application of this method must be very limited. The researches made by Bass on the use of cultures of *B. acidophilus* for therapeutic purposes, including a large number of experiments on twenty-three different human subjects, have yielded results which practically agreed with those of Rettger and Cheplin. A note of warning is sounded against making the same kind of mistake with *B. acidophilus* that was made with *B. bulgaricus*. Already enthusiastic workers have reported most striking therapeutic results from the administration of broth cultures of *B. acidophilus* in teaspoonful doses, only a small fraction of the amount of culture that others have found necessary to change noticeably the intestinal flora. Commercial interests have already placed on the market *B. acidophilus* in the form of tablets, capsules and liquids, and physicians are prescribing them. Bass examined some of these preparations to determine the number of viable *B. acidophilus* contained therein. In the instance of tablets, none of those examined was found to contain as many as 1,000 viable bacteria of any kind per tablet. If it should be granted that all the viable bacteria present were *B. acidophilus*, it would take more than 1,000,000,000 tablets, or more than 20 tons, to contain as many bacilli as are contained in 1,000 c.c., or the usual daily dose, of the acidophilus milk, the quantity found, by most investigators at least, to be necessary to transform the flora. Bacteria were more numerous in the commercial liquid cultures examined. If they were all *B. acidophilus*, a patient would have to drink 7 or 8 gallons daily to get as many as he would in 1,000 c.c. of the acidophilus milk culture. Only fresh cultures produced according to the proper bacteriologic methods should be used.

Epilepsy with Megacolon and Polymastia.—Discussing the etiology of epilepsy, three possibilities are considered by Block: (1) epilepsy and megacolon may represent (equally) evidence of defective development of the nervous system; (2) the megacolon by pressure may produce an alteration in the cerebral circulation; and (3) the resulting constipation from megacolon may furnish a toxic cause for convulsions in those predisposed to them. In the case reported no other physical defect could be found except polymastia, a convolutional atrophy of the skull, from apparent pressure, but without the usual symptoms of pressure being present, full tortuous veins in the right fundus, and the megacolon. While the last was not of the extreme degree found in many of the published reports and fatal cases, it is still sufficient to produce abdominal distension, tympany, and constipation, and Block says must be regarded as pathologic. The occurrence of polymastia, Block says, must be regarded as a stigma of degeneration, but whether such atavistic phenomena should be regarded as evidence of physical strength or weakness is undecided. The conclusion reached by Block in regard to his case is that increased intra-abdominal pressure caused a gradual increase in intracranial pressure, which in turn caused a convolutional atrophy of the skull, and tortuous veins of the right retina.

Torsion of Appendices Epiploicae.—Black asserts that only sixteen cases of true torsion of the appendices epiploicae within the abdominal cavity have been reported in the literature. He adds one case. A man, aged 60, after serving as an active pallbearer at the funeral of a friend whose casket was very heavy, suddenly felt a rather severe pain in the mid left region of the abdomen, which disappeared almost immediately. Four or five hours later he felt an indefinite soreness through the left lower abdominal region which disappeared on recumbency. He slept soundly and awakened the following morning feeling well. He had not long been out of bed before the soreness returned about 2 inches to the left of, and 2 inches below, the umbilicus. A tedious job and a long automobile trip aggravated the discomfort. The following morning the soreness was lessened, but that afternoon

it returned, became rather severe, and the man went to bed. At 9 o'clock the next morning he felt perfectly well, but the leukocyte count was 9,000. At 3 p. m. the leukocyte count was 10,000 and there was unquestionable tenderness on pressure over the left middle and lower abdominal regions. The next day, at about 10 a. m., the fourth day since the onset, the temperature was 99 F., the white blood cells numbered 11,200, and the soreness and tenderness had distinctly localized over a point on the left side corresponding to McBurney's point on the right. It looked like a typical left sided appendicitis. It was decided to operate. Lying immediately beneath an edematous peritoneum, almost completely encompassed by the left border of the omentum, was a large bluish black mass the size of an orange. It was rapidly becoming gangrenous and when isolated was found to be an appendix epiploica, attached to the lower portion of the descending colon. Its pedicle was twisted several turns on itself.

Dermoid of Conjunctiva.—In Miller's case the family history and personal history were negative. A few weeks after birth, the child's parents noticed a growth under the left eyelid. A short time later a hair or two projected under the lid and these continued to grow in length and increase in number until there were six or seven long black hairs growing from under the lid. These hairs grew rapidly and were frequently cut to prevent their hanging too far down on the face, but they were always left sufficiently long for the cut ends to project beyond the lids. The tumor was removed. It contained a yellowish fluid, and a small bony mass the shape and size of the crown of a canine deciduous tooth.

Texas State Journal of Medicine, Ft. Worth

December, 1922, **18**, No. 8

Chronic Nontuberculous Lung Diseases. W. W. Watkins, Phoenix, Ariz.—p. 396.
Pulmonary Abscess. J. N. White, Texarkana.—p. 398.
Indications and Contraindications for Artificial Pneumothorax in Pulmonary Tuberculosis. A. E. Greer, Houston.—p. 400.
Tuberculosis Responsibility. H. L. Wilder, Clarendon.—p. 402.
*County Sanatoria for Far Advanced Consumptives. J. B. McKnight, Sanatorium.—p. 405.
Relationship Between Chronic Suppuration, Nasal Sinusitis and Pulmonary Infections. E. M. Sykes, San Antonio.—p. 408.
*Administration of Antitoxin in Early Treatment of Diphtheria. L. M. Whitsitt, Ft. Worth.—p. 410.

Hospitals for Advanced Cases of Tuberculosis.—The hospital for advanced cases of tuberculosis in McKnight's opinion should be so situated, constructed and managed, as to draw from the community the vast number of advanced cases spreading infection in family circles, in addition to the group of homeless or near-homeless forming at present the bulk of cases in such institutions. In the interest of the community, as well as of the individual patient, the admission of these cases to an institution should come early in their course. With the right arrangement and regimen, calculated to relieve suffering and lead, where possible, to improvement or arrest of the process, the hospital for advanced cases is bound to win rapidly the support of the medical profession and the community, and become a powerful agency in the fight for the suppression of the disease.

Prevention of Diphtheria.—Whitsitt emphasizes that the mortality would be materially reduced if physicians would insist on a more hygienic condition of the nose and throat, removal of enlarged tonsils and adenoids, keeping away from poorly ventilated public places, especially during the fall, winter and early spring, when catarrhal conditions are more common. The use of the Schick test and the establishment of a prolonged immunity by the use of toxin-antitoxin, and the universal use of antitoxin in all exposures, will prove specifically prophylactic. It will never be possible, Whitsitt believes, to lower the mortality from diphtheria by elimination, as has been accomplished in typhoid and yellow fever, because of the great number of carriers. While diphtheria is contagious to the nonnatural immune, he is of the opinion that a large percentage of cases in children between the ages of 1 and 2 years, are of auto-infectious origin, because they are carriers, and at the first opportunity presented, which is caused by a catarrhal throat or nose, the germs become active.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

December, 1922, **26**, No. 4

*Unusual Type of Nodular Leprosy in Sudan. R. G. Archibald.—p. 341.
Ancylostoma Braziliense. C. Lane.—p. 347.
Intra-Uterine Infection with Ancylostoma Caninum in Dogs. S. Adler and E. J. Clark.—p. 353.
Cestodes from Indian Birds; Ligula Intestinalis. T. Southwell.—p. 355.
*New Malaria Parasite of Man. J. W. W. Stephens.—p. 383.
Bionomics of Stegomyia Calopus, Meigen, in Brazil. C. J. Young.—p. 389.
Occurrence of Larvae of Onchocerca Volvulus (Leuckart, 1893), in Skin of Natives of Gold Coast. J. F. Corson.—p. 407.
Case of Sleeping Sickness (T. Gambiense) Treated by "Bayer 205." J. W. W. Stephens and W. Yorke.—p. 421.
Bionomics of Stegomyia Calopus, Meigen, in Brazil. Part II. R. M. Gordon.—p. 425.
*Rôle of Cockroaches in Disease. J. W. S. Macfie.—p. 441.
Occurrence of Xenopsylla Astia, Roghs., in West Africa. A. M. Evans.—p. 449.
*Case of Blackwater Fever. A. Patrick.—p. 451.
Case of Trypanosomiasis. A. J. Mackenzie.—p. 457.
Onchocerca Volvulus. J. W. S. Macfie and J. F. Corson.—p. 459.
New Species of Filarial Larva Found in Skin of Natives in Gold Coast. J. W. S. Macfie and J. F. Corson.—p. 465.

Unusual Type of Nodular Leprosy in Sudan.—In the case reported by Archibald, the eruption apparently commenced on the face in the form of small shotty papules, similar ones eventually appearing on the forehead, ears, trunk and upper and lower extremities. The eruption caused little or no inconvenience. On examination, it was found that the skin of the face, neck, anterior and dorsal aspects of the trunk, and the flexor and extensor aspects of the arms and legs showed numerous miliary papules varying from 0.3 to 0.5 cm. in diameter. The majority of these lesions were discrete, with a smooth surface, circular contour, pink color, and of a shotty consistency; some of them showed a slight inflammatory reaction at the base. In certain areas, more especially on the neck and arms, many of the papules showed a circular depression or umbilication in the center, while others showed simply a pale central area. No pustulation was noted. The largest lesions were on the face, and here the majority of them were discrete, whereas those on the ears had coalesced and caused considerable thickening of the tissues, producing an appearance not unlike that of hematoma auris. Papules were also present over both superciliary regions, where a slight degree of madarosis was noted. The skin of the arms was more affected than that of the lower extremities, both flexor and extensor aspects being involved. The intervening portions of the skin presented no abnormalities, except in a few areas on the face where there was a certain degree of erythema. No nodules or ulcers were detected in the buccal mucous membrane; but the posterior fauces and larynx were slightly inflamed. The submaxillary and axillary lymph glands were slightly enlarged and firm on palpation. The diagnosis was made only when microscopic examination of hematoxylin-eosin stained preparations showed numbers of acid-fast bacilli, morphologically resembling leprosy bacilli.

Plasmodium Ovale: New Malaria Parasite.—The characteristics of the parasite found by Stephens, so far as concerns the medium forms, are: a nonameboid, pigmented, compact, round or oval parasite, resembling the quartan form, in a red cell showing Schuffner's dots, which is either normal in size or only slightly enlarged. The pigment, so far as can be judged in stained specimens, appears to be brownish black, and granular rather than spicular. A double infection of a red cell was only seen once. No forms that could be interpreted as gametes were seen. This parasite appears to resemble that found by Ahmed Emin in 1914 in the case of six pilgrims at Camaran in the Red Sea, and figured and described by him as *Plasmodium vivax*, var. minuta. Stephens proposes to term his organism *Plasmodium ovale*.

Rôle of Cockroaches in Disease.—The following organisms appeared to pass unharmed through the intestine of the cockroach, *Periplaneta americana: Bacillus tuberculosis, B. leprae,*

cysts of *Endameba histolytica, E. coli* and of an endameba of a monkey resembling *E. coli,* cysts of *Giardia intestinalis,* and eggs of *Ancylostoma duodenale, A. ceylonicum, Necator americanus, Ascaris lumbricoides, Trichuris trichiura, Taenia saginata,* and *Schistosoma haematobium.* On the other hand, gonococci, *Endameba histolytica, E. coli,* and an endameba of a monkey resembling *E. coli* (in the vegetative stages), eggs of *Aphiochaeta xanthina,* and, in two experiments each, *B. typhosus, B. paratyphosus* B, and *B. dysenteriae* (Flexner Y) were not recovered in the feces of cockroaches after experimental feeding. No evidence was obtained that any of the organisms used in the experiments established themselves as parasites in the intestine of the cockroaches.

Case of Blackwater Fever.—A case is described by Patrick in which hemoglobinemia was marked. The blood urea was found to be much increased after a short period of anuria.

British Medical Journal, London

Jan. 6, 1923, **1,** No. 3236

Acute Constitutional Symptoms Due to Radiations. H. Rolleston.—p. 1.
*Investigation of Dyspeptics. J. Ryle.—p. 5.
*Further Clinical Experience with Insulin in Treatment of Diabetes Mellitus. F. G. Banting, W. R. Campbell and A. A. Fletcher.—p. 8.
*Possible Mode of Causation of Diabetes Mellitus. L. B. Winter and W. Smith.—p. 12.
*Vitamin Content of Certain Proprietary Preparations. K. H. Coward and A. J. Clark.—p. 13.
*Apituitarism and the Anencephalic Syndrome. D. L. Barlow.—p. 15.
*Purpura Treated by Injection of Human Blood. M. Dixon.—p. 16.
*Treatment of Epilepsy. J. McCartney.—p. 16.
*Trauma and Appendicitis. C. J. G. Taylor.—p. 17.
Variations of Normal Temperature. H. H. Haward.—p. 17.

Investigations of Dyspeptics.—Ryle does not believe that there is, or ever will be, a place in medicine for such a specialism as gastrology. Probably less than one third of all chronic dyspepsias are due to disease of the stomach, and even in many of these the primary factors have been situated elsewhere. The introduction of chemical and radiographic diagnostic methods has been of inestimable value, but the chief value of these methods, Ryle believes, will finally be in the direction of helping to make a better interpretation of symptoms and so to become more skilled at clinical diagnosis. Early and accurate diagnosis is the first essential for adequate treatment. Early diagnosis depends on appreciation of possibilities and causes and on good clinical sense; accurate diagnosis, in many of the dyspepsias, can be arrived at only with the aid of routine investigations.

Insulin Treatment of Diabetes Mellitus.—A general plan of investigation and treatment of patients has been adopted provisionally by Banting and his associates to determine those patients who require treatment with insulin and the requisite dosage to be employed. On admission to hospital the history and physical condition of each patient is investigated. Patients admitted in coma or in the precomatous state, whether of the accidental type, occurring with a good carbohydrate tolerance, or as a sequel to slowly deteriorating carbohydrate tolerance, are immediately given insulin treatment. For other cases a diet based on the normal basal calory requirement for the age, height, weight and sex of the patient is calculated. This diet contains sufficient protein to maintain nitrogenous equilibrium, and carbohydrates and fats in such a ratio as to avoid the excessive production of acetone and diacetic acid. Having patients fast for a day has helped to attain constancy of sugar excretion more rapidly. Patients are kept in bed for a variable period following admission to hospital, and afterward only light exercise is permitted. Examinations of the blood and urine are carried out daily for a period of a week or more. At the end of this period on a constant diet the patients who are sugar free are advised to continue dietetic treatment in view of the shortage of insulin. Those who are showing decided glycosuria and hyperglycemia, with possibly various degrees of acidosis in addition, are selected for insulin treatment. Having a preparation of insulin known to be potent and to contain approximately one unit to 1 c.c. according to the pharmacologic assay, the patient is given an amount calculated to be somewhat less than that required to render the urine sugar free. Insulin is administered, according to the amount required, in one, two, or three doses, at or shortly before meals. Subcutaneous injection is the method of choice. By examination of the urine at short intervals it is determined approximately when the patient becomes sugar free, and the subsequent dosage is adjusted to maintain this condition. Special care is taken that the food consumed by each patient is appetizing in appearance, palatable to the taste, and well served. Complete records are kept of twenty-four hour specimens of urine, which is collected in the usual manner, and examined qualitatively and quantitatively for sugar, acetone, diacetic acid and total nitrogen, and the usual routine tests are made for volume, specific gravity, albumin, and character of the sediment. Up to the present time more than fifty cases of diabetes mellitus have been treated with insulin, and some have been under treatment continuously for several months. Although the most striking results have been seen in children and young adults, all patients have been benefited by the treatment. Under treatment with insulin, in patients who are not otherwise amenable to treatment, (*a*) glycosuria is abolished; (*b*) ketones disappear from the urine and the blood; (*c*) blood sugar is markedly reduced and maintained at normal levels; (*d*) the alkali reserve and alveolar carbon dioxid of patients suffering from acidosis and in a state of coma return to normal; (*e*) the respiratory quotient shows evidence of increased utilization of carbohydrates; (*f*) the cardinal symptoms of diabetes mellitus are relieved and the patients show marked clinical improvement. Insulin is a specific in the treatment of diabetic coma. Certain procedures are suggested as a guide in its administration. Hypoglycemic reactions in man have been studied. Hypoglycemic reactions following insulin are relieved by the administration of carbohydrates and also by the injection of epinephrin.

Cause of Diabetes Mellitus.—It has been shown by Winter and Smith that the normal blood sugar in man and animals has a lower rotatory power than would be given by the α-β equilibrium form of glucose as deduced from the copper reduction value. Various facts mentioned suggest that normal blood sugar is gamma glucose. That ingested glucose or fructose is rapidly converted into normal blood sugar was shown by feeding experiments on normal persons. After administering from 100 to 150 gm. glucose or fructose no alteration in the nature of the blood sugar could be detected. In cases of diabetes mellitus this sugar is not present in amounts susceptible of detection by the method employed. The polarimeter reading in these cases is initially greater than the copper reduction value, and the curve gradually falls until the copper value is reached. This suggests that besides α-β glucose, disaccharids or other substances with a polarimeter: copper reduction ratio greater than that of α-β glucose are present in the blood of diabetic persons. The author suggests that α-β glucose cannot be directly stored or utilized, but that an enzyme is responsible for the conversion of α-β glucose into gamma glucose. The absence or inactivation of this enzyme is suggested as the direct cause of diabetes mellitus.

Vitamin Content of Certain Proprietary Preparations.—The vitamin content of certain well known proprietary preparations which are advertised in the medical press as containing vitamins was investigated by Coward and Clark. The preparations tested contained vitamins A and B, except in one instance in which case the tests failed to show the presence of vitamin A in the quantities tested. A comparison between the vitamin content of the proprietary preparations and the vitamin content of those ordinary foods which are rich in vitamins shows that the former contain less vitamins than the latter. The vitamin A content of the proprietary foods was in all cases less than that of butter obtained from grass fed cows, and less than one hundredth that of active specimens of cod liver oil. The vitamin B content of the proprietary foods was in all cases less than that of wheat germ or of yeast. None of the preparations is considered to be a substitute for cod liver oil as a source of vitamin A, for in no case does the total daily adult dose of the proprietary food contain as much as one tenth of the vitamin A content of a teaspoonful of cod liver oil.

Apituitarism and Anencephalic Syndrome.—Four anencephalic fetuses were examined by Barlow. In each instance the anterior (pharyngeal) portion of the pituitary gland was found without much difficulty in its usual situation and resting on the body of the sphenoid. In none of the cases was any real attempt at the formation of a sella turcica apparent, though the gland was of a size approximating that in a normal full time fetus. In one instance a process of apparently neuroglial tissue, probably representing the pars nervosa, was found; and it is noteworthy that this was the only one examined comparatively soon after delivery. In all cases microscopic sections displayed a structure corresponding with the epithelial segment of the pituitary body—namely, strands of polygonal cells with somewhat granular protoplasm and rounded nuclei, separated by a loose connective tissue, in which were abundant thin walled vessels. From the position and structure of these glands Barlow has no doubt that they represent the epithelial portions of the pituitary. As a result of the discovery of the anterior segment of the pituitary gland in four successive typical examples of the anencephalic syndrome, Barlow thinks it may be concluded that the other features of the condition are certainly not due to apituitarism, and that any conception of the functions of the gland based on such an assumption is erroneous.

Purpura Treated by Injection of Human Blood.—The success of the treatment of hemorrhage of the new-born by injection of parental blood suggested to Dixon the use of the same method in purpura. The result has been most encouraging. Dixon has injected from 2 to 5 c.c. of blood, taken from the brachial cephalic vein, into the gluteal muscles. Clotting is prevented by sterilizing the syringe and needle in a solution of magnesium sulphate. The method has been used in four cases, with gratifying results in all, and in the very early cases with complete abortion of the attack.

Treatment of Epilepsy by Potassium Bromid and Borax.—Eighteen patients have been treated by McCartney by this method. He found that he obtained the best results with potassium bromid, 15 grains; borax purificatus, 7½ grains; Fowler's solution, 2 minims; three times daily. The changes noted in the condition of the patients were: (1) marked general mental improvement; (2) freedom from stupor after convulsions; (3) disappearance of irritability and quarrelsome tendencies; (4) complete change of habits. The continuous treatment has had no deleterious effect on the health of the patients.

Trauma and Appendicitis.—In both of the cases reported by Taylor the attack was definitely ushered in by violence—in the one by a direct blow on the abdomen, in the other by a severe strain.

Journal of Laryngology and Otology, Edinburgh

January, 1923, **38**, No. 1

Present Status of Radium in Laryngeal and Esophageal Cancer in United States. H. H. Forbes, New York.—p. 1.
Septic Sinus Thrombosis: Diagnosis and Treatment. W. Milligan.—p. 9.
Identification of Larvae of Diptera (Flies) Which Cause Nasopharyngeal and Aural Myiasis in Man. W. S. Patton.—p. 18.
Spasmodic Rhinitis: Critical Review. St. C. Thomson.—p. 28.

Medical Journal of Australia, Sydney

Dec. 16, 1922, **2**, No. 25

*Basal Metabolic Rates in Exophthalmic Goiter. R. L. T. Grant.—p. 697.
Chronic Suppurative Otitis. H. M. Jay.—p. 704.
Postgraduate Work in Europe. J. W. D. Hooper.—p. 707.
Uterovesicovaginal Fistula. H. Bullock.—p. 709.

Partial Thyroidectomy Better than Medical Treatment of Exophthalmic Goiter.—The basal metabolism of ten cases of exophthalmic goiter and one case of toxic goiter was studied by Grant. In every case the basal metabolic rate was raised above the standard accepted as the normal average when taken prior to any active treatment. From observation of these cases Grant is convinced that the medical treatment of exophthalmic goiter is unsatisfactory and that the best results are given by removal of part of the affected gland. The majority of the patients in this series had their operation performed under local anesthesia, procain being used.

South African Medical Record, Cape Town

Dec. 9, 1922, **20**, No. 23

The Legal Case. S. V. Elliott.—p. 449.
Control of Malaria in South Africa. G. A. P. Ross.—p. 450.
Case of Late (Tenth Day) Postpartum Eclampsia. H. B. Walker.—p. 458.
Undulant (Malta) Fever in South Africa. D. P. Marais.—p. 459.
Modern Treatment of Asthma. A. Bloom.—p. 464.

Annales de Médecine, Paris

December, 1922, **12**, No. 6

*Hirschsprung's Disease. R. Bensaude and P. Hillemand.—p. 425.
*Treatment of Rheumatism. M. Roch and S. Katzenelbogen.—p. 463.
*Secretin. K. Djenab.—p. 475.
*Diabetes Insipidus. Lortat-Jacob and Turpin.—p. 480.

Megacolon.—Bensaude and Hillemand review the question of megacolon. The diagnosis of typical cases is not difficult: extreme constipation; great enlargement of abdomen; characteristic roentgenograms; the tumor presents peristaltic movements at times; and the rectum, which is usually empty, will retain 2 or 3 liters of enema without discomfort. Some cases may give clinical signs of pneumothorax. Medical treatment should be tried, although it is usually without success. Surgery gives better results. Ileosigmoidostomy is comparatively easy and may be sufficient. Colectomy is dangerous, yet may insure a final cure.

Treatment of Rheumatism with Casein.—Roch and Katzenelbogen gave intramuscular injections of 0.5 to 2 c.c. of a 10 per cent. solution of casein repeated after four or five days, in twenty-six cases of rheumatism. The best results were obtained in acute cases. Subacute cases sometimes were also influenced favorably. One case of sciatica recovered perfectly. They advise this protein therapy only as supplementary to salicylic medication, not in its place.

Secretin.—Djenab found that secretin from the deep layers is more efficient than from the superficial layer of the mucosa. The action is much weaker if it is injected into a mesenteric vein and thus passes through the liver. Injections into arteries are also less effective than into the saphenous vein. Feeding animals with fats increases the amount of secretin.

Diabetes Insipidus.—Lortat-Jacob and Turpin give an extensive review of diabetes insipidus.

Bulletin de l'Académie de Médecine, Paris

Dec. 12, 1922, **88**, No. 41

*Tuberculosis and Pregnancy. E. Sergent.—p. 466. Idem. V. Wallich.—p. 477.
*Medicolegal Aspect of Therapeutic Abortion. V. Balthazard.—p. 480.
*Herpes Zoster. G. Marinesco.—p. 487.
"Knock-Out" and War Psychoses. L. Livet.—p. 501.
*Organotherapeutic Action of Milk. Cassoute.—p. 503.
The Prizes Offered by the Académie.—p. 506.

Tuberculosis and Pregnancy.—Sergent emphasizes that there are two principal types of tuberculosis to be considered. In one the tuberculosis was present before the pregnancy, in the other it became manifest during pregnancy or after delivery. In the first type three varieties can be distinguished: (1) Clinically recovered cases in which the infection flares up during the first weeks of pregnancy. Usually the women are young. An early abortion saved the lives in three such cases in Sergent's experience. In another case a pregnancy, occurring against his advice three years after an affection of an upper lobe, had been allowed to come to term, because the woman never felt as well as during the pregnancy. Ten days after delivery, the tuberculous process in the lungs was relighted and the patient succumbed in two months. (2) Cases with active, but stationary lesions. These women, contrary to the first variety, are usually over 30 or 35 years of age. They appear to have adapted themselves to tuberculosis. These cases form the bulk of the statistics, which show that some women, even with lung cavities, can endure several pregnancies. (3) Women with active tuberculosis which becomes more acute with the pregnancy. There is no indication for abortion in these cases, because death is inevitable. The second principal type includes women with latent tuberculosis, in which distinct clinical signs did not appear before gestation. In unilateral cases, pneumothorax may be of use. Bilateral cases die. If the signs start after

delivery, the prognosis is comparatively good. Sergent insists on the frequency of tuberculosis in pregnancy. In his private practice, in almost 26 per cent. of eighty-nine tuberculous women, tuberculosis appeared less than ten months after delivery. In two thirds it was the first pregnancy. It is impossible to dogmatize; case must be considered individually.

Tuberculosis and Pregnancy.—Wallich points out that even the optimists are not in reality optimistic about the relation of pregnancy to tuberculosis. Obstetric statistics are not reliable, because tuberculous pregnant women are usually sent to the medical clinic to avoid exposure of healthy mothers and infants.

Medicolegal Aspect of Therapeutic Abortion.—Balthazard discusses the medicolegal questions arising from the fact that the French law prohibits every interruption of pregnancy. After discussing several theories, he agrees with those who see the legal foundation of therapeutic abortion in a state of necessity, the life of the mother being in extreme danger. The French law allows the physician to make any intervention which aims to cure the patient. He believes that this is better than the laws of other countries where the conditions for therapeutic abortion are specified. The French custom is to call a consultation before the abortion is done. He recommends this custom, but is opposed categorically to a law compelling it and especially any obligation to report it to magistrates. Such a law might protect the physician against trouble, but it would cause violation of professional secrecy and disadvantage to the patient.

Herpes Zoster.—Marinesco confirms the results of Lipschütz who found it difficult to inoculate the cornea of rabbits with herpes zoster. He classes the disease among the neurotropic epithelioses, and believes the virus is propagated along the nerves. The eruption is not a mere cutaneous trophic lesion, but a localization of the virus.

Organotherapeutic Action of Milk.—Cassoute points to the fact that symptoms of cretinism do not develop as long as the infant is nursed, and believes therefore that an important part of the value of unsterilized milk is a combination of the fresh products of all the endocrine glands.

Dec. 19, 1922, **88,** No. 42

*Discussion on Tuberculosis and Pregnancy. L. Bernard et al.—p. 579.
Partial Aphemia in a Case of Nephritis. E. Lenoble.—p. 606.
*Ulcers of Ileum. Mériel.—p. 613.
Photomicrography. G. Durante.—p. 616.

Continued Discussion on Tuberculosis and Pregnancy.—In this great debate, Bernard shares the view of those who oppose the optimism of Dumarest and Brette. He agrees that pregnancy has a bad influence on tuberculosis, but his statistics show that about half of the tuberculous women survive pregnancy. If a tuberculous woman becomes pregnant, the main question is whether abortion will stop the progress of the tuberculosis. There is no evidence to prove this. Unilateral tuberculosis may be arrested by pneumothorax. Bar explains some points, quotes some cases, and draws parallels with similar debates during the last century. He compares abortion in tuberculosis to extirpation of a pregnant uterus for cancer. The change in regard to abortion in management of contracted pelvis has been due to the good results of asepsis in cesarean section. The end of the present question will be similar.

Ulcers of Ileum.—Mériel describes a fatal case of ileus after posterior gastro-enterostomy in a robust man. The operation was performed although there were only indistinct symptoms. The ileus was due to fixation of an ulcer in the lower ileum to the posterior surface of the bladder. The ulcer perforated during the second operation.

Journal de Chirurgie, Paris

November, 1922, **20,** No. 5

*Stomach Complications of Diaphragmatic Hernia. G. G. Moppert.—p. 453.
*Encysted Hematoma of the Spleen. Lombard and Duboucher.—p. 464.

Gangrenous Perforation of the Stomach as a Complication of Diaphragmatic Hernia.—Moppert reports three cases of diaphragmatic hernia with gastric perforation, which, while presenting different aspects of the condition, have many points in common and afford sufficient details for a study of the clinical history of this affection.

Encysted Hematoma of the Spleen. — Lombard and Duboucher describe in a man, aged 44, who had suffered from malaria, off and on, since childhood, a hematoma of the spleen, which had been enlarged for years. The development of the tumor had not been preceded by traumatism but coincided with a severe attack of the malarial infection. It proved to be an encysted hematoma, but it had no cellular lining on its internal surface, which was formed solely of connective tissue, and indicated inflammatory reaction. The changes in the tissue of the spleen adjoining the cyst proved that the process was old.

December, 1922, **20,** No. 6

*Treatment of Tuberculous Spondylitis. J. Calvé and M. Galland.—p. 565.
Inguinal Hernia after Appendicectomy. Oudard and Jean.—p. 584.

Treatment of Tuberculous Spondylitis.—Calvé and Galland applied the Albee implant in 5 men and 3 women, and the Hibbs method in 6 men. The Calvé method of osteosynthesis was applied in 2 other cases. All were adults, and the tuberculous spondylitis had reached the phase of apparent cure. Reexamination from one and a half to three years later revealed that the hump had become more pronounced in two cases, and in 2 others the abscess had returned. In 2 others pains in the roots persisted. Consequently the operation can be considered a success only in 13 cases, and in nearly all of these a celluloid jacket had been worn for two years after the operation. The implant method has proved a failure in children, and it is not needed for well-to-do adults who are not liable to be called on for violent efforts. They should wear a celluloid jacket for life. But for laboring men and women the implant method has advantages; it should be supplemented with the supporting jacket. The 16 cases are reported in detail; 11 cases were repeatedly reexamined with the roentgen rays. The only instance of the Albee operation on a child was done by Albee himself. No supporting jacket was worn, and the implant fractured at the end of eight months. Suppuration then flared up anew and proved fatal.

Presse Médicale, Paris

Dec. 9, 1922, **30,** No. 98

*Tar Cancer. G. Roussy et al.—p. 1061.
*Transolecranon Operations. H. Vulliet.—p. 1065.
*Treatment of Human Anthrax. L. Cheinisse.—p. 1066.

Tar Cancer.—Roussy, Leroux and Peyre applied tar to 509 mice. They publish their results with illustrations and describe the evolution of the lesions. Metastases were rare and usually affected the lungs.

Transolecranon Operations. — Vulliet shows the great advantages of the transolecranon method in the operative treatment of certain injuries of the elbow.

Treatment of Human Anthrax.—Cheinisse reviews different methods of treatment of human anthrax as published in different countries. He cites in particular Vaccarezza's favorable experience with protein therapy, summarized in THE JOURNAL, Sept. 23, 1922, p. 1085. One or two intramuscular injections of 30 c.c. of a 5 per cent. solution of Witte's peptone daily seemed to give good results (6.77 per cent. mortality in fifty-nine cases).

Dec. 13, 1922, **30,** No. 99

*Hepatic Insufficiency. A. Chauffard.—p. 1073.
*General Endocrine Symptoms. A. Sézary.—p. 1075.

Hepatic Insufficiency.—Chauffard recalls his maxim of 1890: The diagnosis is drawn chiefly from physical signs and the prognosis from chemical signs. He reviews all the signs of hepatic insufficiency, starting with alimentary glycosuria. A very typical behavior of these cases consists in an intermittent excretion of sugar, bilirubin, and methylene blue. The proportion of urea nitrogen to total nitrogen in the urine is normally 0.82 to 0.95. In pathologic cases it is lower, and goes even below 0.50 in phosphorus intoxication. Since this coefficient depends also on the quality of the kidneys, Brodin replaced it by the azotemic coefficient which

is about 0.8. The nonprotein nitrogen in the serum increases in hepatic insufficiency to 0.2 or 0.25. Widal's colloidoclastic test shows an insufficiency of the proteopexic faculty of the liver. Roger showed that the antitoxic action of the liver depends on its glycogenic function. Instead of starving the patient before general anesthesia, it is better to give him carbohydrates for protection against toxic icterus. The different opinions on the genesis of urobilinuria do not diminish the clinical value of this excellent sign of hepatic insufficiency. Besides these general signs there are others of a more special nature, which may become important in the clinical diagnosis. The liver retains considerable amounts of uric acid during digestion of food rich in purins. Cholesterin is excreted by the bile, partly as such and partly in the form of cholalic acid. In gallstone disease, the bile contains much cholesterin and little biliary acid. This may explain the precipitation of cholesterin and the formation of stones. The liver is fundamentally an organ which fixes substances which pass through it. The fixation of proteins (proteopexy) is proved, but that of amino-acids is still uncertain. Glycopexy is well known since Claude Bernard's investigations. Adipopexy can be seen histologically and determined clinically. Chromopexy (hemoglobin), toxicopexy and fixation of nontoxic substances (2 mg. of methylene blue) by the healthy liver are known. On the contrary, the hepatic barrier is open for substances assimilable directly by the whole body, like amino-acids and cholesterol.

General Endocrine Symptoms.—Sézary draws attention to symptoms which may be due to troubles of different glands. These general endocrine symptoms often cause uniglandular affections to be considered as pluriglandular. For instance, the increased tonus of the sympathetic in exophthalmic goiter may lead to a suspicion of increased action of suprarenals, and a lowered action of the same glands may be suspected because of the frequent asthenia and pigmentation. Other glands have been also incriminated in exophthalmic goiter. The question is whether the affection of the thyroid alone cannot explain all of these symptoms. The correlated action of the glands is a fact, and there is not sufficient ground to assume a pluriglandular affection. Melanoderma may occur in hepatic insufficiency, exophthalmic goiter, tumors of the pituitary, and affections of ovaries and testicles, without histologic changes in the suprarenals. Asthenia is another general endocrine symptom. Obesity can originate in affections of many glands. Amyotrophy, infantilism, virilism, have various causes. The general endocrine symptoms explain cases of supposed pluriglandular affections without corresponding histologic findings.

Revue de Médecine, Paris

1922, **39**, No. 8-9

*Nervous Manifestations in Endocarditis. Claude and Oury.—p. 449.
Anemia of Pernicious Type of Tuberculous Origin. G. Bickel.—p. 470.
*Thymic Death in Young Woman. A. Pulawski.—p. 495.
Diseases with Neurotropic Virus. H. Godlewski.—p. 500. Cont'n.

The Nervous Manifestations in Endocarditis Lenta.—At the onset of the malignant endocarditis in the woman, aged 25, symptoms of meningitis predominated. Other symptoms suggested irritation of the pyramidal tracts, and aphasia was pronounced. The endocarditis was not recognized for several weeks. The diagnosis had been meningitis, and a tuberculous origin had been considered. This case and some others cited confirm the existence of malignant endocarditis with symptoms almost exclusively cerebromeningeal. The negative spinal fluid findings and positive blood cultures give the clue. The diversity of the nervous symptoms is also instructive. Meningeal and pyramidal disturbances are rarely found associated in true meningitis.

Thymic Death in Adult.—The woman, aged 29, died after an attack of hysteria following a quarrel with her fiancé. She was sleeping calmly at the time, and her death seemed inexplicable until necropsy revealed the large thymus (47 gm.) and hyperplasia throughout the lymphatic system. This is the second thymic death Pulawski has encountered within two years. In this patient the brain seemed to be too large for the skull.

Archivio di Ostetricia e Ginecologia, Naples

November, 1922, **16**, No. 1

*Cicatricial Atresia of Vagina. S. Piccoli.—p. 3.
*Glycuronuria in Pregnancy. C. Volpe.—p. 10.
*Placental Grafts. F. Spirito.—p. 32.

Cicatricial Atresia of Vagina.—Piccoli describes a case of complete cicatricial atresia of the vagina with hematocolpos after a complicated delivery. The plastic operation which relieved the condition is described in detail.

Spontaneous and Induced Glycuronuria in Pregnancy as an Index of Liver Function.—Volpe examined fifty-five pregnant women and thirty-nine after delivery for spontaneous excretion of glycuronic acid, and for that induced by injections of camphorated oil. Although absence and diminution of glycuronic acid are not sure signs of liver insufficiency, they should be periodically looked for in pregnancy.

Placental Grafts.—Spirito repeated Romano's injections of placental emulsions into the peritoneum of rats, and used also emulsions of other organs and placentas from other species. Some of the placental and other tissues survived after seven months, and appeared to be organized. Heterologous placentas gave almost the same results.

Chirurgia degli Organi di Movimento, Bologna

November, 1922, **6**, No. 6

*Fusion of Atlas with Occipital Bone. M. Lupo.—p. 625.
*Symmetrical Hereditary Osteitis. M. Camurati.—p. 662.
*Treatment of Contracture of Fingers. S. Ciaccia.—p. 666.
Coxa Plana from Tuberculous Osteitis of Neck of Femur. M. Camurati.—p. 685.
*Supracondylar Fracture of Humerus in Children. F. Satta.—p. 689.
Pathogenesis of Talipes Equinus. L. Della Valle.—p. 705.

Fusion of Atlas with Occipital Bone.—Lupo explains the mechanism of what he calls occipitalization of the atlas. In five of the six cases illustrated the atlas seemed to belong to the skull rather than to the spine. The neck was short and torticollis was frequent.

Hereditary Osteitis.—The symmetrical osteitis involved the lower third of the femur and the upper two thirds of the tibia in both legs in a boy, aged 7. The disturbances were vague, with paroxysmal exacerbations. The father had had a similar affection at the same age but had outgrown it. Other instances were known in four generations—a total of ten cases. The disturbances had always subsided by the age of 20, and the subjects were otherwise healthy. All, with one exception, were males.

Contracture of the Fingers.—Ciaccia reviews the various disturbances from "rigidity of the hand," and the treatment required. He emphasizes the necessity for combating the circulatory, muscular and trophoneurotic changes in and around the joints.

Supracondylar Fracture of the Humerus in Children.—Satta's five cases confirm the excellent results from operative treatment in supracondylar fracture with grave dislocation of the epiphysis. The bone must be exposed for reduction, and it is best to secure the fragments with a nail. Healing is rapid and complete as is evidenced by the illustrations of the cases.

Policlinico, Rome

Dec. 15, 1922, **29**, Surgical Section No. 12

*Nonparasitic Cyst in Liver. O. Margarucci.—p. 649.
Changes in Intestine Above Stenosis. P. Marogna.—p. 677.
*Ligation of Hepatic Artery in Rabbits. B. Polettini.—p. 691.
*To Insure Continence of Artificial Anus. G. Baggio.—p. 697.

Nonparasitic Cyst in Liver.—Margarucci summarizes fifty cases of nonparasitic cystic affections of the liver with operative treatment. In another series of six cases the cyst was discovered at necropsy. He describes with illustrations two personal cases. The unilocular cystadenoma contained 8 liters of fluid in one case, and was safely removed. It had first attracted attention eight years before. In the other case, the myriads of small cysts forming the cystadenoma were all in the right lobe, and conditions were inoperable. The patients were women, aged 58 and 67.

Ligation of Hepatic Artery.—Polettini relates that five of the six rabbits in which he ligated the hepatic artery survived in apparently good health, and the changes in the liver were minimal in the one that died on the third night. There were

signs of degeneration in the liver of those killed later. It is evident that the blood supply of the liver does not suffer materially from a ligature around this one artery.

Continence of Artificial Anus.—Baggio compares the different means that have been devised to insure continence. None, he comments, are completely successful. He favors mechanical occlusion which can be removed when the desire is felt. On the cadaver, he has found that passing the stump of the bowel through one buttonhole in the transverse and another in the oblique muscle squeezes the bowel flat by muscular tension when the trunk is erect. The passage gapes and the lumen opens up when these muscles relax as the trunk is bent forward. He has found this operation simple and apparently effectual on the cadaver, but has not tried it on the living subject.

Archivos Latino-Amer. de Pediatría, Buenos Aires

November, 1922, **16**, No. 11

*Diabetes in Children. P. Nobécourt et al.—p. 705.
*Hydatid Cyst in Child Brain. Morquio.—p. 710.
*Infant Welfare Work. Clemente Ferreira.—p. 720.
*Triplets of Tuberculous Mother. M. Armand Ugón.—p. 744.
*Tardy Inherited Syphilis. José Bonaba.—p. 748.
Aphasia and Quadriplegia in Child with Typhoid. Cavazutti.—p. 756.
*Intraperitoneal Infusion in Infants. R. O. Crola.—p. 761.
Meningeal Syndrome in Hydrocephalus. A. Segers.—p. 764.
Cephalic Tetanus in Infant. J. C. Navarro.—p. 769.
*Typhoid Phlebitis. F. Pozzo.—p. 772.

Diabetes in Children.—Nobécourt, Bidot and Paraf call attention to diabetes in children with arrest of growth. A typical case is described in which the girl, aged 15, looked only 12. The diabetes developed at the age of 13. The child was fairly well nourished, but it was impossible to free the urine from sugar. Loss of weight and general depression followed too strict dietetic measures.

Hydatid Cyst in Brain of Children.—In one month Morquio had three cases in his service. The operation proved successful in only one, a boy, aged 6. His total of seven certain cases and three suspects in a few months has confirmed the absence of eosinophilia in echinococcus cyst of the brain.

Report of the Public Health Service.—Ferreira, director of the child welfare section for the state of S. Paulo, reports the death rate as 4.3 per cent. among the 1,081 infants supervised. The general infant death rate in the city of S. Paulo for the year was 24.3 per cent.

Triplets of a Tuberculous Mother.—The three children are thriving and the mother's general condition has improved since delivery. The triplets were removed at once, and tuberculin tests have been negative.

Tardy Inherited Syphilis.—The apparently healthy girl, 9 years old, was in the hospital for treatment of chorea of emotional origin. She recovered, but developed hydrarthrosis of both knees and keratitis. Rapid improvement under specific treatment confirmed the syphilitic origin. The great danger in these tardy cases is that the readily curable lesions may be mistaken for tuberculous affections. A negative Wassermann reaction in children is not decisive. Bonaba cites a case in which the skin, gland, bone and other lesions all melted away under specific treatment after having persisted for nine years. In Laurent and Müller's case forty years elapsed before the true nature of the process was recognized.

Intraperitoneal Infusion.—Crola injected physiologic saline or sugar solution into the peritoneum in sixteen infants with alimentary toxicosis. The benefit was prompt and pronounced in ten of the children. The amount was never more than 50 gm. at one time, and 100 gm. in the twenty-four hours.

Typhoid Phlebitis.—The girl, 10 years old, was convalescing from typhoid when phlebitis occurred in the right femoral vein. The leg was put in a splint and the fever subsided in seventeen days. The splint was removed five days later, with complete recovery.

December, 1922, **16**, No. 12

*Habitual Vomiting in Infants. M. Acuña.—p. 785.
*Congenital Ataxias. J. Orrico.—p. 799.
Chronic Tropho-Edema. A. Casaubón and A. Pepa.—p. 810.
Scurvy in Infant. M. Armand Ugón.—p. 815.
Herpes Zoster and Varicella. M. A. Guerrero.—p. 818.

Habitual Vomiting in Infants.—Acuña relates that five infants with inherited syphilis were promptly cured of incessant vomiting by systematic mercurial treatment. In three other infants there was nothing to indicate an inherited taint, but the habitual vomiting was arrested by mercurial treatment just as promptly and completely as in the other group.

Congenital Ataxia.—The ataxia was of the cerebellar spastic type in two boys, 5 years old. It had been noticed at the first attempts to walk.

Brazil-Medico, Rio de Janeiro

Dec. 2, 1922, **2**, No. 48

*Operative Treatment for Ptosis of Eyelid. E. Campos.—p. 345.
Flagellates of Human Intestine. III. A. Marques da Cunha and G. Pacheco.—p. 349. Idem. IV. Idem.—p. 357.
*Avidity of Antitoxins. R. Kraus and Rocha Botelho.—p. 349.
Brazilian Vegetable Oil in Leprosy. Belmiro Valverde.—p. 353.
Mosquitoes of Cellia (Theobald) Species. Neiva and Pinto.—p. 355.

Operative Treatment of Ptosis of Eyelid.—Campos remarks that the large number of methods for correction of ptosis indicates that none is entirely satisfactory. He found Panas' method disappointing. The Hess method gave excellent results in two congenital cases. The weak point in all methods is that the results are not symmetrical. In one case an attack of supra-orbital neuralgia with transient conjunctivitis in a hysteric young woman had entailed ptosis which persisted for nine years. An operation on the eyelid was followed by complete cure of both ptosis and neuralgia. Campos adds that possibly strapping up the eyelid with adhesive plaster might have proved equally effectual.

Titrating Antitoxins.—Kraus reports further research to confirm his statements that the antitoxin acts on the toxin not only in proportion to its quantity but also to its avidity. The latter is a variable quality, and the antitoxins should be titrated for it. He reiterates that Ehrlich was mistaken in his assumption that the preventive and the curative action of an antitoxin necessarily run parallel.

Prensa Médica Argentina, Buenos Aires

Nov. 10, 1922, **9**, No. 16

*Leprosy in Argentina. M. Aberastury.—p. 447. Conc'n in No. 17.
Prophylaxis of Malaria. A. Bachmann.—p. 456.
Blastocystis Hominis in Diarrheic Stools. S. Mazza.—p. 460.
*Arcus Juvenilis. Esteban Adrogué.—p. 463.
Proposed Changes in Military Medical Service. C. Trejo.—p. 466.
Stenosis of Pylorus from Gallstone. E. Pozzi.—p. 471.

Leprosy in Argentina.—This is the report presented at the recent American Leprosy Congress by the official delegate from Argentina.

Arcus Juvenilis.—Adrogué gives illustrations of two cases. The location and aspect in the eyes of the young man were exactly like those of senile arcus. In the other patient, a girl, aged 13, one eye presented this type; in the other eye there was in addition an embryonal cataract.

Nov. 30, 1922, **9**, No. 18

*Gallstone Operations. A. J. Bengolea.—p. 517.
*Ovarian Tumors in the Pregnant. D. E. Centanaro.—p. 533.
Methods for Testing Arterial Pressure. A. Navarro.—p. 538.
*Treatment of Tuberculous Epididymitis. Astraldi.—p. 541.

Gallstone Operations.—Bengolea tabulates the details of operation and the results, immediate and remote, in 271 cases of cholelithiasis. In 7 cases a second operation was required for recurrence of symptoms. Gallstones were found in the common bile duct in 2 cases. The mortality as a whole was 4.79 per cent. and of 203 cholecystectomy cases, 1.92 per cent.

Ovarian Tumors in Pregnancy.—Centanaro analyzes 19 cases of ovarian tumors complicating pregnancy. He agrees that removal of the tumor is the only means to guarantee against interference with delivery. A further argument for prompt removal is the liability to malignant degeneration later.

Conservative Treatment of Tuberculous Epididymitis with Fistula.—Astraldi assumes that the epididymitis is of hematogenous origin, and secondary to a tuberculous process in the seminal vesicles or prostate. Hence he severs the vas deferens between two ligatures. Two cases are described.

Archiv für klinische Chirurgie, Berlin

Oct. 28, 1922, **120**, No. 4

*Double Nerve Grafting. P. Manasse.—p. 665.
*Mammary Cancers in Men. A. Mülleder.—p. 686.
*Traumatic Epithelial Cysts. K. Blond.—p. 695.
*Local Changes in Structure of Bone. H. Maass.—p. 704.
Origin of Loose Bodies in Joints. A. Hartwich.—p. 732.
Regeneration of Bone from Periosteum. B. Martin.—p. 744.
Plastic Operation for Flail Knee. R. Bonn.—p. 751.
*Perforated Gastric and Duodenal Ulcers. J. Prader.—p. 758.
Appendicular Peritonitis. E. Melchior.—p. 796.
*Collateral Circulation in Portal System. F. Walcker.—p. 819.
Appendicitis and Peritonitis in the Pregnant. A. Szenes.—p. 859.
Isolated Luxation of Scaphoid Bone. E. Just.—p. 879.

Double Nerve Grafting.—Manasse expatiates on the ease and good results of implanting both stumps of the injured nerve in an adjacent sound nerve. The sound nerve thus gets the benefit of the nerve fibers that develop between the stumps and bridge the gap. In all of the eight cases in which this *doppelte nervenpropfung* was applied, the radial paralysis was more or less completely corrected. In one case, absolutely normal function was regained. The details of the cases are given with illustrations of the technic.

Mammary Cancers in Men.—This communication from Eiselsberg's service at Vienna confirms that fully 2 per cent. of all mammary cancers occur in men. There were twelve cases in men to 600 in women during the last twenty years at the clinic. Mammary cancers in men seem to be exceptionally malignant, with early metastasis in the spine. If an excised scrap shows cancer, the growth should be removed immediately.

Traumatic Epithelial Cysts.—Blond concludes from six cases that these tumors should be called epidermoids when congenital. Several in his group were traumatic epidermoids.

Local Development of Bone.—Maass insists that the organic and the mechanical work of the growing bone have to be considered separately. The predisposition to deformity of the bone lies in the muscles rather than in the bone. If the muscles are kept habitually in the fatigue position, pathologic pressure and weight bearing exert a much stronger influence than when the muscles are normal. The bone may yield, regardless of whether it is abnormally soft or not. Even temporary pressure or traction is liable to switch the growth of the bone onto a wrong track. Even a slight injury, entailing merely temporary shriveling or contracture of soft parts, may lead to severe deformity of bone which is completely normal in itself.

Perforated Gastric and Duodenal Ulcer.—In the 51 cases analyzed, the 19 perforated duodenal ulcers, and 28 of the 32 perforated gastric ulcers were in men. In 5 cases the perforation occurred in apparent good health; in 5 other cases, during bed rest; in 12 after a brief period of stomach symptoms. The importance of primary suture of the abdominal wall is emphasized by the ultimate outcome. Tampons and gauze induce local retentions liable to entail complications later. Even with profuse escape of stomach and duodenum content into the abdominal cavity, healing proceeded smoothly after primary suture in most of Prader's 17 cases. The interval before the operation was less than ten hours in 13 of them. In the one fatal gastric case and the fatal duodenal case the interval had been twenty-one and eighteen hours, respectively. The effusion from the reaction to the perforation is not a peritonitic effusion at first. No bacteria were found in the peritoneal effusion in 4 of the 10 cases examined during the third or fourth hour, and in one case at the twelfth hour. The acidity in these cases was high, from 10 to 15. This probably helped to check bacterial proliferation, until the reaction veered from acid to alkaline. The acidity, the bacteriologic findings, and the length of the interval decide whether primary suture can be ventured.

Collateral Circulation in Portal Vein System.—Walcker comments on the great variety of anastomoses.

Klinische Wochenschrift, Berlin

Dec. 9, 1922, **1**, No. 50

*Etiology of Goiter. A. Schwenkenbecher.—p. 2457.
*Death from Goiter. F. J. Lang.—p. 2461.
*Water Metabolism. R. Siebeck.—p. 2464.
*Test Glycosuria in Pregnancy. Gottschalk and Strecker.—p. 2467.
*Determination of Bilirubin in Blood. A. Adler and E. Meyer.—p. 2468.
*Experimental Recurrentis Infection. A. Buschke and H. Kroó.—p. 2470.
*Prophylaxis of Measles. E. Schilling.—p. 2471.
Treatment of Blood Poisoning in Anthrax. E. Baumann.—p. 2472.
*Simple Acroparesthesia. F. Heissen.—p. 2473.
Sun Irradiation at Different Altitudes. F. Baur.—p. 2476.
Coagulation of Serum by Heat in Syphilis. E. Hachez.—p. 2477.
*Non-Protein Nitrogen and Toxicoses of Pregnancy. Hellmuth.—p. 2478.
Bilateral Trigeminal Neuralgia Due to Lymphoma of Both Gasserian Ganglions. R. Henneberg.—p. 2479.
Treatment of Abortion. F. Götting.—p. 2480.
To Bring Undernourished Children up to Normal. Davidsohn.—p. 2483.
Nature of Coagulation of Blood. B. Stuber.—p. 2486. Conc'n.

Etiology of Goiter.—Schwenkenbecher reviews the different theories of the etiology of goiter.

Conditions Leading to Death in Goiter.—Lang discusses conditions which may lead to sudden death in persons suffering from goiter. One group is due to the toxic influence on the cardiac nerves. The persistence of the thymus in these cases points to the possibility that the cause of the sudden death may be more complex. Compression of the trachea is more pronounced in deeply or abnormally located goiters than in large ones which can expand freely. Lang discusses the causes for expiratory stenosis in intrathoracic goiter and inspiratory stenosis in goiter of the neck. The function of the nonstriated musculature of the lung is one of the important factors to be considered.

Fundamental Features of Water Metabolism.—Siebeck's opinion is that the exchange of water between blood and the tissues depends upon all three components: the blood, the endothelium of the vessels and the tissue. Any explanation which considers only one of these three points is unsatisfactory. The question whether the exchange of water is conditioned by a vital secretion and resorption, or simply by diffusion, is not stated correctly. There is no question about the existence of diffusion in living bodies, but the point to be studied is the regulation and coordination of this diffusion. Siebeck considered erythrocytes as a good object for such study, and found a very constant relation (1:2) of chlorids between erythrocytes and serum. According to Warburg, narcotics of the aliphatic series inhibit the diffusion of chlorids from the corpuscles, when applied in concentrations in which they inhibit oxidations. Relations to the surface tension were also distinct, and Siebeck concludes that diffusion is regulated by the dispersity of protoplasmic surfaces, which can be changed by surface-active substances. Such a physical coordination is not limited to single points, but affects the whole organism. The question whether the regulation of water is renal or extrarenal, is wrong; both factors are important, and the main point is the coordination of the whole organism.

Alimentary Glycosuria in Pregnancy.—Gottschalk and Strecker give to pregnant women 100 gm. of levulose by the mouth on an empty stomach. Levulosuria is a probable sign of pregnancy, although a negative result does not exclude it. Renal excretion of sugar seems to be more frequent in the early than in the advanced stages of pregnancy.

Elimination of Sources of Error in Determination of Bilirubin in Blood.—Adler and Meyer use Thannhauser's modification of van den Bergh's technic, but do not evaporate the chloroform from the bilirubin solution. It is sufficient to add alcohol until the chloroform dissolves in it. They use Ostwald's absolute colorimetric method for the determination, and note the color only once with the standard solution. Adsorption of bilirubin to the albumins can be prevented by diluting the serum.

Presence of Spirochetes in Brain in Experimental Recurrens.—Buschke and Kroó examined histologically brains from mice infected with *Spirochaeta recurrentis*. The spirochetes were present in large numbers in the gray matter of the brain, between the cells and in the cells of the glia, but never in the ganglion cells nor in the white matter. The spirochetes had invaded the brain in large numbers twenty-four hours after the infection, when there were only few in the blood.

Prophylaxis of Measles.—Schilling had good results with injections of serum from convalescents. As few adults are subject to measles, it is impossible to obtain sufficient quantities of serum. Further investigations are necessary to determine whether nonspecific proteins have any protective value.

Simple Acroparesthesia.—Heissen describes acroparesthesias without visible spasm of the vessels.

Nonprotein Nitrogen and Toxicoses of Pregnancy.—Hellmuth found, in healthy pregnant women, low nonprotein nitrogen in the blood: 0.03 per cent. was the highest. Urea nitrogen constitutes about 30 per cent. of the total nonprotein nitrogen in pregnancy. Uric acid figures are about the upper normal limit; creatin and creatinin are normal. In eclampsia and nephritis in pregnant women, the total nonprotein nitrogen was maximum normal, while the proportion of urea nitrogen was increased. Uric acid was increased in all of these cases.

Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

Oct. 28, 1922, **85**, No. 2

Genesis of Intraligamental Fat Infiltration with Ovarian Dermoid Cysts. R. Benda.—p. 225.
Anatomy of Lower Segment of Uterus. H. R. Schmidt.—p. 233.
Adenomyosis of Female Genitals. W. Lahm.—p. 292.
*Origin of Genital Flora. R. Salmon.—p. 306.
*The Bladder During Delivery. E. Vogt.—p. 333.
*Biologic Changes in Blood During Pregnancy. K. v. Oettingen.—p. 340.
Action of Combination of Organ Extracts on Uterus. Kosaka.—p. 364.

Origin of Genital Flora.—Salomon took smears every hour from the mouth of girl babies for ten days after birth. This research was part of an extensive study of the genital flora in women. The findings confirm anew the paramount importance of asepsis in the care of the new-born.

The Bladder During Delivery.—Vogt calls attention to the symptoms liable to develop when the bladder is pushed out of place during childbirth. It may be pushed entirely outside of the peritoneum, low down in the pelvis, and here interfere with the dilation of the soft parts. If this impediment to delivery is not recognized and corrected, the bladder or the uterus may rupture from the strain. Two cases are described in detail, in which catheterization of the bladder allowed the delivery to proceed smoothly. In two other cases the bladder had been forced into an hour-glass shape. The causes for this extraperitoneal displacement of the bladder may be various, mechanical or pathologic. The obstetrician should be on the lookout for them.

Biologic Reactions in the Blood During Pregnancy.—Oettingen remarks that uniform causes are probably responsible for the parallel behavior of the biologic reactions in the blood during pregnancy. We have six biologic tests at our command, speed of sedimentation of the erythrocytes, precipitation and coagulation of the plasma, agglutination of bacteria, action of hemolytic serum, and cobra venom activation.

Zeitschrift für klinische Medizin, Berlin

Nov. 30, 1922, **95**, No. 4-6

*Treatment by Inactivation of Protoplasm. J. Burmeister.—p. 237.
*Endocrine Obesity. A. Loewy and H. Zondek.—p. 282.
*Intraspinal Arsphenamin Treatment. A. Wittgenstein.—p. 293.
*Monocytes. H. W. Wollenberg.—p. 321.
*Pathogenesis of Typhoid. H. Oeller.—p. 328.
*Action of Epinephrin in Blood Diseases. A. Hittmair.—p. 367.
*Influence of Carbohydrates on Blood Sugar. W. Eliassow.—p. 384.
*Alimentary Glycosuria. J. E. Holst.—p. 394.
*Infusions of Glucose in Heart Disease. R. Niemeyer.—p. 405.
*Hemoclastic Crisis. H. Eisenstädt.—p. 414.
*Uric Acid Determination. J. Rother.—p. 427.
*Clinical Import of Stalagmometry. F. Breuer.—p. 433.
*Endemic Osteomalacia and Late Rachitis. H. Higier.—p. 445.
*Bilirubin in Serum and Bile. G. Hetényi.—p. 469.

Treatment by Nonspecific Passive Protection or Inactivation of the Protoplasm.—Burmeister reviews extensively the field of protein therapy and of calcium therapy. The aim of passive-protection treatment is to suppress the reaction of the body to the toxic agent, because a disease begins only by the reaction of the cells. In such cases, the organism overcomes the infection simply by not taking notice of it: The protoplasma is inactivated against it. It is not yet certain in every instance which drugs activate the protoplasma and which inactivate it. Proteins seem to be activating; heavy metals, calcium, quinin and some dyes inactivate. The symptoms of activation correspond surprisingly to those of exophthalmic goiter, while inactivation is well represented in myxedema.

Endocrine Obesity.—Loewy and Zondek found normal metabolism in pituitary obesity. They emphasize the clinical picture of localized obesity (especially in upper or lower extremities) which is in relation to some changes in the endocrine apparatus, but does not present any of the typical pictures. These cases cannot be explained by a lowering of basal metabolism, and thyroid treatment may reduce the whole body except these masses of fat. It looks as if in a certain sense they might lie outside of the general metabolism. These cases resemble Simon's lipodystrophy. One case of obesity had a low excretion of water, which became normal after thyroid treatment.

Endolumbar Treatment with Arsphenamin.—Wittgenstein reports her experiences in 300 intraspinal injections of arsphenamin. She never saw a severe or permanent injury from the small doses (⅓ mg. to 2 mg.) given in large amounts of cerebrospinal fluid, without undue pressure. Cerebrospinal syphilis and especially lumbar tabes are very sensitive; ⅔ mg. is a maximal dose and should be given in at least 60 c.c. of cerebrospinal fluid. Asymptomatic syphilis of the meninges requires from 1 to 1.8 mg. in 50 or 90 c.c. of fluid. The patient must be kept strictly in a horizontal position for forty-eight hours after the injection, which is repeated in from three to four weeks. In all cases of clinically asymptomatic syphilis of the meninges, the Wassermann reaction became negative. The reaction should be tested every six months. For recurrences, two more injections are sufficient. The results were better in the combined treatment with intravenous and intraspinal injections than with intravenous injections alone. The method did not give satisfactory results in general paresis. The cerebrospinal fluid should be examined in every case of latent syphilis, and the public should be educated to permit this.

Monocytes.—Wollenberg confirms Lucey's observation that the first two blood drops taken from the tip of the ear contain, in many cases, monocytes. Endocarditis lenta leads perhaps to a specific proliferation of the endothelium of all capillaries, especially in the tip of the ear.

Pathogenesis of Typhoid.—Oeller does not differentiate strictly between typhoid fever with extensive changes in the lymphatic apparatus and typhoid sepsis. The latter is due to the inability of the cells to fix the virus (a parallel to the leukopenia). If this inability is complete, pure septicemia results. The hopeless fight is limited in such cases to the blood stream and hemopoietic organs, which act only serologically on the bacteria. New-born children with typhoid infection present sometimes such a state. Streptococcus infections may have points in common with this conception of typhoid. Oeller observed streptococcus and staphylococcus septicemias which recovered after a transitory pyemic stage (localizations in skin and joints).

Action of Epinephrin in Blood Diseases.—Hittmair examined the blood after injections of epinephrin in different diseases of the hemopoietic system. He found no specific changes.

Influence of Carbohydrates on Blood Sugar.—Eliassow used 50 gm. of glucose and equicaloric amounts of levulose, wheat flour and inulin in twelve sugar-free diabetics, and examined their blood and urine. Glucose increased the glycemia strongly, wheat flour less, levulose markedly less, and inulin not at all. He believes that the slow resorption of inulin accounts for this.

Alimentary Glycosuria.—Holst examined the urine of 159 persons, without apparent trouble in carbohydrate metabolism, after an ordinary sweet meal; 19.5 per cent. of them became glycosuric. The amount of carbohydrates in the meal was smaller than the amount usually necessary to produce alimentary glycosuria. It would be a mistake to treat these persons as diabetics, but they should be advised to eat less sugar, and to have the urine examined periodically.

Infusion of Glucose in Heart Disease.—Niemeyer did not find hypoglycemia in heart trouble more frequently than in healthy people. Arteriosclerotics with a tendency to spastic contractions of vessels do not feel well after infusion of highly concentrated solutions of glucose. Contrary to Büdingen, Niemeyer saw no marked therapeutic results from such infusions in heart disease.

Hemoclastic Crisis.—Eisenstadt confirms generally Widal's test leukopenia, but believes that in diseases of the liver it represents rather a special instance of an "abdominal vagus reflex" (Glaser). He does not attribute any value to it for the clinical diagnosis of liver disease.

Uric Acid Determination.—Rother admits that the Folin-Wu method gives very exact values of uric acid in pure solutions. Yet the coagulated proteins of the blood may retain a considerable quantity of uric acid. There is no known method which will prevent this.

The Stalagmons in Cancer.—Breuer used Schemensky's method in sixteen ulcers of the stomach, sixteen carcinomas of the stomach, and eighteen other cases (mostly tumors). Stalagmons are colloidal substances which change the surface tension. They are easily absorbed by animal charcoal, and the principle of the method is to determine the surface tension of urine before and after this treatment. The urine is brought to a specific gravity of 1.010 and one portion is used directly and another after acidifying with hydrochloric acid to the point of change of Congo-red. The relation between the number of drops before shaking with charcoal and the number counted after it, is the stalagmometric quotient. Breuer's results were very good, but it seemed that the tumor must be of a certain size before an increase of the stalagmometric quotient appears. Nonspecific reactions also occur.

Endemic of Ostearthropathy, Osteomalacia and Late Rachitis.—Higier observed during the second half of 1917, in Warsaw, seventy cases of osteomalacia in people between 19 and 56. Lack of vitamin A was the probable cause.

Simultaneous Determination of Bilirubin in Serum and Bile as Efficiency Test for the Liver.—Hetényi determined the bilirubin in blood and bile by Hijman van den Bergh's method. He considers amounts of bilirubin under 6 mg. or over 20 mg. in 100 c.c. of bile, or over 2.2 mg. in blood, as pathologic. Laennec's cirrhosis gave increased amounts in blood, low in bile. Decompensation of the heart gave normal or increased concentration of bilirubin in bile. The liver function is sometimes impaired in the course of pernicious anemia. A number of other diseases were also tested.

Zeitschrift für urologische Chirurgie, Berlin

Oct. 7, 1922, **11,** No. 1-2

*Bilateral Pneumococcus Paranephritis. H. Hammer.—p. 1.
Hypoplastic Kidney with Twin Ureters Opening in Ejaculatory Duct. W. Rech.—p. 6.
*Cystic Enlargement of Lower Ureter. F. Hübner.—p. 25.
*Case of Syphilitic Disease of the Bladder. R. Picker.—p. 43.
Congenital Cleft Abdomen. G. B. Gruber.—p. 51.

Bilateral Pneumococcus Paranephritis.—Both kidneys were entirely covered with a thick exudate, a phlegmon of the adipose tissue surrounding the kidneys. There had been no symptoms, no fever, although the infection must have been of nearly four months' standing. The pneumococcus was cultivated from the paranephritic process.

Cystic Enlargement of Lower Ureter.—Hübner has compiled from the literature more than 100 cases of operative treatment of intravesical ureterocele. He discusses the mechanism and the operative technic, with an illustrated description of a personal case. The patient was a woman, aged 28, who had had pains in the right inguinal region since the age of 16. The pain varied in severity but persisted constantly, with occasional colic-like paroxysms. It was relieved by reclining on the right side. The superfluous mucosa was resected after a catheter had been introduced into the ureter, and the mouth of the ureter was reconstructed with four stitches. There has been no return of symptoms since.

Syphilitic Disease of the Bladder.—Picker's illustrations show the cystoscope findings in a young man who complained of increased frequency of urination, with smarting and itching in the urethra. There was no hematuria, but the bladder mucosa was swollen and bluish near one ureter. In the patch were two small necrotic gummas, with a small recent one adjoining. Under two months of iodid the cystoscopic findings returned to normal. Picker does not hesitate to advise tentative potassium iodid treatment in large doses for two or three weeks with bladder symptoms which do not fit into the usual frames, even when tests for syphilis are negative.

Zentralblatt für Chirurgie, Leipzig

Dec. 16, 1922, **49,** No. 50

*Treatment of Esophageal Strictures. A. Henle.—p. 1850.
Plastic Operation to Restore Patella. S. Kofmann.—p. 1851.
Suturing, Following Resections, of Portions of Intestine Not Covered with Peritoneum. F. Mandl and M. Gara.—p. 1855.
Encapsulated Residual Abscess as Cause of Fistulas After Appendicectomy. M. Cohn.—p. 1858.
Comment on Chiari's "No Tampons for Incision Wounds." Hedri.—p. 1861. Idem. Wolf.—p. 1862.
Addendum to "Treatment of Coxa Vara." E. Bircher.—p. 1863.

Treatment of Esophageal Strictures.—Henle describes his success in treating esophageal strictures. On account of difficulties from kinking in the introduction of rubber tubes into the esophagus, Henle had a number of smoothly polished ivory "olives" made, of varying diameter, the length varying with the diameter. The olives were strung on a silk cord at intervals of from 10 to 12 cm. A knot tied above and below each olive served to keep it in place. In treating a child, aged 3, who had swallowed, six months previously, a caustic fluid, he introduced two threads into the esophagus, passed one thread, to serve in an emergency, out through the nose, and the other through the mouth. Once or twice daily, he attached the string of olives, well oiled, to the thread passing out of the mouth. The smaller olives were below, with the more conical ends downward. Through a gastric fistula, the string of olives was then drawn through the esophagus. As the olives passed the stricture, a certain resistance was noted, which served to give an idea as to the position and length of the stricture, and also whether there was more than one stenosis. In the case given, there were two strictures 5 cm. apart. At first he used olives of from 3 to 7 mm. diameter. Then the olives of smaller size were left off and larger ones were added to the string as needed. After the size 11 mm. passed through readily, longer intervals (two or three days, and later, two weeks) were allowed to elapse. In the meantime, the child had, for some time, eaten solid food—bread with the crust—without any difficulty. Therefore, the stomach drain and the threads were removed. The treatment was completed before the end of six months. The child continues in good health and has no trouble in eating any kind of food. The gastrostomy, which was performed before the case was referred to Henle, healed spontaneously.

Zentralblatt für Gynäkologie, Leipzig

Dec. 9, 1922, **46,** No. 49

*Etiology of Leukorrhea. R. T. von Jaschke.—p. 1938.
Heart Block and Spontaneous Childbirth. W. Walz.—p. 1941.
*Researches on Blood Transfusion. L. Nürnberger.—p. 1945.
*Rate of Sedimentation of Erythrocytes. R. Pewny.—p. 1951.
Normal Pregnancy Three Years After Operative Reduction of Complete Inversion of Puerperal Uterus. K. Teufik.—p. 1956.
*Roentgen Irradiation in Gynecologic Hemorrhage. Hirsch.—p. 1957.
Note on Torsion of Fallopian Tube. J. Schwartz.—p. 1959.
Torsion of Healthy Adnexa in Childhood. F. Neugebauer.—p. 1961.
Zeiss Method of Illuminating Operating Room. Hartinger.—p. 1962.

Etiology of Leukorrhea.—Jaschke refers to the researches by Manu af Heuerlin which go to show that, with rare exceptions, leukorrhea is associated with an abnormal flora. It likewise seems proved that a normal flora of the vagina cannot be preserved unless the vaginal wall remains biologically intact. The glycogen depots that have been shown to exist in the vaginal epithelium also play an important rôle, since glycogen is doubtless the most important precursor of lactic acid, which produces the normal acid reaction of the vaginal secretion and prevents abnormal bacterial growth. The normal, healthy vagina eliminates very soon bacteria that do not belong there. Jaschke's researches show that there is a parallelism between the glycogen content and the lactic acid content, on the one hand, and the condition of the bacterial flora. A low amount of glycogen and lactic acid was very commonly associated with contamination of the vaginal secretion. There were, however, many exceptions and inconsistencies, so that the subject needs to be studied further.

Clinical and Experimental Researches on Blood Transfusion.—Nürnberger compared the blood of donor and recipient biologically; that is, search was made for hemolysins and hemagglutinins. Irrespective of the result, the recipient was given a preliminary dose of 10 to 20 c.c. of the donor's

blood. Then several minutes were allowed to elapse to see whether or not any manifestations would occur in the recipient. If typical symptoms of transfusion shock appeared (dyspnea, cyanosis, restlessness, a feeling of oppression in the chest, weakening of the pulse, heat flashes over the body, and pain in the back), the transfusion was stopped; but if not, the transfusion was completed. If only hemolysins were present (irrespective whether in the donor's or the recipient's blood), he never observed the slightest disturbance. The presence of hemagglutinins in the donor's blood seldom had any bad effect, but in all cases in which hemagglutinins were found in the recipient's blood, there appeared typical symptoms of transfusion shock. This confirms the findings of various other writers.

Rate of Sedimentation of Erythrocytes as a Diagnostic Aid in Gynecology.—Pewny found that the rate of sedimentation could be used only during the later months of pregnancy to differentiate between gestation and myoma; during the first months of pregnancy it cannot be relied on. However, this test will differentiate between benign tumors without complications and malignant tumors, between hemorrhagic and serous tumors of the adnexa, between chronic and acute inflammations of the adnexa and between benign tumors of Douglas' pouch and inflammatory exudate or hematocele. If the blood to be tested has been allowed to stand, the rate of sedimentation will usually be retarded, which fact seems to indicate that, among other factors, colloidal changes play an important part in this test.

Indirect Roentgen-Ray Treatment of Gynecologic Hemorrhage.—Hirsch states that, by using 60 per cent. of an erythema dose, which was applied to the pituitary gland from two fields, he was able to produce a prompt inhibitive effect on metrorrhagia. He observed no bad effects or disturbances arising from this procedure. No sugar nor albumin appeared in the urine following such irradiation, and no disturbances of function were noted in the vegetative nervous system. In fifteen myomas, which were subjected to this treatment, unusually prompt retrogression occurred; the time was much shorter than had been required to accomplish this by ovarian irradiation. In four weeks the myomas often decreased from the size of a child's head or a fist to the size of a walnut. Immediately after irradiation, a distinct swelling of the uterus was frequently noted. In each individual case we must consider whether ovarian or hypophyseal irradiation should be employed. In the case of a growing organism, if roentgen-ray treatment of hemorrhage is to be considered at all, the pituitary gland, from which so many growth impulses go forth, should be avoided. For hemorrhages at the menopause, whether caused by a myoma or dysfunction of the ovaries, hypophyseal irradiation has special advantages, since the reduction in the function of the pituitary gland accelerates the retrogressive changes in the genitalia. This brings about a condition that corresponds more closely to the menopause than is accomplished by ovarian irradiation.

Dec. 16, 1922, **46**, No. 50

Pulvermacher and Torsion of Ovarian Cysts. H. Sellheim.—p. 1986.
Chemicobiologic Treatment of Leukorrhea. Schweitzer.—p. 1999.
*Etiology and Treatment of Tubal Pregnancy. Mauthner.—p. 2005.
Sex Determination. D. G. Wesselink.—p. 2011.
Neglect of Carcinoma Cases in Germany. H. Naujoks.—p. 2012.
Hematoma After Torsion of the Adnexa. H. Becker.—p. 2019.
Bacteriologic Indications in Febrile Abortion. E. Sachs.—p. 2021.

Etiology and Treatment of Tubal Pregnancy.—Mauthner does not deny the possible influence of mechanical factors, but he doubts whether they are dominant. The biologic factor must be considered. A damaged ovary may produce a pathologic product. The nonpregnant tube should not usually be removed, unless much changed. In the past, 40.5 per cent. of all his patients with tubal pregnancy have been sterilized.

Hospitalstidende, Copenhagen

Nov. 29, 1922, **65**, No. 48

Progressive Lipodystrophia in Man. V. Christiansen.—p. 801.
*Ovarian Pregnancy. K. Bierring.—p. 810.

Ovarian Pregnancy.—Bierring removed a cystic right ovary three months after suppression of the menses. The supposed cyst proved to be an ovum.

Dec. 6, 1922, **65**, No. 49

*Width of Bronchioles. C. Sonne.—p. 817. Conc'n No. 50, p. 841.
From Mendel to Morgan. History of Research on Heredity. O. Thomsen.—p. 831. Conc'n No. 51, p. 875.

Pathogenesis of Asthma.—The extensive experimental and clinical research reported was done to ascertain the relative width of the bronchioles, under different conditions, as a factor in asthma.

Dec. 20, 1922, **65**, No. 51

*Radioactive Substances in Soluble Form. S. Lomholt.—p. 865. Conc'n No. 52, p. 897.

Radioactive Substances in Fluid Form.—Lomholt discusses the application of alpha rays in skin disease. In forty-four cases of psoriasis all except one showed more or less favorable influence. Small recurring patches yielded promptly to the treatment. The only drawback is the brownish discoloration that it seems to entail. He used thorium X, dissolved in alcohol, to paint the surface. Actual cure in lupus and psoriasis is rare, but more or less benefit always followed the treatment.

Hygiea, Stockholm

Nov. 30, 1922, **84**, No. 22

*Epidemic Encephalitis. C. Kling.—p. 913. Conc'n.
History of Cancer in Sweden. V. Djurberg.—p. 926.

Epidemic Encephalitis.—Kling was unable to confirm statements as to the identity of herpes virus and the virus of epidemic encephalitis.

Ugeskrift for Læger, Copenhagen

Dec. 14, 1922, **84**, No. 50

*Case of Obesity with Arrhythmia. E. E. Faber.—p. 1741.
Associated Syphilitic Nervous Affections. H. Vedsmand.—p. 1744.
Experimental Optic Nystagmus. G. V. T. Borries.—p. 1748.
*Blepharitis and Its Treatment. H. Rønne.—p. 1752.
*Auricular Fibrillation in Hyperthyroidism. C. Schwensen.—p. 1756.

Obesity with Arrhythmia.—Faber's patient was a man 182 cm. in height who weighed 146 kg. There were signs of cardiac weakness. Under a course of Carell treatment, from 3,000 to 4,000 c.c. of urine was voided, the weight rapidly declined and the heart action improved. Under quinidin, the arrhythmia subsided but recurred. It finally subsided permanently, two weeks after suspension of the quinidin.

Blepharitis and Its Treatment.—Rønne declares that blepharitis is easily recognized and treated, and yet is frequently overlooked. A true hordeolum is a certain sign of blepharitis. The hard dry scab in the eyelashes must be removed. The main thing in treatment is persistence. The salve should be rubbed into the edge of the lids every night on retiring. Blepharitis of many years' standing will yield to systematic scraping off of the scales and application of the salve. If there is ulceration, all eyelashes involved should be pulled out. The fat in the salve is the main thing. Acute exacerbations promptly subside, but chronic blepharitis continues its course until conquered by patience and perseverance.

Auricular Fibrillation in Exophthalmic Goiter.—Subsidence of auricular fibrillation after operative treatment of exophthalmic goiter has been reported by Fridericia and others. Schwensen reports a case associated with irregular heart action and auricular fibrillation. The heart beat was 160, the radial pulse 100. After roentgen-ray treatment, the symptoms became much aggravated for five weeks but then improved, and the electrocardiogram soon became entirely normal. The right ventricle returned to normal size at the same time.

Dec. 21, 1922, **84**, No. 51

*Splenectomy in Pernicious Anemia. E. Holm.—p. 1781.

Splenectomy in Pernicious Anemia.—Holm says that the benefit from splenectomy in pernicious anemia was remarkably constant in the 85 cases compiled by Kriese. The blood improved as in a pronounced spontaneous remission, but the improvement did not last. In Holm's personal case, the erythrocytes numbered only 760,000 but they slowly increased after splenectomy to 1,725,000 in eleven months, and the general condition materially improved. Of Eppinger's 18 cases, 2 lived more than four years after the splenectomy, and 6 more than two years.

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THE RESOURCEFUL GENERAL PRACTITIONER OF MODERN MEDICINE*

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The time has come for plain statements in regard to modern medical practice, with the purpose of bringing the public and the members of the medical profession as a whole back to good common sense views. It is my purpose to attempt to show how the general practitioner may continue to occupy the important place in the field of practice which was his until recently. For the time being, therefore, specialists in medicine and surgery and special forms of the prevailing methods of modern practice, such as diagnostic groups and pay clinics, will not be discussed.

In a consideration of the general practitioner it will be necessary to discuss the opportunities which he enjoys, and the problems and difficulties which beset him. In their work, not all general practitioners are resourceful and sure of themselves. This fault is due in some instances to inadequate early training, but in a majority of men it is due to laziness and failure to take advantage of the opportunities afforded all physicians. From the time of his graduation until he retires from work, the whole professional life of the physician affords opportunities to study morbid processes as evidenced by anatomic changes and altered function and so to manage and treat the patient that partial or complete restoration occurs—dependent, in part, on the nature of the malady. The physician who makes all possible use of his daily clinical opportunities learns something new and useful every remaining day of his professional life.

The determination to take advantage of the daily clinical opportunities and of other educational available aids are the essential factors which produce resourcefulness and ability in the physician. Naturally, this daily clinical study develops the powers of observation and manual dexterity in physical examination and in treatment. The knowledge which this ever increasing experience affords is refined and stabilized by purposeful reading of standard textbooks and periodicals, by association with fellow practitioners and in discussion of papers read before medical societies, and by writing papers on subjects which the physician's daily clinical observations justify.

Something additional must be said of the educational aids available to physicians in most communities. Although medical books and periodicals are relatively expensive, most physicians can afford standard textbooks on physical diagnosis, practice of medicine, general surgery, obstetrics, pediatrics, dermatology, neurology and on other special subjects which they feel are necessary, and one or two good general medical periodicals, which should include THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The daily clinical observations fortified by selective reading in standard textbooks and good medical journals afford a method of self-education of the greatest value.

Membership in and active participation in the work of the county medical society is of great educational benefit to the physician. It affords personal contact with fellow practitioners in the courteous discussion of medical subjects and professional problems, promotes mutual respect and good will, and is a potent factor conducive to increased self-respect and self-reliance on the one hand, and to a decrease in the size of the hat, if imaginary megalocephaly makes one a nuisance to his fellows.

Concisely written reports of interesting clinical observations presented before medical societies and for publication are a splendid means of self-education, and are justified because they furnish a valuable addition to medical literature. In this connection it will be recalled that some of the best and earliest clinical descriptions of epidemic cerebrospinal meningitis, infantile paralysis and other epidemic diseases prevailing in the United States were written by the rural general practitioners, and in some instances in pioneer sections of the country.

DIAGNOSIS

Diagnosis is the most important factor in the practice of medicine. Until the diagnosis is made, treatment may be ineffectual and often is irrational. Modern medical science is characterized by the development of many laboratory and instrumental methods of diagnosis. Concerning these I repeat what has been said on several occasions: With due regard for the value and need of all the splendid ultrascientific laboratory and instrumental methods of physical and functional diagnosis in investigatory medical work, they are needed in the routine clinical care of not to exceed 20 per cent. of all the patients of any urban or rural community. Unfortunately, many lay people have been made to believe and apparently a large number of physicians think that the routine application of the ultrascientific methods of diagnosis is necessary in the majority of cases. The fact is that the diagnosis can be made in fully 80 per cent. of all cases by a resourceful general practitioner who will efficiently use his brain, special senses, hands and an always available simple and inexpensive laboratory and instrumental equipment. In a discussion of the means of diagnosis available to the general practitioner, the history of the past and present condition of the patient is one of the most important, if not the most essential, factor.

* Read before the Tri-State District Medical Association, Peoria, Ill., Oct. 31, 1922.

MEDICAL HISTORY

To obtain a satisfactory medical history is an art which can be perfected by painstaking care and experience. The difficulties encountered in garrulous, taciturn, conceited, opinionated and stupid patients can usually be overcome by patience and tact. In most instances the patient can be encouraged to tell a rational story of the main symptoms of the complaint. The physician should be careful not to misdirect the story of the patient by questions which may encourage indicated replies, but should guide the patient in his story to an orderly recitation of symptoms referring to the most important complaints. If the symptoms refer to the gastro-intestinal tract, the quiz should be confined to this subject until all necessary information is obtained, before proceeding to any other system of the body. This orderly method of procedure impresses the patient with the importance of accuracy of statement; and if each system of the body is taken up in turn and completed, the information obtained will be amplified, will be of greater value, and in the end will save time. In addition to the symptoms of the present disease, in chronic conditions, especially, it is very important to obtain accurate information of former diseases because of the possibility of a relationship to the present condition. It is also important to learn the habits of the patient in regard to food, drink, sleep, work, recreation and the habitual use of tobacco, alcohol and drugs. If insufficient training and lack of experience at the beginning of the professional career prevents the physician from obtaining from the patient all the information available, this will be overcome by taking advantage of the daily experience in clinical observation, selective reading, attendance on society meetings, and other methods of professional advancement. A majority of practitioners do not make written records of their patients: these are absolutely essential to accuracy in diagnosis and efficiency in practice. To obtain an efficient history and make a written record require time. Many practitioners have told me they could not afford the time to do this. My own experience justifies the statement that this is a mistake. Accurately written records, brief though they be, properly filed to be available for future reference, are time-savers of the future weeks, months and years. As written records of patients accumulate and are properly filed to be available, the practitioner possesses information which attaches patients and their families to him and affords him time-saving data of inestimable value in the future care of patients and as material for medical reports and papers to be presented to medical societies or for publication.

PHYSICAL EXAMINATION

The conscientious practitioner will make a careful, general physical examination of practically all patients who seek his services. An occasional patient with a slight ailment, and especially those with slight injuries or lesions requiring surgical treatment, are exceptions. But with many patients the present complaint is often an expression of an older morbid process which has been disregarded by the patient or overlooked by the physician. The physical examination must be made methodically. I need not mention what should be learned by inspection, palpation and auscultation. If each is used carefully, and if the results recorded to insure accuracy are considered with the findings of the available simple laboratory and other tests, these valuable positive and negative data will enable the physician to make a probable diagnosis. In some instances, further examinations may be necessary to reach a true diagnosis. Here, again, the daily opportunity in clinical and laboratory examinations, and the correlation of the findings affords an experience which will insure steady improvement in technical skill and in judgment. Daily practice in technic and judgment is the program which every physician must follow to become a skilled diagnostician. The practitioner can gain much by observing others at work in organized clinics or by taking postgraduate courses in diagnosis, when these are available; but the efficiency of the practitioner in diagnosis is mainly dependent on his own industry and determination to make the most of his own clinical opportunities.

SPECIAL EXAMINATIONS

The general practitioner cannot be proficient in the more refined methods of examination which are necessary in the practice of the specialties of medicine and surgery. But he can and should be able to recognize the more common diseases of the eye, ear, pharynx, accessory nasal sinuses, locomotor apparatus, rectum and female pelvic organs with the simple available means at hand; furthermore, he should possess and use in routine practice a simple chemical equipment and standardized urinometer for urinalysis, a microscope, blood counter, hemoglobinometer, rectal, aural and vaginal specula, laryngeal mirrors, head mirror, blood pressure instrument, stethoscope, stomach tube; and an inexpensive electric light device, with storage battery, if this is needed, is now available for transillumination of the accessory nasal sinuses, jaws and other tissues. Daily use of these instruments will develop technical skill and make them valuable aids in diagnosis.

There is a growing custom in urban practice for general practitioners to have the routine laboratory examinations, such as urinalysis, blood estimations and other simple tests, made and the results interpreted for them at the numerous available commercial laboratories. In my opinion this is a great fault in practice; it would be quite as rational for the practitioner to depend on available organized clinics for the physical examinations and diagnosis of patients.

For the few patients who require laboratory or instrumental tests which involve special knowledge and technical skill in their application, such as blood chemistry, serology, bacterial cultures, elaborate blood counts, electrocardiography, efficient roentgenology and the like, the practitioner should make use of the excellent commercial laboratories, public clinics and available state, county and municipal public health laboratories.

PHYSIOLOGY AND MODERN MEDICINE

Modern medicine is still engaged with the importance of the morbid anatomic lesion as to its etiology, nature, evolution and its modifications by management and treatment. But, today, we have quite as great a concern in the coincident functional disorder. That is, a study of pathologic physiology is recognized as of great importance in the practice of medicine. Therefore, the interest in pathologic physiology has resulted in the elaboration of laboratory and instrumental functional tests in diagnosis which require such great technical skill and experience in their application that they are valueless to the general practitioner. Fortunately, these refinements in functional diagnosis are not needed in more than 20 per cent. of the patients of any community. Unfortunately, the clinicians and laboratory workers who have devised these tests and

instruments have not indicated how some of the ultra-scientific functional tests may be modified to make them utilizable by the general practitioner. It is my privilege to attempt to describe how the physician may use available simple methods to ascertain the approximate function of some morbid anatomic conditions.

CHRONIC NEPHRITIS

As a rule, the general practitioner has the opportunity to see patients in the early stage of disease. At any rate, most patients with chronic disease seek aid comparatively early. Therefore, the general practitioner will have an opportunity to test out the function of organs with manifest morbid anatomic changes before severe constitutional symptoms develop.

When the practitioner finds albumin and casts in the patient's urine, he is justified in making a diagnosis of nephritis. But he must understand that chronic nephritis is often associated, soon or late, with morbid cardiovascular changes, varying degrees of edema of the soft tissues, dyspnea on exertion, and other symptoms and signs indicative of constitutional disturbance.

To appreciate and comprehend the relationship between nephritis and the morbid tissue changes in other portions of the body, I would recommend that the general practitioner adopt the excellent clinical classification of nephritis made by Dr. Henry A. Christian of Harvard, which is as follows:

1. Acute nephritis.
2. Chronic nephritis:
   (*a*) With edema.
   (*b*) With vascular hypertension.
   (*c*) Mixed or combined type.
3. Essential vascular hypertension progressing to chronic nephritis.
4. Renal arteriosclerosis progressing into chronic nephritis.

This is not a formidable and incomprehensible classification such as prevails in the literature, but is a good working basis for every-day practice.

Now, the general practitioner is likely to discover evidence of nephritis in his patients before the constitutional disturbances appear. However, he should know that constitutional evidences of the body changes associated with chronic nephritis may be present, and should make a thorough physical examination, which will include the blood pressure, the condition of the heart, the presence or absence of edema in the soft tissues, and the presence or absence of dyspnea on exertion.

He should avail himself of a simple means of testing the function of the kidneys. The kidney excretes water, salts, and nitrogenous and other elements. The epithelial cells lining the kidney tubules possess the special function to resorb the threshold elements, such as sodium chlorid, from the water which reaches the tubules from the blood passing through the glomeruli. Were it not for this important function of the kidney, the blood and other body fluids would be deprived of the necessary amount of these threshold substances to maintain their chemical and physical equilibrium, which would be disastrous to life.

The general practitioner can test with approximate accuracy the ability of the kidney to excrete water and salines by the following simple method:

For a patient living in the ordinary routine, the urine of the night is collected for a period of twelve hours, is measured, and the specific gravity is taken and noted. At noon the patient is given a liberal mixed meal containing meat and other albumins, and a liberal amount of common salt as a condiment. Following the meal, the urine is collected in a separate receptacle every hour for four or five hours, is measured, and the specific gravity of each specimen is noted. On the second day, in the morning while fasting, the patient drinks three or four pints of pure water. Then for five hours the urine is collected in a separate receptacle every hour, measured, and the specific gravity of each specimen is taken and noted.

These tests afford the following information: The ability of the kidney to excrete water, which is evidenced by the increase of the water output during the fasting period when the patient is drinking water freely, as compared with the bulk of urine passed during the night and that excreted after the hearty meal. The ability of the kidney to concentrate and excrete salines, which is evidenced by a specific gravity of higher degree of the specimens of urine voided after the hearty meal, when compared with the specific gravity of the night urine and of the specimens voided while taking water freely. The ability of the kidneys to concentrate and excrete salts indicates a fairly good function in the excretion of nitrogenous waste and other poisons. The tests will show a very good function of the kidney when the urine is notably increased by water drinking, and when the specific gravity of the urine taken after the hearty meal is comparatively high. The reverse of these findings would indicate poor or very bad function. These tests will be of the greatest value in those patients who show little or no constitutional disturbance. A patient who is suffering from anasarca would be unsuitable for these tests because, no matter what the cause of the dropsy, the power of the kidney to excrete water would probably be poor.

The utility of the test depends on its use in the early stage of nephritis. When so used, the information given will enable the practitioner to give a rational prognosis, and to apply appropriate management and treatment.

For those patients who show very poor function of the kidneys, the conscientious practitioner will desire to apply more refined functional tests of the kidneys. If his patient is financially able, he can be sent where blood chemistry and other tests may be applied. For the poor who are unable to pay for the transportation necessary to reach these centers, there is at present no usual means to afford them this important service. Later I shall mention what should be furnished each community to make available to the practitioner the refinements in diagnosis and in treatment which a few patients require.

Lack of time and space prevents a consideration of the various types of nephritis, their recognition and the indicated management and treatment. The subject is important, but would require more time than is allotted for its consideration alone. However, if the practitioner has the ambition and the energy to perfect himself in a knowledge of nephritis, he may avail himself of the excellent literature of recent periods, and especially of the reports of Dr. Henry A. Christian and his co-workers in the Peter Bent Brigham Hospital at Boston.

HEART DISEASE

The condition of the myocardium and the ability of the heart muscle to function is a question of far greater importance to the patient and to the general practitioner than the anatomic diagnosis. As long as the myocardium has the ability to function anywhere near normally, the patient's health, as far as the heart is concerned, is usually fairly good, and there is no immediate

jeopardy to life. It is true that degenerative changes in the myocardium are caused by or are hastened by certain morbid anatomic lesions. For example, mitral stenosis interferes mechanically with the passage of blood through the heart, causing overwork, dilatation of the left auricle, and comparatively rapid myocardial changes.

In heart conditions the practitioner should avail himself of every available simple means to acquaint himself with the anatomic condition of the heart; that is, its size, the presence or absence of murmurs, and its rhythm, and at the same time should note by careful physical examination the presence or absence of other morbid conditions of the body. For example, he may find toxic goiter, chronic nephritis, neurosis associated with neurasthenia, and other constitutional disturbances which cause heart symptoms.

To test the functions of the heart, he should have the patient exercise for short periods of a minute or less, with a rest period following, by hopping on one foot for fifty to a hundred times, by walking or running for twenty-five or fifty yards, by climbing stairs, or by calisthenic exercise of any kind. Before, during and after the exercise, the rapidity, rhythm of the heart action and the number per minute of the radial pulse should be noted, the presence or absence of undue dyspnea, the presence or absence of actual pain in the heart region, and changes in the color of the skin. If a patient is able to take these exercises without great objective disturbance of the heart, which would include a return of the number per minute of normal heart beats or the number before exercise, within one minute after the cessation of any one form of exercise, the manifest anatomic diagnosis is unassociated with any serious damage to the myocardium. On the other hand, if the pulse remains rapid after exercise for three or four minutes, if the patient has an undue dyspnea on exertion and there is evident precordial pain and disturbance of the circulation of the skin, the myocardium is damaged and requires rational management and treatment.

In 1918, while in England, I visited the heart military camp at Colchester, which was under the direction of Sir Thomas Lewis. The patients in the camp were soldiers on furlough with disability due to alleged heart disease. As you are aware, Sir Thomas Lewis has been one of the most efficient investigators of the normal and pathologic physiology of the heart and of its diseases. In this work of investigation he utilized the electrocardiograph and the polygraph. At this heart camp I was gratified to find that he did not maintain a laboratory with these instruments of precision which he used in his investigatory work, but relied entirely on the simple available means of diagnosis which are possessed by every practitioner of medicine. After making a complete physical examination of each patient to ascertain the presence or absence of other constitutional disturbances, he noted the presence or absence of heart murmurs, the presence or absence of hypertrophy, and then tested the function of the heart by the means I have outlined. By these measures he was able to make an accurate estimate of the heart condition of the soldiers, and a majority of them were returned to active duty in the field.

The general practitioner can learn to do this himself; furthermore, if he will follow this method of practice he will be able to allay the anxiety of many of these patients by giving a rational prognosis based on the ability of the heart to function. For those patients with heart lesions who present evidences of poor function, he will apply the appropriate treatment, referring those who require greater knowledge and technical skill than he possesses to qualified colleagues. Time and space do not permit a discussion of the treatment of the failing heart. I will recommend that the general practitioner secure and read Clinical Diseases of the Heart, by Sir Thomas Lewis, and also Diseases of the Heart, by Sir James Mackenzie.

DISEASES OF THE LUNG

There is no short and easy road to the accurate diagnosis of diseases of the lung. Of these, tuberculosis is one which requires acquired skill in the application of physical diagnosis with the experience which comes from daily practice. But the physician who applies himself earnestly to physical examination of the lungs will qualify himself to recognize the evidences of pulmonary tuberculosis. The failure to recognize the disease is due to the neglect thoroughly to examine a majority of patients. Too often the patient is subjected to the expense of a roentgen-ray examination of the chest which does not reveal, as a rule, morbid changes which cannot be detected by ordinary available means of physical diagnosis. As a refinement and to satisfy one's curiosity to know whether the physical findings discovered are correctly interpreted, a roentgenogram or a fluoroscopic examination may be made of the chest. It is important to examine the sputums for tubercle bacilli, and this knowledge is available to the practitioner through existing laboratories if he is not able to make the examination of the sputum himself.

DISEASES OF THE STOMACH

The technic of using the stomach tube efficiently is easily acquired, and the general practitioner should utilize this useful aid to diagnosis. By means of this instrument he will be able usually to verify the diagnosis of ulcer of the stomach or anatomic obstruction of the pylorus due to any cause, and its use will afford satisfaction. If a hearty meal is given at bedtime and the stomach tube reveals food in the stomach in the morning, it is a sure index of organic pyloric obstruction. With diseases of the stomach, as in other conditions, one must obtain a satisfactory history from the patient and make a general examination. It must be remembered constantly that gastric symptoms, particularly those ascribed to peptic ulcer, are often caused reflexly by chronic appendicitis, less frequently by gallbladder disease, and by morbid lesions of other abdominal and pelvic organs.

Carcinoma of the stomach, especially in its early stages, is more difficult of diagnosis, but the associated poor appetite, lessened strength and endurance, the incidence of pain immediately or shortly after taking food, the frequent nausea and occasional vomiting, and the low acidity of the gastric juice should make the practitioner awake to the possibility of cancer. In my opinion, in these patients, early exploration by the surgeon is justifiable with the hope that the disease, if found, may be wholly eradicated.

CHOLECYSTITIS

Cholecystitis, with or without gallstones, is of frequent occurrence in medical practice. The condition occurs with gallstones in persons past the meridian of life more frequently than in younger individuals. Frequently the disease is latent, but even here is apt to

cause functional disturbance of the digestive organs. In the absence of other symptoms pointing to intrinsic disease of the stomach, these symptoms should arouse the suspicion in the mind of the practitioner that his patient has gallbladder disease. Pain in calculous cholecystitis is rather characteristic in the fact that it is often agonizing in character and is often associated with pain at the spine of the right scapula, and in some patients it radiates to the mediastinum, and the heart is disturbed. Attacks of gallstone colic are sometimes precipitated by mental emotion, by lifting heavy weights or by riding over rough roads, and sometimes it is brought on by an overloaded stomach. When the gallstone reaches the common duct, the pain is usually aggravated, as compared with that of cystic duct stone, and jaundice usually supervenes and confirms the diagnosis. Cholecystitis, of a latent character even, is associated with tenderness of the gallbladder. This may be elicited with the patient in a supine position by percussion over the gallbladder region while the patient takes a full inspiration and maintains it for a moment. This percussion is best accomplished by placing the points of the fingers of the left hand flexed at the middle joint over the gallbladder region and striking them a sharp blow with the right hand.

APPENDICITIS

Acute appendicitis in the primary attack is practically always sudden in its onset, and is associated with a reflex nervous disturbance often manifested by nausea and vomiting, and there is usually irritation of the peritoneum, manifested by rigidity of the abdominal muscles, and tenderness over the appendix region, and there is always constitutional disturbance manifested by rise of temperature, quickened heart beat and general discomfort. In such primary attacks the disease should be treated surgically and at once. In chronic appendicitis the clinical history will usually reveal former attacks, and quite as frequently there will be associated disturbance of the stomach often simulating peptic ulcer. In my opinion, recurring appendicitis does not require the immediate surgical emergency of the primary form of the disease. But the practitioner who fails to have the patient with chronic appendicitis operated on soon or late, and especially soon, is not conscious of his responsibility to his patient.

PERNICIOUS ANEMIA

We do not know the cause of pernicious anemia. The condition is associated with morbid anatomic changes in the alimentary tract, the bone marrow, the spleen and other blood-making organs. A general examination reveals a marked anemia with deformed red blood cells, some of which are very large and others much smaller than the normal. Much is made of the usual relative percentage predominance of the hemoglobin over the percentage of red blood cells, which is expressed by a so-called plus color index. With many physicians, the diagnosis is chiefly based on the blood examination. Now, the fact is that every true case of pernicious anemia presents physical evidences which are so characteristic that the diagnosis may be made on this evidence alone when they are recognized. These consist of a smooth tongue partly or wholly denuded of its epithelium, which shows evidences of irritation amounting in some regions of the organ to inflammation, and is accompanied by burning, smarting and other discomfort. There is practically always an achylia gastrica, evidenced by the absence of acid in the gastric juice; frequent disturbances of the bowel, characterized by diarrhea, with alkaline liquid stools containing protozoa; and the pallor of the skin is characterized by a yellowish tint. The patient always presents more or less evidence of parasthenia in the form of numbness and tingling to the fingers, hands, toes and feet and sometimes extending to the proximal limbs. The practitioner is justified, therefore, in making a diagnosis of pernicious anemia when the patient presents these conditions, even if he is not able to make a thorough blood examination.

The importance of the recognition of pernicious anemia is to avoid unnecessary and expensive treatment. Under ordinary good rational management with attention paid to the diet, the avoidance of fatigue and other hygienic measures, the patient's life will be conserved, as a rule, quite as long as if he submitted to all of the modern measures practiced, including splenectomy and blood transfusion. I make this statement advisedly, based on an experience with more than two hundred patients suffering from pernicious anemia who died in spite of the application in some of them of these alleged curative forms of treatment. Time and space do not permit a discussion of other types of anemia.

ACUTE DISEASES

The problems which confront the general practitioner in the diagnosis of the acute diseases are many, but are less difficult to solve than those which are presented by many of the chronic diseases.

In these conditions he will not usually distress a patient suffering from an acute disease in an attempt to secure an exhaustive history of his family or of the habits and other data so important in the recognition of chronic diseases. Here, with the patient in bed, time may be taken, even over a period of two or three days, to make observations to insure the proper diagnosis, provided, of course, that in the contagious diseases or when one suspects or apprehends a contagious condition, the other members of the family and the community will be safeguarded by proper preventive measures. In suspected diphtheria, antitoxin will be used because it is known that the earlier the specific remedy is applied, the more likely is the life of the patient saved. The subject of the diagnosis of acute diseases is too large to enter on here. The progressive practitioner will keep himself informed of all the newer available and especially the simple methods of diagnosis, and will utilize the available commercial, clinical, state, county and municipal laboratories for the bacteriologic and serologic specific tests which are often necessary in the diagnosis of cases of acute disease. Time and space will not permit a broader discussion of diagnostic problems which are difficult of solution.

ECONOMIC CONSIDERATIONS

I am very mindful of the economic difficulties which embarrass many medical practitioners. The rural practitioner is subjected to physical and mental fatigue from long hours of work, often with insufficient sleep, and exposure to inclement weather, and frequently is inadequately paid for his services. In consequence, he is disinclined to use thorough, painstaking methods of diagnosis, becomes careless, is apt to avoid medical society meetings, and reads medical literature with but little interest. Of course, there are many exceptions.

In the city the general practitioner meets a comparatively larger number of poor pay or wholly indigent patients than are found in rural districts. The impos-

sibility of collecting an adequate fee from many poor patients begets in many city practitioners the habit of superficial methods of practice. Then, too, competition is usually great in the city, and it is probable that the average general practitioner of the city has a smaller annual income than his rural medical brother. But the city physician has opportunities for professional advancement, if he will take advantage of them, by attendance on public clinics and medical society meetings, and by reading good medical literature in accessible libraries.

But whether one is a practitioner in the city or in the country, the economic conditions peculiar to each can be greatly improved by one's own efforts. The fundamental principle which each practitioner must adopt to overcome his economic embarrassment is to improve himself professionally. To accomplish this, I believe he must steadily follow the methods of clinical practice and other self-educational opportunities which I have outlined. I sincerely believe that if he will do this, he will attract to himself a large number of patients, will receive more adequate financial reward, and will find real enjoyment in his work.

Many years ago an observing philosopher said, "The pathway to the door of the qualified man, desirious of giving honest, efficient service to the public, is worn smooth by the passage of many feet."

I believe that the preservation of the general practitioner, as the most important factor in the field of practice, is dependent, chiefly on himself. He must keep abreast of the advance of modern medical knowledge and practice, chiefly by his own efforts. If he strives to improve and help himself he will be successful; will justify his importance in the medical field, and will attract the ill and injured to his door because of his professional individual superiority as compared with men in narrower fields of practice, alone or in public or private groups.

FACILITIES NEEDED BY GENERAL PRACTITIONERS

Many general practitioners of the city lack hospital facilities for the small percentage of their patients who require hospital care. For the small number of his patients who require blood chemistry, electrocardiography and other technical refined tests, he can avail himself of the services of commercial clinical laboratories and those conducted by public and private clinics.

The practitioner in most rural communities lacks both the hospital and available laboratory facilities for the refined physical and functional diagnostic tests which his practice demands for 10 or 15 per cent. of his patients.

The necessity for the preservation of the general practitioner in the city and in rural districts, for the general public good, justifies and demands that the organized medical profession should assume leadership in educating the public to understand and comprehend the need of hospital centers, including diagnostic facilities in every community financially capable of self-support.

Perhaps this much to be desired improvement of the facilities for general practice is unattainable in most communities, for the reason that the medical profession as a whole does not accept its responsibility, and without the leadership of the medical profession the public will remain ignorant of its own welfare needs and will not act.

There is another possible solution of the problem which may afford the general practitioner the support and facilities he requires to furnish all of his patients efficient service.

PRIVATE GROUP PRACTICE

Private group practice is a modern development. If the specialists in surgery, internal medicine and the narrower fields of medicine and surgery and the laboratory experts who form the group are men of broad minds, unselfish, sympathetic and desirous of giving efficient service to the community, including the members of the medical profession not connected with the group, they could furnish a great need in city and rural practice. From 15 to 20 per cent. of the sick in a community require their specialized service in diagnosis and treatment; but they would and should act only as diagnostic consultants and advisers of treatment of patients sent by the general practitioner for these purposes only. An unselfish policy of this kind would justify private group practice, and would be a material professional assistance to the general practitioner and a great benefit to the community. On the other hand, the adoption of a selfish policy by the private group which would disregard and ignore the professional and economic welfare of the general practitioner will result in injustice to the public and disaster to the private practitioner and to the group itself.

The American family home has been and must continue to be the very foundation of this nation. Bolshevistic socialism, anarchy and public discord cannot exist in a nation of family homes. The integrity and perpetuation of this nation is dependent chiefly on the maintenance of family life; and the continuance of the family home demands the preservation of the family physician, the general practitioner.

1550 North State Parkway.

SUCTION IN THE TREATMENT OF LARYNGEAL DIPHTHERIA *

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AND
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With the introduction of intravenous antitoxin, direct laryngoscopy with swabbing of the larynx, and finally suction, the mortality figures in laryngeal diphtheria have gradually decreased.

HISTORY OF THE RELIEF OF THIS DISEASE

The earliest records of catheterization of the larynx, for cases of inflammatory stenosis, is found in the writings of Hippocrates. Cannulas were carried into the throat along the jaws so that air might be drawn into the lungs. This procedure was practiced until the discovery of tracheotomy by Aschopiadon in the first century B. C. Catheterization was lost sight of until 1780, when it was revived by Chaussier, who proposed the use of a laryngeal tube in the asphyxia of the new-born and to overcome obstruction due to disease.

Dissault, in 1801, and many others after him appear to have had some measure of success in the treatment of laryngeal stenosis by this method, particularly in adults; but the retention of one end of the tube in the trachea while the other protrudes either from the mouth or from the nose is obviously impracticable in children.

* A preliminary report from the croup service at Willard Parker Hospital.

THE RÔLE OF INTUBATION

The first to advocate the treatment of laryngeal obstruction by intubation was Bouchut, in 1858, and it was he who demonstrated that the larynx will tolerate a tube. The profession of Paris condemned and even ridiculed the new method and said it could only rarely supplant tracheotomy, which was used to relieve obstruction of the larynx until 1885, when O'Dwyer first introduced suitable instruments for intubation. Beginning with a tube like a bivalve speculum, he experimented for a number of years, until his well known tubes were perfected. Considerable modifications have been made since, and shortly before his death Lynah devised the non-cough-up tube.

TABLE 1.—COMPARISON WITH THE RESULTS OF PREVIOUS YEARS

	May-December	
	1921	1922
Total cases of laryngeal diphtherias	158	106
No local treatment—mild cases	43	21
Applicator treatment	13	12
Applicator and intubation	18	0
Intubation	84	18
Suction	0	46
Suction and intubation	0	9
Total deaths	41	14
Mortality	25—%	13+%

While intubation has saved many lives in diphtheria and other diseases affecting the larynx, Thomson [1] emphasized the disadvantages of intubation and stressed the value of avoiding it when possible. The tube, no matter how carefully introduced, may cause slight injuries to the larynx. A bronchopneumonia may follow; or a chronic stenosis of the larynx, requiring the prolonged use of an indwelling tube with its attending dangers, is not an infrequent result. The chronic stenosis may be due to ulceration brought about by retention of secretion and stenosis from tube decubitus.

OBVIATING INTUBATION

Loosened diphtheric membrane is frequently the cause of obstruction to the breathing, and the removal of this membrane is desired. O'Dwyer himself recognized this, for he wrote, "I have devised and tried several instruments for the removal of pseudomembrane from the trachea, but they have not proved satisfactory."

Drug therapy had failed to eliminate the membrane, and not until the introduction of the antitoxin intravenously was the rapid formation of the membrane somewhat checked. With this method of administration of the antitoxin a good number of the patients that require intubation need it after the first twenty-four hours. While this eliminates some of the cases, others still remain which require intubation.

In taking cultures directly from the larynx, Thomson and others at this hospital noted that the dyspnea was caused either by loose membrane drawn into the lumen of the larynx on inspiration, or by a thick, mucopurulent material, which the patient seemed unable to cough up. In only a small number of cases was the dyspnea due to the attached membrane above or to an inflammatory stenosis. We noticed that this loose membrane came away frequently on the swab, and the cough following the swabbing cleared the mucus away, so that a child ready for intubation frequently had immediate relief. By this method Thomson reduced the mortality by about 10 per cent.

THE USE OF SUCTION

Tracheobronchial diphtheria, the type of case with a low membrane, does not, however, yield promptly to the applicator treatment. What is considered a further step in the relief of laryngeal diphtheria is the use of suction to draw up the obstructing membrane and mucus.

In an effort to avoid intubation, we have in the past permitted our patients to remain dyspneic for hours, sometimes to the point of exhaustion, struggling for air; we had hoped that they might ultimately expel the membrane, or that the antitoxin might check its rapid formation. At present we employ suction promptly, and as frequently as indicated. The patient is wrapped in a mummy bandage as for intubation, and through a Jackson laryngoscope the membrane and mucus are aspirated by means of a 16 to 18 French silk or metal catheter, which is connected to an aspirating bottle, and in turn connected to an ordinary electric suction pump, capable of producing from 5 to 10 inches of vacuum.

A TYPICAL CASE

The citation of a fairly typical case, one in which, undoubtedly, intubation would have been performed, will illustrate our method of treatment:

A boy, aged 3½ years, admitted, 9 p. m., Oct. 14, 1922, had been ill three days. He appeared acutely ill, and was of poor color. He had a croupy cough with moderate intercostal and epigastric retractions. In addition, he had an extensive membrane on the tonsils which spread onto the posterior pharyngeal wall. Because of difficulty in striking a vein, 15,000 units of antitoxin was given intramuscularly. He had had 10,000 just before admission.

Examination of the larynx revealed membrane on the arytenoids, on the aryepiglottic folds, and extending below the cords.

A silk catheter, as described, was passed through the lumen of the laryngoscope, and the membrane was aspirated from the larynx so that it was fairly well cleared of membrane.

TABLE 2.—THOMSON'S FIGURES OF 1920 COMPARED WITH 1919

	Oct., Nov. and Dec.	
	1919	1920
Total number of cases of laryngeal diphtheria	159	132
Number of cases not treated	84	79
Intubation	75	16
Applicator treatment not intubated	0	37
Total number of deaths	42	20
Motality	26%	15%

There was immediate relief, breathing became easier, retractions disappeared, and the color improved. About six hours later the patient became restless and had attacks of difficult breathing and cyanosis. At 5:30 a. m., eight and one-half hours after admission, the patient was again examined with the laryngoscope. A thin film of membrane had formed, and two pieces of membrane could be seen flapping under the cords with each expiration. Suction was again employed, with relief to the patient.

During the rest of the day the patient was fairly comfortable, with only occasional attacks of dyspnea. That night, however, suction was again indicated; small shreds of membrane and considerable mucus was obtained. The patient was comfortable for the remainder of the night. The temperature, pulse and respiration dropped to normal on the third day, and the patient's color was good. For forty-eight hours longer he was still somewhat croupy, but from then on he made a speedy recovery.

1. Thomson, C. A.: Removal of Diphtheritic Exudate from the Larynx; Employment of an Applicator for the Purpose of Avoiding Intubation, J. A. M. A. **78**: 1198 (April 22) 1922.

COMMENT

In the larynx and the trachea, the pseudomembrane is apparently less intimately attached than in the throat, and its removal does not leave as much and, in fact, very little bleeding surface. In the case cited, removal of the membrane relieved obstruction promptly.

From May until the last part of December, 1922, 106 patients with laryngeal diphtheria were admitted to the croup service at Willard Parker Hospital. There were twenty-one mild cases which required no treatment. Twelve patients received applicator treatment. Intubation was performed in eighteen cases. Nine patients received suction and intubation. There were forty-six cases in which suction was used exclusively. The total number of deaths was fourteen, a mortality of 13 + per cent.

Of the eighteen patients subjected to intubation, eight died with terminal bronchopneumonia. Three of these were moribund on admission; eight have been discharged cured, and two are still in the hospital, and cannot go out without their tubes for any considerable length of time.

Two patients who underwent tracheotomy died.

Of the nine patients treated by suction and intubation, two died, and the rest recovered. Both patients had bronchopneumonia on admission.

The remaining two deaths occurred in the series in which suction was used exclusively. Both these patients had toxic tracheobronchial diphtheria. They were ill about four days before admission; one had, in addition, a pharyngeal involvement.

CONCLUSION

1. Suction is especially advocated for cases in which there is a low membrane, which cannot be reached by either intubation tube or tracheotomy.

2. Laryngoscopic examination with suction in severe cases may be repeated when necessary every six or eight hours. It is interesting to note that many of the cases required but one treatment; in these the membrane was loose in the larynx; intubation was indicated, and the foreign substance was removed by suction.

3. In reference to the cases in which suction and intubation were employed, these being only 16 per cent. of the total number of cases in which suction was employed, it was noted that intubation was necessary because of a persisting edema.

4. Convalescence from laryngeal diphtheria has been shortened by sparing the intubation patients the strain they were formerly subjected to in the desire to avoid intubation.

5. The avoidance of intubation has no doubt diminished the incidence of "chronics," or patients who cannot endure removal of the cannula.

6. By employing visually guided suction, our mortality has been reduced.

The Environmental Influence on Child Development.—The environment of the young child is one of the most important influences in his development. Because of the force of reflex imitation working with this factor of plasticity, the emotional attitudes of those by whom he is surrounded leave their impress on the child before he has lived thirty months. His disposition is being formed; he is becoming irritable, quick-tempered, moody, or sunny and cheerful; just which, however, being determined to a larger extent than people realize by the nature of the adults surrounding him, and this all unconscious to himself, simply as a result of the modifiability of his neurones.—W. P. Lucas. *Hospital Social Service* **7**:13 (Jan.) 1923.

CARBON TETRACHLORID IN THE TREATMENT OF HOOKWORM DISEASE

OBSERVATIONS ON FIFTY THOUSAND CASES *

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In a recent issue of THE JOURNAL I [1] reported on the use of carbon tetrachlorid in the treatment of 20,000 cases of hookworm disease in Fiji. My observations were based on experiments conducted up to June 1, 1922. By the end of October, 1922, we had treated an additional 30,000 cases, making 50,000 in all.

The picture presented by the earlier article, while true in the light of experience up to the time of writing, may give the unwarranted impression that carbon tetrachlorid is entirely harmless. I desire, therefore, to submit here the results of our further experience in Fiji with this drug.

We continued the exclusive use of carbon tetrachlorid in the treatment of intestinal parasites with good results till we had treated 42,000 cases. The dosage used was 0.2 c.c. (3 minims) of the drug for each year of age up to 15 years. Adults were given from 3 to 4 c.c. (45 to 60 minims). Up to this time the symptoms reported were few indeed; and "mass treatment" with the drug became so increasingly popular among the natives that we contemplated treating whole populations from a central location in each district instead of continuing our house-to-house method of campaign, which is slow in a country where the homes are so widely scattered. Trial of the new plan in one district showed that it was feasible.

We used, until it was exhausted, a supply of carbon tetrachlorid which showed on analysis a small amount of carbon disulphid, insufficient to do harm. For the last 8,000 cases we used a presumably chemically pure drug. Among these cases there were three deaths. The government chemist, Mr. C. H. Wright, analyzed the new supply of the drug and found it far from chemically pure. A sample of the drug sent to New York was too small for adequate analysis; it showed, however, a fair amount of impurity of unknown nature.

Protocols of the necropsies in the three fatal cases are given below:

FATAL CASE 1.—*History.*—A boy, aged 7, an East Indian of Madrasi parentage, was treated, Tuesday morning, August 22, with 28 minims (1.75 c.c.) of carbon tetrachlorid. Magnesium sulphate was left with his parents with instructions to give it at the end of two hours. On Thursday the mother reported that the boy was ill. Subassistant Surgeon Kalamkar reported that his illness was not severe. On Friday afternoon, the district medical officer was asked to see him, and he kindly attended him until the end, giving him careful symptomatic treatment. The boy refused to enter the hospital till Saturday, and died early Sunday morning. During the interval from Tuesday until his death, he passed nearly fifty ascarids by mouth and by rectum.

Clinical Course (Reported by Dr. D. C. Ogilvie, District Medical Officer, Navua).—When seen on Friday, August 25, at 5 p. m., the boy was semicomatose, occasionally uttering a cry, and pressing his abdomen with his hand as if in pain. He could not be sufficiently aroused to speak. The abdomen was very tympanitic, the liver, slightly enlarged. The heart was beating strongly, about 80 a minute. There were no

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* The treatments described in this paper were given during the progress of a campaign for the control of hookworm disease, conducted by the government of Fiji in cooperation with the International Health Board of the Rockefeller Foundation.

1. Lambert, S. M.: Carbon Tetrachlorid in the Treatment of Hookworm Disease: Observations in Twenty Thousand Cases; J. A. M. A. **79**: 2055-2057 (Dec. 16) 1922.

murmurs. The heart sounds were clear. The patient was in a state of semicoma. The pupils were dilated. The knee-jerks were absent. The corneal reflex was present. There was marked trismus. Occasionally there occurred clonic convulsions of the arms and legs lasting for only a short time. The temperature was normal.

Enemas were given and were returned clear. On Friday the patient passed urine naturally. Trismus interfered with the administration of medicine; what was given was for the most part vomited. On Saturday the coma was deeper. The corneal reflexes were absent. Clonic convulsions were more frequent. Trismus was unaltered. The bladder was distended with urine. The temperature was 102.4 F. Treatment on this day was unavailing; the pulse grew weaker in the night, and the boy died at 1 o'clock, Sunday morning.

Necropsy (Reported by Dr. D. C. Ogilvie).—The body, examined at 11 a. m., August 27, ten hours after death, was well nourished, with no external signs of disease. The abdomen was protuberant from the presence of tympanites. The heart muscle was rather pale, but presented no marked pathologic change. Antemortem clots were present in both ventricles. It weighed 4 ounces (113 gm.). The lungs were normal. About 2 drams of fluid was present in each pleural cavity. The liver was enlarged, weighing 25½ ounces (725 gm.). Its appearance was most striking, being of a yellow putty color, with the surface beneath the capsule dotted closely with small petechial hemorrhages. On section, the outline of the lobule was obscured by the degenerative changes. The bile ducts were patent. The kidneys were congested, and showed macroscopic evidence of cloudy swelling. The weight of the left kidney was 2½ ounces (70 gm.); right kidney, 3¼ ounces (92 gm.). The bladder was distended, and contained urine and gas. The urine contained a small amount of albumin; acetone was present, but no sugar. The stomach presented a small area of inflammation, with small submucous hemorrhages on the posterior wall. The intestine was moderately distended with gas. Fifty ascarids were found, most of them alive. The intestine contained no feces, but many worms were seen full of ingested feces. Twenty *Trichuris trichiura* worms were also discovered, but no hookworms. In the second part of the duodenum there was a coiled mass of thirteen ascarids, distending the intestine but not packed so tightly as to cause obstruction. Nothing abnormal was found in the large intestine.

The diagnosis was death from carbon tetrachlorid poisoning.

Dr. S. T. Darling of Baltimore examined specimens of the liver and kidney from this case. The liver showed a very severe necrosis of the central and intermediate zones of the lobules. Perhaps from one half to two thirds of the liver substance had been destroyed. There was an associated cellular proliferative change around the bile ducts. The kidneys appeared normal.

Immediately after this death we had from the same area, within a period of three weeks, five patients who became ill in the same manner. I saw two of them. Both were seriously ill. To the first, a small child of 3 who was unable to stand and was carried to the laboratory in her father's arms, I gave 6 drops of oil of chenopodium. When she was brought in one could see the intestines writhe beneath the thin abdominal walls. She had passed a number of ascarids, estimated by the parents at thirty or forty, and I believed that she still suffered from these. The next day she was all right, after passing about sixty more worms. The four other persons who developed serious symptoms were immediately taken to the hospital and given santonin. They passed ascarids numbering from nearly 100 to more than 150. When they were relieved of these, their symptoms disappeared.

FATAL CASE 2.—*History.*—An Indian boy, aged 5 years, whose parents were Madrasi born, until three weeks previous to treatment lived at Naitata, Navua. He was treated September 27, with 15 minims (1 c.c.) of carbon tetrachlorid. Magnesium sulphate was said to have been given two hours later. The patient became sick on the 28th. He was taken to the Colonial Hospital on the 29th, and died three hours after admission.

Necropsy (reported by Dr. Basil M. Wilson, Resident Medical Officer, Suva Colonial Hospital).—The body was well nourished. The liver showed many small petechial hemorrhages under its capsule. Otherwise the organ appeared normal and healthy. The other organs appeared healthy. A portion of the liver and one kidney were removed for microscopic examination. More than 100 roundworms (*Ascaris lumbricoides*) were found in the gastro-intestinal tract.

FATAL CASE 3.—At the end of October the third death occurred. The postmortem examination gave the same findings in the liver that were shown in the other two cases.

Specimens of liver and kidney from Cases 2 and 3 will be available for diagnosis.

A striking feature in connection with these deaths in a comparatively small community is the fact that, although they were given wide publicity, they had no hindering effect on our campaign. No one refused to take the treatment because of the fatalities, and in one district, where examination showed so light an infection that we did not want to carry on mass treatment and had instead established a dispensary, we were overwhelmed the first day by the rush of applicants, and in a few days treated nearly the whole population.

MODIFICATION OF CARBON TETRACHLORID TREATMENT

After our experience with the heavy *Ascaris* infection in Navua, it was thought wise to modify the treatment for young children by adding to the carbon tetrachlorid a vermifuge more effective for *Ascaris*. Oil of chenopodium is considered such a drug. It was added in the proportion of one part of chenopodium to eleven parts of carbon tetrachlorid. The dose of the mixture remained at 3 minims (0.2 c.c.) for each year of age. This meant 2¾ minims of tetrachlorid and ¼ minim of chenopodium for each year. We have now treated with this dosage several hundred persons, many of whom have had fairly severe *Ascaris* infections. The worms have all been removed dead. The mixture is not disagreeable to take, and children have not objected to it. The oil is held in a perfect solution in the tetrachlorid. The drugs may quite properly be given in the same proportions to adults in the accepted dosage of from 50 to 60 minims (3 to 4 c.c.).

TREATMENT OF PREGNANT WOMEN

Pregnancy is a condition in which the dire effects of hookworm disease are dramatized most vividly. This aspect of the infection is of first importance to district medical officers in Fiji, for those with a large Indian clientèle, it would seem, have among their obstetric cases a number of deaths each year of mother or child, or both, as a result of hookworm disease.

Oil of chenopodium is said to be contraindicated in the case of pregnant women, and these form an appreciable portion of a population whose women begin to marry at the age of 11 or 12 and have large families. In the first months of our campaign, these women made a large addition to our list of persons excluded from treatment for medical reasons, and consequently they constituted an extensive source of reinfection for those cured by our treatment. In June, 1922, we began treating all women with carbon tetrachlorid, and up to October we had had no case of abortion, though some hundreds of pregnant women had been treated.

CONCLUSIONS

The present paper and that of December 16, 1922, present rather full evidence drawn from 50,000 treatments with carbon tetrachlorid.

1. Carbon tetrachlorid has shown itself to be the best vermifuge for the treatment of hookworm disease in a country where *Necator americanus* predominates.

2. The drug is palatable, requires no preparation of the patient, and, when pure, is apparently not toxic—all of which features are of advantage in a popular campaign.

3. Forty-two thousand persons were treated without morbidity or mortality from the drug. Among 8,000 cases subsequently treated with supposedly pure carbon tetrachlorid, three fatalities occurred. Chemical examinations, however, disclosed that this particular lot of carbon tetrachlorid was far from pure.

4. We emphasize the necessity for a pure supply of this drug.

5. It is possible that a dosage of 3 minims (0.2 c.c.) for each year of age with an adult dose of from 45 to 60 minims (3 to 4 c.c.) is larger than is desirable.

6. Where there is a heavy infection with *Ascaris*, the results are improved by the addition of oil of chenopodium.

TREATMENT OF THE MENINGEAL FORM OF ACUTE ENCEPHALITIS WITH ANTIMENINGOCOCCIC SERUM

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Apropos of the recent report by Helmholz and Rosenow [1] of three cases of acute encephalitis treated with specific serum, it is of interest to record the striking effect of nonspecific serum in a case of acute encephalitis of the meningeal form.

REPORT OF CASE

A schoolboy, aged 15, was a good scholar, but always nervous and inclined to be "twitchy." He was well until the night of Nov. 28, 1921, when there was slight fever and digestive disturbance, which was not taken seriously. No physician was called until the morning of Nov. 30, 1921, when he was observed by Dr. F. R. Lyman of Hastings, N. Y., who suspected meningitis. At 6 p. m. on the same day, when I saw him, the temperature was 102, the pulse 84, and the respiration 18. He was clear mentally, seemed cheerful and was fairly comfortable. There had been repeated vomiting for twenty-four hours, but no diarrhea. The patient was somewhat excitable. The eyes were suffused, and there was a slight lag of the left eyeball on external rotation. The pupils were equal, but rather small. The neck was not stiff, but the head came forward in a jerky fashion. The throat and ears showed nothing significant. Neither Kernig nor Babinski sign was found. The knee jerks were strongly exaggerated. The leukocytes numbered 8,020; the polymorphonuclears were 87 per cent. No diagnosis was made, but it was apparent that a serious infection was developing. On the afternoon of December 1, the patient was seen by Dr. Evan Evans, who found a well developed picture of meningeal irritation. The boy had vomited and was delirious all night, the temperature having reached 103. At 7 p. m. the boy was almost comatose, and could be roused only with difficulty and then presented a marked delirium. The neck was very rigid. Kernig's sign was positive on both sides. There was a positive Babinski sign on the right. The left abdominal reflex was absent, the right was present. The knee jerks were present and not exaggerated. There was marked hyperesthesia. The pupils were small. The eyeballs were so rolled up beneath the lids that the character of the ocular movements could not be determined. The pulse rate was 80 and regular. The respiration was very irregular and jerky, with periods of rapid and shallow breathing, alternating with slow and rather irregular respiration which suggested profound interference with the respiratory center. The lumbar puncture gave 45 c.c. of water clear fluid under marked increase of pressure. There were 85 cells per cubic millimeter, 83 per cent. of them mononuclear in type. Globulin was increased to one plus. Subsequent culture was negative, and the smear showed no organisms.

In view of the rapid development of the meningeal picture, with obvious involvement of the respiratory center, and the very serious general condition of the patient, it was decided to give energetic treatment with antimeningococcic serum. It was felt that without some active measures the patient would die, and that attempts to secure a so-called nonspecific serum effect were justified. Accordingly, 25 c.c. of antimeningococcic serum was at once injected intraspinally. One hour later, 50 c.c. of antimeningococcic serum was injected intravenously. The usual precautions to determine sensitiveness had previously been taken. The patient passed a stormy night and exhibited an irregular and exaggerated, Biot type of respiration with moderate cyanosis. At 6 a. m., December 2, 60 c.c. of serum was given intravenously. At 8 a. m., lumbar puncture was done; 30 c.c. of somewhat cloudy fluid was withdrawn, and 20 c.c. of serum injected into the subarachnoid space. On this date the patient developed weakness of the left external rectus muscle and was apparently unable to swallow. He remained semicomatose, lost control of his sphincters, and was in grave condition. At 6 p. m., 40 c.c. of spinal fluid was withdrawn. This contained 980 cells. No serum was given. December 3, at noon, after a less stormy night, the maximum temperature was 104, and the pulse was 84. The patient had resumed the ability to swallow, and obeyed simple orders, but was profoundly weak and somnolent. There were myoclonic twitchings. Forty cubic centimeters of cloudy fluid was withdrawn, but no serum was given. December 4, the patient had improved, and began to speak in monosyllables; there was less twitching and less meningeal irritation. From this time rapid improvement began. The temperature became normal, December 7. There was complete paralysis of the left external rectus, moderate left ptosis, and some weakness of the left side of the face. Otherwise there were no residual manifestations. The patient had a very severe serum reaction, but, except for this, made an uncomplicated recovery. The left external rectus remained weak for several months, but eventually was restored to normal.

COMMENT

The somnolence, the ocular and facial palsy, the myoclonia, the clear cerebrospinal fluid with small increase in cells and a high percentage of mononuclears, the absence of organisms on repeated smear and culture, the season and the fact of the not infrequent prevalence of the disease in the region seemed to classify this case definitely as an encephalitis.

It was apparent to observers that the effect of antimeningococcic serum in this case of acute encephalitis of the meningeal type was striking and beneficial. From the time of its administration, symptoms ceased to advance, and within thirty-six hours, the patient, who had not been expected to survive, seemed out of danger.

This case is not recorded in an effort to disparage attempts to develop a specific serum for the treatment of encephalitis. It illustrates, however, the point made by Helmholz and Rosenow concerning the care with which therapeutic results must be weighed, and the importance and probable value of nonspecific serum effects in infections of the character described.

49 East Fifty-Third Street.

1. Helmholz, H. F., and Rosenow, E. C.: Three Cases of Acute Encephalitis Treated with Specific Serum, J. A. M. A. **79**: 2068 (Dec. 16) 1922.

A SIMPLE AND RAPID TEST FOR ALBUMIN AND OTHER URINARY PROTEINS *

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While it is true that albuminuria does not always denote renal disease, the inescapable fact remains that albuminuria is almost always the earliest sign of nephritis; and it is generally discoverable months or even years before the symptomatology, the blood chemistry or the most sensitive of renal function tests become diagnostic.[1] Neither clinical nor insurance medicine has as yet taken as thorough cognizance of the importance of minimal amounts of albumin or of the relation of dilution of the specimen to amount of albumin as statistics justify, and chiefly because the albumin tests in common use do not enable one to make precise distinctions between truly persistent and genuinely intermittent albuminurias.

VALUE OF VARIOUS TESTS

As a matter of technical practice, we are accustomed to the use of criteria which are not truthfully informative. For instance, if one uses Heller's test as the criterion, as many do, one is likely to miss altogether or to appraise as negligible the fainter reactions found in more dilute specimens, i. e., specific gravities running lower than about 1.016, when the same amount of albumin in proportion to the concentration of the specimen would have appeared distinctly unfavorable had the specific gravity of the specimen been 1.028. Observations of nephritics or a few dilution experiments will demonstrate this and teach us that, in our daily work, we are employing standards which lead us to classify as intermittent cases of albuminuria which are as a matter of fact persistent, and only apparently intermittent.

Much has been written about what Cammidge [2] has aptly called the "pitfalls" of Heller's and the heat test; and it is well known that the textbooks teach us not to rely on any one albumin test but to check up the one which may have been employed with one or two other tests. Thus, Heller's, and the heat test in some one of its modifications, have come to be preferred, and they are performed far more frequently than other tests, although strangely enough they have some of the same "pitfalls."

Both Heller's and the heat test serve their purpose beautifully if used understandingly and in a purely qualitative way. They fail us only when we try to stretch them, as it were, to get quantitative results; the truth of the matter being that, for want of better methods, we have been obliged to employ these tests as makeshifts, and we are so accustomed to them that the potential value of more accurate methods is not always fully appreciated. How gross and illusory are the deductions which we have been drawing from the reactions exhibited by the more commonly used albumin tests, a few simple experiments with checks, if carefully made, will show; and, under the impression that a closer and more truthful means of dealing with albuminuria would prove to be advantageous, our experimental work was undertaken.

In 1889, Roche, layering with a 20 per cent. solution, proposed the use of sulphosalicylic acid as a precipitant for albumin in urine. Since then, the value of this reagent has impressed numerous other workers; primarily, MacWilliam,[3] who showed its differential value, and recently, Sanford,[4] who gives it the preference as a qualitative test for albumin in urine. Kober [5] has recommended it as a protein precipitant in connection with nephelometry, and Folin and Denis,[6] in connection with turbidimetry.

The physicochemical state of proteins in milk, urine, etc., has been the subject of much study, and the work on hydrogen ion concentration initiated by Sörenson has led to the investigation of protein behavior from this aspect. Pauli, Michaelis and others have contributed information regarding the flocculation of protein materials, and the work of Hanzlik [7] is of special interest with reference to the precipitation of serum albumin.

THE AUTHOR'S TEST

Based on these and our own [8] experiences, by a process of experimental exclusion a test has been developed that has been thoroughly tried and found exceedingly satisfactory for both qualitative and quantitative testing for albumin in urine,[9] with a reagent consisting of a solution of 5 per cent. sulphosalicylic acid and 20 per cent. sodium sulphate. In fact, the test appears to be so reliable that checking up with other tests is rarely, if ever, necessary.

The reagent is highly acid, approximately equivalent to tenth normal hydrochloric acid, and so thoroughly loaded with salt that, when added to an equal volume of urine, a mixture is obtained that is quite uniform in specific gravity, hydrogen ion concentration and salt content, irrespective of the physicochemical constants peculiar to the particular urine tested.

RESULTS

Tests were made on more than 60,000 urines in the Prudential and other laboratories, with these results: Urines loaded to great excess with uric acid, urates, phosphates, oxalates, urea, creatinin and other urinary constituents have invariably failed to produce any cloudiness at all with the reagent. A number of urines containing resinous and emulsifying substances which gave false Heller's and heat reactions did not develop

* From the Prudential Laboratory.

1. In a private communication, Dr. William G. Lyle, director of the Pathological Laboratory, Roosevelt Hospital, and Harriman Research Laboratory, informs me that, in an unpublished statistical study of 2,500 records of patients in whom, in addition to routine urinalysis, blood chemistry, renal function, diet and dye tests were made, the data disclosed albuminuria as the earliest sign of renal disease.

2. Cammidge, P. S.: Pitfalls in the Examination of Urine, Polyclinic **9**: 73-76 (June) 1905.

3. MacWilliam, J. A.: A New Test for Albumin and Other Proteids, Brit. M. J. **1**: 837-840 (April 18) 1891; On the Use of Salicyl-Sulphonic as a Test for Albumoses and Peptones, ibid. **1**: 115 (Jan. 16) 1892.

4. Sanford, A. H.; Connor, H. M.; Magath, T. B., and Heck, B. S.: The Significance of Slight Albuminuria, Collected Papers of the Mayo Clinic **13**: 1921, reprinted from the Proceedings of the American Life Convention, pp. 54-70, 1921.

5. Kober, P. A.: Technical Applications of Nephelometry, J. Indust. & Engin. Chem. **10**: 556 (July) 1918; Nephelometry in the Study of Proteoses, J. Am. Chem. Soc. **35**: 290 (March) 1913.

6. Folin, Otto, and Denis, Willie: The Quantitative Determination of Albumin in Urine, J. Biol. Chem. **18**: 273, 1914.

7. Hanzlik, P. J.: Precipitation of Serum Albumin and Glutin by Alkaloidal Reagents, J. Biol. Chem. **20**: 13, 1915.

8. Exton, W. G.: Rapid Tests for Albumin, Proc. A. Life Ins. M. Directors, 1921, p. 188.

9. A liter of the reagent is made by dissolving 200 gm. of sodium sulphate (crystals) in from 700 to 800 c.c. of distilled water. After cooling down to about 35 C., 50 gm. of sulphosalicylic acid is dissolved by stirring and without further heating, and enough water is then added to make 1 liter. The reagent is not sensitive to light, and keeps indefinitely. The test is performed by mixing equal parts of urine and reagent, and warming. Even the warmth of a match suffices. Boiling does not spoil the test, but is unnecessary. Albumin-free urines so treated give a perfectly clear, transparent mixture; albuminous urines, a clouding with the degree of turbidity directly proportionate to the concentration of albumin.

perceptible cloudiness with the test, and the addition of oily, gummy and resinous substances to normal urines has likewise given consistently negative results. Numerous urines which gave misleading reactions with Heller's or the heat test because of substances which had been added to preserve the specimens, usually thymol or excessive amounts of formaldehyd, were found to be free of interference from such substances if the mixture was examined when warm. Thus, if read while the mixture is warm, the test appears to show serum albumin and globulin, exclusively.

When the mixture is cold, other proteins occasion opalescence or cloudiness, which clears rapidly on warming, the only exception being Bence-Jones protein, which gives a precipitate so characteristic that independent observers have used the identical expression to describe it. It looks exactly like "curdled milk," and does not clear up unless boiled.[10]

Secondary proteoses and protamins from spermatozoa fall out of solution and cause opalescence when the test cools. The microscope will differentiate these, and no confusion arises because the albumin precipitate remains unchanged whether the mixture is warm, boiled or cold, thus making the test practically specific for serum albumin and globulins.

Experiments with nucleoproteins extracted from yeast and thymus gland have proved negative; but, as these are not identical with urinary nucleoprotein, such experiments are merely suggestive. Of the last 60,000 urines examined in the Prudential laboratory, none contained enough nucleoprotein to be evidenced by the new test, although Heller's test occasionally suggested its presence; and the material of several large clinical institutions, during the last year, has not furnished a single specimen of urine containing a sizable amount of nucleoprotein. Evidently such urines are rarer than Bence-Jones specimens. The sensitivity of the test for nucleoproteins has, therefore, not been definitely established, and it is advised that a test for nucleoprotein be made separately by treating the diluted urine with acetic acid or Ott's reagent.

Urines that cannot be cleared may be examined for albumin by comparing the test as performed in the regular way with a control made by diluting the cloudy urine with an equal volume of clear water. The difference in cloudiness between test and control represents the amount of albumin in the specimen.

The most valuable feature of the test is its characteristic of inducing cloudiness directly proportionate to the concentration of albumin in the specimen, the difficulties in this respect encountered by Marshall, Banks and Graves [11] having been overcome, as already pointed out, by safely buffering against variations in salt content and hydrogen ion concentration through loading the reagent with salt and making it so acid that, when diluted with an equal volume of urine, the conditions necessary to constant uniformity of flocculation are attained, which makes a test truly quantitative. Dilution experiments with albuminous urines and a wide variety of normal urines to which given amounts of serum albumin were added have shown very satisfactory quantitative results with optical methods.

10. Through the kindness of Dr. H. M. Mosenthal of New York, and Dr. A. H. Sanford of the Mayo Clinic, Bence-Jones specimens were received, and we were favored with their observations on the nature of the flocculation with our reagent.

11. Marshall, J. T. W.; Banks, H. W., and Graves, S. S.: A Study of Proteins in Urine, Arch. Int. Med. **18**: 250-262 (Aug.) 1916.

SUMMARY

This differential test for proteins in urine, with a single clear, watery reagent, keeps indefinitely and has these characteristics:

1. It is an exceedingly simple, rapid and accurate differential test.
2. It does not react with the bases or salts found in urine.
3. It does not react with resinous and similar foreign substances.
4. It is free of the inaccuracies of layering.
5. It does not require a fixed time for observation.
6. It gives a definite prompt and reproducible end-point.
7. It shows albumin plainly in specimens that cannot be cleared.
8. It is a shade less sensitive than the heat salt and acetic acid test.
9. It is specific for serum albumin-globulins, Bence-Jones protein and secondary proteoses.
10. It gives uniformly truthful quantitative clouds or precipitates adapted for optical measurement.

ACTION OF STRONGER SOLUTIONS OF MERCUROCHROME IN EARLY GONORRHEAL INFECTIONS

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The advancement in the treatment of gonorrhea has not kept pace with that of many diseases. It is generally agreed that efforts to improve on the more or less standard forms of treatment have been relatively unavailing. The introduction of the colloidal silver preparations marked the biggest advancement in recent years and, still more recently, the development of the mercury derivatives, as carried on by Young and his associates,[1] offered hope for an immediate sterilizing injection. As in the case of arsphenamin, the chemicals did not effect a cure in a single injection, though Frontz [2] has about eight well developed cases in which the process was absorbed after two or three injections of 1:1,000 acriflavine.

In spite of adverse criticism, mercurochrome-220 soluble possesses some commendable qualifications. It is a solution and not a colloidal suspension, and therefore penetrates animal tissues better. It has great germicidal value, a solution of 1:1,000 killing *Bacillus coli* and staphylococci in urine in one minute. The toxicity is negligible in ordinary dilutions, and there is no precipitate in urine. Its irritating properties would seem to be the only unsolved problem in its use.

It has been shown that "in thirty-eight hours after innoculation the gonococcus has only begun to penetrate the epithelial tissues," [3] but that the penetration is a progressive one and extends to the subepithelial tissues. In the original experiments on mercurochrome it was shown that the urethral surface cells were most intensely stained, but that there was a diminishing amount of the stain toward the submucosa. The failure to get the germicide in sufficient concentration into the deeper epithelial layers and the glandular structures,

1. Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract: "Mercurochrome-220," J. A. M. A. **73**: 1483 (Nov. 15) 1919.

2. Frontz, W. A.: Personal communication to the author, Oct. 26, 1922.

3. Fenger, quoted by Keyes: Modern Urology **1**: 59.

is, of course, the reason for failure to accomplish a quick cure.

It seemed logical to me, therefore, that further study of the action of the germicides might be useful. After observing the action of the weaker solutions of mercurochrome-220 soluble in the urethra, a 2 per cent., then 3, then 4, 5 and even 6 per cent. solutions were tried. More favorable results followed the use of the stronger solutions. There was evidence that the use of the dye alone did not give as uniformly good results as when it was used alternately with one of the colloidal silver suspensions—argyrol or its equivalent. Those patients applying for treatment early appeared to do better, and I began to follow a definite method, as the cooperation of the patients, all private, was good.

In those cases in which the patients applied for treatment within twenty-four hours after the appearance of a discharge, a microscopic examination was made and repeated every few days. The three glass test of the urines was made at each visit, and it was ascertained whether the previous treatment had been extremely irritating, and if any untoward symptoms were developing. Each morning a small quantity of 5 per cent. mercurochrome-220 soluble was slowly injected with a blunt syringe, and was retained from three to five minutes. When considerable burning was produced, a prescription calling for oil of santal, 10 minims (0.6 c.c.), three times a day, after eating, was given the patient. On his return in the evening, a 25 per cent. argyrol solution was substituted for the mercurochrome. This was a daily routine, and was varied only in the hyperactive cases or in those prolonged and complicated.

I have been able to follow forty-six cases until an apparent cure was effected. They show several points of interest. Thirty-one patients, or 67 per cent., had had previous attacks. One had had as many as seven, the last one occurring three years ago. Two years ago he was referred to me for a slight morning drop, and on removal of an anterior stricture the trouble cleared. He had no evidence of other remaining infection. One had a history of "at least ten" attacks, the last one occurring while in the service three years before. He has never had evidence of existing posterior involvement since coming under my observation, and there is no evidence of damage resulting from the former attacks in the anterior urethra. It is hardly likely that the attacks of these men were recurrences.

In age, the youngest was 19; the oldest two were 51 and 54. The more severe symptoms were complained of by the younger men, though the fact that they had had few or no previous attacks, and were exposed to the more virulent organisms in persons without previous attacks, probably accounts for the condition.

Where there was considerable active discharge, the mercurochrome injection produced considerable burning; but this was complained of only at the first visit. This burning rarely lasted longer than twenty minutes, and never was more severe than that accompanying the act of urination which one often sees during a hyperactive stage. In this series there are only five cases in which the 5 per cent. mercurochrome-220 soluble was not used at first. One patient (Case 33) came in complaining of excruciating pain on movement of the penis. Examination disclosed considerable redness and edema of the whole organ, and a slight watery discharge negative for gonococcus. The history revealed that the injury was not a result of the urethritis, but that the contrary was true. A positive smear developed in thirty-six hours, however, and no mercurochrome could be used for a period of one week.

A disappearance of purulent discharge was effected by the third day in 75 per cent. of these cases. As long as there was macroscopic pus there were usually gonococci.

In ten, or 21.7 per cent., of the cases, posterior symptoms developed, the severity of which could not be found to differ from the usual incidences of such.

In only one case was there a folliculitis reaching any unusual proportions. Following a folliculitis two years previous, a hardened nodule, 3 mm. in diameter, had persisted, and became the seat of a new enlargement which required external incision. The lesion healed with no appreciable scar or nodule. In no case were there symptoms of cowperitis. Arthritis occurred in Case 33, in which the penis had been traumatized. The patient's right wrist became involved within ten days, but recovered under the usual care, and no further joints were involved. The relation of the trauma to the bacteremia is interesting.

Several men presented clear urines and no discharge after three or four days, but the injections were carried on a few days afterward to take care of any possible source of further trouble. Often the urines were examined, but no treatment was given after five or six days. One patient did not return after the first injection for a year, when he came in with a new infection and reported that "one injection had cured" him. The duration of trouble in the series is given in the accompanying table.

DURATION OF TROUBLE

Cases Number	Per Cent.	Duration
32	69.8	7 days
2	4	10 days
3	6.5	2 weeks
3	6.5	2 weeks
2	4	3 weeks
5	10	6 weeks
1	2	15 weeks

Approximately 70 per cent. of the cases reached an apparent cure in one week, and in ten days 75 per cent. were cured.

Freedom from symptoms, both objective and subjective, constituted a "cure." Fully one half of the patients have been dismissed more than a year. There have been no recurrences.

COMMENT

As was stated in the beginning, the study made here was in an effort to get greater efficiency from drugs theoretically capable of producing better results. The increased strength was used to get killing concentrations after penetration. Alternating the colloid with the solution was done as it seemed to produce the best results, though I am not aware of any synergistic properties that either chemical has. It is possible that even a weaker solution of mercurochrome-220 soluble, acriflavine, or similar antiseptics would have been adequate substitutes for the 25 per cent. argyrol. There has been no attempt to offer new records for quick cures. So far as the method of treatment is out of the ordinary, mention of it seemed justifiable.

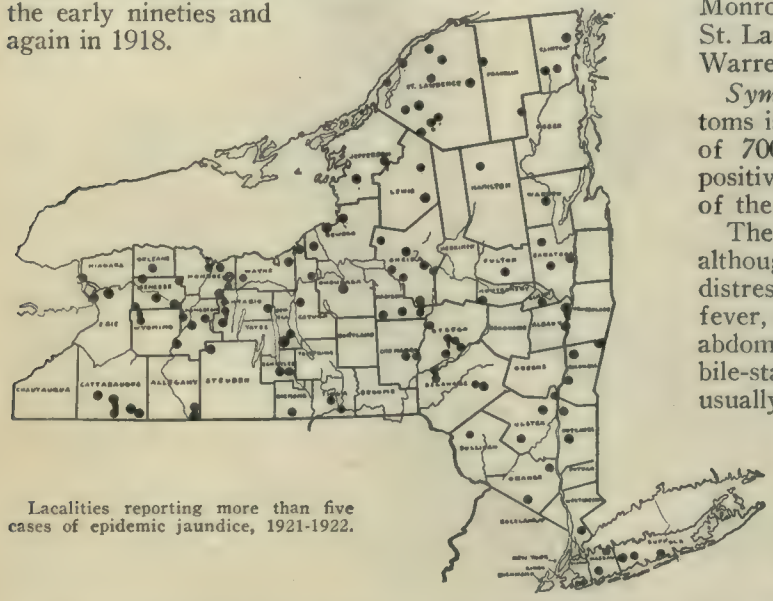
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EPIDEMIC JAUNDICE IN NEW YORK STATE, 1921–1922

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During the winter of 1921-1922, New York State was visited over a very wide area by so-called infectious or epidemic jaundice. This disease was present at the same time in other parts of the country. Previous to the epidemic, localized outbreaks had been studied by the New York State Department of Health in the village of Philadelphia, Jefferson County, in the winter of 1915-1916; at Berkshire, Tioga County, in March, 1920, and in Chenango County during February, 1921. The disease as it appeared at Cooperstown, N. Y., during the recent state-wide epidemic, has already been described.[1]

It may be noted that during 1896 there occurred at Albany a well-marked outbreak of epidemic jaundice. At Hudson, N. Y., a similar epidemic occurred a few years previously. Reports from practitioners indicate that at certain localities in Delaware County, Allegany County and especially in St. Lawrence County repeated outbreaks of epidemic jaundice have occurred at varying intervals during the last thirty years. Up to 100 cases appear in some of these reports, and nowhere were uncomplicated cases recorded which terminated fatally. Multiple cases in households and in schools were frequently found in these earlier outbreaks. This history is interesting as having a possible relation to the outbreaks of influenza in the early nineties and again in 1918.



Lacalities reporting more than five cases of epidemic jaundice, 1921-1922.

The accompanying map shows localities in New York State which reported more than five cases of jaundice during the recent epidemic. Nearly all of these records are for the period between September, 1921, and March, 1922, the interval when the outbreak was state-wide in its distribution. For several of the foci indicated on the map more than a hundred cases were recorded, but the average number of cases for each focus was not more than thirty.

1. Williams, Huntington: Epidemic Jaundice: Report of a Local Outbreak at Cooperstown, N. Y., During a State-Wide Epidemic, New York State J. Med. **22**: 150 (April) 1922.

ANALYSIS OF SEVEN HUNDRED CASES

A detailed study of 700 cases of epidemic jaundice was made by the state sanitary supervisors in accordance with plans drawn by Dr. Edward S. Godfrey, Jr., director of the division of communicable diseases of the state health department. These cases represent approximately half the known cases that occurred during the epidemic in New York State (excluding New York City), and in addition there were many cases that were so mild that they were not seen by a physician or recorded in any way. The 700 cases here analyzed were reported from the twenty-five counties of Albany, Broome, Columbia, Delaware, Erie, Franklin, Genesee, Jefferson, Livingston, Madison, Monroe, Niagara, Ontario, Orange, Oswego, Otsego, St. Lawrence, Seneca, Steuben, Sullivan, Tioga, Ulster, Warren, Wayne and Wyoming.

TABLE 1.—OCCURRENCE OF SYMPTOMS

Symptom	Cases Positive		Cases Negative		Not Recorded	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
Jaundice	647	92.4	11	1.6	42	6.0
Anorexia	574	82.0	68	9.7	58	8.3
Nausea	619	88.4	46	6.6	35	5.0
Vomiting	503	71.9	169	24.1	28	4.0
Headache	488	69.7	139	19.9	73	10.4
Constipation	463	66.1	110	15.7	127	18.2
Prostration	211	30.1	81	11.6	408	58.3
Clay-colored stools	558	79.7	46	6.6	96	13.7
Bile-stained urine	617	88.2	10	1.4	73	10.4
Abdominal pain	417	59.6	211	30.1	72	10.3
Fever	524	74.9	105	15.0	71	10.1
Chills	334	47.7	293	41.9	73	10.4
Limb pains	235	33.6	297	42.4	168	24.0
Diarrhea	106	15.2	442	63.1	152	21.7
Conjunctival congest.	66	9.4	103	14.7	531	75.9
Epistaxis	61	8.7	525	75.0	114	16.3
Herpes	28	4.0	536	76.6	136	19.4
Hiccup	98	14.0	478	68.3	124	17.7
Unusual prevalence of rats on premises	167	23.9	262	37.4	271	38.7

Symptomatology.—Each of eighteen common symptoms is recorded in Table 1 for every case in the series of 700 that were studied. Symptoms are reported positive, negative or not recorded, and the percentage of the 700 cases in each group is given.

The disease appeared to be mild in character, although the gastro-intestinal symptoms were often distressing. In typical cases there was a slight initial fever, with several days of anorexia, nausea, vomiting, abdominal pain, constipation, clay-colored stools and bile-stained urine. After this period, which lasted usually from three days to a week, jaundice appeared and the abdominal symptoms decreased markedly in severity. The jaundice persisted for varying periods from several days to several weeks. It was sometimes observed only in the eyes, but in other cases it was widespread over the body and of a deep shade. Convalescence was almost invariably slow, and was marked by prostration, very frequently of a severe type. In rare cases when seen in the prejaundice stage, there was noticed a faint rash on the arms and upper chest, together with a superficial tenderness and roughening of the skin in these parts. As a rule, however, no record was made of this symptom. The physician frequently considered the disease intestinal grippe, perhaps because the jaundice epidemic came fairly soon after the pandemic of influenza. In this connection, it is of interest to note that there was a moderate leukocytosis present in half of the cases at Cooperstown, which were studied early in the disease, and in no case was there reported a leukopenia.

Five Atypical Cases.—Throughout the epidemic there occurred only five known fatal cases, in each of which there were complications. Two of these were in infants born to mothers ill with jaundice at the time of delivery. One infant was born jaundiced, and lived only thirty-six hours. The other was born with clear skin, but

TABLE 2.—SEX DISTRIBUTION

	Number	Per Cent.
Males	353	50.4
Females	345	49.3
Not recorded	2	0.3

on the second day after birth developed a yellow tint over the body. On the third day the baby began to bleed profusely from the bowel. This condition continued at intervals until the death of the child on the fourth day. The third fatal case was that of a girl, aged 5 years, who had very marked jaundice for two weeks, with constipation and clay-colored stools. The

TABLE 3.—AGE DISTRIBUTION

	Number	Per Cent.
From 0 to 4 years	46	6.6
5 to 14 years	362	51.7
15 to 24 years	127	18.2
25 to 34 years	50	7.1
35 to 44 years	59	8.4
45 to 54 years	23	3.3
55 to 64 years	20	2.9
65 to 74 years	3	0.4
75 to 84 years	2	0.3
85 to 94 years	1	0.1
Age not recorded	7	1.0
Total	700	100.0

child had an irregular temperature during this time, with marked prostration, similar to that of influenza. There were signs of encephalitis, and the chemical test for bile was positive in the spinal fluid. The fluid was of clear color, and gave a low cell count. Another fatal case was that of a girl, aged 6 years, whose jaundice was complicated by existing renal disease due to scarlet fever contracted a year previously. In this case the attending physician attributed death to acute nephritis. The remaining fatal case was that of a boy, aged 14 years. He developed jaundice, which cleared up after a week's duration. Two weeks after this the jaundice returned and became very marked. There developed typical symptoms of meningitis at this time, and the child died four days after the second appearance of the jaundice.

Epidemiology.—It is of interest to note that (1) of the 700 cases studied, the sex distribution is almost exactly equal (50.4 per cent. males); (2) a little more than half (51.7 per cent.) of the cases were in the school age group, from 5 to 14 years, and outbreaks often centered in a school; (3) in more than half the cases, the dates of onset were during the months of November and December, 1921, and (4) multiple cases in a household or a school were very common.

Dates of Onset.—Of the 700 cases, the dates of onset in 672 cases were between Sept. 1, 1921, and March 2, 1922, and are recorded in Table 4. In addition, the onset in seventeen cases occurred between March 1 and Aug. 31, 1921, and in eleven cases there was no recorded date of onset.

Multiple Cases in Household or School.—Of the cases, 421, or 60 per cent., were multiple, that is, more than one case occurred in a household. The maximum number in a home was eight. In 83 instances, there were 2 cases in a household; in 33, 3; in 20, 4; in 7, 5; in 3, 6; in 1 instance, 7; and in 2 instances, 8.

In one instance (at Cooperstown, N. Y.), fourteen children in a one-room school of thirty-six pupils developed the disease, over a period of two and one-half months. In another school, all the pupils but two developed the disease. In a third school, the teacher and also the physician gave the information that nearly every child in the room had had an attack of jaundice, and in a fourth school district in St. Lawrence County, every child but one had jaundice, and in connection with the school outbreak other children in the homes had secondary cases of the same disease. This apparent susceptibility to infectious jaundice among school-children was also noted in an outbreak in St. Lawrence County which occurred about twenty-five years ago. In this connection, attention is again called to the age distribution of the 700 cases here reported.

LABORATORY INVESTIGATIONS

Special investigations were made by the division of laboratories and research of the state health department, with the hope of discovering the specific etiologic agent in this disease. Blood, urine, feces and throat cultures from patients with the epidemic disease were examined, and in no case were positive results obtained in isolating *Leptospira icterohaemorrhagiae* [2] or any other organism of significance.

TABLE 4.—DATES OF ONSET

Investigator	Counties	1921 Sept.	Oct.	Nov.	Dec.	1922 Jan.	Feb.	March	Total
Dr. Edward Clark	Erie, Niagara, Wyoming, Genesee	0	5	18	47	41	6	0	117
Dr. B. R. Wakeman	Livingston, Monroe, Ontario	0	6	58	32	18	0	0	114
Dr. S. W. Sayer	St. Lawrence, Jefferson	9	24	41	28	2	0	0	104
Dr. Huntington Williams	Albany, Columbia	1	4	13	19	25	14	1	77
Dr. W. L. Munson	Franklin, Warren	1	7	12	30	8	0	[illegible]	58
Dr. H. J. Ball	Madison	0	4	11	32	3	1	0	51
Dr. C. R. Hervey	Oswego, Wayne	3	2	14	24	1	0	0	44
Dr. F. W. Laidlaw	Delaware, Sullivan, Ulster, Orange	0	4	13	19	6	0	0	42
Dr. F. W. Sears	Seneca	1	6	6	3	[illegible]	0	0	25
Dr. Huntington Williams	Otsego (Cooperstown)	0	6	6	6	8	0	0	26
Dr. J. A. Conway	Steuben, Tioga, Broome	4	2	3	3	1	1	0	14
Total		19	70	195	243	122	22	1	672
Per Cent.		2.8	10.4	29.0	36.2	18.2	3.3	0.1	100

COMMENT

The causative factor of the epidemic here described has not been determined. There is no evidence that rat-borne or other contamination of human food supplies was of etiologic importance. The relationship is uncertain between this state-wide outbreak and instances

2. Noguchi, Hideyo: Morphological Characteristics and Nomenclature of Leptospira (Spirochaeta) Icterohaemorrhagiae (Inada and Ido), J. Exper. Med. **27**: 575 (May) 1918.

of infectious spirochetal jaundice that have been reported in Japan [3] and in Europe.[4] The identity of the American type and the foreign type of infectious jaundice has never been established. On epidemiologic grounds there is a marked difference, in that the American type seems to be readily communicable by direct contact, and it occurs in quite well-defined outbreaks, especially among schoolchildren. These features are not characteristic of spirochetosis. It is not certain whether epidemic jaundice, which was known to Hippocrates and his disciples, and which is often spoken of as Weil's disease, is a single disease entity, or whether it may result from a number of different etiologic factors. Jaundice was prevalent among the federal troops during the Civil War, and has often been associated with troops in other wars.

Of 700 cases here analyzed, more than half were in children of the school age (from 5 to 14 years). Multiple cases in a household or a school were extremely common. The peak of the epidemic was in November and December, 1921. Marked prostration and slow recovery were characteristics of many cases of the disease. For these reasons, and because of personal observation of the Cooperstown outbreak, I am of the opinion that the epidemic jaundice that occurred throughout New York State during the winter of 1921-1922 was spread by droplet or contact infection from person to person, and that the etiologic agent of this epidemic may have been some unrecognized organism or virus that is carried in the nasopharyngeal secretions [5] of persons ill of the disease.

THE HEART IN PERNICIOUS ANEMIA*

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The death of a patient ill with pernicious anemia, a few hours after a transfusion of blood, with symptoms reported to be those of acute heart failure, brought home to me how little I knew of the heart in this disease. The patient referred to had only 660,000 red corpuscles per cubic millimeter of blood. A series of three blood transfusions was given, resulting in some improvement with the first, a moderate upset with the second, and a severe reaction after the third. This reaction was described by the physician in attendance as being characterized by dyspnea and the disappearance of the pulse at the wrist; the heart sounds remained audible. It began before the transfusion was complete, and persisted until the death of the patient about five hours later.

What was the cause of the attack and subsequent death? Could there have been an embolus to the coronary artery, or could a large clot of blood have impeded the passage of blood through one of the cardiac valves? I was unable to answer these questions with any degree of assurance. In the hope of acquiring some information as regards the cardiac aspects of pernicious anemia, I have examined the postmortem records; and, through the courtesy of Dr. R. C. Larrabee of the blood service, electrocardiograms have been obtained of a number of patients affected by the disease.

No attempt has been made to record the clinical findings, such as murmurs. I believe that the systolic murmurs are usually of greatest audibility over the base of the heart and are especially well transmitted to the carotids. My experience also agrees with that of other observers who find that the murmurs appear first at the base and later extend to the apex, while on the recovery of the patient the murmurs disappear from the heart in the reverse order, i. e., from the base last.

PATHOLOGY

Eleven cases were found in the postmortem records of the Boston City Hospital during the period 1916 to 1921, inclusive. The data may be thus analyzed:

There were six men and five women. One patient was 28 years of age, but the remaining ten were in the age period of 50 to 70 years. Enlargement of the heart of a degree that should be recognized clinically was not found; the actual weights of the hearts were between 240 and 300 gm. in six, and between 300 and 400 gm. in five.[1]

The myocardium was abnormal to macroscopic examination in all but three cases. These did not differ from the others in the duration of the attack, or in the severity of the blood picture. The heart muscle was described as soft, flabby, pale brown, pale red, yellowish and muddy yellow. Microscopic examination, however, revealed the heart muscle to be normal in all but two of the eleven cases. Of these two, one showed a small patch of fibrosis, and the other, large areas of acute necrosis of the fibers. The importance of the findings in the latter is lessened by the possibility of postmortem changes, in that the section was made twenty-two hours after death.

In four instances, the endocardium, especially on the papillary muscles, was mottled and streaked with yellow, the so-called "tigroid" appearance. The epicardial fat was recorded as moderately increased in four cases, and greatly so in two.

The hearts in this group of eleven necropsies were otherwise normal, save for moderate sclerosis of the coronary arteries in four, of the mitral valves in five, and of the aortic cusps in two instances, respectively. These findings are probably best explained as due to arteriosclerosis. They did not differ from those noted in the hearts of other patients of the same age period but not affected by pernicious anemia.

There were no instances of thrombus formation.

ELECTROCARDIOGRAPHIC FINDINGS

Electrocardiograms were taken in the cases of twenty patients, all of whom were ill with a severe attack of pernicious anemia. In but one case was an arrhythmia present. This case was a clear-cut instance of rheumatic heart disease, auricular fibrillation and mitral stenosis, in addition to pernicious anemia. Examination of the tracings revealed nothing that might be considered of diagnostic value as peculiar to pernicious anemia. Some of the details will be cited.

The heart rate was less than 100 a minute in fifteen cases, while the maximum rate was 122.

The P wave was normal.

The P-R interval varied from 0.12 to 0.15 second in fourteen; in five, it was from 0.16 to 0.18 second, and in one, it measured 0.20 second.

3. Inada, Ido, Hoki, Kaneko and Ito: The Etiology, Mode of Infection, and Specific Therapy of Weil's Disease (Spirochaetosis Ictero-haemorrhagica), J. Exper. Med. **23**: 377 (March) 1916.
4. Dawson, B.; Hume, W. E., and Bedson, S. P.: Infective Jaundice, Brit. M. J. **2**: 345 (Sept. 15) 1917. Stokes, A.; Ryle, J. A., and Tytler, W. H.: Weil's Disease (Spirochaetosis Ictero-Haemorrhagica) in the British Army in Flanders, Lancet **1**: 142 (Jan. 27) 1917.
5. Herrman, Charles: Acute Infectious Jaundice (Spirochetosis Icterohemorrhagica), New York M. J. **107**: 1068 (June 8) 1918.

* From the Heart Laboratory of the Boston City Hospital.

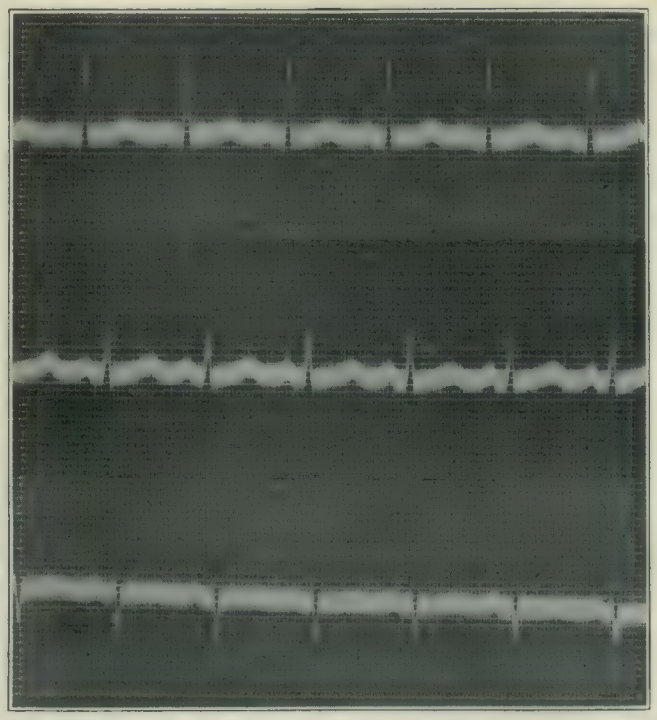
1. According to Gray's Anatomy (Spitzka, E. A.: New American Edition, Philadelphia, Lea & Febiger, 1913, p. 562), the normal heart varies in weight from 240 to 360 gm.

The maximum voltage of the R wave was less than 10^{10-4} volt in ten of the cases; in but four of the remaining ten did it measure more than 13^{10-4} volt.

The T wave exceeded 4.5^{10-4} volt in only two cases. It was upright in Lead 2 in all save the electrocardiogram of the patient with auricular fibrillation; its inversion here was doubtless an effect of digitalis administration.

The Q-R-S complex was normal in appearance and in duration, varying from 0.03 to 0.08 second.

The S-T interval varied from 0.20 to 0.32 second; in half the cases, it was 0.28 second or more. It will be noted that these figures vary from the normal of 0.24 to 0.28 second stated by Buchanan;[2] but on calculating the Q-R-S-T interval by the method of Fenn,[3] it was found that in no case did the actual measurement of this period differ from its calculated length by more than 0.03 second. The probable error when using Fenn's method of calculating this interval is not more than 0.05 second.



Severe pernicious anemia. The coarser abscissas mark off periods of one-tenth second instead of the more usual one-fifth second.

The string shadow returned to the iso-electric position after the Q-R-S complex in all but three of the nineteen cases showing normal rhythm; in these three, the failure of the string to return to the base line was but slight, and was present only in Leads 1 and 2. Such a finding was noted in the electrocardiogram of the patient affected by fibrillation of the auricles, but the case must be excluded from this consideration owing to the presence of digitalization.

A rather surprising fact is that in fifteen of the twenty electrocardiograms the excursion of all waves in Lead 3 was small; and in two of the remaining five, the waves were but moderate in height. However, it does not seem safe to consider this observation of diagnostic value, as it is probably explainable by the position of the heart.

The index[4] of ventricular preponderance was within normal limits in all. It exceeded + 12 in only three cases, and showed a minus result in only two. In the fifteen remaining cases, the index was positive and less than + 12.

COMMENT

The most constant and conspicuous change disclosed in the hearts of which the necropsy findings have been analyzed was a varying degree of fatty degeneration of the myocardium. A standard work on pathology[5] states that this change in the heart muscle may be found associated with a variety of conditions, such as hypertrophy of the heart, myocarditis, pericarditis, coronary disease, anemia, leukemia, poisoning with phosphorus and arsenic, diphtheria, scarlet fever and typhoid fever. The same authority is quoted as asserting that small, or even considerable areas of fatty degeneration appear, as a rule, to be of little or no clinical significance; they are at least not inconsistent with perfect health.

It should be emphasized that the fat is not due to a degeneration or breaking down of the muscle fibers, but is brought by the blood stream and deposited in the heart. The term "fatty degeneration" is perhaps a misnomer. The histologic picture of the myocardium was normal in all but two of the cases reported above, and it is not clear that the pernicious anemia was responsible for the changes noted in these two hearts.

I am not aware of any statements in the literature as to the functional condition of the heart in pernicious anemia. Wiggers[6] writes that, after severe hemorrhage and in shock, he has never observed irregularities, nor were the functions of conductivity and contractility impaired in experimental animals. Pernicious anemia, in that in it the anemia is of long duration, is not entirely analogous to the conditions of which Wiggers writes; but so far as the electrocardiograms on the twenty cases I have studied are concerned, nothing abnormal was found.

In an interesting study of pernicious anemia, Fahr and Ronzone[7] found that, in a severe case of this disease, the minute volume of the blood was increased about 250 per cent., and the systolic output of the heart was increased in the same degree. This was brought about largely by an increased blood velocity due to lowered viscosity of the blood and an increased effective cross-section of the vascular tubing. The same observers conclude that the coronary circulation is at the upper limit of the possible, being about as large as that found in severe work.

That the increase in the output of the heart is not accomplished by a lengthening of the duration of ventricular systole would appear from the electrocardiographic studies reported in this paper. It was found that the measurement of the Q-R-S-T interval, which is a very fair guide as to the duration of ventricular contraction, when compared to its calculated length, the formula of Fenn[3] being used, in no case showed prolongation beyond the limits of error of the method. This tends, therefore, to support the findings of Fahr and Ronzone.[7]

2. Buchanan, J. A.: A Study of the S-T Interval in One Thousand and Twenty-Eight Electrocardiograms, Arch. Int. Med. **28**: 828 (Oct.) 1921

3. Fenn, G. K.: Studies in the Variation of the Length of the Q-R-S-T Interval, Arch. Int. Med. **29**: 441 (April) 1922.

4. White, P. D., and Bock, A. V.: Am. J. M. Sc. **156**: 17 (July) 1918.

5. Delafield and Prudden: A Text-Book of Pathology, Ed. 11, revised by F. C. Wood, New York, William Wood & Co., 1919, p. 611.

6. Wiggers, C. J.: Circulation in Health and Disease, Philadelphia, Lea and Febiger, 1915.

7. Fahr, George, and Ronzone, Ethel: Circulatory Compensation for Deficient Oxygen Carrying Capacity of the Blood in Severe Anemias, Arch. Int. Med. **29**: 331 (March) 1922.

In an editorial [8] on this work of Fahr and Ronzone, it is pointed out that if such patients (those with severe anemia) are not at rest, and additional effort is demanded of the heart already close to the margin of oxygen sufficiency for its musculature, the latter may readily suffer from anoxemia. It is generally believed that the fatty degeneration of the myocardium is the result of the lack of oxygen in the blood, but, as mentioned above, its clinical significance is not clear. That the tigroid or fatty change, visible especially on the papillary muscles, is to be considered evidence of degeneration of the myocardium would seem to be unwarranted.

It has been pointed out that the heart possesses a remarkable power to protect itself from anoxemia. Starling [9] states that it can extract almost all the oxygen from blood low in oxygen (i. e., up to 0.5 per cent. of the oxygen in the blood). However, since in severe pernicious anemia the heart and blood vessels have compensated by making maximal the rate at which the blood is circulated, it is obvious that any exertion on the part of the patient will readily produce a condition in which the needs of the heart, nervous system and other organs for oxygen cannot be met. In agreement with this in cases of severe pernicious anemia, one observes, following physical exertion, symptoms which force the patient to desist from the activity.

When the patient is given a transfusion of blood, especially if it is large in amount, the viscosity of that in the patient's blood vessels is rapidly raised, and the conditions to which the heart has adjusted itself are disturbed. It might reasonably be supposed that in very severe cases, in which the "fatty degeneration" of the myocardium (if it does impair the heart) is extensive, the heart might have difficulty in propelling onward the more viscid fluid.

Such considerations lend the chief support to the belief that embarrassment of the heart may account for untoward results after a blood transfusion. That the heart is upset by a transfusion is probably more or less theoretical, for evidence of cardiac embarrassment is not obtained by the blood service of the Boston City Hospital, where a large number of blood transfusions have been given to patients affected with pernicious anemia, often of a severe type. Various reactions occur, but in them the heart has played little if any part. The amount of blood infused is kept down by the limitations of the donor; more than 500 c.c. is seldom given.

The upset in the patient referred to in the beginning of this paper was probably due to one of the reactions associated with blood transfusions and not primarily cardiac in origin, the discussion of which is beyond the scope of this paper.

SUMMARY AND CONCLUSIONS

The postmortem findings in eleven cases of pernicious anemia have been analyzed. The most constant finding was "fatty degeneration" of the myocardium. Thrombi were not found.

Electrocardiograms were taken from twenty patients. No abnormalities of diagnostic significance were found.

The Q-R-S-T interval was of normal duration. This demonstrates that the increased output of the heart, described by Fahr and Ronzone,[7] is not accomplished by a lengthening of the ventricular systole.

There is ample reason for keeping at complete rest a patient who is ill with a severe attack of pernicious anemia.

The fat noted in "fatty degeneration" is brought to the heart by the blood, in accordance with a normal physiologic process; and evidence is wanting that the efficiency of the myocardium is impaired thereby.

Untoward reactions that sometimes follow transfusions of blood in cases of pernicious anemia are not primarily cardiac in origin.

270 Commonwealth Avenue.

8. The Circulatory Compensation in Severe Anemias, editorial, J. A. M. A. **78**: 1460 (May 13) 1922.
9. Starling, E. H.: Mechanisme de compensation de cœur, Presse méd. **60**: 641 (July 29) 1922.

CHRONIC PULMONARY MILIARY TUBERCULOSIS *

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AND
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The pulmonary form of acute miliary tuberculosis is admittedly the most rapidly fatal of all types of phthisical lesions. Its diagnosis does not as a rule present many difficulties because the marked prostration, cyanosis and dyspnea, which are apparently out of all proportion to the scant signs in the chest, constitute a veritable diagnostic triad. The roentgen-ray findings in such cases may at first be inconclusive; but, before long, the appearance of the characteristic diffuse dissemination of the miliary tubercles dispels any doubt as to the true nature of the process.

A form of chronic pulmonary tuberculosis is not infrequently observed in which the miliary tubercles appearing in large numbers is an important element in the lesion. These may be confined to the upper lobes, but are most commonly found in the lower lobes. It is only rarely that one finds a chronic case in which the miliary tubercles are diffusely and uniformly scattered throughout both lungs. These cases of phthisis pulmonalis, when they are presented for treatment, show clinical features and pursue a course which are at great variance with the ordinary acute type of this affection. They are more amenable to treatment, and they are subject to few exacerbations of activity. Furthermore, serial roentgenographic examinations of such cases may disclose not only a clearing of the collateral inflammation around the tubercles but also definite evidence of fibrosis and partial calcification of the tubercles themselves; and what is perhaps still more striking, there may occur apparent resolution in areas previously extensively involved.

The paucity of literature and the failure of standard textbooks on the subject to treat of such cases prompts the report of those which came under observation and which may possibly be designated as cases of chronic pulmonary miliary tuberculosis.

REPORT OF CASES

CASE 1.—A Russian clerk, aged 20, was admitted to the Bedford Sanatorium in October, 1921. His mother and two sisters died of a rapidly progressing tuberculous lung trouble. Though subject to frequent and protracted colds for eight years, he, nevertheless, led a normal life and was not hindered from partaking in the usual sports. July 11, 1921, he was suddenly seized with a severe attack of hemoptysis followed by fever ranging from 101 to 103 F., night sweats,

* From the Bedford Sanatorium for Incipient Tuberculosis, Dr. Maurice Fishberg, chief of service.

productive cough and pain in the chest. He remained in bed for five weeks, and although the constitutional symptoms abated to a large extent, he complained on admission of a dry, hacking cough, loss of weight and strength, and marked dyspnea on slight exertion.

Physical exploration of the chest on admission disclosed an extensive lesion in the upper lobe of the right lung with suggestion of cavitation in the apical field, as well as thickened pleura at the right base. Roentgenologic examination at the same time disclosed definite evidence of miliary infiltration throughout both lungs with probable cavitation at the right apex (Fig. 1). Examination of the sputum was repeatedly positive; the Wassermann test and examination of the urine were repeatedly negative. The blood pressure was 105 systolic and 65 diastolic.

On account of the dyspnea and distressing cough the patient was kept in bed; and, although his temperature rarely rose above normal, the prognosis was considered unfavorable. However, after a protracted stay in bed there occurred a most remarkable improvement in his general condition. The cough became less distressing, dyspnea practically disappeared, he gained in weight and strength, expectoration gradually diminished, and tubercle bacilli could no longer be found in the sputum. Notwithstanding this marked improvement, physical findings in the chest remained practically unchanged so far as the right lung was concerned, while numerous moist râles were now discovered in the midportion of the left lung, radiating from the hilum region to the periphery. At the same time, careful examination of the serial roentgenograms in this case disclosed phenomena that are both unusual and intensely interesting.

Figure 1, reproduced from a roentgenogram taken on admission, shows extensive dissemination of miliary tubercles throughout both lung fields. The tubercles appear fairly uniform in size, and their hazy outline is suggestive of collateral inflammation. The tendency to conglomeration in the right basal field is also to be noted. In a plate taken two and a half months later there is definite evidence of clearing

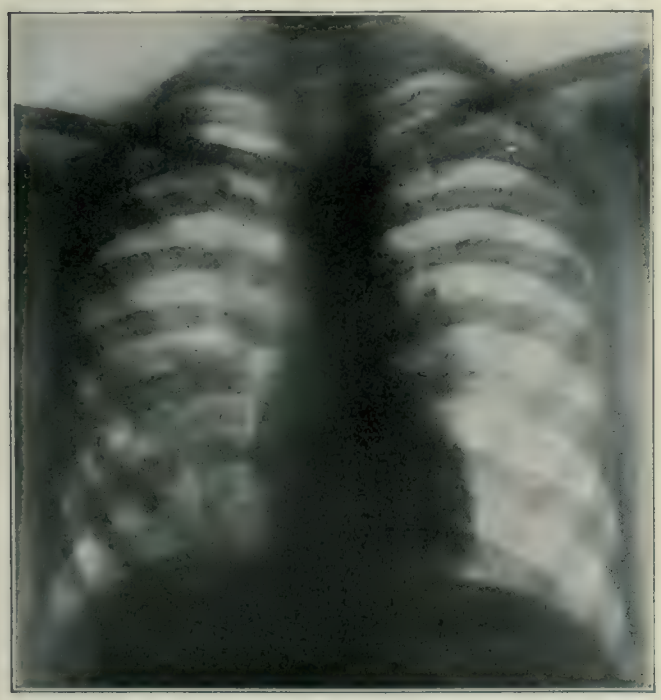


Fig. 1 (Case 1).—Extensive dissemination of miliary tubercles throughout both lung fields; they are of uniform size and distribution, and tend to conglomerate in the right basal field

of the collateral inflammation so that the tubercles appear more discrete. Furthermore, the increased density of the tubercles as well as their tendency to arrange themselves in linear formation, as it were, are strongly suggestive of fibrosis. This evidence of fibrosis is particularly striking in the right basal field where, instead of the conglomerate tubercles seen in the first plate, there now appear dense, ropy radiations from the hilum region.

Still further evidence of clearing and fibrosis as well as apparent disappearance of some of the shadows noted in the earlier plates was shown in another plate taken eight months after admission. But the changes noted in Figure 2, taken

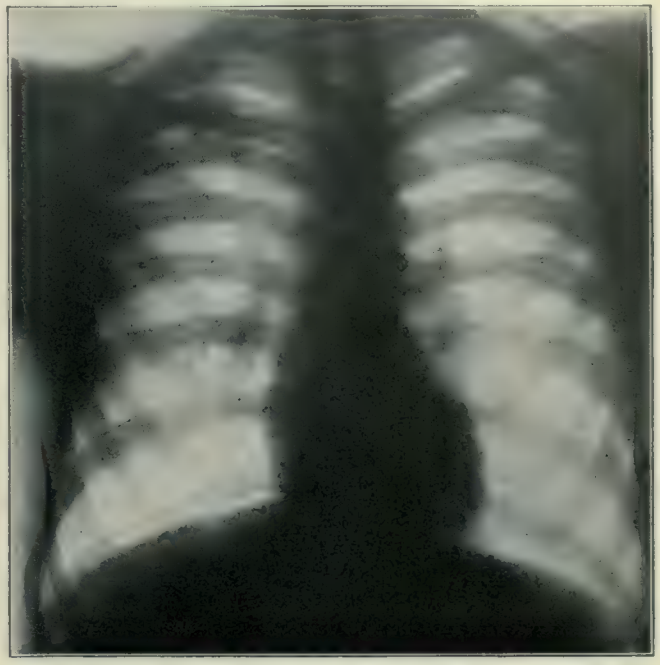


Fig. 2 (Case 1).—Appearance one year later: marked clearing and fibrosis; disappearance of most of the miliary tubercles seen earlier.

one year after admission, are the most remarkable. Here the extensive dissemination of the miliary tubercles throughout both lung fields, which is so apparent in Figure 1, can no longer be seen. Instead, there is marked hilum fibrosis with increased lung markings throughout, and only questionable evidence of infiltration in the upper lobes can be noted.

The striking features of this series of roentgenograms are the marked clearing and fibrosis, and particularly the evidence of resolution, which they apparently show to have occurred in areas previously the seat of extensive miliary tuberculization.

CASE 2.—A woman, aged 30, English, upholsterer, whose family and previous history were irrelevant, was admitted in November, 1922, complaining of cough, dyspnea and malaise. In the winter of 1916 she began to suffer from "nervous dyspepsia." However, she got on quite well until the early part of November, 1918, when she had a sudden attack of moderately severe hemoptysis. This was followed by marked constitutional symptoms, including fever of from 101 to 102, severe dyspnea and general prostration, confining her to bed for more than four weeks. Shortly afterward she was admitted to the Densewood Sanatorium, England, where, after a stay of three months, her general condition improved so that she was discharged with the disease arrested.

On her arrival in this country, in July, 1921, cough and expectoration recurred and became progressively worse. With this she began to lose weight and strength rapidly and experienced persistent afternoon rise of temperature, as well as night sweats, pains in the chest and dyspnea on slight exertion.

Physical examination of the chest on admission disclosed bilateral upper lobe infiltration with cavitation in the right apical field, while roentgenologic examination (Fig. 3) disclosed miliary infiltration throughout both lungs, more extensive in the upper lobes and especially marked on the right side. The sputum was consistently positive; the urine and Wassermann tests were negative; the blood pressure was 115 systolic and 70 diastolic.

The patient exhibited mild constitutional symptoms of toxemia during the first two weeks of her stay at the sana-

torium, but has been showing improvement since. Her cough has become less distressing, expectoration has diminished considerably, and dyspnea has become less marked. She has gained in weight and strength, and is able to be up and about, assisting in household duties in addition to assigned exercise.

COMMENT

The most interesting features in the clinical history of these cases is their similarity to acute miliary tuberculosis. Here we have two patients whose initial symptom was hemoptysis followed by marked constitutional symptoms of toxemia and, more especially, dyspnea, which was apparently out of all proportion to the discoverable physical signs in the chest—a clinical picture almost typical of acute miliary tuberculosis. Furthermore, roentgenographic examinations afforded undeniable evidence of the existence of miliary tuberculosis by disclosing the typical lesion. The subsequent history of these cases, however, was not in concert with the suspected early diagnosis. There was a decided improvement in the condition. The constitutional symptoms abated, the local symptoms diminished in severity, and dyspnea disappeared. Simultaneous with this, the roentgenograms disclosed at first evidence of clearing of the collateral inflammation, then evidence of fibrosis and possibly calcification of some of the tubercles, and finally also resolution in other areas once the seat of extensive miliary tuberculization.

Extensive miliary tuberculization of the acute type has been the subject of extensive investigation for many years, and a voluminous literature has accumulated as a result of the numerous recorded observations. Until recently, however, very little attention has been given to the study of those cases of chronic pulmonary tuberculosis in which the miliary tubercles are diffusely scattered throughout both lungs—a type that may possibly be designated as chronic pulmonary miliary tuberculosis. Northrup [1] discusses the case of a boy,

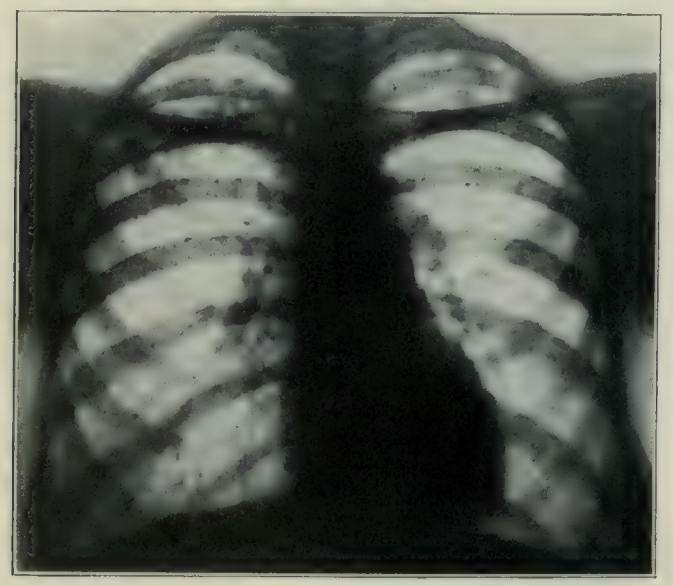


Fig. 3 (Case 2).—Extensive dissemination of miliary tubercles of uniform size and distribution throughout both lungs.

aged 6, suffering from pulmonary miliary tuberculosis diagnosed by roentgenographic studies, who left the hospital much improved and whose disease subsequently ran a chronic course. Von Muralt [2] reported two similar cases, in which, although the patients subsequently succumbed as a result of extensive miliary tuberculization of the central nerve system and other organs, had long been known, on the strength of roentgen-ray findings, to suffer from pulmonary miliary tuberculosis. Recently Bierman [3] has called attention to the mild course of the disease in some who on roentgenologic study showed

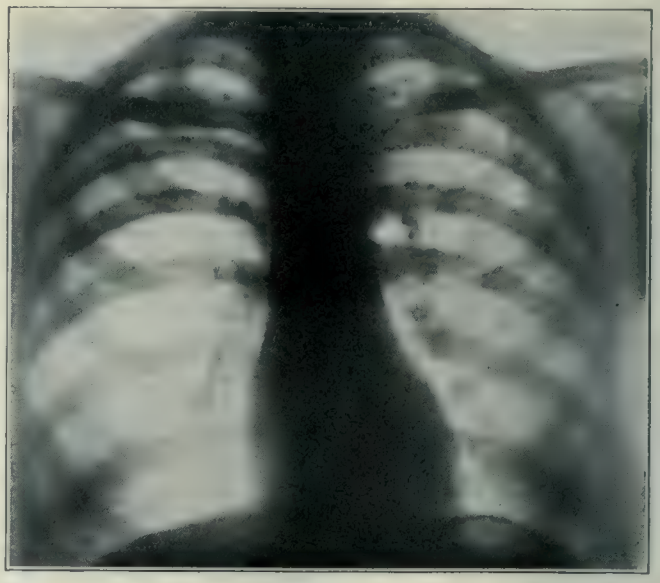


Fig. 4.—Extensive miliary tuberculization of left lung; tubercles appear discrete.

evidence of extensive miliary tuberculization of the lungs; and Wallgren,[4] recounting his experience at the Pirquet clinic, mentions the fact that he had there seen two children who were doing well more than six months after a diagnosis of miliary tuberculosis was made in their cases on clinical and roentgen-ray evidence.

A study of the patients admitted to our care disclosed the fact that pulmonary miliary tuberculosis of the chronic type occurs often enough to be of more than academic interest. Miliary tuberculization affecting an entire lung, or confined to the lower lobes of organs already affected with fibrocaseosus tuberculosis in the upper lobes, is not necessarily of grave prognostic import. Figures 4 and 5, respectively representing unilateral and moderately extensive bilateral chronic miliary tuberculization, are of patients who made remarkable progress toward recovery during their stay at the sanatorium, the former having already been discharged with disease arrested; while the two cases with very extensive pulmonary miliary tuberculosis which form the basis of this communication have reached a stage wherein their lesions can be safely considered to be arrested in the first instance and quiescent in the other. It is altogether fair, therefore, to stress the fact that the prognosis in this form of miliary tuberculosis, other things being equal, should be promulgated with much less of the usual pessimism.

The diagnosis of this type of lesion is impossible of attainment without the assistance of repeated and painstaking roentgenologic observations. In our own cases, as well as those reported by Northrop and von Muralt, not a single correct diagnosis was made without such help, and we have reason to believe that the

1. Northrup, M. W. P.: Disseminated Miliary Tuberculosis of Lungs and Skin, Am. J. Dis. Child. **7**: 24 (Jan.) 1914.
2. Von Muralt, L.: Cor.-Bl. f. Schweiz. Aerzte **46**: 481 (April 15) 1916.
3. Bierman, M.: Minnesota Med. **5**: 661 (Nov.) 1922.
4. Wallgren, A.: Upsala Läkaref. Förh. **27**: 1 (March) 1922, quoted in Tubercle **4**: 183 (Jan.) 1923.

paucity of the literature on this subject is undoubtedly due to the fact that many clinicians do not yet realize how many pathologic changes in the lungs are missed when roentgenographic studies are not a part of the routine in the examination of pulmonary patients. The physical signs produced by this type of lesion are commonly interpreted as being due to secondary bronchitis and bronchiectasis, or to pleuritic changes so frequently encountered in those with advanced tuberculosis.

It is only on careful and often repeated roentgenographic examination that the true nature of the existing pathologic processes is disclosed, a fact that cannot be too emphatically stressed. Furthermore, serial roentgenograms are indispensable in following the progress of the case. The physical signs offer no assistance in this direction. It is the serial roentgenograms that demonstrate the multifarious changes that may occur as clearing, fibrosis, calcification, and even partial resolution, take place.

The mutations of the roentgenographic shadows observed in these cases are not unlike, but are perhaps more remarkable, than those seen in ordinary parenchymatous tuberculous involvements. At first there is evidence of clearing of the collateral inflammation, with disappearance of the fuzzy character of the tubercles. The lung takes on a more transparent appearance and the tubercles stand out more clearly, appearing less confluent, although not much denser than before. At the same time, there may also be definite evidence of fibrosis at the hilum and an increase in the linear markings radiating from it in all directions toward the periphery, along which discrete tubercles seem to arrange themselves, giving the beaded appearance so often noted. When improvement goes on unhindered,

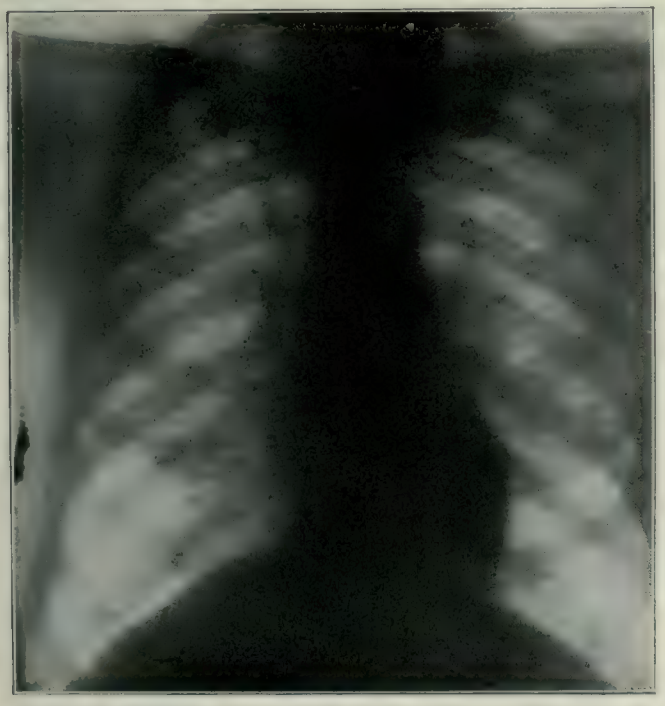


Fig. 5.—Moderately extensive bilateral dissemination of the miliary tubercles, which appear discrete.

the numerous tubercles become denser, more clear-cut and discrete, suggesting further fibrosis; and eventually even calcification may occur. Figure 6 shows the roentgenographic appearance of the lungs of a man admitted to our care with a history pointing to extensive pulmonary tuberculosis in adolescence. Here the calcification of a widespread lesion has taken place to an extent only rarely observed, with the result that the



Fig. 6.—Calcification of a widely disseminated bilateral miliary tuberculization.

patient has practically been cured of his tuberculosis, judging from the present signs and symptoms.

That in extremely rare cases definite evidence of resolution is seen in areas previously extensively involved with miliary tubercles has already been brought out in the earlier part of this paper, and was illustrated by Figures 1 and 2. The work of Gardner [5] and others is of interest in this connection. Gardner shows that resolution of a tuberculous focus can take place in animals infected with an attenuated organism.

DIFFERENTIAL DIAGNOSIS

Extensive chronic pulmonary miliary tuberculosis cannot always be easily differentiated from penumonoconiosis. In neither condition may severe constitutional symptoms of toxemia enter into the clinical picture when the patient presents himself for study. Hemoptysis may be complained of in either case, and dyspnea may be the cardinal symptom in sufferers of one malady or the other. Moreover, the roentgenographic appearance of the lungs in both instances is essentially similar. Even the presence of a fibroid process in the upper lobes of the lungs does not necessarily settle the diagnosis, for, as it is well known, the pathologic changes engendered by long standing pneumonoconiosis may very strikingly resemble the changes seen in advanced fibroid phthisis. It is only the careful inquiry into the previous history of the patient, particularly into the occupational hazards to which he may have been subjected, together with the repeated examinations of the sputum, that make possible a differential diagnosis. On the one hand, we may get a history of prolonged exposure to occupations that

5. Gardner, L.: Am. Rev. Tuberc. **6**: 163 (May) 1922.

are known to produce pneumonoconiosis; on the other hand, tubercle bacilli may be found in the sputum and thus help establish the true nature of the pathologic process. However, it must be remembered that pulmonary tuberculosis may and often does develop in subjects suffering from pneumonoconiosis.

From acute pulmonary miliary tuberculosis the chronic form can be differentiated only by observing the clinical course of the case, the previous history in either affection being as a rule irrelevant. In the former, the constitutional symptoms are distressing from the very outset, and the disease runs rapidly to a fatal termination. The physical findings to the very end may offer no clue to the nature of the process. On the other hand, in the chronic form in which the clinical picture may at first be undistinguishable from the acute type of the disease, the subsequent tendency to improvement and chronicity in the presence of a lesion that on roentgenologic examination is found to be miliary in character is sufficient to warrant the diagnosis of the chronic form of this affection.

There remains another condition that may be confounded with chronic pulmonary tuberculosis, namely, pulmonary miliary malignancy. This pulmonary affection, although of rare occurrence, has frequently puzzled both the internist and the roentgenologist in their efforts to establish a differential diagnosis between these two conditions. The symptomatology of the two may be almost identical, and it is only a careful search for the primary neoplasm or the finding of tubercle bacilli in the sputum that finally clinches the diagnosis. It is different in the case of the usual metastatic pulmonary neoplasm, the roentgenographic appearance of which is quite characteristic. In such cases the shadows are of various sizes and densities, and there are no evidences of collateral inflammations to designate specific tissue reaction. On the other hand, in miliary tuberculosis the tubercles are much smaller, and they are usually more evenly distributed and are more uniform in size and density. There are also to be seen some evidences of collateral inflammatory changes indicative of tissue reaction to the tubercle.

CONCLUSIONS

1. In the form of pulmonary tuberculosis described in the foregoing, extensive miliary tuberculization is an important element in the lesion, and the chronic form of this affection may possibly be designated as chronic pulmonary miliary tuberculosis.

2. There is a similarity between the early clinical picture of the acute and that of the chronic forms of pulmonary miliary tuberculosis.

3. The chronic type of this affection is relatively mild and of fair prognosis.

4. A correct diagnosis in and a study of the progress of cases of the chronic form of pulmonary miliary tuberculosis cannot be made without repeated roentgenographic observations, the physical findings being of little value in either respect.

5. A differential diagnosis must be made between this type of lesion and those caused by acute miliary tuberculosis, pneumonoconiosis and miliary pulmonary malignancy.

AN OPERATION FOR HALLUX VALGUS

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Notwithstanding the variety of operations proposed and used for the common deformity of hallux valgus, the appearance of the feet after operation has not been satisfactory in a considerable number of cases either to the patient or to the surgeon. It is true that relief of pain is the chief end sought, and this may be gained by any procedure that removes both the exostosis on the exposed border of the head of the first metatarsal



Fig. 1.—Hallux valgus before operation (left) and six months after operation (right), showing recurrence of deflection of great toe.



Fig. 2.—Change in the plane of the articular surface of the head of the first metatarsal; after a period of six months had elapsed, there was recurrence of a moderate degree of the original deformity.

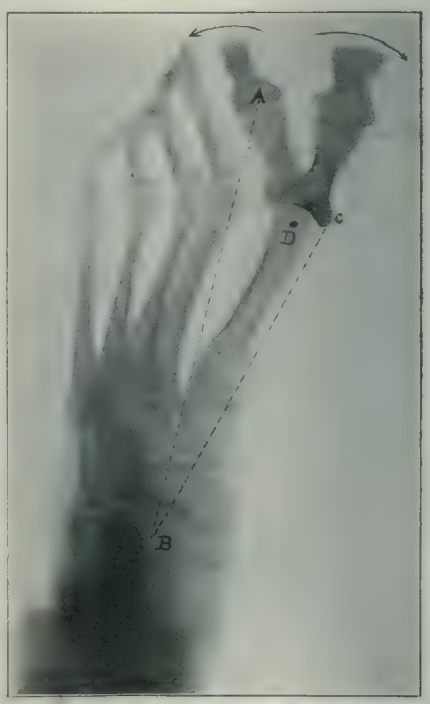


Fig. 3.—Effect of tendon pull: When the tendon of the extensor hallucis pulls at the point of its normal insertion (*a*), it tends to increase any lateral deflection that may be present. If the end of the tendon is transplanted to the medial aspect of the base of the first phalanx (*C*), the toe is pulled inward. *D* indicates the center of joint motion.

and the bursa overlying it. However, if in addition to this a normally straight toe can be produced without jeopardizing function, the final result would be more gratifying, and, as a matter of fact, it is not difficult to attain.

The fundamental causes of the postoperative recurrence of the deformity are the distorting line of pull of the tendon of the extensor hallucis muscle, and an alteration in the plane of the articular surfaces of the bones which form the great toe joint. Tapered shoes and stockings are, of course, contributing causes; but, in spite of these, the toe will resume an approximately normal alinement when pressure is relieved, if mechanical conditions permit.

Correction of either the abnormal line of tendon pull or of the plane of the articular surface alone is not sufficient when there is marked deformity. Figure 1 illustrates a case of hallux valgus before and after an incomplete operation. In this instance the removal of the exostosis and the bursa was followed, as usual, by the relief of pain; but the deformity appeared again sometime later. Figure 2 illustrates a case in which the plane of the articular surface was changed by excision of a considerable portion of the head of the first metatarsal, and yet the deflection of the toe again became noticeable.



Fig. 4.—Line *A*, alteration in plane of articular surface of head of metatarsal; line *B*, bone incision at base of first phalanx to compensate for condition present in head of metatarsal.

These are instances of a common and annoying experience which rearrangement of the point of attachment of the tendon of the extensor hallucis and proper consideration of the plane of the joint will prevent.

An important factor in the development of a faulty line of pull of the tendon is the loose attachment of its sheath at the base of the toe, which permits its enclosed structure to creep to the outer side of the center of motion of the joint, once the digit has been crowded by shoe or stocking from its normal alinement. This gives the tendon a bowstring effect shown diagrammatically by the line *A-B* in Figure 3.

To overcome this it has been my custom to sever the tendon of the extensor hallucis a short distance above its insertion, and to dissect the tendon and its sheath free to a point somewhat above the head of the first metatarsal. Both structures are then carried toward the median line, and the slightly macerated end of the tendon is implanted in a shallow channel on the medial side of the base of the first phalanx, covered with periosteum and other fibrous tissue and firmly sutured in this position. Thus the line of pull is established inside the center of motion of the joint (*D*) as shown by the line *B-C* in Figure 3.

In very mild cases this change of tendon insertion may be all that is required to prevent a recurrence of the outward deviation of the toe. In long-standing cases with decided deformity, however, there is frequently an alteration in the plane of the joint surface which gives it an outward tilt.

This may be sufficient to defeat the purpose of tendon transplantation, and therefore it seems advisable to compensate for the abnormal plane of the head of the metatarsal by shortening the medial border of the first phalanx.



Fig. 5.—Line of incision through which joint is approached.

To accomplish this, a wedge is excised from the base of the bone, and its articular surface is concaved, as shown by line *B* in Figure 4.

In my experience this has proved more satisfactory than reshaping the head of the metatarsal, both from an operative and from a functional point of view.



Fig. 6.—Wire splint designed to be incorporated in the postoperative dressings; any degree of overcorrection may be obtained by bending the wire; the lower strap of adhesive should be well above the incision.



Fig. 7.—Use of wire splint in dressing.

A very practical approach to the joint is indicated in Figure 5. An elliptic incision, with its lower angle prolonged downward toward the tendon, permits removal of the redundant skin and bursa in one mass, and at the same time leaves clean-cut edges for approximation when the wound is closed.

The simple wire splint shown in Figures 6 and 7, which I have used for many years, provides a convenient way of holding the toe in overcorrection during convalescence. It is much more comfortable than a plaster dressing; and, as it may be easily removed, it



Fig. 8.—Result six months after operation.

affords an opportunity for inspection of the wound and for the institution of voluntary motion, which should be encouraged at the end of a week.

The result that may be expected from this operation is shown in Figure 8.

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LUPUS ERYTHEMATOSUS AS A SYSTEMIC DISEASE*

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The clinical picture of localized or discoid lupus erythematosus, with which I wish to contrast the disseminate form with constitutional manifestations, is familiar to most practitioners. The conception of a grave form of lupus erythematosus with severe systemic disturbances and with the extension of the local process originated with Kaposi. In 1872 he first called attention to the presence of toxic symptoms, and was evidently familiar with the hyperpyrexial attacks occasionally seen when discoid lesions are present. Very little has been added to an understanding of the disease since his time. Boeck [1] temporarily confused the problem when he designated lesions on the fingers, which can now probably be classified with Darier's folliclis, as lesions of disseminate lupus erythematosus. The whole matter was probably still more obscured by the French tendency to enumerate a large number of subclasses of lupus erythematosus which essentially are only different degrees of the same disease.

* From the Section on Dermatology and Syphilology, Mayo Clinic.

1. Boeck, C., quoted by Jadassohn: Handbuch der Hautkrankheiten herausgegeben von Prof. F. Mracek, Vienna, Hölder **3**: 318, 1904.

While the cutaneous picture of disseminate lupus erythematosus is fairly well understood, the constitutional background remains, in many respects, a mystery. It is precisely this constitutional background in which the internist and the general diagnostician are fundamentally interested, because in combination with the cutaneous lesions it presents a wide variety of deceptive

CUTANEOUS CHARACTERISTICS OF DISSEMINATE LUPUS ERYTHEMATOSUS AS CONTRASTED WITH THE CHRONIC

Disseminate Lupus Erythematosus	Chronic Discoid Lupus Erythematosus
1. Many lesions usually	1. Few well-defined patches only
2. Superficial lesions with slight atrophy	2. Deeper lesions, with definite scarring and telangiectasia
3. Involvement not only of face, but also of hands, fingers, neck, chest and sometimes any part of the body	3. Usually confined to face, ears and scalp
4. Actively inflammatory, reddish to purplish patches	4. Indolent, with erythematous border only
5. Borders of lesions ill defined; sometimes resemble chronic type; sometimes more like erythema multiforme or only atrophic, purplish patches	5. Border of lesions elevated and erythematous, with characteristic epithelial plugging, and often telangiectasia
6. Very little scaling; often dirty crusting, vesicle or bulla formation	6. Dry, extremely adherent scales; on removal, epithelial plugs from the follicles may be recognized on the under side
7. Often involves the mucous membranes	7. Rarely extends beyond the vermilion border of the lip

In a goodly proportion of disseminate cases, both types of lesions may be present.

possibilities. In fact, it is impossible at this time to estimate the actual incidence of disseminate lupus erythematosus because there is every probability that cases of this type masquerade under medical diagnoses such as scarlet fever, erysipelas, typhoid fever, pellagra and the symptoms of upper abdominal lesions.

CUTANEOUS LESIONS

In the hierarchy of cutaneous diseases, disseminate lupus erythematosus differs from the chronic discoid type, with its lesions limited largely to the face and



Fig. 1.—The eruption of disseminate lupus erythematosus as it frequently appears on the face.

scalp, in that disseminate lupus erythematosus resembles the erythema multiforme group of dermatoses, instead of the exceedingly chronic atrophic changes involving the follicular structures of the face and scalp (Fig. 1). Acute or disseminate lupus erythematosus

has a tendency to become more widespread in the skin than the discoid type, resembling patches of dermatitis, and erythematous plaques, sometimes bullous in character. These lesions, in contrast with the discoid type, may appear on the extremities, and the mucous membrane may be involved in varying degrees, somewhat as in the severe types of toxic erythema (Fig. 2). The chronic type may be present for years and then, especially in young persons, assume characteristics of the disseminate form. The accompanying table gives a condensed classification of the difference between cutaneous lesions of the disseminate and chronic types of lupus erythematosus.

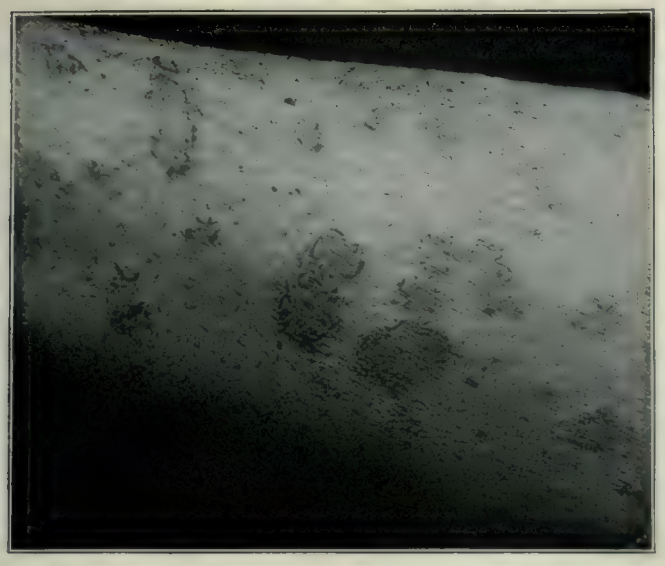


Fig. 2.—Lesions of disseminate lupus erythematosus on the forearm.

CONSTITUTIONAL SYMPTOMS

The systemic symptoms of disseminate lupus erythematosus vary markedly in severity. Quite commonly the patient complains of a lack of physical endurance for years before cutaneous lesions appear. Irritability and sensitiveness are out of proportion to the apparent physical ailments. Vague abdominal complaints, at times severe, are almost always referred to. Very common also are aches and pains of various degrees in the joints. There may be a moderate to marked elevation in temperature for a long time, or there may be sharp hyperpyrexial attacks.

DIAGNOSIS

An outstanding feature of the condition is the protean character of its manifestations. It may resemble a number of diseases with widely varied symptoms. When the cutaneous manifestations predominate, seborrheic or eczematoid dermatitis, erythema multiforme, dermatitis venenata, the sarcoid of Boeck, lichen planus, erysipelas or pellagra may be more or less closely simulated. When the abdominal symptoms are uppermost, the presence of marked pain or diarrhea may lead to the hasty diagnosis of cholecystitis, gastric or duodenal ulcer and chronic appendicitis or colitis. If the toxic symptoms are pronounced, with high temperature and possibly a "typhoid state," confusion with typhoid fever, pneumonia, pyemia, rheumatism or malignant endocarditis often occurs (Fig. 3). The suspicion of typhoid fever is strengthened by the frequent occurrence of leukopenia, sometimes extreme. In Case 4 the leukocyte count fell to 1,800 on one occasion.

In avoiding possibilities of error in diagnosis, a careful study of the eruption is essential. The face and scalp must be scrutinized for signs of old lesions, atrophy and patches of alopecia, the face studied for erysipeloid flush, the lips for silvering, the mucous membranes for erosions, the skin of the upper trunk and neck for signs of old lupus erythematosus, and the fingers for bluish, chilbain-like papules and patches. It may almost be accepted as axiomatic that, whenever lupus erythematosus extends from the face to the body and extremities, it becomes menacing. Conversely, cutaneous lesions occurring on the body, extremities or mucous membranes in association with chronic discoid lupus erythematosus must be carefully weighed as an evidence of impending dissemination, the patient's history closely investigated, and his constitutional background studied. The identification of a disseminate lupus erythematosus is of the gravest prognostic significance, and its treatment a problem of the utmost difficulty.

CHARACTERISTICS OF THE HISTORY

The history of a patient with typical lupus erythematosus in a disseminate phase presents striking characteristics: malaise, irritability, periodic lesions of the mouth, vague abdominal complaints such as pain, diarrhea, sometimes vomiting, hyperpyrexia, and occasionally cardiac, hepatic, gynecologic, neurotic and psychic symptoms. In many instances, the urine contains large quantities of albumin. It is apparent that without lesions of the skin as a guide, this is not a highly specific picture.

ETIOLOGY

The prevalence of tuberculosis of the gland is very striking. The tuberculous adenitis may not be demonstrable clinically, yet the retroperitoneal, pelvic and mesenteric groups may be severely affected, as shown in Cases 1 and 2.

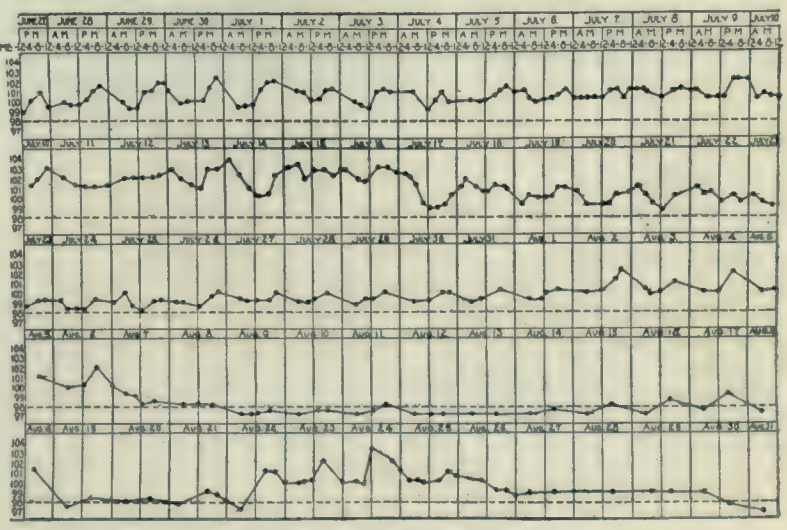


Fig. 3 (Case 4).—Temperature chart.

CASE 1.—*Disseminate lupus erythematosus with lesions of chronic and acute types.* A man, aged 33, examined, April 1, 1918, had had abdominal pain, fever, and eruption on the

skin; patches had been present for five years, and recently they had been spreading rapidly. Examination revealed typical lesions of chronic lupus erythematosus on the face, and a large number of the disseminate type on the face and neck. A slight amount of albumin was found in the urine. Exploration of the abdomen was advised because of epigastric pain and a septic type of temperature. Nothing to account for the symptoms was discovered. Treatment was of no avail, and the patient died. At necropsy, very extensive tuberculous involvement of the peribronchial, retroperitoneal and pelvic lymph glands was noted. The spleen and the left lung were also involved. The kidneys were nephropathic.

No definite evidence of tuberculous glands in the abdomen was demonstrable during life; such evidence was not even discovered on surgical exploration, yet the lymphatic system showed severe tuberculosis.

This case strikingly illustrates the presence of abdominal complaints in association with disseminate lupus erythematosus, and the importance of making a correct diagnosis to obviate an unnecessary operation.

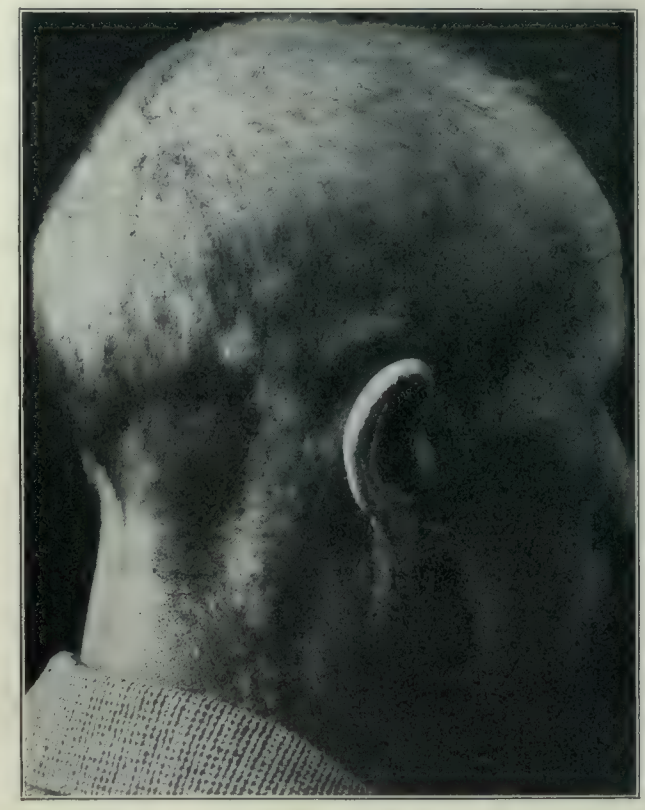


Fig. 4 (Case 5).—Patient before treatment of the glands with roentgen ray.

CASE 2.—*Acute disseminate erythematosus.* A woman, aged 20, examined in September, 1920, had had a cervical abscess (tuberculous?) opened in 1914. Six months before, she had had typhoid fever and since then various symptoms, chiefly epigastric pain, falling hair and exhaustion. Physical examination revealed the skin generally dry and hot, and the hair dry, thin and lusterless. There were patches of erythema with purplish tinge on the cheeks suggesting chronic erysipelas, similar patches on the fingers, and silvering of the lower lip. All the lesions were well defined and distinctly atrophic. The urine contained large quantities of albumin, and an occasional hyaline cast. The erythrocytes numbered 3,500,000, later slightly less than that number; lymphocytes, 2,870. Roentgenograms of the chest contained evidence of tuberculosis in the left upper lobe. Acid-fast bacilli were present; guinea-pig inoculation proved negative. A subcutaneous tuberculin test was not satisfactorily performed. Rest treatment, tonic measures, quinin and pills of ferrous carbonate (Blaud's pills) were given without benefit. A severe "flare-up" occurred after tonsillectomy. This subsided somewhat and the patient was better for a time, but died, Aug. 13, 1921. Necropsy revealed ulcerative tuberculous enteritis, caseating abdominal lymph nodes, and miliary tuberculosis of the spleen. The kidneys were almost double in weight, and definitely nephropathic. Serum from the lymph nodes contained tuberculosis bacilli. Cultures of the blood and spleen were sterile.

The condition had been diagnosed typhoid fever, probably because of periodic attacks of hyperpyrexia, a mistake in diagnosis easily made. The diagnosis depended on cutaneous lesions, and during periods of remission these were little in evidence. The flare-up of erythema on the face, and the high fever after tonsillectomy led to the mistaken diagnosis of erysipelas. Despite careful clinical study, but little evidence of tuberculosis was revealed; yet tuberculous glands in the abdomen were conclusively proved at necropsy.

Brooke,[2] Roberts,[3] Reitmann and Zumbusch,[4] and Low, Logan and Rutherford[5] have reported cases in which glands were extensively involved, and recognized on postmortem examination. Sequiera and Balean[6] report the presence of tuberculous glands in five of eleven cases of acute disseminate lupus erythematosus; necropsy was not performed in any of these. On the other hand, in another case these authors were unable to find glandular tuberculosis at necropsy. Gennerich[7] also reports a generalized adenopathy in a case which in his opinion was not tuberculous.

For a long time the extreme sensitiveness of patients with acute disseminate lupus erythematosus to comparatively banal injuries has been recognized. Sometimes these injuries are so insignificant that they would be ignored by healthy persons. The application of slightly irritating drugs, moderate heat, small doses of roentgen ray, radium or actinic light occasionally tend to cause a definite spreading of the lesions of the skin, and also add to the toxic symptoms complained of by the patient. The therapist is also cognizant of sensitiveness to irritants, and it has almost become the rule to start the treatment of lupus erythematosus, unless it is exceedingly indolent, with the mildest applications. Unusual sensitiveness to tuberculin was first noted in this country by Ravogli,[8] who reported two cases of his own and cited others in the literature. His patients died, subsequent to the injection cutaneously of 0.001 mg. of tuberculin. This preparation should not be used for diagnostic or therapeutic purposes in such cases.

Pulay[9] and Gennerich noted the hypersensitiveness of patients with disseminate lupus erythematosus, and devised rather ingenious hypotheses with regard to the etiology of the disease based on this feature. The former is inclined to attribute the manifestations of the disease to a photosensitiveness, chiefly because of the distribution of the eruption on the exposed parts. He attributes this photosensitiveness to certain metabolic products found in such diseases, for example, gout, diabetes and tuberculosis, and in other less definite

2. Brooke, H. G.: Lupus Erythematosus and Tuberculosis, Brit. J. Dermat. **7**: 73-77, 1895.
3. Roberts, L.: Acute lupus erythematosus (aigu d'emblée), Brit. J. Dermat. **23**: 167-178, 1911.
4. Reitmann, K., and von Zumbusch, L.: Beitrag zur Pathologie des Lupus erythematodus acutus (disseminatus), Arch. f. Dermat. u. Syph. **99**: 147-180, 1910.
5. Low, R. C.; Logan, W. R., and Rutherford, A.: A Fatal Case of Lupus Erythematosus, with Autopsy, Brit. J. Dermat. **32**: 253-262, 1920.
6. Sequeira, J. H., and Balean, H.: Lupus Erythematosus: A Clinical Study of Seventy-One Cases, Brit. J. Dermat. **14**: 367-379, 1902.
7. Gennerich, W.: Ueber die Aetiologie des Lupus erythematodes, Arch. f. Dermat. u. Syph. **135**: 184-207, 1921.
8. Ravogli, A.: Lupus Erythematosus Diffusus Unfortunately Treated with Tuberculin, J. Cutan. Dis. **33**: 266-272, 1915.
9. Pulay, E.: Stoffwechselpathologie und Hautkrankheiten, Dermat. Wchnschr. **73**: 1217-1234, 1921.

disturbances. Products of metabolism, such as glucose, acetone, hemoglobin, urea, lactic acid, hematoporphyrin and tyrosin, and other chemical substances have been shown to produce photosensitiveness, and any one of these substances, Pulay believes, may be the sensitizing agent in lupus erythematosus. He explains those cases in which tuberculosis is much in evidence as due to the sensitizing action of the tuberculotoxins.

Gennerich believes that there is a sensitizing agent produced in the destruction of the lymph glands by an unknown disease. According to his opinion, certain ferments of the lymphocytes are liberated which have a special affinity for the vascular system. The symmetry and localization on exposed parts he explains by the hematogenous distribution of the toxins, and their arrest in the capillaries which are subjected to irritation by light, air and mechanical agents. The toxins act as foreign proteins, and, when abundant, produce anaphylaxis. He admits the frequent association of lupus erythematosus with lymphatic disease, but does not believe that the lymphatic involvement is tuberculous.

Experience has also emphasized the hypersensitiveness of patients with disseminate lupus erythematosus to mild trauma. Particularly after the removal of tonsils and teeth, both systemic and local manifestations have been temporarily increased.

Interference with a focus of infection, as such, may produce extreme reactions. The removal of a single tooth produced a stuporous state in three of our patients. The usual reaction to the removal of pyogenic foci and to interference with a tuberculous focus is illustrated in Case 3. The hypersensitiveness to the removal of such foci need not necessarily be evidence of an etiologic relationship to the disease, although it is possible that the toxins in these foci may represent the chemical substances acting as sensitizers to light, according to Pulay's conception.



Fig. 5 (Case 5).—Appearance of scalp and neck one month after application of roentgen ray to the gland-bearing areas; no topical applications in the interval.

CASE 3.—*Disseminate lupus erythematosus with lesions of the acute type.* A woman, aged 42, examined, April 27, 1921, had had burning and itching eruptions during the warmer months for ten years (severe the last three months), and enlarged cervical glands for five years. One sister had died of tuberculosis. Examination revealed acute lupus erythematosus on the face, back and arms, old neuroretinitis, and tuberculous cervical adenitis. The urine contained large quantities of albumin, and occasional showers of casts. The patient was emaciated and exhausted. General measures of treatment with rest in bed were of no avail. A cervical gland was removed for biopsy, and the patient became severely toxic, and passed into a semicomatose condition with rise in temperature and extreme vertigo. Tuberculosis of the cervical glands was confirmed by the biopsy. Nine teeth were removed, one at a sitting. Each extraction was followed by malaise and stupor. The removal of all dental foci was followed by definite temporary improvement in the eruption and general health. The patient died one year after she was first examined.

The nature of the eruption was characteristic, and needed only a proper diagnosis to explain the systemic symptoms. The sensitiveness to interference with pyogenic foci and tuberculous foci was so marked as to suggest an allergy to toxin in the focus rather than to response to surgical trauma.

It would seem more likely that a procedure such as the extraction of an infected tooth would act more in the nature of an injection of a nonspecific protein than as an eliminator of a photosensitizing agent; this theory would also better explain the temporary improvement often noted some time after all the pyogenic foci have been removed. The disease has improved strikingly after attacks of erysipelas, which acted as a nonspecific vaccination.[10] Engman and McGarry [11] report improvement in the discoid type of the disease following the use of typhoid vaccine as a foreign protein. Improvement following any of these procedures is usually temporary, and if there is a definite etiologic relationship it is not likely that the pyogenic infection is alone responsible for the cutaneous manifestations of lupus erythematosus.

My personal observation of the cases under consideration inclines me strongly to the belief that lymphatic tuberculosis is a fundamental predisposing cause of disseminate lupus erythematosus. My study [12] of the discoid type suggests that clinically recognizable tuberculosis is a relatively unimportant element in the etiology of the chronic form of the disease. This apparent paradox may perhaps be reconciled by the hypothesis that the difference between chronic and acute lupus erythematosus lies chiefly in the activity of the tuberculous focus in glandular tissue, and the patient's resistance or response to it. That the tuberculous factor in either form of lupus erythematosus is not necessarily clinically recognizable, even though it may be etiologically important, is suggested by two of the cases in the series in which the patients were virtually riddled with glandular tuberculosis without any clinically recognizable signs. Certain elements strongly suggest that patients with disseminate lupus erythematosus are under a cross fire from tuberculosis and septic infection, the one creating an allergic background while the other

10. Stokes, J. H., in discussion on Hartzell, M. B.: Lupus Erythematosus and Focal Infection, Arch. Dermat. & Syph. **2**: 445-446 (Oct.) 1920.

11. Engman, M. F., and McGarry, R. A.: The Treatment of Certain Diseases of the Skin by the Intravenous Injection of a Foreign Protein, J. A. M. A. **67**: 1741-1745 (Dec. 9) 1916.

12. Goeckerman, W. H.: Is Lupus Erythematosus Discoides Chronicus Due to Tuberculosis? Arch. Dermat. & Syph. **3**: 788-801 (June) 1921.

periodically excites explosions in the predisposed and unstable organism. It is, of course, impossible to intimate with any positiveness which infection plays which part. Stokes [13] suggests the hypothesis that, when septic infection creates the hypersensitiveness, the result of a hematogenous infection by tuberculosis bacilli is a tuberculid, while, when tuberculosis creates the hypersensitiveness, the result of a streptococcal or septic invasion is disseminate lupus erythematosus. In the most recent case under observation, the prominence of the septic aspect was especially conspicuous. The relapse was accompanied by arthritic manifestations and the development of subcutaneous abscesses which could scarcely have been due to tuberculosis, as such. The erythema multiforme-like characteristics of the acute disseminate eruption in certain cases is much more suggestive of streptococcal origin than of tuberculosis, as such.

CASE 4.—*Disseminate lupus erythematosus.* A youth, aged 18, in whom the first patch had occurred three years before, was examined, April 21, 1921. General malaise and occasional night sweats had been noted. Examination revealed the disseminate type of lesions on the cheeks, lips, scalp and fingers and in the mouth, and evidence of severe myocardial change. Persistent albuminuria and leukoplakia (lowest count 1,800 leukocytes) were noted. Guinea-pig inoculations with pus from a subcutaneous abscess were negative for tuberculosis. A remission occurred after rest in bed, treatment of general symptoms and toxic manifestations. The patient appeared to be well nourished, and showed no evidence of skin lesions when he left. He died at his home one month later. He had, of course, not recovered from his myocardial disorders. Necropsy was not performed.

The findings in this case apparently emphasize the septic element rather than the tuberculous in such conditions, and is illustrative of the fatal character of the disease, even after the elimination of cutaneous and general symptoms.

PROGNOSIS AND TREATMENT

The prognosis of true disseminate lupus erythematosus is invariably extremely grave. Four of the patients in this series are already dead. Dermatologists of large experience have difficulty in recalling that patients with this disease accompanied by hyperpyrexial attacks and renal complications survive for any considerable period. In view of this extremely grave prognosis, it is permissible to assume some risk in the therapeutic management of these cases. This risk attaches particularly to the removal of pyogenic foci. The extreme reactivity of these patients may result in the disastrous termination of an attempt to interfere with even a minor focus. The extraction of infected teeth should be performed with the utmost caution, with the patient under a strict hospital regimen, and should not, if avoidable, be attempted during a febrile period. Tonsillectomy should be surrounded with equal precautions. The impulse to explore in the presence of abdominal symptoms should be restrained until the case is thoroughly worked out. Treatment of the nephritis should be symptomatic, and should depend largely on the importance of this element in the combined picture which the patient presents.

Iodoform in tablets coated with phenyl salicylate has been used for a number of years with some degree of success. Jadassohn [14] expresses the opinion that careful nursing and hygiene, complete rest in bed and quinin in large doses by mouth probably represent the method of choice at the present time. In some instances the response to all measures is absolutely nil, and the treatment must be directed toward combating symptomatic indications as they arise. The remarkably high temperature which can be maintained by these patients for days, without remission, is a particularly trying feature. Myocarditis, arthritis, enteritis and nephritis may follow one another or combine in a single case, and yet the patient may survive several attacks before the ultimate fatal issue. Bronchopneumonia is a common terminal condition.

My experience in Case 5 resulted in the development of a method of treatment which, so far as I know, has not been tried or reported. After every measure that we could devise had been employed without results, it occurred to me that the patient might, as in Cases 1 and 2, have tuberculous glands that could not be detected clinically. In view of the very beneficial effect of roentgen-ray irradiation on practically all glandular diseases, I decided to treat this patient very much as if he had Hodgkin's disease, theoretically assuming that the cutaneous lesions were the result of a toxic manifestation in the skin, incidental to tuberculosis of the glands. I hoped that the lesions of the skin might disappear as do leukemids, when roentgen rays are applied to the glands in leukemia or Hodgkin's disease. The result was most striking (Figs. 4 and 5). The treatment was repeated in three months. The patient now reports himself in good health, a year following the first irradiation.

CASE 5.—*Acute disseminate lupus erythematosus of the erythema multiforme type.* A man, aged 48, examined July 8, 1921, complained chiefly of burning and itching eruption, sore mouth, diffuse alopecia, marked weakness and loss of appetite. He had had typhoid fever at the age of 21, and rheumatic fever at 26. Examination revealed lesions on the face, neck and hands, of the erythema multiforme type of acute lupus erythematosus. There were maceration and exfoliation of the oral mucous membrane, but there was no distinct bulla, and almost total alopecia of the diffuse type. The urine contained a moderate amount of albumin. The patient was emaciated and exhausted. A severe reaction in the form of arthritis, myositis and stupor followed extraction of one tooth. Various local applications, including superficial roentgen ray, to the lesions were of no value, and no definite improvement followed rest in bed with quinin. Neoarsphenamin aggravated the condition. One dose of filtered roentgen ray was applied to the gland-bearing regions; the next day the patient was better, and had rested at night with less itching and burning of the skin, and less soreness in the mouth. His appetite returned. Six weeks later there was a thick growth of hair on the scalp, and little evidence of the former cutaneous lesions. The patient had gained 25 pounds (11.3 kg). One year later he was well and working (Figs. 4 and 5).

This patient did not respond to the usual methods of treatment, but the application of filtered roentgen ray to the gland-bearing areas caused prompt improvement of all symptoms.

Whether the excellent therapeutic response can be attributed solely to the effect of the roentgen rays on the glands must for the present remain doubtful, since the method must have further trial before its value can be predicted. The exact mechanism of the effect of the rays also remains obscure. In view of the deep-seated nature of the process, permanent cure is, perhaps, too much to expect.

Other patients with lupus erythematosus have been treated in the same manner, and will form the subject of a separate report.

13. Stokes, J. H.: Personal communication to the author.
14. Jadassohn, J.: Lupus erythematodes, Handbuch der Hautkrankheiten herausgegeben von Prof. F. Mracek, Vienna, Hölder **3**: 298-424, 1904.

CONCLUSIONS

1. The clinician should become better acquainted with the systemic symptoms of disseminate lupus erythematosus.

2. Any cutaneous lesion associated with a history of fever and vague abdominal complaints should be exactly diagnosed, even though it appears to be trivial

3. Lupus erythematosus disseminatus must be distinguished from pellagra, erythema mulitforme, erysipelas, dermatitis venenata, eczema, lichen planus, typhoid fever, pneumonia, rheumatism, septicemia and septic endocarditis, and from all diseases presenting vague abdominal symptoms, such as chronic cholecystitis, chronic appendicitis, colitis, and gastric and duodenal ulcers.

4. Renal disturbances, sometimes of a severe type, may be present in this disease, and other symptoms may be inconspicuous.

5. The prognosis of the disease is grave.

6. Tuberculous adenitis is so commonly associated with disseminate lupus erythematosus that it seems to play some part in its cause.

7. An extensive tuberculous adenitis may be demonstrated at necropsy, even though the most careful clinical search, including operative abdominal exploration, has failed to disclose it during life.

8. The sensitiveness of these patients to irritants in general and to the removal of foci of infection in particular is very striking.

9. Foci of septic infection should be removed with the greatest caution.

10. Tuberculin should not be used subcutaneously, either for diagnostic or for therapeutic purposes.

11. The extreme reactivity to the removal of pyogenic foci suggests an allergic phenomenon and not the ordinary response to surgical trauma.

12. Roentgen-ray therapy, directed to the deeper glands after all pyogenic foci had been removed, resulted in striking improvement in one of the patients.

VERY HIGH BLOOD PRESSURE AND CONGENITAL HEART DISEASE

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NEW YORK

The types of congenital heart lesion encountered in adult life, for instance, around the age of 40, are of two kinds. The typical congenital heart lesion, with the enormous enlargement in the region of the conus and the marked thrill in the pulmonary region, accompanied by loud systolic bruit heard over all the chest, is usually seen by many physicians, and is recognized by nearly all. There is another type of congenital heart disease that is much more obscure and the existence of which some people doubt. We find, in some of these cases, a very high blood pressure, with a right ventricular preponderance. In these, no definite inference can be drawn from what is heard on auscultation.

When a person with a blood pressure of 240 or thereabouts gives a history of many years of circulatory difficulty, we should expect to find with our fluoroscope a very large left ventricle and the usual picture of long standing cardiovascular renal disease. In the type of congenital heart disease to which I refer, there is no important renal involvement. The heart structure occupies the center of the chest, and is usually elongated. There is a suggestion of prominence in the region of the pulmonary artery. I have come to the conclusion that it represents a late stage of infantile heart and that the high blood pressure is a systemic compensatory blood pressure relating to the high blood pressure in the pulmonary circuit.

One person presenting this syndrome had been the subject of most elaborate observations in various institutions and resorts, and had been much frightened by uniformly bad prognosis. Since his condition has been recognized as a physiologic variation of a type of congenital origin, this man has lived comfortably for several years. Up to the present time, he has been on a regimen planned chiefly to maintain his general muscular strength. His blood pressure has not varied, always registering from 240 to 260. He has a son with a heart of the same type.

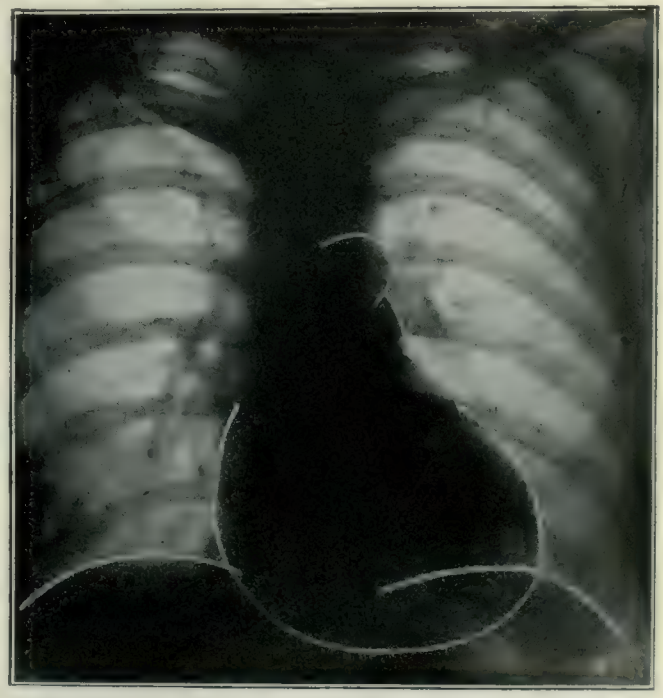


Fig. 1.—Outline of heart as revealed by the orthodiagraph: The heart is not enlarged, as would be expected with high blood pressure.

In the infinite number of human beings, a variation in type of structure of the circulatory system is reasonably to be expected. I am convinced that there is such a variation in type involving a right predominance, and, that, later in life, a higher blood pressure usually appears, without any definite disease. It is not a common type.

In a practice devoted exclusively to cardiac disease, these patients appear now and then. They present, in different degrees: (1) a very high blood pressure in a person with none of the usual causes, such as defective kidneys or hardening of the arteries; (2) an anomalous finding in the orthodiagram and electrocardiogram, and (3) a remarkably slight inconvenience from the very high blood pressure, e. g., 230.

I have spoken of this condition once or twice, although my experience with it is extremely limited.

REPORT OF CASES

Miss A. P. M. was seen by me in consultation, and I suggested a probable congenital lesion of the heart, giving the opinion that the high blood pressure was due to that and no other disease. I predicted that the orthodiagram and also

the electrocardiogram would be anomalous, and that the electrocardiogram would show right preponderance. The prediction of the right preponderance in a patient with a blood pressure of 230 was a fairly bold venture. Subsequent technical examination confirmed my prediction.

The patient, when first seen by me, was sick in bed, complaining of marked shortness of breath and nervousness. She had severe headache and palpitation. She had been in bed with this complaint for two weeks, without improvement.

Five years previously, there had been a similar attack, which kept her in bed for six weeks; but between these two attacks she had been able to go about, with little discomfort. She was told that she had a high blood pressure and a disease of the heart valve. The present attack, she thought, was brought on by a period of overwork and nervousness. Her physician had been giving her digitalis, which on my recommendation was stopped, and she was put on bromids, given three times a day. She improved under this treatment, and was able to come in to my office a month later, at which time the orthodiagram (Fig. 1) and the electrocardiogram (Fig. 2) were taken. The heart was only a little enlarged, and there was a harsh systolic murmur on the apex and all over the heart, loudest at the aortic area. The aortic second sound was markedly increased. The blood pressure was 235 systolic, but 130 diastolic. The pulse rate was 90 and irregular, owing to sinus arrhythmia and premature beats, as the electrocardiogram showed.

COMMENT

The importance of recognizing the condition lies in the fact that the patient must not be treated as an invalid, but must be allowed to lead a normal life, as far as her strength goes. The benefit of this treatment was evident in an improvement as soon as a rational plan of living was instigated and the fear of heart failure was put aside.

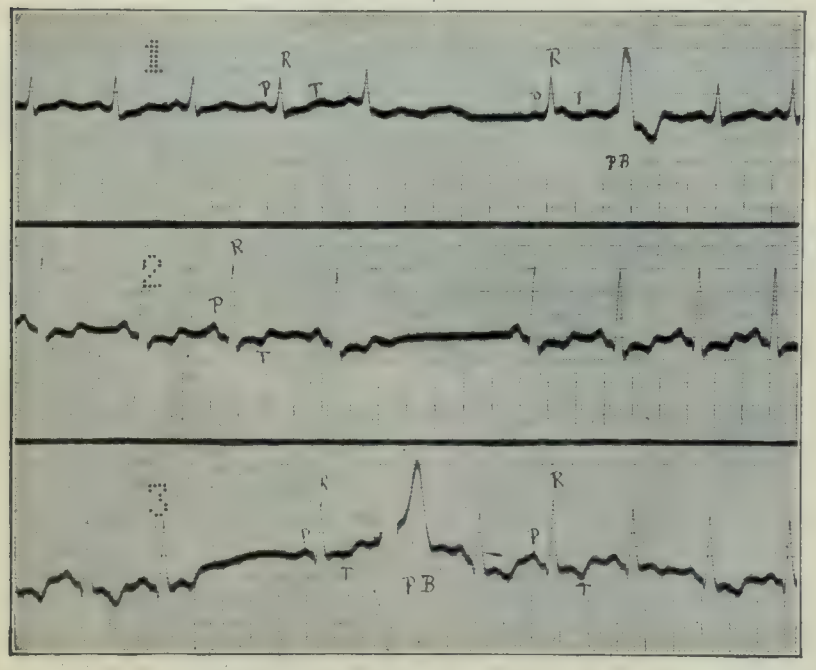


Fig. 2.—Sinus irregularity, denoted by long pauses between some of the beats, sometimes as long as 1.40 seconds, and the frequent variations in the intervals between the other beats; ventricular premature beats starting from the left ventricle are present after some of the long pauses. They are marked *P B* in Leads 1 and 3.

109 East Sixty-First Street.

Typhoid Fever in World War.—There was less than one case of typhoid fever during the World War to each 94 cases during the Civil War, and to each 140 cases during the Spanish-American War and Philippine Insurrection.—(A. G. Love, *Military Surgeon,* August, 1922.)

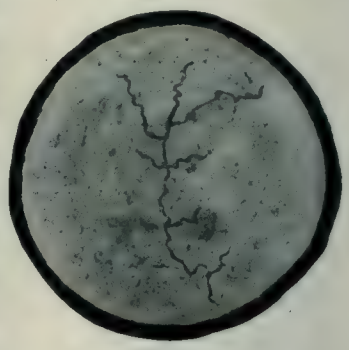
Clinical Notes, Suggestions, and New Instruments

RETICULAR KERATITIS: REPORT OF A CASE

ELTON S. OSBORNE, M.D., SAVANNAH, GA.

In the case here reported, the malarial parasite appears to be the etiologic factor.

A young man, seen in November, who had been working at his trade as a carpenter for several months in various small towns situated near the Savannah River swamps, a malarial section, had had chills and fever, in September, for which he took quinin. Whenever treatment was stopped, the symptoms reappeared, this continuing for two months.



Ophthalmoscopic appearance of reticular keratitis.

Two days before I saw him, he was driving an automobile in the country, and he thought a foreign body had entered the left eye, which suddenly became painful and inflamed, rendering sleep impossible. Examination revealed the conjunctiva of the left eye inflamed, and there was pericorneal injection. There were raised ridges on the corneal surface, having the shape shown in the illustration, the epithelium of which was raised above the corneal level; but there was no denuding of the surface. There was no staining with fluorescein.

The attack lasted more than a week, when the eye returned to normal, developing normal vision, although the vision in the affected eye had been limited to counting fingers during the attack.

The family history was negative. The patient had had only the diseases of childhood, and no previous eye trouble. His appearance indicated that he had lost weight, and he stated that he was 10 pounds (4.5 kg.) underweight. The skin was sallow, with an icteroid tinge, and there was an herpetic eruption on the lips. Ears, teeth and tonsils were negative. The pupils were equal, responding to light and accommodation, and there was no nystagmus. Ocular movements were normal. There was a yellowish tint and injection of the ocular conjunctiva, and pericorneal injection. Ocular tension by a McLean tonometer was 16. The cervical glands and thyroid were not enlarged.

The lungs were normal. The pulse was 101; the blood pressure, 110 systolic, 84 diastolic. The heart was regular and there were no murmurs. The abdomen and external genitalia were negative. The prostate was normal and was not tender, and there was no discharge on stripping.

The malarial parasite present in the blood was probably quartan. The Wassermann reaction was negative. The urine was scant and highly colored. Specific gravity was 1.030. There was no albumin or sugar.

CONCLUSION

It would appear that the malarial parasite was the etiologic factor. There had been a malarial infection for several months, during which time quinin had not been given in sufficient dosage or the administration continued over a long enough period to destroy all parasites. The recovery was prompt on the administration of sufficient quinin, and there has been no recurrence of any symptoms. The daily quinin dosage

is still maintained. The only local treatment was atropin instillations, and the patient was told to wear dark glasses.

19 East Jones Street.

TRAUMATIC LUXATION OF THE HIP IN CHILDHOOD: REPORT OF CASE

DOUGLAS P. MURPHY, M.D., RUTHERFORDTON, N. C.

Hip joint dislocation of traumatic origin in children is rare. When this joint is subjected to undue strain, fracture is the rule in childhood.



Traumatic dislocation of the left hip in a child 8 years old.

Maffei[1] found only forty-nine cases reported in the literature, to which he added three from a series of 1,842 luxations occurring over a period of twenty-one years at the Rizzoli Institute of Bologna. Maffei noted that the posterior luxation was most common, posterior iliac luxation occurring in thirty-three and posterior ischiatic in six cases. Of the anterior, two were suprapubic, one was iliopectoral, and six were obturator. In one case, the type was not given. Thirty-seven occurred in males, and eleven in females. The left hip was injured in twenty-two cases, and the right in seventeen.

Of Maffei's own cases, two were posterior iliac of the left leg, and one anterior suprapubic of the right leg. All were operatively reduced, and were cured. Of the cases recorded in the literature, spontaneous reduction was affected in only one.

REFORT OF CASE

The case here reported is presented because of the rarity of this accident in childhood.

G. C., a boy, aged 8 years, was struck, Dec. 25, 1922, by an automobile, while he was bending over to pick up something. He was brought to the hospital a few minutes after the accident. He had been bleeding at the nose. He was quite excited, and complained of pain in the region of the left hip, which was increased on motion. The left eye was closed, and the lid was discolored and edematous. There was a slight laceration of the lower lip. The left leg appeared shortened, and was flexed somewhat at the thigh and at the knee. It was rotated inward, and motion was limited laterally and in extension. The head of the femur could be felt prominently above and behind its normal position.

1. Maffei, F.: Contributo allo studio della lussazione traumatica dell'anca nell'infanzia, Chir. d. org. di movimento **6**: 604, 1922, reviewed by Brennan: Internat. Abstr. Surg., January, 1923.

Posterior iliac luxation of the left femur was diagnosed with slight concussion of the brain and slight laceration of the lower lip. The diagnosis of posterior luxation was confirmed by roentgen-ray examination, as shown in the accompanying illustration.

The head of the femur was easily returned to its normal position, under light ether anesthesia, without resort to open operation.

SUMMARY

1. Traumatic dislocation of the hip joint in childhood is rare.
2. Males are more frequently affected than females.
3. Posterior luxation is the commonest form.
4. The left hip is affected slightly more often than the right.
5. Operative interference is frequently necessary.

FIBROMA OF STOMACH

J. R. COOPER, M.D., NEW CASTLE, PA.

On account of the rare occurrence of fibroid tumors in the stomach, I thought it would be interesting to report this case. In fact, I have been unable to find any reference to it in the literature I have at hand.

History.—A business man, aged 45, married, was referred to me in September, 1921, by Dr. F. F. Urey for a roentgen-ray examination to determine, if possible, the cause of hemorrhages he was having from the stomach and bowels. About two years before, the patient at times became dizzy, and his stools after these spells were dark and of a tarry consistency. He consulted a number of physicians, but none of them were able to discover the real cause of his trouble. In 1920 his dizzy spells became more pronounced, and he occasionally vomited blood in considerable quantities. His condition then was thought to be ulcer of the stomach or duodenum, but no ulcer history could be secured except the hemorrhages. There was no pain or tenderness before or after eating; his appetite was generally good, and there was no loss of weight. The skin and the general appearance were normal.

Roentgen-Ray Findings.—On making the preliminary fluoroscopic survey before giving the opaque meal, I noticed extending into the gas bubble of the stomach a tumor-like mass about as large as a medium sized orange. It was



Tumor in cardiac end of stomach, extending into the gas bubble.

observed to rise and fall with respiration, and no pulsation could be seen. The tumor, while resembling the apex of a heart, was seen to be distinct from this organ. Its outline could be best observed when the patient held his breath after a medium full inspiration. I felt that we were dealing with a benign neoplasm, as the history of such long standing would rule out malignancy of the stomach. Aneurysm of the abdominal aorta was thought of, but as the Wassermann reaction was negative and no pulsations could be seen, it

was ruled out. To me it resembled a polyp. I then gave the patient a barium meal, but no evidence of ulcer of the stomach or duodenum could be found, and the peristalsis was normal. With the stomach filled with the barium mixture, the tumor could not be seen.

Operation and Result.—In June, 1922, the patient had had a severe attack of dizziness, and vomited a large quantity of blood; he also had passed considerable blood by the bowels. He had been advised at the time of the discovery of the tumor to have it removed; but, as his health was good, he did not heed the advice until this attack, when, becoming alarmed, he went to Rochester, Minn., and was operated on by Dr. Charles Mayo, July 18, 1922. Dr. Mayo wrote me:

"I operated on Mr. H., July 18, 1922, excising a fibromyoma the size of an apple in the cardiac end of the stomach. The tumor was growing from the anterior wall about 1½ inches from the cardia, and I removed it with its base. The opening was closed with two rows of chromic catgut. The pathologic report was fibromyoma with a large ulcer on the mucous surface. This condition is quite a rare one."

The patient is now in perfect health, with no return of his former symptoms.

111 East North Street.

CARCINOMA OF THE STOMACH: REPORT OF CASE, AND EXAMINATION EIGHTEEN YEARS AFTER OPERATION *

JOHN DUDLEY DUNHAM, A.B., M.D., COLUMBUS, OHIO
Assistant Professor of Medicine, Ohio State University College of Medicine

History.—A man, aged 52, an ice dealer, consulted me in July, 1904, for a gastric complaint. The family history was negative, none of his people having died of tuberculosis or malignant disease. He himself had had the diseases of childhood, but no other diseases, and stated that he had never had venereal infection. He was not addicted to the use of tobacco or alcohol.

The illness for which he consulted me began in January, 1904, when the ingestion of food was followed by eructations of gas and sour fluid. Coincident with this was a loss of appetite and inability to perform heavy work. The family physician administered some artificial digestants and regulated the diet, but without benefit. For the preceding four weeks he had occasionally vomited sour, undigested food, but never blood, nor had he observed dark stools. There was no definite history of pain after food.

Examination.—The skin was sallow and the conjunctivae pale. The weight before the beginning of his illness was 175 pounds (79 kg.), and was now 130 pounds (59 kg.). The tongue had a whitish coating. The chest showed normal conditions. There was a small, indefinite, movable tumor to the left of the median line in the epigastrium. The stomach appeared to occupy its usual position. The liver and spleen were normal. An examination of the blood showed a hemoglobin percentage of 50 by the von Fleischl method; a secondary anemia with an increase of leukocytes was shown by stained specimens. The urine was normal. The stomach contents, one hour after an Ewald test meal, showed an absence of free hydrochloric acid and the presence of lactic acid. Food fragments from a meal of the previous night were found. The guaiac test was positive.

Treatment and Course.—A diagnosis of cancer of the stomach was made, and the patient was advised to consult a surgeon without delay, for the purpose of having an exploratory operation performed. This advice was rejected by the patient, who was under the care of another physician, receiving medical treatment from July to Dec. 18, 1904. On the latter date, five months after a diagnosis had been made, he entered Mount Carmel Hospital in the service of Drs. W. D. Hamilton and C. S. Hamilton. The patient had become markedly anemic and sallow in appearance. He had recently vomited coffee-ground material, and had suffered a considerable loss of strength. His weight was 126 pounds (57 kg.). In the epigastrium was a tumor the size of a lemon, quite sensitive to the touch, so that its physical characteristics could not be determined. The hemoglobin was 40 per cent., and there was present a marked secondary anemia.

Dr. C. S. Hamilton operated on the patient, Dec. 22, 1904. The two surgeons reported the stomach to be the seat of a tumor extending from the region of the pylorus along the lesser curvature to its middle. The growth partially closed the pylorus, involving the peritoneum on the anterior gastric wall. Subtotal gastrectomy was performed after the Mayo method, 1 inch of the duodenum being removed, and a posterior gastro-enterostomy with Robson bobbin was done.

Pathologic Examination.—The portion of the pyloric end of the stomach removed measured 12 by 9 by 3 cm. The anterior surface was irregular, extending for a distance of 7 cm. toward the cardiac end. The omentum was attached to this thickened mass. Posteriorly, the surface was smoother, the thickening extending down 5 cm. from the lesser curvature. A hard, irregular, indurated mass occupied the wall of the stomach, except the lower posterior portion, along which was an apparently uninvaded strip. The inner surface was reddened and injected. Erosions and ulcerations were noted. The mucosa could be made out only in the free area.

The photomicrographs[1] and the histologic report were made by Dr. James McIlvaine Phillips, who found the specimen to consist of an irregular block of white tissue, previously fixed and hardened, and brought to the laboratory in alcohol. The block was an irregular mass about 3 cm. long, 1.5 cm. thick, and 2 cm. wide. One surface resembled thickened and irregular mucous membrane, the other serous membrane. The mass of tissue was cut into blocks of suitable size, embedded in celloidin, and these blocks so oriented that sections cut from them extended from the mucous to the serous surfaces. Sections were then stained in hematoxylin and eosin and, for photography, in alum carmin.

The sections took the stain poorly. The tubular glands in the thickened mucous membrane were enlarged and irregular. In their more superficial portions, the cylindric epithelium lining them consisted mostly of a single layer. In their deeper portions there were several layers, and in some tubules the cells entirely filled the lumen. A few of the tubules were cystic. In many of the tubules the thickened layer of cells lining them infiltrated directly into the surrounding tissue. The epithelial cells were large, and many of them swollen and hazy, being transformed into a material which resembled mucin in staining reaction. The submucosa was thickened and infiltrated with round cells and leukocytes. In places, irregular islands of epithelial cells were seen.

The muscular coats had almost entirely disappeared, and were replaced by masses of epithelial cells, the nuclei in many of which showed karyokinetic changes. Some of these cells contained two or more nuclei. The masses of cells were separated from one another by a very coarse mesh network of fine, loose connective tissue fibers. Very delicate capillary blood vessels were seen in these strands, but none were found among the epithelial cells. Here and there large islands or strands of connective tissue and atrophic involuntary muscle were seen.

The diagnosis, carcinoma of the encephaloid type, was confirmed by Dr. Francis Carter Wood of New York.

Following operation, the patient had a stormy convalescence, but slowly and steadily improved.

Later Examination.—Dec. 4, 1922, the patient, aged 71, appeared healthy, and his digestion was perfect. He ate six times daily, indulging in all varieties of food. The only abnormality noted was occasioned by a feeling of hunger.

CONCLUSION

This case is reported as a plea for more frequent gastrectomy for cancer of the stomach. The patient has everything to gain and nothing to lose by such a procedure.

Probably very few patients have lived eighteen years after an operation for carcinoma of the stomach.

327 East State Street.

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* From the Department of Medicine, Ohio State University College of Medicine.

1. These were reproduced by Dunham, J. D.: New York M. J. **84**: 218 (Aug. 4) 1906.

THE INTRAGASTRIC DETERMINATION OF ACIDITY BY MEANS OF THE CELLULOID CAPSULE

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Consultant in Gastro-Enterology, U. S. Veterans' Bureau

While there may be variations of opinion as to the practical significance of exact quantitative determinations of the acid values of the gastric contents, there can be no doubt as to the value of a qualitative determination of the presence or complete absence of gastric acidity. The absence of free hydrochloric acid may signify malignancy, a marked atrophic gastritis, a benign achylia or complete neutralization with alkalis.

Although the determination of anacidity is thus of great practical value, there are times when the introduction of the stomach tube is not desirable: 1. When a penetrating ulcer is present, the gagging and vomiting occasionally produced by the introduction of the tube may produce a perforation. When an associated malignancy is suspected, one may nevertheless wish to know whether free hydrochloric acid is present or not. 2. In marked asthenia, or when a cardiac complication is present, as well as in the highly neurotic type of individual, the introduction of the tube may be considered undesirable.

In order to avoid the use of the tube, in those cases in which its use is contraindicated or undesirable, I have employed the following simple direct method for the qualitative determination of free hydrochloric acid. I employ the small transparent, indigestible celluloid capsule (size 0 or 00), as previously described.[1] These capsules may be obtained from the Collapsule Company, 122 Hudson Street, New York. A string about 30 inches long is attached to one end. Within the capsule is placed a small strip of Congo red paper. The capsule is then closed. Holes for the communication of fluid are then made by passing a moderately heated hairpin through the coapting surfaces. This small capsule is swallowed for a distance of about 24 inches from the teeth. This will carry the celluloid capsule well within the gastric contents. After several minutes, the capsule is removed. The contained Congo red paper will have turned blue, in the presence of free hydrochloric acid.

With a minimum of discomfort to the patient, this simple intragastric, celluloid capsule method enables us to obtain evidence of real practical value.

1 West Eighty-Fifth Street.

1. Buckstein, Jacob: Direct Determination of Lipase Within the Small Intestine, J. A. M. A. **79**: 1766-1767 (Nov. 18) 1922.

ATRESIA OF THE NIPPLES

O. B. SHEETS, M.D., CARTHAGE, S. D.

I have been unable to find any reference in literature to congenital occlusion of the lacteal openings, and therefore report a case in a primipara, aged 33, whose breasts and nipples showed no apparent abnormality.

Mrs. T. W. gave birth to a strong, vigorous boy of 8 pounds (3.6 kg.). The puerperium, as the labor, was uneventful except at the beginning of the third day, when she began to complain of her breasts. Examination disclosed them to be tender to touch, and moderately engorged. The pulse and temperature were normal. At this time the baby became fussy, and at feeding intervals would nurse ravenously with no apparent satisfaction. On the fourth day the mother complained bitterly at these nursing periods, and a second examination revealed the breasts to be very large, tense and painful. There was no local heat or infiltration. The temperature remained normal; the pulse became slightly accelerated. The condition being one of extreme engorgement, effort was made to relieve the breasts, first by expression, then by pumping, with the rubber bulb and the vacuum pump, breast pumps, and finally by having the husband suckle the breasts. None of these methods gave any lacteal secretion. As the trouble seemed to be wholly with the nipples, the breasts were punctured under surgical precautions through the nipples with a 28 gage hypodermic needle on an aspirator, and a quantity of milk was secured. Before the breasts were emptied, two more openings were made, or three through each nipple, each being located with a staining agent. With the third puncture the breast was partially relieved, and the baby applied, with apparent satisfaction to himself and alleviation to the mother. Subsequently these apertures were probed with a No. 1 Bowman probe previous to each nursing for the first thirty-six hours; then less often, with a gradual increase in the size of the probe up to a No. 6 Bowman, thereby securing free lacteal orifices by the end of the fifth day of treatment.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 475)

[NOTE.—This is the eighth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

GOAT'S MILK

Goat's milk is pure white, without especially pronounced odor or taste. There may be a peculiar "goaty" taste and unpleasant odor to the milk, but this can be entirely avoided if the milk is properly produced and handled, that is, by preventing manurial pollution, by keeping male goats out of and away from the stable in which the milking is done, and by taking precautions to keep the udder clean.

There is no essential chemical difference between the constitution of goat's milk casein and that of cow's milk.[19] The casein coagulum forms a more compact, firm mass than does that of the bovine.

Because of the similar chemical composition, goat's milk may be modified, like cow's milk, for infant feeding.[20] The protein content is considerably higher than in human milk, the sugar considerably less. The fat varies from 2.5 to 7.5 per cent.,[21] generally a little higher than that in cow's milk. The butter fat is white, there being a minimum of pigment.[22] The fat rather closely resembles the fat in human milk. The fat globules are relatively small, in very fine droplets,[23] and of uniform size. Ninety per cent. of the fat globules of cow's milk are over 4 microns in diameter; in goat's milk only about 10 per cent. are over 4 microns, and often 50 per cent. are under 2 microns.

The fat globules rise slowly, and in most cases no cream layer is formed. The cream is separated with difficulty by centrifuging,[24] but may be thoroughly separated in a cream separator. Goat's milk fat is richer in insoluble volatile acids than cow's milk fat; but, on the whole, there is very little difference when the chemical composition of the two fats is compared.[25]

In regard to the salt content, goat's milk differs[26] from cow's in containing tricalcium phosphate, dimagnesium and trimagnesium phosphate, monopotassium phosphate, and no monomagnesium or dipotassium phosphate. Human milk contains no insoluble phosphates. Goat's and cow's milk contain more phosphorus

19. Calvin, J. K.: Arch. Pediat. **38**: 584 (Sept.) 1921.
20. Griffith: Diseases of Infancy and Childhood **1**: 109, 1919.
21. Vieth: Milchztg. **14**: 449, 1885.
22. Schaffer: Schweiz. Wchnschr. f. Pharm. **31**: 58.
23. Barbellion: Verhandl. f. Kinderh. **13**, 1900.
24. Heineman, P. G.: Milk, Philadelphia, W. B. Saunders Company, 1920.
25. Solberg: Jahrb. f. Thierchem. **25**: 214.
26. Bosworth and Van Slyke: J. Biol. Chem. **24**: 173, 177 (March) 1916.

than human milk. There are more chlorids in goat's than in human or in cow's milk. The different salts appear to be greatest in number in goat's and least in human milk. McLean [27] asserts that goat's milk contains more iron than cow's milk.

Yield.—In proportion to its body weight, the goat produces about twice as much milk as the cow. The goat may yield from ten to twelve or even fifteen times its body weight in milk yearly, while a cow yields five or six times its weight.[28] By good feeding, 800 kg. or more (from 600 to 1,100 liters) of milk may be obtained in a year. A year-old goat will produce from 300 to 700 liters a year.[29] Goats usually provide milk about six months out of a year, and a lactation period ranging from seven to ten months is considered very satisfactory. A good scrub or common goat will yield about 2 quarts (liters) of milk a day,[30] and a production of 3 quarts a day is considered excellent. However, a good grade Toggenburg will produce from 3 to 4 quarts, and some pure-bred Toggenburgs will run from 5 to 7 quarts a day.

If goat's milk is aseptically obtained, it is the most suitable substitute for breast milk, since it has not been exposed to the possibility of changes, has not lost its natural properties, and can be given raw.

Another advantage of goat's milk is that it cannot be skimmed, as the cream does not form a distinct layer.[31]

Goats are practically immune to tuberculosis.[32] Only from 0.4 to 0.6 per cent. of the goats in Prussia gave a positive reaction for tuberculosis.[24] The question of the transmission of a passive immunity to tuberculosis by the transfer of natural antibodies from goat's milk to very young infants, or from the use of this milk over a much longer period, is now being investigated. At present the results are incomplete.

From some very limited data it might appear that goat's milk is considerably higher in antiscorbutic properties than cow's milk. Moore states that six guinea-pigs weighing from 110 to 145 gm. each were fed on fresh goat's milk, one set for eighty days, a second for forty-four days. The animals developed normally with no clinical symptoms of scurvy, although similar experiments with cow's milk resulted in scurvy.

CERTIFIED MILK

The term "certified milk" should be limited to milk produced in accordance with the requirements of the American Association of Medical Milk Commissions.[33] The expressed desire of the dairyman to contract to produce clean milk is far from sufficient for public protection. Only by periodic inspection by representatives of the local authorities, such as city, state or special commissioners, can a supply of wholesome milk be continuously assured. Sanitary stables and proper handling of the cows, with milking into sterilized receptacles are prime essentials. The cows must be in good health, free from tuberculosis and other infectious diseases. All persons coming in contact with the milk must exercise scrupulous cleanliness and must be free from infections which might be conveyed to others through the milk. All of these precautions can be nullified by carelessness in handling the milk, either at the farm, during transportation or in the home. Certified milk must have a minimum bacterial content, and should never be more than thirty-six hours old when delivered.

Certification must be denied all milks having, on repeated examination, a bacterial count exceeding 10,000 per cubic centimeter. Such examination should be made at least once a week. Of even greater importance than the number are the types of bacteria found in the milk. The milk from all sick cattle and those with open wounds must be excluded. Employees suffering from infectious diseases which may contaminate the milk must be quarantined, and if contagious diseases occur on the premises of a certified dairy, the customers should be notified so that the milk may be sterilized in the home if the commission shall deem it wise to allow the milk to be delivered. In case of doubt, the dairy should be temporarily stopped from further deliveries. The milk must be cooled immediately after being secured, and maintained at a temperature between 35 and 40 F. until delivered.

Many good milks are spoiled on the door-step of the home between the time of delivery and of placing the milk in the icebox. All the utensils and vessels used for preparing the mixture must be clean and sterilized by boiling. As soon as the mixture is prepared, it should be put into the icebox again and kept there, preferably in individual bottles containing single feedings.

PASTEURIZED MILK

Pasteurization is accomplished by heating milk for a definite length of time, varying according to the temperature to which the milk is heated. The "holding method" whereby the milk is heated to not less than from 140 to 150 F., (60 to 65 C.) and is kept at this temperature for at least twenty minutes, is probably the most efficient for commercial purposes. Pasteurization in the home is well accomplished by one of several simple pasteurizers obtainable in the market. Similar results may be obtained by placing milk in the inner vessel of a double boiler with cold water in the outer vessel. The water is then heated to 160 F., and the milk is allowed to stand in its receptacle in a warm place for twenty minutes, following which it is rapidly cooled in a good icechest, where it should be kept until the time for reheating at feeding periods. If a similar method is desired for pasteurization in individual bottles, they should be placed in a pail, and water added to a level above the milk contained in the bottles, after which the water is heated to 160 F. The pail is then removed from the stove, covered, and kept in a warm place for one-half hour, after which the milk is to be rapidly cooled in a good icebox. It should be remembered that the bottles must be properly stoppered.

Scalded Milk.—The milk is heated in an open vessel until it bubbles around the edges and steams in the center. By this means it is heated to temperatures varying from 165 to 185 F. Scalding is not boiling.

Boiled Milk.—Milk may be boiled in either a single or a double boiler. With a single boiler, the milk is heated to the boiling point and allowed to boil from three to five minutes, with constant stirring. With a double boiler, the milk mixture in the inner and cold water in the outer vessel, the water is brought to the boiling point and kept boiling for from six to eight minutes; the whole process requires from ten to twenty minutes. Following the heating, cold water should be substituted in the outer vessel, and should be renewed several times until the milk cools. The milk is then

27. McLean: Ztschr. f. Kinderh., Orig. **4**: 168, 1912.
28. Fleischman: Lehrbuch der Milchwirthschaft **2**: 65, 1898.
29. Kohlschmidt: Jahrb. f. Thierchem. **30**: 254, 1901.
30. Rosenau: The Milk Question, New York, Houghton, Mifflin Company, 1912.
31. Kochen: Steinegger, Milchztg. **27**: 356, 1898.
32. Richter: Berl. klin. Wchnschr., 1888, No. 18.
33. The standards are given in the literature of the American Association of Medical Milk Commissions.

put in small sterilized bottles for individual feedings, or in one large bottle, capped, and placed on ice. While milk heated in a double boiler forms a much finer and softer curd than that of raw milk, it is not so fine as the milk boiled directly over the flame. It does, however, answer the needs in most cases, and, because of the simplicity of the method, is preferable.

RAW MILK VERSUS HEATED MILK

Whatever opinion one may have as to the advisability of recommending heated milk rather than raw milk for infant feeding as a general practice, it must be recognized that the earlier teaching in America concerning raw milk feeding led to the production of certified milk, with a resulting decrease in infant mortality. However, it should be emphasized that any method of food preparation which may tend toward an erroneous feeling of security is to be avoided. This applies particularly to milk production, as it is obvious that unclean milk cannot be considered a safe food for infants, even though it is pasteurized or boiled.

Raw Milk.—In large communities, certified milk from properly inspected dairies is the only milk which may be fed raw with any feeling of safety. During the warm months, even certified milk should be pasteurized or boiled in the home. In small communities, when the milk has been produced under sanitary conditions and reaches the home a few hours after milking, it may be safely used. When there is any doubt as to the quality of the milk, it should be heated.

PASTEURIZATION VERSUS BOILING

The ardent advocates of pasteurization claim that it is essentially a raw milk, so far as concerns its physiologic properties. Our experimental studies have shown that when milk is allowed to stand for some time after pasteurization, even though the vitamins are not completely destroyed, its antiscorbutic value is less than that of fresh raw milk. Therefore the relation of the time of pasteurization to the hour of feeding is important. Proper pasteurization destroys most organisms except the spore bearers. Fortunately, this includes the majority of the ordinary pathogenic bacteria. One disadvantage is that most of the lactic acid-producing bacteria are destroyed, and, therefore, the milk fails to sour, or sours less readily than unheated milk. This may give the mother a false feeling of security. In most instances, however, some of the lactic acid-producing organisms, having a high thermal death point, survive the heating and thereby lead to souring in old milk. While commercial pasteurization, therefore, has its disadvantages, on the whole its use has accomplished much in the lowering of infant mortality.

Boiling in the Home.—This has the great advantage over commercial pasteurization in that if the raw milk has soured before it reaches the home, the housewife can readily detect it. However, it is to be remembered that many pathogenic organisms may develop in milk without giving any evidence of their presence; and, while the organisms themselves are in most instances destroyed by boiling, their toxic products are not thus removed.

The small flocculent curd of boiled milk is more easily digested than the large, tough, casein curds of raw milk. This is of distinct advantage in indigestion and diarrhea and in atrophy, as larger amounts of food and a more highly concentrated mixture can be administered. Boiling, therefore, effectually disposes of the majority of bacteriologic problems, and is an excellent casein modifier. While some of the lactalbumin is coagulated, small amounts of the sugar are caramelized, and some cream and salts are lost in the scum the advantages of this method outweighs its shortcomings.

In feeding boiled milk to infants, the danger of the development of rickets and scurvy can be positively obviated by the early addition of cod liver oil and orange juice to the diet. A tendency to constipation develops, owing to the more complete digestion of the fine curds in the small intestine and the absence of the large, hard protein curd seen with raw milk feedings; but this can usually be counteracted by adding carbohydrates to the mixture. *Duly considering all these facts, we believe that whenever there is any doubt as to the quality of the milk supply, the method of choice is boiling in the home, preferably by the double boiler. This should also apply to the reboiling of pasteurized milk whenever doubt exists as to its quality.*

FROZEN MILK

Vomiting and not infrequently diarrhea follow the feeding of milk that has been frozen. So far as possible, it is better to avoid the use of milk of this type. As this is not always possible, such milk should be boiled before being used in the feeding mixture. In most instances, the changes are in all probability physical, for in the freezing of the water the emulsion breaks and the fat becomes separated. When the milk is thawed, the fat globules coalesce and form a thick layer of butter fat which may cause a gastric and intestinal upset. Milk that has been frozen is less likely to show changes in the fat emulsion if the process of thawing goes on slowly in a cool room.

Pennington [34] and her collaborators also found that changes occurred in the protein of milk that was held for a considerable period at a temperature of 0 C. These changes resulted in proteolysis of the casein and of the lactalbumin.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

DIPHTHERIA TOXIN-ANTITOXIN MIXTURE (See New and Nonofficial Remedies, 1922, p. 282).

Eli Lilly & Company, Indianapolis.

Diphtheria Toxin-Antitoxin Mixture-Lilly.—Each cubic centimeter constitutes a single human dose containing three L + doses prepared in accordance with the requirements of the U. S. Public Health Service. Marketed in packages of three vials, sufficient for one immunizing treatment, each vial containing 1 Cc. of the toxin-antitoxin mixture.

DIPHTHERIA IMMUNITY TEST (SCHICK TEST) (See New and Nonofficial Remedies, 1922, p. 320).

Eli Lilly & Company, Indianapolis.

Schick Test.—Marketed in packages containing one vial of diphtheria toxin sufficient for ten tests and a vial filled with sterile physiological solution of sodium chloride, and in packages of ten vials (hospital size) containing toxin sufficient for 100 tests and ten vials filled with sterile physiological solution of sodium chloride. Each dose consists of approximately 0.001 Cc. of toxin (0.2 Cc. of the diluted toxin) which is equivalent to 1/40 of a minimum lethal dose for a guinea-pig of 250 Gm. weight. As a means of control, the Schick test control, representing diphtheria toxin of the same lot heated sufficiently to destroy the specific exotoxins, is supplied.

34. Pennington, Hepburn, Witner, Stafford and Burrell: J. Biol. Chem. **16**: 331, 1913.

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SATURDAY, FEBRUARY 24, 1923

THE ACTION OF HYPERTONIC SALT SOLUTION

Human curiosity demands an explanation not only of the customary manifestations of nature but also of the phenomena that can be brought about by artificial means in an empiric way. In medicine, this scientific inquisitiveness is widespread and eminently desirable. Few physicians are content to carry out a therapeutic procedure that is traditionally employed in practice year after year without giving occasional thought to its rationale. With the knowledge of how to secure a result comes the desire to know what causes it and why. A number of American clinicians, impressed by Weed and McKibben's [1] demonstration that the intravenous administration of hypertonic salt solution to animals was attended by a decrease in the size of the brain and a fall in cerebrospinal pressure, have attempted to apply it to clinical practice.[2] The impression has been created that the effects are often sufficiently satisfactory to warrant the employment of the procedure as a therapeutic measure. It is said that as the result of such injections cerebral hernias often disappeared or were much diminished, the swollen brain decreased in size so that operations on it could be performed more easily, and the elevated cerebrospinal pressure of patients with brain tumor was usually reduced promptly. A recent study of the effect of hypertonic salt solution, administered intravenously to a number of patients with brain tumor who had an increased cerebrospinal pressure, shows that symptomatic improvement occurred in all. This was mainly manifested in the relief of headache and stupor. No harmful effects were observed. It appears likely that the fall in cerebrospinal pressure that follows the intravenous or oral administration of hypertonic salt solution is a volume change dependent on the egress of fluid from the brain to the blood stream.

The immediate effect of the introduction of hypertonic saline solutions, for example, 100 c.c. of 15 per cent. sodium chlorid solution into the circulation, is the production of a hydremic plethora because of the withdrawal of water from the tissues, the brain being only one of the sites of this diffusion. In a study made at the Massachusetts General Hospital, Barach, Mason and Jones [3] have fixed the responsibility for this on the increased chlorids brought by injection into the blood. The body at once responds, in an effort to render the plasma isotonic again, by pouring water into the blood stream until the osmotic equilibrium is attained. The increase in blood volume usually parallels the blood chlorid concentration. The physics of the reaction is what might be anticipated. In the Boston cases the red corpuscles showed no impairment due to the introduction of hypertonic sodium chlorid solution. In one case there was a temporary lessening of fragility. The oxygen-carrying power of the hemoglobin was intact. There was no free hemoglobin spectroscopically, and no increase in bile pigment. The story is another instance of the benevolent devices of physicochemical regulation in the body.

ANEMIA IN CHRONIC NEPHRITIS

Most physicians think of chronic nephritis as essentially a kidney disease, which, in the narrower sense, it is. The prominent symptoms are those immediately attributable to the profound disturbance in the renal functions. The changes in the composition and character of the urine cannot fail to direct attention specifically and emphatically to the kidneys. Structural elements of various sorts are usually present in the secretion of these organs, and the normal constituents of the urine are likely to be diminished in quantity. Retention is a common manifestation. What the etiologic factors may be has been the subject of considerable divergence of opinion. The greatest emphasis has probably been placed on toxic agents, such as poisons which bring about a slow chronic intoxication, or products of endogenous origin that may work quite as insidiously and dangerously. Toxins derived from bacterial sources in the organism have been accused, and the severe reactions from exposure to unfavorable environments have not been overlooked in the explanations recorded.[4]

Brown and Roth [5] recently emphasized that chronic nephritis should be viewed from the standpoint of a constitutional disease. Renal injury is only one phase of this widespread toxic damage. The retinal, cardiac and vascular tissues, and hematopoietic system are also definitely injured. They reached this conclusion from

1. Weed, L. H., and McKibben, P. S.: Am. J. Physiol **48**: 512 (May) 1919

2 Cushing, Harvey, and Foley, F. B.: Proc. Soc. Exper. Biol. & Med. **17**: 217, 1920. Sachs, Ernest, and Belcher, G. W.: The Use of Saturated Salt Solution Intravenously During Intracranial Operations, J. A. M. A. **75**: 667 (Sept. 4) 1920.

3. Barach, A. L.; Mason, William, and Jones, B. P.: The Effect of the Administration of Hypertonic Salt Solution on the Blood Volume and Certain Related Blood Constituents, Arch. Int. Med. **30**: 668 (Nov.) 1922.

4. A discussion of the subject is given by Strauss, H.: Die Nephritiden, Berlin, Urban and Schwarzenberg, 1920.

5. Brown, G. E., and Roth, G. M.: The Anemia of Chronic Nephritis, Arch. Int. Med. **30**: 817 (Dec.) 1922.

a study of the anemia so commonly associated with the disease. According to these investigations of cases in which no blood loss had occurred, excessive hemolysis could not be called on to explain the lack of red cells. The probability thus remains that the anemia attending the renal insufficiency is due to decreased formation of erythrocytes incident to damaged function of the bone marrow. The latter is disturbed in common with other tissues.

As both Brown and Roth view it, accumulating evidence in chronic nephritis points to primary vascular injury of widespread, not merely renal, distribution; and the bone marrow tissues reveal secondary effects of vascular disease. The unknown agent causing renal insufficiency, they add, is probably the etiologic factor in the disturbance of hematopoiesis; in other words, a common cause is present. After repeated injuries to the bone marrow, anemia becomes more severe and takes on certain characteristics of a hypoplastic or aplastic type of anemia. The injury to the bone marrow concerns only its erythrogenic function. Leukocytogenesis is not involved. It is further pointed out that the latency in the development of the anemia can be explained on the basis of its bone marrow origin. The circulating erythrocytes are not destroyed. Excessive hemolysis is not present. The normal replacement of erythrocytes is slower after injury to the bone marrow. As the circulating cells die and replacement is slow, a lapse of time is natural before anemia is evident.

WAR AND ANATOMY

The Iliad and the Odyssey have recently been used as an index of anatomic knowledge in Homeric times. Körner [1] has found 147 descriptions of war wounds in the classic tale of high endeavor and protracted suffering resulting from the celebrated triangle that brought the hosts of Agamemnon before the walls of Troy. Special emphasis is laid on perforating wounds, in which the points of entrance or exit are given and intervening injured organs named; in one case, for example, a fleeing ex-combatant intercepted a spear in the upper gluteal region which made its reappearance below "the bone," presumably the os pubis, passing through the bladder. In another instance, a braver but less wise warrior, indiscreet enough to oppose the unmasked Odysseus, received the long suffering one's winged shaft in the breast, the arrow sticking in his liver, a localization signifying to Körner that the epic bard was a good enough topographic anatomist to place the dome of the liver some distance above the costal margin. From such references, Körner feels justified in concluding that Homer's knowledge of anatomy rested on a surer foundation than analogy with slaughtered animals and haphazard observations made in the treatment of war wounds, for spear laparotomies and ax amputations do not afford a sufficiently clean and wide field for accurate inspection. He believes, then, that Homer's information must have been based on deliberate dissection by physicians of the day, perhaps by the field surgeons. Fuld [2] has opposed Körner's conclusion, under the title "Prähomerische Sektionen?", confident that the human sacrifices of that barbarous time, and the not far distant cannibalism, furnished foundation enough for the meager Homeric details.

To a nonpartisan reader lenient to the vagaries of poetic license, Körner's anxious analysis of certain supposedly erroneous anatomic concepts of the Greek poet seems superfluous. He does not need to be convinced, by a passage locating the godlike Sarpedon's heart correctly in the pericardial sac, that the Achean confidant of the muse had no intention of situating the liver there likewise in a passage that seems to read to the contrary unless translated with great care. He will be inclined to believe that most of the grosser relations of the human viscera were known to the layman at that remote period somewhat as they are today, and without organized dissecting courses or sub rosa necropsies in a period of priestly control and pious regard for the dead. To this knowledge many sources contributed. And, after all, not the least of these was battle-field experience. For whatever may have been the effect of theological proscription in checking the mutilation of his fellow citizen in times of peace, no religious considerations restrained the Homeric hero from making mince meat of his enemy in the white heat of passion, if he was able and so desired. Witness the fate of the unfortunate goatkeeper Melanthius, who suffered the loss of his nose, ears, hands, feet and "parts of shame" following his careless underestimation of Odysseus' prowess in the battle in Penelope's hall. Many another hexametered catalogue of horrors could be cited.

Although a more generous spirit regarding the dissemination of knowledge may prevail today, it is unlikely that curiosity concerning anything so close to a savage's happiness as his own body could remain restrained through the long centuries before the Renaissance swept aside fear and hide-bound convention, and fired the intellectuals to blaze new trails. Long before that, when an extensive anatomic material was available, some one must have looked at it, and it is not to be doubted that he told a few friends what he found. But with a limited comparative anatomy, in the absence of developed embryology and physiology, knowledge based on understanding was impossible, and anatomy could make but feeble strides. It remained a mere catalogue, and must have been of about the same interest. One cannot help thinking of instances of modern seizure of opportunity. For instance, there is on exhibition a product of the war of our civilization, where culture offers no bar to minute investigation, and where a dozen related sciences contribute to mutual understanding. In Aschoff's Institute of Pathology in Freiburg, in the

1. Körner: München. med. Wchnschr. **69**: 1484 (Oct. 20) 1922.

2. Fuld: München. med. Wchnschr. **69**: 1731 (Dec. 15) 1922.

same room holding the collection of war injuries of 1870, there is a large exhibit of chests of tuberculous soldiers, freed from overlying soft parts, with the anterior half cut away, and with the roentgenogram, taken a few hours before death, hanging over the specimen, uniting clinical experience with pathologic detail. Surely here is method, backed by a wealth of scientific knowledge. But it is doubtful whether the spirit of curiosity behind it exceeded that of the ill-equipped ancients, whose slow but effective search for anatomic accuracy was long past its crude beginnings even in that far remote time when Abner was returned to Hebron, and Joab took him aside to speak with him quietly and smote him in the fifth intercostal space.

"FITNESS" IN DISEASE

The Census Bureau's summary of the annual report on mortality statistics reveals that 1,142,558 deaths occurred in 1920 within the death registration area of the continental United States, or among 82 per cent. of its population. For the entire group of states it may therefore be estimated that 1,400,000 persons die each year. Not all of these are aged; discussions of national vitality therefore stress the great importance of saving some of the lives lost. It has been alleged that this involves a preventability of 42 per cent. The health conservation programs which are so earnestly concerned with the prevention of untimely death often fail to take into account the fact that national efficiency is not necessarily coincident with national "vitality." Many lives may be prolonged through a period of economic uselessness.

The question under discussion is one that frequently concerns the physician. He is often called on to evaluate the physical fitness of a patient; it may become a necessity in order to assign the latter to some appropriate form of activity or to protect him from strains that would be detrimental to health. Finding the right job—the proper place in society—for a person under par is likely to become one of the numerous problems that measure a physician's service and worth in the family and in the community. It is obvious that if the strength or endurance of any worker consistently falls much below the standard for the task to which he has been assigned, the outcome will be unfortunate; on the other hand, as Lee [1] pointed out in a war-time message, if his strength is markedly greater than that of his task, he is not economically placed. Vocational fitness is always a desideratum.

What is obviously needed is a suitable measure of deteriorated functions. Objective proof is usually far better than the most judicious impressions of a physician or friend. Unusual interest attaches, therefore, to psychologic tests that were applied to a group of Joslin's diabetic patients in Boston by Miles and Root [2] of the Nutrition Laboratory of the Carnegie Institution of Washington. The results showed objective justification for the complaints of loss of memory and of ability to concentrate attention mentioned frequently by persons suffering from diabetes. The old and well established mental associations, such as are involved in doing simple addition of numbers, seem little influenced. But new tasks which demand immediate retention and recall, with little reference to past experience, are the ones which suffer and at which the patient finds himself below his former ability. There appears to be no marked increase in the errors the diabetic makes in his work as compared with the normal person, but rather a loss of speed, a decrease in the span, or amount that can be grasped at one time. That the change is chiefly in the nature of a retardation of the neuromuscular processes is indicated by those tests which more especially involve the muscles. In these, Miles and Root have found that the eye requires more time to turn and to react; that the fingers cannot make as many taps in a given interval, and that the hand cannot so accurately pursue a moving object. To what extent this retardation may be due to discouragement or mental depression, on the one hand, or specifically to the diabetes, as such, on the other, it is impossible to state. Miles and Root add that there is clear evidence that, with treatment, most of the persons tested showed rapid improvement on the psychologic side. The conclusions of these investigators will awaken widespread interest. They say that while memory span and muscle movement speed are of fundamental importance for the activities of life, there is a rather wide margin, and undoubtedly many persons with diabetes will be able to do as much light physical or mental work as is actually done by many normal men and women. In other words, "while the diabetic is not at all fitted for racing in top notch competition, still he is fairly well off for living comfortably and usefully." It will be of great value to secure additional studies of "fitness" on patients with other diseases.

INTESTINAL ANTISEPSIS

There is a widespread belief that, through bacterial changes in foods present within the alimentary tract, substances can arise that possess a harmfulness or toxicity of varying intensity for the organism. Clinical observations and personal experience serve to fortify this prevalent view, even though they cannot be said to constitute valid scientific evidence. Excessive intestinal putrefaction or the retention of the intestinal contents is frequently responsible for upsets in health varying from slight malaise to profound disturbance of well-being. Wells [3] has summarized the situation cogently

1. Lee, F. S.: The Human Machine, New York, Longmans, Green & Co., 1918.

2. Miles, W. R., and Root, H. F.: Psychologic Tests Applied to Diabetic Patients, Arch. Int. Med. **30**: 767 (Dec.) 1922.

3. Wells, H. G.: Chemical Pathology, Philadelphia, W. B. Saunders Company, 1920, p. 593.

by remarking that few of the known products of gastro-intestinal putrefaction are toxic to any considerable degree, and these are probably produced in too small quantities to cause any appreciable effect, especially in view of the detoxicating and eliminatory powers of the liver, kidney and other organs. Nevertheless, the names of the diseases that have been attributed to intestinal toxemia are legion.[4] Autointoxication, whatever it may mean, still finds advocates of its etiologic importance in human disorders.

One consequence of this large and seemingly justified interest in the production of poisonous bacterial products in the bowel and their subsequent absorption leading to harm has been the effort to prevent their formation. This led long ago to a variety of efforts to administer so-called intestinal antiseptics. The problem was reviewed in THE JOURNAL several years ago by Harris,[5] working under a grant made by the Therapeutic Research Committee of the Council on Pharmacy and Chemistry. As is pointed out in the Pharmacology of Useful Drugs,[6] there can be no doubt that the nature and character of the infection, its location in the intestinal tract, and the condition of the intestinal mucous membrane and its secretions, as well as the food residues in the bowel, must all influence the results of any efforts at intestinal antisepsis. It is not certain that absolute asepsis of the intestine is desirable, though it is unquestionably desirable to restrain the growth of putrefactive and other pathologic organisms. Some of the reasons for the popular use of certain purges, notably calomel, are their alleged action as an intestinal antiseptic. Fantus[7] reminds us that calomel is now generally admitted not to be an intestinal disinfectant, nor has its action as an intestinal antiseptic been definitely proved. Whatever benefit is derived from the use of the drug is doubtless due to the resultant purgation rather than to any direct effect on the growth of micro-organisms in the bowel.

Recently a group of Chicago investigators[8] has put the possibility of securing intestinal antisepsis by the use of drugs to a severe test under conditions readily controlled and in which any effect would be readily manifest. The procedure was based on the fact that death from intestinal obstruction is due to a toxemia. It has been demonstrated[9] that the toxic materials are produced in the intestinal tract by the action of the normal intestinal bacteria on the intestinal contents. The symptoms can be reproduced in dogs by the production of closed isolated segments of various parts of the small intestine by surgical operations. When this is done, a toxemia similar to that in acute obstruction occurs; and the source of the toxemia is the closed segment, since if this is removed the symptoms disappear. The proteolytic group of intestinal bacteria are the principal agents in the manufacture of the poisons absorbed from such closed loops of intestine. If these are rendered sterile by prolonged drainage into the abdominal cavity, no toxemia can occur.

As the production of these closed segments of the intestine is a readily available method of inducing in the experimental animal a toxemia definitely due to the activity of the intestinal bacteria, Dragstedt and Nisbet[8] have attempted to sterilize the intestinal mucosa by the direct application of chemical antiseptics to isolated loops or short segments of the intestine in animals. Despite the fact that this procedure offers a far more direct opportunity for germicidal effects to manifest themselves than the usual oral administration could possibly permit, sterilization was in no case secured. Many of the usual antiseptics of a strength thought to be sufficient to sterilize a surgeon's hands were used without regard for their possible toxicity, since they could be immediately removed. Furthermore, they were applied directly to the segment of intestine in their full strength undiluted or mixed with the gastric or intestinal content. In spite of these most favorable conditions, it was not possible to prevent the intestinal toxemia associated with stasis. At present, therefore, no experimental justification can be cited for the clinical use of antiseptics intended to produce intestinal antisepsis by direct action on the micro-organisms that inhabit the gastro-enteric tract.

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5. Harris, N. M.: Intestinal Antisepsis, J. A. M. A. **59**: 1344 (Oct. 12) 1912.
6. Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 153.
7. Fantus, Bernard: Useful Cathartics, Chicago, American Medical Association, p. 97.
8. Dragstedt, L. R.; Dragstedt, C. A., and Nisbet, O. M.: Intestinal Antisepsis: Effect of Antiseptics on a Type of Experimental Intestinal Toxemia, J. Lab. & Clin. Med. **8**: 190 (Dec.) 1922.
9. Dragstedt, L. R.; Moorhead, J. J., and Burcky, F. W.: J. Exper. Med. **25**: 421 (March) 1917. Dragstedt, L. R.; Dragstedt, C. A.; McClintock, J. T., and Chase, C. S.: J. Exper. Med. **30**: 109 (Aug.) 1919.

Current Comment

THE MAMMARY GLAND AS AN EXCRETORY ORGAN

Milk is so unique in its composition, and the specific character of its constituents is so largely independent of direct dietary influences, that it is looked on for the most part as an unusual synthetic product. From this standpoint, therefore, the mammary gland in which milk is elaborated has come to be regarded as pre-eminently a secretory structure characterized by its constructive or anabolic capacities. Nevertheless, the constituents of milk are by no means entirely confined to the group of products manufactured de novo in the mammary gland. Milk contains various substances present as such in the blood and other body fluids. Among these are the so-called nonprotein nitrogenous extractives: amino-acids, urea, creatin, creatinin and uric acid. It has been shown by Denis, Talbot and Minot, for example, that in many cases the figures for the content of the nonprotein substances are virtually the same in the milk as in the blood. Taylor[1] of

1. Taylor, W.: Note on the Non-Protein Nitrogen in Goat's Milk, Biochem. J. **16**: 611, 1922.

Aberdeen has now presented additional evidence that in a lactating animal there is a correlation between the daily output of nitrogen in the urine and the percentage of nonprotein nitrogen in the milk, both apparently being determined by the amount of protein in the food. The concentration of nonprotein nitrogenous catabolites in the blood seems to determine both the amount excreted in the urine and the percentage present in the milk. The mammary gland acts to some extent as an excretory organ, waste nonprotein nitrogenous substances filtering through from the blood to the milk. The percentage in which these are found in milk seems to be determined by the degree of concentration in the blood of the end-products of protein metabolism. When the function of the mammary gland is viewed from this standpoint as well as from an appreciation of its synthetic capacities, it is not difficult to understand why milk should occasionally become a vehicle of substances that are undesirable as a dietary ingredient.

MALARIA AND SUNLIGHT

Sporadic cases of malaria, as was observed long ago, occur in the spring long before the breeding season of the anopheles mosquito. After it became known that malaria parasites could pass the winter in the human blood stream, these cases were recognized as relapses from acute attacks of the previous summer. Why relapse appears with the advent of spring has not been determined. Ross believed that external heat encouraged the parasites to multiply, and that when about fifty per cubic millimeter accumulated in the blood the first definite symptoms of illness were noted. He [1] observed in 1898 that the parasites in birds diminished when they were taken to the cool climate of the Himalayas, and that they increased again when brought back to Calcutta. Lenz [2] and Schaedel,[3] accepting the parthenogenic theory of reproduction of Schaudinn, believe that sunlight causes the relapse and that its increased intensity stimulates the gametocytes to start the asexual cycle. On a similar basis, Reinhard [4] undertook to cure malaria by exposing patients to ultraviolet rays with the idea of causing the parasites to come out into the peripheral circulation where quinin could destroy them; in 63 per cent. of thirty-eight cases so treated, asexual forms of the malaria parasites appeared in the blood, in one half of them within seven days. In his patients not exposed to the rays, spontaneous relapse took place in about three and a half weeks. There is therefore clinical evidence that relapse in malaria is associated with exposure to sunlight, and that ultraviolet rays are an effective agent in producing it. Whitmore has undertaken to study the action of light in malaria in birds. It is planned to determine the dose of unfiltered light, and what part of the spectrum will cause a relapse; then to work back the dosage—he is working with a quartz mercury vapor lamp—to an equivalent dosage of sunlight. The results thus far indicate that two hours' exposure to the lamp at a distance of 24 inches with the meter reading at 75 and the birds' feathers intact will cause relapse. Relapse will occur in fifteen minutes when the unfiltered light is directed to an area from which the feathers have been removed. Certainly these experiments may lead to great improvement in the facility with which this disease may be diagnosed.

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2. Lenz, F.: Malariarezidive und Sonnelicht, München. med. Wchnschr. **67**: 697 (June 11) 1920.
3. Schaedel, A.: Biologische Betrachtungen zur Fraga der Malariarezidive und der Malariaverbreitung, Biol. Centralbl. **38**: 143, 1918.
4. Reinhard, P.: Ueber Provokation latenter Malaria durch Bestrahlung mit ultraviolettem Licht, München. med. Wchnschr. **64**: 1193, 1917.
5. Whitmore, Eugene: Action of Light in Relapse in Malaria, Am. J. Trop. Med., September, 1922.

THE VELOCITY OF THE PULSE WAVE

The study of the dynamics of the circulation has been accelerated in recent years as the result of numerous innovations in technic and of a greater inherent interest in the subject following the development of the clinical measurement of blood pressure and the evolution of electrocardiography. The methods employed in the days of pioneers like Chauveau and Marey have given way in part to procedures of greater accuracy and delicacy. Consequently, some of the so-called constants of the circulatory system have been redetermined, and the characteristics of its performance formulated more precisely than ever before. This is true of the velocity of the pulse wave, for example. It has customarily been estimated to vary somewhere between 6 and 9 meters a second for adults, the length of the wave being taken as about 5.6 meters. Bazett and Dreyer [1] of the University of Pennsylvania have lately concluded that the velocity of transmission of the pulse wave is much slower in the large vessels than in the smaller and more peripheral vessels. While a velocity of the pulse wave of about 7 meters a second is confirmed from a comparison of carotid and radial pulses, such a velocity is merely an average between a velocity of about 4 meters a second in the brachial and 8.5 meters a second or more between the elbow and the wrist. The velocity of transmission in the carotid, aorta and possibly the femoral artery is of about the same rate as that found for the brachial. The rate of transmission is much more variable in the more peripheral parts of the arterial system, and is in all probability much more dependent on local conditions of vasoconstriction or dilatation. It may be worth while recalling, further, that, in the light of the known facts, long before the pulse wave has disappeared at the beginning of the aorta it has reached the most distant peripheral vessels.

1. Bazett, H. C., and Dreyer, N. B.: Measurements of Pulse Wave Velocity, Am. J. Physiol. **63**: 94 (Dec.) 1922.

Educational Standards for Physiotherapists.—The proper training of the physiotherapists of the future will have to be some two or three years of college education as a minimum, including biology, anatomy (including histology), physiology, bacteriology, chemistry and physics, so that we may be sure that they have sufficient knowledge of bacteriology, physiology, anatomy and other fundamentals. To this should be added one or more years of practical work in the hospital clinic with good instructors. All the necessary training in the technical procedures should be under the guidance of the medical profession. It would be a sad thing to banish the physiotherapist from the great medical centers where his influence and assistance are most needed.—R. L. Wilbur, *California State J. M.* **21**:25 (Jan.) 1923.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Hugh C. McRee, Decatur, has been appointed physician of Morgan County to succeed Dr. Burton F. Austin who resigned.——Dr. John L. Gallagher, Dora, has been appointed full-time health officer of Limestone County.——Capt. William M. Caffee, Manila, P. I., who has resigned his commission in the M. C., U. S. Army, will open an office in Birmingham.——Dr. Burton F. Austin, Decatur, was presented with a handsome gold watch and chain by members of the Morgan County Medical Society, February 1, on his retirement as county health officer. Dr. Austin succeeds Dr. Grote as health officer of Huntsville and of Madison County.

COLORADO

Society News.—At the annual meeting of the Denver Tuberculosis Association, Dr. George Walter Holden, Denver, was elected president, and Dr. Margaret E. V. Fraser, Denver, secretary.——At the annual meeting of the Northeast Colorado Medical Society, at Sterling, in January, Dr. John W. Kinzie, Haxtum, was elected president, and Dr. Edward P. Hummell, Sterling, secretary-treasurer. Dr. John W. Amesse, Denver, gave an address on "School Health Problems."——Dr. Thomas A. Davis, Portland, and Dr. Otis Orendorff, Canon City, were elected president and secretary-treasurer, respectively, of the Fremont County Medical Society at the annual meeting in Florence, January 22.

Colorado State Board of Health.—At the annual meeting of the state board of health in Denver, February 9, the following officers were elected for the ensuing year: president, Dr. George K. Olmsted, Denver; vice president, Dr. C. W. Compton, Pueblo, and secretary, Dr. Tracy R. Love, Denver. Dr. Margaret Ethel V. Fraser, Denver, Dr. Samuel R. McKelvey, Denver, and A. W. Scott, Fort Collins, have been appointed to fill vacancies on the state board of health.——It is reported that the Rockefeller Foundation has offered to aid the Colorado State Board of Health in its activities planned for the coming year, among which is the establishment of health units throughout the state, each to be provided with a full-time health officer.

CONNECTICUT

Professor Lambert to South America.—Dr. Robert A. Lambert, assistant professor of pathology and bacteriology at Yale University Medical School, New Haven, since 1919, has resigned to accept the professorship in the department of pathology at the Faculdade de Medicina e Cirurgia de São Paulo, Brazil. Dr. Lambert recently made a survey of the medical schools of San Salvador, Guatemala and Nicaragua, to obtain accurate knowledge concerning the standards of medical education in Latin America.

DISTRICT OF COLUMBIA

Personal.—P. A. Surg. Marion F. Haralson of the U. S. Public Health Service has been relieved from duty at Hamburg, Germany, and assigned to temporary duty at Havre, France, in place of Surg. Grover A. Kempf, who has been directed to proceed to London, England, to make investigations of health organization and administration in conjunction with the health section of the League of Nations.——Asst. Surg. Gen. Arthur M. Stimson, Washington, has been directed to proceed to London, England, for duty in the American consulate, relative to the issuance of American bills of health, and to make investigations of health organization and administration in conjunction with the health section of the League of Nations.

GEORGIA

Dr. Bassett Reappointed.—Dr. Victor H. Bassett has been restored to the position of director of the hygienic laboratory of the board of sanitary commissioners, Savannah, and also made acting health officer during the reorganization of the city health department.

IDAHO

Personal.—Dr. T. N. Braxtan, Boise, has been appointed county physician of Ada County; Dr. Thomas E. Mangum, Nampa, county physician of Canyon County, and Dr. Vonanda G. Logan, American Falls, county physician of Power County.——At the annual meeting of the Pocatello Medical Society, Drs. Casper W. Pond and William F. Howard were elected president and secretary-treasurer, respectively.

ILLINOIS

Society News.—Dr. W. N. Peck of the Tri-State Medical Society has been advised that the medical department of the U. S. Army will be host at a luncheon at Washington, D. C., to about 250 members of the Tri-State society, who will compose the "clinic train" party that will visit the larger Eastern cities this spring for the purpose of attending clinics. A clinic will be given at the Walter Reed General Hospital for the party.

Physicians Under Trial.—Dr. Henry Lee Green, Quincy, convicted, Jan. 21, 1922, on a change of violating the Harrison Narcotic Law, was fined $1,000 and costs, February 5, at Springfield, by Judge FitzHenry, according to reports.——It is reported that Dr. Carl W. Kimery, Sullivan, was sentenced to thirty days in jail, by Judge Grider, February 1, when he pleaded guilty to violation of the Volstead Act.——Dr. Albert Willis, Christopher, was acquitted of the charge of causing the death of Miss Mary Shifflett of Leroy, it is reported.

Personal.—Dr. John J. Grant, Freeport, was recently elected president of the Grant County Medical Society.——Col. John L. Fryer, in charge of the sanatorium at Battle Mountain, S. D., has been appointed chief surgeon at the Danville National Soldiers' Home to succeed Major Edward N. Schillinger.——Dr. Arthur H. Curtis, Chicago, addressed the members of the Vermillion County Medical Society at Danville, February 6.——Dr. Guy G. Kilgour, Malden, has accepted the appointment of assistant superintendent of the State Hospital for the Insane at Anna.——Dr. Franklin A. Turner has been appointed director of hygiene of the Rockford public schools, to succeed Dr. Dudley W. Day, who resigned recently.——Dr. Arthur H. Gollmar, Kankakee, is the author of a play "The Mirror Behind the Bar" or "A Glandular Extract from the Common Law," which was produced before the Kankakee County Medical Society, recently.

Chicago

Antinarcotic Activities.—The propaganda committee of the Chicago Medical Society, to whom the matter of relieving drug addicts was referred, has complied with the request of the national organization and compiled a speakers' list. Plans have also been formulated by which those persons addicted to drugs will be properly hospitalized and provided with medical attention. These plans will be announced later.

Personal.—Dr. T. Melville Hardie is a member of the Chicago Curling Club, which defeated the Royal Caledonian Curling Club of Scotland at the annual games held in Chicago, February 16.——A dinner was given in honor of Professor Schick of Vienna, Austria, February 21, at the Hamilton Club. Following the dinner, Professor Schick gave an address before the Chicago Medical Society on the "Prevention of Diphtheria."

INDIANA

Beardsley Bill Defeated.—The state senate, February 8, failed to pass the Beardsley bill, which would commit Indiana to cooperation with the federal government under the Sheppard-Towner Maternity act.

Tuberculosis Conference.—The annual meeting of the Indiana Tuberculosis Association was held in Indianapolis, February 13-14, under the presidency of Dr. George T. McCoy, Columbus. Dr. Charles H. Good, president of the Indiana State Medical Association; Dr. J. S. Pritchard, Battle Creek, Mich., and Dr. R. H. Hayes, Chicago, gave addresses at the conference. Dr. E. Blanche Sterling, U. S. Public Health Service, Washington, D. C., addressed the closing session, February 14, on "School Health Supervision in Relation to Tuberculosis."

IOWA

Iowa Admitted to Registration Area.—The registrar of vital statistics announces that Iowa now complies with the standard set by the Bureau of the Census for registration of deaths,

and has been admitted to the registration area of the United States. Iowa is not yet admitted to the registration area on births.

Society News.—The semiannual meeting of the Sioux Valley Medical Association was held at Sioux City, January 25-26, under the presidency of Dr. Cheney C. Gross, Yankton, S. D. The meeting was preceded by the tenth annual convention of the Sioux Valley Eye and Ear Academy (Iowa, Nebraska and South Dakota), January 24, held under the presidency of Dr. James M. Patton, Omaha. Among the speakers at both meetings were Drs. George F. Suker, Harry L. Pollock and Clifford G. Grulee of Chicago, and Dr. Martin H. Fisher of the University of Cincinnati.——The annual meeting of the Iowa Tuberculosis Association was held at Cedar Rapids, February 14-16, in conjunction with the Iowa Sanatorium Association, the U. S. Public Health Service, the state board of health, the state housing commission and the county medical societies of the fifth district. A health pageant was given by the children of the city.

KENTUCKY

Personal.—Dr. F. A. Jones, Paducah, was recently elected president of the McCracken County Medical Society.——Dr. Eugene C. Roemele, Frankfort, has been reelected health officer of Franklin County for two years.——Dr. William H. Coffman, Georgetown, was recently elected president of the Scott County Board of Health.——Dr. Frederick G. Speidel, Louisville, has been appointed physician for the Portland district, to succeed Dr. Louis W. Eckels, Jr.——Dr. G. W. White, Henderson, recently fractured both his wrists in a fall in a gymnasium.——Dr. Joshua W. Meshew, Barlow, is in the Riverside Hospital, Paducah, suffering from septicemia. ——Dr. E. M. Ewers, formerly of Anchorage, now surgeon at the hospital at Muchan, China, is visiting in the United States.

LOUISIANA

Radiologists Elect.—The annual meeting of the Louisiana Radiological Society was held in New Orleans, January 13, under the presidency of Dr. Sidney C. Barrow, Shreveport. The following officers were elected for the ensuing year: president, Dr. Lucien A. Fortier, New Orleans; vice president, Dr. Clifford P. Rutledge, Shreveport, and secretary-treasurer, Dr. Harold G. F. Edwards, Lafayette.

Personal.—Dr. Laurence R. DeBuys, professor of pediatrics, Tulane University of Louisiana, New Orleans, has been elected a member of the board of directors of the American Child Health Association.——Dr. James M. Batchelor has been appointed chief surgeon and chairman of the medical advisory committee of the Presbyterian Hospital, New Orleans, of which Dr. John C. Barr was reelected president, and Dr. A. C. Browne, secretary.

MAINE

Physician Loses Malpractice Suit.—In the suit of Harold Fletcher against Dr. William C. Peters, Bangor, to recover $10,000 for alleged malpractice, it is reported that on January 24, the jury returned a verdict of $1,500 in favor of the plaintiff.

MARYLAND

Epidemic (Lethargic) Encephalitis Prevalent.—According to the director of the bureau of communicable diseases, Dr. John F. Hogan, Baltimore City Health Department, Baltimore is passing through a period of epidemic (lethargic) encephalitis. In studying the present outbreak, Dr. Hogan is making personal visits to patients at the request of attending physicians. Two physicians of the health department have been designated to investigate all cases that have been reported since January 1, in order to ascertain the actual number of patients suffering with the disease.

Personal.—Dr. Julius Friedenwald, Baltimore, was recently elected president of the Southern Gastro-Enterological Association, at the annual meeting in Chattanooga, Tenn.——Dr. Charles M. Byrnes, associate in clinical neurology at Johns Hopkins University, Baltimore, has been elected president of the Philadelphia Neurological Society.——Dr. George Edmund de Schweinitz, Philadelphia, President of the American Medical Association, spoke on "Vascular Changes in the Eye and Their Relationship to Constitutional Diseases" before 300 physicians and surgeons at the University of Maryland School of Medicine, February 15.——Dr. Howard Barker has been appointed medical officer in charge of U. S. Veterans' Hospital No. 56, Fort McHenry.

Gift to the Johns Hopkins University.—Announcement was made by Dr. Frank J. Goodnow, president of the Johns Hopkins University, at the Commemoration Day exercises, February 22, of a conditional gift of $900,000, from an anonymous donor. At the same time, a grant of $2,000,000 to the university from the Carnegie Corporation was announced. This gift, the first ever made by the Carnegie Corporation to this university is to be used in the construction and maintenance of an outpatient dispensary and diagnostic clinic. The gift of $900,000 is provisional on the raising of $1,000,000 by April 1. The Phipps fund of $60,000, formerly available each year for the maintenance of the psychiatric clinic, will cease on that date. The anonymous gift is to be expended for the expansion as well as the endowment of the psychiatric clinic.

MASSACHUSETTS

Personal.—Dr. George MacIver, first assistant director of the Massachusetts General Hospital, Boston, has been appointed secretary-treasurer of the New England Hospital Association to fill out the unexpired term of Dr. Nathaniel W. Faxon, who recently became superintendent of the University Hospital, Rochester, N. Y.——Dr. Charles A. McCarthy has been appointed city physician of Lawrence. ——Dr. Channing Frothingham, Jr., Boston, has been appointed a trustee of the Boston Psychopathic Hospital.—— Dr. Henry L. Houghton, Boston, has been appointed a member of the state board of registration in medicine to succeed the late Dr. Nathaniel Perkins.——Dr. William L. Richardson, Boston, has been appointed a trustee of the Perkins Institution for the Blind, Boston.

MICHIGAN

Health Board Wins Decision.—A writ of mandamus compelling the Lansing Board of Education to enforce the order of the board of health requiring vaccination of students, teachers and janitors of the public schools or their expulsion from schools, was issued by Judge Leland Carr, February 7, it is reported. The board of education plans to carry the controversy to the state supreme court.

MINNESOTA

New Public Health Journal.—The *Northwestern Health Journal*, an outgrowth of the *Minnesota Public Health Journal*, published its first issue, February 10. Associated with Dr. Naboth O. Pearce, the editor, are Dr. Carl B. Drake, St. Paul, editor of *Minnesota Medicine;* Dr. William A. Jones, Minneapolis, and B. G. DeVries, D.D.S. The new journal has received the endorsement of the state medical association and the state board of health.

MISSOURI

Chiropractor Bills.—Three chiropractor bills have been introduced into the legislature, demanding that chiropractors who have been practicing in the state for one year be licensed, but that, after the passage of the act, they shall be examined by a chiropractic board in anatomy, physiology, chemistry, symptomatology, hygiene, sanitation and the special methods of chiropractic. They must have as a preliminary qualification a four years' high school course or its equivalent, the bills state, and they shall be entitled to all the rights and privileges of physicians and surgeons.

New Health Association.—A health organization to be known as the Health Conservation Association has been formed by the amalgamation of the Kansas City Tuberculosis Society and the committees for social hygiene, mental hygiene, dental hygiene and cancer control, with offices at 408 East Eleventh Street, Kansas City. The association is for the protection and improvement of city health. It will conduct campaigns against tuberculosis, cancer, venereal disease and other preventable or curable maladies. R. E. Parsons, president of the city tuberculosis society, was elected president, and Dr. Scott P. Child, treasurer.

NEW JERSEY

Mosquito Extermination Association Meeting.—At the tenth annual convention of the New Jersey Extermination Association, in Atlantic City, Dr. Thomas J. Headlee, entomologist of the New Jersey Agricultural Experiment Station, stated that 140,000 acres of salt marsh land had been drained and 60 per cent. of the mosquito-breeding places on the upland had been eliminated as the result of the efforts of the association.

Personal.—Dr. Effie R. Graef, Somerville, returned home on the White Star liner *Homeric* in January, after four years of hospital relief work in Turkey, Armenia and Russia.——Dr. G. Wyckoff Cummins has been appointed city physician of Belvidere.——Dr. Edward Guion, Atlantic City, has been appointed head of the Atlantic County Insane Asylum.——Dr. Louis Shalet, West New York, formerly superintendent of the Montefiore Home County Sanatorium, Bedford Hills, N. Y., has been appointed medical superintendent of the Workmen's Circle Sanatorium, Liberty, N. Y.——Dr. Charles Schwinn, Camden, has been appointed superintendent of the Sunny Rest Sanatorium, Ancora, to succeed the late Dr. Joel W. Fithian.

NEW YORK

Kings County Medical Society Opposed to Reregistration.—Dr. Charles E. Scofield, president of the Medical Society, County of Kings, reports that the society has gone on record as being opposed to any reregistration measures.

Appropriation for Site for Veterans' Hospital.—Governor Smith, in signing a bill which appropriates $500,000 for the purchase of lands at the Kings Park State Hospital, suggested that the Kings Park Hospital be enlarged so that all New York State veterans of the World War who are mentally afflicted can be cared for there.

State May Purchase Social Hygiene Plant.—John D. Rockefeller, Jr., has asked $175,000 for his social hygiene plant beside the State Reformatory for Women at Bedford. The managers of the latter institution are negotiating for the purchase of the plant, which is assessed at $250,000. Mr. Rockefeller built the plant of the social hygiene bureau and laboratory to further the work at the Bedford Reformatory.

Scarlet Fever on Long Island.—Twelve cases of scarlet fever were recently reported in one class in the public school at Freeport, L. I. Several cases of the disease have also been reported from Babylon. Dr. Frank Overton, state medical supervisor of Suffolk County, has advised that all athletic events be cancelled for the present and that children be kept away from motion picture shows.

Public Safety Commissioner Seizes Coal.—Dr. Arthur J. Leonard, public safety commissioner of Saratoga Springs, directed the city police and firemen to seize two carloads of anthracite coal in the Delaware and Hudson Railroad yard, February 19, to relieve the coal situation in the city, it is reported. A notice served on Dr. Leonard by the president of the Saratoga Coal Company, ordering him to give up the coal, was ignored, and the distribution of coal proceeded, volunteer workers, police and firemen delivering it throughout the city to meet emergency needs.

Hospital News.—A campaign to raise $1,000,000 for the erection of a new nurses' home and new laboratories for the graduate courses recently inaugurated at the Long Island College Hospital, Brooklyn, will be launched, March 1, and will continue for fifteen days.——Twenty-two violently insane patients and three attendants perished in a fire which destroyed part of the Manhattan State Hospital, Wards Island, February 18. Of the ninety inmates, sixty-eight were finally saved after resisting and laughing at their rescuers.——The Brooklyn Hebrew Maternity Hospital will erect a new building on the site adjoining the present institution at a cost of $200,000. Ground will be broken about April 1.

Symposium on Medical Organization.—At a stated meeting of the Medical Society of the County of New York, January 22, the outstanding feature was a symposium on medical organization. Dr. George E. de Schweinitz, Philadelphia, President of the American Medical Association, spoke on "The National Society"; Dr. Wendell C. Phillips, New York, trustee of the American Medical Association, gave "An Intimate Talk on the Activities of the American Medical Association" (illustrated with lantern slides); Dr. Arthur W. Booth, Elmira, president of the state medical society, spoke on "The State Society," and Dr. Arthur F. Chase, New York, president of the county association, delivered an address on "The County Society."

Governor Calls Medical Conference.—Invitations have been sent out from the executive office at Albany, asking college professors, health board officers, rural practitioners and prominent physicians to meet with the governor, February 26, to discuss pressing health problems. Among the problems scheduled for discussion are the narcotic drug evil, medical education and medical research, rural health problems, the need of physicians in rural districts, and the enforcement of the Medical Practice Act. The *Medical Week*, in commenting on this step, says that the governor, by a sweep of the pen, lifted medical problems out of politics and made them the affair of the whole people, and for the first time the medical profession stands where it should, not on the defensive but as a body of experts sitting at conference with the chief executive of the state.

New York City

Sex Education at School of Pedagogy.—Dr. Thomas W. Galloway of the American Social Hygiene Association, will give a course of lectures to teachers at the School of Pedagogy of New York University. Following is a summary of the course as outlined in the university's catalogue under sex education:

> An introduction to the problems of sex education for the teacher. The course will include an elementary review of the biologic, physiologic, psychologic and social groundwork of the sex-social impulses and their expression, with an effort to deduce from this and from the various experiments that have been made a tentative grading, placement and technic in relation to both the schools and the other community agencies closest to the work of the teacher. The course will comprise lectures, assigned readings, discussions and special reports.

Personal.—Dr. Joseph J. Cosgrove has been appointed medical superintendent of the U. S. Veterans' Mountain Camp, Tupper Lake.——Dr. E. V. Cowdry of the Rockefeller Institute for Medical Research will deliver the Harvey Society Lecture, March 10.——Dr. John J. Moorhead has been appointed head of the new medical board of Beekman Street Hospital.——Dr. William P. St. Lawrence has been elected chairman of the Association of Cardiac Clinics.——Dr. Philip F. O'Hanlon, police department surgeon, has been retired at his own request, following twenty-seven years of service, and will resume the practice of medicine.——Dr. John J. McGrath has been appointed chairman of the board of trustees of Bellevue and allied hospitals to succeed Dr. John W. Brannan.——Dr. Melvin S. Henderson of the Mayo Clinic read a paper entitled "Loose Bodies in the Joints and Bursae Due to Synovial Osteochondromatosis," before the orthopedic section of the New York Academy of Medicine, February 16.——Dr. Gustav Scholer has been reappointed by Governor Smith as manager of the Manhattan State Hospital.——William Bondy of New York has been reelected member of the state board of regents.——Dr. Alexander Lambert testified before the House Foreign Affairs Committee in the first of a series of hearings on the bill introduced by Representative Porter of Pennsylvania to suppress illicit international traffic in drugs.

NORTH CAROLINA

Abolishes Prison for Insane.—The senate passed the bill which would abolish the department for the criminal insane at the state prison and place the inmates in the state hospitals for the insane, February 9. Transfer of control of the state sanatorium for the treatment of tuberculosis from the state board of health to a board of directors to be named by the governor, was also approved by the senate, the bill passing its third reading.

OHIO

Graphic Health Service.—The Ohio Public Health Association has announced the inauguration of a graphic health service. A series of charts of standard size will be issued on the 1st and the 15th of each month covering the subject of public health as expressed through vital and morbidity statistics, the state department of health, voluntary organizations, hospitals, dispensaries and public health nursing. A year's subscription for these charts is $2, which covers only the actual cost of preparation and publication.

Medical Practice Act Upheld.—In an opinion handed down, January 16, in the case of the state ex rel. Lewis M. Copeland (a chiropractor) against the state medical board, in which Copeland sought to compel the board to issue him a license to practice for five years before the limited practitioners act became effective, October, 1915. The Supreme Court of Ohio, in a unanimous opinion, written by Chief Justice Marshall, holds that the mere filing of an affidavit by an applicant for a certificate stating that he was entitled to it is not sufficient. The board has a right, the court held, to inquire into the alleged facts set forth in the affidavit, which it did in Copeland's case, and refused him a license. The court denied his application for a writ of mandamus to compel the board to issue him a certificate.

New Buildings Named After Former Teachers.—Four former Columbus physicians are honored in the naming of three buildings at the Ohio State University College of Medicine, Columbus. The present university hospital with its contemplated addition will be known as the Starling-Loving University Hospital, in honor of Dr. Starling Loving, for

many years professor of medicine and at one time dean of the faculty of the Starling Medical College, and of Dr. Lyne Starling, founder of the Starling Medical College and cofounder of St. Francis Hospital. The medical research building, located just west of the hospital, has been named Kinsman Hall in honor of Dr. David Nathaniel Kinsman, who was professor of the practice of medicine in the old Ohio Medical University. The medical science building will be known as Hamilton Hall, in honor of Dr. John Waterman Hamilton, who was a professor of surgery in Columbus Medical College and a cofounder of Mount Carmel Hospital. The secretary of the board of trustees announced that these buildings had been named in honor of the three colleges of medicine which merged with the state university, and of the men who were most prominent in their work.

Hospital News.—The Grant Hospital, Columbus, has been conveyed by Dr. J. F. Baldwin, former president of the Ohio State Medical Association, through a deed of trust to a self-perpetuating board of trustees. The nurses' home was included in the transfer, which was made December 24.—— The new psychopathic hospital, erected at a cost of $800,000 in Cleveland, and considered the latest advance in construction for the care and treatment of the insane, was closed December 25, after being open two weeks, by order of the director of public welfare. It has been announced that the institution will probably be rebuilt to correct certain defects. ——Plans for the erection of a state hospital for feebleminded at Grafton at a cost of $5,000,000, on a 1,100 acre plot, have been announced by the superintendent of the state welfare department. Construction work on the twenty-eight new buildings will start this spring, and the entire plant will be completed within two years, it is expected.——The new hospital of the National Home for Disabled Volunteer Soldiers, Dayton, was opened for public inspection, January 22. Tuberculous patients only will be admitted to this institution, which has a capacity of 250 beds.

PENNSYLVANIA

Personal.—Dr. William C. White has resigned as medical director of the Tuberculosis League of Pittsburgh following sixteen years of service. Dr. C. Howard Marcy will succeed Dr. White.—— Dr. Clair S. Bauman, Lock Haven, has accepted the post of company physician at Calcutta, India, with the Ludlow Manufacturing Company of Boston. He will sail in May.——Dr. William G. Turnbull, medical director of the Cresson Sanatorium, has been appointed deputy state health commissioner by Dr. Charles H. Miner, state health commissioner. He will assume his duties, March 1, succeeding Col. John D. McLean, resigned.

SOUTH CAROLINA

Trustees for Medical School Elected.—The general assembly, February 1, elected Drs. Gottlob A. Neuffer, Abbeville, Larkin H. Jennings, Bishopville, E. H. Barnwell, Charleston, and D. T. Riley, Florence, as trustees of the board of the Medical College of the State of South Carolina, Charleston.

TENNESSEE

Governor Signs Chiropractors' Bill.—Governor Peay signed the chiropractors' bill, February 2, it is reported. This is the culmination of a long fight by the chiropractors of Tennessee to win recognition. The new act provides for the establishment of a board of chiropractors, one member from each grand division of the state, which is empowered to conduct examinations and issue licenses. It also authorizes chiropractors to sign death certificates.

Physician Wins Verdict.—A peremptory verdict in behalf of Dr. Abraham L. Blecker, Memphis, was directed in circuit court, February 1, by Judge Pittman in a case brought against the physician by the administrator of the estate of Mrs. Anna Katz, deceased, in a suit for $25,000 damages which grew out of the death of Mrs. Katz following a cesarean section in June, 1918. The plaintiff contended that Dr. Blecker performed this operation without the consent of Mrs. Katz's father or husband. Dr. Blecker stated that he operated in a serious emergency caused by the development of eclampsia. Judge Pittman in directing the verdict held that Dr. Blecker was entirely right in operating under the circumstances.

UTAH

Hospital News.—A receiving building was recently opened at the Utah State Hospital, Provo. It was erected at a cost of $250,000 and is called the George E. Hyde Memorial building.

VERMONT

Personal.—Drs. Winfield Scott Nay, Underhill, and A. E. Parlin, Island Pond, have been reappointed to the Vermont State Board of Medical Registration.—— Dr. William G. Ricker, St. Johnsbury, has been appointed a member of the state board of health, and Dr. William N. Bryant, Ludlow, a member of the board of supervisors of the insane.

VIRGINIA

Personal.—Dr. Howard F. Smith, surgeon, U. S. Public Health Service, for the last two years quarantine officer-in-charge at Hampton Roads, has been transferred to Manila, P. I.——Dr. A. M. Byrd has resumed practice in Richlands, following three and a half years of illness.——Dr. Richard Eanes, formerly of Moseley, and for the last three years stationed at Tientsin, China, has landed in San Francisco. He will report for duty at the Fitzsimons Hospital, Denver. ——Dr. William P. Gilmer, Clifton Forge, sailed for Korea in January, where he will work as a medical missionary under the auspices of the Southern Presyterian Church.

WASHINGTON

Hospital Contract Awarded.—Construction of the U. S. Veterans' Bureau hospital located between Camp Lewis and Fort Steilacoom has been started. The Hurley-Mason Company of Tacoma was awarded the contract for $1,397,000, with a provision calling for completion within a period of 260 days. The entire cost of the base hospital will be $2,000,000, and will involve the erection and equipment of twenty-eight buildings.

WISCONSIN

Personal.—Dr. Chester L. Carlisle, surgeon, U. S. Public Health Service, has been assigned medical officer in charge of the U. S. Veterans' Hospital No. 37, Waukesha, vice Surg. Lawrence Kolb, who has been detailed to the Hygienic Laboratory, Washington, D. C. Dr. Carlisle was formerly chief of the neuropsychiatric section of the U. S. Veterans' Bureau in the eighth district, which comprises Wisconsin, Michigan and Illinois, with headquarters in Chicago.

PHILIPPINE ISLANDS

Banquet for Dr. Beck.—A dinner was given in honor of Dr. Joseph G. Beck, associate professor of surgery, otology, rhinology and laryngology at the University of Illinois College of Medicine, Chicago, by alumni of the University of Illinois and members of the eye, ear, nose and throat department of the University of the Philippines, at the Manila Hotel, when he was touring the Far East, recently.

Society News.—At the annual meeting of the Philippine Islands Medical Association, held in Manila, December 20-22, under the presidency of Dr. Henry H. Steinmetz, Manila, the following officers were elected for the ensuing year: president, Dr. Antonio G. Sison; vice presidents, Drs. I. Oto Schöbl and Leoncio Lopez-Rizal, and secretary-treasurer, Dr. Isabelo Concepcion (reelected). The next annual meeting will be held in Manila, December, 1923. Dr. Walfrido de Leon, who was elected delegate to the annual session of the American Medical Association, has already left for San Francisco. Dr. Leonard Wood, governor general of the islands, Dr. Charles N. Leach of the Rockefeller Foundation and Capt. W. D. Fleming, U. S. Army Medical Department Research Board, were among the speakers.——The annual meeting of the Manila Medical Society was held January 3, in the library of the Philippine General Hospital. Dr. Herbert W. Wade was elected president for 1923; Dr. Daniel De la Paz, vice president, and Dr. Carmelo M. Reyes, secretary-treasurer (reelected). The chairman announced that Dr. Liborio Gomez has been elected editor-in-chief of the *Journal of the Philippine Islands Medical Association,* to succeed Dr. Carmelo M. Reyes.

CANADA

Public Health in Canada.—Seven cases of epidemic (lethargic) encephalitis were reported from Vancouver in one day recently. It was stated that the majority of the cases were preceded by influenza.——The epidemic of influenza in Toronto is abating, although the capacity of the city hospitals is still overtaxed. The peak was reached the week ending February 10, when eleven deaths were reported in one day.

Personal.—Drs. John Hunter, Caroline S. Brown, James E. Forfar and Edwin C. Beer were recently elected members of the school board in Toronto.——Dr. Paul A. T. Sneath, Toronto, has been appointed a medical officer on the Gold

Coast, West Africa. He will take a course of instruction in tropical medicine in London, England, before taking up his duties in Africa.——Dr. Roderick D. Dewar, Melbourne, and Dr. William H. Woods, Mount Brydges, were elected president and secretary-treasurer, respectively, of the Middlesex Medical Association, at the annual meeting.——Dr. Alexander F. McKenzie and Dr. F. M. Walker were elected president and secretary, respectively, of the Southern Branch of the Simcoe County Medical Society at the annual meeting at Alliston.——Dr. Thomas C. Routley, secretary of the Ontario Medical Association, addressed the Niagara District Medical Society at Welland, January 4.

Amendment to Medical Practice Act.—Amendments to the Quebec Medical Act, passed by the lower house, were recently approved in the public bills committee of the legislative council after a number of the proposed changes had been killed. As finally approved, the bill holds that any one who assumes the title of doctor without qualifications, whether in newspaper advertising or by other means, is liable to fines ranging from $50 to $200. Improper advertising of this character will also carry a three months' prison sentence as well as a $200 fine for any offense subsequent to the second. The clause stating that "without previously obtaining authorization from the lieutenant governor-in-council, it is forbidden to keep an institute, private hospital, home for convalescent or sick persons, maternity hospital or establishment where consultations and treatments are given" was struck out, following representations by osteopaths of the province.

GENERAL

Drs. Elliot and Lovejoy Awarded Medals.—The Greek government has conferred the war cross on Drs. Mabel Elliot of Benton Harbor, Mich., and Esther Lovejoy of New York, for their services with the Near East Relief in Smyrna. It is stated this is the first time this decoration has been awarded to women.

Society News.—The seventy-fifth annual meeting of the South Carolina Medical Association will be held at Charleston, April 17-19, under the presidency of Dr. Charles F. William, Columbia, and in conjunction with the South Carolina Pediatric Association, the state nurses' association and the state public health association.——The annual meeting of the Southern Public Health Laboratory Association will be held in Richmond, Va., March 23-24. This association is composed primarily of the laboratory directors of the southern states.——The Women's Medical Society of New York will hold its annual meeting, May 21, in New York, under the presidency of Dr. Harriet M. Doane.

Appropriation for Lepers' Home.—The appropriation of $650,000 to provide additional facilities for the national home for lepers at Carville, La., is authorized in a bill that passed the House of Representatives. The measure had previously been adopted by the Senate and now goes to the President for his signature. The bill authorizes the enlargement of the leprosarium at Carville to accommodate 500 patients, as compared with its present capacity of 200. A theater is to be erected. The U. S. Public Health Service now controlling the National Lepers' Home at Carville has been compelled to reject many applications from state health authorities, asking that they be allowed to turn over lepers to the national government.

Surgeons Sail for South America.—Members of the American College of Surgeons sailed from Hoboken, N. J., February 10, on the Lamport and Holt liner *Vandyck* for a cruise to South America, which will occupy about two months. The purpose of the trip is the promotion of professional and social relations between the surgeons of Central and South America with surgeons of the United States, which, it is hoped, will lead to an exchange of professors and students between the colleges of surgery in the various countries. Approximately 350 members of the college and their families will make the trip. Scientific meetings and clinics will be held in the various cities, and the medical schools and hospitals visited. The party will be entertained by the president of Cuba. At Colon, Panama, they will assist in laying the cornerstone of the Gorgas Institute of Tropical Medicine.

Scheme to Defraud Physicians.—A swindler has visited York, Pa., Braddock, Pa., and Alliance, Ohio. He aims to call on the leading surgeons of a city and make arrangements for an operation for a growth on the inside of his right jaw, and a fistula. When all arrangements for the following day are made he produces a bank book on a bank in another part of the country, saying he will deposit money in a bank in the city where he happens to be, so that funds can be used as required during his stay in hospital. He induces the surgeon to advance money on account of his supposed bank account, and of course, never turns up for the operation the next day. The impostor uses the name of Frank S. Miller. He is 65 to 70 years old and 6 feet tall. He is clean shaven, appears nervous and deaf, has thin gray hair, a growth on the inside of the right jaw, and laughs peculiarly. Should this party come to your attention, please notify the First National Bank, Braddock, Pa.

FOREIGN

London Free from Smallpox.—The two remaining cases of smallpox in London were discharged from the Long Reach Isolation Hospital, Dartford, January 19, and for the first time in months the metropolitan area is free of the disease.

Body of Roentgen Cremated.—The body of Prof. William Konrad Roentgen, discoverer of the roentgen ray, was cremated at the Ostfriedhof Cemetery, Munich, February 13. The immediate cause of his death was strangulated hernia.

German Dermatology Congress.—The annual meeting of the German Dermatologic Society is to be held at Munich, May 20-23. The only topic selected for discussion is "Eczema." For further details, apply to Professor Jadassohn, Maxstrasse 1, Breslau.

Manchuria Medical College.—The Manchuria Medical College (formerly the South Manchuria Medical School) at Mukden, having been recently raised to the rank of a university, celebrated the augmentation of its faculty recently. Dr. I. Inaba, president of the college, delivered the opening address.

German Scientists Desire to Exchange Publications.—A committee has been formed in Germany to facilitate exchange of scientific periodicals. It is requested that those who wish to exchange American publications for foreign may address Notgemeinschaft der deutschen Wissenschaft, Bibliotheksausschuss, Berlin C.2, Schloss, Portal 3.

The Italian Surgical and Internal Medicine Congresses.—The thirtieth annual meeting of the Italian Surgical Society is to be held at Rome in October, the same week as the annual meeting of the Italian internists. There is to be a joint session of the two to discuss the surgical treatment of gallstones from the standpoint of chronic pancreatitis. The only other subject selected for discussion at the surgical congress is "Transplants." The officers of the society are Professors Alessandri, president; Parlavecchio and Baldo, vice presidents, and Rossa Felice and Crescenzo, secretary and treasurer, respectively.

Roentgenologist Honored.—Dr. Charles Vaillant of the Lariboisière Hospital, Paris, who has suffered the loss of both arms in roentgen-ray experimentation, was awarded the cravate of the Legion of Honor, the Carnegie hero medal and the gold medal of the city of Paris, February 19. The ceremonies took place at the city hall. The United States ambassador, Myron T. Herrick, conferred the Carnegie medal after Gen. A. Y. E. Dubail, grand chancellor of the Legion of Honor, had awarded Dr. Vaillant the cravate. The president of the municipal council of Paris presented the gold medal of the city of Paris, a rarely conferred honor. Dr. Vaillant has worked almost without respite for twenty-five years at Lariboisière Hospital, and was one of the first Frenchmen to apply himself exclusively to study of the roentgen ray.

Medical Library for American Hospital in Japan.—Dr. R. B. Teusler, director of St. Luke's International Hospital, Tokyo, is asking for assistance in building up a medical library at the institution. The hospital staff, which includes twenty Japanese physicians, is handicapped by lack of reference books, and the medical profession in general has no access to anything in Tokyo except occasional textbooks and broken files of American and British medical magazines. St. Luke's, the only American hospital in Japan, is being enlarged to a 230-bed capacity, for private and charity patients. Persons having published books on medicine or nursing are requested to donate copies, and physicians who are retiring from practice are asked to remember St. Luke's when disposing of their libraries. The Church Periodical Club, 2 West Forty-Seventh Street, New York, has charge of providing the library and will be glad to furnish further information.

German Warning Against Milligram Ampules.—The organized physicians of Greater Berlin have recently published a warning against the use of *milampullen*, and urge pharmacists not to dispense them when prescribed. The direct occasion for the warning was three instances of severe poisoning from atropin after subcutaneous injection of an ampule of atropin

from a box labeled to contain atropin in ampules in 1 mg. doses. The ampules dispensed had been prepared for veterinary purposes, and each ampule was supposed to contain 0.1 gm. of atropin. The organized pharmacists, it is stated by the *Medizinische Klinik,* have frequently warned that all preparations supposed to contain 1 mg. doses should be viewed with suspicion. Not only the labels on the packages may be incorrect, but the dose may not be accurate. This was evidenced by the three cases cited: If the whole alleged amount of 100 mg. had been contained in the ampule, the injection would probably have been fatal.

International Conference on Spanish Theory of Tuberculosis.—The *Semana Médica* and other journals give the details of the conference to be held at Madrid in the last two weeks of April, to discuss the various aspects of the theory in regard to the etiology and treatment of tuberculosis, which Dr. Jaime Ferrán promulgated twenty-five years ago, and on which there is now considerable international literature. It was commented on in THE JOURNAL, June 10, 1922, p. 1833. The conference is open to all who have any communication to make bearing on Ferrán's theory. A list of those already inscribed for the conference includes a number of tuberculosis specialists from Latin America, and Ascoli of Italy, Pribram of Vienna and Brück of Budapest. Prophylaxis and treatment based on Ferrán's views were applied in 1919 on a large scale at Alcira in Spain, as described in the Madrid Letter at the time, Oct. 4, 1919, p. 1074. The letter described also the scientific foundation for Ferrán's antialpha vaccination against tuberculosis.

Personal.—Dr. Brunner of Groningen, who was active in obtaining temporary homes for German children in Holland during the war, has received an honorary degree from the University of Greifswald.——Dr. F. von Soxhlet of Munich recently celebrated his seventy-fifth birthday.——Dr. L. Asher, professor of physiology at the University of Berne, has been elected honorary member of the Biologic Society of Buenos Aires.——Prof. M. Oppenheim of Vienna has been invited to address the annual meeting of the London Dermatologic Society on "Recent Progress in Dermatology."——Dr. Gálvez of Malaga was recently presented with an address on vellum in tribute to his work among the wounded in the Morocco campaign.——Dr. Franz M. Groedel of the University of Frankfort, Germany, was the guest of the Eastern Medical Society at the New York Academy of Medicine, recently. He gave a roentgen-ray demonstration of cardiac movements. ——Dr. E. Phole, Frankfort, conducted a ten-day clinic at St. Joseph's Hospital, Omaha, February 5-15.——Major W. D. H. Stevenson has been appointed officiating director of the Pasteur Institute of India, Kasauli.——Col. Charles Macwatt has been appointed director general of the Indian Medical Service, to succeed Major Gen. Sir William Edwards.

Deaths in Other Countries

Dr. **A. P. Sherwood,** at Eastbourne, two days after his retirement from practice.——Capt. **William A. Whitelegge,** surgeon of the British Navy; aged 61.——Dr. **Cornelius Biddle,** December 16, aged 74.——Dr. **Mary T. McGarvan,** a medical missionary of the Christian Church for twenty years; at Damah, India, following an operation. Dr. McGarvan was formerly a resident of Lisbon.——Dr. **Hunter F. Tod,** well known surgeon for diseases of the throat, nose and ear. He died from malignant disease of the larynx, January 23, in his own ward in the London Hospital.——Dr. **Jorge Martínez Santamaría** of Bogota, aged 42. Nearly the entire issue of the *Repertorio de Medicina* of Bogota is devoted to the official tribute from the president of the republic, and the resolutions of condolence passed by the national parliament, by the public health and other departments and by the scientific societies of Colombia on the death of this physician, who was called the Colombian Pasteur. He founded the national laboratory for production of antiserums and vaccines, and published works on tropical diseases, one on leprosy winning an international prize.——Dr. **Raffray,** physician on Mauritius Island, east of Madagascar. Two of his works, on the nervous system and diet, were awarded prizes by the French Académie de médecine.——Dr. **Samuel M. Salazar,** professor of medical propedeutics at the Military Medical School of Mexico.

CORRECTION

Chicago Surgeons Not on Tour.—Drs. A. J. Ochsner and Henry Schmitz request statement that their names were included in a list of surgeons making the South American trip, THE JOURNAL, January 20, through error. The announcement published was taken from the Chicago *Journal.*

Government Services

New Name Proposed for Postal Department

The U. S. Postoffice Department, of which Dr. Hubert Work, former president of the American Medical Association, is head, will be known as the Department of Communications under the proposed reorganization of the government departments.

Colonel Forbes Resigns from Veterans' Bureau

It is announced from Washington that Col. Charles R. Forbes has resigned as director of the U. S. Veterans' Bureau. Colonel Forbes is now on leave in Europe.

U. S. Public Health Service

Examinations of candidates for entrance into the regular corps of the U. S. Public Health Service will be held, March 12, 1923, at San Francisco, Washington, D. C., and Chicago. Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

Medals Awarded

Distinguished service medals for conspicuous efficiency during the World War were awarded this week by Secretary of War Weeks to Col. Christopher C. Collins, Medical Corps, and Capt. Robert A. Dickson, Medical Administrative Corps.

Reorganization of Government Departments

The plan of President Harding for reorganization of the government departments has been transmitted to Congress by the joint congressional committee on the reorganization of the administrative branch of the government.

An outstanding feature of the committee's report is the proposed creation of a department of education and welfare. This department would include a number of bureaus having functions related to public health, veteran relief and women and children's service, which are now functioning in at least a half dozen different departments of the government. The proposed organization of the department of education and welfare follows:

(*a*) This is a new department, to have four major subdivisions, each in charge of an assistant secretary, as follows:

- Education.
- Health.
- Social Service.
- Veteran Relief.

(*b*) Existing bureaus and offices to be transferred to the Department of Education and Welfare are as follows:

From the Department of the Interior:
- Bureau of Education.
- Indian schools.
- Howard University.
- St. Elizabeth's Hospital.
- Freedmen's Hospital.
- Bureau of Pensions.

From the Department of Labor:
- Women's Bureau (part).
- Children's Bureau (part).

From the Treasury Department:
- Public Health Service.

From the War Department:
- Soldiers' Home.

From the Department of Justice:
- Office of the Superintendent of Prisons.

Independent establishments:
- Smithsonian Institution.
- Federal Board for Vocational Education.
- National Home for Disabled Volunteer Soldiers.
- Columbia Institution for the Deaf.
- Veterans' Bureau.

No immediate action is expected on the report of the committee. Its recommendations have the sanction of the Cabinet, but must await the action of the December session of Congress.

Senate Investigation of Veterans' Bureau

A resolution proposed by Senator Walsh of Massachusetts, providing for a thorough investigation of alleged waste, extravagance and mismanagement in the Veterans' Bureau, has been adopted. The resolution requires the Special Hospitalization Committee, appointed in June, 1921, to consider

the charges of mismanagement, waste of funds and extravagant purchase of supplies, to determine whether or not such charges should be investigated and to recommend to the Senate the manner and scope of the investigation. The recent resignations of Director Charles R. Forbes, General Counsel Charles F. Cramer, and Dr. T. Hugh Scott, formerly executive officer, are regarded as significant in connection with the proposed investigation.

Survey of Philippine Subdistrict of Veterans' Bureau

Dr. L. B. Rogers, assistant director, has arrived from the Philippine Islands and is at his post as chief medical adviser in charge of the medical division of the U. S. Veterans' Bureau, Washington, D. C. Before leaving the islands, Dr. Rogers, accompanied by Major A. C. York, manager of the Philippine Islands subdistrict, made a survey of bureau activities in that section. More than $500,000 in gold is being paid annually to disabled ex-service men of the islands in the form of compensation, hospitalization and vocational training. Dr. Rogers visited the hospitals where bureau beneficiaries are located and personally examined about 300 patients. The bureau, which has about sixty cases in the Santol Tuberculosis Colony, Sana Mesa, Los Banos, the only institution in the vicinity of Manila admitting tuberculous patients, has a contract with the Philippine Island Antituberculosis Society, which conducts the sanatorium for the care of these wards, 5 pesos per day for each patient being paid by the bureau. Dr. Rogers, after visiting many proposed hospital sites, selected a tract of land with modern buildings, accessible to Manila and in a high altitude, which can be converted into a tuberculosis hospital at thirty days' notice. Following a conference with General Read and Colonel Kennedy of the U. S. Army, it was arranged that general medical and surgical cases should be cared for in the Sternberg Hospital at Manila.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 1, 1923.

Maudsley Hospital Opened

The Maudsley Hospital, which is the first institution in this country following the lines of the neurologic and psychiatric clinics of the continent of Europe and of America, designed for the treatment and investigation of organic nervous diseases, neuroses and incipient psychoses, has been opened. It was founded by the London County Council on the initiative of the late Dr. Henry Maudsley, an eminent alienist and psychologist, who made a munificent gift for the purpose—$150,000—during his lifetime and left $50,000 in his will. The hospital represents the first provision made by a public body in England for the treatment of early and curable types of mental disorder entirely on a voluntary basis and apart from certified cases. The hospital is intended primarily for the early treatment of mental disease, but it is also intended to afford opportunities for diagnosis of cases in which special facilities are necessary, for observation of cases of unusual scientific interest and for the study of psychologic medicine, especially by physicians who have qualified. There are 157 beds for inpatients, as well as an outpatient department. A course of lectures for the diploma in psychologic medicine under the direction of Sir Frederick Mott has been arranged. Given willingness to undergo treatment, good prognosis is the main feature constituting suitability for admission of patients. In fact, cases without such prognosis will be admitted only on account of difficulty of diagnosis or exceptional scientific interest. Suitable types for admission among neuroses are hysteria, neurasthenia, anxiety and obsessional states, and among psychoses mild phases of the manic-depressive type and those associated with pregnancy and the puerperal period, with postinfective states, with syphilitic brain disease of the interstitial types, with alcoholism and other drug habits, with endocrine disturbances and generally cases exhibiting mental symptoms associated with all forms of definitely bodily disease. Cases of organic nervous disease of most kinds with mental symptoms will be considered as sufficiently interesting to justify admission regardless of prognosis. Unsuitable types (except for diagnosis, research or teaching) are cases of simple congenital defect, epileptic deterioration, general paralysis, advanced dementia praecox, and usually delusional states of more than one year's standing.

An Institute of Animal Pathology at Cambridge

The council of the senate of the University of Cambridge has presented a report on the offer of the ministry of agriculture and fisheries to establish an institute of animal pathology. For a long time it has been the opinion in the departments of agriculture and medicine of the university that provision should be made for the teaching of animal pathology. This opinion is strongly supported by the Right Hon. Sir Clifford Allbutt, regius professor of physic, and by the professor of agriculture. The ministry offers, in the first instance, to provide a capital sum of $150,000 for investment by the university, on certain conditions bearing on the founding of a chair of animal pathology; but it is not in a position to recommend any assistance toward expenditure on the study of animal diseases at Cambridge from funds other than the Corn Production Acts fund, and when this fund is exhausted, their commitments will cease. But when, in 1927 or thereabouts, this fund is exhausted, the government will be prepared to consider, with due regard to the position of national finances and of agriculture, provision for carrying on the scheme. The council is of opinion that the university should be protected from financial risk by the addition of a proviso that it should be under no obligation to continue the institute after 1927 unless satisfactory provision for maintenance is forthcoming, either from the government or from other sources. In the event of failure of financial support, the university will be left with a fully endowed professorship of animal pathology, an extension of the school of agriculture, with sufficient endowment to pay its rates and arrange for more or less temporary buildings. The council recommends acceptance of the scheme subject to the conditions mentioned.

Plan for a World List of Scientific Periodicals

At a meeting of the Conjoint Board of Scientific Societies, a definite constitution was given to a scheme to prepare and issue a list of all scientific periodicals containing the results of original research, with an indication of the libraries in Great Britain where they may be consulted. There are many thousands of such periodicals written in many languages, printed in almost every civilized country, and produced at different prices and intervals. No accurate list of these exists; no single library contains even a large proportion of them; there is much overlapping, and many periodicals are not known to reach this country. An influential committee representing different branches of science has been arranging for the preparation and publication of a complete list. The trustees of the British Museum, recognizing the importance of the work, have consented to allow the preparation of the list to be undertaken by the staff of the keeper of printed books. Material has been sent in by many scientific societies and libraries, and it is hoped that the list will be printed before the end of the year. As a result of a preliminary circular, between 300 and 400 copies have been subscribed for at $10 each. The Carnegie United Kingdom

Trust has guaranteed the cost of publication up to $5,000 on condition that libraries at a larger number of centers in Great Britain than was originally intended be included.

The Investigation of Distemper

The *Field*, a journal devoted to country life, is inaugurating a fund for investigation of the cause of distemper in dogs. It appeals for support, either in the form of one donation before March 1 or an annual subscription for three years beginning on that date. After the three years the position will be reconsidered, and it will be decided whether any further subscription is necessary. The Medical Research Council has promised cooperation and the use of its farm laboratory, which is under the direction of a skilled veterinary pathologist. Promises of collaboration and assistance have also been received from France and the rest of Europe, and particularly from the United States and the various dominions of the British Empire. Individual research is by no means a novelty in the long history of distemper. But by the centralizing of effort over so large an area, by avoidance of overlapping and by cooperation of the medical and veterinary professions, it is hoped to make greater progress than has been achieved before. Any advance in our knowledge of distemper will probably involve a similar advance in the power of controlling similar diseases in man. It is estimated that the loss caused by the ravages of the disease in dogs amounts to several million pounds a year. A bulletin of the progress made will be issued regularly to subscribers and to the press.

The Position of Physicians Under the Dangerous Drugs Act

The Dangerous Drugs Act, which was passed in order to prevent the abuse of drugs by addicts, has been described in previous letters to THE JOURNAL. Obligations are imposed on physicians in regard to giving prescriptions and keeping records. The Home Secretary, whose department administers the act, has issued regulations as to inspection. At first a policeman, acting under authority, could demand to see a physician's drug books, but the Home Secretary has now decided that inspection can best be carried out by health officers. This new regulation is regarded by the profession as less irritating, though not without objection, for it has been pointed out that the health officer may possibly be a rival practitioner with a right to enter premises without warning, to whom the books and other circumstances of an opponent would be thus thrown open. All prescriptions containing a dangerous drug must be in writing, dated, signed with the name and address of the physician, and must state the name and address of the patient, and the total amount of the drug to be supplied on the prescription. Physicians who dispense medicine must keep registers both of purchases of drugs and of their supply to patients. A physician who infringes any of the regulations is liable to a fine of $1,000 or to imprisonment for six months. Further, the Home Secretary has power after conviction to withdraw from a physician his authorization. The effect would be to deprive him of his right to be in possession of or to supply drugs.

A Well-Documented Methuselah

Under this title, Donald MacKie, deputy registrar-general, Bureau of Vital Statistics, Edmonton, Alta., records in the *Lancet* the death of William Kennedy of Holden, which has been registered in his department. His age is given as 125 years, the primary cause of death as "senility," and the contributory cause as "exhaustion." On investigating the dates, Mr. MacKie got the following information from the son of the deceased: "He was baptized, Sept. 25, 1802, near Enniskillen, Ireland, by the Rev. John Richardson, vicar of the parish, and is the son of Thomas and Margaret Kennedy of Glenvannon. I personally copied it from the original in 1898. He had seven brothers and four sisters, and one of the latter was alive two years ago, and was senior to the deceased. He shaved without glasses two weeks ago, and until lately could read without glasses. He recited long passages of scripture within four days of his death, and passed away almost imperceptibly."

A National System of Registration of Disease

At the Royal Statistical Society, Dr. R. Dudfield advocated the establishment of a national system for the registration of disease. He said that though much attention had been given to epidemic diseases, there was a mass of disablement treated in hospitals and other institutions, of which no study on a grand scale had been attempted. The research work which was going on was too piecemeal in character. Data need bringing together from all institutions, to be collated and analyzed by a central body of statisticians with medical experience.

PARIS

(From Our Regular Correspondent)

Jan. 26, 1923.

The Centenary of the Death of Jenner

The Academy of Medicine commemorated with appropriate ceremonies the centenary of the death of Jenner. A commemorative exhibition of documents connected with Jenner and the earliest period of smallpox vaccination was held, on this occasion, at the headquarters of the academy.

Some Criticisms on Modern Medicine

As he was about to retire from active duty, Dr. X. Arnozan, professor of clinical medicine at the Faculté de médecine of Bordeaux, gave a farewell lecture, in which he compared modern medicine with that in vogue fifty years ago. While unsparing in his criticisms of the medicine of the past, Arnozan also condemned contemporaneous medicine. He reproached it for not taking any particular account of the natural course of diseases. The belief seems to be prevalent that a disease cannot be cured unless it is treated with a specific. Another criticism of contemporaneous medicine is its too great multiplicity or complexity; the overdoing of specialization and the undue number of physical examinations to which patients are consequently subjected. There are, in fact, too many specialists. Finally, and chiefly, Arnozan arraigns modern medicine for being overready to accept new remedies. As soon as a new remedy is put on the market, everybody hastens to prescribe it, without waiting for sure evidence that its use is really beneficial. Then, after a few years, a few months or merely a few weeks of popularity, the new remedy is discarded, leaving the memory of useless, and sometimes, unfortunately, of dangerous prescriptions. Arnozan regrets particularly that, in the application of new remedies, we often lose sight of the fact that a given remedy, excellent though it may be to combat the manifestations of an infectious agent in one portion of the organism, may be absolutely incapable of influencing conditions in other portions.

Collection of Public Health Statistics in France

I mentioned in a previous letter the critical study of Dr. Raoul Pacaud on the public health statistics of France (THE JOURNAL, Dec. 30, 1922, p. 2244). The question has been taken up also by Drs. Louis Martin and E. Briau, and they rendered a report on the subject to the ninth Congress of Hygiene, recently held at Paris. This congress, considering the fact that hygienists need to have access to public health statistics which are easily utilizable and always up to date, passed a resolution demanding that (1) death certificates

shall be obligatory and shall be executed by physicians (as far as possible, by the attending physicians) on an official blank giving a list of questions drawn up by the Conseil supérieur d'hygiène; (2) these official blanks, when filled out, shall be delivered at the *mairie* (mayoralty house), whence they shall be promptly sent to the departmental medical inspector of public health, who will each day classify the statistical information contained therein; (3) a condensed report of the statistics of each month shall be sent by the departmental medical inspector to the minister of public health, whose duty it shall be to see that the statistical tables are kept up to date and that the departmental reports are communicated to the *Journal officiel,* and (4) an earnest appeal should be made to practitioners, through the intermediation of their associations and "syndicates," in order that, guarantees being furnished that privileged communications shall not be violated, they may give whole-heartedly and without mental reservations their complete and hearty cooperation toward securing reliable death certificates.

Antivenereal Instruction

Dr. Julien, an army physician, recently presented to the ninth Congress of Hygiene a communication on antivenereal instruction as given in educational institutions for young men. In 1921, Jullien instituted in the boys' college of his city a series of lectures on public health, which he closed with a talk on "The Sexual Life and Its Dangers," to which only seniors who were candidates for the bachelor's degree were admitted. None of the boys' parents raised any objections, while most of them expressed their appreciation of his endeavors. In 1922, parents requested that he should give again the talk he had given the previous year for the older boys. These results seemed to the congress sufficiently encouraging to prefer a request to the minister of public instruction to establish as a regular routine in secondary schools, and in the beginning classes of higher institutions, sex education and antivenereal instruction, to be given by a competent physician and reserved for pupils above 16 years of age.

Taxes Imposed on Sanatoriums

The tax administration has of late made the claim that physicians who are directors of sanatoriums are required to pay the 8 per cent. tax on industrial and commercial profits, instead of the 6 per cent. tax that is levied on the profits of the so-called liberal professions. An alienist who directs personally a sanatorium was addressed thus: "You are conducting a *pension,* since you are hospitalizing a certain class of patients in a special establishment, where they may enjoy calm, rest and fresh air, while, at the same time, they receive the care appropriate to their condition. You furnish them also board and lodging, heat, light and domestic service. Would you deny that these are acts identically the same as those performed by persons pursuing a purely commercial profession? It would seem that you should be taxed as one deriving commercial profits." The council of prefecture (a tribunal in each department of France, which assists the prefect in his administration) of the department of the Seine, with which the physician who had been thus taxed filed a complaint, decided the question quite differently. It rejected the claim of the fisc and brought out the fact that the profession of medicine "consists essentially in caring for a certain category of patients. The acts in question constitute the exercise of the purely liberal profession of a medical alienist in treating his patients. Again, providing patients with board and lodging, heat, light and domestic service appears to be a necessary consequence and only accessory or supplemental to the regular applied treatment, and therefore cannot and does not change the character of the profession exercised. . . ." The council of prefecture decided that the physician had been wrongfully subjected to the tax on commercial profits.

In an additional instance, M. Grinda, member of the chamber of deputies, presented to the minister of finance the question: If two doctors of medicine have formed a partnership to practice their profession in common, and, in pursuit of this purpose, have contributed to a common fund to develop the possibilities of a sanatorium (founded, originally, by one of the partners, before a partnership was entered into), which they manage themselves and in which they give their personal attention to the patients who entrust themselves to them, are they subject to the tax on industrial and commercial profits, even though they employ a domestic and attending personnel, and are aided in the exercise of their profession by a physician who receives a fixed salary and, in addition, certain supplementary fees, varying in amount? The minister of finance replied:

> Physicians who are directors of a sanatorium and give personal attention to patients who are under treatment must, if the principal purpose of their enterprise lies in the practice of their art, be regarded as devoting themselves solely to the practice of medicine, and therefore subject, as regards their total profits from their profession, to the tax on profits from noncommercial professions, even though they employ a domestic and an attending personnel attached to the establishment, and though they make use, accessorily, of the services of a salaried physician. On the other hand, if their profits are derived chiefly from the furnishing of board and lodging to the boarders in the sanatorium of which they are directors or from the work of a confrère to whom is entrusted the largest part of the care required by the patients, the operations in which they are engaged take on the character of a commercial enterprise, and the profits they derive therefrom must be subjected, in their totality, to the tax on industrial and commercial profits.

Hospital Ships in Time of Peace and in Time of War

Dr. Chastaing, surgeon-general of the navy, holds *(Archives de médecine et de pharmacie navales)* that a hospital ship should be, above all, a hospital. It should offer the same resources and give the same care and attention to patients that a hospital on land affords. To accomplish this, the first essential is to have wards in which the beds are conveniently arranged, preferably in a single row. Superimposed beds (double deckers) should be abolished. Separate isolation wards should be provided for patients with contagious diseases, tuberculosis and dysentery, and for psychiatric and for hopeless cases. Almost all the wards should have an adjoining room in which patients may be examined and treated without being exposed to the gaze of the other inmates of the ward. A special room for the use of the nurses should also be provided. There should be two operating rooms, a room for sterilization, a roentgenographic room, a pharmacy with an analytic laboratory, a morgue with a port-hole for burial at sea, and storerooms for hospital material and patients' effects.

A separate mess should be provided for ambulant patients. After meals have been served, the mess halls may be used as rest or lounging rooms. On the bridges, open spaces or passages roofed in with glass may be utilized as a promenade for convalescents or as places where patients may be given an airing or exposed to the sun.

Adjoining the several wards, there should be ample facilities for shower baths. A delousing room, a sulphuration room and steam dryers for clothing should be provided. Cold-storage rooms are indispensable for the preservation of meats and fresh foodstuffs. It is not out of place to have a morgue with a refrigerating chamber for the preservation of cadavers, such as was installed, about fifteen years ago, on board the American hospital ship *Relief.*

The medical personnel of a hospital ship should be sufficiently large and so habituated to life at sea as to be in a position to face any situation that may arise at any time. In regard to the number of nurses necessary, from 8 to 10 per cent. of the bed capacity of the hospital constitutes an average estimate.

In time of war, hospital ships may not be used for any purpose other than as hospitals. The chief surgeon should be on board the highest representative of authority, charged with the execution of orders that he receives directly from higher authorities, and not dependent on the captain. On board mixed transports, the medical director should be the supreme authority in the hospital section.

BELGIUM

(From Our Regular Correspondent)

Jan. 20, 1923.

Dyspnea and Pneumothorax

At a recent meeting of the Academy of Medicine, Dautrebande and Spehl presented an important study on the causes of dyspnea and of death in open pneumothorax. They conclude that surgical pneumothorax induces dyspnea owing to anoxemia, and that this condition, characterized mainly by a superficial and rapid respiration that soon becomes dangerous, can be combated by the administration of oxygen.

Spermatic or Seminal Cysts

Before the Belgian Urologic Society, Dr. Cantinaux presented recently the results of his researches on the origin of bilateral spermatic cysts, and discussed their relationship with syphilis.

Drainage in Empyema

Speaking before the Belgian Surgical Society, Willems stated that he had tried several times reversible drainage, but that he had obtained only mediocre results; for generalized purulent pleurisies, at least, he regards it as insufficient. In the case of patients confined to the bed, he performs a posterior thoracotomy (Walther method) in the costovertebral groove at the level of the tenth or eleventh intercostal space. In the less grave cases, when the patient can sit up early, Bérard's technic is advantageous: lateral thoracotomy at the anterior axillary line, resection of the seventh rib with insertion, the patient sitting upright, of a drain at the lowest point. The main point in order to prevent the formation of pleural fistulas is to use short drains that do not penetrate the pleura but are just long enough to keep the wound in the thorax open.

Poisonous Mushrooms

Before the Société royale des sciences médicales et naturelles of Brussels, M. Dekeyser presented a proposal concerning the control and supervision of the sale of mushrooms. After some discussion, the following resolution was unanimously adopted:

The Société royale des sciences médicales et naturelles of Brussels, in view of the dangers that the public incurs owing to the absence of control of the sale of mushrooms, has passed a resolution favoring a strict supervision of this traffic. It has decided to send the text of this resolution to the provincial and communal authorities, the Conseil supérieur d'hygiène and also to the public press.

Thymectomy

Before the Société médico-chirurgicale of Brabant, Dr. Marique presented the case histories of fifteen children on whom he has operated for hypertrophy of the thymus. He performed an extracapsular thymectomy according to the technic of Veau and Olivier. The operation is exceedingly simple. The skin incision is as for a low tracheotomy, slightly inclined downward. Keeping precisely on the middle line, the operator, pushing the sternothyroid muscle aside, reaches the thymic capsule, which, when opened, allows the two lobes of the thymus to be easily enucleated. Marique stated that the feeling of suffocation, which constitutes the main indication for the operation, is immediately relieved, and that the other symptoms likewise disappear very soon.

The patients operated on, when seen at irregular intervals, presented no anomalies of weight or height, which is not surprising, since thymectomy is never total. By reason of the simplicity of the operation, it may be regarded as a competitor of radiotherapy, and it has the advantage that it can be performed in remote places or in urgent cases.

Domiciliary Treatment in Mental Cases

Dr. Boulenger presented to the Société de médecine mentale a communication that is of interest to psychiatrists and legislators alike; for, since the passage of the revised act of June 14, 1920, domiciliary sequestration has passed beyond the stage of mere care taking, but has not as yet developed to the point that it constitutes a consistent means of treatment in mental cases over which judicial authority exercises supervision and control. Sequestered mental patients should not be dependent solely on the devotion of relatives or on the constantly varying prejudiced opinions that they may entertain with respect to those mentally defective. These patients usually receive good physical treatment, but they lack the psychiatric treatment needed. It is now proposed that domiciliary sequestration shall be organized on a scientific and medical basis. This will require the creation of a special medical service and a special nursing personnel in each province or judicial district, the medical service to consist of one or more psychiatrists, aided by visiting nurses who have received special instruction, whose duty it shall be to advise, aid and supervise the mentally defective who are sequestered, and to counsel with the family that has assumed their care, in regard to their treatment. This seems to be the only way to render the act of 1920 effective.

The Proper Time for Osteosynthesis

M. Lambotte, the first proponent of osteosynthesis, discussed recently before the Société belge d'orthopédie the results of his experience with regard to the choice of the proper time for such intervention in fractures. Lambotte holds fast to his principle of not operating on diaphysial fractures under one to two weeks after the traumatism. He has observed that fractures operated on immediately show unmistakable evidence of retarded consolidation. He attributes this to the fact that the periosteum, during the first few days following the breaking of the bone, has not at yet regained its embryonal character. Immediate intervention is indicated only in case the bone fragments protrude through the skin, in grave arterial lesions, or in impingement of nerves. Epiphysial fractures, especially in children, are not subject to this rule and may be operated on at once; the same is true of fractures of the short bones.

BERLIN

(From Our Regular Correspondent)

Jan. 27, 1923.

The Struggle Between the Health Insurance Societies and the Physicians

Many of the health insurance societies, owing to the bad economic conditions obtaining generally, are in financial straits. In compliance with governmental decrees, they have been compelled to increase the sick benefits; likewise their disbursements for medical treatment and medicines have been augmented, but after the recent avalanche of high prices, the reaction to which, in the form of higher wages, came but slowly, the capitation fees paid by the members of the health societies were not raised for some time, and the supplementary charges are, in many instances, several months in arrears. Owing to the heavier drains on their treasuries, together with diminished receipts, the financial condition of many health insurance societies has become so desperate that they have been compelled to petition loans from the central government, the governments of the federal states or the municipalities. The directors of the *Hauptkrankenkassenver-*

band (federation of public health societies, which includes district, industrial and provincial public health societies) immediately took advantage of these admittedly deplorable conditions to launch an attack against the principle of free choice of physician, which, for several decades, has been a bone of contention between them and the opposing organization of physicians; namely, the Leipziger Verband (the Leipzig league). As the most essential means of accomplishing their purpose, they demand the abolition of Section 182 of the federal act governing the administration of social insurance. This section provides that members of the health insurance societies, if they become ill, must be given not only sick benefits but also free medical treatment, free medicines and, in short, everything needed for their recovery. The directors of the federations of health insurance societies now demand that, in view of their depleted finances, as the main cause for which condition they allege the free choice of physician, free medical treatment, etc., be abolished, and that members who are taken ill shall receive solely a definite sum per day as a sick benefit. It is evident that the main purpose of social health insurance would be thwarted by any such modification of the law; for, especially at the present time, when workmen and employees, owing to the prevailing economic distress, often have not sufficient means at their disposal to buy the necessaries of life, the sick members of the societies would frequently be tempted to divert to other purposes the sick benefits they received, instead of providing for themselves the needed medicines and medical treatment. Many of them would resort to quacks instead of consulting reputable physicians, which would invalidate one of the main purposes of health insurance. That the income of physicians would be thereby much impaired goes without saying, and, since, at present, a large part of their practice is derived from the health insurance societies, the physicians are quite justified, for material reasons, in their opposition to the proposal of the directors of the health insurance societies. Another matter that has a wide bearing on the situation is the fact that, just recently, the limit of income under which all persons are obliged to take out health insurance; that is, become a member of one of the health insurance societies, has been raised to 2,400,000 marks. It is fortunate that our leading statesmen are fully alive to the true situation of affairs, and it is pleasing to record that, a few days ago, the conferring committee of the reichstag rejected the demand of the directors of the health insurance societies for the abolishment of Section 182.

Personal

Professor Heubner, the senior German pediatrician, who for many years was head professor of pediatrics on the University of Berlin Medical Faculty, and who, since his retirement, has been living in a suburb of Dresden, celebrated, January 21, in the full vigor of health, his eightieth birthday.

The Heubner Prize, which was created in honor of Heubner's seventieth birthday and which is awarded, every three years, for the best work done in the field of pediatrics, has just been bestowed on Dr. Degkwitz, assistant physician in the Munich University Children's Clinic, for his application of an antimeasles serum. Degkwitz himself discussed the nature of his serum and the results he has secured with it in the *Deutsche medizinische Wochenschrift* (**48**:26 [Jan. 5] 1922). His results have since been confirmed by all German children's clinics.

Dr. Franziska Tiburtius, a woman physician of Berlin, celebrated, January 24, her eightieth birthday. She became at first a governess and teacher, and took up medicine later in life. As Germany, at that time, offered no opportunities to women desirous of studying medicine, she entered the University of Zürich, where she studied from 1871 to 1875. After taking her degree in Zürich, she served for a time in the Women's Hospital in Dresden, under Professor Leopold, and then, in 1877, settled in Berlin. When later, through her work, she became known to a large circle of women, she founded, together with another woman physician, Emilie Lehmus, who has since died, a policlinic, and afterward a hospital for women. This highly esteemed physician, who was the first champion of woman physicians in Germany, received on her eightieth birthday a hearty ovation at the hands of the woman physicians of the city.

Creation of a Government Institute for Medical Research

The Emperor William Academy for medicosocial education, which was formerly the Emperor William Academy for the advancement of military medicine, is to be transformed into a government institute for medical research. This large institute, which was completed just a few years before the war, is to turn over its excellent laboratories and its library, which is probably the largest medical library in Germany, to the service of scientific medical investigation. Further details will be given when the plans for the transformation have been fully matured.

Increase of Alcoholism and Drunkenness

Prof. E. Meyer, director of the Königsberg Psychiatric University Clinic, states with regret, in the *Deutsche medizinische Wochenschrift*, January 5, that alcoholism and its sequels, which, during the war, for evident reasons, showed a decrease, have again begun, during the last few years, to rear their head. In his own clinic, the percentage of patients admitted for chronic alcoholism showed a marked increase during the fiscal year 1921-1922 (after the percentage for the year 1918-1919 had trebled). Of 795 men, 100, or 12.58 per cent., and of 503 women, 11, or 2.18 per cent., were admitted for alcoholism. Furthermore, in the case of thirty-three men and two women, the tendency to drink to excess constituted an essential factor in the causation of their mental derangement. Professor Meyer advocated that Germany should adopt regulations similar to those in force in the United States. It is true, that in the United States viniculture does not play as distinctive a rôle as it does in Germany, and the financial difficulties that stand in the way are harder for us to overcome. In spite of that fact, what needs to be done, should be done. For example, the production of beverages with high alcohol content, such as brandy, liqueurs, strong wines and strong beers should be prohibited, and the sale of alcoholic beverages in general should be strictly regulated.

VIENNA

(From Our Regular Correspondent)

Jan. 6, 1923.

Infant Mortality in Rural Districts

The Austrian Eugenic Society (Oesterreichische Gesellschaft für Bevölkerungs Politik) gets reports from all parts of the country from competent observers, with a view of controlling the development of the birth rate and public health. Two medical men, Dr. Narceshuber and Dr. Gerhardinger, have studied for the society the conditions prevailing among the agricultural population of Upper Austria and the Tyrol, two typically conservative and old fashioned provinces, 90 per cent. of the population being peasants. Their report is a shock to all persons accustomed to the conditions of poverty in towns and cities. Infant mortality and infant morbidity is, in our minds, inseparably connected with poverty and want. And it is a revelation to city dwellers to learn that, among peasants who for many years have enjoyed excellent incomes and have hoarded treasures and do not

even know from hearsay the lack of nourishing food, infant mortality exceeds by far the highest statistics for Vienna, with its hundreds of thousands of underfed children.

In the capital, 9.9 per cent. of all children born in 1920 died within their first year of life. In upper Austria, the figure was 21.1 per cent., in Pyrot, 27 per cent., while in Styria and Carinthia, also rural provinces, the rate was 20 and 17.3 per cent., respectively. In the richest rural district of Austria, where a population of 767,000 exists, the average was 27.6 per cent., while in some villages 40 and 50 per cent. of all children died before the age of 12 months. In one hamlet (667 population), of seventy-six new-born babies, only one was alive after a year. In another district of the same province, a purely industrial one, where in 1913 there was an infant mortality of 17.6 per cent., it rose, in 1917, to 21.6 per cent., but it stands now at 19.1 per cent. What is the reason of the remarkable difference between the two populations? Hereditary influences can be ruled out, as only one child is born dead for each thirty-nine born alive, although syphilis among infants is now more frequent, owing to the effects of the war. The only real cause is the manner of rearing children. The main reason for the excessive death rate among young infants is artificial feeding. Among our peasants, it is practiced from the first day of life. An inquiry among the midwives of these districts showed that barely 70 per cent. of these infants are ever given the breast. This is not due to inability of the peasant women to nurse their infants or to any defect on the child's part, but to the absence of knowledge of the importance of breast feeding, and to old customs. Farinaceous food and cabbage and oatmeal are included in the daily fare of the new-born, and bottle feeding is practiced to excess, without the slightest attention to sterilization of the bottle or the contents or the quantity, or periods of rest. There is no trace of efficient nursing, no knowledge of the most primitive hygienic principles.

Tuberculous persons, who are very numerous among the rural population in spite of all the hygienic possibilities of fresh air and good food, are allowed to mix freely and play with even the youngest children. Naturally, whole families are thus extinguished, once an infection is started. Alcohol, in the shape of cider, is not withheld even from infants; and superstition is paramount even among the midwives, in an amazing degree. The reporters point out that the rural districts are suffering from an alarming want of primitive knowledge, owing to the oldfashioned methods of government and absence of schools, while the ceaseless efforts of physicians in the towns have influenced nearly all mothers to give their babies the breast. Perhaps the lack of other food and of milk is also a factor. The rich peasant mother shrinks from her maternal duty because of laziness and of bad examples. Here is a most fruitful field for the intervention of the board of health, and in this country, where religion plays such an important part among the peasant population, influence will have to be brought to bear on the Roman Catholic church, to induce its priests to act as apostles of modern hygiene in these rural provinces. Otherwise, race suicide is an absolutely sure consequence.

Marriages

EDWARD MITCHELL HANRAHAN, JR., to Miss Evelyn Barton Randall, both of Baltimore, February 3.

LEO W. ZIMMERMAN, Timblin, Pa., to Miss Katherine Zapp of Louisville, Ky., January 31.

CORTLAND MYERS to Miss Anne Esther Hughes, both of Los Angeles, January 26.

Deaths

John R. Hoffman ⊕ Wilmette, Ill.; Northwestern University Medical School, 1891; member of the American Academy of Ophthalmology and Oto-Laryngology and vice president of the Chicago Ophthalmological Society; secretary and professor of ophthalmology at the Chicago Eye, Ear, Nose and Throat College; for twenty-five years superintendent of the Chicago Eye, Ear, Nose and Throat Hospital; aged 57; died, February 19, of thrombosis.

Clement Belton Lowe, Vineland, N. J.; Jefferson Medical College of Philadelphia, 1887; also a pharmacist; emeritus professor of materia medica at the Philadelphia College of Pharmacy; at one time president of the Pennsylvania Pharmaceutical Association and vice president of the American Pharmaceutical Association; editor of *Plants of the Philippines* and other botanical works; aged 76; died, February 6.

William Augustus Hardaway ⊕ St. Louis; St. Louis College of Physicians and Surgeons, 1870; Missouri Medical College, 1873; formerly professor of diseases of the skin at Washington University Medical School, St. Louis; at one time president of the American Dermatological Association; author of "Essentials of Vaccination" and "A Manual of Skin Diseases"; aged 73; died, February 3.

Mary Thomas Miller ⊕ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1899; member of the Obstetrical Society of Philadelphia and the Philadelphia Pediatric Society; on the staff of the West Philadelphia Homeopathic Hospital, where she died, February 8, from pneumonia, aged 53.

Clarence M. Slack, St. Petersburg, Fla.; Jefferson Medical College of Philadelphia, 1865; member of the Florida Medical Association; veteran of the Civil and Spanish-American wars; formerly superintendent of the Florida Baptist Children's Home, Arcadia; aged 81; died, January 28, from senility.

David C. Peyton ⊕ Jeffersonville, Ind.; University of Louisville Medical Department, Louisville, Ky., 1886; member of the Medical Society of Virginia; veteran of the Spanish-American and World wars; superintendent of the Indiana Reformatory; aged 62; died, February 6, from pneumonia.

Rufus Joshua Cassel, Mount Vernon, Wash.; University of Minnesota Medical School, Minneapolis, 1901; member of the Washington State Medical Association; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 48; died, January 30, from heart disease.

Richard J. Hill ⊕ Minneapolis; Jefferson Medical College of Philadelphia, 1875; member and at one time president of the Minnesota State Medical Association and the Hennepin County Medical Society; formerly on the staff of St. Mary's and Asbury hospitals; aged 69; died, February 2.

John Miles Martin, Grove City, Pa.; Bellevue Hospital Medical College, New York, 1874; member of the Medical Society of the State of Pennsylvania; served five terms as state legislator; veteran of the Spanish-American War; aged 74; died, Feburary 5, following a long illness.

Joseph Coles Brick ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1894; member of the American Proctologic Society; associate professor of proctology at his alma mater; on the staff of the Jefferson Hospital; aged 61; died, February 4, from carcinoma.

James William Hinckley ⊕ Boston; Tufts College Medical School, Boston, 1898; formerly instructor of gynecology at his alma mater; member of the Boston Society of Medical Sciences; on the staff of St. Elizabeth's Hospital; aged 65; died suddenly, February 7.

William Napier Keefer, Toronto, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1869; L.R.C.S., Edinburgh, and L.S.A., London, 1869; served in the British army during the Afghan War, in India and Egypt; aged 78; died, January 27.

Isaac Arthur Harris, Weaverville, N. C. (licensed, North Carolina, 1885); member of the Medical Society of the State of North Carolina; Confederate veteran; president of the Farmers' and Traders' Bank; aged 84; died, December 29, from cerebral hemorrhage.

Israel Lurier, New York; Medical School of Harvard University, Boston, 1914; served in the M. C., U. S. Army, dur-

ing the World War, with the British and the American armies; on the staff of the Bellevue Hospital, where he died, February 5, aged 34.

Edward S. King, Bluff City, Tenn.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1890; member of the Tennessee State Medical Association; aged 57; died, December 10, from cerebral hemorrhage.

Victor Oscar Saphro ⊕ Los Angeles; University of Colorado School of Medicine, Denver, 1910; lieutenant, U. S. Naval Reserve Force; aged 37; died, February 3, at the Fitzsimons General Hospital, Denver, from bronchopneumonia.

Albert Butler Stone ⊕ Lamar, Mo.; Northwestern Medical College, St. Joseph, 1890; president of the Barton County Medical Society; also a druggist; aged 73; died, February 3, at Pittsburg, Kan., from carcinoma of the prostate.

Richard Gay De Puy, Jamestown, N. D.; University of Michigan Homeopathic Medical School, Ann Arbor, 1881; member of the North Dakota State Medical Association; aged 67; died, February 4, from influenza.

Joseph Adkemar Jeannotte ⊕ Leadville, Colo.; Laval University Faculty of Medicine, Quebec, Que., Canada, 1875; mayor of Leadville; on the staff of St. Vincent's Hospital; aged 68; died, January 31, from pneumonia.

George Bethune Best, Englewood, N. J.; New York Homeopathic Medical College and Flower Hospital, New York, 1887; member, and at one time president of the state board of health; aged 63; died, January 26.

William H. Crow, Pavo, Ga.; Atlanta Medical College, Atlanta, 1895; member of the Medical Association of Georgia; aged 52; died, February 4, at Sylvester, from injuries sustained in an automobile accident.

Isabella Hursen ⊕ Chicago; Chicago Physio-Medical College, 1902; formerly adjunct professor of medicine at her alma mater; aged 55; died, February 11, from heart disease, following an attack of influenza.

John H. Rice, Quincy, Ill.; Eclectic Medical Institute, Cincinnati, 1878; Rush Medical College, Chicago, 1898; member of the Illinois State Medical Society; aged 66; died, January 31, following a long illness.

William A. Ross, Forkshoals, S. C.; Southern Medical College, Atlanta, Ga., 1892; member of the South Carolina Medical Association; aged 56; died at Greenville, January 30, from heart disease.

William F. Hoey, Frederica, Del.; Hahnemann Medical College and Hospital of Chicago, 1889; aged 61; died, January 24, at the Homeopathic Hospital, Wilmington, from epidemic (lethargic) encephalitis.

Nelson H. McNew, Carlisle, Ky. (licensed, Kentucky, 1893); former county judge; for twelve years editor of the Carlisle *Democrat;* aged 86; died, December 13, from cerebral hemorrhage.

James Claude Wilhoit, Manhattan, Kan.; University of Louisville Medical Department, Louisville, Ky., 1907; member of the Kansas Medical Society; died, February 17, from pneumonia.

John W. Kidd, Burnsville, W. Va.; College of Physicians and Surgeons, Baltimore, 1884; formerly member of the state legislature; aged 66; died, February 2, from cerebral hemorrhage.

Robert Orrin Burke, Lansing, Mich.; Chicago College of Medicine and Surgery, Chicago, 1915; member of the state board of health; aged 37; died, December 16, from pneumonia.

Milton Emerson Lake ⊕ Erie, Kan.; Medical College of Indiana, Indianapolis, 1885; also a druggist; aged 33; died, February 7, from acute dilatation of the heart and pneumonia.

William S. Martin, Tuscola, Ill.; Bellevue Hospital Medical College, New York, 1877; member of the Illinois State Medical Society; aged 85; died, February 5, from senility.

Daniel B. Warren, Wellston, Ohio; Medical College of Ohio, Cincinnati, 1878; member of the Ohio State Medical Association; aged 69; died, February 1, from pneumonia.

James Philip Roy, Richmond, Va.; University of Virginia Department of Medicine, Charlottesville, 1884; member of the Medical Society of Virginia; aged 61; died, January 25.

Marvin Le Roy Smoot ⊕ Fayetteville, N. C.; University College of Medicine, Richmond, Va., 1903; aged 46; died, February 6, following a long illness.

William D. Vanderpool, Montesano, Wash.; Missouri Medical College, St. Louis, 1882; also a pharmacist; aged 70; died, December 31, from carcinoma of the stomach.

James Nelson Ayers, Cressey, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1889; aged 65; died recently, from carcinoma of the stomach.

Henry B. Wiggs, Russellville, Ark.; Memphis Hospital Medical College, Memphis, Tenn., 1896; also a druggist; aged 49; died, January 29, at Colorado Springs, Colo.

Joseph Robert Lee Hardesty, Washington, D. C.; Jefferson Medical College of Philadelphia, 1856; Confederate veteran; aged 87; died, February 3, from senility.

Reuben C. Fisher, Belton, Texas; Louisville Medical College, Louisville, Ky., 1893; aged 52; was found dead in his office, January 30, from heart disease.

Edward S. Crump, Detroit; Detroit College of Medicine and Surgery, 1917; aged 33; died, February 2, at the Harper Hospital, from epidemic (lethargic) encephalitis.

Phillip A. Conner, Whitton, Ark. (licensed, Arkansas, 1907); aged 43; died, January 30, from a bullet wound in the brain, presumably self-inflicted.

Sidney Thompson ⊕ Humboldt, Tenn.: Vanderbilt University Medical Department, Nashville, 1882; aged 61; died, January 29, from heart disease.

L. C. Downtain, Eastland, Texas; College of Physicians and Surgeons, Keokuk, Iowa, 1881; aged 63; died, February 8, from cerebral hemorrhage.

Hitzel C. Le Blond, McCurdysville, W. Va.; Medical Department of Western Reserve University, Cleveland, 1881; aged 65; died, January 29.

Victor Veranus Thompson, Waldoboro, Me.; Medical School of Harvard University, Boston, 1911; aged 56; died suddenly, January 26, of heart disease.

George Clinton Evans, Tulsa, Okla. (licensed, years of practice); aged 43; died at the Oklahoma Hospital, December 13, from senility.

Francis Ignatius Drobinski ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1906; aged 41; died, February 9, from angina pectoris.

Walter A. Lamont, Denver; Medical Department University of Tennessee, Nashville, 1883; aged 75; died, January 27, at Canon City, Colo.

Henry H. Moorehouse, Toronto, Ont., Canada; Victoria University Medical Department, 1871; aged 76; died, December 23, at Oakville.

Howard Luther Diehl, Gettysburg, Pa.; Hahnemann Medical College of Philadelphia, 1876; aged 64; died, February 2, from pneumonia.

Charles C. Eldred ⊕ Joliet, Ill.; Jefferson Medical College of Philadelphia, 1875; aged 73; died, February 4, following a long illness.

Jesse Marvin Williams, Los Angeles; Wisconsin College of Physicians and Surgeons, Milwaukee, 1903; aged 46; died, February 4.

James Wayne Martin, Wynona, Okla.; Barnes Medical College, St. Louis, 1899; aged 48; was shot and killed by bandits, December 1.

Walter Leon Culbertson ⊕ Philadelphia; Maryland Medical College, Baltimore, 1911; aged 40; died, February 3, from pneumonia.

Harriett Judd Sartain, Philadelphia; Eclectic Medical Institute, Cincinnati, 1854; aged 93; died, February 8, from senility.

John R. Harwell, Nashville, Tenn.; University of Nashville Medical Department, 1864; aged 86; died, February 7, from senility.

John Hardin Stewart, Sr., Exeter, Ill.; Rush Medical College, Chicago, 1870; died, Feberuary 2, from cerebral hemorrhage.

David Hume Rice ⊕ Colorado Springs, Colo.; Missouri Medical College, St. Louis, 1885; aged 67; died, January 25.

A. S. Byrne Nellis, Dayton, Ohio; Chicago Homeopathic Medical College, Chicago, 1882; aged 62; died, January 25.

Noah P. Buskirk, Round Bottom, Ohio (licensed, Ohio, 1896); aged 78; died, January 17, from chronic nephritis.

J. W. Powell, Evansville, Ind.; Louisville Medical College, Louisville, Ky., 1881; aged 77; died, February 1.

Elijah J. Tucker, Oroville, Calif.; American Medical College, St. Louis, 1882; aged 72; died, January 30.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

ALLEN'S GOITER TREATMENT

At Sheffield, Iowa, the Allen Remedy Company conducts a mail-order business in "Dr. C. J. Allen's Goiter Treatment." Business is drummed up, apparently, by means of agents and traveling representatives. During the past few months several inquiries have been received about this product. We quote from some of them; first from a Wisconsin physician:

"I have under my care a patient who had developed a toxic adenoma of the thyroid as a result of taking the Allen Goiter medicine made at Sheffield, Iowa. This patient was examined at our clinic some months ago and a clinical diagnosis was made of non-toxic, multiple adenomata. She now appears after having taken this medicine for several months with all the symptoms of thyrotoxicosis, including a basal metabolic rate of plus 44 per cent. She reports a neighbor who is in the same condition as herself as a result of taking this treatment. Dr. ——— of this city today told my brother of two cases coming to his attention in the past week, both of whom had been taking this treatment, and one of whom is so toxic that she may not live."



From a physician in Iowa:

"I wish to secure some information regarding the Allen Remedy Company of Sheffield, Iowa, and especially regarding Dr. C. J. Allen's Goiter Remedy put out by this company. Several patients of mine with different types of goiter have been solicited by a Mr. A. D. Tabor of Cedar Rapids, Iowa, and some of them have asked me for an opinion regarding it."

While a South Dakota physician writes:

"Under separate cover, I am mailing you a bottle of dope put out by the Allen Remedy Co. of Sheffield, Iowa. This has been sold in our community lately as a sure cure of goiter of all kinds. Can you enlighten me as to its relative merits for such a sure fire cure and also what the medicinal ingredients might be?"

According to our records, C. J. Allen of Sheffield, Iowa, died in August, 1917, of tuberculosis. He was graduated by Rush Medical College in 1887. The records fail to show that he was ever a member of his local medical society. The advertising matter put out by the Allen Remedy Company states that C. J. Allen "discovered" his cure some years ago, that its fame began to spread and as a result, "C. J. Allen became a goiter specialist and was recognized as such by many leading medical authorities." This statement, of course, is unqualifiedly false. A careful search of medical literature for thirty years past fails to show that C. J. Allen ever made a single contribution to scientific medical literature.

The "treatment" consists of sixteen four ounce bottles of the preparation, for which $90.00 is charged. Those using the product are told to take a teaspoonful with water after each meal. They are especially instructed to "massage the goiter both morning and evening" and, in black-faced type, are told that "This is very important."

Some of the advertising material put out by the Allen Remedy Company contains a testimonial that is printed under the title "Doctor Recommends Treatment." It purports to be from one "G. W. Lee, M.D." of Sheffield, Iowa, and is dated Oct. 10, 1922. Dr. Lee states that he, too, was graduated by Rush Medical College and has "practiced medicine in Sheffield fourteen years." He states further that he knows "all of the ingredients" in the preparation and assures the public that "there is nothing harmful in this treatment." G. W. Lee is an employee of the Allen Remedy Company and is described as "Head of Medical Advisers' Department." According to our records, George W. Lee was graduated by Rush Medical College in 1869 and went to Sheffield, Iowa, in 1886. A few years later he went to Mason City, Iowa, and later still moved to Wisconsin. At the time the Propaganda department was investigating the itinerant quacks a Wisconsin physician wrote to The Journal stating that a concern known as the "Northwestern United Doctors" then operating in Wisconsin had one G. W. Lee in charge of one of its offices.

Some original specimens of the Allen nostrum were secured and submitted to the A. M. A. Chemical Laboratory for analysis. The report follows:

LABORATORY REPORT

"Allen's Goiter Treatment is a reddish-brown, syrupy liquid having an acid reaction and an odor of sassafras and wintergreen. No information is given by the manufacturers concerning the composition of the preparation except that the presence of 4 per cent. of alcohol is declared. Alkaloids, benzoates, salicylates, glycerin, emodin-bearing drugs, potassium salts, sodium salts, and calcium salts are absent, or present only in traces. Qualitative tests demonstrate the presence of an ammonium salt in very small amounts, an iron salt (in the ferrous state), iodid ions, sucrose (cane sugar), small quantities of a phosphate, coloring matter and alcohol. The iodid is present partly as ferrous iodid and partly as free hydrogen iodid. The ammonia, the iron and the iodin were determined separately. The iron found was equivalent to about 0.83 gm. of ferrous iodid per 100 c.c. The ammonia found was equivalent to about 0.06 gm. of ammonium iodid per 100 c.c. and the hydrogen iodid was equivalent to about 1.74 gm. per 100 c.c. The alcohol content was 3.98 per cent. Each fluid dram (teaspoonful) of this preparation, therefore, contains approximately 1 grain of hydriodic acid and one-half grain of ferrous iodid.

"From the results obtained it is concluded that Allen's Goiter Treatment consists essentially of ferrous iodid and hydrogen iodid (hydriodic acid) in a colored and flavored syrup."

The profits made from selling four pints of a syrup of ferrous iodid and hydriodic acid for $90.00 must surely not be inconsiderable. This, however, is a minor indictment. The most serious feature of the business is the viciousness of the indiscriminate sale of an iodid mixture to those who may be and are likely to be suffering from exophthalmic goiter. Add to this the pernicious suggestion that the victim should massage the thyroid daily and it is not surprising that physicians are beginning to report serious results from the use of this preparation.

Correspondence

THE EARLIEST RECOGNITION OF APPENDICITIS—AGAIN

To the Editor:—Apparently Dr. R. D. Rudolf of Toronto was the first to call attention to the interesting fact that Lorenz Heister seems to have been the first to describe a case of typical appendicitis, namely, in his account of a post-mortem performed by him publicly at Altdorf in November, 1711. Dr. Rudolf's paper (*Canad. M. A. J.*, May, 1913) reprints in full this curious "Observation CX" from what he says is "a translation by a Dr. Daniel Cox, of London, under date of 1755, and the book is entitled 'Heister's Cases in Surgery.'" Dr. Rudolf gives the title in this form because the title-page and following leaves were lacking in his copy (which he kindly lent to Sir William Osler, who showed it to me when I showed him the original). In fact, the English title-page reads:

Medical, Chirurgical, and Anatomical Cases and Observations. By Laurence Heister, M.D., Senior Professor of Physic and Surgery in the University of Helmstadt, first Physician and Aulic Counsellor to his serene Highness the Duke of Brunswick, Member of the Imperial Academy of Sciences, and Fellow of the Royal Societies of London and Berlin. With Copper-Plates, illustrating the Descriptions in the respective Cases. Translated from the German Original By George Wirgman. London: Printed by J. Reeves, For C. Hitch etc. MDCCLV.

It is a large quarto of more than 700 pages. The preface is by Dr. Shaw, and the introduction by Daniel Cox, who declares his ignorance of German. It is worth noting that Lord Lister owned a copy of this translation (No. 1285 in Catalogue 733 [1913] of Henry Sotheran & Co., London), and may have read the passage in question.

Dr. Rudolf does not attempt to give any information whatever in regard to the German original, which is, of course, necessarily earlier than the English translation. Its title-page reads:

D. LAURENTIUS HEISTERS . . . MEDICINISCHE CHIRURGISCHE UND ANATOMISCHE WAHRNEHMUNGEN NEBST KUPFERN UND GEDOPPELTEN REGISTERN. Mit Königl. Pohlnisch und Churfürstl. Sächsischem allergnäd. Privilegie. Rostock, verlegts Johann Christian Koppe. 1753. Quarto, with Heister's portrait, engraved by A. Beck.

A second volume appeared in 1770, four years after Heister's death.

In the original the appendicitis observation is numbered 111 instead of CX. Dr. Erich Ebstein of Leipzig has recently given a photographic facsimile of the page (194) in question, so that it is now readily accessible to all. It appears in *Virchows Archiv für pathologische Anatomie* **226**:98, 1919. Ebstein thanks me there in a note because it was I who first called his attention to the passage in Heister, and he then (1914) wrote to me asking for the precise reference. The number of the *Canadian Medical Association Journal* containing Dr. Rudolf's article was handed to me in the office of the editor, my friend Dr. William W. Francis, in May, 1913. Within a few days I secured a fine copy of the original edition of Heister's book, and later obtained the English translation also. The original was lent to Dr. Howard A. Kelly in 1914. Both original and translation were presented to the "Bibliotheca Osleriana" in 1921, and thus will go to the medical faculty of McGill University.

I should perhaps mention that the New York Academy of Medicine owns an elaborate and valuable manuscript bibliography of appendicitis by the late George M. Edebohls. In this some one has added in pencil a reference to Heister, 1755, p. 136, Case 110.

LEONARD L. MACKALL, Savannah, Ga.

ORGANIZATION OF WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

To the Editor:—Since the last session of the American Medical Association, when the organization of a Woman's Auxiliary of the American Medical Association was authorized, it has been gratifying to note the progress made. Several states have been organized and are on a working basis. Many others are in the process of organization, having given favorable opinions, so that by the time of the San Francisco session, it is hoped there will be a large number of states organized, with delegates and representatives in attendance.

The Woman's Auxiliary of the American Medical Association is no longer a dream, but a realized entity, and it is felt that if all the states knew that the others were endorsing and furthering the movement, some prejudices could be removed on the ground that it is an experiment, for such is far from the case.

This means is taken to give any state, desirous of organization, an opportunity to get any information that may be needed, should any have been overlooked, in order that there may be time to organize and have representatives at the session of the American Medical Association in San Francisco; for it is an assured fact that a large proportion of the states will be represented.

Should any desire information, the corresponding secretary, Mrs. H. L. D. Kirkham, 3711 Mount Vernon Street, Houston, Texas, will be very glad to furnish the information needed, and be of any assistance possible in organization.

MRS. H. L. D. KIRKHAM, Houston, Texas.
Corresponding Secretary, Woman's
Auxiliary to the American
Medical Association.

THE PREVENTION OF CONCEPTION

To the Editor:—The Chicago Gynecological Society is desirous of giving proper publicity to its present stand on the subject of the regulation of conception. The following paragraphs are, therefore, submitted for publication:

In accordance with a resolution passed by the Chicago Gynecological Society, the undersigned committee sent to all of the members of the society a questionnaire dealing with various phases of the general subject of regulation of conception. The replies were analyzed and submitted to the society at its regular business meeting of January 19, and the society unanimously approved of the following conclusions:

1. It is against public policy that information as to contraceptives should be given to the general public.

2. Information as to the prevention of conception should be given wherever indicated to wives and husbands by physicians, either privately or in existing clinics and dispensaries.

3. Special clinics for the dissemination of this information are neither necessary nor desirable, nor should nursing organizations be utilized to give out such instructions.

4. Risk to the mother, based on ill health, whether due directly to existing disease or to the drain of too frequent childbirth under unfavorable home conditions, is the essential indication for instruction in prevention of conception.

5. All mechanical devices used by the wife, as well as strong chemical douches, are discountenanced.

RUDOLPH W. HOLMES, M.D.,
JOSEPH L. BAER, M.D.,
N. SPROAT HEANEY, M.D.,
Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DANGERS OF WORK WITH ROENTGEN RAY

To the Editor:—Some time ago a news item stated that an office building in Paris had refused to lease rooms for roentgen-ray work, alleging danger to other tenants. 1. What practical dangers exist which might warrant such action, and what principles apply which might enable the superintendent of a hospital, office building or person similarly placed to know what measures are necessary to insure the safety of persons constantly placed in contiguous or nearby rooms? 2. What physical ill effects might be expected to follow failure to supply such protection? Please omit name and address.

C. E. W., Pennsylvania.

ANSWER.—1. There are no conclusive reports on this particular question, but there are instances of practical application which permit certain conclusions based on demonstrable facts regarding the alleged dangers of roentgen rays at points beyond the walls of the roentgen-ray room. The danger to persons working in rooms above, below and on the several sides of the room in which there is an active roentgen-ray tube is virtually nil. A practical demonstration of the possible dangers to others than those actually engaged in operating roentgen-ray tubes is to be seen daily in the laboratories of a large manufacturer of roentgen-ray equipment where, during the process of manufacture of the Coolidge tube, persons work in rooms above, below and alongside the roentgen-ray tubes which are in action all day long during the process of rarefaction. This work has been going on for several years, and for the last year and a half (approxi-

mately) some of the newer deep therapy tubes have been in action for long periods of time, running as high as 295,000 volts, while many others are operated at around 200,000 volts. On careful inquiry it appears that in no instance has an untoward action been found on any of the numerous workers who constantly are occupied in the immediate vicinity of these roentgen-ray tubes. Blood tests have been repeatedly made on these employees in order to detect any untoward action of the rays. In order to insure a proper peace of mind in any one concerned, as those in neighboring rooms, it is regarded as advisable to provide some protection against the supposed deleterious action of roentgen rays. For this reason some roentgenologists place a lining of sheet lead (from 1/32 to 1/16 inch) on the walls of the rooms in which the roentgen ray is used. This sheeting is often carried from the floor up to about 8 feet, although to be entirely consistent it should cover all the walls, ceiling as well as the floor, thus making a six sided lead lining. (Such a lead lining should always be covered with pantasote or similar material; it ought not to be left bare, to avoid lead poisoning of the technicians and assistants). This, of course, is in addition to the usual standard lead-glass bowl around the roentgen-ray tube, lead protection screen or lead lined booth for the operator, which are an actual necessity in all instances. Some go to ridiculous extremes in providing unnecessarily thick lead linings which are costly; many others use no such lead lining at all. Obviously, the roentgen-ray operator is the one who requires most protection from untoward actions of the roentgen-ray, mainly because he is continually engaged in the work and is in close proximity to the tube. It is well known that in applying the very penetrating roentgen ray such as is now coming into extended use in the treatment of deep-seated malignancies, the unprotected roentgen-ray tube will result in a considerable quantity of the rays reaching into the neighboring rooms. However, it would be the grossest negligence were one to use such a roentgen-ray tube without protection, such as a standard lead-glass bowl, metal parts supporting it, proper filters of copper, and the like, all of which serve to reduce the amount of roentgen ray which reaches places other than the area being treated. In the case of a so-called "deep roentgen-ray treatment" using 200,000 or more volts, using the accepted formula as to filter, target-skin distance, milliamperage, etc., the amount of roentgen ray which escapes would be too small to be dangerous. The amount of ray which passes through 1 mm. of copper, plus 1 mm. of aluminum, through the small diaphragm opening which entirely confines the direct roentgen rays within the body of the patient, and the attenuation of the roentgen-ray strength, which decreases rapidly with the added distance traveled, is very small. The amount of roentgen ray which reaches a person in a neighboring room or in the room above or below, from 15 to 20 or more feet away, separated by the modern concrete and steel construction of floors, ceilings and walls, would be so small that it would not be sufficient to cause tissue or blood changes, even if continued over considerable periods of time.

2. The physical changes to persons acted on by the roentgen ray such as is suggested by the question, if it really did occur, would probably be the same as changes occurring in unprotected roentgen-ray workers, namely, a leukopenia. Skin changes under the conditions mentioned in the inquiry are unheard of.

TREATMENT OF ICHTHYOSIS

To the Editor:—Please describe the most satisfactory treatment for congenital ichthyosis (a mild case). G. T., Wyco, W. Va.

ANSWER.—There is no satisfactory treatment for ichthyosis. It is a congenital defect in the skin which cannot be corrected. In addition to the excessive horn formation, there is in ichthyosis a deficiency of sweat and sebaceous secretion so that the skin is abnormally dry. The most that can be done for the cases is to supply this deficiency of fat in the skin by the local application of fat in some form. This can be done by the inunction of any sort of a bland ointment. Petrolatum or cold cream is perhaps as good as any. Occasionally on localized areas where the horn is thick it can be softened and diminished by the addition of salicylic acid —from 10 to 60 grains to the ounce of ointment. Bathing also softens the horn, and warm baths prolonged to ten or fifteen minutes are useful. But they should be followed by the inunction of a bland fat immediately afterward, or they increase the dryness of the skin.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.
IOWA: Des Moines, March 8-10. Sec., Dr. Rodney P. Fagen, State House, Des Moines.
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

Arkansas November Examination

Dr. J. W. Walker, secretary, Arkansas State Board of Medical Examiners, reports the written examination held at Little Rock, Nov. 14-15, 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. Eighteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Little Rock		(1910)	79, 79.5
Tulane University		(1922)	92.1
Harvard University		(1922)	87.9
Memphis Hospital Medical College		(1911)	77.5, (1913) 79.5
Vanderbilt University		(1888)	79.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College		(1915)	Georgia
Southern Medical College		(1891)	Georgia
Northwestern University		(1902) Oklahoma, (1922)	Mississippi
Indiana University		(1921)	Indiana
University of Maryland		(1904)	Dist. Colum.
Barnes Medical College		(1911)	Missouri
Kansas City Medical College		(1896)	Oklahoma
Memphis Hosp. Med. Coll.		(1902) Tennessee, (1904), (1912)	Mississippi
Meharry Medical College		(1914) Texas, (1918)	Tennessee
University of Tennessee		(1895) Texas, (1921, 2), (1922)	Tennessee
University of Texas		(1920)	Texas

Nebraska November Examination

Mr. H. H. Antles, secretary, Nebraska State Department of Public Welfare, reports the written examination held at Lincoln, Nov. 6-8, 1922. The examination covered 9 subjects and included 90 questions. An average of 70 per cent. was required to pass. One candidate took the examination and passed. Thirteen candidates were licensed by reciprocity. Two candidates were licensed to practice as chiropractors. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago		(1906)	84.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1909)	Illinois
Loyola University		(1916), (1921)	Illinois
Northwestern University		(1921, 2) Illinois, (1922)	Iowa
Rush Medical College		(1921) Michigan, (1922)	Illinois
Keokuk Med. Coll., Coll. of Phys. and Surg.		(1908)	Kansas
College of Physicians and Surgeons, Baltimore		(1915)	W. Virginia
University of Maryland		(1919)	W. Virginia
Ensworth Medical College		(1906)	Kansas
Meharry Medical College		(1921)	Tennessee

Florida October Examination

Dr. W. M. Rowlett, secretary, Florida State Board of Medical Examiners, reports the written examination held at Tallahassee, Oct. 10-11, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 41 candidates examined, 31 passed and 10 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama		(1910)	77.6
Atlanta Medical College		(1914)	78.3
Emory University		(1915) 79, (1916) 79.2, (1917) (1922) 77.6, 84.1, 87.2	89.4
University of Georgia		(1891) 77.3, (1911) 77.4, (1918)	84.1
Chicago College of Medicine and Surgery		(1917)	80.3
Rush Medical College		(1889) 80, (1910) 90, (1921)	84.8
College of Physicians and Surgeons, Chicago		(1906)	94.9
Tulane University		(1919) 85.8, (1921)	81.9

Johns Hopkins University	(1917)	85.7, 89.3
University of Maryland	(1917)	80.6, (1922) 83.5
Harvard University	(1915)	80.6
University of Michigan Medical School	(1919)	88.5
College of Phys. and Surgs. in the City of New York	(1896)	75.2
Columbia University	(1904)	84.6
University of Buffalo	(1921)	86.3
Cleveland Medical College	(1895)	78.7
Ohio State University College of Medicine	(1918)	84.1
University of Oklahoma	(1916)	88
University of Pennsylvania	(1922)	84.7

FAILED

University of Alabama	(1910)	63.6
Atlanta Coll. of Physicians and Surgeons	(1907)	56.1, (1905) 70.9
Atlanta School of Medicine	(1911)	71.3
University of Georgia	(1911)	70.6
Rush Medical College	(1884)	72.9
College of Physicians and Surgeons, Baltimore	(1884)	68.8
Kansas City Medical College	(1905)	72.7
Chattanooga Medical College	(1903)	44.4
University of St. Thomas, Philippine Islands	(1910)	65.6

North Carolina December Meeting

Dr. Kemp P. B. Bonner, secretary, North Carolina State Board of Medical Examiners, reports that eight candidates were licensed by reciprocity and one candidate was licensed by endorsement of credentials at the meeting held at Durham, Dec. 12, 1922. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College		(1914)	S. Carolina
Indiana University		(1919)	Indiana
Louisville and Hospital Medical College		(1908)	S. Carolina
Medical Colege of Virginia		(1914), (1916), (1917)	Virginia
Medico-Chirurgical College of Philadelphia		(1913)	Penna.
Meharry Medical College		(1913)	Tennessee

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Pennsylvania		(1916)	N. B. M. Ex.

Book Notices

THE KINGDOM OF EVILS. Psychiatric Social Work Presented in One Hundred Case Histories Together with a Classification of Social Divisions of Evil. By E. E. Southard, M.D., late Bullard Professor of Neuropathology, Harvard Medical School, and Mary C. Jarrett, Associate Director, Smith College Training School for Social Work. With an Introduction by Richard C. Cabot, M.D., Professor of Social Ethics, Harvard University, and a Note upon Legal Entanglement As a Division of Evil, by Roscoe Pound, Dean of the Harvard Law School. Cloth. Price, $5.50. Pp. 707. New York: The Macmillan Company, 1922.

This book, which was almost ready for publication at the time of Dr. Southard's death, has been completed by his friends; it will stand as a lasting monument to his life and work. His collaborator, Miss Jarrett, who was Chief of Social Service at the Boston Psychopathic Hospital, directed the social treatment which is here recorded. This is the first book to be devoted to psychiatric social work, and illustrates and analyzes, in a most graphic and illuminating way, the problems with which this young but vigorous field of therapeutic endeavor is confronted. The facts presented go far to prove that, of a verity, social work is fundamentally psychiatric. The conditions of human-life require that the individual adjust himself to organized society, to his associates, and to himself. The major fields of social work are therefore declared to be: public or governmental; social or voluntary, and individual or personal. Each requires special consideration from the social worker. The problems concerned are admirably illustrated by cases. The case histories which form the basis of the book, selected from a rich and intensively studied material, were not chosen to illustrate successes or failures in social treatment, but to bring out the types of evil with which society is confronted. In some cases one type of evil predominates; in others there are various combinations and corresponding degrees of complexity. The major evils are five: *morbi*, or diseases and defects of body and mind, the need of which is cure; *errores*, or educational deficiencies and misinformations, whose requirement is that we teach; *vitia*, or vices and bad habits, to remedy which we must train; *litigia*, or legal entanglements in and out of court, to be met by the counsel, and *penuriae*, or poverty and other forms of resourcelessness, which demand that we provide. The discussion which follows is practical, and brings out in bold relief the resourcefulness, versatility, keen insight and intensely human interests which characterized the genius of Dr. Southard. The language is simple, and, in spite of the case history method which has been adopted, there is not a dull chapter in the book. Appendixes have been added which provide a model for careful social work; also a rather complete bibliography. The book can be recommended to physicians who are interested in the treatment of "the man" as well as the disease, and to the nonmedical reader who is interested in any phase of social welfare.

DU GLAUCOMA ET DE L'HYPOTONIE. Leur Traitement Chirurgical. Par le professeur Félix Lagrange, Associé National de L'Académie de Médecine. Paper. Price, 28 francs. Pp. 432, with 110 illustrations. Paris: Octave Doin, 1922.

This aims to cover the entire subject of glaucoma, but a goodly portion of the book is devoted to considerations affecting the author's procedure of sclerectomy. This consists of the removal by scissors, or punch forceps, of a strip of sclera along the upper edge of the anterior flap of the wound one makes in the corneal section for cataract extraction. The author has modified the section by turning the knife sharply backward at the upper part of the anterior chamber to go posterior to the innermost, anterior angle of the sclera before coming on out through the limbus. The ciliary muscle is thus cut away from its attachment to the scleral spur, and this structure in turn excised, along with layers external to it, by the sclerectomy. The new path of the aqueous is then out over the ciliary muscle into the suprachoroidal space as well as through the fistulous tract leading into the conjunctival bleb, whence absorption takes place through the adjoining conjunctival vessels. A table of 104 cases, from one to nine years after operation, is given along with convincing data to show that eighty-nine were successful. In the fifteen unsuccessful cases, lack of success was due in eight cases to cataract formation (though four patients were later given good vision by extraction), twice to optic atrophy, and in the remaining five to retinal hemorrhage, anterior chamber hemorrhage, rapid decrease of vision, acute glaucoma and too small a sclerectomy. Contrasted with Elliot's corneoscleral trephining, Lagrange asserts that there is no danger of injuring the ciliary body, less danger of closure of the fistulous opening by proliferation of corneal tissue (for only sclera is excised), and that late infection does not occur. He advises iridectomy for acute glaucoma, sclerectomy with peripheral iridectomy in chronic glaucoma with constant high tension, and simple sclerectomy for the intermittent low tension of simple glaucoma. Rather too much of the reader's time is taken up with the author's claim of priority in the introduction of a fistulization operation for glaucoma. The facts seem to be that Lagrange described his sclerectomy for glaucoma in 1905, and that Elliot did his first trephine operation in 1909. If these are the facts, Lagrange is entitled to more credit than he complains he has received in many English and American publications. The treatise is interesting, too, outside of the operative features. The author defines glaucoma as "a dystrophy of the eye characterized anatomically by vascular and nervous degenerations and clinically by a hypertension following hypersecretion, and is the result of the union of hypersecretion and hypo-excretion," and insists that the glaucomatous eye is "a sick eye in a sick body." Secondary glaucoma he classifies as a false glaucoma. In the development of glaucoma, he considers that there is a neuropathy, producing a hypersecretion, as first postulated by Donders, leading to increased tension, when, as shown by Knies, the anterior chamber angle becomes blocked. He believes that vascular changes in the nerve account for cases of progressive atrophy of the optic nerve and blindness after normal tension has been restored, and describes sections to prove his view. He thus joins the growing list of authorities who support Schnabel's theory of a cavernous atrophy independent of the tension. He holds that the "great trio" in glaucoma are Donders, Knies and Schnabel. In the diagnosis of glaucoma he emphasizes the importance of Bjerrum's paracentral scotoma and the diminution of the light sense. When scotoma

approaches the fixation point he advises operation. Iridectomy sometimes hastens final blindness, for some unknown reason, but sclerectomy does not. Not the least interesting part of the book is that devoted to hypotony. A tension of less than 16 the author considers pathologic and says that it is of great frequency in high myopia, even when uncomplicated by detachment of the retina. He has devised a procedure which he terms calmatage to increase tension by a slow partial blockage of the angle of the anterior chamber. The conjunctiva above or below the cornea is resected in a large flap, hinged at the corneal margin, and multiple ignipuncture is carried out part way through the outer sclera layers. In animals this sets up a low grade fibrous proliferation in the sclera both in the outer looser layers and in the deeper layers, bringing about a more compact state of the structures through which run the vessels draining the aqueous out of Schlemm's canal. The procedure is carried out in two sittings and is followed by a course of subconjunctival injection of salt or mercury intended to intensify the reaction. Tension increases up to ten days and then relapses to the first reading; but after six months a final higher tension is established and maintained well above the former pathologically low state. Detailed records of thirty such cases are given. They include three of high myopia and twenty-two cases of myopia complicated by detachment of the retina, and five other cases of detachment with low tension. All were improved with an average rise from 10 to 22, according to the Schiötz tonometer. All considered, the book is well worth reading.

INFANTILE CIRRHOSIS OF LIVER. By Santosh Kumar Mukherji, M.B., M.R.A.S., Lecturer, National Medical College of India and King's Hospital. With a Foreword by Major General B. H. Deare, C.I.E., M.R.C.P., D.P.H., Surgeon General of Bengal. Cloth. Price, rupees 2-8-0. Pp. 95. Calcutta: Indian Medical Record Book Dept., 1922.

This interesting little book takes up a subject that is almost entirely unknown to American readers. The type of cirrhosis described is apparently peculiar to the southern part of India. Its importance there is revealed by statistics showing that the number of deaths in Calcutta since 1908 has varied between 727 and 561 a year, almost all of these occurring in children under 5 years of age. The book is based on a study of forty-eight cases and five necropsies. The author regards the condition as an intercellular cirrhosis of the liver. He thinks that the condition is due to dietetic errors occurring in children either totally or partially artificially fed. The symptoms are well presented, as is the subject of differential diagnosis. With the usual means of treatment, the patients nearly all die; but at least a fair percentage can be saved if a rational diet is given, hygienic conditions are improved and cholagogues are used. On the whole, the book should prove interesting to one who wishes first-hand knowledge of a disease about which we know little or nothing.

AN OUTLINE OF THE MEDICAL SERVICE OF THE THEATRE OF OPERATIONS. By M. A. W. Shockley. Cloth. Price, $2.50. Pp. 230. Philadelphia: P. Blakiston's Son & Co., 1922.

This book presents the gist of the lectures given at the United States Army general service schools during the 1919, 1920 and 1921 sessions. It is a textbook for line and medical officers who have shown the ability to organize and administer military organizations. The author therefore assumes that his reader has had considerable experience, and has omitted many purely medical details that would have made the book more interesting. There are formulas for estimating the number of battle casualties, the time that will be required to evacuate the wounded, and the amount of transportation and the number of hospital beds that will be needed. There are tables of reference of noted battles in various wars to show the percentage of wounds in different anatomic regions in offensive and defensive fighting. The duties of different medical offices in the theater of combat are tabulated, and seem hard and fast; but in actual campaign there is unlimited opportunity to do much more. There are specimens of the types of orders affecting the medical department, and the usual sketches showing the disposition of medical units in battle. The latter are separate sheets that fit into a pocket for notes in the binding of the book. The medical service tactical and administrative doctrine contained has been coordinated with combatant doctrine by actual test, and conforms to the doctrine of the Surgeon General's Office. Only 6 per cent. of the total number of medical officers in the World War were regular officers. This book shows why they were detailed mostly to administrative positions.

LEOPOLD AUENBRUGGER'S INVENTUM NOVUM. Faksimile nach der ersten Ausgabe. Begleitet von der Französichen Uebersetzung Corvisart's, der Englischen von Forbes, der Deutschen von Ungar. Herausgegeben und mit einer biographischen Skizze Versehen von r. Max Neuburger, O. ö. Professor an der Universität Wien. Boards. Price, $5. Three illustrations. Vienna: Josef Safár, 1922.

This book opens with a steel engraving of Auenbrugger, who was born in 1722. Following is a facsimile reproduction of the original Latin text of 1761. Next is a steel engraving of Corvisart and a facsimile reproduction of the 1808 translation into French which he made of Auenbrugger's work. The third part is a reproduction of the translation made by John Forbes into English and published in London in 1824. The fourth section is a translation into German made by S. Ungar and published in Vienna in 1843. The book is completed with a portrait of Auenbrugger and a historical sketch in German by Max Neuburger.

It is hardly necessary to remind medical readers of the importance of Auenbrugger's discovery of the art of percussion in the diagnosis of disease. In his preface occurs the famous line which should be the guide of every medical writer:

> In making public my discoveries respecting this matter, I have been actuated neither by an itch for writing, nor a fondness for speculation, but by the desire of submitting to my brethren the fruits of seven years' observation and reflexion.

and further:

> In drawing up my little work I have omitted many things that were doubtful, and not sufficiently digested; to the due perfection of which it will be my endeavour henceforth to apply myself. To conclude, I have not been ambitious of ornament in my mode or style of writing, being contented if I shall be understood.

Dr. Neuburger suggests that perhaps Auenbrugger's work was based on the fact that while young he had observed the tapping on casks to determine the amount of fluid in them, since the boy was the son of an innkeeper. It is well known, too, that some of the ancients had spoken of percussion for ascites and for determining the presence of fracture. Auenbrugger, however, was the first to percuss the thorax systematically for the determination of various normal and pathologic signs, and to outline a system for routine percussion in physical diagnosis. He was a man of clear brain and calm passions. Today the whole medical world accepts without question his right to a position as one of the great founders of the art of scientific diagnosis.

DISEASES OF INFANCY AND CHILDHOOD, THEIR DIETETIC, HYGIENIC AND MEDICAL TREATMENT. A Text-Book Designed for Practitioners and Students in Medicine. In two volumes. By Louis Fischer, M.D., Attending Physician to the Willard Parker and Riverside Hospitals of New York. Volume I: Infant Feeding and Organic Diseases. Ninth edition. Cloth. Price, $12 per set of two volumes. Philadelphia: F. A. Davis Company, 1922.

The new edition contains a revision of a great deal of material contained in previous volumes, which enhances its value. The book is to be recommended as a practical work. Part 6 has an excellent chapter on anaphylaxis and allergy; also a chapter on bacterial vaccines, which is open to criticism because of the optimism expressed by the author, which is, however, based largely on his individual experience.

CONSEJOS PRACTICOS DE HIGIENE INFANTIL. Por el Dr. José J. Callejas. Paper. Pp. 223, with illustrations. Comayagüela, Honduras: Imprenta "El Sol," 1922.

Surprised at the large number of children dying in Central America, the author decided to look into the causes and point out the possible remedy. This he has striven to do in the present book, one of practical advice on child hygiene. Without aiming at originality or beauty of style, he has accomplished a useful piece of work in a publication intended especially for Central American mothers, and reviewing all the factors that affect child welfare from conception to the period of youth.

Miscellany

A CROWDED PROFESSION

The gloomy vaticinations of those who see an unpleasant overcrowding of the profession in two, or at most, three, years' time seem to have attracted the attention of the public in an unusual degree. Many newspapers have reproduced the statistical tables and calculations from the professional journals which go to prove there will be very soon one registered practitioner to every thousand of the general population if, indeed, we have not reached that point already. It is unfortunate that the decrease in the number of new students did not commence in time to affect the number of those who are already getting qualified and registered, as it may take the best part of a generation to reduce the numbers of the surplus by the usual eliminative processes, and, in the meanwhile, there is likely to be an exceedingly hard time for those faced with the problem of making a livelihood under the keenest competition. It is probable, too, that some of the licensing corporations may share eventually in the leanness of the times, for, amid a glut of candidates, public bodies are certain to restrict their favors to those who hold the qualifications which carry the greatest appeal to the lay comprehension.

The situation can but have a very adverse influence on the prospects of medical women; there are far too many of them at present, and since no friendly warnings availed to check the recent inexplicable crowding of the sex into the profession, they are likely to suffer far more than the medical man in the struggle for existence. For a section of the public, and especially some corporations, still decline obstinately to accept the existence of the medical woman as anything but an impertinence, and it is probable that when in competition with the male overplus she may be ousted even from her recently conquered school clinic and welfare domain.—*Observer* (London), January 21.

A GOVERNOR'S OPINION OF THE AMERICAN MEDICAL LIBERTY LEAGUE

The *Denver Medical Bulletin* reprints from the Denver *Post* an open reply by Governor Sweet of Colorado to an invitation from the American Medical Liberty League to attend its meeting. The governor is quoted as saying: "I thank you very much for your invitation, and I wish to say that so far as you state the principles of the league in your letter, and from reading the press, I do not find myself in agreement with them. I agree that personal liberty is a thing to be cherished, but personal liberty cannot be relied on to permit any practice detrimental to the health and well-being of society. I do not believe that 'individual liberty' can be urged as a reason why you should be allowed to do as you please with respect to health matters, regardless of the law and the rights of the community. In my opinion, the rights of society are just as sacred as those of the individual.

"If I am called on to pass judgment on any legislation which may be passed by the legislature now in session, I will be moved in my consideration of this legislation far more by the facts than I will be by any specious arguments affecting the principles of liberty."

CHEMICAL CHANGES IN BLOOD IN PNEUMONIA

In a series of fifty cases of pneumonia of various types, at about the time of the crisis the nonprotein nitrogen was found by John A. Killian definitely increased from 34 to 156 mg. per hundred cubic centimeters (*Proc. New York Path. Soc.* **22**:72 [Jan.-May] 1922). Following the increase in the nonprotein nitrogen the uric acid concentration of the blood rose from 3.8 to 11 mg., and subsequently there was a rise in the urea nitrogen to 20 mg. or more. When the urea nitrogen had reached this level a definite accumulation of creatinin was noted. In a few instances the creatinin exceeded 5 mg. per hundred cubic centimeters, and death in these cases could undoubtedly be attributed to the severe impairment of renal function. The order of retention in the blood of the nitrogenous waste products was analogous to that observed in nephritis of the interstitial type, first, the uric acid, secondly, the urea, and finally, the creatinin. A significant decrease in the blood chlorids from 0.288 to 0.425 per cent. was found in the majority of the patients before the crisis. It was not possible to establish any definite relation between the decrease in the blood chlorids and any of the clinical manifestations of the disease. At the time of the crisis, the chlorids quickly rose to a level exceeding 0.50 per cent., and gradually dropped back to within normal limits. In a few cases subnormal blood chlorids were found with a retention of the nitrogenous waste products. Pneumonia was found to produce a slight decrease in the carbon dioxid combining power, from 45 to 50 volumes per cent.

Medicolegal

Liability of Roentgenologists and Surgeons—Cross-Examination of Experts

(Stemons v. Turner (Pa.), 117 Atl. R. 922)

The Supreme Court of Pennsylvania, in reversing a judgment obtained by the plaintiff for roentgen-ray burns, says that there was nothing in his statement which averred that the machine used was in any way different from those ordinarily in use, or that the defendant, through lack of training or otherwise, was incompetent to handle it. The issue was therefore narrowed to the single question whether the defendant negligently or ignorantly used the roentgen ray on the occasion when he subjected the plaintiff to it, measuring the skill required of him in its use as a duty to do so with the skill reasonably required in the proper use of such practice and treatment. This is substantially the rule laid down by the Pennsylvania cases, which hold that a physician or surgeon is only required to exercise such reasonable skill and diligence as is ordinarily exercised in his profession, and it is also the general rule.

The trial judge in his charge to the jury applied the rule of *res ipsa loquitur* (the matter speaks for itself) to the case, and permitted the injury to the plaintiff and nothing else to speak the negligence; a rule which this court has said does not apply between physician and patient. The appellate courts in the several jurisdictions throughout the country where the question has arisen are not in accord as to whether the *res ipsa loquitur* doctrine should be applied to roentgen-ray burning cases, the weightier reasoning being that it should not. The note to *Runyan* v. *Goodrum* (147 Ark. 481, 228 S. W. 397), 13 A. L. R. 1403, covers all the decided cases, points out the conflict of authority among them on the *res ipsa loquitur* doctrine and deduces the generally recognized conclusion that a person undertaking to use roentgen rays is held only to the same measure of responsibility as in administering other forms of medical treatment. This is the rule which wisdom dictates.

The trial judge also unduly stressed the fact that the roentgen ray is a dangerous instrumentality. So is a surgeon's knife. If human ills are to be cured, such instrumentalities must be used. To put on the medical profession, which must use them, such a burden as financial responsibility for damages, if injury or death results, without proof of specific negligence, would drive from the profession many of the very men who should remain in it, because they would be unwilling to assume the financial risks.

On cross-examination of an expert witness who has expressed an opinion in answer to a hypothetical question full latitude should be allowed to ascertain just what the factors were which the witness took into account in arriving at his conclusion, and what, if any, he disregarded; otherwise, the integrity and value of his opinion cannot be investigated. Under such circumstances, a broad range of inquiry is permitted, and the expert witness may be asked as to the basis of his opinion, including statements on which he has

relied, in order to show the reasonableness or unreasonableness of the opinion expressed, and to test its value. His attention may be called to any fact, omitted from the hypothetical question asked on direct examination, or the facts stated in the hypothetical question which are deemed unimportant may be sifted out. The data on which the expert rests his specific opinion (as distinguished from the facts which make him skilful to form one at all) may be fully inquired into on cross-examination. Without them, the value of the opinion cannot be estimated.

Two Questions for Jury in Action on Account

(Geiger v. Gillespie (Ala.), 93 So. R. 412)

The Supreme Court of Alabama says in this case, which was transferred to it from the court of appeals, that the plaintiff, a physician, sued the defendant to recover for professional services rendered to the latter's daughter. One of the counts of the complaint was on an open account, another on an account stated, and the remaining count for professional services rendered by the plaintiff for the defendant, at the instance and request of the defendant. The cause was tried on these counts and the plea of general issue, together with a plea of the Alabama statute of limitation of three years. The result was a judgment for the plaintiff, which is here affirmed. The only question argued on this appeal related to the insistence that an affirmative charge was due the defendant on the whole case, on the theory that more than three years had expired from the time the services were rendered, and that there had been no agreement on the part of the defendant to pay the plaintiff. But there was evidence for the plaintiff which tended to show that the account sued on was rendered by him to the defendant, and that the latter retained this account without objection of any character—the services having been rendered in January, 1916, and the statement having been rendered the defendant in May, 1918. The evidence was in conflict, however, as to any objection on the part of the defendant, and the issue of fact thus presented was properly left for the determination of the jury. It therefore appeared that the affirmative charge was not due the defendant as for an account stated. Moreover, one of the counts of the complaint rested for recovery on a special contract between the parties as to the services rendered, which was supported by the testimony of another physician, who was a witness for the plaintiff. The issues presented by this count were also properly submitted to the jury. This court finds no reversible error.

No Award When Employer Authorizes Services

(Integrity Mutual Casualty Co. et al. v. State Industrial Commission et al. (Okla.), 209 Pac. R. 653)

The Supreme Court of Oklahoma, in reversing an award of $600 made by the state industrial commission to a physician who had attended an injured employee of a company, and made after awards had been made to the employee which included $850 for medical services, says that the employee's injuries were such that it was necessary to operate on the brain to restore him to consciousness. The attending physician did not feel capable of performing the operation, and suggested to the president and general manager of the company that a specialist from Chicago be employed to perform the operation. The president agreed to this, and a specialist was employed. The insurance carrier under the workmen's compensation act, on being informed of the employment of the surgeon, objected to it, and stated that it would not pay for his services, whereupon the attending physician replied that he would pay for them himself. The insurance carrier tendered the services of another surgeon, which were refused. The award made of $600 was to reimburse the attending physician for money paid by him to the specialist from Chicago.

Under the provisions of the workmen's compensation act of Oklahoma, if the employer furnishes medical services, he becomes liable to the physician on contract. If he neglects or refuses to furnish these services after being requested to do so, the injured employee may secure services at the expense of the employer, and the employer becomes liable therefor under the act, and the fees and charges for these services are subject to regulation by the commission. But it is only the provisions of the law that the commission has jurisdiction to enforce. It is without power to enforce a contract between the employer and the physician employed by him.

Had the employer in this case refused or neglected to furnish medical services after being requested to do so by the injured employee, or under the circumstances surrounding this case by some one for him, then the employee, or some one for him, might have procured services, and the expenses thereof should have been included in the award to the employee, if approved by the commission, and the claim of the physician therefor would have become a lien on the compensation awarded, and should be paid therefrom in the manner fixed by the commission. But the record disclosed that the employer did not neglect or refuse to furnish medical services, but to the contrary did everything possible to furnish the best surgical skill obtainable, and requested the attending physician to procure the services of a specialist to perform the needed operation. Obviously, this created a contractual relation between the physician and the employer, and if the employer refused to pay for the services furnished, the physician had his remedy by appropriate action in the proper court.

Wherefore the supreme court concludes that the industrial commission was without jurisdiction to make the order or award complained of, and the same is reversed and the cause remanded with directions to dismiss the claim.

Power Inherent in Cities to Erect City Hospitals

(Cumnock v. City of Little Rock et al. (Ark.), 243 S. W. R. 57)

The Supreme Court of Arkansas, in affirming a decree that sustained a demurrer to a complaint that asked that the defendants be enjoined from proceeding with the erection of a city hospital, holds that the city had the power to erect a city hospital, under the general welfare clause of the statute of that state which provides that municipal corporations shall have the power to make and publish such ordinances, not inconsistent with the laws of the state, as to them shall seem necessary in order to provide for the safety, preserve the health, and improve the comfort and convenience of such corporations and their inhabitants. The court says that it is also of the opinion that the power to erect a city hospital is a necessary incident of municipal life. In a growing city, a city hospital may be necessary for the preservation of the public health and the care of sick paupers. This court can see no difference in principle between the right of a city to erect and maintain a hospital and to erect and use city halls, jails and the like. Most cities of any considerable magnitude have city hospitals which are subject to the regulation of their own local authorities. It is true there is express statutory authority to erect them in many of the states, but this court is also of the opinion that such authority is essential to carry out the object and purposes of organizing municipal corporations. A municipality is a governmental agency, and in cities the erection of hospitals to preserve the public health and to care for indigent people within its borders is highly essential, and may be absolutely necessary.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.

American Association of Anatomists, Chicago, March 28-30. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Association of Pathologists and Bacteriologists, Boston, March 29-30. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.

Louisiana State Medical Society, New Orleans, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.

South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

January, 1923, **3**, No. 1

Control of Hookworm Disease. XII. Studies on Occurrence, Distribution and Morphology of Necator Suillus, Including Descriptions of Other Species of Necator. J. E. Ackert and F. K. Payne, Baltimore.—p. 1.

*Control of Hookworm Disease. XIII. Conditions Under Which Hookworm Eggs and Larvae Develop. J. E. Ackert, Baltimore.—p. 26.

*Treatment of Hookworm Disease with Carbon Tetrachlorid. W. G. Smillie and S. B. Pessoa, Sao Paulo, Brazil.—p. 35.

Control of Hookworm Disease. XIV. Field Experiments on Vertical Migration of Hookworm Larvae. F. K. Payne, Baltimore.—p. 46.

Control of Hookworm Disease. XV. Effective Method of Counting Hookworm Eggs in Feces. N. R. Stoll, Baltimore.—p. 59.

*Age at Death of Parents of Tuberculous and Cancerous Persons. R. Pearl, Baltimore.—p. 71.

Control of Hookworm Disease.—The results obtained from covering soil pollution with clay loam indicate that the custom of covering human waste with 2 inches or less of clay loam is unsuccessful as a control measure against hookworm disease. The results of tests made by Ackert in which hookworm eggs in soil pollution were buried under 4 inches and under 5½ inches of clay loam showed that the eggs produced infective larvae, that the larvae migrated to the upper part of the culture, and that the eggs remained viable for fifty-eight days. The custom of covering soil pollution containing hookworm eggs with a thin layer of wood or charcoal ashes is ineffective as a control measure, as large numbers of infective larvae developed in stools wholly surrounded by the ashes. Moreover, the larvae lived deep in the cultures for over three weeks.

Treatment of Hookworm Disease with Carbon Tetrachlorid.—Carbon tetrachlorid, administered in 3 c.c. doses to adults, was found by Smillie and Pessoa to be an extremely efficient drug in the removal of hookworms (*Necator americanus*). A single treatment will remove more than 95 per cent. of all hookworms harbored. Larger doses than 3 c.c. are unnecessary and may be dangerous. Carbon tetrachlorid has a toxic action on the host, similar to that of chloroform. The first stages are dizziness, slight nausea, headache, and somnolence. These are usually transient. A later and more serious manifestation is fatty degeneration of the liver, which first manifests itself two or three days after treatment. This condition rarely occurs and is seldom fatal. There is a wide variation in individual reaction to carbon tetrachlorid. Large doses, from 10 to 20 c.c., have been given to adults without producing apparent ill effects. Alcoholics are especially susceptible to the toxic action of the drug; so small a dose as 1.5 c.c. has produced severe toxic symptoms in an acute alcoholic.

Age at Death of Parents of Tuberculosis and Cancer Patients.—A study made by Pearl of the question of the ages at death of the parents of the tuberculous and the cancerous, on the basis of critically collected new material, shows that, for completed lives (parents dead), the mean age at death of the parents of a group of tuberculous persons is significantly, but not greatly (from 2 to 4 years), lower than the mean age at death of the parents of a group of nontuberculous persons having the same age distribution as the tuberculous group. The same thing is true of the fathers of a group of cancerous persons. The experience for mothers of the cancerous is too meager to give definite results. In so far as duration of life may be taken statistically as an indicator of soundness of biologic constitution, it follows that in some degree, though not considerably, both the tuberculous and the cancerous are of weaker stock constitutionally than those not having these diseases. Incidentally, the results of this investigation, as they are interpreted by Pearl, furnish new evidence, of a different sort than any heretofore offered, on the question of the inheritance or duration of life.

Archives of Neurology and Psychiatry, Chicago

January, 1923, **9**, No. 1

*Physiologic Effects and Clinical Results of Section of Anterolateral Columns of Spinal Cord (Chordotomy). C. H. Frazier and W. G. Spiller, Philadelphia.—p. 1.

*Pathology in Case of Epidemic Encephalitis Complicated by Psychosis. G. B. Hassin, Chicago, and D. B. Rotman, Dunning, Ill.—p. 22.

*Neurosyphilis Among Chinese: Findings in Sixty-Five Cases. W. G. Lennox, Peking, China.—p. 26.

*Study of Four Cases of Glossopharyngeal Neuralgia. J. B. Doyle, Rochester, Minn.—p. 34.

Lesions in Brain of Patient with Postencephalitic Paralysis Agitans. J. C. McKinley, Minneapolis.—p. 47.

*Pathologic Findings in Heart Muscle in Progressive Muscular Dystrophy. J. H. Globus, New York.—p. 59.

*Sex Development and Behavior in Male Patients with Dementia Praecox. C. E. Gibbs, Ward's Island, N. Y.—p. 73.

*Spirochete Stain in Multiple Sclerosis. G. S. Stevenson, Ward's Island, N. Y.—p. 88.

Results of Chordotomy.—Frazier and Spiller report eight cases in which chordotomy has been performed. In one case the operation was performed three separate times on the same side of the cord. The operation abolished the pain for which it was performed in six, and gave decided relief from pain in the remaining two cases. Four were cases of malignant tumor. The authors are convinced that this operation, when successfully performed, destroys pain, heat and cold sensations in the lower limbs and lower part of the trunk when performed at the proper level, although the impairment of these sensations is less intense over the abdomen in some cases, probably because some fibers have not decussated at the level of the incision. In some cases they have observed that certain fibers innervating the lower limbs for pain and temperature sensations escape in the division of the anterolateral columns. The bladder and rectum almost invariably escape damage in this operation. One might possibly expect sympathetic fibers for the bladder and rectum to be in the anterolateral columns and to be impaired by this operation, but it has seemed to the authors that when such disturbance occurs from a spinal cord lesion, the crossed pyramidal tracts are damaged. They are inclined to believe that, in the male, impairment of sexual power possibly may result in the manner suggested. In one case in which unilateral chordotomy was performed sexual power was lost. The marked impairment of pain and temperature sensations after chordotomy at the fifth thoracic segment usually is pronounced to about 2 inches (5.08 cm.) above a line passing through the umbilicus, and gradually shades off above this region. While pressure sensation is preserved, it is without any association with pain sensation.

Pathology of Epidemic Encephalitis Complicated by Psychosis.—In the case described by Hassin and Rotman there was a combination of diffuse inflammatory and degenerative phenomena, especially in the basal ganglions and midbrain. The infiltrations were not so pronounced as in acute cases of epidemic encephalitis; and the proliferative changes were not so marked as in so-called productive encephalitis (caused, for instance, by lead or arsenic). Resembling in the combination of inflammatory and degenerative changes the findings in general paralysis of the insane, this case differs from the latter in the comparatively mild involvement of the cortex. The inflammatory changes in the basal ganglions and midbrain could, perhaps, explain the nervous manifestations (ocular paralysis, parkinsonian mask), while the diffuse degenerative phenomena in the cortex were most likely responsible for the patient's mental condition. It is obvious that degenerative lesions are a serious complication of epidemic encephalitis, much more serious than the inflammatory changes. The latter may subside or disappear entirely, leaving no permanent disability, in contrast to a degenerative process, which however mild, may produce more or less troublesome complications of which the most dangerous are mental disturbances.

Neurosyphilis in Chinese.—Sixty-five cases of neurosyphilis are reported by Lennox in which spinal fluid examination confirmed the clinical diagnosis of syphilis. Testimony of individual observers and reports of general hospitals agree that in China syphilis is relatively more common and neurosyphilis relatively less common than in America. One explanation for this apparent racial discrimination, Lennox

says, is the probabality that many cases of neurosyphilis among the Chinese have been overlooked. In a teaching hospital in Peking, search for these cases revealed a proportion comparable with that found in teaching hospitals in America. An unusual proportion of the Chinese patients have cord lesions of vascular origin.

Glossopharyngeal Neuralgia Is a Clinical Entity.—Doyle's observation of four cases leads him to conclude that glossopharyngeal neuralgia is a definite clinical entity, differing from trifacial neuralgia only in the area of distribution of pain. He is convinced that the different fibers of the sphenopalatine ganglion concerned with the innervation of the nasopharynx are not derived from the trigeminal nerve.

Changes in Heart Muscle in Progressive Muscular Dystrophy.—The heart in Globus' case was somewhat smaller than normal, the left ventricle was well contracted and empty, the right ventricle was dilated and filled with blood. The subepicardial fat was somewhat increased, and some fatty streakings were found under the endocardium. The heart muscle was pale, yellowish red, flabby and friable. On section, the wall of the left ventricle showed many translucent patches, irregularly distributed. These patches bore no relation in the coronary or smaller vessels. The coronary vessels showed no pathologic change. Preparations from the wall of the left ventricle showed many connective tissue scars, varying in size. They had not involved the perimysium externum, but were apparently produced mainly by proliferation of connective tissue in the perimysium internum, leading to the isolation of individual muscle fibers and fragmentation of muscle fibers. In younger, advancing scars small round fixed connective "tissue cells" were seen in large numbers. Fat infiltration was found in the connective tissue scars and about the blood vessels, as it was in the skeletal muscles. As the degenerative process and the process of fibrosis were relatively mild in the heart, so the fat infiltration was rather meager. A larger amount of fat was under the epicardium, but this cannot be considered entirely pathologic. Another feature, not unlike the pathologic change in the skeletal muscles, was the accumulation of many small round cells in the connective tissue trabeculae, in the fibrous scars and, in a few instances, in the proximity of blood vessels. Changes in the muscle fibers themselves were also observed. They partook mainly of the character of edema and swelling of some fibers, atrophy of others, with hyalinization and fragmentation. Aschoff bodies were not found in the cardiac lesion described.

Sex Studies in Male Dementia Praecox Patients.—The findings obtained by Gibbs in a study of 325 male dementia praecox patients indicate a disturbance of sexual development and a failure of sexual maturity which is most marked in patients admitted to the hospital during the years of puberty and adolescence. Patients admitted at an early age give the impression of unevenness of sexual growth, the development of the secondary sexual characters lagging behind that of the testes. These patients seem to lack the finishing touches of complete physical maturity. Only 20.5 per cent. of the patients had reached an adult level of sex behavior and maintained it for even a short time, either married or single.

Spirochete Stain in Multiple Sclerosis.—In the study of thirty-seven sections from four cases of multiple sclerosis stained by Jahnel's new method, no spirochetes were found by Stevenson.

Boston Medical and Surgical Journal

Jan. 25, 1923, **188**, No. 4

*Convalescence: II. Problem in Preventive Medicine and Public Health. J. Bryant, Boston.—p. 99.
*Pellagra in Massachusetts. G. C. Shattuck, Boston.—p. 110.

Management of Convalescence: A Public Health Problem.—Bryant emphasizes the wisdom and necessity for better private and community care of the convalescent patient; for today, as in the past, the convalescent patient suffers from clinical neglect. This clinical neglect is, at least in some degree, due to failure on the part of the medical profession to take into consideration a time factor fundamental in all medicine. There can be no doubt that the medical profession is under suspicion of neglecting its duty and opportunity in regard to convalescence. Convalescent care, when properly applied, hastens and completes recovery of the patient, frees acute hospital beds for their proper use, saves money to the community and saves the medical profession from the now too frequently justifiable reproach of clinical neglect of the convalescent patient. Convalescent care may be applied within a general hospital, through an outpatient department, in the home of the patient, and in an organized convalescent home. Maximum efficiency in such a home results only when medical therapy, occupational therapy, physiotherapy, and social service factors work harmoniously together under the directions of a physician skilled in convalescent methods; one who does not assume responsibility for patients acutely ill, and who must in all matters of medical policy be independent of those in control of the acute medical and surgical services of the general hospitals. Bryant predicts the development of a future state wide organization which will have as its objective, the efficient application of available modern methods to the problem of caring for convalescent patients. An organization such as that anticipated could to advantage operate through the medium of large country convalescent centers which, though based on the larger cities, would be available to patients from the smaller towns within a motor transport radius of 20 miles from each such convalescent center.

Pellagra in Massachusetts.—The number of cases (136) of pellagra found by Shattuck in state and hospital records shows that pellagra is by no means rare in Massachusetts. Pellagra has been reported from nearly all the counties of the state. That most of the pellagra in Massachusetts originates within the state is shown by the fact that the great majority of cases developed in residents of the state and in the native born. Pellagra has been most common where population is densest. The mill towns show no disproportionate number of cases. In Massachusetts, women have been affected in much larger proportions than have men. The occupations of both male and female pellagrins have been studied. Among females, housewives markedly predominated, and among males the largest group of cases developed among unskilled laborers. These are the predominant types of work of the two sexes. Persons engaged in a great variety of occupations have developed the disease, and the observations do not indicate an association of liability to pellagra with any special occupation. The skin lesions of pellagra in Massachusetts most often appear in July but, apparently, they may develop for the first time in any month of the year.

Canadian Medical Association Journal, Montreal

January, 1923, **13**, No. 1

Medical Education and the Ontario Medical Association. J. H. Mullin.—p. 2.
Treatment of Nephritis. E. H. Mason.—p. 6.
Tumors of Kidney. H. A. Bruce.—p. 13.
*Tuberculosis of Intestine. Ulcerative Form, Phase of Pulmonary Tuberculosis. D. A. Stewart.—p. 20.
Cancer of Stomach. F. N. G. Starr.—p. 24.
Cranial and Intracranial Injuries. C. K. P. Henry.—p. 26.
Pneumonia. G. G. Melvin.—p. 30.
Hemolytic Streptococcic Infections in Children. I. H. Erb.—p. 32.
Baneful Cathartic After Abdominal Operations. C. A. Howard.—p. 36.
Analysis of Sixty Cases of Gastric Anacidity Associated Mainly with Chronic Diarrhea and Pernicious Anemia. C. Hunter.—p. 38.
Acrodynia (?); Report of Three Cases. A. F. McKenzie.—p. 43.
Echinococcus Cysts of Liver in Girl Ten Years Old. H. M. Young.—p. 48.
Nitrous Oxid. W. Bourne.—p. 50.

Tuberculosis of Intestine; Ulcerative Form.—Stewart believes that intestinal ulceration, tuberculous in origin, is found in a fairly wide percentage of cases of pulmonary tuberculosis. It is likely implanted early, perhaps earlier than the lung lesion. It is almost universally present in the late stages of pulmonary disease, and hastens, or perhaps causes, death. It is treatable and even curable in its early stages. Early diagnosis, especially of disease in the small intestine, is not yet satisfactory, but much can be done by careful study of symptoms and giving the opaque meal and an enema. Surgical treatment is suitable in some cases, but is of limited applicability. The most promising treatment at present would seem to be the use of the ultraviolet ray, given by the quartz lamp, using, perhaps, the roentgen ray as well.

Florida Medical Association Journal, St. Augustine and Jacksonville

November, 1922, **9**, No. 5

Function of Tonsil and Plea for More Conservative Treatment of Chronic Tonsillitis. M. Price, Key West, Fla.—p. 81.
Management of Children with Heart Disease. W. S. Coleman, Miami, Fla.—p. 83.
Granuloma Inguinale. G. J. Oetgen, Jacksonville.—p. 84.
Fractures. R. A. Ely, Tampa, Fla.—p. 89.
Case of Unusual Susceptibility to Diphtheria. P. Crumpler, Clinton, N. C.—p. 91.

Journal of Biological Chemistry, Baltimore

January, 1923, **55**, No. 1

Lead Studies. II. Electrolytic Determination of Lead in Biologic Material. A. S. Minot, Boston.—p. 1.
Hydrolysis of Yeast Nucleic Acid with Dilute Alkali at Room Temperature. (Conditions of Steudel and Peiser.) P. A. Levene, New York.—p. 9.
Chemical Defense Mechanism of Fowl. J. H. Crowdle and C. P. Sherwin, New York.—p. 15.
Study of Adequacy of Certain Synthetic Diets for Nutrition of Pigeons. K. Sugiura and S. R. Benedict, New York.—p. 33.
Potassium in Animal Nutrition. I. Influence of Potassium on Urinary Sodium and Chlorin Excretion. H. G. Miller, Madison, Wis.—p. 45.
Potassium in Animal Nutrition. II. Potassium in Its Relation to Growth of Young Rats. H. G. Miller, Madison, Wis.—p. 61.
Occurrence of Copper and Zinc in Certain Marine Animals. H. W. Severy, Palo Alto, Calif.—p. 79.

Journal of General Physiology, Baltimore

January, 1923, **5**, No. 3

Studies on Bioluminescence. XV. Electroreduction of Oxyluciferin. E. N. Harvey, Princeton, N. J.—p. 275.
Growth and Respiration of Sulphur Oxidizing Bacteria. S. A. Waksman and R. L. Starkey, New Brunswick, N. J.—p. 285.
Phagocytosis of Solid Particles. IV. Carbon and Quartz in Solutions of Varying Acidity. W. O. Fenn, Boston.—p. 311.
Muscle Tension and Reflexes in Earthworm. A. R. Moore, New Brunswick, N. J.—p. 327.
Study of Equilibrium Between So-Called "Antitrypsin" of the Blood and Trypsin. R. G. Hussey and J. H. Northrop, New York.—p. 335.
*Method for Quantitative Determination of Trypsin and Pepsin. J. H. Northrop and R. G. Hussey, New York.—p. 353.
Influence of Salts When Injected into Animal Body. R. G. Hussey, New York.—p. 359.
Conductivity as Measure of Vitality and Death. S. C. Brooks, Washington, D. C.—p. 365.
Ionization of Protein Chlorids. D. I. Hitchcock, New York.—p. 383.
Influence of Electrolytes on Cataphoretic Charge of Colloidal Particles and Stability of Their Suspensions. II. Experiments with Particles of Gelatin, Casein and Denatured Egg Albumin. J. Loeb, New York.—p. 395.

Quantitative Determination of Trypsin and Pepsin.—A quantitative method is described by Northrop and Hussey which permits a determination of the relative amount of trypsin or pepsin present in a gelatin-enzyme digestion mixture, provided the gelatin and trypsin solutions are purified. This method is dependent on the change in viscosity of such solutions. It is found that the time required to cause a given percentage change in the viscosity is nearly inversely proportional to the amount of enzyme present. It is pointed out that the particular value of the method lies in the fact that enzyme reactions which take place in the presence of "buffer" salts may be studied.

Journal of Laboratory and Clinical Medicine, St. Louis

January, 1923, **8**, No. 4

*Nontoxicity and Antipyretic Efficiency of Tolysin (Ethyl Ester of Paramethylphenylcinchoninic Acid). H. G. Barbour and E. Lozinsky, Montreal.—p. 217.
*Excretion of Sugar in Urine in Health and Disease. L. Kast, H. M. Croll and V. C. Myers, New York City.—p. 227.
*Etiology of Gallstones. S. F. Oliver, Cincinnati.—p. 242.
*Cresylecht Violet; A Rare Dye. B. G. R. Williams, Paris, Ill.—p. 250.
Determination of Urea in Blood by Folin and Wu Method. A Modified Apparatus. G. G. Boggs and W. S. McEllroy, Pittsburgh.—p. 254.
Technical Principles in Radial Transmission Sphygmography. H. M. Korns and E. J. Warnick, Cleveland.—p. 256.
*Case of Chronic Hydrocyanic Acid Poisoning. J. Rosenbloom, Pittsburgh.—p. 258.
Fatal Case of Lactic Acid Bacillus Meningitis with Necropsy Findings and Review of Bacillus Mucosus Infection. H. M. Ray, Pittsburgh.—p. 260.
*Relative Value of Some of Commonly Used Methods for Detection of Occult Blood in Stool. H. A. Reimann, Buffalo.—p. 265.
*Quantitative Estimation of Iodin in Urine. H. L. Marsh, Chicago.—p. 271.
Simple Method for Calculating Basal Metabolic Rate. H. L. Haden, Kansas City, Kan.—p. 272.
Apparatus for Cleaning Blood Counting Pipets. R. L. Haden, Kansas City, Kan.—p. 276.
*Formaldehyd Test in Syphilis. D. A. Hohnston, Cincinnati.—p. 277.
Suggestion for Practical Spirometer Valve. G. A. Brough, Chicago.—p. 278.
Concerning Specificity of Cholesterinized Antigens in Serologic Diagnosis of Syphilis: Third Communication. R. A. Kilduffe, Pittsburgh.—p. 279.

Nontoxicity of Tolysin.—Barbour and Lozinsky found that the ethyl ester of paramethylphenylcinchoninic acid (tolysin), given by mouth, even up to doses of 50 gm. per kilogram, or 5 per cent. of the animal's own weight, produces no effect on the general condition of dogs. Tolysin seems to be the least toxic of all substances of demonstrated antirheumatic efficiency. Tolysin exhibits a peculiarity in pharmacologic behavior in that the maximum limit of absorption from the intestine coincides essentially with full therapeutic doses. As cumulation is evidently absent, indefinitely large amounts are nontoxic, at least for dogs.

Excretion of Sugar in Urine.—A comparative study of different methods for the determination of sugar in normal urine has been made by Kast, Croll and Myers. By the use of one of these methods, that of Benedict and Osterberg, it was shown that there is an increase in the amount of reducing sugar excreted hourly after meals. It was found that a diet rich in carbohydrates increases the amount of sugar excreted over that on a low carbohydrate diet. The daily excretion of reducing sugar in the urine was determined in twelve normal persons and 140 hospital patients. In none of the diseases studied, except diabetes mellitus, was there any marked variation from the normal sugar excretion on ordinary diets. Moreover, in diabetes, when by dietary regulation the patient is rendered "sugar-free," the daily amount of sugar excreted is virtually normal.

Etiology of Gallstones.—Oliver summarizes his paper as follows: It would seem that in cases of gallstones and obstructive jaundice, a disturbance in bile salt secretion and excretion occurs. This manifests itself by an increase in bile salts in the urine and blood and a decrease in the bile salt content of the bile. As a result of the deficiency in the bile salt content of the bile, cholesterin tends to settle out of solution. If the condition is not early remedied, gallstones form the end result of this physicochemical disturbance. Further, the increase in bile salts in the blood leads to toxic changes in other organs, notably the kidneys and heart, and also profound constitutional disturbances of a toxemic nature. In all cases of cholemia, hepatic insufficiency is present.

Cresylecht Violet.—In Williams' hands this stain proved of promise in two kinds of pathologic work: (1) in the so-called biopsy, where unfixed tissues are stained for purpose of rapid diagnosis; (2) in diagnostic tissue work or fairly rapid work with frozen liquor formaldehydi fixed tissues where a metachromatic stain saves time and where many sections can be handled quickly, often avoiding double staining, mounting, etc., or in case special double staining is wished in any particular section it may be destained rapidly in alcohol and stained as wished for a mount. By this method a dozen sections can be studied in the same time that the more elaborate methods will give one or two. Moreover such a method is of particular value when the diagnosis is fairly easy, when the interested parties are impatient for a diagnosis and when section should be examined from a number of portions of the neoplasm.

Symptoms of Chronic Hydrocyanic Acid Poisoning.—Loss of energy, vomiting every meal shortly after its ingestion, and secondary anemia, Rosenbloom says, are the earliest symptoms of chronic cyanid poisoning.

Detection of Occult Blood in Stool.—The most reliable and convenient test for occult blood in the stool, in Reimann's opinion, is the Gregerson benzidin technic. The use of the guaiac test in conjunction with it is recommended in order to gain some idea of the quantity of blood, if the amount present be between 1 and 5 c.c. The spectroscope is not recommended for the detection of traces of blood.

Estimation of Iodin in Urine.—The method described by Marsh consists of: first, the determination of the total halogens in the residue from a fused sample of urine by the Volhard-Arnold volumetric method; second, the determina-

tion of the chlorids (Volhard-Arnold) in another fused sample from which the iodin has been removed by the classical method of Gooch. The difference between the total halogens and the chlorids represents the iodin present in the sample of urine.

Formaldehyd Test in Syphilis.—This test was used by Johnston in 100 cases of insanity. In 27 per cent. the Wassermann reaction was plus; in 23 per cent. the formaldehyd test was plus; in 12 per cent. the two tests corresponded; in 11 per cent. the formaldehyd test was plus with negative Wasserman reactions; in 15 per cent. the Wassermann test was positive with a negative formaldehyd test.

Minnesota Medicine, St. Paul

January, 1923, **6**, No. 1

Diagnosis of Gastric and Duodenal Ulcer Without Aid of Laboratory and Roentgen Ray. O. J. Hagen, Moorhead.—p. 1.
Treatment of Duodenal Ulcer. H. S. Willson, Minneapolis.—p. 6.
*Use of Radium in Treatment of Benign Hypertrophy of Prostate. W. A. Dennis, St. Paul.—p. 9.
*Diseases Which May Be Associated with Pernicious Anemia. H. Z. Giffin and John P. Bowler, Rochester, Minn.—p. 13.
*Visual Albuminuria Guide. H. W. Cook, Minneapolis.—p. 16.
Injuries to Lower Birth Canal. J. R. Manley, Duluth.—p. 18.
Malingering with Vengeance. W. W. Lewis, St. Paul.—p. 22.
*II. Preoperative Preparation of Patients with Obstructive Jaundice. End Results in Thirty-Four Cases. W. Walters, Rochester, Minn.—p. 25.
Choosing Anesthesia for General Surgery. J. M. Hayes, Minneapolis.—p. 28.
Diverticulitis of Colon. J. T. Rogers, St. Paul.—p. 35.

Radium in Hypertrophy of Prostate.—Dennis reports six cases of benign hypertrophy of the prostate in which the use of radium according to Barringer's method yielded very satisfactory results. The case reports show that at least 300 or 400 milligram hours may be given a single lobe at one sitting. The six patients had a total of eleven treatments. The placing of the needles has been practically painless and there has been almost no discomfort afterward, except in three instances. In one case the presence of a needle in the prostatic urethra was responsible, and in two cases a chill with high fever followed in about five hours, but had disappeared entirely in one case the next morning, and in the other case after a few days. Dennis believes that his data offer a reasonable hope that benign prostatic hypertrophy may yet be relieved of much of its gravity, and that the perfection of the radium treatment, possibly followed in large middle lobe cases by Young's simple punch operation, may eventually rob this condition of most of its terrors.

Diseases Which May Be Associated with Pernicious Anemia.—In 108 of 628 cases of pernicious anemia analyzed by Giffin and Bowler, other diseases were also present, such as syphilis, hemorrhage, gallbladder disease, chronic sepsis, renal insufficiency and hypertension, carcinoma (breast, colon, uterus, esophagus and stomach), thyroid disease, tuberculosis, diabetes and intestinal parasitism. A general survey of this series of cases leads Giffin and Bowler to conclude that it is doubtful whether the complete pernicious anemia syndrome is ever seen as a result of other disease. The notable and striking exception to this statement is infestation by *Balantidium coli*, which in the four cases in which it was present has always been accompanied by the features of pernicious anemia—glossitis, achlorhydria and subacute combined sclerosis. The absence of active tuberculosis in association with pernicious anemia is a notable feature of the series.

Visual Albuminuria Guide.—By means of a chart consisting of photographic reproductions of actual tests made with known solutions of albumin from a case of nephritis, Cook has devised a visual method of estimating the degree of albuminuria.

Preoperative Preparation in Obstructive Jaundice.—Thirty-four patients with obstructive jaundice were operated on after having first received the preoperative treatment suggested by Walters. None of the patients died of hemorrhage; in only two bleeding occurred from the wounds following operation. All of the patients had jaundice of 2 plus or more (on a basis of from 1 to 4), and 80 per cent. were judged risks 3 or 4 by the consulting surgeon. An estimation of the coagulation time was made according to the method of Lee and White before the administration of calcium chlorid intravenously each day and on the morning of the day of operation. If the coagulation time of the venous blood had not been lowered to less than nine minutes, operation was postponed until such reduction was obtained. Although the coagulation time of the venous blood was nine minutes or less, in some of the patients with jaundice it was thought best to administer calcium chlorid intravenously as a precaution against postoperative hemorrhage. The treatment consists of three intravenous injections of 5 c.c. of a 10 per cent. solution of calcium chlorid.

New Orleans Medical and Surgical Journal

January, 1923, **75**, No. 7

Acute Osteomyelitis in Children; Report of Cases. J. C. Willis, Sr., and J. C. Willis, Jr., Shreveport, La.—p. 337.
Glandular Fever. S. C. Jamison, New Orleans.—p. 346.
Medical Social Service for Childhood of Louisiana. M. Loeber, New Orleans.—p. 350.
*Hyperemesis Gravidarum. T. B. Sellers, New Orleans.—p. 354.
Leukemia. E. L. Irwin, New Orleans.—p. 366.

Vomiting of Pregnancy.—Sellers reports five cases. As soon as the patient is unable to retain a sufficient quantity of food by mouth to nourish her, and keep down an acidosis, he institutes proctoclysis, using 8 per cent. glucose and 2.5 per cent. sodium bicarbonate solution, also Bacon's formula: 20 gm. glucose; 125 gm. beef peptonoids; 3 gm. calcium chlorid; 4 gm. sodium chlorid; 3 gm. sodium bicarbonate and water to make 1,000 c.c. In severe cases the duodenal tube has proved of great value; also intravenous injections of glucose should not be overlooked. Ovarian extract and corpus luteum have not helped in any of Sellers' cases.

Pennsylvania Medical Journal, Harrisburg

January, 1923, **26**, No. 4

Relation of Mental Hospital to Community. J. A. Jackson and H. V. Pike, Danville.—p. 209.
Anthrax. F. B. Utley, Pittsburgh.—p. 213.
Tuberculosis of Bones and Joints. D. P. Willard, Philadelphia.—p. 220.
Syphilis of Bones and Joints. B. F. Buzby, Philadelphia.—p. 223.
*Subjective Symptoms and Differential Leukocyte Count as Aids in Prognosis in Pernicious Anemia. F. A. Evans, Pittsburgh.—p. 228.
*Treatment of Pernicious Anemia. A. H. Colwell, Pittsburgh.—p. 232.
Eye Symptoms in Case of Oxycephaly; Report of Necropsy. C. E. G. Shannon, Philadelphia.—p. 236.
Cardiospasm. H. P. Mosher, Boston.—p. 240.
Phenolphthalein Drug Eruption. J. V. Klauder, Philadelphia.—p. 249.
*Use and Abuse of Corpus Luteum Extract in Toxic Vomiting of Early Pregnancy. J. S. Taylor and S. P. Taylor, Altoona.—p. 252.
*Aneurism of Iliac Artery. F. T. Billings, Pittsburgh.—p. 256.
Important Points in Surgical Treatment of Toxic Goiter. J. Alexander, Pittsburgh.—p. 256.

Symptoms and Leukocyte Count as Aids in Prognosis in Pernicious Anemia.—Evans claims to be able to predict, in a large percentage of cases of pernicious anemia, an oncoming remission several days before it became apparent in the erythropoietic system. Improvement in the level of antihemolytic power of the serum in pernicious anemia precedes an oncoming remission by several days. Such elevation of the antihemolytic power of the serum becomes manifest very early by improvement in the subjective symptoms of the patient and frequently by an increase in the absolute number of polymorphonuclear leukocytes counted. These features, therefore, help one to predict an oncoming remission, and for this reason are an aid to judgment in deciding for or against a proposed blood transfusion.

Treatment of Pernicious Anemia.—Colwell is of the opinion that transfusion of human blood in the treatment of pernicious anemia is useful in stimulating remissions, and that small doses frequently repeated are of as great value as larger ones and less dangerous.

Corpus Luteum Extract in Toxic Vomiting of Early Pregnancy.—The Taylors report two abortions which followed the administration of corpus luteum extract intravenously. They favor the intramuscular route. The dosage must be determined for each patient; the dosages recommended are regarded as being too high. Small dosages frequently repeated, and by intramuscular injection, is said to be the logical method to employ. Corpus luteum extract should be used in those cases of vomiting of early pregnancy which are of toxic type.

Ruptured Aneurysm of Iliac Artery.—Billings' case was one of rupture of an aneurysm of the left common iliac artery, with a moderate dilatation of the right. The walls of the artery showed undoubted syphilitic infiltration.

Philippine Journal of Science, Manila

December, 1922, **21**, No. 6

Additions to Knowledge of Bornean Flora. E. D. Merrill, Manila.—p. 515.
*Schistosomiasis in Philippine Islands. M. P. Mendoza-Guazon.—p. 535.
Coleoptera Fauna of Philippines. Von W. Schultze, Manila.—p. 569.

Schistosomiasis in Philippines.—Ten cases of infection with *Schistosoma japonicum* are reported by Mendoza-Guazon. None of these cases was diagnosed antemortem, partly due to the general belief that schistosomiasis is absent from the islands and partly because of the clinical symptoms, which in a subtropical country can be interpreted as those of malaria, typhoid, dysentery, portal cirrhosis, etc. Another cause is the difficulty of finding the ova in the stools and, when found, of recognizing them. Mendoza-Guazon regards a survey of the existing degree of infection in Manila and in Samar, as well as of the presence of its intermediary host, as being advisable in order to facilitate the enforcement of preventive measures.

Public Health Journal, Toronto

January, 1923, **14**, No. 1

Vice and Drugs in Montreal. A. K. Haywood.—p. 1.
Prevention of Tuberculosis in School Age. J. H. Holbrook.—p. 19.
Sewage Treatment for Isolated Houses and Small Institutions Where Municipal Sewage is Not Available. B. E. Parry.—p. 27.

Southwestern Medicine, Phoenix, Ariz.

January, 1923, **7**, No. 1

State Medicine. M. K. Wylder, Albuquerque, N. M.—p. 1.
Treatment of Vincent's Angina with Sodium Perborate. W. W. Waite, El Paso, Tex.—p. 4.
Compound Fractures of Extremities. R. L. Ramey, El Paso.—p. 6.
Metamorphosis of Pathologic Conditions of Abdomen. E. C. Prentiss, El Paso.—p. 8.
Glycosuric Nephritis, A Clinical Entity? C. S. Vivian, Phoenix.—p. 12.

Surgery, Gynecology and Obstetrics, Chicago

January, 1923, **36**, No. 1

Rhinoplasty and Cheek, Chin and Lip Plastics with Tubed, Temporal Pedicled, Forehead Flaps. C. A. McWilliams and H. S. Dunning, New York.—p. 1.
*Parathyroid Hyperplasia and Bone Destruction in Generalized Carcinomatosis. P. Klemperer, Chicago.—p. 11.
*Unilateral Diuresis. A. Fullerton, Belfast, Ireland.—p. 16.
Regeneration of Resected Urinary Bladders in Rabbits. H. Schiller, Chicago.—p. 24.
Diverticula of Bladder in Children. A. Hyman, New York.—p. 27.
Bladder Neck Obstructions: Their Surgical Relief in Reference to Young Punch. W. P. Parker, Los Angeles.—p. 36.
Clinical Investigation of Vulvovaginitis. I. F. Stein, Chicago.—p. 43.
*Metabolism Readings in Eighty-Four Pregnant Cases. E. L. Cornell, Chicago.—p. 53.
Recurrence of Benign Prostate. W. A. Bryan, Nashville, Tenn.—p. 59.
Necessity for Caution in Employment of High Voltage Roentgen Rays as Therapeutic Agent Against Malignant Disease: Acute Suprarenal Insufficiency and Death as Sequels. F. Smithies, Chicago.—p. 61.
*Radium Treatment of Keloids. E. M. Daland, Boston.—p. 63.
*Blood Supply of Thyroid; Its Surgical Significance. E. V. Mastin, Rochester, Minn.—p. 69.
*Histologic Study of Effect of Ligation of Thyroid Vessels in Exophthalmic Goiter. A. S. Giordano and Harold D. Caylor, Rochester, Minn.—p. 75.
Hemorrhage Following Abdominal Operations: With Special Reference to Appendicectomy and Excluding Bleeding from Stump. C. H. Phifer, Chicago.—p. 80.
*Distribution of Acid Cells Along Dorsal Curvature of Stomach and Possible Relation to Occurrence of Gastric Ulcer. H. E. Radasch, Philadelphia.—p. 87.
Tetanus: Report of One Hundred Sixteen Cases. R. H. Miller, Boston.—p. 90.
*Bone Grafting. W. R. Adams, Savannah, Ga.—p. 97.
*Damper Gastro-Enterostomy. J. C. O'Day, Honolulu.—p. 99.
Prostatic Problem. D. W. MacKenzie and M. I. Seng, Montreal.—p. 102.
No Hand Touch Technic. A. R. Grant, Utica, N. Y.—p. 106.
Pituitary Extract in Third Stage of Labor. S. Seides, New York.—p. 108.

Parathyroid Hyperplasia and Bone Destruction in Generalized Carcinomatosis.—In Klemperer's case removal of both mammary glands for cancer was followed six months later by pains in the back. On physical examination, she complained of pain over most body structures, especially in the spinal region. The roentgen-ray examination showed multiple cancer metastases in the whole skeleton. At the necropsy, numerous tumor nodes were found in both lungs. The most significant condition, however, was the state of the skeleton. The spine in its whole extent could be cut easily with the cartilage knife; in the right femur large and small nodules, narrowed the cortical substance, while they destroyed the spongy substance of the bone in the epiphysis. There were also metastases in the cranial and sternal bones. The extensive destruction of bone tissue led to an examination of the parathyroid glands. On dissection three were found in normal places; they seemed to be unaltered in size. In the place of the left inferior parathyroid was an oblong, kidney-shaped body 30 by 5 by 3 mm. in size, entirely separated from the thyroid gland. It was yellow in color, and dense in consistency. The histologic picture of the bone metastases revealed not only an extensive bone destruction but also a noticeable new formation of osteoid tissue.

Unilateral Diuresis.—Fullerton aims to establish the importance of diminished specific gravity of the urine on the affected side as a sign of unlateral disease of the kidney or disturbance of its function. Forty-eight cases were examined. Thirty-two were verified by operation; in nine cases calculi were passed, and in one case several small stones were discharged through a sinus in the loin. Four cases were bilateral and three of these patients were examined shortly after the calculus had escaped from the ureter. This leaves forty-one cases of unilateral renal calculus examined while the stones were in position. In thirty-one cases the specific gravity was diminished on the affected side. In about 50 per cent. the specific gravity was as low as 1.005 or less on the affected side, as against from 1.015 to 1.025 on the sound side. In two cases the specific gravity was a little higher on the affected side, and in the remaining eight cases it was equal on the two sides. Forty-one cases of tuberculous kidney were examined. Three of these were bilateral and had an equal specific gravity on the two sides. In one case, which was unilateral, there was a low specific gravity, 1.005, on both sides. In all the remaining cases the specific gravity was reduced on the affected side. Thirty-nine cases of unilateral pyelitis were examined. Of these, thirty-three showed a diminished specific gravity on the affected side. Nine cases of tumor originating in the kidney were examined. In seven of these the specific gravity was lower on the affected side. In addition, there were four cases in which the kidney had been involved by extension from a neighboring tumor in the abdomen. In three of these cases there was diminished specific gravity on the affected side. In the remaining case the specific gravity on the affected (left) side was higher than on the sound (right) side, but the right kidney was movable. Two cases of congenital cystic kidney were examined. In one case the specific gravity was low (1.005) on both sides. Fifteen cases of hydronephrosis and four cases of pyonephrosis were examined, and all showed a diminished specific gravity on the affected side. Fifteen cases of movable kidney were examined, and in eight of these the specific gravity was lower on the affected side. Thirty-seven cases classified under the heading of renal hematuria were examined. These were due to such diverse conditions as congenital hemophilia, Henoch's purpura, bilateral nephritis, and the condition known as "essential renal hematuria" or "symptomless hematuria." In twenty-eight the specific gravity was equal on the two sides. In the condition described as "essential renal hematuria" or "symptomless hematuria" the specific gravity is, as a rule, equal on the two sides, and the absence of evidence of disease of the kidney, as seen at operation, would rather lead one to expect this. Forty-four patients were examined for pain in the renal region of such a nature and of sufficient severity to be dignified by the term "renal colic." A definite diagnosis of the cause of the pain was not made. In twenty-seven cases the specific gravity was lower on the side of the pain. Nineteen cases of gunshot wounds of the kidney were examined. In nine of these the specific gravity was lower on the affected side.

Basal Metabolism in Pregnancy.—The findings obtained by Cornell in eighty-four cases indicate that there is an increase

in the metabolic rate above normal in pregnant women. It has a wide variation, however. There is nothing approaching a constant. The test is subject to many errors beyond the control of the technician. The mental attitude of pregnant women is not stable, therefore the readings are not always reliable. The results in toxic cases were so variable that no reliable information was obtained. The death of the fetus cannot be predicted from the metabolic rate.

Radium Treatment of Keloids.—In every case treated by Daland with radium benefit accrued. Twenty-six patients have had a complete destruction of their lesions. The first evidence of relief was the development of a certain amount of anesthesia in the lesion. Later, there was a disappearance of the itching and pulling sensation. Finally, there was a softening of the scar. There was less variation from the normal color of the skin in the cases treated with absorption doses. In a few of the cases treated with ulcerating doses, telangiectasis followed, but this was by no means always true. There was no evidence to show that the tendency of a given individual to develop these lesions was influenced by the treatment of any one lesion by radium.

Blood Supply of Thyroid: Its Surgical Significance.—Mastin shows that the thyroid has a very rich arterial and venous blood supply. There is an extensive anastomosis not only between vessels of the same lobe, but also with those of the opposite lobe. In the event of ligation of all four thyroid vessels, the circulation can be reestablished through extraglandular anastomosis. The secretory activity of the thyroid gland is under nerve control. After ligation of the superior thyroid artery, a polar ligation should be made in order to cut off the veins, lymphatics and remaining nerve filaments. Control of hemorrhage is best accomplished by interrupted mattress sutures placed through the remaining gland tissue, by ligation of all bleeding points, and by the use of gauze packing in the wound if necessary. Bleeding veins can often be demonstrated by having the patient strain or cough before the wound is closed.

Effect of Ligation of Thyroid Vessels in Exophthalmic Goiter.—A study was made by Giordano and Caylor of the histology of the thyroid gland for the purpose of determining, if possible, whether any consistent involution changes could be demonstrated following ligation and, if such changes were found, whether or not they could be correlated with the clinical course of the case between the date of ligation and the thyroidectomy. Of the fifty cases of ligated hypertrophic parenchymatous thyroid studied in detail, definite involution changes were found in thirty-three (70 per cent.), while sufficient distinguishing contrast between the ligated and unligated poles could not be demonstrated in the remaining fifteen. In general, this study shows that distinct clinical improvement and lowering of the basal metabolic rate occurred more often in those cases in which definite involution changes in the ligated pole could be demonstrated histologically. On the other hand, a few definite exceptions demonstrated that a correlation between the clinical findings and the presence or absence of involution changes is not to be expected in all cases.

Relation of Acid Cells in Stomach to Ulcer.—Although there seems to be some relation between the occurrence of gastric ulcers in the different regions of the stomach and the distribution of the acid cells, Radasch says that the evidence is too little to be conclusive.

Bone Grafting.—Adams takes the graft which is to be implanted intramedullarly from the fractured bone, either above or below the line of fracture, depending on which would be the more practical, considering the location of the fracture, muscles, blood vessels and nerves. The graft should be about 4 or 5 inches long and should not extend closer than within 2 inches of the fracture. The graft is cut with the twin saw. The ends, one of which is blunt, the other pointed, are cut with a single saw. The graft includes the periosteum and endosteum. The pointed end is inserted into the opening from which the graft has been cut, is pushed into and down the medullary canal past the line of fracture, into the medullary canal of the other end of the fractured bone, so that 2 or 3 inches lies in the proximal and a similar length in the distal part of the fractured bone, thus bridging the fracture. As the graft is the exact width of the medullary canal, it fits snugly and holds the fractured bones firmly and in good position.

Damper Gastro-Enterostomy.—In O'Day's operation three lines of suture are made—the second line being seromuscular. After the stomach and jejunal walls are divided on either side of this line, respectively, there is left a sort of damper or "flapper" valve. O'Day claims for his method that it will entirely do away with all the menacing postoperative features of the earlier operation: retarded hemorrhage, ulceration of that portion of the stomach wall pressed by the blades of the clamps, regurgitation of bowel contents, and ulceration of the jejunal wall where it is forcibly struck by the chyme.

Virginia Medical Monthly, Richmond

January, 1923, **49**, No. 10

Focal Infection in Chronic and Recurring Disease. C. H. Mayo, Rochester, Minn.—p. 557.
*Tuberculosis Problem and Negro. H. R. M. Landis, Philadelphia.—p. 561.
*Tuberculosis in Rural Virginia. H. R. Edwards, Richmond.—p. 566.
Is Progress Being Made in Surgical Treatment of Acute Abdominal Conditions? A. M. Willis, Richmond.—p. 573.
Forces Which Prevent Modern Medicine from Being a Success. A. A. Houser, Richmond.—p. 578.
Regional Anesthesia. S. Leigh and J. H. Culpepper, Norfolk.—p. 581.
Case of Abscess of Lower Right Lobe of Lung Treated by Artificial Pneumothorax. C. L. Harrell, Norfolk.—p. 585.
Where Can We Find Cases of Incipient Tuberculosis? C. R. Grandy, Norfolk.—p. 586.
Therapeutic Use of Bacillus Acidophilus Milk in Richmond. G. F. Reddish and E. C. L. Miller, Richmond.—p. 590.
Treatment of Eclampsia. J. L. Early, Saltville.—p. 595.
Relation of Medical Examiner to Life Insurance Company. J. H. Dunkley, Roanoke.—p. 599.
Prevalence of Unsuspected Chronic Maxillary Sinus Infection. E. T. Gatewood, Richmond.—p. 601.

Tuberculosis in Negro.—Tuberculosis in the negro, Landis says, is an interesting chapter in the etiology of this disease. He here relates the experience gained by the Phipps Institute in its fight against tuberculosis among negroes. A special clinic is in charge of a capable colored physician, who has colored nurses to help him. At present a force of six nurses and three physicians is working among the colored population. In addition, the Jefferson Hospital for Diseases of the Chest has one colored physician and one nurse. In addition to its specific problem of dealing with tuberculosis, the Phipps Institute conducts a prenatal and postnatal clinic and a syphilis clinic. Each member of the graduating class of the Mercy Hospital (a negro institution) serves for a period of two months. While the time is short, it gives these nurses some idea of the tuberculosis and public health problems. The first nurse taking this course was sent to Wilmington, Del., to take charge of a negro tuberculosis dispensary which had been a failure. As a result of her energy the attendance at this dispensary was tripled in two months and the dispensary days increased from one to three. Taking all these experiences into consideration, this deduction would seem warranted: That those institutions that make use of negro doctors and nurses for the care of patients of the same race are, from the standpoint of number of patients and regularity of their attendance, most successful in the treatment of negro patients.

Standardized Method of Diagnosis in Tuberculosis.—Edwards suggests the need of some standardized method of diagnosis. It is now sometimes difficult to understand exactly what is meant by certain tuberculosis diagnosis. If a set standard could be adopted, all cases could be classified in accordance.

West Virginia Medical Journal, Huntington

January, 1923, **17**, No. 7

General Practitioner's Compensation. O. S. Hare, Bluefield.—p. 241.
Profiteers. C. H. Maxwell, Morgantown.—p. 249.
Diagnosis and Treatment of Carcinoma of Cervix. W. Neill, Jr., Baltimore.—p. 258.
Doctor and Public Health Service in Their Relations to the Public. N. R. Price, Marlinton.—p. 263.
Prognostic Value of Blood Chemistry in Surgery. J. C. Bauer and R. W. Stoneburner, Montgomery.—p. 265.
Modern Conception of Amputation. R. K. Buford, Charleston.—p. 270.
Management of Hypertension. W. B. Porter, Roanoke.—p. 273.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

December, 1922, **27**, No. 269

Employment of Electrical Methods in Diagnosis and Prognosis of Paralysis Due to Lesions of Peripheral Nerves. G. Bourguignon.—p. 193.
Manual Treatment of Backache and Referred Pain. Wetterwald.—p. 212.

British Medical Journal, London

Jan. 13, 1923, **1**, No. 3237

*Clinical Manifestations of Tabes Dorsalis. G. Holmes.—p. 47.
*Applications of Physiology to Medicine. I. Sensory Phenomena Associated with Defective Blood Supply to Working Muscles. J. A. MacWilliam and W. J. Webster.—p. 51.
Clinical, Pathologic and Radiologic Aspects of Infection of Teeth and Gums. W. Willcox.—p. 53.
Value of Butyn as Local Anesthetic. W. M. Beaumont.—p. 57.
Standards of Vision for Scholars and Teachers in Council Schools. N. B. Harman.—p. 58.
*Effect of Anesthetics on Lungs. R. J. S. McDowall.—p. 61.
Intestinal Obstruction Following Acute Appendicitis and Peritonitis. P. F. McFarlan.—p. 61.

Diagnosis of Tabes Dorsalis.—The diminution, loss, or alteration of sensibility to pinprick in the distal portions of the lower limbs, the thoracic zone, the radial borders of the arms, and the central portion of the face, Holmes points out, constitutes the most common, the most definite, and the most characteristic physical sign of tabes dorsalis. It is frequently present when the knee-jerks and the pupillary reactions are normal and before ataxia or other symptoms develop, and it is consequently a most important phenomenon in the diagnosis of the disease. The loss of sensation in these areas is a dissociated one—that is, its different modalities are affected in different degrees, or some forms only may be disturbed. Touch, for instance, is frequently intact on the chest and face at least, and the affection of thermal sensibility is inconstant and irregular. Its diagnostic value is enhanced by the fact that in no other disease is there dissociated analgesia of a similar distribution.

Sensory Phenomena Associated with Defective Blood Supply to Working Muscles.—MacWilliam and Webster investigated the behavior of human muscles temporarily deprived of their blood supply while innervation remained intact; the sensory phenomena recognizable in the states of rest and activity were examined and brought into relation with other functional conditions, such as changes in contractile power, etc. It was found that simple deprivation of blood in the ischemic limb for periods up to twenty minutes caused no great sensory effects, only coldness in the bloodless part, with an inclination to shift the position of the limb, and a certain amount of discomfort from the continued constriction by the obliterating armlet; the absence of pain is to be noted. Muscular action in the ischemic limb soon becomes painful, and when carried to the point of "fatigue" is acutely painful. The pain arises from exercise of a comparatively small amount of muscular tissue—in the presence of an acute lack of blood supply, involving urgent want of oxygen (anoxemia) and its consequences, with excessive accumulation of metabolic products, acids, and other bodies. The authors are convinced that the pain is protective in character, tending to limitation of effort and shielding the muscle from being spurred on to further and injurious activity. These observations have a close bearing on the problems associated with the pain of angina pectoris, and the experiments also have an obvious application to the phenomena of the condition called "intermittent claudication," as seen in the legs of men and horses, in which muscular exertion is interrupted by attacks of pain, loss of power, coldness of the limbs, etc.

Effect of Anesthetics on the Lungs.—Recovery from the pulmonary effects occurs after ether, McDowall says, but after deep and prolonged anesthesia with chloroform recovery is the exception. The actual death of tissue in the lungs as a result of the anesthetic does not appear to be a remote possibility: that the absorption of toxic products from such dead tissue should produce delayed chloroform poisoning seems most reasonable. Another function abolished is that of the bronchioles, which limit the amount of air passing into the alveoli. McDowall has demonstrated that the action of epinephrin on the bronchioles may similarly be prevented by deep anesthesia. The evidence indicates that deep or prolonged anesthesia with ether, and especially with chloroform, should be avoided whenever possible. It is suggested that narcotics should be more extensively used to supplement volatile anesthetics.

Irish Journal of Medical Science, Dublin

December, 1922, **5**, No. 10

What Makes for Success in Surgical Treatment. W. I. de C. Wheeler.—p. 437.
Enteric-Salmonella Bacilli. W. D. O'Kelly.—p. 452.
Oil-Ether Colonic Anesthesia by Control Method. A. E. Boyd.—p. 472.

Japan Medical World, Tokyo

December, 1922, **2**, No. 12

*Experimental Results of Artificial Production of Mammary Carcinoma in Last Five Years. K. Yamagwa and K. Murayama.—p. 337.
*Amounts of Enzymes in Duodenal Fluid in Exophthalmic Goiter. K. Gyotoku.—p. 339.
*Influence of Corean Ginseng on Metabolism. S. Inada and J. Takamizu.—p. 343.
Relation of Immunity and Bactericidal-fast Bacillus Mallei. H. Toyota and D. Kaku.—p. 345.

Artificial Production of Breast Cancer.—During the last five years Yamagwa and Murayama inoculated pure tar, tar extract, tar extract lanolin, tar lanolin, liquid paraffin or tar olive oil, but mainly tar or tar lanolin, into the mammary regions of 188 female rabbits, in doses from 0.3 to 1 c.c., once or twice a month. In twenty-three rabbits, or 12.23 per cent., carcinoma developed.

Enzymes in Duodenal Fluid in Cases of Exophthalmic Goiter.—A quantitative determination was made by Gyotoku of the enzymes contained in the duodenal fluid in twenty cases of exophthalmic goiter. In 60 per cent. of the cases these enzymes were diminished in amount. These patients also had marked digestive disturbances. There was no relation between the amount of enzymes in the duodenal fluid and the degree of disturbances of carbohydrate metabolism.

Influence of Ginseng on Metabolism.—Inada and Takamizu assert that when ginseng is taken in large amount, there is a slight increase of splitting of body protein, but not enough to reduce the body weight. As the result of temporary stimulation, the urine output is increased, but it soon decreases markedly, and returns to normal after a while. Although ginseng decreases the urine output, it has no influence on the constituents of the urine.

Lancet, London

Jan. 6, 1923, **1**, No. 1

Modern Methods of Diagnosis and Treatment of Syphilis of Nervous System. F. W. Mott.—p. 1.
Treatment of Syphilis; Especially Its Later Manifestations. L. W. Harrison.—p. 4.
*Tuberculous Affections of Tongue. R. M. Handfield-Jones.—p. 8.
*Forms of Tuberculous Arthritis and Their Treatment. E. Ward.—p. 11.
Thoracic Surgery: War Lessons in Civil Practice. R. P. Rowlands.—p. 16.
*Identity of Toxins Produced by Serologically Different Strains of Diphtheria Bacillus. P. Hartley.—p. 17.
*Wagner's New Treatment of General Paralysis. A. Pilcz.—p. 19.
*Bacteriology of Ozena. K. Sakagami.—p. 19.
*Case of Primary Carcinoma of Lung. H. J. C. Gibson and G. M. Findlay.—p. 21.
*Diabetes Mellitus in an Infant Aged Five Months. H. T. Ashby.—p. 22.
*Endothelioma of Male Breast Following an Injury. H. K. Griffith.—p. 22.
Barium in Harrogate Waters. A. Woodmansey.—p. 22.
Two Cases of Congenital Hemihypertrophy. D. Paterson.—p. 23.

Tuberculosis of Tongue.—Five cases of lingual tuberculosis are reported by Jones. An inquiry made of ten general hospitals and ten sanatoriums revealed only twelve cases. The author's patients ranged in age from 28 to 59 years. Three were males. Pulmonary tuberculosis was present in all of them. In one case a diagnosis of cancer was made. Microscopic examination of the tissue removed confirmed the diagnosis of tuberculosis in each case.

Tuberculous Arthritis.—A new classification for tuberculous joints is suggested by Ward: (1) monarticular tuber-

culous arthritis: (*a*) major and (*b*) minor arthritis; (2) polyarticular tuberculous arthritis: (*a*) suppurative, (*b*) rheumatoid, (*c*) ostearthritic, and (*d*) arthritis deformans; (3) tuberculous rheumatism; (4) aberrant forms of tuberculous arthritis. A minor tuberculous arthritis is described. Relative, rather than absolute, immobilization for tuberculous joints is advised. Short cuts in the treatment of tuberculous arthritis are discussed.

Efficacy of Monovalent Diphtheria Antitoxin.—Fifteen strains of the diphtheria bacillus were investigated by Hartley. The results obtained are in agreement with those obtained by Paxson, Redowitz, Park, Williams and Mann. Further, these results obtained experimentally in the laboratory are in accord with the vast amount of clinical evidence concerning the efficacy of monovalent diphtheria antitoxin which has been accumulated during the last twenty-five years all over the world. Hartley says it is reasonable to suppose that if different strains of diphtheria bacilli produced toxins which exhibited wide differences in their affinity for antitoxin, evidence—or at least indications—of this would have been forthcoming from workers studying diphtheria from the clinical side. As Park, Williams and Mann have pointed out, ever since diphtheria antitoxin has been used in practice hundreds of thousands of persons known to be contacts have been given practically complete protection for two weeks by the injection of monovalent antitoxin; and, further, routine virulence tests throughout the world have shown that a monovalent antitoxin protects animals against a dose of living culture fatal to animals not given antitoxin.

Wagner's Treatment of General Paralysis.—The von Wagner treatment consists in the subcutaneous injection of the blood of an untreated malaria patient into a general paralytic. Pilcz reports his experiences with this method of treatment in 141 cases. Fifty-one patients have completely recovered; eighteen show marked and persisting remission without being able, however, to return to their former occupations. Fifty-seven cases became stationary or showed an incomplete remission. Fifteen patients died. Pilcz points out that there is no parallelism in the degree and duration of the remissions, on the one hand, and in the serologic reactions (lumbar fluid, etc.) on the other. The best results are obtained in cases with maniacal symptoms and in cases of simple demency; the hypochondriacal, presenile and catatonic forms of disease show a less favorable prognosis. Generally, remission does not immediately follow treatment; it develops gradually, finally becoming permanent. This method is employed, not only in cases of general paralysis, but also in tabes and other forms of neurosyphilis. In disseminated sclerosis, also, good results have been obtained.

Bacteriology of Ozena.—The results of Sakagani's experiments, briefly, were: The so-called ozena bacillus, obtained from the nasal passages of ozena patients, agrees in all important points with the coccobacillus of Perez. The coccobacillus is to be found only in ozena patients, and not in persons suffering from other nasal diseases nor in healthy persons. By experimental infection of the nasal passages of rabbits, Sakagani was able to produce symptoms closely agreeing with those of human ozena. In the various immune tests with this coccobacillus the serum of ozena patients generally showed a weak reaction; with some patients, however (i. e., those tending toward recovery), the specific reactions were remarkably strong. It could be demonstrated that the serum from a rabbit immunized against this coccobacillus produces various immune bodies with great intensity. In animal experiments with this bacillus the presence of immune bodies in the serum was clearly demonstrable; on the other hand, the reactions of the serum of most patients were rather weak. This can be explained from the nature of the disease, which causes merely local changes, so that in the general circulation the antibodies appear only in small quantities. From these experiments Sakagani is convinced that his coccobacillus may be considered to be the causative agent of ozena.

Primary Carcinoma of Lung.—The primary lung tumor in the case reported by Gibson and Findlay was composed of cylindric columnar cells, arranged for the most part in papillary-like tufts. Much of the tumor had undergone a myxomatous type of degeneration. No evidence of a tuberculous process could be detected in either lung. A columnar type of cell was found in a pancreatic metastasis. In the suprarenals, however, the cells showed more irregularity in their shape; some were columnar; others were definitely polyhedral, while the general arrangement was more diffuse. In the secondary growths present in the skin and muscles a definite squamous cell metaplasia had taken place; all transitional types of cell were noted, from columnar epithelium to squamous epithelium, the latter, arranged in cell masses, resembling those found in a typical squamous epithelioma. There was no actual formation of keratin by these squamous cells.

Diabetes Mellitus in Infant Aged Five Months.—Ashby's patient was admitted to the hospital with the diagnosis of pyelitis. She had a dry, scaly skin, which seemed to irritate. The urine (catheter specimen) was acid and cloudy, and contained a small quantity of albumin. Microscopically pus cells and *B. coli* in large numbers were seen. During the first three weeks in the hospital the baby gradually lost weight, had frequent loose stools, had a continuous rise of temperature, and was always restless. The urine became much clearer and less acid, though the temperature became higher. At the end of the third week, the second toe of the left foot became black and gangrenous. The urine was positive for sugar. There was never enough urine to estimate with accuracy the amount of sugar or the specific gravity. Two days later, the second toe of the opposite foot started in the same way. A fortnight later both toes came off and the surrounding skin became healthier. The loss of weight was slow but gradual. The baby died six weeks after admission.

Endothelioma of Male Breast Following Injury.—In April, Griffith's patient, a man, aged 50, received a blow from a horse's bit just above the right nipple. At the end of May the condition had cleared up, except for a definite cystic tumor, which was freely movable in the surrounding tissues and not attached to the skin. In July, conditions were such that operation was advised. The breast was removed. The tumor (macroscopically) was encapsuled, and did not infiltrate the breast tissue or the skin, which was much stretched over it at one point. The sections showed a degenerating endothelioma. It seems probable to Griffith that the injury led to the formation of a hematoma, and the irritation caused by the presence of this blood clot gave rise to so much endothelial proliferation that an actual tumor, an endothelioma, arose in that situation.

Sei-I-Kwai Medical Journal, Tokyo, Japan

December, 1922, **41**, No. 6

*Influence of Some Antiseptics and Narcotics on Movement of Spermatozoa. Y. Ishikawa.—p. 1.
*Experiments in Deep Breathing on Animals for Its Prophylactic Effects on Pulmonary Tuberculosis. S. Otabe.—p. 21.
*Tubercle Bacilli in Blood Stream of Tuberculous Animals. S. Otabe. —p. 32.

Influence of Antiseptics and Narcotics on Movement of Spermatozoa.—This paper is concerned with the influences of some antiseptics and narcotics, in dilute solution, on the movement of spermatozoa outside the body. The chief purpose of Ishikawa's investigation was aimed at the theoretical basis of the modern methods of preventing conception.

Prophylactic Effect of Deep Breathing on Pulmonary Tuberculosis.—Otabe's experiments confirm the theory that deep breathing has a retarding influence on the tuberculous process. The process in the lungs of animals to which deep breathing was applied was less developed than in the controlled animals.

Tubercle Bacilli in Blood Stream.—Otabe's investigation was negative. He used water freshly distilled every day. Although clinically the experiment animals gave every evidence of tuberculosis, he never found tubercle bacilli in the blood microscopically, nor was he able to obtain a culture from the blood.

Bulletin de l'Académie de Médecine, Paris

Dec. 26, 1922, **88**, No. 43, The Pasteur Centennial

*President's Address. A. Béhal.—p. 621.
*Pasteur and General Biology. Delezenne.—p. 636.

*Pasteur's Work and Medicine. F. Widal.—p. 646.
*Pasteur's Work and Surgery. P. Delbet.—p. 658.
*Pasteur's Work and Obstetrics. V. Wallich.—p. 673.
Pasteur's Work and Veterinary Medicine. Barrier.—p. 679.
*Pasteur's Work and the Progress of Hygiene. A. Calmette.—p. 684.

Pasteur's Centenary.—The addresses published in this number were delivered at the Pasteur centennial celebration at the Académie de Médecine, and were reviewed in the Paris Letter, January 27, p. 265.

Bulletin Médical, Paris

Dec. 9, 1922, **36**, No. 50

*The Liver in Children. P. Lereboullet.—p. 1009.
Surgical Treatment of Adenosarcoma of Breast. T. Asteriades.—p. 1015.

The Liver in Children.—Lereboullet surveys the symptomatology and pathology of the liver in children. The liver is relatively larger than in adults, and palpation is of great importance. In testing for alimentary glycosuria, comparatively large amounts of glucose should be used, for instance, 80 gm. for a child of 20 kg. The test is frequently positive in rachitis, scarlet fever, diphtheria and gastro-enteritis.

Dec. 16, 1922, **36**, No. 51

*Biologic Treatment of Gonorrhea. A. Grimberg and M. Uzan.—p. 1035.

Biologic Treatment of Gonorrhea.—Grimberg and Uzan review the nonspecific biologic treatment of gonorrhea. They point out that antimeningococcus serum is not effective against variant types of meningococcus. Antigonococcus serum and vaccines may have only a slightly greater value than nonspecific preparations, but the specific action is an advantage. The doses of the specific vaccine have to be very large.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 8, 1922, **46**, No. 35

*Bronze-Skin Not Due to Addison's Disease. A. Sézary and J. Levesque.—p. 1644.
*Lineal Striae After Right Pneumothorax. E. Rist and P. Jacob.—p. 1646.
*Purulent Gonorrheal Arthritis. B. Weill-Hallé and Turpin.—p. 1649.
*Cardiac Infantilism. C. Oddo and E. Girbal.—p. 1652.
*Chronic Lymphoid Leukemia. J. Tapie.—p. 1656.
*Hereditary and Familial Exostoses. E. Lenoble and Y. Jégat.—p. 1661.
*Induced Pneumothorax with Normal Pregnancy. A. Gendron.—p. 1669.
*Localized Tetanus of Right Leg. A. Bergé and R. Azoulay.—p. 1674.

Bronze-Skin Not Due to Addison's Disease.—Sézary and Levesque present the clinical history and histologic findings of a tuberculous woman who had all the symptoms of Addison's disease except increased fatigability and low blood pressure. Necropsy confirmed the clinical supposition of normal suprarenal capsules.

Parallel Striae After Right Pneumothorax.—Rist and Jacob present the case of a young girl with many parallel striae on the side opposite to an artificial pneumothorax. The side with the striae was 6 cm. broader than the side with the pneumothorax. Abnormal fragility of the skin is the probable cause.

Purulent Gonorrheal Arthritis Cured by Serotherapy.—Weill-Hallé and Turpin present a case of purulent gonorrheal arthritis with recovery after intra-articular serotherapy. Intravenous injections of calcium chlorid influenced favorably the serum disease.

Cardiac Infantilism.—Oddo and Girbal report a case which they call cardiac infantilism, because they attribute the lack of genital development in the 16 years old girl to a mitral stenosis acquired in early childhood.

Chronic Lymphoid Leukemia.—The patient died of lobar pneumonia. The alveolar exudate consisted of polymorphonuclears, while the capillaries were filled with lymphocytes.

Hereditary and Familial Osteogenous Exostoses.—Lenoble and Jégat suggest that tuberculous infection may influence the whole body in a way similar to syphilis, and cause endocrine disturbances entailing malformations in the offspring.

Induced Bilateral Pneumothorax with Normal Intercurrent Pregnancy.—Gendron performed a left pneumothorax on his patient in 1919. In 1921 the woman became pregnant, and tuberculosis developed in the right lung. He allowed the resorption of the left pneumothorax, and instituted another on the right side which he has continued with good success for ten months to date.

Hyperchronic Tetanus Localized in Leg.—Bergé and Azoulay's patient had been wounded in his right knee by fragments of a shell in 1915. Contracture developed in this leg, with a perforating ulcer, two years later. The contractions varied in strength and extent and, to relieve the causalgia, sympathectomy was done but without benefit. The tetanus in the limb became more pronounced and in 1922 extended to the whole body, except the face, and proved speedily fatal, rebellious to antitetanus treatment.

Dec. 15, 1922, **46**, No. 36

*Diagnosis of Addison's Disease. E. Sergent.—p. 1679.
*Treatment of Bronchiectasis. L. Ribadeau-Dumas and Mocquot.—p. 1688.
*Arthrotyphoid. H. Bourges.—p. 1691.
Mixed Epidemic Encephalitis. H. Bourges and M. Breuil.—p. 1696.
*Diastolic Murmur in Hypertension. A. Bergé and G. Basch.—p. 1700.
Unilateral Pulmonary Tuberculosis with Cavity Improved by Artificial Pneumothorax. G. Caussade and Derville.—p. 1706.
*Duodenal Intubation in Jaundice. E. Chabrol et al.—p. 1710.
Hydrocephalus with Obesity. Bonnet et al.—p. 1723.
Gonococcus Abscess of Wrist and Hand. Klippel and Rachet.—p. 1731.

Diagnosis of Addison's Disease.—Contrary to Sézary, Sergent contends that it is possible to make a safe clinical diagnosis of Addison's disease even in the absence of some signs, and gives a new example. He believes that extremes in critical analysis are just as dangerous as abuses of generalization.

Surgical Treatment of Bronchiectasis.—The woman, aged 35, had suffered for twenty years from bronchiectasis which showed at last signs of a cavity, hemoptysis and purulent sputum. Pneumonotomy performed after delivery of a child, was followed by almost complete success.

Arthrotyphoid.—Bourges publishes three cases of typhoid affecting joints in its acute stage.

Diastolic Murmur in Nephritis Hypertension.—Bergé and Basch attribute the diastolic murmur in their case of nephritic hypertension to two small congenital openings in the aortic valves. In the discussion of the case, Laubry expressed the opinion that the diastolic murmurs in similar cases of hypertension are due to dislocation of the valve opening by dilatation of the ventricle. They may be present even with healthy valves.

Duodenal Intubation in Jaundice and Cirrhosis of the Liver.—Chabrol, Bénard and Gambillard studied the secretion of bile in forty patients with affections of the liver. In some cases the examination was repeated several times. The most interesting result was the observation that in atrophic cirrhosis of the liver, there need not be diminution of the biliary pigments nor of the salts. Obstruction in catarrhal jaundice is rarely absolute. This is sufficiently constant to explain the direct origin of stercobilin in the stools. They doubt the theory of dissociated icterus. In every jaundice the amount of salts is comparatively lower than that of bilirubin. This is due sometimes to exaggerated hemolysis. In other cases, it seems that Schiff's law (circulation of biliary acids from the liver to the intestine and back), explains the loss of acids and their lack in the bile when the circle is interrupted.

Journal de Médecine de Bordeaux

Nov. 10, 1922, **94**, No. 21

Epidermomycoses. G. Petges.—p. 695.
*Therapeutic Value of Physical Culture. P. Cadenaule.—p. 700.

Physical Culture in Affections of Children.—Cadenaule had excellent results with systematic gymnastics in children suffering from adenoids, tuberculous habitus, neuritis or some other pathologic conditions. He emphasizes the beneficial effects on the development of body and mind, and especially on the normal sexual development of girls.

Journal de Médecine de Lyon

Dec. 20, 1922, **3**, No. 71

*Ascaris Outside of Human Intestine. J. Guiart.—p. 747.
*Human Parasitology in Roumania. N. Léon.—p. 751.
*Bronchopulmonary Spirochetosis. C. Garin and L. Morenas.—p. 759.
*Tick Paralysis. C. Garin and Bujadoux.—p. 765.

Spirochaeta Dentium in Gingivitis. Massia and Grigorakis.—p. 769.
*Anaphylaxis in Intestinal Helminthiasis. L. Morenas.—p. 773.

Survival and Cinematography of Ascaris Outside of the Human Intestine.—Guiart was able to keep ascarids, from the human intestine, living for several days. The animal keeps well in normal salt solution, which has to be changed twice daily. It is fed by an addition of human blood to the solution. After feeding, a change of the medium is necessary.

Human Parasitology in Roumania.—Léon reviews the human parasites in Roumania, and publishes a case of myiasis of the male urogenital tract.

Clinical Forms of Bronchopulmonary Spirochetosis.—Garin and Morenas draw attention to this affection because it has occurred in several epidemics since the war in Europe. Castellani's spirochetes are present in the sputum; other spirochetes and fusiform bacilli seem to be without importance. The typical form of the disease may be acute, with moderate fever for two to six days. The sputum is mucous and mucopurulent. If the bronchitis continues, the expectoration becomes bloody. In other cases the affection starts mildly and the first symptom is this red jelly-like sputum. Atypical cases may resemble ordinary bronchitis, pneumonia and bronchopneumonia. The diagnosis between tuberculosis and spirochetosis can be made only by examination of the sputum. Both diseases may be present at the same time. Iodids are useful in the treatment of this affection.

Tick Paralysis.—Garin and Bujadoux publish the first case observed in France.

Anaphylaxis in Intestinal Helminthiasis.—Morenas considers eosinophilia and Charcot-Leyden crystals in the feces of patients as the strongest indication of anaphylactic reactions.

Journal de Radiologie, Paris

November, 1922, **6**, No. 11

*Goetsch Test and Radiotherapy in Thyroid Disease. Tarnauceanu.—p. 501.
Two Intensifying Screens in Radiography. M. de Laroquette.—p. 511.

The Goetsch Test and Radiography of the Thyroid.—Tarnauceanu extols the value of the Goetsch test in hyperthyroidism. He used 1 c.c. instead of 0.5 c.c. of the 1:1,000 epinephrin solution. In conclusion he states that, on account of the remarkable results, this test should be adopted as a routine practice in radiology to sift out the cases suitable for radiotherapy.

Journal d'Urologie, Paris

November, 1922, **14**, No. 5

*Neprolithotomy and Pyelolithotomy. A. Pousson.—p. 353.
"Lithotribolapaxy." M. Pavone.—p. 371.
*Endo-Urethral and Endovaginal Diathermy. E. Roucayrol.—p. 385.
Application of Radium with the Cystoscope. L. Buerger.—p. 409.
*Treatment of Gonorrhea. J. Janet.—p. 419.

Nephrolithotomy and Pyelolithotomy.—Pousson finds that nephrolithotomy does not disturb the renal function more than pyelolithotomy. Therefore, in the choice between these two operations, it is not necessary to consider the future of the patient which is the same in both. The indications are the site, form and size of the stone. Roentgenography is necessary, but in some cases only direct examination of the kidney can decide.

Endo-Urethral and Endovaginal Diathermy.—Roucayrol considers diathermy the method of choice in acute and chronic gonorrhea. It may even cure sterility from endometritis. Very few persons are intolerant.

Treatment of Gonorrhea.—Janet points out the necessity to examine filaments microscopically. Their persistence may in rare cases be due to a simple urethritis caused by continued treatment of a cured gonorrhea. On the other hand, men who have a perfectly clear urine, but who have gonococci in the first small drop in the morning, require treatment.

Paris Médical

Dec. 9, 1922, **12**, No. 49

*Senile Changes in the Eye. F. Terrien.—p. 517.
*The Wassermann Reaction with Fresh Serum. Durupt.—p. 519.
*Anaphylaxis. W. Kopaczewski.—p. 524.

Senile Changes in the Eye.—Terrien reviews the senile changes of eyes. Subconjunctival hemorrhages are frequent. They have no prognostic significance for hemorrhages of the brain. Miliary aneurysms in the retinal arteries are such a premonitory sign. They look like small pearls and may be mistaken for a bend in the vessel. The formation of a cataract is sometimes preceded by improvement of hypermetropia, from sclerotic changes in the lens. The turbidity under oblique illumination must not be mistaken for a beginning cataract; the lens is perfectly clear when examined with an ophthalmoscope.

The Wassermann Reaction with Fresh Serum.—Durupt had 15 per cent. more correct positive Wassermann reactions when using fresh serum and its complement and natural hemolysin against sheep corpuscles. The positive reaction with fresh serum is earlier, remains longer during treatment, and is often the only positive reaction in hereditary syphilis. The hemolytic index of the serum (its content of complement and natural hemolysin) must be tested.

Anaphylaxis.—Kopaczewski discusses the terminology and theories of proteinogenous shock.

Presse Médicale, Paris

Dec. 16, 1922, **30**, No. 100

*Diuretic Action of Mercurials. L. Blum and H. Schwab.—p. 1081.
*Roentgen-Ray Epithelioma Cured by Diathermy. H. Bordier.—p. 1083.
*Modern Classification of Nephritis. Wolf.—p. 1084.

Diuretic Action of Mercurials.—Blum and Schwab investigated the diuretic properties of compounds of mercury by injecting from 4 to 5 cg. of cyanid of mercury intravenously. An injection of 1 cg. was used to test the sensibility to the drug. The diuretic effect was marvellous in one cardiac case in which the edema had resisted other medication. In another case the injection was fatal. Investigation of the ureosecretory coefficient showed in every case, treated with mercury, actual injury of the kidneys. As in azotemic nephritis, it affected the elimination of urea, but not of sodium chlorid. Even in healthy subjects on a salt-free diet, the injection was followed by increased elimination of chlorids. It is possible that the drug has also some action on the tissues, although its principal effect seems to be on the kidneys. Therefore, this treatment is absolutely contraindicated in nephritic edema, and should be used very cautiously in other diseases, and only after every other form of treatment has failed.

Roentgen-Ray Epithelioma Cured by Diathermy.—Bordier publishes another very successful case and describes his electrodes.

Modern Classification of Nephritis.—Wolf concludes his report on the new German classification (Volhard and Fahr).

Progrès Médical, Paris

Dec. 9, 1922, **37**, No. 49

*The Training of Midwives. C. Jeannin.—p. 573.
*Tuberculosis and Dental Caries. Siffre.—p. 580.

The Training of Midwives.—Jeannin's inaugural lecture deals with the training of midwives.

Tuberculosis and Dental Caries.—Siffre found that teeth contain usually a little more than 66 per cent. of mineral substances. Caries does not occur more frequently in teeth with a lower content. Caries has no relation to a demineralization of the teeth nor to tuberculosis. The influence of tuberculosis can be only the same as that of other nutritional disturbances. Pregnancy, infancy, and puberty are the only periods of importance for the formation of teeth.

Dec. 23, 1922, **37**, No. 52

*Malta Fever and Fixation Abscess. H. Roziès.—p. 671.
*Vicarious Menstruation. Dalché.—p. 672.
*Isolation of Vitamin A. Tetsuwo Kagawa.—p. 674.
Treatment of Infantile Syphilis with Arsphenamin. Paul-Boncourt and J. Clement.—p. 675.

Malta Fever and Fixation Abscess.—Roziès describes a case of Malta fever which started ten days after the patient had taken, for the first time in her life, raw goat's milk. The usual treatment failed, but recovery followed a fixation

abscess. He insists on using really old turpentine, in higher doses than are usual (2 to 3 c.c.). The earlier the injection is made, the better the results.

Vicarious Menstruation.—Dalché attributes bleeding from different organs at the time of menstruation to complex endocrine and neurotic disturbances.

Isolation of Vitamin A.—Kagawa reports the isolation of vitamin A by Katsuya Takahashi. Ten grams of this substance were extracted from 1 kg. of cod liver oil; 0.0001 gm. was sufficient to cure an animal dying from deficient diet. The fluid substance keeps well in alcoholic or fatty solution. It contains 81 per cent. carbon and 10 per cent. hydrogen, and resembles cholesterol.

Pediatria, Naples

Dec. 15, 1922, **30**, No. 24

*Mixed Typhoid and Malta Fever. L. Auricchio.—p. 1155.
*Vitamins in Milk and Rachitis. R. Pollitzer.—p. 1164.
*Leishmaniasis in Messina. G. Castorina.—p. 1173.

Mixed Infection with Typhoid and Malta Fever.—Auricchio publishes four cases of combined Malta fever and typhoid, and one case with paratyphoid. The typhoid infection dominates the picture.

Experiments on the Relation of Vitamin Content of Milk to Rachitis.—Pollitzer reviews the pathogenesis of rachitis, and emphasizes the secondary (or indirect) decalcifying factors. These factors inhibit the action of vitamin A. Since it is soluble in fat, disturbances of digestion may prevent its absorption. Absence of muscular activity is another such factor. The importance of light is well known. He fed rats on foods without vitamin A, and then gave in addition milk from women whose children were healthy and others who were nursing rachitic children. The addition of 5 c.c. of such milk every second day caused a moderate increase in weight without any difference between the two groups. He does not consider these results as final. The congenital reserve in vitamins seems to be an important factor in the development of rachitis.

Leishmaniasis in Messina.—Castorina gives a survey of forty-four cases of leishmaniasis in children living in Messina and surroundings. Antimony tartrate was injected intravenously. Clinical improvement began usually after the fifteenth injection.

Policlinico, Rome

Dec. 11, 1922, **29**, No. 50

*Radical Cure of Varicocele with Orchidopexy. P. Amorosi.—p. 1621.
*Nitritoid Crises After Arsphenamin. B. Lo Vullo.—p. 1626.
Case of Malignant Neoplasm of Left Lung. G. Miracapillo.—p. 1631.

Radical Cure of Varicocele with Fixation of Testicle.—Amorosi describes in detail the operation devised by Paravecchia. His experiments show that it is harmless as regards the nutrition and function of the testes. This cannot be said for other methods.

So-Called Nitritoid Crises from Defective Preparations of Arsphenamin.—Lo Vullo proves that these crises are simply due to bad preparations.

Riforma Medica, Naples

Dec. 11, 1922, **38**, No. 50

*Pseudotuberculosis Due to Nocardia. I. Iacono.—p. 1181.
Bilateral Mammary Carcinoma. C. F. Bianchetti.—p. 1183.
*Isotonic Infusions of Salt and Glucose. E. Zagari.—p. 1186.
Purulent Pericarditis. P. Orsini.—p. 1188.
Diagnosis of Gastric and Duodenal Ulcers. L. Torraca.—p. 1190.

Pseudotuberculosis Due to Nocardia.—Iacono describes a case of pseudotuberculosis of lungs due to the nocardia. Its mycelium in the sputum is acid-fast and may be mistaken for the tubercle bacillus. The site of predilection is the base of the lungs. Inconstant fever, mucopurulent sputum (sometimes containing blood), and chronic bronchopneumonia leading eventually to the formation of cavities, are the usual signs.

Isotonic Infusion of Salt and Glucose.—Zagari compared the effects of hypodermoclysis with a 4.7 per cent. solution of glucose and a 0.75 per cent. solution of sodium chlorid. He finds that glucose infusions have a better influence on the heart, kidneys, nerves and muscles, while salt solutions depress the output of work, the muscle tonus and reflex excitability.

Anales de la Facultad de Medicina de Montevideo

September-October 1922, **7**, No. 7-8

*The Nerves in Fracture of the Wrist. A. Navarro.—p. 395.
*Postoperative Cardiac Insufficiency. E. Blanco Acevedo.—p. 399.
Surgical Treatment of Constipation. A. Lamas.—p. 402.
Shock in Gynecology and Obstetrics. A. Turenne.—p. 409.
Prophylaxis of General Paresis. F. S. Garmendia.—p. 433.
Unusual Locations of Hydatid Cyst. A. Roldán.—p. 442.
The Recurring Subcutaneous Mucous Chancre. J. Travieso.—p. 449.
*Experimental Chronic Irritation. C. Stajano.—p. 467.
*Refusal to Submit to Operation. D. Prat.—p. 470.
The Planes in Anatomy of the Mediastinum. J. Humberto May.—p. 480.
Chemical Study of Tartrobismuthate of Sodium and Potassium. A. Bocage et al.—p. 483.
Syphilitic General Pustular Eruption. A. Bellagamba.—p. 501.

Compression of Median Nerve in Fracture of Wrist.—In one of Navarro's two cases the nervous disturbances developed slowly but were pronounced by the third month. The fracture had been treated without immobilization, and secondary deformity, with compression of the median nerve, resulted.

Acute Postoperative Cardiac Insufficiency.—Blanco Acevedo warns against assuming the presence of hemorrhage when dyspnea, precordial pain and other symptoms after an operation indicate acute insufficiency of the heart. In two cases described, digitalis by the vein promptly restored normal conditions.

Experimental Chronic Irritation.—Stajano says that his experiments on animals have confirmed the importance of revulsion in the treatment of trophic lesions. They also sustain the theory of trophic centers.

Refusal to Submit to Needed Operation.—Prat discusses the equity of awarding a pension to a man, aged 61, incapacitated by hemorrhoids who refused operative relief.

Archivos Españoles de Pediatría, Madrid

November, 1922, **6**, No. 11

*The Prescurvy Stage. Jose Estella y B. de Castro.—p. 641.
*Erysipelas in Two Sisters. C. S. de los Terreros.—p. 655.
Pathology of the Esophagus. A. Hinojar.—p. 660.

The Prescurvy Stage.—In fully 50 per cent., scurvy does not develop beyond the preliminary phase. Even then there is evidence of dystrophy, weakness and angiomalacia. Edema should always suggest a possible "prescurvy" condition. The changes in the bones are too characteristic to be mistaken for any other affection except possibly Parrot's osteochondritis.

Erysipelas in Two Sisters.—The children went to confession together, and each developed the next day a patch of erysipelas on the cheek that had rested on the woodwork of the confessional.

Prensa Médica Argentina, Buenos Aires

Nov. 20, 1922, **9**, No. 17

*Effects of Irritation of Splanchnic Nerves. B. A. Houssay.—p. 490.
Vaccination Against Diphtheria. Bachmann and de la Barrera.—p. 499.
*Typhoid Bacilli Carriers. M. J. Barilari and R. O. Rodriguez.—p. 500.

Factors in Rise in Blood Pressure After Irritation of Splanchnic Nerves.—Houssay reports experiments on cats and dogs which demonstrated that irritation of the splanchnic nerves increases the secretion of epinephrin. The inevitable rise in blood pressure is due in part to the increase in epinephrin, but mainly to neuromuscular vasoconstriction by the direct action of the irritated splanchnic nerves.

Treatment of Typhoid Bacilli Carrier.—There was a history of typhoid at the age of 5 and again at 25, 29, 30, 33 and 34. The last attack began with acute gallbladder symptoms, and the retrospective diagnosis was chronic typhoid infection of the gallbladder with periodic exacerbations. No typhoid bacilli have been found in the stools since the gallbladder was removed. The family history contains several cases of cholelithiasis, which indicate an inherited substandard condition of the biliary apparatus.

Dec. 10, 1922, **9**, No. 19

*The Spinal Fluid in Neurosyphilis. C. Bonorino Udaondo and O. Catalano.—p. 553.

*Syphilis of the Mamma. M. R. Castex and L. G. Bouzat.—p. 558.
*Biopsy. S. Mazza and M. Balado.—p. 564.
*Hemoclastic Crisis in Insufficiency of Liver. A. B. Ribeyrolles.—p. 570.
Research on Chronaxia. V. Tedeschi.—p. 578.
Lumbar Puncture in Neurosyphilis. J. B. Arizabalo.—p. 583.

The Spinal Fluid in Neurosyphilis.—The findings are tabulated with seven parallel tests of the cerebrospinal fluid in 130 cases of neurosyphilis and other affections of the central nervous system. They confirm the reliability of the Nonne phase I and the Pandy test. The Emanuel reaction is constantly positive in neurosyphilis.

Syphilis of the Mamma.—Castex and Bouzat remark that a gumma in the mamma usually develops more rapidly than an adenoma. In one case, however, an adenoma grew in five days to the size of an egg. Ulceration occurs earlier with a gumma than in malignant disease, but the axillary glands are not involved so early. In a case described, there was no secretion from the fistula opening from the small tumor in the left breast, but there was bilateral hemorrhagic effusion in the pleura. Syphilis was known in the antecedents of the woman, aged 43, and under specific treatment the tumor subsided to a very small lump. In a second case the tumor had grown rapidly in seven days, but began to retrogress at the first mercurial treatment, and was soon reduced to a fifth of its former size. In both cases the tumors were adherent to the skin but not to the lower tissues. The axillary glands were enlarged in the second but not in the first case.

Diagnostic Biopsy.—Mazza and Balado review the technic for obtaining scraps of tissue for microscopy, and the interpretation of the findings.

The Hemoclastic Crisis in Diagnosis of Insufficiency of the Liver.—Ribeyrolles' experience has confirmed Widal's statements as to the reliability of the leukopenia which follows drinking 200 gm. of milk while fasting, as indication that the liver function is below par.

Dec. 20, 1922, **9**, No. 20

*Physiopathology of Pneumoperitoneum. P. Alessandrini.—p. 589.
Efficacy of Arsenical Treatment by the Mouth in Intestinal Flagellosis. S. Mazza and E. V. Merlo.—p. 591.
*Infantilism of Renal Origin. M. Acuña and J. P. Garrahan.—p. 594.
Recurring Inguinal Hernia. M. Balado.—p. 604.
Pupil Membrane Simulating Aplasia of Iris. E. Adrogué.—p. 610.
Practical Psychometer. A. Mo and J. L. Alberti.—p. 612.
Operative Correction of Ankylosis of Knee. A. Ceballos.—p. 616.

Pneumoperitoneum.—Alessandrini has been studying the physiopathology of artificial pneumoperitoneum in 200 cases. It is a harmless procedure which throws light on the physiology of the abdomen.

Infantilism of Renal Origin.—Pure uremic nephritis was accompanied by stunting of growth. On suspicion of inherited syphilis, mercurial treatment was given but it aggravated conditions. The boy died at the age of 16. In a second case the boy seemed about 6 years old although really 9. Some improvement was realized under heliotherapy and dieting, but the urea in the blood kept high.

Revista de la Asoc. Médica Argentina, Buenos Aires

October, 1922, **35**, No. 216

*Periarthritis of Tuberculous Origin. G. Peco.—p. 587.
*Typhoid and Syphilis. M. Angel Marini.—p. 596.
*Intussusception in Infants. M. Ruiz Moreno.—p. 603.
*Thrombosis from Physical Effort. O. Ivanissevich.—p. 627.
Foreign Bodies in Digestive Tract. Carlos I. Allende.—p. 633.
Ophthalmoscopy Under Light Free from Red Rays. R. Gil.—p. 637.
*Research on Snake Venoms. B. A. Houssay and J. Negrete.—p. 649.
Idem. Houssay and S. Pave.—p. 680. Idem. Houssay et al.—p. 699.
*Toad Poison. V. Novaro.—p. 715.
*Nature of Bacteriophagy. C. E. Pico.—p. 734.

Tuberculin Treatment of Periarthritis.—The young woman's fingers were all swollen at the second joint and tender. Then the knees and ankles developed similar periarthritis. Signs of inherited syphilis suggested specific treatment, but no benefit followed a systematic course of neo-arsphenamin. By exclusion, tuberculosis was diagnosed, and under tuberculin treatment for four months the hands returned to normal aspect and approximately normal function.

Typhoid with Syphilis.—Marini's case teaches that old latent syphilis may flare up during typhoid fever, and may prolong and render atypical the typhoid. The syphilis was probably inherited in his case. On the forty-fifth day of the typhoid a papulous eruption developed. Under mercurial treatment recovery was prompt; the typhoid bacilli soon disappeared from the blood.

Intussusception in Infants.—Fourteen of Ruiz' sixteen cases were in breast fed infants. There was no blood in the stool in four. The five infants who did not receive operative treatment until after an interval of two or three days, all died.

Thrombosis from Physical Effort.—Ivanissevich adds two to the twenty-one cases on record in which edema of the entire arm, from thrombosis in the axillary vessels, developed after straining the arm in moving furniture, or other unusual and extreme effort.

Hemolytic Action of Venoms.—Houssay and Negrete's extensive research with twenty different kinds of South American snakes confirms the specificity of the antihemolytic action of the antivenoms.

Toad Poison.—Novaro relates an Argentina tradition that herpes zoster can be cured by binding a toad on the affected area. In two cases in which this was done, there was rapid ulceration and one patient, a robust young man, died in thirty-three hours. In the other case, ulceration persisted for nearly two months. Secretion from the parotid glands of toads (*Bufo marinus*) proved very toxic for pigeons, rabbits and other laboratory animals.

Bacteriophagy.—Pico presents further evidence to sustain his contention that bacteriophagy is merely an activation of the normal autolysis of bacteria.

Archiv für Gynäkologie, Berlin

Nov. 21, 1922, **116**, No. 2

*Lipoids in Ovaries. F. v. Mikulicz-Radecki.—p. 203.
Pathogenesis of Menorrhagia and Metrorrhagia. A. Seitz.—p. 252.
*Blood Changes Under Roentgen-Ray Treatment. K. Heim.—p. 291.
*Protein Therapy and Coagulation. R. Salomon and E. Vey.—p. 317.
Adenomyomas and Adenomyometritis. S. Westmann.—p. 333.
*Operability of Metastatic Ovarian Tumors. E. E. Pribram.—p. 343.
*Tetany in the Pregnant. W. Nidereche.—p. 360.
*Sedimentation of the Blood. A. Mahnert and K. Horneck.—p. 383.
*Laryngeal Tuberculosis and Pregnancy. P. Schumacher.—p. 391.
*Treatment of Eclampsia. Stroganoff.—p. 406.
*Vaginal Operation for Genital Prolapse. B. Dittrich.—p. 412.
Pathology of Tubal Pregnancy. E. Kratzeisen.—p. 421.

Lipoids in Human Ovaries.—The findings are analyzed and interpreted from 120 cases. The subjects ranged in age from a three months' fetus to the menopause. They confirm the corpus luteum as a gland with an internal secretion.

Changes in Blood from Roentgen Exposures.—Heim recorded the differential blood count the day before and the day after deep roentgen-ray treatment, and again at weekly intervals. The effect of the irradiation on the different elements of the blood was pronounced, and proportional to the intensity of the application of the rays. His research emphasizes the necessity for waiting for the blood to recover its balance before repeating the exposure. He consequently advises a wait of six weeks after a radical operation before beginning prophylactic irradiation. Exposures with large doses modify the leukocytes so materially that eight weeks at least must elapse before the series is resumed.

Influence of Parenteral Protein Therapy on Coagulation of the Blood.—In the research reported, various proteins and chemicals checked coagulation but had the opposite effect when diluted to one tenth. By intravenous or intramuscular injection, a pronounced change in the coagulation of the blood was evident. This may have a practical application as a preliminary to operations, by enhancing the preparedness of the blood for coagulation.

Operability of Ovarian Tumors.—Pribram reiterates the importance of seeking for a primary tumor elsewhere in all cases of cancer in the ovary. In two of the three cases described, the primary malignant disease was in the gallbladder. His favorable experience suggests that metastasis in the ovaries does not necessarily preclude the successful removal of the primary focus in the alimentary tract or gallbladder. The metastasis in the ovaries was probably from implantation in two of his cases. If lymphatics are involved, this modifies the outlook.

Tetany in the Pregnant.—Niderehe states that in the 70 cases of tetania gravidarum which he has found on record, the infants had fatal convulsions in the first weeks in 12 cases; abortion occurred in 3; the fetus was macerated in 4, and there was spontaneous or induced premature delivery in 4 and in 2, respectively. In a case personally observed, the tetany developed for the first time during the fifth pregnancy and returned at the sixth and seventh pregnancies, growing progressively more intense. The infant at the last delivery presented a combination of congenital tetany and a disturbance in bone growth which might be called congenital rachitis. The parathyroid glands and the thymus seemed to be constitutionally inferior.

Sedimentation of the Blood Corpuscles.—Mahnert and Horneck discuss the speed of sedimentation of the red corpuscles in puerperal septic processes under various treatments.

Pregnancy and Tuberculosis.—Schumacher relates that the laryngeal tuberculosis became decidedly aggravated about the fourth month of the pregnancy in his ten patients. All died soon after delivery or interruption of the pregnancy except one who survived for two years in fair condition after abdominal supravaginal amputation of the pregnant uterus at the sixth month. This operation not only relieves at the time but wards off further pregnancies. One or both ovaries are left, and the operation is done under intraspinal anesthesia. Of the seventeen pregnant women with pulmonary tuberculosis in the first or second stages treated by amputation of the uterus, 83.3 per cent. are still living in good condition from one to nine years later. He pleads for this operation in every case of laryngeal tuberculosis in the early months of a pregnancy. If approaching term, no operation offers any hope of success. With latent tuberculosis, he urges that the women should be reexamined every two weeks all through the pregnancy, so that the pregnancy can be terminated at the first signs of the flaring up of the process.

Treatment of Eclampsia.—Stroganoff here brings down to date his experience with the "prophylactic" method of treating eclampsia, which he has been applying for twenty-four years—2,208 cases in all. The mortality of the mothers under it was 9.8 per cent. and the mortality of the children was 12.9 per cent.—less than with other methods. He advises supplementary venesection in the severer cases, and states that in the last seven years he has given larger amounts of the sedative during the first two or three hours. There have been no deaths during these seven years except of patients moribund when first seen.

Vaginal Operation for Genital Prolapse.—Dittrich relates that three died of the 340 women on whom he has operated in this way. The deaths were all due to embolism.

Monatsschrift für Kinderheilkunde, Leipzig

November, 1922, **24**, No. 2

*Regeneration of Blood in Infancy. H. Opitz.—p. 113.

Regeneration of Blood in Infancy.—Opitz tried comparatively large infusions of blood in different anemic conditions in infants. The amounts to be infused were computed to bring the number of corpuscles in the child to normal. They were repeated after from four to ten days, as often as necessary. The results were very good except in two children with lymphosarcoma and myeloid chloroma. He believes that the injected corpuscles are not destroyed, because the signs of regeneration (erythroblasts, basophilic stippling, etc.) disappear from the blood. It is probable that the injected blood takes up part of the work, and gives the bone marrow time to rest and recover. Mixed diet and a moderate reduction of milk may hasten the recovery of the patients.

Münchener medizinische Wochenschrift, Munich

Dec. 15, 1922, **69**, No. 50

*Blood Pressure During Sleep. G. Katsch and H. Pansdorf.—p. 1715.
*Constitution in Obstetrics and Gynecology. A. Mayer.—p. 1718.
Movement of Leukocytes and *ph*. S. Gräff.—p. 1721.
*Circulation of Cerebrospinal Fluid. H. Strecker.—p. 1726.
*Sedimentation of Corpuscles. A. Horvat.—p. 1729.
Technic of Cultivation of Anaerobes. Kämmerer and Speth.—p. 1730.
*Heart and Breathing During Hypnosis. P. Astruck.—p. 1730.
PreHomeric Necropsies? E. Fuld.—p. 1731.
Examination of Infant Nurses in Bavaria. J. Meier.—p. 1731.
Vaccination Against Typhoid.—p. 1732.
Accidents in Appendectomy. A. Krecke.—p. 1733.

Blood Pressure During Sleep.—Katsch and Pansdorf were able to study the blood pressure of patients during sleep. The main point was to lead the rubber tubes into another room, to increase the pressure of the band slowly and read the pressure quickly. The systolic pressure is normally lower, but the diastolic does not change, except for a slight increase during very deep sleep. Thus the amplitude of the pulse is decreased from both ends. Some patients with hypertension presented marked decrease in blood pressure, and "sleeping cures" might be advisable for them. Other hypertonics (two cases of uremia) had no decrease in the pressure.

Constitution in Obstetrics and Gynecology.—Mayer reviews constitutional signs in gynecology. The movable retroflexion is a very frequent occasion for useless and superfluous operations. The endocrine disturbances are very important, and psychoneuroses are a much more frequent cause of supposed gynecologic disturbances than is realized.

Circulation of Cerebrospinal Fluid.—Strecker's experiments show that drugs introduced into the lumbar sac in man reach the brain after a certain time, and suggest that there is a circulation of the cerebrospinal fluid.

Sedimentation of Corpuscles.—Horvat's experiments show the importance of the use of equal tubes and equal amounts of blood for comparison.

Psychic Influence on Heart and Breathing During Hypnosis.—Astruck was able in the hypnosis to influence the action of heart and breathing very strongly. Several times he observed a bigeminal pulse during his experiments.

Wiener klinische Wochenschrift, Vienna

Dec. 14, 1922, **35**, No. 50

*Thyroid Problems. B. Breitner.—p. 969.
Sedimentation of Corpuscles. H. Poindecker and K. Siess.—p. 971. Conc'n No. 51.
*Lymphatic Reaction. H. Baar.—p. 973.
*Epidural Injections in Sciatica. F. Högler.—p. 974.
*Preparation of Colloidal Gold Solution. E. Friedländer.—p. 975.
Intensive Roentgen-Ray Treatment. G. Holzknecht.—p. 975.
French Views on Icterus. F. Stohr.—p. 976. Conc'n.

Thyroid Problems.—Breitner gives four types of diffuse affection of the thyroid: hypotrophic-hyporrhoic, in which production and evacuation of secretion are diminished; eutrophic-hyporrhoic, with normal production and insufficient elimination; eutrophic-hyperrhoic with normal secretion and increased elimination, and hypertrophic-hyperrhoic, where both are increased.

Lymphatic Reaction.—Baar describes a case of tonsillitis in a 5 year old boy with leukocytosis of 18,000 and only 15 per cent. of neutrophils. On recovery, there were 42⅓ per cent. neutrophils. A subsequent injection of milk produced a neutrophil leukocytosis (75.5 per cent.). Baar assumes not only an abnormal predisposition, but also some chemotactic action of the germs as responsible for the strong lymphocytosis.

Epidural Injection of Antipyrin in Sciatica.—Högler reports very good results from epidural injections of 10-20 c.c. of an aqueous solution of from 1 to 4 gm. antipyrin. The injection should not be repeated before two days. When the pains are limited to the extremity, a perineural injection is sufficient.

Preparation of Colloidal Gold Solution.—Friedländer found that the reduction of gold chlorid is inhibited, if the potassium carbonate contains bicarbonate. Cautious heating restores the needed purity.

Acta Chirurgica Scandinavica, Stockholm

Dec. 22, 1922, **55**, No. 4

*Perforation of Gastric and Duodenal Ulcers. E. R. Schmidt.—p. 313.
*Experimental Cancer Research. J. Fibiger.—p. 343.
*Xanthosarcomas in Tendon Sheaths. A. Krogius.—p. 363.
Hematoma in Rectus Muscle in Typhoid. F. Rost.—p. 385.
*The Steinach Operation. K. Sand.—p. 387.
*Arterial Embolectomy. E. Michaëlsson.—p. 427.

Perforation of Gastric and Duodenal Ulcers.—In 5 of the 44 cases described, there had been no history of preceding stomach or duodenal disturbance. All 44 patients were

treated by excision and suture of the perforation. The ulcer was excised longitudinally and the gap sutured transversally. A Witzel fistula allowed feeding from the start, and served as a safety valve. Smooth recovery followed thorough irrigation of the abdomen with normal salt solution at 40 C. Of the 22 reexamined later, only 2 have had a return of the ulcer, but patients should always be warned of the possibility of recurrence of both ulcer and perforation, the necessity of an ulcer diet, and the wisdom of remaining under medical control for some time.

Experimental Cancer.—Fibiger prepared this French article as an address for the postponed congress on comparative pathology. His data indicate that predisposition to cancer is restricted to certain races and species, and probably also to certain organs. Experimental cancers have opened a vast new field for research in the problem of immunization. He remarks in conclusion that animals immunized against ingrafted cancer are as liable to develop tar cancer as the nonimmunized.

Xanthosarcomas of Tendon Sheaths.—In Krogius' four cases the growth was on the leg or hand, and was safely removed. The patients were adults. In a girl, aged 11, there were several tuberous xanthomas and the incommoding ones were removed though some recurred.

The Steinach Operation.—Sand's article was reviewed when it appeared in a Danish journal. It is in English here, and summarizes eighteen cases of epididymectomy by Steinach's method.

Arterial Embolectomy. — One of Michaëlsson's three patients survived the embolectomy. He recommends lifting up the vessel with a rubber tube instead of with a metal instrument.

Acta Pædiatrica, Upsala

Dec. 16, 1922, **2**, No. 2

*Comparison Between Medicinal-Dietetic Treatment and Light Treatment in Rachitis. I. Jundell.—p. 113.
*Butter-Flour Pap. H. Ernberg.—p. 149.
*Chorea. R. Nordgren.—p. 159.
*Genuine Contracted Kidney in Children. A. Wallgren.—p. 169.
*Treatment of Diabetes in Children. N. Johannsen.—p. 180.

Comparison Between Medicinal-Dietetic Treatment and Light Treatment in Rachitis.—Jundell reports twenty-one cases of rachitis treated partly by phosphorized cod liver oil and phosphate of calcium, partly by quartz lamp and partly by both methods. He measured the results chiefly by the softening of the bones of the skull. The first treatment, together with a reduced diet, is advisable in overfed children, or when systematic treatment by light is not available. The light treatment is indicated in undernourished and sick (tuberculous) children.

Butter Flour Pap.—Ernberg had good results in 375 cases and confirms the indications and contraindications of the browned butter-flour mixture in infant feeding.

Chorea.—Nordgren observed increased frequency of chorea in certain periods which occur at the same time or follow closely an increased frequency of rheumatism.

Genuine Contracted Kidney in Children.—Wallgren reports a rare case of genuine contracted kidney in an 8½ year old girl. No edema was ever present. The child died with symptoms of uremia (azotemic). Small parts of the kidneys were hypertrophic, otherwise the picture resembled the contracted kidneys of adults.

Treatment of Diabetes Mellitus in Children.—Johannsen reports favorably on Joslin's method in the treatment of seven diabetic children.

Hygiea, Stockholm

Dec. 16, 1922, **84**, No. 23

*The Cerebellum. S. Ingvar.—p. 977.

The Cerebellum.—Ingvar presents this study of the cerebellum from the standpoints of anatomy, physiology and the clinic. He regards the cerebellum as a central ganglion for a specific sense, which informs us of the relations between our body and the laws of gravity and inertia. As these laws affect all alike, we can understand why the cerebellum, in all vertebrates, presents the same histologic picture.

Svenska Läkaresällskapets Handlingar, Stockholm

Dec. 30, 1922, **48**, No. 4

*Surgical Treatment of Gastric and Duodenal Ulcer. E. Hedlund.—p. 209. Conc'n.
*Syphilis as Factor in Thyroid and Pituitary Disease. F. Lennmalm.—p. 257.
Opacity of Cornea on Compression of Eye. J. W. Nordenson.—p. 279.

Surgical Treatment of Gastric and Duodenal Ulcer.—Hedlund gives full summaries of 455 cases in which he has operated, with the history to date. Complete recovery was prompt and more certain after extensive resection of the pylorus than after any other operation. He is personally acquainted with most of the patients. There has been no evidence that removal of such a large part of the stomach has had any deleterious consequences. Local anesthesia alone was used in some of the cases, but even this does not guarantee against postoperative pneumonia.

Syphilis as Factor in Thyroid and Pituitary Disease.—Lennmalm reports five cases of myxedema in syphilitic adults. The myxedema and recurrences subsided under thyroid treatment. He cites a number of similar cases from the records. In another group of patients, syphilitic thyroiditis developed in an old goiter. The symptoms were those of exophthalmic goiter; they materially improved in a personal case under mercurial and roentgen-ray treatment. Acromegaly in syphilitics may retrogress under specific treatment. His personal cases of dystrophia adiposogenitalis and a large number from the literature indicate that syphilis is a comparatively frequent factor in this condition. Improvement under specific treatment is common, as also in diabetes insipidus.

Ugeskrift for Læger, Copenhagen

Jan. 4, 1923, **85**, No. 1

*Chronic Dyspepsia in Young Infants. C. E. Bloch.—p. 1.
*Professional Roentgen Anemia. K. Faber.—p. 8.
*New Law on Marriage and Divorce.—p. 14.

Chronic Dyspepsia in Young Infants.—Bloch's experience has convinced him that a condition of chronic dyspepsia and atrophy in young infants is due to simple insufficiency of the digestive glands. This substandard state of the glands may be congenital, or be the result of overtaxing the digestive organs.

Fatal Acute Aplastic Pernicious Anemia in Roentgenologist.—Faber relates the particulars of the fatal illness of Dr. Nordentoft, who for twelve years had been intensively engaged in roentgenotherapy. Faber compares three similar cases since 1913, and three English cases of similar injury from the use of radium. He adds that means for better protection of physicians and attendants are an urgent necessity.

Medical Features of New Danish Law on Marriage.—Some of the medical aspects of this law were mentioned in the News department recently, page 335.

Jan. 11, 1923, **85**, No. 2

*Insulin in Treatment of Diabetes. A. Krogh.—p. 21.
Autoserotherapy of Tuberculous Pleural Effusion. V. Petersen.—p. 25.

Insulin in Treatment of Diabetes.—Krogh relates the history of this new treatment of diabetes, of which he made a special study while in this country. Probably it will be long before insulin can be imported into Denmark. He discussed with the Toronto professors the possibility of Danish collaboration in further research, especially in the use of fish instead of beef pancreas. In collaboration with Drs. Hagedorn and Johansen the work is now well under way at Copenhagen, with both fish and beef pancreas. Krogh arrived in Denmark, December 12, and by December 21 the first batch of insulin was completed and its potency confirmed on rabbits. The methods of standardization have already been improved. In order to hasten matters, he decided to place the manufacture in the hands of a private firm, instead of a state institution. The state later can take it over, if found desirable. The price is to be kept down as low as possible, as in America. [Krogh received the 1920 Nobel prize in medicine for his research on gaseous interchanges, capillary circulation, etc.]

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CYSTS OF THE EXTERNAL SEMILUNAR CARTILAGE OF THE KNEE

D. B. PHEMISTER, M.D.

CHICAGO

Ebner,[1] in 1904, was the first to describe cyst formation in the external semilunar cartilage. Since then there have been twelve other cases reported: one by Schmidt,[2] six by Riedel,[3] one by Eden,[4] and four by Ollerenshaw.[5] The two cases reported here are apparently the first to be reported from this country.

REPORT OF CASES

CASE 1.—*History.*—C. B., a man, aged 22, who entered the Presbyterian Hospital, Aug. 24, 1920, had had stiffness and pains in the right knee during the preceding three years. They were slight at first, and worse during the winter months. There had been times during the summer months when the knee was practically normal. There had been several acute exacerbations lasting for two or three weeks, during which time both limitation of motion and pain had been considerable. The pain had been most marked over the lateral surface of the joint, although there had been some discomfort throughout the entire joint. There was no history of disturbance in other joints, and no previous diseases except measles during childhood.

Physical Examination.—The patient was well developed, and examination gave negative findings aside from the region of the right knee. On inspection the knee appeared normal except for a small oval swelling over the lateral surface of the joint just above and in front of the head of the fibula. Motion was limited to 90 degrees, and produced considerable pain. On palpation, the swelling was fixed, tense, smooth and somewhat tender. There was no external evidence of fluid in the joint or of thickening of the synovia. A probable diagnosis was made of detached external semilunar cartilage, although there was no history of locking.

Operation and Result.—Through a lateral incision in the line of the joint, the external surface of the semilunar cartilage was uncovered; an oval cystic swelling sprang from it. The joint was then opened and the entire cartilage and cyst excised. There was no excess of fluid in the joint, and the synovial lining appeared normal. The postoperative course was uneventful. Function in the knee returned to normal within two months, and has remained so up to the present writing, two years and four months later.

Pathologic Examination.—The superior and inferior surfaces of the semilunar cartilage appeared normal, but there was an oval swelling 3 cm. long springing from the middle portion of its convex lateral surface (Fig. 1). On section, this proved to be a multilocular cyst filled with a thick, stringy, clear fluid (Fig. 2). There was an extensive yellowish white area of degeneration within the cartilage, extending inward to a depth of 1 cm. In the lateral portion of the degenerated area, at the edge of the cartilage and base of the external swelling, there were numerous small cysts filled with mucinous fluid. A section for microscopic examination was taken through the middle of the external swelling; it included a triangular wedge of the semilunar cartilage (Fig. 3). It disclosed degenerative changes in the center of the cartilage, becoming more extensive and marked as the lateral margin was approached. About the margins of this area the nuclei were breaking down, and the coarse fibers of the intercellular substance were losing their outlines. The deeper portions of the degenerated area consisted of an irregular meshwork of shreds, throughout which were numerous small cavities and mucinous substance which took a hematoxylin stain. The cystic swelling springing from the side of the cartilage had a coarse connective tissue covering. The walls of the multilocular cyst consisted of thin, dense layers of mature connective tissue. There were numerous thin septums partitioning it, especially about the periphery, where the loculi were very small. Two or three of the larger loculi were lined by a fairly thick layer of young, richly cellular connective tissue. This layer contained occasional leukocytes, and showed hemorrhagic infiltration and mucoid degeneration along the surface. There was practically no leukocytic infiltration or vascular engorgement to be seen in any other portion of the section. The blood vessels about the surface of the external cyst were mostly normal, a few of the smaller arteries showing thickening and hyaline degeneration of their walls.

The changes were entirely degenerative in nature, there being none of the other evidences of inflammation. No lining of an epithelial or endothelial nature could be detected in any of the cysts, whether located in the older peripheral or more recent intercartilaginous portions of the diseased area.

CASE 2.—*History.*—M. J., a woman, aged 18, who entered the Presbyterian Hospital, Oct. 11, 1922, during the last two months had had slight pain in the lateral portion of the right knee. It had been most marked when she arose to walk after sitting for some time. From the onset, she had noticed a slight swelling over the lateral aspect of the knee. She had had the usual diseases of childhood, and tonsillitis. Tonsillectomy had been performed several years before I saw her.

Physical Examination.—The patient was moderately well developed. Regional examination was negative aside from the right knee. Inspection of the knee revealed a very slight swelling just above and in front of the head of the fibula. There was full motion in the joint, but slight pain was experienced on complete flexion. On palpation, the lateral nodule was tense and slightly tender. It lay in the plane of the knee joint.

Profiting by experience with the previous case, cyst of the cartilage was suspected, and an aspirating needle was inserted. A thick, clear, mucinous material was removed which confirmed the diagnosis.

Operation and Result.—Through a lateral incision in the plane of the joint, the cartilage and attached cyst were excised. The joint was otherwise normal. The postoperative course was uneventful, and there was complete return of function six weeks after operation.

Pathologic Examination.—Gross: The superior and inferior surfaces of the semilunar cartilage were smooth and normal

1. Ebner, A.: München. med. Wchnschr. **51**: 1737, 1904.
2. Schmidt, Erhard: München. med. Wchnschr. **53**: 1415, 1906.
3. Riedel: Deutsch. Ztschr. f. Chir. **132**: 167, 1914.
4. Eden: Naturwissenschaftliche medizinische Gesellschaft zu Jena, May 18, 1911.
5. Ollerenshaw, Robert: Brit. J. Surg. **8**: 409 (April) 1921.

in contour, but the color of the cartilage was considerably altered. The inner two fifths bordering on the concave margin presented a bluish, transparent, normal appearance, but the remaining lateral portion was opaque and yellowish white. Springing from the middle portion of the side of the cartilage, there was an oblong cystic swelling which measured 2.5 cm. in length by 1 cm. in diameter. Its outer



Fig. 1 (Case 1).—Top view of cartilage and cyst.

surface was somewhat nodular. An incision was made through the middle portion of the cyst and cartilage. The cyst was multilocular, and filled with a stringy, clear, mucinous material. There was a wedge shaped, yellowish white area of degeneration extending into the cartilage for two fifths of its breadth. Small cysts were present in the

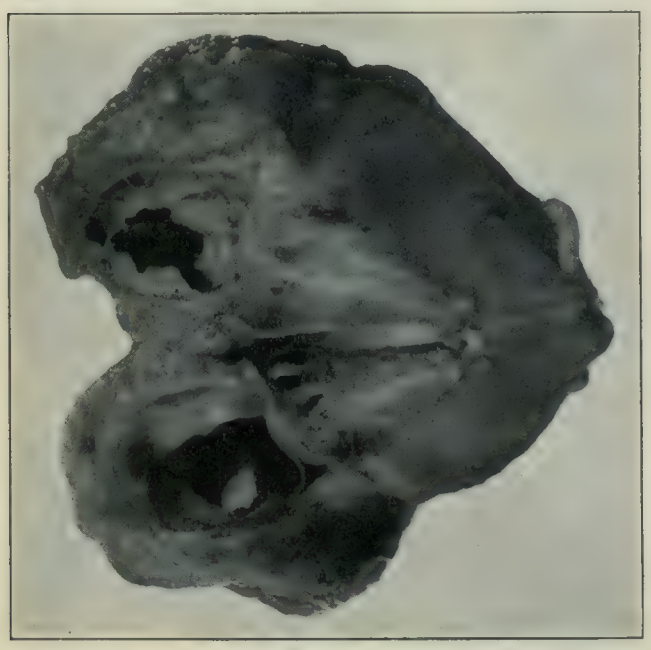


Fig. 2 (Case 1).—Incision through cyst and into cartilage, showing cavities and areas of degeneration.

outer portion of the degenerated area, the largest of which was the size of a grain of wheat. A second incision was made through the cartilage just anterior to the limits of the cyst, and here the yellowish white degenerative change was also present, but there were no macroscopic cysts.

Microscopic: A section cut through the middle portion of the cyst and cartilage disclosed that the outer wall of the cyst springing from the side of the cartilage was composed of fairly thick, mature fibrous tissue. The cyst was multilocular, some of the cavities being quite large and possessing in places a richly nucleated connective tissue lining; but in most cases the lining of the cyst consisted of newly formed degenerating connective tissue, which in places was markedly hemorrhagic. Several of the smaller loculi about the periphery contained much blood. Some of the arteries, both large and small, were considerably thickened. There was no leukocytic or lymphocytic infiltration of the walls of the loculi. The necrosis of the newly formed connective tissue was marked by the presence of irregular, fragmented fibrilli and breaking down of nuclei, with a variable amount of extravasation of red blood corpuscles in the region. No endothelial or epithelial lining was seen in any portion of the loculi (Fig. 5).

The cartilage itself contained in its lateral portion a number of small cysts that were becoming confluent and were separated by thin plates of connective tissue in various stages



Fig. 3 (Case 1).—Microscopic section through cyst and cartilage.

of disintegration. The rest of the wedge shaped degenerated area consisted of a mucinous substance, coursed by irregular fibrillae and staining deep blue with hematoxylin. Cultures made from the fluid aspirated from the cyst remained sterile.

COMMENT

The pathologic findings in these cases are identical with those of colloidal cystic swellings which develop in various connective tissues, especially on the back of the wrist, and are commonly designated as ganglions. Most ganglions of the semilunar cartilage have occurred in young adults. The youngest patient was 16 years old, and the oldest was 55; the average age at the time of operation was 25 years. There were ten males and five females.

Trauma seems to have played a rôle in some cases, but it is of less importance than in ganglions of other locations, particularly those about the wrist. Schmidt's case followed four weeks after a blow on the knee, and

in all of Ollerenshaw's four cases there was a history of slight injury. In the remaining ten cases, there was no history of injury. As the lesion has never been observed in the internal semilunar cartilage, it has been thought that the greater weight bearing of the outer side of the joint, due to the slight inward angulation at the knee, predisposes the external semilunar cartilage to injury and secondary cystic degeneration. That traumatism is an important factor in the production of ganglions in general is shown by statistics collected by Ebner, which disclose that in the upper extremities 82.5 per cent. are in females and 17.5 per cent. in males, while in the lower extremities the proportion is reversed, 87.5 per cent. occurring in males and 12.5 per cent. in females. The lower extremities are much more likely to be the seat of traumatism in males than in females. It is not known whether traumatism, either single or repeated, is the sole cause of the subsequent cystic degeneration or whether there is an added element of low grade infection.

Cultures were made of the fluid aspirated in Case 2, but there was no bacterial growth. None of the other cases were examined bacteriologically.

The pathologic change is essentially a degenerative one and most of the phenomena of inflammation are absent, which speaks strongly against bacterial cause of the disease. From the microscopic findings, Ledderhose [6] assumed that ganglions arise from traumatism, which produces primarily an obliterating endarteritis, followed by degenerative changes in the surrounding connective tissue. Degenerative changes are present almost exclusively in the intracartilaginous diseased portion; but, in the walls of the multilocular cyst bulging from the side of the cartilage, proliferative changes are quite extensive. Fibroblasts form and break down

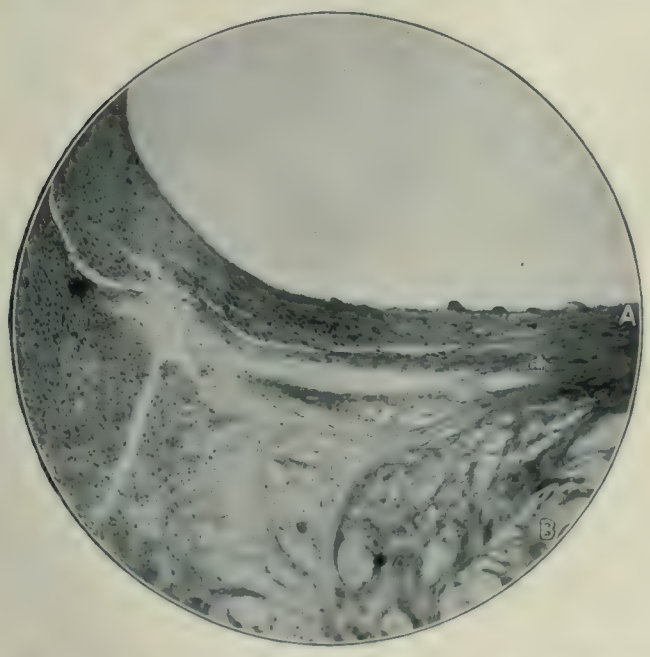


Fig. 4 (Case 1).—Junction of large cyst and cartilage, showing (*A*) connective tissue lining, and (*B*) degeneration in cartilage.

after passing through various stages of maturation. A point against the primary vascular origin of the cysts in my two cases is that blood vessels are not seen in the intracartilaginous degenerated portions, and most of the arteries in the walls of the external multilocular cysts show little obliterating change. It is most likely that the vascular alterations are simply a part of the degenerative process and not the initial change, as assumed by Ledderhose. Ollerenshaw reported an endothelial lining in some of the cavities and considered the lesion a true cyst, arising from misplaced endothelial

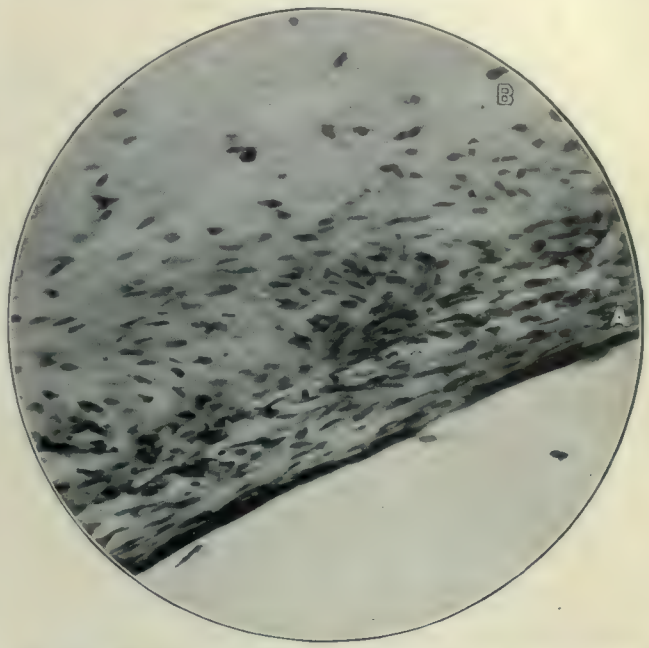


Fig. 5 (Case 2).—Section of partition between two cavities, showing (*A*) nuclei preserved along surface, and (*B*) degeneration in deeper portion.

elements that form the joint lining. His view is not substantiated by the findings in any of the other cases.

The cysts seem to attain their maximum size within a few weeks, after which they remain stationary and continue to produce pain and a variable amount of interference with motion in the joint until removed. There is no recorded instance of spontaneous disappearance either of the symptoms or of the swelling.

The treatment consists in operative removal of both cyst and external semilunar cartilage. In four instances, only the cyst was removed, and in two of these cases there was return of symptoms shortly afterward, necessitating a second operation. Excision of both cyst and cartilage has resulted in a complete cure in all cases in which it has been practiced.

6. Ledderhose: Arch. f. klin. Chir. **37**: 102, 1893.

Study Man but Not by Arbitrary Standards.—Since the time men became sufficiently numerous on the earth to make it necessary for them to take cognizance of one another, we have been setting up arbitrary standards by which to judge him; we have erected codes and laws and customs by which to measure and coerce him; we have poured out pity and "love" upon him and also hate and scorn; we have made him lovely toys, such as aeroplanes and phonographs and tried to make him happy, and when he was not happy we have tried to "save" him from something and for something—we have done all these things and more, and yet never have we seriously on any proper scale made an attempt to learn really what he is and to understand him for what he is, his possibilities for what they are, his own desires and interests be they what they may. We are approaching nearer to the time when arbitrary standards, built up without knowledge but as the result of empirical judgments, will be put aside for a time, and man will study man for what he is in the same way as he now studies other less important objects.—F. E. Williams, *Modern Hospital* **20**:141 (Feb.) 1923.

PROGRESSIVE OSTEOMYELITIS OF THE FRONTAL BONE

REPORT OF CASE *

H. B. LEMERE, M.D.
OMAHA

History.—A man, aged 32, consulted me, Jan. 19, 1922, because of protrusion of the right eye. There was no history or general sign of syphilis. The patient had had epileptic attacks early in life. He had always suffered from bad nasal catarrh, and two months previously had elsewhere had an operation intranasally for frontal sinus empyema. Three weeks before I saw him, the right eyelids swelled and the globe protruded, but after a discharge of pus from the nose, this subsided.

Examination.—The patient was well nourished and was above the medium height. He was drowsy and slow mentally. The temperature was 99.8. The right eye protruded, and the upper lid was markedly swollen. The conjunctiva was slightly infected. The cornea and media were clear. There was slight blurring of the margins of the optic nerve. The retinal veins were tortuous and swollen. Pupillary reaction to light was slightly retarded. Movements of the globe were somewhat restricted. The left eye was normal. Examination of the nose revealed creamy pus from the middle meatus on each side. There was a polyp on the right middle turbinate. There were pain and tenderness in the right temple and the external angle of the orbit. Roentgen-ray examination revealed all sinuses markedly cloudy except the left frontals and ethmoids.

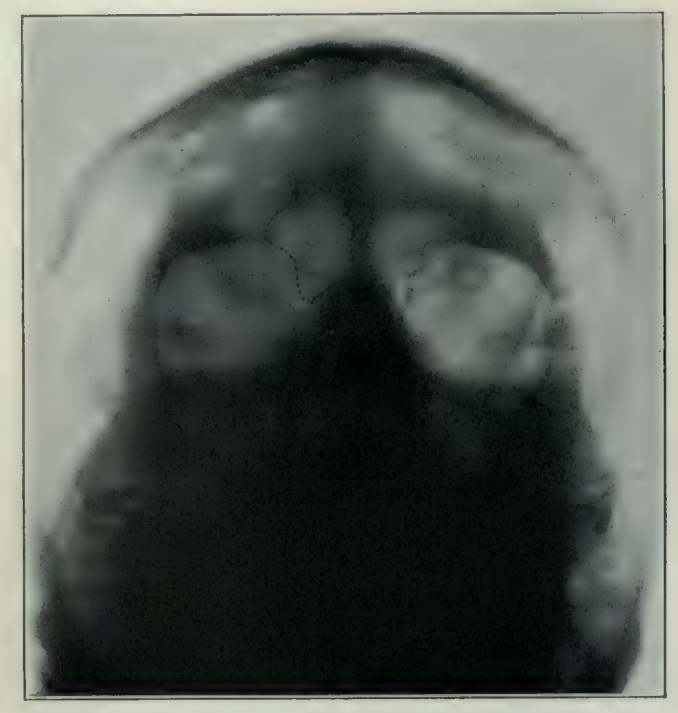


Fig. 1.—Appearance, January 19, previous to operation: right frontal sinus and both antrums cloudy; the whole bone surrounding the frontal sinus appears darker, perhaps indicating involvement of the frontal diploe at this time; the right frontal sinus appears larger than it was found to be when the actual boundary, shown by dotted line, was opened.

Treatment and Course.—January 20, the right frontal sinus was opened externally; it was full of pus, and the membrane was detached from the bone by the pyogenic process. There was no perforation in the bony wall. The floor and part of the anterior wall of the sinus were removed. The anterior ethmoids were removed and a good opening was obtained from the frontal sinus into the nose. The orbit was then explored for the cause of the protrusion, and a collection of pus was encountered about an inch back from the brow under the upper wall of the orbit and just external to the outer limit of the frontal sinus. The abscess had perforated the upper wall of the orbit, and was epidural. The bony opening was enlarged and connected with the opening made in removing the floor of the frontal sinus. Drainage tubes were placed in the orbit, and a large tube was placed to keep the frontal sinus open for observation. A free intranasal opening was made into the right antrum.

February 2, the patient's condition was not satisfactory. There was pus pouring from both nostrils under pulsation. There was a swelling over the right cheek and in the roof of the mouth, on the right side. The patient was dull mentally. The fundus showed no swelling of the disk, but a slight cloudiness of the vitreous. The protrusion of the globe had subsided. The pulse was 88; temperature, 98.6; respiration, 18. Under ether, both antrums were opened in the canine fossa, and through-and-through irrigation was begun. The right antrum was full of polyps.

February 22, the nose was fairly clear of pus. A swelling in the forehead was incised, and a large amount of pus escaped. The pulse was 84; temperature, 99.4; respiration, 24. In the next two months, thirteen abscesses over the frontal bone and in the lids and cheeks were incised, each time evacuating large quantities of pus. These incisions were all kept open by tubes until they ceased to discharge. The abscesses always connected with bone, which could be felt at the base of the abscess. In several of those opened early, the process of repair in the bone was found at necropsy to have proceeded to a point of almost complete recovery. The abscesses were of the nature of a cold abscess, and were unaccompanied by rise of temperature, pain or redness. An edema would make its appearance, and a few days later be followed by more circumscribed swellings with fluctuation. At no time was incision made into these swellings without evacuation of creamy, syrupy pus. There was never a loose sequestrum demonstrable. The entire frontal sinus was kept open wide to observation and treatment during the course of the disease. The frontal sinus septum and part of the inner table failed to form granulations at any time. The antrums were free from pus four weeks before the patient died. In spite of negative Wassermann tests, intensive antisyphilitic treatment was carried out with neo-arsphenamin, mercurial inunctions, and iodids, without apparently affecting the disease in the slightest degree. Autovaccines were prepared and used in increasing strengths without producing any marked change in the patient's condition. Calcium lactate was given, but did not affect the progress of the disease. His nourishment was kept up well until the last. The surgical treatment of the abscesses consisted in opening them and keeping them freely open with tubes and irrigating frequently with surgical solution of chlorinated soda (Dakin's solution), mercuric chlorid and the like. Local applications of silver nitrate, 10 per cent., and tincture of iodin were made.

April 16, an abscess had formed beyond the frontoparietal suture, which had formed the boundary up to this time beyond which the osteomyelitis had not progressed. An abscess also had formed over the right mastoid, though hearing was good and the middle ear normal. Both of these were incised, with release of a large amount of pus. It was felt, however, that this further invasion meant the breaking down of the patient's resistance. His appetite was still good; pulse, 90; temperature, 101; respiration, 24.

April 19, he became dizzy in the afternoon and refused food. He was more drowsy than usual. He had difficulty in speech. He complained of pain in the head. The pulse was 60; temperature, 97; respiration, 24.

April 20, both disks were pale, with no swelling and no tortuosity of the vessels. There was a conjugate deviation to the left. The patient complained of headache, but was very quiet. Kernig's sign was positive. The neck was sore and

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* Candidate's thesis, accepted by the American Laryngological, Rhinological and Otological Society, January, 1923.

stiff; there were slight muscular twitchings. The pulse was 60; temperature, 99.6; respiration, 30.

April 21, the patient's respirations ceased just before my arrival at the hospital. I found his pulse going, though he was apparently dead. Artificial respiration immediately improved his circulation, and his pulse became 84 and strong. Artificial respiration was kept up for one hour and ten minutes; but as the respiratory centers did not respond, it was felt that they were completely overwhelmed. The pulse was 140 and thready. Two minutes after artificial respiration was stopped, the patient died.

Roentgen-Ray Examinations.—The roentgenograms revealed the progress of the osteomyelitis. The plate taken when the patient first consulted me (Fig. 1) reveals some haziness at the lower inner portion of the anterior wall. There is also a very slight change from the normal appearance of the frontal diploe. It is possible that this is the first stage of the pronounced osteomyelitis shown in the later plate, and that this may be the commencement of the osteomyelitis. A roentgenogram, taken February 18, outlined distinctly the portion of the right frontal bone that came away at necropsy, and there is evidently an effort here to sequestrate this piece and throw it off. Figure 2, also taken at this date, discloses the osteomyelitis already well developed. Figure 3, taken March 27, shows the bone very much as we found it at necropsy. All the cranial and facial bones seem to be involved with the exception of the occipital.

These plates would seem to indicate the necessity of frequent roentgen-ray examinations during the progress of a frontal sinus case when the patient is not doing well.

Laboratory Findings (by Dr. A. S. Rubnitz).—The Wassermann examination of the blood, January 21, was positive, but was not considered conclusive, as the blood was taken soon after operation. January 26, it proved to be negative. There was no antisyphilitic treatment in the interval. The spinal fluid was examined, January 23. There was no increased pressure; the cell count was 60 per cubic millimeter, chiefly lymphocytes; globulin was moderately increased. The Wassermann reaction was negative. There were no antisyphilitic measures taken before or during the period of these tests.

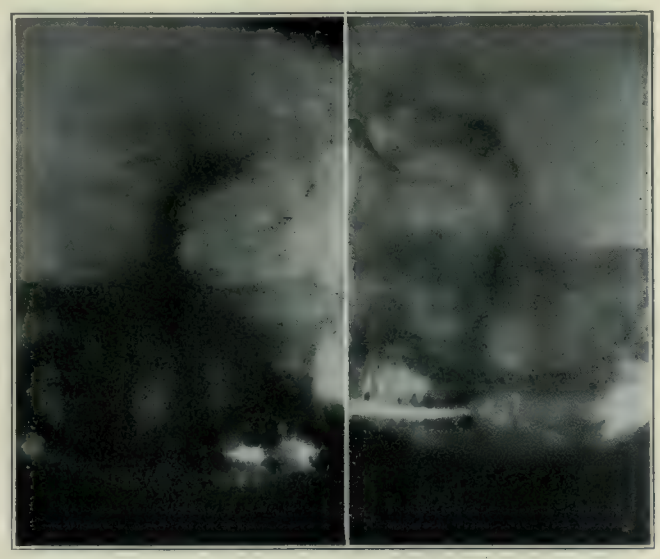


Fig. 2.—February 18, four weeks after: riddled appearance of frontal ethmoid and superior maxillary sinus on left side, and mottled appearance over frontal region of right side.

Cultures were taken at different times. January 23, pus from around the tube (frontal sinus) yielded a gram-positive bacillus (diphtheroid organism). February 19, a direct smear from the frontal sinus yielded a few small bacilli. When a culture was taken on blood agar, the agar was almost completely liquefied, and had a very foul odor. The organism recovered was a small, gram-negative bacillus, most likely of the *proteus* variety. There were also a few gram-positive diplococci that looked like pneumococci. February 22, a smear from a skin wound around the anterior fontanel yielded some staphylococci and a few short chain streptococci.

The urine was about normal throughout. The leukocyte count was only slightly increased: from 9,000 to 14,000. *Bacillus proteus*, the colon variety, had probably much to do with the breaking down of the bone and soft tissues around them, although not the prime causative agent of the infection. The staphylococci found later in the superficial scalp wounds were most likely the first agents in the infection.

Necropsy (by Dr. J. Jay Keegan).—The examination was limited to the head. Superficially there was an old draining sinus opening in the right frontal region, entering the frontal air cells. There was also a drainage wound in the right mastoid region. A scalp incision was made across the head from ear to ear. Pus was found in the line of incision beneath both temporal muscles. The scalp was reflected anteriorly and posteriorly, disclosing a greatly eroded frontal bone in the region of the frontal sinuses. Only a much perforated bony framework remained in the supra-orbital region, this portion being easily separated from the squamous part. There was a considerable quantity of foul-smelling pus in the right frontal sinus. Creamy pus formed a thin layer over almost the entire surface of the frontal bone, extending laterally over the squamous portion of the temporal bones and including a part of both parietal bones. The involved bone had an eroded, roughened surface from the active osteomyelitis. In both temples, pressure revealed the bone to be freely movable on the dura, owing to surrounding necrosis. The calvarium was removed by the usual incisions with saw, except that in the anterior region separation was made without sawing (Fig. 4). On removal of the skull cap, pus was seen in a thin layer between the dura and the involved temporal and parietal bones, extending on the right to the mastoid region and communicating with the drainage wound. The dura was intact in all regions. Both frontal sinuses were filled with pus. The dura was opened, and the subarachnoid space appeared normal over the frontal lobes except for moderate congestion of the cortical vessels. The frontal lobes were withdrawn, exposing the region of the optic chiasm, where there was considerable fibrinopurulent fluid in the cisternal space. Following the usual methods of removal, the brain was removed by incision of the optic nerves, oculomotor nerves and the tentorium. Along the petrous portion of the temporal bones there was a small pocket of pus just above the left seventh and eighth nerves beneath the tentorium. This pocket appeared to communicate with the foramen of entrance of the left fifth nerve root. Dissection in this region disclosed a questionably infected cavernous sinus on this side. The entire basal cisternal subarachnoid space contained fibrinopurulent exudate. The ethmoidal cells were fairly clear. The sphenoidal cells were filled with a thick pus. There was considerable necrosis of the roof of both orbits, but no infection in the orbital cavity. The posterior surface of the petrous portion of the right temporal bone showed surface necrosis not penetrating the dura.

The petrous portion of both temporal bones and the mastoid cells were opened, but did not appear to be deeply infected. Beyond the basal subarachnoid space there was no involvement of the brain proper.

The pathologic diagnoses were: osteomyelitis of the frontal bone, with contiguous involvement of the parietal and squamous portion of the temporal bones; frontal sinus infection; empyema of the sphenoidal cells; basilar meningitis, and subarachnoid abscess in the region of the left seventh and eighth nerves.

The primary cause of death was infection of the frontal sinuses. Contributory causes of death were osteomyelitis of the frontal bone, and basilar meningitis.

CASES ALREADY REPORTED

The first fully reported cases I have been able to find in the literature are those reported simultaneously before the section of Laryngology of the British Med-

ical Association in 1899, by Luc[1] of Paris and by Tilley.[2] Tilley also reported at that time two other cases that had come to his notice. McKenzie[3] gathered all the available literature and cases from that time to 1913, and compiled these statistics of forty-eight cases in a complete and comprehensive treatise. Since that time, several reports have appeared.

Porter's[4] patient was a woman, aged 46, in whom a frontal sinus operation was performed. Later, other sinuses were affected and operated on. Six months later, frontal osteomyelitis had developed and was operated on with extensive removal of bone. The patient recovered, and enjoyed good health for one year, when she died of pneumonia.

Mollinson's[5] patient was a boy, aged 15. During a frontal sinus operation, pus oozed from the bone, and there was extensive removal of the frontal bones. The patient recovered, but McKenzie[6] thought that sufficient time had not elapsed to pronounce the recovery final.

Patterson's[7] patient was a soldier who had osteomyelitis after an operation on the frontal sinus. Twelve operations were performed, resulting in recovery.

Tilley's[8] patient was a woman, aged 35, whose frontal sinus was operated on. Six weeks later an operation was performed for osteomyelitis; the whole left frontal bone, together with inflamed dura and brain tissue, was removed. Sequestrums appeared for several months, but finally the patient completely recovered.

McClay's[9] patient, a man, aged 30, had had intranasal operations on the antrums, ethmoids and frontonasal duct. Two months later, osteomyelitis set in. The whole anterior wall of the frontal sinus and a large portion of the outer table of the left frontal bone were removed. At later operations, the greater part of the left and part of the right frontal bones were removed. The last operation was performed six months after the first surgical treatment. The patient recovered. McClay states that this is the third case he has reported; one spontaneous and one postoperative case ended in recovery, and the other postoperative case did not.

Opdyke's[10] patient, a boy, aged 18, had the left frontal sinus curetted. Eleven days later, a trephining operation was performed, with aspiration of seropurulent fluid from the fourth ventricle. Ten days later, parts of the parietal, occipital and temporal bones were resected. Several weeks later, a double frontal sinus operation was performed. The patient recovered after several months during which twenty-one operations were performed.

Bryan's[11] patient, a boy, aged 15, had an operation on the frontal sinus, with localized osteomyelitis. The operation was followed by spreading osteomyelitis. Death occurred eleven months later from a subdural abscess after complete relief of the osteomyelitis following repeated operations.

Skillern's[12] patient had osteomyelitis of the frontal, superior maxillary, malar ethmoid and sphenoid which resulted in death without extending into the diploe of the frontal bone.

Lynah[13] reported a case of osteomyelitis complicating scarlet fever in a girl, aged 13. This was a fulminating acute case, all sinuses on the left side and osteomyelitis of the frontotemporal region occurring simultaneously. There was apparent recovery six months after the opening of the sinuses and removal of sequestrums and softened bone from the frontal, temporal and malar bones; but sinuses and pus pockets developed at intervals, and the case could not be considered as closed

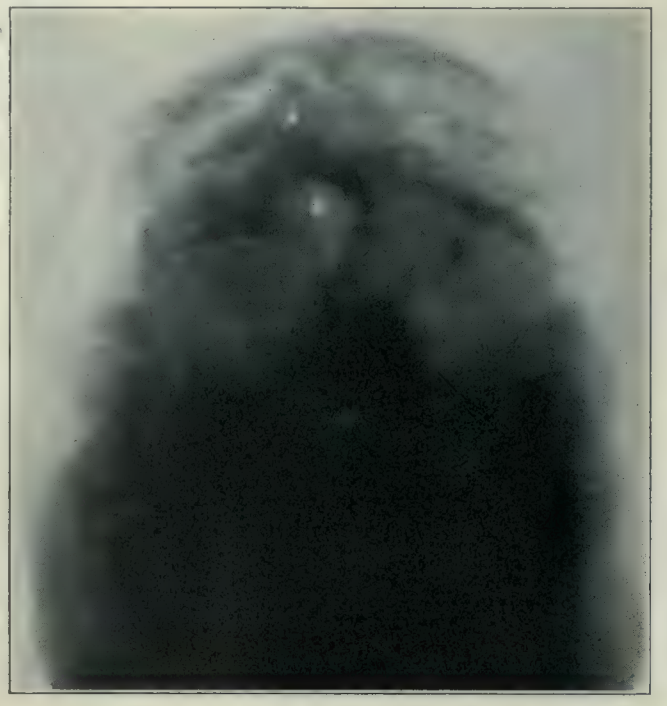


Fig. 3.—Appearance, March 27: honeycombed condition of bone; the shape of the part immediately above *A*, and containing part of the right frontal sinus which separated at necropsy, can be distinctly seen; *A*, sequestrum found almost detached at necropsy; *B*, opening made into frontal sinus; *C*, frontoparietal suture.

Wood[14] reported two cases: In a boy, aged 15, drainage of the frontal bone was necessary, and later parts of the frontal bone were removed; the patient died two months after the onset of the disease. A man, aged 24, had osteomyelitis after a frontal operation; abscesses were opened; diseased bone was removed. Trephining was performed for a brain complication. The patient died four months after the onset of the disease. Necropsy revealed brain abscess and hernia and diffuse pachymeningitis and leptomeningitis.[15]

1. Luc: Brit. M. J. **2**: 993 (Oct. 14) 1899.
2. Tilley, Herbert: Brit. M. J. **2**: 994 (Oct. 14) 1899.
3. McKenzie, Dan: Brit. J. Laryngol., January, February, March, 1913.
4. Porter, W. G.: Lancet **1**: 306 (Jan. 31) 1914.
5. Mollinson: Proc. Roy. Soc. Med. **10**: 106, 1916-1917, Sec. Laryng.
6. McKenzie, Dan: Lancet **1**: 861, 1914.
7. Patterson, Norman: Proc. Roy. Soc. Med. **10**: 106, 1916-1917, Sec. Laryng.
8. Tilley, Herbert: Brit. M. J. **2**: 7 (July 7) 1917.
9. McClay, Neil: Brit. J. Laryngol., June, 1917, p. 7; October, 1921, p. 458.
10. Opdyke, Ralph: M. Rec. **89**: 18 (Jan. 1) 1916.
11. Bryan, J. H.: Extradural and Subdural Abscess, Am. J. M. Sc. **160**: 687 (Nov.) 1920.
12. Skillern, R. H.: Ann. Otol., Rhinol. & Laryngol. **29**: 650 (Sept.) 1920.
13. Lynah, H. L.: Osteomyelitis of the Accessory Sinuses, Laryngoscope **27**: 176 (March) 1917.
14. Wood, G. B.: Tr. Am. Laryngol., Rhinol. & Otol. Soc., 1919, p. 122.
15. In the foreign literature, since McKenzie's list in 1913, articles have appeared by:
Mailis, Yu M.: Osteomyelitis of the Frontal Bone, Khir. Mosk. **35**: 592, 1914.
Wokenius, H.: Acute Osteomyelitis of the Frontal Bone with Empyema of the Anterior Accessory Cavities of the Nose, Ztschr. f. Augenh. **33**: 283, 1915.
Hofer, G.: Contribution to Pathology of Osteomyelitis of the Frontal Bone, Monatschr. f. Ohrenh. **51**: 639, 1917.
Arquellada, A. M.: My Experience of the Treatment of Osteomyelitis, Pediat. Espan. **8**: 399, 1919 (one case frontal of 167 reported).
Lund, R.: Case of Frontal Sinusitis with Suborbital Abscess Followed by Osteomyelitis of Frontal Bone, Hospitalstid. **64**: 111, 1921, Sect. Oto.-Laryngol.

COMMENT

McKenzie makes the classification of (1) localized osteomyelitis, which has no tendency to spread, and heals after the diseased focus is removed, and (2) diffuse or spreading osteomyelitis, which has a great tendency to progress in spite of all procedures. Diffuse osteomyelitis he further divides into spontaneous and postoperative, the spontaneous variety making its appearance from an infected sinus which has not been operated on, and the postoperative appearing in frontal sinus cases in which operation, especially external operation, has been performed. In twenty-one spontaneous cases gathered from the literature there were seven recoveries, while in twenty postoperative cases there were no recoveries. McKenzie also lays down the rule that the diseased bone should be freely and extensively removed.

In reading McKenzie's article I naturally applied his remarks to my case. He states that while the diploe is not of prime necessity in the production of the disease, this structure undoubtedly aids in spreading the disease. The first roentgenogram in my case reveals a cloudiness of the bone in the lower anterior wall of the sinus about the root of the nose, not so clear in the reproduction as in the original negative (localized osteomyelitis), but there is also a suspicion of disturbance in the structure of the frontal bone. The second roentgenogram disclosed marked changes both in the dense bone above and in the diploe. McKenzie thinks that progressive osteomyelitis does not often complicate empyema of the antrum because the bone in the antrum has a better vascular supply. In my case there was an early involvement of the bone in the floor of the antrum, with a pus accumulation under the hard palate. This invasion seemed to clear up until much later in the disease, when the patient's resistance became much reduced and it again asserted itself in abscesses of the cheek and zygoma. McKenzie is driven to the conclusion that the lowered resistance of the bony tissue to the infection from some unknown cause is the main factor in progressive osteomyelitis. My patient showed so little local reaction, such as redness, pain and enlarged lymphatics, and so little general reaction (pulse, temperature, delirium, anorexia) that the symptoms were those of a cold abscess. *Bacillus proteus*, which we found, probably assumed renewed virulence or power of lysis in the osseous structures without arousing general resistance.

McKenzie mentions entrance of the disease directly to the osseous walls of the sinuses or through the veins connecting the mucous membrane and the osseous structures, and many observers believe that severe curetting of the sinus walls starts the disease. The mucous membrane in the frontal sinus in my case was already loosened from the bony walls by the pyogenic process, and there was no instrumentation of the walls other than producing the openings necessary for drainage, which were accomplished by sharp instruments with the minimum of trauma. The necropsy finding of involvement of the posterior wall of the petrous portion, apparently jumping there, would indicate at least some extension by the veins. McKenzie's statement that the usual fatal ending of leptomeningitis comes by entrance of the pus to the base of the brain along the cranial nerves was borne out in the necropsy of my case, in which the left fifth nerve entrance seemed to be the portal of entry. The cases McKenzie quoted showed entrance by way of the optic nerve, cribriform plate, and by the seventh and eighth by way of the mastoid; but no observation was made of entrance by the fifth. That the etiologic factor was an inexplicable lack of resistance is shown in my case by the fact that the extensive purulent leptomeningitis produced no intracranial pressure and no pain, severe headache or delirium. Somnolence and death from toxins showed the yielding to the infection without any fight, and this, though the patient remained well nourished and strong almost to the last.

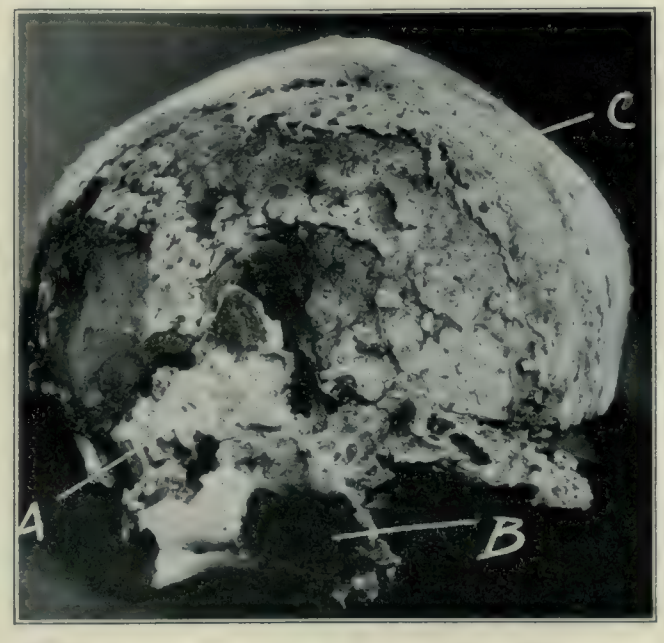


Fig. 4.—Calvarium: sequestrum in place. *A*, *B* and *C*, same as in Figure 3.

In none of the literature is the importance of the roentgen-ray observations on the osteomyelitis emphasized. In another case I should check the treatment and operative work by roentgenograms taken at least once a week, and all bone showing any involvement would be promptly removed.

CONCLUSION

Diffuse osteomyelitis of the frontal bone is still mysterious in its etiology, and the mortality with or without extensive bone removal is exceedingly high. Every case occurring should be fully reported with roentgen-ray pictures (not findings) and careful bacteriology, and where death results, careful necropsy findings. If this should be done generally we should soon have sufficient cases to lay down some further fundamentals than those so ably deduced by McKenzie.

Beriberi Control in the Philippines.—Beriberi was formerly one of the principal causes of death in the islands. For five years, ending, 1908, the average number of deaths a year in Manila was 487.6. During the next five years, it rose to 1,105.8. From 1914 to 1918, the period during which antiberiberi measures, such as the use of unpolished rice and a more varied diet in government institutions, were adopted, the incidence from beriberi dropped to 860; and since 1919, the average mortality from the disease has been further reduced to 605. An appropriation of 12,000 pesos was made in 1917 for the manufacture and distribution of tikitiki extract, and pamphlets on infantile beriberi and its prevention.

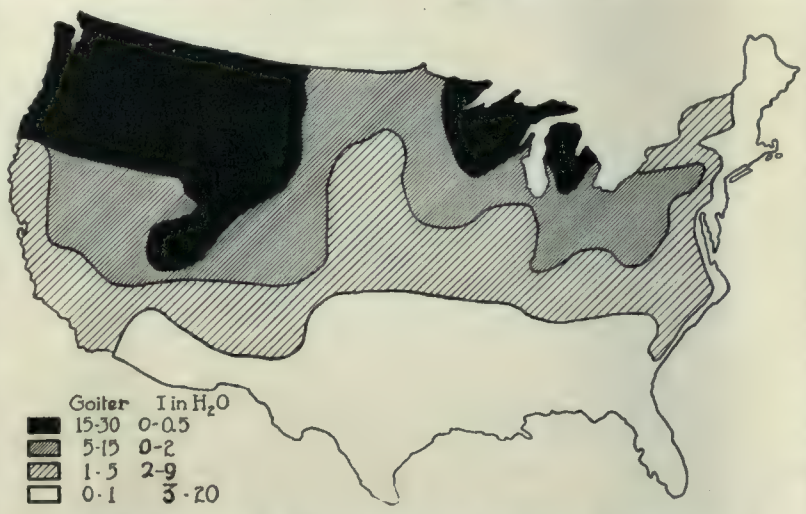
SIMPLE GOITER AS A RESULT OF IODIN DEFICIENCY

PRELIMINARY PAPER *

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WITH THE TECHNICAL ASSISTANCE OF
AGNES WILLIAMS, B.A.
MINNEAPOLIS

Chatin [1] advanced the hypothesis that simple goiter is correlated with a low iodin content of drinking water, but his opinion was not accepted. Heretofore the methods of iodin analysis have not been very well developed so as to determine small quantities in water. According to the director of the Geological Survey, iodin has been detected in waters containing 1,000 parts per million of chlorin and quantitatively in mineral waters containing 5,000 parts of chlorin per million. In Europe, certain determinations of the iodin content have been made; for instance, Macadam determined the iodin in 100 gallons of the Edinburgh water supply.

We have been using the method that I described before the Society of Biological Chemists in Toronto, Dec. 28, 1922, and our results so far have all fallen into line with the idea that there is an inverse ratio between the amount of iodin in surface waters or those of shallow wells or springs, and the distribution of goiter. The accompanying map shows the general findings. The goiter data were taken from photostat copies of the manuscript of "Defects Found in Drafted Men," War Department, 1920, and also from Table xxxiii of that volume. This represents the examination of about two and one-half million drafted men, and yet this number was too small for accurate statistical work in relation to simple goiter. The probable error was very high, and in interpreting these data a certain amount of smoothing of the curves was done in order to make the zones continuous. The probable error is high, owing not only to the small number of cases of goiter reported, but also to the fact that different examiners may have different standards. If we compare the data by the draft board with that by Kerr [2] at Camp Lewis, we notice perhaps the greatest possible difference. Kerr finds 390 enlarged thyroids to each thousand recruits from the state of Washington, and the draft board finds only forty cases of simple goiter [3] to each thousand men in the county in which the highest incidence of goiter was noted in Washington. As a matter of fact, the zones would probably not be continuous if the people remained in small localities and ate the food and drank the water from those lacalities.



Comparison of iodin in water supplies and distribution of goiter: iodin in parts per billion of representative rivers; goiter rate per thousand from Table xxxiii, Defects Found in Drafted Men, War Department, 1920, and manuscript; curves smoothed.

For instance, in olden times in Europe, particularly in the Alps, according to many observers, and in the Himalaya Mountains, according to McCarrison,[4] it was often possible to find two villages very close to each other in which the incidence of goiter is very different. In the United States, however, owing to migration of the population and transportation of food and drink there has been a smoothing out of the areas and obliteration of local differences. In fact, it is doubtful whether we are warranted in making four zones; perhaps three or even two are about all that are warranted. Two contiguous zones would necessarily shade into each other by migration. The goiter incidence in the different zones is quite distinct. In the first zone we find from 15 to 30 to each thousand men; in the second zone, from 5 to 15; third zone, from 1 to 5, and fourth zone, from 0 to 1.

The amount of iodin in drinking water from the few analyses so far completed shows in parts per billion in the first zone, from 0.01 to 0.1; second zone, from 0.015 to 1.2; third zone, from 0.06 to 9, and fourth zone, from 1.4 to 10. Of course, certain mineral waters are excluded from these analyses.

It is not intended to intimate that there is enough iodin in drinking water to prevent goiter. Even in case of the water of the lower Mississippi and certain well waters that contain around 10 parts per billion of iodin, 10 liters (quarts) of water would have to be drunk before 0.1 mg. of iodin was ingested. According to modern Swiss practice, 0.1 mg. of iodin a day is about the dose recommended for schoolchildren for the prevention of goiter, and it is certainly impossible for the schoolchild to drink 10 liters of water a day. Furthermore, in the second zone the incidence of goiter is reduced very much from the first zone, and it is enormously less than in the very goitrous regions of Switzerland; and yet in some regions the iodin in the water is less than 0.1 mg. in 100 liters.

We would then have to suppose that the amount of iodin in the daily consumption of a few liters, say 0.003 mg. or less, showed some protective action. It seems more probable that the iodin in water is merely an indication of the iodin in soils which come in contact with this water, and that the iodin in soils is concentrated by the plants growing in the soils, and in that way the population over a given area receives iodin through the food. Therefore, water which is taken

* From the Laboratory of Physiological Chemistry, University of Minnesota.

1. Chatin: Compt. rend. Acad. de sc., 1850.
2. Kerr, W. J.: Preliminary Survey of Thyroid Gland Among 2,182 Recruits at Camp Lewis, Washington, Arch. Int. Med. **24**: 347 (Sept.) 1919.
3. Too long to wear a military collar.
4. McCarrison, Robert: The Thyroid Gland in Health and Disease, New York, William Wood & Co., 1917.

from the very shallow wells or from the run-off of unpopulated areas would probably be the most typical. The amount of iodin in rivers is significant only in case the volume of the water is very large in proportion to the population along its banks, since it is very probable that all of the iodin given as drugs, besides all that taken in as food, finally finds its way into these rivers through sewage. The amount of iodin exported from Chile in 1904 was 500 metric tons. It is probable that a fair portion of this reached the United States. The amount of sewage contamination, however, could probably be measured by its chlorin content, and therefore any greatly contaminated waters could be excluded from the tables. This is evidenced by the fact that about 7,000,000 tons of salt are used in the United States each year.

As to the cause of this unequal distribution of iodin in natural waters and therefore possibly in the soil, there are at least three factors at work. In the first place, iodin is found in igneous rocks, and in the weathering of these rocks some iodin is liberated. Since the weathering of ingneous rocks is very slow, the iodin content of water in contact with them would be very small. This is probably the case in western Oregon, which is largely covered by basalt in such a manner that the surface water or the roots of plants have no access to any iodin except that derived from the igneous rocks. Most of the iodin in the world is in the sea, which contains about 60 billion metric tons of it. Its concentration in the sea has probably been determined with some accuracy, since recent investigators agree pretty well on this point. Winkler [5] found 0.038 mg. of iodin in a liter of sea water. Cameron [6] found about the same amount. I [7] was able to confirm Winkler's work in a rough manner, finding about 0.04 or 0.05 mg. of iodin in a liter of sea water. This is about 100 times as concentrated as in water from Zone 1.

Much of the United States at intervals from the Cambrian period to the Pliocene period has been submerged under the sea, and in that way has been soaked in sea water for ages, thus receiving a store of iodin; but, as the land emerged from the sea, this iodin was gradually leached out by the rains, except when buried 100 or more feet deep, as in salt deposits in Michigan, New York and Ohio. The region low in goiter, in the Southern states, was the only large region that was submerged beneath the sea in a late geological period (Pliocene), and the amount of chlorin in many of the waters, in the waters of Texas, for instance, indicates that the sea salts have not entirely leached out of the surface in this region. A salt lake covered Kansas and the adjacent territory during the Permian period.

The third factor in the iodin distribution is atmospheric iodin from sea spray and the burning of coal. The United States Geological Survey has carefully mapped the amount of sea water contaminating rain water, and finds that all of the chlorin in the rain water of New York and New England is due to sea spray. The quantity decreases rapidly as we go from the coast toward the Great Lakes, and it may be noticed from the accompanying map that the amount of goiter increases from the coast toward the Great Lakes. The iodin thus brought in amounts to 0.012 part per billion of rain water three miles from the coast, and decreases to about 0.0004 part per billion in the region of Lake Erie and Lake Ontario. This is added to the iodin derived from the soil, and may be significant. The effect of sea spray on the western coast is not shown by the draft board examinations in the prevalence of goiter. This is probably due to the obliteration of this beneficial effect by migration. The younger the person, the less time he has had to migrate; therefore we should expect more localized conditions to be reflected in infants and children. In fact, a map made by Dr. D. C. Hall, professor of hygiene, University of Washington, shows that the Puget Sound region is a region low in goiter among schoolchildren. As we recede from the sound or go down to the narrow portion, goiter increases. Narrow bodies of water have not much effect in throwing sea spray into the air, as is shown by the fact that whereas the widest portion of Long Island Sound throws considerable sea spray into the air, the narrow portion of it does not. It is very probable that the schoolchildren all along the western coast are comparatively free from goiter. Besides the sea spray, the spray of Great Salt Lake contains considerable iodin, as I was able to find 0.07 mg. of iodin per liter in it. This is evidenced on the accompanying map by an adjacent region of low goiter incidence, as contrasting with the high goiter incidence in eastern and southern Utah.

The only way to make certain of this relation between goiter and iodin is to make a large number of analyses of water from different parts of the country. Owing to the large size of the sample required, it is impossible for one investigator to procure them by his own efforts. It is therefore hoped that the interested parties will send in samples, in return for which analyses will be sent them.

The method for collecting the sample is as follows:

One-half teaspoonful of soda is placed in a tin dish pan. Several gallons of water are added, and are evaporated over a brisk fire. Measured quantities of water are added until the required amount for the zone has been added. The entire amount should be evaporated to less than a quart, and filtered into an evaporating dish and evaporated to dryness. The residue in the evaporating dish (but not that in the dishpan) is scraped out and sent to me. The smallest size sample required for Zone 1 is 25 gallons; Zone 2, 15 gallons; Zone 3, 10 gallons; Zone 4, 5 gallons. Larger samples give more reliable results.

5. Winkler: Ztschr. f. angewandte Chem. **26**: 205, 1916.
6. Cameron: Contribution to Canadian Biology, University of Toronto Press, 1922, p. 75.
7. McClendon, J. F.: Science **56**: 269, 1922.

Hospitals in Japan.—In many of the general hospitals outside Tokyo, male and female patients occupy the same ward. The lack of privacy is intensified by the presence of visitors and the dearth of screens. As a rule, the number of visitors is unlimited and they may stay all day. In other words, they may practically live with the patient. The Charity in Tokyo allows visitors but a half a day twice a week. The Leprosarium never admits them. The wards seem crowded, not only because of visitors, but also because of the number of personal belongings which each patient provides. The following is one of the thirty-three rules for patients in a prefectural hospital: "The things the patient may bring on admission to the hospital are as follows: toilet paper, night gown, towels, washbasin, teacups, charcoal, charcoal scuttle, fire shovel, fire tongs, floor cloth, cushion, bed pan (if the patient is unable to leave his bed) and sleeping mat and bedding of attendant." Most hospitals furnish bedding, but do not supply garments, except to charity patients.—H. J. Howard and W. G. Lennox, *Modern Hospital* **20**: 123 (Feb.) 1923.

IS THE ACTION OF BACILLUS ACIDOPHILUS A STRICTLY BACTERIOLOGIC PHENOMENON?*

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The relief from chronic constipation and diarrhea by the ingestion of milk fermented with *Bacillus acidophilus* is a phenomenon worthy of further study.[1] The beneficial effects obtained by such therapy might be due to a multiplicity of factors. It has been held that chief among these is the ingestion of an increased volume, and more particularly the addition of considerable water to the daily diet. As against this physical or mechanical interpretation, there is a chemical explanation, based on the presence of a considerable amount of lactic acid, together with the disintegration products of the organism *B. acidophilus*. Finally, there is the strictly bacteriologic interpretation, which holds the living *B. acidophilus* organisms responsible for all benefits. The experiments here described, which are still in progress, were devised in the hope of arriving at some definite conclusion regarding this phenomenon.

TABLE 1.—OCCURRENCE OF DEFECATIONS IN CONSTIPATED PATIENTS UNDER DIFFERENT TREATMENTS

	No Treatment		Sterile Milk		Pasteurized B. Acidophilus Milk		Regular B. Acidophilus Milk			After B. Acidophilus Treatment: Lactose		After B. Acidophilus Treatment: Nothing	
Patient	No. of Normal* Defecations	No. of Days	No. of Normal Defecations	No. of Days	No. of Normal Defecations	No. of Days	No. of Defecations First 7 Days	No. of Normal Defecations	No. of Days	No. of Normal Defecations	No. of Days	No. of Normal Defecations	No. of Days
1	2	14	3	7	2	5	5	51	62	..	..	19	23
2	12	19	2	7	1	6	6	16	18	..	..	46	59
3	1	34	0	7	..	..	4	67	99	11	12	20	55
4	8	31	3	7	..	..	4	41	62	20	28		
5	12	18	4	7	2	5	6	32	61	..	..	12	24
6	1	7	..	..	2	6	6	47	50	52	68		
7	4	28	..	..	0	12	7	17	22	56	60	3†	6
8	1	12	..	..	0	7	3	23	42	Continued: almost daily defecation			
9	1	14	..	..	0	7	2	16	42	Continued: almost daily defecation			
10	0	14	..	..	0	7	2	11	42	Continued			

* More than one per day counted as only one.

† Four months later.

EXPERIMENTAL DATA

Patients with a history of chronic constipation were given the carmin test, and daily defecations were recorded for some time prior to any treatment, in order to establish the patient's intestinal motility. The feces were examined microscopically, and the presence of gram-positive and gram-negative organisms was determined by a modified method previously described.[2] Some of the patients were then given, during the period of one week, daily doses of 1 liter of skim milk sterilized at 20 pounds pressure for fifteen minutes, which gives it a delicate cream caramel color. This uninoculated milk is identical with that ordinarily inoculated with *B. acidophilus;* therefore, if increased volume is of prime importance, beneficial effects should be induced. The data are summarized in Table 1.

The heading "no treatment" refers to the period of time during which the patients have been under observation prior to any treatment. In the first two columns under this heading is given the number of days during which the patient had normal defecations. The second column gives the total number of days under observation. The next heading "sterile milk," is similarly subdivided to show the number of days during which normal defecations occurred while the patients were ingesting milk sterilized in the manner just described. It is readily apparent that most of the these patients were severely constipated; eight of the ten patients had one normal defecation a week, or less. When these patients were given daily 1 liter of sterile milk, it will be seen that there was little, if any, improvement in their condition. While the first patient did show some improvement, the second patient became much more constipated. The third patient continued to be severely constipated. The fourth patient showed a slight improvement while the fifth became somewhat more constipated.

For the following week, three of these patients, as well as five others, were given daily 1 liter of skim milk, sterilized as described, but inoculated and incubated for twenty-four hours with *B. acidophilus* in the usual manner,[3] after which it was pasteurized by being heated in the Arnold sterilizer (steam at atmospheric pressure) for ten minutes. In order to avoid extreme coagulation of the casein, which would make the milk indigestible, the acidity caused by the fermentation was first neutralized with normal sodium hydroxid. The milk was plated out on whey agar after pasteurization, and was found to be sterile.

From the data that are presented in Table 1, it will be seen that there was no improvement in the intestinal condition of any of these patients when they were taking pasteurized milk, over their condition when taking sterile milk. Also, it may be seen that pasteurized *B. acidophilus* milk had a constipating effect, if any. It is realized that the neutralization of the milk prior to pasteurization prevents any possible activity of the lactic acid which was formed during fermentation. Therefore, in continuing these experiments, this deficiency has been overcome by adding lactic acid in an equivalent amount to the milk after pasteurization, with the same results. It is impossible completely to separate the chemical from the bacteriologic factors in such therapy, for the phenomenon must be biochemical, in the sense that the bacteria secrete by-products of a chemical nature. Nevertheless, it is of interest to determine, if possible, whether these by-products are of most importance or whether the most important factor is the actual multiplication of *B. acidophilus* in the intestine. With this end in view, patients have been given the Berkefeld filtrate of *B. acidophilus* milk, which contains the essential acids, salts and enzymes, but no living bacteria.

* From the Department of Bacteriology, Psychiatric Institute, Ward's Island.

1. Rettger, L. F., and Cheplin, H. A.: The Transformation of the Intestinal Flora, with Special Reference to the Implantation of Bacillus Acidophilus, Yale University Press, 1921. Kopeloff, Nicholas, and Cheney, C. O.: Studies on the Therapeutic Effect of Bacillus Acidophilus Milk and Lactose, J. A. M. A. **79**: 609-611 (Aug. 19) 1922.

2. Kopeloff, Nicholas, and Beerman, Philip: Modified Gram Stains, J. Infect. Dis. **31**: 480-482 (Nov.) 1922.

3. Kopeloff and Cheney (Footnote 1, second reference).

These results will be reported at a later date, the present indications being that such filtrate is of little benefit.

Since neither the physical nor the chemical interpretation of *B. acidophilus* therapy can be considered adequate, the patients were given daily 1 liter of the regular *B. acidophilus* milk, in most instances reinforced with lactose. It contained approximately 200,000,000 viable organisms to each cubic centimeter. It will readily be seen from Table 1 that the beneficial effects of this treatment were soon in evidence, and that relief from chronic constipation was obtained. This indicates that the phenomenon is strictly bacteriologic in nature. Under the heading "regular *B. acidophilus* milk," there are the usual subdivisions, but the first column contains the number of normal daily defecations occurring in the first seven days. This was inserted as a basis of comparison with the results obtained with sterile and pasteurized milk. There has been an improvement, often striking, in every patient studied. This is further substantiated by the persistent improvement shown under continued treatment, as evidenced by the data in the remaining columns under this heading. Frequently the patient had more than one movement a day; but, in order to leave no room for question, they have not been counted here. Thus, in all the columns marked "number of normal defecations," it is to be understood that the number of days during which one or more movements occurred is recorded rather than the actual number of defecations.

An interesting comparison is made in Table 2 on a percentage basis, between the period before and after *B. acidophilus* therapy, the number of days of observation being used as a divisor, and the number of normal daily defecations as a dividend. If the figures under the heading "regular *B. acidophilus* milk" are compared with those in the preceding columns, it will be noted that a marked increase has occurred. For example, in the first two cases, the percentage of defecations is about double that obtained with sterile or pasteurized *B. acidophilus* milk. In the last four cases, this increase is still greater. Quantitative data such as these may, in certain instances, yield a distorted emphasis, since the character of the stools is frequently as important as the number of defecations. Therefore, it is all the more significant that the character of the stools from patients under intensive *B. acidophilus* therapy is almost invariably more nearly normal than when there is no treatment, or sterile milk or pasteurized *B. acidophilus* milk is given. The stools are of a softer consistency, and the color is much lighter. On the other hand, certain limitations are recognized, chief among these that the size of each stool is frequently as important as the number of defecations. While *B. acidophilus* therapy has a general tendency to increase the size of the individual stool, frequently the movements increase only in number, and in some patients the size remains unsatisfactory. These considerations, which will be published later, are difficult to tabulate, but should receive due recognition in the general evaluation of this method of treatment.

Of further interest in this connection is another experiment that is corroborative of the fact that the action of *B. acidophilus* is a strictly bacteriologic phenomenon.

Two members of the institute staff were extremely susceptible to *B. acidophilus* milk. Diarrhea followed the ingestion of comparatively small amounts. Therefore, it was determined to give them each 400 c.c. of *B. acidophilus* milk which had been pasteurized, without their knowledge in order to eliminate so far as possible any psychologic factors. It is particularly significant that the reactions of these two persons were identical. Following the ingestion of the milk, there was a certain amount of gas formed. This was not accompanied by undue tension or pain. Instead of having three or four defecations, as had previously been the case when 400 c.c. of the regular *B. acidophilus* milk was taken, each subject had only one normal defecation, which was customary, before retiring. Three days after this test, each subject was again given 400 c.c. of regular *B. acidophilus* milk, unpasteurized. Both were under the impression, however, that it had been pasteurized. Neither had any defecation, and both complained less of gas formation than previously with the pasteurized milk. Again, they were given regular *B. acidophilus* milk in greater volume, 800 c.c., under the impression that it was pasteurized, although it was not. With this amount, both patients had a diarrheal attack, curiously enough each recording three defecations, one of these being semisolid, and one fluid. As a further check, these subjects were given 800 c.c. of pasteurized *B. acidophilus* milk, they being under the impression that it was the regular *B. acidophilus* milk which gave them diarrhea. Their reactions were again indentical. Each had one abundant semifluid movement at about 6 p. m., but no more. Apparently, there was some stimulation of peristalsis, but the results were not comparable to the effects produced by the regular *B. acidophilus* milk.

TABLE 2.—PERCENTAGE OF DEFECATIONS UNDER DIFFERENT TREATMENTS

Patient	No Treatment	Sterile Milk	Pasteurized B. Acidophilus Milk	Regular B. Acidophilus Milk		After B. Acidophilus Treatment	
				First 7 Days	Total	Lactose	Nothing
1	15	43	40	71	85	..	87
2	60	30	17	86	89	..	78
3	3	0	..	57	67	96	36
4	26	43	..	57	67	71	..
5	66	57	40	86	50	..	50
6	15	..	33	87	94	77	..
7	15	..	0	100	80	93	..
8	8	..	0	43	57	..	..
9	7	..	0	30	39	..	..
10	0	..	0	30	24	..	..

In addition to the foregoing data, further evidence may be presented. Thus, careful daily records of the defecations of all patients receiving this treatment have been kept over as long a period of time as possible, even after the ingestion of milk has been discontinued. While it would be premature to state any conclusion as to the persistence of the beneficial effects, several cases may be cited of women who had previously only occasional normal evacuations, but who had frequent defecations when under *B. acidophilus* treatment. Several months after *B. acidophilus* therapy had been discontinued there was still normal defecation.

Under the final heading "after *B. acidophilus* treatment," in Table 1, the subdivisions "lactose" and "nothing," which are further subdivided in the usual manner, indicate the results obtained after *B. acidophilus* had been discontinued, and the patients either did or did not receive lactose.

The first patient in this series had defecations on nineteen out of twenty-three days, or 83 per cent., after *B. acidophilus* therapy, as compared with defecation on two out of fourteen days, or 15 per cent., before treatment. Patient 2 showed a similar improvement of about 20 per cent. Patient 3, who had only one normal movement in more than a month preceding treatment, had eleven movements in twelve days while taking lactose after *B. acidophilus* therapy had brought about a great improvement. She then stopped taking lactose, and, for almost two months after all treatment was discontinued, she had a normal defecation about every other day.

Patient 4 showed a 50 per cent. improvement, but Patient 5 showed a slight retrogression. This emphasizes the variability of the individual reaction to such treatment, and the danger in generalizing. The next two patients showed striking improvement in bowel movements, two months after the treatment had been discontinued.

These observations have not been continued over a sufficient period of time to warrant any conclusion concerning the permanence of relief from chronic constipation. However, the records of two patients not included in this series, because they left the hospital prior to this experiment, have an important bearing on this question:

One patient had eleven normal defecations in 103 days (more than three months) before treatment. Following one month's intensive *B. acidophilus* treatment, she had 185 normal defecations in 231 days, or 80 per cent., for almost eight months after discontinuing treatment, as compared with 11 per cent. originally. These total figures do not reveal the fact that during the last month the percentage was nearer 50, and that this diminution may become progressive.

Another patient had seventeen normal defecations in seventy-three days (two and one-half months). Under two months intensive *B. acidophilus* therapy, she had fifty-nine normal defecations in sixty-one days. After discontinuing *B. acidophilus*, she had 121 normal defecations in 172 days (nearly six months). In other words, the percentage is 70, as compared with 23 originally. There seems to be no decline with this patient, since her percentage for the last month has been 77.

COMMENT

Considering these two cases with those already discussed, there is here evidence to invite the belief that with some persons the relief from chronic constipation may persist long after treatment has been discontinued. Unquestionably, individuals vary greatly in their reaction to *B. acidophilus*, and there are instances of patients approximating their former constipated condition when *B. acidophilus* milk is discontinued. The complexity of factors which determine any individual's gastro-intestinal condition makes it difficult to generalize on the benefits of any single mode of treatment. The fact remains that up to this time no patient, no matter how constipated, has failed to be relieved of constipation following an intensive course of treatment with *B. acidophilus* milk and lactose.

In this connection, another noteworthy point may be mentioned: an appreciable percentage of viable *B. acidophilus* organisms was recovered from some patients, months after their ingestion had been discontinued, indicating that a true implantation had taken place. Thus, in the patient who has been longest under observation, the first of the two patients not included in the series, 25 per cent. of the total plate count of feces on whey agar were viable *B. acidophilus*, but this was not a constant finding. It may be something more than a coincidence that another earlier patient gave precisely the same percentage of viable *B. acidophilus* six months after discontinuing *B. acidophilus* milk. Two other patients previously noted, Patients 4 and 5, showed 80 per cent. of viable *B. acidophilus* seventeen and twenty-one days, respectively, after discontinuing treatment.

The data herein presented are in direct contradiction to certain general statements made by Bassler and Lutz,[4] which are unsupported by any evidence thus far published. No one recognizes the limitations of *B. acidophilus* therapy more clearly than those who have actually conducted such research as is patent in the work of Rettger and Cheplin,[5] Norman and Eggston[6] and others.

Theoretical objections, therefore, can have little validity in the face of facts.

There are now various commercial preparations of *B. acidophilus* on the market. It is unfortunate that none of these which have come to our attention warrant recommendation, since experience based on their adequate and widespread use would be of great value.

The observations here reported are being continued.

SUMMARY

Subject to the limitations of the material under consideration, the following points have been established:

1. The action of *B. acidophilus* is not a physical phenomenon, since patients receiving sterile milk were not relieved of constipation.
2. The action of *B. acidophilus* does not appear to be a strictly chemical phenomenon, since patients receiving pasteurized *B. acidophilus* milk were not relieved of constipation.
3. The action of *B. acidophilus* appears to be essentially a bacteriologic phenomenon, since patients were relieved of constipation by the ingestion of milk fermented by *B. acidophilus*.
4. Relief from chronic constipation has persisted for six months after the ingestion of *B. acidophilus* has been discontinued.
5. Viable *B. acidophilus* organisms in appreciable numbers have been recovered from the feces of patients months after the ingestion of *B. acidophilus* milk.

4. Bassler, Anthony, and Lutz, J. R.: Bacillus Acidophilus: Its Very Limited Value in Intestinal Disorders, J. A. M. A. **79**: 607-608 (Aug. 19) 1922.

5. Rettger and Cheplin (Footnote 1, first reference).

6. Norman, N. P., and Eggston, A. A.: Intestinal Infections and Toxemias and Their Biological Treatment, New York M. J. **116**: 623-626 (Dec. 6) 1922.

INTERNAL HEMORRHAGIC PACHYMENINGITIS IN INFANCY

REPORT OF FIVE CASES *

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Internal hemorrhagic pachymeningitis occurring in infancy cannot be considered a rare disease. Finkelstein,[1] in 1911, reported six cases, and had records of fifty others. Rosenberg,[2] in 1913, compiled reports of thirty-eight cases. Feer[3] saw five cases in three years. However, few cases have been reported in this country, and since 1915 relatively little has appeared in the literature concerning this disease.

The name would indicate that the process is a hemorrhagic inflammation of the inner surface of the dura. According to Rosenberg,[4] the disease was first described in France, about 1835, under the name serous cysts of the arachnoid. There has always been a controversy regarding the pathogenesis of the disease. Virchow, in 1854, advanced the so-called "primary inflammation" theory to explain its pathogenesis. Prior to that, pathologists had considered the inflammation, when present,

* From the Department of Pediatrics of Lakeside Hospital and Western Reserve University School of Medicine.

1. Finkelstein, cited by Rosenberg.
2. Rosenberg, O.: Berl. klin. Wchnschr. **50**: 2272, 1913.
3. Feer: Cor.-Bl. f. Schweiz. Aerzte. **45**: 598, 1915.
4. Rosenberg, O.: Ergebn. d. inn. Med. u. Kinderh. **20**: 549, 1921.

as secondary to the hemorrhage, and occurring in the process of organization.

Boeckmann [5] investigated a series of cases in which death followed operations on the brain or meninges, and in none was there a hemorrhagic pachymeningitis. He concludes that it takes more than trauma and aseptic hemorrhage to produce the disease. Wohlwill,[6] after studying the gross and microscopic anatomy, concluded that: 1. It is a primary proliferation of the subendothelial tissue, probably following a previous lesion of the endothelium. Fibrinous and serous exudations as well as hemorrhage are only accidental accompanying processes. 2. In neither the traumatic cases nor those which accompany a hemorrhagic diathesis does the histologic structure of the membrane speak for an origin through organization of a primary hemorrhagic effusion.

Marie, Roussy and Laroche [7] tried to produce the disease experimentally. They employed dogs and rabbits, and injected them subdurally with (*a*) whole blood, (*b*) blood plus a killed suspension of staphylococci, and (*c*) a mixture of fatty acids and sodium nucleinate. With the last method they obtained in several instances a picture resembling internal hemorrhagic pachymeningitis. They infer from these findings that it is not a primary hemorrhage that produces the disease. Numerous other authors also oppose the primary hemorrhage theory.

Another theory has been offered by a third group, represented mainly by Jores and Laurent. These authors describe the condition as a primary noninflammatory proliferation of the subendothelial capillary layer. The nature of such a process has no parallel in human pathology. Rosenberg [4] goes so far as to say that he was unable to find any fibrin in any of his cases; there were no inflammatory cells, and no young connective tissue cells in the early stages. Also, the fluid from the cysts has the character of a transudate and not of an exudate. He says that he cannot agree with the descriptions found in most of the textbooks of pathology.

The picture described in most of the textbooks is this: There is a proliferation of the endothelial layer on the inner surface of the dura. In the early stage, a few leukocytes and some fibrin may be present. Later, fibroblasts and new capillaries grow out from the subendothelial layer, which is very vascular. The capillaries, being thin walled, are easily ruptured. The hemorrhages may be minute, and if so are soon resorbed, leaving only a brownish pigment; but if they recur, the membrane in time attains considerable thickness. When the hemorrhage is more extensive, the membrane is pushed away from the dura; and, as the cellular elements are digested or carried away, there remains a cyst containing a yellow fluid. A new membrane then forms on the dura, and if the process is repeated there results a lamellated structure between the layers of which are collections of blood in various stages of resorption. The site of this process is most often the midportion of the convexity, and it is usually bilateral.

The acute infections, syphilis, tuberculosis and trauma are perhaps most frequently given as the primary etiologic factors. The so-called "hemorrhagic diathesis group," including scurvy, leukemia, pernicious anemia, purpura and hemorrhagic disease of the newborn, are often blamed. Schwartz [8] reported a case in which the meningococcus was found. Hemolytic streptococci have occasionally been implicated. Chronic nutritional disturbances have been believed to play an important rôle. Nearly all of Rosenberg's cases occurred in institutional infants who had been artificially fed since birth. He says that the condition is rare in private or dispensary practice. In reading the reports of various authors, we find that in a majority no definite etiology could be assigned. Negative Wassermann reactions and tuberculin tests, and sterile blood and spinal fluid cultures are the usual findings.

Perhaps the most plausible theory at present is that of Rosenberg, who believes that internal hemorrhagic pachymeningitis is due to thrombosis of the cavernous sinus, as the result either of an infection or of a marantic condition. In a large percentage of his cases there was a bloody nasal discharge a short time before the disease manifested itself. Diphtheria bacilli were usually obtained by culture. However, in some of the cases the rhinitis was syphilitic in origin. The inflammatory process extends from the ethmoid vein to the ophthalmic and thence to the cavernous sinus. The anatomic picture of hemorrhagic pachymeningitis he attributes to a passive congestion due to the obstruction of the veins emptying into the sinus; namely, the middle meningeal, ophthalmic, central vein of the retina, ethmoid and supra-orbital. The hemorrhages into the retina and the usual localization of the process in the region drained by the middle meningeal vein are beautifully explained by this theory. He admits, however, that there are certain symptoms one would expect to follow in the course of this thrombosis, which are not usually present with the pachymeningitis, and, further, that the thrombosis has never been found by him at necropsy, even though he has diligently searched for it.

The symptoms may be gradual or sudden in onset. Generally speaking, they are those of increased intracranial pressure or meningeal irritation. Vomiting and convulsions are perhaps the most common reasons for bringing the patient to the physician. Bulging fontanel, enlargement of the head, cervical or general rigidity, increased reflexes, muscular twitchings, paralysis, hyperesthesia, somnolence, pressure pulse and changes in the character of respiration are symptoms which are mentioned. Fever, if present, is usually not high except just before death. The most characteristic finding is the retinal hemorrhage, which is present in a majority of the cases and is certainly rare in other conditions of later infancy. There may be choked disk or optic atrophy. The spinal fluid is normal, or contains evidence of old or recent hemorrhage. Puncture of the anterior fontanel outside the longitudinal sinus is a procedure on which pediatricians have laid much stress. To obtain by it a yellow or bloody fluid practically makes the diagnosis certain. This fluid, and the same is true when it is obtained from the lumbar subarachnoid space, does not clot on standing, although there may be a small fibrin clot or pellicle. Briefly, then, if an infant more than 4 weeks old, usually between the ages of 6 and 18 months, has symptoms of markedly increased intracranial pressure, often more acute than with a tumor, and has a normal spinal fluid, one of the first things to consider is internal hemorrhagic pachymeningitis. The presence of retinal hemorrhages makes the diagnosis practically certain, and a positive fontanel

5. Boeckmann: Virchows Arch. f. path. Anat. **214**: 380, 1913.
6. Wohlwill, F.: Virchows Arch. f. path. Anat. **214**: 388, 1913.
7. Marie, Roussy and Laroche: Comp. rend. Soc. d. biol. **74**: 1303, 1913.
8. Schwartz, A. B.: Pachymeningitis, Am. J. Dis. Child. **11**: 23 (Jan.) 1916.

puncture is pathognomonic. A yellow subarachnoid fluid or one containing red blood cells is very suggestive. If the disease has been going on for some time, there will probably be enlargement of the head.

The mortality of this disease per se is said to be very low. The infants, however, succumb readily to intercurrent infections, especially bronchopneumonia. Goeppert [9] thinks that the appearance of blood in the spinal fluid warrants a bad prognosis. Feer found a bloody fluid in all his cases, and still believes that in most of them recovery occurs. Many of the infants who live through the attack carry a permanent disability, such as chronic hydrocephalus, imbecility, blindness, deafness, paralysis, spasticity or speech defect. D'Espine [10] reported a case in which the patient left the hospital apparently in good condition, but returned a few years later with typical Little's disease. Rosenberg, who, in his early paper, gave a good prognosis, has changed his opinion. He was able to locate a small number of his patients eight or nine years after the disease, and found that 70 per cent. had some defect. He says that the severity of the disease bears no relation to the after-effects. Some with the most severe symptoms were later found to be normal, and those with mild symptoms showed serious defects.

The treatment is mainly symptomatic. In adults, surgery has been employed, and favorable results have been reported. In infants, drainage of the fluid by repeated punctures through the anterior fontanel has not resulted in much improvement, and Finkelstein says that it may be harmful. Gelatin injections have been used in an attempt to control the bleeding. In light of our present knowledge, it is logical to supplant this with intramuscular injections of whole blood or with transfusions. If syphilis is suspected, of course antisyphilitic therapy should be instituted.

REPORT OF CASES

The five cases here reported were observed in the pediatric service of Lakeside Hospital in the last three years:

CASE 1.—A. L., a white boy, aged 20 months, entered the hospital, Oct. 29, 1919, with a history of convulsions for one month which had been becoming progressively more severe.

On admission the child was in deep coma, and breathed only four or five times a minute. He did not respond to any external stimuli. The extremities were cold and cyanotic. At this time there were no localizing symptoms, and the fontanel, though open, was not bulging. There was a bloody discharge from the nose. Symptoms which might be construed as due to syphilis were a depressed nasal bridge and a deformity of the left forearm. The latter, however, appeared to be due to a healed fracture of both the ulna and the radius. There was an abrasion over the left eye, evidently from a mild injury.

During the first few days the child had numerous severe convulsions. Lumbar puncture at first yielded a clear fluid containing a few unchanged red cells. A subsequent puncture of the cisterna magna gave a clear fluid free from cells and globulin. An attempt was made to obtain blood from the longitudinal sinus, and a yellow fluid was encountered which did not clot on standing. Ophthalmoscopic examination revealed at first a hemorrhage near the left disk. The right retina was normal. A few days later there were hemorrhages in both retinas, and slight edema of the disks. The "capillary permeability test" revealed a somewhat increased number of petechiae. Nose and throat cultures were negative for diphtheria bacilli.

9. Goeppert: Jahrb. f. Kinderh. **61**: 51, 1905.
10. D'Espine: Cor.-Bl. f. Schweiz. Aerzte. **45**: 1590, 1915.

November 1, there was some general improvement. However, a paresis of the right side could be made out, and the boy was apparently blind.

During the next few weeks there was gradual progressive improvement. November 12, clear yellow fluid was again obtained by fontanel puncture. The hemorrhages were gone from the right retina, November 11, but persisted in the left eye until the early part of January. Vision returned apparently to normal. The Wassermann reactions on the fluid obtained by fontanel puncture were always negative; but the clear spinal fluid, on two occasions, gave a four-plus reaction when 0.5 c.c. was used, although the result was negative with 0.3 c.c. Later two negative tests were obtained in all dilutions. There were five negative Wassermann tests on the blood. Red mercuric iodid and potassum iodid had been given as a provocative soon after admission.

He was discharged, Feb. 25, 1920, in good physical condition, and weighed 8.7 kg., which was 2.1 kg. above his weight on admission. The parents refused to bring him to the dispensary, and he was not seen again.

The significant features of this case are as follows: The suggestion of syphilis afforded by the depressed nasal bridge was not supported by the serologic findings even though provocative therapy was employed. The blood in all of five, and the fontanel puncture fluid in two, instances were negative. The spinal fluid, however, on two occasions, while negative for amounts of 0.1, 0.2 and 0.3 c.c., was two plus for 0.4 c.c. and four plus for 0.5 c.c. Both preceding and following these tests, negative reactions were obtained for all amounts. The bloody nasal discharge suggests diphtheria as a possible etiologic factor, especially as Rosenberg considers this infection to be of the greatest importance in the causation of pachymeningitis. Cultures were negative, though this, of course, does not absolutely exclude diphtheria.

CASE 2.—M. H., a white girl, aged 10 months, was admitted to the hospital, Feb. 19, 1921, because she had been vomiting and having convulsions for the preceding month. The vomiting was described as projectile in type, and usually occurred immediately after feeding. The attacks of convulsions occurred only about once a week, but had been becoming more severe. The child had lost weight. Recently there had been some nasal discharge. The history showed that she had not thrived either at the breast or when taking condensed milk. She had held up her head at 4 months, and was now just beginning to sit up. The family history was negative except that one brother died of convulsions at the age of 10 days.

The infant was markedly undernourished, and weighed only 3.5 kg. She appeared extremely ill. The extremities were cold and cyanotic. The anterior fontanel was 4 cm. in diameter, but there was no bulging. There were no definite neurologic findings. A few râles were heard in the bases of the lungs posteriorly. Shortly after admission, she had a series of severe convulsions. Lumbar puncture yielded a bloody fluid. On centrifuging, the supernatant portion was clear and of a lemon yellow color. It did not clot on standing. The Wassermann reaction on this was negative, and cultures remained sterile. Nose and throat cultures were negative for diphtheria bacilli. Ophthalmoscopic examination revealed hemorrhages in both retinas. The patient continued to have convulsions, and died about twelve hours after admission. Before death she vomited "coffee ground" material.

The necropsy was held the next morning. When the skull was opened, the dura was injected. Beneath the dura on both sides, over the vertex, there was a flat blood clot, which was adherent in some areas to both the dura and the arachnoid. The dura was slightly thickened, and numerous petechial hemorrhages were present on its inner surface. There was some blood beneath the arachnoid. The thymus was rather large, and contained collections of fluid blood in both lobes. There was congestion of the bases of both lungs. Microscopically, the dura showed hemorrhages on its inner surface and evidence of a mild chronic inflammation. The anatomic diagnosis was internal hemorrhagic pachymeningitis.

CASE 3.—R. L., a boy, aged 1 year, was admitted, Sept. 28, 1921, because of paralysis of the left side following a fall. Three days previously the patient fell from a table. He cried a great deal, but showed no untoward symptoms, and the mother noticed no local injury. The next day he was standing by the door and fell, striking the right side of his head posteriorly. This fall was immediately followed by a convulsion, which lasted an hour. The left side of the body was thereafter paralyzed, and he did not regain consciousness. He vomited several times. The history brought out the fact that following birth he had been blue for several days, and was said to have had pneumonia. He was breast fed for three weeks, and was then given dilutions of raw milk. No orange juice had been given. He had gained regularly in weight, and had always been well except that for the past month the stools had been rather frequent.

The patient was a well developed and nourished child with excellent color and turgor. He weighed 7.5 kg. There was a flaccid paralysis of the left side. The head was drawn to the right, and there was conjugate deviation of the eyes toward that side. The anterior fontanel was normal in size, and there was no bulging. A small area of edema and swelling was found on the right occiput. Both eyegrounds showed numerous hemorrhages. Roentgenograms disclosed no fracture of the skull nor evidence of scurvy or rickets in the extremities. The spinal fluid contained a small amount of fresh blood, probably due to trauma in withdrawal, as the supernatant fluid was clear after centrifuging. This fluid gave a negative Wassermann reaction. No fontanel puncture was made because the parents objected. Nose and throat cultures were negative for the diphtheria bacillus.

The next day he had at first muscular twitching, and then generalized convulsions, which lasted several hours. The temperature at this time ranged between 39 and 40 C. The white blood cells totaled 14,000. The urine was negative. The capillary permeability test was negative. Intramuscular injections of the parents' blood were given although the coagulation time was seven and one-half minutes.

Improvement began the next day and continued until he was discharged against advice, October 7. The temperature had dropped to normal, and he was taking his feedings. The retinal hemorrhages were less distinct at this time. A communication from the parents one month later stated that, although weak, he could move his left arm and leg, and vision was apparently normal.

The history strongly suggests that trauma was a factor in producing the acute picture of convulsions and paralysis in this case. The history relates two falls—one three days before the development of symptoms, and the other immediately before the appearance of the convulsions. It seems probable that the second fall was not responsible for the development of the convulsion, but was a part of the general picture produced as a result of the injury received at the first fall.

The history of birth hemorrhage is also very suggestive. The parents stated that the physicians in charge had time and again despaired of the infant's life because of the attacks of cyanosis and apnea that he had for several days after birth. A wrong diagnosis at this time is not uncommon. Since, however, no punctures were made, we can only conclude that the history strongly suggests that this patient was a victim of birth hemorrhage. If this is correct, then the field was prepared, and the first fall was the exciting cause of the pachymeningitis.

CASE 4.—L. S., a white boy, aged 4 months, was brought to the emergency ward of the Cleveland City Hospital, Aug. 20, 1922, after an accident in which he was thrown from an automobile. The mother stated that immediately afterward he was blue for a short time and that his head was "out of shape." Examination revealed a small contusion of the scalp, and a separation of some of the bones of the skull along the suture lines. He was unconscious for a few hours, and vomited nearly everything taken for twenty-four hours. Roentgen-ray examination revealed no fractures. No other symptoms were noticed, and he was discharged, August 24. Four days later the mother brought him to the Lakeside dispensary with the complaint that he had vomited and was irritable on the preceding day. She insisted that his head was "out of shape." He was admitted to the pediatric service of Lakeside Hospital. More historical detail revealed that at the time of his birth the mother was in labor thirty-six hours and that instruments had been used. One sister was suffering from Little's disease.

On admission, the child's head measured 47 cm. in circumference, and his chest 45 cm. The lambdoid suture on the left and the coronal and frontosphenoid suture on the right measured about 0.5 cm. in width, owing to separation of the bones. The anterior fontanel was rather tense, but did not bulge. The temperature was 39 C. The knee-jerks were active, and that on the left was possibly slightly increased. Otherwise the child was in excellent physical condition, was being breast-fed, and weighed 8 kg. at the age of 4 months.

On puncture of the anterior fontanel to obtain blood, a yellow fluid was encountered which contained about one twentieth of its volume of red corpuscles. Twenty-five cubic centimeters was removed at this time. The fluid did not clot on standing, but a small pellicle formed. Shortly after this puncture the child seemed more comfortable, and smiled repeatedly. Ophthalmoscopic examination revealed normal eyegrounds.

The patient remained in the hospital for eighteen days without marked change in condition. Further examination of the retinas failed to reveal any abnormalities. Several more punctures of the fontanel were performed, and as much as 50 c.c. of fluid was withdrawn at one time without completely emptying the cavity. No convulsions were observed, and the fontanel never distinctly bulged, although a change in tension could be made out after the punctures. Fever was present throughout the entire stay at the hospital, and varied from 37.5 to 39 C. The laboratory work is summarized below.

The child was readmitted, October 6, because of vomiting, and enlargement of the head; symptoms which, according to the mother, had appeared rather suddenly in the preceding two days. The head was now 48.5 in circumference, and there was some bulging of the anterior fontanel and a fullness along the sutures. The temperature was 39 C., and the child was very irritable. The eyegrounds were normal, and there were no localizing neurologic signs. Puncture of the fontanel was immediately done, and 200 c.c. of yellow fluid was withdrawn. The temperature dropped somewhat, and the irritability became less marked. Because he was nursing and it was difficult for the mother to come to the hospital, he was discharged, October 10. He attended the dispensary daily thereafter.

October 16, the mother reported that he had vomited again and that there had been muscular twitchings. He was again admitted to the ward. He seemed much more ill now than before. The temperature was 39 C., and the leukocyte count, 37,000. On the next day he developed a swelling of the left side of the scalp which was thought possibly to be a cellulitis. There was a bloody nasal discharge. Culture produced no diphtheria bacilli. The spinal fluid was normal. Puncture of the fontanel was not done. At this time several mild convulsions were noted, and Cheyne-Stokes breathing was present for a short time.

Moist heat was applied to the swelling, and it quickly subsided. The temperature dropped to normal, and the child was discharged, October 20. Since that time he has reported to the dispensary, has shown no fever, the general condition has been good, and there has been no particular change in the condition of the head.

August 29, white blood cells totaled 25,100; hemoglobin, 70 per cent. Urine examination gave negative results.

August 30, white blood cells totaled 25,250; hemoglobin, 70 per cent.; red blood cells, 5,940,000; polymorphonuclears, 34 per cent.; lymphocytes, 60 per cent.; transitionals, 3 per cent.; large mononuclears, 3 per cent.; eosinophils, 0; basophils, 0.

August 31, the blood clotting time was 5 minutes, 15 seconds; bleeding time, 6 minutes, 20 seconds. The capillary permeability test gave normal results. Fluid from fontanel puncture contained, for each hundred cubic centimeters: calcium, 6.5 mg.; phosphorus, 5 mg.; potassium, 16.3 mg.; sodium, 311 mg.; protein, 0.133 per cent. The intracutaneous tuberculin test (1 : 1,000) was negative.

September 4, the intracutaneous tuberculin test (1:1,000) was negative.

September 5, the spinal fluid Wassermann reaction was negative.

September 8, the blood serum contained: calcium, 10.9 mg. for each hundred cubic centimeters; phosphorus, 5.7 mg.; protein, 7.79 per cent. Fluid from fontanel puncture contained: calcium, 7.2 mg. for each hundred cubic centimeters; phosphorus, 4.9 mg.; protein, 1.27 per cent.

September 13, fluid obtained by fontanel puncture contained protein, 1.85 per cent. The Wassermann test on this fluid was negative.

October 6, the blood clotting time was 4 minutes, 20 seconds; bleeding time, 5 minutes, 20 seconds. The blood serum contained: calcium, 9.7 mg. for each hundred cubic centimeters; phosphorus, 4.8. Fluid from fontanel puncture contained: calcium, 7.9 mg. for each hundred cubic centimeters; phosphorus, 5 mg.; protein, 2.4 per cent.

October 17, the white blood cells totaled 37,750. Urine examination revealed a faint trace of albumin.

There can be no question that in this case trauma was the deciding factor in producing the acute picture of pachymeningitis. It is even possible that the trauma sustained in the automobile accident was the entire cause of the development of this condition, since nearly ten days had elapsed between the accident and the finding of pathognomonic symptoms or internal hemorrhagic pachymeningitis. However, this conception cannot be considered certain, as the history contains the fact that the mother was in labor for thirty-six hours at the birth of this child, and that instruments were used. A further important point is contained in the history, namely, that an older sister is suffering from Little's disease, a condition due in most instances to brain hemorrhage at birth. The head on admission was misshapen, a condition which, according to the mother, developed directly and immediately as the result of the automobile accident. The mother makes the statement that when she picked up the child from under the overturned automobile the child seemed as if dead, and its head was out of shape. On admission there was noticed a separation, to a distance measuring approximately 0.5 cm., of the lambdoid suture on the left side, and of the coronal and frontosphenoid sutures on the right side. These changes were in all probability due to the direct effect of the accident and not to the development of a large collection of fluid within the skull.

CASE 5.—E. R., a colored boy, aged 2 months, was admitted to the outdoor ward of the Babies' Dispensary and Hospital, Sept. 11, 1922, because of convulsions. These began on the day of admission, and the mother said that he had previously been perfectly normal. The only thing of importance in the past history was that the baby was precipitated head first into the bucket before the physician arrived for the delivery. The baby was breast fed.

Examination revealed a well developed infant, weighing 5.2 kg. Intermittent convulsions lasting a few minutes each were observed. Between convulsions there was considerable spasticity of the extremities. The fontanel bulged slightly. The circumference of the head was 40 cm.; that of the chest, 38 cm. There were hemorrhages in the left eyeground; the right was normal.

September 13, the clotting time was 5 minutes and 30 seconds, and the bleeding time 4 minutes.

September 14, the serum calcium was 7.6 mg. for each hundred cubic centimeters, the phosphorus, 4.7 mg., and the protein, 5.8 per cent.

A puncture of the left side of the fontanel, made, September 15, yielded about 20 c.c. of bloody fluid. This contained about one tenth of its volume of red corpuscles. The supernatant fluid was yellow, did not clot, and gave a strong reaction for bile pigment. The child continued to have convulsions, and on the next day another puncture of the fontanel was performed and more yellow fluid withdrawn. After this procedure the fontanel was less tense. This fluid contained 3.6 per cent. protein, 6.3 mg. calcium and 5 mg. of phosphorus for each hundred cubic centimeters. The Wassermann reaction on this fluid was negative. The intracutaneous tuberculin test was negative.

The temperature on the third day after admission reached 39 C. and then gradually dropped to 38 C. September 21, lumbar puncture yielded a clear fluid, without cells or globulin, which gave a negative Wassermann test. On this day the clotting time was 6 minutes and the bleeding time was 4 minutes.

The infant continued to have convulsions at irregular intervals until the latter part of October. During the subsequent month, no convulsions have been observed, and there has been no spasticity or change in reflexes. The general condition was good, and he gained in weight. October 27, ophthalmoscopic examination revealed that the retinal hemorrhages had disappeared completely.

SUMMARY

1. Five cases of internal hemorrhagic pachymeningitis have been observed in this clinic within a period of three years. This corroborates the statements of Finkelstein and Rosenberg that this disease is more common in infancy than is generally believed.

2. From the standpoint of etiology in our cases, infections, especially syphilis and diphtheria, can be excluded in every instance except in Case 2, in which syphilis may by some be considered to have been a possible factor.

3. From the standpoint of etiology, a poor state of nutrition can be positively excluded in three of our five patients; two were exceptionally well developed and nourished infants, and the third was also in a good state of nutrition. The other two patients were in a very bad state of nutrition, but it is just as probable that this was the result, as that it was the cause, of the development of pachymeningitis.

4. From the standpoint of etiology, trauma can be implicated as a factor in four of the five cases. It would seem that subacute pachymeningitis from birth hemorrhage, rendered acute by further physical injury, would explain the development in some of our cases. In certain groups of infants, there may be a certain predisposition toward the development of pachymeningitis.

5. The prominent symptoms in these five cases which correspond with those described in the literature were:

(*a*) Retinal hemorrhages in four cases. In the one in which they were absent there was the largest collection of fluid in the subdural space.

(*b*) A positive fontanel puncture. This was obtained in the three cases in which it was performed. In one case a characteristic fluid was obtained by spinal puncture. In the fifth, puncture was not performed because of the attitude of the parents. As these two children were each about 1 year of age, and retinal hemorrhages were present, it is probable that a fontanel puncture, if made, would have given positive results.

(*c*) Convulsions. These were present in every case; but since convulsions occur as a result of other injuries and conditions, their appearance is suggestive but not pathognomonic.

(*d*) Bulging fontanel. This symptom was absent throughout the period of observation in three cases; and in a fourth the fontanel did not bulge until the second admission, when it bulged slightly; in the fifth case there was slight bulging on admission. In other words, the absence of a bulging fontanel does not speak against internal hemorrhagic pachymeningitis. A general state of collapse, or widening of the sutures, may be sufficient to counteract the encroachment on the intracranial space by the development of a pachymeningitic cyst.

(*e*) Enlargement of the head. This symptom was not definitely present in any of our cases. In only one case was there possibly some enlargement.

(*f*) Nasal discharge. This was present in three cases, and in two of these it was bloody in character. In one of these patients, however, the discharge did not develop the bloody character until long after marked evidence of the presence of a pachymeningitis had been observed. As no evidence of the presence of syphilis or diphtheria was found in any of our cases, it may be concluded that the nasal discharge was a coincidence or a result of the pachymeningitis, and not a symptom of an infection responsible for the development of this disease.

6. In addition, we made the following observations, which may possibly add to the present knowledge of the disease:

(*a*) In two of the cases in which the calcium content of the fluid obtained through fontanel puncture was determined, it was found to be decidedly lower than that of the blood serum; whereas the inorganic phosphorus content of the fluid and the blood serum was practically the same. Since these results are the same as the figures usually obtained by determinations on whole blood, it would seem logical to conclude that the fluid in these subdural cysts is blood, unaltered except for the solution or digestion of all or a part of the red corpuscles. This conclusion, however, is not supported by the amounts of sodium and potassium, which were the same as in serum; nor by the percentage of protein, which showed great variation.

(*b*) The coagulation time and the bleeding time were normal in the three cases in which the tests were performed.

CONCLUSIONS

1. Internal hemorrhagic pachymeningitis is more common in infancy than is ordinarily believed.

2. Trauma at birth or later, or both, seems to have been the most important etiologic factor in our cases.

3. Convulsions, retinal hemorrhages and a positive fontanel puncture form a pathognomonic symptom-complex in internal hemorrhagic pachymeningitis. A positive fontanel puncture alone may be considered pathognomonic, as may also retinal hemorrhages, provided the latter occur after the age of 3 months.

4. In any case in which symptoms indicate the presence of increased intracranial pressure or cerebral irritation, internal hemorrhagic pachymeningitis should be considered.

5. Marasmus or severely disturbed nutrition is not necessary for the development of internal hemorrhagic pachymeningitis, as three of our five cases occurred in well developed infants.

Plan to Decrease Blindness and Power Press Accidents.—The American Engineering Standards Committee has formulated the first safety codes for power, foot and hand presses that have been prepared in America. While no national statistics of power press accidents are available, it is the opinion of safety engineers that the high speed punch or forming press is one of the most dangerous machines in industry, and that hundreds of fingers, hands and arms are cut off or mutilated in these machines every year. The National Committee on the Prevention of Blindness says there are approximately 15,000 persons in the United States who have been blinded by industrial accidents, which is almost 15 per cent. of the blind population of the country. Because of this, the U. S. Bureau of Standards cooperating with the War and Navy departments prepared an eye safety code, which for several years has been studied by the Engineering Standards Committee and has been revised by this body.

POSTINFLUENZAL CHRONIC PNEUMONITIS

A CONDITION COMMONLY MISTAKEN FOR PULMONARY TUBERCULOSIS, AND FREQUENTLY FOR HEART DISEASE

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At a conference on tuberculosis which I recently attended, three papers dealing with the differential diagnosis of pulmonary tuberculosis from three different points of view were read. None referred to a condition which I have found most frequently mistaken for pulmonary tuberculosis among patients presenting symptoms suggestive of tuberculosis who have been sent to me for special examination. I refer to a chronic postinfluenzal pulmonary disorder of long duration. A semichronic pneumonic sequel of influenza was recognized just after the epidemic of 1918. But the disorder I refer to is found in patients who are presenting themselves now, four years and more after the epidemic, with a history of continuous pulmonary disease since that time.

Many of these patients have at one time or another been under treatment for supposed heart disease. All of them have been under more or less continuous treatment for supposed pulmonary tuberculosis ever since they had influenza, and were sent to our hospital with the diagnosis of probable pulmonary tuberculosis.

SYMPTOMATOLOGY

General Condition.—These patients all complain that they have not been well since they had influenza; they are tired and weak, and lack staying power and the ambition to work. Some of them have tried to work from time to time, but could not keep at it. They all give a history of medical care in hospitals and sanatoriums a good deal of the time since the epidemic.

Great loss of weight is unusual, but they are often underweight. They usually look fairly well nourished. Occasionally, there is a slight degree of emaciation. There is seldom any serious loss of appetite, and there is never the marked distaste for food sometimes seen in the tuberculous. Night sweats are uncommon. There is nearly always a marked degree of nervous irritability. The patients are easily excited, the condition being sometimes so severe as to interfere with their ability to make a living.

Pulmonary Symptoms.—Cough, slight or severe, continuous or intermittent, is always present. It is usually more troublesome in the morning and in damp weather. There is nothing especially characteristic about it. All patients raise some sputum, which may be slight in amount or abundant. Occasionally, the sputum is fairly abundant after a paroxysm of coughing, and then there will be no more for some time. There is a mild degree of bronchiectasis. Frequently, small amounts of blood or blood-tinged sputum are raised, but I have never observed a real hemorrhage, even a slight one, in these patients. There is nearly always pain or soreness in some part of the chest at times. There is nothing characteristic about the pain.

Wheezing, which is so marked in some patients that the condition is diagnosed as asthma, is absent in others.

Cardiac Symptoms.—All patients complain of shortness of breath and rapid and violent pumping of the

heart on slight exertion. Nearly all have attacks of dizziness, especially when excited or after sudden activity of one kind or another. Sharp pain, localized at the apex, or a dull ache over the precordia, especially after exertion, is common.

PHYSICAL EXAMINATION

General Condition.—The appearance of these patients gives no clue to their condition. Sometimes, they "look sick," they have a tired drawn expression and the skin has an unhealthy appearance; but, as a rule, they look pretty well.

Lungs.—Examination of the lungs yields a variety of findings, with changes slight in extent and character, or marked, and appearing to affect the whole of both lungs.

The chest usually shows no change in shape; but there are exceptions. I recall only one case in which there was infraclavicular and supraclavicular depression. I now have under observation one patient with a very marked "barrel chest."

The expansion of the lungs, so far as this can be judged by the motility of the chest on respiration, is usually good. In cases presenting pleural adhesions, the diaphragm or the whole lung on one side will sometimes show a diminished excursion.

Resonance may be good throughout; in some cases, there is even hyperresonance. In perhaps half the cases, there is some dulness over one or both bases behind. There may be a slight dulness at the apex; but usually the apexes show little or no change. Changes in resonance from day to day are sometimes observed.

The breath sounds are usually harsh, rough and noisy, and expiration may be prolonged. Sometimes, there is pleural thickening, and the breath sounds are distant. Spoken and whispered voice sounds show the corresponding change. No marked change in tactile fremitus can usually be found.

Noisy squeaks, and sibilant and sonorous râles are usually heard. The râles may be only at the bases, or may be scattered throughout the lung. It is unusual to find them confined to the apexes; but occasionally this is the case. It is very unusual to find the râles confined to one apex. I have never observed a case in which the burst, or shower, of medium moist râles, so typical of tuberculosis, could be heard at the apex persistently after expiratory cough. Occasionally, there is evidence of a slight friction rub on some spot at the base.

Roentgen-Ray Examination.—Sometimes there are apparently normal findings, but sometimes definite pleural thickening, corresponding to that found on physical examination, is reported. More commonly, the roentgenologist recognizes that the lungs do not look normal, but will not make a definite diagnosis. The reports speak of rather diffuse thickening, fairly extensive peribronchial thickening, dilatation of the entire bronchial tree, tortuous and interwoven bronchi, moderately thickened bronchi, small areas of increased density, infiltration of the lower lobes, mottling at the base, and moderate thickening of the hilum. They sometimes say that bronchitis cannot be ruled out, tuberculosis cannot be ruled out, or peribronchial tuberculosis cannot be ruled out. On two occasions, roentgen-ray diagnosis of possible tuberculosis at the base was made. In one case, roentgen-ray reports indicated findings suggestive of old conglomerate tubercles, but no evidence of active parenchymatous tuberculosis. On two occasions, the roentgen-ray diagnosis of pulmonary syphilis was suggested. The roentgen-ray findings vary from time to time in the same patient. Different observers sometimes interpret the findings differently; but we almost never get a definite diagnosis of apical tuberculosis in the reports of these cases. A special expert study of the findings in this condition is much needed.

Temperature.—Usually, the temperature is about normal. In some cases, the afternoon temperature will occasionally rise a little above 99 F.

Sputum.—There is nothing characteristic about the sputum. Tubercle bacilli are absent. Pus cells are often abundant. Curschmann's spirals and Charcot-Leyden crystals have not been found. We have not found influenza bacilli. On one occasion, an organism resembling pneumococcus, which was pathogenic for mice, was found.

Etiology.—In all these patients the onset of the condition dates immediately from a severe attack of influenza—practically always complicated by pneumonia. The condition may, indeed, be described as a pulmonary involvement accompanying influenza which has never fully healed.

NATURE OF THE PATHOLOGIC PROCESS

As I have not seen any fatal cases, the pathologic process cannot be accurately described; but from the physical findings there must be pathologic changes of some sort in the lungs. The changes are rather diffuse; they may be confined to the bases, but rarely, if ever, to the apexes. Bronchitis may be in evidence. A slight degree of bronchiectasis is sometimes present. Emphysema is sometimes marked. Some degree of diffuse fibrosis may be present. Pleural thickening, especially at the base, is common.

TYPES OF THE DISEASE

In most of the cases all, or almost all, of the symptoms and signs described will be found to some extent. That is, we do not see pure cases of asthma, bronchitis, bronchiectasis, pleurisy, or effort syndrome. But a case usually falls into one or another group, according to the prominence of certain signs and symptoms, and may be described as of the asthmatic type, the bronchiectasis type, the bronchitis type, the effort syndrome type, or the type presenting chiefly pleural involvement.

COURSE OF THE DISEASE

There seems to be no great change in the condition from year to year, nor are there "ups and downs," so frequently seen in tuberculous patients, as the result of change of environment.

DIFFERENTIAL DIAGNOSIS

Tuberculosis.—The course of the disease seems more even than that of tuberculosis; the patients never seem to grow progressively worse. Toxic symptoms, if present, are those of effort syndrome and general nervous irritability, and are unlike those seen in tuberculosis.

The process almost never localizes in one or even in both apexes as in tuberculosis; when localized, the process is at the base; when diffuse and extensive, the changes involved are not so great or of the same character as in tuberculosis, so that it is usually easy to recognize that we are not dealing with tuberculosis. While the roentgen-ray findings are not usually clear and definite, at least they do not indicate definite apical tuberculosis. The absence of tubercle bacilli in the sputum on repeated examinations may be helpful.

But the most important points of evidence as to the proper diagnosis are (1) the history of severe influenza and pneumonia continued into a chronic, nonprogressive

pulmonary disorder; and (2) the entire absence of the burst or shower of fine to medium moist râles at the apex after expiratory cough, so characteristic of pulmonary tuberculosis.

Heart Disease.—Practically all of these patients exhibit the signs and symptoms of effort syndrome. Nearly all of them complain of dyspnea on slight exertion, palpitation, pain around the heart, and tachycardia. When, in such cases, a systolic murmur is heard—and this is common—with perhaps an occasional extrasystole, the physician not familiar with effort syndrome will often make the diagnosis of heart disease. But further examination will show the lively reflexes, tremors of extended fingers, marked respiratory sinus arrhythmia, excitability, and other evidence of nervous instability characteristic of effort syndrome.

I have never known one of these cases to be diagnosed as cardiac syphilis; but the symptomatology in those cases with prominent effort syndrome and less prominent pulmonary symptoms might suggest the possibility of this condition. In many of the cases, the second heart sound seems slightly prolonged and has a slight puffy quality along the left border of the sternum, especially toward the end of expiration, probably due to rapid reduplication of the second sound. The history of the case, the negative Wassermann reaction, and the absence of an aortic diastolic murmur and of any other evidence of syphilis, serve to rule out cardiac syphilis.

I have never found evidence of organic heart disease in any of the patients.

Hyperthyroidism.—The nervous irritability and tremor are sometimes prominent enough to lead us to determine the basal metabolism; but with no evidence of exophthalmos, thyroid enlargement or increased basal metabolism, hyperthyroidism can be ruled out.

Asthma.—Sometimes emphysema and wheezing are marked, and the patients have attacks which they describe as asthmatic. Three cases have recently been referred to me with the diagnosis of asthma. But the wheezing is more or less continuous; perhaps in mild form when the patient is quiet, and in severe form in attacks resembling asthma after too strenuous activity. These patients do not have the typical sudden and unexplainable attacks of asthma with periods of complete relief between attacks. They do not show sensitiveness to test proteins, and they do show the signs and symptoms already described which are not present in true asthma.

Bronchiectasis.—Some of these patients show the signs and symptoms of bronchiectasis; but the bronchiectasis is of a mild type, and evidence of other forms of pulmonary involvement is present.

INCIDENCE

It is difficult to make any definite statement as to the frequency with which this condition occurs. Figures as to the number of cases that I see[1] would probably give a wrong impression as to how common the condition is, for as chief of medical service of a large clinic, I have referred to me the more puzzling cardiac and pulmonary borderline cases in greater proportion than they occur in the general run of patients.

COMMENT

It is commonly stated that influenza predisposes to pulmonary tuberculosis. This may be true; but is it not possible that this belief is due to the confusion of tuberculosis with the postinfluenzal nontuberculous, pulmonary conditions described in this paper? We all see cases of pulmonary disease in which the tubercle bacillus cannot be found in the sputum, and cases in which physical changes characteristic of pulmonary tuberculosis cannot be found in the lungs, which are, nevertheless, diagnosed as possible, or even probable, pulmonary tuberculosis. But in the case of a patient giving a history of severe influenza and pneumonia, preceded by good health and followed by chronic pulmonary disease, a diagnosis of pulmonary tuberculosis should not be made unless either physical or roentgen-ray findings show the definite characteristics of pulmonary tuberculosis, or the sputum shows tubercle bacilli. It is possible that pulmonary tuberculosis may attack a person suffering from this postinfluenzal pneumonic condition, so that the two conditions may be present in the same patient, or that pulmonary tuberculosis may immediately follow a severe case of influenza; but I have never seen this combination of conditions.

REPORT OF CASES

CASE 1.—*History.*—A man, aged 21, whose condition had been diagnosed in other hospitals as pulmonary tuberculosis, and who recently left a hospital with this diagnosis, was referred to us for treatment of the same condition. He had never had rheumatism, sore throat, scarlet fever or any venereal disease. He was always well until October, 1918, when he suffered a severe attack of influenza, which kept him in the hospital until the end of the year. When he left the hospital, he was tired and weak; his cough persisted, and he was raising considerable sputum, and sometimes blood. He grew steadily worse until February, 1919. He again entered the hospital, where a diagnosis of "abscess of the lung" and "pneumonia" was made. After four weeks, he was discharged; but, according to his statement, he had never been well since. He had tried to work from time to time, but always gave out. He had a persistent cough, and raised moderate amounts of thick, yellowish sputum and, on rare occasions, some blood. He was short of breath on slight exertion. His weight fluctuated; it was now a little below normal. His appetite had been fair, and he never had night sweats. Pain in the chest and palpitation were absent.

Physical Examination.—The patient was fairly well developed and nourished. His color was good; his skin, clear. The pupils reacted to light; the knee jerks were active; the extended fingers did not tremble. There was no clubbing of the fingers, no exophthalmos and no thyroid enlargement. The tonsils were small and not septic, and there was no cervical adenitis. The breath had a disagreeable odor. There was a slight deviation of the nasal septum, but the breathing space was sufficient. The teeth were in good condition.

The pulse was 68, regular and of good quality. Just outside and below the left nipple was an area over the chest wall rather more than half the size of one's hand that looked depressed. No point of maximal impulse of the apex could be felt or seen. On percussion, the left border of the heart was found 7.5 cm. to the left of the midsternal line, 2 cm. inside the nipple line. A blowing systolic murmur that did not mask the first sound could be heard, with maximal intensity over the base. After exercise, this systolic murmur became accentuated, but no diastolic murmur was evoked.

The lungs and the diaphragm showed good expansion. Resonance over both lungs was good. Respiration was harsh over both bases. There was no bronchial breathing. In both axillae, respiration had an emphysematous quality at both bases behind. Persistent fine and coarse râles could be heard after cough.

The temperature was never higher than 99 F. The Wassermann reaction was negative. The urine was normal. Thirteen sputum examinations had been negative for the tubercle bacillus. No influenza bacilli had been found in the sputum. A diplococcus resembling pneumococcus was found, which was pathogenic for mice. The blood pressure was 100 systolic and 64 diastolic.

1. I have seen three cases in the last two days; six cases in the last week.

Roentgen-Ray Examination.—The roentgenologist reported findings consistent with tuberculosis of the lower lobes or with pulmonary syphilis.

CASE 2.—*History.*—A man, aged 30, whose condition had been diagnosed as active pulmonary tuberculosis, myocarditis and asthma, was referred for examination about three weeks after leaving a tuberculosis hospital against medical advice. He had always been well, until August, 1918, when he had a severe attack of influenza followed by pneumonia, which kept him in the hospital two months. Since that time, he had never been well, and had done little work, spending most of his time in hospitals. He had had a cough, and had not been strong. He became short of breath after very slight exertion. He had dizzy spells, but he did not faint. At times, he had pain in both sides of the chest, in front and behind. He raised much sputum, which, he said, was sometimes blood-tinged. He had attacks of palpitation. He did not have asthmatic attacks.

Physical Examination.—The patient was small, but fairly well nourished. He had good color and looked healthy. The pupils reacted to light. The knee jerks were lively. He showed no exophthalmos and no thyroid enlargement. The tonsils had been removed. There was no cervical adenitis. The nasal septum was straight, and breathing space sufficient. The extended fingers did not tremble.

The pulse was 78, regular and of good quality. The apex impulse could be felt, but not seen, in the fifth space, 7 cm. to the left of the midsternal line, 1.5 cm. inside the nipple line, and inside the midclavicular line; dulness corresponded. There was no increase in dulness upward or to the right. No thrill could be felt. The heart sounds were of good quality. The pulmonic second sound was slightly accentuated. No cardiac murmurs were heard.

The lung expansion was good, and equal on the two sides. The percussion note was resonant over both lungs throughout, front and back on the two sides; in fact, there was slight hyperresonance. But the degree of resonance showed slight change from time to time. The breath sounds were very rough, harsh, and noisy throughout both sides. There was no marked change in fremitus. Throughout both lungs, during both inspiration and expiration, noisy squeaks could be heard. But there were no persistent moist râles after cough.

No marked changes were noted in the roentgen-ray examination of the lungs.

Many specimens of sputum had been examined, but tubercle bacilli had never been found.

Fever was not present. The Wassermann reaction was negative. The urine was normal.

CASE 3.—A man, aged 28, sent from another hospital to our hospital with a diagnosis of pulmonary tuberculosis, had been treated by his own physician for heart disease and bronchitis over a period of three years.

He had no "rheumatic" or syphilitic history. He was always well until he had influenza in 1918. Since then, he had been under medical care. He has not been able to hold a job because he could not work steadily.

He had been weak and tired, and had a cough. He raised a moderate amount of sputum, and sometimes, he said, a little blood. He complained at times of severe pains in the chest. He slept poorly. He became short of breath after climbing one flight of stairs. The heart pumped violently on slight exertion. From time to time, he had dizzy spells, but did not faint. He said that he was very nervous and easily excited. His weight had been about constant. He did not have night sweats. His appetite had been good.

Physical Examination.—The patient was slender and pale, with pale mucous membranes. The cheeks were sunken, and he looked tired. The pupils reacted to light. The knee jerks were very lively. There was no exophthalmos and no thyroid enlargement. The tonsils were not large or septic, and there was no cervical adenitis. The nose showed ample breathing space. The extended fingers did not tremble.

The pulse was 78, of good quality and regular. No point of maximal apical impulse could be felt or seen. The left border of the heart was in the fifth space, 8.5 cm. to the left of the midsternal line, 1.5 cm. inside the nipple line. There was no enlargement upward or to the right. The great vessels were not enlarged. The heart sounds were not very forcible. With certain phases of respiration, a short systolic murmur could be heard. There was no diastolic murmur. The aortic and pulmonic sounds were of about equal intensity. The second sound was not reduplicated. Systolic pressure was 120; diastolic, 85.

The motility of the lungs was good, and equal on the two sides. The percussion note was slightly dull at both apexes behind, and at both bases, especially the left, behind. There was no marked change in fremitus. The breath sounds were harsh over both apexes, and were distant at both bases, especially the left, behind. Inconstant, coarse, sibilant râles could be heard over both upper lobes. But there were no persistent moist râles after cough. The findings showed change from time to time.

Many examinations had been made of the sputum; tubercle bacilli were never found. Roentgen-ray examination showed no marked change in the lungs. The Wassermann reaction was negative. The urine was negative. In the last few months, the temperature had rarely been a shade above 99 F.

CASE 4.—A man, aged 24, sent to the hospital with a diagnosis of heart disease and bronchial asthma, who gave no "rheumatic" or venereal history, had never been ill until four years previously, when he had a severe attack of influenza. He had never been well since. After the attack, a cough remained, and the patient raised a moderate amount of sputum. One day, during a violent coughing spell, he raised blood or blood-tinged sputum. He was very short of breath. Almost every night, he had attacks of wheezing, and became "choked up," so it became necessary to sit up in bed. From time to time, he had sharp pains through both sides of the chest. His weight remained about constant. He had never had any rise of temperature while in the hospital.

Physical Examination.—The patient was well developed and well nourished, with good color. The knee jerks were lively. The extended fingers did not tremble. The pupils reacted to light. There was no exophthalmos, and no thyroid enlargement. The tonsils were not large or septic; the teeth were in good condition; there was no cervical adenitis. (He had a deviated septum, which was corrected by operation about a year previously.) His breathing space was sufficient. There was no clubbing of the fingers. There was no pulsation in the neck.

The pulse was 92, regular and of good quality.

The maximal impulse of the apex was felt, but not seen, in the fifth space, 7 cm. to the left of the midsternal line, 2.5 cm. inside the nipple line, 2 cm. inside the midclavicular line. Dulness corresponded. There was no extension of dulness upward or to the right. The vessels were not enlarged. A very short systolic murmur was heard at the base. After a little exercise, the third heart sound could be heard, but no diastolic murmur. The heart sounds were of good quality. Sinus respiratory arrhythmia was not marked. The second sounds were about equal in intensity. The second sound was not reduplicated. The systolic blood pressure was 110; diastolic, 60.

Roentgen-ray examination of the heart had shown enlargement of the right auricle.

There was a slight lag of the right chest on respiration. There was slight dulness over the right upper lobe in front and behind. Vocal and tactile fremitus showed no marked change. At the right base behind, expiration was slightly prolonged, and a few noisy râles were heard, which soon cleared up. There were no persistent medium moist râles after cough. At times, when the wheezing was bad, the lungs were full of sonorous and sibilant râles.

Skin protein tests were all negative.

The sputum had been examined many times, but tubercle bacilli were never found.

The Wassermann reaction was negative. The urine was normal.

The temperature remained normal.

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ALIMENTARY LEUKOCYTOSIS IN EIGHTY NORMAL MEN

A STUDY IN REFERENCE TO THE CRISE HÉMOCLASIQUE OF WIDAL *

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The statement by Widal, Abrami and Iancovesco,[1] in 1920, that leukopenia following a standard protein meal is to be regarded as a delicate test for the presence of hepatic insufficiency suggested the advisability of studying a series of postalimentary leukocyte curves in normal persons. As the original article by Widal and his co-workers reported only eleven control experiments, it seemed wise to try the test further on a larger group of healthy men.

Widal's test appears to rest on a sound experimental basis. It is known that the injection of a certain quantity of commercial peptone into the general circulation of a dog will promptly result in a crise hémoclasique. This syndrome is an evidence of upset of the colloidal balance of the blood, and is characterized clinically by leukopenia, a fall of blood pressure, hypercoagulability, and a change in the refractive index of the serum.

If after a heavy protein meal, samples of blood are taken either from the portal vein or from the general circulation, they will yield on chemical examination no trace of either proteose or peptone. However, by a biologic reaction, Widal was enabled to demonstrate the presence of these substances in the blood of the portal vein. For this purpose, he momentarily established an anastomosis between the portal vein and the inferior vena cava of a dog during the digestive period by a process similar to that utilized in making an Eck's fistula. Several minutes after the connection had been made, a typical crise hémoclasique resulted. This experiment was controlled by performing the same test on unfed dogs. In the latter animals, no crisis was observed. These studies show that the products of digestion which are normally absorbed into the portal vein, can, when they gain entrance into the general circulation, cause a disturbance of the colloidal balance of the blood analogous to that resulting from the direct injection of commercial peptone.

By withdrawing 40 c.c. of blood from the portal vein of a dog during the height of the digestive period and immediately introducing it into the saphenous vein of the same animal, Widal was able to induce an artificial crisis. Confirmation was added to this experiment by the work of Roch and Gautier [2] in 1922. As ascitic fluid is a portal transudate, these workers reasoned that the entrance of this fluid into the general circulation should produce a crise hémoclasique. This proved to be the case, the white count, in one experiment on a woman with Laënnec's cirrhosis, falling, forty-five minutes after the subcutaneous injection of the fluid, from 10,540 to 6,200 cells. The blood pressure likewise was lowered.

On the basis of his investigations, Widal formulated the hypothesis that the peptones, proteoses, and other disintegrating protein substances found in the portal vein during the digestive period, are arrested and transformed by the liver. This action he designated as the proteopexic function of the liver.

To be consistent with the foregoing data, it seemed probable that the proteopexic function would be deficient in various hepatopathies, that this defect would be associated with a crise hémoclasique following alimentation in persons thus affected, and, finally, that our knowledge of this subject could be utilized clinically in devising a method for detecting insufficiency of the liver. Further research proved that these surmises were true.

The technic of the test proposed by Widal is very simple. The subject to be examined abstains completely from food for a period of at least five hours preceding the test. This detail is of great importance, as the ingestion of nitrogenous food, no matter how small the amount, interferes greatly with the reaction. A leukocyte count is made, and then the subject drinks 200 gm. of milk (a glass of milk, the exact amount not being essential). Subsequently, the leukocytes are counted at intervals of twenty minutes for a period of two hours. Normally, there is slight leukocytosis following the ingestion of the milk, and the count never falls below the prealimentary level. The occurrence of postalimentary leukopenia is considered pathologic and an evidence of hepatic insufficiency. This leukopenia, when present, usually appears in the first hour. In one of Widal's patients it was as late as an hour and a half in coming on. The other signs of the crise hémoclasique, viz., the fall of blood pressure, the increased coagulability of the blood, and the diminished refractive index of the serum, accompany the leukopenia. The last manifestation, however, is the most sensitive and the easiest to determine; it was therefore recommended by Widal that chief reliance be placed on this evidence in determining the existence of a crise.

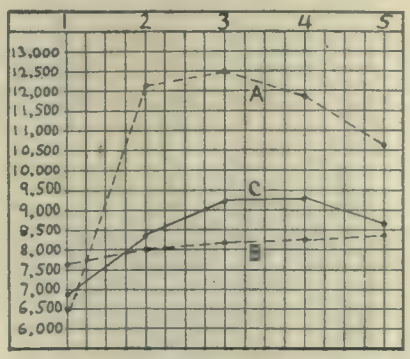


Chart 1.—Postalimentary leukocyte curves in eighty normal persons: 1, after five hours' fast and before test meal; 2, one-half hour after milk, 3, one hour after milk; 4, one and one-half hours after milk; 5, two hours after milk; *A*, maximal degree of leukocytosis; *B*, minimal degree; *C*, composite curve of leukocytosis in eighty normal persons. In every instance, some degree of leukocytosis was observed. The interrupted lines *A* and B represent the limits of variation; i. e., they are the curves of the cases in which the maximal and the minimal degrees of leukocytosis, respectively, occurred. The solid line *C* represents the composite curve of normal postalimentary leukocytosis, the average of the curves obtained.

That leukocytosis following the ingestion of a meal rich in proteins is the rule has long been known. But, if this physiologic phenomenon is to be employed as a foundation on which to build a clinical test, it is very essential to establish the fact that the response is uniform for normal persons. More specifically, it becomes obligatory to investigate thoroughly the physiologic reaction resulting when the protein dosage is reduced to the small quota contained in a single glass of milk.

Widal studied eleven normal persons and sixteen patients in whom the liver was intact, and found that, in all instances, the ingestion of a glass of milk, or, in fact, even of larger quantities of protein, left the subject free from a crise hémoclasique.

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1. Widal, F.; Abrami, P., and Iancovesco, N.: L'épreuve de l'hémoclasie digestive dans l'étude de l'insuffisance hépatique, Presse méd. **28**: 893 (Dec. 11) 1920.

2. Roch, M., and Gautier, P.: Choc hémoclasique chez les pleurétiques et les ascitiques par auto-injection du liquide de l'épanchement, Presse méd. **30**: 209 (March 11) 1922.

It seemed to me that a test of this delicacy should be substantiated by a larger number of observations on normal persons. Leukocyte counts are subject to such great variations, depending on numerous factors, that it appeared beforehand as if alimentary leukopenia must surely occur in a certain definite percentage of healthy men. To record the leukocyte curves noted in normal persons following the ingestion of one glass of milk after five hours of fasting, and, if the curves proved to be consistent, to plot out a composite curve of normal alimentary leukocytosis, under the foregoing conditions, furnished the subject for the present investigation.

TABLE 1.—LEUKOCYTE CURVES IN EIGHTY MEDICAL STUDENTS AT INTERVALS OF ONE-HALF HOUR FOLLOWING INGESTION OF 200 GM. OF MILK

Subject	After 5 Hours' Fast	After Ingestion of 200 Gm. of Milk				
		½ Hr.	1 Hr.	1½ Hr.	2 Hr.	2½ Hr.
1	6,500	8,400	9,200	8,700	.....	.....
2	7,200	7,600	9,200	7,800	.....	.....
3	7,400	9,040	9,280	10,480	8,640	8,480
4	7,400	8,700	9,500	10,050	9,300	.....
5	7,200	9,400	10,300	8,300	.....	.....
6	7,300	8,200	8,900	9,200	8,400	.....
7	7,600	8,400	8,800	10,400	.....	.....
8	7,500	11,500	10,200	10,200	8,000	.....
9	7,300	8,200	9,100	8,200	.....	.....
10	7,300	7,900	8,200	7,900	.....	.....
11	7,100	7,900	8,400	8,900	.....	.....
12	7,200	8,600	8,900	9,000	.....	.....
13	7,100	8,500	8,700	9,400	.....	.....
14	7,400	9,200	9,450	8,750	.....	.....
15	7,200	9,400	9,600	8,400	.....	.....
16	8,200	10,300	10,900	10,200	.....	.....
17	7,100	9,800	10,500	8,000	.....	.....
18	6,300	9,600	10,200	7,500	.....	.....
19	7,500	8,300	8,900	9,400	8 700	8,200
20	7,200	8,800	10,240	10,400	8,800	.....
21	6,900	9,300	12,200	10,500	.....	.....
22	7,600	8,400	8,000	7,500	.....	.....
23	7,300	8,100	8,500	8,300	.....	.....
24	8,000	9,100	9,500	9,200	8,500	.....
25	7,400	9,200	9,800	10,200	9,600	.....
26	7,800	8,600	9,500	10,400	9,000	.....
27	7,400	8,000	9,200	10,800	9,000	.....
28	7,200	9,750	10,300	11,400	10,500	7,900
29	7,200	7,600	8,000	10,800	9,200	.....
30	7,100	8,500	9,200	8,000	.....	.....
31	8,400	9,200	12,000	10,000	.....	.....
32	6,700	7,200	8,340	9,400	8,600	.....
33	9,500	10,000	10,500	11,400	.....	.....
34	9,400	12,800	13,100	14,000	.....	.....
35	8,000	8,800	11,800	14,400	.....	.....
36	6,900	12,500	10,000	9,500	.....	.....
37	6,400	10,200	11,200	9,000	8,200	7,500
38	6,360	9,640	10,500	10,660	8,600	7,360
39	12,600	14,200	15,600	13,800	.....	.....
40	7,000	12,500	13,000	12,400	11,200	.....
41	7,400	9,900	13,000	7,700	.....	.....
42	7,500	9,680	10,400	10,600	.....	.....
43	8,000	9,600	10,000	11,200	12,300	.....
44	7,800	8,200	9,300	10,400	9,500	.....
45	7,500	8,300	9,000	10,600	11,180	9,800
46	7,620	8,660	10,050	9,260	8,780	.....
47	7,360	8,260	9,280	9,000	.....	.....
48	6,400	8,880	10,000	10,900	10,000	.....
49	7,200	9,900	11,400	12,600	10,300	.....
50	6,800	8,200	10,800	11,600	10,900	.....
51	7,800	8,300	9,600	10,200	9,000	.....
52	7,200	9,500	12,400	12,500	.....	.....
53	8,200	8,800	8,860	8,840	.....	.....
54	6,800	7,400	8,800	9,000	.....	.....
55	9,000	9,800	10,200	11,400	10 000	.....
56	7,200	8,200	8,860	9,200	9,000	.....
57	6,400	7,200	8,800	9,200	.....	.....
58	7,600	8,200	9,000	9,200	.....	.....
59	6,200	7,000	8,000	8,000	.....	.....
60	6,200	7,200	11,800	10,400	.....	.....
61	7,100	7,600	8,000	8,100	.....	.....
62	7,200	8,400	9,200	9,000	8,000	.....
63	8,400	8,900	9,100	9,200	9,250	.....
64	7,300	8,200	9,360	8,500	.....	.....
65	6,500	7,400	8,600	9,200	11,320	10,400
66	5,760	9,200	10,520	9,000	.....	.....
67	6,300	7,600	8,200	10,000	.....	.....
68	6,600	8,000	9,500	11,500	.....	.....
69	6,800	10,200	9,500	8,660	.....	.....
70	7,200	7,900	9,000	8,100	7,500	.....
71	8,200	9,000	9,600	10,400	10,000	.....
72	7,200	8,200	9,400	9,200	.....	.....
73	6,800	7,200	8,400	7,500	.....	.....
74	8,200	8,500	8,650	8,750	8,800	8,900
75	7,600	8,500	9,500	10,800	9,100	.....
76	7,800	8,400	9,200	8,200	.....	.....
77	7,400	8,000	9,200	10,800	9,000	8,600
78	7,800	8,000	9,500	8,400	.....	.....
79	7,900	8,400	9,200	10,400	9,500	.....
80	7,820	8,450	9,200	10,890	8,200	.....

POSTALIMENTARY LEUKOCYTE CURVES IN EIGHTY NORMAL PERSONS

The present series of experiments was conducted on eighty presumably healthy medical students. In each instance, the subject had his breakfast between 7 and 8 a. m., and thereafter fasted until 1 p. m. At this time a total white count was made, and then the subject drank one glass of milk. Thereafter, white counts were made at intervals of one-half hour. The complete result of these counts is given in Table 1.

The outstanding feature of Table 1 is the high degree of uniformity in the leukocyte curves. Of the eighty normal persons tested, not one failed to show a response in leukocytosis; in other words, the crise hémoclasique, as judged by the leukocyte count, did not occur once. The curves themselves were surprisingly similar in character.

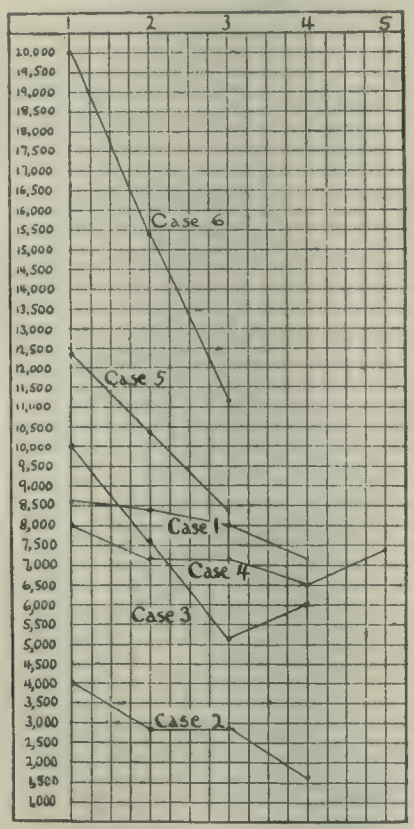


Chart 2.—Postalimentary leukocyte curves in six patients, showing the crise hémoclasique: The time intervals are the same as in Chart 1. Case 1, bronchial asthma; Case 2, Laënnec's cirrhosis; Case 3, cholelithiasis; Case 4, syphilis of liver, with ascites; Case 5, idiosyncrasy to milk; Case 6, Laënnec's cirrhosis, bronchitis.

Three curves are graphically represented in Chart 1. They are the two extremes, i. e., the minimal and the maximal degrees of leukocytosis observed in normal persons, and a composite curve, obtained by averaging the figures obtained in the entire series. It is believed that these curves can safely be considered to portray the average type of reaction and the permissible limits of variation in normal persons.

The present study adds considerable justification to Widal's contention that postalimentary leukopenia is to be construed as a pathologic phenomenon. It does not touch on the problem of the specific interpretation of abnormal curves, or upon the possible occurrence of postalimentary leukopenia in pathologic states other than hepatic insufficiency.

While the present work was not primarily intended to include a study of pathologic material, it may not be

TABLE 2.—SIX CLINICAL CASES IN WHICH THE CRISE HÉMOCLASIQUE OCCURRED

Case	Clinical Diagnosis	Before Test Meal	After 200 Gm. of Milk			
			½ Hr.	1 Hr.	1½ Hr.	2 Hr.
1	Bronchial asthma	8,600	8,400	8,000	7,200	.....
2	Laënnec's cirrhosis	4,000	2,800	2,800	1,600	.....
3	Cholelithiasis	10,000	7,600	5,200	6,000	.....
4	Syphilis of liver; ascites	8,000	7,200	7,200	6,500	7,400
5	Idiosyncrasy to milk; sick with nausea, apparently due to test meal	12,400	10,400	8,450	.....	.....
6	Laënnec's cirrhosis; bronchitis	20,000	15,400	11,200	.....	.....

amiss to mention several clinical examples in which the test was used and the crise hémoclasique resulted. Table 2 gives these cases, and the curves are graphically shown in Chart 2.

SUMMARY

The present study was undertaken for the purpose of investigating the normal leukocyte curve following the ingestion of one glass of milk after a period of fasting. Alimentary leukocytosis is the physiologic foundation on which Widal's test of liver function is built. While a decrescendo leukocyte curve is not the only element in the crise hémoclasique of Widal, the other components being a fall of blood pressure, increased coagulability of the blood, and a diminished refractive index of the serum, Widal expressed the opinion that a drop in the leukocyte curve is the most important part of the syndrome, and is sufficient basis for the diagnosis of hepatic inadequacy.

It therefore became essential to institute a careful inquiry into the physiologic results before attempting to interpret atypical curves. It was necessary to establish the fact that alimentary leukocytosis is uniform under normal conditions. To give a physiologic background on which to base pathologic studies, it appeared desirable to plot out a composite curve of normal alimentary leukocytosis, under the conditions of the test, together with the curves of the permissible limits of variation in normal persons.

Experiments with reference to their postalimentary leukocyte curves were conducted on eighty presumably healthy medical students. After five hours of fasting, a white cell count was made, then a glass of milk was ingested, and thereafter the leukocytes were counted at intervals of one-half hour. In every instance, some degree of leukocytosis followed the administration of the test meal; in other words, the crise hémoclasique, as judged by the postalimentary leukocyte curve, did not once occur in a normal person. There was considerable uniformity in the curves, and the difference between the two extreme variants (Chart 1) was not great.

The composite curve of normal postalimentary leukocytosis (Chart 1), as obtained by averaging the figures on the eighty normal subjects, gave counts of 7,379 white cells before the meal, and 8,856, 9,762, 9,779 and 9,191 white cells one-half hour, one hour, an hour and a half, and two hours, respectively, after the meal.

From the studies here reported, it appears safe to conclude that the normal response to the conditions of Widal's liver function test is uniformly one of leukocytosis.

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The Greatest Intellectual Revolution.—We are in the midst of the greatest intellectual revolution that has ever overtaken mankind. Our whole conception of mind is undergoing a great change. We are beginning to understand its nature, and as we find out more, intelligence may be raised to a recognized dignity and effectiveness which it has never enjoyed before. An encouraging beginning has been made in the case of the natural sciences, and a similar success may await the studies which have to do with the critical estimate of man's complicated nature, his fundamental impulses and resources, the needless and fatal repressions which these have suffered through the ignorance of the past, and the discovery of untried ways of enriching our existence and improving our relations with our fellow men.—Robinson: The Mind in the Making.

DUODENAL MOTILITY

RADIOGRAPHIC OBSERVATIONS FOLLOWING THE DIRECT INJECTION OF BARIUM INTO THE HUMAN DUODENUM

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Recent experimenters have shown that duodenal contents normally are regurgitated into the stomach toward the close of gastric digestion. This finding, together with the frequency with which reverse movements of barium are seen during radiographic examinations of the gastro-intestinal tract [1]—partial duodenal obstruction—prompted the present direct study of movements in the human duodenum.

It is not my purpose in this paper to set forth evidence either for or against any particular theory pertaining to the physiology of the duodenum. However, the results obtained by a specific method of duodenal injection will be presented and discussed in the light of modern theories. Whether or not the observations will be of use from a physiologic or clinical standpoint requires corroborative evidence; the amount of information to date is insufficient to warrant general conclusions.

METHOD

A small duodenal tube with a metallic tip is passed into the stomach, the contents of the stomach are withdrawn, and the patient is then permitted to recline on the right side until the bile flows from the tube. The presence of bile is taken as an indication of the presence of the tube in the duodenum. Following drainage of the duodenum, the patient is fluoroscoped, and the position of the tube is determined. Then from 15 to 30 c.c. of a barium mixture is injected through the tube into the duodenum. Injections are often repeated, some patients receiving as high as 180 c.c. during the course of an examination. Tracings of the various positions of the barium are made on thin sheets of paper placed on the fluoroscope screen. These drawings, while less exact than roentgenograms, have the advantage of representing known conditions in the parts studied.

Disadvantages of the method are that: (1) Material is normally delivered to the duodenum only after passage through the stomach; (2) the presence of the tube, a foreign object, may of itself excite atypical motility; (3) the distention of the duodenum at a given point may give rise to motor activities which, though interesting, perhaps, are not normal to that viscus. For these and other reasons, inferences as to normal duodenal motility will not be attempted.

The method possesses the advantage of an unobstructed view of the duodenum throughout its entire length. The removal of gastric contents may or may not be of advantage; nevertheless, it removes the possibility of confusion because of the passage of material from the stomach into the duodenum.

1. The method here described has been of material service in determining obstruction by making possible the direct visualization of the duodenum throughout its entire course, thereby obviating difficulties encountered following the usual radiographic methods. Quain, in an article (Chronic Duodenal Obstruction, New York M. J. **116**: 651 [Dec. 6] 1922), which has appeared since the writing of this paper, complains of the usual radiographic methods in these words: "In the examination it is sometimes difficult to make out the exact location and conformity of the third portion of the duodenum. The stomach is usually ptosed, and after it is filled with the barium mixture, it conceals the duodenum in the anteroposterior aspect. Turning the patient sidewise gives a better opportunity to visualize this part of the duodenum."

In presenting the data and throughout the discussion, such terms as peristalsis and antiperistalsis will not be used for the reason that these terms are accepted as having specific physiologic meanings. Perhaps such terms might justly be applied to the observed phenomena of the study, but simple descriptive words will suffice for the present needs and will thus prevent unnecessary confusion and possibly just criticism.

RESULTS

Results wil be considered under the headings of (1) immediate results of barium injection; (2) reverse passage of barium from the point of injection to the duodenal cap and stomach; (3) forward passage of barium; (4) "to and fro movements" of barium in a limited portion of the duodenum; (5) injection of the jejunum, and (6) duodenal retention.

IMMEDIATE RESULTS OF DUODENAL INJECTION

Slow injection of from 15 to 30 c.c. of a barium mixture into the duodenum gradually increased the size of the shadow at the point of delivery. The shadow,

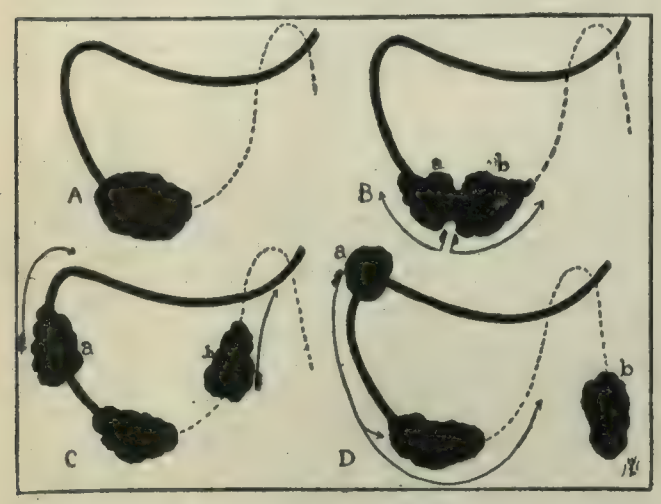


Fig. 1.—Schematic representation of the usual movements of barium following its injection into the human duodenum: *A*, local distention following injection; *B*, barium mass being divided; *C*, barium masses, *a* and *b*, passing from the point of injection, *a* toward the pylorus, *b* toward the jejunum; *D*, mass *a* resting in the cap region; *b* in the jejunum. The arrow from the cap region indicates the passage of barium from that region to the point of injection and to lower segments.

oval at first, gradually assumed an oblong shape as the injection continued. At the point of flattening of the oval mass the injection was discontinued, it being assumed that maximal lateral distention had occurred. Only sufficient barium was injected into the duodenum to cause moderate distention and present a bolus on which the duodenum might act.

In the majority of the cases the placement of barium within the duodenum was followed within a few seconds by constriction of the mass at the point of injection. This constriction resulted in the separation of two portions from the primary mass and their propulsion along both directions of the duodenum; the one portion passing toward the cap, the other toward the jejunum. Usually such movements did not completely empty the injected portion. This type of primary response was observed in seven of the thirteen cases included in this study (Fig. 1). A primary forward passage was observed in four cases. Reverse movements of barium occurred in two cases as the first motor response to duodenal injection. On several occasions, preceding the movements just described, the barium shadow was partially divided and moved in opposite directions over short distances, from 2 to 3 cm., and later reunited at the point of division.

REVERSE MOVEMENTS IN THE DUODENUM

Barium was presented to the pylorus at some time during the examination of all the thirteen cases, and rested there for varying periods of time. In six cases, barium was passed from the point of injection into the stomach; in two of these cases, however, this occurred only after the injection of considerable quantities into the duodenum.

The injection of 15 c.c. of barium in Case 1, in which the tip of the duodenal tube lay within the cap, caused maximal distention. Barium did not pass into the stomach following this injection or at any time during the examination. The cap contained barium thirty minutes after the primary injection in spite of the fact that small amounts had been repeatedly withdrawn and delivered by progressive, forward waves to the jejunum (Fig. 2 *A*). Reverse movements of barium were not observed in any portion of the duodenum.

Maximal distention and motor activity did not occur in Case 2 until approximately 40 c.c. of barium had been injected into the duodenum. The first observed movement almost completely severed the mass and forced the two portions away from each other. The central portion was passed with considerable force toward the pylorus, and came to rest in the cap. At times the reverse movements of barium from the point of injection followed each other in rapid succession, forcing material in tumultuous masses into the cap region. So marked were these movements which piled material against the pylorus that it appeared as though that structure must give way to prevent serious consequences (Fig. 2 *C*). The pylorus, however, did not yield for a considerable time; then a small amount of barium was observed in the stomach. Reverse movements were observed in this case only in that portion of the duodenum cephalad to the tip of the tube.

Injection of the duodenum in Case 3, approximately 19 cm. below the pylorus, was followed by nearly complete division of the mass. The proximal portion was delivered to the cap by one continuous, rapid movement; this portion came to rest in the cap long before the distal portion reached the ileum. From time to time, following the initial movement of barium along both directions of the duodenum, small portions were separated from the mass at the point of injection, and passed to the cap. Usually these reverse movements occurred after a series of deliveries from the cap to the point of injection. On several occasions there occurred rhythmic alternations in the forward and reverse passage of material along the descending portion of the duodenum.

Similar reverse movements of barium were observed in all of the cases save the one in which injection of the cap occurred. In three cases, marked reverse movements occurred in the terminal portion of the duodenum. In several instances, barium was passed toward the cap only after the injection of a considerable amount into the duodenum. Reverse movements in those cases were followed by forward movements, the result being that material passed toward the cap was immediately returned to lower segments.

That reverse movements of barium in the duodenum, as here described, are not entirely the result of the particular method employed is evidenced by the pres-

ence of similar movements in persons examined by the usual roentgenographic methods. For instance, reverse movements were observed throughout the course of the duodenum in Cases 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13, examined after the drinking of a barium mixture (Fig. 3).

FORWARD MOVEMENTS OF BARIUM

Progressive, forward movements of barium, as observed in this study, began either at the point of duodenal injection or from the cap region after its filling by the reverse passage of barium from the point of injection. In brief, the passage of barium caudad from those two points was identical with the passage of barium through the duodenum of persons who had not received the duodenal tube. However, there was this difference: In the usual preparation, movements of barium began in the cap region and progressed along the duodenum, whereas, following direct duodenal injection, the first forward movement began at the point of injection, a point from 4 to 18 cm. distal to the pylorus. Movements of barium were caudad only in Case 1, in which the tip of the duodenal tube rested in the cap. When the point of the tube lay distal to the cap, twelve cases, the first progressive, forward movement apparently began at the point of injection. Later, following reverse filling of the cap, progressive movements from that region delivered barium to the point of injection, at times through the region of injection to more distal positions (Fig. 1). In certain instances—four cases—the first movement of barium following injection of the duodenum was a forward passage into the ileum; in other instances, barium was passed forward various distances and there retained until succeeding movements either carried it forward to the ileum or reverse movements delivered it back to the point of injection or to the cap.

I have not observed movements of barium from the cap which indicate that material simply drops or is siphoned from this region. My observations to date on this point, briefly, are these: Material remains in the cap as a rounded mass for an appreciable period of time following its distention, either directly by injection or indirectly by the passage of material from the stomach or from the duodenum by reverse movements. The first indication of change in the mass is the widening of the distal conical portion. This widening increases as barium rushes through it to fill a portion of the proximal duodenum. At no time does this point of opening reach the diameter of the mass collected below the cap. Following the collection of material in the upper duodenum and apparently before the mass passes forward, its continuity with that in the cap is severed. The portion thus cut off is moved progressively forward.

The present method of study gives no information pertaining to tone changes in the duodenum as affected by gastric motor activity, or evidence as to the origin of waves which pass barium away from the point of duodenal injection and the cap region. The only information establishable is that distention of the duodenum usually is followed by division of the mass and its passage along both directions of the duodenum; also that the filling of the cap by reverse movements of barium from the point of injection is followed by the passage of material forward from that region.

"TO AND FRO MOVEMENTS" IN THE DUODENUM

Movements of barium resembling those described by Cannon [2] as rhythmic segmental contractions were frequently observed following duodenal injection. Similar movements were observed during regular radiographic examinations. Such movements were characterized by a more or less complete division of a



Fig. 2.—Various positions of duodenal tube following its passage into the small bowel, and the various types of activity noted after direct duodenal injection: *A* (Case 1, Oct. 4, 1922): direct injection of duodenal cap; numerals indicate various positions taken by a bolus during its passage from the cap; all observed movements of barium were away from the cap; barium did not enter the stomach. The shape and course of the duodenum should be noted, as compared with the other five figures. *B* (Case 14, Nov. 4, 1922): *a*, pendular movements of barium immediately following duodenal injection; *b*, tracing showing separation of the barium mass and its passage along both directions of the duodenum. During the passage of the distal bolus into the jejunum, the patient complained of dizziness and faintness. *C* (Case 2, Oct. 16, 1922): *a*, the close of a series of reverse movements of barium which completely emptied the ascending duodenum into the cap region; *b*, barium mass being propelled from the cap region following cap distention by reverse movements from the point of injection. *D* (Case 3, Nov. 1, 1922): *a*, injection of the jejunum; the point of injection and the amount of barium along the course of the duodenum to the cap region and in the stomach should be noted; *b*, barium being delivered in small amounts to the cap region from the inferior flexure. The positional changes of the tube and barium in *a* and *b* may be noted. *E* (Case 15, Nov. 13, 1922): *a*, position of coiled tube in the duodenum and the passage of barium to the cap following duodenal injection; a similar coiling of the tube occurred in two other cases; *b*, opposite positions assumed during a period of "to and fro" movements of barium; the tube had been straightened out prior to this observation. *F* (Case 16, Nov. 15, 1922): *a*, primary forward movement of barium following duodenal injection; *b*, complete severance of injected mass and passage of barium along both directions of the duodenum; the shape and position of the cap in this instance should be noted.

2. Cannon, W. B.: The Mechanical Factors of Digestion, New York, 1911.

barium mass at several points, this division throwing the barium into segments. Later these oval masses divided, causing the two portions to move in opposite directions to form a second series of oval masses, the central portions of which occupied the positions of previous constriction. Such movements did not carry material forward or backward save over very limited areas.

The injection of 20 c.c. of barium into the duodenum in Case 14 was followed by marked rhythmic "to and fro movements"; the barium was repeatedly divided and redivided. In this case, however, the barium remained confined to the region of injection for possibly three minutes before material was passed along either direction of the duodenum (Fig. 2 *B*). It may be of interest to state that a forward movement from the point of injection in this case was always accompanied by a simultaneous movement of barium toward the cap. On three occasions subsequent to such movements the examination had to be discontinued because of faintness and dizziness of the patient.[3]

The segmental type of movement was best observed in the region of duodenal injection and portions caudad. However, in Case 2 it appeared as though this type of motility was present in the descending limb of the duodenum. Here barium was being rapidly moved toward the pylorus; at the same time it appeared as though the barium, although progressing upward, was repeatedly divided into segments. Evidently the entire movement was not the result of simple division of the barium mass, for the end-result was engorgement of the cap and complete clearance, save for the presence of the tube, of the descending portion of the duodenum.

INJECTION OF THE JEJUNUM

In one patient, Case 3, the tip of the duodenal tube passed into the jejunum (Fig. 2 *D*). Injections at this point were followed by passage of barium to the stomach and to the ileum. The details of the various movements observed need not be given, for they were similar in all respects to those already described.

DUODENAL RETENTION

More or less prolonged retention of barium at the point of duodenal injection occurred in all cases included in this study. Retention of barium in the cap, however, usually outlasted retention in other portions of the duodenum. For instance, in Case 2, distention of the duodenum in the region of the inferior flexure resulted in the rapid accumulation of barium in the cap and the appearance of barium in the ileum. The patient was radiographed as quickly as possible after injection, and it was observed that the cap remained greatly distended while only a small amount of barium remained about the lower end of the duodenal tube. Barium was still in the cap, thirty minutes later.



Fig. 3.—Duodenal retention and reverse movements of barium in two patients following the drinking of a barium mixture: *A* (Case 17, Dec. 1, 1922): *a*, barium being passed from the region of the inferior flexure of the duodenum into the cap region during a quiescent phase of the antrum; *b*, "to and fro" movements of barium in the duodenum during a positive phase of the antrum. The patient invariably complained of a crawling sensation whenever marked "pendular," or reverse movements, occurred in the duodenum. *B* (Case 18, Nov. 17, 1922): duodenal retention and reverse movements of barium as observed after the drinking of a barium mixture. The positions of retention and reverse movements of barium in these two cases are similar to those observed following duodenal injection (Fig. 2).

The movements of barium which nearly emptied the duodenum and which were associated with faintness of the patient in Case 14 were not sufficient to evacuate the cap. In other instances the cap filled promptly and then, by a loss of small portions which were passed caudad, became completely emptied. The absence of barium from the cap was never of long duration while material remained in the duodenum; withdrawals from and presentations to the cap continued until such a time as the forward movements of barium completely emptied the duodenum.

The fact that barium often remains in the cap for some time after complete gastric clearance is evidence that cap retention is not entirely due to the present method of investigation. Retention in the region of the inferior flexure of the duodenum is often observed during routine radiographic examinations. A degree of retention at this point comparable to that observed by the present method, however, would be looked on as indicative of a pathologic condition. Most often retention occurred in the loop formed at the inferior flexure or in that portion beyond the flexure and to the right of the vertebral column.

Whether or not the tendency to retention in the region of the inferior flexure is the result of the method employed, I am unable to say. Up to the present, attempts to inject the last portion of the duodenum have been unsuccessful (Fig. 2 *E*). In the one instance of jejunal injection, barium was rapidly moved along the intestine in both directions; that portion sent cephalad came to rest in the inferior flexure, the cap and the stomach. It would seem from the present study that the mechanics of the duodenum is more responsible for the retention in the inferior flexure than the result of disturbed physiology. The average duodenum has its lowest point at the inferior flexure; the portion reaching the duodenojejunal flexure rises rather acutely. The condition is somewhat analogous to the mechanics of the water-trap stomach; material must be forcibly lifted against gravity from the lowest point. If such an explanation suffices, it is nevertheless difficult to understand the persistent retention in spite of the marked degree of activity of this region. There was no evidence of duodenal obstruction in any of the cases studied. In the one instance of partial obstruction of the ileum—Meckel's diverticulum—there was the usual retention at the inferior flexure, although barium passed evenly through the duodenum and jejunum.

COMMENT

According to the works of Kussmaul[4] and of Rehfuss, Bergeim and Hawk,[5] there is a flow of duodenal

3. I hope to consider specifically, in a subsequent publication, the relation of duodenal motility to psychic states.

4. Kussmaul, A.: Die peristaltische Unruhe des Magens, nebst Bemerkungen über Tiefstand und Erweiterung desselben, das Klatschgeräusch und Galle im Magen, Samml. klin. Vortr. (Volkmann's), 1880, pp. 1637-1674; cited by Alvarez (Footnote 16).

5. Rehfuss, M. E.; Bergeim, Olaf, and Hawk, P. B.: Gastro-Intestinal Studies, I, The Question of the Residuum Found in the Empty Stomach, J. A. M. A. **63**: 11-13 (July 4) 1914.

contents back into the stomach at the close of a meal or during starvation. It appears that this process may be accentuated by the taking of fats [6] which, according to Cannon,[7] impairs the tone and motility of the stomach. Possibly the fatty acids split off by the pancreatic juices stimulate the bowel.[8]

Numerous observations are on record showing that the injection of the duodenum through a duodenal fistula causes a retardation or cessation of gastric evacuation because of the high state of tonicity produced in the pylorus.[9] Cannon [2] noted that distention of the colon with large enemas resulted in the passage of material into the small bowel. Heile,[10] on the other hand, demonstrated that stimulation of the colon slowed the passage of material through the ileocolic sphincter: a condition similar to that observed in the stomach following the injection of material into the duodenum through a fistula. It is of common knowledge that rapid distention of the jejunum—jejunal feeding—often results in nausea, regurgitation and at times vomiting.[11] Also, it is common to find the ileum containing barium after the giving of a barium enema. According to Quimby,[12] such a procedure may result in the passage of material to the duodenum.

Cannon,[13] Engelmann [14] and Kretschmer [15] have shown that stimulation of smooth muscle in a tubular organ results in a contracted tonic ring from which waves are given off in both directions.

According to Alvarez,[16] the rhythmicity, irritability, reaction time and latent period of the gastro-intestinal tract are graded from the stomach—lesser curvature—to the anus: the gradient theory. Raising the gradient in any portion of the intestine, according to this theory, results in the passage of waves in both directions from that point. As stated by this author,[17] in referring to the closure of the pylorus and retardation of gastric evacuation following injection of the duodenum through a fistula: "It is not surprising that food put into the middle of the tract tends to go both ways." To explain the normal regurgitation of duodenal contents into the stomach at the close of gastric digestion, the theory assumes that "the tone of the stomach drops below that of the digesting bowel."

The results of the present study appear to offer considerable support to the gradient theory. As previously considered, duodenal injection, the stomach having previously been emptied, results in a constriction over the mass injected and the passage of material from that point along both directions of the duodenum. Apparently, therefore, distention of the duodenum in some way raises the tone (gradient) sufficiently high to excite motor activity, i. e., contracted tonic ring, from which waves are given off in both directions. In my series of cases, the reverse movements completely filled the cap; at times, material was passed into the stomach. The tenacity with which barium remained in the cap was one of the most remarkable single observations of the present study.

On the basis of the gradient theory it must be assumed that the pyloric sphincter in my cases, immediately following duodenal injection, possessed a tone higher than the duodenum which forced barium against it. Perhaps, as suggested by Alvarez, the wave delivering barium to the cap region was preceded by a conduction wave which, because of the low threshold of irritability of the pylorus, excited it maximally prior to the arrival of the delivering wave. The festoon-like arrangement of the relatively few contractile fibers of the cap region may in part account for the degree of distention of this region and the inability of the active duodenal fibers to pass barium into the stomach. Perhaps, had the duodenum of my patients been more highly distended at the time of the primary injection, material might have been passed directly into the stomach in each case. However, it was deemed advisable to prevent overloading of the duodenum and the possibility of nausea and vomiting. The high initial tonicity of the pylorus evident in the majority of the patients ultimately gave way as material was delivered to the jejunum and ileum for, as previously mentioned, barium was observed in the stomach from twenty to forty minutes after the initial injection. This phenomenon, namely, barium in the stomach following duodenal injection, may be in the main the result of similar activities which carry duodenal contents into the stomach at the close of a normal gastric digestive phase. In other words, it might be assumed that the tone of the stomach had dropped below that of the more or less loaded small bowel.

The result of the present study shows that barium may be passed over a given segment of intestine in opposite directions. Distention of the cap by reverse movements in no instance prevented material from being passed from this region by progressive movements to the point from which it originally came, or to lower segments. Hence, it appears that the gradients can be altered rather rapidly in the duodenum. Perhaps distention of the cap beyond a certain point is sufficient to produce a gradient in the upper duodenum of greater magnitude than that at the point of primary injection; at any rate, barium continues to pass back and forth over the descending portion of the duodenum until finally the "down hill gradient" clears the viscus of contents.

Distention—placing a mass directly within the duodenum—is followed by a "tonic contraction" over the point of distention, and the passage of material along both directions of the viscus. However, in the present series of observations this point of primary distention and motor response tends to remain more or less filled; at least, it is the last portion of the duodenum, save the cap, to become free of barium. If distention increases the gradient at this point, it appears that the same region should be the first to become rid of its contents. This, as previously stated, does not occur. Possibly barium tends to remain at the point of injection, inferior flexure, because of the mechanics of this portion; it is the lowest portion of the duodenum. That mechanical factors may be at least partially responsible for retention at this point is evidenced by the fact that material delivered to the duodenum from the stom-

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11. Wegele, C.; Gross, M. H., and Held, I. W.: Therapeutics of the Gastro-Intestinal Tract, New York, Rebman Company, 1913.
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13. Cannon, W. B.: Further Observations on the Myenteric Reflex, Am. J. Physiol. **23**: 26-27, 1908.
14. Engelmann, T. W.: Zur Physiologie des Ureter, Arch. f. d. ges. Physiol. **2**: 243-293, 1869.
15. Kretschmer, H. L.: The Retrograde Movement of Ureteral Calculi, J. A. M. A. **71**: 1355-1359 (Oct. 26) 1918.
16. Alvarez, W. C.: The Mechanics of the Digestive Tract, New York, Paul B. Hoeber, 1922.
17. Alvarez: The Mechanics of the Digestive Tract, p. 101.

ach often lags at the inferior flexure or leaves a portion of its mass after the forward wave has delivered material to the jejunum. It appears that the gradient does not become greatly reduced at the point of retention for the reason that it is from here that barium is passed toward the cap and jejunum. Hence, it may be tentatively assumed that a portion of the duodenum may show high degrees of activity and at the same time retain material for a considerable period of time—a condition somewhat similar to gastric retention and discharge. The present observations, however, lend no positive proof that the gradient is either raised or lowered at the point of retention. The observations simply show that material may continue to be passed from a region of distention along both directions of the duodenum without immediate clearance of the segment distended.

SUMMARY AND CONCLUSIONS

1. Barium in quantities of from 20 to 60 c.c. may be injected directly into the duodenum without causing distress, the stomach and duodenum having previously been emptied of their contents.

2. The first observed movement of the barium following injection into the duodenum is a more or less complete division of the mass at the point of greatest distention.

3. Following the primary partial division, barium is usually passed along both directions of the duodenum, the central portion being delivered to the upper duodenum or cap, the distal portion to the jejunum.

4. Reverse movements of barium sooner or later result in the complete filling of the cap, at which point barium may rest for a long period of time.

5. Following distention of the cap by reverse movements, barium is passed forward by progressive movements which, at times, carry material through the point of original duodenal distention to lower segments.

6. Barium may be delivered from the point of distention to the stomach as the result of reverse movements. In the majority of instances, barium is passed into the stomach only after several injections of the duodenum.

7. Rhythmic segmental and pendular movements of barium occur in the duodenum.

8. Barium tends to rest at the point of injection—inferior flexure. This region is the usual point of injection. In one instance of jejunum injection, marked reverse movements resulted in the lodgment of barium in the cap, stomach and inferior flexure.

Child Labor on Truck Farms.—The migration of hundreds of families from Philadelphia and other Eastern cities for work on truck farms has a serious effect on the schooling of the children in these families, according to a survey made by the U. S. Department of Labor through the Children's Bureau. The findings of the survey show that 71 per cent. of a large group of Philadelphia children who belonged to migratory families were retarded. Twenty-two per cent. were from three to six years below normal grades. The attendance department of the Philadelphia schools estimates that over 2,500 children leave that city before the close of school each spring because of farm work undertaken by themselves or their parents. The migrations, which begin as early as February, reach their height at the strawberry season, and the majority of children do not return to school till the last of October. Many, working in the cranberry bogs, remain until later. The long absences in the autumn not only affect the child's progress in his studies, according to the report, but are probably conducive to truancy and to absence for other unlawful reasons.

Clinical Notes, Suggestions, and New Instruments

DIVERTICULUM OF BLADDER IN THE INGUINAL CANAL

HERBERT E. STEIN, M.D., NEW YORK

Diverticula may take their origin from any part of the urinary bladder, although by far the majority spring from the lateral walls, not far from the ureters. Their pathogenesis is still unknown. That some are congenital is evidenced by an analogous condition in fetal bladders, as shown by Watson.[1] However, it is generally believed that they are acquired secondary to some congenital defect in the bladder wall.

The possibility of encountering bladder tissue in the performance of inguinal hernia has been frequently stressed. In a fairly exhaustive review of the literature, I have failed to find a case report of a bladder diverticulum in the inguinal canal.

REPORT OF CASE

Mrs. S., aged 30, a sextipara, whose father was alive, and whose mother died of cancer at 37, had been suffering from so-called bilious attacks every six to eight weeks since childhood. The general habits were good; she urinated about seven times daily and twice at night. The menstrual history was normal.

For the last year the patient had noticed a mass in the right groin which she could reduce by manipulation and lying down. Three days previous to admission to the hospital, she was suddenly seized with severe pain in that region and was unable to reduce the swelling. Her physician, Dr. Maurice Exiner, made a diagnosis of irreducible hernia, and admitted her to the Community Hospital, where I was consulted. She did not appear very acutely ill, although suffering from considerable pain. The temperature on admission was 100.6, pulse 96, respiration 18. The general physical examination was negative. In the right inguinal region a spherical swelling was present, tender, firm, irreducible and not tympanitic. Urinary examination was negative. The diagnosis of an irreducible hernia seemed logical.

Under general anesthesia, the usual Bassini incision was done. Instead of a sac, a tumefaction presented itself, consisting of a firm, vascular, thick walled, pear shaped mass about 5 by 2 cm., lying in the inguinal canal, the narrowest portion at the internal ring. There was no peritoneal sac. The similarity to bladder tissue was noted, a catheter passed by the urethra and the bladder emptied. But the tumor in the inguinal canal remained unchanged in size. The mass was then incised and found to contain about half an ounce of straw-colored fluid. No internal communication with the bladder could be determined. The pedicle at the internal ring was transfixed and ligated with No. 2 chromic gut, and a typical Bassini closure done. The patient had a very smooth convalescence.

We were dealing, then, with either a congenital cyst of the inguinal canal, a bladder hernia, or a diverticulum of the bladder. Microscopic examination, confirmed by several pathologists, proved the specimen to be bladder tissue. The muscle bands were arranged in the characteristic fashion, interspersed by connective tissue. There was, however, a complete absence of epithelium. Hinman,[2] in a series of seventeen operative cases, states that in only one did he discover any vestige of lining epithelium. He mentions the remote possibility of traumatism during operation, such as packing the cavity of the diverticulum, as being the factor in denuding the epithelium. This does not apply to the case here reported, as there was no intradiverticular manipulation. We feel that we were dealing with an old, if not congenital, diverticulum, whose lumen had become shut off from that of the bladder and whose epithelium had undergone atrophy.

41 West Seventy-Fifth Street.

1. Watson, E. M.: The Developmental Basis for Certain Vesical Diverticula, J. A. M. A. **75**: 1473-1474 (Nov. 27) 1920.
2. Hinman, Frank: Surg., Gynec. & Obst. **29**: 150-172 (Aug.) 1919.

THE CELLULOID CAPSULE: A MEANS OF DETERMINING THE MOTILITY OF THE GASTRO-INTESTINAL TRACT

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The methods ordinarily adopted for the determination of the motility of the gastro-intestinal tract are:

1. The ingested barium meal. By following roentgenologically the progress of this radiopaque mixture, it is possible to determine, at any time, the exact position of the head and of the tail of the column of barium. Unquestionably, this is the most accurate method we can employ for this purpose at the present time.

2. The use of powdered charcoal or carmin. This material is not radiopaque, and its progress cannot be followed fluoroscopically. At best, only the terminal result can be noted, namely, the time of the appearance of the carmin or charcoal in the stool. No information as to the intermediate progress is obtainable. The method, however, in addition to giving us information as to the total gastro-intestinal motility, serves as a means of demarcation. When it is desired to study the nature of the stool under special conditions or after a particular test diet, the demarcation made possible by ingested carmin or charcoal serves a valuable purpose. It enables us to determine when to begin the study of the properly selected specimen of stool. This could not be done as well with the ordinary ingested barium meal.

The method here reported, though exceedingly simple, is nevertheless clinically valuable, not only for the demarcation of separate specimens of stool, but also for the determination of gastro-intestinal motility. The method consists in the employment of the indigestible celluloid capsule, which I have previously described.[1] This capsule is filled with powdered barium. Because of this, its localization is possible fluoroscopically at any time in the course of its progress through the gastro-intestinal tract. Moreover, the celluloid capsule itself may be prepared so that it is bright red. Because of its color, the capsule can be readily detected in the stool. This informs us as to the total gastro-intestinal motility, and also serves as a means of indicating when to begin the stool examination of a properly selected specimen, after the administration of a test diet such as that of Adolph Schmidt, or of an ordinary meat-free diet for the detection of blood.

1 West Eighty-Fifth Street.

AN IMPROVED METHOD FOR COUNTING BLOOD PLATELETS *

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CLEVELAND

The essentials of a good method for platelet counting are: (1) an efficient anticoagulant; (2) absence of contact between the undiluted blood and any instrument; (3) preservation and fixation of red blood corpuscles; (4) low specific gravity of diluting solution, and (5) a dye that will readily stain the platelets. To these five might be added a sixth, in case the method is for clinical use; namely, that the solution must be reasonably easy to prepare, and must be stable. The solutions recommended by Pratt,[1] Wright and Kinnicutt,[2] Buckman and Hallisey,[3] Bizzozero[4] (osmic acid anticoagulant, found unsatisfactory by Kemp, Calhoun and Harris[5]) were all found to present features that made satisfactory counts doubtful.

After experimenting with the anticoagulants of the foregoing methods, we reached the conclusion that sodium citrate is by far the most efficient in preventing clumping of the platelets.

The use of the blood pipet for a direct and true count is far easier than any of the indirect methods. It has heretofore been open to the criticism that the platelets have the opportunity of adhering to the glass during the short period before the diluting fluid is drawn in. We have obviated this by first filling the red cell counting pipet to the 0.5 mark with the diluting fluid, and then drawing up the blood rapidly until the top of the column reaches the 1.0 mark, whereupon the pipet is again plunged into the diluting fluid and the dilution is completed. With a little practice, this can be done very accurately. In obtaining blood, the puncture should be made sufficiently deep to cause the blood to flow freely for a few seconds. The first drops are wiped away with a quick stroke.

The method of Wright and Kinnicutt calls for laking of the red blood corpuscles. Unfortunately, we have never seen a field in which the red cells were laked without the formation of artefacts. These artefacts appear as highly refractile bodies, of the size of a small platelet, and take the dye in the same manner. They may appear attached to the periphery of the "shadow" red cell, or may be entirely free. We have followed the formation of these bodies, and believe them to be identical with "Arnold bodies." Our first solution was 3.8 per cent. sodium citrate, which, although isotonic, was found occasionally to permit of "laking" or "fading" of the erythrocytes. After the addition of formaldehyd solution, 0.2 per cent., this phenomenon was much less frequent, but it still occurred. More formaldehyd caused distortion of the red cells.

It is generally agreed that the time of settling of the platelets should be shortened as much as possible. We found this to be particularly true when the open type Neubauer counting chamber was used, since evaporation alters the preparation after about twenty minutes. The high specific gravity of the solution of Buckman and Hallisey does not permit rapid settling of the platelets. Experience with the solution which we have described has convinced us that a count of sufficient accuracy for clinical purposes may be made after ten minutes, or about the time necessary for a preliminary red cell count.

Of all the vital dyes tested, brilliant cresyl blue is the best. Having made a solution as described below, which was isotonic and contained formaldehyd, we were inclined to attribute the occasional apparent hemolytic effect to the dye, which we used in 0.1 per cent. concentration. With this in mind, a series of tests were made, as follows:

Experiment showed that blood diluted 1:160 gives, on centrifugalization, a column of red cells that about half fills the narrow end of a Hopkins tube.[6] Blood was diluted 1:80 with 3.8 per cent. sodium citrate solution. To 5 cubic centimeter portions of this were added 5 c.c. each of 0.2 per cent. solutions of eight dyes, also in citrate (3.8 per cent.). The final mixture was: blood, 1:160; sodium citrate, 3.8 per cent.; dye, 0.1 per cent. This approximates the 1:200 dilution used in the counting chamber. The mixtures stood for periods of from thirty minutes to two hours, and were then centrifuged with controls, not containing dyes, for five minutes. The same speed and time were maintained in all experiments. With the trypan dyes (red and blue) and crystal violet, the bulk of precipitated cells considerably exceeded that of the control tubes; but with all other dyes, methylene blue, methyl violet, neutral red, brilliant cresyl blue and Janus green, the bulk of cells was not altered. Therefore, it was safe to assume that no important hemolysis took place in the Hopkins tubes. Parallel microscopic examinations revealed, in the cases of increased volume, swelling of the corpuscles. Occasional and irregular cases of hemolysis still occurred. Allowing the dye solutions to age as long as thirty days made no difference in our results; nor did the substitution

1. Buckstein, Jacob: Direct Determination of Lipase Within the Small Intestine, J. A. M. A. **79**: 1766 (Nov. 18) 1922.

* From the Department of Pathology, Western Reserve University School of Medicine.

1. Pratt, J. H.: A Critical Study of the Various Methods Employed for Enumerating Blood Platelets, J. A. M. A. **45**: 1999 (Dec. 30) 1905. Kemp, G. F.; Calhoun, Henrietta, and Harris, C. E.: The Blood Plates, Their Enumeration in Physiology and Pathology, ibid. **46**: 1092 (April 14) 1906.

2. Wright, J. H., and Kinnicutt, Roger: A New Method of Counting the Blood Platelets for Clinical Purposes, J. A. M. A. **56**: 1457 (May 20) 1911.

3. Buckman, T. E., and Hallisey, J. E.: Studies in the Properties of Blood Platelets, J. A. M. A. **76**: 427 (Feb. 12) 1921.

4. Bizzozero: Arch. ital. de biol. **16**: 388, 1891.

5. Kemp, G. T.; Calhoun, Henrietta, and Harris, C. E.: The Blood Plates, Their Numeration in Physiology and Pathology, J. A. M. A. **46**: 1026 (April 7) 1906.

6. Hopkins, J. G.: A Method for Standardizing Bacterial Vaccines, J. A. M. A. **60**: 1615 (May 24) 1913.

of isotonic salt solution for sodium citrate solution. Washing the red cells before making up the original suspension caused even greater swelling of the corpuscles in some instances, but no hemolysis took place as determined by the Hopkins tube method.

Having ruled out any direct hemolytic effect of the dye, of the anticoagulant or of age of the solution, we were forced to conclude that the phenomenon was in some way related to the intimate contact (surface effect) with glass, taking place in the counting chamber. The question was clarified by the work of Fenn,[7] who found that hemolysis of washed corpuscles is more rapid when they are allowed to settle out on clean microscope slides than when they are kept in suspension, and that contact hemolysis is most marked on slightly soiled glass, hemolysis being very rapid with unfixed cells. Serum inhibited the contact effect. From the studies of Fenn and from our own, it is evident that, when using solutions for blood counting containing no fixative or only small amounts, the greatest attention must be paid to the use of scrupulously clean apparatus.

SUMMARY

The fluid recommended is a 3.8 per cent. sodium citrate solution, to which formaldehyd solution, 0.2 per cent., and 0.1 per cent. brilliant cresyl blue are added.

This diluting fluid is drawn in the blood pipet to the 0.5 mark; the freely flowing blood is drawn to the 1.0 mark, and finally the pipet is plunged back into the diluting fluid, and dilution is completed.

After the counting chamber is filled, ten minutes should elapse before the platelet count is made. During this period, a red cell count can be readily accomplished.

Great care should be taken to use scrupulously clean pipets and counting chamber to avoid contact hemolysis.

Both in experimental work with the blood of rabbits and of guinea-pigs, and in clinical work, the method proved simple and reliable.

CASE OF GANGRENE OF SCROTUM AND PENIS

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A white man, aged 34, entered the hospital, Nov. 27, 1922, complaining of severe pain in the region of the scrotum and penis. The family history was negative. The past history included the diseases of childhood, and influenza in 1918, but no other serious illness. Owing to inability to retract the foreskin, the patient, on the advice of a physician, was circumcised at the physician's office, November 21. There were no untoward symptoms until two days later, when a slight infection developed, for which he applied a strong solution of mercuric chlorid. The next day he noticed that the skin on the penis and scrotum was dead; sensation was lost, and the wound was reddened. He continued to get worse and noticed that the skin was sloughing on both penis and scrotum. The latter had swollen to several times the normal size. He was brought to the hospital. All the skin, dartos and tunica vaginalis of the scrotum were gangrenous as high as the penoscrotal junction, and the skin on the anterior surface of the penis had sloughed. The skin of the thigh was intact, as were the testes.

The patient was well developed and nourished. He was in much pain. The mucous membranes were pale and cyanotic. There was an anxious expression on the face. Examination of the head, lungs and heart was negative. The abdomen was somewhat tender all over the lower quadrant, but there were no areas of tenderness on palpation. The blood pressure was: systolic, 134; diastolic, 74; pulse pressure, 60. Blood count revealed 12,000 leukocytes, 80 per cent. polymorphonuclears and 4,500,000 red cells. The urine was normal. The Wassermann and Sachs-Georgi tests were negative. A smear made from the lower wound revealed *Streptococcus pyogenes.*

All of the dead skin was carefully removed from the wounds, and a wet dressing of potassium permanganate solution was applied until the infection had cleared up. The improvement was rapid, and on November 12 a plastic operation was decided on, with skin graft if necessary. Under spinal anesthesia, the edges of the scrotal wound were freshened and undermined slightly, beginning at the lower angle of the wound. An attempt was made to cover the testes with healthy skin flaps, which was done with the exception of a small area in the center, on which were placed several small skin grafts. The skin on the penis was so widely separated that it was not possible to approximate the edges, so a skin graft was done, and a rubber tissue dressing was applied. The scrotal wound healed by first intention with the exception of a small area near the center, but the grafts soon covered it. The penile wound healed very rapidly, and the patient was discharged, December 27, the wound to be dressed at home, only a small area requiring any attention.

This is rather an unusual case, in that the skin on both the penis and the scrotum was destroyed and sloughed without any damage being done to the surrounding skin, showing that it was doubtless a case of thrombosis of the vessels supplying the genitals, the testes being unharmed.

7. Fenn, W. O.: J. Exper. Med. **35**: 271 (Feb.) 1922.

THE USE OF SILVER ARSPHENAMIN IN THE TREATMENT OF WASSERMANN-FAST SYPHILIS

IRWIN C. SUTTON, M.D., ANAHEIM, CALIF.

Many articles regarding the efficiency of silver arsphenamin have appeared in the literature since Kolle,[1] in 1918, published the first of his series of reports. This much is established: it is an efficient spirocheticide; it is reasonably free from reactions, and it can be as conveniently administered as any other arsenical preparation.

The twenty-one cases reported were Wassermann fast. The patients, previous to the administration of the silver preparation, had had from four to thirty-four injections of arsphenamin and from thirteen to sixty-seven intramuscular injections of an insoluble mercury salt. The presence of a persistently positive Wassermann reaction in cases of intensive treatment is conceivably due to the continued activity of nests or foci of spirochetes resistant to medication. These foci are usually present in the cardiovascular and nervous systems. Detailed reexamination of these patients revealed evidence of activity that was unsuspected before treatment was instituted. These data are presented in Table 1. Stokes has repeatedly called attention to the multiple structural involvement in the various types of syphilis, and has exposed the fallacy of labeling a case neurosyphilis, for example, when an aneurysm and a hepatitis coexist.

TABLE 1.—TWENTY-ONE CASES OF WASSERMANN-FAST SYPHILIS SHOWING MULTIPLE TISSUE INVOLVEMENT

Osseous system	19
General glandular and splenic	17
Cardiovascular	13
Skin and mucous membrane	11
Cerebrospinal axis	10
Gastro-intestinal	4

MODE OF ADMINISTRATION

A blood Wassermann test was made on all patients before the administration of silver arsphenamin.

From four to sixteen injections of 0.3 gm. of the drug in concentrated solution (10 c.c.) were given at weekly intervals. No mercury was exhibited during the course.

At the end of the series of injections, a month's rest was given, and a complement fixation test was performed, together with a spinal fluid examination.

RESULTS

Twelve of the twenty-one patients presented a negative serum reaction. Four showed no change, and in five a

1. Kolle, W.: Deutsch. med. Wchnschr. **44**: 1177 (Oct. 24), 1211 (Oct. 31) 1918.

marked diminution in the strength of the reaction took place. No severe reactions occurred, although treatment was stopped in Case 11 because of a threatened dermatitis (toxic type). Clinical improvement was seen in nearly every case, especially when the complaint or symptom was of neurologic origin. This seemed to parallel the spinal fluid findings.

Of interest is Case 8, in which the condition was conjugal syphilis. The wife was also Wassermann fast, but responded to therapy with a negative reaction (Case 2). The husband's blood reaction was unchanged, but he was so much improved clinically that he was able to resume his occupation as a brakeman.

Case 15 was accepted for trial with misgivings, since a total of thirty-four arsphenamin and sixty-seven mercury injections had been given. No signs of arsenical intolerance appeared, and the full course of silver arsphenamin was administered, with the result that the reaction changed from total inhibition to negative.

Cases 16 and 8 did not respond although the number of injections was double.

TABLE 2.—RESULTS OF SILVER ARSPHENAMIN INJECTIONS*

Case	No. of Mercury Injections	No. of Arsphenamin Injections	Serum Wassermann Reaction	Spinal Fluid Reaction, 0.5 C.c.	No. of Silver Arsphenamin Injections	Serum Reaction After Therapy	S. F. Reaction, 0.5 C.c., After Therapy	Outstanding Features
1	18	6	3	..	8	0	..	Cutaneous
2	26	16	4	3	8	0	0	Cerebrospinal
3	14	10	3	..	8	1	..	Osseous
4	17	4	4	2	8	0	0	Gumma of the brain (?)
5	45	7	4	4	8	0	2	Cerebrospinal
6	47	6	4	3	8	0	0	Cerebrospinal and aneurysm
7	23	10	3	..	8	1	..	Latent
8	20	18	4	..	16	4	..	Aortitis
9	36	17	4	..	8	4	..	Cirrhosis
10	13	8	4	3	8	2	..	Cerebrospinal
11	27	14	4	4	8	2	0	Tabes dorsalis
12	24	6	3	..	8	0	0	Osseous
13	45	12	2	..	4	0	..	Toxic dermatitis (?)
14	56	14	4	..	8	4	0	Visceral
15	67	34	2	3	8	0	..	Paresis
16	20	6	4	0	16	4	..	Myocarditis
17	14	4	4	0	4	0	0	Poor tolerance
18	16	18	3	0	8	1	..	Cutaneous
19	65	24	4	3	8	0	..	Cerebrospinal
20	49	20	4	0	8	0	0	Cutaneous
21	31	12	3	0	8	0	0	Early tabes

* All Wassermann reactions were performed with alcoholic antigen; 0 indicates a negative reaction.

The results obtained are of importance if it is believed that a persistently positive Wassermann reaction is indicative of activity. It is my impression that, by the introduction of a distinct change in the treatment of Wassermann-fast cases, lasting good will be done the individual. I have twice seen a strongly positive reaction disappear after a prolonged absence of medication. It is, of course, impossible to estimate the permanence of the negative reactions obtained, but in two instances, four and six months after the treatment, the test was still negative.

Clinic Building.

Tuberculosis in New York in 1922.—The New York Tuberculosis Association reports that tuberculosis claimed 5,794 victims in New York City during 1922, the death rate being 99 per hundred thousand of the population. It is the first time in the history of the city that a tuberculosis death rate below 100 has been reached. In 1921 the mortality rate was 103. Up to 1919 the annual number of deaths from tuberculosis in all forms was constantly close to or slightly above 10,000. The great gain in the last few years is better realized when it is noted that the annual total now maintained is below 6,000, while since 1910 the population has increased by well over a million people. If the mortality from tuberculosis in 1910, which was then at the rate of 240 to 100,000 inhabitants, had prevailed last year, the deaths registered would have numbered 12,263. The saving of lives during 1922 due to progress against the disease, therefore, amounted in this city to 6,469.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 553)

[NOTE.—This is the ninth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

CLINICAL ASPECTS OF INFANT FEEDING

The general well-being of the infant is as important as the percentage and energy value of the food formula. In considering the two important factors in successful feeding, the chemical composition is as essential as the caloric value. Otherwise one encounters profound disturbances, difficult of interpretation, and due to feeding of either insufficient or excessive amounts of the components of the diet.

The infant, therefore, must be fed amounts of fat, protein, carbohydrates, salts and water suitable to its constitution, age and physical development; these ingredients must be in proper proportion and sufficient in quantity to meet the caloric requirements of the young tissues for growth and development. The fact also must not be overlooked that the constituents of the diet must be in such form as will allow of normal digestion and assimilation.

The wide range of tolerance of infants to their food has been mentioned, and that this, probably, largely accounts for the fact that so many pediatricians have successfully fed infants on mixtures which varied greatly both quantitatively and qualitatively. In all probability another factor is important in the explanation of these successes, namely, the fact that to a certain extent fats, carbohydrates and proteins are interchangeable in the metabolic functions.

The Weight Curve.—In constructing a diet for infants, the individual needs must always be borne in mind. Allowance must therefore be made for basal metabolism, for growth, for muscular activity, and for the food values lost in the excreta (Holt). Indirect evidence as to the child's progress is best obtained by taking a careful history of its illnesses and feeding history. Direct evidence is best obtained by a careful study of the infant's physical development and weight curve. One soon learns that a study of the infant's weight is one of the simplest and most reliable clinical factors in estimating its progress. While infants vary considerably in their reaction to a given diet, according to their birth weight, subsequent care and previous diet, definite information of inestimable value is to be gained through the regular use of the scale.

For practical purposes it is necessary that we know the average gain to be expected in normal artificially fed infants. It should be remembered that the breast-fed infant will average larger gains than the bottle-fed baby during the first six or eight months of life. For comparative purposes in the estimation of overweight and underweight in infants coming under observation, the following may be taken as working averages. For accuracy, a balance scale is necessary; the ordinary dial scale is unreliable.

The average weight at birth is 7 pounds (3,200 gm., or about 3,333 gm.).

The average initial loss is 10 ounces (300 gm.), or about one tenth of the body weight at birth.

The birth weight is regained usually by the fourteenth day.

The weight is doubled at the end of the fifth month, and trebled at the end of the first year.

The average weekly gain during the first five months should approximate 5 ounces (150 gm.); during the remainder of the first year, 4 ounces (120 gm.).

The yearly gain during the second year is 6 pounds (2,727 gm.).

The gain during the third year is 4½ pounds (2,000 gm.).

The gain from the fourth to the eighth year is 4 pounds annually (1,800 gm.).

The gain from the eighth to the eleventh year is 6 pounds annually (2,700 gm.).

It is not sufficient, however, to base the determination of the amount of food on the weight of the baby alone, since two infants of the same weight may have decidedly different nutritional requirements. The fat baby requires less food per pound than the thin baby, and the overfed less than the underfed infant; the sick baby must of necessity be fed within its limits of tolerance during the acute stage of its illness. The body losses must also be compensated for during convalescence, as the baby's tolerance for food permits, by increases in the diet beyond the normal feedings per pound of body weight.

Within certain limitations, therefore, a healthy infant should show a regular gain. It is not absolutely necessary that an infant add to its body weight every day, as daily irregularities are the rule rather than the exception. The relation of the time of weighing to feeding, defecation and urination must always be taken into consideration, and under normal conditions it is sufficient to *weigh the infant once a week*. It is especially wise to impress this on a nervous mother.

Further, we must not forget that the weight curve of the nursing infant and that of the artificially fed infant differ widely, so that they cannot be directly compared. Although in the beginning the artificially fed infant gains less than the breast fed, in the course of a year he reaches the same weight. The latter at first shows larger gains, but later lags somewhat. Much more important than the weight itself is that the successive weight figures shall form a rising series.

Caloric Needs.—Having determined the infant's weight and obtained a fairly definite idea as to its general physical condition, its caloric needs should be estimated so as to gain an idea of its total dietetic needs. The estimation must of necessity be based on its existent weight curve, duly considering its general condition and its weight as compared with other infants of the same age. One should think not so much of providing a given number of heat units as of the food elements necessary to furnish those units. Each gram of fat in the diet will furnish 9.3 calories, and each gram of protein and carbohydrates, 4.1 calories.

Under this system the physician reckons the minimum daily caloric requirement, either from the present weight of the baby or what it should weigh in health, and then selects the food, so proportioning the fat, carbohydrate and protein content that it will not only meet the caloric requirements, but also will contain the proper amount in grams, of each of the constituents, to meet the infant's needs for growth and development.

In considering the caloric content, the part played by the various food components must be remembered. Benedict and Talbot [35] found that the basal requirements are highest per kilogram at about the ninth month, and steadily fall from this time up to adult life. Holt and Fales [36] estimated that the food value normally lost in the excreta is a nearly uniform proportion of the intake, about 10 per cent. for all ages after infancy, and that the requirements for growth are greatest during the first year of life, and during adolescence; also that the requirement for activity is the only factor which varies widely with different individuals. As the emaciated infant is expected to gain more rapidly in proportion to its body weight than the fat and well nourished infant, it will of necessity require a food with a higher energy quotient to maintain its growth ratio.

The sick baby will rarely be able to digest an amount covering its full needs, as estimated by its body weight.

TABLE 8.—CALORIC NEEDS

Average infants under 2 months of age, from 30 to 45 calories per pound (from 65 to 100 per kilogram)	
Average infants over 2 months of age, from 45 to 55 calories per pound (from 100 to 120 per kilogram)	
Premature and thin infants under 2 months of age, from 50 to 65 calories per pound (from 110 to 140 per kilogram)	
Thin infants older than 2 months, depending on their general condition, from 55 to 70 calories per pound (from 120 to 150 per kilogram)	

Therefore, as in every other phase of infant feeding, individual consideration is necessary. It must be remembered that the nutrition of the baby depends on the quantity of food *assimilated*, and not on the quantity *ingested*. Less food is absorbed and utilized by the infant with deficient digestive power, and overfeeding will retard its progress. A comparative estimate of the infant's diet, with a theoretical minimum, is of special value in cases in which doubt exists as to whether the retarded progress is due to insufficient food or to defective digestion and assimilation.

TABLE 9.—CALORIC VALUES OF ONE OUNCE (THIRTY GRAMS) OF VARIOUS FOODS

	Calories
Cow's milk	21
Human milk	21
Cream (16 per cent.)	54
Skim milk	11
Buttermilk	11
Buttermilk mixture	21
Albumin milk	12
Chymogen milk	21
Keller's malt soup	25
Cane sugar (by weight)	120
Maltose-dextrin compounds (average)	110
Malt-soup extract, dry, by weight	90
Malt-soup extract, dry, by volume	132
Corn syrup, by weight	80
Corn syrup, by volume	110
Flour, by weight	100
Cereal waters (1 ounce of cereal to the quart)	3

Repeated clinical experience proves that the earlier figures of Heubner and Rubner are too low for the average infant on bottle feedings. They estimated that the average healthy infant requires on the average 100 calories per kilogram of body weight during the first six months of life, and from six months to the end of the first year approximately 85 calories per kilogram; and that 70 calories per kilogram of body weight is the energy quotient on which a baby can maintain a weight equilibrium. Instead of lessened caloric needs toward the end of the first years, his increasing activities

35. Benedict, F. G.: Boston M. & S. J. **181**: 107 (July 31) 1919.

36. Holt, L. E., and Fales, H. L.: Food Requirements of Children: Total Caloric Requirements, Am. J. Dis. Child. **21**: 1 (Jan.) 1921.

demand heightening rather than lowering his food intake. Clinical observation in a large number of cases leads to the conclusion that, to assure satisfactory gain, the figures given in Table 8 must be approximated in the artificial feeding in infants.

During the first few weeks of life of the artificially fed infant it is usually difficult to approximate these figures.

Increases in the quantity of food should always be gradual, especially when malnutrition is present, and the infant must be carefully observed and increases made only as the food tolerance permits.

Estimation of the caloric content of the food *is not a feeding method*, and should be used only as a check on overfeeding and underfeeding, the scale, stools, general condition, and particularly the disposition of the infant being the ultimate guide for dietetic changes.

The *energy quotient* is the number of calories which the infant is getting per pound or per kilogram of body weight. To determine the energy quotient of the diet, the number of ounces of each food ingredient of the food mixture is multiplied by their caloric values, the products are added, and the sum is divided by the number of pounds or kilograms of the baby's weight.

ESTIMATING THE AMOUNTS OF THE INDIVIDUAL FOOD ELEMENTS

Protein.—Holt and Fales [37] found in their investigations that the protein intake of the normal nursing infant is very low, ranging during the first nine months of life approximately from 8 to 12 gm. daily. This is equivalent to about 1.5 gm. per kilogram (0.7 gm. per pound). Up to the age of 8 or 9 months the protein taken by the nursing infant seldom exceeded 12 gm. daily. Our own observations indicate that most breast-fed infants will average a daily protein intake of 2 gm. per kilogram.

When cow's milk is substituted for human milk the protein intake is considerably increased—doubled or even at times trebled. Infants from 1 month to 9 months of age receive from 15 to 30 gm. of protein daily when fed on the usual modifications of cow's milk. This represents fully 3 gm. and often 4 gm. protein per kilogram (from 1.4 to 1.8 gm. per pound). The increase in protein requirement when cow's milk is substituted for mother's milk is probably due to the difference between the two milks in amino-acid content. Mother's milk contains about twice as much lactalbumin (1.23 per cent.) as does cow's milk (0.53 per cent.). The lactalbumin, which forms two thirds of the protein of mother's milk, contains the highest proportions of the amino-acids leucin, lysin and tryptophan, of all the protein bodies. The work of Osborne and Mendel,[38] as well as that of others, has shown that lactalbumin is especially efficient in promoting growth, while casein, which forms one third of the protein of human milk (0.59 per cent.) and five sixths of the protein of cow's milk (3.02 per cent.) is of comparatively low grade as a growth protein. The chief demands for protein are for compensation for wear and tear and to provide for growth.

Holt and Fales found also that healthy children in their usual diet take about 4 gm. of protein per kilogram at the age of 1 year, the amount diminishing to about 2.5 gm. per kilogram at the age of 6 years. The young infant, as compared with the older child, requires proportionately a larger amount of protein to meet his needs for maintenance and growth. The total protein intake in the diet of infants and young children, per pound or kilogram of body weight, however, does not differ greatly in amount because the infant receives virtually all of his supply in the form of animal protein during his first year, the vegetable protein being represented by the small amount received in cereals and vegetables.

Vegetable proteins as a class are of distinctly lower grades than animal proteins. While they may be adequate for maintenance, it is hazardous with our present knowledge to depend on them for growth. Holt found that most of the children beyond the age of infancy took more than 60 per cent. of their total protein in the form of animal protein, from milk, eggs, meat, etc. The average was 66 per cent. of the total proteins from animal sources and 34 per cent. from vegetable sources. As vegetable protein cannot replace animal protein gram for gram, he believes that even if a larger proportion of vegetable protein than the usual one third of the total requirements is fed, the total protein intake must be considerably increased.

Sugars and starches, when added to a diet sufficient to meet any infant's need, will, temporarily at least, cause a greater nitrogen retention. Fats have little or no influence. Nitrogen, to be retained, must be built up into living protoplasm, and to accomplish this salts must be available. Unless they are present, the nitrogen is again excreted. Approximately 1.7 gm. of ash are retained for each 1 gm. of nitrogen (Howland), or 0.3 gm. of ash for each 1 gm. of protein.

The healthy, normal infant may be fed a minimum of 1½ ounces of milk to a pound (100 c.c. per kilogram) of body weight, which would represent 1.5 gm. of protein per pound of body weight (3.5 gm. per kilogram).

Notwithstanding what has been said on theoretical and experimental studies of the protein needs of the artificially fed infant, as compared with the amount of protein received by the breast-fed infant, it must be granted that the proteins of cow's milk cover the protein needs of the infant, and that when in excess they rarely cause nutritional disturbances if the tendency to large curd formation is prevented by boiling or alkalizing the milk.

As a working minimum, the protein contained in 1½ ounces of milk per pound (100 c.c. per kilogram) of body weight of the normal infant may be used, and in the underfed this quantity may be increased to an amount equal to 2 or 2½ ounces per pound, thereby approximating 1½ ounces per pound of what the baby should weigh for his age. Increases of milk in the diet must be gradual, the additions being governed by the child's ability to handle the food. *From what has been stated, it may be inferred that it is wise to establish the protein content in a diet, which may then be supplemented by fats, carbohydrates and salts, because protein is the tissue builder and must necessarily be a basic constituent of all diets.*

Fats.—These are necessary to the normal growth and nutrition of the human body. But to a greater extent than the other food elements, they can for a time be replaced by proteins and sugars, more especially the latter. This explains why infants fed on low fat mixtures, more especially proprietary foods, such as condensed milk, will continue to gain in weight. However, such development cannot be considered as normal,

37. Holt, L. E., and Fales, H. L.: Food Requirements of Children: Protein Requirement, Am. J. Dis. Child. **22**: 371 (Oct.) 1921.
38. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **25**: 1, 1916; ibid. **37**: 223, 1919

because the diet, besides being low in fat, rarely contains more than 1 per cent. of protein.

Fats furnish part of the heat energy necessary to maintain the body temperature. They are stored as a reserve food. The fat is a protein saver, and when supplied in proper amount but little protein is used for the production of animal heat, thus allowing the protein to be retained in greater amount for building the body tissues.

Fat is the carrier of the fat-soluble vitamins which are essential to normal growth, and in all probability have a direct relation to mineral metabolism. Fat also has a definite relation to calcium and probably magnesium metabolism independent of that due to its vitamin content. The best results in feeding are obtained when there is a definite relation between the fat and salt intake. Infants receiving an insufficient amount of fat in their diet show an increasing tendency to local and general infection, thereby giving evidence of lowered immunity.

Some infants digest fats badly, and when a fat intolerance is once established it is overcome only with great difficulty. In such cases it is necessary to throw on the carbohydrate the burden of furnishing the necessary extra food. Such a catastrophe should be avoided, as infants receiving an insufficient amount of fat rarely thrive satisfactorily. We should therefore aim to stay within safe limits. When the diet contains an insufficient quantity of fat, a high percentage carbohydrate feeding is usually instituted. This prevents the formation of soap stools, and tends to the development of diarrhea. For the formation of soap stools it is necessary that there be no excess of carbohydrate, and that there be present in the diet a relative excess of protein or fats or both. The resulting change in the chemical content of the bowel also has a decided influence on the bacterial flora in that the fat excreted in the intestinal tract combines with alkalis, which tend to overcome an excessively acid intestinal content.

Holt, in his studies, found that the nursing infant usually receives, during its first weeks, as much as 20 gm. of fat daily, and that the total increases by the seventh month up to an average of 40 gm. daily, the latter representing about 4 gm. per kilogram (1.8 gm. per pound) of body weight. Each gram of fat has an energy value of 9.3 calories, while protein and carbohydrate each furnishes 4.1 calories per gram; therefore, each gram of fat provides for more than twice as many calories. The tendency toward normal growth and development on the part of a nursing infant on a high fat feeding illustrates the value of this element in the diet.

Our clinical experience has demonstrated that while the tolerance for the fat of cow's milk varies greatly in different individuals, most infants will digest and assimilate 1.8 of fat per pound of body weight daily. This is the quantity contained in 1½ ounces of average cow's milk of good quality (4 gm. per kilogram, the amount contained in 100 c.c.). This quantity will also supply the body needs for growth and development when associated with sufficient protein and carbohydrate.

Carbohydrates.—These are used chiefly to supply heat and energy, to supply in part material for fat foundation, thereby partly replacing the fat waste. Because of their high caloric value, they supply a large amount of energy. They are efficient sparers of protein, and will supply energy in case of fat insufficiency in the diet. Synthetically, they are converted into glycogen in the body. Fat is formed from sugar by the subcutaneous cells, which are especially adapted to this function.

Normally, in greater part, sugar is absorbed from the small intestine and is not found in the feces. If absorbed in sufficient quantity it will cause a rapid increase in weight. When insufficient carbohydrate is supplied to the body, it supplies the deficiency by breaking down the body protein.

The majority of infants have a high carbohydrate tolerance, and the same is true of most infants suffering from nutritional disturbances. Exceptions to this are seen in some of the fermentative diarrheas, some eczemas, and exceptionally in a few other conditions. Fortunately, the ability to metabolize carbohydrates is often present even though fats and proteins are poorly digested.

For practical purposes, the carbohydrates used in infant feeding may be divided into three large groups: (1) the disaccharids, of which saccharose (cane sugar), lactose (milk sugar) and maltose are the best examples; (2) the polysaccharids, of which the cereals, flours and dextrin are most commonly used, and (3) mixtures of the disaccharids and polysaccharids, combinations of which are contained in most of the proprietary infant foods.

Cane and Milk Sugars.—As regards the relative nutritive value of cane sugar and milk sugar, there is little to recommend one over the other so far as their food value and the limit of tolerance are concerned. When large quantities of lactose are fed, a laxative effect is more frequently seen than with cane sugar feeding of simillar quantities by weight. Cane sugar is heavier than lactose; two tablespoonfuls of the former and three of the latter approximate 1 ounce by weight. *Cane sugar will answer the needs of most infants.* This assertion is based on a large experience with infant-welfare patients among whom economy, of necessity, had to be considered.

The total carbohydrates (sugar contained in the milk, sugar added to the milk, and cereal, if used), should average from one-eighth to one-fifth ounce (4 to 6 gm.) per pound (from 9 to 13 per kilogram) of body weight a day. One and one-half ounces of milk, averaging 4.5 per cent. carbohydrate, furnishes 2 gm. of lactose. Normal full-weight infants will usually require a minimum addition of one-tenth ounce (3 gm.) by weight of sugar to the milk mixtures for each pound of body weight (6.6 gm. per kilogram). For underweight infants the amount should at first be calculated on the basis of their present weight, but increased if well taken, to meet the amounts indicated for a full-weight infant of similar age.

Carbohydrates needed beyond that furnished by 1½ ounces of sugar should be supplied by well cooked cereals or cereal waters, because of the danger of fermentative diarrhea. (See mixed feeding.)

Holt and Fales,[39] in their investigations on nursing infants, found that they took, on the average, about 12 gm. of carbohydrate per kilogram of body weight daily. Artificially fed infants usually received somewhat more than this. They believe that an infant of average activity should at one year be allowed about 12 gm. of carbohydrate per kilogram of body weight, the amount being decreased to about 10 gm. per kilogram at 6 years, and maintained at this value throughout the remainder of the growth period.

39. Holt, L. E., and Fales, H. L.: The Food Requirements of Children: Carbohydrate Requirement, Am. J. Dis. Child. **24**: 44 (July) 1922.

The sugar content of the food of infants who have been on a low sugar diet should be gradually increased in order that they may become accustomed to the altered amounts.

In changing from one kind of sugar to another, it is always safe to reduce the quantity for a few days, further increases being governed by the infant's tolerance. Partially replacing of the disaccharids by cereal waters and gruels usually results in the amelioration of digestive disturbances following the use of excessive amounts of sugars. Clinical observations have led to the belief that both sugar and well cooked starches, after the second month, have distinct advantages in the diet.

Maltose and Dextrin Compounds.—These have little to recommend them in the feeding of most infants. They can usually be administered in somewhat larger quantities: one-eighth ounce (4 gm.) for every pound of normal weight. However, it is to be remembered that similar amounts of carbohydrates can be given by feeding cereals with sugars. In using maltose and dextrin compounds it is to be remembered that their action on the bowels varies greatly, depending on their maltose, dextrin and alkali content. Thus, we find that proprietary foods containing a considerable percentage of dextrin, in the absence of added potassium salts, are constipating, while those with a high maltose content, more especially when containing potassium carbonate or bicarbonate, are laxative in their effect.

Cereals.—Cereals in water or gruels may be added to the milk mixtures in quantities varying from one-sixtieth to one-thirtieth ounce (0.5 to 1.0 gm.) for each pound of body weight, daily (1.0 to 2.0 gm. per kilogram). Cereal waters may be used as a diluent as early as the second month of life, and the cereal gruels by the fourth month. The addition of a second carbohydrate to the infant's diet is frequently followed by increases in the weight curve out of proportion to the food value of the cereals. This is especially true when the whole grain rather than the dextrinized flours is used in the preparation. It cannot be stated whether this is due to vitamins or vegetable proteins contained in the preparations made from the whole grain. The cereals also have a decided influence on the calcium and magnesium balance, owing, in all probability, to the same factors.

TABLE 10.—GRAMS OF SALTS IN 1,000 C.C. OF MILK

	CaO	MgO	P_2O_5	Na_2O	K_2O	Cl	Fe
Human milk...	0.458	0.074	0.345	0.132	0.609	0.358	0.0017
Cow's milk....	1.72	0.2	2.437	0.465	1.885	0.822	0.0007

Salts.—Human milk contains 0.2 gm. of ash in 100 c.c., and cow's milk 0.75 gm. of ash in 100 c.c. The difference in percentage in human and cow's milk is equalized by the body's using only what is necessary for its life and growth. The salts are absolutely necessary for the life of the organism.

Holt, Fales and Courtney, in their studies on calcium metabolism, concluded that:

> The total absorption of calcium oxid varied in general with the weight of the child. . . . An excessive calcium intake apparently did not increase the calcium absorption, the excess being excreted.
>
> The average absorption of calcium oxid by healthy infants taking modifications of cow's milk was 0.09 gm. per kilogram of body weight. Since the average absorption of calcium oxid by breast-fed infants was 0.06 gm. per kilogram, it may be assumed that 0.06 gm. per kilogram is the minimum normal absorption by infants taking modifications of cow's milk.
>
> To insure the average absorption of 0.09 gm. of calcium oxid per kilogram, the intake of calcium oxid should be at least 0.19 gm. per kilogram with cow's milk feeding; to insure an absorption equal to the average found for breast-fed infants, the intake of calcium oxid should be at least 0.13 gm. per kilogram.
>
> The best absorption of calcium was obtained when the calcium intake bore a definite relation to the fat intake, that is, when the food contained from 0.045 to 0.060 gm. of calcium oxid for every gram of fat, and when at the same time the fat intake was ample, not less than 4 gm. per kilogram.

An infant receiving one tenth of its body weight in milk, that is, 100 gm. per kilogram (one and one-half ounces per pound) of body weight will have an intake of 0.17 gm. of calcium oxid per kilogram (0.08 gm. per pound). At the same time, the infant will have an intake of 4 gm. of fat per kilogram (1.8 gm. per pound).

The percentage content of magnesium, sodium and potassium salts is approximately the same in human and in cow's milk; but quantitatively, in cow's milk, it is about three times as great. Therefore, in mixtures containing the recommended amount of cow's milk there will be about 50 per cent. more of these salts than in the average quantity of breast milk taken by an infant.

Of the inorganic constituents, phosphorus ranks among the most important. Human milk contains 0.345 and cow's milk 2.437 gm. of phosphorus pentoxid per liter, a ratio of about 1 to 8. Of this, approximately 43 per cent. in human milk and 46 per cent. in cow's milk exists as organic compounds. Various authors find that from 53 to 80 per cent. of the phosphorus in cow's milk, and from 65 to 90 per cent. in human milk, is absorbed. If these figures are correct, we may be assured that there is at least sufficient phosphorus in cow's milk mixtures to provide for the infant's needs. Therefore, a question of more importance is the ability of the infant to fix in its body tissues the phosphorus which it receives in its diet.

Theoretically, at least, the iron content in breast as well as cow's milk is insufficient to meet the infant's requirements, and in both instances it must draw to some extent at least on its iron deposits. In artificial feeding it is especially important during the first six months that provision be made for supplementing from other sources the iron contained in the cow's milk.

Salts are necessary for building the body tissue, and each gram of protein retained and built into the body tissue requires approximately one-third gram of ash.

The average infant receiving cow's milk, with its greater salt content, lives on a higher plane of mineral metabolism than one receiving breast milk. In the majority of infants, this excessive salt intake undoubtedly does no harm; the surplus is not absorbed, and is merely eliminated.

Sodium and potassium are usually well retained, unless severe diarrhea is present or there is an excess of fat or of sugar in the diet. Under such circumstances the salts are lost, and the loss is badly borne and cannot indefinitely be continued. When all available alkalis have been drawn on, the infant breaks down its own tissue to furnish more of these substances, which explains, in part at least, the excessive nitrogen excretion in such cases. When diarrhea ceases and the intake is sufficient, a positive balance is rapidly instituted.

(To be continued)

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SATURDAY, MARCH 3, 1923

PHYSICAL CAPACITY IN CHILDHOOD

It has become the custom in recent years to speak glibly of "corrective exercises," with the implication that they may play a noteworthy part in both the prevention and the cure of undesirable conditions, particularly during the period of adolescence. If the alleged effectiveness of various types of muscular activity is as real as it has been pictured to be, the subject assuredly deserves most respectful attention from the clinician. A recent writer has remarked that because muscular exercise is so constantly a part of daily life and so obvious in its practical application, medical practitioners have come to regard its physiology as an established truth, into the true nature of which search is unnecessary. The subject of muscular exercise, he adds, should be of more than mere academic interest to the pediatrician.

The problem of exercise in childhood, furthermore, is of importance not only because of the advantage that may be gained from intelligently regulated muscular performance, but also with reference to inherent dangers as well as benefits. During the period of adolescence, when the body is growing rapidly and various vital organs are in process of developmental adjustment, exercise should never be carried to the extreme. Williams [1] has wisely reminded us that in children the one quality that should not be tested is endurance. Many instances are on record of high school athletes being "burned out" by too intensive participation in scholastic sport. Exercise should be used, Williams adds, to build strength and power in the youth, not to waste them. Emerson [2] has warned against the danger for the undernourished child, even in play, that he will engage in games beyond his strength, or indulge in them for too long a time without rest. Emerson believes that there has been a tendency to overrate the importance of corrective exercises. It should be recognized, he states, that most cases of bad posture are due to the general weakness of a body with too little weight to support its height. When this condition exists, the first need is to start the child on a program that will bring him up to his normal weight, when it will be found that, as weight increases, the posture improves.

For the present, the precise relationship between cause and effect in connection with postural defects and exercise need not be debated. It can scarcely be questioned that, in any event, physical therapy should be based on physiologic knowledge. THE JOURNAL has often taken occasion to point out how meager is our scientific information regarding the physiology of exercise. Before deciding wherein one may drive or neglect the muscular system, its capacities and limitations must be learned. Facts recently gathered by Seham [3] at the University of Minnesota Medical School have a bearing in this connection. They show that, in normal children of school age, all forms of exercise produce an increase in the pulse rate and the blood pressure, the increase depending mainly on the type of exercise. In the majority of cases, the increase of the pulse rate and the blood pressure, as well as the reaction time of the blood pressure, are in direct proportion to the speed and the amount of work performed. These are evidently the same sorts of responses as are encountered in adults. The physical capacity of children, as judged by the maximum physical output, is in direct relationship to the age, circumference of the chest, circumference of the thigh and the vital capacity; height and weight do not alter it so constantly. Such information is part of the essential prelude to an intelligent advocacy of play or the prescription of corrective exercises.

1. Williams, J. F.: Personal Hygiene Applied, Philadelphia, W. B. Saunders Company, 1922.
2. Emerson, W. R. P.: Nutrition and Growth in Children, New York, D. Appleton Company, 1922.
3. Seham, M., and Egerer-Seham, Grete: Physiology of Exercise in Childhood, I, A Study of Normal Children of School Age, Am. J. Dis. Child. **25**: 1 (Jan.) 1923.
4. Osborne, O. T., and Fishbein, Morris: Handbook of Therapy, Chicago, American Medical Association, 1920.

THE GROWTH OF HAIR

The growth of hair presents some sort of problem to innumerable persons, among whom many approach the physician to secure a solution of the difficulty involved. On the one hand are the hordes of people of both sexes and in all walks of life who complain of alopecia. In its extreme forms it shows "a bald, glistening crown closely drawn over the skull." This sad picture, it was recently stated,[4] is senile, spontaneous or simple baldness. Premature baldness, it is added, is the same thing, save for the fact that it occurs before the age when these changes, which we ordinarily attribute to old age, are expected to appear. To the victims of such circumstances is left the invidious choice of accepting a condition for which no remedy can logically be expected, or of assuming the existence of a seborrheic dermatitis, for the treatment of which no two experts may agree.

The other class of unfortunates consists of those who seek to overcome a hypertrichosis, or excess of hair, on some part of the body. The simplest expedient, cutting off the undesired growth, often meets strenuous objection on the ground that such a procedure is likely to cause subsequent overgrowth. Similar stimulation is believed by many to be associated with applications of various cutaneous lubricants; and sunlight also is charged with encouraging hypertrichosis.

Careful measurement furnishes the best index of growth in any domain of biology. Hence the value of studies recently made in the Department of Anatomy at the Washington University Medical School, St. Louis, by Trotter,[5] on the normal character and rate of hair growth. Four regions of the body were considered: the axilla, a spot on the head just back of the vertex, the outer side of the forearm, and a region on the leg just below the knee. These selected areas were shaved very closely, and then at weekly intervals several hairs were pulled out and later measured. The differences between the successive measurements, after the first seven-day period, gave the weekly rate of growth. This was shown to be different in the different regions. It appears that the hairs on the arms and legs do not fall out and are not replaced by new ones for a period shorter than eleven weeks.

Shaving, in particular, is regarded as a cause of hypertrichosis; but no justification for this widespread belief could be secured. Likewise, the assumption that sunburn has at best any more than a very transient effect on hair growth fails to receive any support from the observations at St. Louis. Finally, petrolatum, which ranks very high in the popular estimation as a stimulant of hair growth, failed to produce results that spell proof. A true promoter still remains to be discovered.

WHAT WE GET WHEN WE SMOKE

One of the substances abundantly present in tobacco smoke is carbon monoxid, well known as the lethal agent of illuminating gas and of the exhaust gas of motors, which has had so many victims in recent years. Carbon monoxid is not directly poisonous, but displaces oxygen from hemoglobin, for the red cells have 225 times as great an affinity for this gas as for oxygen. Baumberger[6] has found that tobacco smoke may have from 7.2 to 25 parts of carbon monoxid in 10,000 parts of air, a concentration which Henderson found capable of causing serious symptoms if inhaled for more than an hour. But persons never take in undiluted smoke—the heartiest cigaret fiends and the most resolute pipe smokers always take many breaths of fresh air between puffs. It is estimated that if a person should smoke continuously for one hour, inhaling the smoke five times a minute, there might occur as high as 22 per cent. saturation of the hemoglobin by carbon monoxid, a concentration sufficient to produce headache and perhaps an oxygen shortage during activity; but this figure is undoubtedly far above what smokers do actually accomplish. Perhaps 10 per cent. is more nearly the maximum reached in smoking, a figure that has not been found ordinarily to produce symptoms.

Formerly the statement was current that the chief toxic material in tobacco smoke is pyridin, derived by decomposition of nicotin; but later studies agree in indicating that the nicotin is the chief active agent, tobacco smoke exerting much the same physiologic effects as nicotin in corresponding concentrations.[7] By direct analysis, Baumberger found that cigaret smoke contains between 14 and 33 per cent. of the nicotin present in the tobacco smoked. Cigarets weigh about 1 gm. apiece, and about 80 per cent. of the tobacco is smoked, so that the nicotin in the puffed smoke amounts to about 5 mg. for each cigaret. Of this, about 67 per cent. is absorbed if the smoke is merely taken into the mouth, but 88 per cent. is absorbed if the smoke is inhaled into the lungs. How much of this reaches the blood depends chiefly on how much is lost in saliva, the drooling of the novitiate being an important protective measure, since from 3 to 5 mg. of nicotin dissolved in water, taken within half an hour, may cause severe symptoms in nonsmokers, whereas habitual smokers can endure twice as much.

These figures show that an unventilated room 10 feet square and ten feet high, occupied by ten men all smoking cigarets to the best of their ability for an hour, would come to have an air containing about two parts of carbon monoxid and enough nicotin to furnish 2.6 mg. an hour to the person compelled to breathe it. While these are not large amounts in figures, it is certain that any nonsmokers, and many smokers, in such an environment would have a headache, which is ascribable to the increased intracranial pressure that is produced by both the nicotin and the decreased oxygen in the blood. If our hardened cigaret smoker were to puff away steadily for an hour he might absorb as much as 36 mg. of nicotin if he inhaled, and 27.5 if he only puffed. These are amounts that would undoubtedly produce marked effects even on the habituated, but there is at least the consolation that the lethal dose is 500 mg. taken at one time. However, the smoker gets much besides carbon monoxid and nicotin, for the solids of cigaret smoke weigh about 10 per cent. of the tobacco burned, or about 80 mg. for each cigaret, and all the things it may contain besides the aforementioned are not known; but the experimental evidence indicates that nicotin and carbon monoxid account for most if not all the observed effects.

It is to be considered that these experiments were carried out with cigarets, for the observations of Lee indicate that tobacco burned in cigarets yields much

5. Trotter, Mildred: The Resistance of Hair to Certain Supposed Growth Stimulants, Arch. Dermat. & Syph. **7**: 93 (Jan.) 1923.

6. Baumberger, J. P.: J. Pharmacol. & Exper. Therap. **21**: 23 (Feb.) 1923.

7. Lee, W. E.: Quart. J. Physiol. **1**: 335, 1908. Von Leeuwen, W. S.: Arch. f. exper. Path. u. Pharmakol. **84**: 283, 1918.

less nicotin, and presumably less carbon monoxid, in the smoke than when burned in cigars or pipes. For example, a Manila cigar and a cigaret of Virginia tobacco were so burned that the same amount of tobacco was consumed in equal time, and the effect of the products of the combustion determined; it was found that although the cigaret tobacco used contained nearly twice as much nicotin as the cigar tobacco, the smoke of the latter was twice as toxic as the cigaret smoke. The explanation for this is that during the slow combustion of a cigar, as in ordinary smoking, immediately behind the point of combustion is an area in which the water and other volatile substances condense; during the act of smoking, the hot gases pass through this moist area and volatilize the more volatile principles of the tobacco, of which nicotin is one. Therefore the smaller the moist, hot area behind the point of combustion, and the more rapid and complete the combustion, the less likely is the smoke to contain volatile toxic bodies; hence a cigaret or a slender cigar will yield fewer of these products than a thick cigar, and many smokers can testify that a thick, "fat" cigar has much more effect than a long, slender cigar of similar tobacco. The unpleasant effects that the unaccustomed smoker experiences on relighting a half-finished cigar or pipe are explained on the same basis.

HAVE SPERMATOZOA FUNCTIONS AND EFFECTS OTHER THAN FERTILIZATION?

Have spermatozoa any function aside from that of the propagation of the race? is a question that has arisen because of some recent experiments. Guyer [1] showed that when male rabbits and guinea-pigs are injected intravenously with specific spermotoxic serums prepared from fowls, or with spermatozoa directly, sterility results, and the serum of the animal becomes spermotoxic. When the spermatozoa are injected intravenously, according to Tsukahara,[2] they may cause severe toxic reactions and even death, male animals being more sensitive, and pregnant females more so than nonpregnant.

McCartney [3] did not use spermotoxic serums, as did both Dittler [4] and Guyer, but spermatozoa suspensions directly. In a series of seventy-nine female rats subcutaneously injected with doses of the spermatozoa suspension up to a total of 3 c.c., each cubic centimeter containing 80,000 spermatozoa, he found that the rats remained sterile for a period of from two to twenty-two weeks beyond the normal gestation time, although the normal sexual cycle and sex behavior of the rat seemed in no way altered. The period of from two to twenty-two weeks at first consideration does not appear to be lengthy, but these results become significant when we consider that the rat is a short lived animal and that a rat 3 years old corresponds to a human being 90 years old. From careful manipulation and tests he concludes that the spermotoxins are present in the vaginal and uterine secretions, and have an immobilizing and agglutinating effect on the spermatozoa. Thus, we can conceive of this mechanism acting in the generative tract to kill the spermatozoa introduced by normal coitus, and thus prevent impregnation of the ova. By examination of incubated eggs from immunized hens he confirmed this conclusion. He also concludes that the degree of immunity is proportional to the amount of the spermatozoa suspension injected, and under proper precautions no deleterious effects are to be expected in the normal nonpregnant female so treated, although he found that the injections tended to cause abortion of existing pregnancy. It is also interesting to note that he found that after the immunity by the injection of spermatozoa had worn off, the female was able again to bear normal young. While spermatozoa injected subcutaneously appear to cause no harm to the female organism other than to cause transient sterility, they seem to have toxic action on the male when similarly administered, as shown by the results of both Guyer and McCartney. In male animals so treated, the spermatozoa in vivo were found immobilized, and the testes in several cases were found atrophied.

From clinical observations, Mayer [5] and Vogt [6] conclude that spermotoxins may have a therapeutic, social and economic aspect. Mayer states that abortion of very young ova may result from frequent coitus after a long period of abstinence. Frequent bursting of follicles may result after sexual intemperance, and this may hinder the formation of a corpus luteum, which is so necessary for the embedding of the ova. The toxic effect of sperm overloading may be a reasonable explanation. Vogt assumes that sperm overloading leads to sterility and that a natural cure occurs after prolonged abstinence from sexual intercourse. The first cohabitation is the one that most frequently results in conception, and this may be explained by the absence of the later acquired immunity to spermatozoa. The increased sensitiveness immediately after the menses may be due to the period of abstinence during the menstruation and the consequent weakening of the sperm immunity. Vogt further states that the increased capacity of function of a hypoplastic genital apparatus after marriage, and the disappearance of chlorosis, could be explained by the stimulus of the sperm albumin substance, and this effect seems to be a permanent one. Excessive coitus is thought to cause the woman to lose weight. Vogt gives sexual abstinence as a possible explanation for the rarity of eclampsia

1. Guyer, M. F.: Immune Sera and Certain Biological Problems, Am. Naturalist **55**: 637, 1922.
2. Tsukahara, I.: The Biology of the Male Sexual Cells, Ztschr. f. Immunitätsforsch. u. exper. Therap. **34**: 444, 1922.
3. McCartney, J. L.: Studies on Sterilization of the Female by Spermotoxins, Am. J. Physiol. **63**: 207 (Feb.) 1923.
4. Dittler: Spermotoxic Serums, München. med. Wchnschr. **67**: 1495, 1920.
5. Mayer, A.: Increase of Sterile Marriage Since the War, Klin. Wchnschr. **1**: 1142, 1922.
6. Vogt, E.: Sterility and Sperm Immunity, Klin. Wchnschr. **1**: 1144, 1922.

and hyperemesis gravidarum during the war. Thus, we can see that, in cases of sterility, the probability of sperm overloading must be considered. Some claims for the therapeutic value of sperm albumin in the treatment of disease have been advanced, but these lack experimental proof. Specific precipitins may be secured for spermatozoa, as shown by Hektoen,[7] so that this fact may be used medicolegally.

Whether injection of spermatozoa or spermotoxic serums may be used as a method of sterilization in human biology is a question of the future.

SOME ACHIEVEMENTS OF BIOCHEMICAL ANALYSIS

Even the most enthusiastic optimist would doubtless admit that there are many paths in medicine that lead to discouragement or dissatisfaction. Those who pursue them need to be encouraged from time to time so that they will not falter. He who is brought face to face daily with seemingly insuperable difficulties in diagnosis or therapy is likely to acquire a deadening inertia from such situations unless there is some new spur to his initiative. A retrospect of progress often serves to remind us of how frequently the unexpected happens, and how occasionally the supposedly insoluble is solved. The history of modern microchemical technic in the service of medicine affords an illustrative instance. Myers [8] has recently pointed out with full justice that, during the decade from 1910 to 1920, the chemical composition of the blood was a topic of increasing interest and importance, quite eclipsing in significance the studies carried out on the urine during the preceding decade. In the case of urine, the advances were primarily the result of the impetus furnished by the new methods of Folin and of S. R. Benedict, and these workers, together with Van Slyke, are responsible for many of our new methods of blood analysis. During the latter period the blood has probably been the topic of more studies than any other body tissue, fluid or secretion. The practical importance now attached to the chemical examination of the blood, Myers concludes, would appear to be rapidly overshadowing the importance formerly attached to urine examination.

A singularly excellent example of the perfection of the analytic technic applied to blood is furnished by recent studies on the interrelations of mother and fetus. By pioneer experiments involving examinations of the blood removed simultaneously from the two organisms, parent and offspring, Slemons [9] demonstrated an impressive equality of the nonprotein nitrogenous substances in maternal and fetal blood. Thus, in twenty cases the results for the two organisms did not differ by more than a milligram, and in the others the difference was usually less than two milligrams. The most instructive illustration of this similarity in the composition of maternal and fetal blood is afforded by a case of twins in which the mother presented 30 mg. and each infant 30.2 mg. of nonprotein nitrogen for each hundred cubic centimeters of blood. Such strict equality of concentration, Slemons was forced to conclude, cannot well be explained on any other basis than that of simple diffusion through the placental barrier.

More recently, Howe and Givens [10] have made independent comparisons of the blood of mother and fetus in patients at full term. They, too, found only slight discrepancies; and when the values were calculated, almost identical figures were obtained. The average nonprotein nitrogen for mother's blood was 23.8 for each hundred cubic centimeters; for fetal blood it was 23.8. Slemons [9] found in the case of the mother an average of 25.2 mg. of nonprotein nitrogen for each hundred cubic centimeters of blood, and in the case of the fetus, 24.9 mg. The possibility of dealing to such a degree of accuracy and agreement with small samples of blood in which the variations involve at most a few milligrams of urea for each hundred cubic centimeters of blood represents a real achievement in biochemical analysis. A science equipped with such helps is more than likely to employ them in fruitful investigation.

Current Comment

ABRAMS' DIVINING ROD: THE APOTHEOSIS OF BUNCOMBE

"Oil Locating Machine Aim of Dr. Abrams. Mysterious Device To Be Exhibited Soon." Thus a Los Angeles paper for February 12 heads, in large and black type, an article detailing the alleged claim of Albert Abrams [11] of San Francisco that he has about perfected a machine that will locate the subterranean position of oil. The claim may not be as new as it seems. In his book "New Concepts in Diagnosis and Treatment," published six years ago, Abrams declared that the divining rod is not a superstition and does not belong to occultism "but is entitled to consideration as a scientific fact." In the same book Abrams declared that with his instrument, the "Sphygmobiometer," "it is now possible to demonstrate the wave-metric index of water, oil and minerals." He continues further:

> Thus subterranean determination of the foregoing as a prerogative of the specially gifted must be relegated to scientific reality. By aid of the apparatus in question, one may even venture further and ascertain quantity and depth.

Abrams was vague—as usual—regarding the details of this wonder and to the paragraph just quoted he appended the footnote: "It is impossible to describe the author's methods. They demand personal demonstration. . . ." But why should one express aston-

7. Hektoen, Ludvig: Specific Precipitin Test for Human Semen, J. A. M. A. **78**: 704 (March 11) 1922.
8. Myers, V. C.: Barker's Endocrinology and Metabolism, III, 1922, p. 423.
9. Slemons, J. M.: The Nutrition of the Fetus, New Haven, Yale University Press, 1919.
10. Howe, Marion G., and Givens, M. H.: Chemical Studies of the Blood of Mother and Fetus, Am. J. Dis. Child. **25**: 63 (Jan.) 1923.
11. A reprint of the Abrams vagaries will be sent on receipt of four cents in stamps.

ishment regarding this particular claim of Abrams? To the man who can tell from the autograph of old Samuel Pepys that the famous diarist suffered from congenital syphilis, surely the locating of oil and mineral deposits should be a mere bagatelle. To the man who, from a drop of dried blood, can tell whether the owner of the sanguineous fluid is a Scotch Presbyterian, a Hard-shell Baptist, a Seventh Day Adventist, a Knight of Columbus or a member of the B'nai B'rith, the development of a divining rod is mere child's play. Seriously, however, the disciples of Abrams will needs be more careful in the exploitation of an "oil locating" machine than in their present stunts of diagnosis and treatment of human ailments. Abrams' followers are diagnosing syphilis, cancer, tuberculosis and many other serious diseases in persons not suffering from those diseases and they "get away with it." When the medical profession in the interest of the public protests the findings, the reply is: Your methods of diagnosis are so crude and insensitive that you are unable to find what we have found. This alibi will not work in the less dangerous field of locating oil and minerals. Because of the public's ignorance of the human body and its processes it permits the grossest frauds to be perpetrated when done in the name of the healing art; it resents most savagely, however, chicanery and humbug when property rights are involved. One thing must be said for the Abrams cult: Whatever skepticism we may have of Abrams' accomplishments, he must be given credit for the discovery of the modern Philosopher's Stone, with which his followers transform the dross of credulity and hopefulness into shining shekels of gold.

LOCAL VERSUS GENERAL IMMUNITY

Metchnikoff classified cells that exhibit phagocytic activity into two groups, the microphages and the macrophages. To the former belong the important phagocytes of the circulating blood which have attracted so much attention in all modern considerations of the mechanisms of immunity and the defenses of the organism against bacteria. The macrophages include, in the foremost place, the endothelial cells, although all the primary cells of fixed tissue may be included in the group. Although they are reputed to be most active in ingesting inert tissue detritus, macrophages have been shown to take up bacteria, as in tuberculosis; while pneumococci and streptococci are known to be subject to removal from the circulation by endothelial cells lining the blood vessels.[1] In his presidential address before the American Association of Immunologists, Gay[2] has stressed anew the importance of the cells derived from the fixed tissues; at any rate, he refers to the gradually increasing conjecture that macrophages of local origin are in some way connected with prolonged and sometimes healing processes in streptococcus infection. Thus, a local as distinguished from a general immunity to certain micro-organisms may arise. Only on this hypothesis is it at present possible to explain a tolerance to specific germs when they enter by certain portals, such as the skin or cutaneous wounds, whereas they may be highly damaging when introduced intravenously. It seems likely, therefore, as Gay concludes, that an appreciation of the local nature of some forms of acquired resistance to bacteria may eventually be of service in improving the method of combating localized infections.

1. Karsner, H. T., and Ecker, E. E.: The Principles of Immunology, Philadelphia, J. B. Lippincott Company, 1921, p. 154.
2. Gay, E. P.: On Local and General Immunity, J. Immunol. **8**: 1 (Jan.) 1923.

PLACENTAL FUNCTION

If further evidence were required to substantiate the view that the distribution of nutrients and waste products across the placental barrier between mother and fetus does not involve any more complex mechanism than is afforded by the passage of diffusible substances, it could be found in two recent biochemical researches on the blood. Givens and Howe[1] have established anew that diffusion offers the most reasonable explanation for the passage of the nutrient amino-acids and glucose, on the one hand, and such catabolites as urea and uric acid, on the other, through the placenta. The concentrations of each of these substances tend to be essentially the same in the maternal and fetal bloods. This corresponds with the free interchange of diffusible substances that might be anticipated. Quite different, however, are the comparisons of the nondiffusible fats and lipoids in the bloods of mother and fetus at the conclusion of labor. Slemons and Stander[2] have reported observations from the department of obstetrics at Yale University which teach that the placenta is impenetrable to these compounds. During the latter part of pregnancy the fat, phosphatid and cholesterol of the blood are more abundant than usual, perhaps as a physiologic preparation for lactation. The mother's blood contains much more of these substances than does the fetal blood. The difference that exists between the two organisms in this respect varies from case to case; and Slemons and Stander assert that the values prevailing in one seem to be entirely independent of those in the other. Consequently, they conclude that fetal fat must be synthesized, probably from glucose, which is freely supplied by the mother in accord with the demands of the offspring and which readily passes through the placenta.

HOOKWORM DISEASE IN THE PHILIPPINES

Numerous surveys have indicated a widespread infestation with intestinal parasites among the inhabitants of our insular possessions in the Philippines. The published records involving thousands of examinations in various places there show an incidence well above 80 per cent. In a series of 500 necropsies at Manila, reported by Crowell and Hammack in 1913, for example, intestinal parasites were found in more than 90 per cent. of the cases. In view of this extensive parasitism it seems somewhat surprising that hookworm disease has given occasion to so much less concern in the Philippines than it has in many other parts of the world, in some of which much scientific

1. Givens, M. H., and Howe, M. G.: Chemical Studies of the Blood of Mother and Fetus, Am. J. Dis. Child. **25**: 63 (Jan.) 1923.
2. Slemons, J. M., and Stander, H. J.: The Lipoids of Maternal and Fetal Blood at the Conclusion of Labor, Bull. Johns Hopkins Hosp. **34**: 7 (Jan.) 1923.

activity is being devoted to the subject at present. Is it due to a comparatively light infestation in these islands or to some sort of immunity? The investigations of Schwartz and Tubangui [1] at Los Baños may throw light on the question. They have secured information from a very representative group of the population by examining the matriculants at the University of the Philippines. The majority (approximately 85 per cent.) of these normal adult Filipinos were infested with one or more intestinal roundworms. Approximately half of them showed infestation with hookworm of either the New World or the Old World species, but the vast majority were very lightly parasitized. Clinical symptoms of hookworm disease are absent, as a rule. Whether a racial immunity is involved in this resistance or whether purely physical or other conditions unfavorable to the life of hookworm eggs and larvae in the soil are responsible for the light infections remains to be ascertained. However, Schwartz and Tubangui believe that the prevailing notions concerning the lightness of hookworm infestation and the absence of clinical symptoms in Filipinos harboring these parasites, though supported by considerable evidence, should be confirmed by further investigation before the lack of medical importance now attributed to hookworm infections in the native population is accepted as an established fact.

1. Schwartz, B., and Tubangui, M. A.: The Prevalence of Hookworm and Other Intestinal Nematodes in Adult Filipinos, J. Parasitol. 9: 83 (Dec.) 1922.

Association News

THE SAN FRANCISCO SESSION

Special Trains Over Various Routes from Eastern Cities

Following is further information concerning special trains to and from San Francisco, and railroad rates from principal cities. See also THE JOURNAL, January 27, p. 258.

NEW YORK SPECIAL

A special train will be operated from New York to San Francisco by way of Chicago, and over the Santa Fe through the Grand Canyon and Los Angeles. THE JOURNAL, January 27, gives further details. Dr. E. Livingston Hunt, 17 West Forty-Third Street, New York, is chairman of the committee in charge of this train.

MICHIGAN GOLF SPECIAL

The "Michigan Golf Special" from Chicago to San Francisco will leave Chicago, June 17, at 8 p. m., and will stop at Omaha, Denver, Salt Lake City, Lake Tahoe and Del Monte, at each of which places a round of golf will be played by those aboard. This train is due to arrive in San Francisco at 8 a. m., June 23. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Mich., will give information.

OHIO SPECIAL

The Ohio State Association Special will be operated under the direction of the officers of that association. Mr. Don K. Martin, executive secretary of the Ohio State Medical Association, Columbus, Ohio, will furnish information concerning reservations.

HARLAN TOURS

The Harlan Tours of Chicago will operate the "Medical Special De Luxe." Information about this train was given in THE JOURNAL, February 3.

SANTA FE CHICAGO SPECIAL

The Santa Fe Railroad will run a train, to be called the "American Medical Special," which will leave Chicago at 8:15 p. m., June 16. Short stopovers will be made at Kansas City, Colorado Springs, Santa Fe and Albuquerque. The day of June 20 will be spent at the Grand Canyon. This train is due in Los Angeles at 3:30 p. m., June 21. From Los Angeles, choice may be made of rail or boat service to San Francisco. Detailed information may be obtained from J. R. Moriarty, Division Passenger Agent, A. T. & S. F. Ry., 179 West Jackson Street, Chicago.

Side Trips from San Francisco

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements at San Francisco, has submitted information concerning tours which may be taken, with San Franciso as a starting point, after the annual session:

A three weeks' trip to Honolulu on a special boat, touching all principal ports, including the leper colony, and return to San Francisco.

A trip up the western coast to Alaska and return. Those desiring to do so may leave the boat at Vancouver and return east over the Canadian Pacific, or at Seattle and return east over the Great Northern, or at Portland and then east over any available line. Returning to San Francisco, those who take this coast trip may return east by way of Los Angeles or the Panama Canal.

An oriental tour beginning at San Francisco, and leaving that city a day or two after the close of the annual session. Such tours will include Japan, China and the Philippine Islands and return to San Francisco, or a return by way of the Suez Canal and Europe.

A trip to Honolulu, with six days in that city and on the Island of Oahu, and two days in Hilo and the Kilauea National Park, with a visit by day and by night to the active volcano of Kilauea.

An Alaskan tour, embracing a twenty-four day cruise. Stops will be made at Ketchikan, Wrangell, Petersburg, Taku Glacier and Juneau. At Skagway a railroad trip to Bennett Station will be begun; returning, the boat will proceed to Sitka, from which place six days will be spent in the inside passage en route to Seattle. From Seattle a four days' trip to Rainier National Park will be made.

A tour which includes visits to Yellowstone, Glacier and Rainier national parks.

A comprehensive tour that will take four weeks for sightseeing in the Canadian Rockies.

Inquiries concerning transportation from eastern ports to San Francisco by way of the Panama Canal should be referred to steamship offices. It will be possible for those who wish to go to San Francisco by way of the Panama Canal to return by railroad.

For further information regarding side trips, address Chairman, Committee of Arrangements, 806 Balboa Building, San Francisco.

Railroad Rates

The following summer tourist round trip rates are submitted, on what is thought to be thoroughly reliable information, as approximately the rates that will be in effect for the annual session: from Chicago, $86; from Kansas City, $72; from St. Louis, $81.50; from Omaha, $72; from New Orleans, $85.15; from Atlanta, $106.85; from Boston, $144.80; from Buffalo, $116.10; from Cincinnati, $101.35; from Memphis via St. Louis, $85.15, but via Chicago, $93.20; from Cleveland, $105.65; from Detroit, $101.70; from Indianapolis, $95.70; from New York, $138.32; from Jacksonville, Fla., $119.83; from Philadelphia, $133.14; from Pittsburgh, $113.05; from Washington, $130.45; from Nashville, $94.85; from Louisville, $97.75; from Richmond, $130.45.

These rates will permit stopovers, and will also permit return by a different route than that used in going to San Francisco. Those desiring to return by way of the northern routes will be required to pay $18 additional.

Differentiation of Microbial Species.—The differentiation and classification of microbial species is certainly the most difficult of all problems in bacteriology. When one finds what he considers a new species, he is at once aware of the lack of means to characterize it adequately so that it may be recognized by others.—Bushnell, *J. Bacteriol.*, July, 1922.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Illegal Practitioner Fined.—It is reported that J. C. Belding, Powderly, was fined $100 in the police court, February 8, for practicing medicine without a license.

Cooperation in Mosquito Eradication.—In the fight against mosquitoes, the insurance companies, to avoid loss such as was suffered in the recent dengue fever epidemic, will cooperate this year with the U. S. Public Health Service. The state department of health is making an effort to establish full-time health units in every county of the state, to aid in the spring campaign against mosquitoes.

ARKANSAS

Personal.—The governor has appointed Dr. Rutial O. Norris, Tuckerman, a member of the board of health for a four-year term, to succeed Dr. Cyrus F. Crosby, Texarkana, whose term expired.——Dr. Henry Pace, Eureka Springs, has been appointed health officer to succeed Dr. C. F. Ellis, who resigned recently.

CALIFORNIA

Naturopaths May Prescribe Whisky.—In a letter to Prohibition Commissioner Haynes, Washington, D. C., State Prohibition Director Rutter, announced, February 20, that the state appellate court of California held that naturopaths are physicians; in view of this decision, he urged that naturopaths be accorded the privilege of obtaining whisky prescription books.

COLORADO

Personal.—Dr. Thomas M. Toler, Ault, has become associated with Dr. Silas A. Bryan in the management of the local hospital at Silverton.——Dr. Royal H. Finney and Dr. George M. Blickensderfer were recently elected presidents of the Pueblo County and the Denver County medical societies, respectively.

Station to Station Clinic.—A station to station clinic has recently been demonstrated in three Colorado towns by the University of Colorado, cooperating with the child welfare bureau, the state board of health, and the state tuberculosis association. Limon, Elizabeth, and Castle Rock were chosen for the experiment. The program in each town included a conference on child welfare, public health and community problems; free physical examination of children of preschool and school age, and exhibits dealing with child welfare, public health and recreation. Drs. R. P. Forbes, J. C. Savage and Elsie Pratt, specialists from Denver, examined the children at the different cities, and found that about one half of them from 2 years to high school age were underweight.

CONNECTICUT

Yale University News.—The tenth annual celebration of Alumni University Day was held at New Haven, February 22.——A bill now before the Connecticut Legislature, entitled "An Act for the Establishment of a Psychiatric Hospital," calls for an expenditure of $250,000 for the establishment of the hospital, and an annual appropriation for maintenance on the part of the state. The university will provide the site for the hospital, funds for the support of the medical staff, and for investigations into the cause, nature and prevention of mental disease. The bill was the result of an investigation by the state psychopathic commission, which reported the need of such an institution and recommended its location in New Haven in conjunction with the school of medicine.

DISTRICT OF COLUMBIA

Building for Tuberculous Pupils.—A bill was introduced in the House by Representative Focht to provide for the erection of a building for the care of tuberculous pupils on the Upshur Street tract of land in the city of Washington, at a cost of $150,000.

Honorary Degrees Conferred.—At a meeting of the board of trustees of the Lincoln Memorial University at Washington, February 12, the honorary degree of doctor of science was conferred on Dr. Eugene Hertoghe of Antwerp, Belgium; Dr. William Seaman Bainbridge, New York, received the honorary degree of doctor of letters, and Dr. John Harvey Kellogg, Battle Creek, Mich., Secretary of War Weeks and Secretary of the Treasury Mellon received the honorary degree of doctor of laws.

GEORGIA

Personal.—Dr. Alfred F. White, Flovilla, has been elected president of the Georgia State Medical Board.——A dinner was given in honor of Dr. Albert B. Landrum, Columbus, Ohio, by the Alpha Kappa Kappa medical fraternity, at Atlanta, February 15. Dr. Landrum is grand secretary of the fraternity.——Dr. Henry Hanson, director of public health, Republic of Peru, gave an address on "Prophylaxis of Yellow Fever and Malaria in South America" before a special meeting of the Medical Association of Georgia, at Savannah, February 6.——Dr. Richard L. DeSaussure, Brunswick, has resigned as county health commissioner of Glynn County, to accept a similar position in Ohio.

ILLINOIS

Chiropractor Loses Malpractice Suit.—In the case of Frank Scroggins against John DeBow, a chiropractor of Granite City, for alleged malpractice, the plaintiff was awarded $4,000 damages. Scroggins claimed that following treatments given him by DeBow for goiter he was obliged to go to a hospital.

Peoria Physicians' Fellowship Club.—At a meeting, February 15, pending legislation affecting the profession was discussed. Addresses were delivered by Dr. Charles Humiston of Chicago, Dr. Edwin P. Sloan, Bloomington, president of the Illinois State Medical Society, Dr. John R. Neal, Springfield, legislative representative of the state medical society, and Dr. William D. Chapman, Silvis, secretary of the state society.

Osteopathic Bill Introduced.—A bill called the Osteopathic Practice Act has been introduced in the legislature. It would provide for the regular licensure of applicants to practice osteopathy provided such applicants demonstrate to the state department of registration and education well defined minimum educational qualifications, and provided they successfully pass examinations given by the department. The bill would make it unnecessary for the applicant to be examined on the subjects of materia medica, therapeutics, surgery, obstetrics and the theory of practice.

Emergency Appropriation for Antitoxin.—The state legislature has passed a deficiency bill making an emergency appropriation of $35,000 to the state department of public health for the purchase of diphtheria antitoxin for free distribution. Funds provided by the previous general assembly for that purpose had been completely exhausted. The emergency appropriation funds have been placed to the credit of the department, and all needs of local physicians for antitoxin during the remainder of the fiscal year are assured. Physicians may obtain the free antitoxin in necessary quantities through the 434 distributing agents, at least one of which is located in every county seat. There are sixty-nine in Chicago.

Chicago

"Physiotherapist" Convicted.—It is reported that "Dr." J. D. Levine, a physiotherapist, was found guilty, February 21, of practicing medicine without a license. One witness testified that Levine massaged her spine so severely that a rib was broken.

Fraternity Banquet.—The annual dinner of the Alpha Omega Alpha honorary fraternity, sponsored by the three Chicago chapters, will be held at the Auditorium Hotel, March 6, the second day of the conference on medical education. All members of the fraternity and their friends are urged to be present.

Personal.—Dr. B. Barker Beeson addressed the Allen County Medical Society at Fort Wayne, Ind., January 30, and the Woodbury County Medical Society at Sioux City, Iowa, February 17, on "The Diagnosis of the Commoner Skin Diseases."——Dr. Carl Beck, who recently returned from a six months' trip abroad, spoke on "The Surgical Methods Employed in European Clinics for the Treatment of Gastric and Duodenal Ulcer," before the Laboratory of Surgical Technique of Chicago, February 23.

Society News.—A dinner in honor of Dr. G. Edward de Schweinitz, Philadelphia, President of the American Medical Association, will be given by the Chicago Ophthalmo-

logical Society at the Hotel Sherman, March 6. The regular monthly meeting of the society will be held, March 7, in conjunction with the Chicago Medical Society, at which Dr. de Schweinitz will be the guest of honor.—Dr. William E. Grove, Milwaukee, will address the Chicago Laryngological and Otological Society, March 5, on the subject of "Parotid Fistulae in Mastoid Operations."——A dinner in honor of Dr. William W. Duke, Kansas City, Mo., was given at the Hamilton Club, February 28. Following the dinner, Dr. Duke read a paper on "Specific Hypersensitiveness as a Common Cause of Illness" before the Chicago Medical Society.

INDIANA

Personal.—Dr. Frank W. Foxworthy has returned to Indianapolis after several months spent in South America, where he served as a commissioner to the Brazilian Centennial Exposition in Rio de Janeiro.——Dr. Neil E. Fund, La Porte, has been appointed county physician to succeed Dr. George W. Kimball, who resigned recently.

Beardsley Bill Passed.—The Beardsley bill, which failed to pass at the third reading, February 8, on account of the absence of a constitutional majority, was passed by the Indiana senate, February 14, by a vote of 30 to 12. This bill, commits the state to cooperation with the federal government under the Sheppard-Towner Maternity Act.

Lectures on Forensic Medicine.—A series of clinical lectures on forensic medicine for law students, attorneys, and physicians, has been given at the Central Indiana Hospital for the Insane at Indianapolis. The subject of the sixth lecture, given February 15, was "Paranoia and Paranoid States of Epileptic, Toxic, Hysterical and Traumatic Insanities." An invitational lecture was given at the hospital, March 1, to lawyers on "Disposition of the Unfit."

IOWA

Proposed Affiliation of Colleges with Nursing School.—Dr. Charles S. Chase, professor of materia medica and pharmacology at the State University of Iowa College of Medicine, Iowa City, held conferences with the officials of Grinnell, Penn, and Central colleges, recently, regarding an affiliation with the school of nursing at the university, whereby the courses may be combined to offer to students a certificate as registered nurse.

KENTUCKY

"Habit Clinic" Opened.—The second habit clinic in the United States has been established by the Psychological Clinic in Louisville, under the supervision of the Louisville Society for Mental Hygiene. The first clinic was established in Boston in 1922. The clinic is for children of preschool age who show pernicious or persistent habits which if unchecked may become serious.

Public Health News.—At the annual meeting of the Kentucky State Board of Health, held in Louisville, recently, under the presidency of Dr. Lewis S. McMurtry, the following appointments were made: Dr. Philip E. Blackerby, assistant state health officer, was elected director of the bureau of country health work; Dr. Lillian H. South was appointed director of the bureau of bacteriology and epidemiology; Dr. John S. Lock, director of the bureau of tuberculosis; Dr. Annie Veech, director of the bureau of child hygiene; Dr. Jethra Hancock, director of the bureau of venereal disease; Dr. Charles B. Kobert, director of the bureau of trachoma and conservation of vision; Dr. Samuel W. Bates, superintendent of the State Tuberculosis Sanatorium, Hazelwood; Dr. Frank J. O'Brien, director of the bureau of mental hygiene, and Miss Williamson, director of the bureau of public nursing. Each of the terms are for four years.—— A health exposition was held in Louisville, beginning February 14. The U. S. Public Health Service, by means of six lecturers, conducted a six-day course of instruction in urban and rural sanitation and disease prevention for health officers and public health nurses. Educational, scientific and health exhibits were displayed, under the direction of Dr. Irvin Lindenberger, county health officer.

LOUISIANA

Honor for Dr. Matas.—Dr. Rudolph Matas, New Orleans, has been elected a member of the Royal Academy of Barcelona, Spain, and a corresponding member of the Société de chirurgie at Paris.

Narcotic Clinic Closed.—The Shreveport narcotic clinic, known as the Public Health Hospital, was closed, February 10. It was the last of its kind in the United States. A decision to discontinue the clinic was reached at a conference at which were present a representative of the Treasury Department, U. S. District Attorney Mecom and Dr. Willis P. Butler, who had charge of the clinic.

MARYLAND

Officers of County Association Elected.—At the monthly meeting of the Baltimore County Medical Association, at Towson, February 21, Dr. Albert L. Wilkinson was elected president, and Dr. Robert H. Riley, secretary.

British Ambassador Honored.—Johns Hopkins University, Baltimore, has bestowed the honorary degree of doctor of laws on Sir Auckland Campbell Geddes, British ambassador at Washington. Dr. Geddes graduated from the University of Edinburgh, Scotland, in 1903.

Joint Meeting of Medical Societies.—The Baltimore City Medical Society was the guest of the District of Columbia Medical Society, February 21, at its new medical library in Washington. The program was as follows: "Cardiovascular Symptoms in Thyroid Disease," Maurice C. Pincoffs; "Some Ophthalmological Aspects of Tuberculosis," Harry Friedenwald; "What the Medical Profession Should Know and Do About Preventive Medicine and Surgery," Joseph C. Bloodgood.

MICHIGAN

Toxin-Antitoxin Recalled.—All diphtheria toxin-antitoxin which was shipped to distributing stations in the state during November and December, 1922, has been recalled by the state health department and replaced by a new supply. Much of that now being turned in was prepared in the spring and summer of 1921.

MINNESOTA

Medical Bill Defeated.—The medical bill before the Minnesota State Legislature, known as the Basic Science bill, was defeated in the committee and by the house recently. This bill, which was supported by the state medical association, required of all applicants for license to practice in Minnesota a knowledge of physiology, anatomy and pathology.

County Society Reorganized.—After several years of inactivity, the McLeod County Medical Society was revived at a meeting held in Hutchinson, January 25. Officers were elected as follows: president, Dr. W. R. Schmidt, Glencoe; vice president, Dr. P. E. Sheppard, Hutchinson, and secretary-treasurer, Dr. D. L. Axilrod, Hutchinson. The next meeting will be held in April.

Quarantine for Social Diseases.—Mayor Snively of Duluth appointed a committee recently to confer with the county board of commissioners regarding a temporary quarantine hospital in the city for patients suffering from venereal disease. It is proposed to establish a temporary hospital until the new jail is erected, when it is expected the old jail will be used as a permanent hospital for social diseases.

MISSOURI

Dean Loeb Visits Orient.—Dr. Hanau W. Loeb, dean of the St. Louis University School of Medicine, sailed from San Francisco, February 22, for a tour of the Orient. During his trip, Dr. Loeb will visit the medical schools of Japan, China and the Philippines.

Professor Asher to Lecture.—Dr. Leon Asher, professor of physiology at the University of Bern, Switzerland, will deliver a series of lectures on "The Physiology of the Lymphatics" at the St. Louis University School of Medicine, March 5-9, inclusive. The five lectures will be delivered in the university auditorium.

Personal.—Dr. James Moores Ball, St. Louis, will sail on the Cunarder *Andania*, April 14, to attend the annual meeting of the Ophthalmological Society of the United Kingdom, to be held in London, April 25.——Dr. Albert E. Holly, St. Joseph, has been appointed county physician to succeed Dr. Walter Hansen.——Dr. Horace W. Carle has been elected president of the board of health of St. Joseph, to succeed Dr. John M. Bell, who resigned recently.——Dr. Franklin E. Murphy, Kansas City, has resigned as a member of the state board of health.

MONTANA

Rocky Mountain Spotted Fever Investigation.—Several distinguished scientists, including Dr. Simeon B. Wolbach of the Harvard Medical School, Boston, and Dr. Hideyo Noguchi of the Rockefeller Institute for Medical Research, New York, are at Hamilton, conducting research work on Rocky Mountain spotted fever. Their work will continue for several months.

NEW MEXICO

Appropriations for Health Work.—An increase of $11,000, or a total of $38,000, is being asked by the New Mexico Bureau of Public Health for health work in the state. It is also asking the legislature for appropriations to assist counties in developing full-time county health departments.—— The state department of health has announced that it will lend state films, slides and card exhibits dealing with venereal disease and social hygiene to county and city health officers; also stereopticons, portable moving picture projectors and card exhibit frames. A few slides on the subjects of milk, food, teeth, adenoids and tonsils are available for loan.

NEW YORK

Memorial to Dr. Wyeth.—A memorial service for Dr. John A. Wyeth, who died in May, 1922, was held at the New York Polyclinic Medical School and Hospital, February 27.

Triplets Break Record.—The superintendent of the Nursery and Child's Hospital reports that for the first time in the ninety-nine years of the institution's existence, triplets were born there, February 24.

A New Name for Bedford Reformatory.—Managers of the State Reformatory for Women at Bedford have applied to the legislature for permission to change the name of the institution to "Bedford Farms."

Dinner for Dr. Jennings.—Dr. Frank D. Jennings, past president of the Kings County Medical Society, was guest of honor at a dinner, February 17, in Brooklyn, as centenary president of the organization. Dr. William F. Campbell presided at the dinner, at which more than 200 borough physicians were present.

Scholarships for Ophthalmologists.—The Italian Medical Society of New York has been notified by the Department of Ophthalmology of the University of Rome that two assistantships without salary are offered to American medical graduates of Italian extraction. Further information with reference to these scholarships may be had by writing to the Societa Medica Italiana, 47 West Forty-Second Street, New York.

Investigation of Narcotics Proposed. — Assemblyman Maurice Bloch of New York, who recently introduced a bill into the legislature providing for the restoration of the old system of reinforcing the federal antidrug act by local authorities, has introduced a concurrent resolution providing for investigation of the drug evil by a commission composed of two senators, three assemblymen and three citizens, to be appointed by the governor. The resolution carried an appropriation of $20,000 and gives the commission a year in which to complete the proposed inquiry.

Personal.—Dr. Paul W. Beavan, Rochester, spoke on "Hypertrophic Stenosis of the Pylorus," before the Rochester Pathological Society, January 18.——Dr. Maurice C. Ashley, for more than twenty years superintendent of the State Homeopathic Hospital, Middletown, has resigned, the resignation being effective May 1.——Dr. Francis E. Fronczak, health commissioner of Buffalo, was decorated with the Polish Cross of Valor at the Polish consul's office, February 16, for services rendered with the Polish army. This is the third decoration Dr. Fronczak has received from Poland.

Physicians Organize to Fight Narcotics.—Appointment of a committee of fourteen physicians to act in an advisory capacity to the Society for the Suppression of the Narcotic Drug Evil was announced by Dr. Copeland, February 14. Members of the committee are Royal S. Copeland, chairman; Wendell C. Phillips, trustee of the American Medical Association; Daniel S. Dougherty, secretary of the Medical Society of the County of New York; Carleton Simon, special deputy police commissioner in charge of narcotic work; Charles L. Dana, chairman of the public health committee of the New York Academy of Medicine; Arthur F. Chace, president of the county medical society; Antonio Stella, Harlow Brooks, Eugene H. Pool, Samuel J. Kopetsky, Charles H. Peck, Orrin S. Wightman, Frederick E. Sondern and John E. Wilson.

New York City

Schools Close on Account of Illness.—The prevalence of colds, influenza and pneumonia led the board of education to grant a recess, February 22-26. February 19, there were 2,000 teachers absent from their classes, 800 of which had to be suspended.

American College of Rehabilitation Organized.—At a meeting held at the New York Academy of Medicine a company was organized for the establishment of an American College of Rehabilitation for training workers in the field of reconstruction of the wounded and crippled. The sponsors are Dr. Fred H. Albee, Mrs. Clarence Cary, Martin A. Metzner, W. J. Hoggson, R. Gradwell and Standish Chard.

Acceptance of Rebates by Physicians Condemned.—Resolutions were passed by the New York Academy of Medicine at a stated meeting held, February 15, setting forth that numerous instances had been brought to the attention of the Council and the Public Health Committee of the Academy of rebates being offered to, and accepted by, physicians from commercial laboratories, opticians, druggists and others to whom patients were referred. It was therefore resolved that "The New York Academy of Medicine condemns such practices on the part of those offering the rebates, as well as on the part of physicians accepting them, as being unethical and detrimental to the medical profession."

NORTH CAROLINA

Nurses' State Examining Board.—The Quickle bill, which would have amended the organization of the state nurses' examining board, providing for representations on the board by the state hospital association, and the state medical association as well as the nursing association, was defeated at Raleigh, February 7. Following a hearing before the house committee, the bill was killed by unanimous vote. Contention was made by the nurses, supported by the Buncombe County Medical Society and others, that by reducing their representation on the examining board, nursing standards in the state would be lowered.

OHIO

State Medical Board Elects.—At the regular quarterly meeting of the board in Columbus, January 2-3, the following officers were elected for the ensuing year: president, Dr. T. Addison McCann, Dayton; vice president, Dr. John K. Scudder, Cincinnati; treasurer, Dr. John H. J. Upham, Columbus, and secretary, Dr. Herbert M. Platter, Columbus.

Medical Board Upheld.—The right of the medical board to compel chiropractors to stop practicing unless they hold state licenses was affirmed by Common Pleas Judge Ahern, February 16, when he refused Herman J. Kroeger an injunction to restrain the state board from further interference with chiropractors. Reports state that Kroeger, a chiropractic patient, filed petition in the common pleas court to enjoin the state medical board from interfering with members of the chiropractic profession.

Society News.—A banquet in celebration of the fiftieth anniversary of the organization of the Mahoning County Medical Society was held at the Country Club, Youngstown, February 1. Dr. Charles D. Humes, Indianapolis, read a paper on "Traumatic Neuroses." Dr. Timothy Woodbridge was the first president, and Dr. William J. Whelan, the first secretary, of the society.——At a meeting, March 6, of the Summit County Medical Society at Akron, Mr. O. N. Harter, president of the Ohio Milk Distributors' Association, will give an address on "The Relation of the Milkman to the Medical Profession," and C. H. Case, a veterinary surgeon, will speak on "Tuberculosis in Cattle."

Personal.—Drs. Alfred G. Farmer and Jesse Grant Marthens were elected president and secretary, respectively, of the Dayton Academy of Medicine, January 12.——Prof. R. G. Hoskins, head of the department of physiology, Ohio State University College of Medicine, Columbus, has returned from a lecture tour on the Pacific coast.——Dr. Walter D. Hancock, Millville, aged 75, having retired after fifty years of medical practice, has gone on a three months' trip to South America. ——Dr. James F. Baldwin, ex-president of the state medical society (1922) and formerly professor of surgery, Starling Medical College, Columbus, spoke on "Some Great Charlatans of History" before the Wayne County Medical Society at Detroit, February 19.——Dr. Paul W. Bailey, an ambulance surgeon of the General Hospital, Cincinnati, was seriously injured, January 31, when his ambulance collided with an automobile.——Dr. A. B. Denison, assistant superintendent

of the Lakeside Hospital, Cleveland, has been appointed superintendent to succeed Dr. Robert H. Bishop, Jr., who has been appointed secretary of the University Medical School group.

PENNSYLVANIA

Philadelphia

Library Committee Issues Report.—The library committee of the College of Physicians has issued its report for 1922. At this time, the library contains 136,489 volumes, 14,677 theses and 131,866 unbound pamphlets. During the year, 6,430 volumes, 11,418 pamphlets and 16,016 periodicals were received. The library has 10,505 portraits and 336 incunabula. It was used during the year by 8,296 persons.

Society News.—At the annual meeting of the Philadelphia Pediatric Society, Dr. Horace H. Jenks was elected president; Dr. A. Graeme Mitchell, vice president, and Dr. John P. Scott, secretary.——Drs. John H. Jopson and John S. Rodman were elected president and secretary, respectively, of the Philadelphia Academy of Surgery at the annual meeting, recently.——Dr. William H. Carpenter was elected president of the Medical Examiners' Association of Philadelphia for the ensuing year.

University Day.—Four hundred students of the University of Pennsylvania, members of the faculty and trustees, celebrated, February 22, the ninety-eighth annual "University Day," exercises in the Academy of Music. The meeting not only commemorated the birthday of Washington, who was a patron of the university, but was the occasion for conferring honorary degrees. The degree of doctor of science was conferred on Dr. Chevalier Jackson of the graduate school of the university.

Site for College of Pharmacy Dedicated.—The site at Woodland Avenue and Forty-Second Street, Philadelphia, for the new buildings of the Philadelphia College of Pharmacy and Science, was dedicated, February 23. Rear Admiral Braisted, former Surgeon-General of the Navy and president of the college, delivered the dedicatory address. It was announced that more than $1,000,000 had been collected since last November in the campaign for $2,000,000 for the erection of buildings. The college was founded by Benjamin Franklin.

SOUTH CAROLINA

Narcotic Bill Killed.—State control of the sale of narcotics and other habit forming drugs was rejected by the house of representatives, February 7, when the Lewis bill, which would limit the sale of such preparations to licensed druggists, physicians, veterinary surgeons, trained nurses, dentists and hospitals, was killed.

SOUTH DAKOTA

Eyesight Conservation Campaign.—The South Dakota State Medical Association is conducting a campaign throughout the state for the dissemination of information to the public on the care of the eyes. The state society is voluntarily paying for this work from its own funds, and Dr. Joseph G. Parson, Sioux Falls, chairman of the committee on conservation of vision for the state medical society, has been giving illustrated lectures on the care of the eyes to the various schools and college clubs in Sioux Falls and other towns.

VIRGINIA

Public Health Work in Virginia.—At the annual conference of public health workers at Richmond in December, the progress of county health work in the state was outlined. In 1908 the state had no full-time county health workers; in 1912 the first full-time health officer went on duty; in 1917 five counties had full-time health officers, and in 1922 thirty-two counties employed full-time health workers.

PHILIPPINE ISLANDS

Physicians Elected to the Philippine Legislature.—Dr. Tomas Gomez was elected a member of the senate, and Drs. Agapito Buenconsejo, Raymundo Camacho, Eliseo Limsiaco and Vicente E. Manapat were elected to the house of representatives.

Lecture on Medical History.—Lieut. Col. F. H. Garrison, Washington, D. C., U. S. Army Medical Department Research Board, gave a series of six lectures on the history of medicine before the faculty and student body of the College of Medicine and Surgery of the University of the Philippines, Manila, recently.

Social Hygiene Association.—The Philippine Island Social Hygiene Association applied for charter, January 1. The educational and religious leaders of Manila formed this organization to study and better social hygiene conditions in the islands. Activities already under way include a survey of vice conditions in Manila and its environs and of the sex educational literature used in the normal schools and colleges.

CANADA

Hospital News.—The Hospitalieres Sisters, who have been conducting the Hotel Dieu in Quebec since the first days of the colony, will take charge of the new hospital to be erected on Ste. Foye Road. The new institution will be a general hospital.

Canada Asks United States to Help in Drug Fight.—Canadian officials of the dominion narcotics department will ask cooperation of the United States, it is stated, in a campaign against the international drug traffic. These officials will visit Washington to formulate some international plan. There are 15,000 known drug addicts in Canada, and evidence of the existence of an international "dope ring," with headquarters in Montreal and with operatives working in Chicago and New York, has been discovered.

Personal.—Prof. J. C. McLennan, professor of physics at the University of Toronto, has been granted leave of absence for the remainder of the school year. He will visit laboratories in Great Britain, France and Holland, and return in September.——Drs. Duncan N. MacLennan and William Lowry have been appointed assistant professors in ophthalmology in the University of Toronto.——Dr. Herbert A. Bruce, Toronto, addressed the Wayne County Medical Society, at Detroit, February 26, on "Some Observations on the Diseases of the Gallbladder and Pancreas."

Epidemic Encephalitis in Winnipeg.—Newspapers have carried exaggerated accounts of an epidemic of encephalitis said to have occurred in Winnipeg. THE JOURNAL, in order to present the facts, telegraphed to Dr. A. J. Douglas, health officer of Winnipeg, who replies: "The first case of encephalitis was notified January 12, and since then eighty-five cases have been reported. Eight of these came in from rural points. There have been seventeen deaths with the myoclonic form predominating. There seems to be no discoverable connection between any of the cases. During the past ten days the number of cases has been decreasing and the type is milder.

GENERAL

Postmaster General Work to Interior Department.—It is announced that on March 4, Postmaster General Hubert Work, former president of the American Medical Association, will become Secretary of the Interior in the cabinet of President Harding, being succeeded by Senator New of Indiana as Postmaster General.

Bill to Prohibit Interstate Commerce in Heroin.—Interstate commerce in heroin (diacetylmorphin) is prohibited in a bill introduced in the Senate by Senator Ladd. Persons violating the proposed law shall be fined not less than $1,000 or sentenced to one year's imprisonment. The measure was referred to the Committee on Interstate Commerce of the Senate.

Sioux Valley Eye and Ear Academy.—At the tenth annual meeting of the academy in Sioux City, January 24, the following officers were elected for the ensuing year: president, Dr. Jesse B. Naftzger, Sioux City, Iowa; vice president, Dr. Samuel A. Keller, Sioux Falls, S. D., and secretary, Dr. Lorenzo N. Grosvenor, Huron, S. D. The next meeting will be held at Omaha.

Large Fund for Oriental Colleges.—A campaign was opened in December in the United States to raise funds for the medical schools for women in India, China and Japan, which, if secured before January 1, would insure a gift of $500,000 from John D. Rockefeller. Dr. Tehyi Hsieh, Dr. Ida Scudder, principal of the Women's Medical College, Vellore, India, and Dr. Mabel M. Manderson, former dean of the North China Medical College for Women, Peking, toured the United States lecturing for this movement. It was announced recently by the Woman's Foreign Missionary Society of the Methodist Episcopal Church that more than $2,800,000 had been raised for the six oriental colleges for women.

Eye Sight Conservation Council of America.—The annual meeting of the council was held in New York, February 6,

at the Pennsylvania Hotel, under the presidency of L. W. Wallace, Washington, D. C. General Director Guy A. Henry presented the annual report, stating that more than 533,000 folders and pamphlets had been sent out during the year. Prof. F. C. Caldwell, Ohio State University, delivered an address on "Glare," and Dr. Homer E. Smith, New York, spoke on "The Marvels of Vision." The same officers were elected for the ensuing year, with the exception of the vice president. Bailey B. Burritt, New York, was elected to succeed Dr. Cassius D. Wescott of Chicago.

Reunion of "The Blizzard Class."—The class of 1888 of Bellevue Hospital Medical College, New York, will celebrate its thirty-fifth anniversary, March 12. Because of its graduation on the day of the most terrible blizzard New York ever experienced, the class was named by the late Professor Doremus "The Blizzard Class." Dr. D. Hunter McAlpin, the class president, has invited all the surviving members to be his guests at a dinner at the McAlpin Hotel on that date. Those of the class who have not been reached by direct invitation because of faulty or insufficient address will please communicate with the acting secretary, Dr. S. Adolphus Knopf, 16 West Ninety-Fifth Street, New York.

Resolutions on Narcotics Favorably Reported. — Feb. 23, 1923, the Committee on Foreign Affairs, after hearings, reported favorably the Porter resolutions on narcotics (THE JOURNAL, February 17, p. 488) to the House of Representatives. The report of the committee states, in part, that "notwithstanding that many nations have antinarcotic laws which impose heavy penalties for violation thereof, unlawful traffic in habit-forming narcotic drugs continues. In the United States, although our laws are designed to suppress illicit handling of these drugs, their use by addicts is constantly growing, and we are justified in the conclusion that radical and efficacious remedial action must be inaugurated and strictly enforced."

Rockefeller Foundation Announcements.—The Rockefeller Foundation has elected to its board of trustees Dr. Ray Lyman Wilbur, president of Stanford University, California, and William Allen White, editor, Emporia, Kan., and to membership on the International Health Board, Dr. David L. Edsall, dean of Harvard Medical School.——The foundation has authorized a system of fellowships in the biologic sciences, comparable to those now administered by the National Research Council, under foundation funds, in physics and chemistry and in the medical sciences.——Leave of absence has been granted to President George Vincent to enable him to go as a delegate of the United States to the Fifth Pan-American Congress, Santiago, Chile, during March and April. During his absence, the secretary, E. R. Embree, will perform the functions of president.

Bequests and Donations. — The following bequests and donations have recently been announced:

Sisters of Charity, Richmond, Va., on the death of his widow, half of the $6,000,000 estate of Major James H. Dooley, for the endowment of a hospital, and two orphanages for girls.

Reid Memorial Hospital, Richmond, Ind., $100,000, by Daniel G. Reid of New York. Of this sum, $50,000 is given outright, contingent on the city raising a like sum, for the purpose of enlarging the institution.

Portsmouth Hospital, Portsmouth, N. H., $100,000 for the treatment of tuberculosis and for a contagious ward, by the will of Mrs. M. Jenness DeGarmendia, who died in Paris, France, January 9.

Nyack (N. Y.) Hospital, $90,000, on the death of the beneficiaries, under the will of W. B. Conrad.

Norwood (Mass.) Hospital, $60,000, in memory of her husband, by the will of Mrs. Alice H. Plimpton.

Norwich (N. Y.) Hospital, the greater part of a $50,000 estate, under the will of Emery S. Reynolds.

Flushing (L. I.) Hospital, $25,000, by the will of Mrs. A. M. Booth.

Rockingham Memorial Hospital, Harrisonburg, Va., $10,000, by the will of Miss Clara Chaunceauline.

Roxbury (Mass.) Home for Aged Couples, $5,000, and, after private bequests, the residue of the estate in equal shares to the Boston Floating Hospital, the Florence Crittenton League of Compassion, the Massachusetts Society for the Prevention of Cruelty to Children, the Industrial School for Crippled and Deformed Children, the Boston Nursery for Blind Babies, the Perkins Institution for the Blind, the Frances E. Willard Settlement and the Episcopal City Mission, by the will of Elizabeth Goldthwait Pierce of Newton, Mass. In each instance, a permanent fund, to be known as the "John Goldthwait Fund," is to be established, in memory of Mrs. Pierce's father.

St. Francis Hospital, Santa Barbara, Calif., $5,000 by G. O. Knapp; $1,000 anonymously, and $500 by Mrs. Milton Robbins.

Barrett Hospital, Dillon, Mont., a 7¼ acre site valued at $2,000 by the State Bank of Dillon, and a large sum by Mrs. William Roe.

Chelsea (Mass.) Memorial Hospital and the Chelsea Day Nursery, each $1,000, under the will of Edwin R. Hoag.

Beth Israel Hospital, New York, $1,000, by the will of Israel W. Schenker.

Institute for Tuberculosis, Denver, and the Institute Maer Bell Hanes at Jerusalem, Palestine, each $200, under the will of Dr. Adolph Harskovitz of Uniontown, Pa.

City Memorial Hospital, Winston-Salem, N. C., radium for the treatment of patients, by Bowman Gray of Winston-Salem.

LATIN AMERICA

New Argentine Hospitals.—A new tuberculosis hospital was recently opened at Córdoba.——Work has already begun on the new hospital at Miramar.

Funds for Brazilian Hospitals.—An annual appropriation of 6,000 contos (more than $700,000) was recently approved by the Brazilian Congress for maintenance of hospitals at Rio Janeiro. Repair and reequipment of several hospitals are already under way.

Cuban Society Elects Officers.—The Villaclara Medical Society elected recently the following officers: president, Dr. Olivio Lubián; vice president, Dr. Tomás A. Etchandy; treasurer, Ramón Lorenzo; secretary, Oscar Esparza. Dr. Lubián, the president-elect, is also the editor of *Villaclara Médica.*

Mexican Welfare Society.—This society has charge of funds in the federal district and twenty-two out of the twenty-eight states amounting to about 65,000,000 pesos. The income from these funds is used to support twenty-six homes, six foundling homes, three dispensaries, five old people's homes, ten schools, seventy-one hospitals, four insane asylums and fifty other institutions. The number of inmates is 15,698.

Yearbook of a Child Welfare Association.—El Patronato Oficial de la Infancia of Chile has published a most elaborate 250 page yearbook for 1923, reviewing its activities. Funds available in the fiscal year 1922 amounted to more than 613,000 pesos, and about 555,000 pesos was spent. The society supports eleven milk stations, a home for mothers, an infant clothing shop and a diet kitchen, and will support a maternity home (in construction). It has a capital of more than 1,400,000 pesos. The yearbook is a complete record as well as an entertaining volume. Besides descriptions, illustrations and personnel of all the hospitals and dispensaries at Santiago, the book contains material of general interest.

FOREIGN

International Congress on Comparative Pathology.—Our foreign exchanges state that the second International Congress on Comparative Pathology is now definitely announced to meet at Rome, Oct. 7 to 14, 1923. Seventy communications have already been listed. Prof. E. Perroncito, 40 Corso Valentino, Turin, is in charge.

Federation of Scientific Societies in Belgium.—The *Liége médical* relates that delegates from all the chemical, medical, mathematical and other scientific societies of Belgium recently convened at Brussels. The president of the federation is Professor Stockis of Liége, and the secretary is Dr. Renaux of the Pasteur Institute of Brussels.

Appeal for Candidates for Fellowships.—The *Nederlandsch Tijdschrift* publishes an appeal for candidates for the fellowships offered by the scientific committee of the Netherlands-America Foundation. Netherlands university students or recent graduates who may wish to study for a year or less in the United States are asked to present their credentials to Prof. H. A. Brouwer at Delft. The number of scholarships is small.

The League Against Syphilis.—The first meeting of the international league against social disease was held in Paris, February 25, under the presidency of M. Barthou. The queen of Belgium, founder of the league, was represented by the Belgian ambassador. A world-wide campaign will be conducted against venereal disease in the near future, it was announced. The official title of the organization is the League Against Syphilis.

Importation of Foreign Drugs Into Roumania Regulated.—A recent order issued by the ministry of public welfare forbids the importation and sale of foreign drugs in Roumania except under the following conditions:

The manufacturers must apply in writing for a license and state the value, quality and quantity of their drugs.

Chemical analysis of the drug must be performed by a competent analyst, whose certificate must be attached to the letter of application, together with an official certificate to show that the sale of the drug is permitted in the country of its origin.

Every package must be labeled in Roumanian with the name and formula of the preparation, and each application must be accompanied by ten samples of the drug.

Multiple Sclerosis in Switzerland.—The neurologists of Switzerland, who have long been impressed with the prevalence of multiple sclerosis in that country, have induced the public health authorities to aid them in a collective inquiry on the subject. Questionnaires are to be sent to all practitioners of medicine for information as to the prevalence of

the various types of the disease, but especially the type suggesting spastic spinal paralysis, which is the most common form in Switzerland.

No Reciprocity Between Hungary and Roumania.—Roumania announced in 1922 that Hungarian medical diplomas would not be acknowledged in Roumanian territory, as a reprisal, for Hungary's long standing failure to recognize diplomas from the universities of Roumania. This has seriously affected hundreds of students in the newly acquired parts of Roumania. In the University of Cluj, where formerly the Hungarian language was used, the Roumanian language has been adopted. The advanced medical students, who could not learn Roumanian and carry on their studies at the same time, went to the University of Budapest to finish their education and obtain their medical diplomas. Now, on returning to their homes, they find themselves prohibited from practicing, although their own language is still spoken in Transylvania, where even the Hungarian laws are still in force.

Russia's Biologic Crisis.—In his report on "Epidemics in Russia Since 1912," Professor Tarassevich states that Russia will be fortunate if she emerges from the present crisis with the loss of only 20 per cent. of her population. The crisis is described as not only political and economic but also biologic, because of the disturbances which it has caused in the domain of human physiology and pathology. Not only are epidemic diseases, such as typhus, relapsing fever, intestinal infection, malaria and scurvy, which have always existed in Russia, aggravated both in prevalence and in virulence, but nearly all other epidemic infectious diseases have been greatly increased, hitherto unknown diseases have been observed, and there has been an extension of many noncontagious diseases, such as disorders of the nervous system and the heart, and general functional disorders. Behind all this stands the famine, which has caused millions of deaths, and has lowered the stamina and physical standards of the whole Russian race.

Personal.—Dr. Pasteur Vallery-Radot, grandson of Louis Pasteur, gave a lecture before the Royal Society, London, February 2, in connection with the Pasteur centenary. Dr. Vallery-Radot is touring England in commemoration of the centenary, under the supervision of the Alliance Française. ——By resolution of the Royal College of Physicians, London, the name of Dr. David A. C. Pearce has been expunged from the list of licentiates.——Prof. Grafton E. Smith delivered the Montgomery Lecture before the Royal College of Surgeons of Ireland, January 29.——Dr. Leon Bernard of the University of Paris, secretary of the National Antituberculosis Association of France, arrived in America recently, to study American health methods. —— Prof. Camillo Golgi has been given an honorary degree by the Paris medical faculty.——Prof. T. Weiss was recently presented with a souvenir tablet on the occasion of his retirement from the chair of clinical surgery at Nancy, having reached the age limit.——Dr. F. Ingerslev of Saxkøbing, Denmark, has been elected to membership in the Union internationale contre la tuberculose.——The Academia de Medicina at Madrid recently unveiled a tablet bearing a tribute to the efforts and long service of the librarian, Dr. Fernández Caro, senator and president of the Spanish Hygiene Society.——An album with more than 1,800 signatures was presented to Professor Recasens of Madrid, with an address expressing gratitude for his work as dean of the medical school. He is credited with having initiated the interchange of university professors and numerous improvements in technical equipment.——The *Medicina Ibera* relates that the city authorities of Zaragoza presented Dr. Martínez Vargas with a gold medal. He is professor of pediatrics at Barcelona, and a leader in welfare work for children.——Dr. Sieur, the medical inspector general of the French army and president of the medical consulting staff in the ministry of war, was given an ovation recently as he left the service, having reached the retiring age. Vincent is his successor.

Deaths in Other Countries

Dr. **James Ritchie,** Irvine professor of bacteriology at the University of Edinburgh, January 28.——Dr. **Thomas Wood** of Edinburgh, at Lisbon, Portugal, January 24.——Dr. **J. W. Ballantyne,** lecturer on midwifery and gynecology to the School of Medicine for Women, Edinburgh, past president of the Edinburgh Obstetrical Society, fellow of the American Association of Obstetricians and Gynecologists and honorary member of the American Child Hygiene Association.——Dr. **Thomas Higgins** was assassinated at his home at Maryborough, Ireland, February 12.——Dr. **Oscar Freire,** professor of legal medicine at Bahia, who has been giving a course of lectures in the S. Paulo medical school, died recently at S. Paulo, aged 42. He was the founder of the Sociedade de Medicina Legal at Bahia and a frequent contributor to scientific literature.——Dr. **F. La Torre,** professor emeritus of obstetrics at the University of Rome, author of several textbooks, founder and director for twenty-five years, of the *Clinica Ostetrica,* aged 76.——Dr. **A. Testaz** of Bex, Switzerland, aged 64.——Dr. **A. Roskam** of Liége, president of the Société médico-chirurgicale, and author of works on internal medicine and neurology.——Dr. **Isidro Giol de Diego,** at Madrid.——Dr. **Ernesto B. Salvá** of Santa Fe, Argentina, aged 58.——Dr. **V. Chirivino,** instructor in skin diseases and syphilis at the University of Naples, and a frequent contributor to the literature of these specialties, aged 53.

CORRECTION

Expansion of New York Academy of Medicine.—Dr. W. G. Thompson writes that the announcement made in a recent issue of THE JOURNAL under the heading "Expansion of Academy of Medicine" should be corrected to read as follows: "The Rockefeller Foundation has not contributed $1,000,000 for the new building, but has given approximately that sum toward maintenance of the academy and expansion of its educational work. The Carnegie Corporation has contributed the cost of the new building to the extent of $1,000,000. Thus the academy of medicine furnishes the land, the Carnegie Corporation the building, and the Rockefeller Foundation the endowment.

Government Services

Aviation Examining Units Authorized

Pursuant to instructions of the Secretary of War, the organization of the following aviation physical examining units, organized reserves, has been authorized: Aviation Physical Examining Unit No. 6 (a New Jersey state unit); No. 7 (Tennessee), No. 10 (Iowa), No. 14 (Tennessee), No. 15 (Pennsylvania), No. 2 (California) and No. 5 (California).

Survey Vessels to Have Medical Officers

The House of Representatives acted favorably, February 19, on the bill providing medical and hospital supplies for the officers and seamen of the Coast and Geodetic Survey. By the terms of the bill, the U. S. Public Health Service is authorized to detail a medical officer on each of the vessels of the survey while at sea. The bill passed without a record vote, and went to the Senate.

First Class in Physiotherapy Graduates

The first class in physiotherapy at Walter Reed General Hospital, Washington, D. C., was graduated, February 7. Dr. Frank B. Granger, lieutenant colonel, M. O. R. C., Boston, spoke on the development of physiotherapy, emphasizing the effect the World War had in placing physiotherapy on a scientific basis. Surg. Gen. Merritte W. Ireland presented the certificates of proficiency. The graduates, with a single exception, have accepted appointments as reconstruction aides in U. S. Army hospitals.

Director of Veterans' Bureau Appointed

The President has nominated Brig. Gen. Frank T. Hines, U. S. Army, retired, Washington, D. C., director of the U. S. Veterans' Bureau, succeeding Col. Charles R. Forbes, who resigned recently. Brigadier General Hines was chief of the transportation service during the World War.

Additional Appropriation for Disabled Veterans

Representative Langley of Kentucky, chairman of the House Committee on Public Buildings and Grounds, announced this week that an additional $5,000,000 would be necessary to provide adequate hospital facilities for dis-

abled war veterans. This statement was made after Chairman Langley had conferred with President Harding on the subject. The proposed $5,000,000 appropriation is in addition to the $17,000,000 recently carried in the so-called second Langley bill, which has already been expended or authorized to be expended for hospitals now under construction. An urgent need for more money exists, according to Congressman Langley, who indicated that the President had given his sanction to whatever additional appropriations are necessary.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Feb. 2, 1923.

To What Extent the Sending of Pamphlets May Constitute Illegal Practice of Medicine

A Lyons herbalist became the proprietress of a botanical laboratory in which the medicinal decoctions (tisanes) of an abbé were manufactured. She solicited clients by means of circulars and advertisements in the public press, in which she advised patients suffering from any one of twenty diseases enumerated to begin the use, if they wished to recover, of the medicinal decoctions recommended in a pamphlet, giving twenty modes of treatment, of which the abbé was the author and which was furnished gratis to all persons requesting it. In response to letters, the herbalist sent out an advertising pamphlet, the cover of which bore a picture of the abbé, and the preface of which was signed by him as evidence of his endorsement. The results of a therapeutic method which consisted in the use of the medicinal decoctions of the abbé were set forth with extravagant praise. The cost of the various modes of treatment was plainly stated, and the treatment that should be followed in each type of disease was specified.

The profits realized from the sale of these medicinal decoctions amounted to about 150,000 francs a year. The abbé, who was not a doctor of medicine, had granted to the herbalist, in return for the payment of certain sums monthly, the right to use his name and also to prepare and sell the medicinal products that were manufactured according to his formulas. It was likewise with his authorization that the pamphlet had been edited, published and distributed. When the charge of practicing medicine illegally was brought against them, the abbé and the herbalist set up in their defense the facts that they had made no examination of their patients, and that no written prescription had been given in connection with the application of the appropriate treatment. The court of cassation (the highest court of France) refused to accept this interpretation of their acts, and set forth that the law does not state that examination of the patient and the mode of writing used in prescribing treatment are the pivotal considerations in respect to the charge of practicing medicine illegally. This court decided that a misdemeanor had been committed, since, with the foreknowledge of the abbé, the herbalist gave instructions to patients and participated habitually in the treatment of their diseases. While it is true that advice given in a general way, in a book or pamphlet, in regard to the care to be accorded patients, does not constitute in itself illegal practice of medicine, the case is different when certain care and treatment are prescribed for a patient individually and in a specific instance. The circumstance that made it possible for the court to uphold the charge that a misdemeanor existed is the fact that personal letters were addressed to the patients, in which the cost of treatment was stated and in which the treatment to be observed was specified.

Photogenic Properties of Cocain

Dr. G. Salles calls attention to a cause of cocainomania, which does not seem to have been pointed out heretofore; namely, the use of cocain by motion picture actors to increase the photogenic capacity of the eyes. The resulting increase of ocular tension and the dilatation of the pupil give to the eyes and to the face of the artist an expression of astonishment, depth and brilliance, and sometimes of wildness. It goes without saying that this use of cocain, instead of enhancing the gifts of the actor, soon develops a mania, and induces degradation of character and the loss of the fundamental qualities of an artist.

Voice of Opposition Against Secret Remedies

The Société de thérapeutique adopted recently the following resolution:

> The Société de thérapeutique cannot preserve its character as a great scientific society unless it refuses to act in any way that seems to accord its patronage to private interests. Consequently, it has decided to return to the practice adopted previous to 1914, and henceforth it will not accept from its members, nor allow its members to present, any communications that deal with therapeutic products the chemical formula of which is unknown, or, in the case of galenicals, if the quantitative formula is not made public.

Protection of the Professional Reputation of a Physician

Suit was recently brought against an oculist of Dijon by the father of one of his patients to collect 100,000 francs damages for a grievous error, alleged to have been committed by the oculist, which resulted in the enucleation of the patient's eye. The medical experts, in their testimony, declared that there was no evidence that the oculist had neglected the dictates of common sense, but that, on the contrary, his actions were in conformity not only with prudence but also with the guiding principles of science: both as regards the establishment of the diagnosis and the application of treatment he had adopted a line of conduct that was absolutely normal and in accord with recognized medical standards. In view of this testimony, the plaintiff expressed a willingness to withdraw his complaint, but the oculist set up a cross-action against the plaintiff and demanded an award in his own favor. The court of Dijon approved the oculist's claim, and required his opponent to pay the physician, by way of damaged interests, the sum that he had demanded. The decision of the court was based on evidence that the plaintiff in the primary action had not confined his charges to the imputation that the physician was guilty of a characteristic professional error, but, without necessity, he had accused the defendant of "having carried out the examination of the patient with haste and an unjustifiable precipitation, of having committed a grave error, and of having been guilty of gross negligence, such as would constitute, aside from all questions of medical theory and method, evident incapacity and neglect of the rules of sound reasoning and prudence such as any ordinary human being is supposed to apply." The court regarded these affirmations as a malicious endeavor to injure the physician's reputation. To be sure, the law permits one to injure the reputation of others if it is done in the exercise of one's own individual rights. A patient is entitled to bring complaint against his physician; but, in defaming him without necessity, he exceeds his rights. The rights of the patient cease where the rights of the physician begin. The physician, too, is entitled to protection against imputations of such a nature as will reflect on his character as a professional man and will be certain to awaken a prejudice against him.

Propaganda for Remedies Against Tuberculosis

All physicians of Paris, and doubtless also those in the provinces, received recently a bulky package on which was inscribed in large letters: "The Fight Against Tuberculosis." Great was their disappointment when, on opening the package, they found only a stock of pamphlets vaunting the treatment

of tuberculosis with endotine, the "Gabrilovitch purified tuberculin," which, according to these brochures, was a "veritable specific remedy against tuberculosis." But what was more serious, in a daily paper there appeared a long article entitled, "A Light in the Darkness, Determining the Direction of the Fight Against Tuberculosis." This extolled the great merits of the Gabrilovitch tuberculin and tended to make the general public believe that this tuberculin is "at last a truly therapeutic and a truly specific remedy" against tuberculosis. And how could the general public refuse to believe these affirmations when there appeared, under the article in question, the signature of Prof. Gabriel Petit, of the Academy of Medicine. The public does not know that Gabriel Petit is a professor in a school of veterinary medicine.

MADRID

(From Our Regular Correspondent)

Jan. 18, 1923.

Epidemic Infantile Paralysis in Madrid Province

Dr. Lafora has published an article on an epidemic of infantile paralysis occurring not far from Madrid. So far no epidemics had been reported in Spain, although some small outbreaks, such as the one reported by Dr. Fernández Sanz at Manzanares, Ciudad Real, in the summer of 1917, had attracted attention. The outbreak now described is worthy of notice both because of its being so near Madrid and because of its continuing to spread. It began about three weeks ago among the children in Chinchón. Dr. Lafora has seen three cases personally, and has heard of six new cases in the last few days. No deaths have been reported, but the paralysis has persisted over twenty days in a number of cases. Dr. Lafora's article contains a brief account of the disease, symptoms and treatment, including Rosenow's advice as to the administration of immune horse serum. The authorities have heeded Dr. Lafora's report, and have adopted measures to prevent the spread of the disease.

Dr. Madinaveitia's Death

Dr. José Madinaveitia, noted for his constant efforts on behalf of labor, died recently, at Bilbao, his home town. He lost his immense practice in the Basque provinces on deserting the Basque nationalist party for international socialism. Even his own people repudiated him. He then closed his office and devoted his science, his money and all his energies to a medicosocial campaign among workers. At Eibar, he created a garden for convalescents, changing a barren hill into an inviting resort, and organized libraries, lecture halls and cooperative societies. When the famous mining strike took place at Vizcaya, Madinaveitia immediately began making provision for the strikers' children, that the parents might better stand the conflict. He took whole trainloads of children to Bilbao. The strikers, however, showed him no gratitude for this action. When his efforts at political reform failed, he went back to his practice, as he also went back to his former church, when about to die.

Increase of Students and Decrease of Professors in Spanish Schools

Dr. Eleicegui, editor of *España Médica*,, has published an article protesting against the alleged greed of professors in medical schools. The number of medical students, already too large, continues to increase, and the school rooms are overcrowded. In some classes, the enrolment exceeds 600 or 700, and, to aggravate the situation, the teaching personnel is diminishing. The professors, taking advantage of a law intended for other government employees and aiming to exclude professors from its operation, have devised what is called "la martingala" or combination of chairs. When a vacancy occurs, instead of appointing a new professor, one of the old incumbents is appointed, and he is thus entitled to receive a 50 per cent. salary increase for filling two chairs. Thus, through a false sense of economy, courses already inadequate through the lack of sufficient professors are poorly taught, as the one professor, who could not attend properly to one subject, attempts to present two.

The fault lies with the secretaries of education, who have shown lack of strength, in addition to favoritism, on such occasions. On the one hand, they have allowed their friends to occupy several chairs, so that they may collect several salaries; and, on the other hand, they have exempted students from compulsory attendance. There is no question that teaching in Spain has suffered a serious setback since examining boards have been discontinued and the passing marks left to the discretion of each professor. The result has been an enormous decrease in the number of failures, and a flood of brand new physicians pouring out every year. Thus, we are preparing a medical proletariat, really pitiable, because of both its incompetence and the hard struggle it must make to earn a living.

Neumann Discusses Tone and Rhythm

In an interesting lecture before the National Academy of Medicine, Neumann of Vienna recently discussed the physiologic relationship between the static and the acoustic portions of the internal ear, which, in his opinion, parallel the anatomic relationship. He tried to show that Ewald's muscular tonus property is under the influence of acoustic impressions. To prove it, he described rhythm and musical sensations in man, and explained through them why we derive different impressions on hearing music played either rapidly or slowly on an organ. The cause of both the psychic and the physical effect produced by music must be traced to the anatomic relation between the static and the acoustic labyrinth. There is as close a relationship between the nerves that traverse the two, as among their respective original nuclei. Tone, rhythm, harmony and melody were discussed by the lecturer. He charmed the audience with his description of how rhythm, by stirring the static labyrinth, favors muscular tonus. He recalled that even among the deaf, who receive only subjective sensations, muscular tonus is superior to that possessed by those who cannot hear any sound at all. The oldest musical instrument, the drum, according to Neumann, was originally just a mortar covered with skin, the rhythm of work fusing with the rhythm of music. At the beginning, music, song and dance were inseparable, their exciting influence being so marked that primitive races, and later savages, danced and sang to certain simple but rhythmic tunes exacting such muscular effort as to tire them out.

Spanish Universities Go on Strike

The Spanish universities have gone on a strike: an unprecedented event in Spain and perhaps in the whole world. The deans of the different faculties at meetings presided over by the university rectors decided to close the schools until the superior police chief resigned. Because of some disturbance created by the students, police forces were mobilized. The students from other schools invited their medical colleagues to join in the protests, but met with a refusal. It so happened that, at that very moment, through some blunder, the police charged the students, clearing out both those willing and those unwilling to attend school. On the next day, when a policeman passed the medical school in a street car, some students insulted him. The officer drew his revolver and wounded four students. On the ground that the policeman acted on orders from the chief of police, rectors, deans and professors decided to close the schools until the chief was dismissed. This happened three weeks afterward, when there was a change of administration and a new cabinet was appointed. The minister of education, who happened to be a

professor, struggling between his duty to enforce the law and his wish to stand with his school associates, solved the difficulty by extending the length of the course for as many days as the strike might continue.

BERLIN

(*From Our Regular Correspondent*)

Feb. 3, 1923.

Proposed Reforms in the Medical Curriculum

In 1918, a movement (to which I have frequently referred) was launched to bring about certain reforms in the medical curriculum in Germany. Through the transactions of the special commission appointed by the government, which met in Berlin the end of November, the movement has taken on a more tangible form and the problems have been brought nearer to a solution. The commission was composed of representatives of the medical faculties of the various German universities, the medical profession, medical students, medical societies and health insurance societies, together with delegates of the governments of the several states constituting the commonwealth. The results of the manifold deliberations of the commission may be summed up thus: The course of medical study shall be lengthened and shall comprise twelve semesters in place of ten. The *"praktische Jahr"* (the year devoted to the practical application of previously gained theoretical knowledge), which has been quite generally opposed by the medical faculties, is approved for continuance, since the majority of the representatives, in harmony with the views of all the representatives of the medical profession, held that the *praktische Jahr* afforded future medical practitioners the sole opportunity of developing independent initiative under conditions in which they were thrown on their own resources, a matter of great importance in the practical training of physicians. In further extension of the idea of practical training, it was definitely recommended that all medical students should serve for an uninterrupted period of six months as "famulus," or assistant. This period of assistantship must not interfere with clinical instruction. Considerable latitude should be left to the students as to the exact manner of satisfying this requirement, the sole restrictions being that the whole period of assistantship may not be served during vacations, and that it may not be served before the seventh semester of study. The period of assistantship shall be utilized for practical training in internal medicine, surgery, obstetrics, and gynecology in general. The *praktische Jahr* should follow the final medical examination. Training in internal medicine and in obstetrics is compulsory. The remainder of the *praktische Jahr*, however, shall be open to a wide range of choice; especially in view of the fact that many future medical practitioners intend to serve, for a time, in institutes devoted to scientific research, and likewise because there is a pressing demand from such institutes for more assistants. From one to two months of the time required for internal medicine may be spent on children's diseases. Only two examinations will be given, as heretofore, throughout the course: the premedical examination and the final medical examination at the end of university instruction. Five semesters of study shall precede the premedical examination, and the further requirement is set up that during the fifth semester certain propedeutic clinical subjects, such as pharmacology, general pathology or bacteriology, shall be studied, in preparation for the clinical subjects to follow. More thorough instruction in physiology seems eminently desirable, and a course in physiologic chemistry, including laboratory work, is recommended. A period of service, during the first semesters, as attendants on the sick, which was demanded from many quarters, was not approved, it being held that such training might better be reserved for the period of assistantship during the later semesters. The proposal to divide the final medical examination into two parts, one bearing more particularly on the natural sciences and the other on anatomy and physiology, was rejected by the commission. Training in the mounting of anatomic specimens shall, as heretofore, be given in two semesters, and the time devoted to the refinements of the subject shall be further restricted. The suggestion that botany and zoology be combined into a biologic lecture course and a test in biology was rejected. As heretofore, in a number of important clinical lecture courses attendance shall be compulsory, and evidence of attendance must be furnished. Evidence of attendance on courses in social medicine and in legal medicine and medical jurisprudence must also be secured. Lecture courses in pathologic physiology, psychology and social hygiene should be added to the medical curriculum. In the future, the premedical examination and likewise the final medical examination may be tried by candidates only twice, and the second test must be held before a collegiate body. The length of the final medical examination should be considerably shortened.

Now that the government commission has reported its recommendations, the preliminary work toward the revision of the medical curriculum would seem to have been accomplished. The next step in the procedure will be for the ministry of the interior, as the competent board of control in this case, to draft a bill giving consideration to the changes proposed by the commission, which will be acted upon in turn by the *Reichsrat* (council of the empire or commonwealth), in collaboration with the representatives of the several federated states.

Health Insurance

In the reichstag committee on social politics it was decided, January 18, to raise to 2,400,000 marks the fixed annual income below which all persons must secure health insurance in the health insurance societies. The health insurance societies of Berlin are so far in arrears in the payment of fees due to physicians that the fees for service rendered in October were paid only a few days ago. So far, the physicians have received only about 16 per cent. of their fees, and this occurs at a time when the sum received represents only a fraction of the buying power it had at the time the service was performed. It is stated that 440 million marks in fees due physicians are in arrears. It will be readily understood that, under such circumstances, many physicians state they have not the funds with which to buy the food their families need.

Establishment of Prussian Subdepartment of Physical Education

In the Prussian ministry of public instruction a new subdepartment of physical education has just been established. The Prussian ministry of public welfare has also created a subdepartment of juvenile welfare, including physical training. A council on juvenile welfare and juvenile welfare movements, including physical training, has been formed, with six special committees to deal with the various phases of the work.

Help for Tuberculous Children

Through the collection of a large sum of money in foreign countries, it has become possible to supply supplementary food to about 20,000 children who are either tuberculous themselves or are exposed to the disease through tuberculous members of the family. The selection of applicants and the distribution of food take place only through the municipal welfare station for the tuberculous, the Landesversicherungsanstalt of Berlin, and the welfare station for the tuberculous at the Charité Hospital. The administration of the welfare

work is in the hands of the *Hauptgesundheitsamt* (central public health office) and the *Jugendamt* (child welfare bureau) of the city of Berlin. In Norway a special fund has been raised for the purchase of cod liver oil, and the welfare stations for the tuberculous in Greater Berlin will soon be in a position to distribute this valuable gift.

PRAGUE

(From Our Regular Correspondent)

Feb. 1, 1923.

Pasteur Centenary

January 18, the official celebration of Pasteur's centennial anniversary took place in Prague at the Charles University. The ceremony was opened by the rector of the faculty, Prof. C. Horacek, and by the dean of the medical faculty, Prof. C. Weigner, in the old university hall. The senior of the medical faculty, Prof. J. Hlava, afterward gave a lecture on the importance of Pasteur's discoveries in the development of the medical sciences. He is one of the few Czech scientists still living who knew Pasteur personally. The lecture of Prof. I. Honl followed, on the doctrine of Sacharow, who tries to defend the theory of spontaneous generation sixty years after Pasteur's discoveries. The ceremony was attended by the minister of public health, the Reverend Dr. Sramek, the French ambassador, representatives of other states, members of all the university faculties, and many students.

Health Magazine for Czechoslovakia

The Czechoslovak Red Cross is now issuing a popular health magazine under the name *Nation's Health*, beginning with the year 1923. This magazine developed from the health leaflet which accompanied the *Red Cross Monthly News* and which enjoyed a considerable popularity. The magazine is of limited size and is sold at a low price in order to make it accessible to the largest possible circle of readers. The magazine will be published monthly, and is to be edited by Dr. C. Driml. It is intended primarily for the rural population. It is hoped that this magazine will at least partly satisfy the desire for public health education, which has become apparent in the country in the course of the last few years.

Rural Hygiene Demonstration

The rural hygiene demonstration that was started in Kvasice Moravia under the auspices of the ministry of health, with the financial assistance of the International Health Board of the Rockefeller Foundation, is already bearing fruit. The Czechoslovak Red Cross is about to start a similar demonstration at Lany, the residence of the president of the republic. This demonstration will be gradually extended to include the whole district of Slany, where the community is located. The demonstration in the district, which includes a population of about 50,000, will be supported by the national council of social hygiene, which is a federation of all important private health and social agencies in the republic. Both the ministry of health and the ministry of social welfare will be asked to concentrate their efforts on this district for some time. The district is located near Prague, and it is intended to use it as a place for field education of the public health and social personnel that is to be trained in the school of hygiene now under construction. The district is well suited for this purpose, because it contains industrial as well as purely rural sections.

Milk Supply of Prague

The division for study and reform of public health activities is undertaking a study of the milk supply for the city of Prague, under Dr. J. Jurena, who has recently returned to this country from his studies in the United States. The milk situation during the war was appalling, and control of the milk supply was virtually suspended because the city authorities were glad to see milk coming to Prague no matter how bad it was. During the two years that have elapsed since the close of the war, the supply of the city has again become normal, but the adulteration of the milk, to which the dealers had become accustomed, apparently continued. The two laboratories for the control of food inspected all the stores where milk was sold, in July, 1922, and found the milk adulterated in about three fourths of them. When inspections were made the second and third times, the number of cases in which the milk was found below the standards admitted by the food laboratory fell to 4 per cent. Nevertheless, the situation cannot be considered satisfactory, because the standards which the laboratory for food control recognizes are altogether too low. No bacteriologic examination of the milk is made, purely chemical analyses being depended on. The lowest percentage of fat that is accepted by the food laboratory is 2.8, which is undoubtedly too low. It is the purpose of the study now under way to determine the fat content of the milk as it is produced in the country, and to ascertain the hygienic conditions under which the milk is being produced and transported to the city. Bacteriologic control of the milk will be largely depended on in judging these conditions.

Examinations for Health Officers

The ministry of health is proceeding to the reorganization of the education of public health officers. Till now, all the medical men who served in the state health service have had to undergo an examination before a board nominated for this purpose by the minister of health. Two years of practice in a general hospital were required before the candidate was admitted to the examination. No regular courses were prescribed prior to the examination, but it became the custom for candidates to pass courses of three months' duration given at the university before they appeared before the examining board. The recent law on the nationalization of health services brought in many local health officers who were formerly accepted without the examination. All those who have been serving for less than five years will have to undergo this examination. The ministry intends to institute a regular course for the candidates of the state public health service in the institute of hygiene that is being built. This is being opposed by the medical faculties, which assert that they perform this function for them. The solution will probably be a compromise between the medical faculties and the institute of hygiene to the effect that some of the lectures in the course will be given by the university professors, and the rest by the members of the institute.

Marriages

LELAND GILLELAND HEDGES, Chicago, to Miss Ethelyn Blanche McMillan of Rochester, N. Y., January 10.

ROBERT HALL HARRINGTON to Miss Ruth Ione Hammond, both of Richmond, Va., December 23.

HENRY TAYLOR COMPTON to Miss Sarah Millburn Walthour, both of Savannah, Ga., January 24.

ERASTUS L. MILLER, Crossett, Ark., to Miss Fannie C. Spurlock of Lake Village, February 13.

WILLIAM HENRY WASHBURN to Mrs. Elizabeth D. Sherer, both of Milwaukee, February 3.

LEVER F. STEWART to Mrs. Elizabeth Eyster, both of Clearfield, Pa., January 25.

FRED W. HARK, Iowa City, to DR. FLORENCE E. WHITE of Des Moines, recently.

ARTHUR E. BENCE to Miss Clara Beard, both of Iowa City, recently.

Deaths

Julius Parker Sedgwick ⊕ professor of pediatrics and chief of the department of pediatrics at the University of Minnesota Medical School since 1915, and professor of pediatrics at the University of Minnesota Graduate School of Medicine, Minneapolis; died, February 25, at his home in Minneapolis, following a prolonged illness. Dr. Sedgwick was born in Wrightstown, Wis., in 1876. He received the degree of bachelor of science from the University of Nebraska in 1896 and of doctor of medicine from Rush Medical College, Chicago, in 1899. Following his graduation he served as intern at Alexian Brothers' Hospital, Chicago, and later was made assistant physician at the Fabiola Hospital, Eveleth, Minn. During the World War, Dr. Sedgwick was commissioned a major in the Medical Reserve Corps and served in France with the American Red Cross by which he was appointed to work out a health program for children and mothers who had lived in the war zone for three years. On his return to America in 1918 he was named consulting hygienist on pediatrics to the Surgeon General, U. S. Public Health Service. At the same time he also was engaged in an investigation of the relative merits of natural and artificial infant feeding in connection with clinical work at the University of Minnesota. Dr. Sedgwick was a member of the American Pediatric Society, the Chicago Pediatric Society and the Central States Pediatric Society. He was a contributor to American and European journals on diseases of children and recently edited a translation of Feer's "Text Book of Pediatrics."

George Albert Hayes Smith, Freeport, N. Y.; Long Island College Hospital, Brooklyn, 1898; member of the Medical Society of the State of New York; formerly assistant professor of diseases of the eye at his alma mater; at one time on the staff of the Brooklyn Eye and Ear Hospital, Brooklyn; aged 46; died, February 10, at the Post-Graduate Hospital, New York, from pneumonia, following an operation for biliary calculi.

Alfred Nathan Strouse ⊕ New York; Medical Department of Columbia College, New York, 1885; member of the American Academy of Ophthalmology and Oto-Laryngology, and the New York Academy of Medicine; on the staff of the City Hospital and of the Asylum of St. Vincent de Paul; aged 59; died, February 12, following an operation for strangulated hernia.

Israel J. Desroches, Montreal, Que., Canada; University of Montreal Faculty of Medicine, Montreal, 1877; at one time president of the Medical Society of Montreal, and corresponding member of the Société des sciences physiques, naturelles et climatologiques d'Alger, and the Société francaise d'hygiene de Paris; died recently, aged 72.

Louis Henry Jacob ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1901; member of the American Urological Association and the Philadelphia Genito-Urinary Society; on the staffs of the Jewish and Polyclinic hospitals; aged 43; died, January 8, from appendicitis.

Daniel Louis Humfreville, Pasadena, Calif.; Rush Medical College, Chicago, 1896; member of the Medical Society of the State of California; formerly professor of physiology at the Ensworth Medical College, St. Joseph, Mo.; aged 48; died, February 8, from heart disease.

Elmor E. Morris, New Haven, Ind.; Eclectic Medical Institute, Cincinnati, 1902; member of the Indiana State Medical Association; aged 54; was instantly killed, February 4, when the automobile in which he was driving was struck by an interurban car.

John Weldon, Willimantic, Conn.; New York University Medical College, New York, 1883; at one time member of the faculty of Fordham University, New York, and president of St. Joseph's Hospital; aged 64; died, February 18, from pneumonia.

Douglas Adair White, Syracuse, N. Y.; College of Physicians and Surgeons, Baltimore, 1887; member of the Medical Society of the State of New York; formerly superintendent of the Hospital of the Good Shepherd; aged 62; died, February 1.

Louis Nishawitz, Hackensack, N. J.; Long Island College Hospital, Brooklyn, 1922; intern at the Hackensack Hospital; aged 24; was instantly killed, February 16, when the ambulance in which he was riding was struck by a train.

Frank B. Morgan, Huntington, Ind.; Medical College of Indiana, Indianapolis, 1897; member of the Indiana State Medical Association; for fifteen years county coroner; aged 53; died suddenly, February 5, from heart disease.

Theodore Carroll Griest ⊕ Put-in-Bay, Ohio; Starling-Ohio Medical College, Columbus, 1913; aged 33; was drowned, February 17, when the automobile in which he was driving fell through the ice on Lake Erie.

Henry Latimer Rudolph ⊕ Gainesville, Ga.; University of Maryland School of Medicine, Baltimore, 1902; served in the M. C., U. S. Army, with the rank of captain; aged 43; died, January 28, from pneumonia.

Carl John Larson ⊕ Negaunee, Mich.; University of Michigan Medical School, Ann Arbor, 1904; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 41; died, January 11, from uremia.

Cora B. Murdock Palmer ⊕ Logansport, Ind.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1906; member of the American Psychiatric Association; aged 37; died, January 26, from pernicious anemia.

James R. Scott, Edgewood, Ill.; Cincinnati College of Medicine and Surgery, 1863; Civil War veteran; practitioner of Edgewood for more than half a century; aged 82; died, February 8, from senility.

Albert I. Lawbaugh ⊕ Calumet, Mich.; Long Island College Hospital, Brooklyn, 1870; president of the Michigan State Medical Society, 1908-1909; aged 78; died, February 15, from carcinoma.

Thomas J. Kennedy, Coolidge, Ga.; Memphis Hospital Medical College, Memphis, Tenn., 1887; member of the Medical Association of Georgia; aged 60; died, February 8, from heart disease.

Oscar Von Barandy, South Bend, Ind.; University of Budapest, Hungary, 1900; member of the Indiana State Medical Association; aged 45; died, February 8, from cerebral hemorrhage.

George H. Wuchter, Wadsworth, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1880; veteran of the Spanish-American War; aged 63; died, February 3, of chronic nephritis.

George Snow Fortier, Chicago; College of Physicians and Surgeons, Chicago, 1907; member of the Illinois State Medical Society; aged 51; died, February 20, from pneumonia.

Alfred O. Strout, Parkersburg, Iowa; Chicago Medical College, Chicago, 1875; member of the Iowa State Medical Society; aged 73; died, February 13, from pneumonia.

William Henry Nusbaum, Indianapolis; Miami Medical College, Cincinnati, 1881; formerly state senator; aged 66; died, February 8, following a long illness.

Carl Frederick Bachmann, Neillsville, Wis.; Jefferson Medical College of Philadelphia, 1896; also a druggist; aged 48; died suddenly, February 2.

Wilfrid Henry Chevrette, Holyoke, Mass.; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1903; aged 44; died, January 26.

Cassius W. Gould, Chicago; University of Buffalo (N. Y.) Department of Medicine, 1872; aged 72; died, February 20, from pneumonia.

Joseph Oliver Balcar ⊕ West Franklin, Ill.; Rush Medical College, Chicago, 1918; aged 30; died, February 12, from appendicitis.

Thomas J. Shuell ⊕ Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1880; aged 69; died, February 15.

A. Minnie Russell, Speer, Ill.; Woman's Medical College of Baltimore, 1896; aged 58; died, February 6, from pneumonia.

Leota S. Cunningham, Tulsa, Okla.; Hahnemann Medical College and Hospital of Chicago, 1907; aged 48; died, February 7.

William Eben Ireland ⊕ Washington C. H., Ohio; Starling Medical College, Columbus, 1882; aged 70; died, February 8.

Charles Summer Judy ⊕ Miamisburg, Ohio; Medical College of Ohio, Cincinnati, 1887; aged 61; died, February 5.

Franklin Pierce Tyler, Galesburg, Ill.; Rush Medical College, Chicago, 1885; aged 68; died, February 7.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Vita Oil.—Loring J. Barker of Berkeley, Calif., who did business as the Vita Oil Co., shipped in August, 1917, a quantity of this product from California to Indiana which was misbranded. The Bureau of Chemistry analyzed this preparation and reported that it consisted essentially of nonvolatile vegetable oil, mineral oil and volatile oils, including turpentine, clove, and cinnamon oils with extractives of red pepper and pepper. The product, which was labeled in part "Dr. Smith's Caloric Vita Oil," was falsely and fraudulently represented as an effective treatment, remedy and cure for diphtheria, pneumonia, croup, rheumatism, weak joints, colic, lumbago, earache, painful menstruation, caked breasts, diarrhea, lockjaw, itch, spinal meningitis and many other conditions. In September, 1920, Loring J. Barker pleaded guilty and was fined $100.—[*Notice of Judgment No. 10940; issued Jan. 4, 1923.*]

Gold Medal Brand Sexual Pills.—The S. Pfeiffer Mfg. Co., St. Louis, Mo., shipped in October, 1920, a quantity of this preparation that was misbranded. The federal chemists reported that analysis showed the pills to contain phosphorus and extracts of damiana and nux vomica. The statements regarding the curative effects of the pills appearing on the labels of the boxes and cartons were false and fraudulent, as the preparation contained no ingredient or combination of ingredients capable of producing the effect claimed. In May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed. —[*Notice of Judgment No. 10864; issued January, 1923.*]

Lovett's Pills.—A quantity of "Dr. Lovett's Pills" invoiced by Dr. Lovett Medicine Co., New York City, were shipped from New York to Los Angeles in November, 1921. The Bureau of Chemistry reported that analysis showed the pills to contain iron sodium, and potassium carbonates and sulphates with traces of plant extractives. Among the claims made on or in the trade package for this preparation were:

"This . . . purifier of the blood is . . . the only infallible specific to cure radically and permanently general debility . . . headache, rheumatism, sexual debility, sterility, malarial fevers, diseases of the liver, syphilis, scrofula," etc.

These and a number of equally wild claims were declared false and fraudulent and in June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be disposed of in accordance with the provision of the Food and Drugs Act.—[*Notice of Judgment No. 10869; issued January, 1923.*]

Savanol.—G. P. Steyh, St. Louis, Mo., shipped in May, 1921, from Missouri to California a quantity of "Savanol" which was misbranded. The federal chemists reported that analysis showed Savanol to consist of capsules containing a saponifiable oil with traces of savin oil, apiol and aloin. The claims made on the trade package for this preparation were to the effect that it was an emmenagogue. These claims were declared false and fraudulent and in April, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be disposed of according to law.—[*Notice of Judgment No. 10872; issued January, 1923.*]

Locock's Cough Elixir.—A quantity of "Dr. Locock's Cough Elixir," alleged to have been shipped in interstate commerce by I. L. Lyons & Co., Ltd., New Orleans, in August, 1919, was declared misbranded. The federal chemists reported that analysis of a sample showed it to consist essentially of extracts of plant drugs, including ipecac and squill, small amounts of morphin and acetic acid, sugar and water. The trade package contained statements to the effect that the product was recommended as hastening a cure for incipient consumption, pneumonia, whooping cough, asthma, pains in the joints, bones and muscles, etc. These claims were declared false and fraudulent and in May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11024; issued January, 1923.*]

Sex-Co Restorative Tablets.—The Clyde Collins Co., Memphis, Tenn., shipped in April, 1921, a quantity of Sex-Co Restorative Tablets that were misbranded. The federal chemists reported the analysis showed the tablets to contain strychnin, extract of damiana, iron and a phosphorus compound. The tablets were recommended as an aphrodisiac and for "Bad Blood, Sexual Weakness, Loss of Appetite, Wasting Diseases and Nervous Conditions of all Kinds." Since the tablets contained no ingredient or combination of ingredients capable of producing the effects claimed, the claims were declared false and fraudulent. In June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10760; issued Dec., 1922.*]

Compound Tansy, Pennyroyal and Cotton Root Pills.—The Allan-Pfeiffer Chemical Co., of St. Louis, Mo., shipped in June, 1920, a quantity of these pills which were misbranded. The federal chemists reported that they consisted essentially of iron sulphate, aloes and oil of pennyroyal. They were recommended as a "Safe and Effectual Remedy in Suppressed or Painful Menstruation." As the claim was false and fraudulent, the product was declared misbranded and in May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10822; issued Dec. 23, 1922.*]

Correspondence

MILK GOATS AND MALTA FEVER

To the Editor:—It is now well known that many dairy cows are tuberculous, and that a high percentage of bone, joint, gland and abdominal tuberculosis is due to tubercle bacilli of the bovine type. In order to avoid this source of infection many physicians have interested themselves in the Swiss milk goat whose high degree of immunity to tuberculosis has been well known in Europe for many years.

It has been known for a long time that goats are susceptible to a disease known as Malta fever and that this disease may be transmitted to man through the agency of goat's milk.

In January, 1911, I located in the hill country of southwest Texas to secure the advantages of its excellent climate. I met here an able physician, London trained and a keen observer. This physician, who had been doing an extensive practice over one of the largest mohair goat raising sections of the country for twenty years, had made a clinical diagnosis of Malta fever on several occasions.

In the spring of 1911, Dr. Joseph Walkup, Captain, M. C., U. S. Army, visited me at Kerrville, Texas; his attention was called to the fact that cases presenting clinical symptoms of Malta fever were occasionally seen in Edwards County and near the Mexican border. Dr. Walkup said that he would bring the matter to the attention of the proper army officers, and suggest laboratory tests. In the fall of 1911, Gentry and Ferenbough of the U. S. Army made their investigations and report on Malta fever in Edwards County, Texas, and along the Mexican border.

Kerrville is a leading center of the Angora goat industry, and millions of pounds of mohair pass through its warehouses each year. I have been in charge of a general hospital in Kerrville for twelve years. We are surrounded by goats—mohair goats for their hair, Mexican goats for meat, and Swiss goats for milk.

During the last twelve years just two cases of Malta fever have been noted by us in this vast territory, and not a single case has been admitted to the hospital. As we have a well trained pathologist, it would be difficult for a suspicious case to escape identification.

The Swiss milk goat is in America to stay. The milk goat industry bids fair to become one of the most important branches of our live stock industry. The U. S. Department of Agriculture and the departments of agriculture of several states maintain herds of milk goats for study and experiment.

Malta fever in goats is easily determined by serologic test. My observation leads me to believe that infected herds in the United States can trace the infection to infected herds in Mexico. And while the menace of Malta fever from goat's milk is infinitesimal as compared to the menace of tuberculosis from the milk of tuberculous cows, we as physicians should fight for an absolutely clean milk supply. Every cow and every goat used in a commercial dairy should be required to show a clean bill of health, and the same rule should apply to each employee who handles the milk until it reaches the consumer.

There are many competent physicians and hundreds of parents who have seen goat's milk succeed when modified cow's milk and patent baby foods absolutely failed. To them goat's milk probably seems quite indispensable.

Its superiority is generally admitted by those who have used it, and it offers us as physicians a safe, clean source of raw milk supply. Eliminate Malta fever by serologic test, and we can recommend goat's milk to our patients as far superior to cow's milk chemically, physically and bacteriologically.

The combined efforts of physicians, parents and men of wide business experience have robbed the back alley of its threadbare joke and forced the admission of her aristocratic Swiss cousin into the most select circles of our pure bred live stock families. Let us use our influence in keeping her free from disease and supporting her in the exalted position she now occupies—the savior of the babies.

WILLIAM LEE SECOR, M.D., Kerrville, Texas.

CONSTIPATION—TUBERCULOSIS—HYDROTHORAX

To the Editor:—Constipation is generally considered to be due to sluggish bowels. All our numerous attempts at treatment are based on the notion of sluggish bowels. Has it ever been shown that the bowels are ever unduly sluggish? Is it not a fact that the rectum and not the intestine is loaded in constipation?

H. A. Kelly (Medical Gynecology, 1908, p. 191) conceives constipation to be an inertia of the defecation reflex, a conception that is in harmony with all clinical data. It explains the correlation of constipation with neurasthenia, and also the paradox that while we have numerous cathartics we have no cure for constipation. A simple motor function reacts to any change in the environment, while a depressed reflex is out of the range of our materia medica, which contains no analeptics, no sensory stimulants, and no drug or combination of drugs that might affect simultaneously all the elements of a reflex.

Incipient apical tuberculosis is looked for in adult life but never found. Then it is already—whether active or extinct—fairly advanced, having had its opportunity for spreading the disease. The period of life of the second dentition, because of a lull in the cases of clinical tuberculosis, is looked on with equanimity. But does not the fact that the tuberculin positive test keeps on rising, reaching its maximum with the end of this period, signify that tuberculosis in later life had its incipiency at this period? As to the portals of entrance, can we conceive of more ideal ones than the lacerated gums picked at with fomites by the insanitary child who is mostly at large and exposed? By taking better care of children at this age, cannot we hope to increase the proportion of extinct cases?

The greater frequency of dextral hydrothorax is generally attributed to the compression of the azygos veins. Cannot this condition be accounted for by the more direct back pressure on the mouth of the lymphatic duct and pleural sac of the right side than on that of the left?

JACOB LANSKI, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE WIDAL TEST

To the Editor:—We have been advised of a test that differentiates between a positive Widal reaction due to a previous vaccination against typhoid, and a reaction due to the disease itself. If this test is reliable, please give the technic. MEDICO.

ANSWER.—The only reliable method for confirming a clinical diagnosis of typhoid fever in a previously vaccinated person is blood culture. However, during the World War, in vaccinated patients suffering from a continued fever clinically like typhoid, a progressive rise and fall in the agglutination curve was considered diagnostic of typhoid fever. Brösamlen observed a steep rise in the agglutination curve in 53 per cent. of thirty-two vaccinated typhoid patients. Hergt reported similar findings, adding that the curve was less abrupt when vaccination had been performed two years or more before the disease was acquired. The value of such findings is impaired, however, when it is considered that many other diseases may temporarily increase the agglutinative power in previously vaccinated persons. In a case of pneumonia, for example, on the first and third days, Rist found the agglutination test negative, whereas on the fifth day a titer of 100 was found, and later a titer of 300. Somewhat similar results were obtained in rheumatic fever, amebic liver abscess, tonsillitis, laryngitis and simple diarrhea. In fact, only one disease is known which, instead of increasing or leaving unimpaired the agglutinative power of vaccinated patients, causes it temporarily to disappear. This interesting exception is measles. Rist performed more than 11,000 agglutination tests on vaccinated and unvaccinated fever patients. He concluded that the agglutination titer is not distinguishable from the same titer in vaccinated persons suffering from any other disease, that the value of the agglutination test in vaccinated persons to determine whether or not they have typhoid fever is absolutely nil, and that "No caution, no niceties of technic, no careful consideration of titer or of the behavior of curves are of any avail whatever."

ELECTRICITY IN HYPERTENSION

To the Editor:—What is the present status of the use of electricity in the reduction of hypertension.

J. W. STOFER, M.D., Gallup, N. M.

ANSWER.—Wilfred Harris, in his book on Electric Treatment, states that beneficial results follow the use of high frequency currents in high blood pressure, whether applied by autoconduction or local application. He maintains that these results are quite permanent. On the other hand, W. J. Turrell, in his Principles of Electrotherapy, warns one of the danger of static electricity in hypertension. Others are of the opinion that, while the high frequency current will reduce high blood pressure by dilation of the capillary vessels, the result is not permanent.

XANTHINURIA

To the Editor:—I have a patient who has been suffering from bilateral nephrolithiasis in a severe form for four or five years. He has been in a number of hospitals in this state and in Atlanta. There are xanthin crystals present in the urine, which is said to be uncommon. It is reasonable to presume that the calculi in this case are composed of the same substance, although no analysis of a passed stone has ever been made. In view of the presence in the urine of these crystalloids, is there any rational therapeutic procedure that may be undertaken to prevent the formation of further calculi? Please omit my name.

H. S. G., Kissimmee, Fla.

ANSWER.—Renal calculi composed of xanthin are extremely rare, only a few specimens having been reported in the literature. Xanthin is a purin base that is normally converted into uric acid by the action of an enzyme that is apparently secreted in the liver. Defective xanthin metabolism is therefore closely related to gout. Purin bases, in general, are derived from the catabolism of nucleic acid, which is partly endogenous, or derived from the destruction of the body cells, and partly exogenous, or taken in with the food. The former fraction is not subject to modification, but the latter can be regulated by proper selection of food materials. In general, it may be said that the principal foods with high purin content are meats (especially sweetbreads and liver), fish, peas, beans, asparagus, onions, tea, coffee and chocolate. Eggs, butter, milk and cheese contain no purin bodies. It seems rational to consider that the regulation of the diet in an effort to meet this condition and the principles to be followed are similar to those in gout. The purin content of the blood should be determined, and the rapidity with which this becomes reduced on a purin-free diet to that of endogenous origin (normally about 0.5 mg. a day) should be studied in order to determine the functional capacity of the body to deal with these substances. Additions may then be made in accord with this capacity. Further details are given in the standard textbooks on dietaries, such as that of Friedenwald and Ruhräh, or that of Carter, Howe and Mason.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.
IOWA: Des Moines, March 8-10. Sec., Dr. Rodney P. Fagen, State House, Des Moines.
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

District of Columbia October Examination

Dr. Edgar P. Copeland, secretary, Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, Oct. 10-12, 1922. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Nine candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University		(1921)	88.8, 89.5
George Washington University	(1916) 85.1, (1922) 76.3, 82.8, 82.9, 84.1, 86		
Howard University		(1922)	75

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Coll. of P. and S., Baltimore		(1896)	W. Virginia
Johns Hopkins University		(1911)	Minnesota
Maryland Medical College		(1904)	Maryland
Univ. of W. Tenn.		(1914)	Missouri, (1915) Tennessee

New Jersey October Examination

Dr. Alexander MacAlister, secretary, New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, Oct. 17-18, 1922. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 6 passed and 6 failed. Forty-four candidates were licensed by reciprocity, and 2 candidates received osteopath licenses by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University		(1921)	83.8, 86
Tufts College Medical School		(1921)	77
Woman's Med. College of Pennsylvania		(1921)	84
Queen's University, Kingston, Ont.		(1921)	83.1
University of Berne, Switzerland		(1916)*	75.1
	FAILED		
University of Budapest, Hungary		(1914)*	68.6
University of Catania, Italy		(1915)*	72
University of Naples, Italy	(1903)* 72.6, (1916)* 70.1, (1919)* 69.1		
University of Valencia, Spain		(1915)*	66.6

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Georgia		(1906)	Georgia
Chicago College of Medicine and Surgery		(1917)	Illinois
Rush Medical College		(1895)	New York
Tulane University		(1921)	New York
Johns Hopkins University		(1907)	Maryland
Maryland Medical College		(1912)	W. Virginia
University of Maryland		(1921)	Maryland
University of Michigan Medical School		(1912)	Michigan
Washington University		(1918)	Maryland
Columbia University	(1913), (1918), (1921, 3)		New York
Fordham University	(1920), (1921, 6)		New York
Long Island College Hospital		(1904)	New York
N. Y. Homeo. Med. Coll. and Flower Hospital		(1901)	New York
Univ. and Bellevue Hosp. Medical College		(1921, 3)	New York
Jefferson Medical College	(1896), (1907) Pennsylvania, (1921) Delaware, North Carolina		
Medico-Chirurgical College of Philadelphia		(1910)	Penna.
Temple University		(1908)	Penna.
Univ. of Pa.	(1894), (1907), Penna., (1921)		New York
University of Tennessee		(1918)	Tennessee
Baylor University		(1921)	New York
University of Vermont		(1919), (1921)	Vermont
University of Virginia		(1921)	New York
McGill University		(1920)	Michigan
Queen's University		(1914)	New York
University of Munich, Germany		(1911)*	Texas
University of Naples, Italy		(1916)*	New York
Osteopaths			Missouri, Pennsylvania

* Graduation not verified.

Porto Rico October Examination

Dr. M. Quevedo Baez, secretary, Porto Rico Board of Examiners, reports the written and practical examination held at San Juan, Oct. 3-7, 1922. The examination covered 9 subjects and included 75 questions. An average of 75 per cent. was required to pass. Of the 10 candidates examined, 9 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University		(1922)	75.4
Rush Medical College		(1922)	77.7
University of Mich. Med. School		(1921)	82.1, 88.6
St. Louis University School of Medicine		(1922)	85
Syracuse University		(1921)	82, 87
Jefferson Medical College		(1920)	83.7
Medical College of Virginia		(1921)	83.8
	FAILED		
Chicago College of Medicine and Surgery		(1916)	69.7

Kentucky December Examination

Dr. A. T. McCormack, secretary, Kentucky State Board of Health, reports the oral, written and practical examination held at Louisville, Dec. 5, 1922. The examination covered 11 subjects and included 110 questions. An average of 70 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hospital College of Medicine, Louisville		(1906)	80
Kansas City University of Physicians and Surgeons		(1921)	80
St. Louis College of Physicians and Surgeons		(1922)	78
Eclectic Medical College		(1922)	88
Meharry Medical College		(1921)	73
University of Virginia		(1919)	92
University of Jurjev, Russia		(1894)*	76
	FAILED		
Meharry Medical College		(1918)	66

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Meharry Medical College		(1917)	Tennessee

* Graduation not verified.

Medical Economics

CONFERENCE ON NEW YORK STATE MEDICAL PROBLEMS

Governor Alfred E. Smith of New York held a conference in the capitol at Albany, February 26, with representatives of the Medical Society of the State of New York and others, to discuss some of the medical problems of the state.

RURAL MEDICAL PROBLEMS

The state commissioner of health, Dr. Herman E. Biggs, called attention to the small number of physicians now locating in rural districts, and to the difficulty residents of those sections have in obtaining medical aid. The situation is likely to grow worse, rather than better, in Commissioner Biggs' opinion, unless action is taken, but establishment of health centers to relieve the situation, as proposed by the state department of health as a way out, proved unacceptable to the medical profession. There seems to be a need, Dr. Biggs said, for establishment of hospitals of a proper type—possibly cottage hospitals such as exist in England, acting as feeders to the larger hospitals in metropolitan centers—and rural ambulance service is essential. The people of the sections where these facilities are most needed cannot provide them for themselves. Looking on the protection of health and the relief of sickness as fundamental functions of the state, Commissioner Biggs thought that government aid should be provided in time to prevent serious consequences from the present trend of affairs.

Dr. Arthur W. Booth, president of the state medical society, did not look on the situation as so serious as pictured by Dr. Biggs. If adequate hospital and laboratory facilities are provided, young physicians will, he believed, go into rural communities to practice; and if such communities fail to provide the necessary facilities for medical service, they should not blame physicians for not coming to them, or blame the state for not providing them. Dr. Booth and other speakers emphasized the fact that so-called rural communities were in numerous instances solving the problem for themselves by providing hospital service, and called attention to the number of instances in which they had done so.

Dr. Walter E. Kidder of Oswego suggested the advisability of the establishment by the state of scholarships in medical schools, to be awarded to students who will obligate themselves to practice in rural communities for a certain number of years after graduation, but it was suggested that such scholarships would have to be filled by young men from the country, since it would be found practically impossible to make a country doctor out of a city bred youth. Emphasis was laid on the seasonal character of the problem, there being no difficulty in obtaining medical service during the warmer portions of the year, when the roads were open. Farmers in their automobiles pass the offices of nearby physicians during the warmer periods of the year, to avail themselves of the services of supposedly better physicians in nearby cities and towns, but are dissatisfied because they do not have local physicians at their beck and call during the winter months. Physicians who locate in the country sooner or later tire of this condition, and move to the cities and towns. Young physicians were deterred from entering country practice, it was said, because of the small fees charged by the older local practitioners, fixed on a scale that was reasonable enough when they began practice, but not in keeping with the present cost of medical education or the expenses of medical practice. Dr. Booth suggested that persons living in sparsely settled country districts must learn that the day is gone when a doctor can properly treat them in their own homes, winter and summer, day and night, and that they must provide hospital and ambulance facilities to enable their sick to be cared for in proper local hospitals. The cottage hospital idea, except in extreme and difficult situations, met with no general approval, the opinion being apparently that a three or four bed hospital, in which only minor surgery could be done and with limited laboratory facilities, would not be sufficiently attractive to aid in bringing competent practitioners into the communities so equipped. Hospital facilities, laboratory facilities, and a certain amount of competition were essential, Dr. Booth said, to make a place an attractive location for a physician.

THE NARCOTIC DRUG PROBLEM

The narcotic drug problem was discussed by Drs. Haven Emerson, Harlow Brooks, Walter Timme, Carleton Simon, and Amos O. Squire. There was a general sentiment in favor of the principles embodied in the Harrison Narcotic Law, and of having state narcotic legislation conform to it. The Harrison law, it was generally agreed, is adequate so far as the medical profession is concerned. What is needed is better law to deal with the smuggler, the narcotic drug pedler, and the addict of criminal type. Dr. Emerson and Dr. Brooks agreed that narcotic drug addiction is not a disease. Dr. Simon, special deputy police commissioner, in charge of the antinarcotic work of the New York City Police Department, emphasized the distinction between addicts who constitute medical problems and those who are essentially police problems. Out of 6,235 drug addicts arrested in New York City in the last two years, only 2 per cent. attributed their drug addictions to treatment by physicians for disease or bodily infirmities. The remainder became drug addicts through vice and evil companionship. The addicts who in their addiction constitute true medical cases constitute a small part of the entire group and can obtain adequate treatment, Dr. Simon thought, but the rest should be handled by the police. Dr. Squire confirmed the general belief that narcotic drug addiction is on the increase, basing his statement on the increase during recent years in the number of drug addicts among prisoners committed to Sing Sing. He concurred in the opinion that drug addiction is due oftener to evil associations than to medical treatment, and called attention to the temptations by drug pedlers, who give prospective victims opportunities to test drugs, thus creating addicts. Only a small percentage of addicts, he thought, are ever permanently cured, although all are eager to be treated and are grateful patients.

MEDICAL EDUCATION

Dr. William Darrach, dean of the Columbia University College of Physicians and Surgeons, urged that there be no letting down in the standard of medical education. He suggested the possibility of a revision of the standard medical curriculum of today so as to make each graduate essentially a general practitioner, leaving the development of specialists in any line to those willing to supplement the standard four year course of training by additional study. As one factor calculated to influence young men in entering the medical profession, he urged the fixing of a single standard by the government for all who desire to enter upon the treatment of disease and injury. To require of a physician the equivalent of two years of college work, four years of study in a medical school, and one or two years in a hospital, before allowing him to practice, while at the same time allowing an irregular practitioner of healing to assume substantially the same responsibilities with respect to human life and public health as is assumed by physicians, but requiring of such irregular healer no fixed amount of preliminary education and only eighteen months of medical training, is hardly a rational or a fair procedure. Dr. W. D. Cutter, secretary of the state board of medical examiners, urged the need of better provision for the enforcement of the medical practice act in New York State, endorsing legislation vesting in the attorney general certain authority with respect thereto, supplementing, but not diminishing, the authority of local district attorneys to prosecute on the basis of information furnished by county medical societies. Dr. Simon Flexner of the Rockefeller Institute urged that nothing be done that would hamper or prevent medical research, and spoke particularly of the danger inherent in a bill now before the legislature, which, under the guise of preventing "experimentation" on children, would prevent the use of a new remedy for disease or injury.

At the close of the meeting, a committee was appointed to formulate the principles agreed on and to cooperate with the governor in carrying such principles into effect as circumstances indicate.

Book Notices

STUDIEN ZUR ANATOMIE UND KLINIK DER PROSTATAHYPERTROPHIE. Von Julius Tandler. O. ö. Professor, Vorstand des Anatom. Institutes an der Universität Wien, and Otto Zuckerkandl, A. O. Professor der Chirurgie an der Universität Wien. Paper. Price, $3.60. Pp. 130, with 121 illustrations. Berlin: Julius Springer, 1922.

This is the product of one of the most fruitful combinations in medical work, the collaboration of the theoretical scientist with the clinician. In the introductory chapter the authors analyze the older theories concerning the nature and causes of prostatic hypertrophy; they deny the rationality of the term prostatism, refute the interpretation of prostatic hypertrophy as a compensatory or inflammatory reaction, and assert that the type of this tumefaction is glandular, and that this glandular hyperplasia originates in rudimentary glands. Hyperplasia is the primary factor; the changes in the fibrous skeleton are secondary. The variations in the microscopic pictures are explained by the fact that in this neoplasm of the prostate new formation of tissue and regressive metamorphosis occur simultaneously. It is declared to be still an open question whether prostatic hypertrophy is to be considered a true neoplasm or a hyperplasia. Tandler and Zuckerkandl have proved that prostatic hypertrophy is always confined to a well circumscribed area of the prostate, and that in growing it begins at the urethra, pushes aside the prostatic gland and finally compresses it, so that the tumefaction forms the nucleus of a prostate that was transformed into a capsule by stretching. The authors recede now from their original statement that the median lobe is the exclusive seat of prostatic hypertrophy. They are now convinced that the adenomatous intumescence originates in rudimentary glands pertaining to the upper part of the prostatic urethra. They distinguish two main types of prostatic hypertrophy. The general character of the first type is based on the fact that the vesical urethral opening is changed in a characteristic way by the prostatic tumor, which protrudes into the cavity of the viscus. The internal urethral orifice is no longer flush with the vesical floor, but is either located on top of the prostatic protrusion or is to be seen somewhere on the dependent side of this pathologic hillock. Thirty-two illustrations show all the variations of this type, and histories of clinical cases are given. The second type is represented by the cases in which the whole tumor is located subvesically. The basis of the bladder is dislocated upward, but the internal urethral orifice and its relation to the muscular apparatus remains unchanged. There is no recessus retroprostaticus inside the blader, and the urethral orifice is on the same plane with the surrounding structure. The hypertrophy is limited to the upper part of the prostatic urethra, and the tumor mass surrounds the urethra like a ring. If this subvesical tumor is enucleated, it shows the form of a globe or of an ovoid. The fourth subdivision deals with tumefactions around the vesical opening that cannot be classified as true prostatic hypertrophy, for instance, endovesical myoma, and a submucous myoma. Next follows a chapter describing the secondary changes in the bladder and its appendages due to the stagnation of the urine produced by prostatic hypertrophy. In discussing cancer of the prostate, the authors are inclined to believe that the malignant degeneration is secondary to the hypertrophy in most cases. They also believe that secondary prostatic cancer almost never produces metastases, while primary carcinoma, the so-called Recklinghausen tumor, shows an inclination toward metastasis in the bones. An interesting chapter deals with the fate of the wound cavity after prostatectomy. The simultaneous occurrence of diverticula and prostatic hypertrophy is also discussed as to diagnosis, complications and operative results. In regard to true relapses after prostatectomy, the authors maintain that they may originate only in parts of the mucosa of the upper prostatic urethra that were left by the operation. The concluding chapter elaborates on the details of diagnosing prostatic hypertrophy with all the possible complications. Cystoscopic pictures of striking beauty accompanying the test. This book is a worthy document for the scientific thoroughness of the authors, one of whom, unfortunately, died before the work was published.

LATERAL CURVATURE OF THE SPINE AND ROUND SHOULDERS. By Robert W. Lovett, M.D., Sc.D., John B. and Buckminster Brown Professor of Orthopedic Surgery, Harvard University. Fourth edition. Cloth. Price, $2.50. Pp. 217, with 172 illustrations. Philadelphia: P. Blakiston's Son & Co., 1922.

This edition is of the high character of the previous editions. It furnishes an excellent guide for the general practitioner and specialist who wish to study this most difficult subject. Referring to the matter of faulty attitudes in school and elsewhere the author says that in his opinion it is not likely that they are the causes of moderate and severe structural scoliosis. Regarding the Abbott method of treatment, he says, "The method is evidently no cure-all, and his claims have apparently not been substantiated by others." Operative procedures are still held sub judice, sufficient time not having elapsed since their introduction to allow a proper estimate of their value. Lovett strongly emphasizes the necessity of mobilizing spines in order to obtain the greatest correction, and the need of much gymnastic work in the follow-up care after forcible correction in casts and jackets. The legends of Figures 96 and 97 are reversed; and in the chapter on occurrence, in referring to the occasional appearance of scoliosis in fowls, after ruling out several mentioned causes as not acting in the given cases, the author makes the rather startling physiologic observation that "we must attribute the cause either to intra-uterine pressure or to purely static causes arising late in life." Since this comment has appeared in the preceding editions, it suggests that some parts of the text have not had very careful reading either by the author or by his students, who could hardly fail to notice the anomaly of intra-uterine pressure in the domestic fowl.

TRAITÉ DE PATHOLOGIE MÉDICALE ET DE THÉRAPEUTIQUE APPLIQUÉE. Publié sous la Direction de Émile Sergent, Professeur de Clinique médicale propédeutique, L. Ribadeau-Dumas, Médecin de la Maternité, et L. Babonneix, Médecin de la Charité. Tome X: Sang, Organes Hématopoïétiques Rate, Os. Par Pr. Bezançon, Le Sourd, Agasse-Lafont, Pagniez, Hazard, Sainton, Apert. Paper. Price, 25 francs. Pp. 544, with 71 illustrations. Paris: A. Maloine et Fils, 1922.

The tenth volume of the treatise on medical pathology and applied therapeutics of Sergent, Ribadeau-Dumas and Babonneix covers diseases of the blood and hematopoietic organs, spleen and bones. Following an introduction by Bezançon and Le Sourd, pointing out the value and importance of a study of hematology, the book is divided into three sections. Part 1, by Pagniez and Agasse-Lafont, deals with the diseases of the blood and hematopoeitic organs, and includes a section by Hazard on the physical and chemical examination of the blood. Part 2, by Agasse-Lafont, treats of diseases of the spleen. Part 3, by Sainton, has to do with diseases of the bones, and includes a chapter on rickets, by Apert. Each of the sections is written in a clear and concise manner, the subject matter being well selected and, in the main, adequate, although none of the discussions seem as comprehensive as would be expected from the character of the work. In the chapter dealing with the chemical examination of the blood, little or no attention is paid to the work of our American investigators, who have done so much to advance this field of clinical diagnosis, and no mention is made of the study or determination of the hydrogen ion concentration of the blood. The purely clinical part of the work follows the usual discussions of the subjects treated, and offers little or nothing that is new. However, there is much of value in the work for the general student and practitioner.

DIE RÖNTGENDIAGNOSTIK DER MAGEN- UND DARMKRANKHEITEN. Von Dr. Emmo Schlesinger, Specialarzt für Magen- und Darmkrankheiten in Berlin. Second edition. Paper. Price, 1,530 marks. Pp. 402, with 236 illustrations. Berlin: Urban & Schwarzenberg, 1922.

The author professes that his aim in writing this book was to furnish a reliable guide for beginners, to be of help to practicing roentgenologists, and to point out to the men who engage in roentgen-ray research work the questions that are still open, in order to stimulate progressive investigation. The author has succeeded in this self-imposed task. Although

an enthusiastic roentgenologist, he insists that roentgen-ray diagnosis never should be used independently, but should be employed in cooperation with all other diagnostic means. He concedes to the surgeons that they were the initiators of roentgen-ray diagnosis, as they recognized its importance prior to the internists. After discussing the technology, the author presents and interprets pictures of the normal organs, and brings the visible changes due to functional activities into comparison with the outlines of the quiescent organs. Pathologic conditions and their expressions in the roentgenogram and in the fluoroscopic picture are taken up, special stress being laid on differential diagnosis and possible sources of error. The surgical pathologic conditions and the resulting indications are particularly well worked out in detail. This chapter is very instructive because a large number of the cases reported and illustrated were controlled either by midoperative or postmortem observations. In this way, roentgenologic findings may be compared with the findings during operations, as in resections and entero-anastomoses, while postoperative pictures confirm or disprove the results. The author devised a method of roentgenologic determination of the acidity of the stomachic secretion without use of the stomach tube. He describes minutely its execution. The details of this book cannot be the subject of a review: they have to be studied as they are presented. There are a multitude of excellent pictures covering our knowledge of the diagnosis of diseases of the digestive tract. The explanatory text covers in a perspicuous, concise way all that a scientific interpretation demands.

ENCYCLOPÉDIE FRANÇAISE D'UROLOGIE. Publiée sous la direction de MM. A. Pousson, Professeur à la Faculté de médecine de Bordeaux, et E. Desnos, Ancien interne des Hôpitaux de Paris. Volume IV. Maladies de la Vessie. Par MM. O. Pasteau, Arcelin, Rouvillois et Ferron, Heitz-Boyer, H. Minet, Ertzbischoff, Verhoogen, Malherbe et Pasquereau, Nicaise, Gaucher et Druelle, Estor et Vialleton, E. Forgue, A. Pousson, Courtade, Paul Delbet, Genouville et Boeckel, Desnos. Paper. Price, 60 francs. Pp. 1154, with 517 illustrations. Paris: Gaston Doin, 1921.

The fourth volume of this huge encyclopedia of urology is devoted to diseases of the bladder. The subject matter is divided into two parts, one embracing methods of examination and the other devoted to the well defined clinicopathologic entities. The various chapters are written by men whose names stand high in modern urologic thought and accomplishment. The clinical diagnostic methods of examining the bladder are described by Dr. Pasteau. The second chapter elucidates roentgenographic diagnosis of bladder lesions. Traumatic lesions of the bladder are thoroughly discussed. Those parts dealing with the pathologic physiology and mechanism of the lesion may serve as an example in completeness. A chapter on cystitis by Heitz-Boyer occupies ninety well written pages, illustrated by colored plates and by numerous half-tones of gross pathologic lesions. The chapter on bladder stone by Drs. Desnos and Minet is exceptional in its completeness and beauty of illustration. There is an entire chapter on syphilis of the bladder; one on acquired bladder fistulas, and a splendid section on functional disturbances.

PRINCIPLES AND PRACTICE OF INFANT FEEDING. By Julius H. Hess, M.D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Third edition. Cloth. Price, $4 net. Pp. 496, with 34 illustrations. Philadelphia: F. A. Davis Company, 1922.

This book has made a place for itself as a textbook of recognized merit, and as a convenient guide for the practitioner in the problems associated with the successful care and feeding of infants. In the preparation of the third edition the chapters on vomiting, colic, constipation and abnormal stools have been completely rewritten. New chapters dealing with rickets, scurvy, spasmophilia, acidosis and anemia have been added, and all of the chapters on the nutritional disturbances have been revised and brought up to date. In order to accommodate this additional material, the form of the book has been changed to a larger page size. With the additions the book is an up-to-date, practical reference work on the care and feeding of the infant.

Miscellany

AMEBIC DYSENTERY: ITS PREVALENCE, DIAGNOSIS AND TREATMENT

The study of dysentery from an etiologic point of view, as Kilpatrick[1] points out, has received more scientific attention during the last twenty years than ever before, because of the increasing importance given to tropical medicine in our own country and, especially, in England. "Dysentery," as the term is used today by many physicians, simply signifies a symptom-complex of frequent bowel movements with pain, tenesmus, and blood in the dejecta. In this sense, according to Reed[2] it may be purely symptomatic; it may be due to bacterial infection, tuberculosis, syphilis, poisoning with mercury or arsenic, mechanical irritation, animal parasites, kala-azar, pernicious malaria and trematodes, infection with ciliate and flagellate parasites, and *Endameba histolytica.*

The common belief used to be that amebic dysentery was a purely tropical and subtropical disease. Data based on improved methods of examining stools and on controlled clinical observations of men under orders during the war, and of various classes of civilians since the war, show that the disease is fairly common in temperate climates also.

The British suffered heavy casualties from amebic dysentery in the Gallipoli campaign. They therefore gave a number of their protozoologists intensive training, and placed in their hands large numbers of men suffering from chronic dysentery, concentrating them in special hospitals. Allan,[3] in summing up the literature of the last few years on this subject, gives some interesting statistics tabulated from reports of Archibald, Hadfield, Logan, and Campbell,[4] of the Royal Army Medical Corps. Of 31,000 British troops returned from the Near East, 9.8 per cent. were carriers of *Endameba histolytica.* Of 7,000 troops and civilians without any history of bowel trouble, examined in the eastern Mediterranean area, 10.5 per cent. were infected; and of 5,000 troops and civilians examined on the western front, 8.9 per cent. were carriers.

Kofoid found by subjecting 2,300 of our troops in New York, just returning from France, to one examination that 12.8 per cent. were infected with *Endameba histolytica.* One examination has been found to uncover only from one-third to one-half the actual number infected, or the number that six examinations will uncover. Hence the actual number affected would probably be from 24 to 36 per cent. The United States Public Health Service was urged to take effective measures to detect and rid our returned soldiers of the infection. Under the direction of the service, Stiles[5] reports that a fairly comprehensive investigation was made to corroborate if possible Kofoid's findings before any expensive and far-reaching measures were decided on, and that the results indicate the prevalence of the disease in this country in general.

Amebic dysentery manifests itself clinically in temperate zones most frequently in the chronic form or in the carrier state, which differs from the former only in degree. The symptoms of chronic amebiasis are, as Reed, Stiles and others point out, bizarre: intercurrent attacks of diarrhea alternating with constipation, neurasthenia, loss of weight, anemia, amenorrhea and a variety of other complaints. Such patients should have repeated stool examinations; on the discovery of the cysts, proper treatment should be instituted. A carrier of cysts may not only develop acute, distressing and dangerous symptoms at any time, as well as liver abscess, but is continually a source of danger to his fellow men. Hogan[6] and a few others have reported cases of appendicitis

1. Kilpatrick, S. C.: Prevalence of Entamebic Disease: Diagnosis and Treatment, South. M. J. **15**: 275-280 (April) 1922.
2. Reed, A. C.: Diagnosis and Treatment of Amebic Colitis, Am. J. M. S. **164**: 587 (Oct.) 1922.
3. Allan, William: A Review of the Recent Work on Amebic Dysentery, Boston M. & S. J. **183**: 545-548 (Nov. 4) 1920.
4. Archibald, R. G.; Hadfield, G.; Logan, W., and Campbell, W.: J. R. A. M. C. **26**: 675, 1916.
5. Stiles, C. W.: The Public Health Status of Amebic Dysentery in the United States as Potentially Influenced by the World War, Boston M. & S. J. **186**: 377 (March 23) 1922.
6. Hogan, E. P.: Appendicitis Caused by Entameba Histolytica with Postoperative Amebic Ulcer Perforation of Cecum, J. Trop. Med. **24**: 259, 1921.

due to an undetected amebic dysentery, and occurring synchronously with it.

The vegetative, freely moving, form seems to develop only in the intestine, and, when conditions there are favorable, it is present in large numbers, bringing on what is recognized as an acute attack. It is then easily discovered in the blood-streaked mucus of the stool. This form must be differentiated from that of *Endameba coli,* which is nonpathogenic. The nuclear material of *Endameba histolytica* is coarsely granular, with the ectoplasm clear and more refractile than that of other large cells in the stool, making the detection of the ameba with the low power comparatively easy. It frequently contains vacuoles, and ingests red blood cells with ease. Only the ectoplasm is actively motile; the endoplasm seems to flow passively along as the ectoplasmic pseudopodia propel it. Movements cease if the specimen is allowed to cool off for any length of time. It then becomes more spherical, and the margin of the ectoplasm appears as a highly refractile ring. There is no sharp dividing line between the endoplasm and ectoplasm of *Endameba coli.* Both seem to extend out into the pseudopodia. It very rarely ingests red blood cells.

Only in chronic cases and in carriers, as a rule, can cysts be found. Cysts develop when conditions for growth become unfavorable. Invasion is believed to be accomplished by the encysted form through contaminated food, fruit or water. The cysts live for a long time in water. They pass through the intestine of flies unchanged and are present in fly droppings. In the intestine of man the cysts are converted into vegetative forms producing undermined ulcers in the cecum and large intestine—ulcers that appear to be secondary to a gelatinous necrosis in which the amebas are found. After specific treatment, and sometimes without this, conditions for its development in time become unfavorable, and the vegetative forms disappear from the stool; but numerous cysts may still be found in solid portions of it. The disease has then become chronic with less acute symptoms, or the patient has become a carrier with practically no symptoms, but with cysts in the stool. This condition is nearly always the result of insufficient or bad treatment.

An absolute diagnosis can be arrived at only on identifying the vegetative, motile form of *Endameba histolytica* or its cyst. The cyst of *Endameba histolytica* must be differentiated from those of *Endameba coli* and *Endameba nana.* The latter is also nonpathogenic. It was first described by Wenyon and O'Connor.[7] It is called *Endolimax nana* by Dobell.[8] *Endameba histolytica* cysts are round, rather small, and have four nuclei. *Endameba coli* cysts are larger, frequently not round, and have eight nuclei. *Endameba nana* cysts have four nuclei. A solid portion of stool mixed with an equal amount of Donaldson's iodin eosin stain brings out the nuclei sharply in cysts. They appear dark brown, the rest of the cyst yellow, and the background pink. A saline purge given carriers of *Endameba histolytica* frequently brings out motile forms.

Emetin, first used by Rogers in 1912, given hypodermically 1 grain (0.065 gm.) a day to an adult, for from ten to twelve days, usually kills off all vegetative forms. But it seems to have little if any effect on the cysts. In 1915 DuMez suggested the use of emetin-bismuth-iodid in these cases. A year later the British began using it, and they have demonstrated its value. It is given by mouth in tablets coated with phenyl salicylate or keratin, 1 grain two or three times a day for twelve days. Frequently after two or three days the number of cysts have markedly diminished. A few persons seem to derive no benefit from emetin or emetin-bismuth-iodid, but reports from a large number of men in the tropics show that the vast majority of cases are cured by it. The usual way of treating acute attacks of amebic dysentery today is to follow the course of emetin with a course of emetin-bismuth-iodid by mouth. In chronic cases, repeated courses may be required. Dobell found that 90 per cent. of relapses in treated carriers occurred within three weeks; but they may occur later. Ditlevsen, Dobell, Allen and many others who have had considerable experience with this disease emphasize the importance of repeated examinations of carriers who have apparently been cured.

7. Wenyon, C. M., and O'Connor, F. W.: Human Intestinal Protozoa in the Near East, 1917.
8. Dobell, E.: The Amebae Living in Man, 1919.

Medicolegal

Notice Required in Actions for Malpractice—Not Liable for Failure to Treat Eyes

(Shovers v. Hahn (Wis.), 190 N. W. R. 432)

The Supreme Court of Wisconsin says that the plaintiff brought this action to recover damages for loss of services of his daughter alleged to have resulted from the failure of the defendant to treat her eyes at birth with a 1 per cent. solution of nitrate of silver, as required by Section 1409a-1, Wisconsin Statutes of 1921. The daughter was born in December, 1918, and this action was begun in September, 1921. No notice of injury was served before the commencement of the action. At the close of the plaintiff's testimony, the trial court granted the defendant's motion for a nonsuit, on the ground that the statutes of limitation of Wisconsin had run on the cause of action, and also on the ground that the plaintiff's evidence failed to show that the injury to the daughter's eye was due to the defendant's failure to administer the nitrate of silver solution; and the judgment of the trial court for the defendant is here affirmed.

It was established in the case of *Frechette* v. *Ravn,* 145 Wis. 589, that in an action by the person injured for malpractice founded on tort the notice required by Section 4222 (5), Statutes of 1921, was necessary, because it was an action for an injury to the person, and in *Klingbeil* v. *Saucermann,* 165 Wis. 60, 160 N. W. 1051, it was held that the notice was necessary in an action by the person injured for malpractice founded on contract. It is therefore settled that, were this an action by the person injured, it could not be maintained without the notice.

It was contended by the plaintiff that, since this was an action by the father for loss of service, it was not an action for injury to the person, and the case of *Wysocki* v. *Wisconsin Lakes I. & C. Co.,* 125 Wis. 638, 104 N. W. 707, was relied on to sustain the claim; and the case squarely sustained it. That case was brought by a father for loss of service, medical expenses, and nursing, caused by a personal injury to his minor son, and the court held that no notice was necessary, because it was not an action to recover damages for injuries to the person, but to recover for loss of service, etc. The fault in the reasoning in that case was that actions were classified, not on the basis of the delict or breach of duty, but on the basis of the kind of damages recoverable. An injured minor may recover several kinds of damages. He may recover for pain and suffering, for disfigurement, for the shame and humiliation caused thereby, for loss of earning capacity after minority, and perhaps punitory damages; but he has but one cause of action; namely, for personal injury. If the rights of others are invaded, the action is none the less one for a personal injury. The Wisconsin statute provides that the party damaged, not necessarily the party injured, shall give notice. It is the delict or breach of duty that characterizes the action, and not the kind of damages recovered. It was the legislative intent to give a person guilty of a personal injury to another timely notice that damages were claimed therefor, to the end that he might protect his interests by seasonably gathering and preserving the requisite evidence available. Under the construction given the statute in the Wysocki case, a minor might receive an injury, not serious so far as his cause of action was concerned, but quite serious as to the father's cause of action. The minor had to give the notice, but the father did not. Wherefore, that case, so far as it relates to the giving of notice of injury, is overruled.

The court overrules the Wysocki case the more readily now because it is convinced that the plaintiff in the present case had no cause of action, because the evidence was so vague that no verdict based on the theory that the injury to the daughter's eye was the result of the failure of the physician to administer the nitrate of silver solution could stand. It would be a pure guess, and contrary to the reasonable probabilities shown by the evidence; namely, that her eyes were diseased before birth, and that no treatment would have availed.

Superintendent Employing Physician for Plantation

(Howison v. Nicholson (Ala.), 93 So. R. 373)

The Court of Appeals of Alabama, in affirming a judgment in favor of the plaintiff, says that he brought suit on an account for medical services rendered and medicine furnished during the year 1920 to the tenants of the defendant. There was no denial of the fact that the services were rendered, and medicine and drugs furnished, and that the account was true and correct. The only question was the liability of the defendant. The plaintiff testified that the only contract he had for the services performed and medicine furnished was made with the defendant's superintendent; that it was the custom on the defendant's farm, and had been for several years, for the superintendent or general manager to employ a physician for the laborers, and to see that the hands on the farm had medical attention, a custom which was known to the plaintiff when he contracted with the superintendent; and that it was the custom of the defendant to pay in the latter part of the year whatever physician rendered the medical services under orders from the superintendent. The defendant denied that the superintendent had any authority to employ the plaintiff, or to make any contract that would bind the defendant without first submitting it to him for his approval, and he testified that the only way he paid for medical attention to any of his hands was in case they had money due them in the fall of the year, which was not the case that year with reference to any of the persons named in the plaintiff's account. But from the testimony of the plaintiff, it was clear that the general manager or superintendent, who was expected to make provision for the health of the laborers, not only was following the custom of the plantation, but also was well within his authority as a general superintendent in contracting with the plaintiff to give medical attention to the defendant's laborers. The plaintiff, as a third party, was no doubt relying on a custom that had prevailed, according to his and a former superintendent's testimony, on this plantation for some years; and it mattered nothing if the defendant did forbid employment for medical services, except in the manner indicated by his testimony. He could have no private agreement with his agent which would prevail, if the plaintiff knew nothing of it but relied on the custom stated. The fact, if it was a fact, that the superintendent profited by such an agreement with the plaintiff, could not, in the light of his authority to make the contract, be any reason for casting it aside, nor any reason for questioning the good faith of the plaintiff in making the contract with the superintendent. It clearly appeared that, while the evidence was in conflict, there was sufficient evidence to support the judgment rendered.

Statute of Limitations and Expert Testimony in Malpractice Case

(Carson v. Jackson (D. C.), 281 Fed. R. 411)

The Court of Appeals of the District of Columbia, in affirming a judgment in favor of the plaintiff without stating the amount, says that the plaintiff alleged that she was suffering from osteomyelitis of the radius of the left arm, but that the defendant through negligence at first treated her arm as if it were not so afflicted, and, after he discovered the disease, negligently and unskilfully treated it, causing much pain and a deformity. The plaintiff was a minor, and the defendant contended that, under the statute providing that such actions must be brought within three years but allowing a minor three years after arriving at his majority to institute such an action, if a minor brings the action during his minority he must do so within three years from its accrual, and that because the plaintiff did not so bring her action within three years it was barred. The court however holds otherwise, being of the opinion that under the statute a minor has the entire period of his minority and three years thereafter in which to institute the action.

On the testimony of laymen relative to the condition of the child's arm and to the treatment given by the defendant, surgeons were asked a hypothetical question, which concluded with the words: "In your opinion, would you say that the physician had given the case the care and attention which a physician and surgeon of ordinary skill and ability practicing in the District of Columbia would have given under all the circumstances as related?" The court sees no reason why the testimony of laymen concerning the treatment given by the defendant to the child's arm was not a sufficient basis for the hypothetical question. The defendant did not contend that the testimony was improperly admitted. Besides, it was open to him to show that the testimony did not correctly describe the treatment or condition of the child, and, if he had satisfied the jury that it did not, the answer of the surgeons, based on it, would necessarily have failed of effect.

Was the question objectionable as invading the province of the jury? By the question, the witness was not asked to say whether or not the defendant had been guilty of negligence or malpractice, although probably that was the effect of the question. In order that the plaintiff might make out her case, it was necessary for her to show to the satisfaction of the jury that the defendant had not given her the care and attention that a physician and surgeon of ordinary skill and ability practicing in the District of Columbia would have given under the circumstances related. She could not prove it, except by surgeons who knew what care and attention such surgeons would have given. Laymen would have been incompetent to testify on the subject. The jurors knew nothing about it. It was quite different from an ordinary case of negligence, in which the jury is able to solve the question by applying thereto their own experiences. In such a case, the test is: How would a reasonably prudent man have acted under the circumstances? There is no room for expert testimony in a case like that. But here it was necessary that the experts should tell the jury the essential thing, namely, whether or not the defendant's treatment of the plaintiff satisfied the standards of care observed by surgeons of ordinary skill in the District. If they simply answered that the treatment was improper or unskilful, that would not have gone far enough. The jury would still be in the dark as to whether or not the treatment was in accordance with the standards just mentioned. Light on that subject could be given only by an answer to a question such as the one propounded.

With respect to whether the question was leading, perhaps it would have been better if the expert had been asked whether in his opinion the treatment was in accordance with the standards mentioned. However, the question propounded could not have prejudiced the defendant. The court assumes that the expert well knew, before the question was asked, what answer was expected of him, and he was not, therefore, influenced by the form of the interrogatory.

What were the circumstances of the case, or what was the treatment given, the court does not state.

No One Pronounced Insane for Religious Belief

(West et al. v. Iowa Seventh Day Adventist Ass'n, Inc. (Ia.), 189 N. W. R. 765)

The Supreme Court of Iowa, in reversing a decree that set aside certain deeds made to the defendant association by a Mrs. Smith, states that a volume of opinionated testimony was offered to prove that she was insane on the subject of the Seventh Day Adventist religion. But this court is bound to say that the law pronounces no one insane or unsound of mind on account of mere religious belief, no matter how unreasonable it may appear to a judge or any one else. A belief in the doctrines maintained by any of the religious denominations would not establish insanity or unsoundness of mind. Still, a person might be a monomaniac as to any form of religion. However, this court is not prepared to say that Mrs. Smith was a monomaniac as to her religion. She was greatly wrapped up and absorbed, and an unceasing worker in her church, and implicitly believed in the efficacy of prayer, and that her prayers were answered, and probably when she spoke of being commanded by God to do certain things, she meant that her prayers were answered. This court can hardly reason that she was insane on that account. Many people so believe. People whose sanity is not questioned claim to converse with people of the spirit world. It is not for this court to pronounce judicially whether they do or not.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

January, 1923, **65**, No. 2

*Retinal Reflex in Frogs. V. H. K. Moorhouse, Winnipeg.—p. 177.
*Examination of Certain Proposed Tests for Fatigue. F. S. Lee and J. D. Van Buskirk, New York.—p. 185.
*Mechanism of Sterilization of Female by Spermotoxin. J. L. McCartney, Chicago.—p. 207.
*Studies of Thyroid Apparatus. IX. Effects of Loss of Thyroid and Parathyroid Glands at 100 Days Age on Growth in Body Length, Body Weight and Tail Length of Male and Female Albino Rats. F. S. Hammett, Philadelphia.—p. 218.
Changes in Organ Weights of Guinea-Pig During Experimental Scurvy. D. H. Bessesen, Minneapolis.—p. 245.
*Acetonitril Test for Thyroid and Some Alterations of Metabolism. R. Hunt, Boston.—p. 257.
Distribution of Vagus Nerves to Sino-Auricular Junction of Mammalian Heart. G. Bachmann, Atlanta, Ga.—p. 300.
Studies in Fatigue. XIII. Staircase Phenomenon in Mammalian Skeletal Muscle. C. M. Gruber, St. Louis.—p. 338.
Ash of Human Sweat Produced by Heat and Work. G. A. Talbert, Chicago.—p. 350.
Inadequacy of Our Present Blood Volume Methods. P. D. Lamson and S. M. Rosenthal, Baltimore.—p. 358.
*Shape of Glomeruli and Bowman's Capsules in Active and Inactive Kidney. W. N. F. Woodland, London.—p. 368.
Resistance of Fish to Salts and Alkalinity. R. T. Young, University, N. D.—p. 373.

Retinal Reflex in Frogs.—An investigation of the parts of the central nervous system involved in transmitting the "retinal reflex" impulse is reported on by Moorhouse. Removal of the cerebral hemispheres appears to shorten the average reaction time of the retinal reflex, and to make the response more active. The area of the frog's brain which is most important in forwarding the impulse is the optic tectum, especially the anterior portion.

Results of Proposed Tests for Fatigue.—Lee and Van Buskirk examined experimentally a considerable number of physical tests which either have been proposed, or might be employed, as indicators of fatigue in human beings. They failed to find in any of the tests a reliable criterion of the daily physical fatigue of the individual from such physical exertion as a walk of 14 miles.

Mechanism of Sterilization of Female by Spermotoxin.—McCartney asserts that female rats may be sterilized for a period of from two to twenty-two weeks by subcutaneous injections of spermatozoa, or testis extract (confirming the work of Guyer and Dittler on rabbits). Subcutaneous injections of other organ extracts do not cause sterility. The sterility seems to be due to the presence of spermotoxins in the vaginal and uterine secretions of the immunized animal. These spermotoxins immobilize and agglutinate the spermatozoa. Within limits, the degree of immunity appears to be proportional to the amount of the antigen injected. Immunization with spermatozoa does not affect the sexual cycle (ovulation and rut) of the female (confirming the work of Dittler). Subcutaneous injection of spermatozoa into adult male rats tends to cause destruction of the spermatozoa and atrophy of the testes (confirming the work of De Leslie on rats and Guyer on rabbits). This effect may be only temporary. Subcutaneous injection of sperm suspension from a rooster into egg laying hens, does not influence the rate of egg production, but renders the eggs infertile for a period of from twelve to sixty-seven days. Injection of chicken liver extract does not produce infertility of the eggs.

Effects of Loss of Thyroid and Parathyroid Glands.—Hammett has made an examination of the effects on the growth in body length, body weight and tail length of male and female albino rats deprived of the thyroid and parathyroid, or of the parathyroid glands alone at 100 days of age and then allowed to grow until 150 days of age. The response was a retardation in growth of the parts measured. From the quantitative standpoint the growth of the females was retarded or obstructed to a greater degree by the experimental procedures than was that of the males. It would appear from this that the female rat is more dependent on the stabilizing influence of the thyroid and parathyroid glands in growth than are the males.

Acetonitril Test for Thyroid.—The acetonitril test was developed primarily in connection with a study of thyroid which was to be administered as a drug by mouth. It has served a useful purpose in various ways. Hunt's experiments confirm and extend the work previously reported as to the marked effects of diet on the resistance of mice to acetonitril; they also indicate that vitamins may be concerned in this action. Earlier work showing a very close parallel between the physiologic activity of thyroid (as determined by the acetonitril test) and the iodin content is fully confirmed; this has been found to be true for the thyroids of a number of species of animals and for thyroids with extreme ranges in iodin content; for the thyroid in exophthalmic goiter (with one exception); for thyroid iodized in vivo and for fetal thyroids (with the exception of one abnormal gland). The physiologic activity of thyroxin, both by feeding and by intravenous injection, is (expressed in terms of iodin content) less than that of thyroid. No evidence of the presence of physiologically inactive iodin in the thyroid was found (except in the case of two abnormal glands). Additional experiments are reported showing that the blood in certain pathologic conditions (especially those in which the thyroid is involved, but also in nephritis) contains unknown, or unidentified, substances which markedly increase the resistance of mice to acetonitril.

Condition of Glomerulus During Renal Secretion.—The results of Woodland's experiments are reported completely to disprove the statement of Brodie and Mackenzie that during normal diuresis fluid is contained in the capsule, and to invalidate their conclusion that the glomerular epithelium secretes urine. The only alternative suppositions are that the glomerulus either filters urine or has nothing whatever to do with the actual production of urine. Woodland believes that the whole of the urine is secreted by the tubular epithelium; the encapsulated glomerulus acts solely to reduce pressure and retard current while maintaining volume (in other words, it has the same effect on the blood stream as a waterfall has on a river) and is a device necessitated by the proximity of the kidneys to the aorta—the seat of maximum arterial pressure.

American Journal of Public Health, Detroit

January, 1923, **13**, No. 1

Health Officer's Challenge to General Practitioner. J. D. Robertson, Chicago.—p. 1.
Channel and Some Shoals in Municipal and State Child Hygiene Administration. M. E. Champion.—p. 6.
Important Considerations in Relation of Food to Disease. J. C. Geiger, Chicago.—p. 10.
Tuberculosis Demonstration Plans of Milbank Memorial Fund. D. B. Armstrong.—p. 14.
Place of Proteins in Diet in Light of Newer Knowledge of Nutrition. H. H. Mitchell.—p. 17.
Control of Diphtheria. W. H. Park, M. C. Schroeder and A. Zingher, New York.—p. 23.
Importance of Epidemiology as Function of Health Departments. W. H. Frost, Baltimore.—p. 33.
Service. B. L. Arms.—p. 37.

American Journal of Roentgenology and Radium Therapy, New York

January, 1923, **10**, No. 1

Newer Investigations of Problem of Roentgen-Ray Dosage. O. Glasser, Baltimore.—p. 1.
Problem of Roentgen-Ray Dosage. W. Friedrich, Freiburg, Germany.—p. 6.
Intestinal Reaction to Erythema Dose. C. L. Martin and F. T. Rogers, Dallas, Tex.—p. 11.
Important Points in Technic of Roentgenologic Examinations of Urinary Tract. B. H. Nichols, Cleveland.—p. 19.
*New Light on Gastric Peristalsis. W. C. Alvarez, San Francisco.—p. 31.
*Bone Lesions of Smallpox; Report of Cases. F. B. Sheldon, Fresno, Calif.—p. 35.
Diagnosis and Treatment of Bone Lesions. J. C. Bloodgood, Baltimore.—p. 42.
Ionization Measurements. G. Failla, New York.—p. 48.
Comparative Measurements Between Radium and Roentgen-Rays Concerning Energy Absorbed at Depth. H. R. Gaylord and K. W. Stenstroem, Buffalo, New York.—p. 56.

Results and Technic in Treatment of Carcinoma of Breast by Radiation. B. J. Lee, New York.—p. 62.
Automatic Switch for Bucky Diaphragms. E. V. Powell, New York.—p. 67.
Use of Bucky-Potter Diaphragm with Fluoroscope. W. C. Alvarez, San Francisco, Calif.—p. 69.
Effect of War on Development of Roentgenology. P. M. Hickey, Ann Arbor, Mich.—p. 70.

Gastric Peristalsis.—Alvarez says that new evidence has been obtained as to the location and behavior of the gastric pacemaker. Stomach blocks and dissociations have been observed. Cole's discovery of gastric systoles has been confirmed. Several peculiar types of peristalsis are described, and some contractions are shown which might perhaps be called, by analogy, pyloric extrasystoles. Two or three different types of contraction can take place simultaneously in one segment of the stomach much as they do in one segment of bowel. There is a close relation between the activities of the pyloric end of the stomach and the duodenum.

Bone Lesions of Smallpox.—In one of the cases reported by Sheldon, the woman, a Chinese, had had smallpox when 3 or 4 years of age. At the time she was seen she had deformities of both wrists and shortening of the right humerus and the bones of the right forearm. The ulna in each forearm appeared to be longer than the corresponding radius, causing deformities of the wrists. The second patient, a Chinese, aged 67, entered the hospital for pains in the feet. Roentgenograms showed fusion of the distal extremities of the tibia and fibula. These also were fused with the astragalus. The first and fifth metatarsals of both feet showed shortening. Under the fluoroscope, deformities of the hands and right elbow were noted. Films of the right elbow show complete absence of articulation, and complete fusion of all bones. So complete is this fusion that the medullary canal of the humerus can be followed directly into that of the radius and that of the ulna. The left hand showed marked shortening of the fifth metacarpal, and also a smaller shaft than the right fifth metacarpal. The right hand showed shortening of the first, second, and fifth metacarpals. Of these short metacarpals, only one has a smaller shaft than normal. The history of this man showed no bone injury, no evidence of inflammatory troubles, and no pains or aches until within the last six months, but there was a history of smallpox sixty-four years previously. Both patients being Chinese, Sheldon asks: "Is the particular variola of the Orient different from that of the Occident, or are we simply not recognizing these cases?"

Annals of Surgery, Philadelphia

January, 1923, **77**, No. 1

*Cancer of Larynx: Is It Preceded by Recognizable Precancerous Condition? C. Jackson, Philadelphia.—p. 1.
*Arterial Decortication. C. L. Callander, San Francisco.—p. 15.
*Peri-Arterial Sympathectomy. E. P. Lehman, St. Louis.—p. 30.
Aluminum-Potassium Nitrate in Treatment of Suppurative Conditions, Particularly Osteomyelitis. M. Thorek, Chicago.—p. 38.
Cholecystostomy Versus Cholecystectomy. J. C. O'Day, Honolulu, Hawaii.—p. 48.
Cholelithiasis, Cholecystitis and Cholangitis. A. B. Keyes, Chicago.—p. 52.
Certain Aspects of Surgery of Gallbladder. O. F. Lamson, Seattle.—p. 64.
Case of Retention Cyst from Liver; Review of Literature. J. F. X. Jones, Philadelphia.—p. 68.
*Colloid Carcinoma. D. Parham, Rochester, Minn.—p. 90.
Bone Tumors. Metastasis to Lungs from a Pure Myxoma. J. C. Bloodgood, Baltimore.—p. 106.

Precancerous Stage of Cancer of Larynx.—If it is admitted that certain curable laryngeal conditions are in some cases the sequential predecessors of incurable cancer, Jackson says, it is clearly the duty of the physician not only to eradicate those curable precancerous conditions, but to contribute to their early recognition by applying to them the term "precancerous," however faulty such a word may be from a purely scientific, histologic point of view. From a clinical point of view, continual laryngeal irritation from any cause in a person of cancerous age, may be regarded as clinically precancerous, in the sense that these conditions may be contributory factors in the etiology of cancer, and as such should be cured, surgically or otherwise.

Results of Arterial Decortication.—Ten arterial decorticationswere performed by Callander on six patients. For one of these patients three arteries were decorticated for disease of three extremities, while for another patient the operation was performed on two arteries for trouble in two extremities. In the spastic group of three cases no improvement can be recorded. In the three cases in which an obliterative arteritis seemed to play the predominant rôle, one definite cure is recorded. In one of these cases no improvement followed the operation, and the patient died later from an ascending gangrene of the extremity. In the third case, no improvement followed the operation, and the gangrene remained as before intervention. In a case of pain in the thumb, the pain disappeared following the operation, but for it there was substituted another pain in the flexor group of muscles. This pain later likewise disappeared, and there has been no recurrence of the symptoms.

Perivascular Sympathectomy.—Lehman concludes that the "perivascular sympathectomy" of Leriche in the dog does not result experimentally in the physiologic changes in the extremity which he described in clinical cases, and the vasodilation from proved total sympathectomy does not affect wound healing.

Colloid Carcinoma.—Two hundred and three cases of colloid carcinoma of the gastro-intestinal tract are analyzed by Parham. Colloid carcinomas occurred in the stomach (6.5 per cent.), cecum (22.2 per cent.), appendix (7.0 per cent.), transverse colon (7.3 per cent.), sigmoid (4.3 per cent.), rectum (5.5 per cent.), pancreas (two cases), gallbladder (8 per cent.), salivary glands (one case), bladder (2.5 per cent.), prostate (one case), kidney (one case), ovary (1.1 per cent.) and breast (1.12 per cent.). Peritoneal carcinomas occurred in 16 per cent. of all cases. Colloid carcinoma is usually slow of growth and late to metastasize to glands and other organs. It often grows by permeation and may cause extensive thickening of the wall of the affected organ. Local glands are often involved long before metastasis has reached distant glands. Though histologically less malignant on account of permeation of adjacent tissues, it is particularly difficult to eradicate. Death is often delayed, but the eventual mortality is greater than in other types of carcinoma. Recurrence is often entirely localized to the site of origin. Many patients with colloid carcinoma respond remarkably well to treatment by roentgen ray and radium.

Archives of Internal Medicine, Chicago

January, 1923, **31**, No. 1

*Carbon Dioxid and Oxygen Content of Stomach Gas in Normal Persons. A. D. Dunn and W. Thompson, Omaha.—p. 1.
*Chemotherapy of Bacterial Infections. II. Chemotherapy of Experimental Localized Bacterial Infections with Special Reference to Pleuritis. J. A. Kolmer, Philadelphia.—p. 9.
*Experimental and Clinical Study of Quinidin Sulphate: I. Experimental. H. M. Korns, Cleveland.—p. 15.
*Experimental and Clinical Study of Quinidin Sulphate: II. Clinical. H. M. Korns, Cleveland.—p. 36.
Technic of Determination of Velocity of Arterial Pulse Wave. C. Lundsgaard and O. Beyerholm, Copenhagen, Denmark.—p. 56.
*Relation Between Ingested Fat and Lipemia of Diabetes Mellitus. P. L. Marsh and H. G. Waller, Ann Arbor, Mich.—p. 63.
*Defects in Membranous Bones, Diabetes Insipidus, and Exophthalmus; Report of Case. L. C. Grosh and J. L. Stifel, Toledo, Ohio.—p. 76.
*Orthopnea. C. D. Christie and A. J. Beams, Cleveland.—p. 85.
*Effect of Olive Oil on Gastric Function as Measured by Fractional Analysis. B. C. Lockwood and H. G. Chamberlin, Detroit.—p. 96.
*Basal Metabolism in Dementia Praecox and Manic-Depressive Psychoses. C. E. Gibbs and D. Lemcke, New York.—p. 102.
*Hippuric Acid Synthesis as Test of Renal Function. S. Morgulis, G. P. Pratt and H. M. Jahr, Omaha.—p. 116.
*Edema Associated with Moderate Bicarbonate Administration During Convalescence from Pneumonia. C. A. L. Binger, A. B. Hastings and J. M. Neill, New York.—p. 145.

Carbon Dioxid and Oxygen Content of Normal Stomach Gas.—Evidence was obtained by Dunn and Thompson that atmospheric air introduced into the stomach tends to come into equilibrium with the blood gases within one hour in the case of carbon dioxid, and considerably later, if at all, in the case of oxygen. All the carbon dioxid found in the stomach gas of normal persons, whether fasting or after a full meal, can be accounted for by secretion or diffusion from the gastric mucosa. In the study of stomach gas occurring in pathologic

conditions, an upper normal limit of at least 9 per cent. carbon dioxid tension must be postulated.

Chemotherapy of Bacterial Infections.—Studies with ethylhydrocuprein hydrochlorid (optochin) in the treatment of experimental pneumococcus pleuritis and meningitis, Kolmer states, have indicated that in chemotherapeutic investigations in bacterial infections, localized infections of serous cavities offer a more favorable means for eliciting therapeutic effects of a medicament than do generalized infections and bacteremias. In localized infections of serous cavities it is possible to inject into the sacs sufficient amounts of medicament to render the contents bactericidal and curative. These amounts may be at least one half the maximum tolerated doses. In rapidly fatal generalized infections with bacteremias, however, the intravenous injection of one half the maximum tolerated dose may be without therapeutic effects. Localized bacterial infections of serous cavities would appear to be especially useful for chemotherapeutic studies with medicaments possessing high toxicity when the margin between dosis tolerata and dosis curativa is small. In the production of localized infections of such serous cavities as the subarachnoid space, pleural sacs and pericardium, test animals possessing some natural immunity to the test bacterium should be chosen, like the guinea-pig for pneumococcus pleuritis and pericarditis, the cat or dog for pneumococcus meningitis and the dog or rat for tuberculous pleuritis. The test micro-organism should be of moderate rather than extreme virulence, in order to reduce the invasiveness or aggressiveness of the bacteria for the blood and other organs.

Experimental Study of Quinidin Sulphate.—Korns reports in detail the results of experiments made for the purpose of studying some of the effects of quinidin on the normal dog and guinea-pig heart.

Clinical Study of Quinidin Sulphate.—Detailed reports are made by Korns of seven successful and six unsuccessful cases of auricular fibrillation treated with quinidin sulphate. The result attained by the use of quinidin in a case of ventricular paroxysmal tachycardia is also described. Clinical evidence is presented which lends support to the theory that the action of quinidin in abolishing circus movement is not conditioned by the type of cardiac lesion, degree of decompensation, duration of fibrillation, etc., but is essentially related to the pathologic physiology of the auricular muscle. The most important contribution of quinidin to clinical cardiology is that it provides a means by which the rôle of auricular fibrillation in myocardial failure may be quantitatively estimated. Quinidin is universally a heart muscle poison. In each patient an estimate of this effect must be weighed carefully against the expectation of benefit to be derived from restoration of normal sinus mechanism. Indications for the use of digitalis and quinidin are entirely separate and clearly defined. Electrocardiograms made before and after resumption of normal rhythm are analyzed.

Relation Between Ingested Fat and Lipemia of Diabetes Mellitus.—March and Waller noted the effect on the lipoidemia of diabetic patients of the high fat, low protein, low carbohydrate diets described by Newburgh and Marsh. The patients selected for this study represented a number of different types of diabetes mellitus, varying in age, severity of the disease, duration of diabetic symptoms, previous treatment, degree of acidosis. From an examination of the records of these patients it is apparent that there was no increase in the lipoid content of the blood during the periods of observation, and, of much greater significance, that in the patients in whom a hyperlipoidemia existed when they first came under observation, the total fat fell to approximately normal levels. It is regarded by Marsh and Waller as being very strong evidence that the prevalent assumption which postulates that diabetic hyperlipoidemia is dependent on the excessive ingestion of fat is unwarranted. The explanation of this phenomenon must be sought in some other unusual feature of the diabetic state.

Membranous Bone Defects, Diabetes Insipidus and Exophthalmos.—A case is reported by Grosh and Stifel exhibiting some degree of dwarfism, diabetes insipidus, defects in the membranous bones of the skull and pelvis, and exophthalmos. Pituitary extract, administered hypodermically, controlled the polyuria temporarily. After a time the effect of pituitary extract diminished. It had no effect on the bone defects.

Orthopnea.—Christie and Beams divide orthopnea into (1) orthopnea of necessity and (2) orthopnea of choice. Orthopnea cannot exist without reduction of the vital capacity. If the original loss from disease is great and the patient loses an addition amount on lying down, there will be "orthopnea of necessity." "Orthopnea of choice" is more common and exists when the original loss from disease is smaller or the percentile loss, as a result of posture, is not so great. Some patients with as great reduction in their vital capacity from disease as is seen in "orthopnea of necessity" do not become orthopneic.

Effect of Olive Oil on Gastric Function.—The experiments made by Lockwood and Chamberlin demonstrate that olive oil, given before meals, as is usually done clinically, reduces the average total acidity about 12 per cent., and lowers the high point of the curve about the same degree. It causes a marked delay of the test meal in the stomach and the oil is the last portion of the meal to be evacuated. When oil is given, regurgitation of bile is five times as frequent as without it.

Basal Metabolism in Psychoses.—Definitely abnormal basal rates were found by Gibbs and Lemcke in psychotic patients in the more acute phases of their psychosis. The variations from normal were greater in dementia praecox patients than in cases of manic-depressive insanity. The patients did not show sufficient evidence to explain satisfactorily the findings in terms of thyroid or pituitary disorder. Several of the dementia praecox patients did show some evidence of disturbed growth, including incomplete sex maturity. Thyroid by mouth raised the rate to normal in two cases of manic-depressive depression, but did not do so in a case with more marked constitutional psychopathic features. No immediate mental improvement followed thyroid in these three cases.

Hippuric Acid Synthesis as Test of Renal Function.—In normal persons benzoic acid, administered either as the acid or its salt is completely synthesized to hippuric acid and the kidney is stimulated to enhanced activity. In nephritic and cardiorenal patients the synthesis is never complete and the kidney is apparently fatigued by the excessive exertion. The benzoic acid passing in the urine is not all conjugated with glycocol to form hippuric acid. A variable portion appears as the uncombined acid or as its salts. The unconjugated part of the benzoic acid can be reduced to an entirely negligible amount on a diet of milk and toast. Following the ingestion of a large dose of benzoic acid or sodium benzoate the free benzoic acid in the urine invariably increases though to a very variable degree in different individuals. The increase is particularly great in patients with definite kidney affection. In all the patients whom Morgulis and his associates examined the amount of hippuric acid synthesized in twenty-four hours, following the ingestion of a standard dose of benzoic acid or sodium benzoate, ranged from 53 to 95 per cent., while from 59 to 100 per cent. of the benzoic acid administered could be recovered in the urine. In one group of patients, the recovery of benzoic acid has been almost the same as in normal subjects, but the hippuric acid synthesis was less than in the normal owing to the fact that a large amount of the benzoic acid was excreted in unconjugated form. In another group of patients both the elimination of total benzoic and of hippuric acid falls much below that in the normal subject. The free benzoic acid in the urine following a dose of the acid is apparently greater in the nephritic than in the cardiorenal cases. Clinically, the method will in all probability not find extensive application or favor because it involves much work, and in order to secure reliable results the patient's regimen must be supervised very closely.

Edema Associated with Bicarbonate Administration in Pneumonia.—The case studied by Binger and others was one of lobar pneumonia, in which an average of 5.7 gm. sodium bicarbonate had been given for a period of thirty-five days prior to admission to the hospital. The patient showed intense cyanosis with marked oxygen unsaturation of the arterial blood, rapid breathing, anasarca and hydrothorax,

and evidence of alkalosis (blood p_H 7.55). Oxygen therapy largely relieved cyanosis and dyspnea. Immediately thereafter the patient began to excrete retained bases and water. Diminution of edema was acompanied by gradually increasing lung volume and return to normal type of respiration. No definite impairment of kidney function could be established. At the time of discharge from the hospital, the patient's blood oxygen, carbon dioxid content, and p_H were normal, the urine p_H was normal, and the urine was free from albumin and casts. The case is reported to show that definite untoward results may follow the administration of sodium bicarbonate, and to point out the character of certain of these untoward results.

Boston Medical and Surgical Journal

Feb 1, 1923, **188**, No. 5

Basal Metabolism of Young Girls. F. G. Benedict, Boston.—p. 127.
Pasteur—Scientist, Believer, Democrat. C. W. Eliot.—p. 138.
Nicolaas Tulp and Rembrandt's Painting, "Anatomical Demonstration by Tulpius." C. G. Cumston, Geneva, Switzerland.—p. 143.

Bulletin Lying-In Hospital of City of New York

January, 1923, **12**, No. 3

*Fundamental Cause of Splanchnoptosis. Abdominal Incompetence: A Developmental Factor. II. Study of Certain Details of Prenatal Evolution of Abdomen: With Special Reference to Status at Term. A. C. Vietor, Boston.—p. 139.
*Treatment of Cardiac Failure During Pregnancy. H. E. B. Pardee, New York.—p. 207.
Analysis of Cases of Bacteriemia Occurring at Lying-In Hospital. M. Rosensohn, New York.—p. 214.

Cause of Splanchnoptosis.—Vietor endeavors to demonstrate anatomically and experimentally that the fundamental cause of visceral ptosis is abdominal incompetence and that this is a developmental factor; that, consequently, the retention of the viscera in their normal positions depends on the development of normal competence of the abdomen; and that failures in the normal development of this abdominal competence and visceral retention are correlated with the development of certain departures from the normal body form—the most constant of these departures being the retracted lower thorax.

Cardiac Failure During Pregnancy.—The important feature of heart disease during pregnancy, Pardee says, is the degree of cardiac failure. If this is slight the disease is of little importance. Even with a moderate degree of failure it will be possible for the child to be born if the mother is allowed to take a risk which is not so great as sometimes stated. The first attack of severe decompensation can usually be recovered from with proper treatment, unless the attack should occur during labor. With proper observation and prompt operation, severe decompensation should not occur during labor. Abdominal section is the operation of choice in the emergency, provided a low forceps delivery cannot be done. Ether anesthesia, started by chloroform, is a better anesthetic for these patients than gas oxygen. Oxygen inhalations from a mask are helpful to clear up persistent cyanosis. Without severe cardiac failure or after recovery from it, most patients can be carried through to term or to an induced labor during the eighth month. During labor, the attendant should watch for a pulse over 95 or respiration over 25 per minute, precordial discomfort, dyspnea, cough, and should not allow these small signs to become big before he puts an end to the labor. In treating lesser grades of failure during pregnancy, the patient must rest enough to spare the heart from overstrain, but this may not necessitate rest in bed for more than a short time. Digitalis should be given in doses sufficient to insure effect. With this treatment Pardee feels sure it will be possible to diminish the present mortality of about 25 per cent. for severe cases and 10 per cent. for all cases to a figure which is less disquieting.

Endocrinology, Los Angeles

November, 1922, **6**, No. 6

Invitations to Research in Endocrinology. W. B. Cannon, Boston.—p. 745.
Glandular Status of Brown Multilocular Adipose Tissue. A. T. Rasmussen, Minneapolis.—p. 760.
Present Position of Testicle Transplantation in Surgical Practice: Preliminary Report of New Method. M. Thorek, Chicago.—p. 771.
Steinach Operation: Report of Twenty-Two Cases with Endocrine Interpretation. H. Benjamin, New York.—p. 776.
*Analysis of One Thousand Testicular Substance Implantations. L. L. Stanley, San Quentin, Calif.—p. 787.
Pathogenesis of Thyrotoxicosis. Part 2. N. W. Janney, Los Angeles. p. 795.
*Positive Achievements of Endocrinology. A. S. Blumgarten, New York.—p. 811.

Results of Testicle Substance Implantation.—The results of 1,000 implantations of animal testicular substance in 656 human subjects, including seven females, are reported by Stanley. The greater number of subjects received only one injection, although some received as many as seven injections. Striking objective improvement was seen in numerous cases of general asthenia, acne vulgaris, asthma and senility. Subjective or objective improvement was seen in various cases of rheumatism, neurasthenia, poor vision and a few other conditions. The results, as a whole, are tabulated. In general, testicular substance seems often to have a beneficial effect in relieving pain of obscure origin and in the promotion of bodily well being. The operation is practically painless and harmless. The testicular substance was cut into strips with a knife or cork-borer, in sizes suitable for filling the pressure syringe. This instrument is similar to the one devised by Beck for paraffin injection. By means of a dental syringe with a No. 16 needle, 3½ inches long, the semisolid testicular substance was injected underneath the skin of the abdomen. There were comparatively few sloughs, and the patient was not subjected to a week's hospital inconvenience. The testicles of goats, rams, boars and deer have been used. So far as can be determined, there is very little difference in the effects produced by testicular material obained from the different animals.

Positive Achievements of Endocrinology.—The progress in endocrinology is divided into several categories by Blumgarten: (1) progress in the well established syndromes of the various ductless glands; (2) contributions of endocrinology toward various nonspecific branches of medicine; (3) contributions to therapy, and (4) contributions to public health. Each item is discussed. The progress made in the treatment of endocrinopathies and in organotherapy, in general, is reviewed from the standpoint of what has been established, in other words, the actual accomplishments. Of the pharmaceutic products obtained from the ductless glands only specific substances are mentioned. Speaking of pluriglandular therapy, Blumgarten says: "It seems to me highly unscientific to prepare shotgun combinations of gland substances in the hope that the body will extract from these combinations those that it needs. The only way progress will ever be made in rational organotherapy is to be able to recognize specific deficiencies and to supply effective substances for these deficiencies. If more than one deficiency is present they should be individually recognized and two or more corresponding substances given."

Georgia Medical Association Journal, Atlanta

January, 1923, **12**, No. 1

Overmedication in Infants and Children. B. Bashinski, Macon.—p. 1.
Complemental Breast Feeding. L. Gerdine, Athens.—p. 4.
Antitoxin and Intubation in Diphtheria. W. N. Adkins, Atlanta.—p. 8.
Control of Common Contagious Diseases. J. A. Wood, Atlanta.—p. 12.
Importance of State Pediatric Society as Component Part of State Medical Association. W. A. Mulherin, Augusta.—p. 19.
Treatment of Congenital Syphilis in Children. J. Yampolsky, Atlanta.—p. 23.
Complete versus Subtotal Hysterectomy. G. W. Quillian, Atlanta.—p. 26.
Asthma. A. H. Bunce, Atlanta.—p. 29.
Report of 1,000 Obstetric Cases in Private Practice. J. T. Benson, Atlanta.—p. 31.

Iowa State Medical Society Journal, Des Moines

January, 1923, **13**, No. 1

Control of Circulation. G. Kessel, Cresco.—p. 1.
Tumors of Breast. W. Jepson, Sioux City.—p. 5.
Surgery of Thyroid. P. A. White, Davenport.—p. 11.
Obstetric Problems Involved in Stillbirths and Deaths of New-Born Infants. C. S. Bacon, Chicago.—p. 15.
Recent Progress in Treatment of Chronic Empyema. C. A. Hedblom, Rochester, Minn.—p. 21.
Newer Aspects of Urinary Surgery. D. N. Eisendrath, Chicago.—p. 25.

Journal of Cancer Research, Baltimore

April, 1922, **7**, No. 2

*Biologic Evidence for Inheritability of Cancer in Man. XVIII. M. Slye, Chicago.—p. 107.
Acidosis, Alkalosis and Tumor Growth. William H. Woglom, New York.—p. 149.
Fibrosarcoma of Skin in a Gold Fish (Carassus Auratus). J. F. Schamberg and B. Lucke, Philadelphia.—p. 151.
Action of Buried Tubes of Radium Emanation on Neoplasias in Plants. I. Levin and M. Levine, New York.—p. 163.
Rôle of Neoplasia in Parasitic Diseases of Plants. I. Levin and M. Levine, New York.—p. 171.

Inheritability of Cancer in Man.—Cancer and noncancer tendencies segregate out and are transmitted as such, therefore, Slye maintains, they are unit characters. A specificity of tissue type in specific organs from ancestor to offspring segregates out and is transmitted as such. It is, therefore, a unit character. Since these things are unit characters, it is possible to manipulate them by selective breeding and thereby to implant them indelibly in any species, or to eliminate them permanently and completely from any species. Cancer and noncancer behave like the absence and presence, respectively, of a mechanism fitted to control proliferation and differentiation in regenerative processes, and an animal either has this mechanism or lacks it, no matter to what species he may belong. There is, therefore, a ready and certain genetic method of escape from cancer for the individual and for the race. The demonstration of the inheritability of cancer and noncancer tendencies in mice, Slye believes, is a demonstration of the inheritability of these tendencies in man and in all other species which show cancer, if the theory of evolution is to be maintained and the existence of a biologic law is admitted. From the procedure of analyzing stock into its unit characters in order to manipulate the cancer tendency, there has emerged the fundamental law of heredity—"What goes into the germ plasm must come out in the offspring."

Journal of Pharmacology and Experimental Therapeutics, Baltimore

January, 1923, **20**, No. 6

Importance of Suprarenal Glands in Action of Pilocarpin, Physostigmin and Strychnin. C. W. Edmunds, Ann Arbor, Mich.—p. 405.
*Investigation into Chemotherapy of Acridine Dyes in Experimental Tuberculosis. M. I. Smith, Washington, D. C.—p. 419.
Toxicity and Actions of Normal Butylamins. P. J. Hanzlik, San Francisco.—p. 435.
Pharmacologic Properties of Some Iso-Urea Derivatives. S. Basterfield, Saskatchewan, Canada.—p. 451.
Comparative Stimulant Efficiency of Some Local and Systemic Agents on Normal and Depressed Respiration and Irritant Efficiency of Some Agents. P. J. Hanzlik, San Francisco.—p. 463.
*Studies on Pharmacology of Sodium Citrate. I. Influence of Sodium Citrate on Respiration and Circulation. W. Salant and N. Kleitman, Augusta, Ga.—p. 481.

Chemotherapy of Acridin Dyes in Experimental Tuberculosis.—The acridin derivatives, acriflavine, proflavine, and their silver compounds, acridinium yellow, and acridin orange, Smith finds, possess a high degree of inhibition on the growth of the tubercle bacillus in vitro. These substances do not alter the pathogenicity of the tubercle bacillus when exposed to their action at 38 C. for forty-eight hours. Experiments made to determine whether the serum of animals treated with proflavine would show inhibiting or bactericidal properties for the tubercle bacillus yielded negative results. Proflavine, acriflavine and the silver compound of the latter were applied in the treatment of experimental tuberculosis in the guinea-pig and in the rabbit. No effect on the tuberculous process was noted.

Influence of Sodium Citrate on Respiration and Circulation.—The results presented by Salant and Kleitman show that sodium citrate may be both a stimulant and a depressant. Small and medium doses of sodium citrate stimulated respiration in dogs, cats and rabbits under urethane anesthesia. Such doses may cause stimulation or depression of respiration in dogs anesthetized with chloretone. Small and medium doses given to dogs, when morphin-ether narcosis was employed, were without any effect on respiration in some experiments, while in others the action was the same as under chloretone anesthesia. Respiration was depressed or paralyzed by large doses of citrate even when injected slowly into the circulation, and by medium doses when repeated at short intervals. Transitory acceleration of respiration occurred when large doses of citrate were injected intramuscularly in unanesthetized animals; also when injected subcutaneously into decerebrated and into unanesthetized animals. Respiration was only slightly accelerated or was slowed by citrate given after double vagotomy. Small and medium doses of citrate were without effect or produced only a slight fall of blood pressure in dogs under chloretone or urethane anesthesia. A fall or a rise of blood pressure may occur when citrate is given to dogs under morphin-ether narcosis. Small and medium doses of citrate given intravenously to cats under urethane anesthesia produced a fall of blood pressure of from 30 to 60 per cent.

Journal of Radiology, Omaha

January, 1923, **4**, No. 1

Bone Cysts (Ostitis Fibrosa): Variety—Polycystic Ostitis Fibrosa. J. C. Bloodgood, Baltimore.—p. 1.
Principles of Stereovision. J. B. Wantz, Chicago.—p. 9.
Weight Development in White Rats as Influenced by Roentgen-Ray Exposure. S. E. Sanderson, Detroit.—p. 13.
Problem of High Potential Measurement as Associated with Deep Therapy at High Voltages. F. Rieber, San Francisco.—p. 15.

Kansas Medical Society Journal, Topeka

January, 1923, **23**, No. 1

Organic vs. Functional Disease. G. E. Paine, Hutchinson.—p. 1.
Visual Field in Functional Nerve Diseases. H. L. Scales, Hutchinson.—p. 2.
Kahn Precipitation Test for Syphilis. W. Levin.—p. 4.
Heredity. T. A. Stevens, Caney.—p. 6.
Focal Infections. B. P. Smith, Neodesha.—p. 9.

Maine Medical Association Journal, Portland

January, 1923, **13**, No. 6

Treatment of Essential Hypertension. M. C. Webber, Portland.—p. 147.
Surgical Strategy as an Adjunct to Local Anesthesia in Abdominal Surgery. R. E. Farr, Minneapolis.—p. 156.

Military Surgeon, Washington, D. C.

January, 1923, **52**, No. 1

Safety in Aviation. W. H. Wilmer.—p. 1.
Progress in Aviation Medicine During 1921. L. H. Bauer.—p. 9.
Further Observations on Cardiovascular Physical Fitness Test. E. C. Schneider.—p. 18.
Oxygen Exhaustion of Blood as Factor in Flight Limitations. C. W. Greene and C. H. Greene.—p. 28.
Experimental Analysis of Cause of Occasional Fainting and Collapse in Official Air Service Test. C. W. Greene and N. C. Gilbert.—p. 31.
Eye in Aviation—Some Experience in Work of Department of Ophthalmology, Medical Research Laboratory, Third Aviation Instruction Center, A. E. F., France. C. Berens, Jr.—p. 35.
Aviation Problems in Navy. V. S. Armstrong.—p. 49.
Selection of Aviation Personnel. P. O. Northington.—p. 53.
Medical Aspects of Naval Gas Warfare. G. H. Mankin.—p. 60.
Medicine in Revolt of Sixteenth Century—Historical Sketch. H. M. Brown.—p. 65.
I. Determination of Specific Preventive Immune Bodies Produced in Blood as Result of Preventive Typhoid and Paratyphoid B Inoculations. II. Notes on Relation Between Preventive Inoculations and Status Lymphaticus. B. Tanabe.—p. 83.
Reminiscence of Battle of Borodino. W. W. Keen.—p. 97.
Fleet Surgeon—Some Thoughts on His Official Relationship and Opportunities for Useful Service. W. H. Bell.—p. 98.

New Jersey Medical Society Journal, Orange

January, 1923, **20**, No. 1

Present Status of Diabetic Treatment. F. M. Allen, Morristown.—p 1.
Foreign Bodies in Air and Food Passages. H. B. Orton, Newark.—p. 15.
Reasons for New Higher Voltage Shorter Wave Length Roentgenotherapy. J. T. Stevens, Montclair.—p. 19.
Subacute Bacterial Endocarditis in a Boy Fifteen Years Old. F. C. Johnson, New Brunswick.—p. 23.

Oklahoma State Medical Association Journal, Muskogee

January, 1923, **16**, No. 1

Appendicitis and Appendiceal Colic. R. D. Long, Oklahoma City.—p. 1.
Acute Appendicitis. A. S. Risser, Blackwell, Okla.—p. 5.
Acute Appendicitis in Children. M. E. Stout, Oklahoma City.—p. 11.
Cardiospasm. J. C. Braswell, Tulsa.—p. 15.
Bone Manifestations in Early Syphilis. C. B. Taylor, Oklahoma City.—p. 17.
Case of Foreign Body (Chewing Gum) in Bladder—Removed by Lithotrite. J. C. Mraz, Oklahoma City.—p. 23.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Jan. 20, 1923, **1**, No. 3238

Practical Difficulties in Obstetrics and Gynecology. C. Berkeley.—p. 89.
Diagnosis of Indefinite Masses in Breast. D. C. L. Fitzwilliams.—p. 94.
Minor Traumatic Disabilities of Upper Limb. P. J. Verrall.—p. 97.
Dosage of Radium. D. Turner.—p. 100.
*Function of Suprarenal Glands and Relation to Concentration of Hydrogen-Ions. R. McCarrison.—p. 101.
*Embolism of Right Brachial Artery as Complication of Lobar Pneumonia. A. H. D. Smith.—p. 103.
*Blood as Guide to Early Diagnosis in Lead Poisoning. R. Craik. —p. 103.

State of Suprarenal Glands in Inanition.—The observations recorded by McCarrison are said to provide evidence that: (*a*) the enlargement—with increased epinephrin content—of the suprarenal glands in inanition and in avitaminosis may be correlated with the acidosis which is associated with these states. Its occurrence during the terminal phases of avitaminosis, its association with marked respiratory disturbances, with falling body temperature, and with interference with oxygenation, and its rapid disappearance on the provision of the missing vitamins, suggest that it is an emergency effort on the part of the suprarenal glands. (*b*) The attempted exercises of emergency function by the suprarenal glands may be expected to occur in all conditions of alkalosis or of acidosis.

Embolism of Right Brachial Artery as Complication of Lobar Pneumonia.—The crisis in Smith's case came on the ninth day. Convalescence was uneventful until the fourth day, when symptoms of acute tuberculous infection of the right lung were manifested. About ten days later, during the night, the patient was seized with very acute pain in the right arm. Examination of that arm showed no apparent difference from the other. There was, however, severe pain with paresis of the muscles. The hyperesthesia extended from the wrist to the shoulder. There was almost complete anesthesia in the tips of the thumb and fingers. The right radial pulse was absent both to the finger and to the stethoscope. Following the course of the radial upward no pulsation could be felt in the antecubital fossa. At the level of the posterior wall of the axilla, in the line of the vessel, a very tender lump about the size of a small hazelnut could be felt. Above this level the vessel could be felt pulsating strongly. The radial pulse in the left side was present and bounding in type. The appearance of the arm did not change. The patient was profoundly intoxicated, delirium became marked, and night sweats became very heavy. The cough was lessened, but the physical signs in the lung were still those of acute phthisis. In a few days definite signs of endocarditis were present. The diagnosis was septic endocarditis following lobar pneumonia, with embolism of the brachial artery as a complication.

Blood as Guide to Early Diagnosis in Lead Poisoning.—In the absence of serious anemia, Craik says that punctate basophilia is more likely to be caused by lead than by anything else. Basophilia is pathologic, and demands investigation. So long as it is present something is acting injuriously on the marrow; if this is lead, the urine will contain a trace of the metal even in the absence of other symptoms. Craik suggests that a diagnosis of lead poisoning should depend, not on gross signs but on appreciation of suspicious symptoms and on an investigation of the blood and urine.

Jan. 27, 1923, **1**, No. 3239

Some Problems of Prostatectomy. J. T. Walker.—p. 133.
Surgical Treatment in Cases of Pulmonary Tuberculosis. H. M. Davies.—p. 138.
Damaged Lungs and Bronchiectasis. C. Riviere.—p. 141.
*Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection. H. Turner.—p. 142.
Treatment by Diathermy. W. J. Turrell.—p. 143.
The Posthippocratic Schools of Medicine. R. O. Moon.—p. 145.

Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection.—In November, 1919, Turner's patient developed typhoid. In February, 1920, he began to suffer from pains in the back. In December, 1920, he went through an attack of recurrent fever. He began to lose power in his legs in March, 1921. Standing or walking were impossible. There were distinct signs of partial spinal cord compression in the form of ankle and patella clonus; Babinski signs; rigidity of muscles and weakness of the lower limbs; loss of sense of position in the toes; hyperalgesia at the level of the seventh to eighth dorsal segments, and hyperesthesia of all kinds below; ataxic paresis of the lower limbs; no disturbance of the bladder or rectum. Examination of the spine showed an ill defined swelling between the shoulder blades between the fifth and seventh dorsal spinous processes. The integument in the same region was edematous and reddened. Fluctuation was distinct. Palpation of the spine inflicted great pain, especially in the lateral parts of the vertebrae. On opening the abscess, slightly odorous grey-green pus was found, from which a pure culture of typhoid bacillus was obtained. The cavity of the abscess was located to the right of the spinous processes, and led deeply toward the corresponding laminae. The subsequent course of the case was favorable, although the spinal cord symptoms subsided very slowly. Turner asserts that this is the only positive case of typhoid spondylitis complicated by suppuration.

Journal of Tropical Medicine and Hygiene, London

Jan. 1, 1923, **26**, No. 1

Castellani's Bronchomoniliasis; Report of Case with Pneumonic Onset and Peculiar Clinical Course. N. Farah.—p. 1.
Preliminary Training for Colonial Medical Services. E. P. Minett. —p. 5.
Case of Combined Pellagra and Beriberi. R. W. Mendelson.—p. 6.
*Treatment of Leprosy by Intravenous Injection of Chaulmoogra Oil. P. Harper.—p. 7.

Jan. 15, 1923, **26**, No. 2

Tonsillomycoses. A. Castellani, M. Douglas and T. Thomson.—p. 19.
Researches on Rickettsias and Etiology of Typhus Fever. J. De Sousa and A. Guimaraes.—p. 24.
Dengue vs. Malaria. R. E. Ingrim-Johnson.—p. 27.

Treatment of Leprosy by Injection of Chaulmoogra Oil.—Altogether 265 cases of leprosy at Makogai (Fiji) are, or have been, under treatment by the intravenous injection of chaulmoogra oil for periods of from a few weeks to two years. Forty thousand intravenous injections of the oil have been given without any serious mishap. The results reported by Harper are: dead, 11 patients, of whom 5 were very aged; improved, 28, including 15 discharged from the asylum; unchanged, 195; worse, 31. Of other attempts at specific treatment, Harper says: Intravenous injection of tartar emetic is useless for leprosy. Of four cases treated by sodium hydnocarpate, two have become worse and two have remained unchanged. Of eight cases treated by sodium morrhuate, none showed any improvement and one became worse. Moogrol was used intravenously and intramuscularly on ten patients, of whom four became worse and six remained unchanged. Harper is now trying tuberculin. So far he believes it to be useless, as no patient has yet shown signs of improvement. Harper's conclusion is that treatment by intravenous injection of chaulmoogra oil is of value in early cases, and is preferable to treatment by sodium gynocardate, sodium hydnocarpate, or sodium morrhuate. The moogrol brand of ethyl esters of chaulmoogra oil is too painful for intramuscular use, but is much more easily borne intravenously (in doses of 10 minims daily) than the crude oil. Whether the esters are as potent for good as the crude oil is not yet certain. He gives from 5 to 10 minims of the crude chaulmoogra oil, sterilized by heat, without the addition of any other drugs, daily, except Sunday, for three weeks at a time; this is followed by a rest for two weeks. Iritis, laryngitis and acute tuberculosis are indications for caution.

Lancet, London

Jan. 20, 1923, **1**, No. 5186

*Achlorhydria: Its Relation to Pernicious Anemia and Other Diseases. A. F. Hurst.—p. 111.
Deep Roentgen-Ray Therapy. W. Pilger.—p. 115.
Results of Deep Roentgen-Ray Therapy. R. Morton and H. B. Lee. —p. 117.
*Atavistic Degenerative Diathesis of Tuberculosis. W. C. Rivers. —p. 120.
*Wassermann and Flocculation Tests Compared. A. L. Urquhart. —p. 125.

*Syphilis Transmitted to Third Generation. C. F. T. East.—p. 128.
Technic of Spinal Analgesia for Laparotomy. S. A. Lane.—p. 123.

Relation of Achlorhydria to Pernicious Anemia.—From observations of cases, Hurst says, it is obvious, that anemia does not cause achlorhydria. The achlorhydria is present when the anemia is not. The achlorhydria is not of specific type, but, whatever its origin, it predisposes to the development of pernicious anemia. The history in most cases points to the achlorhydria being of primary or constitutional form. This is undoubtedly the inherited factor in the cases of familial pernicious anemia which have been recorded with increasing frequency in the last few years. In one of Hurst's cases the achlorhydria was due to alcoholic gastritis, in another it resulted from gastro-enterostomy for ulcer, and—conclusive proof that the achlorhydria is primary and not secondary—in at least five cases, pernicious anemia followed artificial achylia produced by total gastrectomy for cancer.

Atavistic Degenerative Diathesis of Tuberculosis.—Rivers believes that the so-called stigmata of tuberculous predisposition are nothing but signs of an already present infection. In Rivers' opinion, atavistic reversion to a primitive susceptibility to tuberculosis (seen in uncivilized races) needs mention, while race mixture can hardly be held universally responsible for tuberculous predisposition. Of 175 juvenile consumptives, twenty-two showed either squint, ichthyosis, red hair or persistent lanugo. In these twenty-two there was one miscegenate (mixed race) to every seven; but in the remainder only one miscegenate to every seventeen.

Wassermann and Flocculation Tests Compared.—Urquhart contends that the flocculation test gives as reliable results as the Wassermann reaction; and that the flocculation test is preferable on account of its greater simplicity.

Transmission of Syphilis to Third Generation.—The case described by East is said strongly to support evidence that congenital syphilis can be transmitted to the second generation. A young woman, aged 23, had syphilitic iritis. The Wassermann reaction in her blood was strongly positive. The father showed no trace of syphilitic lesion; nor was there anything in his history to suggest that he had ever had syphilis. His Wassermann reaction was negative. The patient's mother said that she had never had a miscarriage. The cornea of her left eye had unmistakable scars of an old interstitial keratitis. She had an external strabismus in this eye. In other respects her eyes were normal. Her teeth were typically hutchinsonian. The arch of the palate was high. The Wassermann reaction was strongly positive. She was an only child; her father had been a soldier on foreign service, who died of "senile decay" at the age of 71. East says that one may suspect that the soldier grandfather, who had seen much foreign service, originally introduced the syphilis into the family.

Jan. 27, 1923, **1**, No. 5187

Need for Research in Framing Tuberculosis Schemes. S. L. Cummins.—p. 165.
Relationship of Medicine and Toxicology. W. Willcox.—p. 167.
*Diastase in Blood and Urine as Measure of Renal Efficiency. G. A. Harrison and R. D. Lawrence.—p. 169.
*Glucose Tolerance in Chronic Arthritis and Allied Conditions. G. L. K. Pringle and S. Miller.—p. 171.
Asthma in Childhood. A. D. Fordyce.—p. 175.
Indications and Results of Myomectomy for Uterine Fibroids. A. E. Giles.—p. 178.
*Survival of a Premature Infant Under Artificial Feeding. P. T. O'Farrell.—p. 181.
Postoperative Mania. W. J. Tyson.—p. 182.
Unusual Case of Drug Susceptibility. H. H. Mills.—p. 182.

Results of Blood Diastase Tests.—The blood diastase of twenty-four healthy active persons was investigated by Harrison and Lawrence. It varied between 3 and 7 units, with a mean of 4.4. The index of twenty-three convalescent hospital patients, confined to bed for the greater part of the day (excluding diabetics and cases recovering from diseases of the pancreas, liver, or kidney), varied between 3 and 10 units, with a mean of 6.5. A blood diastase above 10 or below 3 may, therefore, be regarded as abnormal. The results of tests in forty-three cases of kidney disease showed, in comparison with the urea and other tests of renal efficiency, that diastase retention only occurs when at least three quarters of the total kidney substance has been thrown out of action. In one case the diastase tests failed to reveal very extensive renal damage. The patient died from uremia twenty-four hours after prostatectomy. His diastase in both blood and urine was normal, but the urea concentration test gave 1.55 per cent. While estimations of diastase in both blood and urine are of value in confirmation of other renal efficiency tests, the authors would not rely on an estimation confined to the urine.

Glucose Tolerance in Arthritis.—In general, the findings of Pemberton have been corroborated by Pringle and Miller. A lowered glucose tolerance was found in a large proportion of cases of arthritis and muscular fibrositis. This lowered tolerance was specially marked in the great majority of the severe infective cases as well as in the cases of periarticular and muscular fibrositis. The degree of intolerance was roughly proportional to the activity of the arthritic process. The glucose toleration reaction tended to return to normal with convalescence and recovery. The return to normal, was usually most rapid when the infective foci were removed. The estimation of glucose tolerance, in conjunction with the other clinical signs and symptoms, was found to be of assistance in the classification as well as in the prognosis of cases of arthritis. It is stated that in cases with markedly low glucose tolerance, and in which the focus of infection cannot be found nor removed, the prognosis is bad.

Survival of a Premature Infant Under Artificial Feeding.—The case reported by O'Farrell is of interest because the infant weighed 35½ ounces at birth, and was born during a malarial paroxysm, and also because she progressed under artificial feeding.

South African Medical Record, Capetown

Dec. 23, 1922, **20**, No. 24

Incidence of Undulant Fever in South Africa. Is It a Menace to Urban Communities? A. Gow.—p. 475.
Pneumoperitoneum. C. F. Beyers.—p. 479.
*How to Apply Medicines to Skin. C. Pijper.—p. 483.
Case of Chronic Stenosis of Common Bile Duct Treated by Opotherapy. C. Lundie.—p. 487.

Nongreasy Base for Ointments.—The preparation used by Pijper as a basis for ointments is the "bassorin" or "cremor exsiccans" of the English Pharmaceutical Codex, the "linimentum exsiccans" of some continental codexes, which is prepared from tragacanth, 4 parts; glycerin, 2 parts, and water, 94 parts. It is never used pure, and only as a basis, for the incorporation of medicaments: zinc (up to 10 per cent.); phenol (up to 1 per cent.); salicylic acid (up to 5 per cent.); chrysarobin (up to 5 per cent.), and tar (up to 5 per cent.).

Archives Internationales de Laryngologie, Paris

November, 1922. N. S., **1**, No. 1

*Maxillary Sinusitis in the New-Born. F. J. Collet.—p. 1041.
Roentgen Study of Ear Development in the Fetus. Ferreri.—p. 1051.

Maxillary Sinusitis in the New-Born.—Collet reports a case of maxillary sinusitis in a month old baby. He was able to find only six similar cases in the literature in infants ranging in age from 3 days to 5 weeks. The prognosis is grave. Suppuration may last several months, notwithstanding repeated intervention and prolonged nasal wash. In two cases, at least, death occurred with abscess of the lung, or, as in one of his own cases, with abscess of the brain. The pathogenesis of this maxillary sinusitis is different from that of the adult. In the fetus the sinus is connected with the nasal fossa by a large orifice and its cavity is small. These make it improbable that it is due to an infection of nasal origin. Osteitis of the superior maxilla is the dominant factor. Collet considers it a general infection localized in the maxilla and consecutively in the sinus.

Archives Médicales Belges, Liége

October, 1922, **75**, No. 10

Foreign Bodies in the Digestive Tract. E. Henrard.—p. 977.
*Immediate Repair of Perineum Torn in Delivery. F. Leynen.—p. 983.
Sanitary Conditions in Eastern Europe. L. van Boeckel.—p. 987.

Immediate Repair of Perineum Torn During Delivery.—The levator ani muscles support the intrapelvic organs and protect the perineum. Leynen states that in rupture of the

perineum the levator ani muscles must be brought together and the whole muscular floor must be strengthened by methodical movements which he calls "perineal gymnastics." To bring the levator ani together, a strong catgut thread is passed around the two segments and tied. The suture of the other perineal tissues is of secondary importance. The "perineal gymnastics" consist of contraction of the sphincter of the anus. On account of the connection between this muscle and the internal segment of the levator ani, the sphincter contracts at the same time as the levator. This is easily confirmed by palpation through the vagina. This exercise is practiced after every delivery especially when the perineum is soft but not torn. The movements are made daily about twenty times during the first fifteen days. This strengthens the muscular floor of the perineum and pelvis.

Bulletin Médical, Paris

Dec. 23, 1922, **36**, No. 52

*Morbid Syndrome Due to Nervous Shock Before Sleep. A. Hanns.—p. 1051.
Nephritis Due to Bismuth. C. Simon.—p. 1052.

Nervous Spasms on Retiring.—The man of 36 suffered from spasmodic attacks of nervous jerking as soon as he lay down to sleep. Hanns studied the case for six months, but was unable to explain the spasms until a second similar case in a somewhat older man allowed him to conclude that the syndrome was due to slight disturbance in the spinal cord or brain, from fatigue, general debility or slight uremic intoxication. Under sedatives, rest and strict hygiene, the spasms disappeared completely. The reclining position seemed to be an essential factor in these *secousses nerveuses présomniques*, as he calls them.

Néoplasmes, Paris

November-December, 1922, **1**, No. 6

*Refractometric Tests with Cancer. A. Knipfer.—p. 177.
Experimental Epithelial Tumors in Mice. U. Parodi.—p. 188.

Refractometric Tests of Serum of Patients with Cancer.—Knipfer made parallel tests with Freund-Kaminer's and Abderhalden's methods. Deep treatment with roentgen rays increased the cytolytic power of cancer serum, while healthy serum sometimes lost this power. Abderhalden ferments also increased after this treatment in cancer, while they were never present in health. He hopes that this reaction to roentgen rays will improve the serologic diagnosis of cancer.

Presse Médicale, Paris

Dec. 20, 1922, **30**, No. 101

*Meningitis with Lymphocytosis. E. Apert and R. Broca.—p. 1093.
*Sulphur in External Dermatotherapy. R. Sabouraud.—p. 1094.
*Action of Chlorids on Gastric Secretion. A. Frouin.—p. 1096.

Curable Meningitis with Lymphocytosis.—Apert and Broca publish two cases of meningitis with marked lymphocytosis in the cerebrospinal fluid, and no polymorphonuclears. One case was due to *Spirochaeta icterohemorrhagiae*, the other gave negative reactions. Both children recovered completely. They point out that the lymphocytosis was too absolute for tuberculosis.

Sulphur in External Dermatotherapy.—Sabouraud reviews the uses of preparations of sulphur and concludes that they are excellent in all affections of the follicles or localized around the hair follicles.

Action of Chlorids on Gastric Secretion.—Frouin found in experiments on dogs that a salt-free diet inhibits within a short time (about eight days) completely the gastric secretion. Ingestion of salt increases the secretion, as also salt given intravenously. Yet the direct application of salt to the mucosa of the stomach gives better results. Chlorids of calcium and magnesium have the same action as sodium chlorid on the stomach secretion.

Dec. 23, 1922, **30**, No. 102

*Periarterial Sympathectomy. R. Leriche.—p. 1105.
Topography of Nerves of the Brachial Plexus. E. Olivier.—p. 1108.
*External Secretion of Pancreas in Asystolia. Garofeano.—p. 1109.
Elimination of Albumin in Chronic Nephritis. A. Hanns.—p. 1110.
*Epileptic Attacks Due to Cerebral Inhibitions. P. Hartenberg.—p. 1111.
Drugs Antagonistic to Quinidin. L. Cheinisse.—p. 1113.

Periarterial Sympathectomy.—Leriche gives the bibliography and technic of his operation. Experiments on animals cannot refute his findings since it seems that the typical changes (contraction of the artery by irritation and a subsequent vasodilation) occur only in man. The periarterial (or arterial) sympathectomy is different from Jaboulay's denudation of arteries with tearing of the nerves. Jaboulay would certainly have noticed the contraction of the artery during the operation if it had occurred with his method, as it does with Leriche's. He publishes a case of severe arteriosclerosis in which the carotid tore during the operation. Caution is therefore necessary in senile gangrene, and injections of alcohol into the arterial sheath might sometimes be preferable to block the nerve fibers. The operation causes a better peripheral circulation with elevation of arterial pressure and local temperature. It is indicated with impaired peripheral nutrition not of central nervous, vascular or blood origin. The beginning stages of chronic arthritis of peripheral joints might be improved by it, and, indirectly, the functioning of the endocrine glands might be favorably influenced. [A recent article on Leriche's periarterial sympathectomy was published in The Journal, page 173.]

Functional Value of External Secretion of Pancreas in Asystolia.—Garofeano studied the pancreatic secretion of trypsin and amylase in cases of decompensated heart. Both ferments were present in larger amounts than normal, especially when the gastric secretion was impaired.

Epileptic Attacks Due to Cerebral Inhibition.—Hartenberg attributes severe epileptic attacks to an inhibition of cortical centers, and not to excitation. He considers minor attacks and epileptic equivalents from the same point of view.

Schweizerische medizinische Wochenschrift, Basel

Dec. 21, 1922, **52**, No. 48

*Exfoliative Dermatitis. E. Wieland.—p. 1165.
Benign Albuminuria in Children. P. Lauener.—p. 1170.
Volume of Blood in Pregnant Women. E. Gueissaz and F. Wanner.—p. 1173. Cont'd.
*Injury of the Retina by the Sun. J. Strebel.—p. 1177.
Therapeutic Increase of the Blood Coagulability. P. F. Nigst.—p. 1178. Cont'n.
Folklore on Erysipelas. A. Martin.—p. 1183.

Exfoliative Dermatitis.—Wieland observed an epidemic of twelve cases of pemphigus neonatorum at the same time as twenty-one cases of pemphigus in the maternity hospital. The cases in the adults were light and the epidemic stopped after sterilization of the clothes. The infants presented all forms from an abortive pemphigus to the most severe and fatal type. In seven infants *Staphylococcus aureus* was cultivated from the blisters and from the blood in two cases.

Injury of the Retina by the Sun in Spite of Protective Glasses.—Strebel's patient observed the eclipse of the sun through deep blue glasses, and did not recover from the injury to the macula lutea. Blue glasses do not protect and should not be used.

Policlinico, Rome

Dec. 18, 1922, **29**, No. 51

*Substances with Incomplete Vitamin Action. M. Pantaleoni.—p. 1653.
Painful Cavernoma in the Lumbar Muscles. L. Cevario.—p. 1654.
*Activation of Malaria Parasites. I. di Pace.—p. 1658.
*Breeding of Oysters and Hygiene. M. Gioseffi.—p. 1660.

Substances with Incomplete Vitamin Action.—Pantaleoni investigated the action of different substances in polyneuritic pigeons and animals. He confirmed the partially curative action of ammonia, but not of its salts.

Activation of Malaria Parasites by Different Methods.—Di Pace compared the effects of different substances on the activation of latent malaria. Injections of strychnin nitrate were best. Epinephrin, pituitary extract, milk, and cold baths were a little less effective.

Hygiene in the Breeding of Oysters.—Gioseffi discusses the difficulties of hygienic supervision of oyster breeding. Local interests interfere with the requirements. He quotes an example in which the sanitary authorities had to admit for sale oysters from a port which served as a cesspool for 30,000 inhabitants. He recommends special laws.

Riforma Medica, Naples

Dec. 18, 1922, **38**, No. 51

*Intravenously Injected Gases in Peritoneal Cavity. L. Torraca.—p. 1205.
*Breathing Gymnastics in Treatment of Adenoids. P. Brisotto.—p. 1206.
Origin of Peritoneal Pseudomyxoma. S. G. Giardina.—p. 1209.
Pathogenesis of Herpes Zoster. M. G. Marinesco.—p. 1211.
Recent Literature on Thymus Hyperplasia. L. Torraca.—p. 1214.

Accumulation of Intravenously Injected Gases in the Peritoneal Cavity.—Torraca found that not only oxygen, but nitrogen and carbon dioxid injected intravenously accumulate in the peritoneal cavity. He assumes a retrograde transport of the gases through the vena cava.

Pulmonary Ventilation and Breathing Gymnastics in Adenoids.—Brisotto points to the harmful effects of the shallow mouth breathing of children suffering from adenoids. Breathing gymnastics increased the capacity of respiration very markedly, even before the adenoids were removed. It should be used in all cases of operation, because the patients need the education, which contributes much to the general welfare of the patient and to the normal development of the thorax.

Revista de Medicina y Cirugía, Havana

Dec. 25, 1922, **27**, No. 24

*Epidemic Poliomyelitis. G. Aróstegui.—p. 814.
*Eradication of Yellow Fever, Plague and Malaria. M. G. Lebredo.—p. 821.
*Synthesis of Gastric and Duodenal Ulcers. Luis Agote.—p. 836.
Abortive Treatment of Syphilis. D. Speroni.—p. 851.

Arrest of Epidemic of Acute Anterior Poliomyelitis.—Aróstegui describes a small epidemic of rudimentary or abortive cases of poliomyelitis in August at a Havana institution with 200 child inmates. Seven of the children presented symptoms in a mild form, and contacts developed headache, tremor, and a febrile meningeal reaction. In all, the symptoms spontaneously subsided when the children and their attendants were isolated. The upper air passages were systematically disinfected and the children were given sun baths two or three times a day. The prompt recognition and isolation of the early cases evidently aborted the epidemic disease.

Eradication of Yellow Fever, Plague and Malaria in Latin America.—Lebredo is chief of the public health service in Cuba. He pleads for concerted and vigorous action by the Latin American nations to stamp out malaria. Plague and yellow fever are already under control. When local conditions do not allow mosquito extermination, reliance must be placed on quinin sterilization of the human hosts.

The Stomach-Gallbladder-Duodenum Syndrome.—Agote declares that the traditional separation of the medical from the surgical department conflicts with modern science. Concerted supervision by the internist and the surgeon has revealed previously unsuspected interlocking functions of the gallbladder, stomach and duodenum. He calls attention in particular to the acid-sensory syndrome with gastric ulcer. The gastric juice may not be excessively acid, but the tissues are extra sensitive; gases distend the walls, and adhesions are stretched. Vomiting relieves by evacuating the overacid or the distending contents. This clinical picture may be maintained by adhesions dragging on these viscera. The only difference is that the disturbances are less acute but more constant, with occasional sharp exacerbations and with less connection with meals. The symptoms from adhesions may include cardiospasm and other reflex actions. The roentgen-ray findings and tests of the chemistry of the stomach are of little use, but pneumoperitoneum shows up the adhesions. Whatever treatment is instituted, the adhesions must be broken up. Surgical treatment of an ulcer, regardless of its site and duration, is advocated. In laparotomies, every effort should be made to avoid unnecessary manipulation of peritoneum and viscera.

Semana Médica, Buenos Aires

Nov. 30, 1922, **2**, No. 48

*Celiac and Hypogastric Neuroses. J. Arce and C. A. Castaño.—p. 1105.
Prenatal Care. Mamerto Acuña.—p. 1111.
Visceral Cirrhosis with Hydatid Cysts. R. G. Cabred.—p. 1114.
Welfare Work for Child of School Age. J. P. Garrahan.—p. 1119.
Three Years Operative Experience with Hydatid Cysts. O. Ivanissevich.—p. 1123.
Physical Training. E. Romero Brest.—p. 1128.
Workmen's Compensation. G. Bosch Arana.—p. 1132.
Infection of Milk in Tuberculous Cows. E. Fynn.—p. 1135.
Cow's Milk for Infants under Six Months. E. Foster.—p. 1137.
Enlarged Glands in Neck in Examining Recruits. J. A. López.—p. 1140.
Vomiting as a Symptom. A. Vitón.—p. 1142.
Sacralization of Lumbar Vertebra. F. Z. Guerrini.—p. 1145.

Celiac and Hypogastric Neuroses.—Arce and Castaño assert that pathology of the sympathetic system is being recognized in many conditions hitherto ascribed to gallstones, ulcers, etc. Sympathetic tonus is determined by the balance of the endocrine organs. Hence organotherapy is indicated in the celiac and hypogastric neuroses. The complete picture of these two types of abdominal neurosis is described, with the treatment that has been found effective.

Siglo Médico, Madrid

Nov. 25, 1922, **70**, No. 3598

Radioactivity of Manzanares Waters. J. Muñoz del Castillo.—p. 509.
*Treatment of Diabetes. C. von Noorden.—p. 510.
Traumatic Gangrene: Two Cases. Carrasco.—p. 512. Conc'n.
Medical Service in Morocco Campaign. E. Slocker.—p. 515. Conc'n.

Treatment of Diabetes.—Von Noorden protests against fasting for more than forty or sixty hours at most. During the fast he keeps the patient in bed, allowing only weak tea and brandy in water, and gives a sedative. This brief period of fasting is a good preliminary to any course of treatment. In grave cases it should be repeated in two weeks at latest. A day of green vegetables is useful before the "oatmeal cure," and this should be followed by the day of fasting. Sixty hours of fasting is the most effectual means to ward off impending coma. The Allen method, he says, is unnecessarily cruel. Equally good results can be obtained with his milder regimen, without danger of debilitating the patient. The main thing is to test the tolerance in the individual cases.

Jan. 6, 1923, **71**, No. 3604

*Complement Fixation Under Vaccine Therapy. J. Codina Castellví.—p. 1. Conc'n.
Mucous Cyst in Conjunctiva. C. Jimenez Lopez et al.—p. 6.
Etiology of Gastro-Intestinal Disease of Infants. F. García Martínez.—p. 10.

Complement Fixation Under Vaccine Therapy.—Codina Castellví's tests were made on tuberculous patients under treatment with Ferran's antialpha vaccine.

Archiv für Gynäkologie, Berlin

Dec. 30, 1922, **117**.

*Transactions of German Gynecologic Congress.—pp. 1-436.

German Gynecologic Congress.—The seventeenth biennial meeting of the German Gesellschaft für Gynäkologie was held at Innsbruck, in June, 1922. The 111 communications, with discussions, are published in full. No special topics had been appointed for discussion, but radiotherapy of cancer, the Kielland forceps, Traube's color photography, and the gas interchanges in eclampsia seemed to attract most attention. The discussion of childbirth under hypnosis was particularly lively, some denouncing while others lauded it. Mansfeld reported complete amnesia in 90 per cent. of thirty cases and absolute analgesia in 50 per cent. He protests against the term "hypnosis," saying that the procedure should be called "twilight sleep by suggestion." Hallauer reported application of a very little chloroform supplemented by hypnosis or suggestion—*narko-hypnose*—in 3,000 gynecologic and obstetric cases.

Archiv für klinische Chirurgie, Berlin

Dec. 14, 1922, **121**

*Transactions of Surgical Congress.—pp. 3-311.
*Surgical General Infection. E. Lexer.—p. 315.
Experimental Bases for Disinfection of Wounds. Neufeld.—p. 326.
To Insure Antisepsis in the Depths. R. Klapp.—p. 343.
To Insure Asepsis. W. Noetzel.—p. 349.
*Examination of Blood in Surgical Affections. O. Stahl.—p. 358.
Autolysis and Regeneration of Tissues. von Gaza.—p. 378.
*Influence of Operations on Organism. W. Löhr.—p. 390.
*Technic for Thyroidectomy. E. Streissler.—p. 409.
*Valvular Control of Respiration. W. Pfanner.—p. 421.
*Operative Treatment of Pulmonary Tuberculosis. A. Brunner.—p. 482.

Trephining the Sella Turcica. F. Ochlecker.—p. 490.
*Puncture of Corpus Callosum. H. Kästner.—p. 512.
*Localized Fibrous Osteitis. G. E. Konjetzny.—p. 567.
*Technic for Suture of Bone. M. Kirschner.—p. 635.
Surgery of Carotid Gland. H. Klose.—p. 689.
Radium Treatment of Cancer of Esophagus. Kurtzahn.—p. 725.
Anatomy of Membranous Pericolitis. E. Seifert.—p. 754.
*Absorbable Tampons. H. Kümmell.—p. 764.
Pain in the Viscera. G. v. Bergmann.—p. 774.
Resolvent for Scar Structures. E. Payr.—p. 780.

Transactions of Surgical Congress.—This bulky volume of 830 pages contains the proceedings of the forty-sixth annual meeting of the Deutsche Gesellschaft für Chirurgie. It also contains twenty articles which are elaborations of short communications presented at the congress.

Surgical General Infection.—Lexer rejects the term sepsis, and insists on the necessity for discriminating between bacterial general infection and toxic general infection, and between the pyogenic, putrid and specific forms of bacterial general infection. Toxic general infection is of animal, bacterial, or tissue toxin origin. Various questions are suggested by this classification of surgical general infection: Do the toxic tissue elements act alone or with bacterial toxins to influence the course of the disturbances? Do the tissue toxins act by promoting the virulence of the bacteria, or by reducing the defensive forces? To what extent do they influence immunity reactions? He cites data already available which throw a little light on these questions. The main thing now is to separate the tissue toxins from the products of bacteria. This may reveal new bases for therapeutics.

The Differential Blood Count in Surgical Affections.—Stahl emphasizes that it is not the presence of pus that modifies the cell content of the blood, but the consequences of the presence of pus. He insists on the necessity for serial blood counts. The general trend is more instructive than single findings. Change in the blood count precedes the clinical aggravation or improvement, as he shows by nine typical cases.

Influence of Surgical Affections on the Blood.—Löhr presents evidence which confirms the profound changes in the blood serum under the influence of operations, fractures and infectious diseases. The destruction of tissue induces changes of a chemicophysical nature although the albumin content may not be modified. The speed of sedimentation of the red corpuscles is a sensitive and reliable index of them. The extent of the modification of the sedimentation indicates the extent of tissue destruction. With this extraordinarily simple and easy test we can distinguish between inflammatory and noninflammatory bone lesions, etc. The changes it reveals occur earlier and last longer than changes in the differential leukocyte count. The sedimentation test is most instructive when it is negative.

Technic for Thyroidectomy.—Streissler slits the isthmus of the thyroid on the median line and removes the necessary portions of the thyroid without molesting the capsule. By this means there is no danger of removing the parathyroid bodies, while the nourishment is insured of the portions of the thyroid that remain.

Valve Breathing.—Pfanner states that the results of experimental research, clinical experience and necropsy findings show the identity of the process in all conditions in which some valvelike mechanical obstacle impedes respiration. He analyzes the various clinical pictures involved, from goiter and foreign bodies to asthma.

Operative Treatment of Pulmonary Tuberculosis.—Brunner remarks that surgical treatment of pulmonary tuberculosis is gaining ground. In 381 cases of thoracoplasty, 35 per cent. were apparently cured by the operation. In 116 recent cases at Munich, 66 per cent. were apparently cured. The mortality was 27 per cent. in the nineteen cases in which the operation was completed at a single sitting. It was only 4 per cent. in the forty-seven with more than one sitting. In Sauerbruch's service, thoracoplasty operations in fifteen years total 500.

Puncture of the Corpus Callosum.—Kästner relates that Payr has applied this measure in twenty-four cases of congenital and seven cases of acquired hydrocephalus. Persistent improvement followed in the majority. It was applied in cases of brain tumor, epilepsy, trauma of the head, etc., to a total of 102 cases. He extols the method as a routine practice for hydrocephalus, and also for decompression in brain tumors when the tumor cannot be localized. It is absolutely contraindicated with cerebellar tumors, and with tumors near the third or fourth ventricles and aqueduct of Sylvius. With epilepsy, tentative puncture of the corpus callosum is justified after failure of other measures.

Localized Fibrous Osteitis.—Konjetzny discusses the origin and nature of solitary cysts in bones and myelogenous giant-cell sarcoma.

Suture of Bones.—Kirschner gives an illustrated description of various devices for suturing bone stumps together and reconstructing the shaft. Twenty-two cases are summarized.

Absorbable Tampons.—Kümmell's absorbable tampons have been described in these columns. He states that they are proving very useful. In his twenty cases, the catgut pad healed in place without reaction on the part of the tissues.

Deutsche medizinische Wochenschrift, Berlin

Dec. 15, 1922, **48**, No. 50

*Changes of Reactivity During Treatment. H. Königer.—p. 1669.
*Sensitiveness of Skin to Poisons. K. Zieler and H. J. Markert.—p. 1672.
*Pathogenesis of Fever. R. Greving.—p. 1673.
Heart Insufficiency and Digitalis. R. Ehrmann and L. Dinkin.—p. 1675.
Action of Cinchophen. E. Starkenstein.—p. 1677.
Blood Sugar Determination. R. Offenbacher.—p. 1677.
Typhus Fever. D. D. Pletnew.—p. 1678.
Acetic Ether in Pediculosis. Bieber.—p. 1678.
Bacterioscopic Diagnosis of Rectal Gonorrhea. A. Calmann.—p. 1678.
Ring Forceps. Pfleiderer.—p. 1678.
Modification of the Record Syringe. H. Feriz.—p. 1679.
Abnormal Labor Pains. M. Henkel.—p. 1679.
Foreign Bodies in Nose. Finder.—p. 1681.
Committee Report on Reform in Medical Examinations. J. Schwalbe.—p. 1684. Cont'd.
Beginnings of Bacteriologic Researches. C. Flügge.—p. 1685.

Changes of Reactivity During Treatment.—Königer found that the reactivity of a patient changes after antipyretics, narcotics, mechanotherapy, hydrotherapy and parenteral injections of specific and nonspecific proteins, in a regular way: After a short lowering of resistance comes a stage of increased resistance, which may last for one or two days. This phenomenon has nothing to do with specific immunity, since it occurs also in healthy subjects and vanishes comparatively soon. It is possible by keeping up in this way the nonspecific resistance to overcome the specific allergy of the patient. The action of antipyretics is not merely symptomatic; it leads indirectly to a specific immunity because of the short periods of lowered resistance when the infection flares up. He attributes such an action also to quinin in malaria, mercury in syphilis, and salicylic acid in rheumatism. Parenteral injections of proteins are superfluous since the same action may be obtained with milder means, especially with physical treatment. The most important point is in the necessary intervals, and the optimal duration of these intervals depends on the individual changes in the reactivity, the *reizbarkeitsänderung*, of the subject. Very small doses of iodin (1 mg.), are sufficient in goiters if the intervals are not less than from three to eight days.

Sensitiveness of Skin to Poisons in Tuberculosis.—Zieler and Markert found that persons without tuberculosis react to intracutaneous injections of the diphtheria and dysentery toxins and of peptone in the same way as tuberculous patients. Such reactions never flare up in these patients after a subcutaneous injection of tuberculin.

Pathogenesis of Fever.—Greving reviews the modern investigations on the subject, especially those dealing with the relation of the central nervous system to the regulation of temperature. The production of heat is localized chiefly in the abdominal organs, and not in the muscles.

Medizinische Klinik, Berlin

Dec. 10, 1922, **18**, No. 50

*Psychic Infantilism. F. Jamin.—p. 1575.
*Treatment of Permanently High Blood Pressure. Grober.—p. 1576.
*Typhus Fever. M. H. Kuczynski.—p. 1579.
*Determination of Borders of Lung and Exudates by Inspection. E. Weisz.—p. 1582.

*Anaphylaxis and Heart Failure in Diphtheria. G. Scholz.—p. 1585.
Intravenous Use of Digitalis. S. Hirsch and M. Kaiser.—p. 1586.
Operative Treatment of Abortion. Liepmann.—p. 1586. Id. Pentz.—p. 1587.
Roentgen-Ray Diagnosis of Duodenal Ulcers. G. Herrnheiser.—p. 1587.
Intravenous Injection of Concentrated Arsphenamin. J. R. Thim.—p. 1589. Conc'n No. 51, p. 1623.
Dermatomycoses. F. Pinkus.—p. 1593.
Traumatic Deformities. S. Peltesohn.—p. 1594.

Psychic Infantilism.—Jamin emphasizes the importance of exogenous factors (nutrition, infectious diseases) in the prepubertal period, as causes of inhibition of psychic evolution. The treatment is expectant; and a cautious but methodical training in adaptation to social requirements is better than rest cures.

Treatment of Permanent Hypertension by Physical Means.—Grober begins with regulation of diet. For psychologic reasons it is better to prohibit coffee and nicotin entirely. High altitudes have a beneficial effect, as well as the subtropic and tropic climate. Mild hydrotherapy is good, especially shower baths at from 30 to 32 C. on chest and back (not on the head). The use of carbon dioxid baths is still doubtful; oxygen baths may increase the pressure in neuropaths. Careful mechanotherapy and breathing gymnastics are beneficial. Periodical venesections are sometimes necessary. Some cases react very well, at least temporarily, to irradiation with blue or ultraviolet rays. General diathermy seems to give more permanent results.

Typhus Fever.—Kuczynski reports continued cultivations of a virus from guinea-pigs infected with typhus fever. He claims that this virus is identical with *Rickettsia prowazeki* and belongs to the proteus group. The Weil-Felix bacillus, *Proteus X*, is not the cause of typhus fever, but is very near this virus. Immunologic experiments performed by him and Eichholz on animals gave very good results, both prophylactic (vaccines) and therapeutic (serum).

Determination of Borders of Lung and Exudates by Inspection.—Weisz describes two interesting methods for determination of the lung area. The first consists in observation of a slight bulging of the intercostal spaces at the beginning of phonation. The patient repeats (with pauses between) the German word "kitt." Bulging is also distinct over an exudate (except in an open pneumothorax), and thus reveals the upper border of the liver in such cases. The second phenomenon was described by him twenty years ago. It consists in the formation of little pits, *grübchen*, during a quick and not too deep inspiration. The beginner should examine only narrow strips of the intercostal spaces (1 to 4 cm.), covering the rest with the hands. He explains the mechanical principles involved.

Anaphylaxis and Heart Failure in Diphtheria.—Scholz's patient, aged 31, who had been injected eight and a half years previously with diphtheria antitoxin, was treated for diphtheria with an intramuscular injection of 3,000 units of serum. Twelve days later urticaria set in, and three hours later complete collapse. No heart sounds were present. Camphorated ether revived the patient. Three hours later a new attack of urticaria was followed by weak pulse and disturbances of the sensorium. Inhalation of ether restored the patient again. Several similar attacks were stopped by inhalations of ether, and the patient finally recovered. Scholz points out the resemblance of this anaphylactic condition to the sudden death in diphtheria, and recommends the use of ether.

Zeitschrift für urologische Chirurgie, Berlin

Nov. 4, 1922, **11**, No. 3-4

*Reflex Anuria. K. Neuwirt.—p. 75.
*Urogenital Disease and Tonsillectomy. R. Picker.—p. 86.
*Hydronephrosis. P. Blatt.—p. 93.
*Nature of Hypertrophy of the Prostate. J. v. Borza.—p. 109.
*Tuberculosis of Genital Organs. R. Bachrach.—p. 114.
Hydronephrosis from Phimosis. L. Raphaelson.—p. 122.
"Vascular Complications with Hypernephroma." W. Israel.—p. 131. Reply. E. Rehn.—p. 136.

Treatment of Reflex Anuria.—Neuwirt says that the kidneys are more richly provided with nerves than almost any other organ. The splanchnics are the vasomotor nerves of the kidneys; blocking the splanchnic nerve not only arrests kidney colic but also checks reflex inhibitions. It thus puts an end to reflex anuria and oliguria. Blocking the splanchnic nerve by Kappis' technic has the same effect as severing the nerve in animals. Neuwirt applied the Kappis method in a case of recurring kidney colic and reflex oliguria, probably induced by calculi, in a man aged 54. The results sustained his theoretical assumption, the colic subsided and the urine output increased to an average of 1,800 c.c. He blocked the splanchnic nerve on both sides in this case; possibly one side alone would have sufficed.

Cure of Staphylococcus Infection of Urinary Apparatus.—In the case described, the man, aged 30, had staphylococci regularly in the urine. They were evidently eliminated through the parenchyma of both kidneys. Local treatment had been applied thirty-eight times to the kidneys without avail. Picker then removed both tonsils, and in two days the urine was clear and sterile.

Hydronephrosis.—Blatt states that hematuria was the only clinical symptom in one of the twenty cases he has been studying. Anomalies in development were evident in the majority of the cases. His experience warns that cystic dilatation of the lower end of the ureter should be promptly corrected or otherwise hydronephrosis may follow. It was intermittent in one of his three cases in this group. A connection with affections of the female genital organs was frequently manifest. With dysmenorrhea, the possibility of hydronephrosis should always be considered. The latter has sometimes been mistaken for appendicitis, gallbladder disease, and even gastric ulcer.

Nature of Hypertrophy of the Prostate.—Borza concludes from his research that so-called hypertrophy of the prostate is not hypertrophy but a tumor, an adenoma of the accessory periurethral glands.

Tuberculosis of Genital Organs.—Bachrach analyzes 70 cases of tuberculous epididymitis in which the epididymis was removed since 1902. In 20 per cent. the kidney was also tuberculous. Reexamination of 25 more than three years later showed 15 apparently cured. Two patients have died of old age without return of the tuberculosis. One man died from tuberculous peritonitis after nine years of good health, subsequent to unilateral castration and nephrectomy. Two others died from generalized tuberculosis twelve and eighteen months later. Of the 70 patients, 36 were between 20 and 40 and 15 between 50 and 60 when the genital disease developed. There was a history of gonorrhea in 16. Voelcker's technic has made removal of the seminal vesicles practicable, and this has materially improved the prognosis with genital tuberculosis. In conclusion, Bachrach reports the case of a man of 35 who had had a series of operations on the genital organs for tuberculosis. The symptoms indicating endocrine insufficiency subsided after a testicle graft and removal of the left seminal vesicle.

Zentralblatt für Chirurgie, Leipzig

Dec. 23, 1922, **49**, No. 51

*Spastic Ileus and Lumbar Anesthesia. A. Mayer.—p. 1882.
*Early Detection of Cancer Recurrence. F. Franke.—p. 1885.
Diagnosis of Loss of Femoral Nerve Function. Schmidt.—p. 1886.
Operation for Fistula of Gallbladder. A. Hildebrandt.—p. 1887.
Mixed Tumor of Parotid Gland, with Bone Metastasis. M. Budde.—p. 1888.
*Deutschländer's Tumors of the Metatarsus. H. Blencke.—p. 1889.
Comment on "Prostatectomia Mediana." G. Neugebauer.—p. 1892.
Modification of Deschamps' Needle for Ligation of Blood Vessels. L. v. Czirer.—p. 1894.
Operative Method for Perforated Gastroduodenal Ulcer. H. Zoepffel.—p. 1895.

Spastic Ileus Subsides Under Intraspinal Anesthesia.—Mayer points out what seems to him a close connection between spastic ileus and lumbar anesthesia. In two cases, several days after a gynecologic laparotomy, ileus-like symptoms appeared suddenly, with meteorism, vomiting and painful stiffening of the intestines. Various means to restore intestinal function proved unavailing. Mayer decided to reopen the abdomen under renewed lumbar anesthesia. Immediately after the intraspinal injection of the procain-epinephrin mixture, the patient passed flatus and a copious stool. The operation was not performed, and the patient promptly recovered

without further complications. He is convinced that intestinal spasm was present and, furthermore, that it was dispelled by the lumbar anesthesia. Whether the anesthesia dispelled the intestinal spasm directly, or merely stimulated peristalsis, did not appear clearly. Mayer emphasizes that this treatment would of course be valueless in ileus of mechanical origin—it might even be dangerous.

Method of Recognizing Beginnings of Cancer Recurrence.—Franke recommends his method for the early recognition of beginnings of cancer recurrence in the region of a tumor operated on. It consists in rubbing the finger several times in succession across the suspected region, but not pressing so hard as to cause pain. Though previously neither the eye nor the palpating finger has discovered anything abnormal, this will often reveal small nodules in the skin. They appear as small whitish, papular elevations which turn red spontaneously or as the skin is stroked; sometimes they are of a deeper red, resembling urticarial spots. The redness continues for from five to ten minutes—sometimes even longer. Franke thinks this phenomenon is due to the fact that the cancer cells secrete a poison that has an irritating effect on the surrounding tissues—especially the blood vessels and the nerves. This irritation may be of the same nature as that noted at the border of a cancer and the healthy tissue, which manifests itself in the form of inflammatory changes in the connective tissue. Franke recommends that patients who have been operated on for cancer be requested to present themselves at definite short intervals, in order that they may be examined for this irritation phenomenon.

Metatarsophalangeal Arthritis Deformans.—Blencke reports some cases of an inflammatory process in the metatarsophalangeal joints, especially of the great toe, which he has observed recently in about twenty young girls. The inflammation was associated with deforming changes in the bone. He ascribes the condition to the wearing of low shoes with high heels. The almost perpendicular slope of the metatarsal bones resulting from high heels throws an abnormal weight on the heads of the metatarsal bones and on the first phalanx of the great toe, as he illustrates by a roentgenogram of a foot in a high-heeled shoe. Arthritis deformans of the first phalanx of the great toe may be due to such overweighting. A second roentgenogram illustrates one of the typical cases of deformative inflammation in a girl, aged 18. He discusses in connection with it Deutschländer's tumors of the metatarsus.

Casopsis Lekaruv Ceskych, Prague

Dec. 16, 1922, **61**, No. 50

Treatment of Parkinsonian Syndromes with Large Doses of Sodium Cacodylate. K. Henner.—p. 1196. Cont'n.
Treatment of Abortion. E. Haim and M. Zahradnik.—p. 1200.
Psammoma of the Spinal Dura Mater. Niederle.—p. 1203.

Acta Medica Scandinavica, Stockholm

Nov. 29, 1922, **57**, No. 2-3

*Chlorin in Blood and Tissues. P. Iversen and H. Hansborg.—p. 95.
Cancer in Ulcer and Ulcerated Cancer Simulating Round Ulcer. E. Dahl-Iversen.—p. 134.
*Red Corpuscles and Their Variations. E. J. Rud.—p. 142. Conc'n No. 4.
*Slight Glycosurias. J. E. Holst.—p. 188.
*Polycythemia Rubra. H. Curschmann.—p. 228.
*Undernutrition and Endocrine Disturbances. H. Curschmann.—p. 240.
Syringomyelia Simulating a Spinal Tumor. T. Stenholm.—p. 247.
*Seasonal Variation of Weight of the Tuberculous. Strandgaard.—p. 275.

Distribution of Chlorin in Blood and Tissues After Injection of Sodium Chlorid.—Iversen and Hansborg studied in rabbits the distribution of intravenous infusions of 10 per cent. salt solution. They found that the sodium chlorid is deposited in the tissues so rapidly that one circulation may be sufficient to reestablish the equilibrium of chlorin between the blood and tissues. About 8 per cent. of the injected amount remains in the blood, even after seventy minutes. In thyroidectomized animals, more salt is retained in the tissues after the infusion. In normal animals more salt is found in the blood after the injection than would correspond to its water content. In thyroidectomized animals the opposite is true. There were indications that the kidneys influence salt retention in the tissues. Ligature of one or both kidneys after the injection is followed by increased flow from the tissues into the blood just as after injections of epinephrin or pituitary extract.

Red Corpuscles and Their Variations.—Rud surveys the literature and gives his findings in 69 adults and 49 children. Average errors were about 2 per cent. He found in male adults an average of 5,330,000 erythrocytes (maximum 5,900,000, minimum 4,370,000). In adult women the average was 4,830,000 (maximum 5,390,000; minimum 4,300,000). Old persons have slightly lower figures than the young. The newborn averaged 5,680,000 (maximum 6,590,000 and minimum 4,470,000); nurslings 5,110,000; children between 1 and 14 years, 4,360,000, without influence by sex.

Slight Glycosuria.—Holst describes seventeen cases of moderate glycosuria. Some are of the diabetic, some of the renal type, and seven cases are considered as being on the border line between them. The two latter groups are benign.

Polycythemia Rubra.—Curschmann describes two cases of a familial polycythemia rubra. The spleen was distinctly enlarged in the first case. The cases began in early childhood, and remained almost stationary. While pointing to an unquestionable constitutional factor, he does not admit the assumption of endocrine disturbances in the pathogenesis of the disease.

Undernutrition and Endocrine Disturbances.—Curschmann admits thyroid changes in edema from undernutrition, but emphasizes also the differences (especially in the concentration of serum) from hypothyroidism. Undernutrition seems to cause increased gastric hyperacidity in people who are inclined to it, while it may cause achylia in others. Diabetes as well as exophthalmic goiter occurred less frequently during the war. Therapeutic possibilities of undernutrition in exophthalmic goiter are discussed, although not yet recommended.

Seasonal Variation in Weight of Tuberculous Patients.—Strandgaard studied the variations in the average weekly gain of patients in five Danish sanatoriums. He found a remarkable coincidence of these changes in different sanatoriums, distinct when weeks were compared, and striking in the comparison of months. Atmospheric influences seem to be the cause. The maximum gain was in September. This was followed by a rapid decline in October and November.

Hospitalstidende, Copenhagen

Jan. 3, 1923, **66**, No. 1

*Antethoracal Esophagoplasty. Thorkild Rovsing.—p. 1.

Antethoracal Esophagus.—Rovsing has decided that there is no necessity for making the new esophagus from a segment of bowel or the stomach. These unnecessarily complicate the procedure, as a new esophagus answering every purpose can be made out of two long skin flaps turned back over a long large drainage tube. The flaps are sutured together with catgut on the median line, from neck to stomach. The skin beyond is loosened and drawn up to suture together over the whole. In the woman illustrated, Rovsing waited six weeks for the parts to heal before he united the upper stump of the esophagus to the new skin tube. Five different operations between Feb. 17 and Aug. 6, 1921, were required; then the patient was discharged in excellent condition. She eats with good appetite, has gained 26 pounds, and can be considered completely cured. Rovsing has applied the first two or three steps of the procedure in two other cases still under treatment. He severs the esophagus and brings the peripheral stump out through a minute incision beyond the sternocleidomastoid muscle. This does away with the pocket above the atresia in which food and secretions stagnate. Rovsing regards this as an essential improvement over other methods, all of which bury this stump.

Hygiea, Stockholm

Dec. 31, 1922, **84**, No. 24

*Obsessions and Their Treatment. P. Bjerre.—p. 1009.

Obsessions and Their Treatment.—Bjerre describes typical instances of inhibiting or impelling complexes, and discusses treatment. He says that psychanalysis in these cases has to be conducted, like a mathematical problem, until the correct equation is found.

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EPIDEMIOLOGIC SURVEY IN A CITIZEN'S MILITARY TRAINING CAMP

DIPHTHERIA CARRIERS AND SUSCEPTIBILITY; CARRIERS OF INTESTINAL DISEASES *

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In the study and the control of communicable diseases, a problem of the greatest importance is presented by the carriers of infection, and especially those carriers not known to have come in contact with the sick. Surveys made in nonepidemic periods show that a surprisingly high percentage of the inhabitants of any community harbor in their bodies bacteria of disease-producing types. These persons are true reservoirs of infection, and constitute for infectious disease its main bulwark of defense. At present we have only meager and suggestive evidence concerning the proportion of noncontact carriers in the general population, and many questions, especially those connected with their relative duration and infectivity, remain unanswered. Nearly all of the surveys of which we have record have been made for specific purposes, usually during or subsequent to epidemic conditions. There is a good reason for this, since we possess no legal means by which we may enter any community and study the carrier rate among the healthy civilian population. The difficulties to be overcome before undertaking such a task, and indeed throughout its continuance, are generally sufficient to discourage those willing to perform the necessary work.

It would seem, therefore, that whenever a practical opportunity is offered to make a systematic epidemiologic study on even a fraction of the normal population, the carrying out of such a study becomes a duty that no conscientious epidemiologist would attempt to shirk.

According to the present policy of the government, young men from every community are given the privilege of a month's military training each summer at army camps located in the various corps areas. The young men attending these camps represent a great variety of home surroundings. It might at first be assumed that they would constitute a representative sample of the whole population at their age group, but this is not unqualifiedly the case. Intimate contact with them soon reveals the fact that they belong to the strong and healthy type of young man—both in body and in mind—and the findings among them would represent something near the optimum conditions in their communities.

It is obvious, therefore, that the Citizens' Military Training Camps afford an opportunity to elicit facts of the greatest epidemiologic value, and without causing the individuals studied the slightest inconvenience. The scope and thoroughness of the investigations will depend chiefly on the training and number of the personnel available for carrying out the work. It is confidently believed that as the potential value to the army and to the country of this unique opportunity to study preventable disease is realized, ample facilities will be forthcoming. Scarcely secondary in importance is the opportunity to train reserve officers in the technic of extensive surveys, such as our laboratories were called on to make in the winters of 1917, 1918 and 1919.

Recognizing the valuable field thus offered, a beginning in such studies was made at Camp Meade this year. Plans were carefully laid beforehand so that the laboratory of the Third Corps Area, with the cooperation of several technicians from the Army Medical School, was ready to fit in the work projected without interference with the strictly military phases of the training period. The investigation included a search for virulent diphtheria bacilli in the throats of candidates presenting themselves for training, the application of the skin test for diphtheria susceptibility, and a study of the feces for ova of intestinal parasites and for members of the typhoid-paratyphoid-dysentery group of bacilli.

DIPHTHERIA BACILLUS CARRIERS

During the "processing" of applicants presenting themselves for admission to the camp, throat cultures were made from all candidates, both those accepted and those rejected being included. By "processing" is meant the series of physical examinations to which every man was subjected in order to record, so far as possible, his exact physical condition. The selection of this particular time for taking the culture was the most favorable for the purpose, since the individuals concerned had been on the reservation less than an hour, and it was scarcely possible that any of them had picked up diphtheria bacilli from other students.

In taking the cultures, the usual technic was followed: Sterile cotton swabs were applied to the tonsillar region on both sides and swept over the pharynx; the swabs were immediately rubbed over the surface of Loeffler's blood serum mixture in tubes; these cultures were transferred to the laboratory, where they were incubated and examined microscopically the next day, after being stained with Loeffler's alkaline methylene blue. In making the examination, the opinion of no single individual was considered final. Each slide

*From the Laboratory of the Third Corps Area, Camp Meade, Md., and the Laboratories of the Army Medical School, Washington, D. C.

thought to be positive was examined by two or three persons, and every culture containing bacilli even remotely resembling the diphtheria bacillus was retained for further examination. Naturally, an unusually large number of the cultures were retained by such selection; but in a survey such as this, there would have been too much chance of missing virulent diphtheria bacilli had we accepted as possibly virulent only forms identical in morphology with Wesbrook's A, C and D types.

Cultures were made from the throats of 1,080 persons. In eighty-three of these, forms were found which caused us to retain them. On reexamination, seventeen of these were dropped, thus reducing the number for further study to sixty-six. The subsequent study consisted merely of making subcultures on plates containing Loeffler's blood serum mixture and on blood agar, and attempting to isolate, from these, organisms of diphtheria bacillus morphology. All diphtheria bacillus-like organisms were tested for virulence by the injection of a saline suspension of one-half the twenty-four hour growth on coagulated blood serum mixture subcutaneously into two guinea-pigs. One of these guinea-pigs received approximately 500 units of diphtheria antitoxin intraperitoneally. On the death of an animal, careful necropsy was performed and characteristic subcutaneous edema with hemorrhagic suprarenals noted in every positive case. The sixty-six cultures noted above were injected in this way. The toxicity of each virulent culture was confirmed by at least two subsequent tests.

Of the sixty-six cultures tested for pathogenicity, nine were found to be virulent diphtheria bacilli. This means a carrier rate at this camp of 0.83 per cent. One other culture, not included, possessed some virulence; it killed two of the three guinea-pigs into which it was injected.

There was opportunity to make second cultures from two of the students found to be positive. The findings were confirmed in both cases; second cultures from both the nose and the throat of each man contained virulent bacilli. There were no clinical evidences of diphtheria, although both had large tonsils—one, very large. Both thought they had had diphtheria several years before, but were not certain. One was Schick negative; the other was positive. The positive reaction was a typical, clearly cut + +, the redness on the right arm occupying an area about 1½ inches by 1 inch; the left arm showed no reaction whatever.

The Schick tests were made on seven of the students found to be carrying virulent bacilli. Of these, three gave + + reactions, two gave + —, and two gave — reactions (57 per cent. negative). In the literature we have seen no previous record of carriers giving positive Schick tests. Such findings would be looked for only in incubationary carriers, but these students gave no clinical indication of the disease during their four weeks at the camp. We have no satisfactory theory to account for such a combination, and hope that the opportunity may come to investigate it further.

Diphtheria Carrier Work.—The fact that we found nearly 1 per cent. of carriers of virulent diphtheria bacilli among healthy young men between the ages of 17 and 21 is not surprising. In one of the earliest (1894) surveys made in this country, Park and Beebe [1] found 2.4 per cent. They examined 330 healthy persons in New York City. None of these persons were known to have been in contact with diphtheria; of the eight found positive, two later developed the disease. Pennington [2] found that 1.4 per cent. of well schoolchildren examined by her in Philadelphia were harboring virulent organisms in their throats. Von Scholly and Wilcox [3] examined cultures from the throats of 1,000 noncontacts, and in 1.8 per cent. found virulent diphtheria bacilli; these were chiefly tenement house children in New York City, in two of which there was a possible history of exposure. In a more recent survey made in Detroit, Goldberger, Williams and Hachtel [4] found virulent bacilli in about 0.1 per cent. of 4,093 persons. These were unselected people not known to have been in contact with diphtheria.

These figures suggest work for future training camps, the results of which might be exceedingly illuminating. At Camp Meade it was possible to take cultures only once, and the time selected was that which would to the greatest extent eliminate the influence of camp conditions. Notwithstanding the fact that nearly 1 per cent. had diphtheria bacilli in their throats, no case of the disease developed. Does this mean that there was no transfer of virulent bacilli, or is there another explanation for the freedom from this disease of the 55 per cent. of Schick positive persons? The infectious agents were certainly not lacking, and according to our tests there was an ample amount of favorable soil. It would seem that the mechanism of defense of healthy mucous membranes is sufficient to prevent the production of the clinical disease, and that possibly another factor must be active since diphtheria has its highest incidence during those times of the year when common colds are most prevalent. It will be interesting at subsequent camps to make cultures a second time, or better at weekly intervals, in order to learn among other things whether or not the carriers are temporary or chronic, and to follow the distribution of virulent bacilli to the throats of other persons.

TESTS FOR SUSCEPTIBILITY TO DIPHTHERIA

The personnel available for the work was not sufficient to permit the injection of candidates at the time of "processing." It was therefore necessary to make the injection and subsequent examinations at times when those responsible for the military training would not be inconvenienced. For this reason, Schick tests could be made on only 833 persons.

Technic of Injections.—The Schick test material prepared by the laboratories of the New York City health board was diluted immediately before proceeding to the building where the injections were to be made. The toxin, contained in capillary tubes, was forced into sterile saline solution, the tubes being rinsed several times. Duplicate dilutions were made with the same lot of toxin and heated in a water bath at 75 C. for five minutes. The amount of the diluted toxin injected was 0.2 c.c. and, according to the directions accompanying the packages, this represented one-fiftieth minimal lethal dose for a 250 gram guinea-pig. The syringes used for the injections were of the all-glass, tuberculin type. In preparation for the injection, the flexor surface of the forearm just below the bend of the elbow was rubbed with gauze saturated with a mixture of

1. Park and Beebe: Diphtheria and Pseudo-Diphtheria, M. Rec. **46**: 387-401, 1894.

2. Pennington, Mary E.: The Virulence of Diphtheria Organisms in the Throats of Well School Children and Diphtheria Convalescents, J. Infect. Dis. **4**: 36-50, 1907.

3. Von Sholly, Anna I., and Wilcox, Harriet L.: A Contribution to the Statistics on the Presence of Diphtheria Bacilli in Apparently Normal Throats, J. Infect. Dis. **4**: 337-346, 1907.

4. Goldberger, Williams and Hachtel: Report of an Investigation of Diphtheria Carriers, Bull. 101, Hyg. Lab., U. S. P. H. S., 1915, pp. 29-41.

equal parts of acetone and alcohol. The injections were made into the layers of the skin, a distinct bleb being produced in every case. Readings were made two days and seven days after the injections. The results were recorded as suggested by McGuire, Linthicum, Schirch and Nourse:[5]

Recording Results: The method of reading was that followed by Park and his co-workers. For the sake of brevity and convenience in entering results, we adopted the following symbols: ++, positive reactions; +, positive-combined reaction; +—, pseudonegative reaction; —, negative reaction.

The literature describes fully the positive, pseudonegative and negative reactions, but gives little concerning the positive-combined reaction, first noted by Park. This reaction consists of a pseudoreaction on the control side, with a positive reaction superimposed on a pseudoreaction on the test side. Some difficulty is encountered in distinguishing these two reactions at forty-eight hours, but with a little experience they may be easily differentiated at a later reading. The positive and positive-combined reactions indicate susceptibility, while the pseudonegative and negative reactions indicate immunity to diphtheria.

It is to be remembered that these symbols denote merely the type of reaction and do not indicate its severity; for instance, ++ does not mean a reaction approximately double the intensity of that of +, but that in the former case the reaction was not complicated by a pseudo-element, while in the latter a positive reaction was superimposed upon a pseudo-reaction. Thus, ++ and + indicate absence of antitoxic immunity, while +— and — indicate the presence of antitoxic immunity. Table 1 gives a summary of the results of the tests according to organization.

TABLE 1.—RESULTS OF SCHICK TESTS IN THE VARIOUS ORGANIZATIONS

Organizations	Reactions				Susceptible		Immune		Total
	++	+	+—	—	No.	%	No.	%	
Co. A, Inf.	32	8	17	19	40	53	36	47	76
Co. B, Inf.	29	14	22	20	43	50	42	50	85
Co. C, Inf.	29	9	12	29	38	48	41	52	79
Co. D, Inf.	36	12	13	28	48	54	41	46	89
Co. E, Inf.	8	3	6	7	11	46	13	54	24
Co. F, Inf.	39	10	5	28	49	59	33	41	82
Co. G, Inf.	21	6	7	14	27	56	21	44	48
Co. H, Inf.	48	13	4	39	61	59	43	41	104
Troop B, Cav.	15	3	7	7	18	56	14	44	32
Bat. A, Art.	30	9	4	16	39	68	20	32	59
Bat. B, Art.	20	7	2	14	27	66	16	34	43
Bat. C, Art.	31	5	4	19	36	61	23	39	59
Med. Co. No. 1	13	3	1	36	16	30	37	70	53
Totals	351	102	104	276	453	55	380	45	833

The high percentage of susceptibles found in this series—55 per cent.—is surprising. According to the findings of others, the percentage of susceptible persons between the ages of 17 and 21 should not have been above 20 to 30 per cent. It will be noted that Medical Company No. 1 actually did show 30 per cent. susceptible. For the marked difference, we have not been able to find an explanation. The injections were made simultaneously with those of other companies and although the men were living in separate barracks, surrounding conditions and type of work were not sufficiently different to influence the results.

We have carefully reviewed our work in an attempt to learn whether or not the high percentage of positive results obtained might be due to a fault of some kind. We believe that proper technic was used and that the reactions were in practically every case so cleanly cut that there could be no discussion with regard to the results; sometimes two, usually three persons read the reactions together. The strength of the toxin used was questioned. If possibly there had been in the capillary tubes a much larger amount of toxin, or if that present had been especially high in potency, the dose injected might have been not one-fiftieth minimal lethal dose, but one-thirtieth or even one-twentieth. In order to eliminate such a possibility, duplicate sample packages were submitted to the Hygienic Laboratory of the U. S. Public Health Service for test, and it was reported by Dr. McCoy that instead of being too strong, the product was approximately 15 per cent. low in potency.

We are therefore inclined to believe that, of the young men tested, 55 per cent. possessed no immunity to diphtheria detectable by the Schick test.

In view of the statements frequently made that persons in large cities are more likely to be immune to diphtheria than those from country districts, we thought it would be interesting to analyze our results on the basis of their residence, with regard both to the state and to the size of the community in which they lived; the analysis was extended to include age groups. The results of this analysis are shown in Table 2.

This is the well-known dichotomous chart, and gives all the information needed, we believe, for a thorough analysis of the results. From left to right the totals for each of the states from which the personnel at Camp Meade was derived are divided according to the size of the community, rural being less than 2,500. A rural community is generally considered to be one in which such sanitary arrangements as sewage disposal and controlled water supply are lacking. Communities between 2,500 and 10,000 are likely still to be of the rural type from the standpoint of sanitation. Those above 10,000 are frequently as well equipped as are cities of 100,000 and over.

At the bottom are shown the totals for the communities of these sizes. In the columns, the results are grouped according to ages. A very few boys less than 17 years of age found their way into the camp, but the proportion is insignificant. In the 20 and more group, about 10 per cent. were above 20 years of age. These were spread over so many different ages, however, that it was not thought worth while to make special note of them. The number of individuals showing reactions of the various types are recorded, as well as are the total number of positives, that is, those showing ++ and + reactions, and the total number of negatives—those showing +— and — reactions, together with the percentages of those susceptible and those immune in each group.

At the right are given the totals for all ages analyzed with regard to types of reaction, and numbers and percentages of those susceptible and those immune.

At the lower right hand corner are the grand totals, the bottom line showing, as is noted in Table 1, that 55 per cent. were susceptible and 45 per cent. immune as indicated by the Schick test.

The figures in most instances are so low that the differences have no conclusive significance. The total number here is less than that in Table 1 for the reason that in every instance in which complete data were unavailable, the individual concerned was dropped. Although the figures are small, it is impossible not to call attention to the differences in susceptibility of persons living in rural Pennsylvania and those living in rural Virginia, the proportion of those immune in Virginia being constantly much higher than in Pennsyl-

5. McGuire, P. F.; Linthicum, E. S.; Schirch, G. J., and Nourse, J. D.: The Control and Prevention of Diphtheria in the U. S. Army Mil. Surgeon **50**: 525-533 (May) 1922.

vania. This fact is made still more interesting on examining the diphtheria rates in the two states, since it is found that the mortality rates in Pennsylvania have throughout the census period been higher than those in Virginia. The average temperature of Virginia is higher than that of Pennsylvania, which would suggest a reason for less diphtheria in Virginia; but it would not explain the great difference in the percentage of susceptible persons in the rural communities of the two states.

The form of Table 2 permits the recording of so much information in a small space that it is hoped no military importance. The results of this survey indicate that it is potentially a serious menace and one still far from final eradication.

EXAMINATION OF FECES FOR OVA OF THE INTESTINAL PARASITES

It was believed that information of interest might be revealed through a search for evidences of intestinal infestation in the particular group of men at this camp. The states represented, with the exception of Virginia, are just north of the region in which the hookworm is prevalent. In making the survey with the primary

TABLE 2.—RESIDENCE WITH REGARD TO STATE AND SIZE OF COMMUNITY, AGE GROUPS, TYPES OF REACTIONS AND PERCENTAGES OF SUSCEPTIBLE AND NONSUSCEPTIBLE PERSONS

Size of Community	Age Groups: 17 and Less								18							
	Reactions				Susceptible		Immune		Reactions				Susceptible		Immune	
	++	+	+—	—	No.	%	No.	%	++	+	+—	—	No.	%	No.	%
Pennsylvania																
Rural	24	2	2	4	26	81	6	19	13	1	2	5	14	87	7	33
2,500+	19	7	7	13	26	56	20	44	24	2	7	17	26	52	24	48
10,000+	16	7	5	10	23	61	15	39	18	6	3	9	24	67	12	33
100,000+	16	..	5	7	16	57	12	43	10	5	3	18	15	42	21	58
Total	75	16	19	34	91	63	53	37	65	14	15	49	79	55	64	45
Maryland																
Rural	6	1	2	2	7	63	4	37	5	1	1	1	6	75	2	25
2,500+	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..
10,000+	..	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..
100,000+	10	..	..	5	10	67	5	33	1	2	..	11	3	27	11	73
Total	16	1	2	7	17	65	9	35	6	3	2	13	9	38	15	62
Dist. Columbia																
100,000+	6	4	2	6	10	55	8	45	8	4	1	1	12	86	2	14
Virginia																
Rural	4	7	3	12	11	42	15	58	9	2	5	8	11	46	13	54
2,500+	1	1	2	4	2	25	6	75	5	3	1	2	8	73	3	27
10,000+	..	..	1	1	..	..	2	..	..	..	..	2	2	50	2	50
100,000+	..	2	..	1	2	67	1	33	..	..	..	1	..	..	1	..
Total	5	10	6	18	15	38	24	62	16	5	6	13	21	53	19	47
Totals																
Rural	34	10	7	18	44	60	25	31	27	4	8	14	31	59	22	41
2,500+	20	8	9	17	28	52	26	48	29	5	8	20	34	55	28	45
10,000+	16	7	6	11	23	58	17	42	20	6	4	11	26	63	15	37
100,000+	32	6	7	19	38	59	26	41	19	11	4	31	30	46	35	54
Total	102	31	29	65	133	59	94	41	95	26	24	76	121	55	100	45

Size of Community	Age Groups: 19								20 and More							
	Reactions				Susceptible		Immune		Reactions				Susceptible		Immune	
	++	+	+—	—	No.	%	No.	%	++	+	+—	—	No.	%	No.	%
Pennsylvania																
Rural	6	1	4	5	7	44	9	56	15	1	1	1	16	89	2	11
2,500+	3	3	9	12	50	12	50	12	2	2	11	14	52	13	48	
10,000+	4	6	3	8	10	48	11	52	9	4	8	7	13	47	15	53
100,000+	3	2	4	6	5	33	10	67	11	3	1	7	14	64	8	36
Total	21	13	14	28	34	45	42	55	47	10	12	26	57	60	38	40
Maryland																
Rural	3	..	..	1	3	75	1	25	4	..	1	2	4	57	3	43
2,500+	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
10,000+	1	..	..	..	1	..	..	..	..	..	..	2	..	..	2	..
100,000+	3	..	1	3	3	43	4	57	3	3	..	8	8	43	8	57
Total	8	..	1	4	8	62	5	38	7	3	1	12	10	42	13	58
Dist. Columbia																
100,000+	3	..	2	4	8	33	6	67	4	2	1	2	6	67	3	33
Virginia																
Rural	9	1	1	1	10	84	2	16	4	2	2	7	6	40	9	60
2,500+	1	..	1	..	..	..	1	..	3	..	1	4	3	38	5	62
10,000+	..	..	..	..	..	..	..	..	..	1	1	1	1	33	2	67
100,000+	1	1	..	1	8	67	1	33	..	..	..	3	..	..	3	..
Total	10	2	2	2	12	75	4	25	7	3	4	15	10	35	19	65
Totals																
Rural	18	2	5	7	20	63	12	37	23	3	4	10	26	65	14	35
2,500+	9	4	4	9	13	50	13	50	15	2	3	15	17	49	18	51
10,000+	5	3	8	11	50	11	50	9	5	9	10	14	42	19	58	
100,000+	10	3	7	14	13	38	21	62	18	8	2	20	26	54	22	46
Total	42	15	19	38	57	50	57	50	65	18	18	55	83	53	73	47

SUMMARY

Size of Community	Reactions				Susceptible		Immune	
	++	+	+—	—	No.	%	No.	%
Pennsylvania								
Rural	58	5	9	15	63	72	24	18
2,500+	63	15	19	50	78	53	69	47
10,000+	47	23	19	34	70	57	53	43
100,000+	40	10	13	38	50	50	51	50
Total	208	53	60	137	261	56	197	44
Maryland								
Rural	18	2	4	6	20	67	10	33
2,500+	1	..	..	1	1	50	1	50
10,000+	1	..	1	2	1	25	3	75
100,000+	17	5	1	27	22	44	28	56
Total	37	7	6	36	44	51	42	49
Dist. of Columbia								
100,000+	21	10	8	13	31	61	19	39

Size of Community	Reactions				Susceptible		Immune	
	++	+	+—	—	No.	%	No.	%
Virginia								
Rural	26	12	11	28	38	49	39	51
2,500+	9	4	5	10	13	46	15	54
10,000+	2	1	2	4	3	33	6	67
100,000+	1	3	..	6	4	40	6	60
Total	38	20	18	48	58	47	66	53
Totals								
Rural	102	19	24	49	121	62	73	38
2,500+	73	19	24	61	92	52	85	48
10,000+	50	24	22	40	74	54	62	46
100,000+	79	28	20	84	107	51	104	49
Total	304	90	90	234	394	55	324	45

such studies made in the future will be analyzed in an identical manner in order that the results from year to year may be added, and figures finally obtained which will have definite significance. It is realized that in comparing rural Virginia with rural Pennsylvania on the basis of the figures we have so far, it is not possible to do more than call attention to a point to be borne in mind in future studies.

With regard to the susceptibility of persons from rural districts as compared with those from cities, it is seen that a greater proportion of the city boys were immune.

There is sometimes apparent an inclination on the part of some persons to consider diphtheria a disease of object of ascertaining the number of carriers of hookworm ova, the finding of other parasites was likewise noted.

The technic used was that attributed to Barber.[6] Specimens were collected in new, clean homeopathic vials which were labeled and brought to the laboratory. Here about 5 gm. of the feces was thoroughly mixed with about 15 c.c. of saturated sodium chlorid solution containing 10 per cent. of glycerin. This mixture was allowed to stand generally from fifteen minutes to about two hours, when about 0.5 c.c. of the upper layer was transferred to a microscope slide on which had been

6. Medical War Manual No. 6, Laboratory Methods of the U. S. Army, Ed. 2, Philadelphia, 1919, p. 49.

made a large, heavy ring with a wax pencil. With the low power of the microscope, every part of the drop was examined thoroughly, a mechanical stage being used.

Specimens from 750 persons were studied. The ova found were: *Taenia solium,* 1; *Ascaris lumbricoides,* 5; *Trichuris trichiura,* 2; *Oxyuris vermicularis,* 1; hookworm, 1; total, 10, or 1.33 per cent. The single hookworm carrier was from rural Virginia. The person whose feces contained eggs of *Taenia solium* was brought to the hospital and treated. A large part of the tapeworm was recovered, but it was unfortunately thrown out before examination could be made. The chief point of interest at the outset, as already noted, was to learn how many hookworm carriers there might be among young men coming from what might be considered the border states. The finding of but one from a rural community in Virginia would be surprising were it not for the fact that the type of young man found in a military training camp is usually above the average for the community.

In such surveys it is customary to note the percentage of those who have lived in the tropics or who have had service overseas. A few of the students at Camp Meade had been in the army during the war, but their percentage was insignificant.

While numerous surveys have been made for the identification of persons harboring intestinal parasites, the only one with which we are acquainted in any way comparable with the study made by us is that of Kofoid.[7] In the survey reported by him, the findings among 126,140 men are given. These were men "who entered the army from the hookworm area, or had resided there for six months or more, or who had formerly lived in that area but emigrated to other states of the Union. . . . The data, therefore, are fairly representative of the normal population of males of military age only for states of the hookworm area and only those males of military age who in other states might have acquired the infection by reason of Southern residence."

The results reported by Kofoid among men born in the states from which those at Camp Meade were drawn are given in Table 3.

TABLE 3.—RESULTS REPORTED BY KOFOID

State of Birth	Positive		Number of Men Examined
	Per Cent.	Number	
Pennsylvania	0.3	4	1,074
Maryland	2.1	12	584
District of Columbia	1.6	2	121
Virginia	6.7	65	969

These results show a much higher infestation rate among men from the same localities. We cannot believe that differences in technic are responsible for the low rate found by us at Camp Meade. If it seemed necessary to account for our relatively low figures, we should probably call attention again to the superior type of the persons making up our group.

SEARCH FOR CARRIERS OF MEMBERS OF THE TYPHOID-PARATYPHOID-DYSENTERY GROUP

As soon as possible after the receipt of specimens of feces at the laboratory, a suspension was made in saline solution and a drop of this was streaked over the surface of culture mediums in two plates. One plate contained Endo medium, the other, lactose-litmus agar. In about half the cases these cultures were made within one hour after the collection of the specimens; in the other half, the delay was from one to five hours, so that dysentery bacilli of the Shiga type, if present, might have been lost.

The cultures were incubated at 37 C. over night and then examined in a good light, careful search being made for nonlactose fermenting colonies. The plates were then returned to the incubator, where they were kept for a second twenty-four hours and reexamined. Colonies which showed no evidence of acid formation were studied closely, and if they bore any resemblance to the organisms in question they were fished to a section of a lactose-litmus agar plate. About eight different colonies could be transplanted conveniently to a single plate. The use of a Petri dish, in this way, for the primary fishings, saves culture medium and infinite labor. The plates thus inoculated were incubated over night, and nonlactose fermenting colonies which were possibly gram-negative asporogenic bacilli were stained, fished to Russell double sugar agar, and studied further.

The few cultures deemed worthy of final identification were sent to the Army Medical School in Washington, where they were studied by Captain H. A. Davis, Medical Administrative Corps. He reported:

B 644 is a gelatin liquefier and is probably a member of the proteus group.

F 2 is an intestinal organism not fermenting lactose, and according to the classification of Graham-Smith would be placed in Group I, Subgroup d.

F 5 is of the same class and falls in Group H, Subgroup h.

I 44 is *Bacterium alkaligenes.*

39 is placed in the intestinal group as of Group H, Subgroup d.

78 is placed in the intestinal group as Group K, Subgroup b.

The result of this work is therefore that no member of the typhoid-paratyphoid-dysentery group of bacteria was isolated and identified from any of the specimens studied. It is in conformity with these findings that during the training period no clinical case of intestinal infection was reported.

SUMMARY

During the August training period at the Citizens' Military Training Camp at Camp Meade, Md., in 1922, a beginning was made to take advantage of the unusual opportunities for epidemiologic surveys thus afforded.

Cultures were made from the throats of 1,080 students, and these were studied for the presence of virulent diphtheria bacilli. In 0.83 per cent. of the cultures virulent diphtheria bacilli were found, indicating that nearly 1 per cent. of the young men coming to the camp carried virulent diphtheria bacilli in their throats.

The Schick test for susceptibility to diphtheria was made on 833 of the students, with the result that 55 per cent. of them reacted positively, indicating the absence of antitoxic immunity. In spite of this high rate of susceptibility and the number of persons in close association with them carrying diphtheria bacilli in their throats, no clinical diphtheria developed during the training period. Among seven of those found to be carrying virulent diphtheria bacilli, three gave positive Schick tests; the others were immune.

A study of specimens of feces from 750 of the students revealed parasites in ten, or 1.3 per cent. One of these, a young man from rural Virginia, was found to be a carrier of the hookworm.

7. Kofoid: The Geographical Distribution of Hookworm Infection in the United States, Detected in Army Recruits, Am. J. Trop. Med. 2: 389-396, 1922.

The same 750 specimens of feces were studied culturally for the presence of members of the typhoid-paratyphoid-dysentery group of bacilli, but no evidence of a carrier of a member of this group was discovered.

CONCLUSIONS

In concluding the report of this work, we express the hope that each year increased facilities may be given the Medical Department for carrying out surveys such as are indicated herein and for such extensions of the work as will be indicated from time to time. We believe that in no other way can the army better serve the public health; and building up the health of the nation is as much a measure of national defense as is drilling and target practice, on the one hand, or the production of gases and high power arms, on the other.

This plea can be supported in no better way than by quoting from the recent work by Nichols:[8]

> On the technical side, carrier work in the military services is of course the same as elsewhere, as the putting of a uniform on the host does not affect the parasite. There are, however, several special factors in epidemiology and administration among soldiers which do affect the work in a peculiar way. Personal contact is much closer and more constant among troops in barracks or in the field than among private citizens. Hence, the chances for the functioning of carriers are particularly good. On the other hand, diagnostic and control measures, when approved, can be carried out more exactly on account of military discipline. Again, the high standard of laboratory facilities which has been maintained in the United States Army since the days of Sternberg tends to make carrier work easier than in some other places. It may, therefore, be said that conditions in the Army, and the same is true of the Navy, offer unusual need and opportunity for carrier work. The drawbacks are lack of time for proper examination, lack of facilities for the mass of work, and lack of control due either to an emergency or to official non-support. . . .
>
> During the war, carrier work eventually reached a high state of technical perfection, as so many well trained medical officers and assistants were available. The degree to which the carrier program was actually used to control the situation varied with the circumstances. Now that the military establishments are contracted to a peace basis, this work has necessarily become limited. But since the work of the military organizations is now largely educational in connection with National Guard and the Reserves, the principles learned should not be forgotten. This new knowledge should be applied on as large a scale as possible, as a measure of education and preparation.

8. Nichols, H. J.: Carriers in Infectious Diseases (with a Chapter on Carriers in Veterinary Medicine by R. A. Kelser), Baltimore, 1922.

The Conduct of an Individual.—Human behavior is the outcome of an infinite complexity of interacting factors. The conduct of an individual could only be completely intelligible if we possessed a full knowledge of his inherited tendencies, his instinctive and emotional equipment, his intellectual capacities, and his general physical condition. In addition to this information, we should also have to obtain a detailed life history of the individual in order to understand the various habits and inhibitions which had been built up on the foundations of his physical, intellectual and emotional endowments. The most difficult subject which we should have to study in our search for an understanding of human behavior is probably that of the instinctive and emotional life, yet in the final analysis we should undoubtedly find that these factors outweighed all others in the causation of the conduct of an individual, so that we should be well repaid for our effort. There is no other single factor which has so much influence on the development of the personality as the parental environment—Abnormal Behavior, Sands and Blanchard, Moffat, Yard and Company, 1923.

STUDY OF ISO-AGGLUTININS BEFORE AND AFTER ETHER ANESTHESIA*

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According to Levine and Segall,[1] prolonged etherization may cause a temporary change in the iso-agglutinative phenomena. The authors report three cases in which the serum before anesthesia was compatible, by direct tests with the blood of prospective donors, but after a period of ether anesthesia of the patient, agglutinated the corpuscles when tested against the same blood. The change in agglutination was only temporary, but the observation, which should be extended, suggests that ether, being a lipoid solvent, may change the state of the blood in such a way as to modify the action of the iso-agglutinins present.

The observations of these investigators interested us greatly, as we had never observed untoward results from transfusions following ether anesthesia, when the bloods were matched before the operation. The studies reported in this paper were begun in an attempt to determine whether there was a change in the iso-agglutinative phenomena, and, if so, why we did not obtain noticeable effects on patients on whom transfusion was performed after prolonged ether anesthesia.

METHODS

Twenty-five patients about to undergo operation were selected for study. Cross-agglutination tests were performed on each of these patients, as follows: The serum of each patient was mixed in hanging drop preparations with fresh, washed red blood cells of Groups I, II, III and IV (Moss).[2] The washed red cells of the patients were mixed with the fresh serums of Groups I, II, III and IV. The serum and cells were obtained from the patients (1) before ether anesthesia; (2) immediately after operation, or before the patient recovered from anesthesia; (3) one hour after operation; (4) two hours after operation; (5) three hours after operation, and (6) twenty-four hours after operation. The microscopic tests were made in duplicate, as follows: A drop of each serum plus a drop of 1 per cent. suspension of the washed cells in isotonic salt solution was mixed on a cover slip, which was then inverted over a hollow ground slide. All red cells were washed three times with physiologic sodium chlorid solution. The slides were examined immediately to determine whether the preparations were satisfactory, again after one hour in the incubator at 37 C., and finally after twenty-four hours at 20 C.

The methods of examination of the blood as shown in Table 1 were used in the twenty-five cases studied.

Parallel series of tests were carried out in each case to determine the effect of ether in vitro. The serum of each of the Groups I, II, III and IV was tested against red blood cells of Groups I, II, III and IV.

* From the Biological Division of the Medical Clinic, the Johns Hopkins Hospital.

* Owing to its large size, Table 2 is omitted from the article as published here. It will appear in the authors' reprints.

1. Levine, E. C., and Segall, H. N.: Posttransfusion Reactions; Alterations in Blood After Ether Anaesthesia and After Blood Transfusion, Surg., Gynec. & Obst. **35**: 313 (Sept.) 1922.

2. Moss's classification is used for the reason that one is unable to distinguish in Jansky's descriptions Group II from Group III. A free discussion of this point by C. G. Guthrie and J. G. Huck will appear in the Johns Hopkins Bulletin, February, March and April, 1923, "On the Existence of More Than Four Iso-Agglutinin Groups in Human Blood."

The serums were shaken for one hour with ether. The ether was left in contact with the serums for four hours in the incubator at 37 C. After this time the serums were again tested against red blood cells (1 per cent. suspension) of each Group I, II, III and IV, and again four hours later.

TABLE 1.—FINDINGS IN CASE 1*

		Patient's Serum			Patient's R. B. C. 1% Susp.			
Time	Color of Patient's Serum	Known R. B. C. 1% Susp. Group	Reading After 1 Hr.; 37 C.	Reading After 24 Hr.; 20 C.	Known Serums Group	Reading After 1 Hr.; 37 C.	Reading After 24 Hr.; 20 C.	Group
Before operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Immediately after operation	Pink, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
One hour after operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Two hours after operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Three hours after operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Twenty-four hours after operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	

* Pyloroplasty; ether anesthesia; duration, two and one-half hours; +, agglutination; 0, no agglutination.

RESULTS

The findings in this series of twenty-five cases are decisive. In this series, in Table 2 are collected two patients of Group I, nine of Group II, four of Group III and ten of Group IV. In five cases the patients were started with gas followed by ether, and twenty-five patients had ether throughout. The duration of the period of anesthesia varied from one to four hours. In all cases the serum was found to have a pinkish

TABLE 3.—EFFECT OF ETHER

Group I Serum			Group II Serum			Group III Serum			Group IV Serum		
Known R.B.C. 1% Susp. Group	Reading after 1 Hr.; 37 C.	Reading after 24 Hr.; 20 C.	Known R.B.C. 1% Susp. Group	Reading after 1 Hr.; 37 C.	Reading after 24 Hr.; 20 C.	Known R.B.C. 1% Susp. Group	Reading after 1 Hr.; 37 C.	Reading after 24 Hr.; 20 C.	Known R.B.C. 1% Susp. Group	Reading after 1 Hr.; 37 C.	Reading after 24 Hr.; 20 C.
I	0	0	I	+	+	I	+	+	I	+	+
II	0	0	II	0	0	II	+	+	II	+	+
III	0	0	III	+	+	III	0	0	III	+	+
IV	0	0	IV	0	0	IV	0	0	IV	0	0
Shaken with Ether			Shaken with Ether								
I	0	0	I	+	+	I	+	+	I	+	+
II	0	0	II	0	0	II	+	+	II	+	+
III	0	0	III	+	+	III	0	0	III	+	+
IV	0	0	IV	0	0	IV	0	0	IV	0	0
In Contact with Ether 4 Hours			In Contact with Ether 4 Hours			In Contact with Ether 4 Hours			In Contact with Ether 4 Hours		
I	0	0	I	+	+	I	+	+	I	+	+
II	0	0	II	0	0	II	+	+	II	+	+
III	0	0	III	+	+	III	0	0	III	+	+
IV	0	0	IV	0	0	IV	0	0	IV	0	0

tinge when collected immediately after operation, but at all other times it was a clear yellow. The ages of the patients varied from 16 to 65 years.

In no case examined did the blood groups change in any degree after ether anesthesia. As in Case 1, the blood group was determined to be IV by cross-agglutination with all four groups before operation. Immediately after operation, the blood group was determined to be IV; one hour after operation, the grouping was IV; two hours after operation, IV; three hours after operation, IV; and twenty-four hours after operation, the blood group was determined to be IV. The findings were the same throughout all cases examined, regardless of the group in which the patient's blood was placed.

No change in group resulted from the effect of ether in vitro (Table 3).

COMMENT

In none of our cases was the shift described by Levine and Segall observed. All the reactions remained definite in each instance. One hour's shaking with ether, and four hours in contact at 37 C., failed to produce any shifting of the blood in any of the twenty-five cases. Only one of the findings of Levine and Segall was corroborated in this series; viz., the serums of the patients had acquired after ether anesthesia a pinkish hue.

CONCLUSIONS

1. There is no change in the blood groups after ether anesthesia.
2. No change of iso-agglutinative phenomena was produced by shaking with ether for one hour, or four hours' contact at 37 C.
3. Transfusions can be performed safely within twenty-four hours after prolonged ether anesthesia, provided a suitable donor has been found previous to the beginning of anesthesia.
4. If severe reactions occur from transfusions after ether anesthesia, they are apparently due to some other cause and not to a change in iso-agglutinative phenomena.

CHRONIC INFECTIOUS ARTHRITIS*

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Modern notions concerning the influence of focal infections on the production of rheumatism may be responsible for a certain sense of security and of satisfaction with regard to the etiology and classification of this disease. Nevertheless, the subject of chronic infectious arthritis offers great difficulties from the standpoint of both clinical and experimental investigation.

The present study was undertaken for the purpose of inquiring into the classification of chronic infectious arthritis, the validity of the idea of focal infection as a cause, and the results of the usual nonspecific "shock" therapy.

It was thought that the investigation of a large number of records in a hospital such as Barnes Hospital might result in finding the answers to these questions, or in finding the refutation of certain notions usually accepted as accurate. Various attempts have been made to classify arthritis, but most classifications are unsatisfactory because the great majority of cases of chronic arthritis have been without proved etiology; therefore, classifications have been based on anatomic and symptomatic changes.

It might be convenient to separate the proved bacterial cases from those which, while possibly infectious in origin, have so far eluded our efforts to discover the invading organisms. Thus, we can easily understand those metastatic inflammations of the joints in which the exudate shows either staphylococci, pneumococci,

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hemolytic streptococci or gonococci, and then the great group of acute rheumatic fever cases stand out in relief by virtue of their characteristic clinical performance and the invariability of heart disease. With the great remainder, our efforts must be directed first to finding important points of difference which would suggest a classification, and to testing various forms of treatment, and, from the information thus gathered, to carry on our efforts in the experimental laboratory with the hope that with such diseases reproduced either entirely or in some of their main features, logical conclusions might follow.

The cases here reported were designated chronic infectious arthritis. It has been the habit at Barnes Hospital to exclude the proved bacterial cases from this classification, but it has also been the habit to designate the disease acute rheumatic fever as acute infectious arthritis without regard to its claim to distinct individuality.

It was my desire to study all the cases from the beginning of Barnes Hospital to the present. There are about 400 cases listed under the heading of chronic infectious arthritis, but the nature of the investigation demands so much of critical review of histories, of interpretation and of inferential conclusions, where justified, that the process of study turned out to be very laborious; therefore, slightly more than a hundred cases are ready for consideration.

As already stated, none of these studied cases gave positive bacteriologic findings as far as the joints were concerned. When the source of infection was proved, the proof was from clinical evidence and serologic tests.

METHOD

Each history was examined for information concerning the sex, age, duration of disease, occupation, family history, clinical course, physical examination, type of rheumatism present, treatment and outcome.

Most of the histories examined were written since 1913, but a few are included of patients who entered the hospital before Billings had popularized the idea of focal infection. It was interesting to note the difference in clinical attitude before and after the work of Billings. In the earlier histories, the examinations were meager; there was an evident lack of knowledge of attacking the problem, and this was invariably reflected in the word "unimproved" at the end of the history. After 1912 there was to be seen a sudden increase in the diagnostic activity devoted to the exploration of all localities which might harbor infection. Treatment was likewise more energetic, and the word "improved" began to appear more frequently. Then, as this energetic diagnostic effort and diversified treatment with bakes, vaccines, proteose and typhoid vaccine inoculations were carried on over a number of years, an element of doubt about the reality of the improvement became apparent. Indeed, not only have physicians passed through these changes of sentiment, but the patients themselves have often overestimated the relief which followed a given treatment, only to recognize later the fleeting character of the relief.

It is useful to study a series of cases of this kind because it reveals how important the doctrine of focal infection has been in stimulating physicians to search for and removed sources of infection wherever they might be in the body. Such a study also reveals the types of cases in which therapeutic failures occurred, and emphasizes the need of more penetrating research into the cause of disease in such cases. It emphasizes to no less a degree the successes that have occurred, and indicates the percentage of patients who have been benefited by sheer thoroughness in diagnosis and enthusiasm in treatment.

RESULTS

Twenty-four cases were chronic cases of arthritis which began as acute rheumatic fever. In nearly all instances the chronicity was dependent on neglect or inadequate treatment. All cases responded readily to salicylates, and the patients left the hospital "recovered," as far as arthritis was concerned. These cases can be readily separated from other types of rheumatism by this ability to recover and by the invariable coincidence of a heart disease, usually mitral stenosis. The statement that acute rheumatic fever is heart disease is strikingly illustrated in this group. The joint changes are trivial, and, although attended by intense inflammation, the arthritis is not permanent. This is a disease of early life, differing sharply in this feature from arthritis deformans. It occurs in attacks. Tonsillitis and pharyngitis usually precede its onset, and there is usually another case in the family.

One of the cases of chronic arthritis which began as acute rheumatic fever is interesting as suggesting a basis for certain joint symptoms and changes which will be commented on later:

> A girl, aged 14, became ill in the usual way with pharyngitis, acute rheumatic fever, mitral disease and acute pericarditis, which persisted as chronic adhesive pericarditis. Such cardiac embarrassment obviously hindered both her muscular development and her general nutrition. We might call to mind, in passing, the peripheral joint changes associated with poor ventilation in the lungs and called pulmonary ostearthropathy. The patient began to have joint pains and stiffness several years after the onset of pericarditis. This pain and the stiffness were progressive, and when the patient returned to Barnes Hospital she was the picture of undernutrition and discomfort. She had no true arthritis, yet most of the small joints were stiff and painful.

The bone change was simple atrophy. Might it not be possible that inadequate circulation secondary to cardiac inadequacy is responsible for this atrophy? We are familiar with the pain that attends obliterating arterial disease; the joint pain suffered in this case, for which there is no explanation in the roentgenograms, may be based on circulatory deficiency.

In this connection, two cases in the series are worthy of attention: A man, aged 56, had had attacks of acute arthritis for eighteen years, usually involving knee or ankle. A man, aged, 47, had had similar attacks for twelve years. Both had purulent prostatitis; both had auricular fibrillation. The latter condition was adjusted with quinidin, and marked improvement in the arthritis, with relief of pain, followed. We might recall that many of our measures to relieve arthritis influence the local circulation. Such treatment as Bier's hyperemia, "baking" and perhaps the so-called "shock" treatment with its fever and increase of pulse rate achieves the same result.

The possible influence of circulation on joints is further suggested in a type of case familiar to all. This is the old person with evident arteriosclerosis who begins to have stiffness of the fingers, with subsequent thickening and slight distortion of the knuckles, these changes usually involving the toes as well. How much infection enters into this form of rheumatism cannot be estimated. There were four such cases in this series. The patients were 61, 69, 70 and 71 years of age; no foci of infection were found. The validity of this idea of the influence of circulation on conditions about the joints could be investigated experimentally.

We have noted the absence of change in the joints of acute rheumatic fever. In marked contrast are the roentgen-ray findings in gonorrheal rheumatism, of which there were three cases of long duration. This is fairly typical of any bacterial arthritis. Destructive changes in the cartilage are apparent. Infiltration of the periarticular tissues is extensive. We have found the gonococcus complement fixation test uniformly positive in these cases and in all our acute cases of this type.

Three cases of gout were present in this series, one of them being very well studied. This patient, a man, showed not only an increased uric acid, greater than usually found in arthritis, but incidentally displayed a certain degree of diabetes insipidus and an enlarged sella.

There were two cases of syphilitic arthritis characterized by exacerbation of pain at night. There were four cases of tuberculous arthritis—the typical spindle-shaped fingers. This leaves two groups of patients, one of which includes the cases of arthritis deformans, twenty-three in number, and the other, those cases not belonging to any of the mentioned groups, thirty-five in number, in which there was complaint of chronic rheumatism involving one or several of the larger joints, and in all of which the inflammatory character of the arthritis and the roentgen-ray changes spoke for bacterial invasion, even though this invasion could not be demonstrated.

The group of patients suffering from arthritis deformans presents the usual features emphasized in all clinical descriptions of the disease. Of the twenty-three cases, only three were in men. The average age at the onset was 39, and the average duration at the time of admission was nine years. In none of these cases was there a significant focus of infection. In nearly all, the teeth were reported as being in bad condition, but neglect of the teeth was inevitable. Frequently tonsillectomy was done, not because the tonsils were considered the source of infection, but because the consultant regarded tonsillectomy advisable in view of the prevailing adherence to the idea. Whatever future investigation may reveal, there is no basis in examination of these patients for believing that an infected focus is the cause of arthritis deformans. There is definitely another factor—perhaps the factor of a physical type, certainly the factor of age. The gradual onset of painful swelling of the fingers is characteristic. The visible changes are out of proportion to the meager roentgen-ray evidence of atrophy and hypertrophy.

The treatment of these cases has included tonsillectomy, extraction of teeth, treatment of nasal inflammations, bakes, Pemberton diet, inoculation with vaccines of streptococcus and of pneumococcus, and "shock" treatment with intravenous injection of proteose and typhoid vaccine. Frequently, after suffering chill and fever following typhoid vaccine, the patient has described improvement in the affected joints. This has proved transitory, and no other benefit has folowed any form of treatment used. A tuberculin test made in six of the cases was negative.

This brings us to the remaining cases, thirty-five in number, of chronic infectious arthritis. Unlike the preceding group, which began with painful stiffening of the fingers and toes, twenty-four of this group describe involvement of a large joint as the beginning of illness. This involvement is attended by outspoken periarticular swelling, frequently hot and red. The illness fluctuates in severity, but the patient does not recover entirely. Later on these patients may have the swelling and stiffness in small joints, and the impression is conveyed that the later development is of the nature of a superimposed arthritis deformans, or the senile type of arthritis referred to before. In this group the most exhaustive diagnostic search was made. The examination of every system, always by specialists, was made. Treatment included all the agencies mentioned before. In spite of exhaustive search, fourteen cases, or 58 per cent. of this class of cases, failed to reveal a source of infection that was convincing. The treatment was usually the same in those cases in which no satisfying focus was found as it was in these in which some important local infection was discovered. This is a very important point, as the study of the results in the two groups indicates. First, in the group in which a focus was found, the foci which seemed unquestionably associated with the development of arthritis occurred as purulent prostatitis three times; purulent seminal vesiculitis, once; purulent otitis media, twice; purulent cholecystitis, once; cholelithiasis, once; purulent rhinitis, once, and hemolytic streptococcus pharyngitis, once. The treatment given these patients, as said before, was similar to that given those patients in whom no focus was found, with the exception that the discovered focus was actively treated by irrigation or by removal. No improvement is reported in three of these cases. Cholecystectomy relieved the patient with purulent cholecystitis, and vasotomy relieved the arthritis in the patient with purulent seminal vesiculitis. In the group of patients in whom no important focus could be found, seven were reported improved, five unimproved, and two were not treated. Thus, it will be seen that there is very little difference in the effect of treatment of these two groups.

The part which tonsillectomy plays in the improvement of arthritic symptoms is interesting. This operation was frequently followed by relief, which, though temporary, was nevertheless definite to the patient and usually visible. It raises the question of nonspecific effect, and this is further suggested by the case of one of these patients in whom appendectomy was followed by similar definite, though temporary, relief. Perhaps the changes in the body incidental to anesthesia and hemorrhage, followed, as they usually are, by slight fever and leukocytosis, are not unlike the changes following the inoculation of typhoid vaccine.

With regard to the other forms of treatment, it may be said that baking was sometimes comfortable and sometimes disturbing as far as the patient was concerned. No definite effect on the rheumatism was noted in the history. The inoculation of proteose was always followed by a definite reaction; but, on account of the uncertainty of the chemical product, this mode of "shock" treatment was supplanted by the intravenous injection of typhoid bacilli. The usual initial dose was from 25 to 50 millions, repeated in ascending doses every five days so that at the end of about two weeks a patient might be receiving one billion bacteria at a dose. This increase in dosage was found necessary because, once inoculated, the patient invariably required greater doses to produce chill, fever and leukocytosis. Frequently, definite improvement could be traced to a series of such injections.

The influence of an intercurrent infection was noted in one of the cases of chronic infectious arthritis in which chronic proctitis seemed to be an important focal infection:

> The arthritis was of the usual hypertrophic type, and involved the right elbow and right knee. The joint fluid, typical of this group of cases, was slightly turbid, yellow, and

contained about 5 per cent. of endothelial cells and 95 per cent. of polymorphonuclear leukocytes. Treatment of the proctitis for one month failed to change the arthritis. The patient became ill with a prevailing infection, characterized by headache and pharyngitis, which was loosely called grip. Fever prevailed for six days. The knee joint measured 37 cm. in circumference before this infection. A pronounced improvement of the arthritis was described by the patient, during this illness. Stiffness disappeared, and free movement was possible. The joint circumference diminished to 32 cm. and local thickening. Heat and congestion subsided. The leukocyte count was 11,000. Blood culture was negative. Throat culture showed a predominating gram-negative hemolytic bacillus, easily cultivated. After this infection subsided, the joints remained in good condition until the patient attempted their use, when the condition reverted to its original state.

Another interesting nonspecific effect was produced in another case of the same type of arthritis:

The knee was inoculated with 5 c.c. of 1 per cent. solution of gelatin having a p_H of 4.7. Local heat, swelling and pain followed. Fever of 100 F. persisted for three days. A leukocytosis of 20,000 occurred. Culture of the joint fluid was sterile. All the joint signs subsided, and the local condition was better than it had been in two years, according to the statement of the patient. The periarticular tissues were soft; the bony prominences were easily felt and were not tender. But when the patient attempted to use the knee, the previous condition of effusion, periarticular thickening, pain on use, and tenderness recurred.

It is unfortunate that we have not followed up these cases of chronic infectious arthritis in a way sufficient to show the present condition, and it is impossible to say how long the improvement recorded in this group of twenty-four patients has persisted. As a group, they offer encouragement to the effort to use all possible measures to discover infected foci. The high percentage of improvement recorded in those cases in which no focus was found seriously argues against the accuracy of our reasoning from cause to effect—from focus to arthritis. However, the subject is one which allows free play to philosophical discussion, but is one which, by the very nature of the process involved, evades accurate decision.

There remains to discuss eleven cases which, on account of their relative frequency and the uniformity of symptoms and invariable existence of active prostatic infection, invite our attention. These are patients, usually between the age of 35 and 50, who complain of backache. No doubt they have been told, in the absence of roentgen-ray evidence, that they had "sacro-iliac strain." The distribution of the lesion in these cases is remarkably constant, consisting, usually, of destructive changes in the fifth lumbar vertebra. Treatment consisted of active treatment of the prostate by massage and instillations, and immobilization of the lumbar spine. Good results occurred if the changes in the spine had not progressed to a high degree of destruction.

COMMENT

The most significant features of this study have been:

1. The emphasis given to the part which circulatory changes and consequent nutritional changes play in the production of painful stiffening of the joints in which simple atrophy is the only evidence on roentgen-ray examination.

2. The importance of exhaustive physical examination in the search for infected foci.

3. The necessity of employing many forms of treatment, since no form was constantly successful and each kind of treatment was occasionally successful.

4. The importance of the last described group of male patients whose chief symptom is backache and who have spinal ostearthritis, apparently associated with prostatic infection.

5. The lack of evidence that arthritis deformans is a focal infection.

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THE DIAGNOSIS OF CONDITIONS CAUSING BACKACHE

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Backache is one of the commonest of complaints. Etiologically considered, it is one of the most difficult to deal with. The sufferer often wanders from physician to physician, from urologist to gynecologist, from surgeon to orthopedist, from osteopath to chiropractor. Drugs of all descriptions, "patent" and legitimate, are taken; applications, operations, manipulations are resorted to without avail. Like a good old creditor, the backache stays with the patient sufferer.

It is true that a certain percentage of the afflicted are cured or relieved by medical or surgical intervention; that in other cases backache yields to the chiropractic touch or the magic influence of "science" of some kind. But is it not also a fact that many of these poor patients come again and again to the physician's office, only to be considered a nuisance by the one who is unable to help them, often through his own fault? And is it not true that in the field of industrial medicine, no other problem has resulted in more discredit to the profession than the failure in diagnosis and treatment of this condition? It is not willingness to help or sympathy which is lacking in the physician, but in no field of medicine is there greater ignorance as to cause and conditions, or more perfunctory practice regarding treatment than in dealing with the complaint commonly called backache.

Here, as in all other fields, it is only careful attention to little things and to petty complaints, scrutiny, observation and painstaking examination, which will save the reputation of legitimate medicine. Thorough knowledge and a broad conception of all the conditions that may bear on the question are the necessary requisites for any action. I take it for granted that the modern physician understands the practical mechanics of the spine; that he appreciates the importance of the lumbosacro-iliac junction as the supporting arch of the upper half of the body, and that he has at his command the aid of the modern laboratory and a skilled roentgenologist.

FACTS OF IMPORTANCE IN DIAGNOSIS

Since Lovett's [1] comprehensive article, the situation regarding backache has undergone some changes that are well worth noting. It is true the symptomatology has remained the same; the general classification—pelvic, traumatic, arthritic, static, sacro-iliac—still holds good. The "patent" medicine vender continues to reap his revenue and we are still, in many cases, "up against it," as far as diagnosis and treatment is concerned. But two facts stand out that the student cannot overlook:

1. Lovett states that backache is more common in women than in men. In his paper, he speaks occasionally

1. Lovett, R. W.: The Causes and Treatment of Chronic Backache, J. A. M. A. 42: 1615 (May 23) 1914.

of "her" when referring to the patient. From my own experience and the data available in the literature, it seems that there has been a shifting of sex incidence in backache coming under the observation of the orthopedic surgeon, with an apparent preponderance in men resulting. O'Ferrall,[2] in a clinical study of the cause of backache, cites thirty-four cases in men to six in women (laborers). Kuth,[3] among 208 cases, finds 136 in males and twelve in females (traumatic, seventy-five; nontraumatic, seventy-seven; and six after childbirth. In my experience I find one case of backache in women to approximately two in men. An explanation of this situation at first sight seems difficult. The most plausible reason is that backache in women most frequently is of pelvic etiology, and that women, becoming more and more acquainted with this fact, consult a gynecologist or general surgeon to begin with. On the other hand, the development of gynecologic diagnostic and therapeutic methods has resulted in women being subjected to corrective operative measures much more expeditiously than previously was the case, and thus in reducing the frequency of cases that in earlier days were not cured by "successful" operations. In other words, gynecology has become more popular and more efficient. But is backache from all other causes, extrinsic and intrinsic, more frequent in man than in woman? This rather interesting problem can be solved only by examination of a large, unselected material. An investigation of this sort will not only be interesting, but is also bound to be of great practical value, for it will throw light on a number of sanitary, social and economic conditions connected with causation and prevention.

2. The second fact may be summarized by the statement, based on observation during the last few years, that development and exploitation of modern diagnostic means and closer scrutiny of their revelations have resulted in the recognition of causes for backache which, up to the time of Lovett's writing, had appeared rather vague or were insufficiently known. I need refer only to the studies regarding osseous malformations, focal infections, and the like. On the other hand, close criticism of our findings has convinced us of the numerous shortcomings of our technical means of detection, e. g., comparison of roentgenograms with the actual pathologic condition.[4] In this connection, much is open to further investigation.

NATURE OF EXAMINATION

The conclusion to be drawn is of paramount importance: Every patient coming to us for treatment for backache must be subjected to a most systematic and careful examination. This point cannot be emphasized too strongly. It is not sufficient to hear the patient's complaint, to apply a few palpatory or functional tests, and then dismiss him with a drug, a liniment or a pelvic "support." That is exactly what the quack is doing. By this method, symptoms are frequently relieved; but the cause, as a rule, persists. The patient drifts from bad to worse, and the physician brings condemnation not only on himself but, what is infinitely worse, also on the whole profession. Superficiality and snapshot diagnosis, merciless as the statement may appear, constitute the arch sin committed against the backache sufferer in my experience, not only by the general practitioner but also by many a busy orthopedic surgeon.

In order to avoid the numerous pitfalls, it is indispensable to have the patient remove the clothing. A careful survey must be made both with the patient standing up and with him lying down. Close cooperation by the internist, gynecologist, urologist, orthopedist, roentgenologist and laboratory man is in many cases the only way to expeditiousness and success. A routine scheme, as outlined below, will prove most useful and will result in a possible diagnosis by a process of elimination rather than by a process of election, whch is only too liable to lead to a loss of time and to failure. It may seem far fetched, cumbersome and time consuming to launch on such a comprehensive scheme as the one proposed. My experience and failures have taught me that the procedure pays in the end, and that the investigation can be accomplished in a very short time, once the mind is trained to proceed in a systematic manner. Many authors who have carefully gone into this question are supporting me in this plea for thoroughness and system.[5] A careful anamnesis in the great majority of cases will immediately suggest a definite course. But we must always bear in mind that the case under observation may present a combination of any two or more causes, and that there is the possibility of referred symptoms. The accompanying tabulation, adopted by me, is self explanatory and is recommended to any one called on to solve a difficult problem of this sort.

CAUSES OF BACKACHE

Extrinsic (remote)

Gyneco-logic	Genito-Urinary	General Abdomen	Nervous System	Constitu-tional
Displacement	Bladder	Constipation	Meninges	Diabetes
Inflammation	Prostate	Inflammation	Medulla	Toxemia
Tumor	Seminal organs	(appendix,	Peripheral	Bacterial
Pregnancy	Ureters	etc.)	nerves	Alcohol
Coccygodynia	Kidneys	Tumor		Lead
Organic		Visceroptosis		Neurasthenia
Nervous		Hernia		Hysteria
		Hydrocele		Endocrine
		Varicocele		Myalgia
		Rectal disease		

Intrinsic (direct)

Congenital	Static	Traumatic	Inflammatory	Neoplastic
Irregular ossification	Large abdomen	Strain (sacro-iliac)	Syphilis	Sarcoma
	Slumped attitude		Pott's disease	Carcinoma
Sacralization	Curvature of spine	Sprain	Sacro-iliac tuberculosis	
Fifth lumbar	Rachitic	Dislocation		
Defects	Osteomalacic	Fracture	Infectious disease	
Rib formations	Scoliosis	Postoperative	Pneumonia	
	Spondylolisthesis		Typhoid	
	Tilting of pelvis due to		Gonorrhea	
	a. Inflammation of lower extremity		Actinomycosis	
	b. Paralysis		Osteomyelitis	
	c. Deformity		Spondylitis deformans	
	Weak foot		Neuritis (herpes zoster)	
	Contracted gastrocnemius		Neuroradiculitis	

Generally speaking, in examining patients suffering from backache I have found it most useful always to bear in mind three points: (1) that one must, as Kidner [6] puts it, so pointedly, "get rid of the old idea of the inherent stability and strength of the lower lumbar spine and the pelvic girdle, and to look at it as a particularly unstable and complicated mechanism with

2. O'Ferrall, J. T.: Low Back Pain—a Clinical Study of Its Cause, J. Bone & Joint Surg. **4**: 384 (April) 1922.

3. Kuth, J. R.: A Study of Two Hundred and Eight Cases of Lower Back Pain, J. Bone & Joint Surg. **4**: 357 (April) 1922.

4. O'Ferrall, J. T. (Footnote 2); Magnuson, P. B., and Coulter, J. S.: Workman's Backache, Internat. Clin. **4**: 215, Series 31, 1921. O'Reilly, A.: X-Ray Findings in Cases of Painful Back, J. Missouri M. A. **18**: 440 (Dec.) 1921.

5. O'Ferrall, J. T. (Footnote 2), and Palmer, M. B.: The Lumbar Spine and Sacro-Iliac Joints, Am. J. Roentgenol. **9**: 16 (Jan.) 1922. Albanese, A.: Better Knowledge of Bertolotti's Syndrome, Chir. d. org. di movimento **5**: 577 (Dec.) 1921. Holland, G. T.: Note on Sacralization of the Fifth Lumbar Vertebra, J. Bone & Joint Surg. **4**: 215 (April) 1922. Boyd, W. A., and Seibels, R. E.: Backache as Related to Gynecologic and Orthopedic Conditions, J. South Carolina M. A. **18**: 261 (Sept.) 1922. Kidner, F. C.: Disturbances of the Lumbar Spine and Pelvic Girdle, in Jones, Robert: Orthopedic Surgery of Injuries, New York, Oxford University Press.

6. Kidner, F. C. (Footnote 5, sixth reference).

many and rather weak points"; (2) that anatomy and function of the lumbosacro-iliac apparatus is by virtue of its connection and location especially liable to be secondarily affected by alterations of all structures surrounding and supporting it and supported by it, with the result of mechanical, inflammatory and productive changes; (3) that many cases are associated with neurasthenia and psychasthenia, which are liable to exaggerate or misrepresent local symptoms. It is therefore advisable to test possible hypersensitiveness of the patient by pressure on the styloid process. This "trick" has given me many times a pointer as to the evaluation of complaints.

ETIOLOGY

In reviewing the numerous possibilities in the etiology of backache, experience has shown me that there are five conditions which are quite frequently overlooked, because they and their connection with pain in the back are insufficiently known, or else the facts making the diagnosis are at times difficult to establish. These conditions are (*a*) of a genito-urinary nature (small concrements, chronic prostatitis); (*b*) toxemias (focal infection); (*c*) weak foot (flatfoot); (*d*) malformations (especially of the fifth lumbar vertebra), and (*e*) myalgia. As to their significance as regards the matter under discussion, there can be no doubt. They all occur in daily practice, and often do not present, especially in the beginning, any other symptom but backache.

(*a*) There is perfect agreement that the treatment of a patient who has a small stone in the ureter or a chronic prostatitis with measures to cure a local backache is inexcusable. It is true, the prostatitis may gradually get better or the stone may pass, and with it the backache may disappear in spite of the mistaken diagnosis and treatment. But where does such practice differ from that of the quack? An excellent means of avoiding this pitfall is a routine microscopic examination of the urine in every case of backache.

(*b*) The same principle holds true of the toxemias. In our age and generation, one would think that every physician would carefully examine each patient's teeth and throat, and that he would try to discover the focus in the pelvic organs before writing a prescription for a liniment or for acetylsalicylc acid. Still, our daily experience proves that such is not the case. I agree in every respect with Gardner,[7] who emphasizes the fact that, in every case of suspected focal infection, "a full mouth examination not only is necessary, but is the patient's due," the dental report to be based on complete mouth roentgenograms and the clinical evidence. How many sufferers from backache could have been cured by this practice in the beginning of their troubles, while their treatment proves to be most difficult after secondary changes have firmly established themselves in the structures of the backs. In this connection, it is well to remember that syphilis is not always proved by a positive Wassermann reaction. I have seen a number of persons suspected of syphilis with a persistently negative Wassermann reaction, who responded quickly to treatment with yellow mercurous iodid.

(*c*) According to our experience, weak foot, especially in the beginning, is often associated with backache. A recent summary of the physical status of four million recruits for the late war shows that among individual defects flatfoot ranged far ahead of anything else (11.7 per cent.), and as a cause for rejection, it amounted to 3.6 per cent. Thus, flatfoot, and weak foot still more, are astonishingly frequent disorders. The cases in which persons having weak feet were treated for backache were numbered by the thousands. Once a physician has learned to regard the whole body as a static unit, the mechanics of a single part of which cannot be disturbed without bringing disarrangement and strain on more remote links of the chain, this situation will automatically be remedied. In the reconstruction camps of the U. S. Army during the war, an encouraging beginning was made in the systematic diagnosis and treatment of this condition, which no doubt will have its effects in emphasizing, in civil practice, the relation between weak feet and backache. Easy as the diagnosis of weak foot may appear, in this connection I wish to emphasize the fact that the functional test as generally carried out, with the patient balancing the weight on one foot, is ineffective and altogether misleading. To most persons, this position is an unnatural one, and therefore, in order to maintain it, they make unusual and incoordinate efforts, with the result of forced innervation of muscles which, under normal conditions of weight bearing, would remain more or less inactive. Thus, for instance, a weakened tibialis anticus, during an examination of this kind, may elevate a sagging longitudinal arch and lead to the assumption that the arch is really efficient, while, on ordinary walking and standing, it is not. This deception is preeminently liable to occur in incipient cases of weak foot. Boigey[8] reports a similar observation on excessive weight bearing. In our case, we have, in addition to the heavier load, the effort of the patient to maintain balance. In testing for weak foot, it is therefore my procedure to let the patient throw his weight on only one foot, just as he would in the process of a slow walk, while the other foot remains on the ground and serves to maintain the balance of the body. This method gives a far clearer and more accurate picture of the existing weakness of a foot.

(*d*) Skilful modern roentgen-ray diagnosis has thrown considerable light on the backache due to abnormalities of the spine and sacrum. The frequency of these malformations is surprising. Baetjer and Waters[9] report that, in 1,000 cases of examination of the lumbosacral region, there were 15 per cent. of congenital nonunion of the sacral laminae. Rib formations in connection with the fifth lumbar vertebra are also an occasional occurrence. The most interesting abnormality in this region, also quite frequent, is the so-called sacralization of the fifth lumbar vertebra, of which Imbert[10] differentiates three degrees, according to the greater or lesser size of the transverse process, and its more or less complete contact with the ilium or sacrum (sacralization or pseudosacralization). The authors[9] mentioned say that "this abnormality generally gives symptoms." Considering that the fifth lumbar vertebra is the last link of a movable chain, and that it acts as a buffer between the spine and the pelvic girdle, and taking into account the intimate relation of this vertebra and the sacrum to many structures, it is not surprising that clinical diagnosis, together with roentgen-ray findings, has developed the interesting fact that congenital anomalies in this region predispose to injury, with resulting back symptoms. The understanding of Bertolotti's "painful sacralization" syndrome

7. Gardner, B. S.: The Examination of Teeth in Group Medicine, Minnesota Med. **5**: 356-359 (June) 1922.

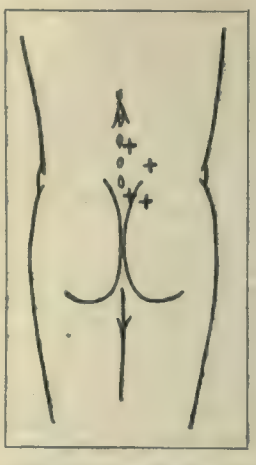
8. Boigey, M.: Observations on the Various Modes of Locomotion of Man, Presse méd. **30**: 1461 (Sept. 2) 1922.

9. Baetjer, F. H., and Waters, C. A.: Injuries and Diseases of the Bones and Joints, New York, Paul B. Hoeber, 1921, pp. 316-317.

10. Cottalorda, M. J.: The Fifth Lumbar Vertebra, A Clinical and Roentgenologic Study, Marseilles méd. **59**: 382 (April 15) 1922.

rests on the recognition of this important connection. Léri,[11] however, says that even a pronounced degree of sacralization revealed by roentgenography is rarely the cause of pain. Albanese,[12] recently after drawing our attention to the fact that many of these cases are misdiagnosed and mistreated, points out that Bertolotti's syndrome always means sacralization, but that sacralization does not always mean Bertolotti's syndrome. This, in my experience, states the case correctly, and may be applied to any congenital malformation of this region in relation to injury. The term injury does not necessarily imply trauma of a serious character. The ordinary wear and tear or increased taxation of the abnormally developed bones, joints and ligaments is sufficient at times to invite the changes necessary for trouble in such a locus minoris resistentiae. The observations of other authors as reported in the recent literature confirm me in this statement.

O'Reilly,[13] in two recent roentgen-ray studies, rightly emphasizes the importance of the relation between congenital malformation of the lumbosacral region and industrial accidents, injury, strain and backache. Approximately 50 per cent. of persons showing abnormalities of this region have not, and probably never will have, back symptoms if there is no additional strain or trauma; but observations seem to point to the fact that they have a potentially weak spine, predisposing to strain and subsequent backache. Sooner or later, this fact will have to be considered in the examination of prospective laborers, and in the evaluation of industrial accidents and determination of compensation connected with them. On the other hand, the roentgen-ray finding of a congenital abnormality must, in case of backache, lead us to assume that the cause of the pain is located in the lumbosacro-iliac apparatus, even if the roentgen ray does not show anything else, provided we can definitely exclude all other causes. In other words, I am joining Léri [11] in his warning that sacralization and other abnormalities, while receiving due consideration, must not be called to account for all sorts of pathologic conditions.



Seat of predilection of lumbosacro-iliac myalgia.

(*e*) The last cause for backache—not an infrequent one, if we look for it—to be considered within the scope of this treatise is myalgia. It is sometimes called muscular rheumatism, myositis, neuralgia or myogelosis. The theory that myalgia is due to three causes: direct infection, bacterial toxemia, or pyemia must, according to recent investigations concerning the colloidal nature of the tissues and the hydrogen ion concentration of the body fluids, be enlarged to include also changes of a chemical nature in the muscles. The investigations referred to show that there is a close relationship between the processes taking place in the condition under discussion and the muscle changes in rigor mortis, through accumulation of fatigue products, with the production of lactic acid.

PREDISPOSITION

According to these observations there are three types of persons who have a so-called rheumatic constitution: (1) the asthenic type, pale, tall, narrow chested, with poor circulation; chlorotics; lymphatics; spasmophilics; (2) the hereditary adipose type; diabetics; those suffering from hypophysial adiposity, adiposis dolorosa, purpura; (3) individuals showing the uric acid diathesis. These three types of patients, under the influence of daily life, changes of temperature and barometric pressure, overfatigue, overstrain or exposure of any kind, are liable to develop myalgias.

For the diagnosis of these myalgias, it is of paramount importance to know where to look for their source, and to palpate the muscle in the suspected area in order to discover the small circumscribed hardenings (often the size of a pit of a date) that are the cause of the trouble. Next to myalgias in the shoulder and elbow region (brachialgia), the myalgia in the lumbosacral region (the lumbago proper) is the most common manifestation of this disease. The seat of the pathologic condition in such a case is generally to be found in the lower end of the erector trunci muscle, and especially deeply situated in the angle formed by the iliac bone and the lowest part of the lumbar spine. In quite a number of cases of so-called sprain of the lumbosacral ligaments, strain due to fatigue and weakness, or occupational and postural strain, I have been able to demonstrate the myalgic nodules deep in the lumbosacro-iliac angle. At times, the lesion may be found a little higher up on the outer or inner side of the long back muscles and in the posterior superior part of the gluteus maximus. Men and women are similarly affected; but in every case we have to deal with people of poor muscular development. The diagnosis rests on the type of patient affected, the demonstration of the nodulation in the muscles, always painful on carefully increased pressure, and often the presence of a more or less hypersensitive area of skin directly over the affected muscle area. Often one may elicit a history of, or may discover, myalgic spots in other parts of the body at the time of the examination.

On the whole, this condition, up to this time, has been insufficiently known and little looked for. Most patients subjected to home treatment in the beginning yield to antipyretics, heat and massage, and therefore never come to a physician for a diagnosis. But, many patients suffering from the chronic form of this trouble have been subjected to all kinds of unsuccessful treatment, because the condition was not looked for or was unrecognized.

TREATMENT

This leads to the question of treatment. The genitourinary causes of backache must be left to the urologist. Those due to toxemias will generally yield to treatment of the focus, plus general measures. Backache in connection with anomalies of the lumbosacro-iliac apparatus is opening up a vista regarding prophylaxis, while the treatment is essentially of an orthopedic character. Pain in the back due to weak feet disappears like magic with attention to the fundamental pathologic condition. The lumbago of a myalgic character, once it has become chronic, is amenable to treatment only by proper massage of the affected part of the muscle, vigorously applied to strong muscles, but gently to weak muscles, and above all by injections of saline solution, with or without procain, into the individual nodule. Attention to the general condition of all patients is of equal, if

11. Léri, A.: The Fifth Lumbar Vertebra and Its Variations, Presse méd. **30**: 158 (Feb. 22) 1922.
12. Albanese, A. (Footnote 5, second reference).
13. O'Reilly, A. (Footnote 4, third reference): X-Ray Study of the Lumbosacral Spine, Southern M. J. **15**: 217 (March) 1922.

not superior, importance. But above all there must be assured the protection of a definite diagnosis.

CONCLUSIONS

1. The essentials for an etiologic diagnosis in cases of backache are system and thoroughness in examination.
2. The search for remote causes and for those of local character is of equal if not greater importance.
3. Congenital anomalies of the lumbosacral region predispose to injury, with subsequent backache.
4. Lumbago proper or lumbosacro-iliac myalgia is one of the most frequent and least recognized conditions.
5. In every difficult case, the establishment of a diagnosis depends on close cooperation of the various diagnostic branches of medicine.

BLOOD TRANSFUSION BY THE CITRATE METHOD IN HEMORRHAGES OF THE NEW-BORN *

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The use of whole blood injections is a well recognized clinical procedure in cases of hemorrhage occurring in new-born babies. Several methods have been devised for this procedure, all of which have certain features to recommend them. The simplest method is the use of subcutaneous or intramuscular injections, from 10 to 20 c.c. being employed at a time. These are often repeated two or three times in a given case, if the primary injection is not successful in arresting the hemorrhage. This is a perfectly safe method, and can be carried out under any circumstances by a physician of ordinary skill. The objection to its routine use is that frequently cases fail to respond favorably; moreover, such injections are frequently painful and irritating to the recipient.

A second method is the direct transfusion through anastomosis of veins by means of cannulas, the median basilic vein of the donor being united to the external jugular of the baby. This method is good, but is rather cumbersome. It requires the use of trained assistants, and not a little skill in blood vessel surgery for its successful accomplishment. The amount of blood transferred is not accurately measured, but must be judged by the change in color of the baby and thus approximated. It has the advantage that nothing but blood is injected, which avoids all possible danger of toxic reaction due to anticoagulants.

A third method is the injection into the longitudinal sinus by means of syringe or buret of whole blood, either with or without the addition of citrate to prevent clotting.

This method is used especially by pediatricians, and in the hands of one doing this kind of work is doubtless very satisfactory. For the general practitioner, however, the procedure is considered too formidable unless he has had some special training along these lines. The objection advanced is that one cannot be sure that the needle is in the lumen of the sinus throughout the injection, even if it is there when the injection is begun. I have seen one case at necropsy, after injection by a man who claimed that he had had considerable experience in the use of this method. A large hematoma was found under the dura. The needle had evidently penetrated the side wall of the sinus after the injection was begun. Numerous other reports of similar accidents are on record.

Fourthly, various substances other than whole blood have been used in this type of case, with indifferent results: horse serum, blood coagulants and human serum, either of the father or the mother of the child or of some person not a blood relative. The general experience has been that they work very well in the mild cases, but frequently fail in the severe form of the disease.

It would seem, therefore, that the use of whole blood in these cases is the only reliable way to stop the bleeding. If this could be done in a simple and safe method that is not too complicated for the average surgeon, a marked advance would be made in the treatment of these cases. It was in the hope of developing such a method that I undertook this piece of investigation.

It seemed reasonable that, if the peripheral veins were not too small, their use would be advisable, because any one familiar with the procedure in adults would be better able to acquire the technic in babies. In discussing the question with the pediatricians, however, I was told that the peripheral veins were too small, and that the method was impracticable. The same opinion was advanced by the men doing the direct transfusion. However, the dissection of a number of veins in bodies that I saw postmortem proved beyond a doubt that these veins could be used if the proper instruments and technic were employed. Losee [1] mentions this fact in an article on the use of blood transfusion in cases of severe hemorrhages in infants. He does not describe his technic. Bamberger [2] describes a case in which he successfully used the median basilic vein.

INSTRUMENTS

Two pairs of fine rat-tooth tissue forceps	One buret
Two pairs of mosquito artery forceps	One rubber catheter, 18 inches, as connection
One pair of iridectomy scissors	One constrictor for donor's arm
One scalpel	One small syringe for injecting procain
One large bore bleeding needle	One skin needle and horsehair
One pair of ordinary scissors	Ten c.c. of a 2 per cent. solution of sodium citrate
One Luer needle No. 19	One tube of No. 0 catgut
One 4-ounce glass graduate and stirring rod	Special board to hold baby

The median basilic vein was first selected as most accessible and presumably the most satisfactory. After it had been used on several occasions, however, it proved to be so small that a very fine needle had to be used to insert into the vein. This resulted in a very slow flow of blood, when the gravity method was used, making the procedure very tedious and sometimes resulting in coagulation of the blood before the completion of the operation. These difficulties were especially seen in premature infants.

The external jugular vein was therefore selected because of its size, and also because of its accessibility. It is located just under the platysma muscle, and can be easily exposed by a small incision through the skin and muscle. It can readily be seen when the baby cries. The femoral or long saphenous vein has been

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1. Losee, J. R.: Bull. Lying-In Hosp., New York **12**: 100 (July) 1922.
2. Bamberger, A.: Illinois M. J. **39**: 27 (Jan.) 1921.

mentioned in this connection, but was not used in this series because of the inevitable soiling of the wound postoperatively by urine and feces.

The citrate method was selected because of its simplicity, and because probably more men are familiar with its use than with other methods. There is very little, if any, danger of a toxic reaction from the small amount of the drug used in a single injection.

TECHNIC

Since the object of this work was to develop a method that would be practicable under almost any circumstances for men of average skill, the equipment has been made as simple as possible for efficient work. Only a few instruments are necessary, but they must be good and of the right kind.

For the special holding board, an inch board about 20 by 10 inches is used as a base. Across this, about 4 inches from one end, is set another piece of inch board 2 inches high, called the neck board. A series of ⅛ inch holes are drilled in the base board about 2 inches from the edges and about 4 inches apart, through which bandages tied to the baby's ankles and wrists can be passed. The baby is thus secured to the board.

The baby is placed back down on the board so that the neck board comes under the back of its neck, and the hands and ankles are secured as mentioned above.

The head is then held rotated to one side by a nurse or assistant. This exposes the region of the opposite external jugular vein. In cases in which transfusion is indicated, the condition of the baby is such that it offers, in most cases, little resistance or objection to being placed on the board.

It is advisable to have a long narrow bore glass tube as a buret, and we find that the glass portion of the Asepto irrigating syringe works very well. We have also used the barrel of an ordinary 20 c.c. Luer syringe for this purpose. The object of having the buret long and slender is to facilitate observation of the rate of injection, since the flow of blood through the fine needle is necessarily slow.

The needle used must not be sharp pointed because of the tendency to cut and tear the wall of the vein. For this reason the ordinary Luer needle is made blunt by grinding the point down with an emery wheel.

Before the operation begins, it is well to have everything in shape to complete it without delay. The importance of this point is that if there are delays, a certain amount of clotting is liable to occur, which interferes with the flow of blood through the small needles that it is necessary to use in this work.

The donor's arm is prepared for venipuncture in the usual way, and is painted with iodin. A 12 inch No. 0 catgut ligature is doubled, and the ends are grasped by mosquito forceps. The skin over the external jugular is painted with iodin followed by alcohol, and the region of the vein injected with a small amount of procain or apothesin 1 per cent. solution. The vein can be readily seen in most cases, especially when the baby cries.

A few minutes are allowed for the anesthetic to take effect, and then a small incision is made about an inch in length along the course of the vein through the skin and platysma muscle. In infants that have had a severe hemorrhage, the vein may be hard to find, owing to the collapsed condition. The baby will usually cry, however, and this will give the needed distention. After exposure, the vein is grasped very gently with fine artery forceps, and carefully cleaned of perivascular connective tissue. The importance of this point is that the vein cannot be properly opened, nor the needle easily inserted, unless the vein wall is quite free. The vein is next lifted up, and the double ligature passed underneath. This is sometimes facilitated by passing a grooved director before passing the ligature. The loop in the catgut is then cut, giving two ligatures under the vein. The ends of each ligature are caught in mosquito forceps. One ligature is drawn upward and the other downward so that the segment of the vein that is to be opened is raised clear of the wound, and all circulation in it is stopped. At this point the vein is dropped back into the wound, and a pad soaked with salt solution is placed over the incision to prevent drying.

The blood is now obtained from the donor in the usual way, a large bleeding needle being used with a 6 inch rubber tubing attached, into the 4 ounce graduate containing 10 c.c. of a 2 per cent. solution of sodium citrate. The blood is constantly stirred during collection, and until it is ready to be poured into the buret, thus insuring thorough mixture with the citrate solution. In donors with fine veins or in subjects in whom the arm is very fat, conditions frequently encountered in women, the vein is transfixed by a fine cambric needle to prevent rolling when the puncture is made.

After the collection of the blood, the salt solution pad is removed from the baby's neck, and the segment of the vein between the ligatures is raised clear of the wound. The vein is next incised half way through its diameter with the fine iridectomy scissors. Ten cubic centimeters of physiologic sodium chlorid solution is placed in the buret, which is connected to the No. 19 Luer needle by an 18 inch rubber tubing about the size of the ordinary rubber catheter. This needle must have a blunt point, which prevents injury to the vein wall during the insertion. When it is seen that the salt solution is flowing freely through the needle, the opened segment of the vein is lifted up, and a stream of salt solution from the needle is directed at the hole in the vein. This dilates the hole and materially aids in the introduction of the needle into the vein. The proximal ligature is slightly relaxed as the needle enters the vein, and then drawn taut after the insertion of the needle. The needle is thus held in place.

The salt solution is allowed to flow into the vein; when it is seen that a good flow is established, the citrated blood is poured into the buret by the assistant, and the buret kept filled until all of the blood has been injected. The last of the blood is followed by a few cubic centimeters of salt solution. The needle is then withdrawn, and the vein is tied off above and below the opening with the tension ligatures mentioned above.

The wound is closed by one catgut ligature in the platysma, and a subcuticular horsehair suture in the skin. It is dressed with a dry dressing, which may be changed to a hot boric compress if infection occurs, as happened in one of these cases. If everything works smoothly, the transfer can be effected in about fifteen minutes from the time the collection of the blood begins.

The donor in these cases may be the mother, the father, or even some persons not a blood relative of the baby. There is no necessity to group the blood of the donor or recipient, as it has been shown that the hemagglutinins and precipitins are not developed in the child to any great extent until it is about 2 years old. It was found, in this series, that sometimes the blood of one donor was more effective in controlling the hemorrhage than that of another. Blood from the mother frequently seemed to be better than that from the father.

There does not seem to be any danger of overloading the heart in giving the blood in this way, as the flow into the vein is very slow, and in none of the babies was there any evidence of respiratory or circulatory embarrassment. Many of the babies had an elevation of temperature of a few degrees for a few hours, but seemed to be otherwise none the worse for the operation.

RESULTS

In all, there were fourteen cases in this series. The seriousness of the hemorrhage varied from a slight capillary oozing from a mucous membrane to a severe anemia which resulted from extensive bleeding from the cord, or from a melena. In many of the cases, various remedies had been tried before transfusion was undertaken, such as retying and sewing the umbilicus in cord hemorrhages, or the giving of various other

forms of coagulant, such as blood coagulants, horse serum, or human serum under the skin. These measures had failed to produce the desired effect, and so transfusion was resorted to. The operation was followed by recovery in all cases, but in a few it was necessary to repeat the transfusion.

In one case a baby was suffering from a severe icterus neonatorum, and the jaundice persisted for several days after the hemorrhage was controlled. This is suggestible of the possible value of this procedure in severe cases of this kind unaccompanied by actual hemorrhage.

Clinically, striking improvement is shown by these babies after they had received from 75 to 100 c.c. of blood. The color is better, the bleeding usually stops in a few minutes, and the child is very much more active. It can be put to the breast in a short time, and is usually vigorous enough to take its feeding. If it is very weak from blood loss, it is probably better to feed it breast milk from a bottle for some time until it regains some of its strength, and is free from the danger of recurrence of the hemorrhage. If recurrence does occur, it may be necessary to repeat the process. In this case, if one external jugular has been used, it is probably better to use the median basilic vein, if it is not too small.

This, however, is not always necessary, as in one case I transfused a baby that had had a previous transfusion of defibrinated blood into the external jugular. This child started to bleed again on the second day, and I attempted to use the opposite external jugular for a second transfusion. As a result of defective apparatus, the blood clotted while we were getting it into the vein, and we were forced to tie off that vein. We then tried the arm vein, but it was too small, and broke while we were inserting the needle. I therefore reopened the wound I had made in the neck and dissected out the internal jugular vein, passed ligatures in the usual way, injected the blood, and tied off that vein. This left the baby with both external jugular veins and one internal jugular vein tied off; but, as far as could be seen, it did not affect the circulation of the head in the least, and the baby made an uneventful recovery.

One point that might be mentioned that we have learned from these experiments is that in using blood from the mother it is better to allow a slight excess of citrate solution, as it would appear that more is necessary to prevent coagulation in mother's blood than in blood taken from the father. This clinical fact is in line with some results that I have obtained in the study of the coagulation time of the blood in puerperal women.

These hemorrhages occurred from the first to the fourteenth day of life, and are more common about the fourth to the seventh day. In the melena cases there may be no evidence of bleeding for some time, except the pallor and weakness of the baby, until a large, black stool with or without fresh blood reveals the diagnosis.

Bleeding from the cord or from a circumcision is usually detected early, but much valuable time is frequently lost trying ineffectual methods to control it, such as retying the cord, putting in extra stitches, or the use of styptic applications locally. These hemorrhages are chemical in origin, and cannot be controlled by mechanical means. The only sure way of controlling them is by the administration of whole blood, and the best way of accomplishing this is by the intravenous blood transfusion of citrated blood.

It is not known just what happens in the blood of new-born babies that results in the failure of the normal mechanism of coagulation to function. Rodda [3] has shown that there is a decrease in the coagulability, beginning with the second day and reaching its lowest point about the fourth or fifth day. The coagulability returns to normal in most cases about the eighth to the tenth day, and the bleeding time as well as the coagulation time may be prolonged in babies apparently otherwise normal.

It would seem possible or even probable that this phenomenon is intimately related, either as a result of, or as part of, the process of icterus neonatorum. This process occurs, and disappears in about 50 per cent. of cases at the same time as the decrease in the coagulability is manifest, and its cause has never been satisfactorily explained.

It is obvious that something is lacking in the blood of these infants which is essential to normal blood coagulation and which predisposes to these hemorrhages. Whatever this substance or these substances are, they are present in excess in normal adult blood and are not dependent on the calcium content of the donor's blood, for in these experiments the injected blood contained its calcium supposedly in the form of the insoluble calcium citrate. It is more likely, therefore, that some of the other constituents of the blood entering into the coagulation are deficient, such as the thrombokinase or prothrombin, or that some substance in the blood, such as bile, interferes with the normal activity of the coagulation ferments.

CONCLUSIONS

1. Blood transfusion by the citrate method is a specific for the treatment of the hemorrhages of the new-born.
2. Peripheral veins, and especially the external jugular veins, are well adapted for this procedure if the proper instruments and technic are applied.
3. This method is safer than the injection of blood into the longitudinal sinus, and is not too technically difficult for the average physician.
4. The recovery of a patient with severe icterus neonatorum suggests the use of this procedure in this condition.

3. Rodda, F. C. Determining Coagulation Time of Blood in New-Born, Am. J. Dis. Child. **19**: 268 (April) 1920.

Cowpox in 1796.—In the month of May, 1796, the cowpox broke out at Mr. Baker's, a farmer who lives near this place. The disease was communicated by means of a cow which was purchased in an infected state at a neighboring fair, and not one of the farmer's cows, consisting of thirty, which was at that time milked escaped the contagion. The family consisted of a man servant, two dairy maids and a servant boy; who, with the farmer himself, were twice a day employed in milking the cattle. The whole of this family except Sarah Wynne, one of the dairy maids, had gone through the smallpox. The consequence was that the farmer and the servant boy escaped the infection of the cowpox entirely, and the servant man and one of the maids had each of them nothing more than a sore on one of their fingers, which did not produce the least disorder in the system. But the other dairy maid, Sarah Wynne, who never had the smallpox, did not escape in this easy manner. She caught the complaint from the cows and was effected with it in so violent a degree that she was incapable of doing any work for the space of ten days.—Edward Jenner: An Inquiry into the Causes and Effects of the Variolae Vaccinae, a Disease Discovered in Some of the Western Counties of England, particularly Gloucestershire, and Known by the name of the Cowpox (1798).

CHANGES IN THE TEMPORAL BONES IN EXPERIMENTAL RICKETS

THEIR RELATION TO OTOSCLEROSIS *

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In a previous report by one of us,[1] attention was called to the possible relation of otosclerosis to rickets or to the deficiency disease of which rickets is a common manifestation. The purpose of this second report is twofold: (1) to determine the pathologic changes within the temporal bone, particularly in parts most intimately associated with the function of hearing, in experimentally produced conditions having a fundamental resemblance to rickets, and (2) to establish an analogy between these changes and those found in that important and prevalent progressive type of deafness named "otosclerosis," thus attempting to offer experimental evidence as to its cause, i. e., that it is a manifestation of a deficiency disease.

Until 1902, Moos and Steinbrügge, according to Politzer,[2] were the only two who had minutely investigated the changes in the labyrinth of rickets. Necropsy of a dumb idiot, deaf since birth, who had general hyperostosis of the cranium, disclosed these changes: hyperostoses on the inner tympanic wall; great constriction of the internal auditory canal; ossification of the ligamentum annulare, and a mass of tissue consisting of cartilage cells and fibrous plugs, with a small calcareous deposit, in the capsule of the right cochlea near the recessus hemisphericus. In addition, in the left ear the foot-plate of the stapes was replaced by a bony mass which extended into the osseous substance of the labyrinth capsule. In the right ear, instead of the crura of the stapes, slipper shaped bands were seen, which were ossified only at their external periphery, and between which connective tissue rich in cells was deposited. Since that time, few investigators have called attention to changes in the temporal bone in rickets.

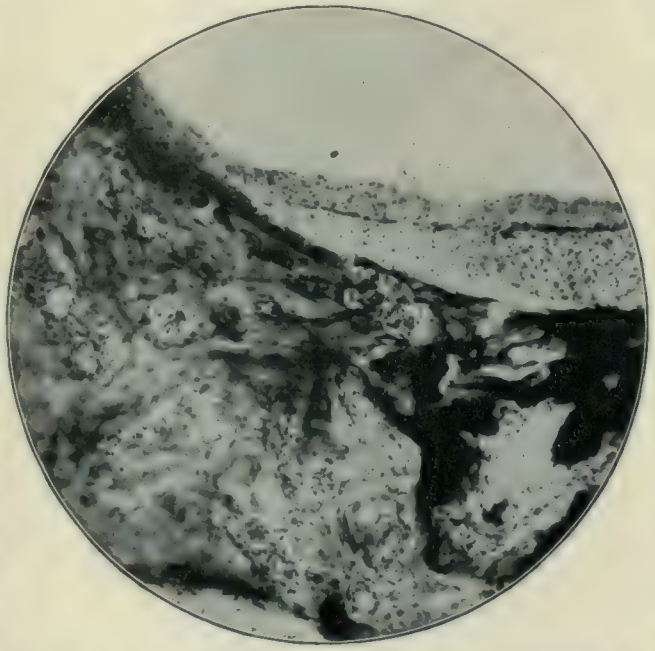


Fig. 1.—Labyrinthine capsule: osteoid tissue, bone only partly calcified, and wide cellular canals; slightly reduced from a photomicrograph of 160 diameters' magnification.

Mayer[3] finds bony degeneration in the cartilage about the oval window, together with the same changes of ossification about the "joint" around the oval window. Mayer studied the changes in the temporal bone in a 9 months old child with well advanced rickets:

> The marrow, blood spaces and adjacent layers of bone stained bright red in the hematoxylin-eosin-stained preparation, and in these red parts appeared very broad osteoid formations (bonelike tissue with deficiency of lime salts) which were sharply differentiated from the deep blue underlying bone. The marrow was distinctly fibrous, and evident spindle-shaped cells and collagen fibrils formed a widely reticulated network in which numerous osteoblasts were seen. Another significant finding was the remains of premature cartilage in the region of the oval window, which was not ossified in the typical manner, but absorbed by the ingrowth of giant cells.

Mayer quotes Pommer and Schmorl, who likewise showed that the newly formed bony tissue remains uncalcified and covered with osteoblasts.

Ziegler, according to Mayer, also called attention to the changes in the temporal bone in rickets and to the fibrous nature of the bone marrow, an "endostitis," in which the newly formed network of bone remained uncalcified and in which the defect was lack of calcification rather than in the formation of cells.

INTERNAL EAR IN EXPERIMENTAL RICKETS

The experimental work was carried out on young white rats in the manner now widely used in studying the biologic effects of deficient diets on these animals. Each litter of young was divided, part serving as controls and part being subjected to the experimental diet. For one series of animals, the diet was low only in fat-soluble A; for another series, it was low in both vitamin and calcium. We had for study, therefore, material coming from three groups of rats: (1) the normal controls; (2) rats on a diet deficient only in fat-soluble vitamin, and (3) rats on a diet deficient in both fat-soluble vitamin and calcium. The basal diet was composed of: casein, 18 per cent.; dextrin, 72 per cent.; salt, 4 per cent., and yeast, 6 per cent. This diet, when fat-soluble vitamin was administered in the form of 2 or 3 drops of cod liver oil daily to each control animal, was found to be adequate to bring about normal growth and development. When the fat-soluble A was absent, growth and increase in weight were retarded in the characteristic manner, and xerophthalmia developed. If calcium also was omitted, bone changes became marked.

Technic.—At the end of the experimental period, which had been continued for three months, the rats were killed with chloroform. The long bones were removed and fixed in 10 per cent. dilution of liquor formaldehydi for microscopic study. The heads were removed, the skin, soft parts and lower jaws dissected away, the top of the skull and brain removed, and the rest of the head fixed in the 10 per cent. liquor

* From the Nelson Morris Memorial Institute for Medical Research of the Michael Reese Hospital.

1. Kauffman, A. B.: Deficiency Diseases of the Ear, Nose and Throat, 1, Otosclerosis, 2, Hyperplastic Ethmoiditis, Laryngoscope **32**: 50 (Jan.) 1922.
2. Politzer, A.: Diseases of the Ear, Philadelphia, Lea Bros. & Febiger, 1903.
3. Mayer, O.: Untersuchungen über die Otosklerose, Leipzig, Alfred Hölder, 1917.

formaldehydi. After fixation, the bones were decalcified in 5 per cent. nitric acid in the 10 per cent. liquor formaldehydi, washed in water, dehydrated in alcohol, and embedded in celloidin. The base of each skull was cut into transverse serial sections, each tenth section being stained and mounted. Mayer's acid hemalum and aqueous eosin were used as routine stains.

In the decalcification of the bones, differences in calcium content were already evident in the different series of rats. The bones of those animals which had been maintained on a diet low in both fat-soluble A and calcium were completely decalcified within a very short while, six hours usually being sufficient. The bones from rats which had been maintained on a diet low only in fat-soluble vitamin required longer action of the decalcifying fluid, usually over night, whereas the normal controls required a still more protracted action of the decalcifying agent.

In the microscopic examination the attempt was made to compare similar regions and levels of the auditory apparatus in the three series of rats. In each series the foot-plate of the stapes formed the most convenient landmark for orientation.

Normal Rats.—In the series of normal controls there were no bony abnormalities to describe. The external auditory canals of some of the animals of this series contained dense collections of polymorphonuclear leukocytes, without, however, any evidences of involvement of the middle ear or of the bones surrounding the middle and internal ear. A similar condition was also present with about equal frequency in the animals of the two experimental series.

Rats on Low Vitamin and Low Calcium Diet.—The changes noted in the animals of the series on a diet low in both vitamin and calcium are described first because they were most marked and most widespread. Throughout all the bones of the base of the skull there are present the evidences of disturbed bone formation which have been described so completely for the long bones by others in experimental rickets of rats (Fig. 1). Completely calcified bone is small in amount. The greater portion of the bone is composed of uncalcified osteoid tissue, which has, in general, the normal trabeculated arrangement; but the trabeculae are somewhat thicker than those of the normal bone of the control series. The osteoid tissue has a faintly fibrillated appearance, and its nuclei are larger and richer in fluid than those of the normal bone. Where bone marrow is present, it is hyperplastic, cellular, free of fat, and usually rich in red blood corpuscles; moderate numbers of myeloplaxes are present in the marrow. Cartilage is absent, except about the annular ligament of the foot-plate of the stapes and in the ventral portions of the occipital and sphenoid bones; the cartilage about the annular ligament shows certain changes to be described later. The haversian canals are wide, and are filled with a tissue rich in young, spindle connective tissue cells, which surround a dilated, thin walled, engorged blood vessel in each canal. Osteoclasts are not seen in any of the sections. In one animal of this series, osteoblasts are numerous, forming a distinct layer on the surface of the osteoid trabeculae; in other animals of the series they are present in fewer numbers.

Osseous Changes In and About the Auditory Apparatus: The changes described above as present diffusely in the bones of the base of the skull are as marked in the petrous portion of the temporal bone as elsewhere. The labyrinthine capsule in one animal is readily distinguished from the surrounding bone by its thinner, denser lamellae of osteoid tissue, by the absence of marrow and by the less numerous canals. The capsule contains more calcium than the surrounding bone, but, like the latter, is incompletely calcified. In the other rats of this series the bone immediately about the cochlea and labyrinth (Fig. 1) cannot be distinguished from that farther away, the entire petrous bone being soft and spongy, with numerous wide, cellular, vascularized spaces.

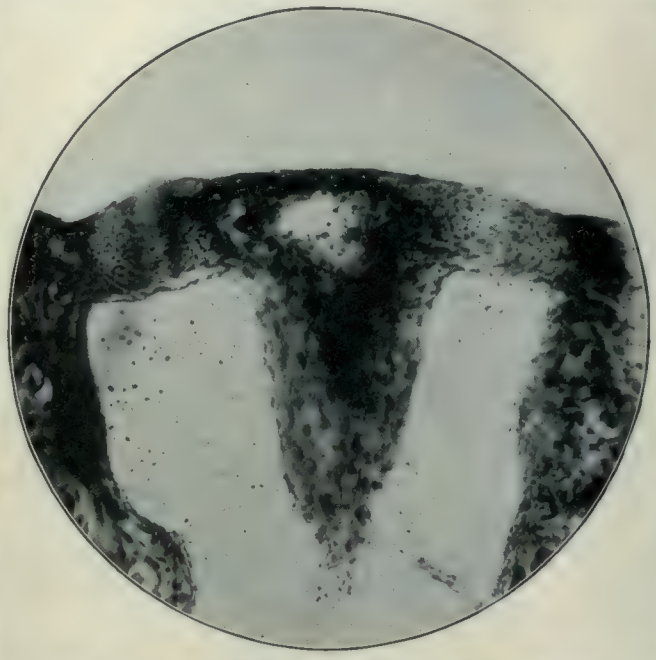


Fig. 2.—Foot-plate of the stapes, with a central cellular area: The annular ligament on the right, which is the anterior margin of the oval window, is indistinct and the line of calcification is irregular; on the left, an area of calcified cartilage extends almost to the annular ligament; slightly reduced from a photomicrograph of 160 diameters' magnification.

The stapes, just above its foot-plate, contains in every specimen a central area of cellular tissue (Fig. 2). The foot-plate has a somewhat greater degree of curvature than in the normal animals. In one the bending is quite marked, the foot-plate bulging into the cisterna perilymphatica vestibuli (Fig. 3). In another animal two slight projections extend into the vestibular cavity from the margins of the foot-plate, the middle portion of the plate being bowed outward into the middle ear cavity (Fig. 4). This condition is suggestive of hyperostosis, but has probably been brought about by the outward bending of the central part of the foot-plate.

The cartilage of the oval window on both sides of the annular ligament is definitely abnormal (Figs. 2 and 4). The cartilaginous zone is increased in width, and its margin next to the bone is irregular. The cartilage cells are less regularly arranged than normal, and those nearest the annular ligament appear younger than the rest of the cells in that the nuclei are larger and less condensed. Capsules enclosing two cells each are more numerous than in the controls. Irregular calcification of the cartilage, especially of the petrous side, is apparent; deeply blue stained projections of cartilaginous matrix may extend almost to the free margin of the annular ligament (Fig. 2). At the anterior margin of the oval window the changes in the cartilage have led to almost complete disappearance of the annular ligament (Figs. 2, 3 and 4). The latter,

instead of being a very sharply defined band of transversely fibrillated tissue between two zones of cartilage, is indistinct, being represented by only a few fibrils, which run from the marginal cartilage to that of the stapedial foot-plate. The free margins of the two cartilaginous zones are very indefinite and irregular, and in places the two zones appear to be fused and to replace the annular ligament completely as the result of proliferation of cartilage cells (Fig. 5). The changes in and about the annular ligament and the foot-plate are present in all the animals of the low calcium series, five in number, which were subjected to detailed microscopic study. In all the animals the changes in the osseous tissue are marked and widespread. It is not possible to detect any greater proneness to involvement on the part of any particular portion of the bony auditory apparatus, but the cartilage of the anterior margin of the oval window is uniformly more severely involved than that of the posterior margin.

Changes in the Auditory Soft Tissues: In the normal animals the labyrinth is lined by a fairly thick layer of tissue which has the structure of neuroglia or neuro-epithelium. This is composed of rather widely separated, faintly outlined cell bodies, each with a small, round, deeply stained nucleus about the size of that of a lymphocyte. These cells lie in a very finely fibrillated ground-substance, the fibrils interlacing with one another in all directions. The layer of lining cellular tissue is traversed by a few widely separated capillaries. In the animals of the low calcium series, the layer of tissue which lines the labyrinth is of normal thickness, but contains a larger number of young spindle nuclei (Fig. 1). The latter are usually most numerous nearest the bony wall or about the walls of the capillaries; the cells to which these nuclei belong appear to have been derived from the small amount of stroma which normally supports the capillaries. The ground-substance of the lining tissue appears more coarsely fibrillated, somewhat denser, and slightly more deeply stained than in the normal animals. The cochlear nerve contains a few small round cells with deeply stained nuclei, apparently lymphocytes. In the spiral ganglion, young spindle nuclei are slightly increased in number in one specimen. In general, it may be said that changes in the auditory nervous tissues are slight; such as are noted appear to be secondary to the nutritional disturbance of the more markedly involved bone or to the abnormal general metabolism.

Animals on a Diet Low in Fat-Soluble Vitamin Only.—In the animals which were kept on a ration low only in fat-soluble A, osseous changes, both immediately about the auditory apparatus and at a distance from the latter, are much less marked than the changes which have been described above. The bone is composed of dense, hyaline, deeply eosin-stained, fibrillated trabeculae which are usually centrally calcified. The haversian canals contain only small amounts of cellular tissue; the marrow present is moderately cellular. In this series of animals the structure of the bone approaches very closely that of the normal controls. The animals of this series used for microscopic study had been treated with cod liver oil and had recovered from their xerophthalmia and retarded gain in weight. The slighter degree of involvement in this series, as compared with the low calcium series, might be considered evidence of recovery from osseous disturbances under the influence of cod liver oil. We do not believe, however, that the bones were ever so severely or so diffusely involved in the animals which had been on a diet low only in fat-soluble vitamin as in those which had been subjected also to a low calcium ration.

The changes noted in the bones of the base of the skull in the two experimental series of rats can be closely correlated with those present in the long bones. In the animals which had been maintained on a diet low in both calcium and vitamin, the long bones give evidence of disturbed calcification as marked as that present in the bones of the skull. An excessive amount of osteoid tissue is present, calcification is deficient, the line of cartilage between diaphysis and epiphysis is irregular and partly calcified, and the bone marrow is hyperplastic and cellular. In the series whose food was deficient only in fat-soluble vitamin, changes are much less marked, and the long bones approach the normal in structure.

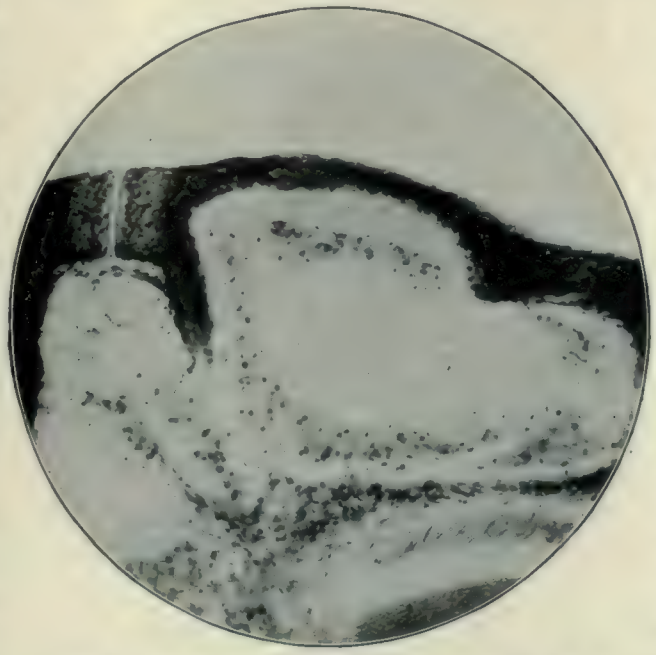


Fig. 3.—Foot-plate of the stapes, bent inward into the vestibular cavity: The annular ligament at the right (anterior margin of the oval window) is indistinct; slightly reduced from a photomicrograph of 160 diameters' magnification.

Clinical Application.—It is seen, therefore, that in rats fed on diets low in content of fat-soluble A and calcium, there were produced pathologic conditions in the temporal bone having a fundamental resemblance to the other bony skeletal changes in rickets. These changes, definite and well marked, are present in structures vital for perfect hearing. The bowing of the foot-plate of the stapes (suggestive of the yielding of soft bone to external pressure); the proliferative changes in the region of the anterior margin of the oval window; the involvement of the annular ligament, that may, in the process of healing, go on to at least partial ankylosis; the replacement of the normal, dense, nonvascular bone of the labyrinth capsule and coils of the cochlea by vascular spongy bone; the proliferative changes in the auditory nervous tissues—these alterations are certainly sufficient to warrant the assumption that corresponding changes even less marked in the human being would produce impairment of hearing to a varying degree. It is interesting here to ask whether the change in the position of the head, observed in some of the animals fed on these deficient diets, may not have been due to labyrinthine involvement.

We feel justified, therefore, in calling attention to several points hitherto unrecognized both by pediatricians and workers in the problem of rickets, and also by the otologist: that changes in the temporal bone in rickets are important ones since they are concerned with structures essential to the function of hearing; and, secondly, that with such changes there may be a type of deafness either initiated very early in life or remaining latent until the healing process is complete, that has for its etiologic basis dietary deficiencies. This may help to throw some light on the vast number of impaired hearing cases found in children and not ascribable in their entirety to any of the entities in the present-day classification of deafness.

OTOSCLEROSIS A DEFICIENCY DISEASE

Attention was called by one of us [1] to the possibility that otosclerosis is a deficiency disease, that it is a nutritional disorder having for its most important etiologic factor a vitamin deficiency of fat-soluble A, so that it was termed at that time a latent "adult rickets." There is scarcely any chronic disease which shows more quantitative variations than rickets, changes from a clear-cut disorder going down to a vanishing point which needs the greatest care in order to establish its existence. Further to establish this assumption, we shall make an effort to show that the experimentally produced pathologic changes in the internal ear of rats, following dietary deficiencies, can rightfully be considered precursors of the clinical and pathologic entity known as otosclerosis.

The term "otosclerosis" has been accepted by otologists since the work of Politzer,[2] in 1893, as indicating a definite entity. It has been applied to that group of cases showing a chronic progressive deafness (usually associated with tinnitus aurium) in which, independently of intercurrent disease of the tympanum, the bony capsule surrounding the labyrinth is the seat of a chronic nonsuppurative disease. Although von Tröltsch [4] was the first to suggest, on the basis of clinical observations, that this condition be given a separate place in the category of diseases of the ear, it was Politzer who clearly defined the condition, introduced the term, and demonstrated its character by microscopic study as a primary pathologic change of the capsule of the labyrinth. Many observers attempted to show an analogy between this condition and other pathologic states in which other bones of the body were affected, particularly rickets, osteomalacia and arthritis. Beck,[5] in 1915, first called attention to the fact that in otosclerosis there is evidence of calcium deficiency in the rest of the bones of the body, especially in the larger and long bones, as determined by roentgenograms. Politzer believed that the form of progressive deafness which runs its course from the very beginning without any catarrhal symptoms must be regarded as a special disease of the organ of hearing. Unfortunately, however, to this time we are no nearer to knowledge of its cause than we were when Politzer, Siebenmann, Katz, Habermann and other European otologists first called our attention to the condition, and as a result, there has been offered no form of treatment of benefit to this prevalent malady, which constitutes more than 7 per cent. of all ear cases.[6]

Pathology.—Most authors are agreed as to the pathologic change itself. This knowledge has been gained by the microscopic examination of such specimens as have been available. There is osteoporosis of the bone of the labyrinth, in consequence of which the dense petrous bone is replaced in certain areas by vascular, spongy bone, especially in the region of the anterior bony margin of the oval window. In its early stages, the process is a true new formation of osteoid tissue and not a transformation of old bone. It is characterized by the large size of the osseous spaces and haversian canals; the spaces are filled with connective tissue rich in cells, which surround large and small blood vessels. Osteoclasts are not seen at this stage. Later on, the diseased areas become sclerosed by the deposition of new bone in the walls of the spaces. There is usually a sharp line of demarcation from the uninvolved portions. In the early stages, the nerve structures are normal, as a rule.

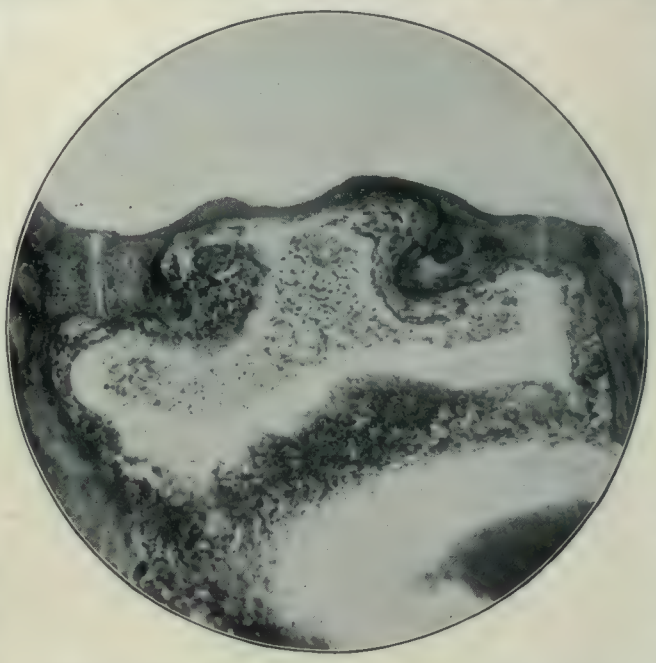


Fig. 4.—Central part of the foot-plate of the stapes bent outward into the cavity of the middle ear, the marginal portions projecting into the vestibular cavity: The annular ligament on the right (anterior margin of the oval window) is indistinct and there is irregularity of calcification; slightly reduced from a photomicrograph of 155 diameters' magnification.

All authors have taken it for granted that the change is superinduced on previously normal bone structure, with which hypothesis we are at variance.

It must be recognized, as shown by Kerrison,[7] that several varieties of the disease may exist, varying in mechanical results according to the region involved. In some cases the region about the oval window is the chief seat of abnormality. In others, there may be foci of change in widely separated portions of the petrous bone, in parts of the labyrinthine capsule not closely related to structures essential to cochlear function. In still other cases, the distribution of the pathologic process is such as to involve directly cochlear structures, with functional reactions characteristic of cochlear nerve involvement.

In the experimental rats studied by us there were present changes in the temporal bone that are similar

4. Von Tröltsch, A.: Die Krankheiten des Ohres, Ed. 2, Wurzburg, Stobel, 1862.
5. Beck, J. C.: Roentgenographic Diagnosis in Otosclerosis, Laryngoscope **25**: 154, 1915.
6. Bezold, F. R., and Siebenmann, F. R.: Text Book of Otology, translated by Jacques Holinger, Chicago, E. H. Colegrove, 1908.
7. Kerrison, P. D.: Diseases of the Ear, Philadelphia, J. B. Lippincott Company, 1921.

in most respects to the foregoing findings. We have produced osteoid changes in the capsule of the labyrinth and coils of the cochlea, together with changes involving the stapediovestibular region.

It must be noted that these changes have been produced more or less acutely and extensively, in contradistinction to the more chronic and localized process that takes place in otosclerosis. However, the anatomic changes which accompany the healing of experimental rat rickets have been thoroughly studied by other investigators; and so far as the changes in the temporal bone are in exact accord with the changes in the long bones, we feel justified in assuming that similar healing processes would take place here, and give a picture identical with advanced otosclerosis, an involvement like that produced experimentally being a precursor of the latter condition. It has been shown that the relative proportions of the dietary components (vitamins and inorganic salts) determine whether the animal will develop bones which are normal or pathologic, and in the latter case whether the animals will have rickets, osteoporosis or osteosclerosis.[8]

SUMMARY

In young rats which have been maintained on a diet low in fat-soluble vitamin A and in calcium, there occur abnormalities of the osseous capsule of the internal ear which are identical with those changes in the long bones which are characteristic of experimental rickets.

These alterations, since they occur in structures concerned in the function of hearing, may result in an impairment of hearing.

The analogies between the changes in the temporal bones in experimental rickets and the lesions which have been described in otosclerosis suggest that the latter condition may be a late result of rickets or a manifestation of a dietary deficiency still existent during adult life.

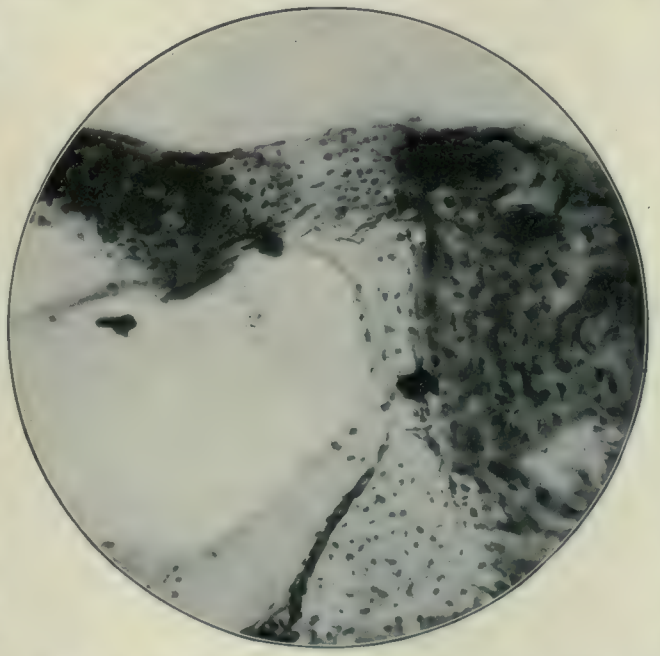


Fig. 5.—Anterior margin of the oval window: The annular ligament is almost completely replaced by cartilage; slightly reduced from a photomicrograph of 275 diameters' magnification.

8. McCollum, E. V., and Others: Studies on Experimental Rickets, XXII, Conditions Which Must Be Fulfilled in Preparing Animals for Testing the Antirachitic Effect of Individual Foodstuffs, Bull. Johns Hopkins Hosp. **33**: 296 (Aug.) 1922.

Reproduction in Tsetse Flies.—Tsetse flies differ from all others of their family in their remarkable manner of reproduction. They do not lay eggs, but the single developing larva is retained within the body, being nourished by special glands on the walls of the uterus. The larva is full grown before it is born, and occupies practically the entire swollen abdomen of the mother. In *Glossina palpalis* the first larva is born three or four weeks after mating, and another is born every nine or ten days, provided the temperature is around 75 or 80 F. In one captive fly, eight larvae were produced in thirteen weeks, and only one egg was found left in the body. Pregnant flies often abort when disturbed, and cases are known in which the larvae pupated within the abdomen of the mother, to the destruction of both of them.—Chandler: Animal Parasites and Human Disease.

NONSURGICAL REMOVAL OF PARAFFIN IN THE URINARY BLADDER

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The literature concerning foreign bodies in the bladder describes a large variety of articles. These have either been introduced from without by the patient or the medical attendant, or have ulcerated their way into the bladder from a neighboring viscus. Among the articles may be mentioned hairpins, straws, quills, gum, broken catheters or filiforms, nails, closed safety-pins, gauze, sponges and bullets. Rarely, nonabsorbable ligature material may erode its way through the bladder wall, following an operation on nearby pelvic organs. The silk, silkworm, or silver wire may then be seen lying free in the bladder or adherent to the mucous membrane, usually still knotted. Luys [1] has illustrated such an occurrence.

Occasionally the urologist is confronted with a case of wax or paraffin in the urinary bladder. The method and the reason for introducing the object are well known. The patient usually fashions a bougie out of wax or paraffin, and then, during the self-imposed urethral manipulations, the object slips inward beyond reach. In the endeavor to recover it, the bougie is sometimes forced back into the bladder, and we then have the clinical condition of foreign body to deal with.

Many ingenious instruments have been devised for removing objects from the bladder. The simple hollow tube known as the Kelly cystoscope is perhaps the easiest to use in the female. These tubes are now made with a distal light on a light carrier, and it is no longer necessary to wear a head-mirror. Alligator forceps are introduced through the tube, grasping and removing the foreign body. Young's rongeur cystoscope, Young's cystoscope lithotrite, the Brown-Buerger operating cystoscope, and the Bigelow lithotrite all are of utmost value in attacking this problem.

The case here submitted is one in which gasoline was injected into the bladder to dissolve a wax crayon which the patient had introduced. This method of removal, while new, is not original, having first been recorded by Caples [2] in 1919.

REPORT OF CASE

History.—E. W., a man, aged 23, was referred, Jan. 16, 1922, by Drs. T. J. Goundry and W. J. Gibson, with the complaint that he had a crayon pencil in the bladder. The past

1. Luys, Georges: Cystoscopy and Urethroscopy, St. Louis, C. V. Mosby Company, 1918, p. 189.
2. Caples, B. H.: Foreign Body in the Urinary Bladder, Surg., Gynec. & Obst. **29**: 315 (Sept.) 1919.

history was negative. He had always been strong and healthy, and had never consulted a physician before. The present illness began four days before his first visit, while the patient was testing out the caliber of his urethra with a commercial colored crayon, such as children use in school. Within the first twenty-four hours he began to pass gross blood and an occasional small clot. The bleeding was terminal, and consisted of about three drops. Frequency became progressively worse, until when seen he was voiding every half hour, accompanied by pain in the glandular portion of the urethra, occasionally referred to the rectum. There was no renal colic, and no pain above the level of the bladder, anteriorly or posteriorly. Nocturnal frequency was the same as during the day, and the patient stated that he did not pass any particles of the crayon.

Examination.—Urine voided into two glasses was opaque from presence of pus and blood. The external genitalia, the contents of the scrotum, the inguinal rings and the rectum were normal. Cysto-urethroscopy, with 4 per cent. solution of procain, was performed. A Brown-Buerger cysto-urethroscope, size 18 French, passed easily and revealed no residual urine. The bladder capacity was 250 c.c. The bladder was washed repeatedly until the solutions became clear. The mucous membrane was injected throughout, red and velvety, but no areas of ulceration were seen. In the bas-fond of the bladder, posterior to the interureteric ridge, were two pieces of red crayon lying crossed like the letter X (Fig. 1). The patient stated that two days before, during the act of voiding, he felt a sudden snap in the bladder, and thought that the crayon had broken. Both ureteral orifices were normal in appearance. They were not catheterized. The vesical outlet and the posterior urethra were inflamed to about the same degree as the bladder.

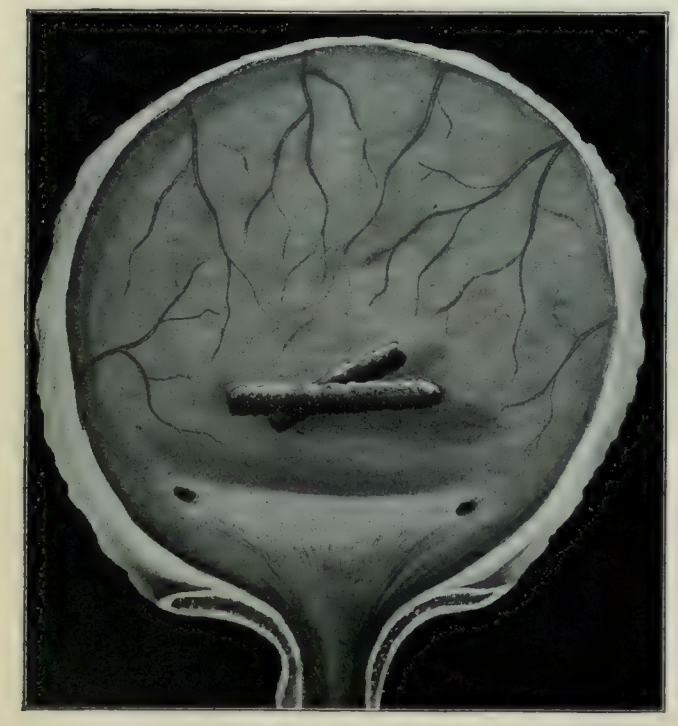


Fig. 1.—Semidiagrammatic view of the two pieces of crayon lying in the bladder, as seen through the cystoscope.

Treatment and Course.—The next day, which was the fifth day of the disease, 1 ounce (30 c.c.) of filtered gasoline, 70 proof, and 2 ounces (60 c.c.) of light liquid petrolatum were heated to a temperature of 105 F. and injected into the bladder through a Nélaton catheter. The patient retained this for one hour and forty-five minutes without much discomfort. He then voided 5 ounces (300 c.c.). The gasoline and oil floated to the top of the container, and many red particles of the crayon settled to the bottom. Six hours later the injection was repeated, and was retained for two hours without discomfort. The patient was up and about, coming to the office for his treatments. On the second day of treatment, the voided urine contained many crumbs and fragments of the crayon. During the act of micturition, while seen in my office, the stream became suddenly interrupted, and the patient could not void. The next moment he passed the large curved fragment seen in Figure 2, and at subsequent voiding the urine changed from red (particles of crayon in suspension) to straw color. Pain in the bladder and urethra was much less. The patient felt fine, and wanted to go back to work. No further injections of gasoline were given. The patient was put on hexamethylenamin and told to return in a week. One week after the urine had ceased to contain particles of crayon, the bladder was clear of any foreign material. There was still a moderate amount of cystitis. The third cystoscopy, about two months later, revealed the bladder absolutely normal.

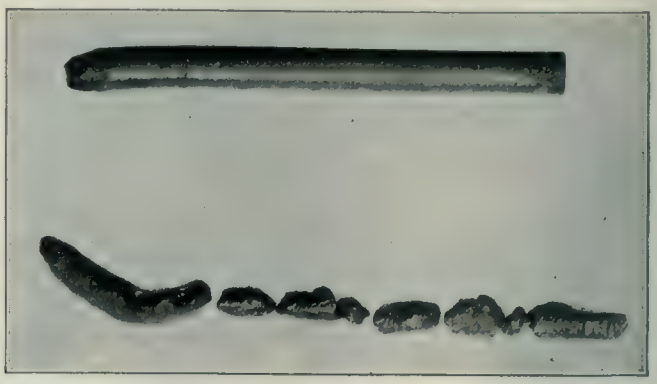


Fig. 2.—Above, crayon similar to the one used by patient; below, some of the larger pieces of the crayon which were voided, about three-fourths the actual size.

COMMENT

If I had not chanced across Caples' article, this patient would probably have been submitted to a suprapubic cystotomy. I saw a similar case during my hospital internship. A young man had fashioned a bougie out of a piece of paraffin candle and passed it on himself. When seen in the bladder through the cystoscope, the paraffin was in a rounded mass and floated. This patient was subjected to suprapubic cystotomy, as Caples' method was then unknown.

It is surprising how well the bladder tolerates the mixture of gasoline and liquid petrolatum, even in the presence of more or less acute cystitis, which is usually the case. This patient retained his first injection for one and three-quarters hours, and some of the others as high as five hours. He had a total of six injections of gasoline and liquid petrolatum.

Experiments as to the solubility of various brands of wax or paraffin, colored crayons and Christmas candles brought out the fact that most of them will dissolve in the one-third gasoline, two-thirds liquid petrolatum mixture, in about two hours at body temperature. If the container is agitated by shaking, they dissolve sooner.

Some of the colored crayons do not dissolve at all, but the cohesive substance which holds together the particles dissolves and the crayon crumbles. The crayon in this case was 3½ inches long, and had a caliber of 24 French when the paper wrapper was removed. If we are dealing with the type of crayon that goes into complete solution, the paraffin can be recovered by chilling the urine. This causes the paraffin to be precipitated out in its solid state, and the paraffin can then be collected and the total from the different voidings measured.

This case is reported so as to call attention to the fact that it is not necessary to perform a suprapubic cystotomy or perineal section to remove wax or paraffin from the bladder. The crayon could have been removed with Young's cystoscopic rongeur, but this would have necessitated the withdrawal and the reintroduction of the cystoscope many times, biting off a small piece each time, on account of the object's friability. Since the rongeur is size 30 French, this is far from a pleasant procedure for the patient. To the general practitioner, when there is a history of wax or paraffin in the bladder, it is not even necessary to submit the patient to instrumentation, it being such a simple matter to inject a little gasoline and liquid petrolatum.

SUMMARY

A patient who had passed a colored crayon into the bladder was given six injections of gasoline and liquid petrolatum, which dissolved the crayon.

35 Chestnut Street.

A STUDY OF LIGHT WAVES IN THEIR RELATION TO RICKETS*

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AND
MILDRED WEINSTOCK
NEW YORK

Recent investigation has established the fact that white rats can be regularly protected against rickets by means of sunlight or artificial rays produced by the mercury vapor quartz or the carbon arc lamp.[1] All these sources of light emit not only visible radiation, but also ultraviolet rays of various wave lengths. In a previous paper, Hess, Unger and Pappenheimer drew attention to the fact that rats which were confined in an enclosure of ordinary window glass (3 mm. thick) failed to be protected by sunlight, as by this procedure the effective rays were filtered out of the spectrum. In a subsequent paper,[2] it was shown that a filter of ordinary window glass (Corning), which transmitted ultraviolet waves as short as 334 millimicrons, intercepted the effective rays from the mercury vapor lamp, indicating that not all ultraviolet rays possess this property, but that it is associated only with waves shorter than 334 millimicrons. The proposition was advanced that the longest waves of value in relation to rickets lie in the neighborhood of 300 millimicrons. Recently, Pacini,[3] in a consideration of this subject, has expressed the same opinion. Shipley[4] believes that very short ultraviolet rays, those about 210 millimicrons in length, probably have the greatest antirachitic effect.

In the present study we have attempted a closer analysis of the spectrum in order to ascertain more precisely which waves exert this remarkable protective action. A partial abstract of this work will be found elsewhere.[5] The method of procedure has been to interpose selected filters between the source of light and the experimental animals, and to note whether irradiation prevented the development of rickets. The rats were 4 weeks old at the outset, and were fed the Sherman and Pappenheimer low phosphorus diet. For the most part the source of light was the mercury vapor, air cooled lamp, run at 76 volts. In order to obtain a desired dosage, the lamp was placed at varying distances, and used for varying periods of time, as may be noted in the accompanying tables. The filters

TABLE 1.—FILTRATION OF RAYS (MERCURY VAPOR QUARTZ LAMP)

Rat No.	Weights, Gm.	Filter	Exposure Time, Min.	Exposure Distance, In.	Lower Limit of Spectra of Filters, Millimicrons	Rickets: Roentgenogram	Rickets: Microscopic Examination
949	38-40	G 38 H	10	12	475	Moderate	Marked
950	40-40	4.6 mm.				Moderate	Marked
951	38-40					Moderate	Marked
1063	50-64	G 38 H	30	9	475	Moderate	Moderate
1064	40-52	4.6 mm.				Moderate	Moderate
1065	40-40					Moderate	Slight
1066	44-50					Moderate	Moderate
1204	50-50	G 38 H	60	9	475	Moderate	Moderate
1205	40-50	4.6 mm.				Moderate	Moderate
1206	50-44					Moderate	Slight
1207	40-44					Moderate	Slight
1302	70-100	Window glass	15	36	334	Marked	Marked
1303	50-80	2.6 mm.				Marked	Marked
1304	56-60					Marked	Marked
1305	54-60					Marked	Marked
1493	50-58	Window glass	30	9	334	Marked	Marked
1494	32-44	2.6 mm.				Marked	Marked (slight calcification)
1488	42-50	Window glass	60	9	334	Marked	Marked
1489	40-44	2.6 mm.				Moderate	Marked
1490	38-40					Moderate	Marked
1491	38-50					Marked	Marked
952	30-34	G 586 A	10	12	302	Moderate	Extreme
953	40-40	4.3 mm.				Moderate	Marked
954	20-28					Moderate	Extreme
1067	40-40	G 586 A	30	9	302	Very slight	Minimal
1068	40-52	4.3 mm.				Slight	Minimal
1069	40-42					Slight	Minimal
1070	42-42					Neg. (?)	Almost neg.
1200	50-50	G 586 A	60	9	302	Neg. (?)	Negative
1201	54-40	4.3 mm.				Neg. (?)	Slight
1202	50-50					Neg. (?)	Negative
1203	50-40					Neg. (?)	Negative
1512	44-50	Pyrex	3	18	289 (280?)	Slight	Slight
1513	44-50	0.8 mm.				Negative	Slight
1514	40-44					Slight (?)	Slight
1515	40-48					Slight (?)	Slight
1516	40-48	Pyrex	6	18	289 (280?)	Negative	No R. (osteoporosis)
1517	30-36	0.8 mm.				Negative	Very slight R.
1518	40-50					Negative	No R. (osteoporosis)
1519	46-50					Negative	No R.
1330	54-54	Pyrex	15	18	289 (280?)	Negative	No R.
1331	40-40	0.8 mm.				Negative	No R.
1332	54-44					Negative	No R.
1333	40-40					Negative	No R.
1334	54-60	G 86 B	15	18	302	Marked	Marked
1335	48-60	4.2 mm.				Marked	Marked
1336	40-50					Marked	Marked
1337	50-56					Marked	Marked
1500	30-30	G 86 B	30	9	302	Moderate	Marked
1501	32-30	4.2 mm.				Moderate	Marked
1502	30-34					Moderate	Marked
1503	30-36					Moderate	Marked
1496	30-34	G 86 B	60	9	302	Moderate	Marked (sl. calcification)
1497	32-34	4.2 mm.				Marked	Marked
1498	30-30					R (?)	Marked
1499	30-30					Moderate	Marked

* From the Department of Pathology of the Columbia University College of Physicians and Surgeons.

1. Hess, A. F.; Unger, L. J., and Pappenheimer, A. M.: Proc. Soc. Exper. Biol. & Med. **19**: 8, 1921-1922. Shipley, P. G.; Park, E. A.; Powers, G. F.; McCollum, E. V., and Simmonds, Nina: Ibid. **19**: 43, 1921-1922. Powers, G. F.; Park, E. A.; Shipley, P. G.; McCollum, E. V., and Simmonds, Nina: Ibid. **19**: 120, 1921-1922. Hess, A. F.; Unger, L. J., and Pappenheimer, A. M.: Ibid. **19**: 238, 1922.

2. Hess, A. F.: The Influence of Light in the Prevention and Cure of Rickets, Lancet **2**: 367 (Aug. 19) 1922.

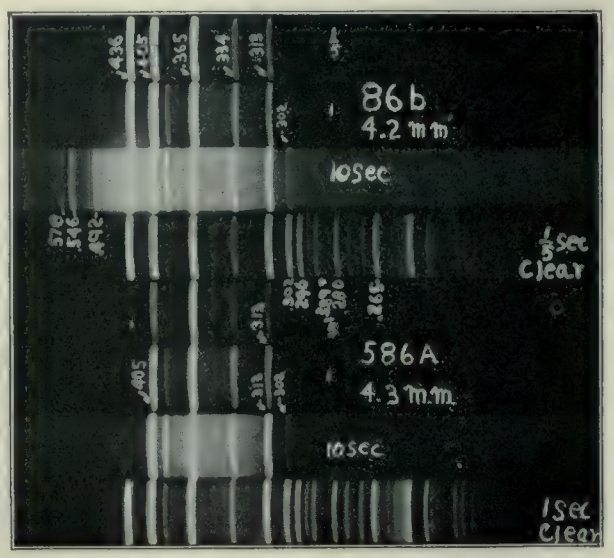
3. Pacini, A. J.: M. Herald & Electrotherapist, October, 1922.

4. Shipley, P. G.: Faulty Diet and Its Relation to the Structure of Bone, J. A. M. A. **79**: 1563 (Nov. 4) 1922.

5. Hess, A. F.; Pappenheimer, A. M., and Weinstock, Mildred: Proc. Soc. Exper. Biol. & Med. **20**: 14, 1922.

were of glass, manufactured by the Corning Glass Works, and were of known transmissibility. In every instance the transmission curves of these glasses have been studied by the U. S. Bureau of Standards, and are set forth in their scientific and technologic papers.[6] In regard to the animals, the same procedure was followed as in previous experiments of this series. White rats weighing about 40 gm. were employed; after a twenty-one day period on the experimental diet, they were roentgenographed, and after a total twenty-eight day period they were killed and examined. The interpretation of rickets was based on a microscopic examination of the costochondral junctions.

Table 1 illustrates the results obtained when the source of light was the mercury vapor lamp, and various glass filters were interposed. When rays are employed without filtration, we have found that irradiation for two minutes at a distance of 3 feet suffices to protect white rats under the foregoing experimental conditions. When, however, the diet was amplified by replacing 5 per cent. of the wheat flour with an equal percentage of dried milk, a marked increase in growth was brought about, and greater irradiation was found necessary in order to protect. The first experiment (Table 1) demonstrated a failure to afford protection when filter G 38 H (Noviol C) was employed. This is a yellow filter, which cuts off rays shorter than 475 millimicrons. This failure resulted even when exposures were carried out at a distance of only 9 inches and for a period of sixty minutes. If we regard an exposure of two minutes at 3 feet as a "unit protective dose," then the irradiation in this instance was equivalent to 480 protective units. The next section of this table gives data in relation to a filter of crown window glass which allowed the passage of ultraviolet waves as short as 334 millimicrons. Here, again, 480 units of light were ineffective.



Comparative spectrograms of mercury vapor radiations through the neutral filter 86 B (4.2 mm.) and the purple filter 586 A (4.3 mm.): *A, B, C,* one-fifth, one and ten seconds exposures through 86 B; *D, H,* one-fifth and one second exposure without interposition of any filter; *E, F, G,* one-fifth, one and ten seconds exposures through 586 A.

Filter G 586 A, which was employed in the subsequent tests, is a purple glass, and transmits waves as short as 302 millimicrons. It should be borne in mind that the spectrum of the mercury vapor quartz light is not continuous like that of sunlight, or a band spectrum similar to that of the carbon arc light, but is a discontinuous spectrum composed of a number of bright lines of varying intensity. One of the important lines is composed of waves 313 millimicrons and another 302 millimicrons in length. The accompanying spectrogram, which was made with the filter used in this experiment, shows that this glass allows the passage of a considerable amount of 313 millimicron rays and a feeble intensity of 302 millimicron wave lengths. To ascertain the percentage of transmission for glasses of different thicknesses, we have made use of the chart employed by the U. S. Bureau of Standards for this purpose.[7] When this chart is used, it is found that this filter transmits about 3 per cent. of 313 millimicron waves, and less than 1 per cent. of the 302 millimicron waves. It will be noted (Table 1) that protection failed with ten minutes' irradiation, that it was partial with irradiation of thirty minutes, and almost complete when continued for sixty minutes. It is evident that we may conclude that whereas rays 334 millimicrons in length are ineffective, waves 302 millimicrons in length are able to protect rats from rickets. The data, however, are not adequate; the analysis of the spectrum is not sufficiently precise to warrant a conclusion as to whether the bright line 313 millimicrons contributed to the protection. From the fact, however, that prolonged irradiation was successful, whereas short irradiation proved unsuccessful, it would seem that the most effective wave lengths were those of 302 millimicrons, and that they were supplied in insufficient intensity unless prolonged exposures were employed.

The test with pyrex glass (0.8 mm. thick) gave a result that was to be expected. This filter was markedly permeable to short ultraviolet rays, allowing the passage not only of waves of 302 millimicrons, but also those of 289 and even 280 millimicrons. It is not surprising, therefore, that this filter did not greatly interfere with the protective action of the mercury vapor rays. The fact that several "protective units" were required to bring about the desired result must be ascribed largely to the diminution in intensity as well as to the filtration of wave lengths of curative value.

The last filter used in this series was G 86 B, which is nearly neutral in color. As may be seen from the accompanying spectrogram, the ultraviolet rays transmitted by this filter are strikingly similar to those transmitted by the purple filter (G 586 A), which we have just discussed. This combined spectrogram was made from exposures of the identical filters employed in our tests; the spectra were photographed simultaneously on the same plate. Both transmit 313 millimicron waves in considerable intensity, and 302 millimicron waves in less than 1 per cent.; in the latter region the transmissibility rather favors the G 86 B filter. In spite of this marked similarity, it was found, as will be seen in the table, that the colorless filter (G 86 B) failed to protect under conditions in which the purple filter (G 586 A) was successful.

There is, however, a striking difference in the transmission of these two filters in the field of visible rays. This is evident from a glance at the spectrograms, which show that with the neutral filter (G 86 B) the rays extend much farther to the left in the region of

6. Scientific Paper 325, Technologic Papers 119 and 148, Bureau of Standards, 1918, 1919 and 1920.

7. Burge, W. E.: Am. J. Physiol. **36**: 35, 1914-1915.

the visible than when the purple filter (G 586 A) was used. These spectrograms fail to illustrate this aspect of the question, as they do not register rays longer than about 450 millimicrons, whereas the visible part of the spectrum includes rays 720 millimicrons in length. It was found on examining these two filters by means of

TABLE 2.—CARBON ARC IRRADIATION; CLOTHING MATERIALS

Rat No.	Weights, Gm.	Material	Exposure: Time, Min.	Exposure: Distance, Feet	Rickets: Roentgenogram	Rickets: Microscopic Examination
1545	42-48	Thin cotton (nainsook)	10	3	Negative	None
1546	40-42				Negative	None
1547	40-50				Negative	None
1548	60-60				Negative	None
1549	40-46	Cotton stocking	10	3	Negative (?)	Slight
1550	28-28				Moderate	Moderate
1551	60-64				Rickets	Moderate
1552	28-26				Rickets	Marked
1659	70-66	Cotton stocking	30	3	Slight	Very slight
1660	60-54				Negative	No definite
1661	58-60				Negative	No definite
1662	66-60				Slight	No definite
1553	40-54	Woolen stocking	10	3	Rickets	Moderate
1554	60-60				Negative (?)	Very slight
1555	50-60				Moderate	Moderate
1556	70-68				Moderate	Moderate
1655	80-70	Woolen stocking	30	3	Slight	No definite
1656	50-40				Negative	Slight
1657	76-70				—	Very slight
1658	44-40				—	Slight

a spectrophotometer that the nearly neutral glass, which failed to allow protection, transmits about 90 per cent. of red rays of 680 millimicron wave length, and about 87 per cent. of yellow rays of 540 millimicron wave length, whereas the purple filter (G 586 A) transmits only 3 per cent. of red, and none of the yellow rays. Furthermore, the neutral filter allows the passage of infra-red waves which are entirely excluded by the purple filter. In view of this marked distinction in transmissibility, it seems probable that the difference in the action of these filters rests in their difference in permeabillity to long rays—that either the infra-red or visible rays, or both, exert a neutralizing or inhibitory effect on the radiations which protect against rickets. As experiments are under way to test this hypothesis further, we shall postpone a detailed consideration of this interesting aspect of the subject.

A series of experiments was undertaken to test the transmissibility of some clothing materials which are commonly worn by young infants. This seemed worth while in order to gain a conception of the degree to which clothing filters out the protective rays of the sun. As this was the object of the test, the carbon arc lamp, the rays of which more nearly resemble sunlight, was used instead of the mercury vapor lamp. White flame carbons were inserted, and the lamp was placed at a distance of 3 feet; under these conditions, irradiation of about three minutes with 30 amperes suffices to protect white rats. Filters of thin white cotton dress material, and of white cotton stocking, and of wool stocking material were interposed as filters between the animals and the carbon-arc lamp. They were placed at a distance of 6 inches from the rats. It was found that the thin cotton material offered but little hindrance to the protective rays. When ten "protective units" of carbon light were given, these rays were able to traverse not only the cotton but even the woolen stocking material. All these materials were white, or almost white. Another test was devised to ascertain the difference in transmissibility of white and of black material. To this end cotton goods, counting ninety-six by 120 threads to the square inch, and manufactured on the same loom—differing, therefore, merely in color—were employed as filters in the same way as in the previous experiment. Exposures were made of ten and twenty minutes' duration, using the respective materials. As Table 3 shows, the black cotton material (which was dyed with an anilin dye) acted as a more potent filter than the white material. This is in keeping with the accepted opinion that black possesses marked absorptive affinity for ultraviolet rays.

COMMENT

It follows from our experiments that, in order to be of value in rickets, ultraviolet waves must have a wave length not longer than 302 or possibly 313 millimicrons. This renders light that has passed through ordinary window glass of no therapeutic value in this disorder. The shortest waves of sunlight that reach the surface of the earth are about 290 millimicrons, and vary greatly in intensity according to the time of the day and the season of the year. Indeed, when the atmosphere is heavy with moisture, smoke or dust, the shortest of these waves are absorbed. It is evident, therefore, that the range of effective radiations is markedly circumscribed by nature, and further limited by meteorologic conditions. The foregoing experiments serve to emphasize the remarkable specificity of wave lengths of light in relation to rickets. It can be stated with confidence that waves 324 millimicrons in length have little or no value in protecting against rickets, and that waves of 302 millimicrons are of great value in this respect. This signifies that a difference of about thirty millionths of a millimeter in wave length suffices to render ultraviolet light effective or ineffective.

In this connection, attention may be called to some experiments of Burge [7] on the coagulating property of

TABLE 3.—CARBON ARC IRRADIATION—WHITE AND BLACK MATERIAL

Rat No.	Weights, Gm.	Material	Exposure: Time, Min.	Exposure: Distance, Feet	Rickets: Roentgenogram	Rickets: Microscopic Examination
1390	50-50	White	10	3	Rickets	Marked
1391	44-50				Slight	Moderate
1392	40-50				Slight	Slight
1393	50-50				Slight	Moderate
1618	44-42	White	20	3	Slight	Slight
1619	44-38				Slight	None
1620	50-48				Negative	
1621	50-42				Negative	None
1394	50-52	Black	10	3	Marked	Marked
1395	46-50				Marked	Very marked
1396	54-58				Marked	Very marked
1397	50-52				Marked	Very marked
1622	48-50	Black	20	3	Rickets	Moderate
1623	54-40				Slight	Slight
1624	48-50				Marked	Marked
1625	46-50				Marked	Moderate

light, in which he found that the longest waves able to coagulate egg white were 302 millimicrons in length. The similarity of this result to that described above may be found to have some significance. Looking at the question from the other end of the spectrum, we have been unable to ascertain how short ultraviolet rays may be and still possess prophylactic value in rickets. It

has not been possible to filter out the radiations in the near ultraviolet region (from 400 to 300 millimicrons) and at the same time allow the passage of radiations in the far ultraviolet. It should be borne in mind that the shorter the light waves in this region the more irritating they are, so that it is probable that there is a therapeutic limit also in this direction.

The experiments with clothing material indicate that the rays do not have to impinge directly on the surface of the skin. Clothing must be regarded as other filters which screen the effective rays, namely, according to their texture or thickness. Furthermore, a direct quantitative relationship exists between the nature of the material and the duration of exposure to sun's rays or artificial sources of light. Black clothing will absorb more of the effective ultraviolet rays than similar white material.

The spectrum would seem to contain not only rays which can prevent or cure rickets, but also longer rays which are able to neutralize or inhibit the effect of these beneficent radiations. This phenomenon points to the need and the value of an analysis of rays employed in heliotherapy in rickets, tuberculosis, and other diseases. It would seem to indicate that this valuable therapeutic agent will be used with the employment of filters to absorb radiations which may be not only ineffective but counteracting.

Clinical Notes, Suggestions, and New Instruments

EXTERNAL CRICODYNIA: ITS CONTROL THROUGH THE NASAL (SPHENOPALATINE OR MECKEL'S) GANGLION

GREENFIELD SLUDER, M.D., ST. LOUIS

CASE 1.—For twenty years I have occasionally treated a man, now 55 years old, for acute inflammatory attacks in the lower pharynx, larynx and upper windpipe. His history is otherwise negative, save that he is underweight and not as strong as most men. In each of probably a dozen attacks he complained of a painful spot at the cricoid cartilage, in the external neck, with tenderness to slight pressure. I construed this to be a slight external perichondritis. It has always disappeared with recovery from the inflammatory attack.

CASE 2.—Two years ago I had a case identical with the foregoing in a man then 40 years of age. Eight years ago he had a tuberculous disease of the lumbar spine which confined him to bed in a plaster-of-Paris jacket for six months, since which he has been strong and well. His history is otherwise negative. For twenty-five years I have treated him for an occasional acute inflammatory attack of the nose, throat, larynx and windpipe, each lasting about a week and ending in recovery. With the attack two years ago he developed a painful external cricoid. The inflammatory attack was well in a week or ten days, but the cricoid remained very tender and painful for six months. I again thought of perichondritis, but could never discover any thickening of the tissues at the cricoid. Aside from the pain at the cricoid, no diagnosis could be made. For this reason I have elected to term it external cricodynia. Everything that I could do for him was in vain. He complained constantly, bitterly of the pain, particularly when touched, as, for example, by his collar.

CASE 3.—In the past year I have had another case identical in every way with Case 2. The patient is a strong, normal man, 33 years old. He had a chronic tonsillitis for which I did tonsillectomy. His sense of general well-being is improved by it, but the painful cricoid was unchanged. Remembering some of the surprising and inexplicable results[1] obtained by anesthetizing the nasal (sphenopalatine-Meckel's) ganglion, I resorted to this experiment, and to my delight it stopped the cricodynia for two weeks. A second cocainization was again successful, and until now (six months later) it has not returned. There was nothing in the case to suggest its being a nasal ganglion case.

One month ago the second patient returned complaining of the external cricodynia. Anesthetizing the nasal ganglion stopped it, and it has not as yet returned.

I have had one more case of cricodynia which I controlled through the nasal ganglion, in a patient whom I saw only twice, in my office.

At present I am unable to speculate as to the path of the impulse or the mode of accomplishment for this result.

3542 Washington Avenue.

AN INSTRUMENT (DRILL) TO FACILITATE THE CORRECTION OF CERTAIN TYPES OF EXTERNAL DEFORMITIES OF THE NOSE

SIDNEY ISRAEL, M.D., HOUSTON, TEXAS

In the correction or reduction of certain types of external deformities of the nose, those of us that have labored with the rasps, saws and chisels realize the limitations occasionally encountered of certain of these instruments, and the difficulties necessary to overcome. As a result of work on the cadaver, as well as on the living patient, a drill or burr has been devised, by the use of which I have succeeded in meeting and correcting these difficulties.

The drill is especially indicated in the correction of lateral displacement, or deformity of the bony nasal framework, when it is necessary to mobilize the nose completely previous to replacement in the corrected position. Its use in this type of deformity renders the need for saws or chisels unnecessary.

In the reduction of bony prominences, exostoses, or the like it is invaluable, and with it one can smooth, round or bevel the bone, as would best suit the individual case.

The drill or burr will attach to any small motor, by means of a flexible cable, and from the illustration one can see that the cutting or drill head is carefully protected by means of the steel hooded guard, which is a continuation of the main shaft, at the distal end and covers two thirds of its entire circumference. When the instrument is introduced beneath the skin, only the part of the drill in actual contact with the bone is exposed. The adjacent structure, together with the structures beyond and the overlying skin, is carefully protected by the guard surrounding the rotating drill or burr-head.



Drill for correction of certain types of external deformities of the nose.

Carter Building.

A RAPID TECHNIC FOR PREPARING HISTOLOGIC SECTIONS BY THE PARAFFIN METHOD

V. D. KEISER, A.B., M.D., AKRON, OHIO

The paraffin method of preparing tissues for histologic study has been, as a rule, the method of choice of most histologists. But in the clinical laboratory, where the element of time is important, the pathologist has often discarded the

1. Dean, L. W.: The Control of Glossodynia Through the Nasal (Sphenopalatine or Meckel's) Ganglion, South. M. J. **15**: 856 (Oct.) 1922. Ewing, A. E.: Pain of Acute Glaucoma Relieved by Cocaine Applied to Meckel's Ganglion, Am. J. Ophth., December, 1908. Miller, H. E.: Intra-Ocular Tension in Glaucoma Lowered by Injection of the Sphenopalatine Ganglion, Index of Otolaryngology **3**, No. 4. Sluder, Greenfield: Headaches and Eye Disorders of Nasal Origin, St. Louis, C. V. Mosby Company, 1918. The Control of Earache Through the Nasal (Sphenopalatine, Meckel's) Ganglion, J. A. M. A. **78**: 1708 (June 3) 1922; The Control of Mandibular Pain Through the Nasal (Sphenopalatine, Meckel's) Ganglion, Tr. Am. Laryngol. A., 1922.

paraffin method for other methods that are more rapid. The modification here described preserves the advantages of the paraffin methods as to quality of sections, and the like, and yet lends itself well to the needs of the clinical pathologist.

This method depends primarily on a hastening of the dehydration process by using hot acetone as the dehydrating agent. This is accomplished in this laboratory by placing the fixed tissue in a specimen bottle of thick glass of about 30 c.c. capacity. The bottle is tightly corked and the cork clamped in place after the addition of about 25 c.c. of acetone. The bottle so prepared is then put in the paraffin oven, which is kept at 60 C. After two hours the dehydration process is completed with most tissues, as evidenced by the absence of a turbidity on the addition of xylene. As acetone is about as inflammable as alcohol, the pressure flask should not be opened near a flame.

DETAILS OF THE METHOD

1. Blocks of tissue are cut as thin as practicable, and boiled for one minute in a 10 per cent. dilution of liquor formaldehydi.

2. While still hot, the tissue is dried with blotting paper.

3. The tissue is placed in a specimen bottle; about 25 c.c. of acetone is added, and a cork is clamped in place. The bottle is placed in the paraffin oven at 60 C.

4. After two hours it is removed from the paraffin oven and uncorked. Care must be taken at this point to remove the cork slowly, preferably with the whole container enveloped in a towel. A very considerable pressure has been created within the container, and, on removal of the clamp, the cork may fly out and the acetone expand with explosive violence.

5. If the tissue contains a considerable amount of fat, as in omentum or breast, it is treated with 15 or 20 c.c. of ether for fifteen or twenty minutes. (This suggestion of my colleague Dr. T. H. Boughton, of Akron City Hospital, has proved of value in sectioning fatty tissue.)

6. It is treated with 10 or 15 c.c. of xylene. The absence of turbidity is noted. Should turbidity appear, another hour in fresh acetone in the paraffin oven will complete the dehydration process. From fifteen to twenty minutes in xylene is ample time.

7. It is placed in high melting point paraffin in the paraffin oven for two hours.

8. It is blocked out and cooled in ice and salt solution. Cooling in an ice and salt solution seems, in our hands, to prevent troublesome crystallization of paraffin.

9. It is cut in sections at 5 microns, and spread on water at 38 C.

10. It is transferred by means of a plain glass slide to the surface of ice water.

11. It is mounted on a slide smeared with Mayer's albumin fixative.

12. The slide is placed in the paraffin oven for fifteen or twenty minutes.

13. Staining with hematoxylin and eosin is done at once.

14. It is mounted in balsam.

COMMENT

Since we have been taking sections up from a cold solution rather than from the warm solution on which they have been spread, we have experienced no appreciable trouble in having sections float off the slides during the staining process.

The method has resulted in materially shortening the time in which this laboratory can render a pathologic report after receipt of the pathologic material.

Proper Training in Physiotherapy.—It seems to be quite clear that granted that we get a group of men and women interested enough in physiotherapy they will see that they get the proper amount of information. It is essential that they get their training under the best possible auspices. There is responsibility upon the medical profession to provide such training for those who want it and are prepared to receive it.—R. L. Wilbur, *California State J. Med.* **21**:25 (Jan.) 1923.

Special Articles

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1922

ELEVENTH ANNUAL REPORT

THE JOURNAL presents its eleventh annual survey [1] of typhoid fever mortality in the cities of the United States having more than 100,000 population. The statistics of the fourteenth census showed that there were in 1920 sixty-nine cities with a population of more than 100,000. These may be conveniently considered for our purpose in six groups. More than one fourth of the population of the United States lives in these cities, and nearly one sixth lives in the twelve cities with more than 500,000 population.[2]

TABLE 1.—CLASSIFICATION OF CITIES

	Population	Number of Cities
Group 1.	More than 500,000	12
Group 2.	From 300,000 to 500,000	9
Group 3.	From 200,000 to 300,000	12
Group 4.	From 150,000 to 200,000	10
Group 5.	From 125,000 to 150,000	9
Group 6.	From 100,000 to 125,000	17

As has been the case since 1920, every one of the twelve largest cities (Group 1, more than 500,000 population) had a typhoid death rate under 10, and, as in 1920 also, all but one had a rate under 5. In 1921 we were obliged to note that seven of these twelve cities showed a slight typhoid increase, as compared with the remarkably low figures for 1920. The year just past, however, has witnessed a resumption of the decline in typhoid death rate, all but three of these cities showing a lower rate for 1922 than for the low year of 1920. The increases are, for the most part, trivial and to be expected on the basis of ordinary yearly fluctuations.

TABLE 2.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 1 (MORE THAN 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Chicago	1.0	1.1	2.4	8.2	15.8
Boston	1.4	3.1	2.5	8.0	16.0
Cleveland	2.2	3.4	4.0	10.0	15.7
New York	2.2	2.1	3.2	8.0	13.5
San Francisco	2.2	4.2	4.6	13.6	27.3
Philadelphia	2.7	2.3	4.9	11.2	41.7
Buffalo	3.5	4.2	8.1	15.4	22.8
Los Angeles	3.7	2.6	3.6	10.7	19.0
Baltimore	4.0	5.4	11.8	23.7	35.1
St. Louis	4.2	3.8	6.5	12.1	14.7
Pittsburgh	4.6	4.1	7.7	15.9	65.0
Detroit	5.0	5.8	8.1	15.4	22.8

1. The preceding articles were published May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672; March 26, 1921, p. 860, and March 25, 1922, p. 890.

2. The number of typhoid deaths has been sent us by the local officer of health, and the rates have been calculated in most cases on the basis of the midyear 1922 population estimates made by the U. S. Census Bureau. In a few instances indicated in the text, other estimates have been employed. It may perhaps be noted that the figures kindly furnished us by the municipal officials include all typhoid deaths that have occurred within the city limits, nonresidents as well as residents. In some instances this undoubtedly gives an exaggerated impression of the amount of typhoid fever in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality" (Bureau of the Census, Mortality Statistics, 1912, p. 13). No attempt has been made to revise the averages of preceding years, since in most cases the figures would be changed but slightly.

Six of these large cities had a rate under 3. The Baltimore rate is so low (4.0) as to be worthy of particular notice, especially considering the fact that, so

TABLE 3.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 2 (FROM 300,000 TO 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Minneapolis	1.9	1.2	5.0	10.6	32.1
Milwaukee	2.5	1.9	6.5	13.6	27.0
Newark	2.7	2.8	3.3	6.8	14.6
Seattle	2.8	2.2	2.9	5.7	25.2
Cincinnati	2.9	3.4	3.4	7.8	30.1
Kansas City, Mo.	4.9	11.0	10.6	16.2	35.6
Washington, D. C.	5.2	6.6	9.5	17.2	36.7
Indianapolis	5.4	7.3	10.3	20.5	30.4
New Orleans	10.2	9.3	17.5	20.9	35.6

late as the five year period from 1916 to 1920, the average typhoid rate in that city was 11.8.

The most complete typhoid records continue to be published by the New York City Health Department in its *Weekly Bulletin*. For the quarter ending Sept. 30, 1922, for example, it is stated that the probable mode of infection was traced in 42 per cent. of the cases, which is almost exactly the same as that for the corresponding quarter of the previous year. Out of town infection again stands highest in the list, the proportion remaining very constant, about 26 per cent. of all cases. Bathing in polluted waters in New York City is credited with causing twenty-four cases, and contaminated shellfish with six cases. A number of cases of typhoid were traced to a Thanksgiving party in November, where ice cream was served. Several

TABLE 4.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 3 (FROM 200,000 TO 300,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Providence	0.0	2.5	3.8	8.7	21.5
Columbus, Ohio	1.1	4.0	7.1	15.8	40.0
Jersey City	1.6	3.5	4.5	7.2	12.6
Akron	1.9	5.7	....	....	....
St. Paul	2.0	7.1	3.1	9.2	12.8
Rochester	2.5	3.2	2.9	9.6	12.8
Oakland	3.0	1.3	3.8	8.7	21.5
Portland, Ore.	3.3	3.0	4.5	10.8	23.2
Toledo	3.8	8.6	10.6	31.4	37.5
Denver	5.9	4.5	5.8	12.0	37.5
Louisville	8.0	5.5	9.7	19.7	52.7
Atlanta	10.9	11.0	14.2	31.4	58.4

outside cases were also traced to ice cream from the same source. It was suspected, but not proved, that the wife of the proprietor of the ice cream store was a typhoid carrier. This outbreak illustrates what has been frequently observed in the carrier transmission of disease; namely, that the carrier condition first comes to light in connection with group outbreaks. If some meal or article of food partaken of by a large number of persons furnishes the clue, then the existence of a carrier may be detected, while otherwise the occurrence of scattered cases at long intervals may make an almost impossible epidemiologic tangle. Such outbreaks strengthen the opinion that untraced, and with the available information untraceable, cases of typhoid may be due in relatively large proportion to carrier infection. New York City is apparently practically free from water-borne and milk-borne infection.

Philadelphia is another city in which careful records of typhoid in recent years are available. While the data for 1922 have not yet been published, those for 1921 are interesting for comparison. The source of infection was traced in 58 per cent. of the Philadelphia typhoid cases. Nearly one half of this number (43 per cent.) were attributed to out of town infection. Other sources named are: direct contact with other cases (twenty-two cases); bathing in polluted water (nineteen cases), and drinking polluted water from wells or springs (sixteen cases). No statement regarding carrier outbreaks is made for 1921, but it is is fair to suppose that the proportion does not vary very much from that occurring in New York, since the other sources of infection seem very similar. The heavy toll paid by Philadelphia citizens for maintaining a polluted water supply for nearly fifty years may be seen by comparison of the rates in this city since 1860. In the first decade (1860-1870) the typhoid death rates ranged from about 60 to nearly 100, sometimes exceeding the latter figure. Between 1870 and 1880 the actual rate

TABLE 5.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 4 (FROM 150,000 TO 250,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Syracuse	1.6	3.9	7.7	12.3	15.6
Worcester	3.1	3.2	3.5	5.0	11.8
Dayton	3.7	5.2	9.3	14.8	22.5
Omaha	4.4	4.0	5.7	14.9	40.7
Richmond	4.4	5.6	9.7	15.7	34.0
San Antonio	5.6	16.6	23.3	29.5	....
Dallas	5.8	12.7	17.2	....	....
New Haven	5.8	4.7	6.8	18.2	30.8
Memphis	8.9	9.0	27.7	42.5	35.3
Birmingham	12.5	17.0	31.5	....	....

was somewhat lower, but in 1876, the year of the Centennial Exposition, the rate again reached nearly 100. Little improvement was noted between 1880 and 1890, but in the next decade the rate fell in several years almost to 30. The period 1900 to 1910 was again a time of great typhoid prevalence, the rate exceeding 70 on two occasions. In 1912, filtration for the whole city was completed; pasteurization of the milk supply has been general since 1914, with the eminently satisfactory results shown in the table (only 4.9 for 1916-1920).

We have received an admirable report on typhoid fever in Baltimore. An unusually large proportion (65 per cent.) of the cases in 1922 were attributed with a high degree of probability to their source. About 35 per cent. of the whole number of cases were regarded as due to out of town infection. About 6 per cent. were regarded as due to household contact infec-

TABLE 6.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 5 (FROM 125,000 TO 150,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Bridgeport, Conn.	0.6	2.7	4.8	5.0	10.3
Grand Rapids	0.6	2.8	9.1	25.5	29.7
Scranton, Pa.	1.4	6.5	3.8	9.3	31.5
Springfield, Mass.	1.4	4.4	4.4	17.6	....
Des Moines	1.5	1.4	....	....	....
Paterson, N. J.	2.1	5.8	4.1	9.1	19.3
Hartford, Conn.	2.8	7.2	6.0	15.9	19.0
Youngstown, Ohio	6.2	15.0	....	....	....
Houston, Texas	7.3	11.7	....	....	....

tion, and about the same number to carrier infection. Well water infection was considered to have caused nearly 7.5 per cent. of the cases. It is, of course, true that Baltimore has a high percentage of cases coming to

the city hospitals from rural communities in the neighborhood, and that, in a large proportion of these cases, infection was almost certainly contracted outside the

TABLE 7.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 6 (FROM 100,000 TO 125,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
New Bedford	0.0	2.3	6.0	15.0	16.1
Yonkers	0.0	2.9	4.8	5.0	10.3
Cambridge	0.9	10.8	2.5	4.0	9.8
Albany	1.7	4.3	8.0	18.6	17.4
Lowell	2.6	5.2	5.2	10.2	13.9
Salt Lake City	3.2	5.7	9.3	13.2	....
Fall River	3.3	2.4	8.5	13.4	13.5
Tacoma	4.0	3.0	2.9	10.4	19.0
Wilmington, Del.	5.1	4.4	....	....	....
Camden	5.7	6.6	4.9	4.5	....
Spokane	5.7	4.7	4.9	17.1	50.3
Norfolk, Va.	6.4	4.1	....	....	....
Kansas City, Kan.	7.0	4.8	9.4	....	....
Fort Worth	7.8	10.7	....	....	....
Reading, Pa.	9.2	11.7	10.0	31.9	42.0
Trenton	15.9	8.9	8.6	22.3	....
Nashville	16.2	20.4	20.7	40.2	61.2

city. The remarkable decline in urban typhoid everywhere naturally brings it about that outside infection is coming to bear a more and more important relation to the total number of city cases. Many other American cities are in much the same position as Baltimore as regards typhoid deaths of nonresidents in the city hospitals. New Orleans, for example, has probably an even higher proportion of nonresident deaths. An exact comparison between city death rates thus becomes a difficult task, unless in all cases nonresident deaths in

TABLE 8.—DEATH RATES FROM TYPHOID IN 1922

Honor Roll (from 0.0 to 2.0)			
New Bedford	0.0	Scranton	1.4
Providence	0.0	Springfield	1.4
Yonkers	0.0	Des Moines	1.5
Bridgeport	0.6	Jersey City	1.6
Grand Rapids	0.6	Syracuse	1.6
Cambridge	0.9	Albany	1.7
Chicago	1.0	Akron	1.9
Columbus	1.1	Minneapolis	1.9
Boston	1.4	St. Paul	2.0
First Rank (from 2.0 to 5.0)			
Paterson	2.1	Fall River	3.3
Cleveland	2.2	Portland	3.3
New York	2.2	Buffalo	3.5
San Francisco	2.2	Dayton	3.7
Milwaukee	2.5	Los Angeles	3.7
Rochester	2.5	Toledo	3.8
Lowell	2.6	Baltimore	4.0
Newark	2.7	Tacoma	4.0
Philadelphia	2.7	St. Louis	4.2
Hartford	2.8	Omaha	4.4
Seattle	2.8	Richmond	4.4
Cincinnati	2.9	Pittsburgh	4.6
Oakland	3.0	Kansas City, Mo.	4.9
Worcester	3.1	Detroit	5.0
Salt Lake City	3.2		
Second Rank (from 5.0 to 10.0)			
Wilmington, Del.	5.1	Youngstown	6.2
Washington, D. C.	5.2	Norfolk	6.4
Indianapolis	5.4	Kansas City, Kan.	7.0
San Antonio	5.6	Houston	7.3
Camden	5.7	Fort Worth	7.8
Spokane	5.7	Louisville	8.0
Dallas	5.8	Memphis	8.9
New Haven	5.8	Reading	9.2
Denver	5.9		
Third Rank (from 10 to 20)			
New Orleans	10.2	Trenton	15.9
Atlanta	10.9	Nashville	16.2
Birmingham	12.5		

city hospitals are deducted from the total. Since reliable information on this point is not in all cases available, this is a recognized source of error. It is nevertheless true that the existence of typhoid fever in territory surrounding the large cities of this country should be a matter of concern for city officials. In some instances the prevalence of typhoid in the neighborhood of the city is now receiving attention, since it is apparent that such foci not only swell unduly the number of imported typhoid patients in city hospitals, but also serve as genuine centers of infection for the city population through contamination of milk and other foods destined for city consumption.

There is not much to be gained this year by comment on comparative records of individual cities. The 1922 rates are in nearly every case so low that comparison with the preceding year, or in most cases with one

TABLE 9.—AVERAGE DEATHS FROM TYPHOID PER HUNDRED THOUSAND IN EACH GROUP, 1916, 1917, 1918, 1919, 1920, 1921 AND 1922

Group	Year	No. of Cities	Total Population	No. of Typhoid Deaths	Average Deaths per 100,000
1	1916	9	13,743,746	854	6.2
1	1917	9	14,027,263	774	5.5
1	1918	9	13,809,901	598	4.3
1	1919	9	15,019,516	463	3.1
1	1920	12	16,526,740	460	2.8
1	1921	12	16,851,750	460	2.7
1	1922	12	17,037,727	441	2.5
2	1916	10	4,053,281	344	8.5
2	1917	10	4,150,099	329	7.9
2	1918	10	4,372,088	298	6.8
2	1919	10	4,511,181	204	4.5
2	1920	9	3,463,760	141	4.1
2	1921	9	3,498,783	174	4.9
2	1922	9	3,540,856	152	4.2
3	1916	10	2,635,983	248	9.4
3	1917	10	2,701,029	173	6.4
3	1918	10	2,773,716	193	6.9
3	1919	10	2,839,092	134	4.7
3	1920	12	2,951,373	142	4.8
3	1921	12	2,990,971	148	4.8
3	1922	12	3,047,937	112	3.6
4	1916	14	2,250,991	330	14.7
4	1917	14	2,310,372	307	13.3
4	1918	14	2,449,736	331	13.5
4	1919	14	3,564,860	210	8.2
4	1920	10	1,707,624	135	7.9
4	1921	10	1,740,300	143	8.2
4	1922	10	1,789,285	101	5.6
5	1916	17	1,983,918	235	11.8
5	1917	17	2,031,313	229	11.3
5	1918	17	2,053,215	240	11.7
5	1919	17	2,103,710	115	5.5
5	1920	7	962,436	46	4.8
5	1921	9	1,123,181	70	6.2
5	1922	9	1,263,044	35	2.7
6	1920	15	1,718,166	83	4.8
6	1921	17	1,948,414	132	6.7
6	1922	17	1,966,279	112	5.6
Total	1916	60	25,667,919	2,011	8.1
Total	1917	60	25,220,076	1,812	7.2
Total	1918	60	25,458,656	1,660	6.5
Total	1919	60	27,028,359	1,126	4.2
Total	1920	65	27,330,099	1,007	3.7
Total	1921	69	28,291,435	1,138	4.0
Total	1922	69	28,644,628	953	3.3

another, can have but little statistical significance. When a city like St. Paul, with a population of nearly 250,000, can report only seven deaths from typhoid, three of which were in nonresidents, it is plain that typhoid is at a low ebb.

The extent of the decrease in typhoid that has occurred in the large American cities is shown especially in Tables 8 and 9. Three cities, New Bedford, Providence and Yonkers, were able to report no deaths from typhoid for the calendar year 1922. The roll of honor this year, including all cities with a typhoid rate under 2.0, is larger than ever before reported. No fewer than eighteen cities find this year a place on the roll of honor, almost double the largest number previously recorded (ten in 1920). For the first time, too,

since these summaries were undertaken, there is no city in the fourth rank with a rate over 20. There are, indeed, only five cities with a rate over 10, as compared with nineteen cities of the third rank as late as 1917.

Southern cities have shared in this typhoid decrease along with the cities in the Northern states. Baltimore and Richmond have rates of 4.0 and 4.4, respectively. San Antonio and Dallas report much lower rates for 1922 than for 1920 and 1921. Nashville, which has the highest rate of any city, is in a region in which typhoid is apparently particularly prevalent, the state of Tennessee being debited by the U. S. Census Bureau with the highest typhoid rate in 1921 of any registration state. It is difficult, with typhoid-infested surroundings, for any community to keep reasonably free from typhoid infection. A great improvement has been effected in Nashville in spite of these disadvantages. The average rate was over 40 from 1911-1915, so that 16.2 in 1922 appears relatively low. It may be confidently anticipated that still further improvement will be effected in this city.

Trenton reports the highest typhoid rate for any Northern city, and finds itself in the third rank, having for its only companions four Southern cities with a large negro population, and surrounded by rural areas

TABLE 10.—TOTAL AVERAGE TYPHOID DEATH RATE (1910-1921)

	Total Population (57 Cities)* Estimated by the U. S. Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	20,996,035	4,114	19.59
1911	21,545,014	3,391	15.74
1912	22,093,993	2,775	12.56
1913	22,642,972	2,892	12.77
1914	23,191,951	2,408	10.38
1915	23,740,930	2,068	8.71
1916	24,205,359	1,842	7.61
1917	24,740,068	1,647	6.65
1918	24,971,278	1,557	6.23
1919	25,526,186	987	3.87
1920	26,154,013	921	3.52
1921	26,561,469	978	3.68
1922	26,936,843	851	3.15

* Twelve cities are omitted from this summary because data for the full period are not available.

in which typhoid is far more prevalent than in the neighborhood of Trenton. Trenton and Reading might perhaps profit by an antityphoid campaign. Is there any reason why these cities should have consistently higher typhoid rates than Paterson and Scranton? A few cities seem to have suffered in 1922 from small special outbreaks. Kansas City, Mo., although its total rate is not high, had some milk-borne typhoid, and Washington, D. C., experienced an outbreak attributed to food eaten at a church supper which caused the illness of forty-four persons, and the death of one.

As appears in Tables 8 and 10, the year 1922 marks the lowest point yet reached in the typhoid record of the large cities of the United States. The slight check that occurred in 1921 to the almost steady decline of twelve years has been followed, as we predicted last year, by a further decrease. Compared with 1921, forty-six cities showed a diminished and only twenty-three an increased typhoid rate. It does not seem oversanguine, knowing what we do of modes of typhoid dissemination, to believe that city typhoid rates will decline still further. We are certainly not manufacturing typhoid carriers in the United States as abundantly as we were fifteen years ago.

THE CARE AND FEEDING OF INFANTS

(Continued from page 627)

[NOTE.—This is the tenth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

SUMMARY OF QUANTITATIVE AND CALORIC RELATIONSHIP OF THE FOOD CONSTITUENTS

In the diet recommended as a *minimum* for the average normal infant on a diet of cow's milk with added carbohydrates, namely; per pound, milk 1½ ounces, sugar 1/10 ounce and starch 1/60 ounce, or per kilogram, milk 100 c.c., sugar 6.6 gm. and starch 1.1 gm., the distribution of ingredients would be as in Table 11.

TABLE 11.—INGREDIENTS IN MINIMAL DIET

	Proportion of Amounts: Per Pound Grams	Per Kilogram Grams	Per Cent.	Distribution of Calories: Per Pound	Per Kilogram	Per Cent.
Fat	1.8	4.0	20.5	16.74	37.2	37
Protein	1.5	3.5	17	6.15	14.35	14
Sugar, in milk	2.0	4.5	62.5	22.55	49.61	49
Sugar, added	3.0	6.6				
Starch	0.5	1.1				
Calcium oxid	0.08	0.176				
				Total 45.44	101.16	

The ratio of the amounts of the components of the diet, when expressed in percentages, shows: fat, 20.5; protein, 17; carbohydrate, 62.5; that of the caloric distribution of the ingredients is: fat, 37; protein, 13.5; carbohydrate, 49.5.

The *amount* of fat in the diet, therefore, slightly exceeds the protein, while the carbohydrate is somewhat more than three times the fat or protein.

The *caloric value* of the diet, however, shows that the fats are about two and one-half times the protein, while the combined fat and protein calories about equal the carbohydrates.

Holt,[40] in studying the diets of a series of 106 children, ranging in ages from 1 to 18 years, found that the average percentage distribution of the food intake in calories was: fat, 35; protein, 15; carbohydrate, 50.

TABLE 12.—CALORIES IN FAT, PROTEIN AND CARBOHYDRATES

Fat	1 gram = 9.3 calories
Protein	1 gram = 4.1 calories
Carbohydrate	1 gram = 4.1 calories

The combined calories of food elements usually recommended for the normal infant average 45 for each pound, or 100 calories for each kilogram body weight. Clinical experience leads me to recommend this amount as the *minimum required* by the average artificially fed infant of the second month (see caloric needs). The greater needs of the individual infant for growth are to be met by increasing the total food given or such of the ingredients as may be indicated. Only under exceptional circumstances should the suggested proportions be deviated from to any considerable amount, and then only through the reparation stage if normal development is to be expected.

NUMBER OF FEEDINGS IN TWENTY-FOUR HOURS

Four-Hour Intervals.—It has been proved that the usual cow's milk mixtures fed to infants do not leave

40. Holt, L. E.: Food, Health and Growth, New York, the MacMillan Company, 1922.

the stomach completely for at least three hours after ingestion. Most normal infants will be satisfied when placed on suitable mixtures at four-hour intervals. For several years, normal infants have been fed successfully on four-hour periods. The most suitable hours are 6 and 10 a. m., and 2, 6 and 10 p. m., with a 2 a. m. feeding if necessary. Most infants will be satisfied with five feedings daily from birth.

Three-Hour Intervals.—If the three-hour interval is indicated, one should begin with seven feedings in twenty-four hours for the first month (6, 9, 12, 3, 6, 10, 2); six feedings during the second and third months (6, 9, 12, 3, 6, 10), and five feedings by the fourth to the fifth month (6, 10, 2, 6, 10), according to the individual need.

Premature and delicate infants having a tendency to vomit, as such cases are exceptions, may be fed smaller amounts more frequently, even at two-hour intervals, if indicated. In case catheter feeding is necessary, the longer interval will usually suffice.

Water to Be Added.—It is most important to remember that young infants require a minimum of one fifth of their body weight of fluids daily (3 ounces per pound), and in their later months at least one sixth of their body weight (2½ ounces per pound) daily.

For the average normal infant, the *amount of water to be added* to the mixture is calculated by estimating that young infants, after their first few weeks of life, should be given 3 ounces of fluid daily per pound (200 c.c. per kilogram) of body weight, and older infants 2½ ounces. The difference between the total fluids required by the infant for a day's feeding, and the amount of milk fed, equals the amount of water to be added. The food mixture is divided into equal portions, the number of which will vary with the feeding interval. Infants having a tendency to vomit usually have to be limited to 2½ ounces of fluid per pound of body weight.

Underweight infants will require a total of fluids approximately 3 ounces, or at times even more per pound of body weight. Very fat infants will often be satisfied with somewhat less water than suggested.

After the fourth month, the average infant will take at least one quart of the food mixture daily. By this time a mixed diet may be instituted by adding a well cooked cereal to one or two of the day's feedings.

After the sixth month, four meals of 8 ounces each of a milk mixture may be given, and a fifth meal of a vegetable broth may be added. *Mixed feeding will be discussed more fully under Additional Foods.*

It has been found that a concentrated milk mixture does not disturb the infant's digestion when the milk is boiled, when cereal waters are used as diluents, or when it is alkalized by the addition of sodium citrate or lime water.

Carbohydrates to Be Added.—Having the necessary amount of milk and water, we ascertain the amount of carbohydrates to be added. Cane or milk sugar will satisfy the needs of the average normal infant during its first month when added in amounts of one-tenth ounce (3 gm.) per pound. Somewhat more than twice this quantity (6.6 gm.) should be added per kilogram of body weight to the day's mixture. Cane sugar mixtures are occasionally refused by infants when large amounts are added because they are too sweet. In such cases, part of the sugar can be replaced by milk sugar or maltose-dextrin compounds.

After the infant is 1 or 2 months old, from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) of cereal or cereal flour for each pound of body weight may be added to the mixture. This is best given as cereal water. The addition of the second carbohydrate often has a very beneficial effect on the weight curve.

In underweight infants, the amount of sugar to begin with should be calculated on the basis of the existent weight, approximating the quantity needed for a full-weight infant as rapidly as the sugar tolerance permits.

Table 13 gives equivalents of 1 ounce by weight and the domestic measures of carbohydrates used in the artificial feeding of infants.

TABLE 13.—EQUIVALENTS OF AN OUNCE

	By Weight		By Measure	Spoonfuls, Leveled with Knife		
	Ounce	Gm.	Ounces	Table	Dessert	Tea
Cane sugar	1	30	1.00	2	3	6
Milk sugar	1	30	1.50	3	4.5	9
Maltose-dextrin	1	30	1.50	3	4.5	9
Flour (wheat)	1	30	2.25	5	7.5	15
Flour (barley)	1	30	1.50	3	4.5	9
Barley (pearl)	1	30	2.50	5	8	15
Oats (rolled)	1	30	2.50	5	8	15

1 tablespoonful = 1.5 dessertspoonfuls = 3 teaspoonfuls

To Break the Curd to Assist Digestion of Cow's Milk.—Many infants can digest raw cow's milk. When it is not well digested, the formation of large protein curds is obviated by boiling the milk from two to three minutes over the flame or, better, by putting it in a double boiler and heating it until the water in the outer vessel boils eight minutes. Although the curd is less finely divided by the use of the double boiler as compared with boiling over the direct flame, it answers the purpose for most infants and causes fewer changes in the milk. A small double boiler should be used, as in it the column of milk is deep and has a small surface. The milk should simmer rather than boil actively, and in the larger vessel boiling takes place more readily. Milk that has been simmered undergoes less change in taste than that which has been actively boiled and there is less loss of soluble protein, fat, sugar and salts.

The feeding of raw diluted cow's milk has certain unquestionable advantages; however, when its source is in any way doubtful or its subsequent handling is likely to have led to contamination, it should be either pasteurized or boiled.

Cereal water diluents cause the formation of fragile curds. Addition of sodium citrate to the milk mixtures also prevents the formation of hard protein curds. Sodium citrate may be prescribed either in 5-grain tablets, approximately one-half to 1 grain being added for each ounce of the milk mixture, or a prescription may be so written that each teaspoonful of the prescribed formula will contain sufficient sodium citrate for the day's food.

When lime water is added to cow's milk until it is neutral or faintly alkaline to phenolphthalein, a basic calcium casein is formed which is not acted on by rennet and will not form a curd, even in the presence of lime salts (Van Slyke). Lime water is commonly used in amounts equaling 5 per cent. of the milk in the mixture (1 ounce to 20 ounces of milk). In most instances no advantage is gained by adding alkalis to boiled milk mixtures. Occasionally the addition of sodium citrate or lime water to boiled milk will be found of advantage in cases of difficult feeding and in the presence of vomiting.

(To be continued)

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SATURDAY, MARCH 10, 1923

THE STATUS OF EPIDEMIC ENCEPHALITIS AS AN INDEPENDENT DISEASE

From the spring of 1920 until recently, there have been comparatively few new cases of epidemic (lethargic) encephalitis in North America, and interest in it has been kept up mainly by the surprising array of its somatic and psychic sequels. Within the last few weeks, however, reports have come of a large epidemic in Winnipeg, and smaller ones in Connecticut and elsewhere. Since 1917, nearly 2,000 articles on this disease have appeared, and, within the last two years, four comprehensive reviews in book form.[1] In addition, the French investigator Levaditi has written a book giving a comparative epidemiologic, pathologic and clinical study of the three closely related acute infectious disorders of the nervous system: encephalitis, poliomyelitis and herpes.[2]

The etiology of both acute encephalitis and poliomyelitis remains unsettled. The champions of the "globoid bodies" of Loewe, Hirschfield and Strauss, and those of the streptococcus, have not yet agreed among themselves, or succeeded in convincing the majority of investigators to accept any exclusive view. It is agreed that the disease is caused by a microbe having a minute filtrable form that permits transmission by means of the filtrable virus to animals. It seems proved also that the virus exists in the nasopharynx, that the disease is mildly contagious, and that the usual period of incubation is ten days. No one now regards seriously the view of the English epidemiologist Crookshank that epidemic encephalitis and poliomyelitis are caused by the same virus or variations of the same virus. The relationship between influenza and encephalitis is most difficult to define. It does not seem reasonable that the appearance of the two diseases in epidemic form at the same time now and in the past can be a mere coincidence. There must be some connection, but what is it? Encephalitis is certainly not a mere sequel of influenza, as most victims of the former do not give a history of having had the latter. Nor do encephalitis patients present the leukopenia and tendency to a peculiar form of pneumonia so characteristic of influenza. Furthermore, there is a form of encephalitis directly connected with influenza, which differs from the epidemic form in being more sudden and severe in its onset, and in having more severe and permanent focal symptoms, more signs of a complicating meningitis, and a marked tendency to multiple minute hemorrhages in the brain and sometimes to suppuration. Economo has suggested that the encephalitis virus requires activation by that of influenza, and it has also been thought that the damage to vessel walls caused by previous influenza renders a person more susceptible to encephalitis. Another theory, which at least cannot be said to have been positively disproved, is to the effect that encephalitis is caused by a highly neurotropic influenza virus. Stern offers the broad hypothesis that encephalitis is caused by a filtrable virus, which exists in a harmless form in the saliva of many persons, and may be activated not only by the influenza virus, but also by pneumococci, streptococci and other bacteria.

While, as yet, we have no proof of a specific causative virus, the nosologic independence of epidemic encephalitis appears proved when, following Stern, we assemble the main features: First, the clinical ones: (1) the prominence of somnolence, transient cranial nerve palsies, and atonic or hypertonic extrapyramidal motor disturbances (choreic and parkinsonian types); (2) the rarity of certain symptoms that are frequent in other forms of encephalitis, such as those indicative of destructive upper motor neuron lesions, as well as convulsions and anesthesias; (3) the relative frequency of "central" pains, sympathetic disturbances, especially salivation, and certain pseudospontaneous motions and disorders of respiratory rhythm, otherwise more commonly seen in psychogenic disorders than in organic disease; (4) the tendency to frequent variation in the grouping of symptoms in different epidemics and localities; (5) the presence of a chronic progressive form. To these we may add (6) the possibility of the development, after a free interval of years, of a progressive "para-encephalitic disease," analogous to the late nervous manifestations of syphilis. This usually is of a parkinsonian type, and may follow in the wake of an acute illness so mild that its nature becomes established only by the character of the subsequent symptoms.[3]

Anatomically, we have these principal features: (1) the insignificance of the gross changes; (2) the rarity of thrombosis and necrosis; (3) the lymphocytic character of the perivascular infiltrations; (4) the predilection of the inflammation for certain regions of the basal ganglions and brain stem.

1. Acute Epidemic Encephalitis: An Investigation by the Association for Research in Nervous and Mental Disease, New York, 1921. Encephalitis Lethargica, Reports on Public Health and Medical Subjects, No. 11, London 1922, Achard, Charles: L'encéphalite léthargique, Paris, 1921. Stern, Felix: Die epidemische Encephalitis, Berlin, 1922.

2. Levaditi, C.: Ectodermoses neurotropes: poliomyélite, encéphalite, herpés, Paris, 1922.

3. This aspect of the encephalitis problem was discussed by Bassoe, Peter: The Diagnosis of Epidemic Encephalitis, J. A. M. A. **79**: 2223 (Dec. 30) 1922.

Much work has been done on the spinal fluid, and the views, at first quite divergent, have become crystallized. There is no pathognomonic feature, but there are two fluid "syndromes," thus defined by Eskuchen:[4] (1) lymphocytosis; globulin increase; luetic gold curve; increased sugar; (2) cell-globulin "dissociation," with relative increase in cells; luetic gold curve; increased sugar.

On the whole, the most valuable work in the last two years relates to the sequels, mental and physical, the number and variety of groupings of which are most surprising and bewildering, bringing new and unexpected problems in differential diagnosis. Postencephalitic states are easily confused not only with paralysis agitans and chronic choreas, but also with dementia praecox, general paresis, multiple sclerosis and brain tumor. Especially in children, in the absence of history, behavior disorders and other mental disturbances may lead to a wrong diagnosis of imbecility, "moral insanity," or plain, unaccountable wickedness.

ALIMENTARY GASES

Distention of portions of the alimentary tract by gases that fail to be absorbed or discharged from it is a familiar manifestation. Not infrequently it is a condition sufficiently distressing to call for special treatment to secure relief; consequently, some appreciation of the etiology of the accumulation of gases is desirable. The kinds of the latter that have at times been reported as occurring in different regions of the gastro-enteric tract are varied, including oxygen, nitrogen, carbon dioxid, methane and hydrogen sulphid. It has long been recognized that part, at least, of the occluded gases are derived from air swallowed or inevitably entangled in the meshes of ingested food. Part may be, and doubtless is, derived from fermentative changes in the enteric contents. Furthermore, it has been realized that diffusion must go on between the contents of the alimentary tube and its environment of blood and tissue fluids, to a greater or lesser extent.

Does the character of the residual gases determine some of the symptoms they may initiate? Such a question might be asked in connection with the belching so commonly noticed in patients. Before this widespread phenomenon is attributed offhand to pressure, to gastric "neurosis"—whatever that may be—or to reflex changes, it is worth while to consider the character of the gases concerned. Several years ago, Ylppö[5] found that atmospheric air, as such, disappeared from the stomach in from forty to sixty minutes, and that the residue had a rather constant oxygen-carbon dioxid ratio, which approximated that of blood gases. In general harmony with this is the recent study of Dunn and Thompson[6] of Omaha. They, too, found that atmospheric air introduced into the stomach tends to come into equilibrium with the blood gases within one hour in the case of carbon dioxid, and considerably later, if at all, in the case of oxygen. All the carbon dioxid found in the stomach gas of normal persons, whether during fasting or after a full meal, can be accounted for by secretion or diffusion from the gastric mucosa. Although stomach contents devoid of "free" hydrochloric acid usually show evidence of fermentation with gas production, the presence of such acidity virtually precludes the production of carbon dioxid by fermentation. Consequently, the latter process can have little to do with the carbon dioxid content in the stomach gas of normal persons. As Dunn and Thompson reemphasize, the gaseous interchange in the stomach is a fundamental physiologic process governed by fixed laws.

This subject bears a relationship to the phenomenon of aerophagy, in which the repeated swallowing of air is followed by eructations of gases from the stomach. It is far from enlightening to dismiss this unique behavior as the manifestation of a neuropathic reaction. When patients suffering from cardiac or gastric disease experience relief after belching gas, they are tempted to repeat the process. To do so they must swallow more air. A study of aerophagy in the light of accurate gas analyses, Dunn and Thompson remark, may reveal "a cause of more compelling therapeutic interest for this unpleasant symptom complex than that which allows it to be viewed in the yellow light of 'neurotic perversity.'"

LIPEMIA IN DIABETES

It is an established fact that many diabetic patients exhibit not only a hyperglycemia but also an undue content of fat in the circulating blood—a lipemia. The latter has not received the amount of attention that has been given the abnormal level of the blood sugar, presumably because the latter usually discloses itself by a coincident glycosuria, and the fat estimations require a well trained analyst. If diabetes is to be interpreted as a derangement not only of the carbohydrate metabolism but also, in the severer cases, of the behavior of fat and protein in the chemical transformations of the organism, treatment may become a problem of adjusting the diet to the tolerance of the organism for each of the great classes of foodstuffs. For this reason the advocacy of a low protein, low carbohydrate, high fat diet by Newburgh and Marsh[1] has provoked considerable debate.

Ketosis is commonly regarded as an indication of inadequate metabolism of fats. It is a common manifestation of severer types of diabetes. If the high fat diet reported to be successful in the hands of Newburgh and Marsh does, in fact, allow the patients to

4. Eskuchen, Karl: Ztschr. f. d. ges. Neurol. u. Psychiat. **76**: 568, 1922.
5. Ylppö, A.: München. med. Wchnschr. **63**: 1650, 1916.
6. Dunn, A. D., and Thompson, Warren: The Carbon Dioxid and Oxygen Content of Stomach Gas in Normal Persons, Arch. Int. Med. **31**: 1 (Jan.) 1923.

1. Newburgh, L. H., and Marsh, P. L.: Use of a High Fat Diet in the Treatment of Diabetes Mellitus, Arch. Int. Med. **26**: 647 (Dec.) 1920.

become free from excretion of ketone substances, the circumstance should be reflected in a reasonably low content of blood fat. Bloor,[2] who has had a large experience in this field, regards lipemia in any event as a disturbance in the balance between inflow and outflow of fat in the blood. He assumes that diabetic lipemia represents an abnormally slow outflow.

It has become important, therefore, to ascertain by direct observation whether the mechanism for the utilization of fats breaks down in any way under the Newburgh-Marsh diabetic regimen. Blatherwick [3] has observed that patients with mild and moderate diabetes living on diets similar to those recommended by Newburgh and Marsh are apparently able to utilize satisfactorily large amounts of fat, as indicated by constancy of the blood fat level and by the absence of acetone substances in the urine. More recently, Marsh and Waller [4] have published records of diabetic patients on the same type of high fat diets in whom there was no increase in the lipoid content of the blood during the periods of observation. In fact, in some of those showing a hyperlipoidemia when first examined the total fat fell to approximately normal levels. Hence Marsh and Waller conclude that the prevalent view, which assumes that diabetic hyperlipoidemia is dependent on the excessive ingestion of fat, is unwarranted. The explanation of this phenomenon must be sought in some other unusual feature of the diabetic state.

THE THERAPY OF CERTAIN FUNCTIONAL NERVOUS DISTURBANCES

The treatment of headache or migraine, like that of fatigue, mental lethargy, and the whole complex of neurasthenia, is admittedly unsatisfactory. The reason for this lies primarily in our ignorance of the genesis of these clinical disturbances. There seems to be a crying need of immediate further studies in this field of medical research. The failure of clinical medicine to make satisfactory progress in the management of certain types of functional nervous disturbances justifies us in giving a respectful hearing to any reasonable proposal. In this spirit, reference may be made to the suggestions of Pemberton [5] that many forms of neurasthenia, headache, migraine, most cases of neuritis, certain types of mental depression and melancholia—possibly a few supposedly organic conditions—are the result of interruptions in a chain of metabolic processes. Such statements, like the frequently made claim of "suboxidation" or "impaired oxygen" as a cause of disease, mean nothing unless they can be substantiated by some sort of evidence that may be subjected to critical evaluation. Pemberton has been impressed by the similarity of the conditions mentioned to the neuropsychiatric symptoms observed in arthritic patients. He therefore assumes similar underlying causes; and since the treatment of many cases of arthritis from the standpoint of the existence of metabolic upsets has been favorable in his hands, Pemberton advocates an analogous procedure in the relief of the less complicated disturbances of the nervous functions.

For the conditions described, lowered sugar tolerance and changes in equilibrium of the blood gases and in the content of certain other constituents of the circulating medium have been among the features detected by laboratory examinations. These have been interpreted to be due to metabolic errors involving some phase of local or general oxidative functions. Treatment is therefore directed toward the relief of such conditions. As Pemberton expresses it, part of the metabolic process apparently concerned is, broadly speaking, oxidative in nature. In this is included the delivery of oxygen, the removal of the products of combustion, or both. Interruption of the normal course of events may be due to a large number of factors, among which are external physical conditions, the endocrine system, focal infection, malfunction of various viscera, and various metabolic insults. Appreciation of the general nature of this disturbance makes possible the stimulation of metabolic functions by a variety of measures, on the one hand, and adjustment of the metabolic load, on the other. A combination of the two measures is sometimes helpful or necessary.

One of the ways of "adjusting the metabolic load" is through the path of economy in diet. The load may be lightened by a reduction in food intake, often with success, as has been reported in the treatment of arthritis. Another scheme consists in the use of hydrotherapy or external application of heat, measures often attempted without much consideration of what they may actually bring about in the organism. In a recent issue of The Journal, Pemberton and Crouter [6] have indicated that the percentage oxygen saturation of the peripheral blood tends to rise with increased local or body temperature when this is caused by external heat. It was found that during electric "bakes" the sweat almost invariably changes its hydrogen-ion concentration or "reaction," whatever this may have been at the start. It is generally about neutral at the outset, but becomes more alkaline or less acid as the bake progresses. This is merely a hint of deeper seated physiologic changes.

It would be rash, indeed, to expect to find a panacea for nervous ills in any specific form of physical therapy or dietotherapy; but there can be no harm in pointing to suggested possibilities.

2. Bloor, W. R.: Lipemia, J. Biol. Chem. **49**: 201 (Nov.) 1921.
3. Blatherwick, N. R.: Observations on Blood Fat in Diabetes, J. Biol. Chem. **49**: 193 (Nov.) 1921.
4. Marsh, P. L., and Waller, H. G.: The Relation Between Ingested Fat and the Lipemia of Diabetes Mellitus, Arch. Int. Med. **31**: 63 (Jan.) 1923.
5. Pemberton, Ralph: The Nature of Certain Functional Nervous Disturbances and Their Treatment Along Metabolic Lines, Arch. Neurol. & Psychiat. **9**: 208 (Feb.) 1923.
6. Pemberton, Ralph, and Crouter, Caroline Y.: The Response to the Therapeutic Application of External Heat, J. A. M. A. **80**: 289 (Feb. 3) 1923.

THE FORMATION OF GALLSTONES

The current hypotheses regarding the formation of gallstones are numerous and somewhat discordant. A simple concentration of bile cannot be the foremost cause of concentration formation, for the secretion of the liver can be desiccated to a considerable extent without necessarily leading to the precipitation of less soluble constituents from the somewhat inspissated fluid. Of late we have been taught to believe that concentration of the bile in the gallbladder is a common physiologic phenomenon incident to the temporary storage of the secretion there. It would strain our belief in the fitness of nature to assume that the organism would commonly avail itself of a process easily liable to bring about deposition of bile constituents and consequent calculus formation. Increased concentration of cholesterol, bile pigments or calcium salts may well be contributing factors in the pathogenesis without being direct causes of cholelithiasis.

It is commonly taught, therefore, that infection of the biliary tracts usually plays a significant part in cholelithiasis. While the possible importance of the bacterial factor cannot be denied, there are evidences that infection is not the sole disturbance that may lead to the precipitation of bile constituents. It has been shown that a sterile thread inserted into the gallbladder may become encrusted with the calcium salts of the bile pigments, even though the organ remains free from infection. New demonstrations have been furnished recently by Rous, McMaster and Broun [1] of the Rockefeller Institute for Medical Research. They have observed calculus formation in the walls of tubes of rubber and glass adjusted under sterile conditions to collect bile from experimental animals. The stones were never present in the ducts themselves, and they did not occur when the collecting systems remained clear of organic débris, such as dead cells and mucus.

In the experiments just related, the stones were made up of calcium bilirubinate and calcium carbonate, with a scaffolding of organic material. Cholesterol was not demonstrable in them. The majority had a center of calcium bilirubinate surrounded by an envelop of crystalline, slightly pigmented carbonate; but stones consisting almost wholly of one or the other substance were encountered. Frequently a number of pigment stones were secondarily united in a matrix of carbonate. The relation of the calculi to the organic débris associated with them differed significantly. Those formed primarily out of carbonate originated in the midst of lumps of the débris, as the microscope showed, whereas the minute pigment stones were so situated as to suggest that they, or their original nuclei, had once been free in the bile, but had been caught in the débris and retained. Some of the pigmented calculi were large and of such shape as to leave no doubt that deposition had occurred on them in situ.

In those cases in which infection does play a determining part in gallstone formation, it seems to act, according to Rous and his co-workers, by damaging the duct walls with resulting desquamation, and by lessening the ability of the bile channels to rid themselves of the cell débris. The latter induces, or furthers, the direct deposition of solids, and may catch and retain potential nuclei for stone formation, in the shape of pigment particles from higher up in the biliary system, which would under ordinary circumstances be voided with the bile. It should be recalled that the sterility of a hollow viscus or duct is maintained in large part by its free evacuation. Any stasis produces conditions favoring the growth of micro-organisms that may happen to lodge behind an obstructing mass. Secondary infections, sometimes due to an escape of bacteria into the bile from the liver, may lead to new gallstones or new layers of old ones. Indeed, it has been asserted that many of the more serious consequences of cholelithiasis are due to such infections rather than to the mechanical effects of the biliary calculi.

1. Rous, Peyton; McMaster, P. D., and Broun, G. O.: The Experimental Production of Gall-Stones in Dogs, in the Absence of Infection, Stasis and Gall Bladder Influence upon the Bile, Proc. Soc. Exper. Biol. & Med. **20**: 128, 1922.

Current Comment

FUMIGATION WITH HYDROGEN CYANID

A deadly poison in the hands of a person not fully aware of the danger inherent in it, or lacking intelligence and skill to guard against the hazard, is as much to be feared as dynamite. Manufacturers and distributors of such poisons who entrust them to ignorant and unskilled persons should be held jointly responsible with the users for the consequences. A community that permits the sale of a deadly poison to any adult who represents that it is to be used for a lawful purpose, without requiring him to show that he knows how to safeguard against danger inherent in its use, must hold itself, too, responsible for the results. And communities, manufacturers, distributors and users may all consider seriously the recent deaths of six persons in Chicago as the result of fumigation with hydrogen cyanid. On the night of March 3, the owners of a basement restaurant in Chicago turned over the restaurant to a man engaged in the extermination of insect pests, to have the roaches destroyed by him. This he undertook to accomplish by fumigation with hydrogen cyanid, generated by the interaction of sulphuric acid and a sodium cyanid solution. The operator claims that he sealed all openings leading from the restaurant into the upper stories of the building, which were used as residential flats, and that he warned the occupants to keep their windows open during the night. After the tragedy that followed, however, it was discovered that an opening through which a water pipe passed had been overlooked, and not sealed, and that the windows of the apartment on the second floor had been closed. The hydrogen cyanid leaked from the restaurant into the apartments above, and six of the occupants lost their

lives. One man escaped, who happened to sleep, fortunately, near an open window. Hydrogen cyanid has been extensively used in the disinfestation of ships, grain elevators, greenhouses and storage warehouses, and in army camps. Always the strictest precautions have been used, and recently those engaged in the work and liable to come within range of the fumes have been equipped with gas masks. To a certain extent, hydrogen cyanid has been used for the disinfestation of dwelling houses and apartments, possibly more frequently than has been commonly recognized, for often the extermination of insects is undertaken on a commercial basis by persons who do not disclose the nature of the methods used. Here and there, a community, possibly awakened by a tragedy such as has just occurred in Chicago, has passed regulations to safeguard its people against such dangers; but generally, beyond limiting the sale of such deadly poisons as sodium cyanid and hydrocyanic ("prussic") acid to adults buying them for lawful purposes, no restrictions have been imposed. The seriousness of the situation is shown with tragic force by the accident in Chicago. The health authorities of the country should recognize the danger and take precautions against it, without waiting for deaths to occur within the communities which they serve.

THE ACTION OF DRUGS ON RESPIRATION

The remarkable coordination of the activities that characterize the phenomena of respiration has been one of the features responsible for the belief in the existence of a respiratory center in the medulla oblongata. Despite the usual exhibitions of function in which both inspiratory and expiratory muscles play their part in a well adjusted rhythm, every-day experience teaches that a certain degree of independence must exist between the two antagonistic phases of the respiratory act. In coughing, for example, the expiratory factor becomes greatly exaggerated. One mode of treatment consists in an attempt to decrease the rate of respiration by the use of drugs, familiar illustrations being afforded by the effects of alkaloids of the morphin group supposed to depress the respiratory center as a conspicuous feature of their general depressant action on the central nervous system. In a series of unusually interesting researches in the Laboratory of Pharmacology at the University of Pennsylvania, Schmidt and Harer[1] have furnished cogent evidence, for certain species at least, that some drugs may depress expiration selectively, or at least depress expiration more than inspiration. It was found to be conspicuously true of morphin and diacetylmorphin (heroin), which are looked on almost as specifics in their ability to relieve cough and to decrease the rate without affecting the depth of breathing. Various other depressants, such as ether, chloral hydrate and urethane, exhibit a marked tendency to make expiration passive without depressing inspiration; but usually they show this effect only in narcotic doses. Caffein and strychnin antagonize the depression of expiration; atropin does not. It is too early to dwell on the details of these interesting observations. If, however, they should pave the way to a cogent demonstration of the existence of a separate central nervous mechanism for the control of each of the phases of respiration, a great step in advance will be recorded. Perhaps the present conception of a respiratory center will be replaced by that of a twofold organ, an expiratory center and an inspiratory center, the former set at a higher threshold for chemical stimuli than the latter. Practical therapy is eagerly awaiting new clues for the discriminating use of drugs that act on respiration.

1. Schmidt, C. F., and Harer, W. B.: The Action of Drugs on Respiration, I, The Morphine Series, J. Exper. Med. **37**: 37 (Jan.) 1923; II, Ether, Chloroform, Chloral, Urethane, Luminal, Magnesium, Caffeine, Strychnine and Atropine, ibid. **37**: 69 (Jan.) 1923.

INCOME TAX: TRAVELING EXPENSES HELD NOT DEDUCTIBLE

The Commissioner of Internal Revenue has declined to reverse his ruling to the effect that the traveling expenses of a physician incident to attendance at a meeting of a medical society are not ordinary and necessary expenses incurred incident to the practice of medicine, and that they are, therefore, not deductible. Physicians are advised to file their returns without taking credit for any traveling expenses that they may have incurred by reason of attendance at such meetings. The ruling in this case seems so clearly inconsistent with the law and with the practice of the Bureau of Internal Revenue with respect to deductions for traveling expenses under other circumstances that efforts will be continued to obtain a review of the decision and its reversal.

Association News

THE SAN FRANCISCO SESSION

Scientific Exhibit

The following have been appointed on the Advisory Committee of the Scientific Exhibit: Dr. Charles C. Bass, New Orleans; Dr. Frank W. Hinman, San Francisco; Dr. W. T. Longcope, Baltimore; Dr. H. E. Robertson, Rochester, Minn., and Dr. Rea Smith, Los Angeles. The Committee from the Board of Trustees consists of Dr. D. Chester Brown, Chairman; Dr. Frank Billings, and Dr. Wendell C. Phillips.

The Scientific Exhibit will be located on the main floor of the Civic Memorial Auditorium. The Registration Bureau, Information Bureau and Commercial Exhibit will be on the same floor; also the sections will meet in this building, so that here will be the center of activities.

The Committee on Scientific Exhibit is desirous that the exhibits shall be presented in a way which will emphasize their scientific value; this may be done by carefully worded explanatory placards and by personal demonstration. Also, the general attractiveness of the exhibit is very essential, and to aid in the appearance, the Committee on Scientific Exhibit will do its part by having the booths appropriately painted.

In connection with the exhibits there will be a motion picture theater for the exhibition of lantern slides and motion pictures.

Application forms may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago. The committee will make no assignments previous to May 1, in order that the amount of space available may be apportioned to the best advantage of all concerned. All applications must be received before this date.

San Francisco Hotels and Rates

The following partial list of San Francisco's leading hotels has been submitted to THE JOURNAL by Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements. It will be noted that in certain instances it is stated definitely whether the rates apply to single or double rooms, while in other instances this information is not given in the list. It will also be noted that three hotels marked with an asterisk have already booked their capacities, and no further reservations are available. Those who wish to secure hotel accommodations at San Francisco may write direct to any hotel listed below or to Dr. W. E. Musgrave, Chairman, Local Committee of Arrangements, 806 Balboa Building, San Francisco.

LEADING HOTELS OF SAN FRANCISCO (ALL EUROPEAN PLAN), THEIR LOCATION AND RATES

Hotel	Street Address	With Bath Single	With Bath Double
Argonaut	4th and Market Sts.	$2.00–$2.50	$3.00–$3.50
Baldwin	321 Grant Ave.		3.00
Bellevue	Geary and Taylor Sts.	3.50	5.00
Cartwright	524 Sutter St.	2.50– 3.00	3.00– 4.00
Cecil	545 Post St.	8.00	12.00
Chancellor	433 Powell St.	2.50	3.50– 4.00
Clark	217 Eddy St.	2.00	2.50
Clift	Geary and Taylor Sts.		8.00
Court	205 Bush St.	3.00	4.00
*Fairmont	California and Mason.		7.00–10.00
Federal	1087 Market St.	2.50, 3.00, 3.50	
Golden West	Powell and Ellis	3.00–4.00	
Grand	57 Taylor St.	2.00, 2.50, 3.00	
Herbert's (men only)	151 Powell St.	2.00–3.00	
Keystone	54 Fourth St.	2.50–3.50	
Lankershim	55 Fifth St.	3.50	
Larne	210 Ellis St.	3.00–4.50	
Manx	Powell and O'Farrell.	4.00–5.00	
*Palace		8.00–10.00	
Plaza	Post and Stockton Sts.	5.00–6.00	
Richelieu	Geary & Van Ness Ave.	5.00 (single or double)	
Somerton	440 Geary St.	2.00–4.00	
St. Francis	Union Square	4.00–10.00	
Stewart	353 Geary St.	3.50–7.00	
Sutter	Sutter and Kearny Sts.	4.00	
Stratford	Powell and Geary.	6.00	
Turpin	Powell at Market St.	3.00–3.50	
Victoria	Bush & Stockton Sts.	2.50–4.00	
*Whitcomb	Market & Civic Center	4.00–8.00	
Wiltshire	340 Stockton St.	3.00–4.50	

* Reservations all booked.

Invitation from Medical Society of Hawaii and Governor Farrington

The following telegram, transmitted by wireless to San Francisco and thence by usual telegraphic communication, has been received at the offices of the American Medical Association:

I am pleased transmit cordial invitation of Medical Society of Hawaii to Fellows and members American Medical Association visit Hawaii after Annual Meeting San Francisco. I trust large number your members be able accept. Farrington, Governor Hawaii.

Steamship Service Between Los Angeles and San Francisco

Those who go by way of Los Angeles to the annual session may proceed from Los Angeles to San Francisco by steamship if they will stipulate when tickets are purchased that they read via the Los Angeles Steamship Company. No additional charge will then be incurred. The Steamships *Yale* and *Harvard* of this company operate four times a week each way between San Francisco and Los Angeles, leaving Los Angeles at 4 p. m. every Tuesday, Wednesday, Friday and Sunday. Eighteen hours is required for the ocean trip from Los Angeles to San Francisco.

Special Train for Massachusetts Medical Society

A special tour for the Massachusetts Medical Society has been arranged under the direction of the Raymond and Whitcomb Company for the Fellows of that society and their friends who will attend the Annual Session. Leaving Boston at 2:10 p. m., June 14, the Massachusetts party will go to San Francisco by way of Chicago, Colorado Springs, the Royal Gorge, Salt Lake City, Riverside, Los Angeles, Yosemite and Big Trees, reaching San Francisco, Sunday, June 24. The return trip may be made either by way of Portland, Seattle, Vancouver and the Canadian Rockies, or by the direct Overland route by way of Ogden, Omaha and Chicago. For more detailed information concerning this tour communicate with the Raymond and Whitcomb Company, 112 South Dearborn Street, Chicago, or 17 Temple Place, Boston.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

The annual congress met in the Florentine Room of the Congress Hotel, March 5, at 9:30 a. m., and was called to order by Dr. Arthur Dean Bevan, chairman of the Council on Medical Education and Hospitals. Dr. Louis B. Wilson, Rochester, Minn., presented a report of the Committee on Graduate Medical Education. Dr. E. Stanley Ryerson, secretary of the Faculty of Medicine of the University of Toronto, presented a paper on "Coordination of the Courses as a Means of Increasing the Efficiency of the Medical Curriculum." Dr. Arthur Dean Bevan presented a plan for revision of the medical curriculum. There was a full discussion. Dr. Robert W. Lovett, chairman, presented a preliminary report of the Committee on Trained Nursing and Dr. Richard Olding Beard of Minneapolis presented a minority report for this committee.

At the afternoon session a paper by Dr. H. M. Platter, secretary of the Ohio State Medical Board, was presented on the "Enforcement of the Medical Practice Act." Dr. K. C. Babcock of the University of Illinois read a paper, "Some Needed Revisions in Medical Licensure." Dr. Alexander Macalister discussed "The Hospital Intern Year as an Essential for the License." Dr. C. F. Humiston discussed the new medical practice act for the state of Illinois.

At the session of Tuesday, March 6, the following papers were read and discussed:

Medical Education: "The Danger of the Stereotyped Curriculum," Dr. Charles P. Emerson, dean and professor of medicine of the Indiana University School of Medicine, Indianapolis. "Present Ideals of the Physical Plant in Medical Education": (*a*) Dr. Charles R. Bardeen, dean and professor of anatomy of the University of Wisconsin Medical School, Madison; (*b*) Dr. G. Canby Robinson, dean, Vanderbilt University School of Medicine, Nashville, Tenn. "The Art of Medicine," Dr. Irving S. Cutter, dean, University of Nebraska College of Medicine, Omaha.

Hospital Service: Introductory remarks, Dr. Frank Billings, president of the American Conference on Hospital Service, Chicago. "The Rôle of Nonmedical Clinical Assistants in Hospitals, Without Interns," Dr. S. S. Goldwater, director, and Dr. W. M. Bluestone, assistant director, Mount Sinai Hospital, New York; discussed by Drs. Charles P. Emerson, John M. Dodson and N. P. Colwell. "Liability of the Hospital for the Acts of Its Servants," John A. Lapp, director, Department of Social Action, National Catholic Welfare Council, Chicago; discussed by Drs. M. L. Harris and A. R. Warner. "The Relation of the State University Hospital to the Medical Profession," Dr. C. P. Howard, professor of medicine, State University of Iowa College of Medicine, Iowa City; discussed by Drs. Ray Lyman Wilbur, Irving S. Cutter and C. R. Bardeen. Annual report of the Hospital Library and Service Bureau, by the director, Miss Donelda R. Hamlin, Chicago. A complete report of these sessions will appear in THE JOURNAL next week.

Statue of Jenner in Japan.—On the west coast of Japan in a small fishing town, until recently very isolated and formerly ravaged by smallpox, there stands a monument to Edward Jenner, erected by a grateful people.—*Med. Press*, Feb. 7, 1923.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALASKA

Medical Missionary Needed.—It is announced by the director of educational work for the Presbyterian Board of Home Missions of New York that a medical missionary is urgently needed for Cape Prince of Wales.

ARIZONA

Date of State Medical Meeting Changed.—The thirty-second annual meeting of the Arizona Medical Association will be held at Grand Canyon, June 21-22, instead of at Phoenix in April, as previously announced. The change was made so that the meeting would just precede that of the American Medical Association in San Francisco. Dr. A. L. Gustetter, Nogales, is president of the society, and Dr. D. F. Harbridge, Phoenix, secretary.

CALIFORNIA

Dr. Deacon Exonerated.—Dr. George Deacon, Pasadena, who, it is alleged, was charged with administering narcotics to an addict, was exonerated by the state board of medical examiners at Los Angeles, February 14.

University Promotions.—Twenty-five members of the faculty of Stanford University School of Medicine, San Francisco, have been given promotions, it was announced, February 21. The following associate professors have been promoted to professorships: Dr. Frank E. Blaisdell, surgery; Dr. John F. Cowan, surgery; Dr. Charles H. Danforth, anatomy; Dr. Ernest C. Dickson, medicine; Dr. Leonard W. Ely, orthopedics; Dr. Harold K. Faber, pediatrics. Assistant professors becoming associate professors are: Dr. W. Edward Chamberlain, radiology; Elmer E. Drew, physics; Dr. Ludwig A. Emge, obstetrics and gynecology; Dr. Henry G. Mehrtens, neurology, and Dr. Clelia D. Mosher, personal hygiene and medical adviser to women. Dr. Albert V. Pettitt, formerly instructor in obstetrics and gynecology, is now assistant professor.

CONNECTICUT

Epidemic (Lethargic) Encephalitis in Connecticut.—The first cases of epidemic (lethargic) encephalitis in Connecticut were reported in 1919, the bureau of preventable diseases announces. There were forty cases reported in 1920; seventy-four in 1921, and forty-seven in 1922. Since January 1 of this year, thirty cases have been reported. The increase in the number of cases this year it is said, may be due to an increased interest in the disease and more accurate diagnosis. Encephalitis was made reportable to the state department of health, Nov. 11, 1921.

ILLINOIS

Chicago

Cook County Medical Examiner Appointed.—Dr. Frank J. Pokorney, Chicago, has been appointed medical examiner for Cook County, it was announced by the president of the board of county commissioners, March 3. Preparation of a county civil service eligible list and the necessity for examination by a physician of many of the applicants caused the appointment of Dr. Pokorney. All persons about to be retired from the county's service on pensions or because of disability will also be examined.

Tuberculosis Conference.—The executive officers of the National Tuberculosis Association held a three day session at the Hotel LaSalle, February 26-28. It was stated there are 65,000 hospital beds available for tuberculous patients in the United States and that there are more than 1,000,000 cases of the disease. A standard system of home treatment teaching which would permit the discharge of a patient from the sanatorium in three months was outlined. A visiting service would care for the patient following his discharge. A total of $5,000,000 was the goal set by the conference for 1923.

Hospital News.—The campaign to collect two thirds of a million dollars which was necessary before one third of a million left by the will of John P. Wilson, for the benefit of the Children's Memorial Hospital, could be secured, was successfully completed, March 3.——Work will soon start on the nurses' home to be erected by Michael Reese Hospital.——The cornerstone for the training school for home and public nursing at Monroe and Loomis streets, was laid, February 18. The building will also house free dental clinics for the children of Chicago. Money for this project was derived from the Pageant of Progress exhibitions.

INDIANA

Epidemic Bacillary Conjunctivitis.—Reports from Gilead state that pink-eye is prevalent in the local schools. In some schools the incidence of the malady has been 100 per cent. of the pupils.

Child Hygiene.—The child hygiene division of the state board of health recently conducted a two weeks clinic in Clinton County. Lectures were given on child welfare, and moving pictures on health were shown in the public schools.

Dinner for Dr. Bloodgood.—Dr. Joseph C. Bloodgood, Johns Hopkins University, Baltimore, was the guest of honor at a dinner given by the Terre Haute Academy of Medicine, February 2. Following the dinner Dr. Bloodgood gave a stereopticon lecture on "Cancer of the Breast."

Distribution of "Patent Medicines" to Be Stopped.—The city health department of Indianapolis, of which Dr. Herman Morgan is secretary, is taking steps to stop the practice of distributing samples of "patent medicines" on porches of homes in Indianapolis. This practice is in violation of a city ordinance, which prohibits the distribution of samples of medicine, except by handing the samples directly to adults.

Personal.—Dr. Charles J. McIntyre has been elected president of the Indianapolis Association for the Prevention and Relief of Heart Disease.——Drs. Noah H. Thompson and Walter A. Domer were hosts at a banquet for the members of the Wabash County Medical Society at the Indiana Hotel, Wabash, February 15.——Dr. William M. Varble, Jeffersonville, has been elected secretary of the board of health of Clark County to succeed the late Dr. David C. Peyton.

IOWA

University News.—The medical library of Sir Norman Walker of Edinburgh University, Scotland, has been offered to the State University of Iowa College of Medicine, Iowa City, through Dr. Walter L. Bierring, Des Moines. The gift has been accepted by the university. Sir Norman visited the university two years ago as a member of a commission of European physicians and surgeons and was favorably impressed by the medical work being done at the university.

Personal.—Dr. John J. Lambert, professor at the State University of Iowa College of Medicine, won the golf championship of Iowa City and Iowa University recently on the Country Club links.—Dr. John J. B. Morgan, director of the psychologic clinic in the State University of Iowa College of Medicine, Iowa City, addressed the twenty-third annual meeting of the Nebraska Conference of Social Workers at Omaha, February 12, on "The Menace of the Feebleminded."——President Harding has dismissed Surg. Waldo H. Sanford, Colfax, from the U. S. Public Health Service, it is reported.

KANSAS

Physician Convicted of Murder.—The Kansas Board of Medical Registration and Examination reports the revocation of the license of Dr. W. A. Nixon, Great Bend. He was convicted of murder in the first degree, and was sentenced to the state penitentiary at Lansing for life.

KENTUCKY

Health Board to Conduct Free Examinations.—Free physical examinations will be given to many thousands in Louisville under supervision of the faculties of the medical and dental colleges of the University of Louisville, it was announced, February 17, by Dr. Arthur McCormack, secretary of the state board of health, following a joint meeting of the faculties, the deans of the colleges and representatives of the board of health. The work will be done through the cooperation of the university officials with the Jefferson County Medical Society and the county dental society. This is the first step in a movement to demonstrate to the public the importance of periodic physical examinations for everybody, as a measure to reduce the death rate from preventable disease.

LOUISIANA

Hospital News.—A state-wide campaign to collect $400,000 for the Charity Hospital, New Orleans, will be inaugurated, May 12, National Hospital Day.

MAINE

Androscoggin Sanatorium Reopened.—The tuberculosis sanatorium owned by the Androscoggin Antituberculosis Association, used until recently by the federal government for the care of ex-service men, has been reopened by the association for local use. Dr. Ralph Goodwin is the physician in charge.

MARYLAND

Epidemic (Lethargic) Encephalitis to Be Investigated.—Dr. William T. Howard, former assistant commissioner of health, and Dr. John F. Hogan, director of the bureau of communicable diseases, Baltimore City Health Department, are studying the epidemic (lethargic) encephalitis situation in Baltimore, at the request of the state commissioner of health. The investigation will cover records in Baltimore for many years past, in order to obtain information on which to base an accurate statement as to the nature and cause of the present outbreak.

Influenza and Pneumonia Records for Month.—Seventy-nine deaths from influenza and 2,641 cases of the disease were reported in Baltimore during the month of February, according to a bulletin issued by the Baltimore City Health Department. There were 376 cases of bronchopneumonia, with 158 deaths. Of lobar pneumonia, there were 292 cases, with 102 deaths. During the month, seven cases of epidemic (lethargic) encephalitis were reported and six deaths, the heaviest monthly toll in the recent history of the health department. The influenza situation is showing considerable improvement.

Personal.—Dr. Thomas S. Cullen, professor of clinical gynecology at the Johns Hopkins Medical School and visiting gynecologist at the hospital, is a patient in the hospital, where he recently underwent an operation for gallstones.——Dr. Thomas B. Futcher, associate professor of clinical medicine at the Johns Hopkins Hospital, is a patient at the Johns Hopkins Hospital, suffering from an attack of pneumonia. Dr. Daniel Jenifer has been appointed a health officer for Baltimore County, succeeding Dr. John S. Green, resigned.——Dr. John W. Ebert has been appointed physician to the Baltimore County Jail, at Towson, succeeding the late Dr. Joshua Royston Green.——Dr. Arthur P. Herring, commissioner of mental hygiene for Maryland, spoke to the members of the Democratic Women's Club of Baltimore, March 1, on "The Mental Hygiene Clinic."

MASSACHUSETTS

Illegal Practitioner Sentenced.—According to press reports, Robert Thompson, Boston, was found guilty in the Suffolk superior criminal court, recently, and sentenced to three months in jail, for practicing medicine without a license.

Entire Hospital Staff Resigns.—Twenty-one members of the staff of the Quincy City Hospital, including Chief-of-Staff N. S. Hunting, resigned in a body, February 18. Recent changes in the management were said to be responsible for the resignations. Mayor Bates announced, February 20, that he had obtained a staff of physicians to replace those who resigned.

Boylston Medical Prize Awarded.—The Boylston Medical Prize of Harvard Medical School, Boston, has been awarded by a committee composed of Drs. Reid Hunt, William T. Porter, John Warren and Henry A. Christian to Prof. Alfred N. Richards, Ph.D., and Dr. Joseph T. Wearn of the University of Pennsylvania, Philadelphia, for an essay entitled, "Observation on the Composition of the Glomerular Urine with Particular Reference to the Problem of Reabsorption in the Renal Tubules." The prize awarded was $500.

Dinner to Dr. Schick.—Under the auspices of the state board of health, the city board of health and the department of preventive medicine and hygiene of Harvard University Medical School, a dinner was given in honor of Dr. Béla Schick of Vienna at the Hotel Lenox, Boston, February 8. Dr. Francis X. Mahoney, city health commissioner of Boston, presided, and Dr. Rosenau was toastmaster. Dr. Schick was presented with a gold set of the equipment used by the city Schick staff. It was announced that 30,000 children in the city of Boston have been Schick tested since May 1, 1922.

White Memorial Fund Health Unit.—The trustees of the George Robert White fund have awarded the contract for the construction of the first health unit to be erected with the income from the fund. The building will be erected on the site of the old police station at Commercial and Battery streets. The total cost will be about $185,000. The building will be three stories high, and will contain an auditorium, an emergency hospital, dental clinics, medical examination rooms and the quarters for the district nursing association. Health Commissioner Mahoney expects to appoint the nurses, physicians and dentists for the clinic about December 1.

MICHIGAN

The Beaumont Lectures.—The Beaumont Lectures for 1923 were delivered before the Wayne County Medical Society at Detroit, January 29-30. Dr. J. R. Macleod, professor of physiology at the University of Toronto, Canada, delivered the first two lectures on "The Physiology and Pathology of the Pancreas and the Demonstration of New Discoveries of Pancreatic Hormones." The third lecture was delivered by Dr. F. G. Banting of the University of Toronto, on "Clinical Work on Insulin."

MINNESOTA

Epidemic (Lethargic) Encephalitis in the State.—Between thirty and thirty-six cases of epidemic (lethargic) encephalitis have been reported in Minnesota, according to records of the state department of health. Dr. A. J. Chesley, secretary, stated that the cases are distributed in the following counties: Anoka, Hennepin, Lake, Ramsey, Stevens, Ottertail, St. Louis, Olay, Polk, Swift, Faribault, Goodhue and Big Stone.

Personal.—Dr. Albert J. Chesley, executive officer of the state board of health, has been awarded the Cross of Valor of Poland for his services in that country during the World War.——Dr. Henry F. Helmholz of the Mayo Clinic, Rochester, spoke on "Diagnosis and Treatment of Pyelitis in Infancy and Childhood" before the Jackson County Medical Society at Kansas City, Mo., February 20.——Dr. Arthur T. Laird, Nopeming State Tuberculosis Sanatorium, St. Louis County, was recently elected president of the Minnesota Occupational Therapy Association in Minneapolis.——Dr. Hazel Bonness of the state board of health has been appointed chief of the division of child welfare of the Montana Board of Health.

MISSOURI

Health Unit Organized.—In accordance with the recent decision of the St. Louis County Court to adopt a health unit system to replace the office of health commissioner for the county, Dr. William F. O'Malley, Webster Groves, was appointed head of the unit, February 23, for a period of three years.

Professor Hinrichs Dead.—Reports have been received of the death of Gustavus Detlef Hinrichs, a graduate of the University of Copenhagen and for many years professor of chemistry in St. Louis University School of Medicine. Professor Hinrichs founded in 1875 the first state weather service in the United States. Nearly fifty volumes of scientific memoirs in German, Danish, English and French came from his pen.

St. Luke's Hospital Opened.—St. Luke's Hospital, Kansas City, was formally opened to the public, February 25, by the Rev. Sidney Partridge, bishop of the Protestant Episcopal Diocese of Western Missouri. This institution, which was built and equipped at a cost of nearly $700,000, has accommodation for 125 patients; but when fully completed will have a capacity of 400. One entire floor is designed and reserved especially for obstetric patients.

NEW HAMPSHIRE

Antivaccination Bill.—A bill has been introduced into the legislature of New Hampshire which provides that children of parents opposed to vaccination be exempted from the requirement that they be vaccinated before attending school.

NEW MEXICO

State Medical Meeting.—The forty-first annual meeting of the New Mexico Medical Society will be held at Albuquerque, June 19-21, under the presidency of Dr. Harry A. Miller, Clovis, just preceding the annual session of the American Medical Association.

NEW YORK

A Birth Control Bill.—There is before the New York State Legislature a bill entitled "An act to amend the penal code relative to the furnishing by physicians of information and

articles for the prevention of conception." The text of the bill provides that

> The giving by a physician to any person, married or having a license to be married, of any information or advice in regard to the prevention of conception, on application of such a person to a physician, is not an offense, neither is it an offense to supply, on written prescription of a physician, any article, instrument, drug, receipt or medicine for the prevention of conception.

Physicians' Signatures Forged for Liquor.—According to an announcement made by Gus J. Somons, chief prohibition officer of the state, signatures of physicians have been forged to prescriptions for liquor in a systematic manner, and many unscrupulous physicians and druggists are supplying liquor. As one method of obtaining signatures men representing themselves as prohibition agents visit physicians to check up on signatures and get copies of the physicians' signatures on pads. These signatures are then forged on prescriptions, and the prescriptions are sold to druggists at prices varying from $1 to $1.50 each.

Investigation Into Causes of Ward's Island Fire. — An investigation into the causes of the Ward's Island fire, in which twenty-five lives were lost, was conducted jointly by the state hospital commission and a committee from the board of managers of the hospital. It is understood that no agreement has been reached as to the exact cause of the fire. Governor Smith, in a special message to the legislature, recommends submitting to the voters of the state a proposal for a bond issue of $50,000,000 for the erection of new state hospital buildings as well as an appropriation of $1,438,950 for urgent repairs and the removal of fire hazards at these institutions.

New York City

Fellowship in Pathology Founded at Mount Sinai Hospital.—A dinner was tendered Dr. Emanuel Libman, February 23, by his associates and pupils as a tribute to his twenty-five years of active service as associate pathologist to Mount Sinai Hospital. Dr. Frederick S. Mandlebaum, pathologist of the hospital, was toastmaster. Following the dinner, it was announced that a fund of $25,000 had been completed to found the Emanuel Libman fellowship in pathology.

Personal. — Dr. Simon Flexner delivered an address on "Poliomyelitis, Encephalitis and Allied Conditions" before the section on biology of the Academy of Sciences of the American Museum of Natural History, recently.——A reception was given recently in New York in honor of Dr. Rosalie S. Morton and Senator Royal S. Copeland. Dr. Morton, who was head of the American Women's Hospital during the World War, was recently decorated by the French government.

Cancer Society Meets.—The annual meeting of the American Society for the Control of Cancer was held, March 3, in the Pennsylvania Terminal Building. The following officers were elected for the coming year: Dr. Rudolph Matas, New Orleans, vice chairman; Dr. Howard C. Taylor, vice president; Calvert Brewer, secretary, and Thomas M. Debevoise, treasurer. The board of directors has elected the following physicians as members of the executive committee: Howard C. Taylor, Clement Cleveland, Haven Emerson, John C. A. Gerster, Howard Lilienthal, George H. Semken, Francis Carter Wood, Joseph Colt Bloodgood, Thomas S. Cullen, Robert B. Greenough and Edward Reynolds.

Hospital News.—The Polyclinic Hospital, which was turned over to the government in 1918 for the treatment of disabled veterans, was formally opened to the public, February 27, with memorial services for its founder, Dr. John A. Wyeth. The hospital has been renovated throughout.——A section of ground at Fifty-Fourth Street and Twelfth Avenue, originally bought by the New York Hospital for a site for a new building, has been sold for commercial purposes. According to the present plan, the hospital is to remain in its present location and an emergency hospital is to be built up-town. ——The building at No. 31 Washington Square, now occupied by the Washington Square Hospital, has been sold, and will be remodeled into apartments when the hospital lease expires. ——The trustees of Beth David Hospital held their annual banquet at the Hotel Commodore, February 4. More than 400 persons attended. Among the speakers were Bird S. Coler, commissioner of public welfare, and Dr. Royal S. Copeland.

Low Infant Death Rates.—According to Dr. Otto R. Eichel, director of the division of vital statistics of the New York State Health Department, Canandaigua, New Rochelle, Ossining, White Plains and Glen Falls have the best records among up-state cities in respect to infant mortality in 1922. In Canandaigua, the death rate of babies per thousand born alive was 38; in New Rochelle, 48; in Ossining, 52; in White Plains, 53, and in Glen Falls, 54. Five years ago, the infant mortality rate in New Rochelle was 96. In many other cities in this state, the results of child welfare work is equally striking. The Union Hospital in the Bronx has just compiled statistics showing that the death rate for infants in that borough is the lowest in the city for the first two months of 1923. In February, it was 69.8 for every thousand babies under 1 year, while in Queens it was 100.6, and in Manhattan, 92.3. The infant death rate for the entire city for the first six weeks of this year was 75, in comparison with 89 during the same period last year.

NORTH CAROLINA

Epidemic of Measles.—Dr. Amzi J. Ellington, health officer of Goldsboro, reports 462 cases of measles in the city, 135 occurring in one week and thirty in one day. No fatalities have been reported. Goldsboro has a population of 11,296.

Personal.—Dr. Charles Daligny has been elected county health officer of Montgomery County.——Dr. Bomar A. Olds, Henderson, health officer of Vance County, has resigned to accept a position with the Rocky Mount Sanatorium. Dr. Fletcher H. Harris, Henderson, will succeed Dr. Olds.

OKLAHOMA

Hospital News.—The Durant Memorial Hospital at Durant will be purchased by several local physicians and operated under the direction of the Bryan County Medical Society, it was recently announced.

OREGON

Tuberculosis Association Meets.—At the annual meeting of the Oregon Tuberculosis Association held in Portland, February 23, A. L. Mills was reelected president. Dr. Caroline Hedger, Chicago, was the principal speaker at the meeting. It was announced that receipts from the Christmas seal sale amounted to nearly $40,000.

PENNSYLVANIA

Philadelphia

Personal.—Dr. Florence E. Kraker, who was given a year's leave of absence from the Pennsylvania Women's Medical College, where she is lecturer on obstetrics, has arrived in Shanghai to establish a department of obstetrics for Chinese women medical students.——Dr. W. M. L. Coplin, Philadelphia, has published a history of Base Hospital No. 38, the Jefferson Medical College Unit.——Harry Dee Brown has been appointed director of the Philadelphia Health Council and Tuberculosis Committee, to succeed Dr. Blair Spencer, who resigned several months ago. Mr. Brown, who leaves a position with the New York State Committee on Tuberculosis and Public Health, has been engaged in the war against tuberculosis for nearly fifteen years.

SOUTH CAROLINA

State Medical Meeting.—The South Carolina Medical Association will hold its seventy-fifth anniversary home-coming meeting in the city of Charleston, April 17-19, under the presidency of Dr. C. F. Williams of Columbia. It is desired to get in touch with every South Carolina physician living outside the state, and every graduate of the Medical College of South Carolina. Communications should be addressed to the secretary, Dr. E. A. Hines, Seneca.

TEXAS

State Health Commissioner Appointed. — Dr. William H. Beazley, Lufkin, was appointed state health officer by Governor Neff, February 21, in succession to Dr. J. H. Florence. Dr. Beazley has been acting health officer since Dr. Florence's resignation, January 1.

Cousins Medical Bill Passed by State.—The senate, February 16, passed finally the Cousins medical practice bill, by a vote of 23 to 1. The power to revoke licenses of physicians, vested in the original bill in the state board of medical examiners, was placed by amendment in the district courts. Penalty for violation of the provisions of the bill was reduced by amendment from two to four years in the penitentiary to not more than six months in the county jail or one to four years in the penitentiary. An effort early in the day to exempt chiropractors from the provisions of the bill failed when the motion to that effect was tabled, 16 to 4.

VIRGINIA

Hospital News.—The contract has been let for the construction of the Virginia Baptist Hospital, Lynchburg, at a cost of approximately $200,000.

WISCONSIN

Physician Put on Probation.—It is reported that Dr. William G. Wheeler, Racine, who was found guilty on a charge of manslaughter, growing out of an illegal operation, was recently put on four years' probation, under the state board of control.

Personal.—Dr. Wade H. Fortner, Princeton, who has served as city physician for several terms, has been reappointed for another period of two years.——Dr. L. A. Steffen, Antigo, has been appointed a member of the state board of health to succeed his father, the late Dr. I. D. Steffen.

New Secretary for State Society.—Following the lead of the state medical societies of Ohio and Virginia, the State Medical Society of Wisconsin has employed a fulltime lay executive secretary. The council at its annual meeting, January 29, elected Mr. J. G. Crownhart, Madison, to fill the position, with headquarters in Milwaukee. In addition to his duties as secretary, he will, under direction of the council, be the business manager of the association and managing editor of the *Wisconsin Medical Journal.* Dr. L. Rock Sleyster, Wauwatosa, who is giving up the work after ten years of service, will remain as editor of the state journal and as delegate to the American Medical Association.

WYOMING

Eugenics Law Passed.—The state legislature of Wyoming has passed a law under the terms of which a prospective bridegroom must present a physician's certificate showing that he is free from venereal disease in communicable form before a marriage certificate will be issued to him.

HAWAII

Effect of Vaccinia on Leprosy.—The U. S. Public Health Service for January 5 describes the results of vaccination of a number of lepers in the Kalihi Hospital at Honolulu. Twenty-seven patients were vaccinated. Of these, sixteen had the nodular type, four the anesthetic type and seven the mixed. Vaccination was successful in nineteen cases. In the persons unsuccessfully vaccinated, no evidence of any change of the leprous lesions was noted. Of the nineteen successfully vaccinated patients, eleven developed acute leprous eruptions in the two weeks following the date of vaccination; in eight cases there was no apparent change in the leprous lesions.

PORTO RICO

Personal.—Dr. Manuel Pavía has returned to Porto Rico from the United States, where he visited the principal medical centers. He is a member of the legislature of Porto Rico and returned to be present at its opening.——The *Bulletin* of the Porto Rico Medical Association states that Dr. Esteban Garcia Cabrera has left for the United States and will visit the institutions studying genito-urinary problems.

GENERAL

Meeting of Medical Women.—The annual session of the Medical Women's Association will be held in San Francisco, June 25-26, under the presidency of Dr. Grace N. Kimball, Poughkeepsie, N. Y., at the same time as the annual meeting of the American Medical Association. Dr. Kate Campbell Hurd Mead, Middletown, Conn., is president-elect. Headquarters will be at the Hotel Plaza.

Association of American Medical Colleges.—At the thirty-third annual meeting of the association, at Ann Arbor, March 2-3, the following officers were elected: president, Dr. Irving S. Cutter, Omaha; vice president, Dr. Ray Lyman Wilbur, San Francisco; secretary, Dr. Frederick C. Zapffe, Chicago; executive council, Dr. Nathaniel C. Allison, St. Louis, and Dr. Walter L. Niles, New York. The next annual meeting will be held at Omaha.

Birth Rate Decreasing.—According to statistics compiled by the provisional census bureau of the department of commerce, the birth rate declined and the death rate increased during the last nine months of 1922. The mortality rate ranged from 7.8 in Idaho to 14.3 in Maine, and averaged 11.7 in the states from which statistics were taken for each thousand of population in the period, as compared with an average of 11.6 during the first nine months of 1921. The birth rate ranged from 18.3, in Washington, to 30, in North Carolina, and averaged 22.8 in the first nine months of 1922, as compared with an average of 25 in the same period in 1921.

Filled Milk Bill Passes.—The Filled Milk bill that previously had passed the House of Representatives was adopted by the Senate in the closing days of Congress and thereby was enacted into a law. It declares filled milk an adulterated article of food, injurious to public health, and states that its sale constitutes a fraud on the public. In defining filled milk, it is referred to as any milk, cream or skimmed milk, whether or not condensed, evaporated, concentrated, powdered, dried or desiccated to which has been added or with which is blended any fat or oil other than milk fat. The measure was opposed vigorously throughout the country by manufacturers of filled milk.

Joint Resolution on Narcotics Passes.—House Joint Resolution No. 430, calling on the President to urge the governments of Great Britain, Persia and Turkey to limit the production of opium and the growth of the poppy, and on the governments of Peru, Bolivia and the Netherlands to curtail the production of coca leaves, passed both houses of Congress before adjournment, March 4. The resolution prescribed that the minimum production of these narcotics be fixed at the amount necessary for strictly medicinal and scientific purposes. In both houses of Congress the measure went through without a record vote, the sentiment being strongly in favor of its adoption so that no time would be lost in appealing to these foreign governments to stop the increase in the consumption of these habit-forming drugs, both by the American people and by people of other countries. The President is requested in the resolution to report back to Congress on the first Monday in December, 1923, the result of his action.

Cornerstone of Gorgas Memorial Institute Laid.—The cornerstone of the Gorgas Memorial Institute for research in tropical diseases and the study of preventive medicine was laid, February 18, in the exposition grounds in the city of Panama. Dr. Belisario Porras, president of the Republic of Panama, and originator of the Gorgas Memorial Institute idea, was the principal speaker. Dr. Porras contrasted the Panama of his student days with that of today. He said it was the most natural thing in the old days to pass friends in the streets who were hurrying home in the grip of malarial chills, or with some other pernicious fever, but that, thanks to Gorgas, the tropics have been redeemed, and Panama has been made one of the healthiest cities. Drs. Franklin H. Martin, acting president of the institute, and Augusto S. Boyd, responded to Dr. Porras' address. Bronze medals commemorating the event were distributed. Following the ceremonies, a reception was given at the presidential palace. The institute will be governed by a board of directors of which Rear Admiral W. C. Braisted, retired, is president. Dr. Richard P. Strong, director of the Harvard University School of Tropical Medicine, has been chosen scientific director.

LATIN AMERICA

Mexican Society Elects Officers.—The Monterey branch of the Mexican Medical Association has elected officers as follows: president, Dr. José Barargán; secretary, Dr. Jesús Lozano; treasurer, Dr. Cristóbal Guajardo.

New Medical Practice Act in Colombia.—A recent law adopted in Colombia restricts the practice of medicine to graduates from Colombian schools or from countries having reciprocity agreements with Colombia, and Colombians graduating from foreign schools. In communities having no regular physician, permission to practice medicine, but not surgery, will be granted any individual with a good reputation who is endorsed by at least twenty-five prominent persons. Foreign physicians will be allowed to practice only after passing a written and practical examination in Spanish before a board, the subjects being prescribed by the Bogotá medical faculty. The fees for foreigners will include all the fees charged students during their entire course, plus 200 pesos.

FOREIGN

Royal College of Physicians of London.—The recently issued list of fellows, members, and licentiates of the college contains the names of 370 fellows, 600 members and 14,448 licentiates.

New British Medical Journal.—*Nutrition and Pediatrics* is the title of a new British publication dealing with the diet and disorders of infancy and childhood. The magazine will be issued quarterly.

Another Centennial.—The Vienna ophthalmologist, Prof. Karl Stellwag von Carion, known best by his sign in exophthalmic goiter, was born early in 1823. His "Manual of Ophthalmology," 1862, has been translated into several languages.

Afghanistan Invites German Physicians.—The *Münchener medizinische Wochenschrift* states that the government of Afghanistan is offering inducements for German physicians to settle in Afghanistan. Ten are wanted at once in the army, hospital and contract practice or private practice. The Leipzig League is in charge of the matter.

Artificial Limbs for Ex-Service Men in Roumania.—The minister of war of Roumania and the board of public hygiene have issued a proclamation to the war cripples of Roumania irrespective of nationality stating that those possessing worn-out or useless artificial limbs should appear at the nearest military hospital, where measurements will be taken and suitable limbs supplied. Free railway transport and free board in hospital will be provided where necessary.

Foreign Congresses.—The sixth annual meeting of the Australasian Association for the Advancement of Science was held at the Victoria University College, Wellington, New Zealand, January 9-10.——The annual congress of the Royal Institute of Public Health will be held in Scarborough, England, May 16-21, under the presidency of Lord Riddell.——The next annual congress of the Ophthalmological Society of the United Kingdom will be held in London, April 26-28, under the presidency of Dr. A. Maitland Ramsay.

Rockefeller Foundation Aids German Scientific Research.—The *Klinische Wochenschrift* states that Dr. H. Poll is the secretary of the committee in charge of the $50,000 which the Rockefeller Foundation has agreed to give annually for a number of years to aid scientific research. The money is to be used to provide means for scientific research which otherwise could not be carried out. The members of the committee are Professors Matthes, von Frey, Versé and Willstädter, and a representative of the Rockefeller Foundation.

Expeditionary Research Association.—At a meeting, January 3, in London, held under the presidency of Sir Kenneth D. MacKenzie, it was decided to form a scientific expeditionary research association for the purpose of facilitating and promoting scientific research by means of expeditions to all parts of the world. There will be an advisory council composed of members of the councils of all the scientific bodies interested in or affiliated with the association. It was announced that a research expedition to the South Pacific Ocean would be organized in the summer, covering a period of about ten months, at a cost of approximately £45,000 ($203,000).

Medical News from China.—A special commissioner, sent by the League of Nations, will go to the Far East to make an investigation of infectious and contagious diseases. Dr. Wu Lien-teh has been selected by the ministry of the interior of China to accompany the commissioner.——During the recent hostilities in China, the hospitals were handicapped by lack of roentgen-ray equipment. The Peking Union Medical College and the Shantung Christian University School of Medicine, Tsinanfu, sent operating and roentgen-ray units to aid local hospitals. General Wu, in gratitude, purchased a complete roentgen-ray outfit and presented it to the Mission Hospital at Paotingfu, and General Feng followed this example at K'aifengfu.——The Chinese churches recently organized a public movement to abolish licensed prostitution.

Venereal Disease in New Zealand.—The report of the committee of the New Zealand Board of Health, appointed to investigate venereal diseases in the dominion, has recently been issued. The most important finding was the very general ignorance among the public on the subject of venereal disease. It was estimated that one person in every 428 of the population of the dominion is being treated by registered medical practitioners for venereal diseases, or its after-effects. Dr. J. F. S. Hay, inspector general of the mental hospitals of New Zealand computes the number of persons now in the country who have or have had syphilis to be 33,000, or one in every thirty-eight of the population. Among the recommendations proposed were (1) that persons intending to marry should make an affidavit as to their freedom from communicable disease; (2) that a provision of the Queensland Act be adopted making venereal disease a ground for annulling a marriage contract, and (3) that a law be passed, compelling persons suffering from venereal disease to take treatment or be segregated.

International Health Course.—The Health Organization of the League of Nations, with the assistance of the Rockefeller Foundation, has commenced the practice of interchange of public health personnel (THE JOURNAL, February 17, p. 488). The first interchange of public health personnel was held in Belgium. Plans for the second interchange, which is to be held in England, were outlined in the *Lancet*, February 10. At the request of the ministry of health, arrangements are being made by the Society of Medical Officers of Health, which has appointed a special committee for this purpose. The party will consist of twenty-five persons, drawn from fourteen countries: Austria, Belgium, Czechoslovakia, Denmark, Finland, France, Hungary, Italy, Norway, Poland, Roumania, Russia, Serbia and Sweden. The officers will make their headquarters at the offices of the society, 1 Upper Montague Street, London. The first week will be spent in London. At the end of the week, the party will divide into groups of four or five persons, for study of health administration. The areas chosen, with the officers responsible for conducting the course follow: Birmingham and Warwickshire, Prof. John Robertson; Bradford and York, Dr. J. J. Buchan; Glasgow and Lanarkshire, Dr. A. K. Chalmers; Liverpool and Lancashire, Prof. E. W. Hope; Manchester and Cheshire, Dr. Veitch Clark, and Newcastle and Durham County, Prof. Harold Kerr. The groups will remain in the areas to which they are assigned till March 28. They will reassemble in London, April 3, and, until April 6, will study port sanitary administration. April 11, the international representatives, with five British medical officers, will depart for Austria, where a similar course will follow before the officers return to their respective countries.

Personal.—Mr. N. Gist Gee, for twenty years professor of biology at Soochow University, China, has been appointed adviser on premedical education to the China Medical Board of the Rockefeller Foundation of New York. He will make a study of the teaching of chemistry, physics and biology at colleges in China.——The *Medizinische Klinik* states that Professor Meyerhof, the physiologist of Kiel has been invited by the secretary of the Rockefeller Foundation to deliver a series of lectures at New York, Boston and Baltimore, and has accepted. He spoke in Cambridge last year on his research on cell respiration and muscular energetics.——The friends of Prof. M. Letulle of Paris, one of the editors of the *Presse médicale*, are collecting a fund to present him with an engraved plate on the occasion of his promotion in the Légion d'honneur. Each person subscribing at least 60 francs will be presented with a replica of the plate. M. P. Masson, 120 boulevard Saint-Germain, Paris, is the treasurer of the fund. The list of Letulle's works on internal medicine is a long one.——Prof. J. Hirschberg delivered an address recently, at a special meeting of the Berlin Medical Society, on "The Greek Canon of Ophthalmology." It demonstrated anew his wonderful familiarity with the classics and with this oldest work on ophthalmology, and its influence on Arabic literature and on the centuries that followed. Hirschberg is now 79.——The seventy-fifth birthday of Prof. James Israel of Berlin was celebrated by his friends recently with considerable ceremony. The congratulations of the German Surgical Society were presented by Bier; of the Berlin Surgical Society, by Körte; of the Berlin Medical Society, by Kraus; of the German Urologic Society and the Berlin Urologic Society, by Posner, and von Lichtenberg presented Israel with a special number of the *Zeitschrift für chirurgische Urologie*, published in his honor.——The *Klinische Wochenschrift* states that the former surgeon-general of the Russian guards, Dr. von Untersberger, aged 75, is living retired at Dorpat, having lost everything by the revolution. He was awarded a gold medal at the Tuberculosis Congress at Washington.

Deaths in Other Countries

Dr. **Alfred E. Harris**, for nineteen years medical officer of health for Islington, London.——Dr. **Alfredo Ferrán Funalleda** of Ponce, Porto Rico.——Dr. **Muñoz Urra** of Talavera, known for his research on the histology of the eye.——Mme. **Francq-Celse**, who practiced at Boulogne-sur-Mer.——Dr. **Antonio Molina de St. Remy**, an otolaryngologist, who settled in Porto Rico in 1898, but lately moved to Santo Domingo.

CORRECTION

Dr. Scott Did Not Resign from Veterans' Bureau.—In THE JOURNAL, February 24, under Government Services, it was stated that Dr. T. Hugh Scott, formerly executive officer of the U. S. Veterans' Bureau, had resigned. This was incorrect. Dr. Scott has not resigned, but was recently transferred to the U. S. Veterans' Bureau Hospital at Muskogee, Okla., as officer in charge.

Government Services

Colonel Forbes in Message on Veterans' Bureau

On his retirement as director of the U. S. Veterans' Bureau, Col. C. R. Forbes declared that the greatest need of the bureau was the establishment of a board of consultants consisting of four or five specialists to be paid not less than $20,000 a year to care for the 25,851 hospital patients under treatment in government institutions. Colonel Forbes recommended that this board of consultants consist of one neuropsychiatric, one tuberculosis, one general medical and surgical, one eye, ear, nose and throat, and one orthopedic expert. An educational director was also suggested to supplement these members of the proposed board. Physicians considered by Colonel Forbes of the type necessary to serve the Veterans' Bureau and help solve the difficult problems were: neuropsychiatric: Dr. W. F. Lorenz of the Wisconsin Psychiatric Institute; Dr. D. W. Salmon, formerly director of the National Society of Mental Hygiene; Dr. W. A. White, head of St. Elizabeth's Hospital; tuberculosis: Dr. E. R. Baldwin, president of the Trudeau Sanatorium of New York; Dr. S. M. Rinehart of the Veterans' Bureau; Dr. Frank Billings of Chicago; general medical and surgical: Dr. Charles Mayo of Rochester, Minn.; Admiral E. R. Stitt, Surgeon-General of the Navy; Dr. L. B. Rogers, assistant director of the Veterans' Bureau, in charge of the medical division.

Colonel Forbes asserted that mental cases were increasing among disabled soldiers, the figure at present standing at 9,243. The bureau is caring for 10,915 tuberculosis patients and 5,693 general medical patients, according to the latest figures.

Commanders of Navy Hospitals Change

Several changes have been made in the command of U. S. Navy hospitals. Capt. N. J. Blackwood has been transferred from the command of the hospital at Boston to New York; Capt. James F. Leys, from the command of the hospital at Newport to Boston, and Capt. H. T. Lowndes from the command of the hospital at New York to the hospital at Washington, D. C.

Senate Committee to Investigate Veterans' Bureau

The Senate passed the Reed resolution authorizing a committee of three senators "to investigate leases and contracts executed by the U. S. Veterans' Bureau or the Treasury Department for vocational schools and hospitals, and for the purchase, rentals and sales of real estate and supplies used directly or indirectly for the benefit of the veterans of the World War." The preamble of the resolution states that it is claimed that an unnecessarily large proportion of the appropriations made by Congress for the relief of veterans is being improperly consumed in overhead expense and duplication of duties, and in the employment of an unnecessarily large number of agents, physicians, instructors and other persons. The investigating committee will consist of Senators D. A. Reed (Pa.), chairman, D. I. Walsh (Mass.), and T. L. Oddie (Nev.). Senator Reed informed the President that the committee would organize at once. A statement was issued by the new director of the Veterans' Bureau, Brig.-Gen. Frank T. Hines, as follows: "The books and records of the U. S. Veterans' Bureau in Washington and in the field will be made available for Senator Reed's committee at all times. Full cooperation in every way will be given, and it is to be hoped that the inquiry will be beneficial not only to the veterans, but also to the bureau itself."

International Cooperation on Health Matters

Assistant Surg.-Gen. J. D. Long has been detailed, on request of the state department, to accompany the delegates to the fifth International Conference of American States, to be held at Santiago, Chile, March 25, 1923. Dr. Long, in addition to his duties in charge of the division of foreign quarantine of the public health service, is assistant to the director of the international sanitary bureau of the Pan-American Union. After the completion of the International Conference of American States at Santiago, it is expected that Dr. Long will visit various countries of South America to establish cordial relations with the health authorities of the countries visited. There are many international sanitary problems constantly present in the countries of South America due to such diseases as plague, smallpox, yellow fever and leprosy, and control of these diseases may best be had through the international cooperation and mutual understanding that will follow such visits. Assistant Surgeon-General Long has been selected for this detail because of his experience in the Philippine Islands and the Orient for ten years, during which time he was director of health and chief quarantine officer of the Philippine Islands.

Vacancies in Navy Medical Corps

Arrangements are being made to fill the thirty-three vacancies in the Medical Corps of the Navy. The examinations will be conducted by subsidiary boards at the naval station nearest the candidate's home, and the papers given a final mark by the central board of the department at Washington.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 10, 1923.

Victor Horsley Memorial Lecture

In 1920, a committee was formed to commemorate Sir Victor Horsley's services to science. It may be remembered that he died while on service with the army in Mesopotamia, in 1916. Subscriptions amounting to $5,000 were received from all over the world. The committee, over which Sir Charles Ballance presides, and of which Sir Frederick Mott is treasurer, resolved that the money should be invested in the name of a board of trustees, who should triennally appoint some one to deliver a lecture in London under the title of the Victor Horsley Memorial Lecture. No limitation is placed as to the country or profession from which the lecturer shall be appointed, or as to the subject of the lecture. Sir Edward Sharpey Schafer, professor of physiology in the University of Edinburgh, has accepted the invitation of the trustees to deliver the first lecture, which will probably be given in the autumn.

Zinc Poisoning

An outbreak of zinc poisoning is rare. One occurring recently among the inmates of an institution near London makes evident the danger that may arise from the use of galvanized iron vessels in cooking. About 400 persons were served at tea with hot stewed apples. Within a few minutes, more than half of them complained of dizziness, nausea or sickness, and tightness in the throat. There were also some cases of diarrhea. The medical officer at once administered a bismuth and chalk mixture, and within a short time most of the sufferers recovered. Only ten were seriously ill, and all were sufficiently well next day to carry on their ordinary work. The apples had been freshly gathered, and stewed in large galvanized iron "skeps," which were placed in iron steamers. The skeps were used because on a previous occasion the apples had turned black when placed directly in the steamer. Analysis of some of the apples showed that they contained 7 grains of zinc, in the form of zinc oxid, in a pound. This is equivalent to 20 grains of hydrated zinc sulphate to a pound. The dose given in the British pharmacopeia is from 1 to 3 grains (0.065 to 0.195 gm.), and the emetic dose, from 10 to 30 grains (0.65 to 1.95 gm.). Each person who ate the stew may be assumed to have taken about 20 grains (1.3 gm.) of the sulphate. Its presence in the apples can be explained by the solvent action of vegetable

acids on zinc. Hence, galvanized iron vessels are not sold for cooking, and in private houses never appear to be used for this purpose. But managers of public institutions seem to require instruction as to the risk.

Vital Statistics of 1921

The report of the registrar general for 1921, for England and Wales, which has just been published, shows that the standardized death rate was 11.5 per thousand, the lowest recorded. In all age groups up to 65, the rates are lower than ever before. The figures show the progressive saving of life in this country:

Decade	Death Rate
1841–1850	22.4 per thousand
1871–1880	21.4 per thousand
1901–1910	15.4 per thousand

Thus, the present death rate is only just over half that of the period 1841-1850. This table gives the principal causes of death:

DEATHS IN 1921

Cause	Number	Per Cent. of Total in Round Figures
Total	458,629	..
Heart disease	53,710	12
Cancer	46,022	10
Tuberculosis	42,678	9
Pneumonia	34,708	8
Bronchitis	33,684	7
Influenza	8,995	..

The smallness of the influenza figure compared with previous years is noteworthy:

INFLUENZA DEATHS

Year	Number
1918	112,329
1919	44,801
1920	10,665
1921	8,995

In 1921, the tuberculosis, bronchitis, and pneumonia rates were also exceptionally low. On the other hand, the cancer rate showed a slight increase, and was higher than in any year since 1918. Infant mortality was 83 per thousand births, a rate second only to that of 1920. When this rate is compared with that of 153, in decade 1841-1850, the great improvement is evident.

A New Element Isolated in London

A new element, called hafnium, has been isolated in London by Dr. Alexander Scott. He showed specimens of the oxid, a cinnamon colored powder, at a meeting of the Chemical Society. A short time ago, two young chemists, Coster and Hevesy, working in the laboratory of Professor Bohr at Copenhagen, announced that, by roentgen-ray spectroscopy, they had found an unknown element occupying position 72 in the table of the elements, as arranged by Moseley. French chemists had already assigned this number to a supposed rare earth element, which they called celtium; but the Danish chemists presented reasons for doubting their results. The element to which they gave the name of hafnium they believed to be a metal in the group of titanium and zirconium. They inferred its presence to 1 per cent. in a Norwegian zirconium mineral, but had not isolated it.

In 1913, Dr. Scott received for analysis from New Zealand samples of black sand, from which he extracted a cream colored sand containing 75 per cent. magnetic oxid of iron and 25 per cent. titanium oxid. In further tests on the titanium oxid, he always found small quantities of a highly refractory residue. He continued to collect these, labeling them "new oxid," but until a few weeks ago, he could not pursue his investigations. Knowing from the similarity of the compounds it made with potassium and fluorin to those of titanium and zirconium that it was a likely candidate for position 72 in the atomic table of the elements, he began to work as soon as he heard of the Danish discovery. He found the atomic weight to be approximately 180 and the chemical characters to be those which roentgen-ray spectroscopy would assign to hafnium. The black sand deposit of New Zealand is said to be more than 7 miles long and of unknown depth, so that if hafnium has a commercial value it can be turned out in bulk. From its analogies to zirconium and titanium, it may be of value in making incandescent mantles. Dr. Scott is a director of scientific research at the British Museum, and is well known for his investigations on the chemical deterioration of museum objects and the methods of restoring them. He is constantly consulted as to the preservation of the relics from the tomb of Tutankhamen. His discovery is the most striking chemical event in this country since Ramsay's isolation of helium.

Crippled Children of London

A careful survey made of London's crippled children has been embodied in a report by Mr. Elmslie, orthopedic surgeon to St. Bartholomew's Hospital, to Dr. Hamer, health officer for London. Acute poliomyelitis has now become the most important cause of crippling, tuberculosis having fallen to the second place.

CAUSES OF CRIPPLING

Infantile paralysis	961
Tuberculous disease	732
Congenital deformities	180
Other deformities	421
	2,294

Infantile paralysis is mainly a disease of the first two years of life, as the analysis of 559 cases shows:

INFANT MORTALITY

Age at onset	1	2	3	4	5	6	7	7-10
Number of cases	211	168	87	50	26	3	7	7

Mr. Elmslie finds that the treatment of acute poliomyelitis in London is very unsatisfactory and that a new method is called for. He emphasizes the importance of early diagnosis and treatment. His criticisms of existing methods are severe in contrast to the favorable opinion expressed as to the treatment of tuberculosis. Tuberculosis as a cause of crippling occurs later in life than poliomyelitis:

TUBERCULOSIS

Age at onset	1	2	3	4	5	6	7	7-10
Number of cases	31	73	100	68	88	48	42	55

The report does not treat of the causes of these diseases, which are regarded as a problem of preventive medicine.

Campaign Against Venereal Diseases

The seventh annual report of the National Council for Combating Venereal Diseases, which has just been published, brings the story of this movement up to June, 1922. One of the great difficulties in the control of venereal diseases is to secure continuous treatment. The figures of attendance at clinics are: 1918, 46,000; 1919, 82,000; 1920; 85,000; 1921, 67,000. These figures have been interpreted as showing that at first the clinics were new and less numerous, and that at

last a definite drop took place in the incidence of the diseases. But many patients did not continue under treatment until cured. It has been estimated that 60,000 patients disappeared in the years 1919-1920 from the records of the clinics before they ceased to be a danger to others as well as to themselves. An obvious remedy would be compulsory treatment, and arguments for it, drawn from countries in which it has been tried, are given in the report. But compulsion is repugnant to the ideas of liberty that prevail in this country. Still there is hope that some limited form, for those who discontinue treatment, may be introduced by the ministry of health.

Centenary of Pasteur in London

In celebration of the centenary of the birth of Pasteur, a lecture was given in the rooms of the Royal Society, under the auspices of the Alliance française, by Dr. Pasteur Vallery-Radot, a grandson of Pasteur and a distinguished pathologist and physician of the Paris hospitals. Sir Charles Sherrington, president of the Royal Society, who was in the chair, said that Pasteur was not only a great Frenchman and a great man of science, but also a great benefactor to the human race and to animal kind, both intellectually and practically. The lecturer has under preparation the complete annotated works of his illustrious grandfather. In his address, Dr. Pasteur Vallery-Radot said that nothing could be dearer to Pasteur than the knowledge that England, the land of Jenner and Lister, and the home of some of his greatest friends and warmest partisans, was paying homage to his memory. At the age of 25, Pasteur was already a great scientist. His study of crystals led him to discoveries in fermentation and the question of spontaneous generation. Pasteur was insistent on results, and by showing the various industries the benefit of his studies, gave practical help in the production of wine, beer, milk, vinegar and bread. His well known discoveries of the causes of infectious diseases followed. His work, by its logical linking and its incalculable consequences, was one of the most wonderful products of man's genius; he had an extraordinary imagination, but he tempered it by the most strict experimentation. His ideal was to see humanity led to peace by the aid of science.

Australian Institute of Tropical Medicine

The Australian Institute of Tropical Medicine was opened at Townsville in 1913, in the part of the great continent that lies within the tropics. Although Australia is relatively free from tropical disease, it was felt that, when the north became more populated, malaria, yellow fever, amebiasis and other exotic diseases were likely to be imported, as the trade routes bring it into contact with countries in which these diseases are rife. The importance of training Australian physicians in tropical medicine was therefore realized. The project of making the institute a postgraduate school for tropical hygiene failed, as few graduates availed themselves of the facilities offered. But the other function of the institute—to conduct research into the tropical diseases—remained. Dr. Anton Breinl, a pathologist well known for his work on tropical diseases in England, was appointed the first director, with three assistants. Some excellent work was done by them. The "White Australia policy," which is as important in Australian politics as the Monroe doctrine is in America, raised the question, Can the white man and woman live and maintain health in tropical Australia? Dr. Breinl and his collaborators made some valuable researches whose results answered this question affirmatively. Dr. Breinl resigned in 1921, and the institute became dormant. But with the creation of the commonwealth department of health, the institute was reconstructed. Its activities include the esablishment of laboratories to render assistance to physcians in bacteriologic, protozoological and biologic work, and the organization of a service to deal with tropical diseases in Australia and her dependencies. Work on hookworm disease has been done with the assistance of the Rockefeller Foundation. The whole of Australia and her dependencies have been surveyed, and the distribution of hookworm disease has been determined. It is proposed to establish permanent measures of control and thus to eradicate the disease. By arrangement with the Rockefeller Foundation, a section of the work will be carried out with the collaboration of the Australian Institute of Tropical Medicine. Also, an inquiry into the incidence of malaria and filariasis has been begun. The staff is being reappointed, and Dr. R. W. Cliento, a recent graduate of Adelaide University, has been appointed director. He has been sent on a tour to Java, Ceylon, India, Italy, England, the United States and the Panama zone to study the methods of control of tropical diseases. Arrangements have been made with the Universities of Melbourne and Sidney for the instruction in tropical medicine required for a diploma.

PARIS

(From Our Regular Correspondent)

Feb. 9, 1923.

Measles as Modified by Preventive Injections of Convalescents' Serum

The method of prophylaxis of measles by the injection of the serum of convalescents from this disease, which has been recommended, since 1916, by C. Nicolle and E. Conseil, and which has been widely experimented with in America and in Germany, has been the subject of a series of studies in France (P. L. Marie, Nobécourt and Paraf, Cheinisse). However, at a recent meeting of the Société médicale des hôpitaux de Paris, Drs. R. Debré and Ravina held up against the method the transitory character of the immunity it confers. By a previous injection of convalescents' serum, they have proposed to secure an attenuated type of measles in children who become exposed rather than to suppress the disease entirely. To accomplish such a result, a preventive injection at the end of the period of incubation, between the seventh and the tenth day, should be given the patient. Under these conditions, a very peculiar type of measles is observed. The incubation period is sometimes prolonged and the period of invasion is practically suppressed; in some cases it expresses itself by a slight rise of temperature, without any catarrhal symptoms; Koplik's spots have not been observed. In such cases, the eruption is sometimes discrete, sometimes more or less confluent, but not associated with catarrhal manifestations. The fever is mild or very light; the general condition remains entirely satisfactory throughout the course of the disease, which is very short. There are no complications. There is no tuberculin anergy. The serum of patients convalescent from this modified type of measles possesses the same preventive properties as the serum of those convalescent from ordinary measles. From these facts it would seem that children treated by this method have acquired, in a simple manner and without danger, a satisfactory immunity to measles.

Intoxications Resulting from the Manufacture of Artificial Pearls

Dr. André Léri reports observing in two women, engaged in the manufacture of artificial pearls, a peculiar form of polyneuritis, characterized by a paralysis affecting chiefly the interosseal muscles of the feet and hands, and, to a lesser degree, the extensor muscles of the feet and the flexor muscles of the hands; an anesthesia in the region of the interosseal branches of the extremities; abolition of all the tendon reflexes; paralysis of the soft palate, associated with suppression of the pharyngeal reflex, and paralysis of the orbicularis oculi and the orbicularis oris. These two women filtered the

nacreous varnish by hand, and also dipped the "pearls" in this varnish, which contained a high percentage of tetrachlorethane, a very volatile and toxic chlorin compound of carbon. These findings caused Léri to look into the matter more carefully; he found that all the women engaged in the dipping or the mounting process presented quite serious manifestations affecting the peripheral nervous system: dilatation of the pupils or unequal size of the pupils with a weakened light reflex, paralysis of the extensors of the fingers, paralysis of the soft palate, with diminution or disappearance of the pharyngeal reflex, and frequently abolition of the tendon reflexes. Some of these women (those engaged in the mounting process, for example) merely breathed an atmosphere charged with the vapors of tetrachlorethane, without coming in direct contact with this substance. It was very evident, therefore, that intoxication occurred by way of the respiratory passages.

His attention having been once directed to the subject, Léri did not take long to become convinced of the great frequency, hitherto unsuspected, of intoxications through the industrial use of tetrachlorethane, which is used, not only in the manufacture of artificial pearls, but also as a solvent in a number of industries. Strict hygienic measures should therefore be employed in factories in which tetrachlorethane is used, and particularly in the artificial pearl industry. Braying of the nacreous varnish should not be done by hand, but a mechanical process should be substituted. The dipping vats containing the nacreous varnish should be kept closed as much as possible, and the toxic vapors as they rise should be sucked away from below. Only the employees absolutely needed should be allowed to remain, for any length of time, in the contaminated atmosphere. The employees should receive a medical examination, from time to time, and those showing the first signs of intoxication should be eliminated without delay; the abolition of reflexes may be regarded as an alarm signal. In this manner, grave intoxications; for instance, certain types of commonly fatal icterus such as have been observed, can doubtless be prevented.

Seventy-Fifth Anniversary of Society of Biology

May 26, 1923, the Société de biologie of Paris will celebrate the seventy-fifth anniversary of its foundation. The affiliated societies will also take part in the ceremonies. These are located at Bordeaux, Marseilles, Nancy, Petrograd, Lille, Barcelona, Strasbourg, Lyons, Buenos Aires, Lisbon, Athens, Bukarest, Cluj and Jassy, including the societies of Denmark, Sweden, Lithuania and Belgium. The Société de biologie and its affiliated societies will meet in plenary assembly, on which occasion three questions will be discussed: Generation and Fecundation, Dr. A. Brachet; Physiologic Action of Potassium and Calcium, Dr. H. Zwaardemaker, and the Problem of Immunity in Invertebrates, Dr. J. Cantacuzène.

Death of Dr. G. Bardet

Dr. G. Bardet, secretary of the Institute of Hydrology in Paris and formerly president of the Société de thérapeutique, has died at the age of 71. He was for many years chief editor of the *Bulletin général de thérapeutique*.

Medical Expeditions

Those who took part in the fifteenth and sixteenth medical expeditions were invited recently to a reunion held in the Laboratoire de thérapeutique of the Faculté de médicine. Each guest was presented with a beautiful plaquette in memory of the occasion. Many lantern slides of climatic stations and mineral springs visited on these two expeditions were shown at the meeting.

Since the war, these expeditions, which were formerly directed by the late Dean Landouzy, have been under the scientific direction of Prof. P. Carnot, who succeeded Landouzy to the chair of therapeutics, and of Assistant Prof. F. Rathery. Dr. Gerst has charge of the material equipment for the expeditions. The next expedition will include the climatic stations and the mineral spring resorts of the Jura, Savoy and Dauphiné. Confrères from other countries, who may wish to join the expedition, will be heartily welcome.

VIENNA

(From Our Regular Correspondent)

Jan. 26, 1923.

Cocainism in Vienna

The number of victims of the cocain habit in this city has suddenly increased. The police are attempting to stop the illicit trade in this drug, which is new in our country, having been introduced by visitors. Our laws prohibit the dispensing of cocain by any chemist or apothecary unless on a regular prescription from a duly qualified and registered medical practitioner, and then only in solution, except when sold to hospitals or medical men. Thus it is clear that the quantities required for addicts can be obtained only by smuggling. Although no great harm has yet been done, the public is aroused to the possible danger.

Honorary Titles Relinquished

All medical members of the University of Vienna have given up the honorary titles conferred on them by the former or the present governments, such as councilor of the court and councilor of the emperor, retaining only those titles that have been obtained from the university by scientific work and teaching, such as professor or privat-dozent (or lecturer). These honorary titles were misleading, as they were looked on as evidence of special knowledge, while in fact they were only "ornaments" conferred for prolonged public service, or as a substitute for higher salaries. There was for many years a craze among German-speaking people for titles. The general medical practitioners had often demanded that physicians forego such titles, but the mentality of middle Europe was not yet ready for such a change in public life.

Congress on "Logopedy" Proposed

The Vienna phonetic society, which has done a great deal to promote the study of the physiology and pathology of the human voice, is endeavoring to arrange a "logopedic" convention in this city. Invitations to meet this summer have been sent to the leading men in Europe engaged in this kind of research, and if the acceptances are numerous enough, the convention will take place. It is intended to hold a symposium on aphasia, phonetic problems in adolescents and peripheral disturbances of the speech. Otolaryngologists and rhinologists will also be invited.

Charts on Mortality and Births in Vienna

In a paper on vital statistics, which Dr. Hecke of the Board of Public Health presented before the Sociologic Society of this city, charts were exhibited which show that since 1919 a small but significant increase of births has taken place. This, however, cannot yet compensate for the increased loss of life and the decrease in births during the war years. About the same ratio between births and deaths existed in 1921 as in 1915; the exact figures for 1922 are not yet available, but the very low figures of 1918 are already greatly exceeded. While in 1911 the total mortality amounted to 33,664, the birth rate stood at 41,030. In the next year, both figures dropped in nearly parallel lines, the deaths numbering 32,161, the births 39,801. In 1913, the deaths increased a little, numbering 32,319, and the births diminished to 37,367. Similar conditions prevailed in 1914, when the deaths rose to 33,268, and the births dropped to 36,378. The mortality figures went up by leaps and bounds in 1918 and 1919, so that the curve

on the chart resembles a human arm outstretched in despair, while the birth curve falls in a steep decline.

In 1917, only 20,688 children were born, while 46,131 persons died from influenza and other diseases. The climax was reached in 1918, when there were 19,257 births and 57,497 deaths. In 1919, the number of births rose to 29,218; the deaths dropped to 40,922. This satisfactory trend continued in the next year with 27,821 births and 34,197 deaths; in 1921, there was a slight excess of births over deaths: 28,798 against 28,297, respectively.

Scientific Research in Austria in 1922

In a short report to the government, which demonstrated the meagerness of the regular appropriations to the scientific research institutes, Professors Becke and Rademacher asked for larger appropriations, and enumerated the most important investigations conducted last year in this country. Apart from the publications dealing with the geographic and ethnographic researches in the Balkans in 1915-1918, when our armies occupied these countries, the results of which were made known in 1922, one of the most important papers was that by Dr. Schedler, who made geomagnetic surveys in thirty different places and found marked differences and changes from the values heretofore accepted.

The Vienna Radium Institute, a private concern, has done excellent work in the investigation of radioactive substances. It has been shown that the age of certain mineral deposits can be estimated according to the proportion of transformation or decay of the radioactive substances contained in them. While the uranium-pitchblende of Bohemia is about 200 million years old, in Norway there are minerals at least twice as old, and in Ceylon the layers of thorianite have been found to be at least 500 million years old.

A tremendous amount of work is still going on in the biologic institute (Vienna). Here the problems of transplantation have attracted the attention of a number of gifted investigators. The pupils of Przibram study especially the physiology of transplanted eyes, hearts and legs. Koppanyi has succeeded in transplanting eyes in rats, and these eyes seem to be functioning. At a recent meeting of the Vienna Ophthalmologic Society, his experiments were vehemently attacked by the oculists, but just as vehemently defended by the physiologists. Dr. Weiss transplanted entire limbs in amphibia, exchanging, for instance, arms and legs, and demonstrated that these transplanted limbs functioned normally after a few days. In a group of these animals, he could even transplant whole hearts into the peritoneal cavity. These transplanted hearts obtained an organic union with the new host, the animal thus having two hearts.

In the chemical laboratories of the university, important researches on the catalytic effects of copper and of the methyl-groups of methylated benezene compounds are in progress. In the physical institute, studies on colors and their differentiation are conducted by Dr. Duschek-Frankfurt. A prehistoric cave, discovered in the Styrian Alps near Mixnitz, gave opportunity for the study of animals and plants of diluvial times, while the results of botanic researches in the Far East and in the African Sudan, begun by Austrians before the war, have been published recently.

All these important contributions to science have been made in spite of an appalling lack of funds, indicating what might be done if the scientific spirit were not subdued.

Graduate Work for Vienna Practitioners

The progress of medicine has made it necessary for practitioners to keep in touch with the latest achievements, but it is not an easy matter to attend the so-called postgraduate courses organized by the university. These courses last a fortnight, are conducted through the day and are not therefore accessible to the average practitioner, who simply cannot spare a fortnight four times a year for this purpose. The Wiener medicinisches doktoren Kollegium (a private medical corporation) has instituted the Seminar Abende (instruction evenings), which are open to all medical men free of charge. Any physician in Vienna may inform the secretary of the kollegium that he desires instruction on a certain point or subject. These notices are collected. Eminent lecturers then take charge of the queries and summarize them under dermatology, pathology, gynecology or other subjects. Every Monday at 6:30 p. m., one or two of the lecturers speak on the subject, and, as far as possible, answer the questions submitted a week before. Meanwhile, the lecturer has time to look up the latest references.

Discussion is, as a rule, encouraged. The new departure has been given a warm reception by the profession, and is considered a great success. Practitioners from Germany, the provinces and foreign countries have asked permission to attend these evenings, so as to be able to introduce new methods in their own cities or countries. The university has approved these "evenings," and one of the largest classrooms has been placed at the disposal of the kollegium for a weekly lecture. Eminent specialists are now eager to enlist as lecturers and referees, and the kollegium has only to select the man best suited for presenting the subject of the evening.

The Problem of Alcohol in Teaching

In a paper presented before the Austrian Society for Hygiene, Reichel discussed the difficulties of presenting the alcohol problem in schools: how to impress on adolescents the detrimental effects of alcohol. A large percentage of the population is of the opinion that moderate consumption of alcohol is not detrimental. It is noticeable that total abstainers not infrequently are vegetarians, or faddists of another kind, and thus cannot be regarded as commendable examples. Poets of all nations have always glorified wine as an excellent beverage, and in religious acts of several creeds wine plays an important part. Therefore, youth must be taught that self control is the principal means of insuring a sound mind in a sound body.

The lecturers do not believe it advisable, in the case of young persons, to demonstrate the harmful effects of alcohol by pathologic specimens. It is much more effective to prove to them that drinkers are more subject to disease and illness than abstainers. Statistics of insurance societies; mortality statistics of alcohol-consuming classes (waiters, barmen) and of moderate drinkers, and of drinking races (French, German, Russian) should be shown, to emphasize that the person who uses alcohol is more likely to be sick than persons who do not use it. This methol appeals to the instinct of self-preservation.

Especial interest is evoked in the youthful minds by the experiments and observations on sportsmen. Durig has collected statistics of record holders among German athletes. The absolute superiority of total abstainers over even moderate drinkers is a revelation to young men, whose interest in sport is intense even in our countries. It is easy to convince them that mental health is inconsistent with bodily ill health. Reichel thinks that children should be taught to refuse even to taste alcohol. The supposed increase of mental activity under the influence of alcohol can easily be shown to be misleading. The figures on temporary mental derangements, even of lasting mental harm due to alcohol, can be easily traced. The statistics of hospitals for the insane offer excellent proof. It is important that the school physician himself set an example of total abstinence and that school boards appoint only teachers who are abstainers.

BERLIN

(From Our Regular Correspondent)

Feb. 10, 1923.

Effect of Economic Conditions on Hospitals

On account of the bad economic conditions, the private hospitals have begun to experience difficulties. In Berlin, at the present time, the cost of maintenance per patient in the public welfare hospitals amounts to more than 3,500 marks a day. The city contributes, however, only 1,980 marks and the health insurance societies only 1,500 marks per patient. Consequently, the total indebtedness of the municipal general hospitals has reached the sum of 4,200,000,000 marks, while the deficits of the forty private hospitals (denominational institutions, homes for the aged, etc.) amount to 100,000,000 marks. The municipal government will therefore be compelled to lend its aid, and it has been proposed that the price of gas be raised 5 per cent. for the benefit of municipal welfare institutions.

The Prussian Academy of Sciences

At the last two sessions of the Academy of Sciences, Prussia's most distinguished scientific body, Professor Beckmann spoke on the subject of protection to human life through improvement in nutrition. For his proper nourishment, man needs, chiefly, digestible carbohydrates and albuminous substances. The latter he derives mainly through the mediation of domesticated animals. It lies in the interest of man's nutrition, therefore, to provide our domesticated stock with plant foods that are as easily digestible as possible. For example, through maceration of straw by treating it with alkali hydroxid, carbohydrates may be made more digestible, and, by the application of leaching with water, lupine seeds may be detoxicated, so that their albuminous substances may be utilized to advantage for the feeding of stock. An increase in the digestibility of stock foods, or any other improvement in them that can be effected, immediately redounds to the benefit of human nutrition. Any conservation of foodstuffs is also of advantage to human nutrition. There are many experiments in progress in these fields of endeavor.

Professor Correns, the director of the Kaiser Wilhelm Institute for Biologic Research, located in Dahlem, a suburb of Berlin, delivered a lecture on the "Numerical Relationship of the Sexes." Whereas Süssmilch in 1741 referred in one of his works to "God's interposition" in the distribution of the sexes of mankind, modern science is endeavoring to acquire an influence over the determination of sex. Süssmilch sought to explain teleologically the fact that for every 100 girl births there were from 104 to 105 boy births by citing statistics to the effect that boys, during childhood, are subject to a greater mortality. However, the figures vary in different countries and are also subject to secular changes; wars, especially, affect the numerical relationship of the sexes. Internal or external conditions may change the relationship quite markedly; for instance, influences may be brought to bear on the sperm cells. Such influences may affect the numerical relationship in two ways: either one kind of sperm cell may be strengthened or weakened at the expense of the other, or the physiologic conditions under which they exist may be modified by the voluntary act of man. Up to the present time, however, science has not progressed very far in its experimental endeavors looking toward sex determination, so that "God's interposition" still holds, as a matter of fact.

The Institute for Roentgenologic Research

The Institute for Roentgenologic Research, which, since the death of Geheimrat Grunmach in 1919 has been lying fallow, as it were, is at last to have a new director. The selection of a new director for this neglected post has been delayed, owing to the fact that there has been a difference of opinion between the government and the university faculty as to the course that the institute should follow. While the government was inclined to put the administration of the institute in the hands of a roentgenologist, the faculty voiced the opinion that a physicist should be put at the head of affairs, on the ground that clinical roentgenology and other phases of radiotherapy were sufficiently well provided for in the various clinics, not only from the diagnostic but also from the therapeutic side. There was a need for the development of roentgen-ray research, and for that reason a physicist would seem to be indicated rather than a medical man. The deliberations on the subject have now been brought to a close, and the institute, which was formerly a laboratory for roentgen-ray examinations, has been changed into an institute for roentgenologic research, and a physicist, Prof. W. Friedrich, head of the Radiologic Institute of the Women's Hospital in Freiburg, has been appointed as director. At the same time, the position has been raised to the rank of a head professorship. Friedrich, working sometimes alone and sometimes in collaboration with Professor Gauss of Freiburg and the late Professor Krönig, has performed meritorious service in the field of roentgenologic research and in its practical application.

Personal

Prof. Dr. James Israel, Berlin surgeon, celebrated, February 2, in an enviable state of physical and mental health, his seventy-fifth birthday.

Hermann Hartmann, the founder of the Wirtschaftliche Organisation der Aerzte Deutschlands (Leipziger Verband), died at Leipzig, January 20, at the age of 59. Hartmann was a natural-born leader and a strong, self-reliant personality. At a time when physicians were helplessly exposed to the caprice and exploitation of the directors of the health insurance societies, Hartmann saw the value of organizing; thus he became, at the turning-point of the century, the first man in Germany to effect a union of professional men for economic purposes. By persistent, energetic effort he forced the medical profession to recognize the medical organization he had founded, and at last brought it about that this organization gained a powerful influence with the government and in parliament, and came to be regarded as possessing equal rights with the directors of the health insurance societies in matters pertaining to health insurance. He was later chosen as the representative of the medical profession on the Reichswirtschaftsrat (economic council). Establishment of the principle of free choice of physician was the method Hartmann employed to restore the liberties of the physicians in their struggle with the health insurance societies. The Hartmann League, as the economic organization of the medical profession has been called in his honor, has, through his efforts, been placed on such a solid foundation that what he has wrought will persist in spite of the death of the founder.

Marriages

Percy J. Carroll, major, M. C., U. S. Army, Jefferson Barracks, Mo., to Miss Helen Byrne of St. Louis, February 3.

James M. Miller, captain, M. C., U. S. Army, Fort Eustis, Va., to Miss Bessie E. V. Keil of Walhalla, S. C., February 3.

John Maurice Hayes, Decatur, Ill., to Miss Helen D. Hogan of Assumption, recently.

Carle E. Bentley to Mrs. Katherine Oakman, both of Little Rock, Ark., February 10.

Franklin W. Sells, Osceola, Iowa, to Miss Clara L. Black of Los Angeles, January 3.

Lonnil Woodfin Grove to Miss Dorothy Haverty, both of Atlanta, Ga., January 19.

Deaths

Cyrus Lee Stevens ⊕ Athens, Pa.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; consulting surgeon at the Robert Packer Hospital, Sayre, where he died, February 19, aged 71, following a long illness. Dr. Stevens was born at Stevensville, Pa., in 1851. Following his graduation, he visited hospitals in New York, London and Paris and was appointed professor of obstetrics and surgery, Medical Department Central Turkey College, at Aintab, Turkey, where he remained for three years. Returning to the United States in 1884, he was appointed medical superintendent at the New York Post-Graduate School and Hospital. He served as member of the board of trustees, secretary and president of the Medical Society of the State of Pennsylvania; president and secretary of the Bradford County Medical Society; member of the board of health; the borough council, and editor of the *Pennsylvania Medical Journal*. Dr. Stevens was a member of the House of Delegates of the American Medical Association for six years, a member of the reference committee on amendments to the constitution and by-laws for three years, and chairman of the reference committee on credentials for one year. He was a member of the American Association for the Advancement of Science, and in 1907 was made a member of the Pennsylvania House of Representatives.

Sir Thomas George Roddick, Montreal, Canada; honorary president of the Medical Council of Canada; died, February 20, of arteriosclerosis, aged 76. Dr. Roddick graduated from McGill University Faculty of Medicine, Montreal, in 1868, and was appointed professor of surgery in 1890; dean of the medical faculty, 1901-1908, governor, 1908, and at the time of his death, emeritus professor of surgery. He had served as consulting surgeon at the Royal Victoria and the Montreal General hospitals, and was a member of the Canadian parliament from 1896 to 1904. Dr. Roddick was appointed first colonial president of the British Medical Association in 1896, and was knighted in 1914.

John Bernard McGee, Cleveland; Western Reserve University School of Medicine, 1878; at one time professor of therapeutics and secretary of the faculty, Cleveland College of Physicians and Surgeons, and associate professor of therapeutics at his alma mater; member of the Ohio State Medical Association, the American Association for the Advancement of Science, the American Anthropological Association, the Cleveland Medical Library Association, the Cleveland Clinical Club, and formerly president of the Cleveland Academy of Medicine; on the staff of St. Joseph's Orphan Asylum; aged 69; died, February 10, following a long illness.

Daniel Hughes Du Pree ⊕ Athens, Ga.; Johns Hopkins University Medical Department, Baltimore, 1907; formerly assistant professor of clinical medicine at the University of Georgia Medical Department, Augusta; member of the American College of Physicians; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 39; died, February 22, of angina pectoris.

Charles William Franzoni ⊕ Washington, D. C.; Medical Department of Columbian College, 1869; member of the Biological Association of Washington; formerly president of the Medical Society of the District of Columbia and for thirty-five years treasurer of the Washington Medical Society; Civil War veteran; aged 85; died, February 17, of bronchopneumonia.

Lem Walter Spriggs, San Francisco; College of Physicians and Surgeons of San Francisco, 1899; Jefferson Medical College of Philadelphia, 1904; formerly dean, and professor of abdominal surgery and gynecology at the College of Physicians and Surgeons of San Francisco; aged 51; died, February 16, of chronic myocarditis and angina pectoris.

Joseph Weinstein ⊕ New York; University and Bellevue Hospital Medical College, 1899; member of the American Academy of Ophthalmology and Oto-Laryngology, and the Berlin Laryngological Society; on the staffs of the Sydenham, Beth David and Beth Israel hospitals, New York; aged 45; died recently, at Frankfort, Germany.

Stephan Alexander Hunter, Pittsburgh; Jefferson Medical College of Philadelphia, 1878; ordained Presbyterian ministry, 1877; served as a missionary in China, 1879-1891; author of "A Manual of Therapeutics and Pharmacy" and "An Analysis of the Book of Hebrews" (both in Chinese); aged 71; died, February 20, of senility.

Tunis C. Quick ⊕ Buffalo; Medical Department of Columbian University, Washington, D. C., 1895; member of the Medical Society of Virginia; served in the M. C., U. S. Army, during the World War; surgeon in the U. S. Public Health Service at the time of his death; aged 52; died, February 21, of heart disease.

Herbert James Hall ⊕ Marblehead, Mass.; Medical School of Harvard University, Boston, 1895; former president of the American Occupational Therapy Association; since 1912 medical director of the Devereux Mansion Sanatorium, where he died, February 19, aged 52, following a long illness.

Henry Albert Hutcheson ⊕ Oaklandon, Ind.; Medical College of Indiana, Indianapolis, 1903; formerly associate in clinical surgery at Indiana University School of Medicine, Indianapolis; aged 49; died, February 15, at St. Vincent's Hospital, Indianapolis, following an appendectomy.

William Shannon ⊕ New York; New York University Medical College, 1889; formerly clinical instructor of pediatrics at Cornell University Medical College; on the staffs of Willard Parker, Riverside, and Misericordia hospitals; aged 59; died, February 19, of pneumonia.

Enos John Hughes, Chicago; College of Physicians and Surgeons, Keokuk, Iowa, 1876; University of Michigan Medical School, Ann Arbor, 1886; for more than thirty years medical examiner for the Baltimore and Ohio Railroad; aged 65; died, March 2, of heart disease.

James John Dickinson, Pittsburgh; Jefferson Medical College of Philadelphia, 1913; member of the Indiana State Medical Association; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 35; died, February 16, of pneumonia.

Ransom J. Chase, Springfield, Colo.; Hahnemann Medical College and Hospital of Chicago, 1903; served in the M. C., U. S. Army, during the World War; served with the American Red Cross in Russia for four years; aged 44; died, February 3, of pneumonia.

Eugene Francis Daum, Chicago; Northwestern University Medical School, Chicago, 1900; member of the Illinois State Medical Society; served in the M. C., U. S. Army, during the World War; aged 46, died, March 1, of acute endocarditis following influenza.

George Washington Faller ⊕ Oyster Bay, N. Y.; New York University Medical College, New York, 1878; member of the New York Academy of Medicine; formerly on the staff of the Nassau Hospital, Mineola; aged 68; died, February 19, of heart disease.

George Woodruff Johnston, Washington, D. C.; University of Pennsylvania School of Medicine, Philadelphia, 1882; formerly on the staff of the Emergency Hospital; aged 64; died, February 20, of heart disease while delivering an address.

Paul Tudor Jones, Columbus, Ga.; University of Virginia Department of Medicine, Charlottesville, 1872; Bellevue Hospital Medical College, New York, 1873; member of the Medical Association of Georgia; aged 71; died, February 9.

George Harcourt Willis, Winslow, Ill.; Rush Medical College, Chicago, 1900; served as mayor of Winslow for two terms, and for eleven years as secretary of the board of education; aged 50; died, February 17, of pneumonia.

Andrew A. McMeans ⊕ Monterey, Mexico; Trinity Medical College, Toronto, Canada, 1889; member of the State Medical Association of Texas; served for several years as American vice consul in Monterey; aged 56; died, February 9.

Lemuel B. Spung, New Lexington, Ohio (licensed, Ohio, 1897); member of the Ohio State Medical Association; aged 63; died, February 11, at the Bethesda Hospital, Zanesville, of peritonitis, following an appendectomy.

Domer Gheen Smith ⊕ Freeport, Ill.; Jefferson Medical College of Philadelphia, 1899; for several years secretary of the Tri-State Medical Society (Illinois, Iowa, Wisconsin); aged 56; died, February 28, of pneumonia.

Robert Beardsley Goodyear, North Haven, Conn.; Yale University School of Medicine, 1868; member of the Connecticut State Medical Society; Civil War veteran; aged 87; died, February 21, of senility.

James Fotheringham Kendrick, West Burke, Vt.; University of Vermont College of Medicine, Burlington, Vt., 1899; member of the Vermont State Medical Society; aged 52; died, January 15, of paralysis.

Lester Ours, Wheeling, W. Va.; Jefferson Medical College of Philadelphia, 1922; aged 25; intern at the Ohio Valley General Hospital, where he died, February 13, of appendicitis.

William Morrison, Brooklyn; Long Island College Hospital, 1909; also a clergyman; formerly pastor of the First Baptist Church of Flushing, N. Y.; aged 74; died, February 20, of cerebral hemorrhage.

Cornelius Abram DeMund, Ridgewood, N. J.; Cornell University Medical College, New York, 1900; member of the Medical Society of New Jersey; aged 44; died, February 3, of valvular heart disease.

George Alexander Graham, Raeford, N. C.; New York University Medical College, New York, 1876; member of the Medical Society of the State of North Carolina; aged 70; died, February 1.

Altero Lipa B. Weindrug, New York; University and Bellevue Hospital Medical College, 1900; member of the Medical Society of the State of New York; aged 49; died, February 20, of pneumonia.

Louis Lawrence Wilencheck, Fairfield, Idaho; University of Colorado School of Medicine, Denver, 1916; member of the Idaho State Medical Association; aged 31; died, January 27, of influenza.

Albert Ai Pratt, Enosburg Falls, Vt.; University of Vermont College of Medicine, Burlington, 1904; member of the Vermont State Medical Society; aged 53; died, January 12, of myocarditis.

Oscar W. Whitacre, West Frankfort, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1909; member of the Illinois State Medical Society; aged 40; died, February 11, of tuberculosis.

Charles Marchant Ramsdell, Cove, Ore.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1877; aged 68; died, February 8, following a long illness.

Charles Bellamy Young ⊕ Middletown, Conn.; Medical Department of Columbia College, New York, 1894; on the staff of the Middlesex Hospital; aged 54; died, February 1, of diabetes.

Arthur M. Eastman, Minneapolis; Hahnemann Medical College of Philadelphia, 1879; president of the Minnesota State Board of Medical Examiners; aged 67; died, February 23.

William Blaine Judy ⊕ Mount Vernon, N. Y.; Northwestern University Medical School, Chicago, 1919; formerly on the staff of Mount Vernon Hospital; aged 30; died, February 19.

George Francis Caldicott, Worcester, Mass.; Tufts College Medical School, Boston, 1921; on the staff of Worcester City Hospital, where he died, February 11, of pneumonia, aged 26.

Thomas Hartley Hall, Dublin, Ga.; Pennsylvania Medical College, Philadelphia, 1859; member of the Medical Association of Georgia; aged 85; died, February 12, of senility.

John Wesley Corman ⊕ North Tonawanda, N. Y.; University of Toronto Faculty of Medicine, Toronto, Canada, 1874; aged 73; died suddenly, February 8, of heart disease.

Minerva A. Kline, Chicago; Hahnemann Medical College and Hospital of Chicago, 1892; aged 60; died, March 2, at the Hahnemann Hospital, of myocarditis.

William P. Burge, San Francisco; Western Homeopathic College, Cleveland, 1866; aged 89; died, February 1, at the Old People's Home, of arteriosclerosis.

George Benjamin Phelps, New York; Medical Department of Columbia College, New York, 1883; aged 68; died suddenly, February 15, of heart disease.

John Alfred Remington ⊕ Central Falls, R. I.; Bellevue Hospital Medical College, New York, 1891; formerly state senator; aged 55; died, February 13.

Lyman A. Clark, Utica, N. Y.; New York Homeopathic Medical College, New York, 1869; aged 77; died, February 7, at the Masonic Home, of senility.

William H. H. Tate, Heflin, Va.; Louisville Medical College, Louisville, Ky., 1875; Confederate veteran; aged 81; died, February 2, of senility.

Joseph B. Morrison, Maryville, Mo.; Jefferson Medical College of Philadelphia, 1861; Civil War veteran; aged 86; died in February, in New York.

Stewart Newell Pool ⊕ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1891; aged 55; died, February 19, of pneumonia.

Norton Hills Pardon, Glendale, Calif.; University of Michigan Medical School, Ann Arbor, 1894; aged 54; died, February 9, of heart disease.

Thomas Leo Callen, East Newark, N. J.; University of Tennessee College of Medicine, Memphis, 1902; aged 42; died, February 21, of influenza.

Charles Walter Connell, Fall River, Mass.; Medical School of Harvard University, Boston, 1887; aged 63; died, February 7, of heart disease.

J. H. Morrow, Blue Ridge, Texas; St. Louis College of Physicians and Surgeons, St. Louis, 1890; aged 69; died, January 27, of influenza.

James Massey Jones, Interlachen, Fla. (licensed, Florida, 1889); Confederate veteran; also a druggist; aged 79; died, February 12, of senility.

John Mason Phillips, Evansville, Miss.; Vanderbilt University Medical Department, Nashville, Tenn., 1882; aged 63; died, February 8.

Ezra Grumbine, Lebanon, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1868; aged 77; died, February 16, of senility.

William E. Wisner, Columbus, Ind.; Cincinnati College of Medicine and Surgery, Cincinnati, 1870; aged 90; died, February 8, of senility.

W. H. Emmons, Phoenix, Ariz.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1874; aged 82; died, January 26, of senility.

George W. Stevenson, Phoenix, Ariz.; Curtis Physio-Medical Institute, Marion, Ind., 1894; aged 53; died, January 23, of tuberculosis.

Robert N. Cartwright, Fairfield, N. C.; Jefferson Medical College of Philadelphia, 1884; formerly state senator; aged 65; died recently.

Elijah J. Shelton, Bloomfield, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1864; aged 91; died, February 18, of senility.

George W. Helmick, Columbus, Ohio; Starling Medical College, Columbus, 1877; aged 65; died, February 22, of heart disease.

A. Neal Wood, Ashdown, Ark.; University of Arkansas Medical Department, Little Rock, 1890; aged 57; died, December 15.

John Irvine Hostetter, Colo, Iowa; Chicago Medical College, Chicago, 1880; aged 67; died, February 16, of cerebral hemorrhage.

Edwin D. F. Phillips, Kansas City, Mo.; Kansas City (Mo.) Medical College, 1876; aged 81; died, December 24, of chronic nephritis.

Samuel E. Nixon, Burlington, Iowa; Hahnemann Medical College and Hospital of Chicago, 1874; aged 73; died, February 10.

Samuel William Allen ⊕ Chicago; University of Arkansas Medical Department, Little Rock, 1882; aged 61; died, February 10.

Milton C. McBride, Dallas, Texas; Memphis Hospital Medical College, Memphis, Tenn., 1883; aged 64; died, February 7.

William O. St. Sure, Sheboygan, Wis.; Rush Medical College, Chicago, 1893; also a druggist; aged 74; died, February 6.

Callie A. Rennoe, South Bend, Ind.; Rush Medical College, Chicago, 1892; aged 54; died, February 11, of heart disease.

Theodora Tiffee Purkitt ⊕ Willows, Calif.; Cooper Medical College, San Francisco, 1894; aged 66; died, February 8.

Henry L. Mann, Kansas City, Mo.; Starling Medical College, Columbus, Ohio, 1875; aged 75; died, February 13.

Oliver H. Fisher, Reading, Pa.; University of Pennsylvania School of Medicine, 1872; aged 76; died, February 4.

Leroy Gullick, Denver; Baltimore Medical College, Baltimore, 1906; aged 40; died, February 4, of pneumonia.

Hamlin Joseph Walters, Lincoln, Neb.; Miami Medical College, Cincinnati, 1875; aged 72; died, February 4.

Calvin K. Jayne, Madison, Wis.; Jefferson Medical College of Philadelphia, 1879; aged 66; died, February 4.

John O. Moxley, Lewiston, Idaho (licensed, Idaho, 1899); also a druggist; aged 77; died, February 8.

Edward J. Thayer, New York; Rush Medical College, Chicago, 1893; aged 57; died, February 15.

Levi D. Allen, Amsterdam, Ohio (licensed, Ohio, 1896); aged 79; died, January 18, of senility.

L. W. Early, Phoenix, Ariz. (licensed, years of practice); aged 68; died, January 31.

The Propaganda for Reform

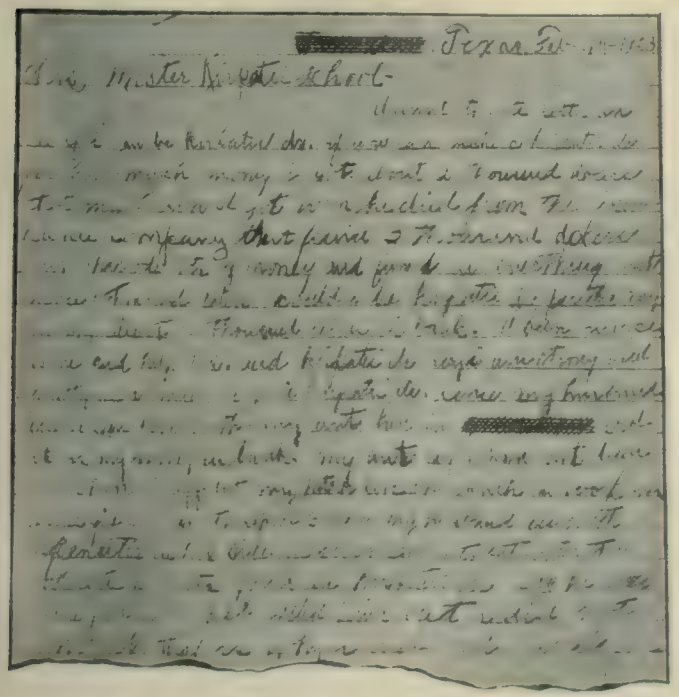
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THE MENACE OF CHIROPRACTIC

Practically no Educational Qualifications Necessary for Matriculation in Chiropractic Colleges

The followers of various cults would have the public believe, and the public to some extent does believe, that the various state laws (Medical Practice Acts) governing the practice of medicine are a species of class legislation made in the interests of the medical profession. They are, of course, nothing of the sort. These laws are on the statute books for but one object, that of protecting the public against the ignorant who would hold themselves out to treat human ailments. Another tenet in what Mencken would call the American credo is that the medical profession confines its therapeutic efforts exclusively to the administration of drugs or to surgical procedures. The fact is, the modern physician is bound to no exclusive therapy but uses whatever in his judgment, is indicated.

The objection that the medical profession has to the various "schools" and so-called colleges devoted to turning out disciples of certain cults is not, *per se*, the fact that these cults are inherently unscientific, in that they would treat all conditions by a single therapeutic method; it is that their followers are not trained in the fundamental sciences on which the healing art depends. All that the medical profession

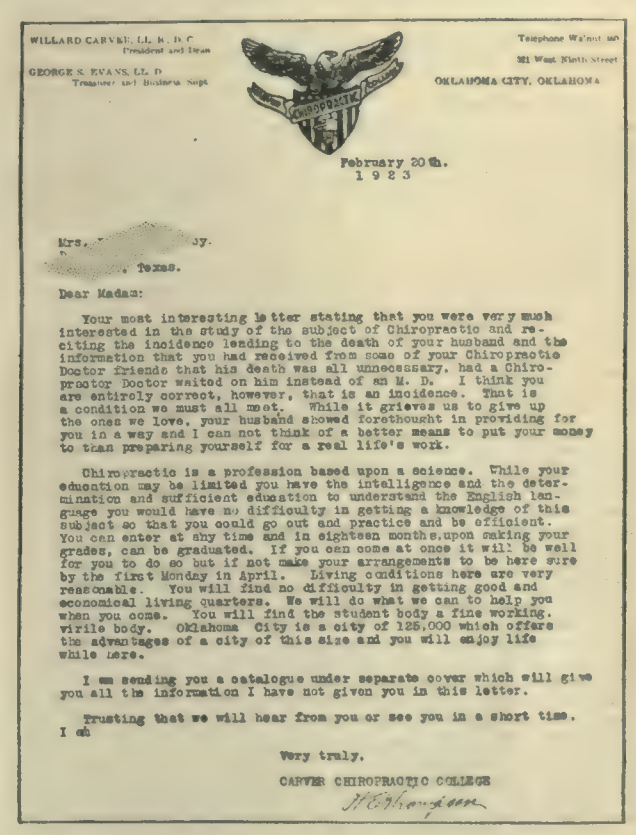


Photographic reproduction (reduced) of part of a letter written to the Carver Chiropractic College asking if the "college" could make a chiropractic doctor out of the writer of the letter.

would ask in the interest of public safety is that chiropractors, neuropathists, spondylotherapists, naprapathists, mechano-therapists, and the followers of a score of other healing cults, be well trained in the fundamentals on which the diagnosis and treatment of disease depends. When a man has been thoroughly grounded in those essentials, it is immaterial, both to the public and to the medical profession, by what particular method he treats the sick, whether it be by the laying on of hands, by the manipulation of the spine, by massaging of the muscles, or what not. All that is asked is that the man who is to minister to the sick shall know enough about the human body and its processes in health and disease to know what he is doing.

CHIROPRACTIC: THE CIRCUS CULT

The most widely advertised cult today is chiropractic. This cult menaces public health, not because its devotees advertise by circus-like methods, nor even because the theory on which it is based is the unscientific and preposterous one that all diseases are due to subluxated vertebræ impinging



WILLARD CARVER, LL. B., D. C.
President and Dean

GEORGE S. EVANS, LL. D.
Treasurer and Business Supt.

Telephone Walnut 140
321 West Ninth Street
OKLAHOMA CITY, OKLAHOMA

February 20th.
1923

Mrs. [redacted] Texas.

Dear Madam:

Your most interesting letter stating that you were very much interested in the study of the subject of Chiropractic and reciting the incidence leading to the death of your husband and the information that you had received from some of your Chiropractic Doctor friends that his death was all unnecessary, had a Chiropractor Doctor waited on him instead of an M. D. I think you are entirely correct, however, that is an incidence. That is a condition we must all meet. While it grieves us to give up the ones we love, your husband showed forethought in providing for you in a way and I can not think of a better means to put your money to than preparing yourself for a real life's work.

Chiropractic is a profession based upon a science. While your education may be limited you have the intelligence and the determination and sufficient education to understand the English language you would have no difficulty in getting a knowledge of this subject so that you could go out and practice and be efficient. You can enter at any time and in eighteen months upon making your grades, can be graduated. If you can come at once it will be well for you to do so but if not make your arrangements to be here sure by the first Monday in April. Living conditions here are very reasonable. You will find no difficulty in getting good and economical living quarters. We will do what we can to help you when you come. You will find the student body a fine working, virile body. Oklahoma City is a city of 125,000 which offers the advantages of a city of this size and you will enjoy life while here.

I am sending you a catalogue under separate cover which will give you all the information I have not given you in this letter.

Trusting that we will hear from you or see you in a short time.
I am

Very truly,

CARVER CHIROPRACTIC COLLEGE

Photographic reproduction (reduced) of the reply of the Carver Chiropractic College.

on spinal nerves. No, the chief reason is that those who call themselves chiropractors are uneducated men who know practically nothing of the human body and its intricate mechanism. Chiropractors are uneducated because the so-called chiropractic colleges are not educational institutions but "trade schools" which cater to the ignorant and the venal and turn out "graduates" in periods varying from a few weeks to a few months.

Before one can enter a medical school he must not only have had a high-school education but he must also have completed at least two years of college work. Many schools require more than two years of college, some even demanding a degree before the would-be medical student is permitted to matriculate. To enter a chiropractic "college" one does not have to have a high-school education; in fact, he does not need even a common school education. If he can write enough to sign his name and knows enough to read he will be accepted by these "colleges" and after a short period of "instruction" turned out on the public to tinker with that most delicate and marvelous mechanism, the human body.

ONE EXAMPLE

As an example of the type of educational qualification necessary for taking up the study of chiropractic, the following evidence will be of interest. The letter that follows, bearing all of the external and internal evidence of having come from an ignorant and illiterate woman, was sent last month from a Texas town to the "Carver Chiropractic College," Oklahoma City, Oklahoma. We are omitting the name of the town in Texas from which the letter was sent, but

otherwise are reproducing it *verbatim et literatim.* We also give a photographic reproduction of part of the letter in order more clearly to show its obviously illiterate character. Here is the letter:

"*Sirs, Mister Kirpatic School.* I want to rite letter an see if i can be kirpatic dr. if you can make a kirpatic dr. for how much money i got about 2 thousend dolers that my husband got wen he died from the insurance company that paid 3 thousand dolers but I had ode lots of money and funerl an everything cost more 1 thousand dolers. Could i be kirpatic dr. for this much money about 2 thousand dolers in bank. i been nurse some and help drs. and kirpatic dr say i am strong and pretty an i make a good kirpatic dr. since my husband die I can live with my ant here in ———————— but it is my money in bank. My ant say i have not been in school enuff but my father live on ranch an work wen I was girl and I go to school 3 years. My husband die with apensitis in his side an drs. say it to late after they operate an lots of pus an kirpatic dr. say he could cure him if i had called him but i did not no it that is why i did not send for him an i want to be kirpatic dr so i can cure apensitis sometime. I been ritin some other kirpatic schools and kirpatic colleges but they send me books and dont anser my letters so i can no. if you will anser my letter an tell me if you can make me a kirpatic dr. on how much money i got an how long it will be if i am a widow 24 years old and i will come right away.

Mrs. ————————, Texas."

In due time the writer of the letter received an answer (which we reproduce in miniature) from the Carver Chiropractic College. The letter ran:

"*Dear Madam:* Your most interesting letter stating that you were very much interested in the study of the subject of Chiropractic and reciting the incidence [*Sic!*] leading to the death of your husband and the information that you had received from some of your Chiropractic Doctor friends that his death was all unnecessary, had a Chiropractic Doctor waited on him instead of an M. D. I think you are entirely correct, however, that is an incidence. [*Sic!*] That is a condition we must all meet. While it grieves us to give up the ones we love, your husband showed forethought in providing for you in a way and I can not think of a better means to put your money to than preparing yourself for a real life's work.

"Chiropractic is a profession based upon a science. While your education may be limited you have the intelligence and the determination and sufficient education to understand the English language you would have no difficulty in getting a knowledge of this subject so that you could go out and practice and be efficient. You can enter at any time and in eighteen months, upon making your grades, can be graduated. If you can come at once it will be well for you to do so, but if not, make your arrangements to be here sure by the first Monday in April. Living conditions here are very reasonable. You will find no difficulty in getting good and economical living quarters. We will do what we can to help you when you come. You will find the student body a fine working, virile body. Oklahoma City is a city of 125,000 which offers the advantages of a city of this size and you will enjoy life while here.

"I am sending you a catalogue under separate cover which will give you all the information I have not given you in this letter.

"Trusting that we will hear from you or see you in a short time, I am.

"Very truly,

"Carver Chiropractic College

"H. E. Thompson."

Here we have documentary evidence of the type of education and intelligence that one chiropractic college requires for matriculation. According to this "college" the writer of the letter was sufficiently educated and intelligent to get "a knowledge of this subject [chiropractic] so that you could go out and practice and be efficient."

Oroya Fever.—Since at least the time of the Incas, Peru has suffered from a strange disease which has swept over the country from time to time in the form of frightful epidemics, some of which have cost thousands of lives. One of the severest recent outbreaks occurred among the workmen building the Peruvian Central Railway between Lima and Oroya, and it is estimated that at least 7,000 individuals died in it. In 1906 at least one tenth of 2,000 workmen employed building tunnels and bridges on the Central Railway died of the fever, and one bridge in particular, which was the scene of a great many deaths from the disease, has come to be known as the Oroya Fever Bridge. Oroya fever has been constantly confused with other diseases, and it was not until the South American expedition of the Harvard School of Tropical Medicine made an investigation of the disease that some order was brought out of the confusion. Malaria, paratyphoid, and particularly verruga peruviana are the diseases which have been most frequently confused with Oroya fever. —Chandler, Animal Parasites and Human Disease, 1922.

Correspondence

MELANIFEROUS LEUKOCYTES IN THE DIAGNOSIS OF MALARIA

To the Editor:—In and about St. Louis, a district in which the manifestations of malaria are protean in character and of endless variety, it seems strange that a means of diagnosis in malaria is ignored that is used by the American government in the Philippines, employed in the malarial zones of the British Empire, and warmly advocated and championed by no less an authority than Sir Patrick Manson. Since the discovery by Laveran, we have been in a position to explain the observation of Loomis, who forty years ago drew attention to the relationship that existed between pigmented leukocytes and malaria. That plasmodial pigment is engulfed by the phagocytes no one will deny, but in scientific proselytizing I have found that to gain assent in reasoning back from effect to cause, from plasmodial pigment to the plasmodium itself, is quite another matter.

In G. A. Gibson's Text Book of Medicine **1**:311, Manson says: "Pigmented leukocytes are easily made out and are quite as pathognomonic of malaria as the actual plasmodium itself." To those who, after the fashion of the Scotch verdict "not proven," decline to make a positive diagnosis of malaria in the absence of the plasmodium, I would recommend a careful consideration of the foregoing statement. If they will only make a few trials, search unstained blood films for pigmented leukocytes, and control their provisional diagnosis by quinin, I will venture to assert that they will be surprised to find how many cases will prove to be malarial which after blood examinations with most approved staining have been returned as negative by reason of the fact that no plasmodia have been found.

It is not to be expected that plasmodia are always to be found in the peripheral circulation, and therefore it follows that the diagnosis in actual cases of malaria must often rest in abeyance, to the confusion of the physician and the detriment of the patient.

On the other hand, pigmented leukocytes are always to be found in the peripheral circulation in malaria uninfluenced by paroxysm or quinin, and are infallible and ever present guides to diagnosis. In children, especially, in whom usually the paroxysms are not well marked, the search for plasmodia must necessarily often prove futile, whereas the pigmented leukocytes are always present. For myself, I have followed Manson's teaching for the last twenty years, having made almost a thousand blood examinations with this object in view, and can speak with enthusiasm of the labor-saving and time-saving truth of his statement.

The color of the pigment lends itself to a differential diagnosis. Light yellowish or red pigment denotes a simple type of malarial infection, while jet black pigment is indicative of the presence of the estivo-autumnal parasite. The amount of pigment present in the white corpuscles is also helpful in the interpretation of cases.

When the pigment granules in the leukocytes are few in number to the leukocyte, we are necessarily dealing with a case of recent infection. On the other hand, in long standing and chronic cases we should expect to find, and do find, the leukocytes crowded with pigment.

The diagnosis of malaria by Manson's method is simplicity itself. All that is requisite is a microscope with a one-sixth inch objective, a film of freshly drawn, unstained blood, and the ability to recognize small black specks of pigment on the white background of the leukocyte. The only possibility of mistake lies in regard to the pigmented leukocytes found in

the subjects of melanotic sarcoma—a differentiation that may be safely ignored.

JAMES ROSS CLEMENS, M.D., Webster Groves, Mo.
Professor of Pediatrics, St. Louis
University School of Medicine.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PAN-SECRETIN

To the Editor:—Is the pan-secretin compound, manufactured by Henry R. Harrower, Glendale, Calif., useful in the treatment of diabetes?

F. P. CAPRON, M.D., Providence, R. I.

ANSWER.—Harrower's pan-secretin compound, according to the advertising circular, is "an endocrine combination embodying: (1) A specially prepared extract of *Islets of Langerhans* (pancreas tail), rich in its incretory glycolytic product; (2) An acid extract of the duodenal mucosa containing the pancreatic activator *secretin*, and (3) A small dose of desiccated calves *tonsil*." This formula emphasizes the fact that some of the commercial houses are carrying us back to the days of the shotgun nostrum. It would seem hardly necessary to say that such a combination as that quoted above is unscientific and that, so far as we know, there is no scientific evidence to warrant the belief that such a combination is of value. Four years ago, the Council on Pharmacy and Chemistry published a report (THE JOURNAL, Jan. 18, 1919, p. 213) on some of the Harrower "pluriglandular" mixtures, and gave reasons why such unscientific combinations were not acceptable for New and Nonofficial Remedies. Recently this form of therapy was discussed in the Section on Therapeutics and Pharmacology of the Royal Society of Medicine of London, and Dr. Swale Vincent, professor of physiology at the University of London, in the course of his remarks, stated that many foolish notions are abroad, one, for example, being that a preparation from the pancreas, tonsil and duodenal mucosa, taken by the mouth, is a remedy for diabetes (*British Medical Journal* **1**:105 [Jan. 20] 1923). It is a sad reflection on those physicians—the number surely is comparatively small—who allow themselves to be influenced by "literature" that is sent out by commercial houses to sell their products. It appears to be difficult for some men, physicians included, to resist "the will to believe" and to substitute "the will to question" in these matters.

ELIMINATION OF OXYURIS VERMICULARIS

To the Editor:—I have tried in the last six or seven months to get rid of pinworms (*Oxyuris vermicularis*) in a child, aged 4 years, but apparently have not had good results. I have followed very carefully the instructions given in the textbooks of pharmacology. Please outline a treatment for this condition. I have used santonin in one-fourth grain doses. Please omit my name.

V. M., Ohio.

ANSWER.—It is not surprising that the use of santonin did not lead to a cure of *Oxyuris vermicularis* infestation. These worms, at least in their adult state, live in the large intestine, where an effect from anthelmintics given by mouth cannot be expected. The only justification for the peroral administration of anthelmintics, such as santonin, in this condition lies in the fact that the worms live in the small intestine while they are immature and during impregnation. Santonin treatment might therefore be used in conjunction with the much more important treatment by means of enemas.

The chief emphasis of the treatment must be laid on the prevention of reinfection, as these worms do not proliferate in the intestine. The difficulty lies in the fact that the female worms, each of which carries many thousands of ova, begin to migrate as soon as the ova are ripe. On escaping from the anus, the worms are likely to be crushed, most especially because of the itching and consequent scratching they cause. Thus, the ova become smeared over the anal region, and sooner or later enter the mouth, chiefly by way of the hands. The reason this infestation is so much more common in children than in adults is that the child is much less cleanly and much more prone to carry unclean hands and fingers into its mouth. From this it will be seen that the chief enemy to be exterminated is the sex-ripe female, which has its habitat in the large intestine, most especially the cecum and the rectum. If we succeed in keeping the rectum free from worms for a sufficient length of time, thereby breaking in on the vicious circle of reinfection, the patient will be cured. Hence, it is necessary to employ for a considerable time—several weeks—daily enemas of soap solution, salt solution, dilute vinegar, or even plain water. The presence of chemicals in the enema is probably of no importance. Cleanliness is everything. Not only should we aim to prevent infection of the anal region by consistent enema treatment; but we should also keep the hands and the finger nails scrupulously clean. If several children are closely associated, simultaneous treatment of all is necessary in order to prevent mutual reinfection.

ABORTION AND PREMATURE LABOR

To the Editor:—What is the prevailing interpretation among the profession of the terms "abortion" and "miscarriage"? Some authors, such as Hirst, define abortion as interruption of pregnancy before the fourth month and miscarriage from the fourth to the seventh, while others, such as DeLee, use application of the term abortion to interruption before the seventh month, and refer to miscarriage as a term only popularly used by the laity.

LOUIS TUFT, Pittsburgh.

ANSWER.—"Abortion" is generally used to mean any interruption of pregnancy which occurs before the fetus is viable; interruptions of pregnancy which occur after the fetus is viable, but before full term, are designated "premature labor." There is no sharp line of division, but, as a rule, the end of the twenty-eighth week is taken as such. Physicians use the term "miscarriage" but little in scientific discussions; laymen employ it to designate any premature interruption of pregnancy at any time. In law, any interruption of pregnancy before full term is designated an abortion.

CAUSE OF SUBNORMAL TEMPERATURE

To the Editor:—Please give me the etiology and prognosis of subnormal temperature. Can it be owing to a defect in the endocrine glands?

M. S. CANFIELD, M.D., Frankfort, Ind.

ANSWER.—The preservation of a normal temperature depends on the balance between heat production and heat dissipation. The former is a function chiefly of the muscles, and is the result of metabolic changes. Heat loss is provided for in many ways, chiefly by the exposure of blood in the skin to lower temperatures, and the cooling that comes from sweating and evaporation. A subnormal temperature may result either from diminished heat production or from excessive loss. Under modern conditions of life, with the possibilities for regulating the atmospheric temperature and the skin exposure by variations in the clothing, a subnormal temperature from excessive loss of heat is rare, but may occur from exposure and privation. Diminished heat production occurs in many states of lowered vitality and diminished metabolism; it is likely to be associated with subnormal body temperature. This is almost a normal occurrence in the aged, and is common in many conditions of cachexia and inanition, such as those of convalescence from fevers and in cancer. All conditions of diminished oxygenation, such as congenital heart disease, cardiac failure, alcoholism, jaundice, uremia and pernicious anemia, are likely to cause a subnormal temperature. Endocrine gland disorders associated with diminished basal metabolism of any severity are almost inevitably accompanied with subnormal temperature. Among these conditions, special reference should be made to Addison's disease (suprarenal deficiency) and myxedema (thyroid insufficiency). Subnormal temperatures are often noted in the early stages of tuberculosis, especially in tuberculous meningitis. They also accompany serious shock, such as that due to very severe abdominal inflammations or perforations of a hollow viscus.

USE OF INITIALS TO INDICATE MEMBERSHIP IN AN ORGANIZATION

To the Editor:—As a matter of curiosity, I write to inquire whether it is considered good form to place after one's name initials indicating membership in certain societies; for example, F.A.C.S. or F.A.C.P., as the case may be. Could one with equal propriety use the letters F.A.M.A. as indicating fellowship in the American Medical Association or other societies, varying the letters accordingly?

W. F. VON ZELINSKI, M.D., Fort Bragg,, N. C.

ANSWER.—The use of such initials as F.A.C.S., F.A.C.P. or F.A.M.A. to indicate membership in an organization is purely a matter of taste.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Idaho: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.
Iowa: Des Moines, March 8-10. Sec., Dr. Rodney P. Fagen, State House, Des Moines.
Maine: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.
Montana: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
New Hampshire: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

FURTHER DATA ON THE ALLEGED LACK OF PHYSICIANS AND THE DISTRIBUTION OF IRREGULAR PRACTITIONERS

E. P. LYON, PH.D., M.D.
Dean, University of Minnesota Medical School
Minneapolis

In *Minnesota Medicine*, February, 1923, I published certain facts with regard to the distribution and supposed need of physicians in Minnesota and neighboring states. Something concerning the distribution of osteopaths and chiropractors was also indicated. These facts were obtained from a study of notices of locations for physicians on file in my office and from a study of the American Medical Association Directory, in comparison with a list of incorporated places in Minnesota as reported by the United States census of 1920.

My conclusions were that a real lack of physicians exists in the Northwest only in a few new and sparsely settled communities; and that the increase in irregulars is not due to a lack of physicians, the osteopaths and chiropractors being located where there are already abundant physicians and not where there are no physicians.

It occurred to me that further light on the questions in which I was interested might be obtained by direct inquiries addressed to the villages of this state. A return post-card was sent to every place in Minnesota with a population between 100 and 1,000. There were 540 places on the list, and 381 replies, or 70 per cent., were received.

The return card bore information as to the (1) number of physicians (M.D.'s); (2) number of osteopaths, and (3) number of chiropractors, with a column for remarks.

The results are summarized in the accompanying table.

SUMMARY OF REPLIES

Population of Place	Number of Replies	Have Physicians (M.D.)	Percentage Having Physicians	Have Osteopath	Have Chiropractor	Osteopath or Chiropractor but No Regular Physicians
From 100 to 199	61	6	10	0	0	0
200 to 299	87	34	38	0	1	1
300 to 399	79	53	67	0	2	0
100 to 399	227	93	41	0	3	1
400 to 499	40	37	93	1	4	1
500 to 599	33	32	97	0	2	0
600 to 699	22	20	91	0	1	0
700 to 799	27	26	97	1	5	0
800 to 899	17	16	95	0	3	0
900 to 999	15	15	100	0	4	0
400 to 999	154	146	95	2	19	1

It will be noted that 95 per cent of places from 400 to 999 population have physicians. Above 900, all places have physicians. Only two places have osteopaths or chiropractors unless they also have regular physicians. In fact, while 239 places in Minnesota of from 100 to 999 population have physicians, only twenty-one irregulars are found in the whole 381 places replying to the questionnaire. The sectarians are in the larger places—places above 1,000 in population.

In my opinion, these figures substantiate the view that there is no widespread lack of physicians, no ground for the statement that osteopathy and chiropractic are filling a need of physicians, no necessity for lowering standards or increasing registration in medical schools.

The line labeled "Remarks" brought out a variety of comments. Many small places without physicians asserted a need for physicians, or stated that good openings existed. Sixteen places of from 100 to 199 population, and twenty-seven of from 200 to 299 made such statements. As soon as one reaches a population of 300 these requests become less, there being twelve requests from towns of from 300 to 399, two requests from towns of from 400 to 499, and none from towns of from 500 to 999.

On the other hand, two small towns with two physicians each make the comment: "We have one doctor to spare."

The places of from 200 to 299 present the most urgent appeals. Several state that they have previously had physicians, and indicate irritation that they cannot get them again. Says one: "Nearest town, 10 miles. We need a doctor and can support one of the right kind. The doctors in this part of the country have all moved to the county seat, and we can either die or be robbed. Just a matter of choice with us. However, it is fine for the doctors." Another says: "We have had several doctors locate in the village in the last twenty years. All made a stake and then moved away to some larger place."

These comments indicate that the farming population is not adjusted to the good roads-automobile-telephone combination. Furthermore, with distance, fees have increased and the farmer objects to that. While country patients may be as well cared for as in the days when physicians were more scattered, the people are not so well satisfied. Probably much of the talk of need for physicians arises from this fact.

Michigan Reciprocity Report

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration, reports that from Jan. 1, 1922, to Jan. 1, 1923, eighty-four candidates were licensed by reciprocity. The following colleges were represented:

College	Licensed by Reciprocity	Year Grad.	Reciprocity with
University of Alabama		(1911)	Georgia
University of Arkansas		(1917)	Arkansas
Yale University		(1903)	Connecticut
Georgetown University		(1902)	Dist. Colum.
Howard University		(1895)	Iowa
College of Phys. and Surg., Chicago		(1895), (1905)	Illinois
Bennett College of Eclectic Medicine and Surgery		(1907)	Illinois
Hahnemann Medical College and Hosp. of Chicago		(1906)	Illinois
Loyola University		(1922, 2)	Illinois
Northwestern University		(1910), (1921)	Illinois, (1914) N. Dakota
Rush Medical College		(1897)	Illinois, (1899) (1900), (1916), (1917), (1920, 2), (1921) Illinois, (1915) Arizona Utah
University of Illinois		(1912), (1913)	Illinois, (1914) Wisconsin
Indiana University		(1921)	Indiana
Medical College of Indiana		(1892)	Indiana. (1898) Texas
State University of Iowa College of Medicine		(1920)	Iowa
Hospital College of Medicine, Louisville		(1900)	Tennessee
Louisville Medical College		(1906)	Indiana
University of Louisville		(1910)	Kentucky
Tulane University		(1910),	(1919) Louisiana
Medical School of Maine		(1907)	Maine
College of Physicians and Surgeons, Baltimore		(1913)	Maryland
Johns Hopkins University		(1918),	(1920) Maryland
Maryland Medical College		(1900)	Maryland
Harvard University		(1908)	Ohio, (1919) Minnesota
Tufts College Medical School		(1917)	Mass.
University of Minnesota Medical School		(1915)	Minnesota
Washington University		(1919)	Missouri
Barnes Medical College		(1898)	Kentucky
Ensworth Medical College		(1903)	Oklahoma
Kansas City Medical College		(1891)	Nebraska
St. Louis College of Physicians and Surgeons		(1918)	Missouri
St. Louis University School of Medicine		(1911), (1918), (1921), (1922)	Missouri, (1921) Iowa
Creighton University		(1910)	Nebraska
Columbia University		(1916), (1918)	New York
University and Bellevue Hospital Medical College		(1920)	New York
University of Buffalo		(1891)	Illinois, (1910), (1920) New York
Leonard Medical College		(1909)	Georgia

Eclectic Medical College	(1899)	Ohio
Medical College of Ohio	(1897)	Indiana
Ohio State University College of Medicine	(1910)	Ohio
Starling Medical College	(1891)	Illinois
University of Cincinnati	(1921)	Ohio
Western Reserve University	(1909)	Mass.
Jefferson Medical College	(1920)	Virginia
Medico-Chirurgical College of Philadelphia	(1915)	Penna.
Temple University	(1920)	Delaware
Meharry Medical College	(1909)	Georgia
University of Vermont	(1892) N. Dakota, (1917)	Vermont
University of Virginia	(1918)	Iowa
McGill University	(1914) New York, (1921)	Maryland
University of Toronto	(1910)	Illinois
University of Vienna, Austria	(1883)*	Illinois
University of Helsingfors	(1907)*	Mass.
University of Budapest, Hungary	(1915)*	Ohio
Catholic University, Louvain, Belgium	(1894)*	Mass.

* Graduation not verified.

Book Notices

PREMATURE AND CONGENITALLY DISEASED INFANTS. By Julius H. Hess, M.D., Professor and Head of the Division of Pediatrics, University of Illinois College of Medicine. Cloth. Price, $5.50. Pp. 397, with 189 illustrations. Philadelphia: Lea & Febiger, 1922.

Medicine has become so enormous in its scope and its facts, and hypotheses concerning disease have accumulated to such an extent that the abbreviations necessary in the general textbooks fall short of the necessary knowledge of the diseases of which these textbooks treat. It is becoming increasingly necessary, therefore, to consult monographs to obtain an adequate idea of any subject in which one may be interested. It is to meet just such a need that this volume appears. It is the only book in English, and the only book of any claim to prominence, if, indeed, it is not the only book that has ever appeared on the subject. In view of the absence of background, it is surising that the writer should have assembled and systematized his facts so well. The book is well written and beautifully illustrated; what is more, the illustrations are to the point. The literature has evidently been studied thoroughly, though it is not quoted exhaustively. The book begins with a short chapter on definitions, followed by one on classification which takes up the etiology of prematurity. This is followed by an excellent chapter on physiology. One is struck after reading this by the fact that our knowledge of the physiology of the premature infant is certainly very limited, although the author has evidently used every endeavor to get at all the facts. In this chapter the roentgen-ray examination of the skeleton presents a new feature and is thoroughly covered. In the clinical chapters one is struck by the great detail in the portions devoted to treatment, a necessary thing since the subject is not well understood by the average physician. On the whole, the book is conservative, well written and instructive. It deals with a subject about which we know little, but such a book is calculated to arouse interest and therefore is of value, not only for the practical information it contains, but also because of the increased interest it is likely to arouse in the subject.

DISEASES OF THE HEART. A Handbook for Students and Practitioners. By I. Harris, M.D., L.R.C.P., Honorary Physician in Charge, Cardiographic Department, Liverpool Northern Hospital. Cloth. Price, $3.50. Pp. 196, with 49 illustrations. New York: William Wood & Co., 1922.

This book is supposed to give a complete account of the diseases of the heart, and it was written for the student and the practitioner. The author did not in either of these respects carry out his intentions. The book is far from being, even in an abbreviated form, a complete presentation of our present knowledge of the subject. Many essentials are omitted: the discussion of chronic adhesive pericarditis may be cited as an example. No mention is made of the marked increase in the size of the heart, or of the perihepatitis with the associated ascites that is so often the outstanding feature in those patients in whom the condition is diagnosed during life. The author is not always in accord with recognized authorities on points generally accepted. Adam-Stokes syndrome is not considered under the subject of heart block. The mechanism of this disorder is explained on the basis of an increase in the refractory period of the ventricle rather than attributed to a defective conduction of the auriculoventricular bundle. The subject matter is poorly presented. The reader is often in doubt as to the point the author wishes to make. This feature alone would make the book undesirable for the student.

GREEK BIOLOGY AND MEDICINE. By Henry Osborn Taylor. Cloth. Price, $1.50. Pp. 151. Boston: Marshall Jones Company, 1922.

GREEK BIOLOGY AND GREEK MEDICINE. By Charles Singer. Cloth. Price, $1. Pp. 128, with 8 illustrations. New York: Oxford University Press, 1922.

Dr. Taylor's volume is part of a series on "Our Debt to Greece and Rome." It comes at a time when it must be inevitably compared with a similar recently published book by Charles Singer of England. The book by Taylor is divided into sections on early biology, the hippocratic writings, Aristotle's biology, progress in anatomy, the system of Galen, and linkage with our modern times. It is thus a series of orderly essays progressing according to a definite scheme, and thereby excellent teaching material. On the other hand, the book by Singer is a delightfully written essay, easily readable, wandering almost nonchalantly among the achievements of the ancient Greeks, picking up a thought or an example here and there, and, on the whole, presenting an excellent picture of the medicine of the classic Greek school. In both books one is confronted by the fact that modern authors incline to read into the philosophy of the ancients knowledge of facts that they could not possibly have known. Such synthesis is so simple as to be exceedingly attractive, but it is likely to be a source of historical error. It is Taylor's belief that the Greeks recognized particularly the fundamental fact in biology and medicine that the organic is distinguishable from the inorganic by its power to heal itself when diseased, or, in other words, that Nature is the greatest healer, and that, regardless of our many discoveries today, we must return to this conclusion. After all, however, we have come a long way in understanding the methods by which the beneficent Nature brings the healing about, and our advances of the last half century need not be slighted in our admiration for the far-sightedness of the ancient observers.

UNIVERSITY OF IOWA STUDIES IN PSYCHOLOGY. Psychological Monographs, Vol. VIII. Edited by Carl E. Seashore. Pp. 378. Princeton: Psychological Review Company, 1922.

In this monograph are fourteen articles on sound perception, two on measurements of motor control, and one on measurement of coordination of eye and hand. In these articles, instruments, technic and norms are discussed. As such they serve as a point of comparison and departure for studies of the diseased. The results of some of the tests of tone perception show a wide range between individuals. The methods and tests are rather too elaborate to lead to their use in the medical clinical laboratories.

YEAR-BOOK OF PHARMACY. Comprising Abstracts of Papers Relating to Pharmacy, Materia Medica, and Chemistry, Contributed to British and Foreign Journals from July 1, 1921, to June 30, 1922, with the Transactions of the British Pharmaceutical Conference at Its Fifty-Ninth Annual Meeting. London: J. & A. Churchill, 1922.

The British Pharmaceutical Association is to be congratulated on the prompt publication of the annual year book. While it does not contain the abstracts for all the year 1922, it covers a large portion of the year and includes the 1921 abstracts left over from the previous edition. This is in favorable contrast with the American Pharmaceutical Association, which has just issued the year book for 1920. The British book contains abstracts in the usual divisions, such as alkaloids, bacteriologic and clinical tests, essential oils, plant analysis, newer remedies, pharmacology and therapeutics, and other phases affecting pharmacy. About one third of the book is devoted to the proceedings and scientific contributions of the British Pharmaceutical Conference.

ENCÉPHALITE HYPERTHERMIQUE. Guérie à Lourdes, le 8 Septembre 1922. Observation Médicale avec Courbe de Température. Par les Drs. H. et J. Bon. Paper. Price, 3 francs. Pp. 23, with 3 illustrations. Paris: A. Maloine et Fils, 1923.

This is plainly faith cure propaganda in the guise of a scientific medical report which is devoid of merit. There is no good reason offered for the diagnosis of encephalitis.

Medicolegal

Agreement Creating a Partnership

(Runo v. Rothschild (Mich.), 189, N. W. R. 183)

The Supreme Court of Michigan says that the plaintiff made an affidavit in which he stated that prior to a certain date he had practiced his profession as an urologist, and the defendant was his assistant. On the date mentioned the plaintiff offered to permit the defendant to continue to occupy the suite of offices, to make use of the laboratory and to practice his profession for the plaintiff's patients, the income from practice and laboratory work to be used to pay all the bills necessary to the maintenance of the offices, the practice and the laboratory, after which the proceeds of the income were to be divided share and share alike. The defendant accepted the offer, and entered on the performance of the agreement, but subsequently failed to pay certain bills and make proper division of the proceeds, it was alleged.

Did this agreement imply a mere hiring of the defendant or a partnership between the parties? The defendant contended that it indicated a partnership, and that therefore the plaintiff's remedy was by way of an accounting, and not an action at law and for the arrest of his copartner; with which the court agrees, in affirming a judgment dismissing this action at law when there was such an arrest. The affidavit, the court says, showed an agreement under which the defendant was to take charge of the plaintiff's offices and equipment and carry on the business for their joint benefit, pay all expenses out of the income, and divide the profits with the plaintiff. This severed their previous relations, under which the defendant was but an employee, and constituted the parties copartners.

While the law has always considered the partnership relation one of contract and intention, it determines the status of the parties from their agreement, and draws their intention from their acts. The defendant had the right to manage and control the business, and his share of the profits was not in the nature of compensation for services rendered to the plaintiff. The plaintiff did not hire the defendant to carry on his practice, but entered into relations with him wholly inconsistent with those of master and servant or employer and employee. The defendant was empowered to act for both in the management of the business, and both were liable for the expenses if the income was not sufficient to pay the same. This was not a mere joint adventure, but a community of interests, with all the essential incidents of partnership rights and liabilities. The agreement delegated to the defendant the power and authority to manage and control practice and laboratory for their common benefit and profit. The plaintiff contributed toward the earning of profits, in the practice to be conducted by the defendant, his offices, laboratory and equipment, and his clientele; and the defendant contributed his time, labor and skill, and such new business as he could command; and these contributions were dedicated to the enterprise for the profits to be derived therefrom.

Validity of Award Based on Condition When Discharged by Physicians

(London Guarantee & Accident Co., Limited, et al. v. Industrial Commission et al. (Colo.), 210 Pac. R. 70)

The Supreme Court of Colorado says that a claimant for compensation under the workmen's compensation act of that state was injured, Aug. 8, 1919. September 19, a voluntary agreement, which the state industrial commission approved, was entered into by the insurance carrier and the claimant, for the payment to him of $10 a week for ninety-two weeks. The case was then set down for hearing, to determine whether the claimant was entitled to any further compensation, and the extent of his permanent disability, if any. It plainly appeared that, at the end of sixty days following the accident, the claimant was told by the attending physicians furnished by the employer, or the insurance carrier, that they could do nothing further for him. Being thus left to shift for himself, he consulted surgeons, who performed two serious and unusual operations, the result of which was an improvement in his condition. His health was not restored, nor did he regain his normal ability to perform manual labor. On the final hearing by the industrial commission, in the latter part of 1921, it appeared to that body, and it so found, that the claimant's disability, at the expiration of the sixty days from the time of the accident, was 80 per cent., and would have so continued had not these operations been performed, but that after the operations were performed the permanent result of the accident was still a loss of 33⅓ per cent. of the use of his right leg. Under these circumstances, the award for permanent disability was computed on the basis of an 80 per cent. loss of the use of the claimant's leg. None of it was for medical attention, but for a permanent disability actually existing when the physicians of the employer or insurance carrier discharged him at the end of the sixty-day period. The making of this additional compensation, which might be equal to, or greater than, the amount of the claimant's expenses incurred for the two operations, was not equivalent to an award by the commission for medical attention in excess of the sum of $200, the maximum allowed by the statute for medical attention during the sixty days immediately following the accident; nor was it equivalent to an award for attention given after the period of sixty days following the accident. Neither the statement that the commission's award for increased permanent disability was an indirect method of payment for medical attention beyond the period of sixty days following the accident, nor one that the award compelled the employer and insurance carrier to pay for an assumed disability which the claimant did not suffer, was borne out by the findings of fact. The statute authorizes the commission, of its own motion, at any time, after notice to the parties interested, to review any award previously made, and on such review to make another award diminishing, maintaining, or increasing the compensation previously awarded, subject to the maximum and minimum provided in the act. The commission, therefore, was authorized in this case to increase the award which it first tentatively made, and had the right to fix the permanent disability as of the date when the physicians of the employer and insurance carrier notified the claimant that they were unable to do anything further for him. If the theory of the employer and insurance carrier to the contrary were sustained, it would be equivalent to penalizing the claimant for taking measures to protect himself by diminishing his disability to perform labor. Considering the wide discretion vested in the commission, and the spirit and purpose of the statute, the court holds that the commission acted humanely as well as fairly to the employer and the insurance carrier, in reaching its ultimate conclusion. Wherefore, a judgment approving the findings and the award is affirmed.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.

American Association of Anatomists, Chicago, March 28-30. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Association of Pathologists and Bacteriologists, Boston, March 29-30. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.

American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.

Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.

Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore, Secretary.

North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.

Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.

South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville, Secretary.

Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

January, 1923, **6**, No. 1

Mists and Halos of Glaucoma. R. H. Elliot, London, England.—p. 1.
Ophthalmoscopy by Red Free Light. A. S. Green and L. D. Green, San Francisco.—p. 16.
Formalized Cartilage Implants Following Enucleation W. B. Doherty, New York.—p. 19.
Action of Miotic Drugs on Diseased Intraocular Structures. R. J. Curdy, Kansas City, Mo.—p. 22.
Accommodation Rule with New Features. C. Berens, Jr., New York.—p. 26.
Etiology of Sympathetic Ophthalmia. H. H. Stark, El Paso, Tex.—p. 29.
Graduate Teaching of Ophthalmology. L. Post, St. Louis.—p. 33.
Parinaud's Conjunctivitis with Eosinophilia. T. W. Weaver and W. G. Gillett, Wichita, Kan.—p. 36.
Unsuspected Foreign Body in Lens. I. A. Abrahamson, Cincinnati.—p. 37.
Indirect Rupture of Sclera. A. Brav, Philadelphia.—p. 38.

American Review of Tuberculosis, Baltimore

January, 1923, **6**, No. 11

Clinical Pathology of Pulmonary Tuberculosis in Adults: Analysis of Five Hundred Necropsies. J. Walsh, Philadelphia.—p. 975.
Statistical Study of Decline in Number of Deaths from Tuberculosis of Lungs in Boston, 1898-1921. J. O. Emerson, Boston.—p. 994.
*Pulmonary Tuberculosis Among Negroes. H. G. Carter, Burkeville, Va.—p. 1002.
*Chronic Bronchiectasis Terminating in Phthisis Florida. H. A. Bray, New York.—p. 1008.
Mechanism of Compensation in Pulmonary Tuberculosis and Its Relation to Physical Signs. H. A. Bray, New York.—p. 1013.
*Complement Fixation Reaction as Applied to Tuberculosis. J. D. Aronson and P. A. Lewis, Philadelphia.—p. 1024.
*Resistance to Experimental Peritoneal Tuberculosis Following Oil Injections. W. F. Petersen and S. A. Levinson, Chicago.—p. 1035.
Preservation of Cultures of Human and Bovine Tubercle Bacilli. H. J. Corper and H. Gauss, Denver.—p. 1040.
*Periodic Variations in Basal Metabolism Rate in Tuberculous Women. P. H. Pierson, San Francisco.—p. 1046.

Pulmonary Tuberculosis Among Negroes.—Carter records the results of treatment of pulmonary tuberculosis in negroes in such a way that an intelligent comparison can be made with those of institutions admitting whites. The results at Piedmont Sanatorium prove beyond question that the negro, although he shows less resistance against the disease than the white man, will respond to treatment for pulmonary tuberculosis, and that if treatment is begun in the early stages of the disease the large percentage of them will continue well. Syphilis as a complication of tuberculosis renders the prognosis more grave than simple tuberculous infection. Syphilis as a disease of the lung has been demonstrated in four clear cut examples in a series of sixteen cases in which the sputum was negative and the Wassermann was positive. If the "young adult type" of tuberculosis is indicative of lessened resistance on account of absence of contact, then the Piedmont records will go to show that the high death rate from pulmonary tuberculosis among negroes is due to absence of contact rather than unsanitary surroundings. The records continue to show that the mulatto has a better resistance against pulmonary tuberculosis than the pure bred negro.

Chronic Bronchiectasis Terminating in Acute Phthisis.—Bray's patient presented evidence of a localized pulmonary lesion at the base of the left lung for a period of at least seven years. This was attended by productive cough and mucopurulent sputum, partly residual and negative for tubercle bacilli. The woman's features were somewhat cyanosed and her fingers clubbed. These clinical manifestations suggested some condition other than tuberculosis, probably bronchiectasis. This suspicion was heightened by the absence of any striking change in the clinical manifestations of the disease during this period, by the negative radiographic examination, and finally by the contrast in the clinical picture, physical and radiographic findings when the condition became complicated by phthisis florida.

Complement Fixation Reaction in Tuberculosis.—Aronson and Lewis believe that they are justified in concluding that in the recent past those who have worked with complement fixation in tuberculosis have given undue weight to the antigen and have paid too little attention to other fundamental factors concerned in the reaction. They found no evidence of more than one antigenic substance, and this was found in acceptable form in several preparations. Petroff's glycerin extract, Besredka's antigen, the alcoholic extract of the tubercle bacillus used by Craig, the simple suspension of the living tubercle bacillus and doubtless the "autolysate" of Corper are of essentially equal worth. The most important feature of the reaction is that the time of primary incubation is longer than in the classical Wassermann reaction (from two to four hours, as against one-half hour). The longer time is necessary to secure comparable results with the bacillary suspension which becomes less practical on this account, as well as by reason of its limited keeping qualities. The authors assert that their experience has continued to show that the application of the reaction in practice is limited by the fact that about 10 per cent. of clinically normal persons give a positive reaction. This is not materially different with any antigen.

Resistance to Experimental Peritoneal Tuberculosis Following Oil Injections.—Petersen and Levinson found that the experimental intraperitoneal injection of oils (sperm oil, peanut oil, liquid petrolatum) in rabbits, following an intraperitoneal inoculation with human tubercle bacilli, occasionally prevents the development of local tubercles in the peritoneum but does not alter the development or course of the tuberculosis in other organs. When bovine strains were used this effect was not apparent. Inasmuch as liquid petrolatum seems as effective as the animal or vegetable oils used, the effect is probably due to the mild peritoneal irritation brought about by the oils which can be demonstrated by histologic examination. In view of the fact that olive oil has been observed to influence the implantation and development of cancer transplants (Nakahara) the authors suggest that it is probable that the mechanism involved in this increased resistance is similar in tuberculosis and cancer.

Variations in Basal Metabolism in Tuberculous Women.—Pierson found a menstrual or premenstrual rise in the basal metabolic rate in tuberculous women, followed by a fall during the postmenstrual period in the few cases studied. He thinks that this variation may explain some of the differences in opinion as to the basal metabolic rate in tuberculosis and should be taken into account when figures are presented regarding this test. There is added evidence that the thyroid or several endocrine glands are involved in the ability of an individual, or a family, to resist tuberculosis.

Archives of Surgery, Chicago

January, 1923, **6**, No. 1, Part 1

*Bile Factor in Pancreatitis. F. C. Mann and A. S. Giordano, Rochester, Minn.—p. 1.
*End-Results of Five Hundred Cases of Chronic Appendicitis. J. B. Deaver and I. S. Ravdin, Philadelphia.—p. 31.
*Eperimental Traumatic Shock. VI. Action of Ether on Circulation in Traumatic Shock. M. Cattell, Boston.—p. 41.
Roentgenologic Aspect of Chronic Appendicitis. H. K. Pancoast, Philadelphia.—p. 85.
*Relation of Heart, Pericardium and Heart Valves to Anterior Chest Wall. L. T. LeWald, New York.—p. 89.
*Value of Pericardiotomy in Diagnosis and Treatment. J. B. Roberts, Philadelphia.—p. 101.
Chronic Noninflammatory Lesions of Knee Joint. M. S. Henderson, Rochester, Minn.—p. 118.
*Gastrojejunal Ulcer: Experimental Study. A. H. Montgomery, Chicago.—p. 136.
*Mesenteric Vascular Occlusion. L. Brady, Baltimore.—p. 15.
Bilateral Chronic Open Pneumothorax Cured by Negative Tension. Report of Case. E. M. Eberts, Montreal, Canada.—p. 168.

Bile Factor in Pancreatitis.—The bile factor in pancreatitis was investigated by Mann and Giordano from two chief aspects, the anatomic and the experimental. The investigation proved that an anatomic and physiologic basis for the theory that reflux of bile may occur in the pancreatic duct does exist. The evidence indicates that such a reflux of bile may rarely be the cause of chronic pancreatitis. The possibility of bringing into play a physiologic mechanism which can infiltrate the pancreas with sterile bile to an extent actually to produce acute pancreatitis is questionable. Granted that the necessary anatomic, physiologic, and patho-

logic factors are present and that the reflux of sterile bile under such conditions does produce pancreatitis, such cause for the condition must be very rare; few cases are on record. It is emphasized that any mechanism which will afford the possibility for bile to pass into the pancreatic duct will also obstruct the flow of pancreatic juice. Furthermore, bile has been found in the pancreatic duct without acute pancreatitis. It is urged that pathologists should, in cases of pancreatitis, examine the relationship of the two ducts to the duodenum and to each other in order to determine whether it is anatomically possible for bile to pass into the pancreatic duct. These observations prove conclusively that the explanation of the cause of most cases of pancreatitis must be sought elsewhere.

End Results of Chronic Appendicitis.—The analysis made by Deaver and Ravdin shows that the most frequent symptom of chronic appendicitis is periodic pain in the right iliac fossa, and in a patient carefully studied this symptom is suggestive. The symptoms in seven cases of tuberculous appendicitis and one case of carcinoma did not differ in any way from the remaining cases in the series. The mortality in the cases in which operation was performed during the quiescent period was 0.27 per cent., while in the cases in which operation was performed during the acute stage it was 2.7 per cent. There seems to be a definite relation between appendicitis and upper abdominal disease and between appendicitis and pelvic disease. Hematemesis may be a manifestation of chronic appendicitis. Of the patients followed up, 83.1 per cent. were entirely relieved, 9.7 per cent. were partially relieved and 7.07 per cent. were unrelieved. The latter group was partly due to pathologic conditions unrecognized because of faulty study and exploration.

Action of Ether on Circulation in Traumatic Shock.—Cattell discusses the effects of ether on the blood pressure, its action on the heart, vasomotor system and blood vessels, and from the point of view of the circulation as a whole, together with a consideration of the changes occurring in shock. In the normal animal, the inhalation of strong ether results in a sudden drop in the arterial pressure, which is quite temporary. As the anesthesia deepens, the pressure gradually recovers until, byt the time the eye reflex has disappeared, it may have returned to its original level. In the shocked animal, there is no recovery of the blood pressure after the primary fall, and the pressure continues to fall to zero even before the eye reflex disappears. Observation on the heart volume of intact cats, and on the contractions of the isolated cold blooded heart, together with deductions from blood pressure records, showed that the administration of ether, from its very beginning, results in a depression of the heart and a decrease in its output, which is sufficient to account for the fall in pressure in both the normal and the shocked animals. Determinations of leg volume with a plethysmograph, perfusion rate measurements, and results obtained by the injection of ether directly into the circulation, together with the form of the blood pressure curves, indicate that ether causes a contraction of the peripheral vessels. In the blood pressure curves resulting from the administration of ether in the normal animal, the primary drop is probably due to an influence on the heart; and the subsequent recovery of the blood pressure, to a compensatory vasoconstriction. In the shocked animal, no evidence of a vasoconstriction produced by ether was obtained, and pressor effects from asphyxia or sensory nerve stimulation become less or are entirely absent. The condition of ether sensitiveness is brought about by any circumstances which tend to depress the general condition of the animal, such as low blood pressure, hemorrhage, severe operations or the injection of acid into the circulation. The cause of the greater depressing influence of ether on the blood pressure in shock appears to be due to a disturbance of the vasomotor system. The usual compensatory constriction no longer occurs to offset the decreased output of the heart, and the pressure continues to fall.

Determining Relation of Heart and Its Valves.—LeWald describes the method he used to make teleroentgenograms which would show the exact position of the heart valves. Cadavers were used in the first study. The position of the heart valves was established by means of wire loops.

Pericardiotomy for Diagnostic Purposes.—Experience in pericardial surgery has given Roberts strong evidence in support of the opinion that careful investigation should always be made by percussion, auscultation and roentgenographic study before resort is had to tapping, or other surgical attacks, as the line of treatment in suspected pathologic conditions of the heart. Recent researches and numerous war experiences in treatment of thoracic wounds and the acknowledged innocuousness of pericardial incisions indicate that it may be at times not only wise, but imperative, deliberately to open the sac of the heart for diagnosis.

Experimentally Produced Gastrojejunal Ulcer.—Of sixty-three dogs that were subjected to a gastro-enterostomy by Montgomery (the pylorus being left patent), a definite gastrojejunal ulcer was found in four. In every case the ulcer was a fairly large, solitary lesion, somewhat indurated and well defined. Macroscopically and microscopically, it showed all the characteristics of a chronic ulcer. These ulcers have a tendency to perforate and are similar in other respects to gastrojejunal ulcers found in man. They seem to occur following hematomas that affect the jejunal mucous membrane at the cardiac angle of the stoma where suturing and hemostasis are imperfect. Hematomas situated at other places along the suture line may be absorbed and produce no damage. These ulcers occurred independent of the kind of suture material employed.

Mesenteric Vascular Occlusion.—Fourteen instances of mesenteric vascular occlusion are analyzed by Brady. In three cases there was no formation of an intestinal infarction and the mesenteric thrombosis was discovered only at necropsy. In thirteen cases, the superior mesenteric vessels were involved; in one instance the inferior. The mesenteric arteries were involved in four cases, the veins in eight. In two cases it was impossible to tell which of the two caused the infarction. These findings are at variance with those of most observers, the majority of whom found the veins involved much less frequently than the arteries. When the mesenteric veins are occluded, it is always due to thrombosis. Either embolism or thrombosis may cause occlusion of the mesenteric arteries. In ten of the cases, the following etiologic factors were found (in four cases no cause for the occurrence of the thrombosis could be found): endocarditis with aortic insufficiency and stenosis clinically, marked arteriosclerosis, and cirrhosis of the liver, two cases each; Raynaud's disease, carcinoma of the pancreas with metastases to the liver and neighboring glands, polycythemia, and partially strangulated inguinal hernia with abscess formation, one case each. In all of the cases there had been a history of abdominal pain and vomiting, and on examination abdominal tenderness and muscle spasm were demonstrated. The majority of the patients, even from the first, were greatly prostrated and looked ill. The picture is indistinguishable from that of acute intestinal obstruction due to causes other than mesenteric thrombosis. Brady says that there is just one method of treatment—immediate laparotomy.

January, 1923, **6**, No. 1, Part 2

Present and Future in Thoracic Surgery. S. Robinson, Santa Barbara, Calif.—p. 247.
*Surgical Treatment of Esophagus. H. Fischer, New York.—p. 256.
*Posterior Mediastinotomy. H. Lilienthal, New York.—p. 274.
Teratoma of Right Chest Cavity. Report of Case. W. Whittemore, Boston.—p. 282.
Radium Needle for Esophagoscope. S. Hankauer, New York.—p. 288.
*Differential Diagnosis Between Tuberculosis and Lung Abscess. L. T. LeWald and N. W. Green, New York.—p. 303.
*Lung Abscess. A. L. Lockwood, Toronto.—p. 314.
*Surgical Treatment of Bronchiectasis: Report of Three Cases of Removal of Lobe of Lung. E. A. Graham, St. Louis.—p. 321.
*Lung Abscess. G. J. Heuer, Cincinnati, and P. M. MacCready, Baltimore.—p. 337.
Interrelationship and End-Results of Chronic Suppurative Diseases of Lungs. W. S. Lemon, Rochester, Minn.—p. 343.
Fibrosis of Lung Following Ligation of Pulmonary Artery, Combined with Phrenicotomy and Following Partial Occlusion of Pulmonary Veins. K. Schlaepfer, Baltimore.—p. 358.
*Lung Suppuration and Its Treatment. W. Meyer, New York.—p. 361.

Surgical Treatment of Esophagus.—While the results of today in this field are not such that one should be boastful about them, Fischer believes that a more hopeful attitude is justified. So far, only in cases of carcinoma of the cardiac

portion of the esophagus has the patient recuperated from the operation and lived.

Posterior Mediastinotomy.—The principle on which the approach made by Lilienthal depends is that of the retraction of the divided ribs at right angles to their long direction, shingling them, one on the other, thus making the deep exposure from below upward, the extent of available space being determined by the length of the wound, especially that portion which divides the intercostal extrapleural structures. Lilienthal asserts that by the methods he has worked out, the exposure is so complete that not only the posterior but also the middle and superior divisions of the mediastinum can be reached with facility and with comparative safety.

Lung Abscess.—Twelve cases form the basis of the report made by LeWald and Green. Eight patients were operated on and the diagnosis established; all of these recovered. Four were not operated on for lung abscess, and, of these, three recovered and one died. The disease in these cases had been either postpneumonic or postoperative. Two cases followed tonsillectomy. One case followed operation on the gallbladder. In none of this series was a foreign body demonstrated as the cause. The outstanding symptom was a persistent cough with profuse sputum with a fetid odor, accompanied by a loss of weight.

Lung Abscess.—Contrary to the opinion of early writers that abscess of the lung is a common sequel to lobar pneumonia, a survey made by Lockwood of cases reported during the last century indicates that it is a rare sequel. Lockwood is convinced that surgery should not be employed so soon as the diagnosis has been made, except as indicated. Instead, thorough medical treatment, with postural rest and drainage, should be instituted. When this fails, pneumothorax should be produced in selected cases, and surgery reserved for those patients who do not respond to the other two methods.

Lobectomy for Bronchiectasis.—Lobectomy was successfully performed by Graham in three cases of bronchiectasis. He thinks that in advanced cases it is the only method which seems to offer a chance of complete relief from all symptoms.

Chronic Lung Abscess.—A study made by Heuer and MacCready of the late results in sixty-two cases of lung abscess demonstrates that it is the old, long standing chronic lung abscess, with thick fibrous walls, which is often not entirely cured by drainage operations. The patients in their series who are well are those who had acute or recent lung abscess. The patients who are not entirely well all had chronic abscesses of from two to seven years' standing which at operation presented thick fibrous walls.

Lung Suppuration and Its Treatment.—Meyer presents a review of personal experiences and clinical impressions obtained within the last twelve years in the treatment of forty-nine cases.

Johns Hopkins Hospital Bulletin, Baltimore

January, 1923, **34**, No. 383

*Mechanism of Eliminating Phenolsulphonephthalein by Kidney. Proof of Secretion by Convoluted Tubules. E. K. Marshall, Jr., and J. L. Vickers, Baltimore.—p. 1.
*Lipoids of Maternal and Fetal Blood at Conclusion of Labor. J. M. Slemons and H. J. Stander, New Haven, Conn.—p. 7.
*Bactericidal Action of Ultraviolet Light. S. Bayne-Jones and J. S. Van der Lingen, Baltimore.—p. 11.
Wassermann Reaction in Johns Hopkins Hospital. A. Keidel and J. E. Moore, Baltimore.—p. 16.
*Studies on Sugar Tolerance. R. H. Major, Kansas City, Kan.—p. 21.
*Cause of Certain Acute Symptoms Following Gastro-Enterostomy. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 26.
Selective Culture Medium for Diphtheria Bacillus. E. A. Greenspon, Baltimore.—p. 30.

Elimination of Phenolsulphonephthalein by Kidney.—The results of the experiments made by Marshall and Vickers indicate definitely that the passage of a colloid free filtrate of plasma through the glomerular capsule is insufficient to account for the amount of phenolsulphonephthalein found in the urine on the basis of the amount of free (filterable) phthalein in the blood. It is obvious that the assumption that all of the plasma could be filtered is incorrect; the increasing concentration and, hence, osmotic pressure of the proteins would soon bring filtration to an end. Sufficient allowance has, therefore, been made for the two factors in the calculation which are not accurately known—the volume flow of blood through the kidney and the amount of urine present in the tubules and pelvis of the organ. The authors assert that if their figures for these values are correct, or should the kidney not remove completely the phthalein entering it in the arterial blood, it is also obvious that there is not sufficient total phthalein in the blood at the time of the experiment to account for that which has been eliminated in the urine. The only conclusion which can be drawn is that the substance has been stored in the renal cells at the time of injection and is slowly given out in the urine.

Lipoids of Maternal and Fetal Blood at Conclusion of Labor.—Slemons and Stander found that during the latter part of pregnancy, the fat, lecithin and cholesterol of the blood are more abundant than usual. This change, most likely, represents a preliminary step in the preparation for lactation. The mother's blood contains much more of these substances than the fetal blood does. The difference which exists between the two organisms in this respect varies from case to case; and the values prevailing in one seem to be entirely independent of those in the other. The results of blood analyses in human subjects, like the biologic evidence obtained from vital staining experiments in rodents and carnivora, teach that the placenta is impenetrable to fat and lipoids. Fetal fat, then, must be synthesized; probably from glucose, which is freely supplied by the mother in accord with the demands of her offspring. No characteristic change in the blood fat or blood lipoids accompanies the development of eclampsia and allied intoxications of pregnancy.

Bactericidal Action of Ultraviolet Light.—Jones and van der Lingen describe methods by which exact determinations may be made of the wave lengths of light which kill bacteria. The sparks of various metals were used as sources of ultraviolet light, except in a few experiments when it was necessary to take advantage of sunlight because of its greater intensity. In most of the work, a quartz spectrograph was used. The bactericidal action of light is confined to the ultraviolet region of the spectrum, beginning at 350 microns and extending with increasing intensity to the shortest wave lengths measurable with a quartz spectrograph: 185.6 microns. These limits coincide with the absorption of ultraviolet light by bacteria. The temperature coefficient for the bactericidal action of light was found to be 1.05 over a range of 10 C. An increase in hydrogen-ion concentration of the fluid in which bacteria are suspended during their exposure to ultraviolet light increased the velocity of the bactericidal action. Neither temperature nor the hydrogen-ion concentration rendered bacteria sensitive to the longer wave lengths of light.

Results of Glucose Tolerance Tests.—The results of glucose tolerance tests on sixty patients are reported by Major. The diabetic type of sugar curve with glycosuria is constant in diabetes mellitus. The level of the sugar threshold varied greatly, showing a tendency to be higher in older persons. All the cases of acute nephritis studied showed a diabetic type of blood sugar curve usually without glycosuria. No constant type of curve was obtained in thyroid or pituitary disease. Abnormal curves are frequent and indicate a disturbance of carbohydrate metabolism. Increased tolerance to carbohydrates was found in pituitary disease, often with a high sugar threshold. Some of the glycosurias encountered in hyperthyroidism are due to a lowered renal threshold. These observations indicate that, as a rule, the urine does not show sugar in appreciable amounts until a definite blood sugar level is reached. This level or "renal threshold" varies somewhat in health, but markedly so in disease. Repeated tests on the same individuals show marked variations in this "renal threshold." Four persons classed as "renal diabetics" showed glycosuria with a blood sugar at normal or subnormal levels.

Cause of Certain Acute Symptoms Following Gastro-Enterostomy.—Three cases are reported by Haden and Orr showing a high level of nonprotein nitrogen of the blood, low blood chlorids and suppression of chlorid excretion following gastro-enterostomy. One patient had a marked

alkalosis; two patients had a carbon dioxid combining power at the upper limit of normal when first determined. Two patients also had a very high nitrogen excretion in the urine. All three patients presented clinical symptoms of a severe intoxication. The clinical picture and laboratory findings are believed to be due to an intoxication arising in the upper intestinal tract. The fundamental cause in these cases is probably a duodenal obstruction at the site of the gastroenterostomy which interferes with drainage of the duodenal loop.

Journal of Bone and Joint Surgery, Boston

January, 1923, 5, No. 1

Osteochondritis Dissecans. Report of Cases. A. H. Freiberg, Cincinnati.—p. 3.
Combined Cistern and Lumbar Puncture; An Aid in Diagnosis of Compression of Spinal Cord. J. B. Ayer, Boston.—p. 18.
Fracture of Spine with Cord Involvement. W. J. Mixter, Boston.—p. 21.
*Crush Fractures of Spine. J. W. Wallace, Pittsburgh.—p. 28.
*End-Result in Four Cases of Severe Destructive Injury to Hip. T. S. Mebane, M. C., U. S. Army.—p. 70.
Treatment of Congenital Dislocation of Hip. E. H. Bradford, Boston.—p. 76.
*Use of Index Finger for Thumb: Some Interesting Points in Hand Surgery. J. Dunlop, Los Angeles.—p. 99.
Structural Scoliosis Complicated by Paralysis of Lower Limbs; Report of Case. S. Kleinberg, New York.—p. 104.
*Synovectomy in Chronic Infectious Arthritis. P. P. Swett, Hartford, Conn.—p. 110.
Congenital Elephantiasis of Toes. H. S. Thatcher and T. Wheeldon, Richmond, Va.—p. 122.
Conservation of Muscles in Paralytic Deformities of Foot. P. W. Roberts, New York.—p. 123.

Crush Fractures of the Spine.—Eighty-two cases of fracture of the spinal column are analyzed by Wallace. A great majority of these cases had been unrecognized and consequently untreated. In six cases the method of injury was not given. In nine cases the history of the injury gave no definite forcible flexion of the spine and the mechanism of the fracture could not be determined. In sixty-seven cases a definite history of forcible flexion of the spine was given. In every case in which the history showed that the patient was caught in a flexed position and had his spine flexed so that the head was forced between the legs, a fracture of one of the lower vertebrae was found. In twenty-three cases there were fractures elsewhere in the body. Fracture of the transverse processes was the most common injury. This occurred on either one or both sides and of the vertebra crushed; sometimes the vertebra above and below. Fracture of the spinous processes was rather rare, having occurred in only three cases. Fracture of the articular processes occurred in one case. The data on the complaints of the patients are not complete, but it appears that in half the cases the patients not only had pain in the back, but also had pain referred to other parts, generally the legs, also to the hips, chest, abdomen, head, etc. A few patients had no pain in the back, but had referred pain. A few had no pain whatever.

Severe Destructive Injury to Hip.—The four cases cited by Mebane are instructive in that they demonstrate that considerable loss of substance of the upper end of the femur can be followed by a fairly satisfactory functional result. They also demonstrate that this result can occur in spite of prolonged infection. These results show that extensive resections of the upper end of the femur, in adults, for severely infected fractures, are justified. They would suggest, also, that it might be justified in severe tuberculous or septic disease, in which the mortality is high, recovery slow, and tendency to permanent organic damage by amyloid degeneration is great.

Use of Index Finger for Thumb.—Dunlop's patient had lost the thumb of his right hand; in addition he had a number of fractures in the carpal area; the wrist was stiff or nearly so in the straight position, and the index finger, due to the destruction of the base of the metacarpal, was somewhat shorter than normal, whereby the metacarpophalangeal joint was retracted. The extensor muscle of the index finger was not functioning, and the finger was slightly flexed and abducted under the middle finger. The position of the index finger had a great deal to do with the lack of functioning of the middle, ring and little fingers at the metacarpophalangeal joint. With the hand in this condition the patient had used it but little and there was practically no motion, except a slight amount in the two interphalangeal joints. The problem, then, as it appeared to Dunlop, was to get the index finger out of the way of the other fingers and use it in place of the thumb. This was done by rotating the metacarpal and the remaining portion of the finger after an osteotomy at the point of fracture and placing the finger in the position of the thumb when taking hold of objects. The operation was successful. The finger made a good thumb.

Synovectomy in Chronic Infectious Arthritis.—Fifteen synovectomies have been performed by Swett on eight patients suffering with chronic infectious arthritis. The operation consisted in opening the joint, generally at the site of the greatest thickening and effusion, and then with scissors and forceps dissecting out all of the diseased inner layers of the synovial membrane down to what appeared to be healthy tissue. The joints have all been closed without drainage, and with no fixation. The cases, with one exception, were all of long standing showing marked joint effusion, capsular thickening, and fusiform swellings. Mechanical improvement in the operated joints was promptly manifested by a restoration of painless function in every case, but in two cases a relapse occurred very shortly, and in one of these two cases, reoperations were performed with ultimate, complete recovery. So it may be said that only one case was a failure, and that twelve cases were successful from the point of view of joint mechanics.

Journal of Experimental Medicine, Baltimore

January, 1923, 37, No. 1

*Reverse Selective Bacteriostatic Action of Acid Fuchsin. J. W. Churchman, New York.—p. 1.
*Method for Permanent Sterile Drainage of Intra-Abdominal Ducts, as Applied to Common Bile Duct. P. Rous and P. D. McMaster, New York.—p. 11.
Intestinal Flora in Mouse Typhoid Infection. L. T. Webster, New York.—p. 21.
Ox Bile Sensitization in Mouse Typhoid Infection. L. T. Webster, New York.—p. 33.
*New Method for Mammalian Decerebration. C. F. Schmidt, Philadelphia.—p. 43.
*Action of Drugs on Respiration. I. Morphin Series. C. F. Schmidt and W. B. Harer, Philadelphia.—p. 47.
*II. Ether, Chloroform, Chloral, Urethane, Luminal, Magnesium, Caffein, Strychnin and Atropin. C. F. Schmidt and W. B. Harer, Philadelphia.—p. 69.
*Functional and Anatomic Study of Excretion of Hemoglobin by Kidney. Y. Fukada and J. Oliver, San Francisco.—p. 83.
*Mechanism of Vomiting Induced by Antimony and Potassium Tartrate (Tartar Emetic). S. Weiss and R. A. Hatcher, New York.—p. 97.
Blood Destruction During Exercise. II. Demonstration of Blood Destruction in Animals Exercised After Prolonged Confinement. G. O. Broun, New York.—p. 113.

Selective Bactericidal Power of Acid Fuchsin.—Churchman asserts that acid fuchsin possesses a bactericidal power which is selective as between a gram-negative and gram-positive spore-bearing aerobic organism. The selective feature is the reverse of that of gentian violet. This reverse selective activity is also possessed by simpler sulphonated substances and would appear to be dependent in some way on the presence of sulphur trioxid radicals. Selective penetration, if at all concerned in the behavior of gentian violet and acid fuchsin toward bacteria, must play a very minor rôle. In the case of gentian violet the power to kill organisms and the power to prevent their growth run parallel, so far as the selective feature is concerned. In the case of acid fuchsin, the bacteriostatic and bactericidal selective features do not run parallel. *Bacillus pyocyaneus*, an organism resistant to gentian violet, is quite susceptible to acid fuchsin.

Permanent Sterile Drainage of Common Bile Duct.—The success of the method employed by Rous and McMaster lies in the interpolation, with special care for asepsis, of a long drainage tube between the common duct and the opening in the abdominal wall. The tube must be pliable near the cannula, else the latter may be pushed askew through leverage exerted by the viscera, with obstruction as a result; and it must be resistant where it passes the abdominal wall to sustain muscular contraction. To gain these ends, a curved glass tube is employed with, on one limb, the soft black rubber tubing that connects with the cannula, and, on the

other, a piece of red duodenal tubing that is to pass through the abdominal wall. The entire U of rubber and glass should be as long as the size of the abdominal cavity will readily permit.

New Method for Mammalian Decerebration.—In the method described by Schmidt the brain stem is nearly encircled by a ligature passed about it through suitable openings made in the skull. Its free ends emerge through the roof of the mouth. When the ligature is drawn down tightly against the floor of the skull, the brain stem is severed and the vessels at the base of the brain are compressed.

Action of Morphin Series on Respiration.—A method is described by Schmidt and Harer for recording intrathoracic pressure in cats without opening the pleural cavity; active expiratory movements were elicited by inhalation of a constant carbon dioxid air mixture for a given time and a study was made of the action of drugs on inspiration and expiration. Morphin and heroin were found to exert a selective depressant action on the central expiratory mechanism, and the slower rate, with relatively unaltered depth, seemed to be due, at least partly, to the slower rate of emptying the lungs. Codein had no depressant action on the respiration of decerebrated cats. Larger doses of morphin or heroin had no further depressant effect on rate or depth of breathing after expiration was made passive, unless circulatory depression appeared, and failure of circulation seemed to be the cause of respiratory depression, rather than the reverse relation. In decerebrated animals large doses of morphin and moderate doses of codein stimulated the spinal cord, and expiration became active, with a faster rate of breathing. The characteristic action of morphin and heroin on the respiration of the cat is apparently limited to a depression of active expiration.

Action of Ether, Chloroform, Etc., on Respiration.—The depressant drugs studied by Schmidt and Harer in this series of experiments were found to resemble morphin and heroin in that they depressed expiration more than inspiration, but they acted only in narcotic doses and always depressed inspiration at the same time. Ether caused a sharp expiratory rhythm, persisting until narcosis was very deep, probably a result of irritation of their air passages. Chloroform sometimes caused dyspnea, even in very deep narcosis, probably because of circulatory depression. Chloral hydrate made respiration more rapid, but shallower. Urethane usually made expiration active, often with inspiratory pauses, such as may follow vagotomy. Magnesium seemed to produce the most uniform, uncomplicated depression of all the depressants tried. Phenobarbital (luminal) resembled morphin and heroin more closely than any of the general depressants, making expiration passive without depressing inspiration, but it acted only in narcotic doses, unlike morphin and heroin. Caffein and strychnin, whenever they caused acceleration after morphin, brought back active expiration. Atropin never stimulated, and commonly acted as a synergist to morphin. It is suggested that there is a separate central mechanism for the control of each of the phases of respiration, and that, while each responds to the same chemical stimuli, the threshold is higher for expiration than for inspiration. Evidence is presented to indicate that if expiration remains passive, a marked increase in depth of breathing may slow the rate, and a respiratory mechanism that lacks active expiration may be so inefficient that a carbon dioxid concentration which stimulated when expiration was active may depress when it is passive.

Excretion of Hemoglobin by Kidney.—Fukuda and Oliver are of the opinion that the anatomic and functional findings in hemoglobin excretion are best explained by the assumption of a filtration of this substance through the glomerulus and an additional excretion of it by the tubule cells. Absorption of water aids in the concentrating process, and is most marked in the collecting tubules.

Mechanism of Vomiting Induced by Tartar Emetic.—The findings obtained by Weiss and Hatcher in their experimental study point to the heart as the seat of reflex vomiting following the intravenous injection of tartar emetic. The intravenous injection of tartar emetic induces afferent emetic impulses which pass from the heart to the vomiting center mainly by way of the vagus, to a much less extent by way of the sympathetic nerve and the stellate ganglia. The introduction of tartar emetic into the stomach induces afferent emetic impulses which pass upward mainly by way of the vagus, to a much less extent by way of the sympathetic nerve. The introduction of tartar emetic into the duodenum induces afferent emetic impulses which pass upward partly by way of the sympathetic nerve, partly by way of the vagus. It seems probable that the path taken by afferent emetic impulses induced in the gastro-intestinal tract by tartar emetic depends on the innervation of the organ concerned, and not on only selective action of the poison on the afferent nerve.

Journal of Industrial Hygiene, Boston

January, 1923, **4**, No. 9

Consequences of Myopia as Industrial Disease of Eyes. N. B. Harman, London, England.—p. 371.
Comparative Efficiency of Circular Konimeter and Palmer Water Spray Apparatus for Determination of Dust Content of Air. C. E. A. Winslow and R. Jordan, New Haven, Conn.—p. 375.
Rôle of Syphilis in Industrial Disablement: Analysis of Two Hundred and Ninety-One Physical Surveys. P. Edmunds, Baltimore.—p. 380.
Pharmacology of Phenylenediamines. P. J. Hanzlik, San Francisco. —p. 386.
Effects of Exposure to Arsenic Trichlorid on Health. S. Delepine. —p. 410.

Laryngoscope, St. Louis

January, 1923, **33**, No. 1

Improvised Artificial Drum as Aid to Hearing. Study of Certain Principles Involved. P. D. Kerrison, New York.—p. 1.
Case of Tuborrhea of Right Ear, Impaired Hearing of Left Ear and Polyarthritis Due to Purulent Sinusitis. G. Wolf, New York.—p. 10.
Indications and Contraindications for Submucous Resection of Nasal Septum. J. N. Hoffmann, Canton, Ohio.—p. 13.
Complete Traumatic Destruction of Vestibular Function with Unusually Slight Coincident Cochlear Involvement. S. O. Fields, Norfolk, Va. —p. 16.
Correction of External Deformities of Nose by Intranasal Route. H. B. Blackwell, New York.—p. 21.
Generalized Clonic Spasms, Hemiparesis and Coma Result of Lateral Sinus Thrombosis. S. Salinger, Chicago.—p. 27.
Asthma, Hay-Fever, Nasal Hydrorrhea and Angioneurotic Edema. C. B. Williams, Mineral Wells, Texas.—p. 31.
Cysts of Bursa Pharyngea; Report of Two Cases. F. A. Figi, Rochester, Minn.—p. 37.
Management of Certain Nose and Throat Disorders in Singers and Speakers. I. W. Voorhees, New York.—p. 42.
Migrating Foreign Body (Pin) in Bronchus. G. W. Fletcher, Winnipeg.—p. 53.

Philippine Islands Medical Association Journal, Manila

November-December, 1922, **2**, No. 6

Rupture of Uterus; Nine Case Reports. H. Acosta-Sison, Manila.—p. 269.
Parkinsonian Syndrome in Lethargic Encephalitis. Six Cases. E. Domingo and W. Vitug, Manila.—p. 281.
Case of Multiple Neurofibromatosis (Von Recklinghausen's Disease). J. Rodriguez, Culion, Palawan.—p. 289.
*Case of Nodular Disseminated Nonulcerative Syphilides. P. Gutierrez, Manila.—p. 293.

Nodular Disseminated Nonulcerative Syphilids.—The principal points of interest in Rodriguez' case are (1) the absence of the characteristic pigmentation from the onset of the disease to the present; (2) the inconspicuous character of the nodules, some of which were as large as a small orange but were hardly visible on inspection, in marked contrast to the prominent sessile or pedunculated and often pendulous growths commonly seen in this disease, and (3) there were no marked mental symptoms. The patient was only 17 years of age. His blood Wassermann was negative.

South Carolina Medical Association Journal, Greenville

January, 1923, **19**, No. 1

Tuberculosis of Kidney. M. Weinberg, Sumter.—p. 366.
Genito-Urinary Routine Suggested as Practical for General Practitioner. M. H. Wyman, Columbia.—p. 372.
Humans, with Especial Reference to Asthma and Hay-Fever. H. M. Davidson, Atlanta, Ga.—p. 377.
Paranasal Sinuses of Children with Special References to Ocular Symptoms. E. W. Carpenter, Greenville.—p. 381.

Tennessee State Medical Association Journal, Nashville

January, 1923, **15**, No. 9

Angina Pectoris. J. O. Manier, Nashville.—p. 389.
Early Diagnosis of Syphilis. M. Haase and C. H. Marshall, Memphis.—p. 392.
Results Following Belfield's Operation in 101 Cases of Seminal Vesiculitis. J. E. Hall and J. H. Litterer, Nashville.—p. 395.
Duty and Responsibility in Face of Abortion Evil. J. C. Ayers, Memphis.—p. 400.
Management of Perineum Following Labor. L. E. Burch, Nashville.—p. 405.
Things Every Physician Should Know About Etiology and Prevention of Mastoiditis. A. C. Lewis, Memphis.—p. 407.
Various Phases of Endocrine Conditions. Y. W. Haley, Nashville.—p. 409.
Plea for Early Treatment of Squint. M. B. Seligstein, Memphis.—p. 412.
Importance of Early Correction of Cross Eye Deformity. B. P'Pool, Nashville.—p. 414.

Texas State Journal of Medicine, Fort Worth

January, 1923, **28**, No. 9

Activities of the State Health Department. J. H. Florence, Austin.—p. 442.
Why We Should Have Whole Time County Health Officers. A. P. Harrison, Austin.—p. 445.
City Health Department. W. T. Davidson, Dallas.—p. 450.
Municipal Health Officer and Industry. A. H. Flickwir, Houston.—p. 454.
Physician and Public's Health. M. F. Bledsoe, Port Arthur.—p. 456.
Plague Suppressive Measures. H. G. White, Beaumont.—p. 458.
Work of Biologic Survey as It Affects Disease Carriers. W. B. Bell, Washington, D. C.—p. 461.
Proper Field of Public Health Nurse. E. L. Hamner, Fort Worth.—p. 466.

Wisconsin Medical Journal, Milwaukee

January, 1923, **21**, No. 8

Renal Calculi. D. N. Eisendrath, Chicago.—p. 349.
Diabetes Mellitus. Diagnosis and Treatment. B. H. Schlomovitz, L. F. Jermain and B. L. Schuster, Milwaukee.—p. 355.
Modification of John Young Brown Operation for Treatment of Chronic Ulcerative Colitis; Report of Case. E. H. Mensing and W. Thalhimer, Milwaukee.—p. 362.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

January, 1923, **17**, No. 1

Some Reasons for Failure in Solving Problems Connected with Tuberculosis. J. MacKenzie.—p. 12.
Shall We Slaughter Milk Cows Which React to Tuberculin? A. Calmette.—p. 15.
Notification of Tuberculosis. R. Dudfield.—p. 20.
Education of Tuberculous Patient. H. O. Blanford.—p. 24.
*Sanatorium Treatment of Tuberculosis Contrasted with Home Treatment. G. L. Cox.—p. 27.

Sanatorium Treatment of Tuberculosis Contrasted with Home Treatment.—As the result of the analysis of 4,067 histories of adults who commenced treatment during the five years from 1914 to 1918, so far as comparison is possible, Cox is convinced that patients in the early and intermediate stages of pulmonary tuberculosis who have undergone a course of sanatorium treatment, even for three or four months, fare appreciably better in health in later years than do those who did not receive such form of treatment. Of 1,047 patients in the early and intermediate stages with negative or absent sputum commencing treatment during the five year period, 14.0 per cent. of the sanatorium patients had died at the end of 1921, and 37.7 per cent. of the nonsanatorium patients had died at the end of 1921; and of the 1,263 patients with positive suptum, 61.2 per cent. of the sanatorium patients had died at the end of 1921, and 81.3 per cent. of the nonsanatorium patients had died at the end of 1921. Cox emphasizes that in both sanatorium and nonsanatorium cases early diagnosis is a very important factor in the successful treatment of pulmonary tuberculosis. In both sanatorium and nonsanatorium cases, patients with a negative or absent sputum throughout treatment are much more likely to remain fit for work, and less liable to succumb to the disease than those with tubercle bacilli in the sputum. In the sanatorium cases the mortality from pulmonary tuberculosis is greater among patients with a positive sputum, aged between 15 and 25 years, than in the other age groups.

Calcutta Medical Journal

November, 1922, **27**, No. 5

Studies on Quinin. M. M. Dutt.—p. 201.
Digitalis. J. C. Aich.—p. 232.
Ophthalmic "Don'ts" for General Practitioners. S. K. Ganguly.—p. 237.

Glasgow Medical Journal

December, 1922, **98**, No. 6

Study of Diets and Economic Conditions of Laboring Class Families in Glasgow in June, 1922. A. M. T. Tully and E. M. Urie.—p. 353.
*Rare Case of Polydactylism of Foot. G. H. Edington and W. B. Primrose.—p. 369.
*Review of Service Patients in Mental Hospital. D. K. Henderson and R. D. Gillespie.—p. 375.
*Outbreak of Food Poisoning by Milk Caused by Bacillus Aertrycke. W. R. Wiseman.—p. 390.

January, 1923, **17**, No. 1

Dr. John Borland, First Surgeon to Kilmarnock Infirmary: His Life and Work. J. C. McVail.—p. 1.
Cases of Perforation of Bowel and Rupture of Heart. D. Fraser.—p. 19.
Treatment of Early Opacities in Senile Lens, with Demonstration of Six Cases. W. B. I. Pollock.—p. 32.

Rare Polydactylism of Foot.—The abnormality in the case described by Edington and Primrose consisted of three supernumerary toes occupying the cleft between the hallux and the normal second toe of the left foot. The supernumerary digits were not all in the same plane, one being dorsal, and two being displaced toward the plantar surface of the foot. These last were webbed in half their length, and were capable of active movements; the dorsal digit was not actively mobile, and its nail showed distinct indication of longitudinal division into two. The hallux was not quite so broad as in the normal foot. A roentgenogram showed three supernumerary metatarsal bones, of which two belonged to the plantar toes, and the third, which was imperfect, to the dorsal toe.

Review of "Service" Patients in Mental Hospital.—Henderson and Gillespie analyze 113 "service" cases of the more chronic type. The existing literature is summarized, and various points noted. The confusion and indefiniteness in diagnostic terminology in these papers is deprecated; and a plea is recorded for a uniform system of diagnostic classification. Most of the papers mentioned emphasize the inefficiency of the recruitment mental examination, and the uselessness and positive danger of passing mental defectives and obviously potential psychopaths into the army. Further, it is shown that the proportions of the various disease types among service patients has altered since the war period, and that dementia praecox cases constitute, with mental defectives, by far the greater proportion of cases still under care. The etiologic factors are divided into those existing before the war and those associated with service. Of the former, insane heredity, psychopathic predisposition, previous mental illness, constitutional inferiority (i. e., mental or moral deficiency), syphilis, and excessive alcoholism, together accounted for 99 per cent. of cases when full data were available. An examination of the symptomatology shows that no new type of mental disturbance has been produced by the war, but that certain psychoses (viz., dementia praecox) which in civil life are usually chronically progressive, appeared in an acute, recoverable form. It is evident that the majority of the cases under consideration would eventually have entered mental hospitals even had it not been for the war strain.

Food Poisoning Caused by Bacillus Aertrycke.—Wiseman discusses an outbreak of food poisoning due to the consumption of cow's milk and affecting fifty-two persons of ages ranging from 14 months to 83 years. The actual source of the contamination was not discovered. In this outbreak two distinct types of *B. aertrycke* were found—(*a*) the "mutton" type, and (*b*) one closely approximating, and probably identical with the Newport type. The conception of interagglutinability of the members of the *B. paratyphosus* B food poisoning group is shown to be susceptible of modification.

Japan Medical World, Tokyo

Oct. 15, 1922, **2**, No. 10

*Immunologic Studies of Intestinal Fluids. R. Umemura and M. Yamanouchi.—p. 281.
Mode of Influence of Carbohydrates on Organisms. M. Ohtaki, K. Sukegawa and S. Sawaguchi.—p. 288.
Is Phospholipin a Constituent of Hydrolytic Enzymes? S. Kai.—p. 291.

Immunologic Studies of Intestinal Fluids.—The important points revealed by Umemura and Yamanouchi in their study of the intestinal fluid in search of an explanation of immunity phenomena are: The normal intestinal fluid does not destroy immune bodies. The intestinal fluid of an immunized animal contains agglutinin. This agglutinin appears in the fluid from the third to the fifth day and reaches the maximum from the tenth to the fourteenth day and then gradually decreases. The agglutinin in the intestinal fluid is from one fourth to one sixtieth of that in the circulation. The excretion of immune antibodies in the intestinal fluid has no local differences between duodenum and jejunum or ileum. The agglutinin in the intestinal fluid is specific. The agglutinin in the intestinal fluid has no changes with temperature at 56 C.; at 65 C. it is reduced from one fifth to one half and at 70 C. from one thirty second to one eighth and at from 75 to 80 C. it only remains as a trace or disappears entirely. The intestinal fluid contains bacteriolysin and performs bacteriolytic action in the test tube. The bacteriolytic action takes place in the intestinal canal of an actively immunized animal. The bacteriolysin in the intestinal fluid appears from the third to the fourth day after the injection of antigen and it reaches the maximum on about the fourteenth day and then gradually decreases. The appearances of the antibodies in the intestinal fluid introduced by passive immunity is the same as active immunity. The number of bacteria in the intestine is lowest in the duodenum and increase further down.

Journal of Physiology, London

December, 1922, **57**, Nos. 1 and 2

*Metabolism of Salivary Glands. III. Blood Sugar Metabolism of Submaxillary Gland. G. V. Anrep and R. K. Cannan.—p. 1.
*Id. IV. Metabolism of Reducing Substance of Submaxillary Gland. G. V. Anrep.—p. 7.
Studies in Respiration and Circulation in Cat II. Oxygen in Venous Blood. K. Uyeno and Y. Doi.—p. 14.
*Circulation After Cessation of Work; Calculation of Circulation Rate Experiments According to Nitrous Oxid Method. J. Lindhard.—p. 17.
Seasonal Variation in Reticulated Corpuscles of Amphibian Blood. J. M. D. Scott.—p. 31.
Study of Chlorin Interchange Between Corpuscles and Plasma. L. Dautrebande and H. W. Davies.—p. 36.
Calibration of Reversion Spectroscope for Estimation of Carbon Monoxid in Blood. H. Hartridge.—p. 47.
Visual Acuity and Resolving Power of Eye. H. Hartridge.—p. 52.
Relation Between External Work Produced and Time Occupied in Single Muscular Contraction in Man. H. Lupton.—p. 68.
Measurement of Tension of Oxygen and Carbon Dioxid in Blood of Pulmonary Artery in Man. A. C. Redfield, A. V. Bock and J. C. Meakins.—p. 76.
Concentration of Blood and Effects of Histamin in Suprarenal Insufficiency. C. H. Kellaway and S. J. Cowell.—p. 82.
*Nature of Sugar in Blood. L. B. Winter and W. Smith.—p. 100.

Blood Sugar Metabolism of Salivary Glands.—Anrep and Cannan assert that changes in the blood flow through the submaxillary gland do not affect the consumption of sugar from the blood. Stimulation of the chorda tympani increases the blood sugar consumption. The increase is of the same order as that of the gland secreting under pilocarpin and is broadly proportional to the activity as measured by the rate of secretion. The maximal consumption of sugar corresponds with the maximal secretion and does not occur, as does the oxygen consumption, in the postactive period. Atropin, in doses sufficient to paralyze the secretion, only reduces the effect of the chorda tympani on the sugar consumption. Large doses abolish the effect altogether.

Metabolism of Reducing Substance of Submaxillary.—The resting submaxillary gland yields on acid hydrolysis about 2.3 per cent. of reducing substance calculated as glucose. The ratio reducing substance: total nitrogen in a resting submaxillary gland is about 0.8 per cent. The glands on both sides yield after acid hydrolysis the same absolute amount of reducing substance. The saliva secreted under chorda stimulation becomes gradually poorer in reducing substance. The D/N ratio of the saliva also drops with the extent of secretion. The ratio reducing substance: protein nitrogen is more constant. The variations in the latter indicate the presence in saliva of variable amounts of protein which does not give rise to reducing substance. The submaxillary gland loses the same amount of reducing substance as is secreted in the saliva. There is no evidence of a process of reconstruction of mucin during the secretion under chorda stimulation, as judged by the reduction after acid hydrolysis.

Circulation After Work.—The results of experiments dealing with the oxygen consumption per minute, the oxygen absorption per liter of blood and the pulse rate within the first twenty minutes after cessation of muscular work in two male subjects are given by Lindhard. The minute volume of the heart as calculated from the experimental data shows that the circulation rate decreases rapidly during the first two minutes and then more slowly following a rather complicated curve.

Nature of Sugar in Blood.—A method is described by Winter and Smith for obtaining the sugar of blood in a concentrated solution free from proteins. By means of this it is shown that the sugar in normal blood of man, and of the ox, sheep, cat and rabbit, is an unstable form of glucose, with an initial low rotatory power. It is suggested that the sugar is gamma (γ) glucose. Glucose and fructose, taken in large quantities by mouth, cannot be detected as such in the blood, their conversion into normal blood sugar being very rapid. Nervous influences alter the nature and quantity of the blood sugar. The blood sugar of persons suffering from severe diabetes mellitus is of an abnormal nature. It appears to be the α, β form of glucose. An enzyme is postulated whereby the α, β equilibrium form of glucose is converted into γ glucose. This enzyme is absent from the blood. The absence or inactivation of this enzyme is suggested as the cause of diabetes.

Lancet, London

Jan. 13, 1923, **1**, No. 5185

*Pyloric Stenosis of Infants. L. G. Parsons and S. G. Barling.—p. 59.
*Addison's (Pernicious) Anemia. H. Gilford.—p. 64.
*Secondary Infections Complicating Pulmonary Tuberculosis Among Sanatorium Patients. R. C. Wingfield.—p. 66.
Sulpharsenol in Treatment of Syphilis and Some Complications of Gonorrhea. F. C. Doble.—p. 70.
*Nondiarrheic Type of Celiac Disease: Form of Chronic Fat Indigestion in Children. R. Miller and H. Perkins.—p. 72.
*Injection of Alcohol in Treatment of Prolapse of Rectum in Infancy and Childhood. L. Findlay and F. B. D. Galbraith.—p. 76.
Skin Eruption Due to a Mold (Cercosporella Vexans). C. Russ.—p. 77.
Treatment of Whooping Cough by Lactic Acid Bacillus Preparation. F. Parry.—p. 78.
Chronic Disease of Antrum. T. B. Jobson.—p. 78.
Hemilaryngectomy for Carcinoma. F. Muecke.—p. 78.

Results of Medical and Surgical Treatment of Pyloric Stenosis.—The paper is based on an analysis of ninety-four cases, of which thirty-six were treated by medical means, eight by gastro-enterostomy after failure of medical measures, and fifty by Rammstedt's operation. The results of medical treatment alone were very unsatisfactory. Relief of the obstruction by Rammstedt's operation, preceded and followed by a careful medical regimen, offered the best means of reducing the high mortality of the disease. Rammstedt's operation, in the opinion of Parsons and Barling, allows the redundant mucous membrane to bulge and for a time abolishes the sphincteric activity of the pylorus. Given early diagnosis and this treatment, the authors believe the mortality can be reduced to 20 per cent. Functional test meal examination of the stomach shows high rennin, high free acidity, and high total acidity in the resting juice, delayed emptying, and absence of duodenal regurgitation. Chemical analysis of the stools negatives the suggestion that these patients are suffering from pancreatic insufficiency. This and other evidence the authors assert is opposed to the hyperadrenalism theory of the cause of hypertrophy put forward by Gray, Pirie and Reynolds.

Addison's Pernicious Anemia.—The place which Addison's anemia should hold among diseases, Gilford says, is with

the errors of development. Too early senescence of the fed blood organs results in pernicious or Addison's anemia.

Secondary Infections of Pulmonary Tuberculosis.—While he does not advocate the administration of autogenous vaccines in every case of pulmonary tuberculosis in which the character and bacteriology of the sputum lead one to suspect a secondary infection, Wingfield tries to show that there are certain types of cases in which, even under sanatorium conditions, secondary infection of clinical importance can be recognized easily and will respond promptly to autogenous vaccine treatment.

Nondiarrheic Type of Celiac Disease.—A group of children who failed to thrive owing to their inability to absorb fat properly is reported by Miller and Perkins, and the principles of treatment for the condition are discussed. In spite of the absence of diarrhea (in the popular sense of the word), and in spite of the absence of the typical pale, unformed, and offensive celiac stool, these are, nevertheless, cases of celiac disease in a mild form. It is suggested that the group may be conveniently termed the "nondiarrheic or dry form of celiac disease." A stool may contain a large excess of fat (even over 50 per cent.) and yet be formed and colored if the fat in it is chiefly in the form of soaps; whereas, when chiefly in the form of fatty acids, the excess of fat causes the stool to be pale, unformed, and offensive. The soapy stool is found in the nondiarrheic group and the fatty-acid stool in the classical diarrheic form of celiac disease. Recognition of the nondiarrheic group suggests that the diarrheic cases may show considerable naked eye improvement in the stools without there being a return to the normal power of fat absorption—in other words, that during the quiescent and convalescent stages in celiac disease the essential failure in fat absorption will still be recognizable by analysis of the stools. Examples are quoted to prove this point. Its recognition also affords strong evidence against the view that celiac disease is due to an enteritis or that it has any essential connection with intestinal disease. A consideration of the two sorts of stool in celiac disease—the pale fatty acid and the colored soapy stools—leads to the view that the pallor of the classical celiac stool is due not to an absence of bile pigment, but rather to a masking of the pigment by the excess of fat present as fatty acid crystals.

Alcohol Treatment in Prolapse of Rectum.—With the finger in the rectum, to act as a guide, Findlay and Galbraith inject 1.5 c.c. of absolute alcohol on each side into the perirectal tissue at a depth of from 2 to 2½ inches. An ordinary exploring syringe is employed, the needle being inserted on each side about ¼ inch from the anal margin. The needle punctures are sealed with collodion, a pad is placed in the perineum and kept in position by strapping the buttocks firmly together. Instructions are given that the child must move the bowels only while in the recumbent position, the fecal matter escaping by the side of the dressing. The pad and strapping are reapplied daily for a week. Forty-one children have been so treated by the authors. In two cases the operation had to be repeated once, and in one case twice, but in all the other examples only one treatment was necessary to obtain a cure.

Medical Journal of Australia, Sydney

Dec. 23, 1922, **2**, No. 26

The Practice of Medicine. J. Gordon.—p. 725.
Peptic Ulcer. G. P. Dixon.—p. 726.
Use of Antigonococcal Serum in Treatment of Complications of Gonorrhea.—p. 731.
Case of Pernicious Anemia with Early Spinal Symptoms. C. B. Blackburn. With Pathological Report. O. Latham.—p. 735.

Dec. 30, 1922, **2**, No. 27

Suggested Amendments of Public Health Legislation in Queensland. A. G. Butler, E. S. Meyers, J. V. Duhig and S. F. McDonald, Queensland.—p. 757.
Case of Hemorrhage in Newly Born. W. R. Groves.—p. 762.

Medical Journal of South Africa, Johannesburg

December, 1922, **18**, No. 5

Sterility. E. R. Snyman.—p. 113.
Analysis of 4,656 Post-Mortem Examinations Held at Government Mortuary, Johannesburg. J. J. Levin.—p. 119.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 22, 1922, **46**, No. 37

Insufficiency from Fenestrated Pulmonary Valve. E. Barie.—p. 1735.
*Auto-Injections in Post-Encephalitis Syndromes. A. Souques.—p. 1736.
*Paroxysmal Hemoglobinuria from Chilling. Roch and A. Liengme.—p. 1737.
*Cerebrospinal Meningitis in Infants. Chevrel.—p. 1742.
*Artificial Pneumothorax with Adhesions. Ameuille and Jullien.—p. 1747.
*Hirsutism in a Boy. E. Apert et al.—p. 1750.
Non-Familial Myoclonic Epilepsy. J. A. Sicard and J. Lermoyez.—p. 1753.
*Tyrosin Test for Tuberculosis. A. Pissavy and R. Monceaux.—p. 1756.
Bismuth Medication in Specific Aortitis. Laubry and Bordet.—p. 1760.
*Contamination of Offspring by Hereditary Syphilitic. M. Pinard.—p. 1769.

Intravenous Injections of Cerebrospinal Fluid in Parkinsonian Postencephalitic Syndromes.—Souques had no results with the treatment of parkinsonian postencephalitic syndromes with intravenous autoinjections of cerebrospinal fluid as recommended by Piticariu. Sicard added similar negative experiences in the debate.

Paroxysmal Hemoglobinuria Provoked by Cold.—Roch and Liengme describe a case of paroxysmal hemoglobinuria with attacks provoked by cold and by an intravenous injection of a very small amount of casein (5 cg.). Although the Donath-Landsteiner test was positive, the patient had a negative Wassermann test, and hemoglobin was not found in the serum in any of his attacks. The attacks appeared later than in typical cases, and lasted much longer than usual (ten to fifteen days).

Cerebrospinal Meningitis Due to Pseudomeningococcus.—Chevrel observed in infants two cases of cerebrospinal meningitis due to *Diplococcus crassus* and two to *Diplococcus siccus.* These affections are very severe and their diagnosis can be made only by cultivation. Most of these pseudomeningococci are gram-negative and some are agglutinated by the antimeningococcus B serum.

Artificial Pneumothorax with Adhesion of the Layers of the Pleura.—Ameuille and Jullien report the case of a woman in whom all the clinical and roentgehologic symptoms suggested adhesion of the layers of the pleura (fifteen year old pulmonary lesions, condensation of the left lung, and retraction of the base of the thorax). Yet pneumothorax was possible, and materially improved the patient's condition.

Hirsutism in a Twelve Year Old Boy.—Apert, Stevenin and Broca publish a case of extreme hirsutism in a boy, aged 12. The intelligence and behavior were those of an adult. His pulse, respiratory rhythm and blood pressure corresponded also to those of an adult. The most interesting finding was in basal metabolism, which was too low for a child of his age and proportions, but perfectly normal for adults. Although he was fat and small, pituitary treatment was without good results and caused a further increase in weight. The examination of his basal metabolism led to the administration of thyroid, which seemed to work better.

Tyrosin Reaction in Diagnosis of Tuberculosis.—Pissavy and Monceaux report further good results in fifty-two experiments with the reaction for tyrosin in tuberculous sputum. The reaction was only twice negative in patients with tubercle bacilli in the sputum. On the other hand, one case gave the reaction almost six months before the appearance of bacilli. The reagent which they use deteriorates very easily. They give details of the technic.

Contamination of Wife and Child by Hereditary Syphilitic.—Pinard reports a case of probable hereditary syphilis. The wife and child, although without actual symptoms, have also a positive Wassermann.

Médecine, Paris

December, 1922, **4**, No. 3

Hygiene and Infectious Diseases in 1922. L. Tanon.—p. 165.
*Feeding in Acute Diseases. M. Labbé.—p. 176.
*Treatment of Infectious Diseases. H. Dufour.—p. 181.
*Persistence of Malaria Parasites. J. Rieux.—p. 187.
Hygiene in Infectious Diseases. G. Reynaud.—p. 192.
*Internal Mycoses. P. Sée.—p. 197.
*Masked Forms of Intestinal Amebiasis. F. Moutier.—p. 199.
*Typhoid Fever. P. Hébert and M. Bloch.—p. 205.
*Primary Symptoms of Measles and Scarlet Fever. Piédelièvre.—p. 210.
Arsphenamin Treatment of Pulmonary Gangrene. M. Perrin.—p. 215.

Treatment of Epidemic Encephalitis. J. Jumentié.—p. 221.
*Complement Fixation in Tuberculosis. J. Paraf.—p. 224.
Intravenous Injections of Sodium Salicylate in Acute Articular Rheumatism. R. Lutembacher.—p. 228.
Typhoid Fever and Autovaccines. R. Dubarry.—p. 229.
Bacilli in Diphtheric Membranes. A. Baranger.—p. 233.
Treatment of Malaria. P. Lassablière.—p. 235.

Nutrition in Acute Diseases.—Labbé recommends a diet rich in albumin to restore the proteins lost by the increased metabolism. The elimination of toxic substances should be aided by large amounts of fluid.

Treatment of Infectious Diseases by Shock, Fixation Abscess and Vaccine Therapy.—Dufour finds these methods useless and dangerous in the first stage of infectious diseases. If the disease continues and is too severe or too protracted, such treatment is justified, as well as in the later stages.

Evolution of Malaria.—Rieux believes that disappearance of the parasite from the blood of patients, which is usual after a year, signifies recovery. The attacks of fever, which may occur later are rather due to other diseases or sequelae of malaria, and not to its manifestations.

Internal Mycoses.—Sée draws the attention to internal mycoses, especially aspergillosis and oidiomycosis, which may clinically resemble tuberculosis of lungs. These affections can be cured with iodids.

Hidden Forms of Intestinal Amebiasis.—Moutier advises systematic examination of the stools for dysenteric amebas. Any enteritis, colitis or proctitis may be due to them.

Typhoid Fever.—Hébert and Bloch's statistics show a very good influence of vaccination on morbidity and mortality.

Diagnostic Value of Primary Signs of Measles and Scarlet Fever.—Piédelièvre considers Koplik's spots as a pathognomonic sign of measles. Careful examination may reveal them more than a week before the general exanthem. In the diagnosis of scarlet fever, a low blood pressure and a distinct enlargement of the spleen may aid. Schultz and Charlton's extinction sign is constant, but almost useless for the early diagnosis.

Complement Fixation in Tuberculosis.—Paraf points out the specificity of the reaction. It is not positive in all cases of active tuberculosis, and this applies especially to the early stages and to tuberculosis of organs other than the lungs.

Paris Médical

Dec. 23, 1922, **12**, No. 51. Pasteur Number

Republication of Pasteur's Four Revolutionary Articles, 1861-1884.—pp. 561-584.

Dec. 30, 1922, **12**, No. 52

*Forms of Uric Acid in the Blood. M. P. Weil and Guillaumin.—p. 585.
Functional Heart Murmurs in Children. G. Blechmann.—p. 588.
*Recent Research on Causes of Rachitis. E. Pichon.—p. 595.

Various Forms of Uric Acid in the Blood.—Weil and Guillaumin distinguish between the "total uric acid" of the blood and the free uric acid with its salts. The usual methods give only the value of the latter. The other part of the "total uric acid" consists of more or less complete remnants of nucleotids. Some of them give some reactions of uric acid (combined uric acid). In others, hydrolysis of the plasma after removal of albumin has to precede the reaction (uricogenous compounds). Their determination is still in the experimental stage. The uric acid of the plasma belongs almost exclusively to the free group. The combined uric acid is practically limited to the corpuscles, which contain also some free uric acid. A method of determination is given.

Recent American and English Research on Causes of Rachitis.—Pichon reviews some new American and English researches on rachitis.

Progrès Médical, Paris

Jan. 6, 1923, **38**, No. 1

*Prophylaxis of Inherited Syphilis. Vignes and Galliot.—p. 1.
Mineral Water Treatment of Genito-Urinary Affections. Legueu.—p. 3.
*Relation of Heart Disease to Pregnancy. P. Hermet.—p. 4.

Prophylaxis of Inherited Syphilis in Paris Lying-in-Hospitals.—Vignes and Galliot report good results in prophylaxis in maternity hospitals in Paris, and describe the treatment given to adults and the new-born.

Heart Disease and Pregnancy.—Hermet reviews the opinions of American authors on the subject of heart disease and pregnancy (Pardee, Lambert, Bishop, Neuhof).

Schweizerische medizinische Wochenschrift, Basel

Dec. 28, 1922, **52**, No. 49-50

*Leukorrhea. W. Bigler.—p. 1193.
*Functional Treatment of Dysmenorrhea. F. Ludwig.—p. 1198.
Neuroma-Like Formations in Obliterated Appendices. Schweizer.—p. 1202.
Traumatic Rupture of Diaphragm in Congenital Diaphragmatic Hernia. G. G. Moppert.—p. 1205.
Psychology of Treatment of Neurosis. A. v. Muralt.—p. 1207.
Paroxysmal Pseudohemoglobinuria. T. and J. Stephani.—p. 1209.
Action of Bile Acids on Heart. A. Tappolet.—p. 1210.
*Increasing the Coagulability of Blood. P. F. Nigst.—p. 1211. Conc'n.
*Volume of Blood in Pregnancy. E. Gueissaz and F. Wanner.—p. 1216.

Etiology and Treatment of Leukorrhea.—Bigler limits his paper to the nonspecific fluor. It originates only in the vagina or cervix, never in the body of the uterus. Although admitting that a normal secretion usually corresponds to a low bacterial content, he finds that there are no direct relations with high bacterial contents. One has to assume an endogenous factor—a readiness to inflammation. A nonspecific secretion of this kind is very often only the external manifestation of an internal change: endocrines, especially the ovary. Acute and chronic general infections, diseases of blood and metabolism, and constitutional anomalies, like infantilism and status lymphaticus or hypoplasticus, are frequent causes. Bactericidal powers of the vaginal epithelium and of the blood are important protecting factors against leukorrhea. Evidences of vagotonia are common in the condition, and irritability of the vagus nerve may be the cause of a hypersecretion, especially from the cervix.

Functional Treatment of Dysmenorrhea.—Ludwig surveys the theories, and accepts dysmenorrhea as a disturbance of the tonus of the uterus. Substances paralyzing the tonus have a favorable influence.

Increasing the Coagulability of the Blood.—This is the last of a series of articles. Nigst points out that the bleeding is not a direct function of the coagulability of blood. Measures which lead to an increase in the blood coagulability in vitro, like application of roentgen rays on the spleen, have no practical value for surgical hemostasis. Local application of hemostatics may be useful, but only the classic surgical methods are reliable. An extensive survey of the literature is given.

The Total Volume of Blood in Pregnant Women.—Gueissaz and Wanner computed the volume of blood in ten nonpregnant and twelve pregnant women, and seven women after delivery. They used a combination of de Crinis and Löwy's methods (injections of glucose solution and refractometry of the serum). They found an increase in the blood volume of 15 per cent. in the pregnant.

Dec. 30, 1922, **52**, No. 51-52

*Wildbolz' Reaction. R. Kipfer.—p. 1241.
*Transvestitism. R. Bing and S. Schönberg.—p. 1254.
*Sugar Metabolism. A. Gigon.—p. 1258.
Syphilis-Like Affection of the Nail Due to Bacillus Fusiformis. M. Tièche.—p. 1259.
*Parathyreoprival Tetany. M. Greppin.—p. 1260.
*Sweating from Standpoint of Loss of Energy. M. E. Bircher.—p. 1265.
*Agglutination for Typhoid in Cholelithiasis. C. W. Jungeblut.—p. 1269.
Reaction and Amount of Urine. A. Staehelin.—p. 1271.

Wildbolz' Urine Reaction.—Kipfer gives details of the technic, a report on 200 cases, and a survey of the literature on 2,300 cases. He considers the reaction a valuable adjuvant in the diagnosis of tuberculosis. He points out that negative clinical findings are not an absolute scientific proof that there is no tuberculosis.

Transvestitism.—Bing and Schönberg publish four cases of pronounced transvestitism—insistence on dressing in the clothes of the opposite sex. One of the men used boyish clothes.

Sugar Metabolism.—Gigon does not believe that the free blood sugar has a direct action in the glucose metabolism It has perhaps some importance for the protein metabolism.

He supposes that the greatest part of the circulating sugar is bound to nitrogenous compounds.

Case of Parathyreoprival Tetany, with Formation of Cataract, and Transplantation of Parathyroids.—Greppin discusses especially the relation of the cataract to the tetany, and gives the literature on the subject, including treatment by transplantation of parathyroids.

Sweating from Standpoint of Loss of Energy.—Bircher produced sweating in twenty persons by heat and light. The oxygen consumption increased 13 per cent. over the basal rate, and the temperature of the body about 1 degree C. The increased metabolism lasted longer than the sweating.

Agglutination for Typhoid in Cholelithiasis.—Jungeblut examined seventeen patients with cholelithiasis. Agglutination of typhoid bacilli was positive only in two cases and of dysentery bacilli in two, together with agglutination of the colon bacillus.

Annali Italiani di Chirurgia, Naples

Dec. 20, 1922, **1**, No. 10-12

*Sarcoma of Kidney and Vagina in Infant. G. Roello.—p. 743.
Malarial Splenomegaly in Sardinia. F. Putzu.—p. 767.
*Perforated Gastric Ulcer. F. Niosi.—p. 866.
War Wounds of Skull and Brain. M. Sbrozzi.—p. 904. Cont'd.
Transactions of Italian Surgical Congress.—pp. 926-992.

Sarcomas in an Infant.—A pedunculated sarcoma in the vagina grew rapidly again after repeated resection, and necropsy at the age of 8 months showed a sarcomatous tumor in both kidneys. Roello says that this is the seventeenth case on record of primary bilateral blastomas in children.

Perforated Gastric Ulcer.—Only two of the patients were women in Niosi's twelve cases. The age ranged from 18 to 60, and the onset of symptoms was sudden and stormy. In two of the cases the perforation was the first indication of the presence of an ulcer. The sudden intense pain persisted for three or five days before it became relieved. In one case the pain subsided completely, nothing but moderate tenderness in the epigastrium remaining of the severe symptoms that had suggested perforation. There was no history of previous stomach disturbances, and the man had leaped across a ditch just before his sudden pain. Niosi operated with considerable hesitation until the perforation came into view. In another case the man remained at work, and ate beans for supper. The interval in his case was thirty hours, and necropsy two days after the operation revealed a second perforation.

Biochimica e Terapia Sperimentale, Milan

Dec. 31, 1922, **9**, No. 12

*Color of Blood After Carbon Monoxid. G. Benassi.—p. 357.
Clinical Tests for Urobilin. E. Tarantola.—p. 364.

Color of Blood After Carbon Monoxid.—Benassi admits that although the light red color of blood stains in persons dead from carbon monoxid poisoning is important, yet the absence of the color does not disprove at all the possibility of a great part of the hemoglobin being bound with carbon monoxid.

Policlinico, Rome

Jan. 1, 1923, **30**, No. 1

*Inversion in Epidemic Encephalitis. G. Sabatini.—p. 2.
Two Cases of Pernicious Anemia. F. Grego.—p. 7.
*Oral Affections in Pregnancy. G. B. Poletti.—p. 13.

Inversion Phenomena in Encephalitis.—Sabatini reports two cases of inversion of the daily cycle of activity after encephalitis. One of the patients with a parkinsonian syndrome was perfectly dull during the day, but was able to do fine work in the late evening. He points out that the insomnia of some encephalitic children with agitation is a similar phenomenon. Interesting examples of differences in the writing of the patients in the forenoon and at night are given. The morning samples show many pathologic changes; one subject needed three times the time to copy that was sufficient at night.

Oral Affections in Pregnancy.—Poletti discusses the affections of the mouth in pregnancy and puerperium. Pregnancy probably causes or perhaps aggravates different affections of the mouth (gingivitis, caries of teeth). These disturbances seem to depend on alterations of the internal secretion (ovary, thyroid, parathyroid, posterior pituitary). Organotherapy may give good results.

Jan. 1, 1923, **30**, Medical Section No. 1

*Ulcerous Typhoid Aortitis. E. Marchiafava and A. Nazari.—p. 1.
*Weisz' Reaction in Typhoid. G. Salmoni.—p. 8.
*Prophylaxis of Pertussis with Vaccines. L. Auricchio.—p. 25.
*Gases of the Blood. T. de Sanctis-Monaldi.—p. 33.

Ulcerous Typhoid Aortitis.—Marchiafava and Nazari give a clinical and pathologic account of the rare affection which caused the death of Take Jonesco. The famous Roumanian politician became ill nine days after eating two oysters in Naples. The typhoid fever started rather mildly, but on the fifty-second day the temperature increased. At the same time the patient suffered pains in the anterior inferior part of the abdomen, more to the left side. They increased during movements and defecation. Later the pain irradiated to the pubic and iliac regions, and remained till the end, which occurred suddenly, with symptoms suggesting internal hemorrhage, on the eighty-ninth day. A blood culture taken sixteen days before death was negative. The necropsy revealed arteriosclerosis of the aorta with a typhoid ulcer about 1 cm. proximal to the iliac vessels. The defect led into an aneurysm of the size of a small hen's egg, perforation of which had caused a retroperitoneal hematoma. This explained the clinical findings of an inferior abdominal angina.

Weisz' Reaction in Typhoid.—Salmoni used Weisz' reaction with permanganate in 1354 different cases, 360 of which belonged to the typhoid group, 300 were tuberculous. He found it very constant in typhoid fever. It appears earlier than agglutinins, is more simple and constant than the diazo-reaction, besides being independent of the drugs taken by the patient. It is negative in the first two stages of tuberculosis, but practically constant in the third. The reaction is due to some substances which are present only in pathologic states. It is to be considered positive only if the color is really a golden or canary yellow and if it persists, because a similar color caused by the presence of urobilin disappears in a few minutes.

Vaccine Prophylaxis of Whooping Cough.—Auricchio used a vaccine prepared from four strains of the Bordet-Gengou bacillus in forty cases which were exposed to infection in the family. Thirty-eight of these remained healthy, and only two who were vaccinated during the incubation phase showed slight symptoms of the disease. He made within six days three injections of 2 and 3 c.c. of a vaccine containing 2 billions of germs per 1 c.c. He examined in ten cases the progress of immunization by repeated agglutination, complement fixation (which he calls the Wassermann reaction), and opsonin tests. All of them showed the efficacy of the treatment.

Gases of the Blood.—De Sanctis-Monaldi reviews the gases of the blood, especially in relation to acidosis.

Tumori, Rome

Dec. 25, 1922, **9**, No. 3

Blood Vessels in Experimental Tumors. S. Dentici.—p. 249.
*Chronic Inflammation and Experimental Tumors. G. d'Agata.—p. 263.
Cancer in Wolffian Region. E. Gioja.—p. 278.
*Dercum's Disease and Multiple Lipomatosis. G. Goglia.—p. 318.
*Lymphosarcoma of Pharynx. G. Ferreri.—p. 333.
*Fibrosarcoma of the Tongue. R. Brancati.—p. 356.

Chronic Inflammation and Experimental Tumors.—D'Agata inoculated mice with cancer and with the sporothrix, together or separately. The two processes, the cancer and the chronic inflammation, developed separately even in the same organ. When the cancer was not inoculated until there was an intense peritoneal reaction to the inoculated inflammation, the cancer did not take.

Adiposis Dolorosa and Multiple Nodular Lipomatosis.—Goglia's data confirm the anatomic similarity between these two affections, while reaffirming the absolutely different clinical course and prognosis. The asthenia in Dercum's disease is physical, psychic and cardiovascular. There may even be hallucinations and tachycardia. The onset may be almost like an explosion. It resembles the attack of gout to such

an extent as to suggest that the fat is deposited in the subcutaneous tissue to form adipose tophi in the same way that the urates are deposited in cartilage to form gouty tophi. In the five cases described, one was typical Dercum's disease, three were ordinary multiple lipomatosis, and the fifth case was evidently a transitional form between the two. His review shows that Dercum's disease mainly affects women while ordinary lipomatosis affects men. Long survival is rare with adiposis dolorosa.

Lymphosarcoma of Pharynx.—Deep roentgen-ray treatment was applied in Ferreri's three cases, and the two men were apparently entirely cured. They have had no return of disturbance during the months since. One woman died. The sarcoma was in a tonsil in this case. Swelling of glands in the neck was the first symptom, and the tumor in the tonsil developed rapidly in less than three months from the first symptoms. The lymphosarcoma retrogressed also in this case after the cross-fire exposure to one third of an erythema dose. By the third day the aspect was almost normal, but the patient died from acute marasmus. The symptoms indicated intense intoxication. Necropsy revealed metastasis in the spleen although to the eye it seemed normal.

Fibrosarcoma of the Tongue.—The tumor had been noticed for six months. It occupied the tip of the tongue in a boy, aged 17. The whole tip of the tongue was resected under local anesthesia. Brancati advocates resection of the entire tongue in case of rapidly growing sarcoma.

Brazil-Medico, Rio de Janeiro

Dec. 9, 1922, **2**, No. 49

*Mycosis Associated with Leishmaniasis. F. Terra et al.—p. 363.
Necropsy Findings in Case of Syringomyelia. M. Couto Filho.—p. 368.
Uranotenia Mosquitoes. A. Neiva and C. Pinto.—p. 374.

Associated Leishmaniasis and Mycosis.—One leg from hip to toes was scattered thickly with ulcerated nodules, which proved to be due to two distinct processes, cutaneous leishmaniasis and a dermatitis from which the acrotheca was cultivated. The term chromoblastomycosis is suggested as a descriptive title.

Dec. 16, 1922, **2**, No. 50

*Prophylaxis of Syphilis in Infants. A. Pedro.—p. 381.
*Suppurating Cholecystitis. R. da Silva.—p. 383.
*Spontaneous Cure of Cataract. J. Santa Cecilia.—p. 385.
Flagellate Parasites of Birds. A. Marques da Cunha and J. Muniz.—p. 386.
Treatment of Fetid Bronchitis. G. do Couto e Silva.—p. 388.

To Ward Off Syphilis in the Offspring.—Pedro emphasizes the necessity for mercurial treatment of all pregnant syphilitic women. He reiterates that systematic treatment all through the pregnancy is imperative, and that it is harmless, whatever the woman's condition. He injects the mercury in a muscle or by the vein, regardless of the Wassermann reaction. The results in years of this treatment have confirmed that it protects the fetus against spirochetes, and allows its normal development and growth after birth. He reports a number of instances in which healthy children were born under systematic mercurial treatment while the same women bore deformed children in previous or subsequent pregnancies without the mercury. Treatment of the father has no influence on the offspring.

Treatment of Acute Purulent Cholecystitis.—The young woman seemed to be moribund from the intense peritoneal reaction to acute suppurating gallbladder disease. She was weak from a childbirth a month before, followed by influenza. Ribeiro da Silva merely broke up adhesions and aspirated about 40 gm. of the purulent contents of the gallbladder by capillary puncture, which revealed streptococci. Recovery was prompt and complete. Cholecystectomy later proved unnecessary.

Spontaneous Cure of Cataract.—The man had been blind from bilateral cataract for twelve years when sudden improvement was observed in the right eye. For seven years since, to date, he has been able to distinguish movements of the hand at 1 meter. The papilla shows glaucomatous excavation. The milky cataract must have ruptured the capsule and been absorbed. Santa Cecilia states that there are about eighty cases on record of reabsorption of an overripe cataract.

Dec. 23, 1922, **2**, No. 51

*Etiologi of Beriberi. C. Fraga.—p. 395.
*Gummatous Lymphomas. O. Clark.—p. 400.
New Species of Blood-Sucking Insect. A. Neiva and C. Pinto.—p. 402.
*The Bone Marrow in Immunization. C. Magarinos Torres.—p. 403.

Etiology of Beriberi.—Fraga presents evidence to sustain his conviction that beriberi—in Brazil, at least—is an infectious disease and not a deficiency disease. A one-sided or oversterilized diet may afford a predisposition, but this alone will not induce beriberi. He describes the clinical picture in three cases under close supervision from the very first symptoms. Two in this group were medical students. The onset was always that of an acute infectious disease. The polyneuritis developed about the fifth day. The acute infectious onset is generally ascribed to influenza or something else, and the connection with the polyneuritis escapes notice. He cites two groups of nine convicts each in the penitentiary at Bahia who volunteered for experiments on promise of release. They were fed on hulled or sterilized rice or other deficient diet for a month or six weeks, but none developed polyneuritis. He adds that perhaps the strongest argument in favor of the infectious origin of beriberi is the success of treatment with arsenicals. At the Bahia insane asylum, Barreto Praguer has had most encouraging results with neo-arsphenamin. In a recent epidemic of beriberi, cure under neo-arsphenamin was comparatively rapid. If a deficiency diet were alone responsible, how could this benefit from arsenical treatment be explained?

Gummatous Lymphomas.—Clark urges tentative treatment for syphilis before accepting the diagnosis of lymphosarcoma. In two cases described the lymphomas melted rapidly under specific treatment. In one case futile operations had already been performed on the huge lymphomas in both inguinal regions.

The Bone Marrow in the Course of the Immunization Process.—During the last two years Magarinos Torres found decided changes in the bone marrow of rabbits which were being utilized for production of agglutinins. The changes in the bone marrow seemed to parallel the curve of agglutinin production. The action of the antigen, the leukocytosis, and the production of antibodies all make demands on the bone marrow.

Medicina Contemporanea, Lisbon

Aug. 20, 1922, **40**, No. 34

*Bilharziasis in Portugal. C. Franca.—p. 265. Conc'n.

Bilharziasis in Portugal.—Franca relates that not until 1921 were any autochthonous cases of bilharziasis known in Portugal but in that year and since a number of cases were found. The majority were in a single focus, the bay of Atalaia, in which the women of the neighborhood were accustomed to wash clothing, standing in the water. A mission from the Lisbon Bacteriologic Institute found that a thermal spring in this bay kept the water warmer than elsewhere, averaging 25.5 C. This explained the survival of the bilharzia in molluscs, and rendered improbable the spread of the focus. A number of works have been published on this endemic bilharziasis in the last two years, describing research on the intermediate hosts as well as the clinical cases, and the action of antimony tartrate. Besides Franca, Bettencourt, Machado d'Almeida and Pereira da Silva have been investigating indigenous bilharziasis. In twenty-three cases, complement fixation tests were positive only in six. Treatment with antimony tartrate proved effectual, but the correct dosage, Franca says, is still a question.

Revista Médica del Rosario, Argentina

November-December, 1922, **12**, No. 6

*Blocking the Splanchnic Nerves. P. L. Mirizzi.—p. 347.
Anguillula Stercoralis in Stools of Young Man. R. Barralt.—p. 381.
*Spontaneous Meningeal Hemorrhage. T. Fracassi.—p. 395.

Splanchnic Regional Anesthesia.—Mirizzi applied on seventeen cadavers the various technics that have been proposed for blocking the splanchnic nerves. He injected a solution of methylene blue. With the Kappis technic, the diffusion of the anesthetic showed that the analgesia would probably have been complete in 80 per cent. of the subjects. With Braun's technic, the proportion was still higher, 100 per cent. The

details of thirty-two clinical cases in which the Kappis method was used on the right side are tabulated, and compared with what others have published, citing over 411 cases. In Mirizzi's cases the analgesia was satisfactory in 88.46 per cent. The duration of the analgesia was two and a half hours in two cases tested. The cases in which the anesthetic had to be supplemented by other means were in nervous or obese patients, or the site of the lesion had not been accurately diagnosed beforehand.

Spontaneous Meningeal Hemorrhage.—Fracassi reports eight cases in adults, encountered in two years. The diagnosis is almost impossible without lumbar puncture. In two of his cases treatment for epidemic meningitis had been given. The sudden onset in the midst of apparent health is the most striking feature of this "meningeal epistaxis" or "meningeal hemoptysis," as it has been called. Sudden convulsions or coma open the clinical picture, but there is no frank hemiplegia, and if the hemorrhage stops, the symptoms gradually subside in a week or two, or the hemorrhage may return. Treatment is that for cerebral hemorrhage in general, supplemented by injections of normal horse serum to promote coagulation. Lumbar puncture should not be repeated, as a rule, because reducing the pressure may favor recurrence of the hemorrhage. One patient has survived three attacks at long intervals; others died at the first or second attack. The mortality was 25 per cent.; the age ranged from 33 to 56, except one girl of 19. Complete coma was the first symptom in this girl, with bilateral Babinski but no other symptoms until the second day of the coma when there was slight stiffness of the neck. The coma continued with temperature of 37.5 C. for twenty days, with slow final recovery. The other patients were all men.

Revista Médica del Uruguay, Montevideo

November, 1922, **25**, No. 11

Aid for Unmarried Mothers. A. Turenne.—p. 785.
*Hereditary Ataxia. A. Isola and H. Artucio.—p. 795.
*Pernicious Anemia in Purpura. C. Bordoni Posse and R. Rinaldi Guerra.—p. 798.
Dysentery from Lambliasis. Justo F. González.—p. 802.
Lambliasis in a Boy. Camilo Payssé.—p. 806.
*Leprosy in Uruguay. José Brito Foresti.—p. 808.
Tetanus Fatal in One Day. E. Portu Pereyra.—p. 842.

Hereditary Ataxia.—The ataxia developed at the age of 8. It was of the true hereditary type although no other cases were known in the family. As the girl grew up, certain symptoms suggested optic neuritis from a brain tumor, but the edematous pseudoneuritis subsided after proper lenses had been prescribed.

Pernicious Anemia and Purpura.—Anemia of pernicious type developed in the course of a month in purpura of eleven months' standing. The man lived on a sailing vessel, and the unbalanced diet was evidently responsible for the disturbances. The authors suggest that in all cases of pernicious anemia it is wise to seek for deficiencies in diet.

Leprosy in Uruguay.—Brito Foresti states in this official report that there are 197 known cases of leprosy in Uruguay. This is a minimal proportion of one case to 7,500 inhabitants—about the same as in Norway. The principal complications in the cases he has encountered are acute nephritis and tuberculosis.

Archiv für klinische Chirurgie, Berlin

Dec. 23, 1922, **122**, No. 2

*Camphor-Phenol in Treatment of Joints. A. Hedri.—p. 281.
*Osteomyelitis of Ribs. F. Michelsson.—p. 314.
*Reconstruction of Jaw and Chin. A. Eiselsberg and H. Pichler.—p. 337.
*The Urochromogen Reaction. M. Flesch-Thebesius and B. Lion.—p. 370.
*Foreign Bodies in Esophagus. H. Killian.—p. 382.
*Preparedness of the Stomach for Ulcer. L. Moszkowicz.—p. 444.
Cardiolysis After Gunshot Wound of the Pericardium. R. Strebel.—p. 500.
*Drainage After Goiter Operations. J. Ujhelyi.—p. 522.
*Prophylaxis of Peptic Ulcer. Haberer.—p. 534.
*Complications with Artificial Esophagus. C. Hirschmann.—p. 553.

Action of Camphor and Phenol in Joints.—Hedri writes from Payr's service to extol the results from filling the capsule of a joint with Chlumsky's mixture of 30 parts liquid phenol; 60 parts pulverized camphor, and 10 parts alcohol. In 20 rabbits, 39 joints, injected with 1, 2 or 3 c.c., showed no sign of injury at the time or later. None of the 7 clinical cases given preventive camphor-phenol treatment developed suppuration. The 12 cases with existing suppuration were all favorably influenced, and nothing suggesting arthritis deformans has developed. Thirty-three illustrations and a bibliography accompany the article.

Primary Infectious Osteomyelitis of Ribs.—Michelsson states that the lesion was in the ribs only in sixteen of the total 1,008 cases of osteomyelitis at the Riga clinic. The cases compiled from the literature bring the total to eighty. Spontaneous recovery is highly improbable, but early operative treatment offers every prospect of a permanent cure.

Reconstruction of Jaw and Chin.—This profusely illustrated article reports excellent results when a double pedicled flap from the scalp is drawn down like a cap band to cover the chin. The part of the flap extending on the brow is used for the lining of the lower lip.

The Urochromogen Reaction in the Urine.—In four cases of fatal surgical tuberculosis the urochromogen reaction had been positive. It veered to positive in time in all cases with unfavorable course, while in all cases improving or cured, the reaction was constantly negative or became negative sooner or later. Study of 100 cases indicates that the reaction must be supervised for months to be really instructive. None of the patients with a negative reaction died. The test is applied to fresh night urine; 8 c.c. is mixed with three volumes of hydrant water and half is poured into another reagent glass. Then 2 or 3 drops of the 1:1,000 solution of potassium permanganate are added to one of the glasses. A canary yellow tint at the end of an hour is a positive reaction.

Foreign Bodies in Esophagus.—Killian refers to cases with various complications. In 380 operative cases the mortality was 21.3 per cent., but the mortality increased with complications. He discusses the indications for operative treatment, and emphasizes the importance of the after-care.

Preparedness of the Stomach for Ulcer.—Moszkowicz' photomicrograms confirm the histologic anomalies which are evidently a factor in gastric ulcer.

Drainage After Goiter Operations.—Ujhelji writes from Bier's surgical service to denounce drainage after operations on the thyroid. He declares it is an unnecessary evil.

Prophylaxis of Postoperative Peptic Ulcer.—Haberer argues that no technic guarantees against peptic ulcer, but resection by the Billroth I method has the best record in this line to date.

Reconstruction of the Esophagus.—Hirschmann's seventeen illustrations show the various complications liable with an extrathoracic esophagus, and the means to avoid and correct them.

Deutsche medizinische Wochenschrift, Berlin

Dec. 29, 1922, **48**, No. 52

*Uremia. H. Strauss.—p. 1719.
Urinary Calculi. F. Voelcker.—p. 1721.
*Results of War Amputations and Prostheses. F. Lotsch.—p. 1723.
*Treatment of Peritonitis with Ether. C. Stieda.—p. 1725.
Coxitis and Spontaneous Luxation in Influenza. Ochsenius.—p. 1726.
Habitual Vomiting of Infants. A. Dollinger.—p. 1726.
*Prophylaxis of Puerperal Fever. H. Kritzler.—p. 1726.
Anaphylaxis in Protein Treatment. Neumann-Spengel.—p. 1727.
*Carcinomas of Colon. L. Kuttner.—p. 1727.
Bleeding and Tamponade of Nose. Finder.—p. 1729.
Niessen's Bacillus of Smallpox. H. A. Gins.—p. 1730.

Uremia.—Strauss gives a short survey of the two different forms of uremia (eclamptic and true uremia), and mentions also the vascular syndromes. The treatment of true uremia consists in large venesections and treatment of the heart. If the patient is unable to retain fluids, intravenous infusions of 200 c.c. of a 20 per cent. solution of glucose, or in enemas, are valuable. In eclamptic forms, the heart is also important. Narcotics are valuable, lumbar puncture relieves the patient, and large venesections should never be omitted. Rest is essential. Decapsulation of kidneys is to be recommended when a suburemic condition develops in marked oliguria.

Results of War Amputations and Use of Prostheses.—Lotsch reviews the results of different methods. Very few

stumps are capable of bearing the whole weight of the body. The main point to be considered now is the adaptability to an intended prosthesis. The greatest part of the weight rests usually on the condyles of the tibia or the tuber ischii, and the rest of the extremity serves simply as a lever.

Treatment of Peritonitis with Ether.—Stieda used from 100 to 150 c.c. of ether in sixty-four cases of perforation peritonitis following appendicitis. A diffuse peritonitis was present in twenty-seven of these patients, eight of whom died. He poured the ether into the abdominal cavity, and always drained.

Prophylaxis of Puerperal Fever.—Kritzler points to the danger of infection to which wives of men with suppurating fistulas after wounds are exposed.

Carcinomas of Colon.—Kuttner deals with diagnosis and treatment of carcinomas of the colon. The symptoms are different according to the form and size of the tumor. Some patients have only cachexia. Fever, which occurs sometimes, misleads often to a diagnosis of tuberculosis of bronchial or mesenteric glands. In other cases no cachexia is present. Irregular movements of bowels should always lead to careful examination. Constipation is very suspicious, but diarrhea, especially when putrefactive, may be also a symptom. Paroxysmal pains are characteristic. Occult bleeding is most important, although there may be long periods without bleeding. Examination of the rectum should be made after emptying the bladder. Endoscopy of the rectum and sigmoid flexure is absolutely indicated in every persistent constipation. Roentgen rays indicate the seat of the disease, but only rarely the kind. If the examination is negative and the suspicion strong, laparotomy should be tried. An early radical operation is the only way to cure. Roentgen rays are useful only before and after operation.

Klinische Wochenschrift, Berlin

Dec. 16, 1922, **1**, No. 51

*Origin of Urobilinogen. A. Adler.—p. 2505.
*Balneology and Pharmacology. J. Markwalder.—p. 2507.
*Surgery in Acute and Subacute Liver Atrophy. W. Braun.—p. 2510.
*Use of the Duodenal Tube. A. Weilbauer.—p. 2512.
*Secretion in Fasting Stomach. H. Galewski.—p. 2515.
*Volume of Blood in Pregnancy. R. Koch and M. Jakobovits.—p. 2518.
*Alimentary Reaction of Leukocytes. E. Stransky and J. Langer.—p. 2521.
*Liver Function Test with Methylene Blue. H. M. Cohn.—p. 2522.
*Influence of Mother's Age on Development of Child. Reiter and Ihlefeldt.—p. 2524.
Action of Calcium in Spasmophilia. K. Blühdorn.—p. 2525.
Hemoclastic Crises in Children. Schiff.—p. 2526.
Operation of Hernias in Children. H. Maass.—p. 2526.
"Middle Part Phenomenon" of Cerebrospinal Fluid. V. Kafka.—p. 2527.
Cause of Differences in Syphilitic Antigens. J. Schubert.—p. 2527.
Chronic Myeloid Leukemia with Bothriocephalus and Tenia Saginata. J. Stukowski.—p. 2527.
*Treatment of Calculi in Kidney and Ureter. W. Israel.—p. 2529.
Fifty Years of the Society for Public Hygiene in Berlin. E. Seligmann.—p. 2532.
Origin of Electric Currents in Living Tissue. R. Beutner.—p. 2535.

Origin of Urobilinogen.—Adler found that the amount of urobilin in urine is largely independent of the amount of pigment in the feces, and concludes that a part of the urobilin arises in the tissues. The chief place of origin remains in the bowels, but the hepatic origin seems well established. Urobilin is a pyrrol nucleus compound, and he believes therefore that Kupffer's cells, which have a well known affinity for pyrrol, play a part in its elaboration.

Balneology and Pharmacology.—Markwalder believes that the action of mineral waters consists in changing the organic ions in the organism; he calls this "transmineralization." It leads to a change in the reaction of cells and tissues to normal and pathologic stimuli.

Surgery in Acute and Subacute Liver Atrophy.—Braun was led to the surgical treatment of these affections by the fact that failures to make a diagnosis between a liver atrophy and cholangeitis are frequent. The drainage of the hepatic duct was followed in some cases by marked improvement of the condition. The amount of bile increased progressively, and the patients recovered. The operation is rational when the atrophy occurred after cholangeitis, but he thinks that it should be tried also in other cases of progressive acute atrophy of the liver. Chloroform must be strictly avoided.

Research on Use of Duodenal Tube.—Weilbauer only once found the duodenal contents sterile. In more than 100 other cases, bacteria were present. Pneumococci were the rule but streptococci and staphylococci were very frequent. Colon bacilli were present in cases with gastric achylia. It is well to look for typhoid bacilli in the duodenal contents in every case of jaundice, cholelithiasis and cholangeitis. The best and simplest liver function test is that for urobilin and urobilinogen in the urine.

Immediate and Late Secretion of Fasting Stomach.—Galewski emphasizes the difference between the secretion which occurs immediately after introduction of the tube into the empty stomach and the "tardy" secretion which comes after some time. The amounts of tardy juice were very variable, and even healthy subjects sometimes secreted over 100 c.c.

Volume of Blood in Pregnancy.—Koch and Jakobovits used Greisbach's method (injections of congo-red). In 13 normal women they found the average volume of blood 5.73 per cent. of the body weight (minimum 4.43, maximum 8.91). In 24 pregnant women, the average was 5.40 (minimum 3.73 per cent., maximum 8.17 per cent.). In 14 cases of labor, the blood volume was smaller than in the two preceding groups, average 4.46 per cent., minimum 3.95 per cent., maximum 5.22 per cent. There is no plethora in pregnant women.

Alimentary Reaction of Leukocytes.—Stransky and Langer examined the reaction of puppies to food, and found a leukopenia after all kinds of food (proteins, fats and carbohydrates). Young dogs react also to an injection of amino-acid. Alimentary leukopenia is a normal reaction of the growing organism, and is independent of the liver function. The leukopenia observed by the authors was only moderate.

Liver Function Test with Methylene Blue.—Cohn tested fifteen healthy persons and forty-five patients without hepatic or kidney disturbances with Roch's test (excretion of methylene blue after ingestion of 0.002 gm. by the mouth). Fully 60 per cent. of the healthy subjects and 80 per cent. of the other patients responded positively. The test is therefore useless.

Influence of Mother's Age and Repeated Pregnancies on Development of the Child.—Reiter and Ihlefeldt conclude from 634 legitimate children that repeated pregnancies and higher age of the mother influence the somatic and psychic qualities of the children unfavorably.

Indications for Treatment of Calculi in Kidney and Ureter.—Israel emphasizes the importance of early recognition and treatment of these stones, which would otherwise destroy a vital organ. Conservative treatment is indicated when the stone is small and aseptic, in bilateral lesions, and when there are contraindications from other organs. A calculus in the ureter is especially dangerous for the kidney. In conservative treatment, he advocates 2 quarts of mineral water and 6 tablespoonfuls of glycerin daily for a week. Catheterization of the ureter should be tried in every case. Nephrolithotomy is much more dangerous than pyelolithotomy. Ureterolithotomy has a good prognosis.

Dec. 23, 1922, **1**, No. 52

*Hemodynamic Problems. W. Weitz.—p. 2553.
*Comparative Liver Function Tests. E. Hesse and A. Havemann.—p. 2556.
*Perforating Ulcer and Peripheral Sympathectomy. M. Kappis.—p. 2558.
*Research on Burns from Intense Heat. H. Schridde.—p. 2563.
Reticulo-Endothelium Local Immunity. H. Siegmund.—p. 2566.
Treatment by Light. F. Schanz.—p. 2568.
*Specificity of Tuberculin Reaction. G. Tobias.—p. 2571.
*Puncture of Testicles in Cadavers. E. Mühsam.—p. 2572.
*Soft Food Containing Little Fluid. Alkan.—p. 2575.
Gelatin Embedding of Specimens for Demonstrations. Scheidemandel.—p. 2576.
Action Currents of Striated Muscles. J. G. de Barenne.—p. 2577.
*Some Clinical Chemical Methods. H. Citron.—p. 2578.
Multiple Chyle Cysts of Colon. H. Böge.—p. 2579.
Familial Polycythemia with Progressive Chorea. Doll and Rothschild.—p. 2580.
Treatment of Ozena. K. Amersbach.—p. 2580.
Future of Public Hygiene. A. Gottstein.—p. 2583.

Hemodynamic Problems.—Weitz reviews the conditions of dilatation and hypertrophy of the heart and the question of a direct influence of arteries and capillaries on the circulation.

Comparative Liver Function Tests.—Hesse and Havemann had comparatively good results with chromocholoscopy after injections of indigocarmin. Widal's test was positive only in one case out of sixteen in which no liver lesion was present. The increase in blood sugar over 15 per cent. after ingestion of 15 gm. of sodium lactate is a good liver function test. They recommend the use of several tests because all the functions of the liver are not necessarily affected in every case.

Cause and Treatment of Perforating Ulcer of the Foot and Elsewhere.—Kappis believes that the perforating ulcer is a decubital or traumatic (thermic, etc.) ulcer in a part with lowered sensibility. In most of the cases a fistula of the joint is present. It does not heal because the regeneration in a paralyzed tissue is not normal. The treatment has to endeavor to restore the nervous supply. Locally a resection of the affected joint is to be recommended. Sympathectomy may be tried.

Burns of Skin.—Schridde found that burns due to electric currents are histologically identical with those provoked by application of great heat (cautery).

Specificity of Tuberculin Reaction.—Tobias finds only quantitative differences between the reactions following tuberculin and nonspecific proteins. Yet he admits that the toxic component of tuberculin has a stronger affinity for the specific foci.

Puncture of Testicles in Dead Bodies.—Mühsam made punctures of the testicles in dead bodies and concludes that the method might give reliable clinical results when it is desired to know whether the testicle is able to form spermatozoa.

Soft Food Containing Little Fluid.—Alkan in all cases with gastric hypersecretion uses a diet containing very little fluid. The food does not require chewing.

Some Clinical Chemical Methods.—One of Citron's methods consists in the determination of the amount of fluid in the fasting stomach. The patient drinks a certain quantity of a solution of urea. Immediately afterward a stomach tube is introduced, and the percentage of urea in the fluid thus obtained is compared with the original. The urea nitrogen is determined by the hypobromite method. If the patient took 100 c.c. of a urea solution containing N per cent. of nitrogen and the mixed stomach juice contains N_1 per cent. of nitrogen, the amount of fluid which was present in the fasting stomach is $\frac{100(N-N_1)}{N_1}$.

Medizinische Klinik, Berlin

Dec. 17, 1922, **18**, No. 51

*Gaucher's Splenomegaly. H. Lippmann.—p. 1607.
*Cancer and Self-Protection of the Organism. C. Bayer.—p. 1610.
*Dry Gonococcus Vaccine. A. Buschke and E. Langer.—p. 1613.
*Intravenous Injections of Oily Substances. Lenzmann.—p. 1614.
Relation of Malaria in Berlin to Arsphenamin. G. Hamel.—p. 1615.
Polyarthritis and Pyelitis. R. Korbsch.—p. 1617.
*Treatment of Oxyuriasis with Arsphenamin. K. Hajós.—p. 1619.
Portable Apparatus for Pneumothorax. I. W. Samson.—p. 1620.
Roentgen-Ray Diagnosis of Duodenal Ulcer. G. Herrnheiser.—p. 1621.
Intravenous Injection of Concentrated Arsphenamin. J. R. Thim.—p. 1623. Conc'n.
Physicochemical Foundations of Spasmophilia. H. Hummel.—p. 1626.

Gaucher's Splenomegaly.—Lippmann reports a case of this rare familial disease. The splenomegaly, enlarged liver, yellow complexion, leukopenia, which changed into a leukocytosis after injections of epinephrin and during the dysentery, led to the diagnosis. In the puncture fluids and "harpoon" specimens from the spleen the usual big cells were present, but they did not contain free cholesterol. The cholesterol content of the blood was low. The patient is still living, and in comparatively good general condition.

Cancer and Self-Protection of the Organism.—Bayer reviews the etiology of carcinoma and the protecting action of the organism, and discusses means to enhance it.

Dry Gonococcus Vaccine.—Buschke and Langer found most of the commercial vaccines without effect, and their protein content very low. They attribute it to autolysis. A dry vaccine prepared from gonococci had good therapeutic effects, but the injections were so painful that they had to be discontinued.

Intravenous Injections of Oily Substances.—Lenzmann points out that small amounts of oil (0.25 gm.) cannot lead to an obstruction of the pulmonary circulation.

Treatment of Oxyuriasis with Arsphenamin.—Hajos reports favorable results with the use of 0.9 gm. neo-arsphenamin by the mouth in seven adults.

Dec. 24, 1922, **18**, No. 52

*Importance of the Anamnesis in Diagnosis. W. Neumann.—p. 1637.
*Psychophysical Relations in Internal Medicine. F. Mohr.—p. 1639.
*Akinesia in Chronic Blepharospasm. H. H. Elschnig.—p. 1641.
Treatment of Fistula of Anus. H. Sieben.—p. 1641.
Habitual Luxation of the Clavicle. H. v. Ortenberg.—p. 1642.
Forceps of the Practitioner. H. Strube.—p. 1645.
Diseases of the Bladder. E. Portner.—p. 1646.
Recent Literature on Soft Chancre. F. Pinkus.—p. 1648.

Tuberculosis of Lungs and Pathology of Personality.—Neumann shows in a special case of tuberculosis the importance of an exact history of the patient, and gives interesting details which result from comparison of the anamnesis with the findings of minute physical examination.

Psychophysical Relations in Internal Medicine.—Mohr finds that too little stress is laid on the fact that every somatic disturbance necessarily conditions psychic disturbances, and vice versa.

Therapeutic Akinesia in Chronic Blepharospasm.—Elschnig paralyzed the orbicular muscle of the eye with procain in a case of blepharospasm of several years' duration. The injection was made by Van Lint's technic for operations on cataracts. The result was good although not permanent, and the injections had to be repeated a few weeks later.

Münchener medizinische Wochenschrift, Munich

Dec. 22, 1922, **69**, No. 51

*Migraine in Children. H. Curschmann.—p. 1747.
*Optimal Action of Syphilitic Antigens. J. Hohn.—p. 1750.
*Leukopenia as a Reflex of the Autonomic System. E. F. Müller.—p. 1753.
Spontaneous Formation of Loose Bodies in Joints. E. Roesner.—p. 1757.
Turning of Heart in High Position of Diaphragm. Zezschwitz.—p. 1758.
Louis Pasteur. M. Gruber.—p. 1758.
Protection of Language in Science. E. Liek.—p. 1760.
Treatment of Tuberculosis and Lupus of Nose. G. Spiess.—p. 1762.
Medical Supervision of Athletics. K. A. Worringen.—p. 1763.
Technic and Interpretation of Ventriculography. W. Weigeldt.—p. 1764.

Migraine in Children.—Curschmann states that migraine in children is much more frequent and important than appears from textbooks. This neglect is due to the fact that the condition is rare in clinics. Yet it is frequent in private practice. Abdominal symptoms are characteristic. Many supposed colics, many cases of supposed appendicitis, ulcer of stomach and duodenum are migraine. Heredity is practically always present. The attacks are strictly periodic. Fever may be present.

Optimal Action of Syphilitic Antigens.—Hohn finds that the main difference between the complement fixation and the precipitation tests lies in the large amounts of serum which are necessary for the precipitation (about eight times more than in fixation). The colloidal state of the antigen is of the greatest importance. He recommends an antigen which after dilution shows with a magnifying lens (6x) extremely fine granules. The concentration of sodium chlorid is also important, and it must be titrated.

Leukopenia as a Reflex of the Autonomic System.—Müller found that intracutaneous (not subcutaneous) injections of indifferent substances (including normal saline and even air) cause leukopenia. Addition of minimal amounts of epinephrin delays the reaction. The phenomenon seems to be a reflex due to stimulation of the vagus. The end point of the reflex lies in the vessels of the abdomen. Their dilatation causes slowing down of the blood stream and accumulation of leukocytes in the abdominal organs. Increased tonus of the sympathetic system prevents this leukopenia. He agrees with Glaser's explanation of Widal's hemoclastic crisis as a vagus reflex. The liver has no direct influence. The cause is a change in the equilibrium between the vagal and sympa-

thetic tonus. The phenomenon cannot be used as a liver function test.

Dec. 29, 1922, **69**, No. 52

*Action of Different Strains of Spirochetes. Plaut and Mulzer.—p. 1779.
Bismuth in Syphilis. Felke.—p. 1781.
*Cultures of Spirochetes in Arsphenamin. W. Krantz.—p. 1782.
Physiology of Labyrinth. M. H. Fischer.—p. 1783.
Some Points in Microscopic Technic. Carl.—p. 1785.
Advertisements in the Reception Room. Scherbak.—p. 1787.

Action of Different Strains of Spirochetes on Nervous System of Rabbits.—Plaut and Mulzer studied the neurotropy of different strains of spirochetes on rabbits. The work as well as the whole field of experimental syphilis of the nervous system is made easily accessible by Plaut's suboccipital punctures of rabbits. The Wassermann reaction was always negative in rabbits' cerebrospinal fluid, but micromethods for the globulin test, cell counts, mastic and goldsol reactions gave good results. While one strain only exceptionally caused changes in the cerebrospinal fluid, another strain led to such changes almost regularly. Histologic findings confirmed these "clinical" results. They used also strains from the cortex of two cases of general paresis which caused in three generations of rabbits typical changes in the fluid without local changes at the place of inoculation. The histologic changes in these cases closely resembled those of human general paresis.

Cultures of Spirochetes in Mediums Containing Arsphenamin.—Krantz found that neo-arsphenamin did not inhibit the growth of spirochetes in Schereschewsky's medium in a concentration of 1:5,000. This is twice as strong as that in the blood of a patient after administration of 0.5 gm. of the drug.

Wiener klinische Wochenschrift, Vienna

Dec. 21, 1922, **35**, No. 51

*Roentgen-Ray Diagnosis of Duodenal Ulcer. M. Haudek.—p. 987.
Dengue. M. Eugling.—p. 991.
Roentgen Diagnosis of Duodenal Ulcer. G. Singer.—p. 993.
Dosage, Stimulating Doses and Radiosensibility. K. Ullmann.—p. 994.
*Sedimentation of Erythrocytes. Poindecker and Siess.—p. 997. Conc'n.
Scabies in Vienna. M. Oppenheim.—p. 998.

Roentgen-Ray Diagnosis of Duodenal Ulcer.—Haudek relies on roentgen ray for diagnosis. In seventy cases in one and a half years, thirty-six diagnoses were confirmed by operation, and only two were disproved. He describes his technic and the roentgenologic symptoms of duodenal ulcers.

Sedimentation Speed of Erythrocytes.—Poindecker and Siess find that accelerated speed of sedimentation is a good indicator of the activity of pulmonary tuberculosis, and therefore is important for prognosis. Occult focal reactions may be made apparent by this method.

Dec. 28, 1922, **35**, No. 52

Treatment of Tuberculosis. J. B. Andreatti.—p. 1005.
*Spontaneous Entero-Anastomosis. L. Berczeller and Z. Szilárd.—p. 1006.
*Hypertonic Solutions and Gastric Secretion. J. Karmel.—p. 1007.
Extensive Cervicovaginal Fistula with Six Weeks' Ovum. E. Graff.—p. 1011.
Curettage of Conjunctiva in Chronic Catarrhs. N. Blatt.—p. 1011.
*Test for Patency of Tubes. L. G. Dittel.—p. 1013.
Comment on "Indications for Roentgenotherapy." L. Freund.—p. 1013.

Spontaneous Anastomosis of the Intestine.—Berczeller and Szilárd ligated the rectum of white rats fed with starch, a food which could be almost entirely absorbed. They found that the passage was regularly restored in four or five days. The experiments were negative if the ligation was made on the proximal parts of the colon, or on the ileum.

Action of Intravenous Hypertonic Solutions on Gastric Secretion.—Karmel found that hypertonic intravenous injections, especially of sugar (20 c.c. of a 50 per cent. solution), decrease gastric secretion.

Test for Patency of Tubes.—Dittel points to some dangers of Rubin's method due to the possibility of pregnancy or infection.

Zentralblatt für Chirurgie, Leipzig

Dec. 30, 1922, **49**, No. 52

Comment on "Nerve Blocking in the Leg." O. Wiedhopf.—p. 1929.
*Spastic Ileus in Influenza. F. Colmers.—p. 1931.
Collapse of Anterior Transverse Arch of Foot. G. Hohmann.—p. 1933.
Contusions of the Kidney. K. Hugel.—p. 1935.

Spastic Ileus in Influenza.—Colmers mentions three cases of spastic ileus associated with influenza, in all of which an operation was performed. No obstruction was found but only spastic contraction of the intestine, which had given rise to the clinical symptoms. This condition may occur frequently during an epidemic of influenza. If colicky pains and similar symptoms associated with diarrhea and vomiting appear, spastic ileus should be suspected. In his cases an erroneous diagnosis was more or less excusable, since the onset of ileus symptoms was acute and, in spite of all treatment, the vomiting could not be checked nor the severe subjective symptoms relieved. In doubtful cases, however, he would still prefer to make a small abdominal incision, in order to discover the true condition of affairs, rather than run the risk of overlooking true intestinal occlusion. Spastic ileus in influenza may be due to the action of the central nervous system on the intestinal musculature. An irritation produced by pathologically affected mesenteric glands may play a part, or possibly a toxic influence from the intestinal contents.

Zentralblatt für Gynäkologie, Leipzig

Dec. 23, 1922, **46**, No. 51

*Roentgen Irradiation in Amenorrhea. H. Thaler.—p. 2034.
*Lipoids in the Corpus Luteum. T. Wiczynski.—p. 2044.
Comment on Müller's "Physiologic Ascites in Women." J. Novak.—p. 2050.
*Ileus During Pregnancy. H. A. Dietrich.—p. 2052.
*Teratoma Evacuated Through Rectum. J. Ohrenstein.—p. 2055.

Roentgen Irradiation in Amenorrhea.—Thaler reports good results from roentgen irradiation in cases of essential amenorrhea and in other disturbances based on hypofunctioning of the ovaries. In not less than thirty-six of the fifty-five women thus treated for secondary amenorrhea the condition was cured, and in the large majority of these cases menstruation became regular and remained regular during the whole period of observation. At the beginning of treatment Thaler used from six to ten Holzknecht units. He employed an Apex apparatus, provided with a Watt water-cooled tube. The distance of the tube from the skin was 23 cm., and 3 mm. of aluminum and deerskin was used as a filter. A large field between the umbilicus and symphysis pubis, extending laterally to the anterior superior spines, was irradiated. Frequently, a second irradiation with a somewhat weakened dosage was given a week later. If any further treatment seemed needed, an interval of at least four weeks was allowed to elapse. Then a double irradiation, as at first, was usually given. Very rarely were more than the two double treatments given. As the main purpose of irradiation was the stimulation of the development of the corpus luteum, from six to eight days after the end of the menstrual period were allowed to elapse, in the case of menstruating patients, before they were irradiated. Five of the eighty women with menstrual anomalies treated by irradiation became pregnant in a few months.

Lipoids in the Corpus Luteum.—Wiczynski recalls that the lipoids are no longer regarded as ordinary degenerative products of the cell. Investigations of recent years confirm the view that these bodies, with albumin, constitute a very important component of the cell protoplasm. The differences between the corpus luteum of the menstruating woman and that of the pregnant woman are not essential but of a morphologic nature. That the lipoids are not found in the microchemical preparations during pregnancy is not due to their absence but to combinations with albuminous substances, from which they are liberated through the action of the mixture of pepsin and hydrochloric acid. The corpus luteum of menstruation and the corpus luteum of pregnancy are one and the same organ, the future of which is determined by the fate of the ovum. The behavior of the lipoids in the corpus luteum furnishes proof that it is the ovum that plays the dominant rôle in the ovary; all other components of the ovary are to be regarded as auxiliary factors.

Ileus During Pregnancy.—Dietrich recounts an interesting case of ileus, which occurs rarely in pregnancy. Prompt laparotomy saved the patient in the seventh month of pregnancy and a healthy boy was born spontaneously at term. There was no compression of the intestine by the uterus. A

loop of the small intestine above the uterus was found to be with torsion of 270 degrees. When the torsion was reduced, an extensive invagination 60 cm. long was noted and 1.5 meters of the small intestine had to be resected. The volvulus may have been caused by the expanding pregnant uterus. Dietrich states that frequently in ileus associated with pregnancy the first symptoms are incorrectly interpreted, and the best time for operation is allowed to slip by.

Teratoma Evacuated Through the Rectum.—Ohrenstein reports a peculiar case of teratoma in a woman, aged 26. At the age of 5, a long tuft of hair suddenly appeared at the anal opening, and later reached a length of about 10 cm., so that the patient was compelled, from time to time, to cut off the hair that protruded. She always had the feeling of a foreign body in the rectum. The stool during all the years had presented the form of a hollow cylinder. She had had no particular trouble except in the case of hard stools. A few hours before admission to the hospital, at the age of 26, a profuse rectal hemorrhage occurred, and, at the same time, a tumor appeared at the anal opening, the size of a man's fist. The apex was irregularly lacerated and the color was bluish black. A tooth appeared in the lacerated opening and was removed. The tumor was attached to a pedicle, which extended from 11 to 12 cm. within the rectum. The following day laparotomy was performed; the utero-ovarian ligament was divided close to where it entered the intestine and was removed with the left tube. A degenerated portion of the right ovary was also resected. The tumor was drawn from the rectum by the pedicle, and the pedicle was excised from the rectal wall. Recovery was uneventful. The tumor was a typical teratoma with all three germ layers represented.

Casopis Lekaruv Ceskych, Prague

Dec. 23, 1922, **61**, No. 51

*Action of Epinephrin on Formation of Antibodies. A. Hrma.—p. 1217.
*Treatment of Encephalitis Parkinsonism. K. Henner.—p. 1223. Conc'n.

Action of Epinephrin on Formation of Antibodies.—Hrma tested the action of epinephrin injections on formation of hemolysin, on the complement content, on restitution of a lowered titer of immune hemolysins, and in some other instances. The results were entirely negative.

Treatment of Postencephalitic Parkinsonian Syndromes with Sodium Cacodylate.—Henner reports the results of this treatment in fifty-two cases, with 1,300 injections. Nearly 2,000 injections were given at the clinic without such mishaps as have been described by French authors. The solution used was sodium cacodylate 0.50 gm. in 2 c.c. of twice distilled water. The solution must not be older than two days. The intravenous injections were given three times weekly, starting with 1 c.c. and increasing to 4 c.c. At the end of one course the amount was decreased to 1 c.c. The whole course required a total of from 30 to 65 gm. of sodium cacodylate. After three weeks the treatment was repeated. Four such courses were given. Nicotin, alcohol, caffein are harmful. Physical treatment was used if the disease did not show signs of activity. The urine should be watched for albumin and sugar. After the injection no heavy meals are allowed. Of the fifty-two patients, forty-nine were influenced favorably.

Acta Medica Scandinavica, Stockholm

Dec. 21, 1922, **57**, No. 4

*New Method for Counting Blood Platelets in Man. A. Kristenson.—p. 301.
*"Spinal" Deviation of Intentional Movements. S. Ingvar.—p. 313.
*Red Corpuscles and Their Variations. E. J. Rud.—p. 325. Begun No. 2, p. 142.
Present Knowledge of Incomplete Bundle Branch Block. N. Stenström.—p. 385.
*The Classification of Human Blood. S. Hesser.—p. 415.

New Method for Counting Blood Platelets in Man.—Kristenson dilutes one part of blood with nine parts of a solution consisting of 10 gm. of urea, 2.5 gm. of sodium citrate, 0.005 gm. of mercuric chlorid, and 0.5 gm. of brilliant cresyl blue in 500 c.c. of water. The fluid hemolyzes erythrocytes and colors white corpuscles and platelets.

"Spinal" Deviation of Intentional Movements—Past Pointing.—Ingvar observed a deviation of the movement of one arm (in pointing to a place), if the person abducted the other arm, and especially if a weight was held in the abducted extremity. The phenomenon occurs only in the Romberg position, and not if the person is seated comfortably. Ingvar explains it as an unconscious compensation to preserve the equilibrium, and believes that the deviations due to the vestibular apparatus are also compensatory balance reflexes.

Red Corpuscles and Their Variations.—Rud found no constant or distinct influence of meals, time of the day, menstruation, site of puncture, and the venous or arterial origin on the relative number of erythrocytes. Of all physiologic conditions, pregnancy was the only one which decreased the number of red corpuscles.

The Classification of Human Blood.—Hesser examined forty serums for isoagglutinins and isohemolysins. He found that both properties belong in the same groups. If the hemolysins are not strong enough to dissolve fresh blood, their action can be demonstrated on old erythrocytes.

Finska Läkaresällskapets Handlingar, Helsingfors

November-December, 1922, **64**, No. 11-12

*Operative Treatment of Hallux Valgus. T. Sandelin.—p. 543.
Case of Mixed Sarcoma and Carcinoma in Bladder. F. Stenius.—p. 565.
*Turpentine in Treatment of Adnexitis. B. Nyström.—p. 575.
*Test Glycosuria in Pregnancy. S. Leskinen.—p. 584.
*Transfusion of Blood in Pernicious Anemia. M. Savolin.—p. 591.
*The Autonomic Nervous System. T. W. Tallqvist.—p. 616.
Scarlet Fever in Helsingfors. M. Björkstén.—p. 629.

Hallux Valgus and Its Operative Treatment.—Sandelin found flatfoot accompanying hallux valgus in 5.9 per cent. of the total 536 cases. The foot was normal in only 79.8 per cent. In 54 per cent. hereditary influence was manifest, and in 23 per cent. of the others no data were known. Recent reexamination of 116 of the 147 patients given operative treatment since 1904 showed excellent results with the Hueter method in 70 per cent. The head of the bone is cut off with straight nippers. Sandelin advises against resection for cosmetic purposes alone. Massage hastened recovery after the operation.

Turpentine in Treatment of Adnexitis.—Nyström had good results from intramuscular injection of turpentine in some cases of gynecologic inflammation. But on the whole the results were disappointing.

Alimentary Glycosuria as Early Test for Pregnancy.—Leskinen applied the Kamnitzer method in 48 women, 13 in the first three months of pregnancy and 31 nonpregnant controls. The test is an intragluteal injection of 2 c.c. of a solution of 0.03 parts of phlorizin in 30.5 parts distilled water, with 0.015 parts procain. It is applied in the morning before eating, and at the same time the patient drinks 200 c.c. of water. The urine voided half an hour later is examined and another glass of water is ingested. At half hour intervals the Nylander test is applied to the urine. The reaction is positive when precipitation occurs on boiling for one minute. In the 13 pregnant women the test was positive in 12 and positive on repetition a month later in the thirteenth. It was positive in 2 of the 4 cases of abortion. It was positive likewise in 15 per cent. of the 31 nonpregnant women. Hence the test is not infallible. The positive reactions all occurred within the first hour.

Transfusion of Blood in Pernicious Anemia.—Savolin gives the details of fourteen cases of Biermer's anemia treated in Tallqvist's service by injection or transfusion of blood. One woman now aged 41, had typical pernicious anemia in 1909. It improved under arsenic treatment but constantly recurred. In 1915 the hemoglobin was 40 per cent.; the erythrocytes 1,900,000. An intramuscular injection of defibrinated blood was followed by high fever, but she began to improve, and promptly regained full earning capacity and has felt entirely well during nearly eight years since. A sister and aunt had died from pernicious anemia. In three other cases transfusion of blood had a very favorable influence. One man is still well two years later.

The Autonomic Nervous System.—Tallqvist reviews the pathologic physiology of the vegetative nervous system that has proved of practical value.

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RELATION OF CLINICAL TO NECROPSY DIAGNOSIS IN CANCER AND VALUE OF EXISTING CANCER STATISTICS

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CHICAGO

Among the factors often mentioned as responsible for the undeniable fact that more deaths from cancer have been recorded in recent years than formerly is the increment of cases of cancer recognized at necropsy that were unrecognized during life. These added cases help to swell the cancer death rate; and hence, the more advanced the medical profession of a given community, the more necropsies, and the smaller the number of cancers that escape inclusion in the vital statistics of the community. The experience of necropsy disclosure of a clinically unrecognized malignant growth is so common that this factor is always brought forward when the alleged increase in the frequency of cancer is under discussion; and it is universally admitted. Despite the recognition and acceptance of this factor, however, we have very little in the way of actual evidence as to its real importance.

The most quoted paper is that of Reichelmann.[1] He examined the records of 7,790 necropsies at the Hospital Freidrichshain zu Berlin, from April 1, 1895, to June 24, 1901, among which there were 711 carcinoma cases, or about 9 per cent. He does not include sarcomas or forms of malignancy other than carcinoma. Among these 711 carcinoma cases were 156, or 22 per cent., that were not recognized during life as malignant disease, irrespective of whether the site or the character of the growth was correctly diagnosed. That is to say, if necropsies had not been performed in these cases, the vital statistics would have contained 555 instead of 711 cases of cancer from this group of deaths; i. e., necropsies added about 28 per cent. On the other hand, fifty-eight cases were diagnosed cancer when this condition was not present, so actually the figures are as follows: In 769 cases, cancer was either diagnosed correctly (62.5 per cent.,), missed when it was present (20 per cent.) or diagnosed as present when there was no cancer (7.5 per cent.). Subtracting the cases added by erroneous diagnosis of cancer when it was not present (fifty-eight) from the number added by missing the cancer (156), we find that the performance of necropsies actually added ninety-eight cases to the vital statistics, or about 15 per cent. Carcinoma was diagnosed correctly 555 times, and incorrectly fifty-eight times, and was missed 151 times when present, so that there were 214 errors to 555 correct diagnoses, a diagnostic error of 27.5 per cent. in the 769 cases. Reichelmann cites also a paper by Hofmann[2] based on hospital statistics in Kiel, not available to me, which showed an addition of 19.6 per cent. to the cancer figure through necropsy.

A statistical study of the cancer cases in a large number of London hospitals has been reported by Bashford,[3] who discusses the influence exerted by microscopic examination in cancer statistics; but in these figures no exact distinction is made between cases examined at necropsy and tumors removed at operation and then examined microscopically. In all such cases, of course, the cancer had been viewed and a gross anatomic diagnosis had been made. This includes most of the tumors classed as accessible in Table 1.

Even in this group of cases, microscopic study, either with or without necropsy, added 121 cases to the 683 recognized without the aid of the microscope, or nearly 18 per cent. Presumably, the inaccessible cases alone were recognized first by necropsy, and here we find 106 added to 284, or 37.3 per cent.

In view of the fact that the foregoing statistics were compiled in other countries, and at a period when the roentgen-ray examination was not available with its important diagnostic aid, it seemed worth the labor to ascertain how things stand in this respect in a material under my own observation. I have, therefore, gone over the available necropsy records of the Cook County Hospital for the years 1917-1922, inclusive, comprising about 2,712 necropsies, and also 1,000 other records of my own necropsies not included in these statistics, although many of them were performed in the Cook County Hospital at an earlier date than 1917. In these 3,712 necropsies were disclosed 545 cases of malignant disease, or 14.7 per cent. Our figures cover all forms of malignant tumor, including cerebral gliomas and endotheliomas, that were met with on the necropsy table.

The summary of these records in respect to the chief question under consideration, i. e., how many cancers are recorded in the vital statistics that would have been omitted but for necropsy, is given in Table 2.

To offset this large error of omission, we find errors of commission, i. e., cancer diagnosed as present when no malignancy was found at necropsy, there being twenty-three such in the Cook County Hospital figures and ten in the University of Chicago figures, making a total of thirty-three to be subtracted from the 178 cases erroneously added. Therefore, our necropsies added to the 400 cases diagnosed cancer during life (367 correctly and thirty-three incorrectly) 145 cases, or 36 per cent. In 578 cases (367 correct, 178 omissions and thirty-three erroneously called cancer), there were 211 incorrect diagnoses, or a diagnostic error of 36.5 per cent.

1. Reichelmann: Berl. klin. Wchnschr. **39**: 728 and 758, 1902.

2. Hofmann: Statistik der nicht diagnostizierten Krebse, Inaug. Diss., Kiel.

3. Bashford: Scientific Reports of the Imperial Cancer Research Fund, London, 1905, No. 2, Part 1.

When we tabulate our cases, we find that an excessively small proportion are in sites accessible to direct examination. Divided on this basis we have the results presented in Table 3.

These figures indicate that, as is to be expected, few of the errors are made with external tumors.

TABLE 1.—DIAGNOSIS OF NEOPLASMS

	Malignant Neoplasms		Not Cancer but Wrongly Diagnosed as Cancer
	Correctly Diagnosed	Not Diagnosed	
Accessible	399	43	28
Inaccessible	284	109	3
Total	683	152	31

One of the chief reasons why our figures of error are so high is the fact that they include very few cases of external cancer. In most cases of external neoplasms, the condition is so obvious that little or no effort is made to obtain permission for a necropsy. On the other hand, it is in the cases in which there has been difficulty in arriving at a correct diagnosis that the permission is sought with the greatest zeal and most readily secured. Undoubtedly, the greatest influence in accounting for the large proportion of unrecognized internal tumors is the fact that so large a proportion of the cancer cases in American municipal hospitals occur in patients who are brought into the hospital when moribund or nearly so; wherefore adequate clinical study cannot, and often should not,

TABLE 2.—PERCENTAGE OF CASES DIAGNOSED BEFORE AND AT NECROPSY

	Cook County Hospital	University of Chicago	Total	Percentage
Correctly diagnosed as malignant tumors*	257	110	367	67.34
Not recognized as malignant tumors	125	53	178	32.66
Total	382	163	545	100.00

* Irrespective of whether the location or the character of the malignant growth was correct.

be made. The error in diagnosis of internal tumors, 37.1 per cent., was almost exactly the same as that reported for inaccessible tumors in the London hospitals, 37.3 per cent.

As to the diagnosis of the more commonly occurring tumors, we have in Table 4 the figures on the Cook County Hospital material, which is selected as being more nearly homogeneous as to clinical conditions than the material from my own necropsies.

This table shows that few tumors of the uterus or rectum escape recognition, as might be expected. Most of the errors here were in patients dying of some complicating condition and in a state of dissolution too advanced for thorough examination. However, it is to be admitted that there were some inexcusable errors made through neglect. For example, one patient was studied most carefully by two excellent internists because of peculiar physical findings in the chest, which led to a debate as to whether the lesion might not be a pulmonary syphilis. Their examination apparently was limited to the chest, for they accepted the junior intern's note on the history that the vaginal examination was negative. There was, however, an ulcerating carcinoma of the cervix with extensive metastasis in the right pleura.

Carcinomas of the stomach, esophagus and prostate were usually recognized, although about one third were not correctly diagnosed. As might be expected, primary carcinoma of the liver and lung most often escaped recognition. Our figures in Table 5 show that, at least in the Cook County Hospital material, primary lung and liver carcinomas are far from uncommon. Primary pancreatic tumors were not often correctly diagnosed, although the malignancy was frequently recognized but not correctly located. The same is true for primary carcinoma of the bile tracts. The low figure for the diagnosis of the brain tumors undoubtedly depends on the fact that in many cases the clinical manifestations were those of a complicating hemorrhage into the brain substance, while other patients were brought into the hospital dying in coma, with no available history.

TABLE 3.—DIAGNOSIS OF EXTERNAL* AND INTERNAL TUMORS

	Cook County Hospital	University of Chicago	Total	Percentage
External tumors correctly diagnosed	61	21	82	89
External tumors not recognized	5	5	10	11
Internal tumors correctly diagnosed	196	89	285	62.9
Internal tumors not recognized	120	48	168	37.1

* Under external tumors are included carcinomas of the skin, mouth, tongue, pharynx, breast, uterus and penis, and sarcomas of the extremities or superficial structures; but not carcinomas of the rectum, bladder or larynx.

The sort of errors in diagnosis varied, of course, with the site of each tumor. Thus, in carcinoma of the stomach, the errors were extremely varied; of the thirty-six errors, the diagnosis was heart disease (usually myocarditis) in six; and cirrhosis, pulmonary tuberculosis, carcinoma of the esophagus and carcinoma of the colon in four each. In carcinoma of the esophagus, among fifteen errors, pulmonary tuberculosis appears four times, while aneurysm was the mistake but once. Carcinoma of the pancreas, diagnosed correctly in but four of twenty-two cases, was miscalled carcinoma of the stomach six times, cirrhosis four times, and carcinoma of the liver three times. Carcinoma of the bile tracts, correctly diagnosed but four times in fifteen cases, was called carcinoma of the stomach in

TABLE 4.—DIAGNOSIS OF MORE COMMONLY OCCURRING TUMORS (COOK COUNTY HOSPITAL)

Carcinoma of:	Total	Correct	Malignancy Correct, but Site Incorrect	Diagnosed Nonmalignant or No Diagnosis	Correct, per Cent.	Correct as to Malignancy, per Cent.
Stomach	103	67	11	25	65	76
Esophagus	41	26	3	12	63	70
Pancreas	22	4	9	9	18	59
Bile tracts	15	4	5	6	27	60
Liver	10	1	2	7	10	30
Colon	17	8	1	8	47	53
Rectum	14	11	1	2	80	86
Bladder	18	8	3	7	44	61
Prostate	8	5	1	2	63	75
Uterus	21	17	1	3	81	86
Lung	11	1	2	8	9	27
Intracranial tumors	23	9	0	14	39	39
Renal tumors	9	4	2	3	44	67

five cases, and the diagnosis of gallstones was made but once. Obstructive jaundice was the diagnosis in three cases. Primary carcinoma of the liver was entered correctly as liver neoplasm in but one case in ten, cirrhosis being the diagnosis in five cases. Primary lung tumors, recognized in but one of eleven cases, and interpreted as intrathoracic tumor in two others,

was diagnosed pulmonary tuberculosis in four cases and pneumonia in two. The intracranial tumors, correctly diagnosed nine times in twenty-three cases, were interpreted as cerebral thrombosis and as epidemic (lethargic) encephalitis three times each, and twice each as cerebral syphilis and paresis.

Taking all the tumors of whatever location, we find the following to have been the commonest erroneous diagnoses: cirrhosis, twenty-one; pulmonary tuberculosis, eighteen; heart disease, usually myocarditis, eleven; pneumonia, seven; nephritis, six; jaundice, six; paresis, six; generalized tuberculosis, five. Naturally, in many of the advanced cases coming into the hospital, the terminal condition was recognized without the responsible malignancy being found, and so we have such diagnoses as intestinal obstruction, peritonitis, anemia, septicemia, dysentery, diabetes (one pancreatic cancer, one brain tumor), and abscess, as well as pneumonia, in several cases.

A study of the distribution of all the tumors (Table 5) reveals several significant facts. First is the great predominance of tumors of the alimentary system, which constitute more than half of all the cases. The fact that the character of the cancer cases seen in a large public hospital is not a fair representation of the character of cancer in the community at large is indicated by the relative infrequency of the chief external cancers, i. e., the skin, six; tongue, seven; mouth, lips and pharynx, twelve; uterus, twenty-seven, and breast, sixteen. If our statistics had been compiled from the admission records of a large surgical hospital, we should have had a totally different picture, with these very sorts of operable tumors predominating over cancer of the stomach, esophagus and pancreas. In our material, we find the supposedly rare primary cancers of the liver, fifteen, and lung, seventeen, ranking with cancers of the mammary gland, sixteen, while cancers of the pancreas, thirty-two, and intracranial tumors, thirty-three, exceed the uterine cancers, twenty-seven, which barely outnumber the respiratory tract tumors, twenty-five. Despite the obviously misleading character of such selected material as these hospital statistics furnish, we find medical literature full of erroneous statements based on just such statistics.

There were fifty sarcomas among 545 malignant neoplasms, or about 9 per cent. of all. This figure is rather lower than that given in most tables of cancer statistics. Probably there is some exclusion of sarcomas of the extremities from our necropsy material for the same reason that we find external carcinomas scantily represented. Another factor is probably a more critical acceptance of the diagnosis of sarcoma than was once general. It is being appreciated more and more that not all round and spindle cell tumors are sarcomas, and that carcinomas are much more often mistakenly called sarcomas than the reverse. We have not included any of the testicle tumors among the sarcomas, where most of them are usually placed in classification, for we are convinced that they usually represent tumors of specialized cells of mesodermal origin, and that they are rarely true sarcomas.

In all these necropsies, there was but one instance of a definitely benign tumor causing death. In this case, which is not included in our tables, intestinal obstruction resulted from uterine fibroids.

There were four instances of coexistence of two apparently independent primary malignant tumors in the same subject: (1) carcinoma of the prostate coexisting with a carcinomatous ulcer in the pylorus, which perforated into the peritoneum; (2) glioma cerebri in a man with a small fibrosarcoma in the skin of the thigh; (3) scirrhous carcinoma of the head of the pancreas with a typical ulcerating carcinoma of the stomach, and (4) giant cell sarcoma of the jaw with carcinoma of the prostate.

This study shows emphatically the lack of value of all recorded vital statistics on cancer. When we find diagnostic errors ranging from 25 to 40 per cent. in patients who have been examined in modern hospitals in Germany, England and America, with the advantages of exploratory operations, roentgen rays and laboratory studies under the most competent medical men in the community, it is certain that the diagnostic errors made throughout the country at large must be even greater. To be sure, to the large charity hospitals come an excessive proportion of patients too near death for careful study, and there come to necropsy an undue proportion of cases that are difficult of diagnosis. On the other hand, it is quite certain that a large proportion of persons who have internal cancers are not seen by physicians much earlier than are these hospital patients. It is also certain that, under the conditions obtaining in general practice, the diagnostic effort and ability will average much less than in the large hospitals.

TABLE 5.—DISTRIBUTION OF TUMORS

Site and Type	Cook County Hospital	University of Chicago	Total
Alimentary canal	232	85	317
Carcinoma of:			
Stomach	103	39	142
Esophagus	41	9	50
Pancreas	22	10	32
Colon	16	3	19
Rectum	14	4	18
Small intestine	—	1	1
Ampulla of Vater	1	—	1
Bile tract	15	5	20
Liver	10	5	15
Mouth, lips and pharynx	6	6	12
Tongue	4	3	7
Genito-urinary tract	85	34	119
Carcinoma of:			
Uterus	21	6	27
Vagina	1	—	1
Mammary gland	11	5	16
Ovary	6	—	6
Testicle	7	3	10
Prostate	8	4	12
Bladder	18	5	23
Penis	2	1	3
Ureter	—	1	1
Chorio-epithelioma	1	1	2
Kidney—			
Carcinoma	4	2	6
Sarcoma	1	—	1
Hypernephroma	5	6	11
Respiratory tract	16	9	25
Carcinoma of:			
Lung and bronchi	12	5	17
Larynx	4	1	5
Trachea	—	1	1
Endothelioma of pleura	—	2	2
Cerebral tumors	24	9	33
Glioma	20	5	25
Sarcoma	2	2	4
Endothelioma	1	2	3
Carcinoma, choroid plexus	1	—	1
Ductless glands	10	5	15
Thyroid	5	3	8
Hypophysis	3	—	3
Suprarenal	2	2	4
Sarcomas	57	21	78
Total, all sites	37	13	50
Melanosarcoma	5	2	7
Retroperitoneal	3	3	6
Mediastinal	7	—	7
Extremities	5	3	8
Endothelioma	1	4	5
Brain	1	2	3
Pleura	0	2	2
Miscellaneous	11	17	28
Carcinoma of skin	4	2	6
Carcinoma of antrum	—	1	1
Neuroblastoma	2	1	3
Chorio-epithelioma	1	1	2
Multiple myeloma	1	4	5
Carcinoma, primary site not located	2	4	6
Multiple tumors, cases	1	3	4
Chloroma	—	1	1

These necropsy statistics show convincingly that we have at the present time no reliable statistics relative to the frequency of cancer as a cause of death. The futility of attempting to learn anything concerning heredity from such statistics is even more glaringly apparent. A single error in diagnosis may lead to entirely erroneous conclusions in the study of the influence of heredity on cancer in a given family. Such accuracy is obviously not present in any existing study of human heredity in respect to cancer. We shall have no exact and very little useful information concerning cancer statistics until a very much larger proportion of vital statistics depends on postmortem examination than is now the case.

ASCERTAINING THE SPLENIC INDEX AND THE MOSQUITO FOCUS FROM SCHOOLCHILDREN

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Schoolchildren can be utilized by the epidemiologist and the health officer not only in estimating the amount of malaria in a community, but also, at times, to reveal the source of the anophelines responsible for their infection. A striking demonstration of this was made at São Paulo, Brazil, in one of the field surveys made by the Instituto de Hygiene in cooperation with the International Health Board.

Health officers and plantation managers and employers of labor in regions where there is endemic malaria not only require an index of the degree of malaria, as affected by control measures, but also need to know where the dangerous breeding places are, for often money is wasted in efforts on places in which malaria-bearing anophelines do not propagate at all or in but small and unimportant numbers.

In the survey in question, the customary method of spleen examination was pursued, and blood specimens were taken as well for the endemic index or parasite rate; but in order that no time should be lost in making the anopheline survey, the information obtained from the spleen census was immediately used in the schoolroom to ascertain the probable location of the focus of propagation of the anophelines. This was done by grouping the children according to whether their spleens were palpable or not, and by ascertaining the residence of those with enlarged spleens. An unmistakable indication of the location of the breeding place was elicited, which was confirmed by the larval survey.

The method would seem to lend itself to those special circumstances in which it is desired to locate promptly and incriminate real and dangerous breeding places in the presence of several apparent propagation areas, or to determine the relative amount of malaria arising from two or more foci. In malarial control work it is often highly desirable to know which of the collections of water in the malarial community is the real breeding place and focus of the malaria present, so that time and money can be economized by exerting effort where it will be followed by the greatest good. In the Orient it was possible, by selective grouping of the coolies after the spleen survey, to obtain corroborative testimony as to the influence of certain propagation foci on the production of mosquitoes and of the malaria found in the coolies.

In rural communities where malaria exists, the school should furnish an index of the amount of malaria present, because of the well known frequency of splenic enlargement in children in an endemic or epidemic region, and because the children are representative of the exposed group, temporarily segregated and readily accessible to the epidemiologist or to those interested in malaria control.

In malarial infection there is a correspondence in time between the appearance of malarial plasmodia, the occurrence of fever, and the enlargement of the spleen. This takes place in new infections, in reinfections and in relapse. The splenic enlargement persists for some time after the subsidence of fever.

Groups of people without protection and constantly exposed to malarial infection and to reinfection, as is the case with many rural populations, are in a constant state of flux with regard to the manifestations of the disease. Plasmodia appear and disappear from the peripheral blood. The spleen fluctuates in size from month to month, and the splenic index in such a community reveals the degree of reaction of the people to the amount of malaria present. The longer the group is exposed to the infected mosquitoes, the higher the spleen rate becomes. The closer people live to the propagation areas of the anopheline mosquitoes, the oftener they are bitten by infected specimens, and the higher the parasite rate (endemic index) and the spleen rates are found to be. When persons remove from the endemic region, the spleen returns to normal size.

When, through the influence of antilarval measures, the propagation areas of anopheline carriers of malaria are destroyed, or whenever the mosquito host of the plasmodium is controlled, as by screening, and whenever, by quininization or other means, the amount of malaria in a region or locality is lowered, the spleen rate and the parasite rate are reduced.

When one considers that the peripheral blood findings in malaria represent in many cases only an overflow, while the great drama, as Manson explained, is often enacted in the spleen and internal viscera, and that 10 per cent. or more of laborers at work in the tropical sun may harbor plasmodia in the peripheral blood, it is questionable whether the spleen rate may not be as trustworthy a measurement of malaria as clinical histories or as the results of peripheral blood examination as usually carried out.

Authorities in the Orient believe that the health officer has in the spleen rate a practical means for detecting fluctuations in the amount of malaria in a locality, and one that can be rapidly applied.

In a few instances, malaria infection is not associated with splenic enlargement, as in some cases of acute and fatal pernicious malaria and in cases of superinfection; but it is belaboring an academic point to overemphasize these cases and to refuse the method on account of them, for it is certainly true that in localities constantly exposed to malaria or those visited epidemically, a correspondence exists between the amount of malaria and the spleen rates. In a large series of determinations made in Panama by Davis and myself, a correspondence between the endemic and splenic indexes was noted.

It is also true that, wherever malaria has caused splenic enlargement, the clinical history is usually sufficiently definite to permit the making of a diagnosis from the latter. Many epidemiologists, however, would welcome a method which would elicit information without the necessity of relying on the testimony of ignorant, overzealous or incooperative persons.

Stephens and Christophers [1] have shown that the correspondence is influenced by age in that in the earlier years of life—from 1 to 2 years—the parasite rate is greater than the splenic index. Above 2 years the spleen rate is in excess of the parasite rate, while above 10 years the spleen rate is greatly in excess of the parasite rate. They recommend on the basis of their experience that children between the years of 2 and 10 be used in applying the method.

But it may happen and, as a matter of fact, often does, in times of epidemic malaria or when persons come into a malarial locality who have lived continuously in a nonmalarial place, that, as they possess no immunity to malaria, they are affected very much like children in that their spleens react to the malarial poison by enlargement. Such persons may be made use of in the malarial or spleen census. This was the case with Spanish laborers and negroes from Barbados acquiring malaria for the first time as adults in Panama.

The spleen census is used universally in the Orient by those interested in malaria investigation and control. Ross regards the splenic index as by far the best measurement of malaria when large samples are taken, for the method can be applied to large numbers, and this reduces in corresponding degrees the error due to random sampling. But even with small samples important information can be obtained. The spleen rates of schoolchildren in certain regions free from malaria as London were found to be about 1 per cent.[2] In villages in Java I found the rates to range from nil to as high as 90 per cent. plus where malaria was very severe. Barber and Coogle [3] have reported spleen rates of 5 taken in the South, with a parasite rate of 5.5 in Mitchell County, Georgia; the time of year was winter.

The spleen rates have been used to measure the degree of success in controlling malaria in certain districts. Thus, Watson [4] writes of rates rising from 3.7 to 58 when due to increased malaria, and to rates falling from 50 to 5 following antimalarial drainage works.

Swellengrebel-de-Graaf and Swellengrebel [5] show that splenic enlargement is much reduced in an epidemic region after quininization, and that the indexes will vary after antilarval and antiadult sanitation as well as after quininization. These investigators call attention to a place on the northern coast of Java in which the spleen rate is continuously high while the hospital rate fluctuates considerably. In Samarang, Java, the admissions in 1917 were high, but fell to zero the following year. The spleen rate rose from 80 to 90 and the parasite rate from 24 to 38. The authors believe that little value can be attached to hospital admissions as a measure of malaria. Here we have to consider the factors "malaria" and "sickness due to malaria" as affected by the disinclination of native people to seek hospital aid until they are moribund. There is a great difference between Chinese and Malays and Tamils in this respect.

In making the surveys in Brazil and the Orient, it was the rule to come to the village unannounced so that a good school attendance could be assured. The work was always done with the help and the attendance of the local physician, administrative officer, alcalde or priest or other influential resident citizen, so as to gain their cooperation and to enlighten them as to the conditions in the locality. The school was visited and the pupils assembled, room after room. It was convenient to use one room for all the examinations.

SURVEY OF A BRAZILIAN VILLAGE

In the survey reported here, the village of B. M. was visited in a coffee district in the state of São Paulo. The village lies near the Rio Tiete in the center of a rich coffee-producing country with soil of the "terra roxa," or red loam clay type composed of decomposed diabase. The soil is not only satisfactory for coffee culture, but was found to be suitable for brick and tile making. This discovery led to an influx of Italian tile workers. Malaria broke out soon after the arrival of the brickworkers, and it is probable that the malady was introduced at that time, for it has been severe since that date in 1912.

We did not go there to discover malaria. The people were well aware of its presence in seasonal visitations from September to February, or during the warmer months of the Southern hemisphere. We desired to ascertain the amount of the disease; detect the mosquito carriers; locate the propagation areas, and, if possible, give the people some advice as to control.

The slope on which the village is situated rises from the river. The houses in the lower part of the town and the tile factories are located near the river, being separated from it by a bluff and flood plain about 100 meters (328 feet) in width. The higher part of the village extends away from the river, and is from 30 to 40 meters above river high water. The flood plain opposite the village widens out below and across the river, affording abundant breeding places suitable for anophelines. But the village is divided by a stream through it at right angles to the river and emptying into it. The river is separated from the village by a small bluff, about 30 meters in length and emerging from the low lying flood plain. Between it and the town are some borrow-pits and ditches situated near the tile works. Into these borrow-pits there is some seepage water usually productive of anopheline breeding. But these particulars were not seen until the larval survey was made the next day. When we arrived at the village, a hasty inspection was made in order to note rapidly, if possible, the type of problem in the village. It was suspected that mosquitoes might be breeding near the river margin or in the stream that flowed through the town and flowed into the river. Some might be rising from some unseen source farther away from the river. There were no ponds or water collections other than the stream seen in the village.

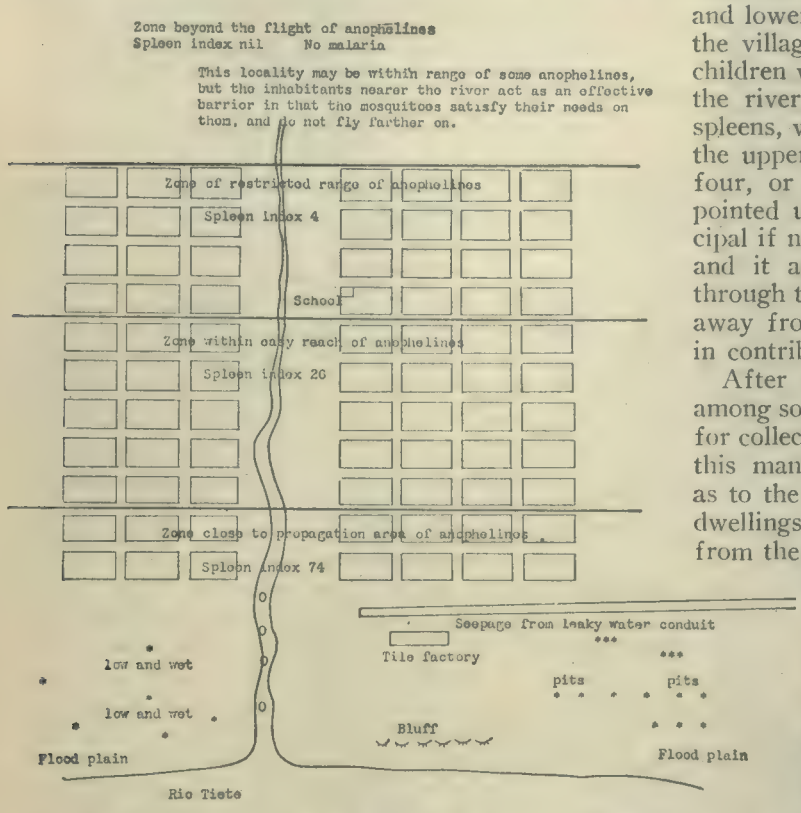
The school was visited without delay, and the nature of our examination was explained to the teachers. The school attendance, a very important point in malaria surveys, showed many absentees from malaria (72 per cent. being due to malaria, according to the physician), so that the findings, so far as the spleen rates are concerned, are an underestimation of the amount of malaria present among the children as a whole.

The children were reviewed as they passed before the examiners, when the spleen was examined, blood taken for hemoglobin percentage, and records made of the name, age, sex, palpability of the spleen, and hemoglobin. The location of the dwelling was approximately

1. Stephens and Christophers: Practical Study of Malaria, Liverpool, University Press, 1908, p. 211.
2. Ross, Christophers and Perry: Ind. J. M. Res. **1**: 385, 1914.
3. Barber and Coogle: Pub. Health Rep. **36**: 706-710 (April 8) 1921.
4. Watson, Malcolm: Rural Sanitation in the Tropics, New York, E. P. Dutton & Co., 1915.
5. Swellengrebel-de-Graaf, J. M. H., and Swellengrebel, N. H.: Ann. Trop. Med. and Parasitol. **14**: 41 (June) 1920.

oriented in regard to probable mosquito-breeding areas. A record of school attendance was made, and from a representative sample blood was taken for the parasite rate.

When a room was assembled, the teacher was examined first, if a man, and blood taken for hemoglobin and parasite rate "pour encourager les autres." A sturdy looking boy or placid girl was chosen to begin the examination of the children. Boys and girls were examined separately. The ages ranged from 6 to 14. There was no preliminary consultation of parents. The girls were reassured by the presence of their teacher, who arranged the dress to facilitate in the palpation of the spleen. The work was facilitated by gaining the cooperation of teachers, who assembled the children, put them through the test with expedition, and saw to



Plan of village: asterisks indicate region where larvae of Anopheles tarsimaculata were found; O indicates the stream which at first glance was noted as being a possible propagation area, but which later proved to be a sewage drain and unsuitable for anopheles production.

it that belts were removed, and clothing loosened, so that a large number could be examined without delay, and recorded the results of the examination.

After the examination and before the children were dismissed, they were segregated in different parts of the room, according to palpability of spleens, and as to location of dwelling place with regard to the river and the village stream. It was interesting and rather spectacular to note in this living graph that malaria as disclosed by the children with enlarged spleens corresponded with dwellings near the river margin and not with those near the village stream, or with any location behind the village.

In most instances the spleens were not greatly enlarged, being "palpable" or "one finger's breadth." In a few children the spleen was greatly enlarged. Only two children had fever at the time of the examination.

Blood specimens were not taken from every child, but only from representative age and sex groups. Half the children from whom blood specimens were taken had positive spleens. The plasmodium was nearly always that of tertian malaria.

In regard to the analysis of the malaria cases in respect to location of residence near presumptive

SPLEEN RATE OF THE SCHOOLCHILDREN EXAMINED AT B. M., MAY 1, 1919

	Number Examined	Spleen Positive	Per Cent.
Girls	78	26	33
Boys	72	40	55
Total	150	66	44

anopheline breeding places, the village as may be seen from the accompanying plan, was divided into an upper and lower half by a convenient street running through the village parallel with the river. Of the fifty-seven children who lived in the lower half of the town toward the river, forty-two, or 73.7 per cent., had palpable spleens, while of the ninety-three children who lived in the upper part of the town and beyond, only twenty-four, or 25.8 per cent., had palpable spleens. This pointed unmistakably to the river margin as the principal if not the sole focus of the malaria in the locality, and it appeared to eliminate the stream which ran through the village, as well as any possible place farther away from the river, as being of any real importance in contributing to the malaria of the community.

After leaving the school, we distributed test tubes among some of the liveliest of the boys with instructions for collecting anophelines in their homes. In the Orient this maneuver usually yielded important information as to the species of anophelines entering and biting in dwellings. The indications which we had received from the spleen census at the school were now utilized in a larval survey. Many propagation areas were found in the low places between the river and the town, along the flood plain and in the borrow-pits and ditches near the tile works. Here larvae of *Anopheles argyritarsis, A. tarsimaculata* and *A. albimanus,* well known carriers of malaria, were found in great abundance. Fewer were found across the river.

The identifications were made at once by reference to the anatomic characters of the larvae as determined by microscopic examination, without the necessity of waiting for breeding out the adults.

No breeding was taking place in the stream which ran through the village, for this, although it appeared to be a likely focus as we entered, turned out to be a

ENDEMIC INDEX OR PARASITE RATE

Sex	Number of Children	Number with Enlarged Spleens	Number with Positive Bloods	Per Cent. with Positive Bloods
Girls	15	6	3	20
Boys	24	15	10	41

drain for the village sewage, and was too foul to support anopheline species.

The larval survey then confirmed the indications obtained from our spleen examinations, since the propagation areas were found to coincide with the areas near the homes of the malaria-infected children. This

was so interesting and important a demonstration that our survey led to control measures being instituted in the village by the state health department.

2711 Elsinor Avenue.

IMPROVED PHENOLTETRACHLORPHTHALEIN TEST FOR LIVER FUNCTION

IN PREGNANCY AND ITS TOXEMIAS *

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Realizing the importance of an accurate measure of liver function in the diagnosis, prognosis and treatment of toxemias of pregnancy, many investigators have tried to devise tests by means of which the functional capacity of the liver can be estimated under normal and pathologic conditions.

Various methods have been attempted. Examination of feces and urine for the presence or absence of stercobilin, bilirubin, urobilin and the biliary salts has its place and can be clinically applied to a certain degree. Determination of the glycogenic and glycolytic functions, the proteolytic function, the proteopexic hemoclasis crisis test of Widal, and the various blood examinations have all been utilized with varying results. Based on the fact that the liver has important excretory as well as secretory powers, several coloring matters have been used, chief among which is phenoltetrachlorphthalein.

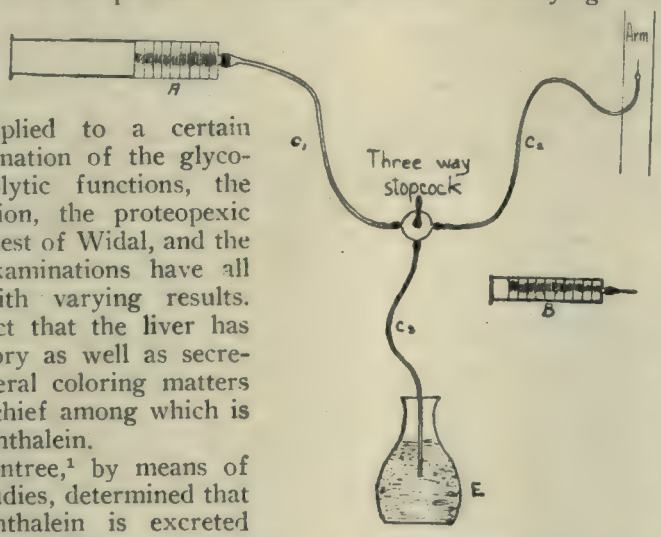


Fig. 1.—Apparatus.

Abel and Rowntree,[1] by means of pharmacologic studies, determined that phenoltetrachlorphthalein is excreted almost entirely by the liver, and that when injected intravenously it is not toxic. Rowntree, Hurwitz and Bloomfield,[2] and Whipple, Mason and Peighthal[3] later employed it as an indicator of liver function, by determining the amount present in the stools during the twenty-four hours following its injection. Legitimate criticisms of this method are that it is not only time consuming and disagreeable, but also not reliable, in that quantitative stool collections are frequently inaccurate indexes of the entire intestinal contents. Furthermore, the dye may be reabsorbed from the large intestine and reexcreted by the liver. Utilizing the Meltzer-Lyons duodenal tube method of bile drainage, Aaron, Beck and Schneider[4] recently estimated the phenoltetrachlorphthalein elimination in the bile. Williams,[5] using the same method, reports the results of observation on a series of normal pregnant women, with fairly constant end reactions, and also several pathologic cases with variable results, in which liver damage might reasonably have been suspected. The latter method at best is uncomfortable to the patient and undoubtedly impossible to perform at times, particularly in cases in which there is pernicious vomiting; moreover, varying amounts of bile escape around the duodenal tube and pass down the intestine, making quantitative values uncertain.

Since it has been observed that the liver is practically the only organ involved in the elimination of phenoltetrachlorphthalein, and because the dye appears in the urine only when there is impaired output in the stools, Rosenthal[6] concluded that, after the injection of the dye intravenously, there should be a retention in the blood if liver function is impaired. In a series of experiments on dogs he showed a definite retention of the dye in the blood of those animals in which liver destruction, as indicated by jaundice of the sclera, bile in the urine, and similar changes, had been produced by means of prolonged chloroform anesthesia. He later applied this improved test clinically, injecting the dye intravenously and withdrawing blood at varying intervals and determining the amount of dye present in the plasma.[7] The same test has been used in this series of normal and toxic pregnancies, the procedure here described having been carried out:

The patient was weighed, and the amount of phenoltetrachlorphthalein to be injected was determined on the basis of 5 mg. of dye for each kilogram of body weight. (One cubic centimeter of the standard product as manufactured by Hynson, Westcott & Dunning contains 50 mg. of the disodium salt).

The apparatus that was used consisted of *A* (Fig. 1) a 30 c.c. syringe; *B*, a 10 c.c. syringe; C_1, C_2, C_3, a three-way stopcock with attached tubing; small test tubes, and *E*, a flask containing warm physiologic sodum chlorid solution.

The required amount of dye having been drawn into syringe *A*, rubber tubing C_1 is attached and the dye diluted with warm physiologic sodium chlorid solution from flask *E* through tubing C_2, thus forcing the air from C_2. Tubing C_3 is then placed in the flask, and C_2 removed. With the patient in the recumbent position, and a suitable vein having been selected, the part is prepared locally with alcohol and iodin, and from 4 to 5 c.c. of blood is withdrawn. The serum from this blood is to be used as the control. Leaving the needle in situ, the syringe is disconnected, the tubing C_2 attached and the diluted dye injected slowly into the vein, and at the end of the injection the time is noted. The small amount of dye remaining in the syringe and connections is then washed into the vein with approximately 50 c.c. of saline solution, and the needle is withdrawn. By means of the smallest hypodermic needle attached to a clean 10 c.c. syringe, from 4 to 5 c.c. of blood is withdrawn from a vein in the opposite arm at intervals of fifteen minutes, one hour and two hours from the time of injection of the dye. (The opposite arm is used so as to avoid the possibility of contamination with any dye that might have escaped about the site of the initial injection.) The various specimens of blood, which have been collected in labeled test tubes, are allowed to cool for about an hour, during which period the clot retracts.

* Read before the Cosmopolitan Medical Club, December 16, 1922.
* From the Department of Gynecology and Obstetrics, Boston City Hospital.

1. Abel and Rowntree: J. Pharmacol. & Exper. Therap. **1**: 233, 1909.
2. Rowntree, Hurwitz and Bloomfield: Bull. Johns Hopkins Hosp. **24**: 327, 1913.
3. Whipple, Mason and Peighthal: Bull. Johns Hopkins Hosp. **24**: 207, 1913.
4. Aaron, A. H.; Beck, E. C., and Schneider, H. C.: The Phenoltetrachlorphthalein Test for Liver Function, J. A. M. A. **77**: 1631 (Nov. 19) 1921.
5. Williams, P. F.: Phenoltetrachlorphthalein Test for Liver Function in Pregnancy, Am. J. Obst. & Gynec. **4**: 26 (July) 1922.
6. Rosenthal, S. M.: Am Improved Method for Using Phenoltetrachlorphthalein as a Liver Function Test, J. Pharmacol. & Exper. Therap. **19**: 385 (June) 1922.
7. Rosenthal, S. M.: A New Method of Testing Liver Function with Phenoltetrachlorphthalein, J. A. M. A. **79**: 2151 (Dec. 23) 1922.

They are then centrifuged at high speed, and the clear serums are removed to labeled tubes.

Standards for colorimetric comparisons are then prepared. According to Rosenthal, there would be an amount of dye in the blood stream comparable colorimetrically to 10 mg. of dye in 100 c.c. of water if there occurred no elimination after the injection of 5 mg. of dye for each kilogram of body weight. This, therefore, has been used to represent the 100 per cent. standard. From this standard solution, 50 and 25 per cent. dilutions are prepared, to each of which is added three drops of 5 per cent. sodium hydroxid solution to bring out the full color. The normal standards for colorimetric comparisons are thus prepared:

0.4 c.c. of control serum + 0.1 c.c. of 50 per cent. solution: 10 per cent. control
0.4 c.c. of control serum + 0.1 c.c. of 25 per cent. solution: 5 per cent. control

In like manner, whenever indicated, standards of varying strengths are prepared. To 0.5 c.c. of each standard and to each of the serums mentioned, three drops of 5 per cent. sodium hydroxid solution is added. The percentage of the dye present in the blood at the various intervals is then determined by colorimetric comparison of the various serums with the standards.

After applying this test to a series of patients in whom no hepatic derangement was demonstrable clinically, Rosenthal [7] determined that a normally functioning liver will remove from the blood stream all but from 3 to 7 per cent. of the dye in fifteen minutes after injection, and that, in one hour, removal of the dye is complete. On further application of this test, he obtained results which proved definite retention of the dye in persons with obvious liver damage, as indicated clinically as well as by postmortem findings.

We have applied this test to a series of pregnant women, both normal and toxic. It seems inadvisable to attempt in a paper of this scope to enter into full case history reports, so for the sake of brevity and for the ease of comparison, we shall attempt to classify and group the various cases according to their clinical pictures.

NORMAL PREGNANCIES

The group of normal pregnancies is composed of patients in the third trimester in whom there were no symptoms or clinical findings referable to any toxemia of pregnancy. We have included in this series one case of pregnancy complicated by asthma and another case complicated by pyelitis. In view of the fact that the normal curve for nonpregnant patients shows from 3 to 7 per cent. of the dye present in the blood stream fifteen minutes after injection, and 0 per cent. at the end of one hour, Table 1 shows that practically all of our so-called normal cases of pregnancy fall within these limits.

These results, although few in number, suggest that the so-called "liver of pregnancy" with its various physiologic changes shows no actual impairment of function as evidenced by this test, and that the normal curve for nonpregnant cases may also be used to represent the normal curve during pregnancy. Conclusions to this effect, however, must await similar results in a large series of cases.

NEUROTIC AND TOXIC VOMITING

Under the heading of neurotic and toxic vomiting are grouped the cases in which vomiting has been the

TABLE 1.—OBSERVATIONS IN NORMAL CASES OF PREGNANCY

Patient	Age	Pregnancy	Month	Blood Pressure	Urine	Date	Percentage of Dye in Serum 15 Min.	1 Hr.	2 Hr.	Comment
1. C. D.	29	Seventh	8½	115/75	Negative	9/25/22	5	½	0	Normal clinical history; normal curve
2. T. D.	32	Fourth	7	120/80	Negative	10/ 7/22	5	0	0	No toxic symptoms; normal curve
3. L. W.	24	First	8½	110/75	Negative	11/28/22	5	0	0	Frequent asthmatic attacks; otherwise normal pregnancy; normal curve
4. C. B.	25	Second	7	120/70	Alb., L. T.; numerous W.B.C.; clumps	11/19/22	5	½	0	Pyelitis + pregnancy; normal curve
5. L. C.	18	First	8½	120/80	Negative	11/22/22	7	1	0	No toxic symptoms; normal curve
6. A. M.	20	First	■	110/75	Negative	10/19/22	6	3	0	Normal clinical history; slight delay in 1 hour

TABLE 2.—OBSERVATIONS IN CASES OF NEUROTIC AND TOXIC VOMITING

Patient	Age	Pregnancy	Month	Blood Pressure	Urine	Date	Percentage of Dye in Serum 15 Min.	1 Hr.	2 Hr.	Comment
7. L. S.	22	Second	2	110/74	Negative	11/20/22	7-8	1-2	0	Neurotic type showing practically normal curve
8. E. R.	27	Third	8	95/70	Albumin, S. T.; acetone, 0	9/26/22	9	½-1	0	Essentially as above
9. B. C.	21	First	8	136/86	Albumin, 0; acetone, 0	11/ 7/22	11	7	2	Moderate impairment of liver function
10. H. L. (a)	20	First	5½	110/80	Albumin, S. P. T.; acetone, 0	10/17/22	10	4	1	Essentially as above
(b)	..	.....	...	115/80	Negative	11/ 2/22	7	1	0	Normal curve following treatment
11. A. S. (a)	18	Second	3½	95/75	Albumin, 0; diacetic, +; acetone, S. P. T.	11/13/22	7	9	3	Moderate impairment of liver function
(b)	..	.....	...	110/85	Negative	11/22/22	6	1	0	Normal curve following treatment
12. A. C.	36	Fourth	2½	98/70	Albumin, S. T.; diacetic, ++; acetone, ++	9/ 5/22	12	12	5	Marked severe impairment of liver function
13. J. C. (a)	28	Third	2½	116/70	Albumin, V. S. T.; acetone and diacetic, F. P. T.	10/12/22	4	3	0	Slight impairment of liver function
(b)	..	.....	...	110/70	Acetone and diacetic, S. P. T.	10/17/22	9	4	0	Moderate impairment of function
(c)	..	.....	...	105/68	Diacetic, + acetone, +	11/ 2/22	7	3	..	Slight improvement; clinical picture improved
(d)	..	.....	...	98/65	Albumin, S. P. T.; diacetic, ++++; acetone, ++++	11/ 9/22	12	9	7	Very marked impairment of liver function
(e)	..	.....	...	94/65	Acetone, ++; diacetic, ++	11/15/22	13	14	10	Severe impairment (dangerously ill)
(f)	..	.....	...	100/70	Albumin, S. P. T.; acetone, 0; diacetic, ■	11/22/22	9	4	½	Marked improvement of liver function (clinical picture improving)
(g)	..	.....	...	108/75	Negative	12/10/22	4	½	0	Normal curve following subsidence of symptoms

predominant symptom. Several of these patients have shown such definite changes in their degree of liver function impairment, coinciding with the clinical manifestations, that it seems advisable to discuss them separately.

CASE 7.—L. S., at the fifth week of pregnancy, had a four day period of excessive vomiting, which ceased on the day of admission. She was discharged well; no vomiting had occurred four days later. The test curve was virtually within normal limits.

CASE 8.—E. R. began vomiting when five weeks pregnant, and continued for twenty days, with associated headaches. Vomiting ceased after two days of starvation treatment. The test on the day of entrance showed a slight increase in fifteen minutes, but a normal level in one hour.

CASE 9.—B. C. was four months pregnant, and had vomited somewhat excessively for the last three months, associated with frequent headaches and dizzy spells. There was no appreciable loss of weight, and the general condition appeared fair. The test showed an elevated curve suggesting impairment of liver function. The patient refused admission to the hospital, and could not be followed further.

CASE 10.—H. L., when two months pregnant, was treated in the Homeopathic Hospital for excessive vomiting. She was discharged well after nine days. She entered Boston City Hospital when five and a half or six months pregnant with a history of excessive vomiting for two weeks prior to entrance, and vomitus containing blood streaks for the last two days. The vomiting ceased after four days of treatment. The test on entrance showed a moderate impairment of hepatic function (10 *a*).

The patient returned for another test, feeling well, with no vomiting for three weeks. The test curve was within normal limits (10 *b*).

CASE 11.—A. S., admitted, November 12, about three and one-half months pregnant, with a history of severe headaches, blurring of vision, and excessive vomiting for twelve days, was unable to retain anything by mouth. The general condition was fair; the face, drawn; the tongue, moist; pulse, 94. The test on entrance (11 *a*) showed definite impairment of liver function.

The patient improved rapidly under treatment, vomiting ceased, and she was ready for discharge, November 22, when the test curve (11 *b*) showed evidence of a normally functioning liver. The patient was seen again three weeks later, feeling perfectly well.

CASE 12.—A. C., admitted, September 1, had had her last period, June 15. There had been pernicious vomiting for five weeks prior to admission. Therapeutic abortion was performed at home four days prior to entrance, but vomiting persisted.

A test, September 5, showed evidence of severe liver function impairment.

September 6, vomiting became aggravated, and the sclerae showed a faint tinge of jaundice. Dilation and curettage was performed, with liberation of a small amount of placental tissue, but the patient died shortly afterward.

CASE 13.—J. C., admitted, Oct. 12, 1922, had had her last period, August 6. She had vomited considerably for the last two weeks, especially during the last three days. The general condition was good; the pulse, 84.

A test on entrance showed slight delay in the one hour specimen (Curve *A*, Fig. 2).

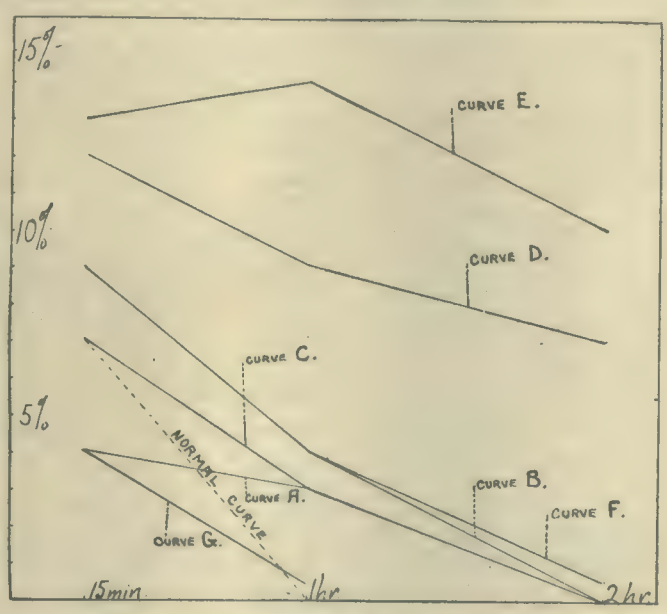


Fig. 2.—Test curves throughout clinical course in Case 13.

October 17, the patient was somewhat worse than on entrance; she vomited considerably. She was given rectal feedings almost exclusively. A test indicated moderate functional impairment (Curve *B*).

November 2, definite improvement was recorded. There was very little vomiting. The patient had been out of bed for the last few days. The test curve was somewhat lower than the previous one, indicating some improvement (Curve *C*).

November 9, it was noted that for the last five days the patient had rapidly become more toxic, vomiting very frequently. The pulse varied from 100 to 104. The test curve was much elevated over previous curves, suggesting marked liver function impairment (Curve *D*).

November 11, there was jaundice of the sclera, which became somewhat more marked, November 14. The patient was much worse, very irritable and apprehensive. There was evidence of a definite toxic psychosis. She was placed on the dangerous list. The pulse ranged from 116 to 120. The systolic blood pressure was 96; the diastolic, 60. The test indicated severe impairment of liver function (Curve *E*).

By November 22, marked improvement had taken place. The patient was rational and felt well. She was placed on the full house diet. There was no vomiting. The test curve had dropped markedly, showing marked improvement of liver function (Curve *F*).

The patient was discharged from the hospital, November 28, and had felt very well since then. The test curve, December 10, was normal (Curve *G*).

Study of Table 2 and the accompanying case reports suggests that in cases of toxic vomiting there is a very definite relation between the degree of toxicity of the patient, as evidenced by the clinical picture, and the degree of functional impairment of the liver, as evidenced by this test. This is clearly demonstrated in Case 13, in which there occurred several fluctuations in the degree of toxicity, with corresponding variations in the test curves.

In one instance the test showed functional impairment somewhat more severe than the accompanying clinical picture would indicate. This, however, was followed in a few days by definite jaundice, toxic psychosis and, in general, a markedly aggravated picture. The question, therefore, arises as to whether it may not be possible by means of this test to anticipate the clinical picture and to institute proper therapeutic measures at an earlier period. The question also arises as to whether considerable aid might not be obtained in differentiating the neurotic type from toxic cases by means of this test, as we have found that in the few cases studied in which the outcome and the general course of the clinical picture warranted the former diagnosis, the functional capacity of the liver was little, if at all, impaired.

HYPERTENSION GROUP

Cases of hypertension, in several of which apparently there were frank renal pathologic changes as a basis, are included in this group with preeclamptic and

eclamptic cases. The majority of the cases are preeclamptic, in which relief of symptoms occurred following treatment or delivery.

CASES 14 and 15.—Both patients were from six to seven months pregnant, and their blood pressures ranged from 130 to 150, systolic, and from 90 to 100, diastolic. There was occasional slight blurring of vision with no other toxic symptoms. Tests in each case showed very slight impairment of function.

CASE 16.—A. F. was followed in the outpatient department of the Boston Lying-In Hospital, where she was treated for hypertension. The blood pressure ranged between 140 and 180, and she experienced occasional headache and blurring of vision. She was referred to the house because of hypertension. Examination of the urine revealed a trace of albumin. Test *a*, prior to delivery, showed evidence of definite impairment of liver function. Test *b*, taken one week after delivery, was within normal limits. The blood pressure has been normal since delivery (130 systolic, 90 diastolic).

CASE 17.—R. C. was treated in the outpatient department for hypertension for the last six weeks. There had been hospitalization. Blood pressures taken at frequent intervals varied from 128 to 150.

December 11, the systolic blood pressure varied from 140 to 160, and the diastolic from 96 to 106. There was definite accentuation of symptoms. The patient was delivered of a living baby by means of low forceps.

December 24, the patient felt perfectly well. The blood pressure had ranged from 116 to 120 for the last ten days. The test curve was within normal limits.

CASE 19.—L. K., admitted, November 22, had had occasional nausea. There had been slight edema of the lower extremities for several months. There were occasional bright spots before the eyes. The blood pressure for a few months had been around 130 and 136 systolic.

A test done November 19 showed slight impairment of function. The patient entered the hospital six days later, November 25. Convalescence was uneventful except that the blood pressure remained somewhat elevated.

Dec. 5, 1922, the test curve was normal.

CASE 20.—J. M. was admitted, Nov. 23, 1922, in a comatose condition with a history of having had one convulsion. A negative history was obtained from the family with exception

TABLE 3.—OBSERVATIONS IN HYPERTENSION GROUP

Patient	Age	Pregnancy	Month	Blood Pressure	Urine	Date	Percentage of Dye in Serum 15 Min.	1 Hr.	2 Hr.	Comment
14. I. J.	22	Third	7	138/90 to 150/90	Albumin, S. T.; acetone, 0	11/23/22	8	2	F.P.T.	Very slight impairment of liver function
15. M. G.	20	First	6½	130/70 to 150/100	Albumin, S. P. T.	11/20/22	7	2	0	Very slight impairment
16. A. F. (a).....	31	Fourth	9	155/100	Albumin, T.	11/ 7/22	10	5	..	Moderate impairment of liver function
(b).....	..	.....	...	130/90	Negative	11/15/22	5	½	..	Normal curve following delivery
17. R. C. (a).....	39	Sixth	7	150/90	Albumin, L. T.	11/13/22	10	5	½-1	Moderate impairment
(b).....	..	.....	...	130/70	Negative	11/23/22	7	1	0	Normal curve following delivery
18. T. W. (a).....	18	First	8	150/100	Albumin, T.	11/15/22	12	4	2	Moderate impairment of liver function
(b).....	..	.....	...	144/95	Albumin, T.	11/22/22	12	6-7	2-3	Impairment slightly more marked
(c).....	..	.....	...	145/95	Albumin, T.	12/ 5/22	14	6	2	About the same as above
(d).....	..	.....	...	120/80	Negative	12/24/22	7	0	0	Normal curve following delivery
19. L. K. (a).....	28	Fourth	9	134/80 to 150/95	Albumin, T.	11/19/22	7	5	1	Moderate impairment
(b).....	..	.....	...	135/80	Albumin, S. T.	12/ 5/22	6	0	0	Normal curve following treatment
20. J. M. (a).....	32	First	9	170/105	Albumin, L. T.; casts, ++	11/23/22	16	14	6?	Very marked impairment of liver function
(b).....	..	.....	...	185/105	Albumin, L. T.; casts, +++	11/26/22	11	[illegible]	1	Impairment much less severe
21. M. B.	24	Third	9	215/120	Albumin, L. T.; casts, +++	11/16/22	15	9	5	Very marked impairment
22. A. M. (a).....	19	First	9	150/96	Albumin, L. T.; casts, 0	11/28/22	11	7	5	Marked impairment of liver function
(b).....	..	.....	...	128/100	Albumin, L. T.; casts, +	12/ 2/22	9	9	7	Impairment more marked (patient having convulsions)
(c).....	..	.....	...	118/75	Negative	12/14/22	9	½	0	Practically normal curve following delivery

edema of the ankles for the last two months, but no headaches or visual disturbances. There had been epigastric pains and edema of the hands for the last two weeks. The patient was referred to the house. The systolic blood pressure was 150; diastolic, 90. Urine examination disclosed a large trace of albumin.

Test *a* showed definite evidence of impaired function. Precipitate premature delivery occurred the following day, and the blood pressure remained about 130 systolic and 70 diastolic for the following week. Test *b*, taken nine days postpartum, showed a normal curve.

CASE 18.—T. W. entered the hospital, Nov. 15, 1922, at about the end of the eighth month of pregnancy, with a history of moderate nausea and occasional vomiting, and dizziness during the last month. The systolic blood pressure on entrance was 150; diastolic, 100. A large trace of albumin was present in the urine. There were no casts. There was moderate edema of the ankles.

The test showed moderately severe impairment of liver function.

Definite improvement in the general condition occurred during the week ending November 22, with relief of symptoms to such a degree as to warrant discharge to the outpatient department. The test done preliminary to discharge, however, showed liver function impairment as severe as at entrance. The blood pressure again was elevated. The patient was advised to remain in the hospital.

December 5, the test showed results quite similar to previous curves. The clinical picture in general warranted of moderate edema of several months' duration. The patient apparently was at term. The fetus was apparently dead in utero. It was said that the patient had been in labor for the last thirty-six hours. The cervix, however, was not dilated. A bag was employed, and eliminative measures were instituted. The test showed severe liver function impairment. The patient was delivered of a dead fetus, partially macerated.

November 24, the general condition was much improved.

November 26, the patient's general condition was very poor. There were evidences of nephritic involvement of a severe degree. The blood pressure was high; edema was increasing. The patient evidently was dangerously ill.

The test curve showed much improvement of liver function, although clinically the patient was dying of nephritis. This suggests that there is a possibility that this test may become of value in differentiating between nephritis and eclampsia.

CASE 21.—M. B. was admitted, Nov. 16, 1922, with a history of having felt perfectly well up to about ten days before, when she began to have abdominal pain, frequent micturition, and moderate edema of the ankles. She had had headache for the last two days, and increasing edema and slight nausea and vomiting on the day of admission. The blood pressure was from 210 to 220. The patient was at term; the fetus was apparently dead in utero. Eliminative measures were instituted.

The test showed marked functional impairment.

The patient gradually became more confused and mentally torpid, and had severe convulsions in rapid succession. She was delivered of a dead fetus. Cardiac embarrassment and

pulmonary edema intervened, and the patient died on the following day.

CASE 22.—A. M., who was about at term, entered the hospital, Nov. 28, 1922, with a history of edema of the legs for the last two weeks. She had felt very well throughout pregnancy. The blood pressure was 154 systolic and 96 diastolic. Examination of the urine disclosed a large trace of albumin. There were no casts.

The test showed marked impairment of function, suggesting greater toxicity than the clinical picture indicated.

By December 2 there was marked improvement of the clinical picture. Edema was almost gone. The systolic blood pressure ranged from 128 to 136, and the diastolic from 76 to 84. The urine was almost free of albumin. The patient had been feeling very well until suddenly, on the morning of December 2, after feeling slightly confused, she had a convulsion. Rigorous treatment was instituted, a bag was employed, and the patient was delivered later by low forceps of a living baby.

The test was done between convulsions, and injection of the dye was followed with 500 c.c. of intravenous saline solution after venesection which undoubtedly diluted the dye somewhat; but still the test curve showed marked impairment of function.

December 14, excellent convalescence had occurred. The test curve was within normal limits.

Table 3, with the accompanying test curves and case reports, indicates that there has been liver function impairment in every case in which there has been sufficient clinical evidenct to warrant a diagnosis of preeclampsia or eclampsia. Whenever the clinical picture showed a considerable degree of toxicity, curves have been obtained which indicate corresponding degrees of impairment of liver function. In several instances, however, the test has indicated degrees of toxicity more severe than the corresponding clinical picture suggested (Cases 18 and 22). Further developments in these cases, however, showed definite accentuation of clinical symptoms suggesting that the test curve preceded the clinical picture in evidencing toxicity.

Hourly blood pressure determinations in cases of preeclamptic toxemia have shown variations at various intervals, fluctuating from considerable degrees of hypertension to approximately normal levels within short periods of time, in cases in which the test curve has consistently shown definite impairment and in which subsequent developments proved definite marked toxicity. This suggests that greater reliance might be placed on this test than on blood pressure determinations or other variable clinical symptoms. Whenever, in cases of toxemia, the patients have been relieved from symptoms, either by treatment or by delivery, the test curves have fallen to normal limits, showing rapid return to normal liver function. The time required in these cases apparently varies directly with the degree of liver impairment.

COMPOSITE CURVES

Figure 3 is composed of composite curves which have been compiled from readings obtained in the entire series of cases.

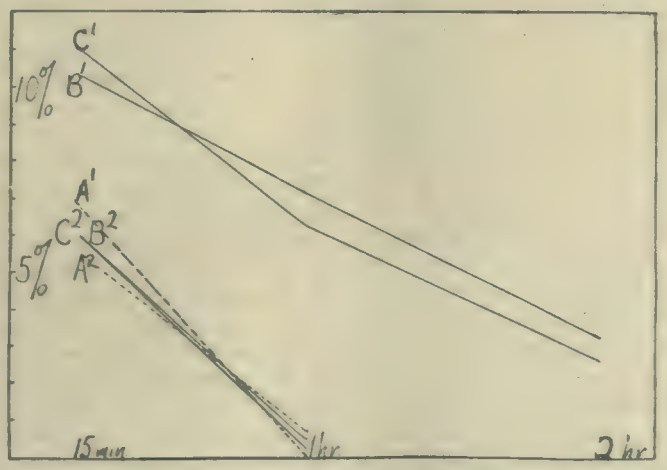


Fig. 3.—Composite curves: A^1, normal curve for nonpregnant patients; A^2, curve in normal pregnancies; B^1, curve in cases of toxic vomiting; B^2, curve in same cases as B^1, after relief of symptoms; C^1, curve in cases of hypertension, including preeclampsia and eclampsia; C^2, curve in same cases as C^1, after relief of symptoms.

Curve A^2 represents our normal curve, and is based on results obtained from our series of normal pregnancies. This curve is seen to coincide, for all practical purposes, with Curve A^1, the normal curve for normal nonpregnant cases.

Curve B^1 is based on tests in so-called toxic vomiting cases, all cases in this series in which vomiting was a predominant symptom.

Curve B^2 is based on the same cases as B^1 after the patients were clinically relieved.

Curve C^1 is based on results obtained in cases in which hypertension was a predominant symptom. The majority of these cases were of preeclampsia and eclampsia.

Curve C^2 is based on the same cases as C^1, following relief of symptoms subsequent to treatment or delivery.

Figure 3 demonstrates graphically that toxic cases of pregnancy show definite liver function impairment, and that subsequent to relief from the toxic symptoms there is return of liver function to normal limits.

SUMMARY

The phenoltetrachlorphthalein test, as described in the foregoing, has been used to measure liver function both in normal and in toxic cases of pregnancy.

Normal cases of pregnancy show a curve coinciding with that of normal nonpregnant cases, suggesting that the so-called "liver of pregnancy" with its various physiologic changes shows no actual impairment of function.

Toxemias of pregnancy, including eclampsia, show a definite relation between the degree of liver impairment, as measured by this test, and the degree of toxicity, as evidenced by the clinical picture.

Results obtained in several cases suggest that this test is a more accurate index of existent toxicity than variable clinical symptoms are, and that it may be possible by means of this test to anticipate the clinical picture in forming an opinion as to the degree of toxicity existent at a given time.

Toxemias of pregnancy, including eclampsia, show definite liver impairment, and subsequent to relief from toxic symptoms there is a return of liver function to normal limits.

We believe that this test gives a quantitative index of functional capacity of the liver, and that in the toxemias of pregnancy it will aid greatly in serving as an index of treatment and will assist in determining the time at which therapeutic abortion or induction of labor should be performed in cases in which these measures may become necessary.

Mysticism.—We must, after all, come to terms in some way with the emotions underlying mysticism. They are very dear to us, and scientific knowledge will never form an adequate substitute for them. No one need fear that the supply of mystery will ever give out; but a great deal depends on our tase in mystery; that certainly needs refining.—Robinson: The Mind in the Making.

THE INTRACUTANEOUS GUINEA-PIG TEST (KELLOGG)

FOR HUMAN SUSCEPTIBILITY AND IMMUNITY TO DIPHTHERIA

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Since the publication of an article [1] describing a new test for the determination of immunity and susceptibility to diphtheria, opportunity has been afforded to check this method against the Schick test under a variety of conditions, and this experience with nearly 200 comparative tests prompts the offering of a second paper on the subject.

Some of the results of parallel tests, and the conclusions reached, more properly form material for a discussion of the Schick test, because they pertain chiefly to experiences in the practical application of the latter. These observations will, therefore, be left for discussion elsewhere. The Kellogg test, for so it has come to be known for want of any other short appellation, is, briefly, the injection into the skin of a white guinea-pig of a mixture of equal parts of blood serum from the person tested and a toxin dilution containing one thirtieth of the L + dose per cubic centimeter. If the patient's serum contains exactly $\frac{1}{30}$ unit of antitoxin for each cubic centimeter (the amount stated by Schick as being protective), 0.1 c.c. will contain $\frac{1}{300}$ unit of antitoxin. Two-tenths cubic centimeter of the mixture of serum and toxin will, therefore, contain $\frac{1}{300}$ unit of antitoxin and $\frac{1}{300}$ L + dose of toxin.

The combining ratio of these substances is such that there will be free in the mixture $\frac{1}{300}$ minimal lethal dose of toxin, which is just sufficient to produce redness without necrosis in the skin of the guinea-pig. This degree of reaction, as also anything less, constitutes a negative result and indicates immunity.

If necrosis appears, there is less than $\frac{1}{30}$ unit of antitoxin per cubic centimeter in the serum, and the subject is not immune. However, serum frequently contains antitoxin in quantities insufficient to give a negative Schick reaction or to afford protection, yet these minute quantities modify somewhat the intensity of the positive reaction on the guinea-pig. Experience with these varying degrees of positiveness, when produced with known amounts of antitoxin, enables us to judge roughly the amount of antitoxin present in routine tests. No experience is needed, however, to decide between cases that have $\frac{1}{30}$ unit or more of antitoxin (negative) and those that have markedly less than $\frac{1}{30}$ (positive) for the reason that the criterion is the presence or absence of a breaking down of the epithelial layer, with blackening. This is observed frequently on the second day, but sometimes not till the third day, over the central portion of the red area. This red area develops in a few hours in all tests except in those with serum containing $\frac{1}{25}$ unit or more of antitoxin per cubic centimeter, in which case no reaction results. When no antitoxin, or only traces, are present, there is usually observed a small dead white spot in the center of a red area at the end of twenty-four hours. This means commencing necrosis, and the outcome (a positive reaction) is now a foregone conclusion, and may be so reported. A little more antitoxin may prevent this early blanching, and in this event we may be unable to determine the reading until the second day. Occasionally it is necessary to wait until the third day for the development of necrosis, but not often. The progress of the positive reaction is characterized by this sequence of events:

An area, bright red, and from 15 to 20 mm. in diameter, forms within a few hours. In twenty-four hours, there is usually observed a central white spot which is premonitory of necrosis. In from forty-eight to seventy-two hours the area of the central white spot has enlarged and commenced to brown in the center, leaving a margin of white necrotic epithelium as a border beyond which the red zone extends. This brownish area shows a breaking down of the superficial layers of the skin with slight serous exudation, rapidly drying to form the brown and later black scab. A second white ring is common and is quite characteristic, giving the so-called target appearance. In from seventy-two to ninety-six hours the brown area has become black. This black spot is a scab which is detached in a few days. Milder degrees of necrosis are seen, but no difficulty is experienced in deciding the question if the decision is deferred to the third or fourth day, as even slight necrosis will by this time have resulted in a scab which is unmistakable even though not as black as in the total absence of antitoxin. When the reaction is definite and bright red at the end of twenty-four hours, but progresses no further, showing signs of regression in forty-eight hours, the amount of antitoxin present in the patient's serum is very close to $\frac{1}{30}$ unit per cubic centimeter. The guinea-pig is never sensitized to the proteins of diphtheria toxin; consequently, pseudoreactions never occur. One half of the reactions can be read definitely in twenty-four hours. Most of the remainder are conclusive in another twenty-four hours. A very few have to wait seventy-two hours for final reading.

In practice we have found that the skin reaction is qualitative rather than quantitative, and that 0.1 c.c. gives exactly the same type of reaction as 0.2 c.c., except that it is smaller in area. Our routine method now is to draw into the syringe $\frac{3}{20}$ c.c. of the serum-toxin mixture, which allows for some loss in injecting, and still gives us 0.1 c.c. in the skin.

While the injection is made intracutaneously, as in the Schick test, the consequences of unskilful technic in making the injection are not as serious as in the latter test. It is impossible to *bury* the reaction by too deep an injection, because the amount of toxin present in a mixture giving rise to a positive reaction is from four to ten times as much as is injected in the Schick test. According to Park,[2] in several hundred Schick tests applied to both arms, 2 per cent. showed the reaction on only one arm, the explanation presumably being that in the failures the injection was placed too deeply.

Blood specimens may be sent by mail to laboratories performing the test, as the antitoxin content of the serum is very stable. Only 0.1 or, at most, 0.2 c.c. of serum is required, so that 0.5 c.c. of blood is all that need be collected. This amount can easily be obtained by pricking the lobe of the ear with a needle or small lance, but many will prefer to take the blood from a vein with a hypodermic syringe.

The toxin is conveniently kept ready for quick and accurate dilution by adding pure neutral glycerin to

1. Kellogg, W. H.: A Test for Diphtheria Immunity and Susceptibility, J. A. M. A. **78**: 1782 (June 10) 1922.

2. Park, W. H.: Toxin-Antitoxin Immunization Against Diphtheria, J. A. M. A. **79**: 1584 (Nov. 4) 1922.

make the volume of the L + dose exactly 1 c.c. Five-tenths cubic centimeter of this glycerinated toxin is added to 14.5 c.c. of sterile physiologic sodium chlorid solution. This gives a strength of $\frac{1}{30}$ L + dose to 1 c.c.

In the laboratory, the specimens of blood are centrifuged, and 0.1 or 0.2 c.c. of the clear serum is placed in a 2 c.c. shell vial. An equal quantity of the toxin dilution is now added to the serum in the shell vial, a 1 c.c. record or Luer syringe being used preferably for measuring both serum and toxin. The same syringe may be used for measuring several serums if it is washed out several times with salt solution after each use. It is necessary, before drawing up serum or toxin, to expel carefully all liquid left in the lumen of the needle, for if this is not done it will be drawn up into the fluid being measured, thus altering the strength. The vials are agitated sufficiently to insure thorough admixture of their contents, and allowed to stand at room temperature for half an hour.

During this wait, the guinea-pigs, which must be white, are prepared by plucking the long hair from an area on one or both sides, and then shaving to give a clean surface. The process of plucking does not seem to inconvenience the pigs any more than the shaving, and the method is to be preferred to that of using depilatory pastes.

If the toxin is fairly low in the number of minimal lethal doses to the L + dose, six tests may be placed on one pig, three on a side, without fear of killing the animal by an overdose of toxin, should all the tests be positive. The toxin we are using at present has twenty-five minimal lethal doses in the L + dose; consequently, the most toxin that can be present in a single positive test is one-twelfth minimal lethal dose, or a total of half a minimal lethal dose in six inoculations ($25 \div 300 = 1/12$). Guinea-pigs should not be used a second time for this work on account of the possible development of an immunity. The injection is made intracutaneously with a 26 gage needle, the same as for the Schick test.

Concerning the maintenance of a potent toxin by laboratories using this test, it may be said that, notwithstanding the liability of toxin to deterioration, the difficulties from this source, contrary to what obtains in the Schick test, are negligible. In the first place, a fall in the minimal lethal dose value will have no effect on the guinea-pig test so long as the L + value has not materially changed. Fortunately, the nature of toxin is such that the L + or neutralizing value falls very much more slowly than its toxic quality; in fact, barring accidents, hardly at all in periods of several months, in a well "ripened" toxin.

The affinity of antitoxin for toxin is so great that one unit neutralizes many minimal lethal doses (according to the number in the L + dose), and it follows that the amount of toxin (measured on the L + basis) may be considerably diminished in the test without greatly diminishing the amount of antitoxin necessary to give a negative reaction. If the toxin used should have deteriorated, unknown to the technician, say 10 per cent. in its L + value, $\frac{1}{33}$ unit of antitoxin in the serum tested will give the same reaction as $\frac{1}{30}$ unit with full strength toxin. If a fall of 20 per cent. (which, it is safe to say, need never be expected) should have occurred since the last standardization, $\frac{1}{40}$ unit will give the same reaction. Conversely, a test serum containing 10 per cent. less than the $\frac{1}{30}$ unit required for protection will permit a reaction that will be quickly noted, while 20 per cent. less will permit a definitely positive reaction, owing to the increased amount of toxin remaining free. These facts explain the great sharpness of reaction and the greater sensitiveness of this test over the Schick.

It is a simple matter to check up the strength of a toxin by making a series of dilutions, each one of which contains one-thirtieth of a possible or tentative L + dose per cubic centimeter, the dilutions varying from one another in strength by one one-hundredth of the original L + value of the toxin. Thus, if the last known value of the toxin was 1 c.c. to the L + dose, one solution is made which will represent 1 c.c. of the toxin to 30 of physiologic sodium chlorid solution; the next stronger will contain 1.01 c.c., and so on, increasing by 0.01 c.c. till four or five dilutions have been made.

After the dilutions have been prepared, 0.2 c.c. of each is placed in tubes or shell vials, and to each is added the same amount of antitoxin solution of such a strength that 1 c.c. equals $\frac{1}{30}$ unit. Two-tenths cubic centimeter is injected intracutaneously, as previously described. The amount of toxin used in the strongest dilution failing to produce necrosis in seventy-two hours is the true L + dose.

The toxic quality of a toxin (on which the Schick test but not the Kellogg test depends) falls extremely rapidly under certain conditions (temperature, light, age, and the like) so that hundreds and perhaps thousands of Schick tests are performed with damaged toxin, and frequently the false negatives received with such a toxin are not recognized by the operator because he has no check or control against a poor toxin. It may be said that he should be on his guard for such an eventuality, and have his suspicions aroused by too high a percentage of negatives; but he has no such check when applying a few tests at a time. The fact remains that he does not always recognize the difficulty, even when testing large groups.

SUMMARY OF COMPARATIVE RESULTS

Kellogg	Schick	Number
Positive	Negative	1
Positive	Neg. pseudo	2
Negative	Positive	1
Negative	Combined pos	7
Same with the two tests		149
Total		160

The accompanying table shows the results of tests applied in parallel with the Schick test on 160 persons, in four different groups, each group being tested at one time by the two methods. Three of these groups were adults, one consisting of sixteen laboratory workers, one of public health nurses, twenty-three in all, and the other, of fifty-five medical students.

The remaining group was composed of children in a school for the deaf and blind. In this institution, 233 Schick tests were made, and all showing pseudoreactions were retested by guinea-pig inoculation. The number retested was sixty-six, which seems a high percentage of protein reactions; but most of the children were young adolescents, very few being under 10 years of age.

Among the miscellaneous specimens examined, in addition to the 160 mentioned above, two were received with a history of the children having given positive Schick tests followed by a course of three injections of toxin-antitoxin mixture six months before. Both of these bloods gave a positive reaction on the guinea-pig, which immediately raises the question of the potency of the toxin-antitoxin mixture.

With two exceptions, the Schick test and the Kellogg test in this entire series of 160 persons tested have agreed so far as uncomplicated Schick tests were concerned. The first of these exceptions was in a public health nurse who was tested by both methods, along with the other members of her group, twenty-three in all. She gave a clean-cut Schick positive, uncomplicated by protein reaction, and a negative Kellogg test. This result was so surprising that she was asked to return so that another sample of blood could be taken as a check against some such mistake as leaving the toxin out of the mixture. The second test was the same as the first, negative on the guinea-pig. Unfortunately, another Schick test was not done, and the subject is now out of reach.

There are two possible explanations for the conflicting results in this case. First, the patient may be sensitive to toxin (as a protein), giving a skin reaction to raw toxin, even though protected by an ample amount of natural antitoxin. The heated control remained negative for the reason that the toxin had been destroyed and the subject was not sensitive to the usual proteins of the toxin solution. This explanation presupposes that toxin is a true protein in chemical structure.

The other explanation is that the subject should have given a negative pseudoreaction with the Schick test; but, through a slip in technic (too deep an injection), no reaction followed the injection of heated toxin. Such a chance, previously referred to as having been reported by Park, is easily possible.

The second exception occurred in the group of medical students, and is probably an example of a false negative resulting from accidental misplacement of the injection in the Schick test.

The first test resulted in a negative Schick and a positive Kellogg reaction. In the second test, the Kellogg test remained the same, but the Schick test was positive, although not a very strong one. There was some transitory protein reaction in this case, but it is not included with the protein-sensitive group, for the reason that the explanation of the difference in the two tests at the first trial is not based on the existence of such sensitization.

Differences in results between the two tests, among protein-sensitive persons, were observed twice in the medical student group of fifty-five, both being read as negative pseudoreactions by the Schick test but giving positive reactions on the guinea-pig. These three false negatives give in this group an error for the Schick test of 5.45 per cent.

Among the sixty-six in the blind school given both tests, all of which were protein sensitive, the Schick results as finally interpreted after several inspections, and some changes of opinion, agreed with the guinea-pig readings in all excepting seven instances. These seven were recorded as combined positives by the Schick and as negative by the Kellogg test. There were, in addition, seven combined positives that were correctly read according to the other test.

That the guinea-pig method gives the true immune status of the subject will hardly be disputed by any one who attempts to solve the problem of what, besides antitoxin, can prevent a necrosing dose of toxin from producing that effect in the skin of a guinea-pig.

All tests were controlled by inoculating toxin mixed with salt solution instead of serum.

SUMMARY AND CONCLUSIONS

1. The test described is conclusive as showing either the presence or the absence of immunity to diphtheria.

2. Controls are possible which guard against deteriorated toxin and false negative reactions.

3. False negative reactions with the technic described are believed to be an impossibility.

4. Protein reactions do not occur.

5. The test is a central laboratory one, relieving the physician of the responsibility for the interpretation of the doubtful reactions so frequently observed in the Schick test.

6. The test is the one of choice for practitioners having occasion to test a few persons at a time. The disadvantage of the Schick test, under such circumstances, is that no control against false negatives from deteriorated toxin exists.

7. The test is not recommended as a substitute for the Schick test, when large groups are being examined, for the reason that the collection of a large number of blood specimens would be too time consuming, excepting with adults and older children with whom venipuncture can be used.

INFLUENCE OF ALCOHOL ON PROGNOSIS OF PNEUMONIA IN COOK COUNTY HOSPITAL

A STATISTICAL REPORT

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AND
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In this paper we propose to consider to what extent the use of alcohol affects the course of lobar pneumonia. The influence of alcohol on longevity has been the subject of extensive studies in recent years by the insurance companies. These companies do not, of course, accept persons who admit the excessive use of liquor, and their comparisons, therefore, are between abstainers and moderate users. Dr. Rogers of the New York Life shows that in several large companies the mortality runs 32 per cent. higher in the group of moderate alcohol users than in the group of abstainers. The statistics of the Midwestern Mutual show that if abstainers are rated at 100 per cent., the mortality of moderate or occasional users of alcohol is 119 per cent.; that of daily users of beer is 133 per cent.; that of daily users of spirits is 166 per cent. The New England Mutual reports the startling comparison of 100 per cent. in abstainers to 213 per cent. in moderate users.

Carefully prepared and impressive as these figures are, we must make allowance for a certain error arising from the reluctance of the applicant for insurance to tell the whole truth concerning his habits. The abstainer has nothing to hide, but the user tends to minimize the amount that he drinks.

The physician in practice, on the other hand, enjoys the confidence of his patient and is able to obtain more reliable information on this matter. Our data are obtained exclusively from the histories of lobar pneumonia patients at the Cook County Hospital. We have studied the records covering eight years, six years before prohibition, 1911 to 1917, and two years after prohibition, 1921 to 1922. The intermediate years were purposely omitted on account of the streptococcus and influenza epidemics that produced atypical forms of pneumonia. It is a matter of common knowledge

that cases of classical lobar pneumonia were comparatively few until the year 1921.

THE GROUPING OF CASES

We found it feasible to place in the first group the abstainers and those who used less than two glasses of beer daily, or who used spirits occasionally. The

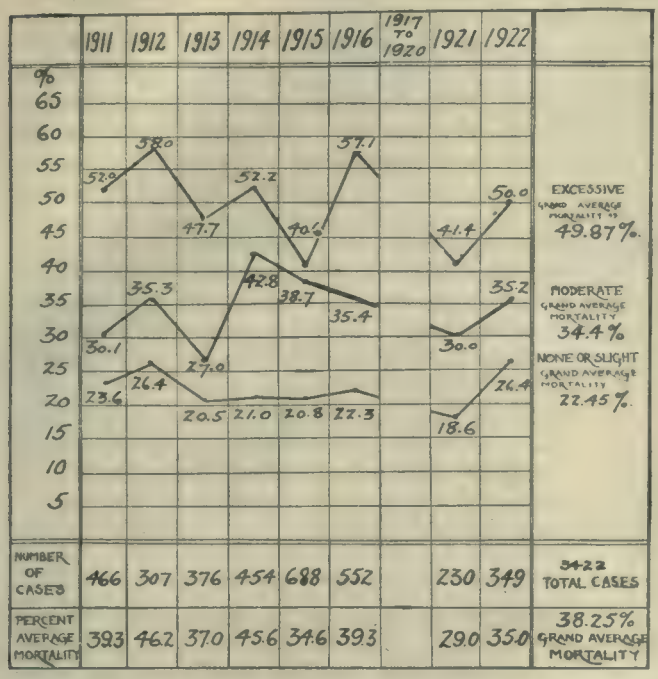


Chart 1.—Yearly mortality in each group.

second group included those who drank regularly two or more glasses of beer, or one or two glasses of spirits. The third group embraced those who drank regularly a large amount of beer or spirits, or who became intoxicated at times. Thus, it will be seen that our first group includes many persons who would be classified as moderate users by the insurance companies, and our third group is made up of men who, for the most part, would be ineligible for insurance because of their excesses.

GENERAL AGE AVERAGE YEARLY IN EACH GROUP

	1911	1912	1913	1914	1915	1916	1917-20	1921	1922	Grand Aver.
None or slight.	35.3	32.3	33.5	32.8	38.4	37.9	——	33.6	36.7	35.06
Moderate.....	40.4	39.3	40.2	42.0	41.1	41.1	——	38.4	40.9	40.46
Excessive.....	42.1	42.8	43.1	42.2	42.7	45.4	——	43.4	43.9	43.20
Average.....	39.2	38.1	38.9	39.0	40.7	41.5	——	38.4	40.5	39.57

In our compilation we excluded all cases in which a clear statement was not recorded concerning alcoholic habits. A majority of such patients were brought to the hospital in such a toxic or moribund condition that no intelligent answers could be obtained. The proportion of alcoholics among these patients was undoubtedly very high, and their mortality more than 56 per cent. So we may be sure that the elimination of these patients who gave no definite information concerning their habits has reduced the actual mortality incidence of the third group of excessive drinkers.

Only male patients have been tabulated, and none were recorded under the age of 18. This comprises 3,422 cases of lobar pneumonia, 884 of which were in the first group, 1,095 in the second group, and 1,443 in the third group. Chart 1 gives the mortality rate of the three groups in each of the eight years. The grand average for all the years of the first group of abstainers and light users is 22.45 per cent.; the average of moderate users is 34.4 per cent.; the average of excessive users is 49.87 per cent.

A natural objection may be raised to accepting these figures at face value on the ground that excessive users are likely to be older than the moderate or light users, and that this difference in age may explain the increased death rate.

We found the average age of the first group about 35 years; of the second group of moderate drinkers, about 40 years, and of the excessive group, about 43 years.

Chart 2 has been constructed with a view to showing the death rate by decades in each group. For example, one sees that in the period between 18 to 29 the mortality percentage of the first group was 13.6, as compared with 18.1 per cent. in moderate, and 28.6 per cent. in excessive users. In the decade 30 to 39, the percentages were 18.4, 29.1 and 42.5; in the decade 40 to 49, 24.6, 38.6 and 50.9; in the decade 50 to 59, 40.2, 51.8 and 62.7; over 60 years, 49.3, 57.7 and 68.4.

We may assume that in this comparison the age factor is entirely eliminated, as we compare the death rate of the three groups only at similar ages.

Not only does the use of alcohol increase the death rate, but the increase maintains a remarkably constant ratio to the amount of liquor consumed.

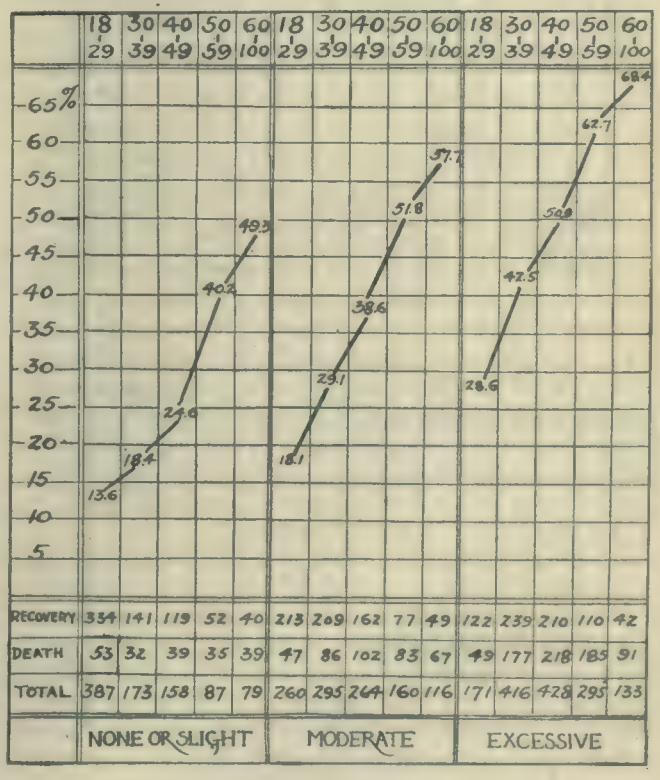


Chart 2.—Mortality by decades in each group.

It is interesting to observe there are 1,095 cases in the moderate group and 1,443 cases in the excessive group, a total of 2,538, with a mortality of 1,105. The mortality, calculated on the basis of the figures obtained for the group of abstainers or light users, would be 666. In other words, 439 of these deaths in the last two groups may be attributed to the use of alcohol in moderate or excessive quantities.

DECREASE IN THE USE OF ALCOHOL

Do these data prove that prohibition legislation is lessening the death rate of pneumonia? They do not. They demonstrate only what a harmful effect the use of alcohol has on the course of the disease. They do not tell us whether legislation has or has not diminished the prevalence of drinking.

There are some interesting facts, however, that have a bearing on the results of legislation.

In the six years antedating the enforcement of the eighteenth amendment, only 21.6 per cent. of all the pneumonia patients were in the first group of abstainers or light users, whereas, in the two postamendment years, the number arose to 39 per cent. Similarly, in the preprohibition years, the excessive users constituted 46.8 per cent. of the whole number, while in the postprohibition years they had fallen to 23 per cent. It was noted also that the amount of alcohol consumed by the persons in this group in recent years was far less than formerly. The tendency to drink less was already in evidence in the years 1915 and 1916, for reasons not explained.

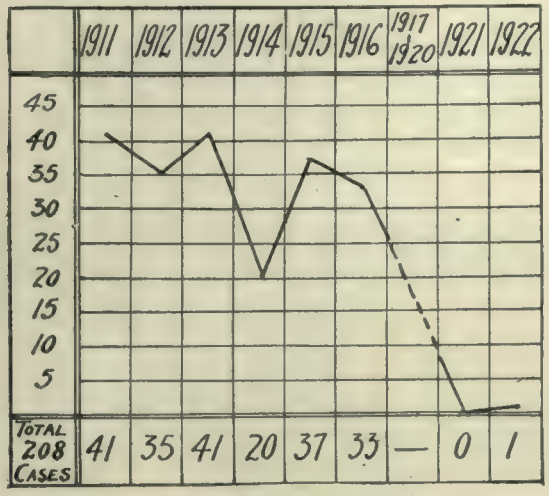


Chart 3.—Incidence of delirium tremens.

Another striking bit of evidence that the use of alcohol is greatly on the decrease, at least among the poor, is the record of delirium tremens. Chart 3 shows a yearly incidence of from twenty to forty-three cases of delirium tremens developing during the course of pneumonia in the preprohibition years, while in 1921 and 1922 together only one case occurred.

SUMMARY

1. To determine what influence the use of alcohol might have on the death rate, 3,422 cases of lobar pneumonia occurring during eight years at the Cook County Hospital were studied. It was found that the mortality was considerably higher in moderate users than in light users or abstainers, and that the mortality in excessive users was much higher than in moderate users.

2. The average age of the moderate group was about five years greater than that of the abstainers or light users, and the average age of the excessive group was three years more than the moderate. The maximum range between the first and third group was eight years. This would therefore explain a certain increase of mortality in the second and third groups over that in the first group.

3. To eliminate the age factor entirely from the problem, the mortality rate was reckoned separately in each group by decades. A comparison of the death rate in the same decades of the three groups shows a remarkable increase of the moderate users over the light users or abstainers, and a still greater increase of the excessive users over the moderate. Taking, for example, the decade 30 to 39 years, embracing the largest number of patients, we find the mortality in the abstainer or light user group 18.4 per cent.; in the moderate user, 29.1 per cent., and in the excessive user, 42.5 per cent., from which we conclude that alcohol, in proportion to the amount consumed, increases the chances of death in pneumonia.

4. It is impossible to calculate the effect of legislative prohibition, but we do see in recent years an increase in the proportion of abstainers or light users, and a corresponding decrease in the number of excessive drinkers. The practical disappearance of delirium tremens in recent years, as compared with its frequency before prohibition, also bears testimony to a lowered rate of alcohol consumption.

5. It may be properly concluded that if all these patients had been restricted to abstinence or to the light usage of alcohol, 439 patients who died would have been saved.

122 South Michigan Avenue.

SECONDARY OS CALCIS*

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NEW YORK

This case is reported because it appears to be the first case in the literature in which this accessory bone was implicated in a traumatism of the foot.

REPORT OF CASE

J. J. Mc., aged 30, an electrician, sprained his right ankle in April, 1921. I saw him three months later, at which time he was still complaining of pain and disability in the right foot. He localized the pain on the dorsum, in front of the external malleolus. He stated that occasionally a swelling appeared in this situation after use.

He walked with a slight limp. There was considerable tenderness on the dorsum in front of the external malleolus. Occasionally a crepitus could be elicited in the anterior subastragaloid region. The mobility of the subastragaloid region was moderately restricted.

A roentgenogram in the lateral view showed what at this time was interpreted as being a fracture through the processus anterior calcanei with avulsion of the distal fragment. The roentgenographic appearance of the left foot was not peculiar.

During the ensuing year, I saw the patient several times. He had had several recurring sprains with periods of disability. The findings on each examination were substantially as outlined above.

At this time, I arrived at the conclusion that, instead of a fracture, the loose bone shown in the roentgenogram was a secondary os calcis, which had become loosened in its situation, and which predisposed this region of the foot to recurring sprains by reason of its instability.

Aug. 15, 1922, I operated on this foot at the Hospital for the Ruptured and Crippled. The dissection was begun at the outer border of the calcaneocuboid joint. At about the middle of the dorsum of this joint, a small quantity of loosely organized cancellous bone was found lying on top of the joint ligaments. Further exploration inward disclosed the acces-

* Presented before the Orthopedic Section of the New York Academy of Medicine, Jan. 19, 1923.

sory bone shown in the roentgenogram, lying quite loose in its bed, and with very little attachment anywhere. This was removed.

The specimen was an irregular, three-sided pyramid whose greatest diameter was rather less than one-half inch. The base was nonarticular, and faced toward the processus anterior calcanei. The dorsal face was likewise nonarticular. The internal and external faces were covered with articular cartilage and articulated respectively with the head of the astragalus and with the cuboid. The apex and part of the lower border between the two articular faces were directed toward the scaphoid, but did not touch this bone.

The patient returned to his work, October 9. On examination, Jan. 19, 1923, he stated that his pain and disability had been much relieved, although there was still some tenderness in the middle of the operation scar. The scar was nonadherent, and the joint mobility was good.

COMMENT

Dwight[1] offers the most comprehensive original information on the subject of accessory bones of the foot in the American literature. In the great number of dissections that he made, he apparently found only two examples of a separate bone in this situation. Since the entire material relating to secondary os calcis is contained in a single paragraph, it is quoted in full (page 17):

"The secondary os calcis is very puzzling, inasmuch as the term seems to be applied to two distinct structures. The most typical one forms the very front of the sustentaculum, and is usually a small bone with a convex posterior border fitting accurately into a corresponding concavity in the front of the sustentaculum. The other nontypical form (which I cannot feel sure is really the same), is a *nonarticular,* rough, ill-defined *projection* from the front and top of the os calcis, pointing toward, if it does not reach, the space between the scaphoid, cuboid, and head of the astragalus. It is apparently by an overdevelopment of this process that the os calcis and scaphoid are occasionally brought into contact. Once I have seen, in a very pathological foot, what looked like a bone in this place which earlier had been distinct, but had been absorbed into the os calcis."

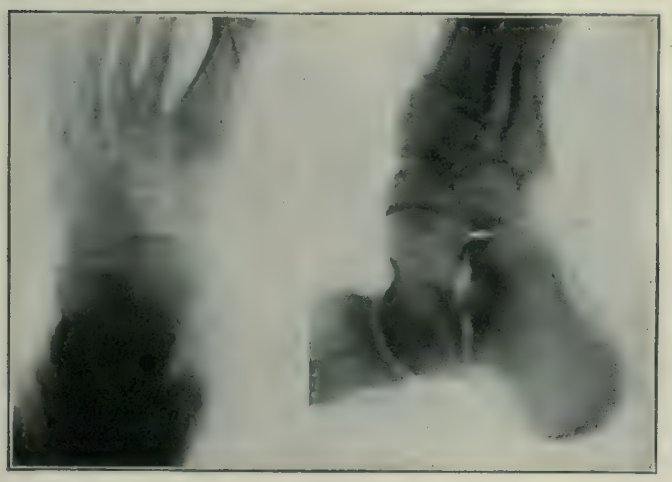


Fig. 1.—Secondary os calcis from above and from the side.

Figure 50, Plate XXII, is a roentgenogram of a clinical case showing a secondary *separate* os calcis in both feet. These feet were not dissected. Figure 51 is a photograph of a dissected specimen, showing a *separate* bone, with the following comment. . . . "Unfortunately, the way it was connected with the bone below it, whether by joint, cartilage, or ligament, is not noted. . . . It is very common in skiagraphs of the outer side of the foot to see a *projection* of the os calcis in this direction, which, if marked, would go on to join the scaphoid. It is very difficult to determine how much of this effect is due to bone and how much to the position of the plate." Figure 64 is another photograph of a *separate* bone, without descriptive matter.

Kleinberg,[2] in examining 350 roentgenograms, did not find a single example of a separate bone. He found seven examples (2 per cent.) of a projection of the os calcis, such as Dwight describes above.

Geist,[3] in examining 100 roentgenograms, found two examples of secondary os calcis, but whether or not as separate bones is not stated.

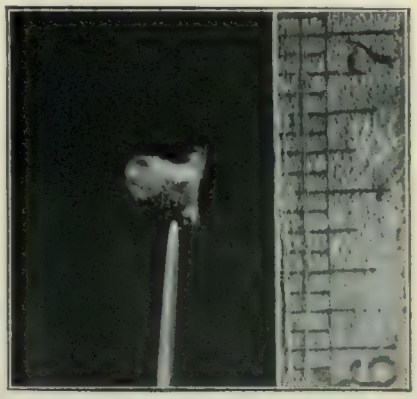


Fig. 2.—Specimen removed at operation.

Pfitzner[4] is the source of most comprehensive original information in the foreign literature. Prior to 1896, Stieda and Gruber, quoted by Pfitzner, had each reported a case encountered in the dissecting room. In Pfitzner's series of dissections of 840 feet, he encountered a separate secondary os calcis in the interval between the anterior end of the os calcis, the cuboid, scaphoid and astragalus, sixteen times (2 per cent.). The bones varied in diameter from 4 to 15 mm. The attachment to the os calcis was fibrous, but firm. In no case was there a joint here. The cuboidal and astragalar faces were commonly articular and covered with cartilage. The relation with the scaphoid was commonly by a free edge, without contact. In two cadavers, the condition was bilateral. In eleven instances, this was the only accessory bone in the foot under examination; there were four instances of association with a tibiale externum, and one with an os trigonum. Of the eleven cases of isolated occurrences of secondary os calcis, the other foot was not examined in three cases; of the remaining eight, four were accounted for in the bilateral cases mentioned above; in the remaining four, the other foot showed one instance of intermetarseum, one of talus accessorius, one of os trigonum, and one of tibiale externum.

CONCLUSIONS

From the clinical standpoint, the separate ossicle described by Pfitzner may be accepted as the typical secondary os calcis. Its occurrence in 2 per cent. of his large series of dissections need not lead to the expectation of finding it frequently in routine roentgenograms of the foot, as the smaller and less well developed specimens might easily escape demonstration.

It would seem that a well developed secondary os calcis, acting like a wedge in a series of complicated movements in the middle of the tarsus, would be peculiarly liable to avulsion or displacement.

116 East Sixty-Third Street.

1. Dwight, Thomas: Variations of the Bones of the Hand and Foot, Philadelphia, J. B. Lippincott Company, 1907.

2. Kleinberg, S.: Supernumerary Bones of the Foot: An X-Ray Study, Ann. Surg. **65**: 499 (April) 1917.

3. Geist, E. S.: Supernumerary Bones of the Foot, Am. J. Orthop. Surg. **12**: 403-414, 1914-1915.

4. Pfitzner: Die Variationen in Aufbau des Fussskelats, Schwalbe's Morphologische Arbeiten **6**, 1896.

PRIMARY TUMOR OF THE THYMUS ASSOCIATED WITH TUBERCULOSIS *

HENRY C. SWEANY, M.D.
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Ewing [1] classifies primary tumors of the thymus in three groups: (1) lymphosarcoma, or thymoma; (2) carcinoma, and (3) spindle-cell sarcoma (very rare). By far the greatest number fall within the first class. There seems to be considerable question whether the so-called carcinomas of the thymus are carcinomas or merely a variety of the first group. The lymphosarcoma of the thymus, or, more truly, the thymoma, presents a condition almost identical with that presented by the lymphosarcoma of the lymph glands. Clinically, they are indistinguishable; but histologically, there are certain well established differences, which may be roughly comparable to the differences between the structures of the lymph and of the thymus glands. The one



Fig. 1.—The tumor lying over the great vessels showing attachment to the chest wall, at the upper left.

outstanding point of difference in the primary tumor of the thymus is the fact that the reticular cells are larger and more nearly polyhedral, and they originate from the endoderm rather than from the mesoderm, as is true in the reticulum of lymph glands. Occasionally, the polyhedral cells may be very large and grouped, resembling Hassal's corpuscles. Varying numbers of giant cells, eosinophils and plasma cells may be present.

REPORT OF CASE

E. P., a man, aged 40, entered the Municipal Tuberculosis Sanitarium with moderately advanced pulmonary tuberculosis, tubercle bacilli having been found on several occasions in the sputum. Four months afterward, a small tumor developed, 1 inch to the right of the midline, between the second

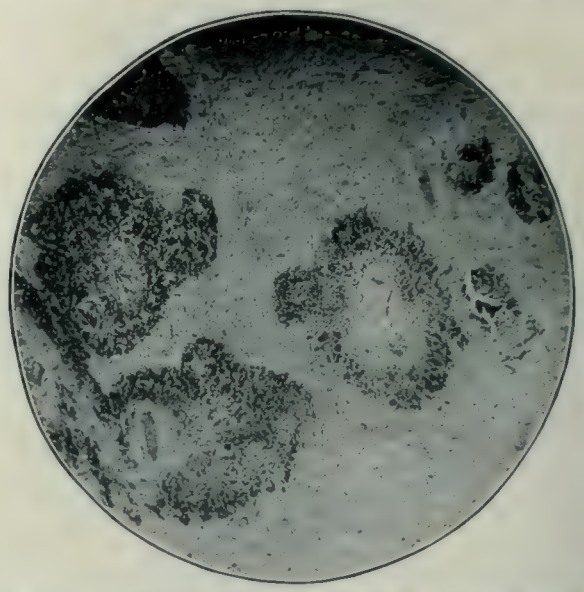


Fig. 2.—Perithelioma-like appearance due to loss of staining power of cells away from blood vessels. This condition is more marked in the older portions of the tumor (low power).

and the third rib, which, on section, was found to be sarcoma. The condition developed rapidly, death ensuing within six weeks. Necropsy revealed a tumor of the thymus gland, extending around the great vessels in crablike fashion. Direct extension of the tumor through the anterior chest wall was also found. Metastasis to the tracheobronchial lymph glands and the liver had occurred. A small tuberculous cavity, 1 cm. in diameter, and a few caseous and calcified tubercles, less than 0.5 cm. in diameter, all found in the right apex, were the only indications of tuberculous involvement that could be found.

The tumor was 11 by 3.5 cm., flat on the anterior surface and irregular on the posterior. The posterior surface conformed to the outlines of the great vessels. At the upper right portion, there was a circular elevation, 0.5 cm. high and 1.5 cm. in diameter, marking the attachment to the anterior chest wall. On section, the tissue was firm and offered resistance to the knife. In this respect, it resembled a pancreas in which there is considerable fibrosis. Microscopically, the type of cell varied slightly in the different portions of the tumor. In the portion penetrating the chest wall were many large polyhedral cells, with about an equal number of intervening round cells. There were a few plasma cells, and rather infrequently there was a giant cell. In the tumor proper and in the parts involved by metastasis, the polyhedral cells were predominant. They were joined more or less to each other by cell processes. There were many blood vessels throughout the tissue, immediately surrounding which the cells stained deeply. More remotely their staining power was lost completely.

Certain authors [2] place tumors that have the large polyhedral cells as the principal element among the carcinomas, because of the size and origin of the cells. While this may be correct histologically, it seems that the character of growth and the extremely rapid clinical course would permit as well of their classification with the lymphosarcomas. Authorities seem to be divided

* From the Laboratories of the Municipal Tuberculosis Sanitarium.

1. Ewing, James: Neoplastic Diseases, Ed. 2, Philadelphia, W. B. Saunders Company, 1922, pp. 917-920.

2. LeTulle: Arch. gén. de méd. **2**: 641, 1890.

on this point. Ewing [1] quotes from reports of Dansac, Hauser and Rubaschow, who alike state that both round and polyhedral cells may be found together in the same tumor. Such appears to be the condition in the one here described. Ewing further states that, on the one extreme, there are the tumors resembling Hodgkin's granulomas, with lymphocytes, reticulum, giant, plasma and eosinophil cells. On the other extreme, there are the pure tumors of rounded or polyhedral reticulum cells. If there exists a true resemblance to Hodgkin's granuloma in the pathologicophysiologic action, there should be the usual difference in the clinical manifestations, which would assist materially in an early classification of the tumor. The only point of difficulty here would lie in differentiating this type of tumor from a true Hodgkin's granuloma of the mediastinal lymph glands—a point of only academic interest.

The most important question that arises in this instance is the relation of the tuberculosis to the tumor formation. Many of these tumors are said to be of granulomatous origin. It is, therefore, not unreasonable to suppose that the tuberculosis, though in itself insignificant, incited the cells of the thymus to malignancy.

The course of this type of tumor is typical. They cause death within a short time. There are no successful means of treatment; measures taken are merely palliative. The tumors are, therefore, not difficult to differentiate from any other glandular involvement of the mediastinum, with the possible exception of the type that resembles Hodgkin's granuloma. They grow by direct extension more than by metastasis; and furthermore, they differ from lymphosarcoma, embryologically and histologically, but not clinically.

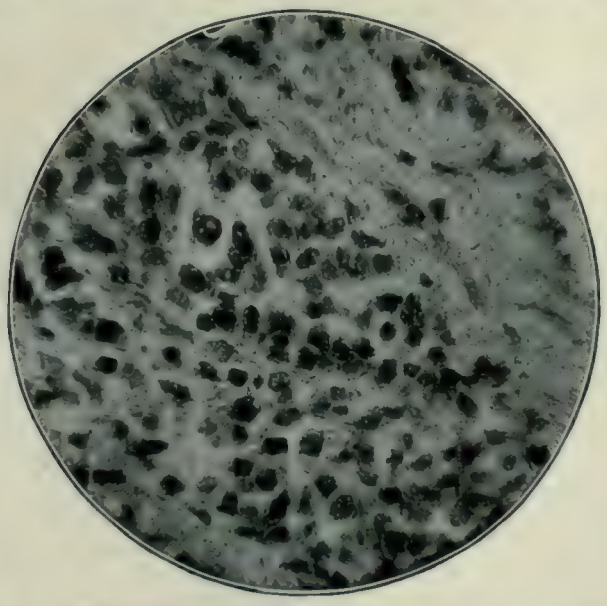


Fig. 3.—Oil immersion photograph of the edge of the tumor showing the polyhedral cells, with very few lymphocytes.

5601 North Crawford Avenue.

The "Cure" for Tuberculosis.—The history of tuberculosis reveals a record of attempts at cure which reflects little credit on the medical profession, and it well illustrates the waste of energies wrongly directed. Instead of strenuously seeking to understand the nature of the patient's ill health, modern medicine is content still to flounder along in the vain search for "a cure."—Sir James Mackenzie, *Brit. J. Tuberc.* **17**:15 (Jan.) 1923.

NOAH WEBSTER AS EPIDEMIOLOGIST

ALDRED SCOTT WARTHIN, M.D.
ANN ARBOR, MICH.

Oct. 16, 1758, there was born, in the best front room of a farmhouse, in the primitive farming village of West Hartford, Conn., a male infant destined to play a very important part in the intellectual development of "these United States of America." Noah Webster is known today, by name, to every high school student in this land, because no American High School is without a copy of "Webster's Dictionary." But he is known by name alone as the "great lexicographer and philologist," and even his legitimate posterity, as a class, the pedagogues, accord him in their minds no higher place than that of a compiler of a dictionary. Yet Webster might well, nay, should, be ranged with the Fathers of this nation, since perhaps no other single individual of Revolutionary times contributed more to the welding of the diverse colonial states into a national solidarity than did this New England schoolmaster. For he gave to the developing confederation of states a unity of speech, a common mode of expression of thought, without which there can be no national harmony. And Noah Webster accomplished this chiefly by means of his "American Spelling Book," the first edition of which he published in 1783, at the age of 25, bearing himself the expenses of the printing. Forty-five years later came the fruition of his labors for the unification of the American language in the publication of his great "American Dictionary." On this philological achievement alone his claims to fame might rest securely, but a survey of his long life of extraordinary mental activity reveals an astounding record of scholarly accomplishment in many lines.



Fig. 1.—Portrait of Noah Webster, engraved by Halpin from the painting by Jared Flagg. (From Scudder's Life of Noah Webster.)

He entered into every field of activity in the cultural development of the young American nation, and in every field he left some mark of his influence. Little of this is known to the average American citizen of his generation, and still less, perhaps, is the part he played in the early medical history of this country known to the medical profession of today. Although not a medical man himself, he made a scholar's sally into the arena of medical disputation, throwing himself with all of his enthusiastic ardor, backed by his scholarly knowledge of the world's literature, into one of the most bitter medical fights ever waged in this country—the argument concerning the origin of the epidemics of yellow fever, from the occurrence of which the young nation so frequently suffered at that period. The main result of this bold excursion into the realm of medicine—much bolder then than it would be

regarded today—was a two-volume work on "The History of Epidemics and Pestilential Diseases," the first American work on general epidemiology, and for the production of which he might well be called the father of American epidemiology, should we wish to enchance his claims to a place among the national fathers.

THE SPELLING BOOK AND THE GRAMMAR

How the curious happening of a lexicographer writing an ambitious work on epidemiology in the closing years of the eighteenth century came about

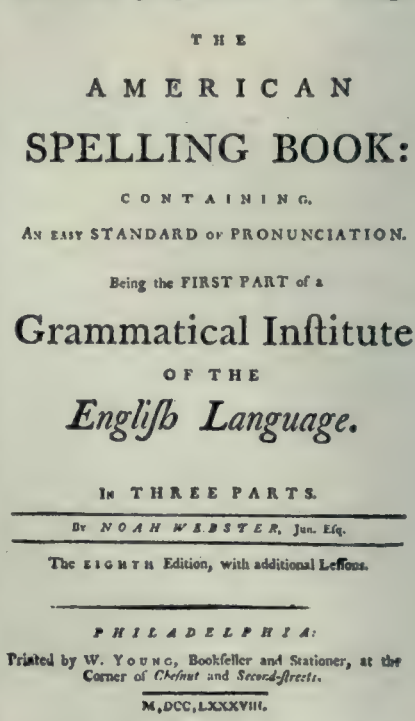


Fig. 2.—Birthplace of Noah Webster. (From the illustration in the "Life of Noah Webster," by Emily E. F. Ford, New York, 1912.)

can be properly understood only in its relation to Webster's whole life story. If there ever was a man through whose entire life, from early manhood to ripe old age, there ran one unceasing purpose, that man was Noah Webster. He was one of those predestined souls born with a mission to fulfil, and the accomplishment of this ideal became almost an obsession. He bent his whole life to that end. His career as an epidemiologist made but a short length in the full chain of his life, and is explainable only as a part of that whole. In 1782, when 24 years of age and only four years out of college, he began his life-work by the compilation of his "Spelling Book," and his "Grammar," as the first two parts of an ambitious "Grammatical Institute of the English Language," the third part of which was to be a reader. Only the first two parts of this educational trilogy achieved immediate publication, and only the first one a great success. It may be considered the first published American book, and its publication led to the passing of the first American copyright laws. Listen to this extract from its introduction:

> The author wishes to promote the honor and prosperity of the confederated republics of America, and cheerfully throws his mite into the common treasure of patriotic exertions. This country must, at some future time, be as distinguished by the superiority of her literary improvements as she is already by the liberality of her civil and ecclesiastical constitutions. Europe is grown old in folly, corruption and tyranny; in that country laws are perverted, manners are licentious, literature is declining and human nature debased. For America in her infancy to adopt the present maxims of the old world would be to stamp the wrinkle of decrepit age upon the bloom of youth and to plant the seed of decay in a vigorous constitution.

Such was the patriotism of a Yankee schoolmaster, at the age of 24, in the year 1782, six years after Lexington and Concord, and only one year after the surrender of Cornwallis. Does such a youthful expression of nationalism sound bombastic to the youth of 1922, five years after the European debacle? Webster was a typical product of Revolutionary times, of Puritan and Pilgrim stock, his immediate ancestors holding positions of authority in the religious and civil life of the developing colony of Connecticut. Born under the poignant influences of the "Old French War," his boyhood was passed on a primitive Connecticut farm to which the news of the stirring events of the gradual separation of the colonies from the mother-country must have come with greatly intensified force, exerting an especial influence on the youthful minds so isolated. Of the actual story of his boyhood up to the age of 14, we have only family traditions. It was said that he was especially fond of words. His early education must have been that accorded to all New England farmers' boys of Colonial times—"the nurture and admonition of the Lord," with the material assistance of Dilworth's Spelling Book, the Psalter and the Testament, the only educational facilities possessed by the New England district schools. We find him at 14, after this preliminary education, with such a decided love for study and books that he was led to take more interest in a Latin grammar than in the tasks of the field. But he had a wise father who appreciated his son's preference for study, and gave him such preparation for college as the times afforded. In 1774, at the age of 16, he entered Yale, his father mortgaging his farm to pay his son's college expenses. In the spring of his freshman year the stirring events of Lexington, Concord and Bunker Hill aroused the patriotism of the Yale youth as it did that of all New England. When General Washington passed through New Haven on his way to take command of the army at Charlestown, Webster was one of the welcoming musicians in the escort of Yale students.



THE

AMERICAN

SPELLING BOOK:

CONTAINING,

AN EASY STANDARD OF PRONUNCIATION.

Being the FIRST PART of a

Grammatical Inſtitute

OF THE

Engliſh Language.

IN THREE PARTS.

By NOAH WEBSTER, Jun. Eſq.

The EIGHTH Edition, with additional Leſſons.

PHILADELPHIA:

Printed by W. YOUNG, Bookſeller and Stationer, at the Corner of *Cheſnut* and *Second-ſtreets*.

M,DCC,LXXXVIII.

Fig. 3.—Title page to the American Spelling Book, Edition 8, Philadelphia, 1788.

The distractions of the Revolution and the condition of the country affected his course in Yale; the classes were separated and quartered in different towns, and little is known of the part played by individual students, and of their rank and honors during the next seven years. Webster graduated in September, 1778, in a class of forty, one of the most notable that ever came from Yale for the number of distinguished men it produced. The education that these men received was a very limited classical one, but they took it seriously, and the duty of the citizen toward the common good,

as emphasized in the ancient classics, stimulated their patriotism and strengthened their ideals of service to their own troubled country. Reared and educated in such an atmosphere of patriotic fervor, Webster was marked for life by its influences, and the desire to aid in the intellectual and moral development of the young American nation became in his mind an obsessing passion; it dominated all of the endeavors of his long and vigorous life, persisting to its close. His conception of national service was a great one, and he clung to it in spite of the greatest obstacles and discouragements,

To diffuſe an uniformity and purity of language in America—— to deſtroy the provincial prejudices that originate in the trifling differences of dialect and produce reciprocal ridicule—to promote the intereſt of literature and the harmony of the United States—— is the moſt ardent wiſh of the author; and it is his higheſt ambition to deſerve the approbation and encouragement of his countrymen.

Fig. 4.—Foreword to the American Spelling Book.

bending all of his unfailing energies, with courage undiminished, toward the accomplishment of his ideal. Through all of his enterprises there may be traced the thread of his great purpose, and that was the improvement of the intellectual and moral life of the independent American people.

He had selected the law as his profession, but the poverty of the country after the Revolution made it impossible for him to gain a living through legal practice. Immediately following his graduation, his father had presented to him an eight dollar continental bill, worth about fifty cents on the dollar, with the remark that he could do no more for him. It is recorded that Webster shut himself up in his room for three days, considering his future, and reading Johnson and the *Spectator* for spiritual consolation. How significant this seems when viewed in the light of his future career! He later in his life spoke of the deep and permanent effect produced on his mind by Johnson's "Rambler." There was nothing for the poverty-stricken young man to turn his hand to for immediate means of obtaining a livelihood but teaching school, so Webster became a Yankee schoolmaster, continuing his own studies at the same time, taking his Master's degree at Yale in 1781, and obtaining admission to the bar in Hartford. The very fact that the disturbed condition of the country prevented any prosperous career in law, and turned him to teaching was probably the decisive turn of fate that determined his career as a lexicographer. His own intrinsic love for words and language, his classical education, the patriotism engendered by the conditions of the times, the separation of America from Great Britain, and the influence of Franklin made him dissatisfied with the educational material then in use. The chief implement of the schoolmaster of the day was Dilworth's Spelling Book, originally designed for the charity schools of England and Scotland. Webster found this especially unfit for American use, and out of this dissatisfaction there gradually developed an ever-growing conviction of the need for a separate American literature and education. And so the spark of the divine fire of a creative plan was kindled. "America must be as independent in literature as she is in politics, as famous for Arts as for Arms," and so the famous Speller was born, with an American flavor all its own, and arranged much more logically and with greater common sense than its English predecessor. The times were ripe for it, and it had an immediate success. On this success his whole future career was founded.

EARLY ACTIVITIES

A growing sense of the value of his own ideals led him now into a life of the most varied activities. As early as 1785 he wrote in his journal, "I have begun a reformation of the language, and my plan is yet but in embryo." He wrote dissertations, and gave subscription lectures on the improvement of the alphabet and the American language, throughout the chief cities of the federated states, even to Charleston, South Carolina. He met and corresponded with Franklin, Washington, Benjamin Rush and other leading minds of the period, and impressed them with his views on these matters. Franklin especially was drawn toward the youth, and later endeavored to have him carry out his ideas of spelling reform. At one time Webster contemplated becoming the private secretary of George Washington, but dropped the matter as he feared that his time for intellectual activity on his own part would be too restricted.

He founded and edited newspapers and magazines, and wrote constantly for the public press on every subject of general interest to the nation, particularly on methods of improving the general system of education. He entered into politics; impressed with the weakness of the Confederation, his political efforts were in favor of a stronger and more centralized form of general government. In 1788 he proposed to Benjamin Rush a plan to found a literary and political magazine in Philadelphia. It materialized in New York instead, in the form of the *American Magazine*, with the motto "Science the guide, and Truth the



FABLE I. *Of the Boy that ſtole Apples.*

AN old Man found a rude Boy upon one of the Trees ſtealing Apples.

Fig. 5.—Example of the wood-cut illustrations of the American Spelling Book, Edition 8, 1788.

Eternal God." It lasted but a year, and the venture ended in considerable financial loss to him. His plans were far ahead of the possibilities of the times so far as both literary and financial support were concerned. In New York he founded the Philological Society. In Boston, in 1789, he published "Dissertation on the English Language," which he dedicated to Franklin. Characterized by their strong national spirit, these essays were written with the ideal "Our political harmony is therefore conceived in a uniformity of language." In 1790 he published a volume of moral tales and fables anonymously, in Hartford, under the

name of "The Prompter." Written in the style of Johnson's "Rambler" and in the manner of Franklin, with the motto "To see all others' faults and feel our own" these lively and pointed essays had a great popularity, and were copied into all of the journals throughout the country. At least fourteen legitimate editions were printed of this little volume of essays, and it was extensively pirated both in this country and in England, where it was pronounced to be "a very good shilling's worth publication." In the same year he also published anonymously an edition of Governor Winthrop's Journal, showing his early recognition of the value of the preservation of the records of early colonial history. In this enterprise, as in others, Webster was a pioneer, and showed an intellectual judgment and vision far ahead of his time. Into "The Little Reader's Assistant," published this year, he introduced a "Federal Catechism" in explanation of the Constitution of the United States and of the principles of government and commerce, the first attempt to introduce instruction on matters of civil government into the common schools. In the same year he published also a "Farmers' Catechism."

This brief recapitalation may seem to show the multiplicity of his activities and the catholicity of his interests during the first thirty-two years of his life. Nothing affecting the life of the American people during this time escaped his interest and active attention. Their language, education, politics, political economy, morals, religion, laws, vital statistics, agriculture and general culture all received treatment at his hands. Naturally, a man who could give intelligent discussion and treatment of so many diverse matters would arouse resentment because of that very ability. It was a primitive society, with a thinly spread and localized culture. The nation was making history too rapidly and the development of literature and the arts lagged very far behind. Local feelings were predominant; Philadelphia vaunted itself, not only as the seat of the government, but because of its literary superiority and still other excellences. Benjamin Rush, writing to Webster in 1788, said: "I object to your printing it in New York. Philadelphia is the primum mobile of the United States. From habit, from necessity and from local circumstances, all the states view our city as the capital of the New World." The union of the colonial states was an economic and political one, and a broader national spirit and culture, a national tie—the very ideals for which Webster was working with all of his might—did not yet exist.

The Deſcription of a BAD BOY.

A Bad Boy is undutiful to his father and mother, diſobedient and ſtubborn to his maſter, and ill-natured to all his play fellows. He hates his book, and takes no pleaſure in improving himſelf in any thing. He is ſleepy and ſlothful in the morning, too idle to clean himſelf, and too wicked to ſay his prayers. He is always in miſchief, and when he has done a fault will tell twenty lies in hopes to clear himſelf, which is only making bad worſe. He hates that any body ſhould give him good advice, and when they are out of ſight, will laugh at them. He ſwears and wrangles, and quarrels with his companions, and is always in ſome diſpute or other. He will ſteal whatſoever comes in his way; and if he is not catched, thinks it no crime, not conſidering that God ſees whatſoever he does. He is frequently out of humor, and ſullen and obſtinate.

Fig. 6.—Description of a bad boy, from the American Spelling Book, Edition 8, 1788.

THE DICTIONARY

Webster possessed an idea—a great idea—which he kept constantly in mind and presented on all possible occasions. The patriotic ardor, the self-assertiveness and aggressiveness of this crude Yankee youth were taken by many for self-conceit and vanity. He was nick-named the "Institute," the "Monarch"; his *reformed* spelling was called *deformed* spelling. Particularly were the Boston literati offended by Webster's belief in himself and his national ardor and enthusiasm. Ebenezer Hazard, later Postmaster General, wrote to Jeremy Belknap of Webster: "He certainly does not want understanding, and yet there is a mixture of self-sufficiency, all-sufficiency, and at the same time a degree of insufficiency about him which is intolerable." And Belknap, writing to Hazard, calls Webster "critick and coxcomb general of the United States." With the unpleasant attitude of these smaller men may be contrasted that of the larger minded master spirits of the time in Philadelphia—Franklin, King, Hopkinson, Dickinson, Benjamin Rush and others who had encouraged him with their approval of his schemes and plans for educational reforms, and asked the aid of his pen in furthering theirs in developing the policies of the government.

Through these youthful years of varied achievements, undaunted by his poverty or the opposition of his critics, the growing conviction in Webster's mind of the need of a separate American literature and education fanned the divine fire of his creative plan for the writing of a complete "American Dictionary of the English Language." He began his labors on this in 1800, and although in the meantime he published abridged forms, the first great quarto of the complete form was not published until 1828. More than twenty-five years of the most exacting and painstaking labor did he give to this great work. We are amazed when we consider the magnitude of his conception, and the tremendous difficulties in carrying it out. The limitations of his own education, the poverty of the library facilities of the United States, the general paucity of American scholarship, his own financial condition—all of these potent arguments against so extravagant a plan deterred him not a whit. He intended his dictionary to be not only a manual of words but an every-day encyclopedia. Through all of his intensive literary labors in acquiring a working knowledge of new languages, in word-hunting, synopsis-writing and definition-coining he was animated by his ideal of giving to the people of the United States "one language and one tongue." The broad interest which he maintained in the life of the nation, in its politics, in civic affairs, in theology and in other matters constantly revivified him, and gave him courage to persist in his heroic labors.

Yet his Journal and the letters of these years reveal periods of discouragement. In 1809, he writes: "I have accumulated such a mass of materials for a dictionary, materials which no other person could use to advantage, that I think it my duty, as it is my pleasure, to prosecute the work." His financial difficulties became greater. In 1812 he moved his family from New Haven to Amherst, Mass., that his living expenses might be cheapened, and that he might have more undisturbed time for work on his dictionary. In his study, a large front room looking out upon the hill, later to be the seat of Amherst College, he worked at a

large table on which were spread his works of reference, passing around the table from one volume to another, collating the radical words in twenty different languages, including the seven Asiatic tongues of the Assyrian stocks. A knowledge of Sanskrit, unfortunately, he was not able to acquire. During all of this labor he became interested in the development of the Amherst Academy, and in 1818, while Webster was president of the board of trustees, there was organized the institution which became the kernel of Amherst College. During these years of literary toil he developed a fine garden about his home, in which he cultivated vegetables, fruits and flowers with equal pleasure and success.

In 1820 he writes that he had expended nearly $25,000 of his own, and $1,000 of subscribers' money toward his dictionary labors. We shall soon see where his own money came from. By 1822, Webster had exhausted all the resources of the American libraries of his time. To finish the labor of years he must go to Europe and study for a time in the larger ones of France and England. And helped by his children, one daughter giving him $1,000, he, attended by his only living son, William, a lad of 22, went, at the age of 66, to complete and perfect his dictionary. He arrived in Paris in the first week of July, and completed his work there by September 13. He then went to Cambridge, where he remained, with visits to London, until his return to America in June, 1825. It is an amazing picture presented by the visit of this unknown American scholar to these seats of ancient learning, inspiring but pathetic. In Paris he had no acquaintance of literary or scholarly repute; he gained access to the Royal Library through the aid of Mr. Brown, the American minister. He writes, nevertheless, that he saw in Paris all of the books he wished to examine, save one, which he missed through his ignorance that the Royal Library was closed throughout the month of September. In Cambridge he knew but one man, Rev. Dr. Lee, to whom he had a letter of introduction. The same general indifference shown by English scholars and book-publishers to all American literary efforts was extended to him. From London he writes on Feb. 15, 1825, "I lived very little known in Cambridge, till the last three weeks, when I was invited to dine with the officers and fellows of Trinity College." This was followed by expressions of interest in his work from some of them, and regret that they had not been made acquainted with him earlier.



Fig. 7.—View of Amherst Hill from Noah Webster's study windows, at the time he was working on the dictionary. (From the History of Amherst College, by W. S. Tyler, 1873.)

His efforts to obtain from the scholars of Oxford and Cambridge a discussion of certain unsettled points in pronunciation and grammatical construction were of no avail. His letter to Oxford on this point was not even answered.

Nevertheless, he had accomplished the great object of his life. His opus magnum, the great Dictionary, was finished in Cambridge, in January, 1825. He wrote of this achievement: "When I had come to the last word, I was seized with a trembling which made it somewhat difficult to hold my pen steady for writing. The cause seems to have been the thought that I might not then live to finish the work, or the thought that I was so near the end of my labors. But I summoned strength to finish the last word, and then, walking about the room a few minutes, I recovered."

The American Dictionary in two volumes quarto was published in an edition of 2,500 copies, November, 1828, by Converse of New York, the printing being done by Hezekiah Howe of New Haven. The publisher had to send to Germany for the types of the Oriental languages; otherwise, the work was wholly American. Yet a writer in the Edinburgh *Review* had written spitefully: "In the four quarters of the globe, who reads an American book or goes to an American play or looks at an American picture or statue? What does the world yet owe to American physicians or surgeons?" This quotation became a title-page motto for the Philadelphia *Journal of the Medical and Physical Sciences*. But in 1832 an edition of 3,000 copies of Webster's Dictionary was published in England. It was seventy years since the publication of Johnson's Dictionary, and scarcely an improvement had been made in the various editions through which that classic had passed. In the first edition of Webster's Dictionary there were twelve thousand new words and over thirty thousand definitions not contained in any previous work.

We cannot take space here to speak of Webster's subsequent labors, his revised version of the Bible, and his later writings. In 1841, at the age of 83, the revised edition of his dictionary was published. He died in 1843, in his eighty-fifth year.

SOURCE OF INCOME

To return to the Spelling Book! Through all the years of labor on the dictionary it was the income from this little fifteen-penny volume, less than a cent a copy, that kept the fire going and the pot boiling, and made possible the achievement of the greater dictionary. It appeared just at the proper psychologic time. Seized upon by all of the young patriotic schoolmasters, of the early days of our Nation's life, it was carried from the hillsides of New England to all parts of the country, as the tides of migration and settlement flowed through the valleys of the Alleghenies, through Ohio and Indiana, to the oak openings of Michigan and the prairies of Illinois. By 1837 at least fifteen million copies had been sent into circulation, by 1865 at least 42,000,000. Between 1876 and 1890 the records of Appleton & Co. showed a sale of eleven and a half million copies more. The total legitimate sale must far have exceeded fifty millions, and in addition it was repeatedly published in pirated editions without acknowledgment to the author. This little book was undoubtedly an important factor in the primary education of a greater number of minds than any other single

schoolbook used in America. Little wonder that one writer should say:

> It was well that Dr. Webster did believe in himself and his own work. His indomitable heroism has laid the foundation of a common tongue for the United States. They have one orthography and nearly one pronunciation. His little "Spelling Book" has in a measure prevented the dialects which exist in the counties of England and the patois of the departments of France, and his views of language have been some of the shaping and controlling forces all over our continent.

Webster had surely accomplished his ideal more completely than falls to the lot of the great majority of men.

SCIENTIFIC ACTIVITIES

In the light of the varied intellectual interests of Webster's life as given above, we may now return to

AN

AMERICAN DICTIONARY

OF THE

ENGLISH LANGUAGE:

INTENDED TO EXHIBIT,

I. The origin, affinities and primary signification of English words, as far as they have been ascertained.
II. The genuine orthography and pronunciation of words, according to general usage, or to just principles of analogy.
III. Accurate and discriminating definitions, with numerous authorities and illustrations.

TO WHICH ARE PREFIXED,

AN INTRODUCTORY DISSERTATION

ON THE

ORIGIN, HISTORY AND CONNECTION OF THE

LANGUAGES OF WESTERN ASIA AND OF EUROPE,

AND A CONCISE GRAMMAR

OF THE

ENGLISH LANGUAGE.

BY NOAH WEBSTER, LL. D.

IN TWO VOLUMES.

VOL. I.

He that wishes to be counted among the benefactors of posterity, must add, by his own toil, to the acquisitions of his ancestors.—Rambler.

NEW YORK:
PUBLISHED BY S. CONVERSE.
PRINTED BY HEZEKIAH HOWE—NEW HAVEN.
1828.

Fig. 8.—Title-page of the first edition of the dictionary, New York, 1828.

a consideration of that part of his activities concerned with medicine. It is perhaps the one least known. Few physicians and fewer students of medicine today ever think of Webster the lexicographer as in any way connected with the history of American medicine. Yet in the closing decade of the eighteenth century he became for a number of years intensely interested in epidemiology, and in 1796 he published "A Collection of Papers on the Subject of Bilious Fevers, Prevalent in the United States for a Few Years Past." This was followed in 1799 by the two volume "History of Epidemics and Pestilential Diseases." It is the first American work of any pretension on general epidemiology, although preceded by various publications on the nature of certain epidemic fevers and catarrhs from the pens of some of the more prominent American physicians of that day. Webster's work was written with the idea of collecting all existent knowledge of the pestilences and epidemics occurring in the history of the world, with the definite plan of analyzing this knowledge in the attempt to find some common causal factor.

We have seen that Webster had received no scientific training of any kind, and he had at this time no close association with any medical man. He had met Dr. Rush and corresponded with him on the founding of a magazine, but not on medical matters. Yet between 1796 and 1802 he published two medical works and sent a number of letters and articles to medical journals. His name appears frequently in the indexes of the earliest volumes of the "Medical Repository," and he is quoted as an authority on epidemics as late as 1855. This sudden excursion, or intrusion, as some of his medical contemporaries regarded it, of a literary schoolmaster and lawyer into the field of medical inquiry may well seem an extraordinary phenomenon requiring some especial explanation. Was this just another example of Webster's know-it-all conceit, or did he have legitimate reasons for breaking into medicine as a vehement advocate of certain doctrines as to the causation of disease?

We are sure of one thing: that, although not trained in science, Webster possessed a scientific mind. He was a most keen observer, and intensely interested in natural phenomena. That we know from his Journal, in which he recorded from 1784 to 1820 the events of his daily life that seemed to him most interesting and important. It was but natural that in the earlier years of this diary "the ladies" formed a not inconsiderable portion of the material of his observations; but, after he achieved marriage, they gave place to comets, meteors, floods and storms, so that his journal became largely meteorological in character. He registered temperatures, precipitation and the character of the prevailing winds. It is recorded that when the French scientist Volney, in 1796, wrote a circular letter to the American press asking for information in regard to winds, Webster sent him observations extending over a period of eighteen years. Later in life he carried out a series of experimental investigations on the nature of dew, anticipating in his method and conclusions by about fourteen years the theories of Wells in London. There can be no doubt that he had a real and vital interest in natural phenomena, but he claimed nothing as a scientist.

To these powers of observation he added a decided statistical bent. When he visited a strange city, he took pleasure in counting the houses—1,950 in Baltimore in 1785, 3,500 in New York in 1786, 2,600 below Market Street in Philadelphia—one of our earliest census attempts, if not the first one. Bills of mortality had an especial interest for him. Apparently he was always much impressed by the sight of disease. As a boy in 1776, he visited the Revolutionary camps with his brother, and was so struck with their insanitary conditions that the picture remained clear in his memory until late in life, when he wrote, "We found about half the soldiers sick with dysentery and fever, so that the very air was infected." In his diary he mentions the births and deaths occurring in his immediate community, and also the cases of illness, often giving a concise but forcible description of the main symptoms. Though not medically educated, he had a wonderful natural power of clinical observation and a facility of description that would have taken him a long way had he elected to become a physician rather than a writer of dictionaries. He was an instinctive scientist, without

special scientific training or knowledge, except that acquired through his own reading. His manifold interests thus systematically practiced in his daily life made him anticipate in a humble way the census, the department of vital statistics, the weather bureau, the health board and the school board of modern times. No wonder that some of his contemporaries thought him "all-too-sufficient." Undoubtedly his youthful and vigorous enthusiasm exhibited along so many lines of mental activity made him appear conceited. That was inevitable, and so he appeared to some of his less gifted contemporaries. One does not, however, get such an impression of the man from his own writings. Far in advance of the times he saw the need and the importance of these statistical observations, and he carried them out, as far as he was able, consistent and true to his ideal of national service.

EXTRACTS FROM DIARY

From his diary we can take the following extracts as illustrating the points made above:

1784. January 21. Saw the comet in the evening and danced at Dr. Butler's.

February 18. At evening rode to Weathersfield with the ladies, who reminded us of the mile-stones and bridges.

19. P. M. Rode to East Windsor; had a clergyman with us, who sang an excellent song. Mile-stones and bridges almost totally neglected.

March 25. In the evening saw a multitude of pretty faces. But my heart is my own.

August 30. Saw an object of charity, a cripple. . . . His arms are small and without much strength, and so confined to his body that he can move his hand only: his legs are bent under, and grow to the thighs several inches from his knees; they are wholly useless. His body is nearly perfect, his health and his speech good; he is forty-eight years of age.

September 6. Divide my time between the ladies and my books.

1785. November 27. Take a view of the city (Petersburg), find about 300 houses; an unhealthy place.

1786. January 3. Number houses (Annapolis), 260: a pleasant city and more elegant houses in proportion than in any town in America; ground covered with verdure.

1788. April 11-14. At St. Paul's (New York). After church a mob collected at the Hospital and destroyed all the anatomical preparations, amounting to several hundred pounds value. The cause was the frequent digging up of dead bodies for dissection—the students of physic having been shamefully imprudent in taking up bodies of respectable people and without sufficient secrecy. Mob collects to the number of a thousand or two, attacks the houses of Dr. Kissam, Mr. Knight, Bailey, etc., break windows, enter and destroy furniture, etc. They then attacked the jail where some physicians were lodged for safety, a small body of armed men defend it. The governor and mayor insulted. . . .

1789. October 24. President Washington arrives in Boston, and all the world is collected to see him. I am almost confined with the influenza. This differs from a common cold, by affecting the eyes and taking away all taste. The head appears to be fastened with chains, and the disorder is attended with a cough. The best remedy is hot liquids to produce perspiration, or a sweat brought on by violent exercise in a warm room. But if the stomach is disordered and refuses diet, a puke is necessary.

1793. September 18. The first frost appears this morning, which after the hottest summer ever known, is very agreeable. The plague rages in Philadelphia, or a disorder like it. The dysentery and influenza common all over the country, but not formidable.

September 29. Public prayers ordered every afternoon on account of the fatal sickness in Philadelphia.

October 4. Rain. Circuit Court rise.

5. Cool. Vines first killed by frost.

6. Sunday. Pleasant. Cool.

7. Ditto. No favorable news from Philadelphia as to the fever; it still rages.

8. City Court. Pleasant.

9. Pleasant. Very warm.

10. Very warm like June.

11. Ditto; fever in Philadelphia carried off 159 in a day.

12. Cloudy.

. . . . . .

15. Wind changes. Cool.

16. My birthday, completing 35 years, half the life of man. Very cold.

17. Cold: disorder in Philadelphia abates.

INTEREST IN EPIDEMIOLOGY

The yellow-fever epidemic of 1793, in Philadelphia, was the immediate cause of Webster's entrance into the field of epidemiology. The principal city was not only the seat of government, but also the intellectual center of the young nation. Webster had lived there for more than a year; he knew intimately its chief citizens, and corresponded with them. Among these was Oliver Wolcott, an ardent Federalist, Washington's Secretary of the Treasury after Hamilton, and later governor of Connecticut. He had been both classmate and roommate of Webster at Yale, and an intimate friendship existed between them for nearly sixty years.

September 19, 1793, he wrote to Webster, from Philadelphia:

> The dreadful malady which has raged for some time in this city has prevented me from writing before. Business of all kinds is nearly suspended, my imagination could never have conceived that a short time could have effected such an alteration in Philadelphia, as has taken place—every face is sad, all conversation is avoided except at a distance, a great part of the houses are shut up—and the citizens fled; the streets in the buisy parts of the city where I now write are as silent as at midnight. For the last two days the malady has much abated, but few are taken sick—but it will be some time, however, before the panic is over and business reassumed. Mrs. Wolcott and part of my family are in the country. I am here no more than absolute necessity requires. In a few days we shall begin to operate in an office, which I have concluded to open near the falls of Schuylkill.
>
> This account which I have given is not a highly coloured one, but it is meant only for *your self*. From your friend.

Webster's sympathies and mental activities were much aroused by the accounts of the Philadelphia epidemic. In a long letter to Wolcott dated October 10, 1793, he shows that he already had formulated ideas of his own in regard to the nature of pestilential diseases, and their origin. This letter is too long to quote in full, but it is of great importance in showing what a conception of disease an unusually intelligent layman of that day might possess:

By the last accounts from Philadelphia we learn that the raging malady still spreads and is more fatal. We are told also that the College of Physicians have pronounced it the plague. I am not acquainted with diseases of this kind, but I have an idea that the plague, the yellow fever of the West Indies, and the malignant fevers of our country, are all diseases of the same genus, differing in degree and virulence, according to the climate. I take them all to be, or to *proceed from* a tendency to a dissolution of the blood, or to putrefaction, or to use a chemical phrase, a decomposition of the parts which compose the system.

[He then goes on to point out relationships between these epidemic diseases and latitude, physical situation, climate, temperature, bad air, and accumulation of filth in a great city.]

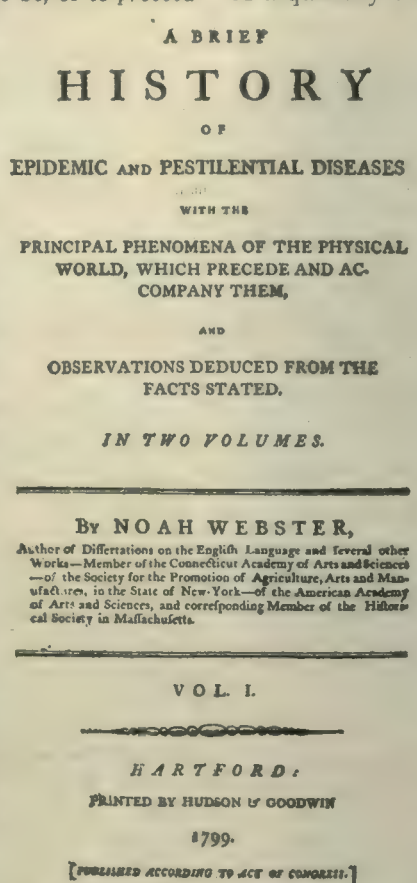
The great reason why the same parallels of latitude in America have not been subject to such putrid diseases hithertofore, I suppose to be our long cold winters. All the causes I believe to be of inferior force. Short cold rainy summers will hardly predispose the body to putrefaction. But the last winter was unusually open and warm, and the summer past for degree and continuance of hot dry weather, perhaps was never equalled in America.

[He writes of the daily public prayers offered, and of the desire of the citizens of New England to send relief to the suffering Philadelphians.]

We are not apprehensive of danger here, and no measures to restrain travellers have been taken. Though in Boston such measures are taken. . . . One question I beg you to answer, respecting the disease. Do people sicken and die with it, without being exposed to its contagion? If so, are such instances common?

He advises that the people retire to the country, and suggests that large streams of fresh water might be brought from the falls of the Schuylkill and made to flow through the streets. This letter indicates that he has not yet fully made up his mind as to the contagious or noncontagious character of the epidemic, and the physicians of Philadelphia, and soon those of the entire country, were engaged in active dispute concerning this great problem. In Philadelphia, itself, the controversy raged with intensity. Dr. Benjamin Rush, the greatest physician of the day, and one of the greatest the American nation has ever produced, the "father of American psychiatry," was the first to recognize the nature of the disease, about the middle of the month of August. In his "Account of the Bilious Yellow Fever of 1793," one of the most masterly descriptions of an epidemic ever written, Rush writes:

This discovery of the malignity, extent and origin of a fever which I knew to be attended with great danger and mortality gave me great pain. I did not hesitate to name it the *bilious remitting yellow fever*. I had once seen it epidemic in Philadelphia in 1762. . . . I expressed my distress at what I had discovered to several of my fellow citizens. The report of a malignant and mortal fever being in town spread in every direction, but it did not gain universal credit. Some of these physicians who had not seen patients in it denied that any such fever existed, and asserted (although its mortality was not denied) that it was nothing but the common annual remittent of the city. Many of the citizens joined the physicians in endeavoring to discredit the account I had given of this fever and for a while it was treated with ridicule or contempt. Indignation in some instances was excited, against me, and one of my friends, whom I advised in this early stage of the disease to leave the city, has since told me that for that advice he "had hated me."



A BRIEF

HISTORY

OF

EPIDEMIC AND PESTILENTIAL DISEASES

WITH THE

PRINCIPAL PHENOMENA OF THE PHYSICAL WORLD, WHICH PRECEDE AND ACCOMPANY THEM,

AND

OBSERVATIONS DEDUCED FROM THE FACTS STATED.

IN TWO VOLUMES.

By NOAH WEBSTER,

Author of Differtations on the Englifh Language and ſeveral other Works—Member of the Connecticut Academy of Arts and Sciences—of the Society for the Promotion of Agriculture, Arts and Manufactures, in the State of New-York—of the American Academy of Arts and Sciences, and correſponding Member of the Hiſtorical Society in Maſſachuſetts.

VOL. I.

HARTFORD:

PRINTED BY HUDSON & GOODWIN

1799.

[PUBLISHED ACCORDING TO ACT OF CONGRESS.]

Fig. 9.—Title-page of the "History of Epidemic and Pestilential Diseases," Hartford, 1799.

Rush was confident that the disease had not been imported, but had arisen from the putrid exhalations of a quantity of damaged coffee on one of the wharves. The College of Physicians declared it to be a contagious fever, and issued a statement to that effect. Rush inserted in the *American Daily Advertiser* of August 29 an address to the citizens of Philadelphia, giving his opinion as to the local origin, warning the public against the spot where the coffee lay, in the hope of checking the progress of the fever as far as it was continued by the original cause. Fresh indignation was excited against Rush; he was threatened with all sorts of indignities, even personal assault, but he remained steadfast in his convictions. The mayor ordered the coffee removed, but the epidemic lasted until November, the number of deaths between August 1 and November 9 being 4,044, a death rate of about one in ten of the total population. Rush remained at his post, doing heroic work; on October 9 he himself contracted the disease, but fortunately recovered after a long convalescence. The psychologic effects on the country were very great; the epidemic was celebrated in verse and in one of the early American novels, Brown's "Arthur Mervyn."

The next year, 1794, saw another epidemic of yellow fever in Philadelphia, of less severity, and the disease appeared in New York, New Haven, Baltimore, Charleston and elsewhere, and for the next two years sporadic cases developed in many places. In 1795, in New York, 700 people died of the disease in a few weeks, and there was great mortality in the cities of Norfolk and Charleston. Again in 1796 there were lesser epidemics, even as far north as Newburyport, Mass. The physicians of the whole country were now divided into two hostile camps, those who believed the disease was imported and contagious, and those who favored the view that it was of local origin and dependent on a local or general atmospheric state.

Webster threw himself with enthusiasm into this discussion. He had come to believe more and more in a close relationship between epidemics and natural phenomena, and now busied himself in collecting material in support of this view. His diary becomes more than

ever loaded with meteorological observations. He went to the public libraries of New York and Philadelphia, to Yale and Harvard College in search of material concerning this subject. He collected all that he could from the historical works available in the country bearing upon the occurrence of epidemic diseases in all parts of the world at all ages of history. His education and literary methods made him especially adapted to such library research, aside from his own instinctive fondness for such investigations. He turned also to the living for individual experiences with epidemic diseases; he wrote to his usual correspondents, he sent out circular letters to the prominent men of the day, to the historians, to the most prominent physicians, the list too long to be given here, to foreign countries; he took depositions of sailors and other persons, collecting an enormous amount of material which he arranged systematically and analyzed with that tireless indefatigability which seems the most remarkable characteristic of this remarkable man. During these years he carried on a most interesting correspondence with Dr. Rush bearing upon the nature of epidemic diseases.

The first fruits of these investigations were published in 1797, in a series of twenty-five letters in the public press, addressed to Dr. William Currie of Philadelphia, one of Rush's most bitter antagonists. What Rush thought of Currie is shown in a letter to Webster dated Feb. 7, 1798: "I wish you would address your letters to the College, instead of Dr. Currie. The latter is thought a weak man by his friends, and *something worse* by his enemies. His name will hurt the circulation of your book in Philadelphia."

THE HISTORY OF EPIDEMIC DISEASES

In his diary of 1798, Webster wrote on April 10, "Begin to write my History of Epidemic Diseases from materials which I have been three months collecting." In August of this year, yellow fever appeared in New York and Philadelphia in a more virulent form. In his diary of 1799, Webster writes:

> My history of Pestilential Diseases was published in December, 1799. On the 14th of December, 1799, died the Great and Good Washington in the 68th year of his age, of a Cynanche Tonsillaris, after 24 hours illness. All America Mourns.

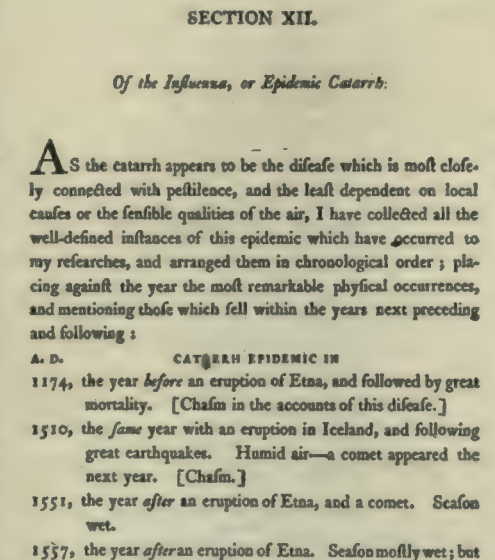
"A Brief History of Epidemic and Pestilential Diseases," in two volumes, was published in 1799, by Hudson and Goodwin of Hartford, and was reprinted in London, in 1800. There was some talk of a German translation, but apparently this was never made. In the introduction he explains why a publication on the subject of diseases should come from the pen of a man who has never before turned his attention to medical sciences. He distinguishes clearly glandular or inguinal plague of the Levant and the bilious or American plague commonly called yellow fever. He gives concise definitions for infection and contagion:

> That quality of a disease which communicates it from a sick to a well person, on simply inhaling the breath or effluvia from the person of the diseased, at any time and in any place, may be called specific infection. Such is the contagion of the smallpox and the measles, which are, therefore, called contagious diseases.
>
> That quality of a disease which though insalutary will not communicate it, without the aid of other causes, as warm weather, or peculiar situation and habit of body, and which requires the healthful person to be a considerable time under its influence, to give it effect, may be called *infection*. Such is the quality of the plague, in all its forms, dysentery, and all typhus fevers.

This is a very remarkable distinction for one who had no knowledge of the actual causes of these diseases. He came as close to the truth as any one could who knew nothing at all of living micro-organisms as the real causal agents of contagion and infection. As he, himself, observes, such a distinction had not been defined or used by European physicians, and it is of extraordinary interest that a layman on the basis of literary methods of study alone should come as close to scientific truth as it was possible for any one to do at that time, in the absence of all the facts of the parasitic nature of infection.

The main point of his argument is, however, the identification of general or primary contagion with a pestilential stage or constitution of the atmosphere which produces disease, or disposes the body to disease; and the chief aim of his work is to support this theory by a historical study of the relations between epidemics and natural phenomena producing such a pestilential atmosphere. After a short section in which he gives the views of various authorities on the origin of plagues and epidemics, he starts boldly at his task of historical investigation of epidemics and the concurrence of natural phenomena, beginning with the five books of Moses, through Greek and Roman times, the early Christian era, and all of the succeeding centuries, up to the year 1799. This took up the first volume. His plan was a simple one: From all possible historical sources he collected the facts of the recorded epidemics of the world, collating with these the records of natural phenomena, such as comets, meteors, eclipses, earthquakes, famines and storms. The accompanying examples of his pages will show his method and his material.

It was but natural that Webster should be troubled by the difficulty of synchronizing dates, and he was sometimes hard put to it in his attempts to show the desired sequence between natural events and epidemics of disease. He naturally was extremely honest; but in a work of this kind, it was easy enough to ascribe any embarrassing discrepancies to historical inaccuracies or deficiencies. In his second volume he gives the bills of mortality for the last two centuries with the principal phenomena of the elements, with a discussion on the history and the tables, showing pestilential periods of the atmosphere to be indicated by an increase of



SECTION XII.

Of the Influenza, or Epidemic Catarrh.

As the catarrh appears to be the diſeaſe which is moſt cloſely connected with peſtilence, and the leaſt dependent on local cauſes or the ſenſible qualities of the air, I have collected all the well-defined inſtances of this epidemic which have occurred to my reſearches, and arranged them in chronological order; placing againſt the year the moſt remarkable phyſical occurrences, and mentioning thoſe which fell within the years next preceding and following:

A. D.	CATARRH EPIDEMIC IN
1174,	the year *before* an eruption of Etna, and followed by great mortality. [Chaſm in the accounts of this diſeaſe.]
1510,	the *ſame* year with an eruption in Iceland, and following great earthquakes. Humid air—a comet appeared the next year. [Chaſm.]
1551,	the year *after* an eruption of Etna, and a comet. Seaſon wet.
1557,	the year *after* an eruption of Etna. Seaſon moſtly wet; but in ſome countries dry; a comet the ſame year. [Chaſ.]
1580,	the year *after* an eruption of Etna. Cool dry north wind —A comet.
1587,	the *ſame* year with an eruption in Iceland—and *after* a comet.
1591,	*after* earthquakes in 1590, and a comet.
1597,	the year *after* earthquakes and a hard winter; rainy ſeaſon, and a comet the ſame year.
1602,	the year *after* earthquakes, volcano and ſevere winter. Cold and wet ſeaſon.

Fig. 10.—Page from the "History of Epidemic and Pestilential Diseases."

mortality in different parts of the world. One chapter is given to a discussion of the "influenza or epidemic catarrh." The remainder of this volume is taken up by an argumentative discussion of the order, connection and progression of pestilential epidemics; the extent of a pestilential state of air; the phenomena attending pestilential periods, with conjectures as to the causes; a full discussion of his views on contagion and infection; finally, preventive medicine is given consideration in a long chapter on the means of preventing or mitigating pestilential diseases, and a final chapter on the disappearance of plagues in parts of Europe and of new diseases. Webster even then cannot leave his subject, and gives extensive addenda on lunar influences, electricity, popular modes of guarding against infection, venesection, vapor or mephitic air, revolution of certain comets, and at the very last a postscript—all of these suggesting immense desk labor, overfilled notebooks and prodigious use of time, and all accomplished without amanuensis or typewriter.

The upshot of it all was the chief theorem that "the principle which gives to fevers the pestilential quality consists in the *insensible* properties of the atmosphere." How near he came to the germ-theory, and yet how far away from it! To Benjamin Rush he wrote, Nov. 26, 1799:

> I feel a good deal of confidence in my proofs that epidemic diseases of all kinds proceed from chemical changes in this fluid in which we live and whose vivifying and elastic powers constitute the source of life. . . . After all, I more and more see the difficulty of reaching the cause. That the electrical principle is the agent I am inclined to believe; indeed, I have not the power to resist the evidence of it; but by what combinations with aerial substances, I am ignorant.

A.D.	Summer.	Winter.	Comets	Volcanoes.	DISEASES.	London	Paris.	Phil.
1778	hot	mild			typhus fevers, plague Conflantinople	20399	17212	183
1779	hot Eng.	very severe		Veſu. great	health	20420		142
1780			halo	Etna	bilious fever Philadelphia, general health, plague in Smyrna	20517	Salerni	155
1781					influenza America	20709	Marſ.	279
1782	dry Amc.		(me'rs		influenza Europe, ſcarlatina began in Edinburg	17918	175	198
1783	hot	very ſevere	many	Heckla gre.	meaſles and ſcarlatina Amer. famin India, plague in Egypt, &c.	19029	189	238
1784	hot		comet	Veſuvius	plague in the eaſt, angina America, canine madneſs	17828	140	230
1785	dry Euro.	cold		Veſuvius	angina, fevers America	18919	114	166
1786	cool	cold			yellow fever Cadiz, angina America and England	20454	138	156
1787	cool		(comet	Et. & Veſu.	plague Barbary coaſt	19347	110	147
1788	rainy Am.	cold	meteor		meaſles began N. York and Phila. codfiſh ſickly, influenza Eu.	19697	144	126
1789	(cool ſpri.	(ſevere Eur.	halo	Veſuvius	famin in Afia, dearth in America, meaſles America and influenza, death of haddock Europe, plague in the eaſt.	22744	199	164
1790	(hot ſum.	(mild Amer.			influenza America (and Grenada	18038	203	145
1791	vc. hot A.	cold			plague began in Egypt, bilious peſtilence began in New-York	18760	148	183
1792					plague in Egypt, ſcarlet fever began in America	20213	148	125
1793	hot, dry A.	mild Amer.	comet		ſcarlet fever Am. and Eng. peſtilence Phil. dyſentery Maryland	21749	148	393
1794		ſevere Euro.		great, of Ve.	ſcarlatina, peſtilence New-Haven and Baltimore, dyſentery	19241	122	172
1795	America hot, rainy				ſcarlatina, peſtilence New-York and Norfolk, dyſentery New-Haven, influenza England	21279	195	229
1796	autumn ver. dry A	cold Amer.			ſcarlatina, peſtilence N. York, Boſton, Charleſton, Newburyport, meaſles America	19288	216	223
1797	cool Am.	ſevere Ame.	comet	Andes and Guadaloupe	influenza Europe, peſtilence Phil. Balti. Prov. Norfolk, and among cats and other animals in Turkey, canine madneſs	27014	147	197
1798	very hot	long and ſe.	comet	Teneriffe	peſt. Phil. N. York, Boſt. N. Lond. Portſ. Wilming. in Turkey			
1799	vc. dry A	(vere A. & E.			peſtilence Philadelphia, New-York, Hartford			

Fig. 11.—Table from the "History of Epidemic and Pestilential Diseases," illustrating Webster's method of correlating historical data concerning the coincidence of epidemic diseases and natural phenomena.

Webster's work was received by the medical profession according to their individual beliefs. Those, like Rush, who believed in the local origin of epidemics, praised it highly; the other school condemned it bitterly. It was reviewed in the *Medical Repository* and other scientific journals in the same way, according to the individual beliefs of the writers. Currie of Philadelphia in his work on "The Origin of Yellow Fever," appearing in 1800, retorts in vigorous terms:

> The doctrine of Mr. Webster on this subject, notwithstanding his elaborate researches, appears still more exceptional, and to be as much the creature of the imagination as the tales of the fairies.

Webster received no profit from this work. It was a work of love, or rather, of conviction. In 1801 he wrote that he was some 700 or 800 dollars out of pocket on account of it, with all his previous expenses, his labor and his toil. Nevertheless, the work had a great influence in modifying the prevalent views on the contagious nature of yellow fever, and this was of great practical and humanitarian importance. During the first half of the nineteenth century, epidemics of yellow fever continued to occur in this country, and the controversy as to its origin still went on. Webster's views were repeatedly quoted in connection with medical ones. His work was imitated, without any credit, by Bascom of England in "A History of Epidemic Pestilence," 1851, carrying the same method of investigation up to 1848. Much of this work and conclusions are taken bodily from Webster, but his name is not even mentioned. This work had the same fate in one way as the Spelling Book: it was frequently pirated without acknowledgment.

John W. Francis, in the *International Magazine*, February, 1852, said of Webster:

> If with philologists he is deemed a man of merit, it may with equal justice be said that he is to be recognized by medical men as an author of importance for his "History of Pestilence."

Today we know that these early strivers for the truth were all wrong; that the intangible something in the atmosphere was a mosquito, *Stegomyia*, and the organisms of yellow fever carried by it and injected into the human beings bitten by it. The personal bitterness of their dispute, in their ignorance, appear pathetic to us today, as children crying in the dark. But it was all necessary as a phase in the slow, painful evolution of human knowledge, and another generation will look on our own efforts in the same light.

Noah Webster was one of America's greatest men, measured by the vigor of his mentality, the manifold character of his interests, and the value of his achievements. His courage and his indomitable will should be an inspiration to every youth of the present age. He lacks a sympathetic biographer, to throw about his life a literary atmosphere of appeal and suggestion. His great predecessor Johnson had his Boswell, and so attained immortality in literature. Webster remains today a name on a dictionary, known to every American but almost wholly unknown in the deeper significance of his life and work.

The Most Intelligent Animals.—The chimpanzee is the most intelligent of all animals below man. He can learn more by training, and learn more easily than any other animal. The orang-utan is mentally next to the chimpanzee. The Indian elephant in mental capacity is third from man. The high class domestic horse is very wise and capable, but this is chiefly due to its long association with man. The wild horse mentally is a very different animal, and in intellectual scale ranks with the deer and antelopes. The lion is endowed with reasoning ability and judgment of a high order; its mind is surprisingly receptive. The grizzly bear is believed to be the wisest of all bears. The pack rat is the intellectual phenomenon of the great group of gnawing animals, and is in a class by itself. The white mountain goat seems to be the wisest of all the mountain summit animals whose habits are known. A high class dog is the animal that mentally is in closest touch with the mind, the feelings, and the impulses of man, and is the only animal that can read a man's feelings from his eyes and his facial expression.—Hornaday, "The Minds and Manners of Wild Animals," *Scribners*, 1922.

THE PHYSIOLOGIC EFFECTS OF ETHYLENE

A NEW GAS ANESTHETIC *

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AND
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During the early part of 1908, severe losses were sustained by carnation growers shipping their products into Chicago, because of the fact that these flowers, when placed in the greenhouses, would "go to sleep," whereas the buds already showing petals failed to open. Crocker and Knight [1] of the Hull Botanical Laboratory immediately undertook the study of the effect of illuminating gas on flowering carnations, the results of which showed that ethylene, which forms approximately 4 per cent. of the gas, is the chief constituent that determines the toxicity of the gas for plants. Their investigations showed that one part of ethylene in 2,000,000 parts of air caused the already open flowers to close, on twelve hours' exposure, whereas one part in 1,000,000 prevented the opening of buds already showing petals. Neljubow,[2] who had previously studied the effects of ethylene on etiolated seedlings of peas and other legumes, showed that one part of ethylene in 1,000,000 parts of air caused horizontal nutation, whereas one part in 4,000 killed the majority of the seedlings. The effects of ethylene on the metabolism of plants has been studied by Harvey,[3] who also studied its effect on castor oil plants [4] and on sweet peas,[5] demonstrating the fact that one part of ethylene in 1,000,000 caused the petioles of the leaves to droop, or the laminae to fold down. These plants, being sensitive to as little as 0.00001 per cent. of ethylene in the atmosphere, can be used as very delicate tests for the heavy hydrocarbons (ethylene), exceeding many fold the delicacy of any chemical test for these substances.

Because of its marked toxic effects on flowering carnations and plants, the question of the toxicity of ethylene for animals naturally arose. The extreme toxicity of ethylene for plants furthermore suggested the possibility that some of the toxic properties of ordinary illuminating gas for animals might be due to its ethylene rather than to its carbon monoxid content. Several experiments [6] having been performed with various concentrations of ethylene with no perceptible toxic but, if anything, mildly anesthetizing effects, it was decided to use higher concentrations, the results of which will be given later.

METHODS

For the preparation of ethylene, we used the orthophosphoric acid method,[7] which consists of slowly introducing absolute alcohol from a separatory funnel led to the bottom of a 500 c.c. generating flask containing between 100 and 150 c.c. of orthophosphoric acid, held at a temperature of from 210 to 230 C., the ethylene being allowed to pass first through an empty wash bottle (which took care of the water distilling over), thence through a series of four wash bottles containing 33 per cent. potassium hydroxid (to remove any carbon dioxid present), being finally collected, over water, into 17 liter demijohns for storing.

Hempel [8] advises passing the gas also through concentrated sulphuric acid (specific gravity, 1.84, to remove the aldehyd) and in addition through copper sulphate (for the absorption of phosphin, if any should be present), but the two latter precautions were found to be unnecessary. Anhydrous aluminum sulphate was used as a catalyst in some of the preparations, but with questionable results.

This method was chosen after the concentrated sulphuric acid-absolute alcohol method of Ehrlenmeyer and Bunte [9] had been tried, partly because much less potassium hydroxid was necessary to take care of the carbon dioxid, since no sulphur dioxid was formed, and partly because of the fact that a single portion of phosphoric acid could be used repeatedly, since the water removed from the alcohol was distilled over immediately at this temperature, the acid remaining undecomposed.

The purity of the ethylene thus prepared was determined by analysis of samples, bromin absorbing 98 per cent. plus, the unabsorbed portion proving to be air coming from the generator chamber.

The various concentrations used were obtained by displacing a certain amount of the gas in the demijohn by a measured quantity of water, corresponding to the percentage concentration of the oxygen desired, and then displacing this by oxygen, over water.

The animals used for these experiments were successively frogs, white mice, white rats, guinea-pigs, rabbits, kittens, dogs and man. Nitrogen and hydrogen were used in all experiments in corresponding concentrations for the purpose of studying the asphyxial effects of that concentration of a nonrespirable gas. Nitrous oxid was also used in like concentration for the sake of comparing the effects of ethylene with those of this well known depressant and anesthetic.

The criterion for determining anesthesia and analgesia in all experiments, except where otherwise noted, was that stage of narcotization wherein the animal lay quietly on its back and showed no signs of spontaneous movements or skeletal reflexes on tactile or even painful stimulation.

In this study, as well as in the earlier work (in 1909 and 1918), various amounts of ethylene gas were allowed to bubble through diluted dog's blood. This blood was then examined spectroscopically to detect if possible any characteristic absorption bands resulting from the chemical union of ethylene with the hemoglobin. The ethylene apparently does not enter into chemical combination with the hemoglobin of the blood, for, when the gas was passed through dilute dog's blood, the absorption bands of oxyhemoglobin remained unaltered. When, furthermore, the blood was treated with ammonium sulphid, it showed the same reduced hemoglobin bands as are obtained by the reduction of oxyhemoglobin. Ethylene probably exists in the blood during anesthesia, in a state of physical solution, as is suggested by the rapid recovery of all animals after prolonged administration of the gas.

* From the Hull Physiological Laboratory, the University of Chicago.

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3. Harvey, E. M.: Bot. Gaz. **60**: 193-214, 1915.
4. Harvey, E. M.: J. Roy. Hort. Soc. **40**: 300, 1914.
5. Harvey, E. M.: Bot. Gaz. **55**: 357.
6. The preliminary experiments on the physiologic properties of ethylene were performed by one of the authors (A. B. L.) and R. C. Thompson in the spring of 1918. These experiments (on frogs, white rats and one dog) indicated that the gas in the concentrations used was relatively nontoxic and seemed to possess anesthetizing and analgesic properties.
7. Barnett: Preparations of Organic Compounds, p. 36. Gatterman: Preparations of Organic Chemicals, New York, the Macmillan Company, 1906, pp. 166-170.
8. Dennis, L. M.: Hempel's Gas Analysis, New York, 1902, pp. 34-95, and 316.
9. Ehrlenmeyer and Bunte: Liebig's Annals, **168**: 64; **192**: 244.

The device for the administration of the gas mixtures is the same in principle for all experiments on white mice, white rats, guinea-pigs, rabbits and kittens, and may be briefly described, with the aid of Figure 1:

The animals placed in their respective bell jars, *F, G, H* and *I*, are sealed up by pieces of plate glass applied to the bases, these having been thickly smeared with petrolatum. Next, the pinch clamps *e, e', f* and *f'* are removed from the rubber tubes *i, j, k* and *l* leading from the forked siphon (*a*), and water, which is kept at a constant level in the pressure bottle (*A*) by means of water forced into it through the tube (*b*) attached to the faucet (*z*), is allowed to flow into the 17 liter demijohns *B, C, D* and *E*, which contain the gases hydrogen, nitrogen, nitrous oxid and ethylene, mixed with the desired concentration of oxygen. Immediately the pinch clamps *g, g', h* and *h'* are removed from the rubber tubes *m, n, o* and *p*, and the gas mixtures are delivered over into their respective 4 liter bell jars *F, G, H* and *I*, containing the animals used. The flow through the four branches of the forked siphon is kept constant by adjustment of the screw clamps (*c*) and (*c'*), and is easily judged by the relative level of the water in *B, C, D* and *E*. The gas mixtures, having been delivered over into *F, G, H* and *I*, at a constant rate, make exit through the glass tubes *d', d'', d'''* and *d''''* fitted into the sides of the bell jars near their base.

In the work with frogs, wide mouthed bottles of 675 c.c. capacity were used. The gases in the desired percentage concentrations were introduced under water; the frogs being likewise introduced into their respective bottles, and these tightly corked.

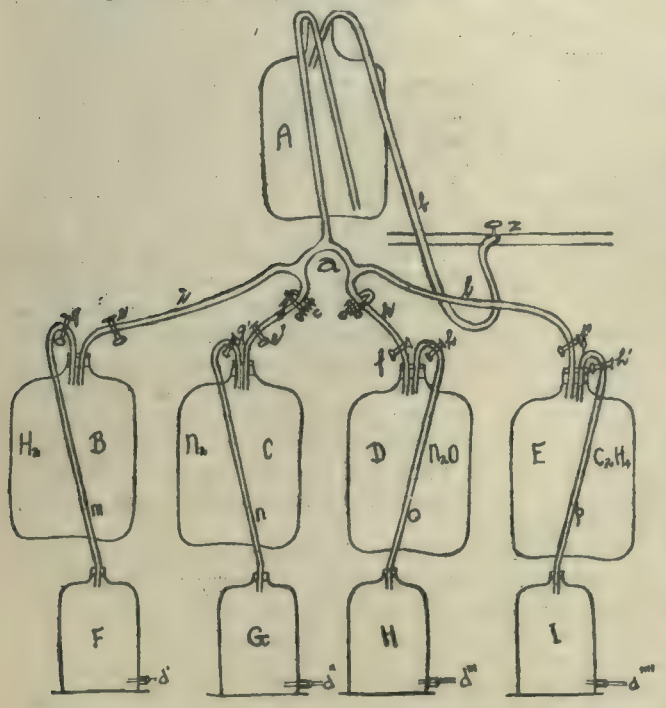


Fig. 1.—Scheme employed in studying simultaneously the effect of a given concentration of hydrogen, nitrogen, nitrous oxid and ethylene on white mice, rats, guinea-pigs, rabbits and kittens. Water siphoned from demijohn *A* displaced the various gases contained in *B, C, D* and *E*, into *F, G, H* and *I* containing the animals.

Because of the fact that the method used for the smaller animals was wasteful, it was decided to employ a closed system for the work on dogs. The apparatus devised for this work, after considerable experimentation, may be briefly described, with the aid of Figure 2:

The dog's nose, having been closely shaved, is inserted into the metal flask (*C*), which is covered by a strong rubber dam (*W*), containing a circular opening (*z*) three-fourths inch in diameter. The motor (*F*) when started, caused the pump (*E*) to circulate the gas contained in the 17 liter demijohn (*A*) successively through tubes *a, b, c* and *d* and back into *A*. *D* is a jar containing soda lime for the absorption of carbon dioxid. *B* is an ordinary basketball bladder, which takes care of any increase in pressure in the system when oxygen is added, and also functions as a manometer in indicating the decrease in pressure due to the oxygen used up, thereby

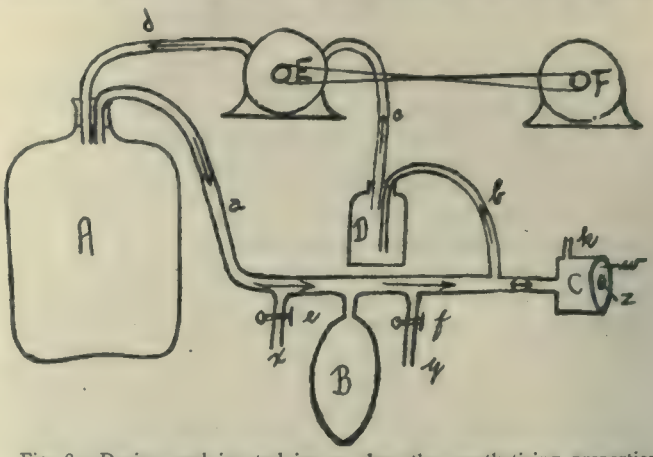


Fig. 2.—Device used in studying on dogs the anesthetizing properties of ethylene. The electrically driven pump *E-F* circulated the ethylene (in *A*) and oxygen introduced at *x* through the connecting tubing and to *C*, a mask for the dog's snout, the carbon dioxid being removed on passage of the circulating gas mixture through jar *D*, containing soda lime.

serving as a guide as to when more oxygen should be added. A rubber tube (*x*), closed by a pinch clamp (*e*) is led off from a T-tube to an oxygen tank; *y* is likewise a rubber tube, kept closed by a pinch clamp (*f*), and used for the purpose of removing 50 c.c. samples of the gas mixtures, during the experiment, for analysis. A small rubber tube (*k*) serves to connect the system with a tambour for respiratory tracings.

Small, young dogs, weighing from 4 to 8 kg., were used for these experiments. Just before the experiment, the animal was prepared for blood pressure tracings by insertion of a two-way cannula into the femoral artery under local anesthesia, a weak solution of procain being used to which 10 drops of epinephrin chlorid had been added. The experiments covered a period of from forty-five minutes to one hour.

RESULTS

The accompanying table contains the essential details of the pharmacologic effects of ethylene gas used in various concentrations on the different types of animals. In all experiments the effects of ethylene were compared simultaneously in the same concentration with two other irrespirable gases, hydrogen and nitrogen, as well as with nitrous oxid.

By 85, 90 or 95 per cent. of a gas we mean that, in a given experimental mixture, 85, 90 or 95 parts of the mixture consisted of ethylene, hydrogen, nitrogen or nitrous oxid, and that the other 15, 10 or 5 parts consisted of oxygen. One hundred per cent. indicates, of course, the pure gas (be it hydrogen, nitrogen, nitrous oxid or ethylene) without admixture with oxygen.

For the convenience of the reader, we point out some of the salient features of this table.

Frogs.—In an 85 per cent. mixture of the various gases, frogs were anesthetized after twenty minutes by ethylene. At that time the frogs in a similar concentration of hydrogen, nitrogen and nitrous oxid were practically normal. When 100 per cent. of the various gases were used, ethylene anesthetized in four minutes, nitrous oxid in fifteen minutes,

hydrogen and nitrogen not at all. *Ethylene, compared with nitrous oxid, anesthetizes frogs in approximately one-fourth the time.* Recovery from the anesthetic (ethylene) is complete within two minutes.

White Mice.—In from 75 to 80 per cent. mixture of ethylene, the animals are markedly depressed but not anesthetized. Animals in a similar percentage of nitrous oxid are practically normal except possibly for some evidence of excitement. Those in from 75 to 80 per cent. hydrogen or nitrogen are normal. As the percentage of gas is increased (to 85 and 90 per cent.), the animals in ethylene are anesthetized at a time (from twenty-two to thirty minutes) when those in nitrous oxid show only slight depression, and those in hydrogen and nitrogen show only a slightly increased respiration. With a 95 per cent. mixture, ethylene anesthetizes in from three to four minutes, nitrous oxid in from five to eight minutes, nitrogen in from eighteen to twenty-eight (?), hydrogen in from twenty-two to twenty-eight (?) minutes. Recovery is complete within one minute after the animals are returned to the air.

Ethylene, compared with nitrous oxid, anesthetizes white mice not only in lower concentration but in one-half the time.

White Rats.—Ethylene anesthetized these animals in from seven to twelve minutes when used in 95 per cent. mixture. It took from thirty to thirty-five minutes to effect the same degree of anesthesia when nitrous oxid was used. In this concentration, nitrous oxid was only slightly more effective than nitrogen or hydrogen.

Rabbits, Guinea-Pigs and Kittens.—In 85 per cent. ethylene these species of mammals showed slight depression, whereas in the other gases, including nitrous oxid, no depression was in evidence. With a 90 per cent. mixture of ethylene, all animals were anesthetized in from ten to twenty minutes (extremes). Those in 90 per cent. nitrous oxid were anesthetized in from twenty to forty minutes (extremes). Animals in the other irrespirable gases of hydrogen and nitrogen (90 per cent.) were unaffected. In all animals anesthetized, recovery took place promptly within from one to three minutes.

From these experiments it appears that all of our animals (mice, rats, rabbits, guinea-pigs and kittens) could be anesthetized with a 90 per cent. ethylene mixture in *one-half the time necessary to anesthetize the same animals with the same percentage of nitrous oxid.*

EFFECTS OF ETHYLENE ON DIFFERENT TYPES OF ANIMALS

Animal	Concentration of Gas Used	No. of Experiments Performed	Average Time of Experiment	Effects Observed			
				Hydrogen	Nitrogen	Nitrous Oxid	Ethylene
Frog.....	80%	2	30 min.	Respiration fell from 108 to 63; seemed depressed	Respiration fell from 96 to 84; less depressed	Much less depressed than one in ethylene; not anesthetized	More depressed than one in N_2O; not anesthetized
	85%	5	30 min.	Seemed normal throughout; not anesthetized	Quite normal throughout; not anesthetized	Practically normal; not anesthetized	Anesthesia after 20 minutes; recovered in 2 minutes
	100%	4	30 min.	Gasping cyanosis depression; not anesthetized	Less marked effects than H_2; not anesthetized	Respiration depressed; anesthesia after 15 minutes	Respiration depressed; anesthesia after 4 minutes; recovered in 2 minutes
White mouse	75%	2	1 hr.	Normal	Normal	Normal	Marked depression; not anesthetized
	80%	3	70 min.	Normal	Normal	Some excitement; no depression; not anesthetized	Marked depression; equilibrium disturbed; not anesthetized
	85%	3	80 min.	Slightly depressed after 1 hour; not anesthetized	Normal	Slight respiratory difficulty near end; not anesthetized	Light anesthesia after 30 minutes; recovered in 3 minutes
	90%	6	100 min.	Respiration increased slightly; depressed slightly; not anesthetized	Respiration increased slightly; otherwise normal	Slightly depressed; not anesthetized	Anesthesia after 22 to 30 minutes; recovered in 1 minute
	95%	4	.....	Anesthesia after 22 to 28 minutes	Anesthesia after 18 to 28 minutes	Anesthesia after 5 to 9 minutes; maintained 10 minutes; recovered in 1 minute	Anesthesia after 3 to 4 minutes; maintained for 10 minutes; recovered in 1 minute
White rat...	85%	2	60 min.	Normal	Normal	No depression; not anesthetized	Slight depression; not anesthetized
	90%	5	55 min.	Normal	Normal	Slight depression; not anesthetized	Anesthesia after 18 to 22 minutes;* recovered in 1 minute
	95%	4	50 min.	Depressed after 40 minutes	Same as rat in hydrogen	Anesthesia after 30 to 35 minutes; recovered in 2 minutes	Anesthesia after 7 to 12 minutes; recovered in less than 2 minutes
Rabbit.....	85%	3	60 min.	Normal	Normal	No depression; not anesthetized	Slightly depressed; not anesthetized
	90%	4	50 min.	Normal	Normal	Anesthesia after 20 to 30 minutes; recovered in 2 minutes	Anesthesia after 10 to 16 minutes; recovered in 2 minutes; respiration slow and regular
Guinea-Pig..	85%	3	50 min.	Normal	Normal	No depression; not anesthetized	Slight depression; not anesthetized
	90%	5	50 min.	Normal	Normal	Anesthesia after 30 to 40 minutes; recovered in 1 minute	Anesthesia after 10 to 15 minutes; recovered in 1 minute
Kitten.....	85%	2	50 min.	Normal	Normal	No depression; not anesthetized	Slight depression; not anesthetized
	90%	6	50 min.	Normal	Normal	Anesthesia after 30 to 35 minutes; recovered in 3 minutes	Anesthesia after 10 to 20 minutes; sat up after 1 minute; walked after 2 minutes

* Anesthesia and analgesia were tested by strong pinches with hemostat introduced into bell jar through rubber dam.

Results on Dogs.—All arrangements having been made for blood pressure and respiratory tracings, the dog's nose was carefully inserted into the mask, the motor started, and a demijohn of pure ethylene was introduced into the system. A small amount of oxygen was added at once, which quickly relieved all signs of asphyxia. Complete anesthesia was obtained in from two to five minutes, the animal passing through an excitement stage (showing increased knee-jerk, dilated pupils, slightly increased respiratory rate, but very little struggling) into a surgical stage with abolition of the knee, skin and light reflexes, retention of the corneal reflex, complete muscular relaxation, and pin-point pupil. Oxygen was added to the system as needed, and by careful administration of it this stage of anesthesia could be maintained for a period of about thirty minutes on one bottle (17 liters)

of ethylene; but if the oxygen had been given too freely, or if it was desired to continue this stage beyond this period, it was necessary to introduce a fresh supply of ethylene. It was found that 17 liters of 90 per cent. ethylene and 10 per cent. oxygen, with proper administration of oxygen, served to continue this stage over a similar period. During the experiment, samples of the gas mixture were removed, and the percentage concentration of ethylene determined by absorption with bromin. This varied between 85 and 90 per cent. for complete anesthesia; whereas, when the concentration fell to 80 per cent. there was complete analgesia and absence of struggling, but no muscular relaxation. The pupil was dilated.

When the ethylene-oxygen mixture was replaced with air, the artery having been tied and the cannula removed, the dog wagged his tail in two minutes, walked in three minutes,

One animal was anesthetized for forty-five minutes, fifteen times during a period of three weeks, the results in each of these experiments being absolutely consistent with the others of the series. The animal always completely recovered in three minutes, romped and played within five minutes, and, up to date, has shown absolutely no signs of evil after-effects. The animal in question, being in a very emaciated condition at first, managed, with good feeding, to gain approximately 3 kg. in weight during the three weeks of experimentation.

Results on Man.—On the basis of our experiences with ethylene reported above, it seemed desirable to investigate its analgesic and anesthetizing properties on the human subject. For such trials a larger supply of ethylene was necessary. After what seemed a fruitless search we were able to obtain the gas tanked by a commercial chemical company. The gas so obtained proved to be as pure as quoted, and we proceeded

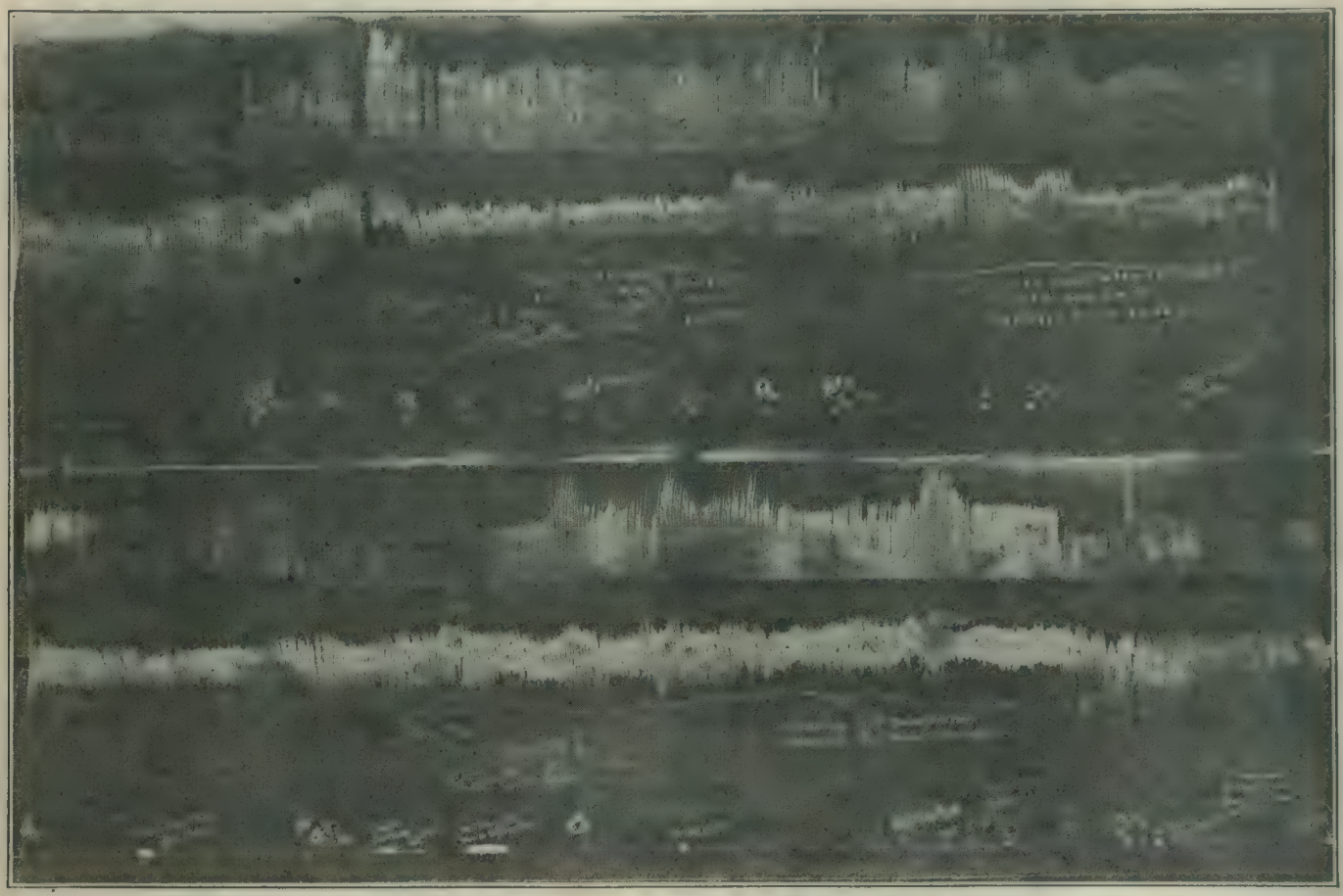


Fig. 3.—Effects of ethylene on blood pressure and respiration: *A*, analgesia.

and showed no signs of evil after-effects, except slight salivation, if a high concentration of ethylene had been maintained throughout the experiment. The analgesia usually lasted for two minutes after removal of the animal from the ethylene-oxygen system.

During some of these acute experiments, wide cuts were made all over the abdomen, with considerable traumatization of tissue. These procedures give rise to no muscular contractions or to reflex effects on the blood pressure or respiration. Although a laparotomy would have been a simple matter, owing to the complete muscular relaxation, this was not done, because of the fact that it was not desired to have the animal recover. In the case of all animals traumatized but allowed to recover, all wounds were previously bathed in a 4 per cent. solution of procain, and the animals showed no signs of discomfort during the few minutes they were permitted to live.

Besides the seven acute experiments, six other experiments were performed in which all observations were duplicated, except those on blood pressure and respiration.

to test out its properties in combination with oxygen on ourselves, using a Clark gas apparatus and appliances for its administration. We append briefly our experiences to date with it:

EXPERIMENT 1.—J. B. Carter, reclining, Jan. 21, 1923, held the mask to the face with one hand and held up the other arm. He was given gas plentifully mixed with oxygen until the extended arm wavered. Administration was discontinued. Just enough was given to give a sense of well-being and exhilaration. At no time was there change in the color of the face.

EXPERIMENT 2.—A. B. Luckhardt reclined and held the mask and extended the arm as did Mr. Carter. Mr. Carter gave the gas mixture. The arm soon wavered and dropped (in less than one minute). There were no asphyxial sensations. There was a sense of contentment and well being. There was no apprehension of possible danger. Everything seemed well. Pains from an infected and active frontal sinus infection left. The subject was satisfied to lie there under the influence of the gas for all time. He did not think that con-

sciousness was completely lost at any time. He came out rather rapidly from a half sleep with slight incoordination of gait lasting a few minutes.

EXPERIMENT 3.—The authors having thus tried out on themselves the immediate effects of the gas, the following subjects volunteered and were more or less deeply anesthetized:

(*a*) A. J. Carlson: After a minute or less the extended arm fell awkwardly and laterally against the wall with a thud. The subject was quiet throughout. Administration of the pure gas with occasional oxygen inhalations continued for three or four minutes. The subject thinks he was conscious throughout but felt extremely comfortable. He came to after a minute or so. He states that he was slightly nauseated for several hours after.

(*b*) J. Blumenstock: The arm dropped; he laughed a good deal at the start. This subsided. He seemed completely anesthetized. The skin of the arm was lifted up and a blunt-pointed safety pin pushed through without any indication on the part of the subject of having felt it. He was kept under for three or four minutes. The experiment was repeated later in the morning.

(*c*) Archer C. Sudan, N. Kleitmann and K. Phillips were similarly anesthetized far past the stage of analgesia, for in two (N. K. and A. C. S.) the safety pin was pushed through the skin without provoking reflex movement of the arm, much less sensation of pain in the subjects. A. C. S. laughed a great deal before complete anesthetization. On recovery, he talked excitedly and incoherently of his experience. Only after several minutes did his speech assume a logical tendency. He had no recollection whatever of having had the blunt safety pin thrust through the skin of his forearm. N. K., while recovering from the anesthetic but while still dazed, vomited up a large breakfast taken several hours previously. He likewise had no recollection of having vomited. Nausea was not experienced, and the subject ate a hearty dinner within an hour.

(*d*) J. B. Carter and A. P. Luckhardt served alternately as subjects for two further attempts, being anesthetized by each other far past the stage of analgesia. Neither felt nauseated except for possibly slight abdominal discomfort for several minutes after recovery, the latter always being prompt and complete except for slight weakness and unsteadiness of gait immediately on getting up from the couch. A. B. L. desired to turn over on his side and go to sleep. J. B. C. went through a period of excitement in coming out of the anesthesia so that restraint by holding down the extremities was found necessary.

January 28, A. B. Luckhardt and J. B. Carter were in complete surgical anesthesia. The former was anesthetized for fully ten minutes, during which time he was pinched in the ear and the upper right arm. The soles of his feet were beaten with a Stillson wrench. Of none of these procedures had he any recollection. In the course of the following week a large "black and blue" area developed on the upper arm at the place of greatest injury. In addition to such observations on ourselves, we anesthetized lightly and for a short period of time (about five minute) several other volunteers, Carl Johnson, T. Boyd and G. Turner. Mr. Johnson arose from the couch a little pale and slightly nauseated. Mr. Boyd was slightly nauseated, but this discomfort left within the next hour while he was about working in the laboratory. G. Turner passed through a period of excitement during recovery from the anesthetic.

February 4, A. B. Luckhardt was again anesthetized by J. B. Carter for a short period, with Drs. Eugene Cary and Dallas B. Phemister, surgeons, making observations. In turns, Drs. Phemister and Cary were themselves anesthetized: the former only very lightly; the latter, until deep surgical anesthesia was attained. Thereafter, A. B. Luckhardt anesthetized J. B. Carter for a period of fifteen minutes, the longest anesthesia in time and depth so far maintained in man. Although all had taken large breakfasts, none experienced anything but a transient nausea.

In all, then, we have anesthetized, more or less deeply, twelve subjects. One of the authors (A. B. L.) was anesthetized six times in three days in three weeks; the other (J. B. C.), seven times on the three days in three weeks. In neither of us did sugar or albumin appear in the urine as a result of the experiences, nor did we experience any other evil after-effects except for a slight nausea and loss of appetite, both of very temporary nature.

SUMMARY

The following summary is warranted on the basis of these experiments:

1. Deep surgical anesthesia can be rapidly induced by ethylene without any sense of asphyxia, but, on the contrary, with a sense of well-being and comfort.

2. Analgesia comes on early apparently long before complete surgical anesthesia is established.

3. At a time when there is complete muscular flaccidity, the pulse rate is slightly decreased, if changed at all; respirations are slow but regular, and the countenance normal in color for the individual, or slightly paler. No cyanosis was ever observed. No subject ever showed any sign even suggestive of asphyxia.

4. The induction of anesthesia was in no way unpleasant except possibly for the first few inhalations of the *concentrated* gas, which induced reflex swallowing. A period of excitement characterized by laughing or forced movement preceded the anesthesia in some. In others, such signs were absent during induction, but were in evidence as the person recovered from the anesthesia.

5. Recovery from the anesthesia was always rapid on withdrawal of the gas mixture. In all, slight weakness and a sense of fatigue was experienced if the person arose from the couch almost immediately on waking up. Vomiting occurred in one early during recovery. In some, slight epigastric distress was experienced temporarily. In others, a slight nausea persisted for several hours after the administration of the gas. In none was nausea so pronounced or so prolonged as to interfere with the ingestion of the next meal.

ADVANTAGES

The possible advantages of ethylene over nitrous oxid, if used for human anesthesia, are:

1. Anesthesia may be maintained:
   (*a*) In the absence of all signs of asphyxia.
   (*b*) In the absence of effects on blood pressure.
   (*c*) In the absence of dyspnea.
   (*d*) With complete muscular relaxation.
2. It may be used in obstetrics, a state of complete analgesia being possible at a concentration of 80 per cent. ethylene.
3. There is rapid recovery after long continued administration, without evidence of after-effects.

These advantages would make possible its use in many persons and conditions in which nitrous oxid is specifically contraindicated, such as in children, in diabetic patients, in old age, in advanced arteriosclerosis, in high cerebral pressure, in operations on the brain, in major operations, and in obstetrics.

COMMENT

The phenomena produced by the undiluted gas are, in fact, partly asphyxial; but this factor can be removed by the addition of oxygen, when it is seen that narcosis results from the ethylene itself. This is shown on frogs, which preserve their reflexes for hours when placed in pure hydrogen, but lose them promptly (four minutes) when placed in pure ethylene.

Evidently the ethylene has a direct action on the central nervous system, a concentration of 90 per cent. maintaining the higher centers in a state of insensibility, after this has been induced by a higher concentration. This fact was first apparent in experiments on frogs, in which it was found that these animals could live in 85 per cent. illuminating gas for thirty minutes without showing any marked symptoms; whereas, when placed in a like concentration of ethylene they became completely anesthetic in twenty minutes. The motor reflexes are also abolished if a concentration of 90 per cent. is maintained after anesthesia has been induced.

There is no marked stimulation or depression of the vagus center, there being an increase in the heart rate during induction (excitement of animal), but a rapid return of this to practically normal later in the procedure. The vasomotor center remains undisturbed, except for a slight asphyxial depression during the beginning of induction, the blood pressure being practically the same at the end of a forty-five minute period of anesthesia as at the beginning. The respiratory center, likewise, is not affected in the absence of asphyxia, this fact being quite noticeable in the experiments on all the animals. Stimulation of the vomiting center sometimes occurs, during recovery, but was never observed during the induction of anesthesia, although several dogs were used soon after being fed.

Relaxation of the sphincters does not occur during the period of the anesthesia, but defecation and micturition take place immediately on recovery, in the case of the dog.

It is worthy of note that, with a small variation in the time required to produce anesthesia, the same concentration of gas can be used in the case of all animals used, and when this condition of anesthesia is induced it can be maintained practically indefinitely.

It is a well known fact that ethylene is readily oxidized in vitro to carbon dioxid by the use of an aqueous solution of chromic acid.[10] We have strong indications that ethylene is oxidized in vivo just as is alcohol; but this has not been definitely established.

So far we have not tried the anesthetic for minor or major surgical work. This we intend to do in the near future, using it, of course, cautiously and for only short periods of time. We recall that one dog was anesthetized for forty-five minutes fifteen times in the course of three weeks without our observing any untoward symptoms. We have been under the influence of ethylene two and three times on a given day for three consecutive Sundays. No late or evil effects were in evidence. We are therefore inclined to the view that the gas is relatively innocuous. However, we intend at an early date to determine whether a prolonged anesthetization (for two or more hours) produces in dogs any marked functional or histologic changes in the various organs of the body.

All experiences to date, involving many types of animals and including man himself, indicate that ethylene is a gas anesthetic of considerable merit; in fact, more desirable than nitrous oxid not only because of the ease of its administration but because of the several important points referred to and enumerated above.

CONCLUSION

This must be considered as a preliminary report of experimental work which has not been carried far enough to warrant general clinical use. We reserve for further study and experimentation in the clinic and laboratory the many problems which the study of the gas has suggested.

In conclusion, we desire to acknowledge our indebtedness to Prof. Fred C. Koch, whose advice and help in the preparation of pure ethylene was of the greatest importance in this research, as well as to Mr. George Turner for his willing help in the conduct of some of the experiments on dogs.

10. Norris: Organic Chemistry, New York, McGraw Hill, 1912, pp. 43-54.

Clinical Notes, Suggestions, and New Instruments

TRAUMATIC FAT NECROSIS OF THE BREAST

IRA COHEN, M.D., NEW YORK

The attention of physicians was directed to traumatic fat necrosis of the breast by Lee and Adair[1] in 1920, and again in 1922. Clinically, these tumors present many features commonly associated with carcinoma. They are hard; they may be fixed to the skin or deeper structures; there may be retraction of the nipple and enlarged axillary lymph nodes. Two characteristics which have to date constantly been described in all cases are the history of trauma and the corpulence of the patient. A certain number of malignant tumors, variously estimated at from 3 to 39 per cent., give a distinct traumatic history, so that there is nothing pathognomonic of traumatic fat necrosis except the histologic picture.

The nature of the trauma as the etiologic factor in this case of breast tumor is the reason for this report.

REPORT OF CASE

Mrs. S. H., aged 35, was referred because of a tumor in the left breast which had been present four weeks. In the history, the only point bearing any relation to the present complaint was that she had been under treatment for hypertension, and suffered with palpitation and precordial pains. She had had seven pregnancies, one of which resulted in a stillbirth after a difficult labor, and one a miscarriage. The youngest child was 3 years old. She nursed all her children, and never had had any trouble with her breasts till the present illness.

About five weeks prior to the time I saw her, she had an attack of severe palpitation and precordial distress, for which she applied an ice bag to the precordium. This bag was unprotected, and was allowed to remain practically in the one place for two hours. The following day she noted a burning sensation in the entire mesial half of the breast, which continued for forty-eight hours. On the second day the breast was red; on the third day the burning was replaced by pain, dull and inconstant in character, and localized in the lower mesial quadrant. Here on the fifth day a small nodule appeared. The nodule itself was not especially tender, but the skin overlying it was sensitive. About this time the pain entirely disappeared, to return the following week, and then remained with varying intensity throughout the illness. The small nodule slowly increased in size for three weeks, and then remained stationary.

The patient was an obese woman; she weighed 150 pounds (68 kg.), which was much too great for her height, with large breasts. In the mesial lower quadrant of the left breast was a tumor approximately 4 by 3 by 2 cm., which was hard and very irregular in contour, seemingly composed, at least in part, of many pea-size nodules. It was attached to the skin but not to the deeper structures. It was not sensitive. There were two axillary nodes to be felt, but one could also be felt in the opposite axilla. There was no retraction of the nipple.

In spite of the hardness and the skin attachment, the tumor did not impress me as malignant. I did not, however, at

1. Lee, B. J., and Adair, F. E.: Ann. Surg. **72**: 188 (Aug.) 1920; Surg., Gynec. & Obst. **34**: 521 (April) 1922.

that time lay any stress on the history, but believed that the patient's attention had been directed to the breast because of the ice bag, and that we were dealing with a fibro-adenoma. Local excision was advised, with pathologic examination of the excised tumor to determine any subsequent procedure.

Under local anesthesia the tumor was excised. Grossly, it was not encapsulated, nor did it resemble on section any malignant or benign tumor that I had seen. It was made up of many nodules of fatty tissue, different in appearance from breast fat. In the histologic report, Dr. S. H. Geist stated that the specimen showed small areas of fatty necrosis containing numerous giant cells, and that the lesion was probably due to some traumatic process.

COMMENT

To the two cases following direct blows and the three following hypodermoclysis may be added freezing from the prolonged application of an ice bag as an etiologic factor in producing a fat necrosis tumor of the breast.

Given a traumatic history in a corpulent patient with a breast tumor, the possibility of the benign nature of the growth should be kept in mind.

178 East Seventieth Street.

PERFORATED ULCER: REPORT OF A CASE

G. B. LEMMON, M.D., SPRINGFIELD, MO.

The perforation of a gastric ulcer in a physician's office is sufficiently impressive to cause some speculation. It is natural to inquire, in such a case, whether or not any part of the diagnostic procedure was responsible. I have wondered especially whether there could be any hazard connected with the manipulation of the barium-filled stomach behind the fluoroscopic screen.

It has long been taught that the palpation of a stomach suspected of ulcer should be done with the utmost gentleness. For instance Aaron[1] says: "The epigastric pain is increased on pressure. Regarding the inadvisability of exerting much pressure in testing the sensibility at this spot, Brinton advises caution with respect to the pressure test; not only must it be applied with great care and delicacy in the first examination of a supposed case of gastric ulcer, but, as a rule, we can scarcely be too reluctant to repeat it. Its effects are sometimes so injurious that it is necessary strictly to prohibit the patient from all manipulations of the epigastric region, as well as from all pressure produced by dress or work."

Yet it is true that the roentgenologists find it necessary to use deep pressure and massage in fluoroscopy, and that their manipulations are at times rather vigorous.

REPORT OF CASE

A man, aged 54, gave a history, pointing to ulcer, characterized by attacks only in the spring, for fourteen years. There was occult blood in the stool on a bloodless diet, and occult blood in the stomach contents, with 60 per cent. hemoglobin. The total acidity of the stomach contents was 66, with yeast cells present. The roentgen-ray examination revealed, on the greater curvature of the stomach, a constant spastic contracture present on the fluoroscopic screen and in the roentgenograms. The latter did not show the duodenal cap, but it was present on the screen and was normal in contour. There were no marked irregularities of the stomach outline other than that mentioned on the greater curvature; the diagnosis was ulcer of the prepyloric region of the stomach.

There was no six hour residue. After the roentgen-ray examination, the patient went home with a friend and ate a little bread and milk. In seven hours, he was back in the office to hear the conclusions in the case. As we were talking, he was seized with a sudden, severe pain in the abdomen, and became very pale, and began to sweat. He was moved to a hospital, where a surgeon performed a laparotomy. There was a large perforation where the roentgenologist had located the ulcer. For six days he did very well, but on the seventh grew suddenly worse and died.

1. Aaron, C. D.: Diseases of the Digestive Organs, Philadelphia, Lea & Febiger, 1921.

Special Articles

THE ESCANABA HYPERPYREXIA

REPORT OF A SPECIAL INVESTIGATION

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[NOTE.—The case of alleged hyperpyrexia in Escanaba, Mich., created such nation-wide interest through the sensational publicity in the press that THE JOURNAL concluded that it would be desirable that the facts be known. Arrangements were made, therefore, for an investigation, a report of which follows.—ED.]

Our investigation of the case of Evelyn Lyons resulted in a diagnosis of malingering by an hysterical woman, with the usual background of conscious and subconscious motives and with no feature of exceptional nature that would warrant devoting to it any particularly serious attention had it not been for an extraordinary notoriety given it by the press. On our arrival in Escanaba we located Dr. Harry C. Defnet, the attending physician, at St. Francis' Hospital. We first secured the past history of the patient, which was long and varied.

She had at one time or another consulted nearly every physician in Escanaba, and several in other localities, including Chicago, where she had left her thyroid gland. Another physician had removed her appendix. Dr. Defnet and other physicians in Escanaba recounted episodes in which she had figured, that savored strongly of hysteria and malingering. At one time Dr. Defnet had been called on to remove from the bladder a fragment of rubber tubing which she had inserted in an alleged attempt to catheterize herself. During her sojourn in the St. Francis Hospital for this minor operation she had acted emotionally and capriciously, causing great annoyance to the sisters, with whom she was *persona non grata* at the time of the investigation.

During the period of time in which, according to the reports in the press, she had the remarkably high fever (from 108 to 114 F.), she had repeatedly spurned medical advice. It had not been possible to make her go to bed at home or to get her into the hospital until on one occasion the civil authorities were invoked and she had to be conveyed thither in a patrol wagon. She had then remained at the hospital for but two days and a half, when she walked out of her own volition. On the Sunday of her arrival there a temperature of 101.4 F. was recorded, but for the next two days the temperature and pulse records, as taken by the nurses, were normal. At that time the readings observed by her physicians were regularly high.

The patient had had some experience in nursing and had a smattering of medical knowledge. She was involved in legal proceedings over a broken love affair at the time of this visit. All in all, the past history bristled with evidences of abnormal emotional behavior of the type which we associate in our minds with the words hysteria and malingering. In fact, so strong was the presumptive evidence of fraud that it seemed in reality almost unnecessary to examine the patient herself. During the twenty-four hours preceding the investigation, she had "carried on" in an awe-inspiring

manner, had been given large doses of morphin without the slightest visible effects and had been catheterized at times. Dr. Defnet stated to the investigators that her temperature had been recorded at 118 F. at 7 a. m., March 11, and that it seemed unlikely that she would live through the day.

The investigation now proceeded to the patient's home, where the investigators asked Dr. Defnet to catheterize her again and provided him with a pint vacuum bottle into which to deliver the urine. The temperature of the urine in the vacuum bottle was then read by means of two chemical thermometers of known accuracy, both registering between 36.8 and 37 C. (98.4 to 98.6 F.). One of the observers now placed an ordinary clinical thermometer in the usual way in the patient's mouth and left the patient to her own devices. She sent the mercury up to 109 F., or as far as it would go in this thermometer. One of the large chemical thermometers with the bulb in the axilla registered 36.8 C., apparently without her knowledge that a second instrument was being used. Thus, obviously, she had manipulated the mouth thermometer.

The patient was now informed that the physicians were acquainted with her deception. She replied with a storm of protest and a refusal to cooperate further in the investigation. Nevertheless, the investigators persisted and endeavored to secure a reading with a thermometer in the patient's mouth, under actual observation. She attempted repeatedly to remove the thermometer, taking it from her mouth and holding it upside down while arguing with the observers, moving it wildly around in her hand, voicing her fears that she might break it, etc.; indeed, Dr. Defnet stated that she had thus broken several thermometers. Finally she was induced to submit to a mouth reading and the result was normal. The patient was again asked as to her method of deception but again refused to submit any information. The physicians arranged therefore to duplicate the second test made, this time, however, keeping the patient, unaware that she was being watched, under actual observation. When left alone with the clinical thermometer in her mouth, she removed it, read it rapidly, arched her body and placed her hands under the bed coverings. She then returned it to her mouth, and when the physicians entered the room it was found that the mercury column had ascended to the top of the tube. One of the investigators then demanded that she produce the hot water bottle. She sat up in bed, searched wildly among the coverings and mattresses, and finally produced a small very hot, hot water bottle. The patient's mother stated that she had regularly kept the bottle filled for her since she complained of pains in the back and abdomen.

If from the medical standpoint there was aught to be said—and in view of the fact that so many physicians who saw her failed to make a correct diagnosis, something should be said—it would be: (1) that it is highly important in such cases to elicit and write down a complete clinical history; (2) that it is well to know that when large doses of morphin fail to affect a pain in the slightest degree the "pain" may be spurious. It is important to realize (3) that when a patient appears to be suffering from some very grave symptoms, but still behaves in a casual manner and refuses to go where the condition can be investigated and treated effectively, a discrepancy exists which requires explanation—a discrepancy between the gravity of the alleged condition and the mental attitude of the patient toward it. Finally, (4) symptoms so extraordinary as the alleged symptoms were in this case should be very thoroughly investigated before they are given publicity.

THE CARE AND FEEDING OF INFANTS

(Continued from page 695)

[Note.—This is the eleventh of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

PRINCIPLES GOVERNING THE PREPARATION OF MILK MIXTURES

So far as it has been developed by the scientific knowledge of the present day, the basis to be recommended for the artificial feeding of average normal infants is the unit requirements in fat, protein, carbohydrate, salts, water and accessory food factors per pound or kilogram of body weight.

It is therefore evident that there must be a rational understanding of the infant's digestive and metabolic processes as concerns the individual ingredients of his diet, and that the quantitative relationship of the individual components of the diet to these physiologic processes must be duly considered. It soon becomes evident that while in many instances one or more of the food elements may cause digestive disturbance, poorly balanced combinations of these elements have a far greater influence on its development. If all the ingredients are in excess, it may cause a general upset to develop rapidly; but the insufficiency of one or more of the ingredients usually results in the more chronic type of nutritional disturbances. One of the best illustrations of the latter type is seen when proper quantities of fat and protein are fed but the carbohydrates are insufficient. A similar but less constant picture presents itself when fat is insufficient in an otherwise well balanced diet.

It is therefore necessary to consider, first, the fundamental principles governing nutrition, basing these on knowledge not only of the digestion, absorption and later metabolism of the individual food elements, but also of their relative action. It must also be remembered that an improperly constituted diet reacts on both the quantity and quality of the digestive secretions, affords pathogenic bacterial flora a suitable medium in which to develop, and accelerates or delays the intestinal reaction, having thus a direct effect on the infant's development.

While the chemical composition of the diet must be most carefully considered, its quality, as regards its freshness and purity, is equally important. Therefore, in providing a suitable food, its source, subsequent handling and finally its proper modification must be supervised. A study of the literature arising during the last half century, concerning the many theories and methods advanced for the feeding of infants, emphasizes that *no substitute has been found for human milk.*

When an infant is fed on food not primarily intended for its use, attempts at adaptation must be made, and their number as mentioned in the literature shows conclusively that no single method can possibly meet all demands.

Realizing that rigid dogmatism will ultimately lead to confusion, it is our object here to formulate prin-

ciples of feeding which are adaptable to the majority of well babies and will allow for their physiologic development. The discussion of the feeding of sick infants will be considered later. Such principles, to be worthy of recommendation, must permit of elasticity in the administration of individual ingredients and must be based on our present knowledge of the needs of the body for growth and development. *It is to be remembered that the diets to be recommended, although meeting the requirements of most infants, will be excessive for some and inadequate for others. Infants differ in their use of the food administered.*

In formulating a scientific basis for infant feeding, we must recognize that at present no hard and fast rules can be laid down for clinical application. Our present methods are still more or less empiric, and the result is dependent to a considerable degree on the wide range of food tolerance of the healthy infant. Hence in order to insure success the physician must depend on his own clinical observations.

The needs of the normal breast-fed infant are well known. The breast-fed infant taking 2½ ounces of milk per pound of body weight receives fat, 2.6, protein, 1.1, and carbohydrate, 5 gm., daily for each pound of weight. So long as he receives daily 2½ ounces of breast milk per pound of his body weight, it matters little to him whether he is given frequent feedings of small amounts or the more desirable larger individual feedings at longer intervals.

It should be emphasized that the needs of the artificially fed infant for the various food elements must be interpreted on the same basis of unit requirements per pound or kilogram of body weight. If the adoption of this method were to secure no other result than to cause a collection of facts from the various clinics for comparative study, it will have served a good purpose.

In the past, percentages of the food elements in their relation to the total milk mixture have been used, orders being written for two-thirds milk mixture, plus 5 per cent. carbohydrate, or a mixture containing fat, 2 per cent., protein, 1 per cent., and carbohydrates, 6 per cent., etc. This, more than any other method, has led to the many so-called schools of infant feeding and possible misinterpretation of end-results. In our present consideration of the infant's food requirements, his needs in fat, protein, carbohydrates, salts and water will be discussed with regard to each pound or kilogram of body weight, secondary emphasis being given to the percentages in the mixture. The German schools of pediatrics were the first to emphasize the caloric requirements of the infant and to make use of these as a basis for calculating food supply. This led in many instances to unbalanced diets, because heat units were thought of rather than food elements. The caloric content of the diet will be considered, therefore, chiefly as constituting a check on overfeeding and underfeeding as a whole and not as a basis for constructing diets.

The question presenting itself to the practitioner is this: Can this principle be practically applied in everyday infant feeding?

Every formula with which feeding is begun should be looked on as experimental, and the reaction of the infant to this feeding should be carefully studied.

If these principles are borne in mind, many an obstacle to successful infant feeding will be overcome.

The attempts toward ultrarefinement of the infant's diet have led to considerable confusion because of the different conclusions of the various schools. Eventually infant feeding will be placed on a thoroughly scientific basis. This, however, does not answer the present-day needs, *which call for a safe and practical solution of the feeding problem for the every-day baby in every-day life.* Feeding advice commonly comes from food manufacturers, and if one preparation is not successful a rapid transition is made from one proprietary baby food to another, with untold detriment to the infant. In clinical experience, the rules advocated for feeding the normal healthy infant *on simple milk mixtures with carbohydrates added,* with further suggestions for the underfed, have been found safe for the baby and practical for the physician, which latter is to be neither overlooked nor taken lightly.

DATA AS TO FOOD AND FOOD REQUIREMENTS USED AS A BASIS FOR ESTIMATING THE DIET OF INFANTS

Average cow's milk contains the percentages given in Table 14.

TABLE 14.—CONTENT OF COW'S MILK

	Per Cent.
Fat	4.0
Protein	3.5
Carbohydrates	4.5
Calcium oxid	0.172

TABLE 15.—GRAMS OF FOOD ELEMENTS NEEDED AS A MINIMUM IN TWENTY-FOUR HOURS BY THE AVERAGE NORMAL ARTIFICIALLY FED INFANT

	Per Pound	Per Kilogram
Fat	1.8	4.0
Protein	1.5	3.5
Carbohydrates	5.0	11.0
Calcium oxid	0.08	0.17
Water	90.0	200.0

The grams of food elements needed as a minimum in twenty-four hours by the average normal artificially fed infant are given in Table 15. The milk or cream and skim milk needed to supply fat and protein will average 2 gm. of sugar. It will therefore be necessary to add the amount needed in excess of this, one-tenth ounce (3 gm.) per pound, or 6.6 gm. per kilogram.

For each gram of food elements in the mixture, the ingredients listed in Table 16 must be added.

TABLE 16.—INGREDIENTS TO BE ADDED FOR EACH GRAM OF FOOD ELEMENTS

Fat	3/10 oz., or 6 c.c., of cream 5/6 oz., or 25 c.c., of milk
Protein	1 oz., or 30 c.c., of milk or skim milk
Carbohydrates	1/30 oz., or 1 gm., of sugar
Calcium oxid	18.5 oz., or 600 c.c., of milk or skim milk

TABLE 17.—REQUIREMENTS FOR EACH POUND OF BODY WEIGHT

Fat (1.8 gm.)	1½ oz., or 45 c.c., of milk
Protein (1.5 gm.)	1½ oz., or 45 c.c., of milk or skim milk
Carbohydrates (3.09 gm.)	3/10 oz., or 3 gm., of sugar
Calcium oxid (0.08 gm.)	1½ oz., or 45 c.c., of milk or skim milk

TABLE 18.—REQUIREMENTS FOR EACH KILOGRAM OF BODY WEIGHT *

Fat (4.0 gm.)	25 c.c. of cream; 100 c.c. of milk
Protein (3.5 gm.)	100 c.c. (of milk or skim milk)
Carbohydrates (6.6 gm.)	6.6 gm. of sugar
Calcium oxid (0.172)	100 c.c.

* No allowance made for protein in cream. Protein figured at 3.5 per cent. in milk.

(To be continued)

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SATURDAY, MARCH 17, 1923

SOME LIMITATIONS OF ALKALI THERAPY

Aside from their somewhat indefinite employment in the treatment of a variety of unrelated "minor ills," alkalis have found a more extensive and rational application in the treatment of so-called acidosis and in gastric ulcer. The use of sodium bicarbonate to avert the disastrous effects of an impending coma in diabetes has often been attended with almost dramatic results in the direction of improvement. The doses have sometimes been very large, amounting to 30 or 40 grams a day.

Among the practitioners in this field, there has latterly been a marked change of sentiment. Joslin [1] of Boston, for example, who was formerly an advocate of alkali therapy, now frankly states that, although a diabetic patient theoretically needs alkali, the dangers attendant on its use in the treatment of the acid intoxication far outweigh the advantages. Specifically, he points to the possibility that the administration of alkalis over long periods may deplete the body salts, such as chlorids, which are distinctly useful. Another danger from the use of alkalis is the occurrence of nausea and vomiting, and this is real, though greatly lessened when chalk is combined with the sodium bicarbonate. When alkalis are given, large quantities of urine must be voided to remove the salts of the acid. The quantity of liquid that must be ingested is so large as to overburden the stomach, and the excretion of so much acid frequently overwhelms the kidneys, and they cease to act.

Alkali therapy has also found widespread favor in the treatment of peptic ulcer. The chronicity of the disease is so often ascribed to the irritant action of the gastric acid that the neutralization of the latter presents a rational aspect. To promote the healing process, sodium bicarbonate, calcium carbonate, magnesium oxid and bismuth subcarbonate have been used. In many instances such treatment, as the frequent successes reported in The Journal attest, has been decidedly favorable.[2] Hardt and Rivers [3] have called attention to groups of cases in which symptoms of intoxication arise under alkali treatment. Patients with duodenal ulcer treated by the Sippy method may develop definite symptoms of toxemia associated with renal changes, increased blood urea, and normal or increased carbon dioxid combining power of the plasma. The gastric acidity during the period of toxemia is usually normal, or there is hyperacidity. When ulcer and renal complications are simultaneously present at the start, these toxic manifestations are more likely to appear and develop to a greater degree. Possibly the outcome is an expression of the as yet ill defined complex termed alkalosis. At any rate, whatever the upset which leads to untoward effects may be, therapy is likely to progress more satisfactorily when its limitations in any direction are better appreciated.

1. Joslin, E. P.: The Treatment of Diabetes Mellitus, Philadelphia, Lea and Febiger, 1917, p. 394.

2. Sippy, B. W.: Gastric and Duodenal Ulcer, J. A. M. A. **64**: 1625 (May 15) 1915.

3. Hardt, L. L., and Rivers, A. B.: Toxic Manifestations Following the Alkaline Treatment of Peptic Ulcer, Arch. Int. Med. **31**: 171 (Feb.) 1923.

OLD THEORIES AND NEW FACTS REGARDING THE TETANY DUE TO PARATHYROIDECTOMY

Tetany is a symptom with which the clinician is not infrequently called on to deal. It is, furthermore, a phenomenon that can be produced experimentally in animals through surgical extirpation of the parathyroid glands. This fact has made it more easy to study the pathogenesis of tetany in order to secure directive clues with respect to effective treatment and prevention. The investigations have consequently resolved themselves largely into a consideration of the functions of the parathyroid glands. A recent writer has summarized the unsatisfactory state of present-day knowledge by pointing out the three foremost theories now being debated; namely, that the parathyroids control the metabolism of guanidin and by so doing regulate the tonus of the muscles; that they regulate the metabolism of calcium; that they are involved in the acid-base equilibrium of the body, so that their removal may cause alkalosis. The parathyroids have also been alleged to control the metabolism of sugar to some extent.

The significance of these theories has been reviewed from time to time in The Journal. Within the last year, evidence collected by various methods in several laboratories has seemed destined to bring the problem of parathyroid tetany somewhat nearer to a solution. At the University of Chicago, Dragstedt [4] has observed that completely thyroparathyroidectomized dogs could be kept alive, at least for a year, by diets containing large amounts of lactose. Such a regimen brings about a complete suppression of bacterial proteolysis in the intestine and the resultant production of intestinal

4. Dragstedt, L. R.: The Pathogenesis of Parathyroid Tetany, Am. J. Physiol. **63**: 408 (Feb.) 1923; Am. J. Physiol. **59**: 483, 1922; The Pathogenesis of Parathyroid Tetany, J. A. M. A. **79**: 1593 (Nov. 4) 1922.

poisons. It was concluded that parathyroid tetany or depression is due to an intoxication, and that the responsible toxic substances come chiefly from the gastro-intestinal tract. They are supposed to arise through the activity of the proteolytic group of intestinal bacteria, and are probably for the most part protein cleavage products of the nature of amins. The function of the parathyroid glands is to prevent intoxication by these poisons. According to Dragstedt, the parathyroid glands do not furnish a hormone necessary for life, and dogs may be kept alive indefinitely after their removal, if treatment directed to the prevention of this toxemia of intestinal origin is carried out. Dragstedt further reports that, after a period of rigorous dietary control, parathyroidectomized dogs may be placed on mixed rations without developing tetany or depression. The mechanism of this readjustment to the loss of the parathyroids is not entirely clear, but it seems to him most likely that some other organ, probably the liver, has taken over the function of the missing tissue. However, the animals are far more susceptible to untoward dietary influences, spoiled foods and meat in particular, than are normal subjects.

In the same laboratory, Luckhardt [5] and his co-workers have found that completely parathyroidectomized dogs can be kept alive, without showing tetany, on a diet very rich in meat, by means of the oral administration of calcium lactate. After a time this can be stopped entirely without the appearance of tetany. The spontaneous tetany occurring thereafter at irregular intervals, presumably because of constipation or the ingestion of large quantities of unspoiled or small quantities of putrid meat or other spoiled food, can be rapidly controlled by the ingestion of calcium lactate and by the giving of enemas. On this basis, Luckhardt believes that the rôle of this calcium compound in preserving the life of completely parathyroidectomized animals is quite complex. It does not seem probable that calcium salts act by meeting a deficiency of tissue or blood or lymph calcium on the view held years ago that the tetany after removal of the parathyroids was due to a loss of body calcium (calcium diabetes).

In harmony with the foregoing findings, studies of Salvesen [6] at Christiania indicate the importance of the calcium factor in tetany. The advantage of the innocuous milk diets is assumed to lie in their yield of calcium in contrast with meat, which is deficient in this element. Meat diet lowers the calcium content of the blood and leads to symptoms of tetany; administration of milk or of calcium salts counteracts this. From the standpoint of Salvesen's experiments, the characteristic feature in the chemistry of parathyroid insufficiency is the drop in blood calcium, which is more marked the more parathyroid tissue is removed. They suggest that the parathyroids control the calcium metabolism, and by doing so they influence the function not only of the muscle and nerve tissue, but probably of all organs. When the parathyroids are removed, the threshold for the excretion of calcium in the intestine is lowered. How Dragstedt's observations on the effects of dietary regulation in the prevention of tetany can be made to harmonize with the experiences of the other investigators remains to be learned. Perhaps the undoubted lack of calcium brought about through parathyroidectomy affects the permeability of the intestinal or other cells to poisons of intestinal origin; if so, the difficulty might conceivably be remedied either by supply of the element or by removal of the toxins. It remains for further investigation to develop an explanation that will encompass all the now known facts.

5. Luckhardt, A. B., and Goldberg, B.: Preservation of the Life of Completely Parathyroidectomized Dogs, J. A. M. A. **80**: 79 (Jan. 13) 1923. Luckhardt and Rosenbloom: Proc. Soc. Exper. Biol. & Med. **19**: 129, 130, 1921; Science **56**: 48 (July) 1922. Luckhardt and Blumenstock: Science **56**: 257 (Sept.) 1922.

6. Salvesen, H. A.: Studies on the Physiology of the Parathyroids, Proc. Soc. Exper. Biol. & Med. **20**: 204 (Jan. 17) 1923.

KEEPING THE BLOOD "FIT" BY EXERCISE

In the modern cult of personal hygiene, physical exercise occupies an exalted position. The experiences of thousands of persons attest the benefits that may be derived from various forms of vigorous activity. Here, as in many other instances in which the pendulum of interest swings rapidly from one enthusiasm to another, it is not always easy to identify the advantages, or to foresee the possible harms. It sometimes happens that the attempt to analyze our experiences meets unexpected difficulties, or fails to reveal any rational basis for the accepted beliefs. This has in large measure been the case with the physiology of exercise. A study of current textbooks is illuminating in this respect. They point to increased circulation, respiration, elimination, metabolism and neural activity as beneficial effects of exercise; yet one might equally well argue that these are an inevitable incident or necessary concomitant of muscular contraction rather than a specially advantageous by-product. One popular writer,[1] for example, points out that in vigorous activity there is an increase in the force and rate of the heart, the respirations are increased in depth and frequency, perspiration becomes more marked, and more waste is eliminated. There is in this heightened activity of the body systems a more or less complete change in the liquids of the body. He asserts that combustion of chemical compounds in the cells releases new energy; old accumulations of waste are removed, and all the mechanisms for action are put in tune. Even reflective states, he adds, are assisted by exercise, although, if carried to the point of fatigue, mental activity afterward is slowed down; and it is concluded that the scientific use of exercise involves the selection of forms and the extent of action that will favor best the particular somatic result desired.

Unfortunately, these considerations are too indefinite as to the physiology of exercise. No one questions

1. Williams, J. L.: Personal Hygiene Applied, Philadelphia, W. B. Saunders Company, 1922, p. 120.

that it may be good for the body in many ways. But precisely why? A muscle becomes weakened through disuse, and ultimately atrophies. Its functional ability is maintained and enhanced by exercise, and strong, well developed muscles are an obvious advantage. Recently, Broun[2] of the Rockefeller Institute for Medical Research has added a new chapter to the physiology of exercise, pointing to the probability that it stimulates the hematopoietic system to increased efficiency. The conclusion is based on observations of the effect of vigorous muscular activity, exhibiting itself in blood destruction. A slight decrease in the total red cell volume and hemoglobin content of the organism frequently occurs during a single day of exercise in animals previously kept under sedentary conditions. As Broun has fancifully expressed his scheme of experiment, animals long accustomed to sedentary life, and in which presumably little blood was being destroyed or made, were exercised vigorously with the idea that the blood-forming tissue might be "caught napping" and not at once make up such unusual corpuscle losses as exercise would entail. This is precisely what seems to happen, and it is particularly evidenced by the increase in the number of reticulated red corpuscles in the peripheral circulation such as always follows hemorrhage or other unusual demands made on the hematopoietic tissues for new cells.

Broun argued that the loss of blood cells which has been demonstrated in sedentary individuals after vigorous exercise produces a temporary anemia in them only because their blood-forming tissues are not in condition to compensate for the increased corpuscular wear and tear. Further investigation by him has now shown that a course of "training" through exercise greatly facilitates the functioning of the bone marrow. The latter adapts itself to the increased demands made. For this reason, in normally active individuals a virtually constant balance is maintained between blood destruction and blood formation in spite of occasional unusual exertions such as may be supposed to cause a temporarily increased blood destruction. These investigations have contributed an important chapter to the science of the physiology of exercise. They show that it must be an important factor in the maintenance of an efficient hematopoietic tissue. Anatomic evidence points in the same direction; for Külbs[3] long ago observed at necropsy that exercise increases the amount of red marrow. Perhaps precise information of this character will before long give a more specific meaning to the current vague statements regarding the power of exercise "to develop the organs of the vital systems."

2. Broun, G. O.: Blood Destruction During Exercise, J. Exper. Med. **36**: 481, 1922; **37**: 113 (Jan. 1) 1923; **37**: 187, 207 (Feb. 1) 1923.
3. Külbs: Verhandl. d. Kong. f. inn. Med. **26**: 197, 1909.

Medicine and Superstition.—Modern medicine is linked to the age of superstitious beliefs, of amulets and exorcisms, by its attitude toward treatment, and especially to "cures."—Sir James Mackenzie, *Brit. J. Tuberc.* **17**:14 (Jan.) 1923.

Current Comment

THE EXPENDITURE OF ENERGY IN EXOPHTHALMIC GOITER

There are numerous statistics available to show the augmentation of metabolism in exophthalmic goiter. The increase in the basal exchange not infrequently amounts to more than 50 per cent., and is usually roughly proportional to the severity of the disease. Du Bois has recorded a rise of 87 per cent. in one case. This shows itself, of course, in the total energy transformations of the patients, who sometimes require a daily food intake of 5,000 calories to maintain weight, even when they are confined to bed. One can scarcely attribute all of this increment to the characteristic nervousness and restless muscular activity on the basis of the usual expenditure of energy for the contractile processes. Plummer and Boothby[1] have therefore determined the actual "net cost of work" in terms of energy calculated from respiratory data on various persons. Normal persons expended an average of 1.18 gram calories over the basal metabolism for each horizontal kilogrammeter of work at the approximate rate of 800 meters an hour. The cost was no greater in several patients in a debilitated condition. In contrast, however, patients with exophthalmic goiter under identical conditions of work required an average of 2.28 gram calories. The "net cost" could be reduced by operative procedure for relief of the hyperthyroidism. Plummer and Boothby are convinced that persons with moderately severe exophthalmic goiter are very inefficient in converting potential energy into any kind of motion, as they require twice as much food fuel as do normal persons for the same work. This type of disease is associated with a characteristic increase in the number of useless movements; but, in addition to this, each movement requires approximately twice the normal amount of energy for its accomplishment.

TYPHOID FEVER IN 1922

Our annual summary of typhoid death rates in the large cities of the United States, which appeared last week, shows a continuance of the typhoid decline which has been so striking a factor of the epidemiology of this disease for the last twelve years. The slight interruption to the steady downward curve which occurred in 1921 was more than overcome in 1922, and the truly astonishing rate of 3.15 per hundred thousand has been reached. This is a little less than one sixth of the rate (19.59) for the large cities of this country in 1910. Three cities with an aggregate population of 473,975 were able to report a perfectly clean slate, not a single death from typhoid having occurred within their borders during the calendar year 1922. The main causes of indigenous urban typhoid in the United States at present seem to be contact with typhoid cases and typhoid carriers—a steadily diminishing hazard, occasional cases from contaminated shellfish and from bathing in polluted water, and, perhaps in some cities, from

1. Plummer, H. S., and Boothby, W. M.: The Cost of Work in Exophthalmic Goiter, Am. J. Physiol. **63**: 406 (Feb.) 1923.

the improper disposal of excreta. Relatively few cases appear to be caused by polluted drinking-water, by milk supply, or, in the Northern cities, by inadequate sewerage. A considerable, if indeterminate, number of the typhoid deaths that occur in the large cities do not originate in the city itself, but are due either to infection contracted outside or to cases brought in for treatment. It is evident that not much further reduction in city typhoid rates can be expected until a diminution in rural typhoid can be brought about. In 1920, the rural death rate for typhoid, as reported by the Bureau of the Census, was nearly double the rate in the urban population. This condition is more marked in some parts of the country than in others. It is also true that in states with a large negro population typhoid rates are higher among the negroes than among the whites, for the same reasons probably that determine excess of typhoid in rural districts. The most encouraging feature of the whole typhoid situation is that our large American cities are no longer distributing centers of typhoid, black plague spots radiating corruption into the surrounding countryside. The two great agencies of typhoid dissemination, polluted water supplies and raw milk, are largely eliminated, and while cities of from 10,000 to 100,000 population have unquestionably much progress to make, especially in control of the milk supply, the condition in the larger cities for the most part may now be regarded with pride instead of being pointed to with obloquy as awful examples.

THE EXCRETION OF VITAMINS

The depletion of the body in vitamins, when these factors are not included in the food intake, is indicated by a variety of considerations. Most students of the subject are agreed that these food factors are not synthesized in the organism, so that the latter is dependent on exogenous sources for its supply. It is conceivable that the vitamins are destroyed in the body, either in the course of those reactions in which they may be physiologically concerned, or as an incident of the general chemical changes that proceed in the tissues and are usually comprehended in the expression metabolism. At any rate, it is known beyond question that all the familiar vitamins, A, B and C, pass into the milk, their content in this secretion apparently being modified by that of the intake. Equally plausible is the hypothesis that, instead of being stored or destroyed, the vitamins are eliminated from the body from time to time through the excretions, and are thus lost to the economy. Several years ago, Muckenfuss in this country asserted that traces of the antineuritic vitamin may be found in the human urine. Furthermore, the alleged presence of vitamin in the bile leads to the possibility of its loss with the feces. Now Van der Walle [1] of Eijkman's Laboratory at Utrecht brings added evidence in the same direction, with the further suggestion that the content of vitamin in the urine varies with the diet. Even more recently, Cooper [2] has demonstrated that vitamin A, if introduced in sufficient quantity into the body, may pass into many of the secretions, including the urine. She suggests that the "alimentary vitaminuria" on diets rich in vitamin A probably indicates a limited capacity of the organism to store or destroy this factor. If this is further substantiated, the necessity of not allowing an unfavorable vitamin "balance" to arise in nutrition becomes an obvious deduction.

1. Van der Walle, N.: The Presence of the Antineuritic and Antiscorbutic Vitamins in Urine, Biochem. J. **16**: 713, 1922.

2. Cooper, Ethel: The Distribution of the Vitamin A in the Urine and the Digestive Secretions (Man, Dog), Am. J. Physiol. **63**: 425 (Feb.) 1923.

Association News

THE SAN FRANCISCO SESSION

American Medical Scenic Special

A special train has been arranged for to leave Chicago over the Burlington Railroad at 11 p. m., June 20. Stops will be made at Aurora, Mendota, Galesburg, Burlington, Ottumwa, Creston, Council Bluffs, Omaha, Lincoln, Denver, Colorado Springs, Glenwood Springs and Salt Lake City. This train will arrive at Omaha at 3:50 p. m., and at Lincoln about 5:30 p. m., June 21; at Denver at 7:30 a. m., June 22, where a short stop will be made, and at Colorado Springs at 10:30 a. m., June 22. A stopover of approximately twenty-four hours will be made at Colorado Springs to permit sightseeing trips to the Garden of the Gods, Pike's Peak and other places of interest. Sleeping cars will be placed conveniently, while at Colorado Springs, to meet the convenience of the party. Leaving Colorado Springs at 4 a. m., June 23, opportunity will be had to see the Royal Gorge and the Canyon of the Arkansas in daylight. About five hours will be spent in Salt Lake City, June 24. From Salt Lake City, the train will proceed over the Western Pacific Railway, known as the Feather River Canyon route, which offers some of the most interesting sights between Chicago and the Coast. San Francisco will be reached at 5:30 p. m., June 25. This special train will be made up of the finest Pullman equipment, with dining car and observation car. More specific information can be secured by addressing J. R. Van Dyke, General Agent, Passenger Department, C. B. & Q. Railroad, 179 West Jackson Boulevard, Chicago.

Clothing for California Comfort

We are receiving a number of inquiries regarding the climate and character of clothing to be worn at the time of the meeting of the American Medical Association here the last week in June. At this time of the year it is likely that there will be a certain amount of wind, some fog, and the evenings will be quite chilly. Rain is not expected at this time of year, and the days will be pleasant and delightful.

Persons coming to the annual meeting should bring overcoats and evening wraps; furs are worn by San Francisco ladies in the evening at this time of year. In the southern part of the state and the central valleys the climate will be very much warmer, corresponding somewhat to the summer climate in the Eastern states. In the mountain districts and the mountain resorts the climate will more nearly approach that of San Francisco. Persons who expect to travel much in this state will be more comfortable with the ordinary weights of underclothing and with overcoats and wraps to meet the varying climates in different parts of the state.

W. E. MUSGRAVE,
Chairman, Local Committee of Arrangements.

GROUP SUBSCRIPTIONS TO HYGEIA

At a meeting of the Genesee County Medical Society, Michigan, it was voted to send *Hygeia* to each school in the county. The society forwarded a check for $166 to cover these subscriptions. In addition to the initial subscription of more than 1,200 sent by the Allegheny County Medical Society, a later order for 446 subscriptions was received. These include the heads of charitable organizations, public officials, presidents of women's clubs, educators, clergymen and public libraries. The society offers to increase this

amount still further, provided the introductory subscription is left open. Other local societies have also sent in group subscriptions to *Hygeia*, among them, Pierce County, Washington; Cascade County, Montana; Genessee County, Michigan; Lake County, Indiana; Fergus County, Indiana; Portage County, Ohio, and Douglas County, Wisconsin. A number of societies have reported that the matter will be considered at the next meeting.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

MEDICAL EDUCATION

MARCH 5—MORNING

The congress met in the Florentine Room of the Congress Hotel, and was called to order by Dr. Arthur Dean Bevan, chairman of the Council on Medical Education and Hospitals.

DR. LOUIS B. WILSON, Rochester, Minn., presented a report on Graduate Medical Education, which is reported on page 790.

Coordination of Courses of Instruction to Increase the Efficiency of the Medical Curriculum

DR. E. STANLEY RYERSON, Toronto: The subjects of the present curriculum are taught too independently in what is aptly called a "water-tight compartment" system. There is a lack of coordination between the fundamental medical sciences (anatomy and physiology) and the clinical subjects. The present method fails to educate the student in anatomy and physiology in such a way that he can recall and apply the principles learned when the occasion arises. This defect is attributed to (*a*) nonuse of clinical subjects to stimulate the student's interest in the first two years; (*b*) lack of opportunity for the student to apply his theoretical knowledge at the time he is learning it; (*c*) lack of opportunity for the student to develop a sufficient number of associated ideas, more especially between the theoretical fact and its practical applications; (*d*) the presence in the mind of the student of the false attitude that these subjects are completed once the examinations in them are passed; (*e*) the lack of any basis on which the student can select the important from the less important facts, and thus gain a thorough familiarity with essential facts.

SCOPE OF REVISED CURRICULUM

The present curriculum fails to provide the student with sufficient clinical experience. The lengthening of the course and the provision of repetition courses have failed to produce the desired improvement in the efficiency of the students. To overcome these defects, a revised curriculum should provide for: (1) instruction according to modern educational methods; (2) opportunity for the student to acquire an absolutely up-to-date education in medical science; (3) coordination between the various subjects, and especially between anatomy, physiology, pathology, medicine and surgery; (4) opportunity for the student to apply his knowledge at the time he is acquiring it; (5) more prolonged clinical experience for the student, by beginning it earlier in his course.

DIVISION OF SUBJECTS

The division of the subjects might be made on the basis of the particular anatomic systems to be dealt with in each year, as follows: first year, general introduction; tegumentary, muscular, articular and osseous systems; second year, cardiovascular and respiratory systems; third year, alimentary, genito-urinary and reproductive systems; fourth year, nervous system, special senses and endocrine system. In drawing up a new curriculum, consideration would have to be given to the exact way in which each fundamental scientific subject is applied in practice. It is then necessary to arrange the scientific subjects in correlation with the clinical subjects in which they are applied and numerous opportunities for the student to make the practical applications himself. The student then has not only a means of developing associated ideas, but also a persistent and active stimulus to his endeavors.

At the beginning, the student would be given a general survey of each of the main subjects of the course, namely, anatomy, physiology, pathology, medicine and surgery. He would thus gain a clear idea of the magnitude of each subject and the relationship of the subjects to one another. Thereafter, the student would acquire a detailed knowledge of tegumentary, muscular, articular and osseous systems. In anatomy, the extremities would be dissected. Their microscopic structure would be dealt with in histology. In embryology, after a study of the whole subject, the method of the development of muscles, bones and joints would be covered. The course in pathology would include (*a*) pathologic histology, (*b*) bacteriology and (*c*) general pathology accompanied by demonstrations of the principles of inflammation in its various aspects. A general introductory course in medicine would cover etiology, the methods of differentiation, the interpretation of signs and symptoms, and some of the general principles underlying the prevention of disease. In surgery, the course would cover the clinical manifestations of inflammation, and injuries as they occur in the extremities.

In the second year, all departments would devote their chief attention to the cardiovascular and respiratory systems, covering in *anatomy*, the dissection, histology and embryology of the thorax, head and neck; in *physiology*, the circulation and respiration; in *biochemistry*, the chemistry of the blood and gases in the physiology of the heart and lungs; in *pharmacology*, a general study of the various pharmacologic groups and the effects produced by drugs on the heart, lungs, breast and extremities; in *pathology*, the gross histologic changes of the heart and great vessels, lungs and pleura, breast, thyroid, lip, tongue and jaws; in *medicine*, the physical examination of the heart and lungs with the diagnosis of the diseases of these viscera, and in *surgery*, conditions of the thorax, mammary glands, neck and thyroid, the lesions of the lip, tongue and jaws, and the surgical aspect of the diseases of the circulatory and respiratory systems. Injuries and diseases of particular bones and joints would also be taken up.

In the third year, attention would be devoted chiefly to the alimentary, genito-urinary and reproductive systems. In anatomy, the dissection, histology and embryology of the abdomen and pelvis would be covered.

In the fourth year, the departments would devote the main part of the time to the consideration of the nervous system, organs of special sense and the endocrine system. The anatomy of the eye, ear, nose and throat, as well as the brain and spinal cord, would be studied. In physiology the student would take up the nervous system, special sense organs and the ductless glands. In pathology, he would note the results of disease and injury in the brain, cord and peripheral nerves and organs of special sense. In pathologic chemistry, the general disorders of the chemical processes of the body would be taken up, the student conducting individual chemical examinations. In medicine, the diseases of the nervous system and the ductless glands would be covered. The more important psychoses would be outlined. The treatment of the patient suffering from diseases would be covered in therapeutics. In surgery, the injuries and surgical diseases of these parts would be given. In obstetrics, the abnormal conditions arising during pregnancy, labor and the puerperium would form the syllabus, while in gynecology more advanced parts of this subject would be covered. In ophthalmology, the methods of examination of the eye, and testing sight would be dealt with. In otolaryngology, the methods of examining the ear, nose and throat, along with the tests for hearing, would be taught on patients. In pharmacology, the student would see the effects of drugs on the nervous system and the organs of special sense. In preventive medicine and hygiene, a course dealing with the problem of preventive medicine, hygiene and sanitation would be given. Such a course as that outlined above appears to be feasible, and its adoption would provide for a coordination of the courses, for more opportunities to develop associated ideas, and for the student to be in attendance at the hospitals for two years longer than he does at present.

Revision of the Curriculum

DR. ARTHUR DEAN BEVAN, Chicago, outlined in detail the methods he followed in an investigation regarding the objections to the present-day medical curriculum. This investigation included interviews with the professors of the various laboratories and clinical departments of the medical school, special inquiry being made in regard to the opportunities for a better correlation of laboratory and clinical subjects, and in what manner the medical curriculum might be revised so as to bring laboratory and clinical subjects more nearly parallel throughout the four years. He also secured the opinions of a large number of medical students who were in the advanced classes, having completed their clinical work, in which criticisms were obtained regarding the manner in which the various laboratory and clinical subjects were taught. Their criticism may be thus summarized:

CRITICISMS

1. The work of the first two years is too theoretical; much of it is intended primarily for research. There is too much notebook work and too little reference to clinical application. 2. Anatomy receives much criticism; there is too little lecture work and demonstration, too little individual teaching, too much instruction by student assistants, and very little clinical application. 3. The work is considered too theoretical in biochemistry. It requires time far out of proportion to its importance. It could be made to include subjects given in laboratory diagnosis. There is much criticism of this department. Pharmacology is unsatisfactory in that its practical application is not made clear to the student. Physiology does not have enough practical application pointed out and emphasized. The pathologic department, on the whole, receives more favorable criticism than any other in the first two years.

The work of the third and fourth years is thus criticized: A better course in prescription writing should be given. More discussion on therapeutics should be given in the clinics. The definite line of treatment should be given as each case is presented. More definite instruction should be given on such therapeutic agents as the roentgen ray and radium, and the clinical value of such tests as basal metabolism and electrocardiography should be made clearer.

In medicine, better courses in laboratory diagnosis are urged. The value of the small teaching clinic is recognized. Better instruction in physical diagnosis is needed, and more systematic instruction in the large teaching clinics.

It is urged that surgery be taught with ample pathologic material, both gross and microscopic, and that its clinical application be shown by the introduction of patients illustrating the various conditions discussed. The value of the large teaching clinic is recognized, and the criticism made of operating in these large teaching clinics. They feel that little or no operating should be done in these clinics. The great value of dispensary work and of the small section hospital clinic of the ward walks is recognized. The courses on dog surgery and of surgical anatomy and operative surgery on the cadaver are favorably criticized. In obstetrics, the chief criticism is that the student sees too little pathologic obstetrics. The outside obstetric cases attended by the student under tuteur and obstetric assistant instruction are appreciated by the student and criticized favorably. The instruction in the specialties—eye, ear, nose and throat and dermatology, pediatrics and neurology—receives fairly generally favorable criticism. I have also obtained from a number of interns and senior students their opinions of the fifth hospital or intern year, and they all regard it as absolutely essential, and more than 90 per cent. prefer a mixed to a single service.

PLAN FOR REVISING CURRICULUM

On the basis of the foregoing study, I venture to submit this specific plan: 1. There are certain portions of the subjects of anatomy, physiology, pathology and pharmacology which are essential in actual practice and which are used every day in clinical work and which must be mastered. 2. The sum total of the knowledge now actually required is enormous, and is sufficient to crowd the time which can be allotted to the medical curriculum. 3. The essential portions of the daughter sciences should be taught so as to make clear their application to clinical work. This necessitates a radical change in the curriculum, the introduction of the patient and the clinic at the very beginning of the medical course.

In revising the undergraduate curriculum, we must drop those portions of the sciences which have as yet no clinical application in the hands of the general practitioner. As an illustration, a large part of the formidable subjects of biochemistry and intricate neurology should be eliminated. There should be introduced into the first year a general medical clinic in charge of a broadly trained man of the Osler type. This clinic should be given once a week, and at this clinic should be demonstrated patients who represent big general clinical problems, such as diabetes, toxic goiter, jaundice, ascites, syphilis, tuberculosis and leukemia, and the use the clinician makes of anatomy, physiology, pathology and pharmacology in handling these problems should be demonstrated. At the same time, the laboratory teachers should have access to this clinical material so that they can demonstrate examinations of blood, urine, blood pressure, basal metabolism, etc., and the laboratory side of these same clinical problems. Pathology should be continued into the clinical years as a well organized department in charge of the postmortem work and general pathology laboratories and museum. The professor of pathology should act as a consultant in important problems in pathology. Whatever revision of the medical curriculum is made, there must be no conflict of authority, and there must be good teamwork.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

John A. Andrew Clinical Society.—The fifth annual meeting of the John A. Andrew Clinical Society will be held at the Tuskegee Institute, April 1-7. Dr. Richard H. Miller of the Massachusetts General Hospital and Dr. William B. Breed, Boston, will lecture and give surgical demonstrations.

Personal.—Dr. Edwin O. Williamson, Gurley, has been elected president of the Madison County Medical Society to fill the unexpired term of Dr. C. A. Grote, county health officer who has gone to Greensboro, N. C.——On the retirement of Dr. C. H. Smith, Montgomery, as physician inspector for the state convict department, the inmates of Kilby prison presented him with a gold ring as a token of their esteem.

CALIFORNIA

Physician Sentenced.—Dr. G. A. Scheuer, San Francisco, was committed to jail for thirty days, it is reported, when he pleaded guilty to violation of the prohibition act, February 21.

Personal.—Dr. Wood C. Baker, county physician of San Mateo County, has accepted an appointment as superintendent of the new San Mateo County Community Hospital to be opened at Beresford in June.——Dr. George C. Wrigley, Sonora, has been reappointed physician of Tuolumne County. ——Dr. Herbert M. Evans, professor of anatomy at the University of California, Berkeley, addressed the Alameda County Medical Society, February 22.——Dr. Clarence A. Tillotson, Dinuba, was seriously injured when the automobile in which he was driving was struck by a fire engine, February 3.—— Dr. John J. Sippy, Helena, Mont., has been appointed head of the public health board of San Joaquin County, with headquarters at Stockton.

COLORADO

Hospital News.—Construction work on the first three units of the Swedish National Sanatorium to be erected in Denver, will be commenced, April 1. The completed buildings will cost $500,000, and will cover about two blocks. The institution will have a capacity of 125 beds.——A $25,000 addition will be erected at the Fort Collins Hospital, Fort Collins, to

include two operating rooms and a roentgen-ray laboratory. ——The Weld County Hospital at Greeley has recently been opened.

CONNECTICUT

Public Health News.—A hearing of the Milk Regulation bill, in accordance with Section 2486 of the General Statutes, was held, March 7, in Hartford, to consider regulations regarding the manufacture and sale of ice cream and changes in the specifications for Grade A milk.——A case of yaws was recently reported from Ansonia. The health officer stated that the patient arrived in the United States two months ago from Jamaica.——The division of venereal diseases of the state department of health is holding a series of conferences, in cooperation with the Hartford Medical Society to which all physicians are invited. The first conference was given at the Hunt Memorial, Hartford, March 16, by Dr. John H. Stokes of the Mayo Clinic, Rochester, Minn.

DISTRICT OF COLUMBIA

Free Medical Treatment for Shriners.—All physicians, nurses and druggists of Washington will give free treatment when necessary to the Shriners and visitors during the session of the imperial council of the Mystic Shrine in June, it was announced by Dr. Charles S. White, chairman of the medical and Red Cross committee. This service will include emergency dentistry, eye glass repairing, nursing, and prescriptions from druggists. Twenty army ambulances and ten private ambulances will be constantly on duty and within easy call.

ILLINOIS

Lay Educational Fund.—More than 500 members of the Illinois State Medical Society have subscribed to a fund to publish in the newspapers of the state the profession's methods of serving the public, it is reported.

Smallpox at Rock Island.—Following the outbreak of smallpox at Rock Island, the city physician, Dr. A. N. Muller, has issued orders that every schoolchild must be vaccinated within the next ten days or remain away from school indefinitely. The board of health asks the public's cooperation in stamping out the threatened epidemic.

Personal.—Dr. George T. Palmer, president of the Illinois State Tuberculosis Association, lectured at Louisville recently, during the celebration of "Health Week."——Dr. Albert W. Bradford has returned to his home in Lacon from the Proctor Hospital where he has been a patient with a broken leg for seven weeks.——The Joseph A. Holmes Safety Association of Washington, D. C., has awarded the gold medal of the society to Dr. Andrew W. Springs, Dewmaine, for his heroic work in the Royalton Explosion of October, 1914.——Dr. Louise H. Keator, formerly a medical missionary to China, has been transferred to the Dixon State Hospital from the Lincoln State School and Colony.

Chicago

Personal.—Dr. Charles E. Humiston and Dr. Frederick W. Besley gave addresses at the annual banquet of the Lake County Medical Society at Waukegan, March 1.———Dr. Roy C. Flickinger, Ph.D., for four years dean of the college of liberal arts at Northwestern University, tendered his resignation to President Walter Dill Scott, March 10, to become effective, July 1.

Michael Reese Alumni Association.—There will be a meeting of former Michael Reese interns, March 22, at Michael Reese Hospital for the purpose of organizing a Michael Reese Hospital alumni association. Every ex-intern is urged to be present if possible. Those living in distant parts who may be unable to attend are requested to send their present addresses to Dr. Ralph B. Bettman, secretary of the Internes Alumni Association, Michael Reese Hospital, Chicago.

INDIANA

Personal.—Dr. Max Bahr, of the Central Indiana Hospital for the Insane, gave the last of a series of lectures on forensic psychiatry, March 8, on "Methods of Examining Insane Criminals."

Whole Family Has Smallpox.—Dr. Willis B. Huron of Tipton, county health officer, recently found the family of George W. Van Horn, a wife and three children, suffering from smallpox.

Protest Against State Laboratory Examinations.—A group of Indiana physicians whose specialty is laboratory diagnosis presented a statement to the state board of health in protest against indiscriminate examinations made by the state hygienic laboratory. It was said that at present the state laboratory examines practically every kind of specimen sent in by physicians free of charge regardless of its having any bearing on the enforcement of public health measures, or whether the patient is a proper beneficiary of free public medical service. The natural outcome of this custom is that physicians send all types of specimens from patients who can and do pay the physicians for service which the state laboratory renders free. The state thus enters into competition with physicians whose specialty is clinical diagnosis, and at the same time pauperizes the patients at the expense of taxpayers. In order to correct this particular abuse, it was suggested that physicians be required to certify that specimens forwarded which do not concern public health measures are from indigent patients to whom the physicians are making no charge whatsoever for their services. The protest was considered by the state board of health, February 14, which directed the superintendent of the laboratory to prepare a statement to the medical profession of Indiana setting forth a policy in laboratory matters, and to prepare a certificate to be used by physicians when specimens are forwarded for examination. The secretary, Dr. W. F. King, in a letter to the editor of the *Journal of the Indiana State Medical Association* said, in part, that the state board of health will go into this whole matter fully and will have in mind the good of the medical profession as well as the public, in any action that may be taken.

IOWA

Summer Course at Iowa University.—A special course for public health nurses will be a part of the summer school work at the State University of Iowa, Iowa City. The course is designed for those nurses in public health work who are unable to take the work in the regular school year. Among the courses to be given will be those in public health nursing, child hygiene, hygiene and preventive medicine, psychology, speech and sociology. The various college faculties of the entire university will be drawn on for instructors. Miss Helena R. Stewart will be director of the school.

LOUISIANA

Personal.—Dr. Richard A. Bolt, Washington, D. C., director of the medical service of the American Child Health Association, gave an address at the annual meeting of the Child Welfare Association in New Orleans, February 27.

State Medical Meeting Changed.—The annual meeting of the Louisiana State Medical Society will be held in New Orleans, April 24-26, instead of April 10-12, as previously announced. Dr. P. T. Talbot, New Orleans, is secretary of the society.

MARYLAND

Personal.—The supervisors of city charities have appointed the following staff of physicians to Bay View Hospital: Dr. Leo A. Lally, resident physician of the tuberculosis hospital; Dr. Claude G. Drace, resident physician at the general hospital; Dr. R. J. Fulton, resident hospital surgeon; Dr. I. Franklin, resident physician of the hospital for the insane, and Dr. Joseph T. Eafan, assistant resident hospital physician.——Dr. Martin F. Sloan, for eleven years superintendent of the Eudowood Sanatorium, Towson, has opened the Maple Heights Sanatorium at Sparks, for the treatment of tuberculosis.——Dr. Arthur J. Lomas, former assistant superintendent of the Johns Hopkins Hospital and at present superintendent of the Iowa State University Hospital, has been appointed superintendent to the University of Maryland Hospital, Baltimore, to succeed Dr. Kenneth B. Jones, resigned.——Dr. Charles W. Hoffman has resumed the practice of surgery and gynecology at 1102 North Charles Street, Baltimore.

MASSACHUSETTS

Massachusetts Association for Occupational Therapy.—At the second annual meeting of the association, Dr. Elliott G. Brackett was elected president; Dr. John D. Adams, vice president, and Miss Greene, secretary.

Dinner to Dr. Edsall.—The medical staff of the Massachusetts General Hospital, Boston, gave a dinner in honor of Dr. David L. Edsall, February 27, at the University Club. Dr. Edsall has just returned from abroad. Dr. Gerardo M. Balboni was toastmaster. Dr. Frederick A. Washburn and Dr. Richard C. Cabot were among the speakers.

Award for Malpractice.—It is reported $5,000 was awarded A. E. Clarke of Malden in the East Cambridge Superior

Court, March 2, in his suit for $25,000 against Dr. Clarence H. Staples of Malden. Clarke alleged that Dr. Staples did not give his leg proper treatment following an automobile accident and that as a result he is permanently lame.

New England Health Institute Postponed.—Dr. Eugene R. Kelley, state health commissioner, announced that the New England Health Institute, held in Hartford, Conn., in 1922, will not be held in Boston this year as was planned, having been postponed until 1924. This change was necessary because of the Boston Health Show, which will be held in the Mechanics Building, Boston, October 6-13.

MICHIGAN

Fellowship in Pathology for Detroit College.—Dr. George E. Potter has endowed a fellowship in pathology in the Detroit College of Medicine and Surgery, it was recently announced by the Wayne County Medical Society. The endowment amounts to $1,000 a year.

Violation of Medical Law.—According to reports, Harry L. Wise, agent for D. L. Smith of the "Vitalizer" Company, Detroit, was fined $60, with an alternative of thirty days in the House of Correction, January 12, when he pleaded guilty to a charge of violating the medical law. Smith was fined $100 on the same charge two days earlier.

MISSOURI

Personal.—Dr. Eugene A. Scharff, superintendent of the Isolation Hospital, St. Louis, was appointed superintendent of the City Hospital, recently, to fill the vacancy caused by the recent death of Dr. Rolla Henry.——Dr. Joseph K. Phipps, Grant City, was reappointed deputy state health commissioner at the last session of the county court, for a period of three years.——Edward A. Doisy, Ph.D., has been appointed professor of biochemistry at St. Louis University School of Medicine, the appointment to take effect, August 1. Mr. Doisy is at present associate professor of biochemistry at Washington University School of Medicine, St. Louis.

NEW JERSEY

Physicians Oppose Naturopathy Bill.—A meeting of physicians was held at the state house, Trenton, February 5, to protest against the passage of Assembly Bill 58, known as the Naturopathy bill. Dr. Wells P. Eagleton, Newark, chairman of the welfare committee of the state medical society, presided.

Illegal Practitioners Sentenced.—According to reports from the state board of medical examiners, A. Wilson Wood, a chiropractor of Ridgefield Park, was convicted of practicing medicine and surgery without a license, February 27.——In the case of George C. Lezenby, Camden, where the evidence showed that the defendant gave only electrical treatments, the judge of the district court dismissed the suit, holding that the board of medical examiners failed to establish any proof that the defendant had violated the medical act. On the board's carrying the case to the supreme court, the judgment of the district court of the city of Camden was reversed.

NEW YORK

Mumps at Sing Sing.—An epidemic of mumps has appeared at Sing Sing prison. Thus far, only officers and attendants have contracted the disease.

Woman Sentenced for Murder of Physician.—Mrs. Lillian Raizen was sentenced to from twenty years to life in prison, February 27, it is reported, for the murder of Dr. Abraham Glickstein of Brooklyn.

Health Officers' Conference.—State Health Commissioner Hermann M. Biggs announces that the annual state conference of health officers and public health nurses will be held at the Grand Union Hotel, Saratoga Springs, June 26-28.

Damage Suit for Necropsy.—The trial of a suit for $20,000 damages commenced by Mrs. Regina Abrahms, widow of Joseph Abrahms, who died, Jan. 28, 1921, against Dr. William H. Garvin, superintendent of the Kings Park State Hospital, and Dr. Walter H. Sanford of the staff has come before the supreme court in Brooklyn. Mrs. Abrahms charges that her husband's body was mutilated during the performance of a necropsy, and that necropsy was performed without her consent. This is denied by the defendants, who state that, at the time her husband was taken to the institution, Mrs. Abrahms virtually consented to a necropsy should he die there. It is also stated that Mrs. Abrahms' mother signed a formal consent.

New York City

Influenza Among City Employees.—Nearly 2,000 of the city employees are suffering from influenza and pneumonia, it is announced. Out of 32,322 employees, 1,869 are off duty owing to sickness. Out of 10,000 policemen, 620 are off, and of the fire department's 6,000 men, 380 are sick.

Janeway Lecture.—The Mount Sinai Hospital invites physicians and their friends to attend the E. G. Janeway Lecture to be given at the Blumenthal Auditorium, March 26, by Prof. J. J. R. MacLeod of Toronto University, Canada. His subject will be "Experimental Work on Diabetes and Insulin."

"Face Specialists" Lose Suit.—A verdict of $25,000 was awarded by a jury in the supreme court, February 21, to Miss Florence Clover, according to report, in her suit against Dr. Oswald C. Stackhouse and the John Woodbury Company, Inc., charging that her face was disfigured as the result of treatment to reduce the length of her nose.

Case of Leprosy at Bellevue.—A case of leprosy was recorded at Bellevue Hospital, March 3, when Abraham Wiener, 50 years old, was transferred there from the Jefferson Davis Hospital. The patient was placed in the contagious ward. He came to New York about three weeks ago. This is the only case of leprosy in New York City, as far as known.

New Health Commissioner Named.—Mayor Hylan made official announcement of the appointment of Dr. Frank J. Monaghan to the post of health commissioner of the city of New York, to succeed Dr. Royal S. Copeland, who has become United States senator. Dr. Monaghan entered the department of health at the beginning of Mayor Hylan's first term and has been the deputy commissioner.

Epidemic Encephalitis in New York.—The total number of cases of epidemic (lethargic) encephalitis occurring in this city since January 1 is 370, and the number of deaths, 115. The largest number of weekly cases occurred during the weeks of February 24 and March 3, seventy-eight and sixty-eight, respectively. For the first six days of the week of March 10, there were reported thirty-eight cases, with eighteen deaths. It is believed that the outbreak has passed the peak and is on the decline.

Benefit Performance of "Pasteur."—Mr. Henry Miller gave a benefit performance of the play "Pasteur" by Sacha Guitry, for the New York Academy of Medicine Building Fund. It has been suggested that the proceeds be used for the maintenance of a memorial to Louis Pasteur in the proposed new building of the New York Academy of Medicine. This performance, which took place, March 14, was the first public presentation of the play in this country. The New York Academy of Medicine is conducting an intensive drive to raise the $250,000 fund for the site of its proposed new building, the funds for which are contingent on the raising of this amount for the site.

OHIO

Physician's License Restored.—The Ohio State Medical Board reports that the license of Dr. Henry Oliver Davis, Akron, which was revoked in 1915 following his conviction for selling narcotics illegally, was restored in January, 1918.

Physician Sentenced.—Dr. Addison D. Hobart, Toledo, reports state, was sentenced to serve three years in the Atlanta penitentiary by Judge Killits in the federal court, March 5, when he was found guilty of violating the Harrison Narcotic Law.

Noted Physical Chemist Dies.—Edward W. Morley, Ph.D., Sc.D., for thirty-seven years professor of chemistry at Western Reserve University, Cleveland, and at Cleveland Medical College for the period 1873-1888, died at his home in Hartford, Conn., February 24. Dr. Morley was a corresponding member of the British Association for the Advancement of Science, an honorary member of the Royal Institute of London and the Chemical Society of London, and has served as president of both the American Association for the Advancement of Science and the American Chemical Society.

PENNSYLVANIA

Personal.—For the first time in the history of Pennsylvania, it is said, a woman has been appointed a member of the governor's cabinet. Dr. Ellen C. Potter has been named welfare commissioner by Governor Pinchot.——Dr. William G. Turnbull, superintendent of the Cresson Free State Sanatorium for Tuberculosis since its opening, has been appointed deputy commissioner of health for Pennsylvania, to succeed

Dr. John D. McLean, Harrisburg, who resigned, March 1. ——Dr. Edward W. Bixby, Wilkes-Barre, has been appointed county medical director of Luzerne County, to succeed Dr. Charles H. Miner.——Dr. S. Leon Gans, chief of the division of venereal disease control, Harrisburg, has resigned, the resignation to take effect, April 1.——Dr. John F. McCullough, Pittsburgh, will read a paper on "Complete Examination in Diseases of the Upper Right Quadrant," before the semi-annual meeting of the Roentgen Ray Society of Central Pennsylvania, April 27, at Williamsport.

Philadelphia

Personal.—Dr. Richard H. Harte, formerly director of health and charities, was awarded the Distinguished Service Medal, March 7, by the War Department. Colonel Harte was medical director of the Pennsylvania Hospital's Base Unit No. 10, one of the earliest American hospitals in France.

Smallpox Closes School.—More than 5,000 residents of the territory bounded by Thirty-Seventh and Thirty-Ninth streets and Haverford and Fairmount avenues were under quarantine, March 8, after the discovery of one case of smallpox at 3828 Mount Vernon Street. Police lines were drawn around the restricted area at 3 o'clock, and fifty physicians in charge of Dr. A. A. Cairns of the deartment of health, began the work of inoculation. The Mantua Primary School, at Mount Vernon and Thirty-Eighth streets, was closed because of the quarantine. The district was the largest and most thickly populated of all that has been under quarantine in recent months, and the work of vaccination was necessarily slow, because of the large number of children in many of the families.

SOUTH CAROLINA

Personal.—Dr. Henry H. Workman, Woodruff, and Dr. Newton T. Clark, Spartanburg, were elected president and secretary, respectively, of the Spartanburg County Medical Society at the annual meeting.——Dr. William M. Love, Chester, has been appointed to the board of health to succeed Dr. William R. Wallace.——Dr. B. R. Brown, city physician and chairman of the board of health of Gaffney, with four other members of the board, resigned, February 28.

WASHINGTON

Health Exposition.—A health exposition will be conducted in Seattle, May 16-26, similar to the one recently staged in Portland. It will be conducted by the American Health Exposition organization, and will have the cooperation of the state and county medical societies. Moving pictures, lectures and health exhibits will be among the features on the program at Seattle.

WISCONSIN

Physician Sentenced.—It is reported that Dr. Henry T. Brogan, Milwaukee, convicted of fourth degree manslaughter following the death of a woman as a result of an obstetric operation, was sentenced to one year in the house of correction, February 27.

Personal.—Dr. Smiley Blanton of the University of Wisconsin Medical School, Madison, spoke on "Organic Changes in Dementia Praecox" before the Milwaukee Neuropsychiatric Society, February 23.——A party was tendered Dr. Gilbert Mueller on the occasion of his resignation as house physician at the Emergency Hospital, Milwaukee. Dr. Edward J. Craite, Rice Lake, has been appointed to succeed Dr. Mueller. ——Dr. John M. Conroy, formerly connected with the Nopeming Sanatorium, Nopeming, Minn., has been appointed superintendent of the Pureair Sanatorium at Bayfield, to succeed Dr. M. S. Hosmer.

WYOMING

Personal.—Dr. Robert W. Hale, Thermopolis, has been appointed a member of the new state board of health by Governor Ross.—Dr. Walter H. Hassed has leased the Lusk Hospital at Lusk. This institution was recently closed.

Northwestern Wyoming Medical Society.—At the annual meeting of the society held in Powell recently the following officers were elected for the ensuing year: president, Dr. Francis M. Lane, Cody; vice president, Dr. Neil D. Nelson, Thermopolis, and secretary-treasurer, Dr. Frank A. Mills, Powell. Dr. Will V. Gage, Worland, read a paper on "Asthma." The March meeting of the society at Thermopolis has been postponed until June, owing to unfavorable weather and roads.

CANADA

Harvey Club of Canada.—A piece of mahogany, obtained from the Harvey home built in Folkestone, England, in the sixteenth century, has been presented to the Harvey Club of Western University, London, Ont. The specimen will be made into a gavel for the use of the president of the club.

Canadian Medical Association.—The annual meeting of the Canadian Medical Association will be held in Montreal, June 12-14, under the presidency of Dr. David H. Arnot, London, Ont. The association has been investigating the feasibility of establishing a college of surgeons in Canada. A committee was appointed for this purpose at the last annual session at Winnipeg, June 20-23, 1922, and will report on the matter at the Montreal meeting.

GENERAL

Western Electro-Therapeutic Association.—The fifth annual meeting of the association will be held in Kansas City, Mo., April 19-20, under the presidency of Dr. Howard Plank of Chicago. Drs. F. H. Morse, Boston, and H. H. Bowing, Rochester, Minn., will be among the speakers.

Aid for Tuberculous Veterans.—The sum of $50,000 has been voted by the Knights of Columbus for the aid of tuberculous and otherwise disabled war veterans who are stranded in the Southwestern states, where they have gone in search of work and health. The money has been forwarded to national headquarters of the American Legion, who will administer the fund.

Award for Radium Research.—At a meeting of the American Roentgen Ray Society in Atlantic City, N. J., recently, it was announced that $1,000 would be awarded by the society for the best original research in the field of roentgen ray, radium or radioactivity. The competition will close July 1. Drs. George E. Pfahler, Philadelphia, Frederick H. Baetjer, Baltimore, and George W. Holmes, Boston, will be the judges.

American Congress on Internal Medicine.—The seventh annual clinic week of the American Congress on Internal Medicine will be held in Philadelphia, April 2-7, under the presidency of Dr. Sydney R. Miller of Baltimore. The opening session will be held in Mitchell Hall, College of Physicians Building, at 2 p. m., April 2. Dr. Thomas R. Neilson, president of the College of Physicians of Philadelphia, and Dr. William Pepper, dean of the University of Pennsylvania Medical School, will give addresses.

Recognition of National Examining Board.—The governor of the state of Texas has announced that the certificate of the National Board of Medical Examiners will in future be recognized. February 9, Governor Cox signed an act which will permit the Massachusetts Board of Registration in Medicine to accept the certificate of the national board in place of and as equivalent to its own professional examination in determining the qualifications of a candidate for registration. This act amends Chapter 112 of the General Laws of the Commonwealth, which has required the board of registration to give its own examination to each candidate for registration in medicine. This amendment becomes effective, May 9. The national board is now officially recognized by boards of registration in twenty-three states, and recognition in three other states is expected soon. In addition to the recognition by state boards, the certificate of the National Board of Medical Examiners is accepted as equivalent to the required professional examination of the U. S. Army, Navy and the Public Health Service, by the American College of Surgeons, and by the Mayo Foundation. Reciprocal relations have also been established with the Conjoint Examining Board of England and the Triple Qualification Board of Scotland.

FOREIGN

Netherlands' Contribution to Pasteur Monument.—The committee in the Netherlands has collected and presented to Professors Borrel and Weiss at Strasbourg the sum of 10,000 francs toward the monument to Louis Pasteur in the city in which he began his scientific career.

The Carthage Prize.—This biennial prize was founded in 1921, and has just been awarded for the first time. The recipient is Dr. Nicolle, noted for his researches at Tunis on the transmission of typhus and on trachoma, Malta fever, leishmaniasis and other tropical diseases. He first proved transmission of typhus by lice.

Organization of Pediatric Society in Belgium.—In January, the Société belge de pédiatrie was organized. It is proposed to hold five meetings a year. Professor Péchère, 30 rue des

Drapiers, Brussels, is the secretary. He is to preside at the annual meeting of pediatricians of French-speaking countries, which is to be held at Brussels in September of the current year.

Bust of Pasteur for League of Nations.—The Pasteur Institute of Paris and the descendants of Pasteur will present to the Council of the League of Nations a bust of Pasteur, in gratitude for the appointment of a member of the Council and a delegation from the health committee of the League of Nations to attend the centenary of Louis Pasteur at Strasbourg.

Approaching Congresses Abroad.—April will see the International Congress on Thalassotherapy (the sea), at Venice, April 9 to 12, with excursions to Italian watering places and to the Italian Congress on Hydrology, which meets at Palermo, April 15, Professor Ceresole, Ospedale civile, Venice, is the secretary of the international gathering.—— At Rome, April 5 to 7, the Italian Societá freniatrica holds its sixteenth annual meeting. The secretary is Prof. F. Bonfiglio, via del Mascherino 72, Rome.

French Ophthalmologic Congress.—The thirty-sixth congress of the French Société d'ophthalmologie is to be held this year at Strasbourg, June 11 and the following days. The discussion on "Treatment by Subconjunctival Injections" is to be opened by Dr. Van Lint of Brussels. The French railways allow a reduction of 50 per cent. to members of the congress, and various excursions have been planned. For further details, apply to Dr. R. Onfray, 6 ave. de la Motte-Picquet, Paris.

Bicentennial of Christopher Wren.—The bicentenary of the death of Sir Christopher Wren was observed in London, February 25-March 3. The ceremonies were organized by the Sir Christopher Wren Bicentenary Grand Committee, consisting of representatives of thirty-eight scientific and municipal bodies. Sir Christopher Wren was president of the Royal Society from 1680 to 1682, and was the designer of the Royal College of Physicians. A memorial volume of essays on various aspects of his life and work was published, the profits being devoted to the preservation fund of St. Paul's Cathedral, of which Sir Christopher was the builder.

Biologic Neuropsychiatric Reunions.—Under this name, the physicians of the Asile Sainte-Anne at Paris are holding quarterly conferences to demonstrate the new biologic methods of research in nervous and mental diseases. At the January meeting, Claude gave tests of the polygraph, which records the solar reflexes and the oculocardiac reflex. Garrelon presented evidence that dogs in which hypervagotony is induced are more susceptible to the action of toxins. Aubel's data confirmed that functional tests of the liver demonstrate insufficiency of this organ in melancholia. A number of neurologists from home and abroad attended this reunion. The second is to be held early in April.

Personal.—Dr. Thomas Gwynne Maitland, Birmingham, England, delivered a lecture before the members of the staff of Troy Hospital, Troy, N. Y., January 17. Dr. Maitland was director of the typhus colony in Serbia during the World War.——Sir Arthur Keith delivered his six Hunterian lectures on "Man's Posture: Its Evolution and Disorders," in the theater of the Royal College of Surgeons, London, March 5-16.——Dr. Stockis, professor in the University of Liége, has been elected president of the Belgian Federation of Scientific Societies.——A course of three lectures on "Recent Work on Inborn Errors of Metabolism" was given by Sir Archibald E. Garrod at the University of London, February 28, March 7 and 14.——The honorary medical degrees conferred by the Paris University on Dr. W. W. Keen of Philadelphia and on Golgi at Pavia are to be presented at the convocation, Nov. 24, 1923.——Professor Pittaluga of Madrid has been lecturing at the Paris medical school on "Diseases of the Blood" and "Malaria." He was banqueted by the dean of the medical school, and he also spoke in Vaquez's service. Professor Recasens of Madrid will lecture at Paris in April.——The University of Bordeaux has conferred an honorary degree on Prof. Ramón y Cajal. It is the first time a degree of the kind has been given by this university outside of France.—— Drs. A. Wimmer and K. Krabbe of Copenhagen have been elected corresponding members of the Société de neurologie at Paris. Dr. A. Bang, also of Copenhagen, has been elected a member of the French Cancer Research Association.

Deaths in Other Countries

Dr. **J. J. Cox** of Manchester, England, former president of the Royal Society of Medicine of Edinburgh, the Manchester Medical Society and the Manchester Clinical and Pathological Society; consulting physician to the Manchester Northern Hospital for Women and Children; in Scotland, January 17, aged 66.—— Dr. **J. A. Raubenheimer,** member of the South African parliament; at Oudtshoorn.——Capt. **Wesley Barritt,** dental surgeon of Harley Street, aged 52.——Dr. **Constance Long** of London, at the home of Dr. Beatrice Hinkle, New York, U. S., February 16, from pneumonia.——Prof. **Christian Saugman,** chief of the Vejlefjord Sanatorium in Denmark and an authority on treatment of pulmonary tuberculosis. He had recently accepted the invitation of the Royal Medical Society to lecture in England on "Thoracoplastic Operations in Pulmonary Tuberculosis."——Dr. **G. J. Witkowski** of Paris, a practitioner and medical historian, author of "The Nude in the Theater from Antiquity," "The Physician in the Drama," "Medical Anecdotes" and "Human Generation," now in its ninth edition.——Dr. **D. Baiardi,** professor of surgical pathology at Turin.——Dr. **Theodore Zaymis,** professor of surgery at the University of Athens.——Dr. **Rafael Pastor Reig,** professor of surgery at the University of Valencia, one of the editors of *Policlinica.*

CORRECTION

Experimental Hydronephrosis.—In the paper by Dr. Frank Hinman on this subject in THE JOURNAL, Feb. 3, 1923, page 315, an error has been made in the photograph labeled Fig. 2, the wrong photograph having been sent by the author. A correction appears in the author's reprints.

Government Services

Aviation Examining Unit Authorized

Pursuant to instructions of the Secretary of War, the organization of Aviation Physical Examining Unit No. 16 (a Pennsylvania state unit), organized reserves, has been authorized.

Physical Examinations for Training Camps

In the Army Appropriation bill, provision is made for the expenditure of $6,400,000 for civilian military training camps in the summer of 1923. The War Department is consummating plans for the summer camp activities throughout the country, by which it contemplates training 30,000 men this year. The purpose of the summer camps is to build up a civilian reserve army that could be called on in case of national emergency. Before an applicant can be enrolled he must undergo a preliminary medical examination and meet certain minimum physical requirements. Physicians who make preliminary examinations are asked to be accurate in order to save the government expense, as failure to meet the requirements results in rejection at the army camps.

Community Show at Army School

The Army Medical Field School held a community show at Carlisle Barracks, Pa., March 5-10, at which each department of the school presented exhibits. The technical library was thrown open, showing hundreds of volumes on medical and military tactics. The museum containing a valuable collection of miniature sanitary devices and appliances that were used by the American army in France proved an interesting exhibit.

Change in Triple Typhoid Vaccine

The following changes have been made in the manufacture and issue of triple typhoid vaccine at the Army Medical School:

1. The content of paratyphoid A and paratyphoid B bacilli has been reduced from 750 million each to 500 million each per cubic centimeter. The present composition of the vaccine is, therefore, 1,000 million typhoid bacilli, 500 million paratyphoid A bacilli and 500 million paratyphoid B bacilli per cubic centimeter, a total of 2,000 million per cubic centimeter.
2. The time of expiration has been extended from four to six months.
3. The vaccine will be issued in special rubber stoppered bottles as well as in ampuls.

Commercial firms are allowed a limit of twelve months on their vaccines, but the present time of expiration is four months in the United States and six months outside the country. The strength of the vaccine has been reduced in order to meet existing indications more closely.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 19, 1923.

Reforms in the Public Mental Hospitals

Considerable public attention has been directed to the administration of mental hospitals, which used to be termed lunatic asylums, by a severe attack on their administration by a physician (Dr. Lomax) who was a medical officer in one for a short period. He alleged gross cruelty and neglect of patients, which led the government to appoint a commission of inquiry; but he declined to give evidence before the commission, as he was not satisfied with its constitution. The commission made a report in which his graver charges were discredited, but it was admitted that he had called attention to certain matters which required reform and a number of recommendations were made. The following reforms have been recommended by the board of control (the official body which controls all administration): In classification, some account will be taken of the home conditions and surroundings from which the patient comes. In the appointment of superintendents, preference will be given to those who have obtained a diploma in psychologic medicine and who have served as house surgeon or house physician in a general hospital. The number of assistant medical officers will be increased. Every endeavor will be made to provide patients with occupations and, as far as possible, to arouse their interest. The question of authorizing payment to patients is under consideration. Visiting committees should consider the desirability of providing letter boxes in which patients can post their letters, and in every ward notice should be posted informing patients of their right to forward letters unopened to the authorities. The organization of after-care work needs to be strengthened and extended, with a view to facilitating the discharge of patients who, though not fully recovered, could dispense with institutional care if suitable conditions were provided. Notices should be placed in the waiting rooms of public mental hospitals to inform friends and relatives of patients of the provision of the lunacy act empowering them to apply for the discharge of a patient. Visiting committees should be strengthened by the cooperation of persons who have special qualifications and time to devote to the work. The provision of facilities for the early treatment of incipient mental disorders without certification is recommended as of great value.

Insurance Medical Service

Much dissatisfaction with the insurance medical service is being expressed by the representatives of friendly societies and echoed in a section of the press. Many complaints are made of grudging and perfunctory attendance, such as the writing of prescriptions without even looking at patients. On the other hand, some patients state that they have received every possible care. The fact that the physician is not paid for each attendance but receives an insurance fee, whether the patient is ill or well, is largely the basis of the trouble. The stimulation of the fee paid or payable for each attendance is gone. Moreover, as the panel patient has to pay nothing additional, no matter how often he seeks advice, there is a strong tendency for the physician's time to be wasted in attendance on patients with trivial or imaginary complaints who would never trouble about them if they had to pay. Such persons deserve only perfunctory treatment, but this very practice tends to become a habit, especially in times of rush, when the time required for patients who are really ill is wasted by those who are not. Here have the weak point of the insurance acts. The less the time devoted to a panel patient, the better the rate of pay, for the payment remains constant. The more conscientious the physician, the worse the rate of pay. As a remedy, paying according to attendance is suggested, but there is an equally crucial objection to this. In private practice, it is to the interest of the patient to see that the physician does not run up a bill larger than is necessary. Under the insurance system, the patient has no interest whatever in the amount of the bill, and indeed, as stated, often employs the physician unnecessarily. The funds would be completely at the mercy of any physician who desired to help himself.

The time is approaching when the present contract with the panel physicians expires. Apparently, in anticipation of this, the British Medical Association has called a conference of its insurance acts committee, with representatives of the friendly societies. In an opening address, Dr. H. B. Brackenbury, chairman of the insurance acts committee, who presided, said that this was the first plenary conference of those who worked under the insurance act. The service was now seen to be far too complicated, and it was still very incomplete. There were imperfections in those who operated under the acts and imperfections in the insured persons, who in some cases avoided the act or were indifferent to it, or failed to inform themselves as to its provisions and their duties under it. Yet the work improved, manifestly. Physicians as a whole no longer were antagonistic. Disciplinary action taken in certain cases had its effect on those who were less conscientious and zealous than they should be. The regulations had been in some respects simplified, and additional benefits were beginning to mature. The first subject discussed was "title to benefit." When an insured person has chosen a physician and been accepted by him, there is no difficulty. But a difficulty may arise when one who has not gone through this formality is taken ill. In some cases, physicians charge such persons for attendance as they would private patients. The most important subject discussed was with regard to the efficiency of service rendered. A representative of the friendly societies complained of insufficient waiting room accommodation, resulting in overcrowding. In every insurance area, physicians should be available at any hour. If a particular physician was not available, it ought to be the responsibility of his servant to get into telephonic communication with another physician about an urgent case; it ought not to be left to the friends to go around to one physician after another in the hope of getting attendance.

Another complaint was that patients went on the lists of popular physicians believing that they would get personal attention, but when taken ill they never saw any one but an assistant. Physicians should not employ assistants. This objection was answered by pointing out that, in the interests of patients, newly qualified physicians required some training as assistants before they practiced on their own account. Some physicians had two doors, one for private, the other for panel patients. That should be abolished. On the part of the association, it was pointed out that, while no doubt there were "black sheep in every flock," the number of complaints in proportion to 13,500,000 insured persons was very small. In a discussion of the supply of drugs and appliances, a representative of the friendly societies remarked, quite truly, that a great deal had been heard about excessive prescribing, but what was really wanted was a campaign against excessive drugging on the part of the insured. Medicine had become a fetish. The chairman opened a discussion on the extension of services, which he divided into (1) provision of diagnostic facilities and (2) institutional or specialist treatment. The former was much less expensive and more easy than the latter. There might soon be an extension of arrangements

for certain laboratory investigations and the use of the roentgen rays for examination of fractures and other conditions. Some approved societies have already supplied such extension, but the problem is to put it on a national basis. Although considerable antagonism, rising sometimes to acrimony, has existed between the representatives of the friendly societies and those of the panel physicians, the conference was marked by agreement rather than difference and was quite amicable.

Regulations with Regard to Condensed Milk

The ministry of health have made new regulations as to the labeling and composition of condensed milk. Every can must bear a label specifying its contents (for example, full cream or unsweetened), and stating the equivalent volume of milk (or skimmed milk) contained in the can. Every can of condensed skim milk must be labeled "unfit for babies." The name and address of the manufacturer must appear on the label. Any instructions as to dilution must be quantitatively accurate. Condensed milk must contain not less than the following percentages of milk fat and solids:

	Milk Fat, Per Cent.	All Milk Solids, Per Cent.
Full cream, unsweetened	9	31
Full cream, sweetened	9	31
Skimmed, unsweetened	..	20
Skimmed, sweetened	..	26

The regulations will come into force, August 1, and will apply to all milk intended for sale for human consumption, whether produced in this country or imported.

PARIS

(From Our Regular Correspondent)

Feb. 16, 1923.

The Centenary of Agrégés in Medicine

Instruction in our medical schools is given by *"professeurs,"* a title which, when strictly used, always signifies incumbency of a definitely established professorial chair; or by assistant professors, designated as *"agrégés,"* who do not occupy such chairs. The system of *agrégés* in medical schools was established just one hundred years ago, by a royal decree dated Feb. 2, 1823. Since that time, the system has undergone many transformations. The principal change has tended to transform the *agrégé* system, with its essentially temporary character, into one of a more permanent nature. It may be mentioned that *agrégés* are appointed for a period of nine years. If, during this period, the *agrégé* did not secure a chair and thus become a professor, his career as an instructor terminated and he became an *"agrégé libre,"* having then no further connection with the faculty. The situation of an *agrégé* was, therefore, quite precarious. Attempts were made to remedy this by a series of measures. Thus, a rank somewhat intermediate between the professor and the *agrégé* was created, to which was assigned the title of *"professeur adjoint"* (adjunct or associate professor). In case there was no professorship vacant, and while they were waiting for a vacancy to occur, a limited number of *agrégés* could be appointed adjunct professors and thus continue on the faculty. Another step toward giving the *agrégé* system a more permanent character was taken with the passage of the decree of March 4, 1914, according to the provisions of which the *agrégés*, on completion of the term of nine years, and also the *"agrégés libres,"* may be *pérennisé;* that is, their incumbency may be regarded as permanent, until the age of retirement is reached, which is after thirty years of service. Then, the decree of Jan. 4, 1921, provided that *"agrégés pérennisés"* (*agrégés* whose incumbency has been declared permanent) may be appointed *"professeurs titulaires"* (professors without a chair). Finally, according to the decree of May 28, 1921, *agrégés* may also be appointed *"professeurs honoraires."* In accordance with these decrees, many *agrégés* in the universities of the provinces have been declared permanent incumbents of their posts, which is a fitting recompense for their labors and years of teaching.

In connection with the celebration of the centenary of the establishment of the *agrégé* system, Dr. Mauclaire, who is himself an *agrégé* of the Faculté de médecine of Paris, gives, in the *Gazette des hôpitaux,* the complete list of *agrégés* appointed for Paris during the last hundred years. This list comprises a total of 406 *agrégés,* 150 of whom were later appointed professors of the Faculté de médecine of Paris. Ten others were appointed professors on the provincial faculties, and five in other educational institutions.

The Necessity of Supervision of Commercial Analytic Laboratories

In view of the continually growing number of private laboratories in which are made not only chemical analyses but also bacteriologic examinations and very important biologic tests, the necessity of some system of supervision, to which attention was directed about a year ago, by Dr. Paul Salmon (THE JOURNAL, Jan. 21, 1922, p. 207), is becoming more and more manifest. The current number of the *Presse médicale* reports numerous examples of analyses impaired by errors or in which discordant results were given. A physician took a specimen of urine and divided it into three parts, which he left with as many different pharmacists. The first reported a correct analysis: 3.4 gm. of albumin and 42 gm. of sugar. The second found 5 gm. of albumin and no sugar; the third, 30 gm. of sugar and no albumin. While this was serious enough, the following case is more grave: A girl, aged 17, contracted a sore throat. Her father, a physician, took a smear and sent it to a well known pharmacist, who reported: "numerous streptococci; no bacilli." The father was not convinced, and sent a new smear to the pharmacist every day; and every day he received the same report. One evening he found his daughter so ill that he became alarmed and asked the pharmacist whether he was quite certain about his report, and the latter replied that he had not the slightest doubt as to its correctness, and advised the injection of antistreptococcus serum. The father then went to a confrère residing in the neighborhood. This confrère was a hospital physician who had been for a long time director of a contagious disease ward. He had scarcely entered the patient's room when, without even examining the throat, he insisted on the necessity of giving the patient immediately an injection of antidiphtheric serum. And, indeed, the cultures that were prepared in a laboratory of the Faculté de médecine showed characteristic diphtheria bacilli. In another case, a physician, basing his judgment on the findings of a pharmacist, who, without adequate training, was playing the rôle of a bacteriologist, thought he was dealing with a streptococcal pneumonia and was preparing to inject antistreptococcus serum when it was discovered that the supposed streptococci were nothing more than spherical masses of an old fuchsin solution in water colored with anilin.

In view of such errors, the consequences of which may be extremely grave, some form of supervision seems essential. The writer of the article in the *Presse médicale* finds the present state of affairs unacceptable. Whereas no one can practice medicine, and no one can sell drugs or medicinal herbs, unless he holds a diploma, it seems to be regarded as of no importance who has the legal right to perform chemical, biologic and bacteriologic tests. One would suppose it was more difficult to make an analysis than to sell a bottle of "patent medicine," and yet he who dispenses the products that the wholesalers send him is provided with a very significant diploma, while the one who makes the analysis on which the life of the patient depends may be absolutely incompetent.

Before a person should be allowed to make medical analyses, he should pass a series of tests and should then be furnished with a diploma. Furthermore, medical analytic laboratories should be placed under the supervision of a joint commission composed of professors chosen from the Facultés de médecine and the Facultés de pharmacie.

Reminiscences Connected with Pasteur

Dr. J. A. Doléris, honorary obstetrician to the hospitals of Paris, publishes in the review *Gynécologie* a series of reminiscences connected with the life of Pasteur. Doléris was the first medical student to be admitted to Pasteur's modest laboratory and to be initiated, along with his many brilliant collaborators, all of them chemists, by Pasteur himself in the mysteries of micro-organisms. He was the author of the first doctorate thesis that came out of this bacteriologic laboratory and was defended before the Faculté de médecine of Paris. A few weeks after Pasteur presented to the Academy of Medicine his communication on the probable cause of puerperal fever, Doléris, who was then an intern at the Maternité, was performing a necropsy on a patient who had died from a puerperal infection; he then, for the first time, found himself brought into direct contact with Pasteur, who had been invited to be present and to collect certain specimens for study. What impressed Doléris most on this occasion was the pained expression that crossed the face of the eminent scientist, a laboratory man, who up to that time had studied puerperal infection only in animals, as he contemplated this human body as it lay on the bare slab in the low, dismal dissecting room. Pasteur could not help uttering words of compassion for this poor creature who, owing to an implacable disease, had sacrificed her life in the performance of her maternal duty. *"La pauvre femme! La malheureuse!"* he exclaimed, from time to time, as Doléris performed the necropsy before him and exposed the organs one by one, while Roux, who accompanied him, collected specimens of the pathologic fluids in the veins, the peritoneum and the fallopian tubes. The thesis of Doléris on the etiology of puerperal fever was received rather coldly by his critics. At the mention of bouillon culture mediums, Professor Depaul exclaimed scornfully: "What has all this cookery to do with puerperal fever?"

Let me call attention also to these characteristic lines of a letter that Pasteur wrote to Doléris a short time after the latter passed his doctorate: "You are about to enter, or, I may say, you have entered, the great field of practice. Seek to ascertain—but always exercising prudence and sound judgment—what part must be assigned to micro-organisms."

BERLIN

(From Our Regular Correspondent)

Feb. 10, 1923.

The Biologic and the Social Effects of Alcoholism

Dresel, professor of social hygiene in the University of Heidelberg, publishes in the *Zeitschrift für ärztlich-soziales Versorgungswesen* a very interesting study on the biologic and social effects of alcoholism, from which I will cite passages. According to experiments carried out by several scientific investigators, the narcotic effect of alcohol depends on its degree of dilution. The speed with which alcohol is absorbed is reduced if taken along with food, and the body that is habituated to alcohol absorbs it more rapidly than one that is not habituated. Whereas other narcotics produce a deeper sleep, alcohol has the opposite effect; sleep is, however, prolonged by alcohol. The sensation of hunger can be deadened by alcohol, since small quantities of alcohol stimulate the activity of the stomach. The sensation of thirst, however, seems to be increased by alcohol, for otherwise it would be difficult to comprehend how habitual drinkers can consume such large quantities of alcoholic beverages; very few persons would be able to drink an equal quantity of water. The abolition of inhibitions is effected only by small doses of alcohol. Small doses also facilitate the development of motor power and stimulate the will. Larger doses, however, impair the coordination of movements, and, according to the investigations of Ach, the psychologist of Königsberg, lessen the power of comprehension in reading experiments; also the power of observation is reduced. The capacity to associate sounds is increased, which fact will explain why "poetic effusions" are so often produced under the effect of alcohol. The ability to add is often reduced, and the incoherence or flightiness of thought in habitual drinkers is well known. The power to perform muscular work is reduced by alcohol, although the subjects on whom the experiments were carried out stated that it was perceptibly easier to perform the work required when alcohol had been ingested.

The use of alcohol as a stimulant in sport activities is, therefore, contraindicated, on account of its weakening and other injurious effects. The feeling of increased warmth may also be regarded as a subjective deception. Large doses of alcohol cause a fall in the body temperature. The use of alcohol as a food is irrational, since the cost of a given caloric value is much higher in this form than from unextracted foodstuffs. According to the investigations of Professor von Gruber of Munich, a considerable waste of albumin occurs in the manufacture of beer. There is also considerable economic loss in the process of obtaining brandy from potatoes. The effect that abuse of alcohol exerts on disease and mortality is, in the opinion of Dresel (which accords with that of other investigators), difficult to estimate. So far, no specific injuries to the tissues or organs have been established with certainty as due to alcoholism, although it appears that many organic diseases occur more frequently in habitual drinkers than in persons who are temperate. The effects on animals that have suffered damages from experimental doses of alcohol cannot be applied without question to man. Even the frequent occurrence of cirrhosis of the liver does not prove an etiologic connection with alcoholism, for the bodies on which necropsies are performed do not furnish conclusive evidence as to the conditions that obtain in all dead bodies, much less as to conditions in the living.

One thing, however, appears certain, and that is that in habitual drinkers the small blood vessels undergo certain changes. Kräpelin, the psychiatrist, of Munich, found among his patients with arteriosclerotic brain symptoms 71.5 per cent. men, and of these, 47 per cent. were habitual drinkers. Many cases of mental disease have a history of immoderate indulgence in alcohol. During the war, delirium tremens disappeared almost entirely. The results of conception during alcoholic intoxication have not, as yet, been definitely established. It is probable, however, that in chronic alcoholics the spermatozoa are directly injured. But whether constitutional inferiority, which, it is asserted, occurs frequently in the offspring of habitual drinkers, is due to direct injury to the germ cells of the parents through alcohol, or whether it is only the result of the hereditary transmission of a psychopathic constitution, which is relatively frequent in habitual drinkers, has not been decided as yet.

The investigation of causes with respect to disease and death in the callings most closely associated with the manufacture and distribution of alcohol (saloon keepers, waiters and brewers) encounters the greatest difficulties, as the high morbidity and mortality in these classes may be explained on other grounds. It is exceedingly difficult to differentiate injuries due directly to alcohol from other injuries, and, in Dresel's opinion, it is, to a certain extent, an impracticable differentiation; for it must be remembered that alcoholism

seldom appears as an isolated evil, but is almost always associated from the start with some other social evil. Dresel regards this as the chief difficulty in combating injuries due to alcohol. He thinks that prohibition of alcohol will only partially solve the problem of relieving the public or the state from persons who are now alcoholics or have suffered injuries through alcohol; for it is certain that many of those who now apparently suffer shipwreck on account of alcohol would follow a downward course as the result of some other evil quite disconnected from alcohol. This applies also to the high criminality asserted to exist among habitual drinkers, as set forth by the Berlin investigator Baer. Dresel states that the question has now been raised why all heavy drinkers do not develop criminal tendencies. Dresel holds that alcoholism alone does not produce criminality, but that persons with psychopathic tendencies are inclined to combine alcoholism with criminality. The alcohol problem is so closely interwoven with the whole life of the people that researches on the existing social conditions among drinkers and in drinkers' families are more likely to shed light on the situation than studies on isolated biologic questions. The greatest damage to society is not caused by the degradation of the heavy drinkers themselves and by the disruption of their families (for their number is small compared with the total population), but lies rather in the spread of the habitual use of alcoholic beverages by the masses of the people.

Outbreak of Meat Poisoning

In the bath resort of Freienwalde, near Berlin, there occurred an outbreak of meat poisoning that affected several hundred persons. The symptoms had developed after eating horse meat, and several of the cases resulted fatally. It was ascertained that all the meat that had caused the poisoning had been purchased in the same shop. Necropsies on the victims revealed the presence of paratyphoid bacilli. It was discovered that the butcher had slaughtered and marketed six horses, three of which had harbored paratyphoid bacilli. Unfortunately, the official meat inspector had failed to discover the existence of the infection, and therefore suit has been brought against him for culpable negligence.

Personal

Professor Straub of Freiburg has been called to Munich to occupy the chair of pharmacology as successor to Professor von Tappeiner, who is to retire, April 1, on account of his advanced age.

Marriages

WALLACE WILLIAM HOLLEY, Warren, Minn., to Miss Pearle Marguerite Palmer of Los Angeles, January 9.

FRANK DALLAM WORTHINGTON, Charlotte, N. C., to Miss Alice Hunt Owings of Baltimore, February 28.

WARREN T. MAYFIELD, JR., Norman, Okla., to Miss Dolores Burrell of Santa Ana, Calif., in January.

CHARLES F. DAVIDSON to Mrs. Barbara Frick Chamberlaine, both of Easton, Md., February 24.

AVONIA EADES KISER, Paris, Ky., to Miss Maude Ussery of Richmond, Ind., recently.

MORRIS C. MARCUS to Miss Evelyn Neuman, both of Chicago, February 25.

CARL COHEN, Atlanta, Ill., to Miss Della L. Sporn of Chicago, February 11.

RALPH J. LEVY, New York, to Miss Marion Saul of Brooklyn, February 21.

HENRY S. PALMER, Newark, N. J., to Miss Johnson of Orange, recently.

JOHN KERCHER to Mrs. Clara Renker, both of Chicago, March 17.

Deaths

George Frank Lydston ⊕ Chicago; Bellevue Hospital Medical College, New York, 1879; died in California of pneumonia, March 14. Dr. Lydston was born at Tulumne, Calif., in 1858. After his graduation he became intern at the Charity Hospital, New York, and later, resident surgeon of the New York State Immigrant Hospital. He was lecturer on genito-urinary diseases in 1882 and later professor of genito-urinary surgery and venereal diseases in the College of Physicians and Surgeons, Chicago. He was author of numerous books of both scientific and literary character, including a "Textbook on Genito-Urinary and Venereal Diseases," on the "Surgical Diseases of the Genito-Urinary Tract," and on "Impotence and Gland Transplantation." Most of his recent contributions to medical literature were devoted to the possibilities of securing rejuvenation by transplantation of glands. Among his contributions to general literature were a social text on diseases of society, a play "The Blood of the Fathers," and several novels, such as: "Over the Hookah," "Poker Jim," and "Trusty 515." Dr. Lydston was a man of aggressive personality and a writer of ability, with keen and satirical humor.

Asa Wilder Daniels, Pomona, Calif.; Medical College of Ohio, Cincinnati, 1867; founder of the Southern Minnesota Medical Society; Civil War veteran; member of the state board of health; for more than half a century a practitioner in Minnesota; served in the Indian outbreak of 1862; aged 94; died, February 27, of acute bronchitis.

Charles Columbus Simmons, Bunker, Mo.; Jefferson Medical College of Philadelphia, 1894; member of the Missouri State Medical Association; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 53; died, February 21, at St. Luke's Hospital, Kansas City, following a long illness.

Carroll Kendrick, Kendrick, Miss.; University of Louisville Medical Department, Louisville, Ky., 1873; member of the Kentucky State Medical Association; member and at one time president of the state board of health; for thirty years a member of the state legislature; aged 70; died, February 17, of heart disease.

William M. Leszynsky ⊕ New York; Medical Department of the University of the City of New York, New York, 1878; member of the American Neurological Association and the New York Neurological Society; on the staffs of the Harlem, People's and Lebanon hospitals; aged 66; died, March 3, of pneumonia.

Charles Williamson Perkins, Chester, Pa.; Hahnemann Medical College of Philadelphia, 1870; practitioner in Chester for nearly half a century; former president of the city board of health; on the staff of the Crozer Hospital; aged 74; died, February 24, at Hot Springs, Ark., of diabetes mellitus.

Frederick Schauffler Osterheld, Ovid, Mich.; Detroit College of Medicine and Surgery, Detroit, 1919; member of the Michigan State Medical Society; served during the World War; aged 34; was killed, February 22, when the automobile in which he was riding was struck by a train.

William Franklin Faison ⊕ Jersey City, N. J.; University of Virginia Department of Medicine, Charlottesville, 1888; on the staffs of Christ, Jersey City and St. Francis' hospitals; founder and president of the Fairmount Surgical Sanatorium; aged 57; died, February 24, of pneumonia.

George Washington Westermeier, Cherry, Ill.; Medical Department of Washington University, St. Louis, 1908; member of the Illinois State Medical Society; served in the M. C., U. S. Army, during the World War; aged 39; died, February 28, of pneumonia.

Charles H. Willson, Piketon, Ohio; Medical College of Ohio, Cincinnati, 1878; member of the Ohio State Medical Association; aged 70; was killed, February 25, when the automobile in which he was driving was struck by a train.

James A. Waterman ⊕ Jefferson City, Mo.; Beaumont Hospital Medical College, St. Louis, 1887; physician to the Missouri State Penitentiary Hospital; aged 60; died, March 2, at St. Mary's Hospital, of abscess of the stomach.

Enos Canfield, Van Etten, N. Y.; Eclectic Medical College of the City of New York, New York, 1881; practitioner of Van Etten for more than half a century; aged 88; died, February 22, of heart disease.

James H. Fonger, Gary, S. D.; Minneapolis College of Physicians and Surgeons, Minneapolis, 1900; aged 48; died, January 28, at the John Swenson Memorial Hospital, Canby, Minn., of acute alcoholism.

Roy Granbery, New York; University of Louisville Medical Department, Louisville, Ky., 1901; passed assistant surgeon, U. S. Public Health Service; aged 42; died, February 27, of bronchopneumonia.

Wilson Charles Dingman ⊕ Poughkeepsie, N. Y.; Medico-Chirurgical College of Philadelphia, 1906; chief surgeon to the Mansion Square General Hospital; aged 50; died, February 27, of pneumonia.

Frank C. Simpson, Louisville, Ky.; University of Louisville Medical Department, Louisville, 1880; aged 65; died, February 25, at the Norton Memorial Infirmary, of pneumonia, following an operation.

Mary Agnes Dangel, San Francisco; University of Michigan Medical School, Ann Arbor, 1897; aged 56; died, February 25, at St. Luke's Hospital, of acute dilatation of the heart and myocarditis.

George W. Koeppel, Milwaukee; Milwaukee Medical College, 1901; formerly on the staffs of the Milwaukee County and Emergency hospitals; aged 44; died, February 18, of bronchopneumonia.

Howard Bell, Delhi, N. Y.; Medical Department of the University of the City of New York, New York, 1884; aged 68; died, February 17, from a bullet wound, presumably self-inflicted.

William D. Crocker, Warsaw, N. C.; Louisville Medical College, Louisville, Ky., 1887; member of the Medical Society of the State of North Carolina; aged 58; died, February 24, of influenza.

Enoch Knabb, Springfield, Mo.; Keokuk Medical College, Keokuk, Iowa, 1895; member of the Missouri State Medical Association; aged 55; died, February 19, of cerebral hemorrhage.

Arthur Windes Condict, Dover, N. J.; University of Michigan Medical School, Ann Arbor, 1882; member of the Medical Society of New Jersey; aged 63; died suddenly, February 16.

Charles Edward Dampier ⊕ Crookston, Minn.; University of Michigan Medical School, Ann Arbor, 1878; aged 68; died, February 20, at the Bethesda Hospital, of pneumonia.

Thirza La Vence Gregory, Englewood, N. J.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1892; aged 60; died, February 19.

James Edward Peltier, Newaygo, Mich.; Michigan College of Medicine and Surgery, Detroit, 1897; member of the Michigan State Medical Society; aged 59; died, January 8.

Joseph Daniel Daly, Brooklyn; Illinois Medical College, Chicago, 1899; on the staff of the Brooklyn Home for Consumptives; aged 46; died, February 26, of pneumonia.

Andrew Joseph McCusker, Glenwood City, Wis.; Detroit College of Medicine and Surgery, Detroit, 1918; aged 31; died, February 2, of pneumonia, following influenza.

Elmer Ellsworth Reed, Kansas City, Mo.; College of Homeopathic Medicine and Surgery of the Kansas City (Mo.) University, 1897; aged 56; died, February 17.

Walter de La Montanye Hill, Everett, Pa.; Jefferson Medical College of Philadelphia, 1900; died, February 9, at the Allegany Hospital, Cumberland, Md., of pneumonia.

Howard L. Garner, Rhinelander, Wis.; Milwaukee Medical College, 1901; served in the M. C., U. S. Army, during the World War; aged 44; died recently, of pneumonia.

J. Ambrose Armes, Leitchfield, Ky.; Louisville Medical College, Louisville, 1896; member of the Kentucky State Medical Association; aged 52; died recently, of carcinoma.

Charles Lamb Clark, St. Paul; Medical Department of Columbia College, New York, 1878; formerly deputy coroner; aged 66; died, February 16, of bronchopneumonia.

Elias V. B. Kendig, Hayesville, Ohio; Medical Department of the University of the City of New York, 1864; Civil War veteran; aged 84; died, February 21, of senility.

Emory W. Bruner, Jeffersonville, Ind.; Miami Medical College, Cincinnati, 1867; Civil War veteran; aged 81; died, February 27, of chronic nephritis and uremia.

Nelson Peck, Clarksburg, W. Va.; University of Maryland School of Medicine, Baltimore, 1886; aged 74; died, February 16.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

WHAT TO DO FOR A HIGH TEMPERATURE

Helpful Suggestions Sent to the Malingering Maid of Michigan

Elsewhere in this issue appears a report of a case of malingering that has been given much publicity in the daily press for the past few weeks. A young woman of Escanaba, Mich., was reported as having a temperature that, from the newspaper reports, ranged all the way from 111 F. to the limit of a clinical thermometer. Investigation showed that the patient "faked" the temperature by the stealthy use of a small hot-water bottle.

During the time that this case was a nine days' wonder, the patient's family received many suggestions. Most of these came by letter, some by telegraph. The family very courteously turned over to The Journal's representative some of the would-be-helpful messages that had been received. The following brief extracts from this mass of correspondence may prove of interest:

From Oakland, N. J., came the suggestion that the patient be given "as much ice cream (vanilla or other mild flavor) as she will swallow all day long and at night, too. It may help her a lot."

The Rose Salatorium Co., Rome City, Ind., urged the patient to take the "Vitamin Salt Food," "the salt that builds you up" ($1.00 per pound) and to purchase (price $1.50) the book "What to Eat and How to Prepare It." The latter, it seems, is invaluable; after getting it "you can live healthily ever after, for it tells you how."

CHIROPRACTORS—OF COURSE

An anonymous Milwaukee friend suggested that the patient have a chiropractor give "some spinal adjustments." The writer (evidently a woman) said they could take her word for it "as we always have chiropractors work on our babies when ill." And, as a parting shot: "Of course the medical men will be against this, but just try it just once."

A prepaid telegram:

"Miss X————, Noted Fever Case, Escanaba, Mich.

"You have tried the rest now try the best, *viz*, your local chiropractor. I am a chiropractor and I know what chiropractic can do. Stop flirting with death and call on a chiropractor immediately and wire or write me the outcome. I am paying for this message in hopes of saving your life. Yours for health.

E. D. Hemphill, D.C., Chiropractor, Saginaw, Michigan."

From Cleveland, Ohio, came an unsigned letter from a man who said that he had had a similar high temperature until "some one told me of a mechano-therapy doctor." One treatment cured him! As a sporting proposition, he added: "To show you how sure I am of him curing you I'll just bet my whole week's pay and more."

William E. Gates, Shirley, Ill., wrote: "Having read of your exceptional case in the News Papers and being an Astrologer I would like very much to have your birth date. If I find anything that will benefit you, I will send it." Mr. Gates even enclosed a stamped addressed envelop.

An anonymous letter from Toledo, Ohio, enclosed the card of "J. A. Aldridge, Divine Healer." The letter detailed some of Aldridge's marvels and expressed the wish that the patient might come to Toledo and see the "healer." It closed with the statement: "Do wish your doctor could bee wright with him. They mite make good to Be togather."

A Chicago woman insisted that "she never saw or heard of a fever but what I could heal in a few minutes when I had half a chance and even when I don't have even when they are supposed to be dying." The writer modestly mentioned that she had "healed seventeen cases of consumption and four

were dying and several cancers and tumors in a few minutes when dying, two in one visit."

One W. L. Brown of New York City sent a letter by special delivery. "I feel," wrote Brown, "that I can by an application that has been revealed to me for years and had been successfully applied in cases somewhat simular [sic!] to yours," bring the patient back to normal. "There isn't the least harm in it . . . my revelation is from the external side only." Mr. Brown explains that it is a "gift."

On the stationery of the National Home for Disabled Soldiers, Leavenworth County, Kansas, came a letter from one J. H. Woodruff, who seems to call himself "i John the Prophet." It read:

"My Dear Miss Lady you have one of the New Diseases that the other Prophets spoke a Bout that Would Baffle the Doctors. You Plase this Letter on your head and Put on Bonnet or hat and Were it ½ hour and your Fever Will go down if you have any Faith in god and i Will do the Balence."

A Bostonian, with nothing to sell, was quite sure that the patient's fever could be brought back to normal if she would "take wild cherry bark, steap it in hot water. Ad a little sugar and take a wine glass every two hours until you are normal."

"Dr. H. F. A. Meissel, Prof. of N. S. of L. E." Terre Haute, Ind., wrote, enclosing his business card and an advertising poster. Mr. Meissel's specialty is "Nature's Tissue Cell Food" which "cures any ailment of man or beast promptly from the slightest cold to the worst ailment ever named." Mr. Meissel recommended "Nature's Tissue Cell Food." No price mentioned.

A physician in a Wisconsin town wrote that "at the risk of being called an egotist" he was certain that he knew the cause of the patient's superheated condition. "It is a disfunctioning of your ductless glands that means the thyroid, the pituitrery and the supra adrenal glands." The doctor went on to state that these glands "secret a serum" that "serves to maintain an equiblerium." [sic!] He stated that he had taken the liberty of writing to the editor of an Escanaba paper giving his views on the case and had sent the editor "a prescription composed of ductless gland secretions to be administered artificially to stimulate glands to a normal function." If the patient's physician would but give her this prescription, everything would be well.

Correspondence

"THE EARLIEST RECOGNITION OF APPENDICITIS—AGAIN"

To the Editor:—Dr. Leonard A. Mackall (THE JOURNAL, February 24, p. 572) says that the first case of appendicitis is that described by Heister in 1753, and that this fact was first pointed out by Dr. R. S. Rudolf of Toronto in the *Canadian Medical Association Journal*, May, 1913. In the third edition of Dr. Deaver's book on appendicitis, published in Philadelphia by Blakiston in 1905, I revised the chapter on the history of appendicitis, and there at page 16, Heister's case is noted and at page 11 a case of appendicitis described by Fernelius in 1567 is described. The original references to all these cases were consulted in the library of the College of Physicians of Philadelphia.

ASTLEY P. C. ASHHURST, M.D., Philadelphia.

NOSTRUM GUZZLING A CENTURY AGO

To the Editor:—The following quotation may shed some light on the status of the "Propaganda for Reform" a century and more ago. It is from "A View of the Nervous Temperament," by Thomas Trotter, M.D., Late Physician to His Majesty's Fleet, etc., etc., first published in London in 1806:

All nervous persons are uncommonly fond of drugs; and they are the chief consumers of advertised remedies, which they conceal from their medical friends. Among some well-meaning people, this inordinate desire for medicine has frequently become of itself a disease. With many of them, physic, to be useful, must be clothed in mystery; and the moment a discovery is made of the composition, the confidence is lost. Medical attendants have too often brought this punishment on themselves. Were they unanimous in combating the prejudices of mankind, by candour and openness of conduct, by a fair avowal of the imperfections of their art, and the honest confession that the articles of Materia Medica form but a small portion of its resources, they would not so frequently see their commands disregarded, or learn that their compounds have been thrown out of a window. This is the only way in which I can account for so many persons of good sense and discernment, consigning themselves and families into the hands of impudent and illiterate quacks.*

The asterisk refers to this footnote:

The duty on quack medicines at this time is estimated at upwards of £300,000 annually. From this it may be supposed that ignorant pretenders to medicine take not less than *two millions* out of the pockets of the community!!

GEORGE BEVIER, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CATHARSIS OF NURSING MOTHERS

To the Editor:—1. Please mention a list of cathartics which, when ingested by the nursing mother, are known to appear in the milk. 2. Can you advise what measures may be taken to secure catharsis in a nursing mother suffering with chronic constipation? Kindly use my initials in publication. H. J. O.

ANSWER.—1. It seems impossible to furnish a list of cathartics as requested by our correspondent. So far as is known, no chemical work has been done on this question. The fact, however, is abundantly substantiated that many cathartics taken by the nursing mother will affect the suckling infant. It would be much easier to mention those evacuant measures that will not affect the child when taken by its nursing mother, thus answering at the same time the second question.

2. A coarse diet, with fruit and vegetables predominating, and the ingestion of an abundance of water and of fat will tend to minimize the necessity for cathartics. Bran, though a dietetic measure, is frequently so active in favoring evacuation that it needs to be mentioned especially. One tablespoonful of it may be taken three times a day with meals. If the diet is insufficient, liquid petrolatum in tablespoonful doses morning and evening will probably soften the stool and favor its passage. Abdominal massage and gymnastics would be advised in case medicinal treatment failed. Should mechanotherapy not be available, or when the chief delay occurs in the last portion of the large bowel, then evacuant enemas of soapsuds or saline solution will be effective.

INFLUENZA, GRIPPE AND "FLU."

To the Editor:—Please tell me what is the opinion of those best qualified to know concerning the relationship of the recent epidemic of illness in Chicago and the so-called Spanish influenza of 1918. I am far from clear about classifications, and assume that many coryzas rank as influenza in the newspaper statistics. What relation does our prewar la grippe bear? In England it has long been usual to call coryza flu. Are we not adopting that custom? J. W. W.

ANSWER.—It seems that most physicians are inclined to regard the recent epidemic of respiratory infection in Chicago as one of influenza and as identical with the great epidemic of 1918. At present the main reason for this impression, no doubt, is the similarity of the two outbreaks in symptoms and complications. It is perhaps too early for reports of systematic bacteriologic and anatomic observations, and it is possible, of course, that such studies may reveal peculiarities in the present epidemic that will suggest a distinctive etiology; but as yet nothing of that sort has been intimated. Undoubtedly, various infections may cause coryza as well as other common symptoms and lesions, and in view of the tremendous significance to human welfare of the recent influenza pandemics, it is not strange that the newly coined "flu" should be crowding out older designations for what may be distinct diseases that are more or less similar in their manifestations. So long as the causative agents of influenza and similar diseases remain obscure, precise differentiation on the etiologic basis of outbreaks such as referred to in our correspondent's letter probably cannot be made.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

THE STATUS OF GRADUATE MEDICAL EDUCATION IN THE UNITED STATES IN 1922-1923

Report to the Council on Medical Education and Hospitals of the American Medical Association by a Special Committee on Graduate Medical Education*

READ BY THE CHAIRMAN

LOUIS B. WILSON, M.D.
Director, Mayo Foundation of Medical Education and Research
ROCHESTER, MINN.

Since October, 1922, the Special Committee has attempted a survey of the present status of graduate medical education in the United States. The chairman of the Special Committee and the secretary of the Council have personally visited most of the schools in the United States which announce opportunities for formal graduate medical study, and a number of universities which provide opportunities for formally registered graduate study in preclinical branches, and opportunities for informal graduate study through internships, residencies, and so forth. In addition, a few hospitals that provide special internships in ophthalmology, otolaryngology and rhinology and dermatology have been visited.

An attempt has been made to collect, in each instance, information concerning the corporate character of the institution and its relationships to other institutions, its financial resources and annual expenditures, its teaching resources in laboratories, hospitals, dispensaries, libraries and museums, the extent and general character of its teaching staff, its standards for admission of students, the name, home address, medical school and year of graduation of each student enrolled in the institution during 1922, the length and character of its courses of study in various fields, its methods of determining and recording the progress made by its students, and the character and form of certificates granted by the institution.

PROGRESS SINCE LAST SURVEY

In general, it may be said that there has been a very decided improvement in the general character of the graduate study of medicine in the United States since the committee's preliminary survey in December, 1919. However, there still remain institutions in which the conditions are almost inconceivably bad, though in others work on the highest plane of university graduate study is in progress. The Universities of Minnesota and Pennsylvania, the New York Post-Graduate School, and the Universities of Illinois, Harvard and Tulane have made the greatest advances in the organization of their facilities for graduate study in clinical branches. Chicago (Rush Medical College), California and Columbia universities have formulated plans for graduate study, and have already begun work in certain clinical fields, or expect to do so in the near future. Several other schools, as for example Johns Hopkins Medical School, and Bellevue Medical School, without general plans are giving opportunities for graduate work in a few clinical fields.

OPPORTUNITIES FOR ADVANCED STUDY IN PRECLINICAL FIELDS

In a number of the university medical schools, opportunities for graduate study in the preclinical branches have long existed. Usually these opportunities are a part of the graduate school of the university in which the students are registered. As far as the committee has been able to determine, there has been no material increase in the number of graduate sudents availing themselves of these opportunities, except at Johns Hopkins and the University of Minnesota.

The opportunities for graduate study in preclinical laboratories and in informal or short courses in clinical fields in the Universities of Colorado, Chicago, Northwestern, Indiana, Iowa, Maryland, Michigan, Washington, Nebraska, Pittsburgh, Western Reserve and Virginia have been surveyed only through correspondence or the school bulletins.

SCHOOLS OF PUBLIC HEALTH

The graduate work in the school of public health in the Universities of California, Pennsylvania, Harvard, Michigan, Yale, Johns Hopkins, Albany, Bellevue and Wisconsin have not been surveyed. This has not been because your committee was not interested but because it felt that this work was so well organized in the institutions named that for the time being a survey might be omitted.

ADVANCED STUDY IN CLINICAL FIELDS

Any discussion of the general character of graduate work provided by medical schools must take into consideration the demands from graduate students. Broadly speaking, these demands come from two groups of physicians: first, those desiring to fit themselves for practice of some special field of usually clinical medicine and, second, those desiring to improve themselves in general practice or in the practice of a specialty in which they are already engaged.

The first group consists largely of recent graduates who wish to fit themselves in a special field, either preclinical or clinical, and usually without engaging in general practice as a means of livelihood in the meantime; or of older graduates who have been in general practice for several years and who wish to fit themselves for, usually clinical, practice in some special field, using their experience in general medicine as a basis for their further study. The larger number of graduate students in both of these groups are still obtaining their preparation informally in advanced internships, residencies, assistantships, apprenticeships and various minor teaching positions in medical schools and the hospitals attached thereto. Their ability to practice in their chosen field is usually a matter of self-determination, occasionally aided by advice from their immediate superiors. At present, public recognition of special attainments in limited clinical fields are available to men so prepared only through membership in one or more of the various specialists' associations, as the American College of Surgeons and the American Ophthalmologists. A few universities, notably the Universities of Minnesota and Pennsylvania, now have their opportunities well organized for such preparation in clinical fields, including supplementary study in supporting preclinical fields, and recognize the graduates' attainment of proficiency by the granting of advanced degrees.

The committee recommends that graduate students of either of these two types, as well as medical schools contemplating the provision of opportunities for their preparation, should study carefully the recommendations of the various subcommittees in the special fields of medicine presented before this Council at its 1921 meeting.

While the granting of certificates or advanced degrees for work of the character described above must be left to the discretion of the institutions providing the opportunities, your committee believes that if any form of advanced degree or diploma-like certificate which may be used for wall display be granted, the principles enumerated later in this discussion should be followed.

The second group of physicians desiring to make further preparation either in general practice or in some special clinical field in which they are already engaged includes men and women of all degrees of preparation, from the most meager to the most advanced. They ask for opportunities for

* The committee consists of DRS. LOUIS B. WILSON, Chairman, Rochester, Minn.; JOHN M. DODSON, Chicago; ALFRED C. EYCLESHYMER, Chicago; VICTOR C. VAUGHAN, Chicago; J. M. T. FINNEY, Baltimore; EDWARD JACKSON, Denver; JAMES EWING, New York; WILLIAM PEPPER, Philadelphia, and, ex-officio, ARTHUR DEAN BEVAN, Chairman and N. P. COLWELL, Secretary of the Council on Medical Education and Hospitals.

study ranging from a casual visit to a clinic, a few days or a few weeks of intensive instruction, to a year of laboratory or clinical experience. As a result, the provision of opportunities which they may properly take advantage of without impossibly long interruptions of the practice presents the most complicated problem. At the outset your committee recognizes the very great need for continuation study, aside from that obtainable in daily practice and through personal reading, by the general practitioner and the specialist. New developments in diagnosis and treatment must be studied, and additional skill in diagnostic and operative procedures obtained. Unfortunately, the period which the practitioner can usually afford to take is too frequently so brief that his instructor who is responsible for the care of patients does not feel warranted in relinquishing any of that responsibility to him. The instruction, therefore, must usually be limited to lectures, demonstrations and laboratory work. Where periods of several months can be spent in one field, the instructor may sometimes place clinical material at the disposal of the practitioner-student. However, much good is being accomplished by lectures and laboratory courses and clinical demonstrations, however brief. Your committee would recommend for the consideration of prospective practitioner-students, and of other universities, the work in the short courses for practitioners under various names provided by the New York Post-Graduate School and the Universities of Pennsylvania, Tulane, Harvard, Johns Hopkins, Minnesota, Colorado, Illinois, Indiana, Iowa, Washington, Nebraska and Bellevue, and also the "extension courses" being carried on by the University of Pennsylvania.

ADMISSION REQUIREMENTS

At present it would seem that the least admission requirement should be graduation from an acceptable medical college, or, in the case of older reputable physicians, evidence of licensure before graduation was required. Many schools are not giving sufficient attention to entrance requirements, and serious abuses exist.

TEACHERS

In some institutions, the courses of instruction are given by men with inadequate experience not only in the subject matter of their fields but also in teaching. It is believed, for example, that the general practitioner who can spend only a short period in acquainting himself with the newer things in diagnosis and treatment should, if possible, receive his instruction from the very best man available. Certainly instruction should not be left to men who are recent graduates of inferior schools and who have not been able to obtain teaching recognition on the faculties of acceptable medical schools.

LABORATORY FACILITIES

It cannot be assumed that all graduate work necessarily requires the use of laboratories for instruction; but most of it does, and where courses obviously requiring such facilities are offered, adequate laboratories should be provided. In many institutions this is far from being true at present.

LIBRARY FACILITIES

Any graduate work in medicine demands intensive reading in the field studied. Library facilities in many institutions surveyed are either totally lacking or wofully inadequate. In some cities, however, this lack is provided for by good medical libraries attached to other nearby institutions.

HOSPITALS AND DISPENSARIES

Graduate courses in clinical subjects can rarely and with difficulty be profitably presented in lectures only. Your committee recognizes the difficulties in bringing short term graduate medical students in responsible contact with patients, but some institutions are solving this problem in a creditable manner, apparently without harm to the patients. Certainly clinical material must be available for demonstrations to, if not for personal use by, the graduate student.

CERTIFICATES

A few of the previously named institutions and a number of others not named are granting diploma-like certificates of attendance to practitioner-students for relatively short periods of study. One institution, not named, grants such a certificate after one week of study. After careful consideration, your committee believes that the granting of diploma-like certificates which may be used for wall display, to any except those whom the institution knows to be proficient in a particular field, is fundamentally wrong. It is usually urged that these certificates are certificates of attendance only. Though this may be true, since the name of the student and the name of the specialty are usually stated in such a manner as quickly to catch the eye of the observer, it is believed that the public in most instances does not readily distinguish between such a certificate of attendance and a certificate of proficiency in the specialty named. Hence they assume that the physician who displays such a certificate on his wall is truly qualified to practice the specialty named. This often false impression is all the more harmful if the certificate bears the name of some well known university, or if there is included in the name of the institution the name of some special field of medicine, as surgery or ophthalmology, or if it bears the legible signatures of men widely known as specialists in any field of medicine or surgery. Your committee believes that such certificates may readily be, and frequently are, used by unqualified physicians to mislead the public as to their qualifications in the fields named on the certificates.

If a graduate school determines that one of its students is thoroughly competent to practice in any special field of medicine or surgery, your committee sees no reason why it should not give him a certificate to that effect, or confer on him an advanced degree if it so desires. If, however, it does not know that one of its graduate students possesses such competence, under no circumstances should it grant him any sort of certificate which can be readily displayed on the wall of his office to mislead his patients. Your committee further believes that no certificate of proficiency or which may be construed by the public as indicating proficiency should be granted by any graduate institution to any one who the institution does not know is proficient in that field, nor to any one who has not completed one academic year in full time study of a single special subject in the institution granting the certificate. For lesser degrees of proficiency and shorter periods of study the most that should be granted in the way of a certificate should be a statement in letter form or on a card which does not contain all the essential data on one side. Neither should it resemble a diploma, be suitable for wall display, nor contain any portion easily read at a distance of more than three feet.

Your committee further believes that these principles should apply also to certificates from hospitals for internships in special fields in which the special field is named. They should not necessarily apply to certificates from hospitals for general internships or resident service in which no special field is named, since the responsibility for license to practice general medicine rests with state medical examining boards.

It is only to protect the public against inadequately prepared specialists that the foregoing provisions are suggested. It is, however, believed that the work of schools offering opportunities for graduate study for student-practitioners would be greatly simplified by thus restricting the issuance of diploma-like display certificates, and your committee hopes that when the attention of schools is called to the reasons for such restriction, they will adopt regulations in conformity with the foregoing recommendations.

Your committee recommends as a basis for approval by the Council the following:

PRINCIPLES REGARDING GRADUATE OR POSTGRADUATE MEDICAL SCHOOLS, SCHOOLS OF LABORATORY TECHNIC, AND OTHER INSTITUTIONS PROFESSING TO FURNISH COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE

1. *Admission.*—Opportunities for graduate study should be open only to those who have received the degree of Bachelor or Doctor of Medicine from medical colleges considered acceptable by this Council, or to reputable physicians who were licensed in certain states before graduation was required.

2. *Records.*—Records should be kept by each institution showing (*a*) the preliminary and professional entrance qualifications of every student, which should be verified by documentary evidence; (*b*) the subjects for which he is enrolled; (*c*) evidence of his faithful attendance at his work; (*d*) whether or not an advanced degree or diploma-like certificate was granted, and (*e*) especially evidence of the student's proficiency as demonstrated by his routine or research work, examinations or otherwise.

3. *Teachers.*—The school should be supplied with a corps of skilled teachers responsible for the work in all subjects in which opportunities for study are announced. This should include teachers for essential review or advanced work in the preclinical sciences, as well as those who have in charge work in clinical subjects. The teaching staff should be made up of graduates of or teachers in Class A medical colleges, or of high grade educational institutions. The faculty should be organized under the various teaching departments in which work is offered with a competent professor at the head of each department.

4. *Laboratories.*—The school should have ample laboratories to provide proper review or advanced work in the preclinical sciences essential for the specialty or specialties in which opportunities are offered.

5. *Clinical Material.*—The school should have either a large outpatient clinic with 100 or more patients each day, or a teaching hospital with a daily average of 200 or more patients; or, if teaching is limited to a single specialty, a hospital of not less than twenty-five patients daily, or both such dispensary and hospital. In brief, it should have sufficient clinical material to enable it to provide satisfactory clinical study in the specialty or specialties for which opportunities are offered.

6. *Library and Museum and Special Apparatus.*—Unless the graduate school otherwise has the convenient use of a good medical library, it should have a medical library of its own. This should include an ample supply of modern text and reference books, files of bound medical periodicals, and the essential indexes. It should also receive regularly thirty or more standard medical periodicals, the latest numbers of which should be on tables or in racks where they may be easily accessible to the graduate students.

The school should be supplied with adequate museum facilities, including anatomic and pathologic specimens, such as can be used for study by graduate medical students. It should also be supplied with adequate special apparatus, such as stereopticons, balopticons, photomicrographic outfits and roentgen-ray equipment.

7. *Annual Announcements.*—The graduate school should publish annually announcements, bulletins or catalogues, giving detailed information in regard to its teachers, laboratories, dispensaries and hospitals, and outlines of the various opportunities for study offered, as well as a complete list of the students enrolled during the last preceding year, showing their medical schools and years of graduation, the subjects for which they were registered, and to whom advanced degrees or diploma-like certificates were granted.

8. *Type of Institutions Not Acceptable*—Work in schools owned or controlled by individuals or by corporations conducted for profit, or work given in hospitals owned or controlled by individuals, is not eligible for the approval of the Council on Medical Education and Hospitals.

No institution the name of which indicates a specialty or group of specialists will be considered as acceptable unless it has an adequate number of skilled teachers and ample laboratory or clinical facilities, and offers opportunities for study sufficiently well organized and thorough to permit the students to acquire a reasonably complete knowledge and skill in that specialty.

9. *Advanced Degrees, Diplomas, Certificates.*—No advanced degree, diploma or diploma-like certificate should be granted for a period of study extending over less than one college year of at least thirty-two weeks in length, and which includes at least six hours of actual study each day, and unless scholarship records of the students granted such certificates show that they have, throughout the period, faithfully attended to their studies, and unless reasonable tests show that they have faithfully and satisfactorily completed the work for which they were registered.

Classification of Graduate Medical Schools

The classification of schools according to these principles and according to their present status is a complicated problem, largely because of the great variation in the purposes and length of the courses offered. Indeed, for the present it seems necessary to ignore both these factors and to consider only the observation of entrance requirements, the provision of adequate material, personnel and organization to accomplish properly the work advertised, a proper guaranty of stability and responsibility in the institution, and the protection of the public from unwarranted certification of specialists.

In accordance with the foregoing principles, your committee recommends the following classification on the present status of the graduate schools inspected:

A-1. Those which have adequate equipment, which are furnishing acceptable graduate courses of instruction in all the various specialties, and which grant advanced degree diploma-like certificates only to students who are qualified to receive them.

A-2. Those which have adequate equipment, which give acceptable course in one or two specialties, and which grant advanced degrees or diploma-like certificates only to students qualified to receive them.

B-1. These which have limited equipment but which grant no advanced degrees or diploma-like certificates, or if so, only to students qualified to receive them.

B-2. Those which have reasonably good equipment but which are overgenerous in granting advanced degrees or diploma-like certificates to students who have not secured adequate qualifications.

C-1. Those which are (*a*) inadequately equipped; or (*b*) are not properly organized; or (*c*) are not conducted in a satisfactory manner; or (*d*) grant advanced degrees or diploma-like certificates on courses which are inadequate to warrant such certification.

C-2. Those which offer courses in any specialty which are too short to insure any reasonable degree of efficiency in any specialty, or which give advanced degrees or diploma-like certificates for such unduly brief courses.

Ohio December Examination

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports the oral, written and practical examination held at Columbus, Dec. 6-8, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 25 candidates examined, 23 passed and 2 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Yale University	(1922)	89.9
Howard University	(1921)	80.5
Chicago College of Medicine and Surgery	(1916)	81.7
Hahnemann Medical College and Hospital, Chicago	(1922)	83.6
Loyola University	(1918)	75*
Northwestern University	(1922)† 81.5, 90.2, (1922)	88.5
University of Louisville	(1916)	83.7
Harvard University	(1922) 86.4, 87,	90.7
Eclectic Medical College	(1905)	76.9
Jefferson Medical College	(1921) 82.7, (1922)	85.1
Temple University	(1919) 91.1, (1921)	77.1
University of Pittsburgh	(1922)	90.1
Meharry Medical College	(1908)	75‡
University of Vienna, Austria	(1915)§	82.5
University of Szedin, Hungary	(1912)§	82.8
University of Naples, Italy	(1919)§	77.1
FAILED		
University of Naples, Italy	(1914)§ 52, (1921)§	41.3

* This candidate was given 1.9 per cent. credit for years of practice.

† These candidates have finished the medical course, and will obtain the M.D. degree after they have completed a year's internship in a hospital.

‡ This candidate was given 2.4 per cent. credit for years of practice.

§ Graduation not verified.

Book Notices

PERSONAL HYGIENE APPLIED. By Jesse Feiring Williams, A.B., M.D., Associate Professor of Physical Education, Teachers College, Columbia University. Cloth. Price, $2.50 net. Pp. 412, with illustrations. Philadelphia: W. B. Saunders Company, 1922.

This book is a serious attempt to present to the intelligent public, and particularly to the college student, a comprehensive survey of health in education and education in health. It is the author's belief that the important factor of health in life involves not only the presentation of rules of health, but also bringing into contact with such rules the deep and overflowing source of human action where ideals, ambitions, prejudices and hopes are born. In the first five chapters, therefore, the author considers the meaning of health, the health problem, intelligence and ideals, the approach for knowledge of health, and science and attitudes. In these chapters he places clearly before the reader the importance of rationality in health as well as in any other factor in human life. His definition of health is "the quality of life that renders the individual fit to live most and to serve best." In other words, health for health's sake is not a satisfactory definition. In his chapter on science and attitudes he discusses the various cults and sects which are making inroads into the health field. Here again his statements are well founded on statistics. His judgments are sincere and careful, and his illustrations are attractive and convincing. In the remainder of the book, various chapters are devoted to special hygiene of the various parts of the body, divided by systems. These chapters are wholly practical, and they are full of excellent devices for the individual who is seeking didactic and reliable information. The book is one which the physician may safely recommend to his patient.

MEDICAL AXIOMS, APHORISMS AND CLINICAL MEMORANDA. By James Alexander Lindsay, M.A., M.D., F.R.C.P., Professor of Medicine in the Queen's University of Belfast. Cloth. Price, 6 shillings net. Pp. 192. London: H. K. Lewis & Co., Ltd., 1923.

The author has here collected axioms and brief statements concerning the diagnosis and treatment of various conditions. The statements are taken from his own experience and also from the experience of several hundred ancient and modern authors. The axioms are thought-provoking and instructive. Any one of them is the text for a complete paper, and probably says in a few words what most authors would require a paper to bring out. A few specimens are quoted:

Never believe what a patient tells you his doctor has said.—*William Jenner.*

The first qualification for a physician is hopefulness.—*James Little.*

Give your prognosis in heart disease on the best supposition, treating your patient on the worse.—*Clifford Allbutt.*

Chorea is commoner in the more emotional sex and at the more emotional age.—*Hughlings Jackson.*

I am of the opinion that our first duty is to inquire whether a thing be or be not before asking wherefore it is.—*William Harvey.*

ALGUNOS ASPECTOS DE LA PSICOLOGIA DEL NIÑO. Por el Doctor Honorio F. Delgado, Fundador del Seminario Psico-Pedagógico. Con Prologo del Doctor William A. White, Superintendent of the St. Elizabeth's Hospital (Washington, D. C.). Paper. Pp. 84. Lima, Peru: Imprenta la Opinion Nacional, 1922.

Not only have the psychanalytic waves washed the shores of every civilized country, as stated by Dr. White in his preface, but they have splashed everything on land. This event, however, holds no terrors for at least one of the leading South American psychiatrists, the author of this ambitious essay on "Some Aspects of Child Psychology." He even desires to widen the scope of Freud and Jung's pet conception. After reviewing the nature, mental development, personality and tendencies of the child, Dr. Delgado sees a chance to supply the deficiencies of education through the introduction of psychanalysis in the schools, and the teaching of what he calls philosophy of life. All may agree with the Peruvian professor as to education being sorely in need of reform. Few will endorse his medicine for the ailing patient. Most psychiatrists will remain skeptical as to the far-reaching good to be derived from a school psychanalysis service. Nor can one share the author's optimism as to the reinterpreted message of "Christ, Lao-Tse, Heraclitus, Euripides, Plato, Horace, Seneca, Plutarch, Sankara, Montaigne, Shakespeare, Goethe, Nietzsche and two dozen others" creating a race of supermen. It would take indeed a superman—or a psychanalyst—to interpret the message, even without trying to harmonize the doctrines, of, say, Horace the Epicurean poet, and Seneca the stoic philosopher, or Euripides the cynical dramatist, and Plato the idealist sage, or Lao-Tse and Nietzsche. The hopelessness of his plan is shown by the assertion that Germany became first among nations through her putting into practice the axiom of Durch Kennen zum Koennen.

OTO-RHINO-LARYNGOLOGY FOR THE STUDENT AND PRACTITIONER. By Dr. Georges Laurens. Authorized translation by H. Clayton Fox, F.R.C.S. With a foreword by Sir J. Dundas-Grant, M.A., M.D., F.R.C.S. Second edition. Cloth. Price, $4.50 net. Pp. 350, with 584 illustrations. New York: William Wood & Co., 1922.

The first edition of this work was spoken of in these columns as the ideal textbook for practitioners and students, because of its essentially practical character. In the present volume none of this value is lost, and numerous additions have been made. The author's minuteness of detail, his brief, sensible descriptions, the clever arrangement of his text, and, above all, his sane instructions under the headings What to do and What to avoid give to the student a broad view of this field, and to the practitioner a safe working basis in the absence of the specialist.

PROBLEMAS ACTUALES DE LA DOCTRINA DE LAS SECRECIONES INTERNAS. Por el Dr. G. Marañón. Paper. Price, 18 pesetas. Pp. 265, with 40 illustrations. Madrid: Ruiz Hermanos, 1922.

Previous publications of this facile Spanish author have dealt largely with the clinical aspects of the ductless glands. The larger part (170 pages) of the present volume is denoted to a review of the physiology of the endocrines. Two chapters are given to the glandular pathology, and one chapter to organotherapy. Those who can read Spanish will find this book on the ductless glands well worth attention, as in the presentation and critical analysis of facts and theories in this field Dr. Marañón shows himself the equal of the best authors in English, German and French.

DOSIERUNGSTABELLE FÜR DIE RÖNTGEN-THERAPIE. Allgemein gefasste und nach den Spezialfächern geordnete Bestrahlungs-Rezepte für die zugänglichen Krankheiten mit Berücksichtigung der neureren Forschungen den Bedürfnissen der Praxis entsprechend gestaltet und mit Erläuterungen versehen. Von Dr. G. Holzknecht, Professor für Medizinische Radiologie an der Universität. Paper. Price, 3 marks. Pp. 33. Leipsic: Franz Deutike, 1922.

The author, one of the pioneers in roentgenology, issued this little book as a guide to enable the beginner to determine the roentgen-ray dosage suited to the treatment of a given case. The basis for a scientific and exact selection of the dose is furnished by the recognition of the paramount importance of the dispersion rays and by the introduction into the roentgenologic practice of the measuring of the wave length. In order to simplify the choice of the dose, the author classifies all conditions to be treated in four groups: The first, requiring extreme doses, is represented by carcinoma; the second is the group that needs strong, but not extreme, irradiation; the third group requires only a medium strong dose, and the fourth group requires only weak irradiation. The necessary measuring for the construction of the various intensities was performed with the help of the intensimeter, the radiometer and the spectrograph. All the diseases are catalogued according to the medical speciality in which preferably they are to be treated.

SEMIOLOGIA DOS SOPROS DIASTOLICOS DA BASE. Especial Estudo da Insufficiencia Aortica Myocardica. Por el Dr. Jose Barboza, Assistente de Clinica Medica da Faculdade de Medicina do Rio de Janeiro. Paper. Pp. 97, with 3 illustrations. Rio de Janeiro: Typ. da Revista dos Tribunaes, 1921.

This study of myocardiac aortic regurgitation was granted the Francisco de Castro prize by the Rio de Janeiro Academy of Medicine. While, as pointed out by Austregesilo in the preface, exceptions may be taken to some of the author's sweeping statements, no one can doubt his sincerity or complain of obscurity in his statements. As to classification of

cardiac murmurs, Dr. Barboza considers Gallavardin's the least incomplete, although differing with him in the definition of functional murmurs. A remarkable tribute is paid to MacCallum of Johns Hopkins, as deserving credit for "the best studies on the muscular architecture of the heart." There is little original work in the study, but the author has read critically previous contributions and interpreted them according to his own views.

NURSING IN DISEASES OF THE EYE, EAR, NOSE AND THROAT. By Harmon Smith, M.D., Surgeon in Throat Department of the Manhattan Eye, Ear and Throat Hospital, (Editor), John R. Shannon, M.D., Wendell Phillips, M.D., John E. Mackenty, M.D. Assisted by David H. Webster, M.D., John R. Page, M.D., and Francis W. White, M.D. With Chapters by Herbert B. Wilcox, M.D., and Helena M. Toothaker, R.N. Third edition. Cloth. Price, $2.25 net. Pp. 333, with 73 illustrations. Philadelphia: W. B. Saunders Company, 1922.

This compact little book contains a wealth of information, not only along the lines of nursing but also along those of the operative and nonoperative treatment of diseases of the eye, ear, nose and throat. The first section deals with the germ theory of diseases, antiseptics, disinfection of rooms and clothing, preparation of surgical dressings, and operating room technic. The nurse's duties in operations and emergencies, as well as the feeding and care of infants, are well covered. The second section is devoted to the eye. The anatomy, the physiology and the common remedies used in ocular conditions are considered quite completely. Then follows a discussion of contagious eye diseases as well as some of the operative procedures. In the third section, covering the ear, we have at first an outline of the physiology, together with the examination of the ears. Functional tests for hearing and the testing of the static labyrinth are given, especially the former. The ordinary tuning fork tests are well described. Then follow diseases of the external, middle and internal ear. In the fourth section, the anatomy of the nose is considered. The fifth and last section covers the pharynx and larynx, their anatomy, and the diseases peculiar to these structures, particularly with reference to the larynx. Many details are given, including examination, edema of the larynx, benign and malignant tumors, tuberculosis, syphilis, foreign bodies, tracheotomy, laryngectomy and thyroidectomy. Not only does this volume give innumerable points of information for nurses, but it would be a valuable book for the general practitioner; he would be spared the necessity of consulting large works by the information here given on many points of general interest to guide him in his treatment of the ordinary affections of the eye, ear, nose and throat with which he often comes in contact.

LICÇÕES DE CLINICA MÉDICA. Pelo Dr. H. Annes Dias, Prof. da Faculdade de Medicina de Porto Alegre. Paper. Pp. 418, with illustrations. Porto Alegre, Brazil: Livraria do Globo, 1922.

At the request of his pupils, the author, a professor in the Porto Alegre, Brazil, Medical School, has compiled some of the lectures on clinical medicine given by him during the last two years. Dr. Annes Dias follows the accepted methods in the analysis of cases. A number of illustrations are attached, but they add little to the value of the book, as most of them are not original, and the reproduction is poor. The appended index deserves commendation as setting a good example which other Latin authors and publishing houses might well follow.

THE TOPOGRAPHICAL ANATOMY OF THE THORAX AND ABDOMEN OF THE HORSE. By O. Charnock Bradley, M.D., D.Sc., M.R.C.V.S., Lecturer on Comparative Anatomy, University of Edinburgh. Cloth. Price, $5 net. Pp. 204, with 85 illustrations. New York: William Wood & Co., 1922.

This book is a successor of "The Topographical Anatomy of the Limbs of the Horse," by the same author. It is at once a regional, descriptive textbook, and a laboratory manual for use in dissection. It is excellently planned, and gives a clear and instructive account of each of the structures in each region. It is illustrated by reproductions of comprehensive drawings by Mr. James T. Murray, which constitute a valuable part of the work. Dr. Bradley has appreciated the fact that the B. N. A. terminology is better than any other for use, even in a book on the anatomy of a quadruped, and he has therefore adopted it, adding in footnotes an explanation of etymologies—a feature always appreciated greatly by students. In a few instances, B. N. A. terms are modified slightly to adapt them to the anatomy of the horse. For example, "cranial" and "caudal" are substituted for "superior" and "inferior," and "internal thoracic" for "internal mammary." In cases in which the structure of the horse differs materially from that of other mammals, there is a consideration of the primitive mammalian structure, and of the significance of the specialization as illustrated in this animal. To supply a systematic survey of the great functional systems, the need of which is always felt by students, tabulations are introduced in the back as appendixes, covering the arterial and lymphatic systems. The addition of similar tabulations covering the bony, muscular, venous, nervous and other systems would add greatly to the value of the book to the student. The work of the publisher has been admirably done. The illustrations are clear, and the book is convenient, durable and attractive.

DISEASES OF THE THYROID GLAND. By Arthur E. Hertzler, M.D., F.A.C.S., Professor of Surgery in the University of Kansas School of Medicine. With a chapter on Hospital Management of Goiter Patients by Victor E. Chesky, A.B., M.D., Associate Surgeon to Halstead Hospital. Cloth. Price, $5. Pp. 245, with 106 illustrations. St. Louis: C. V. Mosby Company, 1922.

This monograph in a brief way considers the entire subject of diseases of the thyroid from etiology to treatment. The first chapter, on etiology and pathogenesis, while brief from the standpoint of the mass of literature on the subject, is nevertheless an intelligent summary. In the chapter on pathology there is a goodly collection of photographs of gross specimens and of photomicrographs. The histopathology is adequately presented; the surgical pathology is not. This is particularly true of the data on exophthalmic goiter. Associated parenchymatous changes, and such subjects as the thymus and the suprarenals are too briefly considered. There is an excellent chapter on aberrant and intrathoracic goiter There is an excellent series of drawings illustrating anatomy and surgical technic. The book is essentially a personal work, and is interesting reading.

PROPÉDEUTIQUE ET TECHNIQUE UROLOGIQUES. Par G. Wiener, Ancien urologue adjoint à l'Hôpital Saint-Pierre de Bruxelles. Paper. Price 40 francs. Pp. 483, with 153 illustrations. Paris: Masson et Cie, 1922.

There is little in this publication that does not appear in any of the current textbooks, while many important facts are missing. The author tries to show the difference in the quality of the urine, studied by the three glass test, in uncolored pictures. In describing the abdominal puncture of an overdistended bladder, he neglects to mention the dangers of this procedure and how to evade them, especially the possibility of injuring intestinal loops. The recommendation, in urologic operation, of the use of chloroform in preference to ether will not be popular with American surgeons. While much space is devoted to the Ambard constant, discarded as valueless by many clinicians, the modern physiologic renal tests are hardly mentioned.

EXPERIMENTAL PHYSIOLOGY. By Sir Edward Sharpey-Schafer, F.R.S., Professor of Physiology in Edinburgh. Third edition. Cloth. Price, $2 net. Pp. 131, with 90 illustrations. New York: Longmans, Green & Co., 1921.

This book contains directions for performing some of the fundamental experiments in physiology, especially experiments on muscle and nerve, and the heart (frog). The experiments outlined on mammals are fewer than are usually given in the physiology courses in the better medical schools in this country, but the book should prove interesting and helpful to instructors in physiology everywhere.

BODY MECHANICS AND HEALTH. By Leah C. Thomas and Joel E. Goldthwait, M.D. Cloth. Price, $1.50. Pp. 112, with 31 illustrations. Boston: Houghton Mifflin Company, 1922.

The authors consider briefly the problems of securing and maintaining correct posture while standing, sitting and walking. The book contains numerous illustrations and tables of progressive exercises for use in achieving the objects sought.

Medicolegal

Determination of Necessity for Operation by Results

(Union Iron Works et al. v. Industrial Accident Commission et al. (Calif.), 210 Pac. R. 410)

The Supreme Court of California says that in 1916 an employee fell from a ladder, breaking both legs and an arm. The corporations that may be called his employers placed him under the care of two physicians, but later removed him to their own private hospital, where he was treated by their own physicians. For four years after the injury, there was a continuous discharge of pus from one leg, due to necrosis of the bone and unhealed wounds. In February, 1920, he consulted one of the physicians who first treated him, who advised an immediate operation to remove the diseased bone. This advice was reported to his employers' physicians, but it was their opinion that such an operation would not be opportune until the clearing up of a discharging sinus in the left leg, and in this conclusion they were confirmed by an opinion to the same effect of another physician and that of the medical director of the industrial accident commission. The employers, therefore, refused to permit operation. After waiting nine months for their physicians to relieve his condition, the employee, in November, 1920, abandoning their treatment, placed himself under the care of the physician whom he had previously consulted. That physician performed two operations, which were a complete success, the flow of pus being stopped, the broken bones united and the wounds healed. Thereafter, the employee applied to the industrial accident commission for an award of $1,446.90, for the payment of expenses incurred by him in having these operations performed and for hospital fees and treatment attendant on the operations, which was granted; and is affirmed by the court.

It may be conceded that had this been an action for malpractice, or one founded on the old common-law liability of the employer, the time to determine whether a surgical operation was reasonably required would have been before the operation, and that if at that time there was a difference of opinion among competent physicians as to the necessity of an operation, no liability could be predicated on a failure to operate. The proceeding before the commission, however, was not an action for damages, nor was it based on the idea of fault on the part of the employer. It was founded on the provisions of the workmen's compensation act, which contemplates and calls for such medical and surgical services as will tend to secure the return of the workman to productive employment. Manifestly, if the treatment practiced and persisted in by physicians furnished by the employer, even though they are conceded to be skilled and competent in their profession, does not within a reasonable time effect a cure, and thereafter a course of treatment prescribed by other physicians procured by the injured employee does in fact seasonably effect a cure, then it cannot be said that the employer has furnished such medical and surgical treatment as was reasonably and seasonably required. The successful result of the operations in the instant case demonstrated that such was the treatment reasonably required to cure and relieve the injured employee from the effects of his injury. This being so, the refusal, after more than three years of unsuccessful treatment, of the employers' physicians to operate, despite repeated requests to do so, this refusal extending over a period of nine months, during which time the injured employee continued to suffer, and his condition apparently grew worse, was tantamount to a refusal to furnish the treatment seasonably required by the statute.

But before the injured employee will be entitled to compensation in such a case for expenses incurred in the treatment of him by a physician of his own selection, it will have to be shown that the treatment not only was a success, but that it was reasonably and seasonably necessary to cure and relieve him. Moreover, all the circumstances attending the treatment by the employers' physicians will have to be weighed by the commission in order to determine whether or not the treatment prescribed by the employers' physicians would, if it had been persisted in, have produced as speedy and as satisfactory a cure as did the treatment of the physician resorted to by the injured employee. In coming to a conclusion, the commission would necessarily take into consideration the period of time covered by the treatment of the employers' physicians and the results obtained during that time. In other words, the injured employee will be permitted, at the peril of having himself to pay the expenses of medical treatment, to secure the services of physicians other than those provided by his employer, this peril attaching unless it can be shown that the procurement of such services was warranted.

Malicious Prosecution of Insanity Proceeding

(Pickles v. Anton (N. D.), 189, N. W. R. 684)

The Supreme Court of North Dakota, in affirming a judgment for $6,000 damages in favor of the plaintiff, and in thereafter denying a petition for a rehearing filed by the defendant, says that it is entirely satisfied that an action will lie for the malicious prosecution, without probable cause, of a proceeding the object of which is to have a person adjudged insane. It has been held that the prosecution of such a proceeding without probable cause constitutes cruel and inhuman treatment within the contemplation of the laws relating to divorce, so as to afford a ground for a divorce. It would seem that if the baseless prosecution of an insanity proceeding is a wrong of sufficient magnitude to justify the severing of the marriage ties, it ought to furnish a ground for the award of damages; and in this court's opinion it constitutes a legal wrong for which the party injured is entitled to be compensated. As the name implies, malice is an essential ingredient of an action for malicious prosecution, but it must also be shown that the action or proceeding complained of was instituted without probable cause. The plaintiff may introduce evidence tending to show that the defendant, by the institution of the action or proceeding complained of, sought to accomplish some personal or private end. Malice need not be shown by direct and positive testimony. It may be inferred from circumstances. Reasonable or probable cause depends on the honest and reasonable belief of the party commencing the prosecution that the charge made is true. The fact that the plaintiff may have committed certain unlawful acts would not justify the defendant in charging that she was insane and in attempting to have her incarcerated in an asylum for the insane. In other words, it would not furnish probable cause for the inquisition for lunacy.

Liability for Injury Extended to Death from Second Operation

(Blackwell v. American Film Co., Inc., et al. (Calif.), 209 Pac. R. 999)

The Supreme Court of California says that, owing to the alleged negligence of the defendants, the plaintiff's husband suffered a fracture of one of his legs above the knee, and no union of the bone could be effected. A little more than six months after the accident, an operation was performed, which was unsuccessful. Mr. Blackwell sued the defendants for damages, and recovered a judgment for $13,762. About seven months after the first operation, a second operation was performed to effect a bone transplantation, and a short time after the operation the patient died. The judgment was paid to Mrs. Blackwell, as administratrix of her husband's estate. Thereafter, she, as administratrix, brought this action to recover damages for the death of her husband, and recovered a judgment against the film company for $10,000, which is affirmed.

The fact that the decedent recovered damages for his injuries would not, in itself, prevent a recovery in this case. The only question presented in this connection was whether it could be said that there was no evidence from which the jury might conclude that the accident was the proximate cause of Mr. Blackwell's death. According to the evidence, he was under the care of physicians and was receiving medical attention from the time of the accident until his death. The evidence also indicated that the second operation was a

step in the continuous treatment administered in an endeavor to cure him of the effect of his injuries. The jury might have found from the evidence that the operation was a proper one under the circumstances; in fact, there were no indications to the contrary. In such a case, the treatment by a physician cannot be held to be a new or intervening cause which would relieve the defendant from liability for the original injury.

The defendant film company emphasized the fact that the decedent in this action alleged that his injuries were permanent, and recovered damages on that basis. Such an allegation was immaterial in the case at bar. The measure of damages in the suit brought by him was based on his duty to use reasonable efforts to restore his health and earning capacity. The question in this case was what pecuniary loss was suffered by the plaintiff and her children by reason of the loss of the decedent in his crippled condition. This defendant also specified as error the overruling of its objection interposed to testimony by Mrs. Blackwell that the physician told her husband to go to the hospital to have the second operation. This ruling was correct. Mr. Blackwell had placed himself under the care of a physician, and it was proper to show that, in receiving treatment, he was following instructions given by the physician. In proving this fact, it was competent to admit testimony that certain orders were given. The testimony was not admitted to prove the existence of any fact related by the physician, but to prove that he made the statement in question. The admission of the testimony under such circumstances was not obnoxious to the hearsay rule.

It was insisted further that an instruction given the jury to the effect that, if the decedent used ordinary care in the selection of a physician, and submitted to the treatment prescribed by him, it would be no defense to show that the physician failed to give him the best or proper treatment conflicted with one to the effect that an error of treatment would not relieve the defendant, but, if the physician made use of the opportunity to perform an unnecessary and dangerous experiment on the decedent, and the experiment alone resulted fatally to the decedent, the defendant would not be liable. But these instructions were not in conflict. The former properly told the jury that mere concurring negligence on the part of the physician would not be a bar to a recovery by the plaintiff in this case. The latter told the jury that, if the physician stepped out of the proper field of treatment to perform an unnecessary and dangerous operation, as an experiment for his own benefit, it would constitute an independent, intervening act of the physician, for which the defendant would not be liable.

Physician's Report for Accident Industrial Board

(Emma's Case (Mass.), 136 N. E. R. 125)

The Supreme Judicial Court of Massachusetts says that an employee having suffered an injury to his left eye and certain compensation having been awarded therefor, the insurer sought a review and requested permission to introduce further evidence, which consisted of a supplemental report made on a reexamination by a duly qualified impartial physician appointed by the industrial accident board. By Section 9 of the workmen's compensation act, the report of such a physician shall be admissible as evidence in any proceeding, provided the employee and the insurer have been furnished with copies in good season. It is not conclusive. But by the statute, the report is put on the footing of evidence, if copies have been given to the parties in good season. It is not to be assumed that the legislature intended that the board or a single member should give any probative weight whatever to such a report unless it is used as evidence. It was discretionary with the board whether a report should be requested. But having been asked for and furnished and copies duly transmitted, the admissibility of the report did not depend on formal offer of proof. It was before the board for consideration in connection with all the evidence, and the provision of Section 10, that the admission of further evidence was discretionary, had no application. It was competent for either party to offer evidence to rebut or control the clinical statements and conclusions of the report, or to impeach the credibility, impartiality and qualifications of the certifying physician. But a failure to exercise such rights, or the enforcement of them could not affect the duty of the board to consider the report as evidence for whatever in their judgment it might be worth. Here the board denied the insurer's motion for permission to introduce the further evidence stated, and it is held that, as it was plain that the award was made on a part only of the material and competent evidence, the case must be remanded for further proceedings not inconsistent with this opinion.

Death of Child Falling from Bed in Hospital After an Operation

(Maxie et al. v. Laurel General Hospital (Miss.), 93 So. R. 817)

The Supreme Court of Mississippi, Division A, says that this action was brought to recover damages for the death of a child, 8 years of age, who had an attack of appendicitis, and was taken to the defendant hospital for care and an operation, was operated on, and shortly thereafter, when there was no attendant in the ward in which she was placed, fell off the bed and soon afterward died. At the conclusion of the evidence, the trial court, on motion of the defendant, directed the jury to return a verdict in favor of the latter, which was done; but the judgment entered accordingly is reversed on the ground that the liability of the defendant was a question for the jury. The supreme court holds that the business of a hospital for the sick and afflicted, conducted for private gain, carries with it an implied obligation to give the patients therein reasonable care and attention; and such a hospital, so conducted, is liable for an injury received by a patient therein resulting from the negligence of its employees. When a child, 8 years of age, in such a hospital, shortly after being operated on for appendicitis, was left by the employees of the hospital in a ward without an attendant or any means of calling assistance and while so situated for some reason fell from its bed, and its temperature soon thereafter rose rapidly, and in a few hours it died, the question of liability for such injury and death was one for the jury and not the court. Therefore, the court erred in directing a verdict for the hospital.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.

American Association of Anatomists, Chicago, March 28-30. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Association of Pathologists and Bacteriologists, Boston, March 29-30. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.

American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.

American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.

Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.

Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26, Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.

Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Joplin, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.

North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.

Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.

South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.

Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.

Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

February, 1923, **25**, No. 2

*Influence of Growth on Basal Metabolism of Children. G. B. Fleming, Glasgow, Scotland.—p. 85.
*Neurosychiatric Sequelae of Acute Epidemic Encephalitis in Children. F. G. Ebaugh, Philadelphia.—p. 89.
*Acute Hemorrhagic Encephalitis: Report of Case Following Scarlet Fever. J. A. Toomey, L. H. Dembo, and G. McConnell, Cleveland. —p. 98.
*Intraperitoneal Transfusion with Citrated Blood. D. M. Siperstein, Minneapolis and J. M. Sansby, St. Paul.—p. 107.
*Congenital Malaria: Report of Case in Colorado. R. P. Forbes, Denver. —p. 130.
*Excretion of Foreign Protein in Human Milk. H. C. Stuart, Boston. —p. 135.
*Oxygen Therapy in Premature Babies with Anoxemia. H. Bakwin, New York.—p. 157.
*Toxemia of Severe Superficial Burns in Children. B. Robertson, G. Boyd, Toronto, Canada.—p. 163.
Review of Literature on Blood and Blood Diseases of Infants and Children for Last Four Years (1918-1921). L. W. Hill, Boston.—p. 168.

Influence of Growth on Basal Metabolism of Children.—Evidence is presented by Fleming in favor of the suggestion that the high basal metabolism of the growing child may to some extent be accounted for by the amount of energy expended in the manufacture of new tissue.

Neuropsychiatric Sequelae of Acute Epidemic Encephalitis in Children.—In seventeen cases of postencephalitis disturbances of a neuropsychiatric type, analyzed by Ebaugh, the psychiatric sequelae consisted of: (1) total change in character and disposition with characteristic hyperkinetic states, leading to behavior oddities consisting of emotional lability, sexual precocity, general incorrigibility, etc.; (2) insomnia with nocturnal agitation; (3) affective disorder of a depressive type; (4) hysterical reactions; (5) tics, fears, and (6) mental deficiency. Neurologic sequelae consisted of headaches, dizziness, diplopia, drowsiness, asthenia and oversalivation. Disturbances in motility, especially choreiform movements, were present. These disturbances appear to be related to the mental state. Visual disturbance and facial weakness also occurred as residuals. Evidence of endocrine change was noted in one case. Ebaugh suggests that the prognosis should be guarded; but pessimism should be avoided. Fifty per cent. of these patients are well or improving. There is no specific treatment for these conditions. Children should be sent to psychopathic wards for observation. Spinal drainage was effectual in several cases. These children do not react to discipline.

Acute Hemorrhagic Encephalitis Following Scarlet Fever.—The hemorrhages found in the brain, and the character of the onset and symptoms of the case reported by Toomey et al. conform to the description of the Strümpell-Leichtenstern type. The brain symptoms appeared just three weeks after the onset of the scarlet fever.

Intraperitoneal Transfusion with Citrated Blood.—The intraperitoneal route for blood transfusions is proposed by Siperstein and Sansby as a therapeutic method of merit, one which will overcome many of the objections to other routes of conveying blood to a child. The intraperitoneal transfusion of freshly citrated blood acts as a true transfusion and not as the absorption of a nutrient material. The work on which the method is based was done on rabbits.

Case of Congenital Malaria.—The case reported by Forbes owes its chief interest to the fact that the anopheles mosquito can be excluded as the source of infection, and that intra-uterine infection, therefore, does occur. The child was 7 weeks old when the first attack occurred. The patient had six febrile attacks at seventy-two hour intervals, before the periodicity was fully appreciated. The mother gave a history of an unusually severe quartan infection in Greece, seven years before, but asserted that she became free from all symptoms three months after coming to the United States in 1916. Quinin hydrochlorid, 2 grains every four hours, was begun and continued for four days; then it was given three times daily for four days, then three times on each of two days of each week for two months. Twenty days after quinin therapy was begun, the spleen could not be palpated. The baby had gained 26 ounces in fourteen days. At 6 months, the baby weighed 16 pounds, and had been free from any symptoms of malaria since treatment was begun.

Excretion of Foreign Protein in Human Milk.—Stuart cites experiments which he believes warrant the conclusion that egg-white protein is not demonstrable in the breast milk of mothers by any of the methods at present at our command. He does not suggest that such protein may not be present in infinitely small amounts, but knowing what small traces of egg-white will sensitize guinea-pigs, he feels that the conclusion is warranted that infants must be extremely sensitive to be affected by the amounts which they receive from this source. The explanation, therefore, of the frequent finding of these positive reactions in exclusively breast fed infants has not as yet been given, and the problem calls for further investigation. Stuart's results, however, fail to suggest that breast milk is a medium for the transmission of antigen.

Oxygen Therapy in Premature Babies with Anoxemia.—Two prematurely born babies with marked anoxemia, as indicated by the cyanosis and the increase in the oxygen unsaturation of the venous blood, were treated with oxygen inhalations. In both instances the cyanosis disappeared and the saturation of the venous blood rose to normal. The oxygen was given through a rubber tube inserted into the mouth.

Treatment of Toxemia of Burns in Children by Exsanguination-Transfusion.—In casting about for some means of relieving the toxemia incident to burns, the operation of "exsanguination-transfusion" was devised by Robertson and Boyd. The operation consists in the initial withdrawal of blood from the patient's longitudinal sinus or femoral vein until the limit of safety is reached. The transfusion is then commenced in an elbow vein. Withdrawal of the patient's blood and injection of fresh blood are then carried on simultaneously until the amount withdrawn is slightly less than the amount available for transfusion. The withdrawal is then discontinued and the remainder of available blood injected. The amount of blood withdrawn has ranged from 200 c.c. in an infant, up to 500 c.c. in a child 3 years of age. The results have been very encouraging. In ten cases of burns of the type described (i. e., with convulsions), two children received blood transfusion and eight were subjected to exsanguination-transfusion. Three of the latter died from burn toxemia. In the other seven cases, the burn toxemia was relieved.

American Journal of Hygiene, Baltimore

January Supplement, 1923, **3**

Analysis of Malaria Epidemiology. A. J. Lotka, Baltimore.
I. General Part.—pp. 1 and 38.
III. Numerical Part.—p. 55.
IV. Incubation Lag. F. R. Sharpe and A. J. Lotka, Baltimore.—p. 96.
V. Summary. A. J. Lotka, Baltimore.—p. 113.

American Journal of Medical Sciences, Philadelphia

January, 1923, **165**, No. 1

*Effects of Acute and Chronic Pneumothorax. J. L. Yates, Milwaukee. —p. 1.
*Aneurysm of Hepatic Artery. J. Friedenwald, Baltimore, and K. H. Tannenbaum, Chicago.—p. 11.
*Fibrillation of Auricle Returned to Normal Rhythm. L. F. Bishop, New York.—p. 29.
*Case of Heart Block and Auricular Fibrillation with Postmortem Specimen; Etiology of Fibrillation. S. Neuhof, New York.—p. 34.
*Arsenical Treatment of Chronic Infectious Endocarditis. J. A. Capps, Chicago.—p. 40.
*Fate of Arsenic After Intravenous or Intrathecal Injection. R. D. Rudolf and F. M. R. Bulmer, Toronto.—p. 47.
Pneumothorax in Tuberculosis. J. J. Singer, St. Louis.—p. 54.
Surgical Neuroses of Thyroid. J. Rogers, New York.—p. 66.
*Influence of Oliguria on Nitrogen Retention in Blood. O. H. P. Pepper, Philadelphia.—p. 81.
*Persistent Leukocytosis in Early Stages of Thrombo-Angiitis Obliterans. H. M. Thomas, Jr., Baltimore.—p. 86.

*Injury of Spinal Cord in Breech Extraction as Important Cause of Fetal Death and Paraplegia in Childhood. B. Crothers, Boston.—p. 94.
Visceral Adhesions and Bands: Normal Incidence (Second Paper). J. Bryant, Boston.—p. 111.
*Is Stomach Focus of Infection? N. Kopeloff, New York.—p. 120.

Effects of Acute and Chronic Pneumothorax.—On the basis of personal clinical experience, Yates regards an acute pneumothorax as being dangerous in so far as it interferes with the pulmonary circulation. The extent of the danger is determined by the integrity of the circulation, chiefly by the latent energy of the myocardium. Since reserve myocardial energy cannot be estimated accurately and is quite essential to life during a period of stress, open thoracotomy should be performed with some form of differential pressure. Thus alone may the degree of pulmonary deflation required for the intrathoracic operation be permitted to develop gradually, be controlled so as not to become excessive and allowed to be as transient as possible. The operation is incomplete until full pulmonary inflation is both obtained and maintained. The latter is possible only when suitable one way primary drainage is used. Gas-oxygen positive pressure analgesia as developed by Gwathmey is simple, safe and satisfactory, and, in the absence of a negative pressure cabinet is the best method now available. Chronic pneumothorax, as well as chronic pulmonary compression by the pleuritic effusions inevitable after thoracotomy, must be avoided if surgeons would assure to patients the best chances for rapid, comfortable and complete recovery. Experiment data are given.

Aneurysm of Hepatic Artery.—Friedenwald and Tannenbaum add one case to the sixty-five recorded in the literature. On account of the age of the patient, his loss of flesh, absence of pain, jaundice, blood in the stools, diminution in pancreatic ferments, and the roentgen-ray findings, the diagnosis was made of carcinoma of the pancreas, though the possibility of a stone lodged in the ampulla could not be ruled out entirely. While on the commode, but before his bowels had moved, the patient had a sudden fainting attack. He lost consciousness and his pulse became imperceptible. This was associated with a very severe pain in the right hypochondrium just to the right of the epigastrium. Half an hour after the collapse the patient had a profuse bowel movement, but there were no evidence of blood clots or hemorrhage. Following this there was a second partial collapse, which was again relieved by the administration of camphorated oil. The attacks remained unexplained, except the possibility of an internal hemorrhage. Two days later he suddenly uttered a cry, became pulseless and died. The diagnosis of hemorrhage was made, the cause of which was not ascertained until the necropsy disclosed an aneurysm of the hepatic artery which had perforated. The symptoms most frequently observed in aneurysm of the hepatic artery are pain, hemorrhage, icterus, enlargement of the liver, fever, fluctuating tumor in the region of the gallbladder, marked anemia, emaciation, together with attacks of syncope, dizziness, headaches, weakness and indigestion. All of these symptoms are rarely present in any individual case and ordinarily there are but few symptoms. In many instances the patient dies after a single attack of pain followed by hemorrhage without having had any previous symptoms whatever. Ligation of the hepatic artery is the only rational methods of treatment.

Fibrillation of Auricle Returned to Normal Rhythm.—Four cases are cited by Bishop which illustrate the return to normal rhythm in hearts which have been the seat of fibrillation of the auricle but were later normal in their auricular function. One example is that of a man with extremely advanced circulatory disease, which is shown by an enormous enlargement of the heart, the maintenance of a terrific blood pressure, the recurrence at various times of all the cardiac symptoms of heart failure, namely, dyspnea, edema, congestion of the lungs, liver and kidneys, and occasionally fibrillation of the auricle. This man, nevertheless, now presents a fair appearance of health and a regular heart as the result of being put on a strict regimen. The only specific treatment he has been given for his fibrillation is digitalis. His normal rhythm is, therefore, a part of the natural history of the ups and downs of the auricle. Another illustration of auricular fibrillation of an entirely different character is that of a man who developed cardiac disease as a result of long standing, continued nervous strain and overwork. He had symptoms of angina pectoris. At the time of his examination he had auricular fibrillation. His heart is now regular as a result of a strict regimen.

Heart Block and Auricular Fibrillation.—The chief pathologic changes found in the heart in this case, which Neuhof believes were undoubtedly the final cause of the cardiac disturbance, were found in the coronaries, in the artery of the auriculoventricular node (the node of Tawara) and in the musculature surrounding the node. The coronary artery was thickened and sclerosed, although still patulous. The artery supplying the auriculoventricular node (the beginning of the auriculoventricular conduction system, the normal conveyer of impulses from auricle to ventricle) was completely calcified. Surrounding the artery (and probably as the result of its calcification) was a distinct zone of degenerated musculature, which undoubtedly included the node, either in whole or in part. Neuhof is convinced that the calcifying process in the coronary artery, and particularly in the artery of the node, had been going on for many years, yet the patient at the time of death was 80 years old and had lived in cardiac comfort until sudden heart failure supervened; in all probability this resulted from final complete closure of the calcified artery supplying that node. This case is another illustration of the fact that the slow process of intracardiac arterial disease may never at any time sharply interfere with the factor of safety of the heart, and that ample time had probably been given for the establishment of coronary anastomosis; for, contrary to older teachings, it is now known that the coronaries are not end arteries and that many deeply situated anastomoses exist.

Arsenical Treatment of Chronic Infectious Endocarditis.—During the past twelve years Capps has treated all of his cases of chronic infectious endocarditis with daily injections of sodium cacodylate (usually intravenously), continued over a period varying from seven weeks to four months. In many of these patients he failed to find bacteria in blood cultures, although the other clinical findings were sufficiently characteristic for making the diagnosis. Eight cases were proved by blood cultures. Two of these patients died, and six survive. The duration of the disease in the fatal cases was six and thirteen months, respectively. The observation of the six surviving cases extends over periods of from eleven years and six months, to three months. Four patients have remained in good health for two years and more may be reasonably classified as recoveries. The only specific therapy attempted was the prolonged use of sodium cacodylate in daily doses of from 1 to 4 grains. The drug was pushed until a strong garlic odor was expelled with the breath. Capps feels that the preparations sold on the market in ampoule form are not very dependable, so that it is advisable to make a fresh preparation every few days of a reliable drug. No untoward effects were observed in any case. If the bowels became loose the dose was decreased for two or three days. Rest in bed was insisted on during the period of treatment. The results of blood cultures were of especial interest. *Streptococcus viridans* was the organism found in all cases. All the healed cases showed disappearance of bacteria from the blood during recovery.

Fate of Arsenic After Intrathecal and Intravenous Injection.—Rudolf and Bulmer assert that when arsenic is injected intravenously little, if any, of it reaches the central nerve tissues. When it is given in therapeutic doses intrathecally none of it can be detected in the spinal cord.

Influence of Oliguria on Nitrogen Retention in Blood.—The influence which marked reduction in the quantity of urine may have on the excretion of nitrogen, and so indirectly on the level of nitrogen in the blood, does not, in Pepper's opinion, seem to receive adequate recognition. The principle is well known, but it has not been sufficiently applied, and certain points which it seems to make clear have, therefore, been left in confusion and uncertainty. In nephritis, for example, there is often a decrease in urinary output, a failure to excrete sodium chlorid and a moderate rise in the level of the various fractions of the noncoagulable protein of the blood. In such cases it is frequently assumed that there is

impairment of the urea-excreting function of the kidney, as well as interference with the elimination of water and salt. Some even dignify these cases with the name "mixed nephritis." When the evidence is examined, however, one cannot help being impressed by the fact that the nitrogen retention may in some instances be the result solely, or in large part, of interference with water elimination; and that the urea excreting function of the kidney may be entirely unimpaired. If this view is accepted, a number of apparently contradictory observations become harmonized. In the treatment of nephritis an appreciation of these principles is important, for they supply a basis for understanding what can be expected of the kidneys in a given condition. They emphasize the importance of maintaining polyuria when the concentration ability is diminished and of decreasing, if possible, the urea production to an amount which the concentration maximum and the amount of urine, indicate that the patient can dispose of. Little or nothing can be done therapeutically toward raising the concentration ability of the kidneys but, by avoiding passive congestion and body dehydration, it is possible to make sure that the kidneys shall have every opportunity to excrete water; and by reducing the protein of the diet and by avoiding tissue destruction as far as possible, the demands placed on the nitrogen-excreting function of the kidney can be lowered and so one factor is avoided which undoubtedly favors nitrogen retention in the body.

Persistent Leukocytosis in Thrombo-Angiitis Obliterans.—The case described by Thomas is believed to be one of thrombo-angiitis of the arteries and veins supplying both lower extremities. The patient is a full blooded Jew, born in the United States; his parents were citizens of Austria-Hungary. He has smoked cigarets to excess for many years. After a sudden attack, in 1918, of auricular fibrillation (which subsided) he was well until April, 1921, when he first became troubled with severe pains in the lower extremities on walking. It was then found that he had a white blood count of 22,000. The pain in the legs and numbness of the left foot increased during the next seven months and the leukocytosis persisted. The rather widespread distribution of the vascular disorder with a comparatively low grade of cyanosis without rapid blanching on change of position of the leg clouded the exact diagnosis. There was evident obstruction to the arterial flow in the vessels of both lower extremities. Whether this is or is not due to true thrombo-angiitis obliterans, the subsequent course of the disease alone can decide. The existence of a well marked and persistent leukocytosis is emphasized. It would seem probable that a leukocytosis may be found to occur frequently in the early stages of thrombo-angiitis obliterans; if this is verified the fact would lend weight to Buerger's contention that the process is infectious in nature.

Injury of Spinal Cord Cause of Fetal Death.—Five cases are reported in which crippling depended on injuries to the spinal cord apparently caused by breech extraction. In making the diagnosis, pathologic, clinical and physiologic facts are considered. Four of these cases showed conclusive evidence of practically complete transection. One child showed evidence of an incomplete lesion.

Is the Stomach a Focus of Infection?—The study made by Kopeloff showed that the bacterial content of the stomach is influenced by the saliva; hence it may be inferred that the stomach is not acting as a focus of infection but merely as a receptacle for the bacteria poured into it. This is in agreement with the bacteriologic investigations of others to the effect that gastric acidity is sufficient to prevent bacterial development.

American Journal of Obstetrics and Gynecology, St. Louis

January, 1923, 5, No. 1

*Microscopic as Compared with Clinical Diagnosis of Malignant Uterine Neoplasm. C. C. Norris, Philadelphia.—p. 1.
*Treatment of Cystocele, Rectocele and Uterine Prolapse. R. T. Frank, Denver.—p. 8.
*Blood Sugar During Pregnancy and Puerperium. W. N. Rowley, Rochester, Minn.—p. 23.
*Sugar Test in Pregnancy. W. F. Welz and A. E. Van Nest, Detroit.—p. 43.
Pathology of Uterine Bleeding in 100 Analyzed Cases. H. Grad, New York.—p. 37.
Hemorrhagic Lesions of Placenta and Their Relation to White Infarct Formation. F. P. McNalley and W. J. Dieckmann, St. Louis.—p. 55.
*Blood in Normal Pregnancy. O. S. Krebs and A. P. Briggs, St. Louis.—p. 67.
Renal Colic Associated with Urethral Conditions in Women. E. MacD. Stanton, Schenectady, N. Y.—p. 72.
*Bacteriology of Fatal Systemic Infections Following Miscarriage or Abortion. W. B. Moody, Chicago.—p. 78.
*Repeated Dystocia from Fetal Anomaly in Successive Pregnancies. A. L. McDonald, Duluth, Minn.—p. 82.
"Once a Cesarean Section, Always A Cesarean Section," An Untruth. J. P. Greenhill, Chicago.—p. 86.

Diagnosis of Malignant Uterine Neoplasm.—In Norris' series of 391 cases of malignant tumors of the uterus, the clinical diagnosis was positive and correct in 272 cases (69.3 per cent.); the true condition was suspected in an additional fifty-nine cases (15 per cent.); in fifteen cases (3.8 per cent.) the clinical diagnosis was malignant tumor, but the type of neoplasm was not recognized, and in forty-five cases (11.5 per cent.) the condition was clinically regarded as benign and its true character determined only on histologic examination.

Treatment of Cystocele, Rectocele and Uterine Prolapse.—In the repair of a cystocele, the principle involved in the operation done by Frank is based on separation of the descended bladder from the uterine cervix, repair of the pubocervical fascia in the median line, and suture of this structure high up to the cervico-uterine junction so as to reestablish a tense continuous bladder shelf. For repair of a high rectocele, the operation consists in exposure of the anterior rectal was high up, opening of Douglas' cul de sac, obliteration of this pouch by circular suture and repair of the torn rectal fascia. This repair is usually combined with repair of low rectocele and torn perineal body. To repair a low rectocele and lacerated perineum, Frank makes an exposure of the anterior rectal wall, separates the rectum laterally from adjacent structures, and approximates the levator edges and triangular ligament en masse.

Blood Sugar During Pregnancy.—The average range for blood sugar concentration in normal pregnant women is stated by Rowley to be from 0.09 to 0.11 per cent., the same as that found in nonpregnant women. The average value found by him in fifty-three observations of the blood sugar concentration during pregnancy was 0.11 per cent. The average value in thirty-two observations of the sugar concentration of fetal blood taken from the umbilical cord immediately after delivery was 0.09 per cent. The average value for twenty-two observations of the blood sugar concentration on the second day postpartum was 0.14 per cent. Placental interchange of glucose, in Rowley's opinion, is undoubtedly dependent on the higher concentration of blood sugar in the mother. The influence of muscular exertion during labor is not a factor in postpartum hyperglycemia. Anesthesia with ether is a contributing but not a determining factor in producing a rise in the sugar concentration of the cord blood. Asphyxia produces a more marked rise than anesthesia with ether. Involution of the uterus cannot be shown to be the primary factor in producing postpartum hyperglycemia. The general physiologic change associated with involution may be a factor in producing postpartum hyperglycemia. In certain types of toxemia there is an increase in the blood sugar concentration.

Sugar Test in Pregnancy.—With pregnant women an alimentary administration of even 100 gm. of grape sugar leads to glycosuria with blood sugar under 0.19 per cent. which means that the spontaneous and artificial glycosuria of pregnancy occurs without an important increase of blood sugar content. Hence, this renal glycosuria of early pregnancy may be used to diagnose pregnancy during the first trimester. This artificial renal glycosuria is present constantly in pregnancy only during the first three months, when other signs of pregnancy are inconclusive. After the twelfth week of pregnancy, it rapidly disappears, and can be evoked in the later months only in a definite percentage of cases (about 30 per cent.). Welz and Van Nest have used this method of diagnosis of early pregnancy in seventy-one cases. In the first twenty-seven cases 100 gm. of glucose were used. As this was not entirely satisfactory, a change to 150 gm was

made. In the first series of twenty-seven tests using 100 gm. glucose, seven women were at periods ranging from fourteen to twenty-four weeks pregnant. As these were all advanced too far in pregnancy to diagnose by the sugar test, they may be ruled out entirely. Only one of these seven women gave a positive result, at fourteen weeks; two had excessive hyperglycemia, from 307 to 410 mg. per hundred cubic centimeters of blood which was not considered as diagnostic of pregnancy. Of the other eighteen, which were under the twelve weeks' period, fifteen agreed with the final diagnosis and three disagreed. In this series the urine was examined only at forty-five minutes and one hour. In the second series of forty-four cases in which 150 gm. of glucose was used, only two cases of those within the twelve weeks of pregnancy disagreed. These failed to give a positive sugar test, though they later proved to be pregnant. In no case was there a positive glycosuria, where there was no pregnancy, though blood sugar estimations were as high as 216.2 mg. per hundred cubic centimeters of blood.

Blood in Normal Pregnancy.—The results of the study of blood made by Krebs and Briggs with special reference to the inorganic constituents shows a great constancy of all the elements in normal pregnancy, regardless of the period of gestation, with one exception, namely, that in the last weeks of pregnancy the calcium content was lowered slightly.

Bacteriology of Fatal Systemic Infections Following Abortion.—From a study made by Moody of the bacteria found in women dying from sepsis following abortion, it appears that the hemolytic streptococcus is more often found than other organisms, but that such bacteria as *Bacillus coli* and staphylococci are not infrequently present. The possibility is suggested that the hemolytic streptococci are present in the lochia but that some outside influence, such as trauma from instrumentation, douches, and the like, is necessary to bring about generalized infection.

Repeated Dystocia from Fetal Anomaly.—The two cases reported by McDonald concerned the same mother in two pregnancies. They present four types of anomaly: (1) polydactylism and syndactylism; (2) situs transversus; (3) some anomaly of the urinary tract with hypertrophy of the bladder wall and patent urachus; (4) ascites.

American Journal of Tropical Medicine, Baltimore

January, 1923, **3**, No. 1

Prevalence of Yellow Fever Mosquito, Aedes Calopus, in Southern Part of Peru. L. H. Dunn, Ovid, New York.—p. 1.
Stegomyia Indices and Their Value in Yellow Fever Control. M. E. Connor and W. M. Monroe, New York.—p. 9.
Limit of Usefulness of Fish in Larvae (Aedes Calopus) Control. W. M. Monroe, New York.—p. 21.
*Hepatic Lesions of Experimental Yellow Fever. T. G. Perrin, Mexico. —p. 27.
*Transmission of Rocky Mountain Spotted Fever by Rabbit Tick Haemaphysalis Leporispalustris Packard. R. R. Parker, Hamilton, Montana.—p. 39.
Biology of Leishmania Tropica. A. M. Pedroso, Sao Paulo, Brazil.—p. 47.
*Presence of Yeast-Like Bodies in Blood of Human Beings. M. S. Fleisher and M. Wachowiak, St. Louis.—p. 59.

Hepatic Lesions of Experimental Yellow Fever.—In the livers of guinea-pigs which died after injection of virulent cultures of *Leptospira icteroides* Perrin found (apart from intense congestive and hemorrhagic phenomena, fibrous reactions of the stroma and vascular walls, etc.) two principal types of lesions: fatty degeneration or dystrophic steatosis, acute and profuse; and insular necrosis, analogous to that found in human livers from fatal cases of yellow fever. The insular necrosis presents characteristics analogous to those observed in experimental infectious jaundice in the guinea-pig.

Rocky Mountain Spotted Fever Transmitted by Rabbit Tick.—The data involving the rabbit tick, which Parker presents, indicate that in seeking for the factors responsible for the maintenance of Rocky Mountain spotted fever in nature, rabbits must be reckoned as one of the possibilities. It seems probable that Rocky Mountain spotted fever can be maintained among wild rabbits by means of the rabbit tick without the presence of the wood-tick, *Dermacentor venustus* Banks. It is furthermore probable that this fever may exist in the rabbit population in localities in which human cases have not been known and also that it may be far more generally distributed among the rodents in the northwestern states, especially in rabbits, than the known distribution of human cases would indicate.

Yeastlike Bodies in Blood of Human Beings.—Yeastlike organisms were found by Fleisher and Wachowiak in the blood of three persons suffering with chronic diarrhea. These organisms fed to animals produced diarrhea and death, and they could usually be recovered from both the intestinal mucosa and the heart's blood at necropsy, thus confirming their etiologic relationship to the disease in human beings. The finding of a yeastlike organism in one case of sprue suggests to the authors that further studies must be made in this disease.

Archives of Ophthalmology, New Rochelle, N. Y.

January, 1923, **52**, No. 1

Should We Still Consider Ocular Tension as Being Due to Aqueous Humor? Ocular Tension After Puncture of Anterior Chamber or Pressure on Eyeball. A. P. Magitot, Paris.—p. 1.
Isolated Paralysis of Inferior Oblique. S. B. Marlow, Syracuse, N. Y. —p. 12.
Factors Influencing Choice of Method for Cataract Extraction. D. Smith, Bridgeport, Conn.—p. 25.
Paralysis of Divergence; Report of Three Cases Due to Epidemic Encephalitis. J. H. Dunnington, New York.—p. 39.
Bitemporal Contraction of Visual Fields in Pregnancy. C. E. Finlay, Havana, Cuba.—p. 50.
Abiotrophy: Ophthalmoplegia Externa. A. W. Stirling, Atlanta, Ga.—p. 56.
Law of Rotation of Astigmatic Axis. A. W. Stirling, Atlanta, Ga. —p. 62.
Metastatic Thyroid Tumor in Orbit. A. Knapp, New York.—p. 68.
Basal Cell Carcinoma of Orbit and Ethmoid: Operation; Radium Application. J. Green, Jr., St. Louis.—p. 75.
Case of Epibulbar Melanotic Sarcoma, Occurring Sixteen Years After an Injury. J. M. Ball and H. D. Lamb, St. Louis.—p. 80.

Boston Medical and Surgical Journal

Feb. 8, 1923, **188**, No. 6

Medical Supervision at Antioch College. G. H. Bigelow, New York. —p. 157.
Young "Cardiac Cripple," with Especial Reference to ex-Soldiers. F. H. McCrudden, Boston.—p. 164.
*Plea for Testing Selected Single Specimens of Urine, with Special Regard to Diabetes. H. Gray, Boston.—p. 168.

Testing Single Specimens of Urine.—Albumin, casts and sugar, Gray says, are overlooked frequently when the physician examines a random sample of urine and, furthermore, even in the twenty-four hour amount. Hence, the best method alike for early diagnosis, for treatment, and for the doctor's periodic study, is to test every single specimen throughout twenty-four hours. Intermittent glycosuria often occurs at unexpected hours. Casts also are far more constantly found in fresh single specimens than in twenty-four hours specimens, particularly in diabetic urines. When it is impracticable for the physician to study every sample, it is desirable to investigate a specimen one hour after a hearty meal.

California State Journal of Medicine, San Francisco

January, 1923, **21**, No. 1

*Resection of Distal End of Ulna for Shortening Radius Following Fracture. C. Hoag, San Francisco.—p. 1.
*Syphilitic Headache. I. C. Sutton, Anaheim.—p. 3.
Uterine Myomas and Their Treatment. W. H. Gilbert, Los Angeles. —p. 5.
Posterior Vaginal Drainage with Description of New Instrument Used as Vaginal Pelvic Guide. F. R. Girard, San Francisco.—p. 9.
Pirquet System and American Requirements. W. E. Carter, Los Angeles.—p. 12.
Use of Pupilloscope in Neurology. H. G. Mehrtens, and O. Barkan, San Francisco.—p. 13.
*Tumors of Breast Arising During Pregnancy and Lactation. A. R. Kilgore, San Francisco.—p. 14.
Adenoma of Thyroid. J. H. Shephard, San Jose, Calif.—p. 16.
Posttonsillectomy Pulmonary Abscess. M. E. Botsford, San Francisco. —p. 19.
*Treatment of Constipation. R. M. Clarke, Santa Barbara.—p. 22.
Educational Standards in Physiotherapy. R. L. Wilbur, Yosemite Valley.—p. 24.
Constitutional Psychopathic Inferiority. W. House, Portland, Ore.—p. 26.
Brisément Forcé, and the For and After Treatment. A. Gottlieb, Los Angeles.—p. 29.
Treatment of Painful Affections Involving Cervical Vertebrae. H. L. Langnecker, San Francisco.—p. 31.

Resection of Distal End of Ulna for Shortening Radius Following Fracture.—In cases of fracture of the radius in

which either the shaft of the radius had been shortened by loss of bone or an overlapping of the fragments, or those cases in which the epiphysis had been impacted or comminuted, causing a definite protrusion of the ulna into the wrist joint sufficient to limit ulnar flexion of the hand with or without subluxation of the ulnar head, Hoag has resected the distal end of the ulna. Whether a subperiosteal resection is done or the periosteum is also excised seems immaterial, except from the standpoint of preserving the radio-ulnar ligaments and avoiding the formation of callus. Reformation of bone which limits motion seldom occurs, providing a full range of motion is maintained from the start to mold the callus. A satisfactory result depends on the observance of this point. Usually no splint or cast is necessary. The use of a sharp chisel, instead of a Gigli saw, is urged as being less damaging to the radio-ulnar attachments. The operative technic is simple; it does away with the need for immobilization; there is no possibility of nonunion and less opportunity for infection. Rotation of the forearm and lateral motion of the wrist are more completely restored. The restoration of strength and the cosmic results are generally better. Four cases are cited.

Syphilitic Headache.—Out of 200 consecutive cases of syphilis with early cutaneous lesions seen by Sutton, headache was the symptom most complained of in eight instances and was present in varying degree in forty-two cases. The pain may vary from a dull throbbing ache in mild cases to severe flashes, accompanied with fever, giddiness, a slowing of the pulse rate, and even convulsions. Syphilitic cephalalgia is consistently worse at night. As a rule, the pains start in the occipital region and spread up over the vertex in lightning-like flashes, but do not follow the course of any certain nerve. Often of vesperal onset, they may even waken the unfortunate patient from deep sleep, with the whole body aching "in concert." While occasionally a superficial tenderness over the skull may suggest a periostitis, or a dull ache may resemble that of any acute infection, all the headaches of early syphilis, Sutton says, should be regarded as being due to an early meningeal irritation, unless definitely proved otherwise. Head pain due to syphilis of the cranial and peripheral nerves was present only twice in Sutton's series of cases. He emphasizes that syphilis should be suspected in all instances in which head pain is a prominent and chronic symptom.

Tumors of Breast Arising During Pregnancy and Lactation.—This paper is a report of an interesting study made by Kilgore of the tumors of the breast arising in connection with functional activity of the organ. Of a total of 1,099 cancers, forty-nine, or 4.45 per cent., arose during breast activity. In lactation and pregnancy, cancer, galactocele, tuberculosis and adenoma comprise more than 90 per cent. of the tumors, in the order of frequency named. Ninety-three per cent. of the cancers arose after 30, while 68 per cent. of the benign tumors arose under this age. Twenty per cent. of all pregnancy and lactation cancers were first noted during the beginning four months of lactation. The number of cases of cancer per hundred thousand pregnant or lactating women increases markedly after the age group 35 to 39 over the number of cases of cancer per hundred thousand women not pregnant or lactating. Forty-five of the forty-nine patients with breast cancer were traced five years or more after operation, and of this number six were well when last heard from, i. e., 13 per cent. (unselected) proved to be five-year cures—not as high as the percentage of cures in unselected cases of breast cancer generally, but indicating, as cancer statistics go, a far from hopeless prognosis for malignant disease arising in connection with breast activity.

Treatment of Constipation.—Constipation is either spastic or atonic. Both conditions are the results of long continued irritations and inflammations; therefore, curing the irritation or inflammation will also cure the constipation, be it either spastic or atonic. As a producer of irritation to the colon, Clarke says, the cathartic habit easily takes first rank. Among cathartics, salts of all kinds, with their ever present osmotic action, are probably more injurious than all others. Each dose makes worse the malady it is intended to relieve, and convinces the patient the more strongly that nothing short of "dynamite" will do any good. The indiscriminate use of bran and other irritating foods is another great cause of constipation. Vaunted by health lectures and magazines, advertised by commercial food concerns, and many times by the doctor as well, it continues to be, when put into an already inflamed tract, irritating. Although producing bowel movement for a while, it only serves to deepen and increase the inflammation which is the basis of the patient's malady. The enema is nearly as bad as the cathartic. It washes away normal secretions and introduces a foreign substance to further irritate the bowel and rectum. The mental attitude is no small factor in the cause of constipation. The patient "thinks" he needs a cathartic and attempts to "beat nature to it" with a cathartic until he gets firmly fixed in his mind an idea that the bowels will not move of themselves. Unbalanced dietary is a cause of constipation. Reflex irritations, as a diseased gallbladder or appendix, an ulcer, or pelvic conditions are prolific causes of constipation. Irregular habits, and failure to promptly answer the call to evacuation, soon result in a loss of the "call" and eventually in inflammation of the pelvic loop, and should be named as causes of constipation. Unusual stress, or any strain that is beyond the ability of the patient to carry indefinitely, either physical or mental, is a great cause of constipation. The removal of bulk from the diet is the one great means of reducing irritation to the colon. The diet must be reduced to liquids of no residue and kept thus until bowel movement has been accomplished. After this the diet can be increased, gradually and carefully. Medicinal treatment is mainly of a negative character. All cathartics are stopped entirely, and the patient is impressed that they must not be taken again except in great emergency. Enemas, whether medicated or plain, are also stopped, as they are a source of irritation. Clarke gives an intestinal powder every three hours in the beginning. It not only provides bulk but it is nonirritating while the patient is on a nonresidue diet, and it is also very soothing and healing to the irritated mucosa and nerve endings. It should be reduced gradually as bulk is put back into the diet. The powder contains bismuth subnitrate, calcium carbonate and calcium phosphate, each 1 ounce, taken in one teaspoonful dose, every three hours, in water. An oil enema of cottonseed oil should be given every night at 8 or 9 o'clock. Heat to the abdomen is very essential. Fomentations should be given every three hours, each set lasting from fifteen to twenty minutes. Rest is of vital importance, especially to the exhausted patient. Exercise, instead of rest, is beneficial only to those patients suffering from dyschezia.

New Jersey Medical Society Journal, Orange

February, 1923, **20**, No. 2

Uterus and the Curet. A. S. Harden, Newark, N. J.—p. 37.
Treatment of Hypertension in Cardiorenal Disease. D. Riesman, Philadelphia.—p. 41.
Autosuggestion. T. R. Chambers, Jersey City, N. J.—p. 46.
Mental Abnormalities and Problem of Eugenics. A. Gordon, Philadelphia.—p. 47.
Interest of Medical Profession in Public School Hygiene. H. W. Haight, Highland Park, N. J.—p. 55.

New York Medical Journal and Medical Record

Feb. 7, 1923, **117**, No. 3

*Diagnostic and Therapeutic Importance of Some Typical Tender Bone Points. R. Bastianelli, Rome, Italy.—p. 125.
Bifurcation Treatment of Irreducible, Acquired or Congenital Hip Dislocations. A. Lorenz, Vienna.—p. 130.
Lorenz Bifurcation Operation. D. D. Ashley, New York.—p. 136.
Correction of Congenital Club Foot. E. H. Bradford, Boston.—p. 138.
Foot Strain in Golf. N. D. Mattison, New York.—p. 142.
Massage in Sprains, Dislocations and Fractures. P. Kouindjy, Paris, France.—p. 145.
Exercise in Acute Infectious Arthritis. S. W. Boorstein, New York.—p. 150.
Results of Exercise for Correction of Postural Defects. R. J. Cook, New Haven, Conn.—p. 155.
Contracted Achilles Tendon. A. Gottlieb, Los Angeles.—p. 157.
Diagnosis and Treatment of Minor Injuries to Lumbar Spine and Sarcoiliac Joints. M. B. Cooperman, Philadelphia.—p. 159.
Suppurative Arthritis. H. Cohen, New York.—p. 163.
One Hundred Cases of Weak Feet in Adults with Pedographic Findings. J. Grossmann, New York.—p. 164.

Diagnostic and Therapeutic Importance of Tender Bone Points.—A great number of persons, especially women, com-

plain of pain in various parts of the body, of which it is difficult to establish the seat and the nature, and consequently they are treated as suffering from nervousness, neuralgia, hysteria, or from material diseases of organs or parts of the body in the neighborhood of the pain, e. g., loose kidney, intestinal neuralgia, chronic appendicitis, arthritis, or periostitis. Bastianelli has paid a great deal of attention to the bones as the possible location of the pain. The treatment instituted, directed toward the affected bone, has been successful. It consisted of the injection of from 10 to 20 minims of phenol, 3:100 or 5:100, deeply on the bone exactly at the painful point. The injection must be repeated four or five times at different intervals according to the reaction. In the chronic cases, especially of the superior humeral, superior tibial, posterior lumbar, and rib and scapula points, the results have been extraordinary; less in the epicondyle and styloid pain and in the coccygodynia, perhaps because it is more difficult to inject them well. In the acute form, the reaction is more severe and the disease for the time being becomes worse.

U. S. Naval Medical Bulletin, Wahington, D. C.

January, 1923, **18**, No. 1

Study of Earth Sciences; Its Purpose and Its Interrelations with Medicine. T. W. Vaughan.—p. 1.
Psychometric Tests for Recruiting Stations. J. R. Poppen.—p. 14.
Problem of Malaria in Marines in Haiti. A. H. Allen.—p. 25.
Functions and Organization of Medical Corps Units Serving with Marine Corps in Field. S. N. Raynor.—p. 31.
Psychoneuroses and Their Treatment. W. O. Krohn.—p. 39.
*Use of Chaulmoogra Oil Derivatives in Leprosy. C. B. Van Gaasbeek.—p. 50.
Hygienic Laboratory of Republic of Haiti. R. M. Choisser.—p. 56.
Modeling Compound Impressions. H. E. Harvey.—p. 61.

Use of Chaulmoogra Oil Derivatives in Leprosy.—Thirty-seven patients in the leper colony on the island of St. Croix, Virgin Islands, were treated with the ethyl ester derivatives of the fatty acids of chaulmoogra oil. Gaasbeek and his associates gave 1 c.c. the first week intramuscularly into the buttocks; 2 c.c. for the next three weeks; 3 c.c. for the following six weeks, at which time the supply of the drug was exhausted and the treatment was discontinued until a new supply of the oil was received about five months later. The nasal smear was positive for *Bacillus leprae* in twenty-three of those who received the treatment. Under treatment the nasal smear became negative in every case. The effect on the nodules was remarkable. Although the nodules were not directly injected, they could be seen getting smaller weak by week. The effect on the macules was no less striking. The duration of the disease had no effect on the disappearance of the macules under treatment. On the leprous ulcerations the results were not so striking. The duration of the disease did not seem to have any effect on the healing of the ulcers. Healing seemed to depend rather on the duration of the ulcer and the extent of the anesthesia. In cases in which the ulcers were comparatively recent and the anesthesia slight, there was prompt healing when treatment was instituted. In cases in which the ulcers were of long standing and involved bone, and the anesthesia was total there was no change or, at the most, only slight improvement. The effect on disturbed sensation was marked. At the beginning of the treatment there was anesthesia, either slight, marked, or total, in thirty-five patients. In six patients the anesthesia cleared up entirely; in twenty there was improvement; while in the remaining nine there was no change. On the whole, more marked improvement was observed in patients having leprosy less than five years, although considerable improvement was found in those of from five to ten years' duration. Those that showed no improvement had had leprosy six, eight, thirteen, eighteen and twenty-five years, respectively. These observations have led the observers to conclude that the ethyl ester derivatives of chaulmoogra oil have a very definite place in the treatment of leprosy. It is believed that they will cure some cases, especially those of relatively short duration, and it is known that they will bring about improvement in a majority of patients to such an extent as to permit their parole. No harmful effects have been observed from its administration.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 3, 1923, **1**, No. 3240

Microbic Transmissible Autolysis. J. Bordet.—p. 175.
*Malignant Diseases of Breast. C. A. Morton.—p. 178.
Cataract Extraction Followed by Symptoms Suggestive of Sympathetic Ophthalmia. F. Fergus.—p. 182.
"Tetanism" in Meningitis. H. B. Shaw and C. D. Shapland.—p. 183.
Diaphragmatic Hernia of Entire Stomach. J. G. Andrew.—p. 184.
Hydatid Cysts of Liver. Associated with Gallstones and Empyema of Gallbladder and Pleura: Recovery. M. L. Ramsay and H. F. Vellacott.—p. 184.
Radiation of Pain in Lesions of Fallopian Tube. M. Marcus.—p. 185.
Case of Ritter's Disease (Dermatitis Exfoliativa Neonatorum). R. McD. Cairns.—p. 186.
Posthippocratic Schools of Medicine. R. O. Moon.—p. 187.

Malignant Diseases of Breast.—The records of 120 consecutive cases of ordinary glandular cancer of the breast, subjected to operation during the ten years preceding 1921, are analyzed by Morton, with reference to the proportion of cases with local recurrence. The late results as to local recurrence were traced in eighty of the 120 cases. Of the remaining forty cases, some patients died with distant metastases without local recurrence before the end of three years after the operation, others died also during this period of intercurrent disease, and in some cases the cause of death was unknown. Thirty-seven patients were free from recurrence three years or later after the operation, and forty-three had local recurrence. Of the thirty-seven, twenty-five had no recurrence five years or later after the operation. Recurrence has been most frequent in the pectoral region. There were twenty cases of supraclavicular recurrence. In no case has Morton ever encountered a recurrence in the downward direction, and he has never made a practice of any special clearance of the tissues in this direction. The special feature of the operation performed by him is the supraclavicular extension.

Lancet, London

Feb. 3, 1923, **1**, No. 5188

*Progressive and Malignant Endocarditis in Childhood. F. J. Poynton.—p. 215.
*Immediate Microscopic Diagnosis of Tumors at Time of Operation. E. H. Shaw.—p. 218.
*Causes of Death in Chronic Valvular Disease of Heart. J. Cowan and J. K. Rennie.—p. 223.
*Cardiac Rheumatism of Childhood. M. O. Raven.—p. 226.
Anthrax Infection by Shaving Brushes. F. A. Knott.—p. 227.
Case of Extra-Uterine Pregnancy. A. McMurray.—p. 228.
Case of Retroperitoneal Fibroma Arising from Anterior Common Ligament. W. H. Ogilvie.—p. 228.

Malignant Endocarditis in Childhood.—Malignant endocarditis in childhood, Poynton says, shows the same features as in the adult, though, as a rule, it is more rapid in its course. There are fever, sweating, anemia, purpura, Osler's spots, infarctions, optic neuritis and retinal hemorrhage, drowsiness, aneurysms, diarrhea, cerebral hemorrhage or embolism, hematuria, enlargement of the spleen, cardiac bruits, and a continual excited action of the heart. Poynton has seen in a child a femoral aneurysm as large as a cocoanut from an embolus in that vessel. This likeness to the adult cases is most significant when the close association with acute rheumatism is seen. Poynton holds that there is a rheumatic malignant endocarditis which may arise from the simple form or be primary in origin. Further, he believes that the mysterious cases of streptococcal origin in adults are either primary cardiac rheumatism of a malignant type, or, if not actually rheumatic, more closely allied to the rheumatic infection than any other. In other words, they are due to a strain of that group. Cases are cited as proof that a study of rheumatic heart disease is probably one of the best methods available at present for throwing light upon malignant endocarditis met with not only in childhood, but also in adult life.

Immediate Microscopic Diagnosis of Tumors.—Shaw describes in detail his method of cutting frozen sections of fresh tissues, a procedure which he first recommended for general use in 1910 but which he originated in 1899. Two alterations were made some years ago: (1) substitution of

the ethyl chlorid spray for the old ether apparatus—by this means a piece of tissue may be frozen on any flat piece of roughened glass, metal, or even wood; and (2) diluted instead of full strength stain, which acted too quickly and gave very dense pictures.

Causes of Death in Chronic Valvular Disease of Heart.—In the 100 cases of valvular disease found by Cowan and Rennie to be present on postmortem examination, nineteen cases were purely acute, while eighty-one cases were, in part at any rate, chronic. In all of these cases an antemortem diagnosis had been made. In thirty-nine of the eighty-one cases of chronic valvular disease an acute or subacute endocarditis was found to be also present. Paroxysmal tachycardia was present in twenty-one cases. In one case death ensued as the result of recurring attacks of paroxysmal tachycardia. In one case death ensued in a patient who had full heart block. Of these eighty-one cases of chronic valvular disease the cause of failure was in two cases unknown. In six cases death ensued from causes quite distinct from the cardiac disease. In eleven cases cardiac failure followed the activity of factors outside the heart. Of the other sixty-two cases, in forty-nine the heart itself seemed to be the prime factor in the failure, and in thirty-nine of these an acute endocarditis was present at death. The commonest cause of cardiac failure in chronic valvular disease seems thus to be an acute reinfection of the cardiac valves. Acute endocarditis is most common in rheumatic patients, and least common in syphilitic patients. Of fifty-eight cases of acute endocarditis, nineteen purely acute and thirty-nine associated with chronic lesions, thirty-two were rheumatic and only one syphilitic. One patient had suffered from both diseases. The immediate cause of death in cases of chronic valvular disease is varied. In some a general sepsis is present, in some embolic lesions in the organs occasion death, in some the valvular fault progresses beyond the point where compensation can be effected. But in probably the majority of cases the cause of death is muscular weakness from the associated myocarditis.

Cardiac Rheumatism of Childhood.—The treatment followed by Raven, in the main, consisted of recumbency, fresh air, and warmth. The most severely ill patients have been kept strictly recumbent against bed rests for from eight to fourteen months: the others have been allowed to get up little by little, as the symptoms subsided, beginning at a quarter of an hour a day and working up gradually to a full day before discharge; then they have always been sent back to the hospital or physician that sent them for further observation. Treatment by drugs, useful though they undoubtedly are—particularly salicylates, digitalis, and opium in appropriate cases—is regarded only as accessory to a general management on these lines.

Indian Medical Gazette, Calcutta

January, 1923, **58**, No. 1

Therapeutics of Antimony. R. N. Chopra.—p. 1.
Malaria Survey of Sawantwadi State. C. Strickland.—p. 7.
What Are the Departures from Health and Diseases Which Arise from Negligence, Ignorance and Self-Indulgence of Man? J. W. Cornwall.—p. 15.
Use of Nonmotile Strain of Bacillus Typhosus in Agglutination Reaction. G. P. Khan.—p. 18.
Spinal Analgesia. F. J. W. Porter.—p. 20.
Case of Homicidal Yellow Oleander Poisoning. S. Banerjea.—p. 20.
*Two Cases of Death from Hemorrhage into Pericardium. R. S. Townsend.—p. 21.
Cases of Kala-Azar. D. N. Roy.—p. 23.
*Case of Unusual Malpresentation. J. A. Rowland.—p. 24.

Death from Hemorrhage into Pericardium.—In one of the cases recorded by Townsend, there was actual rupture of the heart muscle, and in the other case, a small aneurysm in the first part of the aorta had ruptured. The rupture in the first case occurred at the point of entrance of the pulmonary artery into the right ventricle. No disease of the valves could be found, one minute patch of atheroma was present in the pulmonary artery about 1 inch from the tricuspid valves, otherwise the large vessels seemed healthy. All other organs of the body were healthy except the liver, which was enlarged and somewhat engorged.

Unusual Fetal Malpresentation.—Rowland relates the case of a pregnant woman whose abdomen was so large as to lead to a suspicion that the case might be one of twins. On making an examination per vaginam the head (vertex), hand and foot were found firmly impacted in the vagina, the head being between the hand and foot. It was found impossible to return any one of the presenting parts into the uterus. The possibility of interlocked twins was thought of, but no definite diagnosis could be arrived at. The head was perforated with great difficulty owing to the edematous condition of the vagina, and an arm was removed at the shoulder joint. Attempts made to bring down the leg, simultaneously pushing back the head into the uterus failed. When the head was severed from the thorax by cutting through the neck, it was possible to push the head into the uterus. A leg was pulled down and the body of a full-term child of normal size was extracted. On completion of delivery it was found that the woman had a sessile submucous fibroid tumor, the size of a large orange, situated in the upper segment of the uterus. The tumor was incompletely split in halves. Previous to this confinement the patient had had two normal deliveries.

Irish Journal of Medical Science, Dublin

January, 1923, **5**, No. 11

Principles of Therapeutics. T. G. Moorhead.—p. 485.
Unsatisfactory Appendicectomies. Wm. Doolin.—p. 495.
*Cases of Diabetes and Leukemia. J. W. Moore.—p. 507.

Cases of Diabetes and Leukemia.—Moore cites two cases, one of diabetes mellitus in a girl, aged 14 years, complicated in its final stages by xanthoma diabeticorum, and one of myelogenous leukemia in a boy, aged 11 years.

Medical Journal of Australia, Sydney

Jan. 6, 1923, **1**, No. 1

Dysentery: Bacillary and Amebic. E. M. Little.—p. 1.
Head Injuries of War. B. T. Edye.—p. 5.
Gas Gangrene in Military and Civil Practice. K. Inglis.—p. 7.
Ocular Syphilis. J. C. Douglas.—p. 9.
Tonsils Considered by a General Practitioner. G. P. O'Day.—p. 13.
*Case of Tuberculous Meningitis. W. E. George.—p. 14.

Acute Tuberculous Meningitis.—George relates the case of a boy, aged 12, who became suddenly ill, the chief symptom being headache. This and other symptoms led to a provisional diagnosis of enteric fever. The Widal test was negative. No bacilli were recovered from the feces, urine, or blood. On the thirteenth day, the patient had a sudden rigor. Four days later the leukocytes numbered 20,000, 90 per cent. being polymorphonuclear cells. He was becoming more drowsy. Within a week the diagnosis of meningitis was evident. The patient died about three weeks after the onset of his illness. At the postmortem examination, an old adhesive pleurisy of the whole of the upper lobe of the right lung was discovered; on section the same lobe was found to contain numerous caseous tuberculous nodules. Both cerebral hemispheres were greatly congested and the meninges in the vicinity of the pons varolii were hyperemic and swollen by a great deal of subjacent inflammatory exudate. This exudate was clear and showed increased lymphocytes; no organisms were isolated on culture. The case was interesting in view of the differential diagnosis and the persistent leukocytosis with polymorphonuclear cell increase in an acute condition, evidently tuberculous from the outset.

Quarterly Journal of Medicine, Oxford

January, 1923, No. 62

*Study of Orthostatic Albuminuria by Means of Graphic Records. J. W. Russell.—p. 73.
*Fractional Test Meal in Study of Disorders of Gastro-Intestinal Tract. (Analysis of 174 Verified Cases). D. Hunter.—p. 95.
Muscular Exercise, Lactic Acid, and the Supply and Utilization of Oxygen. A. V. Hill and H. Lupton.—p. 135.

Study of Orthostatic Albuminuria.—There appears to be a group of mild kidney lesions which, apart from subacute exacerbations, reveal themselves chiefly by the inability of the kidney to bear, without leakage of albumin, the circulatory disturbance brought about by the upright position. Russell believes that the orthostatic albuminurias belong to the same group, though at its mildest extremity. In none of the seven cases examined by him has the bed urine been always com-

pletely free from albumin. The later day cessation of the albuminuria, in the few cases in which it was observed, has also been variable in its occurrence. The cessation was not due to adaptation to the upright position acquired in the course of the day, but its explanation has yet to be found. It was evident, however, that there is a close association between the quantity of urine secreted and the amount of albumin contained. In general, the two curves are inverse in direction, but the albumin excursions are probably exaggerated by the assumption of the upright position. Profuse diuresis generally puts an end to the excretion of albumin, even in the standing position. When the urine is persistently and abnormally scanty, the two curves cease to show any relation to one another. In most of the cases examined there was a marked delay in the secretory response to the intake of a fixed quantity of fluid. In the more obviously nephritic cases, the albumin response to the upright position was not immediate, except during a subacute exacerbation. Russell noted that in the more definitely "orthostatic" cases, standing at once and invariably gave rise to albuminuria, except during a period of diuresis.

Fractional Test Meal in Study of Disorders of Gastro-Intestinal Tract.—In the course of an investigation extending over two years, the fractional method of gastric analysis was applied by Hunter to 270 patients. In 174 of these cases the diagnosis was considered proved. In fifteen cases of chronic ulcer of the duodenum, the fractional test meal findings were remarkably constant. Eighty-eight per cent. of cases showed curves considerably above the limits of normal. In every uncomplicated case there was copious secretion of transparent fluid and rapid emptying. In fifteen cases of chronic ulcer of the pyloric end of the stomach, the findings were less constant; 67 per cent. of cases showed curves above the limits of normal. The typical curve was one with a high resting fluid, a gradual climb to a high level, and a slight terminal drop. Emptying was delayed. In twenty cases of chronic ulcer of the body of the stomach there was no constant finding. In 50 per cent. of cases the curve remained within the limits of normal, while in 35 per cent. it rose above these limits. An observation of some importance is that in 38 per cent. of cases, where the ulcer was situated posteriorly, macroscopic blood appeared. In cases of hour-glass constriction of the stomach, and in a small group of cases with ulcer on the anterior aspect of the body of the stomach, the findings were similar. There was complete achlorhydria with rapid emptying, but there was an excess of opalescent fluid and little mucus. Forty-three cases were examined after gastrojejunostomy. All showed deep bile staining of more than half the specimen, and in 90 per cent. of cases bile was found in the fasting gastric fluid. In 70 per cent. of cases the meal disappeared more rapidly than before operation, the average time of emptying being one hour and fifteen minutes. In two cases of gastrojejunal ulcer the acid curves were above the limits of normal. Of fifteen cases of carcinoma of the stomach investigated, in 67 per cent. the curves showed complete achlorhydria. The specimens were usually copious and contained dirty mucus. Macroscopic blood appeared in 27 per cent. of cases of which half were operable. Nine cases of chronic appendicitis were investigated. In 78 per cent. of these the curves were within the limits of normal. Seven cases of gallstones were investigated, some associated with acute cholecystitis, and some with chronic cholecystitis. In 83 per cent. of cases the curves fell within the normal limits. Eight cases were investigated in which the common bile-duct was obstructed. Very high acid curves, either of the plateau type or of the climbing type, appeared in 88 per cent. of cases. In a great variety of conditions there occurred a complete achlorhydria, and the specimens were scanty, difficult to withdraw, and mixed with mucus. Such findings were invariably associated with rapid emptying. In the majority of cases examined of visceroptosis, pernicious anemia, and cirrhosis of the liver these findings were present. In cases of myeloid leukemia, acne rosacea, and lupus erythematosus there was a low hypochlorhydria. A prolonged secondary anemia, such as may be produced by repeated small hemorrhages from a duodenal ulcer, may result in achlorhydria. Further, this may remain after return of the blood condition to normal.

Archives Franco-Belges de Chirurgie, Brussels

September-December, 1922, **25**, No. 12

*Goiter with Metastasis. E. Delannoy and A. Dhalluin.—**p. 1047.**
*Juvenile Deforming Osteochondritis. Vignard.—p. 1088.
*Palpation of Hip Joint Through Rectum. J. Cottalorda.—p. 1092.
*Regional Anesthesia of Neck and Arm. Brunin and Vandeput.—p. 1098.

Simple Goiter with Metastasis.—Delannoy and Dhalluin describe a case with photomicrograms, and compare it with 71 cases from the literature. Their conclusion is that these goiters with metastasis are always malignant, although the primary cancer in the thyroid may be latent. The data presented emphasize the necessity for examining the thyroid for unsuspected malignant disease whenever a neoplasm is found in a bone. In the cases tabulated, the metastasis was in a bone in all but a few cases, with or without metastasis elsewhere. In one man, 65 years of age, the metastasis was in the eyebrow. In another, aged 63, with a large goiter of four years' standing, there were metastases in liver, kidneys, pleura and lungs. The bones involved were mostly in the upper part of the body, but in some cases the metastasis was in the pelvis or femur. In 30 cases the spine and in 19 the skull were involved. In 17 cases death occurred in less than a year after the metastasis had been noted; in 15 within five years, of the 39 cases in which the outcome was recorded. In Helbing's case the man, aged 31, survived for seventeen years; the metastases were in sternum, femur and spine. In Wilkens' case the man, aged 72, with metastases in skull and lumbar spine, lived for seven years.

Juvenile Deforming Osteochondritis of the Hip Joint.—Vignard describes the findings in two cases in which he operated. The joint became totally stiff thereafter in the boy, 14 years old; but complete function was regained in the girl, aged 9. In this case, nothing abnormal was found when the cartilage was divided.

Palpation of Hip Joint Through the Rectum.—Cottalorda refers to cases of fracture of the acetabulum, of which he has compiled ninety-nine cases, in addition to ten from his own experience. He experimented further on the cadaver. All this experience testifies that palpation through the rectum does not reveal conditions in the hip joint unless the finger is exceptionally long, the patient thin and docile or deeply anesthetized, and the acetabulum much out of shape.

Regional Anesthesia for Operations on Neck and Arm.—This is the concluding portion of an exhaustive study of ways and means for blocking the nerves to allow operations on different areas of the neck, arm and hand.

Archives des Maladies du Cœur, Paris

December, 1922, **15**, No. 12

*Cardiac Disturbance from Arteriovenous Aneurysm. I. Nanu et al.—p. 829.
*Oxydases and Peroxydases of the Blood. J. Sabrazès.—p. 841.
Auricular Insufficiency in Chronic Lung Disease. Lutembacher.—p. 849.

Cardiac Disturbances Following Arteriovenous Aneurysm.—Nanu, Alexandrescu-Dersca and Lazeanu describe two cases of arteriovenous aneurysm of the leg in which operation was followed by recovery from cardiac disturbances. Even the dilatation of the heart was well influenced.

Oxydases and Peroxydases of the Blood.—Sabrazès reviews the question of oxydases and peroxydases of the blood cells. Monocytes with an oval nucleus do not contain peroxydase; polymorphonuclears give the reaction, although it is not very strong. Eosinophils contain more peroxydases than the neutrophils. It is interesting to note that in the pus of acute gonorrhea, those parts of neutrophils which contain gonococci, have lost the peroxydase. The mast cells from the peritoneal cavity of white rats, the megakaryocytes and blood platelets, did not give the reaction.

Archives Médicales Belges, Liége

December, 1922, **75**, No. 12

*Neurasthenia. F. Dauwe.—p. 1169.
*Protein Therapy in Genito-Urinary Diseases. G. d'Hooghe.—p. 1195.
*Eugenics. Govaerts.—p. 1201.

Neurasthenia.—Dauwe makes a detailed study of the physical symptoms and mental condition in neurasthenia.

Protein Therapy in Genito-Urinary Diseases.—D'Hooghe publishes cases of chronic urethritis, acute epididymitis, gonorrheal arthritis and gonorrheal conjunctivitis, in which protein therapy was successful. It was also applied in skin and syphilitic affections, often with favorable results.

Eugenics.—Govaerts concludes that eugenics belongs in the domain of social medicine. It consists principally in the knowledge of heredity and the action of social institutions on the transformation of the race. It teaches us that if we do not combat hereditary causes, all improvements brought into the life and work of a generation will be only temporary, and they will have to begin all over again in the next generation. It shows the necessity of taking into consideration the child of tomorrow as well as the man of today.

Bulletin de l'Académie de Médecine, Paris

Jan. 2, 1923, **89**, No. 1

The Past and Future of Pharmacologic Chemistry. Béhal.—p. 2.
*Diabetic Acidosis. A. Desgrez et al.—p. 25.
*Constitutional Irritability and Respiratory Spasm. E. de Massary and J. Walser.—p. 33.
*Retraction of Palmar Aponeurosis. Peugniez and Joly.—p. 35.
*Backward Lowering of the Root of the Tongue Causing Respiratory Disturbances. P. Robin.—p. 37.

Diabetic Acidosis: Action of Levulose.—Desgrez, Bierry and Rathery emphasize the influence of different rates of absorption on the assimilation of carbohydrates. Some diabetics tolerate levulose distinctly better than glucose. They maintain, contrary to Labbé, that the acidosis due to lack of carbohydrates is essentially the same as the acidosis of diabetics. The difference of opinions is due to confounding the acidosis of complete fasting with the acidosis from absence of carbohydrates with a large supply of fat. The fat, in an auto-experiment of Forssner, led in three days to a daily excretion of 42.80 gm. of acetone bodies. The symptoms of intoxication forced the scientist to stop the experiment, because he did not intend to commit suicide.

Emotional Instability and Respiratory Spasm.—De Massary and Walser discuss almost monosymptomatic forms of what they call constitutional hyperemotivity, *émotivité anxieuse*. The cardinal symptom may be respiratory, circulatory or digestive. The respiratory affection merits consideration as a real morbid entity. It consists in a sensation of oppression, feeling of difficulty in breathing, and characteristic uneasiness, which may increase to actual distress. By distracting the patient's attention it is possible to diminish the severity of the disturbance. The influence of the pneumogastric nerve is the evident cause, and other manifestations of vagotonia are found constantly (oculocardiac reflex), or frequently in these cases (hyperacidity, sweats, respiratory arrhythmia, hypotension). Atropin has a curative action on the condition.

Retraction of Palmar Aponeurosis Cured by Penetrating Roentgenotherapy.—Peugniez and Joly report the case of a patient with retraction of the palmar aponeurosis who recovered after roentgen-ray treatment.

Backward Fall of the Root of the Tongue as Cause of Respiratory Disturbances.—Robin gives a description and pictures of an overlooked cause of respiratory disturbances in the upper respiratory passages. The seat is in the oral pharynx, and the obstruction is due to a backward lowering of the root of the tongue. To overcome it, the patient has to open the mouth. The angles of the lower jaw are nearer together than normal; the chin is receding. The respiratory difficulty ceases if the patient is instructed to protrude his lower jaw so that the lower teeth come in front of the upper ones. An apparatus which causes such propulsion of the chin is the adequate treatment of the condition.

Bulletin Médical, Paris

Jan. 13, 1923, **37**, No. 2

*How Should Hodgkin's Disease Be Classified? Gastinel et al.—p. 39.
*Subcapsular Thyroidectomy in Exophthalmic Goiter. T. Asteriades.—p. 45.
Innervation and Chemical Excitants of Tissues. Guillaume.—p. 46.

How Should Hodgkin's Disease Be Classified?—Gastinel, Reilly and Potez ask this question, and state that Hodgkin's disease from a nosologic standpoint is a transition between and association of tumors and inflammatory lesions. From an anatomic standpoint, it is a morbid entity, and should be called "malignant lymphogranuloma."

Surgical Treatment of Exophthalmic Goiter by Subcapsular Thyroidectomy.—Asteriades describes and extols Siraud's method of subcapsular thyroidectomy under local anesthesia. It is simple, without danger, rapid and sure. He reports fifty-seven "brilliant successes" with this technic in fifty-seven cases.

Encéphale, Paris

December, 1922, **17**, No. 10

Cervical Neurofibroma. E. Flatau and B. Sawicki.—p. 617.
Neurosyphilis. C. I. Urechia and D. N. Elekes.—p. 627.
*Psychic Origin in Organic Affections. W. H. B. Stoddart.—p. 638.
Galvanic Nystagmus. J. Molinié.—p. 641.
Epidemic Encephalitis with Pithiatism. A. Gilles.—p. 644.
True Melancholia and Periodic Asthenia. R. Benon.—p. 646.

Psychic Origin of Certain Organic Affections.—Stoddart draws attention to the fact that many apparently organic affections may be due to psychic causes which can be discovered and treated by psychanalysis.

Journal de Radiologie, Paris

December, 1922, **6**, No. 12

Electrical Methods in Diagnosis and Prognosis of Peripheral Paralysis. G. Bourguignon.—p. 565.
Electrodes for Surgical Diathermy. H. Bordier.—p. 595.

Revue Franç. de Gynécologie et d'Obstét., Paris

December, 1922, **17**, No. 12

*Tubal-Abdominal Pregnancy. E. Zarate et al.—p. 625.
*Thirty-Six Pregnancies. L. Laurentie.—p. 645.
*Typhoid Bacilli in Fetal Blood. J. Vignoli.—p. 646.

Extra-Uterine Pregnancy at Term.—In the case reported by Zarate, Rojas and Widakovich the fetus had continued to develop after unnoticed rupture of the gravid tube. The uterus enlarged correspondingly, with symptoms of labor at term. The child was extracted and seems to be developing normally at the age of 6 months. The neck is short and the face too large for the head, but there is no pronounced deformity. It was the third pregnancy; the second had terminated in an abortion. In five cases summarized from the records, two children had developed normally to the fourth and ninth year. Another child is mentally backward; the others died soon after birth; one of the mothers died. If the fetus in an extra-uterine pregnancy survives to the fifth month, it generally goes to term. When diagnosed in the first half of pregnancy, operative treatment at once is imperative unless the woman objects. The exaggerated weight of the lower abdomen, fetal movements felt close to the skin, and the fact that they are generally painful, aid in the diagnosis. Internal examination is liable to entail abortion or premature delivery. The diagnosis during the first months is based on the diffuse abdominal pains and the symptoms of rupture of the tube, with or without external hemorrhage. The false labor is liable to injure the fetus; it should be extracted at once. The authors were able to extract the sac, with the placenta still adherent, and the first 5 cm. of the tube, and the ovary. There was scarcely any hemorrhage. The child weighed 2,860 gm.

Thirty-Six Pregnancies.—Laurentie reports a Syrian woman, now 85, who has borne twenty-four healthy children and has had twelve abortions. She did not nurse the children. She is exceptionally well preserved for her age. Her mother had twenty-three children.

Typhoid Bacilli in Fetal Blood.—Typhoid bacilli were cultivated from the blood of the umbilical cord of the premature child of a woman with typhoid. Serologic tests were negative with both mother and child.

Jan. 25, 1923, **18**, No. 2

*Low Cesarean Section. P. Gaifami.—p. 33.
*Sedimentation of the Blood in the Pregnant. H. Vignes and P. Hermet.—p. 42.
*Flushing the Uterus in Puerperal Infections. L. M. Pierra.—p. 44.

Low Cesarean Section.—Gaifami extols the advantages of transperitoneal cesarean section on the lower segment of the

uterus, as he observed them in the fifty cases he describes, including several with beginning infection. The pregnant uterus at term was removed in one case two years later; no trace could be found of the incision without the microscope. Conditions in the lower segment are more favorable for healing. In eleven cases the cesarean section was repeated, and the cicatrix was solid in all even when expectant treatment had been pushed to the extreme.

Sedimentation of Erythrocytes.—Vignes and Hermet found that sedimentation was accelerated in the blood of women advanced in pregnancy, but not early in pregnancy. They found it accelerated also in animals whose blood was being drawn repeatedly for antiserums.

Washing Out the Uterus in Treatment of Puerperal Infection.—Pierra refers to the revival of continuous irrigation as a means of treating infection limited to the cavity in question. The conditions in the uterus are much like those in a war wound, and Andérodias has reported 133 cured of 148 cases of puerperal infection. In 3 of the cases in which it failed, death was explained by kidney or lung disease; Perazzi's 6 patients all recovered, also Petit's 2, including one complicated with a gangrenous fibroma, and Michon's 12 of febrile abortion. In some of this last group curetting had failed to relieve. Pierra found it equally effective in a case of gravely infected criminal abortion. The fluid used totaled from 300 to 600 c.c. in the twenty-four hours. Petit used four to eight tubes, injecting 10 c.c. through each, every two hours, to a total of 500 to 1,000 in the twenty-four hours. Some used surgical solution of chlorinated soda, others preferred a milder disinfectant. Pierra and Michon used and prefer a 1:250,000 solution of silver nitrate (10 drops of a 1 per cent. solution to the liter of water). The weak solution stimulates repair and destroys micro-organisms without injuring the tissues.

Schweizer Archiv für Neurol. u. Psychiatrie, Zurich

1922, **11**, No. 2

*Rigidity in a Torsion Spasm After Encephalitis. R. Mourgue.—p. 163.
Parallelism of Psychic and Motor Activity. H. Steck.—p. 208.
Treatment of Epilepsy. V. Demole.—p. 215.
Tubercle in Tegmentum of the Pons. H. W. Stenvers.—p. 221.
Cerebral Syphilis and Psychoses. L. Redalié.—p. 230.
*Pituitary Gland in Cerebral Lesions. V. Desogus.—p. 244.
*Dysthyroidism, Anaphylaxis and Epilepsy. V. M. Buscaino.—p. 261.

Decerebrate Rigidity in a Torsion Spasm After Encephalitis.—Mourgue gives a clinical study of a case of a typical torsion spasm after epidemic encephalitis, and discusses the literature, especially with regard to the action of the liver in Wilson's disease. The patient had an alimentary levulosuria. Mourgue considers the extrapyramidal syndromes as affections of the general metabolism of proteins.

Pituitary Gland in Cerebral Lesions.—Desogus investigated the influence of different cerebral lesions on the pituitary gland in fifty dogs. He destroyed in some of them both occipital lobes, in others the parietal or frontal lobes. He found hyperemia and hypersecretion of colloid and a strong eosinophilia from twenty to thirty days after the operations. Between thirty and sixty days a regression takes place which reaches its maximum during the next month. After a hundred days, the pituitary becomes normal.

Dysthyroidism, Anaphylaxis and Epilepsy.—Buscaino found in thyroids of epileptics and of persons suffering from epileptiform convulsions, crystals which he considers as abnormal proteins. Popovici found that Abderhalden's reaction is much more frequent and strong if the thyroid from epileptics is used. He consider epilepsy as an anaphylactic crisis due to these proteins, and proposes extirpation of the thyroid and subsequent substitution by tablets in the systematic treatment of epilepsy.

Archivio Italiano di Chirurgia, Bologna

December, 1922, **6**, No. 4

*Mixed Tumor of the Orbit. G. M. Fasiani.—p. 333.
*Operations on Hour-Glass Stomach. C. Gamberini.—p. 347.
*Pseudo-Hydronephrosis. G. Razzaboni.—p. 365.
*Absorption by the Tunica Vaginalis. L. Torraca.—p. 404.
*Treatment of Exstrophy of the Bladder. U. Camera.—p. 421.

Mixed Tumor of the Orbit.—Fasiani resected temporarily the external wall of the orbit, and this allowed easy enucleation of the tumor. It had been developing for five years in the right eye of a man in the thirties. It was as large as a pigeon's egg, and was encapsulated. After its removal the eyeball returned to its normal place, with vision 1/4.

Hour-Glass Stomach.—Gamberini operated for organic hour-glass stomach in eleven of his 150 operations on this organ. In some cases he made a gastro-enterostomy in each half of the stomach. In other cases he made a very long opening, extending at each end beyond the narrow portion of the stomach. In other cases he resected and sutured the duodenum to the stump of the stomach, proximal from the narrow portion. The various cases are illustrated.

False Hydronephrosis.—Razzaboni applies this term to accumulation of urine in a cystic pouch, independent of the kidney parenchyma. He produced typical lesions of the kind in twenty-five rabbits and dogs by hampering the circulation, as he shows with photomicrograms. The kidney suffers, and actual hydronephrosis or atrophy results unless the cystic accumulation in the perirenal or pararenal tissues is removed in time. This kidney may then recuperate completely. There is no need to resect the kidney with pseudohydronephrosis unless irreparable lesions are already present.

Absorption by the Tunica Vaginalis.—Torraca injected a stain into the cavity of the tunica vaginalis in seven dogs, and the stain appeared in the urine in from fourteen to twenty-three minutes. In eight men with hydrocele, injected in the same way with the stain, it did not appear in the urine at all in two, and in the others it did not appear until after an interval of from one to nearly seven hours, and most of the stain lingered in the tunica for days.

Exstrophy of the Bladder.—Camera describes a modification of the Segond autoplastic method which he applied in a boy, aged 5, with excellent outcome. He utilized the scrotum instead of the prepuce to cover the defect left by the Segond technic. The testicles in cases of exstrophy are usually ectopic, and the scrotum provides a stout and well nourished flap. This method might be applied to small boys even when a radical operation is planned later to do away with the urinal.

Pediatria, Naples

Jan. 1, 1923, **31**, No. 1

*Scarlet Fever. G. Di Cristina.—p. 1.
*Treatment of Typhoid and Malta Fever. G. de Finis.—p. 11.
*Leukocyte Extracts and Gärtner's Bacillus. A. Ronchi.—p. 24.
Encephalitis and Chorea. S. de Stefano.—p. 38.

Scarlet Fever.—Di Cristina claims that specific germs from blood and bone marrow from patients with scarlet fever can be constantly found in anaerobic cultures containing human corpuscles. The development is optimal after fifteen days' incubation. The added blood is hemolyzing and a precipitate forms which makes examination by the hanging drop method impossible. Staining with Löffler's or Giemsa's stain reveals a few diplococci of the size of *Micrococcus catarrhalis*. Young rabbits injected with this material cease after twelve days to increase in weight, and either die slowly from cachexia or do not recover for a long time, although the body temperature hardly increases, and no leukocytosis is present. The anatomic changes consist in intense hyperemia of all organs, a reduction of the volume of the spleen (rarely an enlargement), and parenchymatous degeneration of the kidneys. Recent cultures seem to be more fatal than old ones. Direct inoculations of blood from scarlet fever patients give less distinct results. Serologic tests were not satisfactory. Di Cristina mentions his prophylactic experiment with a preparation of scarlet fever scales subjected to the action of convalescents' serum.

Treatment of Typhoid and Malta Fever with Vaccines.—De Finis used Di Cristina's and Caronia's vaccines in ninety cases of typhoid, thirty-five cases of paratyphoid and fifty-five cases of Malta fever. Only one patient, with the paratyphoid bacillus, died. The other patients (mostly children) recovered. In many instances the recovery was by crisis after a single injection; other patients required from 3 to 4 injec-

tions at two days' interval. Intramuscular injections gave the same results as intravenous.

Action of Leukocyte Extracts on Gärtner's Bacillus.—Ronchi's experiments on guinea-pigs demonstrate the preventive and curative effects of autolysates of leukocytes on the usually very severe infection with Gärtner's bacillus.

Anales de la Facultad de Medicina, Lima

September-October, 1922, **5**, No. 3

Inaugural Lecture of Surgical Course. G. Gastañeta.—p. 177.
*Epidemic Encephalitis. M. Gonzalez Olaechea.—p. 182.
*Parasitic Disease of Lungs in Peru. A. Corvetto.—p. 196.
Inaugural Lecture of Deontology Course. G. Fernández Dávila.—p. 205.
Inaugural Lecture of Surgical Course. P. S. Mimbela.—p. 213.
Etiology of Frenasthenia. L. Ciampi and H. Valdizán.—p. 224.

Epidemic Encephalitis.—The sudden onset of intense frontal and orbital headache was the first symptom of the disease. It ran its fatal course in less than a month. It was of the choreo-athetoid type, and there was pronounced softening of the thalamostriatal region of the brain.

Parasitic Pulmonary Diseases in Peru.—Corvetto emphasizes the clinical resemblance to pulmonary tuberculosis of hydatid cyst in the lung, paragonimiasis and bronchopulmonary spirochetosis. In every tuberculosis suspect in tropical countries, search should be made for these parasites. His records include twelve cases of pulmonary echinococcosis and six cases of paragonimiasis in Peru. In the latter disease, besides the imminent danger of fulminating hemoptysis, there is danger of embolism from the ova in the arteries. As this parasite requires another host to complete its cycle, it dies in time and is expelled; the patient thus spontaneously recovers. No treatment to date has proved efficacious against the paragonimus, except possibly antimony tartrate which offers some hope of relief. Individual and international prophylaxis is imperative, and the governments of the countries exposed to oriental immigration should be on the alert. Individual prophylaxis is simple: No shellfish or crustacean should be eaten unless thoroughly cooked. To eat them raw is to invite this disease. One of Corvetto's patients was well-to-do, but most of those affected have been laborers in the fields who eat raw crustaceans from the rivers. Only two cases of the Castellani bronchial spirochetosis have been known in Peru to date. One was acute and the other chronic. As this disease is extremely contagious, isolation is necessary until the sputum is free from the spirochetes. This not only wards off contagion of others but protects the patient against superimposed infection to which he is exceptionally predisposed at this time. Concluding his article, which was read at the recent Latin American Congress, Corvetto urged a resolution calling for special study by the public authorities of the countries of America of prophylaxis of these three parasitic pulmonary diseases.

Revista Española de Medicina y Cirugía, Barcelona

December, 1922, **5**, No. 54

*Typhoid in the Army. F. Soler y Garde.—p. 687.
Serologic Diagnosis of General Paresis. Berlamino Rodríguez Arias.—p. 710.
Dietetic Therapeutics. A. Arteaga Pereira.—p. 713. Conc'n.

Typhoid in the Spanish Army.—This is a critical study by an army medical officer of antityphoid vaccination in Spain and elsewhere. Soler insists that deaths from typhoid are the direct moral responsibility of those in authority, as vaccination has proved so harmless and effectual.

Semana Médica, Buenos Aires

Jan. 11, 1923, **1**, No. 2

*Hemorrhagic Disease of the Uterus. C. A. Castaño.—p. 45.
*Menstrual Hemoptysis. J. Destefano.—p. 52.
*Elements in Intradermal Tuberculin Test. A. Bergman.—p. 53.
Vaccine Therapy of Chronic Urethritis. E. Castaño.—p. 59.
Suggestion as Factor in Crime. III. J. C. Belbey.—p. 61.
Emergency Colectomy. E. Villagra Muro.—p. 78.
Infant Mortality in Santa Fe. E. Martinez Zuviría.—p. 82.
Diet for the Insane. F. Gorriti.—p. 88.
Dosage of Sodium Cacodylate. M. Ruiz Maya.—p. 94.

Hemorrhagic Uterine Disease.—Castaño disavows his heading "Hemorrhagic Metropathies" by presenting evidence that the disturbance is in the ovary. The uterus is merely the outlet, and it shows only hyperplasia of the endometrium such as occurs physiologically in the premenstrual cycle. Treatment should be by organotherapy and radiotherapy. He has been successful with roentgen-ray treatment in virgins and in the profuse hemorrhages near the menopause. Under other conditions, he prefers radium, and reports 100 per cent. recoveries.

Menstrual Hemoptysis.—Destefano comments on the interplay of the endocrine organs in the physiology of menstruation, and relates that it can be influenced to ward off menstrual hemoptysis. This is in reality a premenstrual phenomenon, and he combats it systematically by intravenous injection of pituitary extract in the tuberculous inclined to hemoptysis. He begins it each month about ten days before the period, and repeats on alternate days till the onset of menstruation. The hemoptysis never returned in women thus treated.

Intradermal Tests for Tuberculosis.—Bergman tested thirty-six patients with intradermal injection of goat or beef serum, egg white or other alien protein, injecting it with or without admixture of tuberculin. The findings testify anew to the specificity of the tuberculin tests.

Jan. 18, 1923, **1**, No. 3

*Drainage of Edema. J. Destéfano.—p. 101.
*Open-Air Schools. T. A. Tonina.—p. 103.
Hallucinations of Moving-Picture Type. F. Gorriti.—p. 110.
*Endocrine Basis of Ear, Nose and Throat Affections. J. de la Cruz Correa and R. Becco.—p. 112.
Examination of the Kidney in Edema. C. H. Niseggi.—p. 117.
Suggestion in Crime. J. C. Belbey.—p. 122.
Tumor in Left Occipital Lobe. Juan M. Obarrio.—p. 128.
*Interpretation of Electrocardiogram. T. Lewis.—p. 133.
*Medical Impressions of America. D. Speroni.—p. 142.

Mechanical Treatment of Edema.—Destéfano indicates the dangers from resorption of dropsical fluid, overloading the heart and flooding the system with dislodged toxins which aggravate the condition of the already damaged kidneys. He had a case in 1914 in which resorption induced a kind of serous apoplexy which proved fatal. On the other hand, direct drainage of the fluid by platinum needles introduced into the skin has proved effective and harmless in his experience with 100 cases. The needles are 4 cm. long and twice the caliber of the needle used for injection of grey oil. He inserts one on each side of each leg, just above the malleoli. The head of the bed is raised by 20 cm. to aid the flow with gravity. The needles are left in place as long as needed; in some cases up to four or five days. In one case 27 liters thus drained away in forty-eight hours. Gauze is wrapped around the outer end of the needle to separate it from the skin. Infection of the puncture holes occurred in only one instance. In this case an inflammatory reaction around one hole caused brief fever that subsided within twenty-four hours.

Open-Air Schools.—Tonina reviews the experiences at the four open-air schools at Buenos Aires organized since 1909. This class of schools is designed for weakly children, and the task of the medical school inspector, he asserts, should be far more comprehensive than in other schools. He should be empowered to treat the debility and in some cases to treat the underlying chronic malaria, anemia, syphilis or endocrine derangement.

The Endocrine Factor in Disease of the Ear, Nose and Throat.—Thirteen cases are described in which appropriate organotherapy aided in the cure of otorhinolaryngologic affections which had proved rebellious to all other measures. In some of the cases the return of tonsillitis with the menses was arrested by ovarian treatment. In other cases, organotherapy usefully supplemented operative measures or medication to reduce congestion. One man with spasmodic rhinitis, false asthma and ethmoiditis, improved materially under peptone and organotherapy. Measures to correct menstrual anomalies in some of the cases seemed to influence favorably the deafness or recurring throat disease.

Interpretations of the Initial Phases of the Electrocardiogram.—This is a translation in full of Sir Thomas Lewis'

article published in the *Archives of Internal Medicine*, September, 1922, p. 269.

Impressions of America.—In his visit to Washington, D. C., Prof. David Speroni was impressed with the insignificance of the buildings housing the medical schools in comparison to the magnificence of the public buildings. At Baltimore, the Pathology Institute attracted his attention most, and especially its arrangement of separate halls for the pathologic findings of different diseases. He dismisses the medical clinics and laboratories as not calling for special mention, saying they are no better than those of the Rawson Hospital at Buenos Aires. He addressed the students at Washington, describing the Open-Door colony for the insane near Buenos Aires, which has been called by outsiders the best institution of its kind in the world. Speroni spoke in Spanish, a Porto Rico student giving a running translation.

Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1922, **173**, No. 1-3

*Suppurative Pericarditis. A. Hilse.—p. 1.
Etiology of Muscular Torticollis. O. Heinemann.—p. 15.
*Hypernephroma. E. Muscholl.—p. 22.
*"Sexual Operations." W. Haubenreisser.—p. 31.
*Subcutaneous Extravasation of Lymph. R. Bonn.—p. 53.
*Osteomalacia with Epilepsy. A. Brenner.—p. 66.
*Luxation of Hip Joint in Adults. J. Fränkel.—p. 84.
*Hemophilia. K. H. Bauer.—p. 109.
Lymphogranulomatosis with Infiltrative Growth. H. Meyeringh.—p. 185.
Actinomycoma in Omentum. F. Matz.—p. 217.

Suppurative Pericarditis.—Hilse reports two cases in which there was adhesion between the heart and the pericardium. One of the young men died after incision of the pericardium by Ollier's method. The other recovered after pericardiotomy by Rehn's method. About 1 liter of pus was thus released. The anterior surface of the right ventricle was adherent to the pericardium. A drainage tube was introduced over the vena cava, one on the right and one on the left side, and the incision was left open. By the next day all the symptoms had disappeared except the edema of the legs. Continuous arrhythmia soon developed, and there is still retraction of the chest wall and diaphragm with the pulse beat. Six weeks later walks of 10 km. caused no disturbance. The puncture can be made below the fifth rib. From the left margin of the sternum to the left nipple is the zone in which there is no danger of piercing the heart or lung with a cautious puncture. Hilse declares that infection of pleura or lung during the procedure is more serious than running the needle into the heart muscle. In both his cases there was pyocyaneus infection of the wound. The advantage of rinsing with saline during the operation and in changing the dressings was manifest. It did not seem to have any appreciable influence on the heart action. Several clots of fibrin were thus washed out which otherwise might have obstructed the tubes and entailed adhesions in the pericardium. The drainage tubes must not be removed too early; he noted retention of pus as late as the twenty-third day.

Hypernephroma.—The large Grawitz tumor in the woman, aged 30, had no connection with the kidneys or suprarenals. It was growing from the posterior abdominal wall, between the left kidney and the spine, and it was adherent to the pancreas. Recovery was prompt after its removal.

Sex Gland Operations.—Haubenreisser analyzes the results to date of transplantation of testicles, roentgen irradiation of the testicles, and the two Steinach methods of ligating the vas deferens. He cites seventy articles reporting experiences in these three lines of sex gland operations, and reports ten cases from Payr's service, and four cases given only roentgen-ray treatment. Not the slightest influence from the irradiation could be detected, and only one of the patients presented any improvement. This was after transplantation of testicle tissue. This seems to be the only method which offers results, and this only after late castration. The transient effect from the Steinach ligation is due mainly to absorption of hormones from stasis of the testicle secretion, aided by autosuggestion.

Traumatic Extravasation of Lymph.—Bonn reports four recent cases of what has been called traumatic loosening and separation of the skin. Puncture and a compressing bandage may cure in cases of small extent. Otherwise he advises ample incision with swabbing, painting the walls of the cyst-like cavity with tincture of iodin, and draining. The walls of the cavity bleed more or less as this is done, and thus the tissues get a more nourishing fluid than the lymph.

Osteomalacia with Epilepsy.—The epilepsy first became manifest at the age of 25, and osteomalacia developed four years later during pregnancy. The clinical picture was that of puerperal osteomalacia, but the course and the tenderness of the skull resembled the osteomalacia from a deficient diet. There was a history of rachitis and convulsions in childhood, and of food privation in recent years. The condition materially improved under systematic phosphorus and cod liver oil treatment (phosphorus 0.01 gm.; cod liver oil, 100 gm. A teaspoonful three times a day, to a total of 0.05 gm. phosphorus). Calcium and nourishing food were given at the same time. In two months the woman was able to get up, after having been bedridden for six months. The epileptic seizures have become milder and the intervals longer. Epinephrin was not borne well, and had to be abandoned. The woman's two children have rickets, and one also has spasmophilia.

Luxation of the Hip Joint in Adults.—Fränkel refers to unilateral congenital luxation, and discusses the hindrance to reduction which may be offered by the iliopsoas muscle. Severing this muscle allowed reduction without further measures in three of the nine cases described.

Inheritance and Constitution in Hemophilia.—Bauer devotes seventy-six pages to an exhaustive study of 653 hemophilic families, with an average of 5.2 children per family. He explains that science has passed beyond the era of anatomy, of cellular pathology, and is now entering the era of function and energy, with the gen, the invisible rudiment, the transmitted germ of a character, instead of the cell, as the new and final unit for analysis. It is at the same time the starting point for a new synthesis, the aim of which is to determine the essential nature of the individuality.

Klinische Wochenschrift, Berlin

Jan. 1, 1923, **2**, No. 1

*Water Metabolism. C. Oehme.—p. 1.
*Fibrous Pericarditis. Volhard and Schmieden.—p. 5.
*Dynamic "Protein Fever." Rietschel.—p. 9.
Assay of Guaiacol Preparations. F. Verzár.—p. 12.
Peristalsis of Capillaries. E. Kylin.—p. 14.
Ventricular Fibrillation in Man. H. v. Hoesslin.—p. 15.
*Salt Metabolism. P. Jungmann.—p. 18.
*Kidney Function Tests. E. Rehn and L. Günzburg.—p. 19.
*Petruschky's Tuberculin Liniment. H. Ulrici.—p. 20.
Mechanical Impulse for Development of Frog's Eggs. H. Voss.—p. 21.
*Potassium Ions and Muscle Tonus. S. M. Neuschlosz.—p. 21.
*Surviving Heart of Homothermic Animals. F. Klewitz.—p. 22.
Hemispasm of the Trunk in Infant. Sonntag.—p. 23.
*Paralytic Ileus After Diphtheria. B. de Rudder.—p. 23.
Treatment of Pernicious Anemia. G. Rosenow.—p. 24.
German Social Insurance. Mugdan.—p. 27.
"Vitalismus" by Conviction. V. v. Weizsäcker.—p. 31.
Creatin-Creatinin Metabolism. M. Bürger.—p. 33.

Water Metabolism.—Oehme reviews the disturbances of water metabolism and discusses especially its central regulation. We do not know anything about the influence of hormones on the central nervous system, but pituitary extract influences the diuresis even after destruction of the nerves of the kidneys. No definite proofs were given that the condition of the blood colloids changes in diuresis due to caffein. Comparison of the refraction and viscosity of serum, which should show the alleged changes in dispersion of colloids, had negative results. It is more probable that the changes occur in the colloids of the organs themselves—kidneys as well as tissues. The tendency of the organism is to develop ontogenetically and phylogenetically toward constancy of blood composition and changes of concentration in the cells. These cause the movement of substances into them and from them. This regulation is perfected by especially sensitive cells of the central nervous system. It is probable that, in cases of diabetes insipidus in which changes were observed only in the pituitary gland, the authors omitted to examine the tuber and the paraventricular nuclei of the brain.

Fibrous Pericarditis.—Volhard and Schmieden point out that a simple adhesion of the pericardium does not necessarily cause clinical symptoms, but fibrous thickening and

contraction of the pericardium is characterized by typical transudate in the pleural and peritoneal cavities. These fluids may even assume an inflammatory character. There are two types or rather degrees of the disease. If the adhesions with the thorax are more pronounced than with the epicardium, systole is difficult, because the heart has to overcome its immobilization by the chest wall. The other type occurs if the fibrous union between the epicardium and pericardium predominates. In this case, diastole is hampered. In the first type the chest wall is retracted with every systole, and if the heart is not strong enough and capable of diastolic filling, the diastole brings the heart forward. This is often mistaken for an apex beat. The second type (or degree) has progressed so far that energetic diastole is no longer possible. The usual clinical signs belong only to the first, milder type. Yet the diagnosis of the second degree is possible by observing the disproportion between the insignificant local findings and the extreme, apparently cardiac, stasis (edema, cyanosis, enlargement of liver, dyspnea). In very severe cases a radioscopic examination shows that the heart is small, and gives an impression as if it were standing still, because the amplitude of movement is minimal. In both degrees, the chest wall over the heart does not rise during respiration (Wenckebach). A very characteristic sign of the second type is the constant fullness of the veins of the neck, which show, in the upright posture, a distinct double collapse in systole and diastole. This phenomenon may be seen even in the arm veins. The venous pressure is from 200 to 300 mm. water. Ascites may precede the general edema, and be the main clinical feature for years, and cause innumerable punctures, Talma's operation and wrong diagnosis. A similar venous stasis occurs only in severe cases of mitral stenosis. Yet the dilatation of the right auricle, the strong impulse of the heart, the irregularity of its action, together with the thrill and presystolic murmur, differentiate this disease. Volhard has tried since 1907 to convince different surgeons as to the necessity of extirpation of the anterior part of the pericardium, and he reports briefly seven such cases. The adhesion was in some cases so extensive that the danger of rupturing the right heart made a complete operation impossible. Two cases in which Schmieden operated were enormously relieved. He reports the history of efforts in this line and describes the operative technic.

Dynamic "Protein Fever."—Rietschel investigated the "protein fever" of infants which had been observed by Benjamin in 1914. Healthy infants kept on a comparatively concentrated diet had fever when a part of the carbohydrates or fat was substituted by an isocaloric amount of protein. The infants did not give the impression of being sick, and ingestion of water brought the temperature within a few hours to normal. He attributes the fever to the specific dynamic action of proteins which could not be physically compensated because the food did not contain enough water. This condition is different from toxic protein fever, which is due either to toxic products of decomposition of proteins or to bacterial putrefaction.

Salt Metabolism.—Jungmann publishes a new case of an affection of the pituitary (abscess) in which initial symptoms of diabetes insipidus disappeared. It is probable that they were due to increased pressure on the base of the brain during the development of the abscess. The full complex of diabetes insipidus consists in disturbance of the vegetative centers that regulate water and salt metabolism, and the composition of the blood.

Kidney Function Tests.—Rehn and Günzberg record the hydrogen ion concentration of ureter urine in patients who received hydrochloric acid before and an intravenous injection of sodium bicarbonate during the experiment.

Petruschky's Tuberculin Liniment.—Ulrici tested patients, who were sensitive to tuberculin injections, with twenty times the maximal doses of Petruschky's tuberculin liniment. There was no reaction at all. He admits that the preparation is inoffensive and concludes also that it is absolutely ineffective. Petruschky's claim to have freed the peninsula Hela from tuberculosis is not confirmed by physicians, who found in four years ten cases of tuberculosis among its 500 inhabitants.

Potassium Ions and Muscle Tonus.—Neuschlosz studied the action of strychnin on toads: he suspended one gastrocnemius muscle in Ringer's solution and the other in a similar solution free from potassium. While the tetanus was the same, the preceding tonic stage was very feeble in the muscle in the potassium-free solution.

Surviving Heart of Warm-Blooded Animals.—Klewitz found that the amounts of sugar used up by surviving hearts (rabbit, dog) are very different, and do not depend upon the activity of the heart. Nitrogenous bodies can be also metabolized by these hearts.

Paralytic Ileus After Diphtheria.—De Rudder describes a case of paralytic ileus occurring in a 3 months old infant, fourteen days after nasal diphtheria.

Mitteil. a. d. Grenzgeb. d. Med. u. Chir. Jena

1922, **35**, No. 5

*The Roentgen Rays in Duodenal Diagnosis. E. Saupe.—p. 555.
*The Blood Picture with Fibrous Osteitis. A. Roseno.—p. 586.
*Puncture with Subphrenic Abscess. C. Hirsch.—p. 595.
*Spinal Cord Tumors. M. Sgalitzer and S. Jatrou.—p. 598.
*Refractometer Findings in Cancer. Nather and Orator.—p. 611.
*Exophthalmic Goiter Problems. B. Breitner.—p. 637.
*Why Muscles Atrophy. A. W. Meyer.—p. 651.
Histologic Findings in Atrophied Muscles. C. Froboese.—p. 683.
*Tonus and Creatin Content of Striated Muscle. E. Sulger.—p. 691.

Interpretation of Duodenal Roentgenograms.—The roentgenograms in 5 cases of diverticulum in the duodenum and of several other unusual cases are reproduced. In one puzzling case there had been no symptoms from the stomach but partial ileus developed, and blood was found in the vomit. The roentgen rays revealed a large cancer in the upper duodenum. Saupe compares the roentgen findings in ten cases with the condition found at the laparotomy or after subsidence of symptoms under medical treatment.

The Blood Count in Fibrous Osteitis.—The differential blood count was within normal range in the three cases examined.

Puncture of Subphrenic Abscess.—Hirsch describes a technic for exploratory puncture of right subphrenic abscess. One patient was a physician who had had twenty-three exploratory punctures in the course of three months; none of them had brought pus. The punctures had all been made in the area of absolute dulness above the liver. Roentgenoscopy located the abscess in an area of relative dulness, and a long needle introduced a little above the absolute dulness brought pus at once. Prompt recovery followed evacuation of the abscess.

Roentgen Findings with Spinal Cord Tumors.—Fifteen cases are summarized in which the tumor had grown from the spinal cord or its membranes. In three of the ten extramedullary tumors there were small exostoses on the nearest vertebrae, while the spine seemed otherwise intact. The neurologic, roentgen and operative findings are compared with the course, and with the necropsy findings later in five cases.

Refractometer Findings in Cases of Cancer and in the Predisposed.—Nather and Orator found that after the age of 45, healthy persons respond to serologic tests in the same way as persons with cancer. They accept this as a specific predisposition to malignant disease because the cell reaction is specific, and may persist unmodified after removal of the cancer. It may be possible to modify this predisposition in some way, for the prophylaxis of cancer.

Exophthalmic Goiter Problems.—Breitner asks whether exophthalmic goiter is a disease *sui generis* or merely the severest form of a pluriglandular affection in which the thyroid plays the leading rôle. Another question he propounds is whether there can be affections of the endocrine ring in which the thyroid plays such a subordinate part that the clinical picture can be distinguished from the thyrosis pictures. He queries further whether a neuropathic constitution, degenerative tendencies and primary nervous disturbances are the real affection, and the exophthalmic goiter is merely a graft on this. He says that for more than a year all the exophthalmic goiter cases, in Eiselsberg's clinic, have

been closely studied from these standpoints. It is already evident, he says, that the extreme cases of exophthalmic goiter must be regarded as the result of the accumulation of a functional oversecretion or undersecretion of all the glands with an internal secretion.

Experimental Research on Atrophy of Muscles.—Meyer induced atrophy of muscles in cats, rabbits and guinea-pigs by immobilizing a limb in plaster.

Tonus of Striated Muscle.—Sulger discusses the tonus and creatin content of striated muscle under various conditions of tension and innervation.

Zeitschrift für Tuberkulose, Leipzig

December, 1922, **37**, No. 3

Climatic Treatment of Tuberculosis in German Middle Altitudes. A. Bacmeister and F. Baur.—p. 161. Comment. C. Flügge.—p. 167.
Origin of Tuberculosis of Suprarenal Capsules. F. Schwarz.—p. 169.
Treatment of Tuberculosis by Partial Antigens. Warnecke.—p. 184.
Comment on Frey's "Relaxation Pneumothorax." Gwerder.—p. 192.
*Calcium Treatment. Hartwich-Borrmann.—p. 193.

Calcium Treatment.—Hartwich-Borrmann combines calcium with potassium to dehydrate the organism. The prescription is calcii chloridi 30 parts; potassii acetatis 60 parts; aquae 285 parts. Sig.: One teaspoonful in a glass of warm water, half hour before breakfast. In exudates, good results were obtained after giving up to 6 teaspoonfuls daily. This treatment has been applied in appropriate cases during the last two years among the 600 inmates of the Lyster Sanatorium in Norway. A number of typical cases are described in detail to illustrate the special advantages in cases with profuse moist râles. The calcium can be given by the mouth or rectum, subscutaneously or by the vein, and in various forms. A dry cough is no contraindication for calcium treatment, but the doses should be smaller.

Zeitschrift für urologische Chirurgie, Berlin

Jan. 15, 1923, **11**, No. 5-6

*Hypertrophy of the Prostate. E. Kornitzer and C. Zanger.—p. 137.
*Valve-Like Closure of Urethra Opening. C. O. Schmidt.—p. 158.
*Technic for Nephrotomy. A. Heymann.—p. 168.
Perirenal Hygroma. O. Connerth.—p. 169.
*Malformation of Uterus, One Kidney Missing. G. Eismayer.—p. 191.

Hypertrophy of the Prostate.—Kornitzer and Zanger give photomicrograms from six cases of hypertrophy of the prostate in which connective tissue, muscle and gland tissue were all involved.

Dilatation of Urinary Organs from Valvelike Obstruction to Outlet of Bladder.—The protruding abdomen of the premature child measured 35 cm. The diameter was about twice that of the shoulders. A fold in the bladder wall seemed to have acted like a valve to close the inlet to the urethra.

Technic for Nephrotomy.—Heymann recommends nephrotomy—without decapsulation—as by far the best means for treating neuralgic pains in the kidney accompanying degenerative nephrosis. To avoid hemorrhage, he incises only the kidney proper, and does not carry the incision into the kidney pelvis. This probably would suffice also for operative treatment of essential hematuria.

Malformation of Uterus and Kidney.—Eismayer summarizes from the literature 122 cases of deformity of the uterus with one kidney missing, and describes one case. The woman died from puerperal sepsis after premature delivery. The right kidney was abnormally large and the uterus seemed to consist of only the right cornu. There was no kidney on the left side.

Zentralblatt für Chirurgie, Leipzig

Jan. 6, 1923, **50**, No. 1

*Pylorus Stomach and Disposition to Ulcer. W. Koennecke.—p. 2.
*Recurrence of Gastric Ulcer. O. Wiedhopf.—p. 4.
*Recurrence of Cancer of Breast. L. v. Czirer.—p. 7.
*Testis Transplantation. C. Hammesfahr.—p. 9.
Treatment of Amputation Stumps by Sauerbruch Method. Veit.—p. 12.
*Roentgen Irradiation of Salivary Fistula. F. W. Kaess.—p. 14.
*Primary Suture After Thyroidectomy. O. Orth.—p. 16.

The Pyloric Portion of the Stomach as Affecting the Predisposition to Ulcer.—Koennecke gives the results of experiments on dogs. Four dogs, after bilateral exclusion of the pylorus and end-to-end gastro-enterostomy with the duodenal stump (Billroth I), were examined from three to four months after the operation. They presented no pathologic findings, whereas one dog with gastrojejunal anastomosis (Billroth II) developed a typical, penetrating jejunal ulcer. Peptic ulcer is not always due to a single cause; there is usually a complex condition back of it. Peptic jejunal ulcers in man are, of course, usually associated with a disposition to ulcer, as the primary operation was performed generally on account of ulcer. In animals this predisposition has to be artificially produced. In seven dogs he severed both splanchnic nerves and later he supplemented this with bilateral exclusion of the pylorus. All seven dogs survived the operation several months, and all developed typical callous, and, for the most part, deeply penetrating ulcers. The two dogs with gastrojejunal anastomosis developed peptic jejunal ulcers opposite the gastric opening, while the five dogs with gastroduodenal union (Billroth I) presented ulcers of the duodenum from 1 to 2 cm. back of the suture and corresponding to the lesser curvature. As practical conclusions, Koennecke recommends: Avoidance of exclusion of the pylorus in any form in persons predisposed to ulcer formation; as far as possible, resection for ulcer of the pylorus or duodenum; in inoperable duodenal ulcer, resection of the pyloric region, followed by the Billroth II operation (oral gastro-enterostomy); and, finally, gastro-enterostomy for ulcer only exceptionally and when there is no pyloric or duodenal stenosis.

Recurrence of a Gastric Ulcer Following Use of Silk in Suturing the Mucosa.—Wiedhopf reports a case of recurrence of a gastric ulcer, and concludes that the findings at the operation furnish further proof for the contention that silk is not so well adapted as resorbable catgut for suturing the mucosa in gastro-intestinal operations.

Local Recurrences Following Operations on Cancer of the Breast.—Czirer points out that the ordinary skin incisions used at present in operations for cancer of the breast, in part, cross the lymph paths, and in part run parallel with them; but they are all alike in one respect: In every incision the knife penetrates deeply the dangerous portion of the skin. Czirer's method, which he describes in detail, consists essentially in keeping as far away as possible from the strip of skin under which the superficial and deep lying lymph vessels pass from the mammary gland to the axilla. He argues that it is along these particular lymph vessels that metastasis is likely to occur. The lateral free border of the pectoral muscle also looks suspicious to him, and he endeavors not to get too near to its subcutaneous tissue.

A Critical Discussion of Testis Transplantation.—Hammesfahr reports the case of a man, aged 26, whose left testis had atrophied from unknown cause, eight years previously, so that only a hard body of connective tissue, the size of a peppercorn, was left. Six years after the left testis had atrophied, the patient injured the right testis by a blow with a hammer, whereupon also this testis atrophied, in spite of all attempts to conserve it. Libido and interest in his work gradually decreased. By splitting the atrophied testis and embedding it in the abdominal musculature, Hammesfahr sought to save part of the function, but histologic examination showed that there were no elements capable of functioning left—neither seminal tubules nor interstitial cells. He therefore transplanted half of a testis from a patient who had suffered a gunshot wound, and embedded it in the abdominal musculature in accordance with Lichtenstein's method. Ten days later, he noted over the transplant a slight swelling, which, in a few days became soft. On opening the swelling, he found the whole upper portion of the testis soft and necrotic. At the base he discovered a thin (3 mm.) layer of the transplant firmly adherent to the underlying tissue and plainly vascularized. Hammesfahr is almost certain that no appreciable portions of the testis implant became incorporated with the surrounding tissues, but that the adherent vascularized disk was also resorbed later. It was therefore all the more remarkable that, within a few weeks, libido became normal and had persisted at last accounts. It is hypothe-

tically possible that the testicular tissue, though soon resorbed, exerted a stimulating effect on certain vicariously functioning endocrine glands, and that these glands, thus stimulated and metamorphosed as it were, brought about the remarkable change. It is also possible that the result was due wholly to suggestion. Moreover, in judging the results of transplantation in man, we must not lose sight of the fact that sex function depends on purely psychic, imponderable factors to a greater extent than any other function of the human organism. Also it must be remembered that we possess no definitely established, general, normal measure by which to estimate such functioning. Hammesfahr does not wish to seem to oppose the idea of homoplastic transplantation of a testis, but urges the application of strict criticism to the results by the serologic control methods proposed by Stocker.

Roentgen Irradiation in Treatment of Salivary Fistula.—Kaess reports two cases in which he found that roentgen irradiation of the parotid gland, by temporarily suppressing gland function was decidedly efficacious in the treatment of salivary fistula. The patients were dismissed cured in from seventeen to thirty days. Kaess holds that roentgen irradiation deserves a special place among the numerous methods employed in the treatment of salivary fistula, and is to be recommended not only in stubborn cases, in which, as a rule, only extirpation of the gland would be considered, but also as an adjuvant in every operative method of treatment. It is conservative and simple.

Primary Closure in Strumectomy.—Orth states that not until the past year did he decide to dispense with drainage and resort to primary wound closure in resections. He is well pleased with the results. Lack of care in the operative procedure may be the reason why former attempts at primary suture did not turn out well, and that on the second or third day, and often, on account of hemorrhage, the same day as the operation, the wound had to be reopened and drained. Thus, it would seem that primary wound closure depends on three things: punctilious asepsis, cervical anesthesia and hemostasis. Cervical anesthesia, as distinct from infiltration anesthesia, is an aid to primary wound closure, as it does not affect the subcutaneous cellular tissue. Orth ligates the four main arteries at resection and in only two instances has transient tetany developed. It yielded readily to thyroid treatment. If he ligates only the two superior, and not the two inferior arteries, he finds that, in spite of ligation of the bleeding vessels in the resected area, hemorrhages usually occur, or, at least, hematomas develop, which cause the sutures to open, or, if this does not occur, the trachea may be compressed. Orth holds therefore that, in spite of the slight danger of tetany, the four main arteries should be ligated, since as a rule, vascularization in the resected stumps is assured by the retroglandular anastomoses. The two cases of tetany may have been caused by a temporary injury of the parathyroid glands, or the patients may have had a disposition to tetany.

Zentralblatt für Gynäkologie, Leipzig

Dec. 30, 1922, **46**, No. 52

Brow Presentation with Transverse Frontal Suture. Heinlein.—p. 2065.
*Inoperable Carcinoma of the Cervix Uteri. P. W. Siegel.—p. 2067.

Irradiation of Inoperable Carcinoma of the Cervix Uteri.—Siegel reports the results of roentgen and radium irradiation in 65 cases of carcinoma of the cervix, the interval since five years or more. Of these 65 cases, 29, according to Döderlein's classification, were operable, 20 were inoperable, 14 were borderline, and 2 were practically hopeless. Of the 29 operable cases, 27 were operated on, and 8 patients (30 per cent.) were still living at the end of five years. In 2 of the 29 operable cases, irradiation was employed. One of these patients still survives. Of the 14 borderline cases, 10 were operated on, and 3 (30 per cent.) survived after five years. Four were given irradiation and none survived the five year period. Of the 20 inoperable cases, 3 (15 per cent.) survive after five years. In the 2 hopeless cases, death ensued. Irradiation of inoperable carcinoma of the cervix uteri, aside from the comparatively high percentage of patients surviving after five years, checked the bleeding, oozing and the pain, and brought about an endurable state of affairs soon after irradiation was begun. Viewed in this light, irradiation of inoperable carcinoma is a great blessing, and should be instituted in every case of inoperable carcinoma.

Zentralblatt für innere Medizin, Leipzig

Dec. 23, 1922, **43**, No. 51

*Arterial Hypertension. E. Hartwig.—p. 825.

Arterial Hypertension.—Hartwig gives a short review of current opinions, and is in favor of the theory that hypertension is primary and the affection of the kidneys secondary. Yohimbin has given good results.

Dec. 30, 1922, **43**, No. 52

*Control of Puncture of Corpus Callosum. G. Gabriel.—p. 841.

Control of Puncture of Corpus Callosum by Ventriculography.—Gabriel recommends ventriculography to control the persistence of the communication made by the puncture. He was able to prove by this method a communication between the ventricles and the subarachnoidal space up to four weeks after puncture of the corpus callosum.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 30, 1922, **2**, No. 27

*Colon Disease. E. H. B. van Lier.—p. 3050.
Placenta Praevia with Twins. H. Boshouwers.—p. 3057.
Vaginal Hysterotomy for Abortion. H. Boshouwers.—p. 3058.

Colon Disease.—Van Lier describes a chronic affection of the colon characterized by attacks of pain, constipation alternating with diarrhea, and tenderness at numerous points in the colon, and pain on pressure and when jarred. The clinical picture resembles that of lead colic so closely that a similar mechanism is probably involved. When a colitis lasts longer than six weeks, it probably belongs to this category. He regards it as an incurable affection which we can improve and keep under control by preventing fermentation and the use of drastic purgatives, and by regulating the diet and encouraging the patient; but our main task is to protect the patient against useless operations. The disturbances are liable to be ascribed to gallstones, movable kidney, gastric ulcer or ovarian disease. Nearly all these patients had had the appendix removed, but without effect on the clinical picture. Van Lier describes a number of cases. One patient consulted a surgeon who diagnosed a tender tumor in the colon and advised operation. The patient then went to an internist who diagnosed spastic contraction and advised medical measures. A second internist diagnosed movable kidney and advised nephropexy—three separate diagnoses in one morning. If the entire length of the colon had been palpated, these blunders would have been avoided. In recent months van Lier has saved two patients from cholecystectomy, and has seen seven others disappointed by the persistence of symptoms after appendectomy.

Jan. 6, 1923, **1**, No. 1

*Hemangiomatous Obliteration of Portal Vein. J. F. Hulk.—p. 4.
Delivery of a Thoracopagus. J. M. van Dam and H. J. van Eldik.—p. 16.
Experiences with Criminal Abortion. J. A. van Dongen.—p. 24.
A Dicephalus Monster. E. A. J. M. Sträter.—p. 33.
*Leprosy in Dutch Art. G. van Rijnberk.—p. 34.
Medieval Regulations in Regard to the Plague in Utrecht. A. J. van der Weyde.—p. 42.
History of an Amsterdam Hospital. G. Hellinga.—p. 43.
The Social Side of Psychiatry. W. Beijerman.—p. 74.

Hemangiomatous Obliteration of the Portal Vein.—Hulk assumed that volvulus or thrombosis of a mesenteric vessel was responsible for the severe clinical picture and the discoloration of certain loops of the intestine at the exploratory laparotomy. Necropsy revealed that the portal vein was obliterated. The tissues encircling the vein had become transformed into a tumor-like porous mass, with a network of fine vessels and extensive collateral venous circulation. Twelve analogous cases have been published, and various causal factors have been incriminated. He adds that no such formation of porous tissue has ever been encountered around any other vessel.

Lepers in Art.—Eight sixteenth-century wood engravings are reproduced which portray lepers. Most of them are the

Biblical scene, in a Dutch setting, of Lazarus at the gate of the rich man, but one depicts a merrymaking of beggars, sham cripples in the yard of the "Lazarusclep." Another shows the annual parade of the lepers at Amsterdam.

Jan. 13, 1923, **1**, No. 2

*Syphilitic Central Deafness. J. H. Roorda Smit.—p. 130.
*Strangulation of Fetus by Umbilical Cord. G. C. Nijhoff.—p. 142.
*Active Immunization Against Diphtheria. Cornelia de Lange and J. C. Schippers.—p. 145.
*Blue Sclerotics and Brittle Bones. H. L. Straat.—p. 151.
Murder of Infant by Decapitation. J. P. L. Hulst.—p. 153.
Uniformity in Social Medical Legislation. W. Schuurmans Stekhoven. —p. 171.

Syphilitic Disease of the Brain Centers for Hearing.—Smit relates that of his 17 patients in this category, only 3 had consulted him on account of deafness. In 8 cases the deafness was bilateral. In all the other cases the deafness was first revealed by the examination. One patient had been deaf on the left side for twenty-two years and for seven years on the right side. He recovered his hearing under specific treatment. The diagnosis in this case had been meningitis, and no one had thought of syphilis. The prognosis is graver when the deafness appears during a stormy onset and course of the syphilis, than when it is a late manifestation, or when the syphilis is of the inherited type. Smit says that mercury answers all purposes; arsenicals are not needed, and are liable to aggravate the neurosyphilis. In the cases of inherited syphilis, in 4 the deafness developed at puberty. Another developed at the age of 21 in connection with keratitis. One patient who had been deaf for thirty-five years regained his hearing. The syphilis had been acquired only in one of the 5 cases in this group. The almost complete recovery shows that the auditory nerves had not degenerated, notwithstanding the long blocking of the auditory centers by the syphilis.

Strangulation of Fetus by Umbilical Cord.—The cord was twisted around the neck two, three or four times in the three cases illustrated. In another case the murmur could be heard and the thrill felt in the umbilical cord although, when the child was extracted, the cord was wound around the neck four times, and the child was resuscitated.

Active Immunization Against Diphtheria.—De Lange and Schippers' experience with thirty-two cases has confirmed the reliability of the Schick reaction and of the toxin-antitoxin method of prophylaxis.

Blue Sclerotics and Fragile Bones.—In the cases described by Straat the clinical picture included otosclerosis. The grandfather and two of his four children had presented the whole triad. Three of the five members of the third generation present the blue sclerotics and easily fractured bones, but otosclerosis is not apparent as yet; all are under 11 years old.

Jan. 20, 1923, **1**, No. 3

*Mongoloid Idiocy. L. Bolk.—p. 226.
Mortality in Different Parts of the Netherlands. Ouwehand.—p. 235.
*Paralysis from Occult Spina Bifida. E. Hoelen.—p. 252.
*Obstetric Examination. J. H. Van Blommestein.—p. 259.
*Physical Properties of Blood Serum. J. Koopman.—p. 264.
Stomach-Colon Fistula with Cancer. D. A. de Groot.—p. 275.
Delivery with Unsuspected Pregnancy. K. A. Rombach.—p. 276.
Pyometra After Radiotherapy of Inoperable Cancer. Lammers.—p. 278.

Mongoloid Idiocy.—Bolk explains the mongolian aspect of the eyes as the result of arrested development of the epicanthus. This arrest of development may extend to the brain. He argues further that the "hormone index" is peculiar to each individual, and that the hormone index in mongoloid idiots must differ from normal in some essential way. There must be some special irritating or inhibiting element. Biochemical research may reveal the nature of this element.

Paralysis from Occult Spina Bifida.—Hoelen reports a case which teaches that search should be made for spina bifida when neurologic disturbances develop in the legs during the period of puberty. The first symptoms had been bilateral paralysis of the peroneus muscle, with signs of degeneration and atrophy, slight dissociated sensory derangement, and exaggeration of the reflexes in the foot. The spinal fluid had a normal cell count, with very high albumin content. There was no depression of the skin, but the roentgen rays revealed occult spina bifida in the first sacral vertebra. A mass of fat and connective tissue protruded into the spinal canal through the gap in the spine. The arch of this vertebra and of the one above were resected, and the soft-part mass, adherent to the dura, was removed. All the nervous symptoms subsided thereafter, and by the end of the year the feet had returned to normal shape. The young man can walk for three hours without a trace of fatigue. This is the only instance of bilateral peroneus paralysis from this cause of which Hoelen can find records. There were no trophic disturbances in this case, but slight vasomotor derangement was manifest.

Obstetric Examination by the Rectum. — Blommestein declares that of the thirteen points we seek to determine by internal examination, eight can be determined through the rectum, as well as through the vagina. In Hermann's recent analysis of 720 obstetric cases, a temperature of 38.1 C. was recorded in 20.6 per cent. of those examined by the vagina and in 6.8 per cent. of those examined by the rectum alone.

Certain Physical Properties of the Blood Serum.—Koopman compares the findings in 800 serums examined for the temperature at which the serum coagulated when slowly heated. In the healthy, this occurred between 73.2 and 74.6 C. In 42 cases of nephritis, the findings were within normal range in all but 14; in these the coagulation did not occur until the temperature had reached 77.9, 83.9 or 90.4, or intermediate points. The blood pressure ranged from 120 to 220, and all had albuminuria and tube-casts. In 12 cases of pernicious anemia, 9 had normal coagulating and refractometer findings. In 3 the coagulating point was 80, 83.6 and 85.7, while the refractometer index was abnormally low. In all of 33 cases of ordinary anemia and some of leukemia, the coagulation point was normal, as also in his cases of heart disease. But in jaundice the coagulation point was high. This suggests that in pernicious anemia a rise in the coagulation point may be due to the bile pigment in the serum. A higher coagulating point renders the prognosis graver.

Norsk Magazin for Lægevidenskaben, Christiania

January, 1923, **84**, No. 1

*Pathology of Tissues of Ectodermal Origin. J. Henrichs and P. Henriksen.—p. 1.
*Pemphigus of the Conjunctiva. E. Trumpy.—p. 27.
*Tumor in Cerebellopontile Angle. I. Lossius.—p. 32.
*The Fat-Soluble Vitamin A. E. Poulsson.—p. 35.
Pathogenesis of Pernicious Anemia. P. F. Holst.—p. 50.

Disease of Ectodermal Origin.—Henrichs has continued his research on families presenting a combination of mental disease and skin disease. He here describes a new instance which sustains his conception that some primary anomaly in the ectoderm is responsible for this coincidence of hereditary disease of the nervous system (imbecility, von Recklinghausen's disease and ichthyosis), of the organs of sense, and of the skin. Henriksen presents microscopic evidence of degeneration of nerve fibers in such cases, and urges search for the defects in internal secretion which are probably the primary factor. Carrel's method of artificial activation may aid in this line.

Pemphigus of the Conjunctiva.—The pemphigus involved the conjunctiva at its first onset in one of the two cases described. The other patient had had recurring pemphigoid blisters in the mouth and throat for three years before the eyes were affected. No benefit was derived in either case from arsenic internally and local applications.

Tumor in Cerebellopontile Angle.—The symptoms were typical except that the optic disks seemed to be normal. The tumor was removed at one sitting. The man, aged 60, died soon afterward.

The Fat-Soluble Vitamin A in Indirect Infant Feeding.—Poulsson concludes from his research that cod liver oil contains 200 or 300 times as much of the fat-soluble vitamin A as butter. He emphasizes the necessity for giving minute doses of cod liver oil to women nursing children that do not seem to be thriving. In a case described, the infant's growth seemed to be arrested at the age of 6 weeks. Then the mother began to take a tablespoonful of cod liver oil, three times a day, and the infant immediately began to thrive. The woman's milk had always had normal fat content.

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CHARACTERIZATION OF VARIOUS FORMS OF ENDOCARDITIS *

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According to the studies that we have made, cases of endocarditis can for the present be best classed as rheumatic, syphilitic, acute bacterial, subacute bacterial, and indeterminate.

The cause of rheumatic fever has not yet been discovered. There exists, however, a lesion specific for the disease, the Aschoff body. It is to be remembered that this is a perivascular lesion, in contradistinction to the lesion later to be noted as occurring in cases of subacute bacterial endocarditis. In rheumatic fever, a secondary infection by anhemolytic streptococci was found by Kinsella and Swift in 8.3 per cent. of the cases studied by them. At the postmortem examinations, cultures yielded the organisms in 50 per cent. of the cases. They found no immunologic reactions present for these cocci, whereas in cases of subacute streptococcus endocarditis they observed, as we did, that a complement fixation test is uniformly present when the serum of the patient is tested against the homologous organism. Rheumatic fever may occur in acute, subacute or recurrent form. It is the most frequent cause of valvular defects.

Syphilitic disease of the valves of the heart is known to us practically only as an end-product. It is very likely that it occurs in at least acute and recurrent forms. It is important to make studies in this direction.

BACTERIAL GROUPS

The groups called bacterial are so designated because they are due to known bacteria. When the cause of rheumatic fever is discovered, a better nomenclature can be introduced. The cases of bacterial endocarditis that run an acute course are due most commonly to hemolytic streptococci, pneumococci, staphylococci and the gonococcus, but can also be caused by a great variety of other organisms. The acute bacterial endocarditides occur much less frequently than infections running a subacute course. Cases lasting for six weeks are usually classed as subacute. The acute cases were formerly called "acute malignant endocarditis." The subacute cases are due in about 95 per cent. of the cases to anhemolytic streptococci (the so-called *Streptococcus viridans*). The remaining cases are nearly all caused by the so-called *Bacillus influenzae*.

Other organisms, especially the gonococcus, can cause an infection giving a subacute picture, while on the other hand, the organisms found in the subacute cases may, rarely, originate an infection of short duration. These subacute cases have been designated by a variety of names, the most frequently employed being chronic septic endocarditis, septic rheumatic endocarditis, chronic infectious endocarditis, chronic malignant endocarditis and endocarditis lenta. It is best to designate the bacterial cases according to the course of the disease and the infecting organism. As the subacute cases are almost entirely due to anhemolytic streptococci and the influenza bacillus, they are best designated as subacute anhemolytic streptococcus endocarditis or subacute *Bacillus influenzae* endocarditis. For brevity, one can call the streptococcus cases subacute streptococcus endocarditis, because we know that the hemolytic streptococci practically never are the cause of a case of endocarditis of subacute type. I myself have seen no such cases.

THE INDETERMINATE GROUP

What we designate as the indeterminate group consists essentially of two types of cases: (1) an atypical form of verrucous endocarditis, and (2) those cases usually described as terminal.

To explain what we mean by the atypical variety, it is necessary to revert to the subject of rheumatic fever. We have stated that the Aschoff body is the characteristic lesion of this disease, and, for scientific purposes, only those cases in which this lesion is found can definitely be designated as rheumatic. In our studies of hearts from cases clinically recognized as cases of rheumatic fever, and exhibiting at postmortem examination the typical verrucous lesions, only eighteen out of fifty-six cases exhibited Aschoff bodies. A study of the clinical histories of the other thirty-eight cases makes it clear that many of them at least are cases of true rheumatic fever. It is evident, therefore, that not all cases of rheumatic fever are accompanied by the specific lesion. At the same time, we cannot state that all of the cases not showing the bodies are cases of rheumatic fever. Possibly, some belong in the ndeterminate group which I shall now discuss.

Besides those cases that present the clinical picture of rheumatic fever and the typical verrucae on the valves, but not Aschoff bodies, there exists a group of cases presenting more or less the clinical picture of rheumatic fever (with perhaps a greater tendency to the occurrence of purpura and erythema), not showing Aschoff bodies at the postmortem examination, and accompanied by lesions on the valves which do not correspond to those usually found in rheumatic fever. The lesions are much larger and flatter, and have a tendency to extend for a fair distance along the surface of the

* Read before the Association of American Physicians, May 3, 1922.
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valves. They may show a somewhat crinkled appearance, and in one case, the lesion extended from the mitral valve for a considerable distance over the mural endocardium of the left ventricle. The mural endocardium may be involved at a distance far away from the valves. Bacteria have thus far not been found in the vegetations of this group. It is possible that some of them represent unusual types of vegetations of rheumatic origin.[1] There are no so-called Bracht-Waechter bodies in the myocardium in these cases.

The other type of what we for the present designate as the indeterminate group of cases is represented by what has usually been described as terminal endocarditis. This is a form of endocarditis that occurs without recognized symptoms at the end of a chronic and debilitating disease. It has been found most frequently in such conditions as diabetes, gout, nephritis, neoplasms, old lesions of the nervous system, and exophthalmic goiter. We have been surprised by the frequency of its occurrence in cases of leukemia, acute or chronic. The lesions are small verrucae, and in the heart muscle and kidneys there are no known characteristic changes. These cases need renewed investigation. It may very well be found that some, at least, of these endocarditides are instances of a terminating and not of a terminal disease. I drew attention to the importance of this distinction, a number of years ago. It has been thought by some that the lesions in these cases may be toxic in origin. It is just as likely, or more likely, that they are definite infections. In cases of chronic valvular disease of rheumatic origin, such an endocarditis may be found. The question then arises whether or not we are possibly dealing with a terminal endocarditis of rheumatic origin, without the presence of Aschoff bodies. The fact that symptoms are not present does not constitute an argument against a possible rheumatic origin of the lesion, because we have seen cases of acute rheumatic endocarditis occur in the absence of all recognizable clinical symptoms. In cases of subacute bacterial endocarditis in the bacteria-free stage (which I shall shortly define), a so-called terminal endocarditis has been found by us. Recently we have found that a true rheumatic endocarditis may occur as a terminal infection in the course of other diseases.

Little is known as regards the inflammatory changes in the valves in cases of exanthematous and other specific fevers, except, of course, the occurrence of acute bacterial endocarditis. In patients who had suffered some time before from scarlet fever, we have found an undescribed lesion of the mitral valve. This I shall discuss at another time. Tuberculosis of the endocardium is a very rare disease. Atherosclerosis is not an inflammatory process, but it plays a great rôle in the production of valvular defects. Its importance in causing disease of the mitral valve has not been sufficiently understood. Besides typical atherosclerosis there are a number of other causes of noninfectious thickenings of the valvular and mural endocardium.

PATHOLOGIC AND CLINICAL CHARACTERISTICS

It will now be of value to take up briefly some of the pathologic and clinical characteristics of these varieties of endocarditis. It will be possible to discuss only some of them. The syphilitic and indeterminate cases will be only casually brought in for discussion, because our knowledge of them is in a great many respects, very deficient.

The first question that arises is in regard to the significance of the presence of a previous valvular disease. Valvular defects are caused by rheumatic fever, atherosclerosis, syphilis, congenital disease, traumatism, and rarely by a bacterial endocarditis that has ended in recovery from the infection. Rheumatic fever and syphilis readily attack healthy valves. Acute bacterial endocarditis usually attacks a valve that is the seat of a previously existing valvular defect. Subacute bacterial endocarditis occurs almost always on the basis of a previously damaged valve. It involves most frequently valves previously affected by rheumatic fever, less often syphilitic valves, and, still less often, valves affected by atherosclerosis. Acute bacterial endocarditis is not at all an infrequent occurrence in connection with all kinds of congenital cardiac defects. The congenital lesion that we have most often found involved in cases of subacute endocarditis is the open ductus arteriosus. This may very well be so because this is the congenital lesion most often found in adult life. The indeterminate cases of endocarditis may occur in the entire absence of previous valvular disease.

The portals of infection in syphilis are well known. In rheumatic fever, knowledge in this respect is lacking. The tonsils appear in some instances to be the seat of the virus, but it has not been proved that they represent the only or the main portal of entry. The origin of acute bacterial endocarditis is usually found in an evident purulent focus. In the subacute cases, the invasion usually originates in what, following Billings and Rosenow, we call focal infections. It is possible that the disease may be initiated by organisms in the intestinal tract.

A study of the extensive material at our disposal (made with the valuable assistance of Dr. Benjamin Sacks) shows that in fatal proved cases of rheumatic fever the tricuspid valve was involved in twelve of eighteen cases, or more than 66 per cent. Taking all the cases classed clinically as rheumatic and showing typical vegetations at the postmortem examination, but without Aschoff bodies, we find fifty-six cases, thirty-one of which, or 55 per cent., were accompanied by vegetations on the tricuspid valves. This was not surprising, because I had for many years drawn attention to the high incidence of more or less marked stenoses and organic insufficiencies of that valve. Syphilis, as is well known, has an affinity for the aortic valve. Nothing definite is known as to the involvement of the mitral valve. In cases of acute bacterial endocarditis, the right side of the heart (tricuspid or pulmonary valves, or both) was found involved in fifteen out of fifty-six cases, or 26.8 per cent. The mitral valve was affected more often than the aortic, the same holding true of cases of subacute bacterial endocarditis. In cases of the latter disease, the right side of the heart was involved once (tricuspid) in more than 100 hearts, and the lesion was slight. The atypical cases involve the right side of the heart frequently, in one instance the pulmonary valve being affected. This valve was not found affected in any definitely proved case of rheumatic fever. Terminal endocarditis appears to be a disease of the left side of the heart, the mitral valve being the usual seat of the disease.

As regards the type of gross lesion found, in rheumatic endocarditis it is a small verrucous lesion which undergoes scarring and leads to stenoses and insufficiencies. In acute bacterial endocarditis, one finds

1. In one case studied within the last year, an opportunity was afforded to follow the entire clinical course. The clinical picture was different from that of rheumatic fever and of subacute bacterial endocarditis.

fibrinous deposits, ulceration, and abscesses of, and perforations through, the walls. In subacute cases the lesion may be small or massive, but even when small is practically always larger than the lesion found in cases of rheumatic fever. There is little tendency to ulceration; and, if ulceration does occur, it is usually in the aortic flaps. The disease occurs much more frequently on the mitral than on the aortic valve. There is then frequent involvement of the wall of the auricle and of the chordae tendineae. Healing often occurs, with resulting fibrous tissue, with or without calcareous impregnation. In the cases of terminal endocarditis, the lesion consists of verrucae usually quite small.

MICROSCOPIC APPEARANCE

The statements made here concerning the microscopic appearance of the various types of lesions are based on studies made by Dr. George Baehr, who will later report on them in full. In rheumatic endocarditis, the verrucae in a given attack all appear to be of the same age. The first change is a productive inflammation over which the endothelial cells swell and desquamate. The denuded areas are covered by agglutinated blood platelets. The adjacent endothelium rapidly proliferates, covering the surface of the blood platelet nodule and thus limiting its size. This is the typical verruca. Later, the nodule becomes organized and thereby flattened, and a ridgelike scar is found along the closure line. In the atypical cases of the indeterminate group and in the terminal cases, the lesion is essentially the same as it is in the rheumatic cases. What differences do exist will be described at a later time. In acute bacterial endocarditis, we find a purulent infiltration over a very much wider area, with resulting necrosis and ulceration. A large blood platelet mass results, the so-called vegetation. It is invaded by polymorphonuclear leukocytes and by such large numbers of organisms that there is a veritable row of colonies on the surface. Endothelium does not cover the mass. Organization occurs in the deep layers of the vegetations in patients who do not die within the first few weeks. In cases of subacute streptococcus and *Bacillus influenzae* endocarditis, the primary lesion, though small, is larger than it is in rheumatic fever. There is no purulent inflammation, but a productive process with a tendency to round cell infiltration. The process spreads by continuity. The blood platelet mass that is formed is invaded by such large numbers of bacteria as to form definite rows of colonies, especially near the surface of the mass. The vegetations contain few polymorphonuclear leukocytes. In a number of cases, giant cells are found, apparently of the foreign body type. When present, they constitute a characteristic lesion of this type of endocarditis. Phagocytic cocci are often demonstrable in them. The freshly formed portions of the vegetations consist almost entirely of bacteria. The endothelium of the adjacent endocardium is inhibited to a great extent from spreading over the surface of the mass because of the presence of the colonies of bacteria. In the deeper and older portions, the bacteria tend to disappear, and here an active fibroblastic invasion is always to be seen; and, when healing occurs, dense connective tissue with and without lime has formed.

Whatever lesions are found in the heart muscle in cases of acute bacterial endocarditis consist in the main of polymorphonuclear leukocytes. In cases of subacute bacterial endocarditis, one finds an essentially round cell interstitial lesion, the so-called Bracht-Waechter body. These lesions are not present in all cases, and are not specific. In rheumatic fever, as stated above, Aschoff bodies may be present. In syphilis, as is well known, syphilitic lesions of smaller or larger extent may occur in the myocardium.

OTHER FINDINGS

Pericarditis of various types, including the purulent type, occurs in the cases of acute bacterial endocarditis. In rheumatic fever, pericarditis is very frequent, a purulent effusion never being found. It is also found in atypical verrucous endocarditis of the indeterminate group. We have observed one case in which there was a recent pericarditis accompanied by Aschoff bodies in the heart muscle, but not by any lesions of the valves. In subacute endocarditis, pericarditis is not part of the clinical picture. It might very well occur as the result of the presence of pneumonia or some other complication, or it might represent a mixed infection with rheumatic fever.

Embolic lesions occur with great frequency in the acute and subacute bacterial cases. They consist of petechiae, Janeway lesions, Osler (tender cutaneous) nodes, gross embolisms in the vessels, embolic aneurysms and purpura. The last named condition, as well as petechiae, particularly white-centered ones, can, of course, occur without being embolic in nature. Embolic lesions in cases of rheumatic fever or valvular disease are due to secondary thromboses and not to the valve lesion as such. Such emboli never produce tender nodes or embolic aneurysms. The Osler node occurs only in the subacute cases. Subcutaneous fibroid nodules are found only in the rheumatic cases. The Janeway lesions occur almost exclusively in the cases of acute bacterial endocarditis.[2] In connection with subacute bacterial endocarditis, I have seen them only three times, and in all these three instances they were quite small. In these cases there were associated small oval areas of erythema scattered over a smaller or larger part of the surface of the skin of the body—a type of eruption that we have never seen in cases of acute bacterial endocarditis. Typical erythema nodosum is not found in cases of acute or subacute bacterial endocarditis, but can occur in cases of definite rheumatic fever. Erythema multiforme in its typical form occurs only in the rheumatic cases and in the atypical cases of the indeterminate group. Atypical erythematous lesions are seen in cases of acute and subacute bacterial endocarditis. Petechiae occur frequently in cases of acute and subacute bacterial endocarditis. When they occur in rheumatic fever, it is only as part of a purpuric eruption. Petechiae having white centers occur in the acute and subacute cases, but more often in the latter. Those with elevated white centers are found only in the acute cases, and then usually indicate a general staphylococcus infection.[3]

Purpura occurs in cases of rheumatic fever and in the atypical cases of endocarditis, but is then not due to embolism. In cases of acute and subacute bacterial endocarditis, the purpura that occurs may be either embolic or not embolic in origin.

In the eyes we find lesions in both the rheumatic and the bacterial cases. The uveal tract may be involved in cases of acute bacterial endocarditis. The lesion is

2. These lesions were described many years ago by Edward G. Janeway as "small hemorrhages in the palms and soles with slightly nodular character." In contradistinction to the Osler nodes, these lesions are not tender. The lesions are of such great value for diagnosis that we have thought it proper that they should have a special designation, and that this designation should carry the name of the eminent clinician who emphasized the importance of them for diagnostic purposes. We have found that some of these lesions may be rather erythematous in character.

3. Petechiae with elevated white centers or elevated petechiae may occur in general infections which are not accompanied by an endocarditis. They occur most frequently in cases of staphylococcemia.

usually a severe one, often terminating in panophthalmitis. In the subacute bacterial cases, no such lesions have been found by us. In fact, we have not seen any cases in which the uveal tract was involved in even a mild way in cases of the subacute type. This is rather remarkable because the same focal infections that cause endocarditis are known not infrequently to produce disease of the iris, ciliary body and choroid coat of the eye. In one case the patient suffered from a choroiditis due to ethmoiditis, and soon afterward developed a subacute streptococcus endocarditis, apparently of tonsillar origin. The chorbiditis did not recur. In rheumatic fever, uveal involvement occurs, but such a complication is very unusual. The literature on this subject is quite misleading. Apparently, cases of disease of the uveal tract due to the bacteria present in focal infections have been wrongly classed as rheumatic. Optic neuritis occurs in the various types of bacterial endocarditis. It is much more frequent in cases of subacute streptococcus endocarditis than has usually been realized. Optic atrophy may result. Besides hemorrhages in the retina, certain white spots, which were first described by von Roth and which are often termed Roth's spots, are found. They seem to occur much more frequently in the acute than in the subacute type of cases.

In cases of rheumatic fever, acute bacterial endocarditis and atypical verrucous endocarditis, the skin over the joints may be red. In the subacute cases one practically never sees this condition. When it occurs, one must think of the possibility of a mixed infection with rheumatic fever being present. Pus is found in the joints only in cases of acute bacterial endocarditis.

The study of the kidneys has given most interesting results. In acute bacterial endocarditis, besides infarcts, one may find purulent lesions. In the cases of rheumatic fever in which Aschoff bodies were present, there were not found any instances of diffuse glomerular nephritis. In the cases classified as rheumatic and in which Aschoff bodies were not found, glomerular nephritis was found three times. In subacute streptococcus endocarditis, besides infarcts, there occurred the embolic glomerular lesions which were first described by Löhlein and fully studied by Baehr. These lesions occur in no other form of endocarditis, and very rarely in other conditions.[4] The embolic lesions occurred in all but two of sixty-eight cases studied by Dr. Baehr. They were found to be less abundantly present in cases in the bacteria-free stage. Diffuse glomerular nephritis occurs more than fifteen times as frequently in the bacteria-free stage of subacute streptococcus endocarditis as in the bacterial stage. When found in the bacterial stage it is acute in type, whereas in the cases in the bacteria-free stage, it presents the appearance of a subacute or chronic diffuse glomerular nephritis. In one case of rheumatic fever (Aschoff bodies present), necroses were found in the renal cortex and also in the heart muscle, which were due to a proliferative lesion in the endothelium of the arteries. A study on this subject will be reported later by Drs. Baehr and Sacks. In the cases of subacute bacterial endocarditis due to the influenza bacillus (seven cases), we have thus far found no embolic glomerular lesions. We do not yet know whether this observation has any significance. The Osler nodes were found in some of these cases. Diffuse glomerular nephritis was found in one case in the bacterial stage.

4. We have found them in one case of actinomycosis, and in a case the exact nature of which was never cleared up, and which at the postmortem examination presented an adherent pericardium and focal necroses in the liver.

CONDITIONS IN WHICH ANHEMOLYTIC STREPTOCOCCI HAVE BEEN FOUND

It is important to remember that anhemolytic streptococci may be found in the blood of patients suffering from conditions other than endocarditis. Otherwise, one would make the error of concluding, from a report that such streptococci had been found in the blood of a patient, that an endocarditis was present. They have been found in:

1. Cases of subacute streptococcus endocarditis.

2. Cases of rheumatic fever and of chorea. As stated earlier in this communication, under these conditions they are believed to be secondary invaders. The cocci found in such cases differ in certain morphologic and cultural characteristics from those found in cases of subacute bacterial endocarditis.

3. Cases of combined rheumatic endocarditis and subacute streptococcus endocarditis, their presence being due to the second named condition. I shall at another time describe such a case.

4. As an invasion from active or quiescent focal infections, especially the tonsils.

5. As an invasion from acute inflammatory processes in various parts of the body, as, for instance, thrombosis of the lateral sinus, postpartum infections, and phlegmons.

6. As a secondary or terminal invader in a variety of diseases. In cases of verrucous endocarditis of the rheumatic or terminal type, Reye recovered anhemolyic streptococci regularly from the crushed vegetations. In sections they were found only with great difficulty.

7. Fatal cases of valvular defect or subacute *Bacillus influenzae* endocarditis, as a secondary infection.

8. A curious group of cases,[5] described by Oille, Graham and Dettweiler, characterized by subfebrile temperature elevations and the presence of anhemolytic streptococci in the blood. The patients, of whom there were twenty-three, all recovered. Because embolic features were not present and because there was otherwise no absolute evidence of organic change in any of the valves, one cannot be sure that the endocardium was involved. Nevertheless, one must admit that in at least some of these cases an infection of the endocardium took place. Herrick and Warren reported a small group of cases in which there occurred a general infection by an hemolytic streptococci, with recovery. Some of these were found in the course of a valvular defect. Here also one cannot be sure whether or how often the valves were involved.

MIXED TYPES

Mixed types of valvular affections and mixed infections of various kinds come under observation. The combination of valvular disease and endocarditis have been mentioned. Some of these are:

1. Atherosclerosis and syphilis, either being the primary lesion. The combination of valvular disease and bacterial endocarditis is common knowledge. Atherosclerosis and atherosclerotic processes are ofen added to valvular disease of rheumatic origin. How often the rheumatic virus attacks a valve that has previously been the seat of atherosclerosis, we do not know.

2. Rheumatic fever and subacute streptococcus endocarditis. We observed one case in which the bacteriologic and pathologic studies proved definitely that the two diseases were present at the same time, the lesion of rheumatic endocarditis being present near the free border of the mitral valve, and the lesion of the subacute streptococcus endocarditis, much larger in size, being present on the ventricular aspect of the aortic flap of the mitral valve. In a second case there were found the healing lesions of subacute endocarditis of the valves and fresh Aschoff bodies in the heart muscle.

3. Valvular defect and verrucous (terminal) endocarditis.

5. A group of eighteen similar cases has recently been reported, mainly from the bacteriologic side, by Salus.

4. In cases of subacute streptococcus endocarditis, secondary infections by pneumococci are occasionally found, the latter being then generally due to the presence of a pneumonia. In endocarditis in the bacteria-free stage, a secondary infection by an anhemolytic streptococcus has been found once in a case of healing *Bacillus influenzae* endocarditis, and in another case of healing streptococcus endocarditis there were some superficial lesions due to a secondary infection by *Staphylococcus aureus*. In the latter case there were present purulent foci in the heart muscle, in which staphylococci were demonstrated in sections.

COURSE

It will now be of interest to discuss, even if briefly, the course of the various types of endocarditis. The outcome of the syphilitic cases in the form of aortic insufficiency is known to us, but little has been learned concerning the history of the active stage of the infection. The general course of rheumatic endocarditis has been much but not sufficiently well studied. It is necessary to carry on renewed investigation concerning the life history of the disease and of the lesions. It is of interest to note that death may occur in the first attack of rheumatic endocarditis. We have definite pathologic evidence on this point.

In the last twelve years we have learned much that is new concerning the course and outcome of cases of subacute bacterial endocarditis. In the discussion of this subject it is necessary to distinguish cases in the bacterial and the bacteria-free stages. The case is surely in the bacterial stage if the blood culture is positive; but it may be in the bacterial stage, and yet the blood culture may be repeatedly found negative. This can be determined by clinical criteria, but more definitely by the postmortem examination. In cases in the active stage of subacute bacterial endocarditis, the surface of the vegetations consists almost entirely of bacteria. If the organisms are present in small numbers, the case is already going over to the bacteria-free stage. With these facts in mind, we can discuss the cases as they present themselves to us clinically.

CLINICAL OBSERVATIONS

1. *Cases Giving a Positive Blood Culture.*—More than 90 per cent. of cases in the active stage are found to have bacteria in the blood if proper methods are used. What happens to these patients? Nearly all of them die. When I had completed the study of the first 150 cases I had observed four cases of complete recovery. In these cases there was no proof that the particular method of therapy employed was responsible for the favorable outcome. Since that time I have observed at least two more such cases. The first four patients came under observation, respectively, nine, seven, five and five years ago. The fifth patient was observed during the greater part of the year 1921, and has been free from the infection since January of this year. The sixth patient that recovered has been under observation for several months since the time of recovery. To be sure that a patient has really had the disease, one needs more, as I stated above, than to find that there is present valvular disease and that there are bacteria in the blood. There must be definite clinical symptoms present, such as fever, splenic enlargement, petechiae, tender nodes, embolisms and progressive anemia. There exist cases in which a positive blood culture is found followed by negative blood cultures. These patients usually die within a few months. After the blood is free from bacteria, the patients generally present symptoms like those occurring in the cases to be described directly, that come under observation for the first time in the so-called bacteria-free stage.

2. *Cases Coming Under Observation with Negative Blood Cultures.*—A. Some of these cases are in the active stage. Clinically they act like the cases in which the blood cultures are positive, and the necropsy shows vegetations full of bacteria. These cases really belong in Group 1, constituting cases of that type in which we failed to find the bacteria during life.

B. This group has the same symptoms as cases in the active stage, but they gradually lose the fever and most of the other symptoms. Most of these patients die while still in the febrile stage. At the necropsy, few or no bacteria are found in the vegetations. They are evidently cases that were recently in the bacterial stage of the disease. Those patients that live after the fever has disappeared present a clinical picture like that presented by patients constituting the next group.

C. Here we find a remarkable group of cases in which fever is not a characteristic symptom as it is in the active stage of the disease. Some of these patients have no elevation of temperature during a long period of observation, which may extend over many months. Fever may occur because of complications, anemia or intercurrent diseases. The type of cases belonging to this group, which comes under observation still febrile, with negative blood cultures, and then becomes afebrile, has been described in Group B.

In papers published in 1912 and 1913 and in subsequent communications, I have directed attention to a group of patients who come under observation with a valvular defect and with a variety of symptoms such as embolisms of the various types mentioned above, progressive anemia, splenomegaly, progressive insufficiency of the kidney due to subacute or chronic glomerular nephritis, or a peculiar pigmentation of the face. These cases had generally been considered to be instances of chronic rheumatic endocarditis. From pathologic, bacteriologic and clinical studies, it was definitely shown that such patients must have had a previous endocarditis of the bacterial type, and had not come under observation in the bacterial stage, or had not been recognized as suffering from such a condition. Such cases are designated as cases of subacute bacterial endocarditis that have become spontaneously bacteria-free. The lesions in the heart were of the same type as were found in the cases in which positive blood cultures had been obtained, but showed marked or complete organization with or without calcification. In nearly all the cases the typical embolic glomerular lesions were found, but in a healed stage. They were much less abundantly present than in the cases that showed evidence of active infection. In the few cases in which the embolic glomerular lesions were not found, the patient had presented typical Osler nodes during life, and the cases could therefore be accurately identified.

It is interesting to speculate on the probable great frequency of subacute bacterial infections of the valves of the heart with complete recovery in cases in which there is no history of the active infection. I have shown that cases with positive blood cultures may undergo complete recovery, and have drawn attention to the occurrence of cases coming to us with sequelae of the disease in which there is no history of the active bacterial stage of the disease (we have seen at least fifty such cases). It is therefore most probable that there occur cases in which the infectious stage was never recognized clinically, and in which a complete recovery

ensued, leaving no evidence behind of a type that we have heretofore recognized.

3. *Recurrences.*—During the last year we have made the novel observation that recurrences of the disease exist. Thus far four such cases have come under observation:

A. A case in the bacteria-free stage with fresh lesions due to anhemolytic streptococci. There were very recent and also completely healed embolic glomerular lesions.

B. A case with positive blood cultures; then a baceria-free stage with the development of renal insufficiency, and later a return of the fever and bacteremia, and a fatal outcome.

C. A case with positive blood culture in which there was fever for several months; then a completely afebrile period lasting six months, and a second attack of fever lasting three weeks with a general infection of anhemolytic streptococcus. In the first attack, petechiae were present and the spleen was enlarged. In the second attack, splenic enlargement was present. This patient is being kept under observation.

D. A case apparently at the end of the active stage of the disease, with fever, white-centered petechiae, enlarged spleen, tender sternum and marked anemia, running a course of a number of weeks, with negative blood cultures. All the symptoms then disappeared, and after ten months the fever returned for three weeks and white-centered petechiae were repeatedly found, and anemia developed under observation. This patient now has no fever and is being further studied.

All of these cases could be used as evidence that recurrences of the infection may take place. Further studies in this direction are highly desirable because it is very probable that recurrences of the disease are much more frequent than we had believed possible. The occurrence of mild forms of the disease points in this direction. Reference has been made to the cases described by Oille, Graham and Dettweiler. I am not yet in a position to state how often such mild cases occur, but the studies of the last few years have made me believe that I may have overlooked a number of them.

CONCLUSION

It is evident that I have presented the subject of the characterization of the various forms of endocarditis in a very broad way only. It is realized that the various subjects that have been discussed must later be taken up in a more detailed fashion.[6] One thing is clear. It is evident that the disease which was considered rare, subacute bacterial endocarditis, is now recognized as one of the common diseases. Of great interest is the change in our point of view. It was supposed to be a practically uniformly fatal disease. Now we are observing more and more partial or complete recoveries. We find that very mild cases exist, and that there is a recurrent form of the disease. In other words, the interest is shifted toward the question of healing. It will be of the greatest value if an active campaign is undertaken for the purpose of preventing this as well as other forms of endocarditis.

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6. References to the older literature will be found in earlier papers. The later literature will be given in subsequent publications.

Empiricism and Rationalism in Therapy.—Empiricism may be defined as the employment of a remedy of whose actions we are ignorant for a disease whose nature we do not understand. Rational or scientific treatment means, on the other hand, the recognition of the symptoms of ill health, with a knowledge of their mechanism and prognostic significance, and the employment of a remedy whose action on the sick human body we know and understand.—Sir James Mackenzie, *Brit. J. Tuberc.* **17**:15 (Jan.) 1923.

STUDIES IN FAMILIAL NEUROSYPHILIS

II. FAMILIAL NEUROSYPHILIS FROM VARIOUS EXTRAFAMILIAL SOURCES: A CLINICAL CONTRIBUTION TO THE QUESTION OF NEUROTROPISM *

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In the first paper of this series,[1] we reviewed the question of conjugal neurosyphilis, and reported examinations of the fifty-two marital partners of fifty neurosyphilitic patients. The results were discussed from the standpoint of their applicability to the hypothetic existence of a strain of *Spirochaeta pallida* having a selective affinity for the central nervous system. Conjugal neurosyphilis was observed in twenty-one, or 52.5 per cent., of the forty partners in whom syphilis could be demonstrated, this incidence being much greater in the partners of paretics and tabetics than in those of cerebrospinal (meningovascular) neurosyphilitics. This variation, together with other facts, led us to conclude that from this type of clinical study alone a definite decision as to duality of strain could not as yet be reached.

To the proponents of neurotropism, the high incidence of conjugal neurosyphilis, both partners having been infected with the same strain of organism, as well as the occasional development of neurosyphilis in several persons infected from a common source, provides a substantial clinical basis for the hypothesis. That a neurotropic strain of organism cannot be the only factor, or necessarily the most important one, in the origin of neurosyphilis is illustrated by the families to be reported in this paper, since several members, each acquiring syphilis from a separate source, all developed neurosyphilis.

REPORT OF CASES

FAMILY 1.—*Elder brother infected with syphilis in 1914 at 29; lapsing treatment; in 1917, asymptomatic neurosyphilis; "cure" by adequate treatment; remains well in 1923. Younger brother contracted syphilis in 1910, at 20; in 1920, general paresis.*

The elder brother, aged 29, was seen in January, 1914, with primary and secondary syphilis of eight weeks' duration. There was a fairly profuse maculopapular rash, polyadenitis and the scar of the healed chancre. During 1914 and 1915, he received only three doses of arsphenamin. About four months after the onset of the infection, he began to suffer with severe headache, lasting continuously for periods of a week or more, a drowsy feeling and burning sensations over the skin. He disappeared from observation until July, 1917, at which time a spinal puncture was performed. This showed 32 cells, globulin +++, Wassermann reaction positive with 0.2 c.c., and a colloidal gold curve reading 4333321000. The blood Wassermann reaction also was positive. Neurologic examination disclosed nothing of importance.

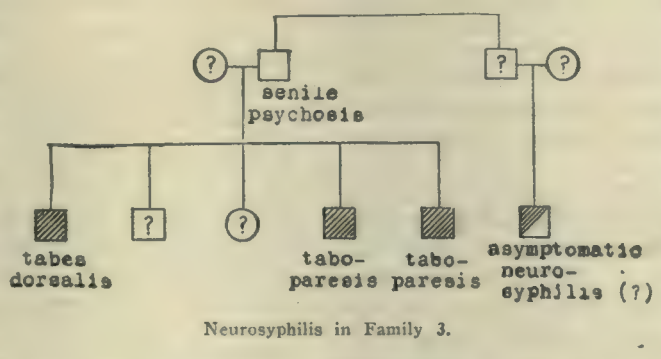
This patient's younger brother was admitted in July, 1920, at the age of 30. In 1910, when 20 years old, he contracted a chancre which was treated with two injections of arsphenamin, and was not followed by any secondary symptoms. He had remained well until ten days before admission, when

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1. Moore, J. E., and Keidel, Albert: Studies in Familial Neurosyphilis, I, Conjugal Neurosyphilis, J. A. M. A. **77**: 1 (July 2) 1921.

he suddenly fell unconscious. Since then he had been very nervous, trembling and twitching constantly. His wife had noticed that his speech was thick. Examination revealed anisocoria; the pupils reacted sluggishly to direct light, but failed to react consensually; there were coarse tremor of the lips and tongue, markedly exaggerated deep reflexes, speech defect, date discrepancies, euphoria, a belligerent manner, and lack of insight. The blood Wassermann reaction was positive; the spinal fluid showed 112 cells, globulin + + + +, Wassermann reaction positive with 0.1 c.c. of fluid, and paretic colloidal gold and mastic curves. The diagnosis was general paresis.

FAMILY 2.—*Colored. Father, aged 50, contracted syphilis in 1900, two years after birth of youngest son. In 1920, neurosyphilis with partial bilateral eighth nerve deafness. Eldest son, aged 28, infected from a different source in 1915. In 1920, neurosyphilis with probable partial unilateral eighth nerve deafness, positive spinal fluid. Youngest son, aged 20, at admission in 1918, had secondary syphilis. Two and one-half years later, asymptomatic neurosyphilis.*

The father was 50 years old at the time of admission in 1920. At 30, eight years after the birth of his eldest son, and two years after that of the youngest son, he developed a phallic sore, which was hard and painless, and for which he received only local treatment. No recognizable secondaries followed. The entrance of syphilis into the family is well marked by the occurrence of two miscarriages following the last healthy child. Three years before admission (seventeen years after infection) the patient had a severe sore throat lasting several months, and since that time he has been hoarse. For the last three or four years, he has had severe headaches; for two years marked tinnitus in the right ear, and for the past year vertigo, a definite impairment of hearing on the right, a sense of formication on the scalp, and a sense of a constricting band about the head.



Neurosyphilis in Family 3.

Physical examination revealed contracted pupils, which, however, reacted promptly to light and accommodation. There was partial inner ear deafness on both sides, involving both the cochlear and the vestibular branches, and more marked on the right. A large, ragged perforation was present in the soft palate, with scarring and destruction of the right anterior pillar. The lymphatic glandular groups were all easily palpable. There were two scars on the glans penis. The deep reflexes were normally active. The blood Wassermann reaction was negative; the spinal fluid showed 3 cells, a weakly positive globulin test, Wassermann reaction negative with 1 c.c. of fluid, and negative colloidal gold and mastic curves. Nevertheless, the physical evidence permitted the diagnosis of a healed gumma of the soft palate, and partial bilateral eighth nerve paralysis.

The eldest son, aged 28, was born eight years before his father contracted syphilis. About five years before admission in 1920, a sore on the penis developed, which was followed in about six months by a generally distributed non-itching rash, but no other secondary symptoms. Coincidently with the rash, there appeared a "gnawing" sensation in the left ear with increasing deafness on this side, both of which conditions have persisted.

Physical examination disclosed normal pupillary reactions, a probable partial destruction of the cochlear and vestibular branches of the left eighth nerve (otologic examination was unfortunately incomplete), and sluggish deep reflexes. The blood Wassermann reaction was positive; the cerebrospinal fluid showed 270 cells, globulin + +, Wassermann reaction negative with 1 c.c., and a paretic mastic curve. The diagnosis of neurosyphilis with unilateral eighth nerve deafness was permissible.

The youngest son, aged 20, first seen in June, 1918, had had a sore on the penis four months previously, which was not treated. About two months later, he developed lesions about the anus, which caused pain on walking. Examination at this time revealed numerous characteristic papulo-erosive lesions of the buccal mucosa, a marked visible polyadenitis, the inguinal groups being especially large, and numerous typical condylomas about the anus. On the shaft of the penis there were three or four indurated papules of a secondary type, though the rest of the skin was clear. The initial lesion was hidden by phimosis.

During 1918, he received four doses of arsphenamin, 0.3 gm. each, at irregular intervals. The positive blood Wassermann reaction was reduced to negative by the first injection.

A lapse of two years and seven months occurred before the patient's next visit, in March, 1921. At this time physical examination and the blood Wassermann reaction were both negative, and the patient was free from complaints. A spinal puncture performed as a routine disclosed 2 cells, globulin + +, Wassermann reaction negative with 1 c.c., a colloidal gold curve reading 3332^{+}210000, and a colloidal mastic of 3221000000. The diagnosis of asymptomatic neurosyphilis is apparent.

FAMILY 3.—*Father, senile psychosis. Eldest son acquired syphilis in 1892; tabes dorsalis with Charcot hip in 1920. Third son, chancre in 1904; died of taboparesis in 1917. Youngest son, chancre in 1896, taboparesis in 1922. First cousin of these brothers, chancre in 1900, paranoid psychosis in 1912, asymptomatic neurosyphilis (?).*

The father of this remarkable fraternity died at 82 of senility, having had two attacks of a senile delirium before death. He had four sons and a daughter. The second son and the daughter are, as far as is known, well.

The eldest son, seen in 1920, at the age of 53, developed a phallic lesion in 1892, which was diagnosed as a hard chancre by a competent physician, and treated with mercury intermittently for several years. On admission, his complaints dated back fifteen years to 1905, when he began to suffer with sharp shooting pains in the legs, radiating from hip to heel. During the last year these had grown much worse, and for two months had been almost unbearable. Three weeks before admission there was swelling of the right leg below the knee, and the knee became stiff. Prior to this he had noticed no difficulty in walking. Physical examination revealed equal, irregular pupils, reacting sluggishly and slightly to light; absent knee and ankle jerks; diminution of deep reflexes of the left arm; marked ataxia of the lower and slight of the upper extremities; right Charcot hip confirmed by roentgenoscopy, and a dilated aorta. The blood Wassermann reaction was negative; examination of the spinal fluid revealed 12 cells, globulin + +, Wassermann reaction positive with 1 c.c. of fluid, and negative colloidal tests. The diagnosis was tabes dorsalis and Charcot hip.

In 1904, the third son, when 33 years old, contracted a chancre, which was followed in six weeks by typical secondary lesions. He was treated with mercury by rubs, intramuscular injections, and by mouth for eighteen months. For about four years before his admission in 1916, he had suffered with ataxia, lightning pains, and gastric crises. The physical evidence of neurosyphilis in 1916 consisted of irregular, contracted pupils, barely reacting to light; absent knee and ankle jerks; ataxia; speech and memory defect; delusions of grandeur; tremor, and lack of insight. The blood Wassermann reaction was positive; examination of the spinal fluid disclosed 58 cells, globulin + + + +, Wassermann reaction positive with 0.1 c.c. of fluid, and a paretic colloidal gold curve. In spite of fairly energetic treatment, the patient died in 1917 of taboparesis.

The youngest son was infected with syphilis at the age of 20, in 1896. The diagnosis was made by the same physician who had treated the other two brothers. Internal treatment with mercury was given for some months. In 1912 he

had a lesion of the right testis and epididymis, diagnosed as tuberculous and removed by castration. The blood Wassermann reaction at this time was negative. This patient was first seen by us in September, 1922. He is said to have been acting peculiarly for some months, and his normal elder brother, knowing that he had had syphilis, persuaded him to submit to examination. This revealed unequal, irregular pupils, reacting sluggishly and slightly to light; the deep arm reflexes were present but the triceps particularly was sluggish; the patellar and ankle reflexes were absent, even on reinforcement; there was a positive Romberg sign. The blood Wassermann reaction was positive; the spinal fluid showed 146 cells, globulin ++++, Wassermann reaction positive with 0.2 c.c. of fluid, and a colloidal gold curve reading 5554331000. The clinical diagnosis was taboparesis.

The first cousin of these three brothers also contracted syphilis in 1900, when 23 years old. His treatment was similar to that of the others. In 1912 he developed a paranoid psychosis necessitating institutional care. At this time, he showed physically no evidence of neurosyphilis except markedly exaggerated deep reflexes, but a study of his spinal fluid revealed 2 cells, globulin +, Wassermann reaction negative, and a colloidal gold curve of the syphilitic zone type. The diagnosis of asymptomatic neurosyphilis on this evidence is questionable. No details as to the subsequent course are available.

COMMENT

All the affected members of these three families are known to have been infected; not only at widely separated dates, but from different sources; yet in Family 1 two brothers showed evidence of central nervous system syphilis; in Family 2, the father and eldest son, infected at an interval of fifteen years, both developed eighth nerve deafness, and the youngest son asymptomatic neurosyphilis; and in Family 3, three brothers (possibly also a cousin) developed neurosyphilis, two of them taboparesis, one tabes dorsalis. Such an occurrence can best be explained on the basis of familial predisposition.

Reports similar to this are much less frequent in the literature than those dealing with conjugal neurosyphilis. An incomplete search, however, reveals two articles, by Strohmayer [2] and Burrow.[3] The first named reports the development of tabes dorsalis in two sisters with a diabetic and neuropathic ancestry. Burrow's family includes four certain cases of tabes and an additional probable one, among six members of a fraternity, all having acquired syphilis from different sources. The older literature contains many articles dealing with the question of predisposition and the inheritance of a tendency to develop neurosyphilis, a typical example being the paper by Näcke.[4] In general, however, the older investigators attempted only to show the existence of a familial neuropathic taint. Actual reports of several cases of neurosyphilis (other than congenital neurosyphilis) in a single family are lacking.

It is obvious from this report that the factor of personal, familial or racial predispostion to nervous system damage may, as pointed out by Nichols,[5] influence the course of events in syphilis. Partly for this reason the clinical data in favor of syphilis à virus nerveux are as yet insufficient to permit of a definite decision. Levaditi and Marie [6] have attempted to solve the problem from the experimental standpoint. They inoculated rabbits with a strain of organism said to have been obtained from the blood of a paretic (neurotropic virus), and compared this strain with a strain of spirochete obtained from a chancre (dermotropic virus); they noted wide differences in incubation period and in the macroscopic and microscopic appearance of the lesions. Cross-inoculations with their two strains were possible, and while the dermotropic strain retained its virulence for the human being in spite of years of animal passage, the neurotropic strain was shown to be avirulent for man. These results are open to two grave criticisms: (1) that the differences observed in the two strains are those to be found between any recently isolated strain of spirochete and one which has been carried in the animal for years; or (2) more likely, as is pointed out by Jahnel,[7] their neurotropic strain probably is *Treponema cuniculi* (*Spirochaeta paraluis-cuniculi*) the organism of spontaneous venereal spirochetosis in rabbits.[8] All of the peculiarities shown by the neurotropic strain of Levaditi and Marie have also been observed with *Treponema cuniculi*. These criticisms must be met by more detailed and careful experimentation before an answer can be reached.

SUMMARY AND CONCLUSIONS

1. In three families, of which two contained three members each, and one two members, who all acquired syphilis from different sources and at different dates, all developed neurosyphilis.

2. This occurrence can best be explained on the basis of familial predisposition.

3. The clinical and experimental evidence now available does not settle the question as to the existence of a neurotropic strain of *Spirochaeta pallida*.

316 Professional Building.

2. Strohmayer, W.: Familiäre Tabes auf erblich-degenerativer Grundlage, Neurol. Zentralbl. **26**: 754, 1907.

3. Burrow, J. L.: Familial Tabes Dorsalis, J. Neurol. & Psychopath. **1**: 246 (Nov.) 1920.

4. Näcke, P.: Erblichkeit und Prädisposition resp. Degeneration bei der progressiven Paralyse der Irren, Arch. f. Psychiat. u. Nervenkr. **41**: 295, 1906.

5. Nichols, H. J.: Observations on a Strain of Spirochaeta Pallida Isolated from the Nervous System, J. Exper. Med. **19**: 362, 1914.

6. Levatiti, C., and Marie, A.: Etudes sur le tréponème de la paralysie générale, Ann. de l'Inst. Pasteur **33**: 741, 1919.

7. Jahnel, F.: Das Problem der progressiven Paralyse, Ztschr. f. d. ges. Neurol. u. Psychiat. **76**: 166, 1922.

8. Noguchi, Hideyo: Venereal Spirochetosis in American Rabbits, J. Exper. Med. **35**: 391 (March) 1922.

RELATIVE VALUE OF SURGERY AND ROENTGEN RAY IN THE TREATMENT OF HYPERTHYROIDISM *

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Diseases of the thyroid gland are of interest to many branches of the medical profession. Aside from their great importance in clinical medicine, much remains to be learned about them from a physiologic and pathologic point of view. Not only is the thyroid frequently the seat of local changes, but through variation in its activity it exerts a profound effect on the organism as a whole. We may, therefore, logically classify cases of thyroid disease on two different bases: the basis of function and that of pathologic changes in the gland itself. On the first basis we may group them according to the activity of the thyroid, which may be excessive, normal or reduced, and, on the second, according to various histologic changes, of which the chief are hypertrophy and hyperplasia, the deposition of colloid, the presence of adenomas, of malignancy or

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* From the surgical service, the roentgen-ray department and the medical laboratories of the Massachusetts General Hospital. The metabolism studies were aided in part by a gift from Dr. William Norton Bullard.

of inflammation. Combining these two aspects of thyroid disease into one comprehensive system, which will satisfy both clinical and pathologic demands, is not simple. For the present we are interested solely in those cases of thyroid disease which show evidence of an associated constitutional disturbance, apparently due to a toxemia. While as yet there is no conclusive scientific proof of the cause of these symptoms, they are best explained in the main by an increased output of the active principle of the thyroid gland, thyroxin,[1] which apparently acts to stimulate oxidative processes throughout the body. This hypothesis, which associates evidence of toxemia with an increased activity of the thyroid, is accepted for the purposes of this paper, as being the best in accord with clinical observation.

Clinically, the determination of the basal metabolic rate gives us the relation of these increased oxidative changes to a normal standard. The degree of elevation of the basal metabolism enables us to approximate the extent of the thyroid activity. Increased basal metabolism is not only an essential concomitant to the diagnosis of increased thyroid function, but also the most accurate single measure by which to judge the progress of the disease and note the effect of treatment. It is not in itself a measure of the degree of operative risk in a given case, but it is an important factor to be taken into consideration with the clinical aspects.

Persistent increase of thyroid activity occurs, with rare exceptions, in conjunction with two types of changes in the thyroid gland, one a diffuse hypertrophy (hyperplasia), and the other an adenomatous change.[2] Associated with these two pathologic changes are two clinical types of disease. The first type is exophthalmic goiter, the second, adenomatous goiter with hyperthyroidism. For the clear recognition of the second type we are indebted to Plummer.[3] It differs clinically from exophthalmic goiter in developing at a somewhat greater average age in patients who have had a preexisting goiter for many years, in the absence of eye signs, and in the somewhat less intense nervous symptoms. It occurs in from 17 to 20 per cent. of the cases of adenomatous goiter in which resection was done at the Mayo Clinic.[2] For the constitutional disturbance associated with these two types of thyroid disease, hyperthyroidism is used as a convenient term, although it implies an assumption in regard to etiology not completely proved.

FORMS OF TREATMENT

In the present stage of the treatment of hyperthyroidism, the most effective measures aim at a partial destruction of the thyroid gland. Of these measures the ones that now appear to yield the best results are surgery and irradiation. Neither is a new form of treatment. Reports of the therapeutic use of the roentgen ray in exophthalmic goiter have appeared in the literature since 1905. In the Massachusetts General Hospital, a series of cases of hyperthyroidism treated by the roentgen ray was begun by Holmes in 1914. These results of the treatment were reported by Holmes and Merrill[4] in 1919. From the same clinic, Means and Aub,[5] using the basal metabolism as an index of intoxication in exophthalmic goiter, compared the effect of treatment by roentgen ray and by surgery.

Previous to the latter part of 1919, patients with hyperthyroidism coming to the Massachusetts General Hospital were treated, some by surgery and some by roentgen ray, without close cooperation between the two departments, and in occasional instances without detailed study by the medical services. For this reason it seemed wise to coordinate the efforts of the hospital. To this end, in October, 1919, a committee composed of two representatives from the medical, one from the roentgen-ray and three from the surgical services was formed which would have charge of the study and in most instances of the treatment of cases of thyroid disease. The present paper is based on cases studied and treated by the thyroid committee.[6] The conclusions drawn from the cases are my personal conclusions, and not those of the committee.

The results obtained in hyperthyroidism by irradiation with the roentgen ray was felt by the committee to be sufficiently encouraging to justify a continuation of this form of treatment in selected cases. At the same time the committee believes that roentgen-ray treatment should be limited, as stated by Holmes and Merrill,[4] to cases which show symptoms apparently due to increased function of the gland, such as increased metabolic rate, rapid heart action, nervousness, loss of weight and weakness. Goiters with normal or reduced function, requiring treatment for deformity, pressure on adjacent structures, potential malignancy, or potential hyperthyroidism, should be treated by surgery and not by roentgen ray. The only exception to this is in malignant goiter beyond reasonable hope of benefit from operation. Here the roentgen ray has an important rôle. Beyond this, the roentgen ray is not a treatment for goiter; it is a treatment for hyperthyroidism.

On what evidence should a diagnosis of hyperthyroidism be based? Persistent increase in the basal metabolic rate is considered necessary to confirm the usual clinical evidence in the diagnosis of hyperthyroidism. On the other hand, a basal metabolism consistently within normal limits should exclude hyperthyroidism. The only condition that would justify roentgen-ray treatment at all is obvious hyperthyroidism confirmed by increase in basal metabolism, or persistent and clearly marked increase of basal metabolism in a patient suggesting thyroid disease, who showed on careful study no other cause for increased metabolic rate.

Beyond accurate diagnosis there are certain other essential conditions without which roentgen-ray treatment should not be undertaken. The first is adequate modern roentgen-ray equipment, with ability to measure dosage. The second is means of estimating the degree of benefit obtained by determination of the basal metabolism as well as by clinical observation. Without this, a slight degree of persistent hyperthyroidism demanding further treatment may be continued when there is danger of myxedema. The third is careful and accurate clinical supervision. An open mind should be kept in regard to switching to surgical treatment, if improvement is not rapid and complete.

If these conditions are fulfilled, as I believe they have been in cases treated through the Massachusetts General Hospital thyroid clinic, what are the probabili-

1. Kendall, E. C.: Tr. A. Am. Phys., 1915, p. 420.
2. Plummer, H. S.: Oxford Medicine **3**: 839.
3. Plummer, H. S.: The Clinical and Pathologic Relationships of Hyperplastic and Nonhyperplastic Goiter, J. A. M. A. **61**: 650 (Aug. 30) 1913.
4. Holmes, G. W., and Merrill, A. S.: The Treatment of Thyrotoxicosis by Means of Roentgen Ray, J. A. M. A. **73**: 1693 (Nov. 29) 1919.
5. Means, J. H., and Aub, J. C.: A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism, J. A. M. A. **69**: 33 (July 7) 1917; Basal Metabolism in Exophthalmic Goiter, Arch. Int. Med. **24**: 645 (Dec.) 1919.
6. Dr. C. A. Porter, who supplied much of the surgical material, Dr. G. W. Holmes, Dr. J. H. Means, Dr. Malcolm Seymour and Dr. A. W. Allen.

ties of "cure" by the roentgen ray in selected cases? This necessitates a definition of "cure." When, as suggested by Dr. C. A. Porter, the basal metabolism is reduced permanently to within normal limits, we have done all that is possible by surgery or, possibly, by the roentgen ray, to produce a "cure." This does not necessarily mean that a roentgen-ray "cure" is as good as a surgical "cure." In either case, permanent organic change may have occurred which is beyond benefit, or symptoms from the underlying unknown cause of exophthalmic goiter, or from changes in the quality of the thyroid secretion may persist. It is hopeless to expect that surgery or the roentgen ray will relieve permanent organic damage caused by the disease. These patients as a group are likely to represent inferior risks during life. Permanent reduction of the metabolism to within normal limits is ordinarily accompanied by marked improvement, subjective and objective, and in this sense "cure" is used.

Means and Holmes [7] state that in a recent series of fifty-eight cases of hyperthyroidism treated by the roentgen ray, forty-four cases were exophthalmic goiter, and fourteen were classed as toxic adenoma. Of the forty-four exophthalmic patients, thirteen were apparently cured, and fifteen were improved but not rendered entirely free from hyperthyroidism. Sixteen showed little or no improvement; eight of the latter came to operation and were permanently cured. None of the patients seemed to be made worse by the treatment. Two of the patients that improved were later operated on, and one of these died. This was the only death known. Of fourteen patients with toxic adenoma, all improved and five were cured. A composite chart of metabolism, pulse and weight curves of twenty-eight patients with exophthalmic goiter that improved under roentgen-ray treatment showed a maximum benefit during the first four months of treatment. This chart (Chart 1) is reproduced here by permission of the authors. No further significant drop in pulse or metabolic curves occurred in the next six months in spite of more treatments. In the second year there was a slight drop. They conclude that the roentgen ray probably has a beneficial effect in toxic goiters; that about two thirds of the patients with exophthalmic goiters show either recovery or improvement coincident with the treatment, and that in exophthalmic goiter, if good results are not secured with the roentgen ray in a few months, surgery should be employed.

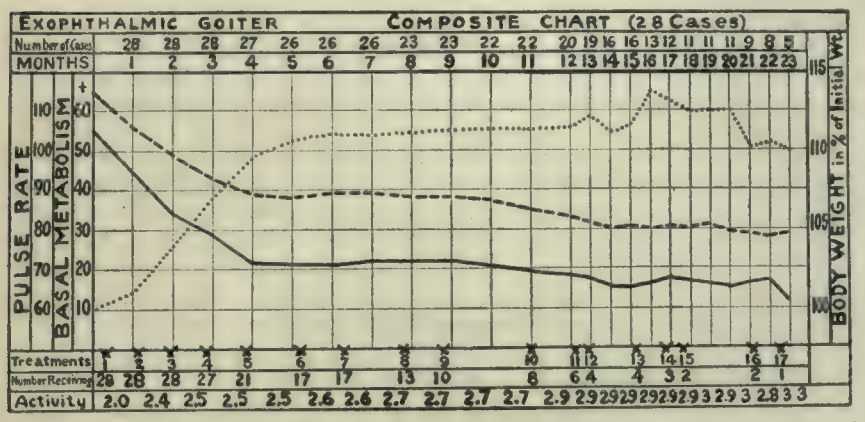


Chart 1 (from Means and Holmes).—In this and the accompanying charts, the solid black line denotes metabolism, the interrupted line pulse, and the dotted line weight. In this chart, X indicates roentgen-ray treatments, the figure below giving the number of that particular treatment. Under activity is indicated the magnitude of the rest factor. Three grades of activity have been arbitrarily selected: 1, complete rest in bed; 2, patient not in bed, but doing no work; 3, patient working or following usual mode of life. In the composite the averages of the individual activity figures are shown for each month.

In comparison with the foregoing series of cases treated by the roentgen ray, I have charted the metabolism, pulse and weight in thirty consecutive cases in which surgical treatment has been completed. The numerous metabolism determinations have been made under the direction of Dr. J. H. Means, to whom I am indebted for permission to use them. Complete surgical treatment is considered to consist of subtotal thyroidectomy, or the removal of the whole gland except an amount which, in the surgeon's judgment, is necessary to maintain normal thyroid function, usually consisting of the inner posterior portion of both lobes. Except in mild cases, this result is obtained by a series of graded operations. While ligation of the thyroid arteries, or hemithyroidectomy, is occasionally curative, these operations ordinarily represent only a stage which the patient passes through on the way to a subtotal thyroidectomy, and it is manifestly unfair to judge surgery by the results from these partial operations.

Of the thirty cases of subtotal thyroidectomy, twenty-five, or 85 per cent., showed a drop in metabolism to + 15 or less when last observed. Four cases with an average metabolism of 69 per cent. still showed evidence of hyperthyroidism, although clinically greatly improved, presumably because the surgeon failed to estimate correctly the amount of gland which should be removed to restore metabolism to within normal limits. In one mild case there has been hypertrophy of part of the remaining thyroid tissue, with return of symptoms, and the patient is now convalescing from removal of more of the gland.

An examination of Charts 1 and 2 will show that they are constructed on a similar plan. While both start out with the maximum number of cases, only relatively few cases are followed throughout the whole period. The number of cases figuring at any time is shown by the figure above each ordinate. The starting point taken in the surgical cases has been the last metabolism determination before operation. The curves obtained are in no sense end-result curves; they approximate, however, the results obtained in each class of cases as a group.

A comparison of the composite chart of the cases treated by roentgen ray and those treated by thyroidectomy shows that the average results in all cases treated by subtotal thyroidectomy are better than the results in a selected two thirds of the cases treated by roentgen ray. The metabolism shows a drop to about + 10, as compared with + 20 for the roentgen-ray cases; the pulse, a drop to 80, as compared with 90; the weight, a tendency to more persistent and greater increase. The rate of fall in metabolism and pulse is about equal in the two charts. The reason for this is that in certain of the patients who underwent ligation of both superior thyroid arteries, followed by thyroidectomy in two stages, the whole of the surgical treatment required four months, and in one case eight months for completion. For comparison, a composite chart of nine cases treated

7. Means, J. H., and Holmes, G. W.: Further Observations on the Roentgen-Ray Treatment of Toxic Goiter, Arch. Int. Med., to be published.

by immediate subtotal thyroidectomy in one stage is added. Here the sharp fall in metabolism and pulse and gain in weight is striking. There can be no doubt that the average results in surgery are better than those following roentgen-ray treatment.

RESULTS OF TREATMENT

In discussing these results, there are three questions of principal importance: 1. Is the improvement noted following roentgen-ray treatment due to fluctuation in the disease or to the treatment? 2. If the roentgen ray is used, what class of cases should it be used in? 3. If the results of surgery are better in general than those of the roentgen ray, why should the roentgen ray be used at all?

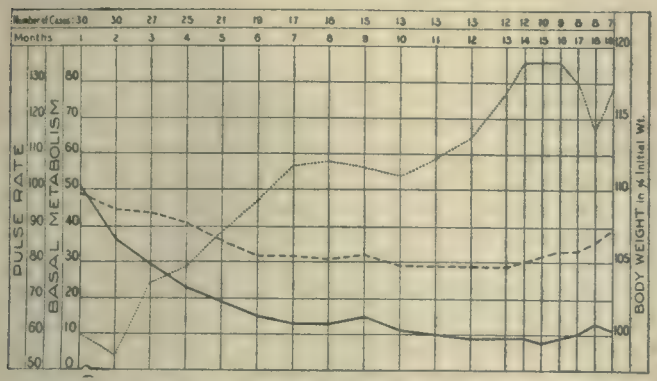


Chart 2.—Exophthalmic goiter composite chart, thirty consecutive cases, subtotal thyroidectomy: In this chart and Chart 3, the curves begin at the time of the first operative procedure; the averages used as a starting point are those obtained at the last metabolism determination before operation. This preceded operation by a variable period, which is not shown. The time in months should begin with zero, and not with one.

After seeing the cases treated by the roentgen ray, I have no hesitation in saying that I agree with Means and Holmes, and believe the improvement in the majority of instances at least due to the roentgen ray. In my opinion, the improvement coincident with the use of the roentgen ray is too sudden and striking to be accidental. In a few instances this is emphasized by a preliminary period of observation during which no change in the course of the disease occurred. In some cases the results of treatment are as brilliant as any I have seen by any therapeutic method. Nor is the improvement due to a long period of rest, as in the series of cases reported by Kessel, Lieb and Hyman.[8] While it has been thought desirable to carry out, when possible, a study of these cases in the hospital before instituting treatment, in the majority of cases there has been no marked change in the way of life. The average activity, as shown by Means and Holmes on Chart 1, has been between 2 and 3 on an arbitrary scale from 1 to 3, in which 1 represents rest in bed, 2, partial rest, in which the patient is up and about, but has rest periods and does not work, and 3, ordinary mode of life. If the roentgen ray were inert, we should expect patients to get worse as well as better. As a matter of fact, this has not occurred.

If the roentgen ray is effective in certain cases of goiter, is it possible to detect those cases in which it is likely to show good results? It has not proved possible to predict the effect of the roentgen ray in any given case. Means and Holmes[7] are unable to show that either the age of the patient or the intensity of the hyperthyroidism, as shown by the level of the metabolism, is a factor determining the success or lack of success of roentgen-ray treatment. An impression that recent cases in young persons were more responsive to the treatment was not borne out by their statistical study. There are, however, certain cases in which the roentgen ray seems to me unsuitable. Among these are adenoma with hyperthyroidism. Here the cause of the symptoms seems to be within the thyroid gland, and not only is it logical to remove this cause surgically, but the late results of operation are better than in exophthalmic goiter. Judd[9] reports 83 per cent. of cases of adenoma with hyperthyroidism cured by surgery, as compared with 65.8 per cent. of patients with exophthalmic goiter. Another group of cases consists of those showing organic damage, particularly cardiac. In these cases I believe that the time consumed by roentgen-ray treatment may lead to further damage. These patients need certain relief from their toxemia. This can be assured only by surgery. A course of roentgen-ray treatment may leave us four or five months along, and no better off. If the roentgen ray is used in these cases, it should be as an adjuvant to the effect of preliminary ligation of the thyroid arteries.

The economic situation may have a bearing on the choice of the roentgen ray or surgery. For instance, a wage earner may well desire the most rapid and certain means of cure. On the other hand, for a mother with several young children, it may be advisable to try the safer course of a series of roentgen-ray treatments. In general, it can be said that the roentgen ray should not be used in any case in which a few months without relief is likely to be productive of definite damage, or in adenomatous goiter with hyperthyroidism, except in unusual instances. If it is used, a definite time-limit should be fixed which I think could well be set for four months, during which the patient usually receives five treatments. If a satisfactory response to the roentgen ray has not been secured by this time, operation should be undertaken.

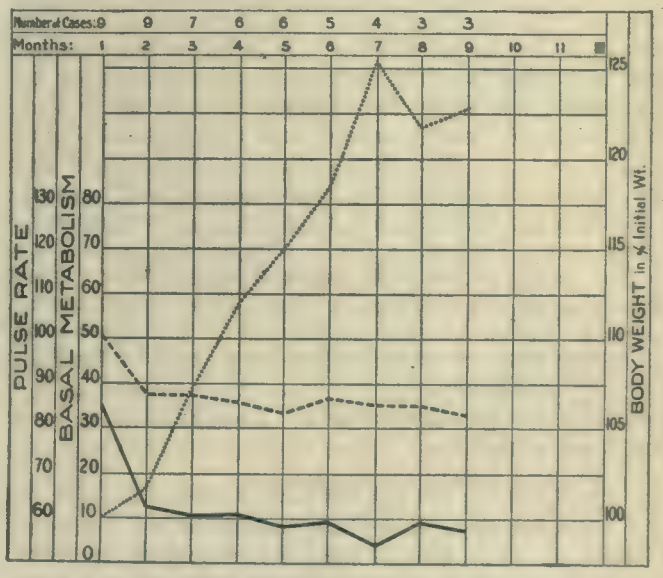


Chart 3.—Exophthalmic goiter composite chart, nine cases, subtotal thyroidectomy, one stage.

If surgery is more effective in the average case, why should the roentgen ray be used at all? Surgery is a clumsy form of treatment for a gland that is hyper-

8. Kessel, Leo; Lieb, C. C., and Hyman, H. T.: A Study of Exophthalmic Goiter and the Involuntary Nervous System, J. A. M. A. **79**: 1213 (Oct 7) 1922.

9. Judd, E. S.: Ann. Surg. **72**: 145 (Aug.) 1920.

active. In exophthalmic goiter, the ultimate cause of the disease is unknown. By removing part of the gland we are not affecting the cause; we are merely removing part of a gland that is excited to hyperfunction. The changes accompanying hyperfunction are still present in the part of the gland that remains. The amount of the gland left to maintain thyroid function is purely a guess on the part of the operator. When surgery can accomplish safely removal of a proper proportion of the gland, it has reached its limit. The roentgen ray, on the other hand, while also acting as a destructive physical agent, has nevertheless the possibility of indefinite expansion as a means of treatment. Improvements in technic and manner of application may lead to results as yet unobtained. It shows sufficient promise to be given opportunity.

Certain minor advantages have been claimed for roentgen-ray treatment. These are absence of operative scar, sparing the patient the distress and discomfort of going through operative procedures, and the fact that hospitalization may not be necessary. Although these advantages loom large in the minds of patients, hyperthyroidism is a sufficiently serious condition in its immediate and remote effects to make these advantages deserving of slight consideration in advising treatment.

The chief advantage of the roentgen ray is that its immediate mortality is nil. The use of the roentgen ray in our clinic is undoubtedly influenced by the fact that the mortality in the cases of hyperthyroidism treated surgically since the organization of the thyroid committee has been 7.1 per cent. There have been five deaths among seventy patients, in some of whom the surgical program is as yet incomplete. The surgical aspects will be presented later in detail. While the mortality from surgery reported from certain large clinics is small, this would probably not be true of small series and isolated cases compiled throughout the country. The stage of gaining experience in this condition is likely always to result in mortality. It must be remembered that mortality is often figured from the number of operations, not from the number of patients treated, and that figures may combine toxic and nontoxic cases. It has been said that recommending the roentgen ray has done harm. It is also true that unqualifiedly recommending operation on the diagnosis of exophthalmic goiter may do harm.

The roentgen ray will accomplish the "cure" of a certain percentage of cases. In others it will bring about a degree of improvement that will permit of safer operation, or make unnecessary some of the preliminary operative steps. It is another weapon in the treatment of hyperthyroidism. The question is how and when to use it.

OBJECTIONS TO ROENTGEN-RAY TREATMENT

Many objections have been raised to roentgen-ray treatment. The chief of these is the temporary relief afforded. While it is true that in certain cases there is a tendency for the metabolism to rise after a period within normal limits, these are a small minority. In these, as a rule, roentgen-ray treatment results in a second drop, to the normal metabolic level. On the whole, the results in cases brought to within normal metabolic limits seem to me satisfactory.

A second objection is the occurrence of myxedema. Means and Holmes [7] report that since the beginning of the roentgen-ray treatment at the Massachusetts General Hospital, four patients have developed myxedema. Two developed it within the first four months of roentgen-ray treatment. In both, the depression of metabolism proved temporary. One patient developed myxedema eighteen months after roentgen-ray treatment; another, five years after. Whether in these cases there is any actual connection between the treatment and the myxedema is uncertain. It seems to me that the danger of myxedema following controlled roentgen-ray treatment is more than balanced by the possibility of recurrent laryngeal nerve injury, particularly bilateral abductor paralysis, or parathyroid injury, following surgery.

Another objection is the increased difficulty of operation following the use of the roentgen ray. The cases coming to operation in this clinic after roentgen-ray treatment have been treated here. They have been as a rule exophthalmic cases; if toxic adenomas, the goiter has been small. In these cases there has been no appreciable increase in difficulty of operation. The gland has not been adherent to the anterior muscles. The only change I have noted has been a somewhat firm consistency to the gland, and possibly a slight increase in fixation posteriorly. The increased operative difficulty has been no more than that after preliminary ligation.

A fourth objection is the time required for roentgen-ray treatment. If the cases are carefully selected and the treatment is strictly limited to four months, this is not of great importance, compared with the possible benefit. It is not longer than the period that may be required for a graded series of preliminary operations.

My personal objections to roentgen-ray treatment are somewhat different. In the first place I cannot help fearing remote ill effects from so powerful and so little understood a physical agent. It can only be said that these as yet have not developed. Further, the suggestion of an alternative form of treatment, surgery or roentgen ray, lessens the authority of the clinic. It is hard under these conditions at times to carry out surgical procedures when they become advisable.

I have no quarrel with the cases apparently cured by the roentgen ray. These results seem to me sufficiently good. Nor am I troubled by the cases in which the roentgen ray frankly fails. These patients have lost time and have been put to trouble and expense, but they are willing to undergo operation, and the ultimate results are likely to be good. The patients improved, but not cured, seem to me a serious objection. They are sufficiently benefited to feel reasonably well and carry on their normal life and work with fair comfort. Still, they are distinctly and recognizably thyrotoxic. Basal metabolism may show a persistent elevation of from 15 to 25 points. Not infrequently they may present bizarre forms of hyperthyroid abnormality. In some cases the picture may be so close to normal that it is difficult to say whether operation is advisable or not. In other cases, thyroidectomy may be clearly indicated. But these patients are likely to refuse surgery. Here is the real objection. The patients recognize their great improvement, and since they are able to live and work in relative comfort, they do not wish to undergo operation. The ultimate fate of these patients is as yet uncertain. My feeling is that they go on receiving organic damage, and that their life and usefulness is shorter than it would be from the more complete cure possible by surgery.

A fourth class of cases, of no significance in determining the value of roentgen-ray treatment, is nevertheless of practical importance. These are the patients

that start roentgen-ray treatment and for one reason or another abandon it. It is true that many of these patients receive adequate surgical treatment elsewhere. Some undoubtedly do not, and in them the disease may progress without any adequate measures of relief. The fate of these patients is beyond the control of the clinic; a responsibility is assumed in regard to them which, through their own fault, cannot be fulfilled. It is possible that surgery might have been refused. At the same time a definite surgical program, once started on, is less likely to be abandoned.

It should be appreciated that there is no less responsibility in advising roentgen-ray treatment than in advising operation. The ill effects of the roentgen ray are more remote, and require more imagination to grasp. It should not be advised as a way of postponing a difficult decision on account of its lack of immediate danger. The man in charge of roentgen-ray treatment, like any other therapeutist, is likely to see little but good from his efforts. Some results are brilliant. Many other patients are much improved. The failures are likely to be operated on, or to drift away; in either case they disappear from the clinic. The harm that needs to be visualized comes, I believe, to these improved patients, through damaging effects of a slight persistent hyperthroidism. The stage of improvement without "cure" I believe to be the serious phase of roentgen-ray treatment; it should constantly be borne in mind.

If roentgen-ray treatment is advised at all, it should be with the clear understanding that it will be tried for only a few months; that relief is uncertain; that, if improvement is not sufficient at the end of that time, operation must be undertaken. The patient should know that operation will eventually be advisable more often than not.

CONCLUSIONS

1. Subtotal thyroidectomy is a more effective form of treatment of exophthalmic goiter than roentgen-ray treatment.

2. The roentgen ray has a beneficial effect in certain cases of hyperthyroidism.

3. This effect is not sufficiently constant to be relied on as the sole form of treatment. In selected cases of exophthalmic goiter, the use of roentgen-ray treatment under careful control is justifiable for a period of four months, during which the patient receives about five treatments.

4. If, after four months of treatment, the degree of improvement obtained in general condition and basal metabolic rate does not promise "cure," operation should be undertaken.

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Investigations of Canned Meats.—A report on the bacteriology of canned meat and fish prepared by the food investigation board of Great Britain, recently issued, represents the first comprehensive study which has been made in that country of the bacteriology of canned food products. The board made a detailed examination of 323 cans of food, 246 of which were rejected. The most striking fact in the report is the nonsterility of cans which were externally sound. Less than 30 per cent. of these cans when examined were sterile; the percentage not sterile ranged from 36 for sardines to 100 for crab. Of canned meat, 63.6 per cent. of the cans were not sterile. This report, the *Lancet* states, gives the death blow to the generally accepted conclusion that canned foods remain good because the processes of preservation by heat have sterilized them.

RENAL GLYCOSURIA

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The advent of blood sugar studies made it possible to divide glycosurias into two general classes: (1) glycosuria with hyperglycemia and usually accompanied by symptoms, and (2) glycosuria with normal blood sugar, and no symptoms. The latter class comprises the so-called renal glycosurias. These glycosurias are usually discovered quite accidentally; they have normal or subnormal blood sugar findings; they are relatively independent of the carbohydrate intake, and they are without symptoms of diabetes mellitus. In some cases, however, the glycosurias disappear on a diet containing small amounts of carbohydrate or carbohydrate-free diets.

The renal glycosurias have of late aroused a great deal of interest because of their obscure etiology, relation to diabetes mellitus and ultimate prognosis. The commonly accepted theory is that renal glycosuria is due to a lowering of the kidney threshold for glucose, caused by an increase in the permeability of the kidney epithelium. This explanation has become so common that authorities talk about kidney permeability, glucose threshold, and the like as if these were well established facts. The vague labeling of unknown conditions is well expressed in a recent editorial in THE JOURNAL:[1]

> Why the "permeability" of the kidneys for sugar should hinge upon a definite concentration of the carbohydrate in the blood has never been clearly explained except by fantastic analogies; nor has it been clear why the renal threshold should "shift" under varying physiologic or pathologic conditions. In current discussions of sugar metabolism, the authorities have been wont to speak glibly of sugar "assimilation," "tolerance," "thresholds," and the like, without offering any really clear explanation of precisely what is meant.

This being the status of affairs, it is desirable to report another case that may possibly throw light on the etiology of renal glycosurias. The case here reported pertains to myself and presents a study over six years.

REPORT OF CASE

In 1916, I happened to discover 0.5 per cent. glucose in my urine. My instructor in physiologic chemistry thought that the glycosuria was due to an excessive intake of carbohydrate. The discovery the next day of 0.2 per cent. glucose following ingestion of a glass of milk and one slice of bread soon disproved the assumption, and led me to seek medical advice. My physician assured me of the harmless nature of the glycosuria, and advised me to determine my carbohydrate tolerance. Daily reductions of the carbohydrate amounts had no effect on the glycosuria until I reached about 30 gm. of carbohydrate in the form of starch. Any amount above 30 gm. would invariably cause glycosuria. At no time before or after the discovery of glucose in the urine did I have a sign or symptom of diabetes mellitus or of thyroid disturbance.

My past history was negative except for a case of measles at the age of 3. In my family history, there was no record of diabetes mellitus, or infectious or nervous diseases. My physical examination, except for a deflected septum and infected cryptic tonsils, was negative.

A complete lack of symptoms and an assurance of the harmless nature of the glycosuria led me to disregard the latter, and to continue my usual liberal carbohydrate intake.

A few months later, I tested my urine, on returning from a long walk, following a rich carbohydrate meal. To my surprise, the specimen was free from glucose. I tried this

1. Physiologic Glycosuria, editorial, J. A. M. A. 78: 1462 (May 13) 1922.

experiment three times a day for two weeks, and ingestion of as much as 500 gm. of carbohydrate would cause no glycosuria, provided the meal was immediately followed by a walk of at least twenty minutes. If I rested for twenty minutes right after a meal, and then took a walk, glycosuria would invariably follow. The thought that this symptomless glycosuria might change into true diabetes mellitus influenced me to search for its cause.

In 1918, I had an attack of acute follicular tonsillitis, and was sick for a week. This attack, in addition to the fact that the tonsils were infected, led me to have a tonsillectomy performed with no other thought than the avoidance of further attacks. In spite of only one attack of tonsillitis, the tonsils were very much infected.

About six weeks after tonsillectomy, while analyzing the urine after a meal consisting of about 90 gm. of carbohydrate, I found no glucose in the urine. Any amount above 90 gm. would cause from 0.2 to 0.4 per cent. glucose. The blood sugar following the ingestion of 1.75 gm. of glucose per kilogram of body weight was pronounced perfectly normal by Dr. Olmsted of Barnes Hospital metabolism department.

The unexpected rise in carbohydrate tolerance following the removal of the faucial tonsils made me feel almost certain that a remaining focus of infection in the nasopharynx was keeping the carbohydrate tolerance down.

On reading Sluder's[2] article on the lingual tonsils as a focus of infection frequently taking the place of the faucial tonsils after the latter have been removed, I concluded that my lingual tonsils were infected. An examination of the lingual tonsil by Dr. Sluder proved the tonsil to be hypertrophied and chronically infected. After two weeks of treatment by applications of saturated solution of silver nitrate to the lingual tonsil, the carbohydrate tolerance rose to 150 gm. On cessation of treatments, the carbohydrate tolerance would drop back to 90 gm., and the tonsil would enlarge again. Since the tonsil showed no change, I was advised to have it removed. During the summer of 1920, I had the lingual tonsil cauterized.

The day following operation, while testing the urine an hour after the ingestion of a glass of milk, I found glucose. This sudden drop in tolerance continued for nearly a week until the slough at the site of the operation came off. Tolerance then began to rise, and by the end of the third week I was able to consume 100 gm. of pure glucose without glycosuria resulting. For nearly two years following the lingual tonsillectomy, repeated examinations of the urine revealed no glucose, in spite of the most liberal amounts of carbohydrate consumed.

Although the relation between the infected tonsils and the glycosuria was definite, the exact modus operandi remained unknown. Sluder's observations on the lingual tonsil as a cause of thyroid irritation, plus the fact that on several occasions thyroid extract caused glycosuria, suggested irritation of the thyroid as a possible cause of the symptomless glycosuria.

In June, 1922, I had to give up this hypothesis. A urine examination following a meal containing, probably, 300 gm. of carbohydrate revealed 0.42 per cent. glucose. About three months previous to this finding, I had reported the case to the Jackson County Medical Society as a case of renal glycosuria completely cleared up following removal of infected tonsils.

An examination of the pharynx revealed an infected piece of lingual tonsil. This time, I decided to postpone the removal of the tonsil until I had made a more thorough study of the glycosuria. A number of questions arose: Was the blood sugar still normal? What was the new carbohydrate tolerance? Was exercise still inhibiting glycosuria? Was there any endocrine disturbance? What rôle, if any, did the nervous system play in this glycosuria? To answer these questions, I made a number of experiments.

EXPERIMENTS

A blood analysis following ingestion of 100 gm. of glucose gave these data: fasting, 0.12 per cent.; first hour, 0.15 per cent.; second hour, 0.13 per cent.; third hour, 0.12 per cent. The three hourly urines showed 0.42 per cent. glucose. In other words, a normal blood sugar with glycosuria.

Experiments to determine the carbohydrate tolerance demonstrated that in the morning following a night's fast, I could consume any amount of carbyhydrate without a resultant glucosuria; in the afternoon, 120 gm. of carbohydrate would cause the excretion of 0.4 per cent. glucose in the urine; exercise for twenty minutes or more right after any carbohydrate intake would prevent glycosuria; exercise of less than twenty minutes' duration would fail to prevent glycosuria; exercise taken later than fifteen minutes after a carbohydrate meal would fail to prevent glycosuria.

While conducting the foregoing experiments, I observed that a change in weather had a peculiar influence on my carbohydrate tolerance. For many days, I could not understand why on some days glucose was excreted on an intake of 120 gm. of carbohydrate, whereas on other days as much as 500 gm. would cause no glycosuria. Repeated observations convinced me that cold weather had an inhibitive effect.

This peculiar relation between temperature and carbohydrate tolerance led me, a year before, to believe, erroneously, that in my case glycosuria was due to a thyroid disturbance, since my experiments with thyroid extract were conducted during warm weather.

Experiments with various endocrine products proved to be entirely negative. Thyroid extract taken until the pulse rate increased from 75 to 100 a minute caused no glycosuria, if the carbohydrate intake was less than 120 gm. Epinephrin chlorid, 1 c.c. of a 1:1,000 solution, hypodermically, caused no glycosuria on less than 120 gm. of carbohydrate, and no greater glucose output on a high carbohydrate intake than occurred without the epinephrin chlorid. Solution of the anterior and posterior lobes of the pituitary also failed to produce glycosuria.

One afternoon while looking at the lingual tonsil, I happened to press the laryngeal mirror against the posterior wall of the pharynx, and thereupon experienced a marked pressure under the middle of the sternum, evidently due to esophagospasm, caused by reflex stimulation of the vagus.

The fact that a mechanical stimulation of the pharynx reflexly stimulated the vagus, suggested that the toxins of the infected tonsils might act in a similar way, reflexly stimulating the vagus nerve endings in some of the organs concerned in carbohydrate metabolism. To prove this, I decided to remove the vagus influence by atropin sulphate, and accordingly, took 1/100 grain (0.00065 gm.) of atropin sulphate hypodermically, ten minutes afer ingestion of 120 gm. of carbohydrate. Hourly urine specimens for three hours failed to reveal any glucose. These experiments were repeated on seven successive days with diets ranging from 120 to 500 gm. of carbohydrate, and the results were identical. Moreover, I found that if I took the atropin later than ten minutes after carbohydrate ingestion glycosuria would invariably follow. In other words, the atropin sulphate had much the effect of exercise. Experiments with various doses of atropin sulphate proved that 1/100 grain was the smallest dose necessary to inhibit glycosuria. Blood sugar examination following ingestion of atropin failed to reveal any increase.

The peculiar similarity of action between atropin sulphate and exercise suggested that there was something common to atropin and exercise that inhibited glycosuria. Atropin and exercise had to be taken immediately after a carbohydrate meal; both had to be of definite quantities to produce the inhibitory effect.

The next interesting question was: What was the exact mechanism by which exercise produced the same effect as atropin sulphate? The fact that exercise was ineffective if taken one-half hour after carbohydrate intake led me to believe that it was not the burning of the glucose by the muscles during exercise that was responsible for the inhibitory effect on glycosuria, but probably the greater intake of oxygen during exercise. If exercise prevented glycosuria by a direct burning of glucose, as suggested by Allen,[3] why didn't exercise have the same effect, if taken one half hour instead of ten minutes after a carbohydrate meal?

2. Sluder, Greenfield: Some Clinical Observations on the Lingual Tonsil Concerning Goitre, Glossadymia and Local Infections, Am. J. M. Sc. **156**: 248 (Aug.) 1918.

3. Allen: Diabetes Mellitus, Nelson Loose-Leaf Living Medicine **3**: 99.

In other words, it seemed that there was something in the exercise that had to be supplied to the organs of carbohydrate metabolism before the glucose left the intestines and entered the portal circulation. To prove that this substance was oxygen, I performed the following experiments: Five minutes after a meal consisting of 300 gm. of carbohydrate, Dr. Ralph Duncan administered pure oxygen by the Barach method. Hourly urine examinations for three hours failed to show any glucose. A similar experiment performed twenty minutes after carbohydrate intake, instead of five minutes, resulted in the excretion of 0.44 per cent. glucose. The oxygen, then, behaved exactly like exercise. Both had to be taken right after a carbohydrate meal, and both had to be taken for a certain length of time. The evidence obtained from the foregoing experiments, then, is sufficient to convince one that exercise inhibited glycosuria by causing a greater intake of oxygen, and not by a direct burning of glucose.

COMMENT

The relation between the focal infection in the tonsils and the symptomless glycosuria is evident. The various processes involved in bringing about the glycosuria need further explanation. The rapidity with which glucose appeared in the urine, twenty minutes after carbohydrate intake, suggests that the glucose on reaching the liver met with some interference and passed through the latter without absorption. The fact that exercise right after carbohydrate intake absolutely prevented glycosuria suggests that exercise removed something that was depressing the liver cells. Exercise or oxygen if taken later than twenty minutes after carbohydrate intake failed to prevent glycosuria, suggesting that the glucose reaching the liver would be turned down, as it were, before the inhibition from the liver was removed. The fact that atropin sulphate invariably prevented glycosuria and that this drug has a selective depressing effect on the vagus endings would further suggest that the depression in the liver cells was due to some vagus disturbance.

In view of the fact that the splanchnics, on stimulation, cause a conversion of glycogen into glucose and greater discharge of the latter into the blood, it is possible that the vagi have the opposite effect; namely, on stimulation they inhibit the conversion of glucose into glycogen. From the negative results obtained with epinephrin chlorid, the effect of the splanchnics can be excluded in this case.

The absence of glycosuria in the morning in spite of the ingestion of 500 gm. of carbohydrate, and the appearance of glycosuria in the afternoon on 120 gm. of carbohydrate, is further evidence of a disturbance of glycogenesis. In the morning, following a night's fast, the liver, being depleted of its glycogen, would assimilate all the glucose brought to it; whereas, in the afternoon, having stored up enough glucose from the morning meal, it would be unable to assimilate more than 100 gm., sending the rest to the kidneys for elimination.

If we assume the foregoing hypothesis of stimulation of the vagi inhibiting glycogenesis, it is easy to conceive how the toxins from the infected tonsils could stimulate the glassopharyngeal nerves of the pharynx and, reflexly, the vagi. That the vagi can be reflexly stimulated by stimulation of the nasopharyngeal nerves has been shown by Auer,[4] who produced gastric inhibition by chemical and mechanical stimulation of the nasopharynx; and recently by Carlson and his associates.[5] The latter by stimulating the tongue and pharyngeal muscosa caused contractions of the cardia and lower esophagus in cats. These results were also obtained by tetanization of the central endings of the glossopharyngeal nerves.

The next interesting question is, Why should the kidneys excrete glucose, when it is at a normal level in the blood? If we admit the foregoing hypothesis of the toxins from the infected tonsils reflexly stimulating the vagi and thus inhibiting the conversion of glucose into glycogen in the liver cells, it is possible that the same toxins might stimulate the nerve endings in the cells of the kidney tubules, either reflexly or directly, in the process of their excretion from the kidney. This stimulation by increasing the excretory function of the epithelial cells causes a more rapid elimination of the glucose.

Whether or not this hypothesis explains the processes involved in the production of renal glycosuria, the facts brought out in this case are sufficient to throw some doubt on the existing theory of a lowering of the kidney threshold and an increased renal epithelium permeability as the cause of renal glycosuria. While I do not wish to convey the idea that infected tonsils are the cause of renal glycosuria, yet the fact that in none of the reported renal glycosuria cases is there any reference to an examination of lingual tonsils, and only such reference to examination of the faucial tonsils as "tonsils, negative," with no statement as to whether an attempt was made to express or aspirate the tonsillar contents, it is possible that some of the other reported cases have a similar focus of infection somewhere in the nasopharynx. A history of repeated attacks of tonsillitis, as my case demonstrates, is not at all necessary to justify a suspicion of chronically infected tonsils. In spite of only one attack of acute follicular tonsillitis, and a complete absence of symptoms from the lingual tonsils, there was enough infection in the tonsils to cause the symptomless glycosuria.

It is also possible that toxins from sources other than the nasopharynx might stimulate the vagus endings in the liver as well as the nerve endings in the epithelial cells of the kidneys, and cause symptomless glycosuria. It is quite likely that the glycosuria of pregnancy, having all the ear-marks of renal glycosuria and disappearing with the termination of pregnancy, is caused by the placental toxins, which, as is well known, have a special predilection for the liver and kidneys.

In view of the inhibitory effect of cold weather on my glycosuria, which is probably due to a greater intake of oxygen resulting from an increased metabolism, I have had to postpone further experimentation till next spring. In reporting the case in the meantime, I am hoping that those who have cases of renal glycosuria under observation may try the foregoing experiments, and thus determine whether the observations hold good for other cases of renal glycosuria.

SUMMARY AND CONCLUSION

1. The case here reported presents a glycosuria of six years' duration, since the first discovery of glucose, and without symptoms of diabetes mellitus.

2. It presents a glycosuria with normal blood sugar, but clearing up on ingestion of small quantities of carbohydrate, or with carbohydrate-free diets.

3. Exercise, if taken immediately after carbohydrate intake, and continued for not less than twenty minutes, absolutely prevented glycosuria, in spite of the most liberal carbohydrate intake.

4. Auer: Am. J. Physiol. **18**: 347, 1907; **25**: 334, 1910.

5. Carlson, A. J.; Boyd, T. E., and Pearcy, J. F.: Studies on the Visceral Sensory Nervous System, XIV, The Reflex Control of the Cardia and Lower End of Esophagus in Mammals, Am. J. Physiol. **61**: 14 (June) 1922.

4. Exercise would fail to prevent glycosuria, if taken fifteen minutes after carbohydrate intake.

5. The removal of infected faucial tonsils raised the carbohydrate tolerance to 90 gm.; whereas, the removal of infected lingual tonsils brought the carbohydrate tolerance up to normal and caused a complete disappearance of the glycosuria for nearly two years.

6. The reappearance of glycosuria was observed following reinfection of a remaining piece of lingual tonsil, following, however, intake of 120 gm. of carbohydrate, instead of 30 gm., as before the tonsillectomies.

7. There was an absence of glycosuria in the morning after intake of 500 gm. of carbohydrate and the reappearance of glycosuria after 120 gm. of carbohydrate in the afternoon.

8. Glycosuria would disappear in cold weather in spite of the most liberal amounts of carbohydrate, and reappear in warm weather on intake of 120 gm.

9. Exercise, oxygen or atropin sulphate, if taken immediately after carbohydrate intake, would absolutely prevent glycosuria, regardless of the amount of carbohydrate ingested.

It is suggested that renal glycosuria may be due to an inhibition of glycogenesis, caused by a reflex stimulation of the vagi. The inhibition of the vagi may be of various degrees. In cases with complete vagus inhibition, glycosuria occurs even on carbohydrate-free diets; whereas, in cases with partial vagus inhibition, glycosuria clears up on intake of small amounts of carbohydrate. The appearance of glucose in the urine in spite of a normal blood sugar may be explained by an increase in the excretory function of the kidney cells, caused by a stimulation of the nerve endings of the latter by the same stimulants that act on the vagi.

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SOME RECENT ADVANCES IN THE TREATMENT OF HEART DISEASE

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During recent years, our conception of heart disease has been rapidly advanced by the new knowledge gathered by two precise graphic methods: the polygraph, for which Mackenzie and his co-workers are responsible, and the electrocardiograph, perfected by Einthoven, with which most of the pioneer work has been done by Thomas Lewis. The information given us by these two methods has radically revised our knowledge of heart failure, and has profoundly altered our conceptions of prognosis and treatment. Although much of this newer knowledge is based on the results obtained by workers with these instruments of precision, after one has mastered the information taught, the use of them is not necessary for ordinary clinical work, and no less an authority than Thomas Lewis says:

> While the pursuit of graphic work by those who possess the special aptitude and a developing interest in the method is decidedly to be encouraged, yet it is clear that a universal adoption of the graphic method is neither to be anticipated nor advocated. This conclusion is largely dictated by the belief that most of the every-day disturbances of the heart beat may now be identified by relatively simple means. If this is possible to a practitioner, then it is also possible for him to grasp the new general conceptions and to apply them to his daily work.

I will therefore discuss some of the newer knowledge of heart disease as it aids us in the prevention and treatment of cardiac failure. Another factor is the ever increasing importance attached to infection as a cause of cardiac failure, as opposed to the old and generally accepted theory of back pressure.

I consider the subject also especially timely because of the increased interest in it as a result of the recent rise in the prevalence and mortality from these diseases. Recent statistics show that the number of deaths from diseases of the heart is now twice as great as that from tuberculosis, pneumonia or cancer. A more widespread knowledge of recent advances in the prevention and treatment of this group of diseases is the most important factor in combating this condition.

I shall discuss six forms of cardiac arrythmia: (1) sinus arrythmia; (2) heart block; (3) premature contractions; (4) paroxysmal tachycardia; (5) auricular flutter, and (6) auricular fibrillation. I shall also discuss the treatment of cardiac diseases as influenced by the presence of one or more or these conditions. In addition, I shall also refer to the treatment of functional disturbances of the heart, including effort syndrome.

SINUS ARRYTHMIA

Irregularities of the heart produced by interference with the origin of rhythmic impulses at the sinus are termed sinus arrythmia. As these irregularities are usually not associated with any organic disease of the heart, and are usually but an exaggeration of a normal phenomenon due to respiration, occurring in children and in young adults, they neither should suggest nor require special treatment. It is very important, therefore, to recognize this type of irregularity, as failure to do so has frequently resulted in much unnecessary treatment, and has been the cause of much worry to patient and parent.

HEART BLOCK

Heart block is an abnormal heart mechanism in which there is a delay in, or absence of, ventricular responses to auricular impulses. There is no specific treatment for this condition, but the underlying associated cardiovascular disease should be treated. As this is frequently a manifestation of infection, the use of salicylates is indicated. Attention to the hygiene of the mouth and throat as a possible source of focal infection should be considered in every case. Syphilis, alcoholism and arteriosclerosis should be treated when present.

In cases of complete heart block, the occurrence of fits and their danger in causing accidents must be borne in mind. Gastro-intestinal disturbances should receive appropriate treatment. Digitalis, although an important cause of this condition, may be used if indicated by associated pathologic conditions. Heart block in itself should not be considered a cause for limiting the activities of the patient. Hypodermic injection of 10 minims (0.6 c.c.) of 1:1,000 solution of epinephrin chlorid has been recommended and more recently advocated by Parkinson and Phear.[1]

PREMATURE CONTRACTIONS, OR EXTRASYSTOLES

Premature contractions, or extrasystoles, are contractions of the heart that disturb the rhythmic sequence by appearing early and in response to impulses newly

1. Parkinson, J., and Phear, A. G.: Lancet **1**: 933 (May 13) 1922.

formed in the myocardium. As in the case of heart block, we have no specific treatment for this condition when present, and the treatment should be directed toward the underlying pathologic condition. Here, again, it must be remembered that large doses of digitalis sometimes cause premature contractions; but digitalis is not necessarily contraindicated because of their presence.

Premature contractions are frequently present without evidence of serious organic disease, such as is manifested by signs of cardiac enlargement, and symptoms of cardiac embarrassment. In such cases, they are not in themselves evidences of serious disease, and do not call for any specific treatment. We often see this present in pregnant women, and in persons suffering with nervous conditions and many gastro-intestinal disturbances, especially those associated with flatulence.

PAROXYSMAL TACHYCARDIA

The term paroxysmal tachycardia is applied to several phemonena all characterized by rapid beating of the heart, usually ranging between 120 and 300 beats a minute, starting and ending quite abruptly. Some of these are cases of auricular fibrillation, some auricular flutter, and some simple paroxysms of tachycardia. The treatment of this condition consists of those measures intended to cut short the paroxysm during the attack, and those measures intended to prevent the paroxysms between attacks.

(*a*) *During Attack.*—There is no known specific remedy that is invariably valuable, and it is very difficult to estimate correctly the value of the various measures recommended, as the attacks are usually self-limited in duration. However, many remedies are found valuable for these attacks and should be tried. These are: changing posture, tight binder to the abdomen, ice bag to the precordium, and emetic drugs. The intravenous injection of $\frac{1}{100}$ grain of digitalin or $\frac{1}{250}$ grain of strophanthin is useful in some cases. Pressure on the vagus as it lies in the carotid sheath or over the supra-orbital nerve as it emerges from the supra-orbital foramen frequently gives almost miraculous relief. During prolonged attacks the diet should be bland and easily digestible, the bowels should be kept open, and cardiac failure, it present, should be appropriately treated by the usual means. Quinidin, which will be more fully discussed later, is valuable in cases of paroxysmal auricular fibrillation. The pain and insomnia, when present, should be controlled by morphin or chloral.

(*b*) *Between the Attacks.*—A careful search should be made for the etiologic factor, and, when present, it should be treated. The general health of the patient should be improved, and infections, especially of a rheumatic character, carefully treated. Foci of infection in the mouth, tonsils and abdomen should be carefully looked for. Digestive disturbances, especially those associated with flatulence, should be appropriately treated. The wearing of an abdominal belt has proved of great value in preventing these attacks. Pregnancy and general anesthetics are not necessarily contraindicated, nor should the activities of the patient be restricted unless serious disease of the heart is evident by other signs and symptoms.

AURICULAR FLUTTER

Auricular flutter is a condition in which the auricles beat at a very rapid rate, usually from 240 to 360 a minute. The paroxysms of auricular flutter should be treated along the same lines as those laid down for paroxysmal tachycardia. Auricular flutter, however, even if long continued, responds very successfully to digitalis therapy. Digitalis, given in full doses, practically always reduces the ventricular rate. As auricular flutter is due to circulating and never ending contraction waves in the auricle, digitalis creates a block in the auricles by obstructing the path of this circulating wave. Usually, it is found that full doses of digitalis convert the flutter into a fibrillation; and, when the digitalis is withdrawn, the fibrillation soon vanishes, and the normal rhythm is resumed. The corresponding improvement in the general condition of the patient occurs promptly with the restoration of the normal rhythm.

AURICULAR FIBRILLATION

In auricular fibrillation, the regular auricular contractions cease, and are replaced by fibrillatory twitchings of the auricular musculature. The normal impulses to the ventricle, being absent, are replaced by rapid and irregular ones, and the resultant ventricular contractions are very rapid and irregular as to strength and interval between beats. As this condition is present in the vast majority of cases of heart failure, its treatment is of great importance, and the reputation of the digitalis preparations in the successful treatment of heart failure is due to the favorable influence it has on the auricular fibrillation. Although the usual rules for the treatment of heart failure, such as rest, elimination and diet, must be instituted in every case, digitalis has an almost specific action in improving the condition of the patient. It acts by producing a partial heart block, in the bundle of His, abolishing most of the fine irregular impulses coming from the auricle, and reducing thereby the number of ventricular contractions. As the ventricular contractions become less frequent, each systole gains in strength, and the ideal condition is obtained when the ventricular rate approaches the normal of 72 a minute. (In counting ventricular systoles, it is important to listen over the heart as well as to palpate the radial pulse, as in this condition a pulse deficit at the radial is frequent.) This can be accomplished by the appropriate use of digitalis, if one understands its action and correct dosage. Although many preparations of the digitalis group have been used, I find that the tincture and the powdered leaf of digitalis are the most reliable, and will give satisfaction in practically all cases. It has been determined that full digitalization is accomplished by from 6 to 8 drams (22.5 to 30 c.c.) of the tincture, or from 36 to 48 grains (2.3 to 3 gm.) of the powdered leaf in the average adult weighing 150 pounds (68 kg.). The usual dose is from 20 to 30 minims (1.25 to 1.9 c.c.) of the tincture, or from 2 to 3 grains (0.13 to 0.195 gm.) of the powder given four times a day. Digitalization is completed in from four to six days.

In 1915, Eggleston [2] recommended the determination of the physiologic dose required, and advised giving the full dose in a very short time. I now give 1 dram (3.75 c.c) of the tincture or 6 grains (0.4 gm.) of the powder four times a day for one or two days until the full physiologic effect is obtained. Symptoms of overdigitalization must always be watched for, the three most reliable ones being nausea and vomiting, slowing of the pulse below 70, and the developing of coupling beats. When any of these symptoms are present, the drug must be immediately stopped. After digitalization is obtained,

2. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. **16**: 1 (July) 1915.

most cases require the saturation to be continued. This can be accomplished by administering the amount eliminated, which has been determined to be the equivalent of 2 grains (0.13 gm.) of powdered leaf, or 20 minims (1.25 c.c.) of the tincture daily. In cases in which the heart failure is extreme, and more rapid action of the drug is necessary, $\frac{1}{250}$ grain of strophanthin may be administered intravenously, and repeated every two hours for three doses. This, however, should be used only in those cases in which no digitalis has been previously administered.

De Meyer [3] recommended the intravenous administration of 1.5 mg. of physostigmin in tachycardia and auricular fibrillation. Enough work, however, has not been done with this remedy to warrant an opinion at the present time.

In 1914, Wenckebach [4] reported the results of treating a case of malaria in a Dutch merchant with quinin; an associated auricular fibrillation disappeared. In 1918, Frey [5] recommended quinidin sulphate for the treatment of auricular fibrillation, quinidin being the least toxic of the quinin derivatives. He reports favorable results in several cases. Since then, this drug has been used by clinicians in this country and in Europe, who report favorable results in more than 50 per cent. of the cases in which the normal rhythm is restored. In its action this drug differs from that of digitalis in that, whereas digitalis produces its favorable effect by reducing the number of ventricular contractions and does not influence the auricular fibrillation, quinidin, when successful, restores the normal rhythm. My own experience with about twenty cases in the last two years is even better than the average reported, as I have been able to obtain the normal rhythm in about two thirds of the cases. This drug, however, shows its greatest value in the more recent cases, as in the old and very seriously diseased hearts the normal rhythm, even when restored, did not continue very long. The usual dose is 5 grains (0.324 gm.) three or four times a day, which, when successful, will restore the normal rhythm in from four to six days, although in one of my cases it was restored after two doses, while in another, it took two weeks. In the severer cases, I continue the saturation with quinidin by administering 2 grains (0.13 gm.) three times a day for several weeks after the normal rhythm has been restored. As some patients have an idiosyncrasy against this drug, it is recommended that 2 grains be given three times a day for the first day, and then the regular doses be followed, if no untoward symptoms are manifested.

HEART FAILURE

There remains, however, a group of cases of heart failure not associated with auricular fibrillation, the treatment of which, therefore, is less satisfactory. Those due to syphilis should receive intensive antisyphilis treatment, although vascular syphilis responds less than that of other parts of the body. The goiter heart can be radically treated only by the removal of the toxic goiter. The digitalis preparations do not seem to influence these cases very much. The arteriosclerotic and hypertensive hearts must be treated by correcting and eliminating the factors of deleterious habits and mode of life which are responsible for most of these cases. In the primary endocardial cases which are usually rheumatic, the result of streptococcus infection, foci of infection must be carefully sought for and appropriately treated. These are usually to be found in the teeth, tonsils, accessory sinuses, pleura, gallbladder or appendix.

In all cases of cardiac failure, infection plays a much greater rôle than is generally recognized, and is the real cause of the dilatation rather than the back pressure or cardiac strain. This has been proved by carefully watching of the temperature during the failure when a slight and sometimes moderate rise has been found in many cases. The presence of a streptococcus bacteremia has been found by many who have taken cultures in cases of heart failure, and, at the Mount Sinai Hospital, since we have instituted routine blood culture in all these cases, we are finding viridant and hemolytic streptococci in many of our cases. This has great practical importance in treatment, leading to the paying of less attention to the element of strain and more to the treatment of foci of infection. On that basis, we are now using the salicylates and sodium cacodylate in all cases of cardiac failure associated with infection.

Pfalz,[6] stimulated by the work of Büdingen, recommended the use of glucose in the treatment of heart disease. Glucose being one of the most important sources of energy for the proper activities of the cardiac muscles, he recommends the infusion of 200 c.c. of 15 per cent. glucose daily.

Although digitalis is the ideal remedy in auricular fibrillation, it can be given also in heart failure with marked edema, and is not necessarily contraindicated in cases of aortic regurgitation, and high blood pressure.

FUNCTIONAL CONDITIONS OF THE HEART

There is also a group of cases generally classed as heart disease because of the presence of one or more symptoms or physical signs of heart disease. These cases are termed functional conditions of the heart because, as far as we know, they are not associated with pathologic conditions of the cardiac structure. It is of great importance to differentiate these from diseased hearts in order that the activities of these patients may not be restricted and that the treatment of these cases may be directed to the underlying or associated condition and not to the heart. I refer, particularly, to those in whom a systolic murmur or an abnormal rhythm is found as an isolated symptom.

EFFORT SYNDROME

Another class of cases closely allied to these are those known as soldiers' heart, irritable heart, neurocirculatory asthenia or effort syndrome. Warfield and Smith [7] reviewed 275 cases with symptoms of irritable heart, consisting of breathlessness, exhaustion, giddiness, faintness, palpitation, headache, lassitude and irritability. A careful investigation of these cases disclosed seventy-eight cases of hyperthyroidism; ninety-four of tuberculosis; thirty-three, normal; forty-one, bronchial asthma; four, cirrhosis of the liver, and four, irritable heart. In the treatment of these cases the constitutional defect and the psychoneurotic tendencies must be corrected.

SUMMARY

1. The newer knowledge of the mechanisms of the cardiac rhythm, particularly as disclosed by researches

3. De Meyer: Tr. French Congress of Medicine, 1920.
4. Wenckebach: Berl. klin. Wchnschr., 1914.
5. Frey, W.: Berl. klin. Wchnschr. **55**: 849, 1918.
6. Pfalz: Deutsch. med. Wchnschr., Oct. 23, 1913.
7. Warfield, L. M., and Smith, F. M.: J. Lab. & Clin. Med. **5**: 75 (Nov.) 1919.

with the electrocardiograph and polygraph, enables us to treat heart conditions more efficiently.

2. Cardiac failure is usually associated with auricular fibrillation, which, when present, responds very satisfactorily to digitalis medication. Proper dosage of digitalis is necessary. The method of large dosage is advocated.

3. Quinidin has proved successful in more than 50 per cent. of the cases of auricular fibrillation in restoring the normal rhythm.

4. The importance of infection as a factor in cardiac failure is too frequently overlooked, and the generally accepted theory of back pressure and cardiac strain should be abandoned in most cases.

5. Functional cardiac disturbances must be differentiated from serious organic disease, and treated accordingly.

6. Effort syndrome is usually not a cardiac disease, and the true diagnosis should be determined for its successful treatment.

104 South Michigan Avenue.

INFLUENCE OF VARIOUS SYMPTOMS IN THE PROGNOSIS OF PULMONARY TUBERCULOSIS

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In two previous communications [1] I have attempted to analyze the relative resultant effect of the presence, absence and location of râles, together with the importance during treatment of their increase and decrease, in the prognosis of pulmonary tuberculosis.

My purpose here is to determine the comparative value of certain symptoms in aiding us to predict for our patients something of their ultimate chances of recovery. This analysis, as in the two previous communications, is based on a study of one thousand consecutive admissions to the Trudeau Sanatorium during the years from 1907 to 1913. As twenty of these cases for one reason or another have not been included in these statistics, the tabulations are based on 980 cases. As a result of the follow up system employed at the sanatorium, we are able to tell the present condition, or, to be more exact, the condition in 1918, of all but less than 2 per cent. of these 980 patients.

The terms "well," "living," "dead" and "unknown" have been used to describe the state of health of these 980 patients in 1918, or from five to eleven years after discharge, "well" referring to those patients who have been apparently well and working for a period of at least two years, and "living" including either those who have relapsed or those of whom we can give no further information except the fact that they are still alive.

MODE OF ONSET

The first point to be considered is the mode of onset of the disease in these 980 cases, and the significance of its various types as regards prognosis. In considering the five most common types of onset, namely, the catarrhal, the insidious, the pleuritic, the hemoptysic and the febrile, we note from Table 1 that the way the disease began plays little or no part in determining its future course. In the five types of onset mentioned above, the "wells" vary only from 58 to 68 per cent., while the deaths vary from 20 to 27 per cent.

TABLE 1.—ONSET AND COURSE

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Catarrhal	473	48.26	289	61	70	15	110	23	4	1
Insidious, gradual	350	35.73	237	68	38	11	70	20	5	1
Pleuritic	72	7.34	42	58	14	19	15	21	1	2
Hemoptysic	50	5.1	33	66	5	10	12	24	—	—
Febrile	15	1.53	9	60	2	13	4	27	—	—
Gastric, dispeptic, indigestion	8	0.82	7	88	—	—	—	—	1	12
Glandular	5	0.51	3	60	1	20	1	20	—	—
Family history + t'b'r'n+	3	0.3	1	33	1	33	1	33	—	—
Fistula in ano	2	0.2	2	100	—	—	—	—	—	—
Pneumonia	2	0.2	1	50	—	—	1	50	—	—
Total	980	100	624		131		214		11	

SPUTUM

Among our 980 patients, 591, or 60 per cent., showed tubercle bacilli in the sputum, 464 of these while in the sanatorium and 127 before coming.

The grave importance of these findings as regards prognosis is clearly shown when we realize that only 53 per cent. of these patients whose sputum was positive are well and working, as contrasted with 79 per cent. among the negative cases, while the mortality among the positive cases, from five to eleven years after discharge, is 32 per cent., as compared to only 6 per cent. in the negative cases.

TABLE 2.—RELATION OF SPUTUM TO PROGNOSIS

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	389	39.7	307	79	51	13	24	6	7	2
Positive	591	60.3	318	53	79	14	190	32	4	1
Total	980	100	625		130		214		11	

HEMOPTYSIS

Under the head of hemoptysis we have arbitrarily set the amount of one teaspoonful or more of blood as constituting a definite hemorrhage. Doubtless most of us are apt to consider the symptom as being of rather grave prognostic value in comparison to the absence of hemoptysis. The figures in Table 3 are surprising, for 61 per cent. of the hemoptysic patients are well and working, as compared to 65 per cent. of our non-bleeding patients, while the death rate is practically the same for the two types of cases; namely, 23 and 22 per cent.

TABLE 3.—PROGNOSTIC VALUE OF HEMOPTYSIS

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	636	64.9	415	65	77	12	136	22	8	1
Positive	344	35.1	210	61	53	15	78	23	3	1
Total	980	100	625		130		214		11	

WEIGHT

Table 4 will illustrate the beneficial importance of a gain in weight among our tuberculous patients. More than 67 per cent. of these showed a gain in weight averaging 8½ pounds (4 kg.), as contrasted

1. Trudeau, F. B.: Importance of Physical Signs in the Prognosis of Pulmonary Tuberculosis, Am. Rev. Tuberc. **4**: 518 (Sept.) 1920; Presence, Absence and Location of Râles in the Prognosis of Pulmonary Tuberculosis, J. A. M. A. **77**: 1326 (Oct. 22) 1921.

to only 28 per cent. who lost weight, and approximately 5 per cent. whose weight remained stationary. Among those who gained, the figures for the "wells" and "deads" are 67 and 20 per cent., respectively, contrasted with 57 and 27 per cent. of those who lost weight. The forty-seven patients whose weight remained stationary did practically no better than those who showed a loss of weight.

TABLE 4.—SIGNIFICANCE OF GAIN IN WEIGHT

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Gain	657	67.04	441	67	81	12	127	20	8	1
Loss	276	28.16	157	57	42	15	75	27	2	1
Stationary	47	4.79	27	57	7	15	12	26	1	2
Total	980	100	625		130		214		11	

PULSE

The symptomatic importance in prognosis of the pulse is emphasized by Table 5. Cases are rated as "pulse positive" in this series in which a pulse rate of 90 or over persists for five consecutive days and diagnosis fails to reveal any other cause than tuberculosis. Sixty-nine per cent. of the negative pulse patients are well and working, as compared to only 49 per cent. of those having tachycardia, while only 16 per cent. of the former class are dead, as compared to 38 per cent. of the latter. The grave prognostic significance of rapid pulse is undoubtedly due largely to the fact that it is often accompanied by fever, which, as we shall see in Table 6, is the gravest of all symptoms that we have studied.

TABLE 5.—IMPORTANCE OF PULSE

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	717	73.1	496	69	97	14	114	16	10	1
Positive	263	26.9	129	49	33	13	100	38	1	—
Total	980	100	625		130		214		11	

FEVER

Cases are here classified as "fever positive" when the patient's temperature was 99.5 F. or over for five consecutive days, which could not be explained by any other cause than tuberculosis. By reference to the figures in Table 6 it will be noted that the percentage of "deads" among our febrile patients is nearly as great as the percentage of "wells"; namely, 43 and 45 per cent., respectively, while of our afebrile patients 68 per cent. were well and working from five to eleven years after discharge, and only 17 per cent. had died.

TABLE 6.—SIGNIFICANCE OF FEVER

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	809	82.6	548	68	110	14	141	17	10	1
Positive	171	17.4	77	45	20	12	73	43	1	—
Total	980	100	625		130		214		11	

SEX, FAMILY HISTORY AND STAGE OF DISEASE ON ADMITTANCE

Although not strictly classified as symptoms according to the title of this paper, it might be of interest to consider from a prognostic standpoint the influence of sex, family history and the stage of the disease on admittance to the institution.

Table 7 discloses that the proportion of males to females entering the institution is very nearly equal, as is the percentage of "wells" among the two sexes,

TABLE 7.—INFLUENCE OF SEX

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Male	522	53.27	329	63	55	11	133	25	5	1
Female	458	46.73	297	65	75	16	80	18	6	1
Total	980	100	626		130		213		11	

namely, 63 and 65 per cent., respectively; the males, however, have slightly the higher death rate in our series, with 25 per cent., as compared to 18 per cent. of the females.

In considering family history in this paper we have reference only to the immediate family; namely, father, mother, brothers or sisters. It is of interest to note that 30 per cent. of our cases have a positive family history, yet this fact seems not to have any prognostic

TABLE 8.—INFLUENCE OF FAMILY HISTORY

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	690	70.4	441	64	90	13	153	22	6	1
Positive	290	29.6	184	63	40	14	61	21	5	2
Total	980	100	625		130		214		11	

value, as a study of the table reveals only a small variation in outcome as between our positive and negative family history cases.

Table 9 is indeed encouraging, for more than 78 per cent. of our patients in whom the disease was incipient have resumed normal life, while less than 10 per cent. have died. Even among those whose disease was moderately advanced, more than 70 per cent. are alive,

TABLE 9.—INFLUENCE OF STAGE OF DISEASE ON ADMITTANCE

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Incipient	352	35.92	275	78	43	12	28	8	6	2
Moderately advanced	612	62.45	350	57	84	14	173	28	5	1
Far advanced	16	1.63	4	25	3	19	9	56	—	—
Total	980	100	629		130		210		11	

although only 57 per cent. of these have been restored to good enough health to allow them to work. It seems, indeed, gratifying that there are 25 per cent. of "wells" among our far advanced cases.

TABLE 10.—TOTAL RESULT

	Number	Per Cent.
Well	625	64
Living	130	13
Dead	214	22
Unknown	11	1
Total	980	100

CONCLUSION

It might be interesting to note the present condition of these 980 patients, regardless of any symptoms,

except the fact that they were patients in the sanatorium. Two hundred and fourteen of these are dead, and eleven unknown. Of the deaths, 180, or 84 per cent., were caused by tuberculosis, and thirty-four from other causes, so that of 980 patients whose condition has warranted their admittance to the sanatorium, more than 75 per cent. are well or living from five to eleven years after discharge, while practically two out of every three of them have been restored to earning capacity.

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PREVENTION OF PERITONEAL CONTAMINATION IN DRAINAGE OF ABDOMINAL ABSCESSES

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If, in the course of an operation for appendicitis, a well walled-off collection of pus is found, it is a common practice to enter the abscess, even if it is rather large, and remove the appendix. This is, of course, done in the hope or belief that contamination of the general peritoneal cavity will not result. Unfortunately, in mesiocolic, procecal and many retrocecal and subhepatic abscesses, it is impossible to enter the intraperitoneal abscess and remove the appendix without breaking up the protective peritoneal adhesions. Unless the abscess is large or so superficially situated as to reach the mural peritoneum, in which case the abscess cavity can be freely explored and drained without fresh soiling of uncontaminated peritoneal surfaces, it will hardly be denied that the exercise of great caution in the removal of the pus, for example, by way of an extraperitoneal canal to prevent additional peritoneal contamination, conforms to a surgical principle, the ignoring of which is fraught with danger. Therefore, if an appendical abscess can be drained without traversing a virgin peritoneal space, this should be done. In laterocolic extra-



Fig. 1.—Large cigaret drain passed between mural peritoneum and abdominal musculature; tuft of gauze on inner end pressing intraperitoneally against abscess wall causes rupture and evacuation of abscess.

peritoneal abscesses and certain large intraperitoneal abscesses this will be easy of accomplishment; moreover, it can be done in retrocolic, intraperitoneal and extraperitoneal abscesses of smaller size and more sequestered location, if the correct avenue of approach is followed.

In the accompanying illustrations, two methods of safe drainage of deep seated intra-abdominal abscesses are presented. The first of the two methods to which it is desired to call attention has been used for many years, but too infrequently used by most operators, if I have been able to judge correctly by personal discussion of the subject with colleagues and by perusal of written treatises on this subject. The plan referred to is that of approaching a laterocolic or retrocolic

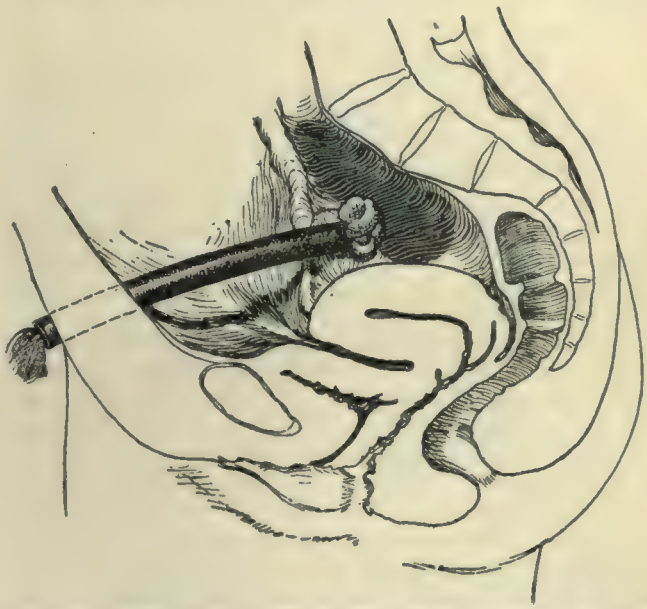


Fig. 2.—Cigaret drain passed to intra-abdominal surface of pelvic abscess; pressure of tuft of gauze may be expected to cause disintegration and spontaneous rupture of abscess wall after drainage well of adhesions has been formed.

abscess by an entirely extraperitoneal route; that is, the incision is made lateral to the classical appendix incision, and extends only to the peritoneum. The parietal peritoneum is then peeled away from the musculature of the flank, and the abscess opened bluntly at the bottom of the extraperitoneal canal thus formed.

Given a well defined retrocecal abscess as large as a hen's egg or larger, a certain mortality will follow attempt to remove the appendix and wipe out the pus through a ventral peritoneal incision. On the other hand, there should be practically no mortality following the opening of the abscess through an extraperitoneal avenue of approach. It is not, however, my object here to discuss at length any method of opening an intra-abdominal abscess at the time of operation; the foregoing reference has been made because the measure already described leads to another and more important consideration.

About fifteen years ago, in attempting to reach a retrocecal abscess as described above, it was found easily possible to peel off the peritoneum down to a position alongside the cecum; but the exploring finger found no ulcerated area through which a puncture could be made without danger of admitting virulent pus into the free peritoneal cavity. Therefore, the space alongside the cecum was loosely packed with two strands of gauze, between which a large rubber drainage tube was passed, the ends of the gauze and the drainage tube extruding at the wound in the flank. About eight hours after the operation, the abscess broke spontaneously, and a large amount of pus was discharged from the wound. The gauze was removed gradually, and the tube was taken out after ten days. There were no subsequent signs or symptoms of abscess, nor has there been any recurrence of appendi-

citis symptoms nor any intra-abdominal trouble of any kind in the years that have lapsed since the operation.

I have often dealt with abscesses consequent on appendicitis in this manner, and have been surprised to note how completely this plan of utilizing suction and chemotaxis has removed every vestige of infection in and about the appendix, and to observe how free patients thus operated on have remained, so far as any postoperative complications are concerned.

Much less frequently it has been found, after opening the abdomen and peritoneal cavity itself in the usual manner, that large appendical abscesses deeply situated could not be opened and drained safely in the ordinary transabdominal manner; that is, it could not be done without extensive contamination of the general peritoneum. Therefore, in such cases a very large cigaret drain with a protruding tuft of gauze was placed on the abscess, the abdominal wound being closed around the distal end of the tube. It has been the almost invariable rule that rupture of the abscess has occurred within forty-eight hours, but not, of course, until the canal established about the tube was sealed off by peritoneal adhesions. Thus, a transabdominal but to all purposes extraperitoneal avenue of drainage was constructed. It seems clear enough that adhesions and exudate about the inner end of the tube soften as the result of the dynamic effect of pressure, suction and chemotaxis focalizing the infection about the inner end of the tube.

In cases of acute appendicitis with a definite resisting mass in the right groin, prudence directs that the flank incision be made cautiously until the peritoneum is reached. If an abscess is opened before the peritoneum is reached, it will of course be very easy to provide ample and safe drainage. If, however, the peritoneum is found to be intact and movable over the underlying mass, the plan of peeling the peritoneum loose from

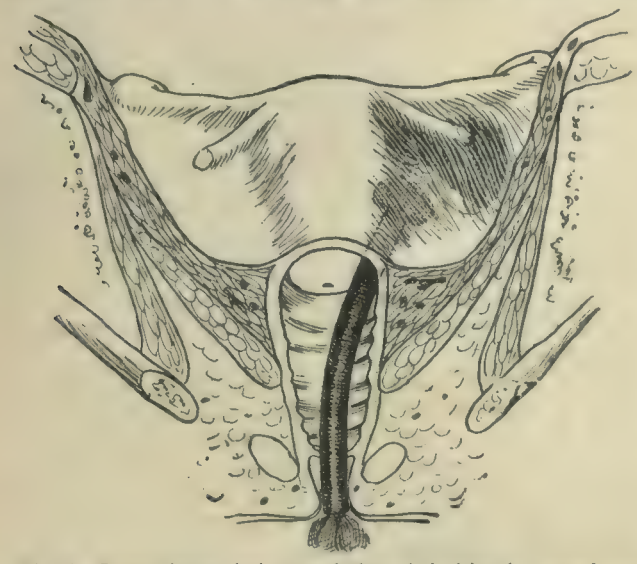


Fig. 3.—Large cigaret drain passed through incision in vagtnal vault for purpose of inducing rupture of a high pelvic abscess.

the muscular abdominal wall and seeking a low point of puncture has much to recommend it. In such cases, after the peritoneum has been reached, a thorough exploration with the gloved finger should be made to determine whether a true abscess exists or whether the mass consists merely of the enlarged appendix, clumps of omentum and exudate. If no well defined fluctuating abscess is palpable through the intact peritoneum, the abdominal cavity should, of course, be entered and the appendix removed. If, however, an abscess is felt under the intact peritoneum, there is excellent reason for avoiding entrance into the free peritoneal cavity. In such an instance the abscess can be punctured low with the gloved finger and drained



Fig. 4.—Pelvic abscess in position favorable for vaginal puncture as distinguished from abscess situated high and difficult of access, as in Figure 5.

through the space between the peritoneum and musculature. This offers an avenue of ample and safe drainage. If, however, the low puncture cannot be made without considerable risk of contamination of the general peritoneal cavity, then the tampon of gauze and the drainage tube introduced deeply alongside or under the abscess will induce spontaneous rupture with safe drainage in practically every case.

Rather extensive observation has shown, moreover, that in cases presenting difficulty in determining whether or not abscess really existed, ample seropurulent drainage has been attended or followed by disappearance of the mass and complete recovery of the patient. Therefore, in view of the relief afforded by the suction drain in such cases of doubt, the wisdom of opening up such a large mass and searching for the appendix in late acute or subacute cases may be doubted. This, however, does not imply that the appendix should not be removed in practically every case that is seen early enough.

It has transpired in my experience that the abdomen has been opened for the removal of pus tubes or confluent salpingo-oophoritis, whereas the principal seat of pus proved to be external to the peritoneum; that is, the intra-abdominal extraperitoneal pelvic abscess was situated so high up in the pelvis as not to admit of easy diagnosis by bimanual abdominal and vaginal examination. Such an abscess may occur unassociated with marked infection of the tube and ovary. An abscess so situated cannot always readily be reached through a vaginal puncture, and the folly of opening intra-abdominally such an abscess filled with hot pus at the time of the abdominal operation is, or should be, generally appreciated. The employment of the large

cigaret drain with the gauze tampon at the inner end will militate strongly on the side of safety; for, if the large rubber tube filled with gauze is placed against the intra-abdominal side of the peritoneum covering the pelvic abscess, the outer end of the tube projecting from the ventral wound, a deep well made up of protecting adhesions will quickly form about the tube, and as a rule within a day or two the abscess will rupture spontaneously and discharge through the walled off canal without contamination of the general peritoneum. It should be admitted that if the tubes and ovaries are definitely infected and are not removed at the time of the exploration because of the danger of rupture of the abscess, it may occasionally be necessary after the abscess has cleared up to reopen the abdominal wound for the removal of the infected adnexa. Certainly, this is not brilliant surgery; but brilliance in surgery may be said to belong to another day, and many good surgeons have expressed abomination of the word brillance as applied to their work.

The procedure described may be said to make for a tedious convalescence. That is true, and a tedious convalescence is a dull affair. It is much less brilliant than a funeral, but more satisfactory to the patient and surgeon. There are, no doubt, some who will look on the proposal given as one of atrocious demerit; but among these there will hardly be any who have had extensive experience with the plan.

A few times in my experience when attempts have been made to reach a pelvic abscess through a vaginal puncture it has appeared that further dissection about the uterus might result in a perforation of the pelvic peritoneum, and in such instances the tampon tube has been passed into the pelvic cellular tissue through the wound in the vaginal vault with the view of awaiting spontaneous rupture as the result of the dynamic effect of pressure, suction and chemotaxis. The rupture has almost invariably occurred after a few hours with ample drainage and eventual complete cure, except in cases of

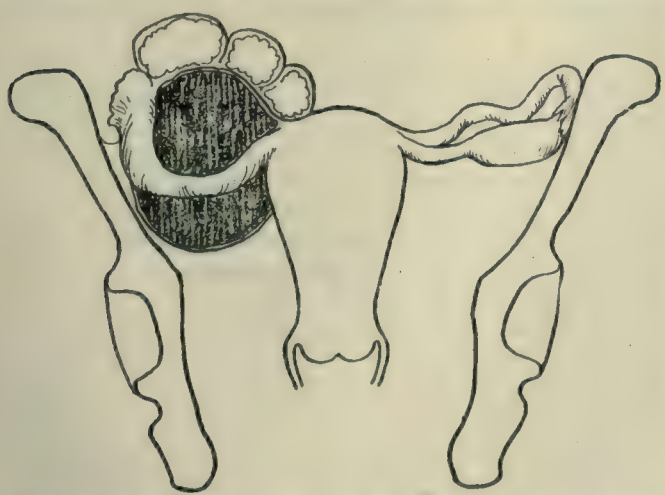


Fig. 5.—Pelvic abscess situated high up in the broad ligament; often difficult to open safely by vaginal puncture, unless quite large.

pelvic abscess attended with pyosalpinx or other associated pathologic changes, in such instances it being necessary later to remove the infected uterine adnexa through the abdomen. Perhaps many surgeons have made use of the procedure here described. They are presented for the reason that they are not generally employed in the relatively small percentage of cases suitable for their application.

In 1921, Ochsner [1] reported a case of abscess of the pancreas, interesting in this connection:

A woman, aged 48, with symptoms of ulcer of the greater curvature of the stomach, which later proved to be malignant, was subjected to an exploratory laparotomy which demonstrated an indurated mass 5 cm. in diameter in the posterior wall of the stomach attached to the tail of the pancreas, which was swollen to the size of an orange about 10 cm. in diameter. This swelling was congested and contained fluid. Evidently

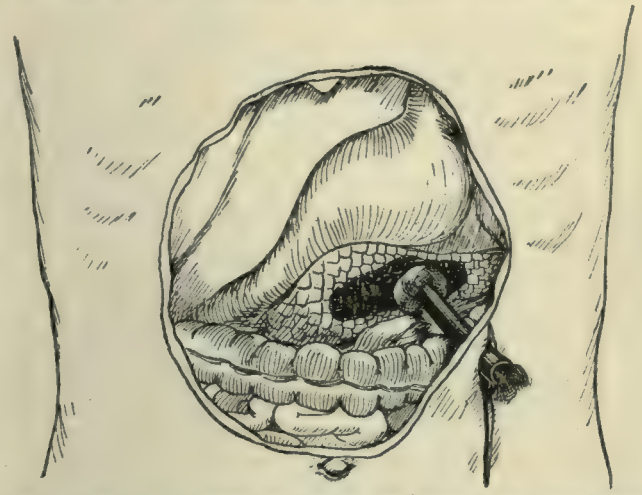


Fig. 6.—Postponed rupture of abscess of pancreas; large cigaret drain passed down to abscess and abdomen closed; spontaneous rupture occurred a few hours later, after protective adhesions had formed about the tube. (Case of Dr. A. J. Ochsner.)

an abscess had formed in the tail of the pancreas from an infection originating in the perforated gastric ulcer.

In order to determine the condition more perfectly, an opening was torn in the transverse mesocolon, and the abscess was found strongly adherent to the posterior wall of the stomach, while the posterior wall of the pancreas was quite free. Great care was exercised in the manipulation of the pancreas not to rupture the abscess. An incision was then made in the left flank, immediately below the last rib, 5 cm. long, and a pair of forceps was passed forward, guided by one hand, in the abdominal cavity to a point behind the pancreas. The blades of the forceps were spread widely open in order to establish a broad passage. The space behind the pancreas was then loosely packed with gauze, in the middle of which was placed a large rubber drainage tube. The gauze and the drainage tube were passed out of the wound in the flank, and two cigaret drains were added and carefully placed behind the pancreas. The tear in the mesocolon was then repaired, and the abdominal wound was closed. Five days after the operation the abscess broke spontaneously, and a large amount of thick pus escaped. The gauze and the cigaret drains were removed gradually. The rubber tube was left in place for two weeks, when the discharge had been greatly reduced. The tube was then removed, and the wound healed in two more weeks.

1. Ochsner, A. J.: Paper read before American Surgical Association, Toronto, 1921.

Ossification of Arteries.—Ossification of the arteries probably occurs in about 6 per cent. of the vessels of the extremities which show severe arterial degeneration. It is more than twice as frequent in these vessels as in the aorta and cardiac valves. Ossification of the arteries takes place usually in the medial coat, though occasionally in the intima also. It follows medial calcification with or without endarteritis, but is most common where the two are combined. It is usually not associated with cartilage, but is the result of metaplasia of fibroblasts of the adjacent granulations as they impinge on the calcific plaques.—L. C. Knox, *Proc. New York Path. Soc.* **22**:115 (Jan.-May) 1922.

CLINICAL EXPERIENCE WITH KOLMER COMPLEMENT FIXATION TEST FOR SYPHILIS *

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More than fifteen years has elapsed since Wassermann and his collaborators first published their epochal work on the complement fixation test; since then no biologic test has received a more searching analysis. Aside from the volumes written on its original technic, numerous attempts at its refinement, with varying success, have been made (Noguchi, Hecht-Weinberg, Bauer modifications, etc.). Today no one questions the value of its aid in the diagnosis of syphilis. However, a considerable percentage of physicians still continue to regard this test with some degree of suspicion, and perhaps properly so, since reports on the same serum, when examined in different laboratories, are very often contradictory. This discrepancy may result from the carelessness or inexperience of the serologist, or it may be due to the fact that almost every serologist has introduced into the technic minor changes of his own. This has led to a marked diversity of opinion on almost every step of the test, a fact well known and deplored by all syphilologists. Because of this, the need for a standardized technic becomes at once apparent. With a standardized technic that is both specific and more sensitive than the older tests, we would possess a more reliable aid, not only in the diagnosis but likewise in the treatment of syphilis. A complement fixation test that would give no false positives, and fewer false negatives, would be a decided step forward.

With this end in view, Kolmer began an intensive study of every phase of the complement fixation test, requiring almost six years to complete. In January, 1922, he [1] published his final results, claiming for his new technic practical specificity, increased sensitiveness and, from the laboratory point of view economy, accuracy and simplicity of performance. Almost three years has elapsed since Kolmer's technic was introduced into our clinic. Its merits from a clinical point of view were discussed by Schamberg and Klauder [2] in a previous paper from this clinic and from private practice.

Since this publication, four other papers on the Kolmer test have appeared, and there has been a remarkable concordance of opinion among all of the writers. It is a significant fact that although all of them credit the new test with being distinctly more sensitive than the older methods, not a single instance of a false positive has been observed by any of them.

Shivers [3] employed the Kolmer test in 320 cases, and expressed the opinion that "the new method marks a distinct and valuable advance in the serum diagnosis of syphilis, being much more sensitive and at the same time yielding no falsely positive reactions."

Harper and Curtis [4] tried the Kolmer test in 120 cases, and they fully corroborate the clinical findings of Schamberg and Klauder. They write: "We regard the Kolmer modification of the Wassermann test as a most important advance, and one calculated to shed added light on the detection of obscure syphilis and in the ultimate determination of the factors of treatment."

Kilduffe [5] reports the results of a comparative study of 1,014 serums with the Kolmer test and the older routine method, and concludes that the Kolmer method possesses greater delicacy, flexibility and elasticity, and permits of quantitative reading. He did not observe any nonspecific reactions. Kilduffe concludes that Kolmer's method presents by far the most acceptable technic yet proposed for adoption as a standard method.

Palmer and Gibb [6] report on the use of Kolmer's test in 329 patients, strongly commend it, and conclude that it shows greater sensitivity and specificity and gives fewer anticomplimentary reactions.

The opinions hereafter expressed are based on a study of the histories of more than 400 syphilitic patients on whom more than 4,000 tests were performed.

From the standpoint of the syphilologist, the value of a complement fixation test depends, in the main, on two factors: (1) specificity (specific in the sense that it must indicate the presence or absence of syphilis, since it is not a specific test in the biologic sense), which is of primary importance, and (2) sensitiveness. The latter is particularly of value for the aid it may give in the early diagnosis of a chancre, in endosyphilis and in the control of treatment, as it is on this test alone that the syphilologist must later depend for his information as to the efficacy of treatment.

SPECIFICITY

The recognition of the specificity of a test for syphilis depends, on the one hand, on a positive outcome in the presence of the disease, (corroboration by the finding of *Spirochaeta pallida* or the presence of unquestionable clinical phenomena), and, on the other hand, on its negative outcome in the absence of the disease in question.

It is generally known that the original Wassermann test could not be considered absolutely specific for syphilis, since positive results were obtained in certain other disease processes and that, more important still, negative results occurred in the presence of known syphilis. With the older technic, positive reactions in the presence of disease processes other than syphilis were, however, rare (less than 1 per cent.); [3] but with the new technic our records tend to indicate that this does not occur, and in this experience we are confirmed by other observers. With respect to this point, Case 1 is cited because one of the few conditions in which positive reactions occur with the old technic is nodular leprosy:

CASE 1.—V. C., a white woman, aged 38, born in Italy, whose condition was diagnosed as nodular leprosy, the diagnosis being confirmed by microscopic examination, was referred to the genito-urinary clinic of another hospital for antisyphilitic treatment because of a 4 plus Wassermann reaction nine months before we saw her. During that period she received eight intravenous injections of neo-arsphenamin and fourteen intramuscular injections of mercuric salicylate. The treatment had no effect on the numerous leprous nodules or on four Wassermann tests at various times during this

* From the Research Institute of Cutaneous Medicine, and from the Polyclinic Hospital.

1. Kolmer, J. A.: Am. J. Syph. **6**: 64, 74, 82 (Jan.) 1922.
2. Schamberg, J. F., and Klauder, J. V.: M. Clinics N. America **5**: 667 (Nov.) 1921.
3. Shivers, C. H. D.: The Clinical Value of the Kolmer Complement Fixation Test for Syphilis, Arch. Dermat. & Syph. **6**: 344 (Sept.) 1922.
4. Harper, J., and Curtis, L. F.: The Kolmer Modification of the Wassermann Test, U. S. Naval M. Bull., November, 1922, p. 757.
5. Kilduffe, R. A.: The Kolmer Modification of the Wassermann Reaction, Arch. Dermat. & Syph. **6**: 709 (Dec.) 1922.
6. Palmer, L. J., and Gibb, W. E.: Experience with the Kolmer Quantitative Complement Fixation Test for Syphilis, Arch. Dermat. & Syph. **6**: 739 (Dec.) 1922.

treatment, which were each 4 plus. When first seen by us, in November, 1921, the patient's husband and five robust children were serologically tested, with the old technic, with negative results. A Kolmer test at this time on the patient's blood was negative. Dec. 20, 1921, the blood of the patient and of her new-born sixth child were negative with the Kolmer test.

When we come to study the question of negative reactions in known syphilitics, we find that they are fairly common, even with the most careful performance of the test. It must be recognized, of course, that all biologic tests, even when well performed, have their limitations, and the Wassermann test is no exception to the rule. Craig[7] agrees with most observers in estimating that fully 10 per cent. in primary, 5 per cent. in secondary and 12 per cent. in tertiary syphilis yield negative results with the Wassermann test as ordinarily performed. This may not be so important in the primary as it is in the secondary and tertiary stages, because in the first instance we possess the aid of the dark-field illuminator. These negatives are due to a lack of sensitiveness on the part of the old technic. On the other hand, the results obtained with the new technic are astonishing. In our series, eighty-four patients presented secondary, sixty-three tertiary, twenty-eight neurosyphilitic and twelve congenitally syphilitic lesions, diagnosed clinically and therapeutically; there were twelve primary lesions, the duration of each of which was more than fourteen days. All of these patients gave positive reactions by the Kolmer method.

SENSITIVENESS

No matter how sensitive a biologic test may be, its outcome depends on the presence of the reacting substances necessary to it. No complement fixation test can always yield positive results in the presence of the particular disease sought for, and this is just as true in syphilis as it is in tuberculosis, gonorrhea or sporotrichosis. The reason for this is that the complement fixing substance termed "reagin" by Neisser is not present at all times during the course of the infection. Furthermore, in syphilis at least, it may be present in one of the body fluids (spinal fluid) and not in another (blood). Again, as is well known, the disease may be and often is well on its way to the secondary stage before reagin apparently appears in the blood (only about 40 per cent. of the cases are positive in the first week of primary syphilis). Craig and others have likewise shown that, during the course of syphilis, reagin varies in amount from day to day in an inexplicable manner, and may even entirely disappear for from twenty-four to seventy-two hours after the ingestion of large amounts of alcohol. It is possible that this negativity may occur as a result of other as yet unknown influences. As a matter of fact, all syphilologists know that this apparent absence of reagin (which is followed by a reappearance at a variable period later) is often evident after a few treatments with antisyphilitic drugs, particularly the organic arsenicals. The latter fact should be emphasized, as an inexperienced physician may be misled into believing that cure has taken place. If all physicians would recognize that, once the Wassermann test has become positive in primary or secondary syphilitics, an adequate and fairly definite amount of treatment is required to reverse it and hold it negative for at least a two year period, then the pathologic changes of the tertiary and endosyphilitic phases of syphilis would be largely avoided; after these changes have taken place, no amount of treatment will remove the sclerosed structures following chronic syphilitic infiltrates. It is possible that some of the negative reactions in known syphilitics are so either because there is an actual absence of reagin, or because it is present in too small a quantity to be detected by the older and less delicate method. Our studies with the new test incline us to the belief that, in most instances, the latter is the correct explanation. In virtually all cases, we have found the new test far more sensitive than the older three antigen technic.

Schamberg and Klauder, Shivers, Harper and Curtis, Kilduffe, and Palmer and Gibb have already shown that with the new technic the complement fixation reaction becomes positive earlier in primary syphilis than it does with the old test. In the present series, the number of primary lesions seen early (before the tenth day) was too small to form the basis for the expression of an opinion. However, in a number of the primary lesions, the amount of reagin detected was greater with the new technic than with the older three antigen tests. The value of this is apparent, as many primary lesions are negative to the dark-field illuminator as the result of previous local treatment which has caused destruction of the surface spirochetes, and generally negative serologically because, as has already been stated, the time of appearance of reagin in the blood varies with the individual and the sensitiveness of the test.

The quantitative character of the new test enabled us better to follow the gradual diminution in reagin over a much longer period of time during the course of treatment than has heretofore been possible. Since it is in large part on the patient's serologic status that we depend for our knowledge of the efficacy of treatment, this fact alone gives the test a value not to be underestimated. In patients whose Wassermann reaction was persistently positive with the older technic, it was likewise so with the Kolmer test and usually in higher degree; many negative reactions after treatment with the old test were still positive with the new test.

The sensitiveness of the Kolmer test was particularly of value in the patients with active tertiary lesions. In some of these, the older three antigen technic gave negative reactions, whereas, with the new test, the reaction was positive. Some of these patients had had one or more negative reports from other laboratories, with resultant improper diagnosis and treatment. Only recently, we were again enabled to confirm our clinical diagnosis in a man with a nodular syphilid about the mouth, of a year and a half's duration, who had been treated during that time with salves, caustics and the roentgen ray because his Wassermann test had been negative.

In patients with a recurrent positive Wassermann reaction after treatment, we have observed that the reappearance of reagin is detected sooner by the new quantitative test. In common with other syphilologists, we have always regarded a single report of a weakly positive reaction as inconclusive, particularly in asymptomatic cases. In many of these symptomatic and asypmtomatic endosyphilitics, a higher reading with the new technic gave us greater assurance of the correctness of the diagnosis.

Space will not permit of the detailed report of many cases. A few selected from a large number will suffice to demonstrate the superior sensitiveness of the Kolmer test.

7. Craig, C. F.: Variations in the Strength of the Wassermann Reaction in Untreated Syphilitic Infections, J. A. M. A. **62**: 1232 (April 18) 1914.

ILLUSTRATIVE CASES

CASE 2.—R. P., a man, aged 45, contracted syphilis twenty years ago. He had inadequate and indifferent treatment. The pupils were sluggish and unequal; he was markedly nervous, and had a swelling in the metatarsal bones of one foot. He had recently had three negative blood Wassermann reactions in three different cities. As a result, no treatment was administered. A repetition of the test with the alcoholic extract of syphilitic liver, the acetone-insoluble lipoids and the cholesterolized antigen by Dr. Kolmer was likewise negative. With the Kolmer test, however, it was 4-+, 2+, —, —, —, with the graded strengths of serum.

The spinal fluid was likewise negative with the old three antigen test, but with the Kolmer quantitative test it was 4+, 3+, —, —, —.

Intravenous treatment with neo-arsphenamin was carried out with the resultant disappearance of the swelling of the metatarsal bones and a general improvement in the patient's nervous and physical condition.

This case illustrates in a striking manner the importance of employing a sufficiently sensitive test.

CASE 3.—G. C., an old person with neurosyphilis, presented fixation of the pupils and a negative Wassermann reaction with the alcoholic extract of syphilitic liver and acetone-insoluble lipoids, and negative with the cholesterolized antigen, but with delayed hemolysis. The Kolmer quantitative test was 4+, 4+, 3+, —, —. The contrast here is pronounced.

CASE 4.—J. H. was an unrecognized neurosyphilitic patient with fixed pupils. The old three antigen test negative. The Kolmer test was 4+, 3+, 3+, —, —. Without the latter test, treatment might have been suspended.

CONCLUSIONS

1. The Kolmer complement fixation test is distinctly more sensitive than the routine three antigen method.

2. With its employment, the serums of syphilitic subjects are slower in becoming negative, thus insuring more adequate treatment. The test detects relapsing positives at an earlier period than the older method.

3. The quantitative character of the test enables the physician to determine more accurately the serologic status of the patient, and to gage the influence of treatment.

4. In a fairly large experience we have never observed a false positive by the Kolmer test.

5. We regard the Kolmer test as an invaluable advance in the serologic study of syphilis.

1922 Spruce Street—1714 Pine Street.

Vitamins.—Have you heard the story of McCollum's calves? It reads like a fairly tale. In the year 1906, three groups of heifer calves were selected and placed on diets chemically equal: the fat, protein, and carbohydrate contents of the three were identical as were, consequently, the caloric values. One group was fed on corn, another on oats, and the third on wheat—the complete plant, stalk, leaves, and kernel being used in each case. The calves grew and thrived and only minor differences were noted until they were grown and produced young. The cows that had been fed on a wheat diet from babyhood produced calves that were born dead and weighed only 40 to 50 pounds, while a normal calf at birth weighs from 75 to 80 pounds. The oat-fed cows brought forth calves practically normal in weight, but these too were born dead. The corn-fed cows produced calves that were normal in weight and that were on their feet within a few hours. Considered from a casual point of view, these results would seem to indicate the superiority of corn above other cereals. The real point of advantage lay in the larger amount of green leaves and stalk in the corn diet, rather than in the grain itself.—Moore, Nutrition of Mother and Child, J. B. Lippincott Company, 1923.

TRANSFUSION IN PURPURA HEMORRHAGICA

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During the last few months the blood service at the Boston City Hospital has dealt with a number of cases of purpura hemorrhagica of a severe and acute type. Our methods of treatment have probably been about the same as those of other clinics, but a survey of the literature would seem to indicate that our use of transfusions has been more persistent and vigorous than is common elsewhere. Certain determining factors bearing on this subject, while they are common knowledge among students of the hemorrhagic diseases, still lack the universal recognition that the urgency of the disease demands. The object of this brief report is to emphasize these facts and to illustrate their bearing on the subject of transfusion.

DETERMINING FACTORS

1. Hemorrhagic purpura is the result of a numerical decrease of blood platelets. It makes no difference whether we are dealing with a primary or an idiopathic case, whether the condition is secondary to infection, or whether it is part of a primary general aphasia of the marrow or a replacement aplasia, as in some leukemias. If platelets are sufficiently low, the hemorrhagic symptoms will be present, intermingled with those of the causative condition, just as lack of platelets will be evident in the blood picture, however complicated it may be. There is even experimental evidence that when the platelets are overpromptly destroyed after entering the blood stream, the same phenomena will occur.[1] One may venture a prophecy that the name "purpura hemorrhagica" will some day disappear, or be relegated to that of a symptom-group resulting from thrombopenia.

2. The life of a platelet in the blood stream is only a few days—certainly not more than a week.

3. There is a strong tendency toward recovery, or at least toward remission. Of course, this statement does not apply to the thrombopenia of aplastic anemia or of acute leukemia, and in the secondary group of purpuras the tendency and duration are more or less dependent on the underlying infection. But most of the so-called idiopathic cases of purpura hemorrhagica do tend to recovery, although the patients are apt to suffer intermittent relapses, the later attacks being sometimes severer, but commonly milder than the earlier ones.

OBJECTS OF TRANSFUSION

The objects of transfusion are, as in all hemorrhagic diatheses, twofold: First, to mitigate the anemia. This is not very important in the disease under consideration, except in severe and advanced cases. In straight purpura hemorrhagica there is no trouble with the red cell forming function of the marrow, and once the bleeding has ceased, recovery from anemia is usually prompt and satisfactory. The second and more important object of transfusion is to control the bleeding. This implies supplying enough platelets to permit natural hemostasis to occur.

The primary object of transfusion being to increase the number of platelets in the patient's blood, the question arises as to how largely the count is affected by this procedure. In our experience, a single transfusion

1. Lee, R. I., and Robertson, O. H.: J. M. Res. **33**: 323 (Jan.) 1916.

seldom increases the patient's platelet count by more than 20,000. Obviously, it is desirable to give large transfusions. The patients are mostly young persons, with normal hearts, and there is little danger from overtransfusion. They can safely and advantageously receive as much blood as the donors can safely supply. We do not, therefore, advise small transfusions.

For the same reason we feel strongly that citrated blood is greatly inferior, in this disease at least, to whole, unmodified blood. In citrate transfusions, large numbers of platelets stick to the gauze filter and to the glassware, as can easily be proved by staining scrapings from the latter. To show how considerable the loss is, 0.1 per cent. of sodium citrate was added to the blood of a patient whose platelet count was 102,000. After a half hour the citrated blood contained only 18,000 platelets. The loss is very much less if paraffined tubes are used. For example, a donor's platelets were 280,000 immediately before a transfusion by Kimpton's method. A count of the platelets in a small quantity of blood left in the tube at the end of operation gave 220,000. I am aware of the paradoxical fact that, while citrate is used to prevent coagulation of blood outside the body, its action when injected is to shorten coagulation time, and that it has been used clinically for this purpose; but this has little to do with purpura hemorrhagica, in which coagulation time is not impaired. Indeed, there is reason to believe that citrate injections act by destroying platelets, thereby releasing substances that assist coagulation.[2] I would not go so far as to say that citrate transfusions should never be used in the disease under consideration—some good observers have had success with them. But both theory and experience seem to point unmistakably to the superiority of other methods when they are available. Perhaps direct, arm-to-arm transfusion by the original Crile technic has theoretical advantages, but for practical uses paraffined tubes are, of course, preferable. All of our transfusions have been done by the Kimpton-Brown method.

Another point is that usually more than one transfusion will be needed. Indeed, the first one may have no visible effect. A brief consideration of the facts already noted readily explains this. Hemorrhages generally begin when the platelets have fallen to some fifty or seventy-five thousand. By the time the patient comes to the table for this first transfusion, they may have fallen so far below this number that a single transfusion, however large and however efficiently performed, will not put them back to the point at which bleeding will be controlled. Several may be needed and, in view of the short life of the platelet, the intervals must be brief—not more than forty-eight hours. Even when the hemorrhages have been controlled, there is no certainty that they will not recur. If they do, transfusion should be repeated at once without reference to the presence or absence of anemia. Nothing is gained by delay, especially if the platelet count shows steady diminution; control will be more difficult each day one waits. Only boldness and persistence in transfusing will save life in severe cases. One cannot begin to feel safe until the patient has gone on without bleeding for a period considerably beyond the life of a platelet—say, ten days.

Let me add that the platelet count is not a very good criterion. Platelet counting is at best inaccurate. After cases have gone on for a month or so, they are apt not to run true to type, and we have been much perplexed by a discrepancy between our counts and our stained smears. The former may show more than 100,000 platelets, and yet they may be almost absent from the smears. The presence or absence of bleeding from the nose and gums is a more reliable guide.

2. Neuhof, H., and Hirshfeld, S.: Ann. Surg. 76:1 (July) 1922.

REPORT OF ILLUSTRATIVE CASES

CASE 1.—F. C., a man, aged 60, seen in consultation with Dr. F. H. Hubbard of Taunton, had been bleeding three weeks from the nose and gums, and the skin showed small purpuric spots and a few deeper ecchymoses. The bleeding time was fifteen minutes; no platelets were recognizable in the smears. Six days later, transfusion of 500 c.c. was done by the paraffined tube method. Next day the patient was admitted to the City Hospital, with moderate anemia and a platelet count of 44,000, still bleeding slightly from the nose. After an interval of five days, a second transfusion was done by Dr. Kimpton, again without much benefit. More or less oozing continued for a week, when a third transfusion (600 c.c.) was done. Bleeding then stopped completely, but in six days a fourth transfusion (500 c.c.) was required. The platelets fluctuated from 28,000 to 44,000 for the next fortnight, and, as might be expected, there was a little bleeding from time to time. Then the platelets began to rise steadily, and the hemorrhagic tendency ceased. Now, eleven months from the onset, the patient is apparently well. His last platelet count was 232,000, and the bleeding-time two and one-half minutes. Smears show plenty of platelets. He works steadily as a millwright, and though he often gets scratches and slight injuries, there is no tendency to abnormal bleeding.

CASE 2.—L. C., a boy, aged 8, had had nosebleed for five days. There were also skin hemorrhages of the two types almost always seen in this disease—fine, superficial, purpuric spots, and larger and deeper ecchymoses, the latter probably resulting from slight injuries. The platelets were 70,000, and there was moderately severe secondary anemia, with leukocytosis. The nosebleed stopped immediately after a transfusion of 450 c.c. by Dr. Kimpton. Two days later, with a platelet count of 76,000, there was a nosebleed, and on the fourth day another, so severe as to require a second transfusion (550 c.c). The next day the platelet count was 240,000, though few were visible in the smears. This sudden increase, far beyond what could have resulted from transfusion, can only mean a sudden resumption of the function of platelet making by the marrow. Needless to say, there were no further hemorrhages, and he was shortly discharged with a count of 348,000, and a smear showing "loads of platelets."

CASE 3.—A. M., a girl, aged 17, had bled from the nose and gums for three weeks. The face and ankles were puffy, and there were numerous ecchymoses and purpuric spots. There was rather severe secondary anemia; the platelets numbered 58,000; the bleeding time was twenty-two minutes. Next day transfusion (600 c.c.) was done by Dr. Loder. The platelets rose to 80,000, but the bleeding continued, from the transfusion wound as well as from the nose. In forty-eight hours a second transfusion (500 c.c.) was done, with little benefit. The third and fourth transfusions, of 500 and 600 c.c., respectively, were done after intervals of three days and the fifth (550 c.c.), after two days. Two days more and again she had a nosebleed and vomited some bright blood, the platelets being 52,000. Five days after the fifth transfusion they had fallen to 34,000, and hemorrhages of increasing severity required a sixth transfusion of 500 c.c. after an interval of ten days. The platelets then increased to 112,000, and there were no more hemorrhages. In the meantime, however, she developed acute nephritis and pericarditis with effusion. About a month after the last transfusion there was vomiting and intense abdominal pain, with tenderness and rigidity in the lower right abdomen. In view of her serious condition and the existence of hemorrhagic disease, operation was deferred and the acute symptoms soon cleared up. She continued, however, to have a septic temperature, and finally died nearly two months after the last transfusion. Necropsy showed gangrenous appendicitis, with a large abscess cavity, and fibrinopurulent pericarditis. The red marrow showed a normal number of megakaryocytes.

COMMENT

These three cases have been selected because they illustrate what may be expected of bold and persistent transfusion in typical acute cases of a distinctly desperate type. Not all fall into this category. We have had one patient who recovered promptly and completely, though perhaps not permanently, after a single transfusion. Another was a chronic case, which ran quite a different course. Each transfusion sufficed to prevent bleeding for several weeks. After four or five recurrences at intervals corresponding to the menses, the tendency seemed to cease, and she was discharged apparently well. Some of these chronic and persistent cases, after a while, become quite bizarre and atypical. What, for example, can be said of a boy, aged 2, who developed perfectly typical purpura hemorrhagica while under treatment for diphtheria in the contagious department? After several transfusions his bleeding was controlled, only to relapse repeatedly. After nineteen months, during which Dr. Kimpton did twenty-eight transfusions and the family's stock of patience and money was exhausted, he died. During the greater part of his illness the platelets were above normal, sometimes over a million. The coagulation time was never more than slightly increased. Such cases are hard to explain, and leave one with the feeling that there is much to be learned about hemorrhagic diseases.

912 Beacon Street.

PERIRENAL TUMORS

REPORT OF CASE

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In defining paranephritic tumors, Lecene [1] states that "this term applies to such retroperitoneal neoplasms as seem to have intimate anatomic relations with an otherwise normal kidney and which appear to have developed at the expense of either the fibrous capsule or the cellulo-adipose covering of the kidney."

REPORT OF CASE

History.—Mrs. B. K., aged 43, admitted to Los Angeles County Hospital, Oct. 4, 1921, complained of a large tumor mass in the right kidney region, pain, constipation, slight nocturia, nausea and vomiting, and loss of weight and strength. About March 1, 1921, the patient first noticed dizzy spells and vomiting, which were severe at times. This kept up until about the first of August, when she noticed a mass forming in the right of the abdomen, which rapidly enlarged into the present large palpable tumor. The family history was irrelevant.

Examination.—There were no abnormalities excepting in the abdomen, the upper two thirds of the right half being filled with a firm, bulging mass, irregular in outline, extending 1 inch to the left of the umbilicus, and 2 inches below the costal margin. The mass moved on respiration, and was only slightly tender. There was no history of hematuria, infection or other urinary disturbance.

October 6, the cystoscope was introduced and both ureters were catheterized. The bladder was normal but, owing perhaps to the pernicious and constant vomiting and inability to take water, there was practically no urine. Doubtless, also, there was reflex inhibition of renal function as regards dye output, for no phenolsulphonephthalein was excreted in fifteen minutes from either side, and there was no bladder leakage. The right pyelogram disclosed a practically normal pelvis, displaced mesially and partially overlying the spine. A good pelvic outline was obtained, and normal major and minor calices were well shown. There was no kidney outline shown on a simple film.

October 8, a combined phenolsulphonephthalein test made in the ward showed 45 per cent. in the first half hour and 20 per cent. in the second half hour. October 10, the ureters were again catheterized. The output of phenolsulphonephthalein in twenty minutes was 2.5 per cent. from the right side; there was some urine, but no phenolsulphonephthalein from the left side, and no bladder leakage of dye. The patient's urinary function was undoubtedly reflexly inhibited from the stress and discomfort of the cystoscopic procedure, since there was no dye output on the sixth and almost none on the tenth; but there was normal urine and a high output on the eighth when taken in the ward without cystoscopy.

A normal but displaced pyelogram with a tumor of such enormous size was evidence that the growth was cerainly not primary in the kidney itself, as no growth of this size could possibly have its origin and principal development in the kidney substance without marked filling defect in the kidney pelvis. The diagnosis made at that time was perirenal neoplasm, but further and more specific information as to its origin from a particular organ or tissue, and what organs were involved or invaded by its growth, could not be foretold, although it was evident from its rapid growth that the tumor was malignant.

Operation and Result.—I felt that an operation would subject the patient to very grave immediate danger, and that the prognosis as to recurrence would be extremely bad if surgery was done, while a pancreatic or duodenal fistula was more than possible. Furthermore, nephrectomy might be necessary, and apparently the right kidney had quite as good a function as the other; so we felt that the case was inoperable. The patient, however, pleaded for an operation, and the internists who saw her thought she was entitled to her chance. She was, therefore, transferred to the general surgical ward and to the service of a member of the general surgical staff; October 22, she was operated on by Dr. A. B. Cooke, who reported that the operation presented no special difficulties. A right rectus incision was employed. When the abdomen was opened, it was apparent that the tumor was retroperitoneal. On account of its size and the dense adhesions present, the tumor was enucleated from its bed from the mesial side. The only untoward occurrence was a small injury to the vena cava at the junction of the renal vein, which was clamped and ligated in continuity. The patient left the operating room in excellent condition, only a few minutes more than one hour having been consumed in the entire procedure. Technically the operation was a transperitoneal nephrectomy.

The tumor weighed 8 pounds (3.6 kg.). The mass, when removed, resembled a kidney in outline. In order that the kidney itself might be seen, however, the mass had to be bisected, a reproduction of which is presented in the accompanying illustration. The kidney was examined by three pathologists, and proved to be a fibromyxosarcoma. At no point was the kidney, its fibrous capsule, or the ureter invaded. In addition to belonging in a rare class of neoplasms, the unique feature was the fact that the tumor was circumrenal, and the enormous mass symmetrically arranged around a normal kidney retained its typically reniform appearance.

The patient died on the twenty-second day after the operation.

Necropsy.—The anatomic diagnosis was: (1) compensatory hypertrophy of the left kidney; (2) dorsal decubitus of the left sacrum; (3) no metastases; (4) right suprarenal apparently not involved or invaded; (5) limited peritonitis involving the upper abdomen.

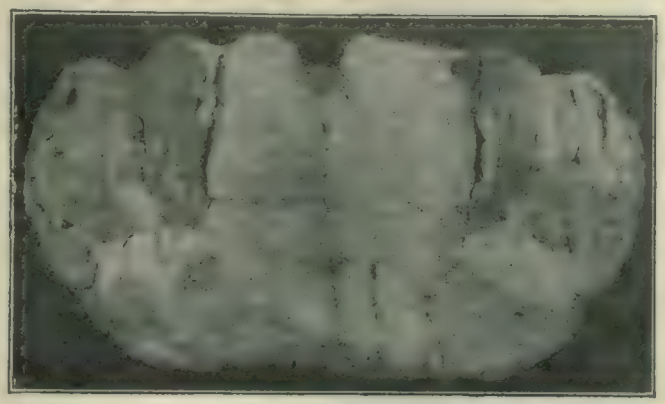
Chemical examination of the blood revealed, for each hundred cubic centimeters: sugar, 133 mg.; urea nitrogen, 17 mg.; preformed creatinin, 1.8 mg.

The specimen of the right kidney presented an oval tumor mass, 24 by 16 cm., having a slightly lobulated appearance.

1. Lecene, M. P.: Paranephritic Tumors, Tr. A. franç. de chir. **28**: 583, 1919.

On one surface the ureter and kidney pelvis were seen. The pelvis was about normal in size and shape, was not distorted, and the calices could be traced outward. The ureter was of normal size. Section through the mass showed it to possess a distinct capsule definitely outlined. The kidney was compressed anteroposteriorly, but there was no invasion or infiltration of the tumor into the kidney. Grossly, the capsule of the kidney appeared intact and the tumor mass completely surrounded it, except over the pelvis and ureter. The cortical portion of the kidney was distinct. The tumor proper was firm and of a dense white appearance, and in areas had a mucinous appearance. One area in the periphery, which was oval-shaped—10 by 6 cm.—was encapsulated, was softer than the remainder, and was of a gray, semitranslucent, mucinous appearance, with several cysts in it. The average diameter of the cysts was 1 cm. The cut surface of the tumor showed numerous interlacing fibers coursing throughout.

Microscopic examination of a section from the peripheral portion showed numerous fibroblasts, with hyperchromatic nuclei, few mitotic figures, and a great abundance of intercellular substance. A section from the encapsulated, grayish, translucent portion showed numerous spindle-shaped cells which varied in size, but on the whole were relatively large; also numerous round cells. The nuclei were hyperchromatic, the cytoplasm acidiphilic and nongranular. There were numerous mitotic figures in all phases. There was almost complete absence of intercellular substance. There were also myxomatous areas; the intercellular substance was not typically basophilic — probably myxomatous areas of degeneration. A section including the kidney and tumor showed some compression of the tubules, but no necroses or invasion. The kidney capsule was intact and distinct. Van Gieson's stains showed the cells to be of a fibroblastic nature. The diagnosis was: large spindle-cell fibroblastic sarcoma.



Tumor removed at operation.

COMMENT

Garceau,[2] in a complete review of the hospital records—necropsies and operations—for a period of ten years at both the Massachusetts General Hospital and the Boston City Hospital, found only one perirenal tumor—sarcoma. Gurlt,[3] in an analysis of 14,630 tumors at Vienna, found only one paranephritic tumor—sarcoma. Albarran and Imbert[4] compiled seventy-two cases from the literature during the period from 1862 to 1901; none were listed as personal cases by Albarran and Imbert. In 1897, Adami[5] compiled forty-two cases of retroperitoneal lipoma from the literature, classified in three groups: (1) definitely perirenal; (2) of doubtful origin; (3) arising from mesenteric fat. Recent data from the Mayo Clinic[6] are not available. Up to July, 1912, however, operation had been performed there in only eighty-three cases of malignant tumors of the kidney. No mention is made of perirenal neoplasms. Kidney tumors themselves are not as common as is generally supposed, but occur probably fifty times as frequently as paranephritic neoplasms.

Detwiler Building.

2. Garceau, Edgar: Tumors of the Kidney, New York, D. Appleton & Co., 1910.
3. Gurlt: Lancet **1**: 1275, 1909, quoted by Rolleston and Turner.
4. Albarran and Imbert: Renal Tumors, Paris, Masson & Cie, 1903.
5. Adami: Retroperitoneal and Perirenal Lipomata, Montreal M. J. **25**: 529 (Jan.) 1897; **25**: 620 (Feb.) 1897.
6. Braasch, W. F.: Clinical Data on Malignant Renal Tumors, J. A. M. A. **60**: 274 (Jan. 25) 1913.

Clinical Notes, Suggestions, and New Instruments

CEREBROSPINAL RHINORRHEA: REPORT OF CASE*

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Assistant Otolaryngologist, Misericordia Hospital; Clinical Assistant to Outpatient Nose and Throat Department, Jefferson Medical College Hospital

Cerebrospinal rhinorrhea is a rare affection, characterized by the escape of cerebrospinal fluid into the nose.

REPORT OF CASE

A woman, aged 40, single, engaged in housework, was seen, Jan. 5, 1922, after she had been treated three months for sinusitis. She was complaining of a persistent dripping of clear fluid from the left nostril for the preceding three months. The family history was negative with the exception that obesity ran in the family. The patient had always been very stout; the present weight was 241 pounds (109 kg.); otherwise the past history was negative. There was no history of any head injury.

The present condition began, Oct. 23, 1921. After a very hearty laughing attack, followed by a severe sneezing, the patient was aware of a clear, limpid fluid from the left nostril; associated with this there was a severe frontal headache, which extended to the vertex. The headache had been constantly present, and diminished somewhat when the flow increased. At the time of examination there was a continuous dripping of clear, limpid fluid from the left nostril. The quantity for one hour was 1½ ounces (45 c.c.). The fluid was clear, odorless, tasteless and without sediment, and gave a slightly alkaline reaction. The flow had always come from the left nostril, with the exception that when I firmly packed the left naris, it then came from the right side just as freely. At first the fluid would make the patient's handkerchiefs stiff on drying, but this condition lasted only during the first week. At present there was no alteration in the color or consistency of the handkerchief; when it was dried it was very soft.

The flow of fluid was greatly altered or increased by the position of the head. When the head was inclined forward, there was a marked increase in the flow; when the head was in the upright position, dropping of the fluid was less; when the head was tilted backward the fluid ran down the postnasal space into the throat, and was swallowed; from the frequent elevation of the thyroid cartilage in the act of swallowing, it would lead one to believe that the flow was profuse; when she lay in bed with the head hanging over the edge, face downward, there was a drop of fluid every two seconds. During the sleeping hours the flow continued the same as in the daytime: so much so that it necessitated the patient's either lying on her face or turning her face to one side. In the morning the pillow case was completely inundated, soft and stainless. The constant swallowing of this fluid at times had caused severe diarrhea. An unusual occurrence in this case—if the patient's statement was correct, and I think it was, in view of her intelligence—was that on three occasions, as she stated, the fluid escaped from her left ear, coming out in gushes for a short time. This occurred before she came under my care.

The flow of fluid also was increased when the patient worked hard, climbed steps and did any severe exercise, or

* Read before the Section on Otology and Laryngology of the College of Physicians of Philadelphia, Dec. 20, 1922.

when she became angered and excited. The patient carefully measured the quantity of fluid during the waking hours on several days; it amounted to 32½ ounces (960 c.c.) a day.

The external nose was straight; there was slight excoriation, and there were a few fissures about the left vestibule and the upper lip. The mucous membrane was congested in the right nasal fossa and markedly so in the left. The middle and inferior conchae in both nasal fossae were slightly hypertrophied. The nasal septum was sharply deviated to the right, and had a spur at the base anteriorly on the same side which touched the center of the concha nasalis inferioris. There was no evidence of any pus in the nasal chambers or postnasal space. The postnasal space was slightly congested, with an area of redness about the eustachian orifices; otherwise it was normal. The tonsils were of average size and were normal. Transillumination of the frontal sinuses revealed that they were rather large. The left maxillary antrums were slightly cloudy; the right sinus was normal. In carefully examining the nose on repeated occasions, I was unable to determine definitely where this fluid made its exit, but I think that it came from the posterior portion of the roof of the nose and not from the middle meatus.

The tympanic membrane of the left ear was intact, and there was apparently no opening in the superior wall of the external auditory canal.

The fluid that escaped from the left naris was clear, colorless, and without a sediment. The specific gravity was 1.006. It contained 36 cells per cubic millimeter; this number is higher than normal for spinal fluid, but the majority of the cells were epithelial cells and presumably from the nasal mucosa. The fluid contained traces of albumin and of globulin; the total was about 0.03 per cent., which is exactly the amount found in normal spinal fluid. There was a trace of dextrose, the quantity appearing to be identical with that found in normal spinal fluid. The chlorids amounted to 7.26 per cent., exactly as found in normal spinal fluid. The colloidal gold test yielded a 0000000000 reaction, as in normal spinal fluid. The quantitative Wassermann reaction was negative with serum in amounts of 0.1, 0.02, 0.004, 0.002 and 0.001 c.c. With cholesterinized antigen, alcoholic extract of syphilitic liver and acetone insoluble lipoids used as antigens, it was negative.

The general results of this analysis showed that the fluid had practically the identical composition of normal cerebrospinal fluid, and Dr. John A. Kolmer, who examined it, regarded it as such.

The patient's eyes apparently never gave her any trouble, but when first seen I referred her to Dr. L. Webster Fox for ophthalmoscopic examination. There was no prominence of the eyeballs, and no nystagmus; the pupils were normal in size and contour; they reacted to light and accommodation normally; there was no photophobia or lacrimation, and no paralysis of the ocular muscles. Jan. 9, 1922, there was a slight optic neuritis or what might be called a fulness of the optic nerve in the left eye due to a probable blocking of one of the accessory sinuses. January 10, however, there was marked improvement in the optic nerve sheath. The visual field was markedly contracted, January 9 and 10. After that date and on February 21, the fields were not pronouncedly contracted as in the preceding examinations. The distal vision was not impaired.

A thorough neurologic and mental examination was made by Dr. D. J. McCarthy, who reported no evidence of organic disease of the brain, although he was of the opinion that the headaches were suggestive of a localized low grade meningitis.

My own observation of this patient was that she was extremely nervous and easily excited to fits of anger; at times she became very morose, and confined herself to her room for indefinite periods, making her appearance only at mealtimes; she refused to speak to any one; at times when she became angered, she went into a fit of temper and became apparently violent. At all times apparently she was very much depressed. On two occasions she made a verbal threat to commit suicide. Prior to the onset of her present condition, she was a very pleasant person, worked hard at home with houshold duties, was very handy making miniature dolls to represent world celebrities, and was extremely clever at embroidery. At present she refused to do any housework or cooking, and had lost her desire for doing any fancy work.

The roentgen-ray examination of the head and sinuses, made by Dr. Henry K. Pancoast, revealed the frontal sinuses negative; anterior ethmoid sinuses, clear; maxillary sinuses, clouded on the left side; septum, deviated to the right, the right side being entirely clear, and left side clear above; the lower turbinates filled the nasal cavity fairly well; sphenoid sinuses, clear; posterior ethmoid, clear; sella turcica, normal, there being some calcification in the frontal region, presumably of the meninges, over two small areas, which may not be of any significance.

The clear sphenoid and posterior ethmoid sinuses would seem to indicate that the cerebrospinal fluid did not come down in this region. The occlusion of the left side of the nose would suggest that the escape was more on that side. The significance of the clouded left antrum is uncertain.

Unfortunately, there was nothing that could be done in the way of treatment. It is not only useless, but it is harmful to check the flow of fluid. In many of the cases reported, when the flow ceased spontaneously or was checked, the patient became worse. The administration of drugs by mouth and local applications intranasally have proved useless. The latter form of treatment is positively contraindicated; such practice may cause encephalitis. Lumbar puncture has been tried and has proved unsuccessful.

The patient became so depressed that it was deemed advisable to send her to the hospital for a rest cure. After she had been in the hospital two and a half months, the flow of fluid from the left nostril entirely subsided; two weeks later she was suddenly taken with a chill, and a rise of temperature to 104, associated with numbness of the entire body and severe headache. Two days later she went into a semicomatose state with alternate periods of lucidity. The following day she developed a facial paralysis and tremors of the entire body. Two days later she developed auditory nerve deafness, and three weeks later died of acute encephalitis.

Medical Arts Building.

SUBSTERNAL THYROID WITH BILATERAL LARYNGEAL PARALYSIS *

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Assistant Surgeon, Manhattan Eye, Ear and Throat Hospital

It is now generally recognized that, in cases of thyroid disease, paresis or paralysis of the vocal cords may occur previous to an operation on the thyroid gland.

Any laryngeal impairment that is caused by an enlargement of the thyroid gland is nearly always unilateral. When a bilateral involvement exists previous to operation, it is usually caused either by some lesion in the central nervous system, such as syphilis, or by a malignant disease of the thyroid gland.[1]

The case here reported presents a bilateral involvement of the vocal cords, without demonstrable lesion in the central nervous system and without evidence of malignancy in the thyroid gland.

REPORT OF CASE

History.—D. G., a woman, aged 50, born in Poland, came to the Manhattan Eye, Ear and Throat Hospital, clinic of Dr. McCullagh, Jan. 7, 1922, complaining of difficulty in breathing and of choking attacks. The family history had no bearing on the trouble, with the exception that the maternal grandmother had a goiter. The patient had had pneumonia three times. Otherwise she was in good health up to eight years ago, when the menopause began. Since that time she was very nervous, had palpitation of the heart on exertion, felt very weak, and lost considerable weight. A physician of the board of health thought that she had tuberculosis of the lungs, although the sputum was negative. She was sent to

* Read before the Section of Rhinology and Laryngology, New York Academy of Medicine, Jan. 24, 1923.

1. Crile, G. W., and Associates: The Thyroid Gland, Ed. 2, Philadelphia, W. B. Saunders Company, 1922, p. 58.

the Bedford Sanatorium, where she remained six months. There she had no cough, but lossed more weight, altogether about 35 pounds (16 kg.). From her usual weight of 125 pounds (56.7 kg.) she was reduced to 92 pounds (41 kg.). Dr. Alfred Meyer, who examined her at the sanatorium, was convinced that she had no tuberculosis, and he advised her to go home.

The difficulty in breathing and choking attacks began in the early part of 1920. A laryngologist thought that the trouble was due to nasal obstruction, and he performed a submucous resection of the nasal septum. As the symptoms became worse, she was advised to have the tonsils removed. She then came to the Manhattan Eye, Ear and Throat Hospital. Besides the dyspnea and the choking attacks, which appeared only after exertion, she also complained of frequent colds, profuse, watery, nasal discharge, and slight hoarseness for the last two months. She had similar attacks of hoarseness in the last few years.

Examination.—The patient was fairly well nourished; the weight was 150 pounds (68 kg.).)There was a fine tremor of the tongue and the outstretched fingers. The pulse rate was 120. The thyroid gland above the episternal notch was slightly enlarged, and the lower border of the gland could not be outlined. There was dulness on percussion over the upper part of the sternum. The left vocal cord did not move at all, and was shortened. The left arytenoid was fixed and tipped slightly forward. The right cord did not abduct, but in phonation approached the left cord. This explained the patient's fairly good voice. There was only a very small space between the vocal cords through which the patient was breathing. The left half of the larynx was completely paralyzed, and the right half presented a paralysis of abduction. Otherwise the general physical examination was practically negative.

On roentgen-ray examination, January 10, the trachea seemed to be in the median line, although there was a possible slight deviation to the left. There seemed to be a mass in the superior mediastinum which might be a thymus or a substernal thyroid. There was also some scoliosis from the second to the tenth dorsal vertebrae. After fluoroscopic examination, it was decided that the mass was a substernal thyroid.

The Wassermann reaction was negative.

Treatment.—The patient had four deep roentgen-ray treatments. These did not seem to do her any good subjectively. After each treatment she had to be in bed for three or four days on account of the extreme weakness, which followed the exposure to the rays. Her pulse rate and nervousness were not diminished. Objectively, the treatment seemed to have done some good, as shown by another roentgenogram, November 14. The mass seemed to be considerably diminished in size. The laryngeal picture, however, had not changed. She had no roentgen-ray treatments for about six months, as she was unwilling to have them. Since November 11, she has taken quinin hydrobromid, 5 grains (0.3 gm.), in capsules, three times a day. She now feels somewhat better, she is not so nervous, and the pulse rate is reduced to 98.

COMMENT

This case presents a difficult problem for proper management. I do not think that at this time an operation on the thyroid gland would do the patient any good. There is no case of complete paralysis of the vocal cords on record in which the patient recovered from the paralysis after operation on the thyroid gland. It is probable that the dyspnea which the patient suffers at times will become worse and more frequent on account of the very small breathing space between the vocal cords. It may then be necessary at any moment to do a tracheotomy. Until recently, no direct surgical attempts on the vocal cords have been made in such cases. Chevalier Jackson,[2] however, has performed ventriculocordectomy in a number of instances, operating by the direct laryngoscopic route. He believes that these patients regain a fairly good voice by the vicarious use of the false vocal cords. Crile,[1] in one of his cases, did a submucous resection of the vocal cords through a laryngofissure, preceded by a tracheotomy. It is probable that a similar operation will have to be performed on this patient; but so long as the patient is comfortable, I feel that no operative work ought to be done.

161 East Seventy-Ninth Street.

2. Jackson, Chevalier: Ventriculocordectomy: A New Operation for the Cure of Goitrous Paralytic Laryngeal Stenosis, Arch. Surg. 4: 257 (March) 1922.

A SECOND INITIAL LESION OF SYPHILIS ONE YEAR AFTER THE FIRST

WILLIAM C. NICHOLS, M.D., AND ARTHUR A. NICHOLS, M.D.,
FARGO, N. D.

Mr. J., aged 28, a traveling salesman, consulted a physician in a neighboring city, Nov. 10, 1921, for a small sore on the glans penis. He was told that it was a simple infected herpes, and was given a jar of a blue colored ointment to apply. The lesion healed in about ten days. Jan. 4, 1922, he consulted us with a florid maculopapular eruption which was generally distributed over the forehead, face, trunk and extremities, with several mucous patches on the tongue and inside of the cheek. As the rash was typical, and there had been the history of a lesion, we did not think it necessary to make a Wassermann test.

Intravenous injections of 0.9 gm. of neo-arsphenamin were given, January 4, February 5, 12, 19 and 26, March 26, and April 2, 9 and 16. The patient refused to take mercury intramuscularly so was given a 50 per cent. ointment for inunctions. During the entire course of his treatment, up to and including August 15, the patient used only 3 ounces of this preparation, and no other form of mercury. A Wassermann test, June 25, was negative with alcoholic antigen, and positive with cholesterinized antigen.

The patient was advised to continue the inunctions and was given six more injections of neo-arsphenamin, 0.9 gm., June 28 and July 1, 5, 8, 15 and 22. He was instructed to return for a Wassermann test, October 1, but failed to do so. He came, Feb. 4, 1923, complaining of a sore on the inner surface of the upper lip, which he had noticed for about three weeks. This had been painted a few times with silver nitrate by a dentist. Examination showed a typical indurated chancre with some healing around the edges. It was about the size of a penny, with a flat, ulcerating surface. Slides stained by the Giemsa method showed many spirochetes. The Wassermann test was 4 plus. He was given 0.6 gm. of arsphenamin, February 11, and when he returned for the second treatment a week later, the sore had entirely disappeared.

This case is interesting in view of the fact that the patient was irregular in receiving the arsphenamin injections, and was very lax with the mercury inunctions, not only as to time, but also as to the quantity used throughout the period of treatment.

608 Front Street.

TRAUMATIC ASPHYXIA

A. H. TRAVER, M.D., ALBANY, N. Y.

C. V. M., aged 47, a farmer, who had always been in good health, was driving his automobile, weighing about 3,000 pounds, over a farm road, Aug. 7, 1922, when the car skidded and went over a bank of about 8 feet. The car tipped entirely over, resting on top of its body, with the wheels in the air. The patient was caught under the overturned car, his back on the ground and the top of the body of the car resting on the lower part of his chest. It was about twenty minutes before the car was jacked up and the patient taken out. The men who saw him thought he was dead, as his face was black. He was able to speak, and seemed conscious, but could not see. He was taken to his home, and I was called. I reached his home at 5:30 p. m., about thirty minutes after the accident.

The face and neck were black. The eyes were protruding. The conjunctiva was bulging from between the lids. Subconjunctival hemorrhages were present. He was blind, not

being able to see an electric light flashed before his eyes. He was conscious. His clothes were covered with blood, apparently from the nose. The pulse could not be felt at the wrist, and the heart beats could be barely heard with the stethoscope. Morphin, strychnin and nitroglycerin were given. In about an hour the patient had improved so that it was thought safe to move him to the hospital. When he entered the hospital, the nurses thought he was a colored man. He vomited, but there was no blood in the vomitus. The urine showed no blood. During the night the abdomen became much distended; this condition was relieved by an enema. In the morning his color was the same, and the eyes were still bulging. He could see light, but was unable to recognize any one. The pulse was 110, the temperature, 99. Dr. A. J. Bedell, who examined the eyes, said that the hemorrhage was not in the eyes, and thought that the blindness was caused by the pressure of the blood on the nerve. The patient rapidly improved; August 14, the pulse was good, and the heart sounds were strong. The discoloration of the skin was less marked. He was now more the color of an Indian. The eyes were still red. He could recognize people, but could not see to read. Roentgen-ray examination showed fracture of the left transverse processes of the seventh, eighth and ninth dorsal vertebrae. The patient was taken home in an ambulance ten days after the accident. October 15, the patient said that he felt well; he had some pain in the hip. He could see fairly well with one eye, but the other was still blurred. Dr. Bedell's reports on the eyes were that at the first examination, August 8, there was marked congestion, with extreme subconjunctival hemorrhages which surrounded the cornea; the pupil reacted normally to light and accommodation; the media were clear. When last seen, November 2, the vision of the right eye was 20/15; the fundus was clear. Vision of the left eye was 10/200; the disk was white; there was a slight change in both veins and arteries. The field of vision showed decided contraction, and in the left eye there was a small central scotoma.

Little is said about this condition in the various textbooks, and different reasons are given for the symptoms.

27 Eagle Street.

Treatment of Pneumonia.—DR. HENRY F. STOLL, Hartford, Conn., writes: Don't think of pneumonia solely as a disease of the lungs. Heart failure is responsible for many fatalities. At the first examination and at each succeeding visit, note the position of the apex beat and observe the quality of the heart sounds; this can be done without disturbing the patient, and may enable one to detect the first signs of a failing myocardium or the beginning of pericarditis. Don't make a complete examination of the lungs every day unless you suspect pus; it exhausts the patient. Never direct a patient to "sit up" or to "roll over" if very ill, to examine his back; he may be turned on his side with little discomfort if it is done by reaching across the patient, placing one hand under the further shoulder, the other under the pelvis, and gently and slowly turning him toward you. Whenever there is a suspicion of diminished myocardial reserve, small doses of digitalis should be begun from the onset. Don't forget that an increase in restlessness and in the respiratory rate may be due to a distended bladder, and that many cases of incontinence can be cured by a catheter. Save in the very feeble, cold, fresh air is desirable—but be sure that you have a warm patient. When serum (Type I) is indicated, its curative effects are directly proportionate to the promptness of its administration. Quiet and sleep are absolutely essential, and the elimination of unnecessary exertion may be life-saving.

Preventive Neuropsychiatry.—One of the greatest opportunities for neuropsychiatry lies in the field of increasing interest in the study of persons who as yet have not developed actual psychoses, but who are on their way; and prevention here, as in many other fields, should constitute a more than laudable ambition.—William House, *California State J. M.* **21**:29 (Jan.) 1923.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

MERCUROSAL.—Disodiumhydroxymercurisalicyloxyacetate.—$(HOHg).NaOOC.C_6H_3.OCH_2COONa$. Mercurosal contains from 43.0 to 43.8 per cent. of mercury in organic combination.

Actions and Uses.—It is claimed that mercurosal is relatively free from irritant action, that it is eliminated without untoward effect on the kidney and that its toxicity is relatively lower than mercuric chloride and mercuric salicylate. Mercurosal is intended for the mercurial treatment of syphilis. It is administered either intramuscularly or intravenously. The Council accepted mercurosal as a comparatively non-toxic, comparatively non-irritating mercury salt which does not precipitate protein.

Dosage.—The usual intramuscular dose is 0.05 Gm. dissolved in 2 Cc. of sterile water every fourth or fifth day for ten or twelve doses. The usual intravenous dose is 0.1 Gm. dissolved in 5 Cc. of sterile water administered every second or third day for ten or twelve doses.

Manufactured by Parke, Davis and Co., Detroit, Mich. U. S. patent applied for; U. S. trademark No. 161254.

Mercurosal ℞ 1 (Intravenous). Sealed tubes containing mercurosal 0.1 Gm.

Mercurosal ℞ 2 (Intramuscular). Sealed tubes containing mercurosal 0.05 Gm.

Mercurosal is a white, amorphous powder. It is soluble in about 10 parts of water, insoluble in the usual organic solvents. Dilute aqueous solutions of mercurosal are quite stable when protected from air, but on prolonged standing may give rise to an insoluble compound. Mercurosal is decomposed by acids, strong reducing agents; salts of heavy metals, such as silver or lead, yield insoluble precipitates. From a 1 to 2 per cent. aqueous solution of mercurosal, calcium chloride precipitates a calcium salt which dissolves on subsequent dilution with water.

Mercurosal is faintly alkaline to phenolphthalein solution. When an aqueous solution of mercurosal is treated with an alkali hydroxide, a clear solution results. No precipitate is produced when an aqueous solution of mercurosal is saturated with carbon dioxide. When an aqueous solution of mercurosal is acidified with acetic acid or with mineral acids, a white precipitate is produced.

Heat mercurosal, 1 Gm., with hydrochloric acid (1: 1), 25 Cc. until decomposition has taken place, cool and collect the precipitate; dissolve the precipitate in alkali, filter, reprecipitate, and crystallize from water; these crystals melt at 192 C (*salicylacetic acid*). Treat an aqueous solution of mercurosal with iodine solution, acidify with hydrochloric acid and collect the precipitate; after drying, the precipitate melts at 217 C. Saturate an aqueous solution of mercurosal with hydrogen sulphide; no precipitate is produced (*absence of "inorganic" mercury*).

Dry mercurosal at 100 C. for one hour; the loss does not exceed 1 per cent. Dissolve about 0.4 Gm. of dried mercurosal, accurately weighed, in water 5 Cc.; add concentrated hydrochloric acid, 5 Cc.; cover the beaker and digest on a steam bath until solution takes place; dilute to from 100 to 125 Cc. with water and saturate with hydrogen sulphide; collect the precipitate in a tared gooch crucible; wash successively with water, alcohol and ether; dry to constant weight at 100 C.; the weight of mercuric sulphide corresponds to from 43 to 43.8 per cent. of mercury.

A physiologic test is made which shows the comparative shock which is caused by large doses of 2 per cent. solution when given intravenously. The immediate lethal dose per kilogram body weight of rabbit, practically identical with the dose causing shock of this animal, is determined by a series of experiments with a 2 per cent. solution of each lot of mercurosal. Carefully selected rabbits weighing from 2 to 4 kg. are injected intravenously. Death must take place in from 7 to 15 minutes. The average dose of mercurosal immediately lethal and causing shock is 0.025 gram per kilogram of body weight.

PNEUMOCOCCUS ANTIBODY SOLUTION, TYPES I, II AND III COMBINED.—An aqueous solution of specific pneumococcus antibodies, Types I, II and III in equal proportions, approximately free from the proteins of horse serum. The vaccine is prepared by adding to the serum from horses immunized by repeated injections of pneumococci, Types I, II and III, a heavy emulsion of equal proportions of pneumococci, Types I, II and III. The mixture is heated to kill the germs, centrifuged and washed with salt solution to rid it from horse serum. The washed sediment is emulsified in physiological solution of sodium chloride containing 0.25 per

cent. of sodium bicarbonate and then heated at 55 C. for from thirty minutes to one hour to cause dissociation of the antigen and the antibody. The mixture is centrifuged; the supernatant liquid removed, chilled, recentrifuged and filtered through a filter candle. The final product contains 0.035 Mg. of nitrogen per cubic centimeter.

Actions and Uses.—There is some evidence that this antibody solution is of value in the treatment of lobar pneumonia.

H. K. Mulford Company, Philadelphia.

Pneumococcus Antibody Solution, Types I, II and III Combined-Mulford.—Marketed in packages (*M 48-010*) of one 50 Cc. double-ended vials with one complete intravenous outfit, and in packages (*M 48-160*) of one 50 Cc. double-ended vials.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 773)

[NOTE.—This is the twelfth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

WHOLE MILK DILUTIONS WITH CARBOHYDRATE ADDITIONS

In applying the rules for the feeding of normal, healthy infants it must be remembered, as previously emphasized, that each infant must be fed to meet its individual requirements. Therefore the rules must be so modified as to meet the individual demands. If milk dilutions with the addition of carbohydrates are used, the simplest and most natural standard is that which tells us how much milk and carbohydrates the baby should get per pound or per kilogram of body weight.

To be exact, we should express, or at least be aware of, the number of grams of proteins, fat, carbohydrates, salts and water that the infant is receiving for each pound of its body weight.

If statistics on infant feeding were collected on this basis rather than on percentages of the ingredients in the milk mixtures (the total mixtures used by different physicians being of such variable quantity), the collected data would be far more valuable as a basis for future work in infant feeding.

In every instance the general health of the infant is of the greatest importance in estimating its capacity for assimilating the diet.

To meet the minimal per pound body weight protein (1.5 gm.), fat (1.8 gm.), and calcium oxid (0.08 gm.) requirements, the average normal infant will require each day a minimum of 1½ ounces (45 c.c.) of cow's milk. For each kilogram of body weight, 3.5 gm. of protein and 4.0 gm. of fat will be required. These will be furnished by 100 c.c. of cow's milk.

For normal full weight infants, the addition of one-tenth ounce (3 gm.) by weight of sugar to the milk mixtures will be required for each pound of body weight (6.6 gm. per kilogram).

Water equal to 3 ounces per pound, or one-fifth the body weight, will meet the day's requirements for young infants, and amounts approximating 2½ ounces per pound, or one-sixth the body weight, will answer for older infants. The difference between the total day's fluid requirement and the milk in the mixture can be added as boiled water or cereal water or a portion of it may be fed between meals.

Cereals in the form of thin gruels may be added to the milk mixtures in quantities varying from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) for each pound of the body weight after the first or second month of life.

A mixture formulated to include these recommended amounts of food ingredients will average about 45 calories for each pound of body weight (Table 19).

Practical clinical experience has taught us that infants fed on cow's milk mixtures will frequently require approximately 2 ounces (60 c.c.) of cow's milk per pound of body weight, except during the first few weeks of life, when smaller quantities of whole or skim milk are indicated. Such mixtures will average approximately 55 calories for each pound of body weight.

In beginning feeding with cow's milk, mixtures must always be started as weak formulas, more often only 1 ounce (30 c.c.) of cow's milk being used to a pound of body weight, the strength being gradually increased to meet the infant's needs.

Underweight infants should be fed according to their weight at the initiation of feeding, the strength of the mixture being increased gradually but rapidly as the baby shows ability to handle the food, thus approximating the needs of a full-weight baby of the same age, in milk, sugar and water. These babies will frequently, therefore, require 2 ounces (60. c.c.) or more of milk per pound of body weight, and carbohydrates must added in proportion.

TABLE 19.—MIXTURE CONTAINING RECOMMENDED AMOUNTS OF FOOD INGREDIENTS

Milk, 1½ ounces	= 30 calories
Sugar, ⅒ ounce	= 12 calories
Starch, 1/30 ounce	= 3 calories
	45

With the institution of a mixed diet, the infant thrives with less milk per pound of body weight.

In preparing to feed an infant these general rules should be followed:

The baby should be weighed, and one should determine whether or not its weight is within normal limits.

The amount of cow's milk necessary in the preparation of the mixture should be determined. One and a half ounces of cow's milk per pound of normal body weight at the baby's age is a safe minimum for a healthy infant. It should be remembered that normal infants may require as much as 2 ounces per pound of body weight.

The total daily quantity of water required should be determined, 3 ounces per pound (one-fifth the body weight) during the first six months and somewhat less, 2½ ounces per pound (one-sixth the body weight) after this period. Sufficient water (or cereal water) should be added to the milk to bring the total quantity of mixture up to the day's requirements in fluids.

Three grams of sugar, and later an additional 0.5 to 1 gram of starch should be added for each pound of body weight.

The curd should be made more digestible either by boiling, adding cereal water, or alkalizing the mixture.

MIXTURES ESTIMATED ON THE BASIS OF CALORIC REQUIREMENTS

The caloric needs of infants can be made the basis for formulating the constituents of their diet.

The protein, fat, salts and carbohydrates must be so combined as to meet the infant's needs in each of these elements.

Forty-five calories per pound, or 100 per kilogram, may be considered as meeting the minimal daily requirement of the average normal infant. Thin infants will require from 50 to 70 calories per pound (110 to 150 per kilogram).

The protein content should be supplied first; next the needs in fat, and last the carbohydrates.

Protein.—The normal infant will require a *minimum* of 1.5 gm., which provides 6 calories per pound; this is furnished by the protein contained in 1½ ounces of cow's milk. Per kilogram, 3.5 gm. provide 14.3 calories, furnished by 100 c.c. of milk.

Fat.—The needs in fat, 1.8 gm., or 16.5 calories, per pound, will, for most infants, be provided for by 1½ ounces of milk. Per kilogram, 4 gm., which provides 37.2 calories, will be furnished by 100 c.c. of milk.

TABLE 20.—AMOUNTS REQUIRED FOR AN INFANT WEIGHING TEN POUNDS

	Ounces	Calories
Milk	15	315
Sugar	1⅛	135
Water	15	...
Total		450

TABLE 21.—AMOUNTS REQUIRED FOR AN INFANT WEIGHING FIVE KILOGRAMS

	Gm. or C.c.	Calories
Milk	500	350
Sugar	37.5	150
Water	500	...
Total		500

Carbohydrates.—The sugar required in excess of the 2 gm. (8.2 calories) provided by the milk, when 1½ ounces is fed per pound, will amount to 3 gm., or one-tenth ounce, for each pound of body weight. This will furnish 12.3 calories, or a total of 20.5 calories inclusive of the sugar in the milk. Per kilogram, 6.6 gm. of sugar must be added to the 4.5 gm. that is contained in 100 c.c. of milk. The infant will therefore receive 11 gm. of sugar per kilogram, which provides 45.5 calories. Therefore, in feeding 1½ ounces of milk, plus one-tenth ounce of sugar, the following calories will be provided: protein, 6; fat, 16.5, and sugar, 20.5, or a total of approximately 43 calories for each pound of body weight. This requires considerable calculation in estimating the proper proportion of the ingredients and even more so if a second carbohydrate as starch is added.

In feeding 100 c.c. of milk [41] with 6.6 gm. of sugar added, the infant will receive, for each kilogram: protein, 14.3 calories; fat, 37.2, and carbohydrates, 45.5, a total of 97 calories. We will therefore make use of the enumerated facts for calculating the initial diet of a normal infant as follows: An infant weighing 10 pounds will require 15 ounces of milk. Calculating his caloric needs at 45 per pound, his diet should contain a total of 450 calories. Of this 315 calories will be furnished by his milk. The remaining 135 are to be supplied by carbohydrates, sugar or sugar and starch. If sugar is used, 1⅛ ounces will be required. Estimating 3 ounces of total fluids per pound of body weight, 15 ounces of water will be added as a diluent. The total formula will therefore be constituted as in Table 20.

If estimated by the metric system, an infant weighing 5 kg. requires 500 calories, and should receive the amounts given in Table 21.

While in the case of average normal full-weight infants this method of calculating the diet works out satisfactorily, when underweight infants are to be fed, the estimation of needed ingredients is less simple. It becomes even more complicated when cereals and other foods are added to the diet.

This method is also more complicated than the one previously recommended for analyzing diets that infants are taking. In comparing the two methods of estimating the needed ingredients for the infant's diet, the first is based on the amounts of each of the ingredients needed, and the second on the calories required.

It is to be remembered that the quantities recommended under the heading Milk Dilutions with Added Carbohydrates, in the amounts suggested as minimums, furnish approximately 45 calories per pound, or 100 per kilogram, of body weight—the proportions needed by the infant. In the feeding of underweight infants, the amounts ultimately needed are calculated on the basis of the estimated weight of the normal infant of the same age and development.

UNDILUTED WHOLE MILK WITH CARBOHYDRATES

While undiluted milk has been used with varying degrees of success by some of the continental pediatricians, on the whole it is not well borne before the fourth month of life. When undiluted whole milk is to be fed to a young infant, it should first be boiled in order to change the protein so that it will be precipitated in the infant's stomach as a fine curd. Alkalizing the milk by the addition of sodium citrate or sodium bicarbonate also results in the formation of fine curds. If undiluted milk is used in the feeding of the very young infant, the size of the individual meal must of necessity be reduced under that recommended for diluted mixtures, or fewer meals must be given. Otherwise the caloric requirements of the infant will be exceeded. Water must be administered between feedings to meet the infant's needs for fluids.

While, as a routine measure of feeding, undiluted whole milk cannot be recommended, in some forms of vomiting and when gastric dilatation is present, small quantities of a concentrated food can often be fed to better advantage than larger quantities of milk dilutions. When carbohydrates are added, they should be in such amounts as are indicated by the infant's weight and age.

TOP-MILK DILUTIONS

By this method a definite number of ounces of the upper part of milk which has stood for a number of hours is used as a basis for preparing the mixture.

TABLE 22.—FAT PERCENTAGES

	Per Cent.
Upper 16 ounces	7
Upper 20 ounces	6
Upper 24 ounces	5

To carry out top-milk feeding successfully, the percentages of fat must be known which occur at various levels in 32 ounces (1 quart) of milk (containing 4 per cent. of fat) which has stood for six hours or longer.

41. Milk calculated as containing percentages as follows: protein, 3.5; fat, 4; sugar, 4.5.

This method endeavors to provide ample calories, and in this respect may be considered as successful. The chief advantages are that high fat and low casein mixtures can easily be prepared by the use of various dilutions of different layers of top-milk. With these mixtures there is the danger of feeding dilutions containing an excess of fat, not uncommonly reaching 5 or 6 per cent. when the upper layers are used. Such high fat mixtures not uncommonly result in fat indigestion. The early advocates of this method recommended it on the basis of the low protein content of the mixture, believing that a high casein content frequently caused acute intestinal disturbances. In the light of our present knowledge, however, we know that the casein of milk boiled or alkalized, or mechanically divided by the addition of cereals, is easily digested and causes nutritional disturbances only in exceptional cases. Owing to the tendency to use high dilutions, the sugar and salt content, more especially the latter, may be insufficient. This method of feeding has many advocates, and has given good results when its shortcomings are recognized and the diets properly balanced.

It will be of advantage to use the upper 16 ounces of the quart of milk (which will have a content of 7 per cent. fat and 3.5 per cent. protein), in feeding certain selected infants who are not making satisfactory progress on the whole milk dilutions. When desirable, the 7 per cent. top-milk may be used in the mixture in amounts of 1½ ounces per pound, or 100 c.c. per kilogram, as an alternative for whole milk. Such mixtures will average about 3 gm. of fat per pound, or 6.6 gm. per kilogram of body weight.

While this amount of fat is in excess of the amount needed, only in exceptional cases will a healthy infant be upset by it.

High fat mixtures are contraindicated in most infants with disturbed digestion, except those in which it is due to carbohydrate intolerance or protein sensitization. In these instances the fat will often replace, in part at least, the insufficiency of carbohydrate and protein.

CREAM AND SKIMMED MILK MIXTURES

By the use of 16 per cent. cream and skimmed milk as the basis for various milk modifications, a wide range of combinations of the various food elements may be obtained. By the use of cream and skimmed milk, an additional factor is added for calculating the percentage content of the dilutions. *This is, however, not a great objection. The fact should be recognized that most physicians think of mixtures in terms of percentages without recognizing the possibility that one set of infants may receive large quantities of these dilutions in their day's feedings, while another group, under different care, may receive much smaller quantities and fewer feedings of the same quality of mixture.* If we accustom ourselves to think of the number of grams of fat, protein, carbohydrate and salts per kilogram or pound of body weight, it will in all probability offer the greatest possibilities of all the methods so far advocated.

For feeding purposes, gravity cream (of which about 6 ounces or somewhat less may be obtained from a quart of a good quality of milk) contains fat, 16; protein, 3.5, and carbohydrate, 4.5 per cent. The skimmed milk may be obtained by carefully pouring or dipping off the cream. It should contain fat, 0; protein, 3.5, and carbohydrate, 4.5 per cent.

The average infant should receive: fat, from 1.5 to 2 gm.; protein, 1.5 gm., and as a minimum of added carbohydrate, 3 gm. (above that contained in the cream and skimmed milk), per pound of body weight. These will be obtained by the use of cream (16 per cent.), skimmed milk and sugar, the contents of which are given in Table 23.

TABLE 23.—CONTENTS OF CREAM, SKIMMED MILK AND SUGAR

Cream (16 per cent. fat)	in 1 oz.	5 gm.	fat
Skimmed milk (3.5 per cent. protein)	in 1 oz.	1 gm.	protein
Sugar (100 per cent. carbohydrate)	in 1 oz.	30 gm.	carbohydrate

The amounts needed are given in Table 24.

TABLE 24.—AMOUNTS NEEDED

For each gram of fat	2/10 oz., or	6 c.c.	of cream
For each gram of protein	1 oz., or	30 c.c.	of skimmed milk
For each gram of carbohydrate	1/30 oz., or	1 gm.	of sugar

In the mixture, the ingredients will be used in the amounts, *per pound of body weight,* given in Table 25.

TABLE 25.—AMOUNTS FOR EACH POUND OF BODY WEIGHT

Cream	3/10 to 4/10 oz. (fat, from 1.5 to 2 gm.)
Skimmed milk	1½ oz. (protein, 1.5 gm.)
Sugar	1/10 oz. (carbohydrate, 3 gm.)

In the mixture, the ingredients will be combined in the amounts, *per kilogram of body weight,* given in Table 26.

TABLE 26.—AMOUNTS FOR EACH KILOGRAM OF BODY WEIGHT

Cream	20-27 c.c. (fat, from 3.3 to 4.4 gm.)
Skimmed milk	100 c.c. (protein, 3.5 gm.)
Sugar	6.6 gm. (carbohydrates, 6.6 gm.)

In underweight infants, the amounts would be calculated on the basis of initial weight at the beginning of feeding, but these would be increased gradually to the amounts necessary for a normal weight infant of the same age.

Example: It is desired to feed a 10-pound baby, fat, 20 gm.; protein, 15 gm., and carbohydrate, 30 gm., the amount required for one day's food. These quantities would be supplied by cream, 4 ounces; skimmed milk, 15 ounces; sugar, 1 ounce, and water, 11 ounces, bringing the total fluid to 3 ounces for each pound. The small excess of protein in the cream may be considered negligible.

It will be noted that by considering the needs of the infant in terms of weight and forgetting the percentage content of the variable mixture, the danger of error is removed and the variation due to the individual physician is done away with. At the same time this method of feeding becomes much simplified and retains all of its flexibility.

There can be no doubt as to the accuracy of the modifications that can be obtained by this method of feeding. It has the disadvantage of requiring more calculation. In actual experience, the disadvantage to healthy infants of a possible relative excess of protein in mixtures made with simple dilutions of whole milk has been exaggerated. Practical experience presents convincing evidence that far more infants develop gastro-intestinal disturbance from feeding excessively rich cream mixtures. The greatest objection to high milk feeding is the resultant high protein constipated stool, which can be obviated by adding more sugar.

(To be continued)

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SATURDAY, MARCH 24, 1923

DIET DEFICIENCIES AND IMMUNITY

Although the existence of deficiency diseases has become well established in recent years and has been exemplified with scientific precision in the case of at least scurvy and beriberi, the precise processes whereby the characteristic pathologic conditions arise are far from being solved. The instances mentioned represent clinically recognized maladies. It is more than likely, however, that less well defined symptoms have thus far escaped detection in the syndrome of effects attributable to faulty nutrition. The physiologists have demonstrated that when the diet is deprived partially or completely of an essential constituent, animals under experiment soon manifest the deficiency by a retarded rate or cessation of growth, by restricted propagation and by a general unhealthy appearance, so that if some indispensable food factor is withheld for a prolonged period, organic changes of a marked character may ensue.

It is quite possible, as Zilva [1] has specially emphasized, that, besides the more radical changes produced by deficient nutrition, decided modifications may take place in the body tissues and fluids which are not discernible macroscopically or microscopically, but which may nevertheless restrict physiologically the functions of the organism. In this connection arises the interesting problem whether the resistance to disease of the animal is in any way influenced by deficient nutrition. Zilva reminds us of the widespread belief that underfed persons are more susceptible to infection than well fed persons, and that when the former contract a disease they show less resistance and are more prone to succumb to it. But, he adds, terms like "malnutrition" or "underfed" are vague expressions and lack scientific definition. There is also no definite scientific evidence, even of a general character, to support this belief, in spite of its probability. If, however, there is a connection between imperfect nutrition and susceptibility to disease, Zilva maintains that the subject becomes one of the utmost theoretical and practical importance.

When Zilva examined the possible effects of a series of diets, each of which was specifically deficient, no inequalities in the content of the agglutinins and amboceptors in the blood could be recorded in most cases. Thus, guinea-pigs fed on an unrestricted mixed diet, quantitatively restricted mixed diet and a scorbutic diet, respectively, showed no differentiation in the amboceptor and agglutinin titers, and in the complement activity of the blood. And now these studies at the Lister Institute in London have been supplemented by the investigations of Findlay and Mackenzie [2] at the Royal College of Physicians' Laboratory in Edinburgh. They failed to find any decrease in the opsonic activity of the blood serum in animals receiving diets evidently deficient in respect to vitamins A, B or C. Furthermore, there was no evidence to suggest any decrease in the phagocytic activity of the polymorphonuclear leukocytes as the result of a diet deficient in vitamin C. These results harmonize with the contention of Bordet and others that the phagocytic power of the body appears, after all, to be a relatively stable function, and one not easily influenced by conditions that profoundly affect other vital activities.

1. Zilva, S. S.: The Influence of Deficient Nutrition on the Production of Agglutinins, Complement and Amboceptor, Biochem. J. **13**: 172 (July) 1919.

THE TEST OF HYPERTHYROIDISM

The limitations of the so-called Goetsch test as an index of hyperthyroidism have already been pointed out in The Journal.[3] This reaction consists in the response of patients to subcutaneous injections of small doses of epinephrin, a positive result being manifested by an increase in pulse rate and rise of blood pressure, exaggeration of tremor, palpitation and nervousness, appearing within a short time after the injection. The epinephrin was at first believed to produce sensitization of the organism so that a synergistic action of the thyroid secretion would manifest itself by pressor effects. Although Goetsch originally thought that the phenomenon might be of value in the diagnosis of thyroid disease by allowing a surplus output of thyroid hormone to manifest itself more readily, he later pointed out that the reaction, after all, is indicative only of alterations in the sympathetic system; that is, it becomes an index of sympathetic overstimulation.

In recent studies at the Department of Pharmacology at Columbia University, Lieb and Hyman [4] have demonstrated anew that the reaction to epinephrin measured in the response of blood pressure varies

2. Findlay, G. M., and Mackenzie, R.: Opsonins and Diets Deficient in Vitamins, Biochem. J. **16**: 574, 1922.

3. The Goetsch Test in Healthy Persons, editorial, J. A. M. A. **79**: 136 (July 8) 1922.

4. Lieb, C. C., and Hyman, H. T.: Studies of Graves' Syndrome and the Involuntary Nervous System, IV, The Vascular Response of the Pithed Cat to Single Intravenous Injections of Adrenalin, Am. J. Physiol. **63**: 60 (Dec.) 1922; V, The Vascular Responses of the Pithed Cat to Repeated Intravenous Injections of Equal Doses of Adrenalin, ibid., p. 68; VI, Attempts to Alter the Vascular Response of the Pithed Cat to Repeated Injections of Similar Doses of Adrenalin, ibid., p. 83; VII, On the Mechanism of Sensitization to Subcutaneous Injections of Adrenalin, ibid., p. 88.

widely with the condition of the subject. This is contrary to the widespread belief that the circulatory system will respond with the accuracy of a chemical balance to any dose of epinephrin.[5] These studies point to the frequency of "variables" in the involuntary nervous system not due to sensitization. They are frequently present when evidences of "tire" are present, and are definitely not associated with hypertonicity of the portion of the nervous system referred to.

Of foremost importance is the observation that the apparent "sensitization" by epinephrin may develop or persist even in the complete absence of thyroid glands. This fact at once indicates that the reaction is due to alterations in the peripheral structures of the involuntary nervous system rather than to changes in the thyroid. The demonstration that the involuntary nervous system is not a "constant" in its responses, and that the variations need not be due to sensitization by some artificially introduced variables such as the thyroid hormone, removes a fundamental postulate of the Goetsch test. It also jeopardizes the validity of the theory which holds that exophthalmic goiter is due to a synergism between the suprarenal medulla and the thyroid gland. As usual, the conflict of opinion is with theories of pathogenesis, not with the facts of direct observation.

THE BACTERIAL ACTION OF ULTRAVIOLET LIGHT

It has long been appreciated that light has potencies for good or harm, but it is only in comparatively recent times that the details of its effects have begun to receive serious scientific consideration. This awakening of interest has been due in part to the growing knowledge of various manifestations of radiant energy, and their application in various fields of human experience. A recent reviewer[6] has remarked that although the physiologic effect of sunlight seems at first sight indefinite and of dubious importance, the action of far ultraviolet light on normal tissue, and the action of near ultraviolet and visible light under certain pathologic conditions, has been investigated enough to show that there are well-defined effects due to light, closely related to the physiologic results of exposure to radium and the roentgen rays. These results, she adds, are gradually assuming considerable importance in clinical medicine, and present theoretically an interesting but illusive problem in physiology.

Nearly half a century has elapsed since Downes and Blunt, in 1877, showed for the first time that sunlight retards the growth of bacteria, and proved that this was not due to heat, since the same result was obtained with tubes cooled in ice. Much emphasis has been placed, in a popular way, on the bactericidal action of light.

In their natural environment, micro-organisms may be temporarily but are not usually exposed to ordinary light. Some of them will at best only occasionally come into contact with the direct rays of the sun; for this reason it becomes all the more desirable to learn how these living forms react to the various sorts of artificial irradiation to which they can be exposed at the will of the observer. A recent investigation by Bayne-Jones and Van der Lingen[7] at the Johns Hopkins University indicates that the bactericidal action of light is confined to the ultraviolet region of the spectrum. An increase in hydrogen-ion concentration of the fluids in which the micro-organisms were suspended during their exposure to irradiation with ultraviolet rays increased the velocity of the bactericidal action. However, neither temperature nor the hydrogen-ion concentration rendered bacteria sensitive to the longer wave-lengths of light. As the invisible roentgen rays and radium rays are known to destroy living tissues by long exposures, micro-organisms cannot be considered less resistant, although the bactericidal effect of such short rays as radium affords is still somewhat debated. The next step will be to learn more precisely to what degree and how ultraviolet irradiation may be employed to replace chemical antiseptics.

THE CARDIAC FEATURES OF VOMITING

A student beginning the study of medicine must marvel at the lack of knowledge that still attaches to some of the most common experiences in the routine of the physician. Vomiting affords an illustration in this connection. The symptoms have been known since physical manifestations were made the subject of medical observation; and emetics are among the oldest drugs to be employed by the physician. Although nausea and vomiting can be produced without any immediate contact of the emetic agent with the alimentary tract, physiologists have been slow to admit that the latter plays no part in the reception of the stimuli which bring about the act. It has been assumed, for example, that when substances taken in some way other than orally produce vomiting they do so by being excreted into the alimentary canal, and thus in ultimate analysis really act by producing local irritation there. Only in comparatively recent years has the existence of a true vomiting center in the neighborhood of the respiratory center of the medulla been more generally accepted.

The stimulation of the medullary center either directly or reflexly leads to nausea and vomiting.[8] Apomorphin stimulates it directly, and consequently brings about emesis even after subcutaneous dosage. It is widely supposed that the substances which act

5. Elliott: J. Physiol. **44**: 374, 1912.
6. Clark, Janet H.: The Physiological Action of Light, Physiol. Rev. **2**: 277 (April) 1922.
7. Bayne-Jones, S., and Van der Lingen, J. S.: The Bactericidal Action of Ultraviolet Light, Bull. Johns Hopkins Hosp. **34**: 11 (Jan.) 1923.
8. A good outline of the subject will be found in Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 308.

reflexly to produce vomiting do so by irritating the alimentary mucosa. This is, of course, one of the ways in which emesis results. But Hatcher and Weiss [9] have shown that intravenous injection of digitalis preparations produces vomiting in animals even when the entire gastro-enteric tract has been removed, but that the drug does not act emetically like apomorphin when applied directly to the vomiting center. Digitalis substances, therefore, do not exert their emetic action by direct stimulation of the center or through gastro-intestinal irritation, but reflexly by the stimulation of sensory fibers in the heart. Severance of all nervous connections between the heart and the medulla stops the vomiting caused by digitalis products.

Similarly, Weiss and Hatcher [10] have more recently demonstrated that the heart is the seat of reflex vomiting following the intravenous injection of tartar emetic. After gastro-intestinal administration, the path taken by afferent emetic impulses depends on the innervation of the organ concerned, passing sometimes by the vagus and sometimes by the sympathetic system. The coincidence of cardiac and emetic action in numerous drugs has thus served to direct attention to the heart as the probable seat of the emetic action of various substances. Consequently, drugs that block the impulses from the heart may often stop or greatly ameliorate existing emetic reactions.

Current Comment

THE SPLEEN AND RED BLOOD CORPUSCLES

The fact that splenectomy, either in youth or in adult life, is followed by few detectable changes in the physiologic reactions of the organism affected by the operation adds to the difficulty of deciding what the use of the spleen may be. It no longer satisfies the critical student to read that this organ is "the great blood filter purifying the blood in its passage by taking up the particles of foreign matter and effete red corpuscles." If there is normally a more or less continuous formation of red blood cells, a corresponding disintegration must be going on, so that no accumulation of erythrocytes ensues. Long ago it was maintained, by Hunter, for example, that the spleen is concerned with this work of destruction. Lately this view has acquired a new popularity, and found application in the treatment of certain types of anemia in which splenectomy is reported to have been beneficial by averting continued undue destruction of the red cells. Evidence for the destructive function is further acclaimed in the familiar appearance of fragments of erythrocytes in the spleen pulp. The destructive action of the spleen is further implicated in the studies of Pearce, indicating an increased resistance of the corpuscles to hemolysis after splenectomy. A special instance has been described by Kolmer in their behavior toward venom which ordinarily easily hemolyzes the red cells. In the physiologic laboratory of the University at Groningen, Bolt and Heeres [1] compared the behavior of blood before and after contact with the spleen, under otherwise comparable conditions, to hypotonic salt solutions which would tend to lake the red corpuscles. The results show that the organ has the power of diminishing the osmotic resistance of the erythrocytes. These are prepared for hemolysis, which takes place partially in the spleen itself. According to the Dutch investigators, the point of attack of the hemolytic power of the spleen lies in the surface layers of the erythrocytes where the lipoids are concentrated.

THE COMPARATIVE ELIMINATION OF INORGANIC COMPONENTS FROM THE BLOOD

The application of chemical analysis to the examination of the blood has served to elucidate what the excretory functions actually accomplish for the body. As the circulating medium is the carrier of waste products to the organs of elimination, it became apparent long ago that inability to excrete them properly should result in changes in the composition of the blood. There is a growing realization that not all waste constituents in the blood are excreted with equal ease. For example, in 1916, Myers, Fine and Lough called attention to the fact that very high figures for uric acid may be noted, not only in cases of advanced interstitial nephritis, but also in the very early stages of the disease, before a retention of either the urea or the creatinin had taken place. It was suggested that, when symptoms of gout were absent, a high blood uric acid might be a valuable early diagnostic sign of nephritis, possibly earlier evidence of renal impairment of an interstitial type than the classic tests of proteinuria and cylindruria. What has proved to be true regarding a sort of selective capacity for the elimination of certain common organic constituents of the blood by the renal epithelium appears to apply somewhat similarly to some of the inorganic components that normally find their way into the urine. At any rate, Denis and Hobson,[2] in studying the various inorganic ions in the blood serum of patients with nephritis and cardiorenal disease, have noted an unmistakable tendency toward increased values for phosphate and sulphate, in contrast with sodium and chlorin. The latter two are excreted with great ease, and, even in the case of the badly damaged kidney, retention of these elements seldom occurs; in this respect they may be said to resemble creatinin. On the other hand, the sulphate ion is apparently excreted with difficulty, so that in kidney insufficiency the concentration of this fraction may increase enormously, in some cases to 3,000 per cent. above the normal value; in this respect the sulphate ion may be likened to the uric acid fraction, although the percentage increases observed are far above any concentrations of uric acid so far reported. Hence Denis and Hobson incline to believe that the evidence that has been accu-

9. Hatcher, R. A., and Weiss, Soma: The Seat of Emetic Action of the Digitalis Bodies, Arch. Int. Med. **29**: 690 (May) 1922.

10. Weiss, Soma, and Hatcher, R. A.: The Mechanism of the Vomiting Induced by Antimony and Potassium Tartrate (Tartar Emetic), J. Exper. Med. **37**: 97 (Jan.) 1923.

1. Bolt, N. A., and Heeres, P. A.: On the Influence of the Spleen on Red Blood Corpuscles, Biochem. J. **16**: 754, 1922.

2. Denis, W., and Hobson, S.: A Study of the Inorganic Constituents of the Blood Serum in Nephritis, J. Biol. Chem. **55**: 183 (Feb.) 1923.

mulating for some years would make the hypothesis of a selective activity on the part of the kidney for the inorganic constituents of the blood seem to rest on a relatively sure foundation.

THE STORAGE OF VITAMIN A IN THE BODY

Among the various features of physiologic interest in connection with the modern study of the vitamins, the problem of their occurrence in milk has been outstanding. Scarcely more than a decade has passed since the existence of specific potencies indispensable to well-being was first recognized to exist in the secretion of the mammary gland. Meanwhile, it has become clear that the content of milk in some of the vitamins at least may vary widely. For the B factor the evidence is still somewhat conflicting, American investigators in general following the lead of Osborne and Mendel in being more skeptical than the English observers as to the occasional occurrence of marked enrichment of milk in this vitamin. With respect to vitamins A and C, however, it is generally accepted that the feed of the lactating animal may play an important part in modifying their presence in milk. Thus, in general, summer milk derived from cows in pasture tends to be superior in antiscorbutic potency to winter milk derived from animals living on air-dried roughages and grains that are poorer in vitamin C than are the fresh green feeds. The content of fat-soluble vitamin A in milk is also markedly influenced by the diet of the cows. Lately, Sherman and Kramer[1] of Columbia University have found that the storage of vitamin A in the body is markedly affected by previous conditions of the diet. Even at weaning time, young animals may already have a considerable store of vitamin A in the body, and thus be able to continue to grow for some time on a diet carefully freed from vitamin A but adequate in all other respects. The body can also store vitamin A at later ages. Sherman and Kramer remark that the differing stores of vitamin A in the bodies of experimental animals, even at early ages, has undoubtedly been a large factor, not fully appreciated, in previous experiments dealing with this vitamin, and in attempts to determine the vitamin A content of different foods. In the domain of infant feeding, it has a special bearing in relation to the transition periods when the young are being weaned to the artificial foods of later life. Some of the commonest of these, as the cereals, which often enter largely into the dietary of the very young, are comparatively poor in vitamin A. It is a great advantage to the young, therefore, to have a liberal factor of safety in a store of vitamin A in their own bodies. And here, in turn, the importance of a suitable diet of the mother during the period of lactation cannot be overlooked. The richness or paucity of her food in vitamins may have a cumulative significance for weal or for woe to the nursing offspring.

1. Sherman, H. C., and Kramer, M. M.: Experiments on Vitamin A, Proc. Soc. Exper. Biol. & Med. **20**: 201 (Jan. 17) 1923.

Telescopes.—Galileo's first telescope collected about eighty-one times as much light as the human eye. The Mount Wilson telescope, the largest in the world today, collects 160,000 times as much light as the human eye.

Association News

THE SAN FRANCISCO SESSION

Invitation from the Oregon State Medical Society

The board of councilors and members of the Oregon State Medical Society, through the secretary, Dr. Otis B. Wight, extend a cordial invitation to Fellows and members of the American Medical Association who go to San Francisco on special trains to stop at Portland and be the guests of the Oregon State Medical Society during a day's excursion up the Columbia River Highway. The trip will require at least three hours each way, allowing time for dinner. Special trains arriving in Portland in the morning or by early afternoon will be met by members of the Oregon State Medical Society, and automobiles will be available for their accommodation. The return to the trains will be in time for their departure at any time in the evening after 10:30.

No More Accommodations Available on New York Special

The train for the special twenty-five day tour from New York City to the meeting of the American Medical Association in San Francisco arranged for under the auspices of the Medical Society of the State of New York is already completely filled. Another train will be arranged for if 125 more subscribers can be secured. It will be necessary for applications for accommodations to be in not later than April 15. Applications should be sent to Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., 1472 Broadway, New York, N. Y.

EDWARD LIVINGSTON HUNT,
Secretary, Medical Society of
the State of New York.

Post Convention Tour to Hawaii

In connection with the telegraphic invitation extended by Hon. Wallace R. Farrington, governor of Hawaii, as published in THE JOURNAL, March 10, the following comprehensive tour has been arranged:

Leaving San Francisco, night of June 29, the party will sail from Los Angeles, June 30, on the *Calawaii*. Visit to live volcano at Kilauea. Automobile drives round Honolulu and the island of Oahu. Reception by Governor Farrington. Visits to Kalihi leper receiving station and hospitals. Returning, arrive at Los Angeles, July 21. Total inclusive cost from Los Angeles back to Los Angeles, $415. Reservations and booklets may be obtained from Fred. J. Halton, 714 Marquette Building, Chicago, former Secretary, Hawaii Tourist Bureau, who will personally escort the party to Hawaii.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 779)

MEDICAL EDUCATION

MARCH 5—MORNING (Continued)

Preliminary Report of the Committee on Trained Nursing to the Council on Medical Education and Hospitals of the American Medical Association

DR. ROBERT W. LOVETT, Boston: The growth of the profession of trained nursing has been so rapid and so extensive that it is impossible that its educational side could have kept pace with its numerical growth. In 1880 there were fifteen training schools for nurses in the United States, with 323 pupils; in 1920 there were 1,755 schools, with 55,000 pupils. The number of schools increased 116 times over, and the number of pupils 170 times over between 1880 and 1920. Nor has the number of women applying for admission to training schools shown any signs of falling off, if one may generalize from the figures of the number of credentials presented for

entrance to the training schools of the state of New York for the three years ending July 31, 1920, 1921 and 1922.

The educational training of the nurse as it at present exists in the United States is not standardized, systematic or uniform in the matter of requirements for entrance, length of the course, and methods of teaching. Those persons who live in the medical centers and who come in contact only with schools connected with the great modern hospitals can hardly form an idea of the conditions existing in the country in general away from medical centers.

DEFECTS IN TRAINING SCHOOLS

There are five defects in the training schools of today: 1. The course, on the whole, is unsystematized, unstandardized, and far from uniform in the different schools. 2. There is in general thought to be too little systematic instruction in practical work in most courses, and too much theory; and whether or not this is true, there is certainly a lack of correlation between the two elements. 3. Many of the teachers in these schools are poorly equipped. 4. There is a waste of time of pupil nurses in uneducational routine work. 5. Many schools are connected with hospitals where clinical facilities are utterly inadequate.

CORRECTION OF DEFECTS

The correction of the defects may be approached by one of three ways: 1. We may strive to raise the upper level of the profession by means of the development and extension of the university school of nursing. 2. We may attempt to define the lower level of what may be considered as the education of a bedside nurse, to attempt after defining it to raise this level and to prevent so-called training schools from continuing as such when they do not conform to reasonable prescribed standards. 3. We may attempt to do both—to define and raise the lower level by a standard minimum curriculum with measures for its enforcement, and develop the university school of nursing to educate more and better teachers to help in carrying this out, and to assist in graduate teaching.

In approaching this matter by any one of these ways, it becomes necessary to consider the following remedial suggestions: (*a*) the desirable length of course for the bedside nurse of private practice; (*b*) supplementary graduate instruction for advanced or special nurses; (*c*) instruction to provide for subsidiary nursing service. It is the opinion of the committee that any proper nursing education should be based on the completion of a four years' course in a high school. In only six states is this a legal requirement at present, whereas in twenty states one year in the high school or its equivalent is considered sufficient. In five states, a grammar school education is all that is required.

MECHANISM FOR CARRYING OUT RECOMMENDATIONS

A committee of this sort which suggests a scheme of improvement, and leaves the matter there, fails partly in its purpose unless it recommends at the same time a mechanism by which recommendations, if adopted, may be carried out. The committee is of the opinion that:

1. The primary requirement of the present situation is the formulation and adoption of a standard minimum curriculum for the training of the bedside nurse of private practice; that this should be formulated with great care, be absolutely definite and simple, prescribe the percentage of time to be allotted to each subject, the character and sequence of the instruction, and provide for practical experience as well as theoretical instruction. This curriculum should be such that it could be carried out by relatively small hospitals and hospitals away from medical centers. If too elaborate, it will be useless.

2. A committee for this most important and responsible work should be appointed, containing in its membership physicians who are competent clinical teachers, representative nurses, and at least one educator, neither a physician nor a nurse. This committee should be arranged for by the American Medical Association in conjunction with the National League of Nursing Education, each having equal representation and appointing its own representatives. The educator should be selected by the other members of the committee when appointed.

3. After a proper time, training schools which do not conform to the scheme outlined by such a committee should be classed and published as schools not accepted by whatever body or committee or organization is made responsible for the matter.

4. The educational requirement for admission to the training school shall as soon as possible be made four years in high school.

5. The course for the bedside nurse of private practice should be made two years and four months.

6. Necessary changes in legislation should be advocated in those states requiring the three year course.

7. Subsidiary nursing should be favored and adopted, and be subject to the same committee or organization recommended (in paragraphs 2 and 3, page 29), which should formulate for it a standard minimum course, of the same simple character as the one described for the training of the bedside nurse.

8. Postgraduate facilities should be provided for the nurse who has graduated from the two year and four months' course, and who desires to qualify herself for special nursing or for teaching, and the university school of nursing can be of much help in raising the standard of teaching.

9. The nurse's training must be regarded as a serious educational problem requiring more of her time for educational work, with some reduction in the waste of her time in noneducational ward routine.

10. Better standards of teaching will be required in the improved schools from both physicians and nurses.

11. The last two mentioned needs will mean increased expenses to hospitals maintaining training schools, but in the end more serious results and greater expense will accrue to these hospitals unless something is done to remedy the present and increasingly chaotic conditions dealt with in this report.

Minority Report of Committee on Trained Nursing

Dr. Richard Olding Beard, Minneapolis: The proposal of the majority of your committee that the American Medical Association should, at this late day, initiate a new movement of its own for the futile repetition of an already fulfilled purpose, the formulation of a model curriculum, will be unwelcome to the profession of nursing. Even were it a necessary or a desirable thing to do, the work to be studied is nursing and not medicine, and concerning the greatly major part of it medical opinion would obviously be of little service. It is neither necessary nor desirable. About the last thing that nursing education needs is the multiplication of model curriculums. What it does need is a broad, educational policy which may be brought to bear on the schools of nursing through the mechanism of their classification, to the higher levels of which they will then strive, in the interests of their own survival, to reach. The majority's proposal to preempt an equal representation with the nursing profession on a working committee is doubtfully politic. The medical profession of today must realize that it may fitly offer, while the profession of nursing may fitly accept, its friendly counsel in matters of nursing education, but it is no longer in a position, if it ever possessed the right, to dictate its conditions or to determine its limits. Its assumption of that right cannot fail of resistance from the profession of nursing. The horoscope of the nurse's training has permanently shifted. Its ideals have come under educational inspiration and control. Naturally, a claim that is based solely on a tradition of the past and has too often served as the excuse for the exploitation of nursing students must necessarily, under these new conditions, be denied; and it is a strictly ethical denial.

The minority of your committee desires further to recommend the suspension at this time of any action looking to the training and legalization of subsidiary nurses. Arguments for this recommendation may be briefly stated: The argument of public interest is paramount. An inferior type of semi-educated nurse may not be offered to large classes of people who are normally self-dependent, but are economically disabled by sickness, without incurring a sense of social

injustice they will resent. That resentment will be reinforced by the fact that the indigent sick receive, by grace of public taxation, a better type of nursing service than these people may command. The corollary of the proposal would lie in the offer of a second hand doctor at a diminished fee. The one suggestion leads straight in the direction of state nursing, the other in the way of "state medicine." Let us not tempt either. Social machinery may be directed by which, through better hospital service, through systems of hourly nursing, through nursing bureaus publicly maintained, efficient nursing at graduates fees may be secured. Cooperation of the nursing profession to this end is to be expected, but responsibility for these measures should not be left to it alone. It is not in the interest of the public that inadequately trained nurses be placed in charge of convalescence and chronic cases. Too many sources of danger arise during convalescence; while the chronic patient usually presents a most difficult problem for the best educated nurse.

The major consideration on which the proposal of the subsidiary nurse has been based is an economic one. The majority report of your committee and the findings of the Rockefeller survey alike suggest that legislation to control the name, the training, the practice and the wage of the subsidiary nurse will be indispensable. The theory of the law and the results of practical experience go to show that no constitutional measure can be devised that will efficiently tag the subnurse; that will determine her degree of education, more or less; that will keep her where she belongs in service, or will prevent her demand for wages as high as the graduate nurse gets. The legislative committee of the Minnesota legislature now in session has refused to provide for the registration of "subnurses" and it is quite clear that public sentiment is not back of the project.

The place of training of the subsidiary nurse is an unknown quantity. Her training in the same hospital with the regular nurses is impracticable. The proposal to train her in inferior hospitals, unfit to educate graduate nurses, will be unacceptable because it will mean the self-acknowledgment of their inferiority and will react on their supply of patients. It is a significant thing that at the last annual meeting of the American Hospital Association a number of hospital administrators supported the subsidiary nurse in theory, but that all of them sidestepped the responsibility of her training. They are not to be blamed. It would be an expensive and unrewarding task. The ethical error of the proposal of the "subnurse" lies not alone at the point of nursing service; it lies at the heart of nursing education. The women are not to be found who, in any number or with any permanent purpose, will be content with a reparation and a position inferior to that which another group of nurses receives and occupies. The minority of your committee recommends then that the proposal be disapproved by the Council.

DISCUSSION ON PAPER OF DR. RYERSON

DR. C. R. BARDEEN, Madison, Wis.: The student should have some kind of bird's eye view of the human being as a whole. He needs to have more than a knowledge of anatomy, physiology, chemistry and pathology as early as possible because, he is dealing with individuals, and not wholly with systems of organs. I should like to see the experiment suggested by Dr. Ryerson tried out. Something along the line we have been giving is better than a purely vertical scheme, although it is well to study the true association of the essentials with what are not essentials for practitioners of medicine, and try to stick to essentials and not lead the student astray by too many details that are not essential. There should be something to stimulate the student's understanding from the beginning that he is not to study anatomy so many hours a week and physiology so many hours a week, but that he is studying the human organization as a whole in relation to health and disease.

DR. G. CANBY ROBINSON, Baltimore: Correlation of the work in the various departments is the dominating idea of curriculum makers at present. In the arrangement of the teaching plant we have one important factor in bringing about this desirable correlation—a point I am going to discuss tomorrow. Another point of considerable importance is the type of training and interest which teachers in the clinical departments have in the fundamental departments. It will not make much difference if we have correlation of the physical plant, unless the teachers of the fundamental and clinical subjects have a real interest in each other. We are urging that the laboratory men have an interest in the work of the clinics, and I feel that those who are teaching clinical subjects should have an equally clear understanding of the problems and progress of the work in the laboratory; so, after all, what we want is intellectual correlation. That can be brought about fairly satisfactorily with the present type of curriculum, and it might be ideally done with the type of curriculum presented today; but I feel that there should be an effort to bring about more intellectual correlation of the different departments than we have at present, so that a back and forth flow of ideas will be definitely and conscientiously presented to the students as they go through the courses.

DR. WALTER L. BIERRING, Des Moines, Iowa: While the plan presented by Dr. Ryerson appears to be novel to our American system of education, it is distinctly an English method and has not only been adopted by English schools but is now being required by the General Medical Council of Great Britain. The council makes a definite requirement that there shall be a distinct correlation between the fundamental sciences and the clinical branches. For instance, in the third year it requires one hour a week in each of the three subjects, anatomy, physiology and pathology, and while it does not require that there shall be the same number of hours during the fourth and fifth years, it suggests that there shall. It especially suggests the introduction of clinical courses in the second year. In the examinations at Edinburgh last summer and in the examinations of the triple qualification board of Scotland, which is conducted in medicine and surgery, definite examinations in applied anatomy, applied physiology and applied pharmacology as well as surgical pathology are also required. The candidate is required to outline in the examination in clinical medicine the heart, the lungs, the liver, the spleen and various other anatomic areas. The same thing is required in surgery. The National Board of Medical Examiners in this country has been trying to copy the same method by having in its examinations applied anatomy, applied physiology, applied pharmacology and surgical pathology.

DR. ALEXANDER PRIMROSE, Toronto: Most schools today attempt to teach the primary subjects early in the course, and in the final years to apply them. The thing now suggested is to teach the clinical years in correlation with the primary departments. Dr. Ryerson has spent much time and labor on this subject, and his colleagues are sympathetic; but we have not as yet attempted to adopt this method. I do not think it could succeed unless a large number of medical faculties of this country should agree to adopt a similar scheme. I hope this subject will be seriously considered and be brought to an issue as to the determination on the part of medical faculties to accept the principle or not.

DR. J. PARSONS SCHAEFFER, Philadelphia: It seems unfortunate that the terms "preclinical" and "clinical" ever came into being. I want to emphasize what Dr. Bardeen has pointed out, that certain things must be done first. We cannot do everything at the same time, and I believe that anatomy of the human body should antedate everything else, particularly an analysis of it. Granting that this may be true and correct, it would then follow that we should do something to bring home at once to the students the why of everything, and for that reason certain clinical subjects should be taught in the freshman year. It must be done to create interest and not have the students study anatomy merely to complete the course, to pass an examination and then to forget it. I know of no better way to correlate the subjects than for the surgeon and the internist to present their cases from the point of view of anatomy and physiology, and the particular thing they have in mind. At present it is not so presented. An internist or a surgeon jumps good and hard on a student if he does not know his anatomy. An ophthalmologist may strike a student good and hard on some detail of anatomy which we are unable to give in the limited number of hours at our disposal. The solution of teaching these subjects is

to bring something into the freshman year that will create interest and show the why and wherefore.

Dr. Victor C. Vaughan, Chicago: Some one spoke about giving lectures on diabetes to freshmen students. How can you give such lectures with any degree of satisfaction when a student has never seen the pancreas and does not know where it is located? He has no idea of the histology of the pancreas. It is perfectly absurd to talk about the islands of Langerhans to a freshman who has never made an observation, and who does not know which end of the microscope to look through. Medicine, as I have defined it several times, consists of those facts culled from the various sciences which can be used in the prevention or cure of disease. The medical student does not know the fundamental sciences. It may be I am an old fogy, but I would prefer to see the system that has been outlined tried in some school in which I am not interested.

Dr. Louis F. Germain, Milwaukee: I think we all agree that anatomy, physiology and chemistry should be taught during the entire medical course. The question is how to do it. There is a great deal of anatomy, physiology and chemistry which is only of academic rather than practical value, but it must be taught. It is not that we do not teach anatomy, physiology and chemistry right, but that we do not continue teaching these branches through the entire medical course. It is up to the clinician to continue teaching applied anatomy and applied physiology during the entire medical course. A student who comes to us at the end of the fourth year has generally forgotten his anatomy and physiology. Who is to blame for it? Not the anatomist or physiologist, but the clinician. He has not kept up with the teaching of these subjects.

Dr. Henry Page, Cincinnati: To lay down a curriculum with 4,000 hours, as suggested in the Toronto scheme, however admirable it may be in some respects, is going too far in the way of rigidity from which we have been trying to escape. One reason why the clinician has not kept up with teaching in anatomy is that the machinery does not exist to do it. We know that the amount of anatomy which remains with a student after the first year, much less the second and third years, is practically a negligible quantity. When he comes to applied science he has lost or forgotten all his anatomy, and has to learn it over again or never does learn. To correct that, the student should apply his anatomy as a subject relating to medicine.

We have introduced into our school a course in anatomy called the anatomy of physical diagnosis, a rather strange title, but in that course the student is brought in contact with the clinician, and we have been trying to get the best clinician possible to teach that course. Our full-time professor of medicine (Dr. Roger Morris) thinks the course so important to the students that he himself is teaching it.

Dr. A. C. Abbott, Philadelphia: I am profoundly grateful to Dr. Ryerson for the concrete scheme he has brought before us. As has been voiced here during the last two years, many are dissatisfied with the experiment that has been in progress for fifteen years, although they are just starting it in France as a new thing. It is essentially what we started when I began teaching, and has gone from bad to worse and we are hoping to get rid of it. I refer to the detached teaching of the sciences separate from their clinical application. Any plan is wrong that does not constantly convince the student that he is studying medicine. I can understand the fascination, interest, and pleasure that the various special branches give to him; but if he is permitted to study them in a detached way, he does not get a comprehensive view of medicine and does not leave school a competent practitioner of medicine—the purpose for which medical schools are organized.

Dr. George E. de Schweinitz, Philadelphia: We are all agreed that, good as it has been, and excellent as the teaching is, the medical curriculum must be improved. An investigation similar to that referred to by the chairman, made with medical students in the school in which I have the honor to teach, brought out the following objections to the present curriculum: (*a*) Lack of correlation between one subject and another; (*b*) inability to understand why certain things are taught; (*c*) inability to understand why so much of certain branches is taught. The only way these doubts can be overcome is by better cooperation between the teachers of the various branches. No single branch should be considered as finished and then locked off, but should be carried on through the entire curriculum by the men most interested, whether it be medicine, surgery, or the special branches. Take my own branch, ophthalmology. It is impossible to turn out a medical student as a specialist. It is wrong. We can more easily make the student understand why any subject is a part of the curriculum, if there is a close cooperation of the fundamental and the clinical branches. We are all anxious to improve the curriculum and to meet it in all the ways suggested here, but I am reminded of what a distinguished educator in this country said not long ago: "It is about time we take up the teachers and straighten them out." There are lots of teachers in medical schools, admirable men, wise, well instructed, excellent, but they do not teach students to the best advantage. Being a pioneer myself in that respect, I speak with authority. Teaching is a very important part of our business today, and while we are anxious to improve the curriculum, we must also try to improve the methods whereby that curriculum is interpreted to the students who wish to go out as the finished product of our efforts, and that, after all, is what we are trying to do.

Dr. E. Stanley Ryerson, Toronto: Preventive medicine was purposely introduced into the first year to show the student at the beginning of his course that the prevention of disease is just as important as its cure. If he acquires this idea at the beginning and continues it throughout the course, he is going to have an enormous influence, when he enters practice, in forwarding all the various public health movements. In working out the details of a revised curriculum, it would be most essential to have the intellectual correlation between the teachers of the various departments as spoken of by Dr. Robinson.

(To be continued)

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Oil Donated for Mosquito Eradication.—The Standard Oil Company has donated 1,000 gallons of oil for use in the mosquito eradication campaign that will be conducted by the state department of health of Alabama this spring. Other oil companies have indicated that they will donate oil for the same purpose.

Chiropractor Convicted.—Reports state that P. R. Ritchie, a chiropractor of Mobile, was convicted in the circuit court by a jury, February 21, of practicing medicine without a license, and was fined $50 and costs. In default of payment of the fine, the defendant was sent to the county jail for twenty days.

ARIZONA

Maricopa County Medical Society Aids "Hygeia."—The Maricopa County Medical Society with headquarters at Phoenix, has sent in 120 subscriptions to *Hygeia,* including hotels, clubs, schools, colleges, ministers, physicians and laymen interested in public health.

ARKANSAS

Catholic Hospital for Eldorado.—A new Catholic hospital will be erected at Eldorado at a cost of $40,000, it is announced. The building will contain a charity ward for the housing of oil field workers who may be injured in the course of their work.

Insane Persons to Be Kept in Jails.—Dr. C. C. Kirk, superintendent of the State Hospital for Nervous Diseases, Little Rock, has requested the county judge and sheriff to commit all mentally deficient persons in their jurisdiction to the county jail in future, instead of making application for their

admission to the state institution, because of the overcrowded condition of the hospital. Dr. Kirk states that the institution now is taxed beyond its capacity, with a total of 2,036 inmates. The normal capacity is 1,850.

Medical School Bill Indefinitely Postponed.—The Arkansas senate, February 28, postponed indefinitely a bill creating a board of five physicians to administer the affairs of the University of Arkansas Medical Department, Little Rock. It was charged that the bill was intended to transfer control of the school from its present dean to another physician. Following this action, the appropriation bill for the school was called up, and Senator Norfleet sought to amend the appropriations by reducing the salary items from $36,500 to $15,000. The motion was lost, and the body, sitting as a committee, recommended the passage of the appropriation bill as it stood.

CALIFORNIA

Extension of County Health Service.—A new branch health unit has recently been opened by the Los Angeles County Health Department to serve Alhambra, San Gabriel and El Monte. Dr. A. S. Baker, formerly of Seattle, has been appointed health officer for that district. A model hygienic laboratory is being installed which will make the usual health department laboratory tests for physicians and the general public. Plans are now under way for the establishment of a community health center for Alhambra, San Gabriel and El Monte, in connection with the new office. A dental clinic and a babies' clinic will be established in the new unit.

Hospital News.—The Sante Fe Railroad will erect a hospital at Needles as part of its $5,000,000 development program in southern California. Because practically the entire population of Needles is dependent on the railway, the hospital will serve the city virtually as a public institution.——Ground was broken, March 1, for the new $600,000 Mater Misericordiae Hospital to be erected in Sacramento to replace the present wooden structure on R Street. The new hospital, which will be six stories high, will be in the form of an X. The site comprises 8 acres.——Excavation work on the hospital to be erected at Bakersfield for Kern County, at a cost of $450,000 was started the first week in February.——Work on a new 200-bed hospital, to be erected in San Diego by the Sisters of St. Joseph, on a new site on Fifth Street, will start in April. The present hospital site on University Avenue will be sold.

CANAL ZONE

Motion Pictures for Lepers.—Thomas Meighan, a motion picture actor, has donated a projecting machine for the lepers in the colony on Canilos Island, off the coast of Panama. The Paramount Company will supply films at intervals.

CONNECTICUT

Personal.—Dr. Edwards A. Park, professor of pediatrics at the School of Medicine of Yale University, addressed the New England Pediatric Society at the Boston Medical Library, Boston, March 9, on "Special Roentgen-Ray Diagnosis of Rickets, Syphilis and Scurvy." Dr. Park addressed the New York Society of Orthodontists at Vanderbilt Hospital, New York, March 10, on "Facts About Children of Practical Importance to the Orthodontists."

Yale University News.—The Sterling Chemistry Laboratory, a new $2,000,000 structure, will be formally dedicated, April 4, on which day in 1804, Benjamin Silliman, the first professor of chemistry at Yale, delivered his first lecture. English, Scotch, French, Italian, Dutch and Canadian universities will be represented by delegates. The dedication will take place during the annual session of the American Chemical Society in New Haven. The Sterling Hall of Medicine, the next unit to be completed under the fund made available by the bequest of John W. Sterling, is progressing steadily.——Cheney Brothers, silk manufacturers of South Manchester, have offered the sum of $1,000 yearly to Yale University for two years, the money to be used for a fellowship in organic chemistry in the graduate school. This fellowship will be known as the Cheney Fellowship in Organic Chemistry, and will be awarded to a graduate student who has demonstrated the ability to pursue work leading to the degree of doctor of philosophy.

DISTRICT OF COLUMBIA

Smithsonian Institution.—Mr. Henry White has been reappointed regent of the Smithsonian Institution, Washington; Frederick A. Delano has been appointed to succeed the late John B. Henderson, and Irwin B. Laughlin to succeed the late Alexander Graham Bell.

ILLINOIS

Physician Fined for Violating Harrison Narcotic Law.—According to reports, Dr. David H. Worthington, Aurora, aged 71, was found guilty of violating the Harrison Narcotic Law, in the federal court, Chicago, March 9, and fined $100.

Hospital News.—A fifty-bed hospital is being erected by the Ingalls-Shepard Forging Company for the city of Harvey. The institution will cost $250,000. Lodges, fraternities and social societies will raise $20,000 for the furnishings and equipment.——St. Mary's Infirmary, Cairo, has recently added an annex for tuberculous patients, a nurses' home and a new wing to the main hospital building at a total cost of $225,000. ——A new three-story addition will be erected at St. Vincent's Hospital, Taylorville, at a cost of $75,000.

Schick Test for Inmates of State Institutions.—Under a cooperative arrangement between the state departments of public health and welfare, a campaign is on foot for applying the Schick test to inmates of state institutions. The work will be carried out under the direction of the health department, which will also furnish toxin-antitoxin for the immunization of all those giving positive reactions. The boys' school at St. Charles carried out the plan some time ago, and all new-comers are now tested on arrival, and immunized when nonimmune to diphtheria. During the week of March 11-17, the 2,000 inmates of the Lincoln State School and Colony were Schick tested, and follow-up work will proceed immediately. Other state institutions in which danger from diphtheria exists will be treated in like manner.

Tuberculosis Sanatorium Survey.—A field physician from the state department of public health has recently completed a survey of the eight county tuberculosis sanatoriums now in operation in Illinois. The findings show a maximum capacity of 306 beds. The average number of patients cared for in the eight institutions is 251, while the average cost of maintenance each month for all the sanatoriums is $19,200, or slightly more than $76 a month for each patient. The survey showed further that three of the sanatoriums hold diagnostic clinics; all but one conduct dispensary service, and all but two carry on, in some measure at least, county tuberculosis and public health work. The lowest appropriation for any of the sanatoriums for 1923 is $10,000, but the total amount available in that instance is nearly $30,000, a contract with the U. S. government with reference to tuberculous ex-service men making up the difference. All the seven other sanatoriums have appropriations for 1923 ranging from $25,000 to $40,800 for maintenance, and in two cases extra appropriations for building.

Chicago

Illegal Practitioner Fined.—It is reported that "Prof." J. B. Cottaze, who maintained an office on West Madison Street, was fined $25 and costs for practicing medicine without a license, by Judge Adams in the municipal court, March 13. Cottaze, it is alleged, collected thousands of dollars from his patients. The judge ordered the "professor" to leave the city.

Personal.—Dr. Frank Smithies has resigned as gastroenterologist and attending physician to the Augustana Hospital, to assume the duties of physician-in-chief and head of the department of internal medicine at St. Elizabeth's Hospital.——Dr. Alfred A. Strauss addressed the Vermilion County Medical Society at Danville, March 6, on the subject of "The Surgical Treatment of Gastric Ulcers."

Medical Student Arrested.—Reports state that "Dr." Thomas B. Bondus, with offices in the Kesner Building, was arrested, March 2, on charges of practicing medicine without a license. Bondus is said to be an osteopath, who claims he is studying medicine. According to records, Bondus studied medicine at the Hahnemann Medical College and Hospital, Chicago, as a third-year student, 1921-1922, but never graduated.

Society News.—At a meeting of the Laboratory of Surgical Technique of Chicago, March 22, Dr. Leon Asher, professor of physiology at the University of Bern, Switzerland, spoke on "The Physiology of the Thyroid Gland from the Clinical Standpoint." Dr. A. J. Ochsner, presided.——At the fifty-sixth regular meeting of the Chicago Society of Internal Medicine, March 26, Dr. J. Curtis Lyter, St. Louis, will speak on "The Pathways of the Mediastinum, Lungs and Pleura."

Conference on Hospital Service.—At a meeting of the American Conference on Hospital Service, held in Chicago, March 5, the following officers were elected for the ensuing year: president, Dr. Frank Billings, Chicago; vice presidents, Drs. Andrew R. Warner, Chicago, and Linsly R. Williams,

New York, and treasurer, Dr. Harry E. Mock, Chicago. Dr. Fred C. Zapffe, Dr. Linsly R. Williams and Miss Sarah B. Place, R.N., Chicago, were elected to the board of trustees (term expires 1926).

Joint Clinical Meeting.—The Chicago Ophthalmological Society and the Chicago Laryngological Society will hold a joint clinical meeting, April 16-17, under the presidency of Dr. Robert von der Heydt. The first day will be devoted to clinical presentations at the various ophthalmic clinics, and the second day to work at the otolaryngologic clinics. A banquet will be given at the Hotel Sherman, April 16, to which all ophthalmologists and laryngologists are invited. Dr. William Lemuel Benedict, Rochester, Minn., will address the meeting.

City to Recognize Service of Physicians.—The city finance committee, March 15, approved recommendations of Dr. Herman Bundesen, health commissioner, that "as an act of courtesy" physicians who are aiding the health department as a consulting staff be placed on the city pay roll at $1 a year. Dr. Bundesen stated that these men are giving their time free in the interests of public health, and their services could not be bought by the city. There are 100 on the list, among them being Drs. Louis E. Schmidt, Joseph B. DeLee, David S. Hillis, Isaac A. Abt, Arthur I. Kendall, Ludvig Hektoen, William A. Evans, John Dill Robertson and Julius H. Hess.

IOWA

Des Moines Subscription to "Hygeia."—The city of Des Moines has sent in 166 subscriptions to *Hygeia,* including physicians, ministers, teachers and laymen in the community.

Hospital Plans.—A campaign to collect $150,000 has been inaugurated to erect a new building at St. Luke's Hospital, Macon City. Ground for the new institution will be broken, April 8. The entire cost of the structure is estimated at $600,000.——The contract has been let for the new $275,000 addition to the Mercy Hospital, Cedar Rapids.

MARYLAND

Maryland Psychiatric Society Plans Clinic.—At a special meeting of the Maryland Psychiatric Society held at Athol Sanitarium, March 13, announcement was made of the opening of a mental hygiene clinic about April 1, at the University of Maryland. It was also decided at this meeting to bring to the attention of the next general assembly, the importance of establishing a city psychopathic pavilion in Baltimore at a cost of about $300,000; until such provision is made by the legislature, advice regarding treatment to early mental cases will be given at the proposed mental hygiene clinic. The following program was presented: "A Mental Health Clinic," by Dr. Arthur P. Herring, commissioner of mental hygiene of Maryland; "Medical Aspects of a Mental Health Clinic," by Dr. Ross McC. Chapman, superintendent of Sheppard and Enoch Pratt Hospital.

Children's Clinics for Baltimore City.—Mrs. Henry Barton Jacobs has turned over to Baltimore and Dr. William S. Baer, for child welfare work, the Robert Garrett Hospital for Children, which has been closed since the death of Dr. Walter B. Platt, formerly physician in charge. Dr. C. Hampson Jones, commissioner of health, will establish there six free clinics — tuberculosis, dental, eye and ear, nose and throat, child welfare and a Schick, or antidiphtheria, clinic. Dr. Baer will maintain beds for the preliminary examination and treatment of children in connection with his orthopedic work. He will work independently, but there will be at all times cooperation between him and the Baltimore Health Department. Mrs. Jacobs will maintain the hospitals at her own expense, and the city will provide the health department with funds for the employment of three physicians at $1,000 each, and for such equipment as may be necessary. The clinics will be open by May 1. Dr. John E. O'Neill will have general charge of the tuberculosis clinic, with a specialist assigned to assist him. The other appointments have not been made.

MICHIGAN

Midwives in Detroit.—The Detroit Department of Health states that during the last three years permits have been refused or revoked for about 300 midwives. Nearly 180 midwives were at work in Detroit, a few years ago. Following strict examination and inspection by the health department, there are only forty midwives with permits now practicing.

MINNESOTA

Liquor Permits Revoked.—According to reports, twenty-five physicians in Minnesota have had their permits to prescribe liquor revoked for abuse of the privilege. It is stated that, of nearly 5,000 prescriptions filled in Minneapolis, 50 per cent. were issued to fictitious names.

MONTANA

Sterilization Bill Signed.—Governor Dixon, March 15, signed the eugenic sterilization bill, passed by the legislature recently. This bill provides for the sterilization of all idiots, feebleminded persons and epileptics confined in institutions, on consent of the guardian or custodian.

Conference on Rocky Mountain Spotted Fever.—Dr. W. F. Cogswell, secretary of the Montana State Board of Health, has issued invitations to the health officials of the Rocky Mountain states, for a conference on the control of Rocky Mountain spotted fever, which is most virulent in the Bitter Root Valley, Montana. The disease, however, has been reported also in Wyoming, Utah, Idaho, California, Oregon and Washington.

NEBRASKA

Physicians' Licenses in Peril.—It has been discovered that every license issued since the passage of the Code bill, in 1919, may be declared illegal should the issue be carried to court, it is reported. Governor Bryan found that the Code Law nullified the act creating the state medical advisory board which has been issuing medical licenses for nearly four years without legal authority. When the board is again legalized by an act to be presented at the present session of the state legislature, it is planned to issue a blanket order affirming the legality of all physicians' and surgeons' licenses issued within the last three and one half years.

NEW MEXICO

Personal.—Dr. Eugene William Fiske, Santa Fe, has resigned as penitentiary physician following four years of service.——Dr. William M. Lancaster, Clovis, has been appointed health officer of Curry County, to succeed Dr. George K. Maynard.

NEW YORK

State Society Opposes Antiheroin Bill.—The Medical Society of the State of New York has announced its opposition to the bill introduced by Senator Bloch prohibiting the sale or manufacture of heroin in the state of New York. Dr. James N. Vander Veer, chairman of the legislative committee of the society, informed Assemblyman Duke, chairman of the Assembly Codes Committee, that the Medical Society of the State of New York wishes to be heard on this measure.

Antivivisection Bills Killed.—The Assembly Codes Committee, March 14, voted unanimously to kill the Cotillo-Leininger antivivisection bills. One bill purposed to prevent "experimentation" on children, and the other would have prevented experiments on dogs. Among those at the hearing who opposed the antivivisection bills, March 13, were Drs. Simon Flexner, William H. Park and Frank D. Jennings, representing the Medical Society of the State of New York.

New Chiropractor Bill.—A bill aimed at chiropractors was introduced into the legislature, March 9, by Assemblyman Dr. H. W. Lattin of Orleans County. It amends the public health law by providing that a person convicted of practicing medicine illegally may be punished by a fine of $50 or imprisonment of not more than six months, or both. He is also liable for an additional penalty of $500 for each offense, to be recovered by an action brought by the attorney general.

Professor Frankl Lectures.—Dr. Oskar Frankl, professor of pathology, the University of Vienna, delivered the first of the spring series of ten practical lectures given under the auspices of the Kings County Medical Society, at Brooklyn, March 9. Dr. Frankl's subject was "The Endocrines." Beginning March 12, he will lecture in the Hoagland Laboratory, Brooklyn, from 4 to 6 o'clock daily until the end of the month. A similar course at Cornell University Medical College in Manhattan will be conducted simultaneously. During April and May, Dr. Frankl will conduct courses in St. Louis and Chicago.

Plan to Improve Outpatient Service in Pediatrics.—The section on pediatrics of the Associated Out-Patient Clinics of New York has, through its executive committee, been working out plans for improving outpatient service in pedi-

atrics. The children's medical division of Bellevue Hospital was chosen as an institution in which to demonstrate a well-rounded pediatric service, and the demonstration was begun, February 1. Unity between the inpatient and outpatient service will be possible by the transfer of records between ward and outpatient department. A plan for the study of results in pediatric outpatient service is also being tried out. Reports of the demonstration at Bellevue and the plan for studying results will be published for the benefit of those interested in pediatric outpatient service.

Bill to Extend Workmen's Compensation.—A bill has been introduced into the legislature which aims to bring all individuals or firms employing two or more persons under the workmen's compensation insurance act. The measure has been endorsed by the state federation of labor and the American Association of Labor Legislation. Under the proposed bill, physicians, lawyers and any other person employing two or more stenographers would be compelled to take out workmen's compensation insurance. The sponsors of the bill call attention to the fact that in many instances the courts have awarded heavy damages, which the small employer of labor has had to meet. There are several other measures proposing changes in the workmen's compensation law before the legislature. One bill, known as the Lacey O'Conner measure, greatly increases the awards that can be made for permanent or partial disability sustained in industrial plants. Another bill increases the waiting period for filing claims from seven to fourteen days, and it is contended that this will increase claims by 17 per cent. A third bill reduces the noncompensated waiting period in industrial accidents from fourteen to seven days, and provides for compensation from the date of the accident, if the period of disability extends over twenty-six days instead of forty-nine days.

Proposed Amendment to Public Health Law.—A bill entitled "An Act to Amend the Public Health Law in Relation to the Conduct of Medical Examinations" provides that the state board of medical examiners shall consist of nine or more members, one third to be annually appointed by the board of regents. It raises the fee for examination to $35, and provides that the candidate must be a citizen of the United States. It lengthens "a satisfactory course" to eight months. It further provides that, in lieu of the first two years of the medical course, the regents may accept evidence of graduation with the degree of bachelor or doctor of dental surgery from a registered dental school, if the requirements are essentially those of the first two years in medical school. The subjects of hygiene and sanitation are omitted from the list of subjects in which the regents may make conditional admissions to examination. The act would admit to examination a candidate who has received the degree of bachelor of medicine from a recognized school of medicine in this country or in Canada or from a medical school in a foreign country maintaining a standard not lower than that prescribed for medical schools in this state. The examination, according to this amendment, will be held three times annually, and the regents may accept, in lieu of their examination, the certificate of the National Board of Medical Examiners. Other portions of the bill have been left intact.

New York City

Harvey Society Lecture.—The ninth Harvey Society lecture will be delivered by Dr. John Howland, professor of pediatrics, Johns Hopkins University, Baltimore, at the New York Academy of Medicine, March 31. His subject will be "Rickets."

Personal.—Milton C. Whitaker, for six years professor of chemical engineering at Columbia University, has been awarded the Perkin medal presented annually for the most notable achievement in applied chemistry. The award was made in recognition of a series of achievements in the continuous production of ethyl acetate made by Dr. Whitaker and a corps of research chemists working under his direction. ——Dr. Charlton Wallace has resigned as surgeon in charge of the Reconstruction Hospital, Central Park West.——The Brooklyn Chapter of Hadassah gave a reception for Dr. I. M. Rubinow, who has just returned from Palestine, where he was for four years director of the Hadassah medical organization. The occasion marked the opening of the Hadassah campaign to raise $100,000 for nonsectarian medical work in the Holy Land.——Dr. Bronson Grothers of Harvard University read a paper on "The Intracranial Mechanism of Labor and Its Relation to Later Disabilities in the Child," before a joint meeting of the section of obstetrics and gynecology and the section of pediatrics of the New York Academy of Medicine, March 8.

OHIO

Muskingum County Academy of Medicine Aids "Hygeia."—The secretary of the Muskingum County Academy of Medicine has forwarded eighteen subscriptions to *Hygeia* as representing a special subscription by that society.

Chiropractors Fined.—Peter Boike, Madisonville, and Adolph Stoerker, Norwood, chiropractors, were fined $50 and $25, respectively, by Judge Dumont in St. Barnard, March 7, it is reported, for practicing medicine without a license. Both men decided to serve a prison sentence in preference to paying the fine.

Workmen's Compensation Law. — The Supreme Court recently decided that the term "injury" in the Ohio Workmen's Compensation Law does not include diseases contracted in the course of employment, and accordingly holds that death from typhoid fever is not compensable. In the case of *Industrial Commission* v. *Cross* the judgment of the Ohio Court of Appeals was reversed.

Columbus Academy of Medicine.—At a dinner given by the academy at the Chittenden Hotel, February 26, Dr. Paul Roth of Battle Creek Sanatorium, Battle Creek, Mich., gave an address on "The Respiratory Exchange in Relation to Clinical Diagnosis." Dr. Charles E. Roderick, also of the Battle Creek Sanatorium, presented interesting data on the possibility of spreading respiratory infection by means of the apparatus for the determination of basal metabolism.

OKLAHOMA

Hospital News.—The deal tentatively made with members of the Bryan County Medical Society regarding the Durant Memorial Hospital (THE JOURNAL, March 10, p. 704) was not consummated. The institution has been purchased by two local physicians and is now open to all medical practitioners who wish to take advantage of its facilities.

Medical Board Bill Goes to Third Reading.—The senate bill creating a state board of medical examiners, with an amendment excepting Christian scientists from certain of its provisions, was passed to engrossment and the third reading by the upper house, February 28. This act creates a board of seven members, appointed by the governor, who shall be graduates from recognized medical colleges and who have been legal and active practitioners of medicine in Oklahoma for at least five years prior to their appointment.

Health Commissioner Asks Physicians' Support.—Dr. E. A. Davenport, recently elected state health commissioner, has sent letters to all the physicians of the state asking that medical forces rally to support the department of health in securing appropriations totaling $208,670 for each of the next two years. Three large departments have been added to those under control of the board; the bureau of control of epidemics, for which $15,000 is asked; a venereal disease department, for which $20,000 is asked, for upkeep, and a bureau of maternity and infant welfare, to support which $21,370 is asked.

PENNSYLVANIA

Graduate Course for General Practitioners.—A graduate course of three weeks' duration will be given at the University of Pittsburgh School of Medicine, beginning May 31. This course will be devoted to the interests of the general practitioner. Instruction will be by lecture, clinic and demonstration, at the school of medicine and the large hospitals of the city.

Philadelphia

Dr. Deaver Made Professor Emeritus.—Dr. John B. Deaver, who having reached the age limit, retired as John Rhea Barton professor of surgery at the University of Pennsylvania Medical School, Philadelphia, June, 1922, has been named emeritus professor of surgery in the university.

UTAH

National Association to Be Entertained.—Dr. F. A. Goeltz, president of the Salt Lake County Medical Society, has appointed a committee to carry out plans for the entertainment of the physicians who will pass through Salt Lake City in June en route to, and returning from, the annual session of the American Medical Association in San Francisco. The medical society will have a reception committee at the depots to meet every delegation, and each party will be consulted as to its wishes with regard to recreation while in the city.

WASHINGTON

Tacoma Subscriptions to "Hygeia."—Pierce County Medical Society with headquarters at Tacoma has sent in 199 subscriptions to *Hygeia*, the new journal of individual and community health, published by the American Medical Association.

CANADA

Social Hygiene Campaign.—A social hygiene campaign was inaugurated in January by the Canadian Social Hygiene Council, under the auspices of the department of health of the province of New Brunswick. Dr. John J. Heagerty of the federal health department, Dr. Gordon A. Bates of the Canadian Social Hygiene Council, and Dr. John A. McCarthy of the health department traveled almost continuously for two weeks conducting public lectures in every part of the province.

Personal.—Dr. Norman H. Sutton, Peterborough, has been appointed district health officer of District No. 4 under the Ontario Provincial Board of Health, to succeed Dr. George Clinton.——R. B. McCauley, Sault Ste. Marie, has been appointed sanitary inspector of the board of health of the Province of Ontario, to succeed the late James Taylor.——It is announced that legislation is now under way in Ontario to reward Dr. Frederick Banting of Toronto for his discovery of insulin.——Dr. A. E. Webb-Johnson, D.S.O., of London, England, recently addressed an assemblage of physicians and medical students at the Toronto Academy of Medicine.

GENERAL

Committee on Narcotics Completes Report.—Dr. Rupert Blue, U. S. Public Health Service, who has been representative of the United States at Geneva during the deliberations of the League of Nations committee on narcotics, advised the State Department this week that the committee had completed its task, and copies of the report agreed on by the various national representatives were being forwarded to Washington. Dr. Blue was assigned to the committee at the request of the league.

First Aid Manual for Postal Employees.—Just before his transfer from his position as head of the Postoffice Department to the position of Secretary of the Interior, Dr. Hubert Work issued a manual, entitled "First Aid for Postal Employees." The book was prepared through cooperation with the U. S. Public Health Service, under the supervision of P. A. Surg. R. C. Williams. The manual has twenty-four pages. It is pocket size, and is one of the safest booklets of its kind thus far prepared for the public. The advice is invariably simple, cautious and limited to such measures as the ordinary person of average intelligence might very well understand. In addition, every postoffice throughout the United States has been furnished with a first-aid emergency chest, 115 large outfits going to the larger postoffices and 2,000 smaller outfits to the smaller offices and railway terminals.

Psychiatric Social Work.—Announcement is made of the organization of a section on psychiatric social work as a special section of the American Association of Hospital Social Workers. Graduates of recognized courses in psychiatric social work are eligible for membership after being employed for one year in social work in a hospital or dispensary. Without such special training, two years' service in psychiatric social work is required. The entrance requirement for the special courses at Smith College and the New York School of Social Work is education of college rank. The special course covers about two years and includes practical training in the field for at least nine months. It is hoped that these standards will be maintained. A curriculum was recommended by a committee, which worked during the year 1921-1922. The objects of the section are: (1) to promote association of psychiatric social workers, and (2) to promote standards of psychiatric social work. The next meeting will be held in conjunction with the Conference on Social Work in Washington, D. C., May 16-23. The officers of the section are: Mary C. Jarrett, Boston, president; Mary Ferguson, Philadelphia, vice president; Maida H. Solomon, Boston, secretary-treasurer. Inquiries should be addressed to Mrs. H. C. Solomon, 74 Fenwood Road, Boston.

The American Child Health Association.—The important personnel of the American Relief Administration have joined in a consolidation of the American Child Hygiene Association, and the Child Health Organization of America, in the formulation of a new voluntary agency for the advancement of child life, called the American Child Health Association. The American Relief Administration has volunteered to guide the executive effort of the new organization in its endeavor to provide funds to carry on its work. The officers of the new organization are Herbert Hoover, president; L. Emmet Holt, first vice president; Livingston Farrand, second vice president; Thomas D. Wood, third vice president, and Philip Van Ingen, secretary. The headquarters are at 532 Seventeenth Street N.W., Washington, D. C., and the administrative office at 370 Seventh Avenue, New York. The object of the organization is to use the great experience of the American Relief Administration in saving children to the advantage of American children, and to translate into facts the "Bill of Rights," stated by Mr. Hoover, its president: There should be no child in America who is not born under proper conditions; does not live in hygienic surroundings; ever suffers from malnutrition; does not have prompt and efficient medical inspection and attention, and does not receive primary instruction in the elements of hygiene and health.

Bequests and Donations.—The following bequests and donations have recently been announced:

University of Cincinnati College of Medicine and the Hospital of the Protestant Episcopal Church for Children, Cincinnati, each $250,000, under the will of Mrs. H. H. Taylor.

The residuary estate of Margaret Jeager, valued at approximately $100,000, to be divided among the following institutions: St. Vincent's Hospital, New York; Lenox Hill Hospital, St. Joseph's Home for the Aged, St. Joseph's Hospital for Consumptives, Lebanon Hospital, Wyckoff Heights Hospital, Brooklyn, Isabella Home, New York Foundling Hospital, Association for Improving the Condition of the Poor and the Society for the Relief of Ruptured and Crippled.

Epileptic Hospital, Oakbourne, Pa., and the Rush Hospital for Consumption, Philadelphia, each $10,000; Presbyterian Hospital, Philadelphia, $10,000, for free beds in memory of Jacob Y. Dietz and Eugene Santee; Children's Seashore Home, Atlantic City, N. J., the American Oncologic Hospital and the Lankenau Hospital, Philadelphia, each $5,000, under the will of Miss Mary E. Santee.

For a new hospital at Wakefield, Mass., $50,000, by an anonymous donor.

Servants for the Relief of Incurable Cancer, New York, $57,947, by the will of Mrs. Charles T. Klein.

Touro Infirmary, New Orleans, $25,000, by Harmony Club members.

St. Vincent's Hospital, Toledo, Ohio, $20,000, by the Rev. J. Berthelot of Tiffin.

St. Agnes Hospital, Fond-du-Lac, Wis., $10,000, by Dr. George W. Earle of Harmansville, Mich.

Sunset Home and Hospital, Concordia, Kan., a 160 acre farm valued at $20,000, by Olof Anderson.

St. Francis Hospital, Santa Barbara, Calif., $1,000, the result of a children's fete.

Burlington (N. J.) Hospital, $500, by the will of Mary A. L. Bishop.

Campaign to Improve Health of Indians.—A special campaign to eradicate trachoma and reduce tuberculosis among American Indians has been inaugurated by the Office of Indian Affairs of the Department of the Interior. Special instructions were sent out to all superintendents that physicians at the agencies and schools begin at once study of the symptoms and diagnosis of these diseases and immediately give treatment in every available case. In cases of trachoma, medical personnel are instructed to conduct systematic examinations of eyelids of Indians so that there will be no delay in giving treatment to those affected. Physicians on duty among the Indians are also urged to equip themselves professionally to do the expression operation for trachoma. The crusade against tuberculosis is to be vigorously pushed by health officials in the Indian Service. Special efforts are to be devoted to an early diagnosis of this disease, after which a carefully outlined routine of living and treatment is to be enforced. The instructions sent to superintendents stated that the past high tuberculosis death rate among Indians because of racial predisposition would no longer be considered a satisfactory explanation for increased morbidity from this source. A survey of the existence of simple and toxic goiter among the Indians of the United States has been started by the Department of the Interior. The census will be completed by the end of the month. Its purpose is to obtain data of historic and medical value, and Indian schools and agencies have been instructed to give early records regarding individual cases of goiter found among the various tribes.

The Standardization of Biologic Stains.—It is not generally realized that dyes used for biologic stains, in order to give constant results, must be of precise chemical composition, and that it is difficult for the chemist or biologist to control their composition. Before the war, all stains were imported from a single German firm, which did not manufacture stains, but bought textile dyes, and after preliminary testing bottled them and sold them under its own name to laboratories. The war deprived American laboratories of this source of stains, and after prewar stocks had given out, it was difficult to get stains of good quality. A cooperative investigation of American made dyes was arranged through the National Research

Council, among the members of several national societies. That work has been organized now under a special commission independent of the research council, but still representing the different national societies that were cooperating in the earlier work. At the meeting of the executive committee of this commission in New York, March 2, it was shown that stains available in America now are in practically all cases as good and sometimes better than the best of the prewar stains. The most important fact brought out at this meeting was that prewar stains were standardized only in an empiric way by the purchase of large quantities without knowledge of the exact composition of the dye, but they are now standardized on the basis of pure chemicals. In some cases, the impurities present in prewar stains were necessary. These impurities were other dyes and sometimes supposedly inert materials, such as dextrin. The task before the commission was to find what the impurity was that was responsible for the good staining qualities of the impure product, and then to demand that these impurities be present, as intentionally added ingredients. When this has been done, and the products are labeled, American stains will in truth become standardized. The commission will soon issue certifications of batches of stain that it has found satisfactory. These stains will be put on the market under a special label, bearing the name of the commission.

Peace Time Health Program of American Red Cross.—A health advisory committee of the American Red Cross, consisting of Drs. William H. Welch, Baltimore; Herman M. Biggs, New York; Thomas S. Cullen, Baltimore; Hugh S. Cumming, Washington, D. C.; Livingston Farrand, Ithaca, N. Y.; Franklin H. Martin, Chicago; Fred B. Lund, Boston; George M. Piersol, Philadelphia; John H. J. Upham, Columbus, Ohio, and C. E. A. Winslow, New Haven, Conn., was appointed in October, 1922. Its report was recently submitted to and approved by the Red Cross. The following policies concerning a peace time health program were endorsed by the committee:

1. The organization of classes in home hygiene and the care of the sick.
2. The organization of classes in nutrition.
3. The organization of classes in first aid and life saving.
4. The health phases of the Junior Red Cross program, such as (*a*) the development of personal health habits; (*b*) participation in a school health program, and (*c*) participation in community health programs.
5. The enrolment of properly qualified nurses under the division of nursing service.
6. The organized development of public health nursing in rural and semi-rural districts, through the activity of the division of public health nursing.
7. Assistance in the development and standardization of the training of public health nurses through loans, scholarships, subsidies and the like.
8. The development of machinery for the coordination at one central point of the work of various local health agencies.
9. Cooperation on a national scale with such organizations as the National Health Council for the purpose of furthering the coordination of voluntary public health activities.

The committee recommended that the home hygiene and nutrition work be extended by the organization of a health study group—for the consideration, first, of the principles of personal hygiene, and second, of local community health conditions and health needs; that it should be regarded as an essential principle by the Red Cross that all health work undertaken should be carried on only with the knowledge and approval of the state department of health and of the locally constituted health authorities of county, city or town; that in view of the intimate contact between a public health program of any type and the work of the medical profession, chapters should ask the local medical society or the local physicians as a group to nominate a physician of their own choice to act as their representative on the chapter executive committee or the committee on nursing activities. Judge John Barton Payne, chairman of the American Red Cross, announced that a director of health service will be chosen as soon as a suitable person can be found, and the recommendations of the committee put into effect.

LATIN AMERICA

Public Health Society in Brazil.—A Brazilian public health association was recently organized. Dr. Carlos Chagas is president and Dr. J. P. Fontenelle, secretary.

Brazilian Society Elects Officers.—The following officers were elected by the Medical and Surgical Society of Rio Janeiro: president, Prof. Fernando Magalhaes; vice president, Prof. Miguel Osorio de Almeida; secretary, Gen. Dr. Arnaldo de Moraes; speaker, Dr. Carlos Sá; treasurer, Dr. Custodio Fernandez; librarian, Dr. F. Catao; editor, Dr. Felicio Torres, and director of museum, Dr. Mario Góes.

Personal.—Dr. José Arce, professor of surgery at Buenos Aires, has been elected an honorary member of the Academia de medicina at Rome. At the same meeting, Drs. L. Lenzi and S. Marino of the Italian hospital at Buenos Aires were elected corresponding members.——Dr. S. Mazza, professor of bacteriology at Buenos Aires, has left for Europe, intending to study tropical diseases with Nicolle at Tunis, and malaria in France and Italy. He is one of the editors of the *Prensa Médica Argentina.*

Memorial to Carrion.—At the recent Latin American Medical Congress at Havana, a tribute was paid to Daniel A. Carrion of Lima, the young martyr to science in 1885 during research on Peruvian verruca and Oroya fever. The *Vida Nueva* endorses the suggestion made at the congress that each of the American republics should send a block of granite to Peru for a monument to Carrion, each block to be appropriately marked, and the whole to form a memorial shaft. Our exchange urges that prompt action be taken so that this commemoration will be an accomplished fact when the next Latin American congress meets in Mexico.

Nicaragua Wants a National Pharmacopeia.—The *Gaceta Médica de Nicaragua* contains a letter from Dr. Andrés Morin which presents data demonstrating the inconveniences and dangers of the present condition in Nicaragua without any standard pharmacopeia. The same drug purchased at different times in the same pharmacy may differ materially according as the manufacturing firms follow the French or United States or other pharmacopeia. The French Codex is the one that has been most in use, but the United States measurement by measure instead of weight is more convenient. The recent Latin American Medical Congress at Havana discussed the necessity for a Latin American pharmacopeia.

FOREIGN

New Spanish Journal.—Under the title *Clinica y Laboratorio,* a new monthly journal has begun publication at Saragossa, Spain. The editor is Dr. R. Horno Alcorta. The new journal is octavo size and contains an average of 100 pages and six original articles, with illustrations. The subscription price is 40 pesetas a year.

Medical Fees Increase in Portugal.—The Portuguese Medical Association, on account of the continuous increase in the cost of necessaries, has decided to raise its fee scale. In view of the fluctuations of Portuguese money, fees will be based on the 1914 prices of necessaries plus the proportional increase in these since that time.

Gift for Research Work.—Sir Alfred Yarrow of London has donated nearly $500,000 to the Royal Society for research work. The fund may be administered at the society's discretion, but Sir Alfred said: "I should prefer that the money be used to aid scientific workers by adequate payment, and by the supply of apparatus or other facilities rather than to erect costly buildings."

Italian Fund for Medal in Chemistry.—A committee has been appointed by the Italian Association of General and Applied Chemistry to arrange a celebration in honor of the seventy-fifth anniversary of Professor and Senator E. Paternó. The "Paternó medal" will be conferred annually to the author of the most important contribution to chemistry, regardless of nationality. Contributions to a fund for this purpose are welcome from the chemists of the world.

Institute for Medical Research of the Federated Malay States.—The *British Medical Journal* announces receipt of the annual report of the institute, compiled by Dr. William Feltcher, acting director of the government laboratories, in which it is stated that a special inquiry was made in cases of malaria described as "quinin resistant." Of forty-four such cases investigated, in only one was the condition uninfluenced by quinin. In one other case described as "relatively resistant," parasites persisted for a long time in spite of treatment.

Protection Against Injury from Roentgen Rays.—A conference was recently held at Berlin to discuss ways and means for better protection of roentgenologists and for workmen making the apparatus which they use. Professor Bumm presided, and a number of specialists and labor leaders joined in the discussion. It was unanimously decided that there is no necessity for legislative action in the matter, but a collective inquiry is planned. Questionnaires are to be sent to all the university clinics and large hospitals and to certain roentgenologists to collect data on the subject.

Rockefeller Mission Retires from Tuberculosis Work in France.—The *Presse médicale* relates that the Rockefeller Mission has completed five years of its active and *souveraine-*

ment bienfaisante propaganda against tuberculosis in France, and has handed over its services and its activities to the Comité national de défense contre la tuberculose. The seat of this is 66 rue Notre-Dame-des-Champs, Paris. It is in charge of M. Léon Bourgeois and of Professors Calmette and L. Bernard, and the work is to be carried on in the same way by lectures, motion pictures and other means.

New Medical Museum Journal.—The *Journal of Technical Methods* has recently been issued by the International Association of Medical Museums, replacing the series of bulletins, of which seven had been published. The first number is a memorial to Sir William Osler. It also contains articles on histologic technic used in pathology, and on preserving fluids for gross pathologic specimens, and a discussion on photomicrography. A function of the association is the establishment of an international system of exchange of museum specimens and pathologic material for microscopic research.

Fellowships for Research on Malaria.—The *Annali d'igiene* gives the details for competition for the two fellowships, of 12,000 liras each, offered by the Italian government for research on malaria. Among the themes suggested for special study are the development of malaria in regions with few mosquitoes; the biology of mosquitoes; their range of flight; the incidence of malaria before the mosquito season; relations between malaria and domestic animals; the water plants which promote or check proliferation of mosquitoes; other larvacidal measures, and means to enhance immunity and protect workers in the fields.

Good Advice for Physicians and Patients.—Under this heading, the *Nederlandsch Tijdschrift* reproduces two articles from THE JOURNAL of Jan. 6, 1923. One was entitled "Some Sound Financial Advice for Physicians and Medical Advice for Laymen," page 53. The other was "The Problems of Personal Medical Advertising," page 56. Our Netherlands exchange comments appreciatively on both, remarking in conclusion, "It will be a difficult task for the American Medical Association to root out such inveterate and insidious evils as the trend to vulgar commercialism. The fine results of its fight against nostrums encourages the hope that it will succeed."

Deaths in Other Countries

Dr. **Henrique Souza Lopes,** formerly professor of toxicology and materia medica at Rio de Janeiro, and author of numerous works on these specialties.——Dr. **L. Langieri** of Buenos Aires.——Dr. **H. Monnier** of Montreux, aged 75.——Dr. **A. Dumur** of Evian, aged 70.——Dr. **H. Bickel,** privatdozent for neurology at Halle.——Dr. **Julián Fuentes** and Dr. **Joaquín González Hidalgo,** both of Madrid.——Dr. **Georges Perrochaud,** intern at Paris, succumbed to fulminating scarlet fever contracted in his hospital service.——Dr. **J. Vitrac** of Pau, professor emeritus of surgery at the Bordeaux medical school.——Dr. **W. P. Purvis,** senior surgeon to the Southampton Hospital, England.——Dr. **Patrick Muldoon** was shot and killed by rebels at Mohill, Ireland, March 18.

Government Services

Hospital Trains Authorized

Pursuant to the instruction of the Secretary of War, the organization of the following hospital trains, organized reserves, has been authorized: Hospital Train No. 46 (Illinois); No. 63 (Arkansas); No. 10 (Illinois); No. 9 (Virginia); No. 68 (Indiana); No. 54 (Kentucky); No. 7 (Pennsylvania); No. 48 (Oklahoma); No. 66 (Arkansas); No. 40 (New Jersey); No. 17 (New York), and No. 8 (New York).

Hospitals Authorized

Pursuant to instructions of the Secretary of War, the organization of General Hospital No. 1 Organized Reserves (Bellevue Hospital Unit, New York City); of Evacuation Hospital No. 2 (St. Luke's Hospital Unit, New York City), and of Evacuation Hospital No. 25 (West Suburban Hospital Unit, Melrose Park, Ill.), has been authorized. Organization of the following hospitals, organized reserves, at the Western Reserve University School of Medicine, Cleveland, has been authorized: General Hospital No. 4 (Lakeside Hospital Unit); General Hospital No. 57 (City Hospital Unit), and Surgical Hospital No. 5 (St. Vincent's Charity Hospital Unit). The organization of a veterinary convalescent hospital, organized reserves, to be known as Veterinary Convalescent Hospital No. 1 (a second corps area unit), has also been authorized.

Instruction in Treatment of Pulmonary Tuberculosis

Physicians in the U. S. Veterans' Bureau service who have completed the preliminary course in treatment of tuberculosis are eligible to attend the graduate course now being given, and to be repeated at intervals, at Veterans' Hospital No. 41, New Haven, Conn., and at Fitzsimons General Hospital, Denver, Colo. These schools opened March 1 and 5, respectively. The chief instructor of the New Haven school is Dr. Nathan Barlow of the U. S. Public Health Service. The Denver school is in charge of Major E. H. Bruns, M. C., U. S. Army, chief of the medical service. The instructors in the New Haven course include not only tuberculosis specialists connected with the U. S. Public Health Service and the U. S. Veterans' Bureau, but the following specialists not in the bureau service: Drs. Yandell Henderson, F. G. Blake, J. S. Ely, H. B. Ferris, H. W. Haggard, E. K. Hunt, A. M. R. Lauder, C. A. E. Winslow and M. C. Winternitz, dean, from Yale University Medical School; Col. G. E. Bushnell, Bedford, Mass.; Drs. Roy Adams, Washington, D. C.; H. K. Dunham, Cincinnati; George Fetterolf and Thomas McCrae, Philadelphia; A. K. Krause, Johns Hopkins Hospital, Baltimore; D. R. Lyman, New Haven, Conn.; Edgar Mayer, Saranac Lake, N. Y.; W. S. Miller, Madison, Wis.; E. L. Opie, Washington University, St. Louis; J. H. Pratt, Boston, and Asst. Surg.-Gen. F. C. Smith, U. S. Public Health Service, Washington, D. C.

Assistant instructors in the New Haven school from the bureau service are: Acting Asst. Surg. L. G. Beardsley, Surg. E. P. Bledsoe and P. A. Surg. Karl Schaffle.

Those not in the bureau service who will assist in the instruction at Denver are: Drs. A. M. Forster, C. F. Gardner and Gerald Webb, of Colorado Springs, Colo., and Drs. W. H. Bergtold, C. E. Edson, Leonard Freeman, J. N. Hall, C. B. Ingraham, Robert Levy, A. J. Markley and H. F. Pershing, of Denver.

These courses are thorough and will last at least two months in each school. The general supervision of both the preliminary and the graduate courses is in charge of the clinical director of tuberculosis in the central office of the bureau, Washington, D. C.

Successful Candidates for Navy Medical Corps

The following physicians have recently been examined and found physically and professionally qualified for appointment in the grade of assistant surgeon, rank of lieutenant (jg), in the medical corps of the Navy: J. E. Root, Jr., Temple, Texas; R. E. Avery, Barre, Vt.; J. F. Hays and J. M. Brewster, Philadelphia; E. S. McRoberts, Indianapolis, and J. J. Markey and J. D. Viecelli, Denver.

Internships in Army Hospitals

The medical department of the Army will accept for internship in its large general hospitals graduates of class "A" medical schools of this year's graduating class who have the endorsement of the faculty of their school for commission in the medical corps of the Regular Army, and who are physically qualified for service. There is no mental examination for these appointments. Interns who satisfactorily complete one year's internship under these conditions will be commissioned, if they so elect, without further examination, other than physical, in the medical corps of the Regular Army. The pay of an intern is $60 a month, with rations, quarters, necessary traveling expenses and medical attendance.

United States General Hospitals at which these interns will be placed, include:

	Beds
Walter Reed General Hospital, Washington, D. C.	1,000
Fitzsimons General Hospital, Denver	1,500
Beaumont General Hospital, El Paso, Texas	300
Letterman General Hospital, San Francisco	500
State Hospital, Sam Houston, San Antonio, Texas	400

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 26, 1923.

The Hunterian Oration

The hunterian oration in memory of John Hunter was delivered at the College of Surgeons, February 14, the anniversary of his birth in 1728. The college houses the hunterian collection, which under successive curators has become the greatest pathologic museum in the world, and may be regarded as a temple erected to the memory of the founder of scientific surgery. This year the oration was delivered by Sir John Bland-Sutton. The choice could have fallen to no one better fitted for the task. He alone among English surgeons has followed the hunterian tradition of studying all forms of life, normal as well as abnormal. A distinguished audience including Rudyard Kipling, listened with rapt attention to the address, "John Hunter, His Affairs, Habits and Opinions," by this master, whose enthusiasm for his subject was equaled only by his knowledge. He gave a vivid sketch of the most important events in Hunter's life, and showed the bearing of his work on many present-day questions. The oration glistened with aphorisms: "For Hunter, morphology was a gleam in the intellectual sky. We revel in the sunshine. Morphology has become the soul of anatomy. . . . The hall in the museum that enshrines Hunter's statue is a temple of pathology. . . . The essential work in Hunter's life was the useful specimens he prepared and left for successors. These specimens, safeguarded by faithful Clift, catalogued by sagacious Owen and Paget, and such able curators as Flower and Shattock, are now in the care of Keith, who lacks none of Hunter's enthusiasm, but totally eclipses him in the art of exposition."

At the banquet that followed, Kipling proposed the health of the hunterian orator in a characteristic whimsical and philosophic speech. He described man as "the hunter of truth," and exhorted his audience to "consider for a moment the poor brute's position. You all know the common formula for him: 'Born of woman, on woman designed to beget his life —the natural quarry of the seven deadly sins, but the altar of an inextinguishable hope'; or more scientifically [I regret I am not a scientific person] he might be defined as 'an imperfectly denatured animal intermittently subject to the unpredicable reactions of an unlocated spiritual area.' The priest and the law giver have probed and fished for it all through the ages; but more than any other the leech, the medicine man, the healer has been hottest on its track. In the teeth of the outrageous, the absurd disabilities imposed on him, man, the imperfectly denatured animal, who cannot trust the evidence of his own senses in the simplest matter of fact; whose evidence on the simplest matter is colored by his own iniquities; man, always the hunter, went up against the darkness that cloaked him, to find what order of created being he might be. It was the old quest under a new name. But this time the seekers, unlike the priest and the lawyer, admitted that they knew very little. Experience had taught them to be very humble. For that reason their knowledge was increased."

The Medical Work of the Ministry of Pensions

In reply to criticism in the House of Commons, the minister of pensions gave some particulars of the medical work. Since the armistice the ministry has spent more than $300,000,000 on medical treatment of the sick and wounded, and on allowances for the men and their families. A large proportion of the patients have been restored to health. At present the ministry is responsible for 25,000 patients in hospital. Of these, 12,000 are in hospitals owned, manned and managed exclusively by the ministry. A daily average of 80,000 attend as outpatients at hospitals or clinics, of whom the larger number attend clinics owned, manned and exclusively controlled by the ministry. It is the aim of the ministry's medical service to supply medical attention as long as there is the slightest chance of materially improving the men's condition. The treatment of ex-service men suffering from nerve or brain trouble is constantly under discussion between the minister and representatives of the men. The ministry has fourteen neurologic hospitals and a large number of neurologic clinics. Much criticism has been directed against the ministry for allowing men rendered insane by the war to be treated in ordinary asylums. The ministry is about to start the experiment of making separate arrangements for the treatment of cases of a hopeful type.

The Supply of Insulin

Insulin is now being used in London at St. Bartholomew's, Guy's, St. Thomas's, the London, and University College hospitals; in Sheffield, at the university departments of pharmacology and physiology, and at the royal infirmary, and in Edinburgh at the royal infirmary. Arrangements are being made to extend the work to other hospitals and institutions where the necessary conditions, both personal and material, can be provided. Every effort is being made to increase the supply of insulin so that it may be available in general practice. Progress toward large-scale production has been more rapid than was expected. Subject to limitations of raw material in particular districts, successful manufacture is now considered assured. But a period of some weeks must elapse before laboratory tests and clinical use under special safeguards will have made it justifiable for a supply to be issued generally for routine use under ordinary conditions of medical practice. This is a wise provision, for insulin is a powerful remedy and its use in the hands of experts has on some occasions given rise to anxiety.

The Sphalinger Treatment of Tuberculosis

As stated in previous letters, the ministry of health has taken up a noncommital attitude when requested to support the Sphalinger treatment of tuberculosis. Persistent efforts are being made in the press to boom the treatment, but without success. Readers are assured on the authority of "an eminent physician" (who prefers to remain anonymous) that the treatment is valuable. "The serums and vaccines, which are the fruit of years of research, have cured even advanced cases. Three or four years are required for their preparation, and great expense is involved. Sphalinger has so impoverished himself by his magnificent work that he cannot go on without substantial help. He will not publish his formula because he knows very well that unauthorized persons would exploit it, with the result that the method would be discredited. All our present methods of inoculation will have to be revised on the basis of the principles underlying his work. To remove immediate embarrassment and establish an institute in this country, some $500,000 is required." An appeal is being made for subscriptions, but it does not seem likely to produce much result.

Women Physicians Demand Equal Pay With Men

The Medical Women's Federation has sent a letter to the postmaster general asking him to consider the existing inequality of pay between men and women physicians on the staff of the general post office. At present all the women physicians receive a salary of from $1,250 to $2,000 with a bonus, as against from $1,500 to $2,500 for men. The federation lays stress on the fact that medical women receive exactly the same training as men, and also are capable of doing, and actually do, exactly similar work, and undertake

the same responsibilities. It also adds that inequality of payment will tend to prevent the better qualified and more experienced women from offering themselves for appointment.

Chair of Animal Pathology at Cambridge

The senate of the University of Cambridge has accepted the offer of the ministry of agriculture of $150,000 to found a professorship of animal pathology. This is the first step toward the creation of an institute for research in the pathology of animal diseases. The first duty of the professor will be to prepare plans, and it is understood that the government departments concerned are prepared to consider schemes involving a total expenditure, on buildings, staff and upkeep of $500,000 in the next four years. After that the financing of the institute will depend on circumstances. Headquarters will be in an extension of the school of agriculture, where the new professor will have the assistance of Prof. T. B. Wood and Prof. R. H. Biffen, among others, who will aid him in directing the work along agricultural lines. His windows will look into the new biochemical laboratory that is being built for Prof. F. G. Hopkins. A few yards away is the Molteno Institute, where Prof. F. G. Nutall pursues his studies in parasitology. The university medical school also is adjacent. The necessary paddocks, stables and animal houses will be provided at the field laboratories just outside the town. Thus, there is every facility for coordinating the new institute with all the allied departments of the university.

PARIS

(From Our Regular Correspondent)

Feb. 23, 1923.

Can Sports Regenerate the Human Race?

It has been frequently assumed that participation in sport, if it became more general, would preserve the human race from physical degeneration; but in recent examinations of draftees, those who were in the habit of engaging in sport activities were not found to be better built or more robust than the others. On the contrary, a large proportion of the devotees of sport were assigned to the deferred class, on account of poor physical development or disturbed heart action. It would seem, therefore, that we have greatly deceived ourselves, when, reacting against the gymnastics of the school and the army, we have maintained that sport and athletics would provide adequate physical training for children and adolescents. Dr. Ruffier, who has for many years studied the problems of physical education, analyzes the causes of this deception. What gives, he says, a special character to the exercise obtained in sport activities is the spirit of competition—the struggle between competitors who are endeavoring to defeat each other. This is, moreover, the view that young people take of sport. Their youthful enthusiasm, their pride, their desire to measure their strength against their fellows, lead them to take part in foot races, bicycle races, boxing matches and football, in which they find an opportunity of asserting their physical superiority. That is exactly why sport is bad for them and why its effect is absolutely nil as far as the regeneration of the race is concerned. Sport may be regarded only as a pleasing means by which those who are strong of muscle can exhibit their great physical qualities. On the other hand, sport can only be the cause of exhaustion, or at least an arrest of development, for children and weak adolescents. In order that a future champion in the Olympic contests may be discovered in a crowd of young men, just think how many must be overtrained. Another disadvantage is that many, too easily convinced of their physical inferiority, abandon exercise in all its forms. The main thing, then, is not to train weaklings so that they may become distinguished for their prowess in sport, but to base physical education in the schools and colleges on gymnastics tending toward an all round physical development.

The Abuse of Morphin in Chronic Affections

Dr. Maurice Renaud recently called the attention of the Société médicale des hôpitaux of Paris to the misuse of morphin injections in chronic diseases. Renaud is physician to the old people's home at Brévannes, where also a number of hospital patients affected with incurable chronic diseases are admitted. When Renaud took up his work in this service, he found thirty patients, to whom 250 injections of morphin were being given every day. These patients were suffering from tabes, paraplegia, diseases of the stomach, rheumatism and cancer, and their condition was extremely pitiful. Renaud soon became convinced that this abuse of morphin was to a greater extent responsible for their sad condition than was the affection on account of which they had become morphin addicts.

As he studied these morphin addicts, it became apparent that the use of morphin did not make it easier for them to bear the discomforts of chronic diseases, nor did it alleviate any of their symptoms; for, as is well known, morphin is a sovereign remedy only in acute and paroxysmal pain, and, on the other hand, suppresses the marvelous capacity of the human organism to become resigned to most abominable situations. The use of morphin in these cases, therefore, defeats its own end. Instead of producing mental repose, it creates a state of constant irritability, for the patient comes to await, in a state of constant anxiety, the next injection.

On discontinuing entirely the use of morphin, Renaud noted an improvement in all patients. Some of them who were not affected with any serious disease and whose condition had not become grave by reason of their morphinomania became normal as soon as the intoxication was suppressed.

Renaud concludes from these facts that the injection of morphin should be an exceptional form of medication, since the benefits are only transient, and deplorable symptoms result if it is prolonged more than a few days. It should be reserved for the relief of pain in crises or for the alleviation of agony.

Honor Loans for Students

Utilizing a gift of 100,000 francs from Mme. Nathan, a trial of the honor loan system, on a rather extensive basis, has been inaugurated by the University of Paris. In accordance with the expressed will of the donor, twenty loans of 5,000 francs each are to be allotted. During the month of January, applications from students were received and inquired into. The committee of the Société des amis of the University of Paris, which has been designated by the rector of the university as the body to decide on applications, has proceeded with the allocation of the loans, and has established the rule that they must be repaid within fifteen years.

An Ovation to Dr. Vaillant

The municipality of Paris recently tendered, at a special session of the municipal council, an ovation to the roentgenologist Charles Vaillant, who, after numerous partial operations on his fingers, hand and shoulder, has paid with the loss of both arms for his untiring devotion. Many distinguished persons were present at this meeting, including Hon. Myron T. Herrick, American ambassador; M. Strauss, minister of public health; Professor Roger, dean of the Faculté de médecine, and members of the Carnegie Foundation. Dr. Vaillant was requested to sign in the *Livre d'or* the official report of his reception. This was a pathetic scene; for, in order to accomplish this act, our crippled confrère had to use an apparatus fitted to the right arm

stump. Vaillant was then conducted to the reception room, where he was given a seat opposite the platform, with the American ambassador on his right and M. Paul Strauss at the left. Behind him sat his wife and daughter and Mme. Leray, widow of Dr. Leray, who was the director of the roentgenologic laboratory of the Saint-Antoine Hospital for twenty-five years, and who died in 1921, the victim of his devotion to a worthy cause.

Several addresses were delivered, paying respects to Dr. Vaillant and to the memory of Dr. Leray. The American ambassador gave an address as the representative of the Carnegie Foundation, and to Dr. Vaillant and to Mme. Leray he handed a letter of felicitation from M. Loubet, former president of the republic and head of the Carnegie Foundation in France. Dr. Vaillant replied in a few fitting words in which he spoke of the early development of roentgenology.

Medical Fees and the State Treasury

The finance committee of the chamber of deputies has recently passed an order requiring members of the so-called liberal professions to keep a record of payments made to them in remuneration of their services. The fees received by physicians must be recorded, together with the date of payment. On demand, this record must be placed at the disposal of the controller of direct taxes. Likewise, all those who have made the payments must make a memorandum of the fact in a special journal, which must also be open for the inspection of the controller. Aroused by this decision, a syndicate of the physicians of the department of the Seine at its last meeting adopted the following resolution:

For the reasons stated below, the syndicate protests vigorously against the lack of confidence shown in the medical profession, which has never sought to escape the obligation of paying its full amount of taxes, and against the proposed method of recording payments, to be controlled by a government official on the basis of entries made by the clients themselves:

1. This system, no matter what precautions were taken, would be sure to result in the violation of professional secrecy, which is the basis of our fundamental rights and a safeguard of the patients.
2. It would not be long before it would develop a spirit of denunciation, which is considered in France, and rightly so, as the lowest of human qualities. It would soon result in calumnious charges from which the most upright physician would not emerge unscathed.
3. It would consequently decrease the general respect in which physicians are held, and the respect of one's patients is an indispensable asset for physicians if they are to fulfil their important duties.
4. It would reduce the medical profession to a commercial calling, which is contrary to law.

Pensions for the War Disabled

Dr. J. Gourdon, who is in charge of industrial reeducation at the Faculté de médecine of Bordeaux and director of the Ecole normale for the industrial reeducation of cripples in the same city, presented a communication to the Academy of Medicine, in which he endeavored to show that the economic efficiency of those pensioned on account of illness is less than that of the mutilated or crippled. Of the former, there are 28 per cent. who are unable to work, while of the latter only 3 per cent. are in that category. The economic efficiency of those granted disability for illness is 75 per cent., whereas the cripples are able to earn 90 per cent. of a normal salary. In order to make up for this inequality in industrial capacity, Gourdon proposed that an increased percentage of disability be granted those ex-service men whose physical activity is seriously diminished. He recommended also that centers of industrial reeducation especially adapted for such men be established, and finally that a large number of administrative positions under the state be reserved for their benefit.

This proposal has called forth a storm of protest from a number of physicians and surgeons whose duty it is to estimate the percentage of disability of those claiming pensions, for they have been able to show that many sick persons pensioned on account of war service were never in the army, and that their ailments (tuberculosis, deformities, eye affections, mental disorders) were in no wise due to consequences growing out of the war. For instance, Professor Jeanbrau of Montpellier says that of a hundred pensioners whom he examined, ninety-five were granted disability claims on account of illness, yet some of them never served in the army. Thousands of men, it is said, have been pensioned for illness acquired in the army without being subjected to an adequate examination. Therefore, an increase of the percentage of disability, except in a few specific cases, to be particularly determined, would be an injustice and a crushing load on the budget.

In view of this controversy on such an important question, the Academy of Medicine, at the suggestion of the president, Professor Chauffard, has appointed a committee, consisting of Professors Gley, Balthazard, Léon Bernard and Hartmann, and Dr. Sieur of the army medical corps, to inquire into the matter.

The Fight Against Cancer

The regional organization of the fight against cancer, as recommended by Professor Bergonié of Bordeaux (THE JOURNAL, Aug. 26, 1922, p. 753), seems about to be realized. A few days ago, M. Paul Strauss, minister of public health, inaugurated at Bordeaux the first regional center to carry on the fight against cancer. M. Strauss visited the various services of this anticancer center, which is furnished with the most modern equipment. The minister, on this occasion, bestowed on Professor Bergonié the gold medal of the Carnegie Foundation.

MADRID

(From Our Regular Correspondent)

Jan. 18, 1923.

Address by Neumann on the Pathology of the Ear

At a joint session of the Madrid Medical Society and the Spanish Society of Otologists, Professor Neumann of Vienna delivered an address on general and anatomic pathology of the internal ear, especially the labyrinth. He pointed out that arteriosclerosis may act either diffusely by causing a general intoxication or locally on the vestibular nerve. He also presented pathologic specimens from cases of arteriosclerosis in which tinnitus has been the initial complaint. Tinnitus resulting from change of posture is characteristic of arteriosclerosis, ringing in the ears in the neuroses appearing usually when the patient is tired. In another specimen, there was enormous dilatation of the saccule as the result of retention of secretion through inflammation and ossification of the septum. These conditions indicate a low grade inflammation, as severe labyrinthitis would cause destruction instead of ossification. The organism of epidemic cerebrospinal meningitis shows an affinity for the endolymph, and causes inflammation with a fibrinoplastic exudate that results in the formation of scars and bands.

Ossification of the vestibulocochlear septum is rather frequent. Suppurative labyrinthitis may be severe or mild, a defensive granuloma developing only in the latter case. The only differential sign is the rapidity of destruction of the internal ear. Lumbar puncture should never be omitted. In many cases, an increase in the number of cells and increase of albumin will be found in the cerebrospinal fluid, indicating that the process is not localized to the labyrinth. In many cases of death after operation, the surgeon is blamed for spreading the infection from the ear to the meninges; but abnormality of the spinal fluid, detected before operation, proves that extension had already occurred.

Neumann described a case, probably unique, of serofibrinous labyrinthitis in a patient who killed himself two hours after

the onset of the first symptom. The pathologic specimen was therefore obtained at a very early stage of the process. The patient had become deaf in one ear many years before, and suddenly, while eating, he became deaf in the other ear. He rushed to see Neumann, who found that he was totally deaf. The examination was hardly over when the patient killed himself. At necropsy, the diagnosis of serofibrinous labyrinthitis was confirmed. The nature of the exudate explains the diverse responses to different tests.

Otosclerosis remains as much a problem as when first studied by Politzer. Neumann showed specimens from cases of progressive deafness, and pointed out that the majority of cases diagnosed as otosclerosis are not such. A specimen which attracted much attention was a neurofibroma from the internal auditory meatus. In neurofibromatosis of the vestibular portion of the nerve, dizziness is the first symptom, total deafness appearing later. The prognosis in growths of the acoustic nerve is serious, as the roentgen rays cannot detect them during the operable stage.

Other specimens exhibited were congenital malformations, which are very rare in the internal ear. One was a case of Mondini's deformity in a patient who was able to hear a little. One specimen demonstrated the possibility of developing intra-uterine suppurative labyrinthitis, and its spontaneous healing, also in utero. The case occurred in a maternity home, and the child died at birth.

Neumann recalled that a few years ago all otologists were interested in nystagmus; today the principal topic is tinnitus aurium, about which little is known. Otologists should try to throw light on this troublesome complaint. Specimens exhibited led to a discussion of neuronophagia. In one section, the auditory cells exhibited protoplasmic changes; in another, there was hyperplasia of the interstitial tissue between the ganglion cells; a third specimen showed only interstitial tissue, the ganglionic tissue having disappeared. These specimens explain some of the possibilities in tinnitus aurium: buzzing in the ears without deafness; deafness without buzzing, and buzzing preceding or following deafness.

The Society of Otologists appointed Professor Neumann an honorary member. A few days before, the Royal Academy of Medicine had appointed him a corresponding member of the academy.

Anoxemia from Intoxication

Dr. Carracido, professor of biologic chemistry in the school of pharmacy, and president of the Central University, gave a lecture on anoxemia. It is well known that no form of life can exist without oxygen; even anaerobes absorb it in certain combinations. The quantity of oxygen necessary varies for each species. The higher the animal in the zoologic scale, the more oxygen is required, and special organs have been developed to accumulate it. The human organism has about 5 liters of oxygen in solution in its plasma, but more is needed; hence the presence of red cells, whose function is to store oxygen.

According to one theory, carbon monoxid forms a more stable combination with hemoglobin than does oxygen. Carbon monoxid poisoning is then explained by the replacement of oxygen by carbon monoxid, with consequent anoxemia. Carracido does not accept this explanation, as in such cases the proportion of carbon monoxid which replaces oxygen is very small. Oxyhemoglobin still forms more than 90 per cent. of the total. Dr. Carracido attributes the poisoning to catalysis of oxygenated compounds of the blood.

The most characteristic feature of biologic combinations and reactions is their extreme delicacy. Thus, sugar burns completely in the body at body temperature, while outside the organism temperatures incompatible with life are required for the same purpose. This vital combustion is brought about through the presence of catalyzers. These bodies are extraordinarily sensitive. There are substances which, even in infinitesimal amounts, paralyze the catalyzers, and this explains why carbon monoxid and sulphureted hydrogen interfere with the catalysis. Carracido, therefore, explains anoxemia, as the result, not of the substitution of carboxyhemoglobin for oxyhemoglobin, but of the insufficiency of the plasmatic oxygen for maintenance of cell life. Carboxyhemoglobin, sulphohemoglobin, and similar substances prevent the catalyzers from furnishing the necessary surplus from the combined oxygen.

Dr. Carracido also called attention to other anoxemic phenomena. Oxyhemoglobin decomposes at a certain temperature, while methemoglobin, an isomeric combination, is inert. Methemoglobin may be produced outside the body by such substances as potassium ferrocyanid. The same transformation may be brought about in the body by the action of many hypnotics and analgesics. Many a person has died from taking sedatives advertised in the newspapers. While death is attributed to nervous accidents, the nervous system is not at fault; it is only the first system to suffer from lack of oxygen.

Transformation into methemoglobin becomes slower with increasing alkalinity; hence, the greater change in cases of acidosis. No methemoglobin is produced when potassium ferrocyanid is injected into an animal because this salt does not dissolve in the cell constituents. But some drugs, such as phenacetin, which do not produce methemoglobin in vitro, may do so in vivo; hence, the danger of using such drugs. Certain toxins, such as that of diphtheria, also cause methemoglobinization. Methemoglobin is dead oxyhemoglobin. It may be brought back to life by being reduced to hemoglobin, which will then become oxyhemoglobin. This transformation is brought about by reducing substances that abound in the body.

BERLIN

(From Our Regular Correspondent)

Feb. 15, 1923.

Death of Professor Roentgen

Professor Roentgen, the famous discoverer of roentgen rays, died in Munich, March 10, at the age of 77. The importance of his discovery for science in general, and in medicine in particular, needs no elucidation. In America especially, important progress in this field, as regards both theory and practice, has been made. In December, 1895, the first roentgenogram exemplifying the significance of the roentgen ray in the field of medicine was demonstrated in connection with internal medicine by the late neurologist Jastrowitz of Berlin.

Cocainism

At the last session of the Berliner medizinische Gesellschaft, the abuse of cocain, especially the method of snuffing it up the nose, was discussed by several speakers, and means were considered as to how this dangerous practice can best be combated. In Germany, the snuffing of cocain did not become widespread until after the war. The commonly assigned causes for this are: a desire to gain relief from the sufferings of the war by the use of narcotics, and secondly, an endeavor to find a substitute for alcohol. Cocain "snuff" may be procured at bars, in low dives, and even on the street, a pinch costing at the present time from 400 to 600 marks. The habit of using cocain snuff seems to spread more rapidly than the injection method, which is usually carried out in one's private apartments. The toxic effect of cocain when snuffed is less than when injected. The dosage producing euphoria is further removed from the toxic dosage than is the case in injections of cocain. Nor are degenerative effects observed so soon. For the most part, irrespon-

sible, psychopathic persons take up with this vicious habit; especially prostitutes, who are usually at the same time alcohol addicts. Cocain addicts have their special resorts throughout the city, where restaurant keepers, waiters and women (especially those in charge of public comfort stations) sell the cocain powder. They also have a type of low doggerel verse. With his watch and pocket mirror in his hand, the "snuffer" eagerly awaits the onset of the euphoria and the pleasurable day dreams. When the effect begins to abate, he takes another pinch. Cocain snuffers can often go several days without feeling the need of sleep. Finally, a hallucinatory stage follows, which is attended by excitability, fear states, and delusions of persecution, which give rise to malicious resistance. The snuffing of cocain causes a characteristic distortion of the nose, while the formation of small ulcers within bring about the perforation of the nasal septum, which, however, as Professor von Eicken pointed out in his discussion, may be observed in other intoxications, especially among workers in chromium. The prognosis for cocain addicts is more favorable than for morphin addicts, since a complete metamorphosis of the organism does not occur, nor are there marked withdrawal symptoms when the amount taken is gradually reduced. If the habit is not broken up, bodily and mental degeneration and premature death are the result. In order to effect a permanent cure, it is very desirable that a patient be separated from his old environment, for otherwise he is liable to relapse. Cocain is often procured by patients deceiving their physician. Often cocain is dispensed by pharmacists for the reason that the prescription of the physician did not state that it should not be refilled. Pharmacists are also frequently deceived by counterfeited prescriptions. The method of controlling the sale of opium as established by international agreement does not apply to pharmacists. Dr. Joel thinks that the situation would be much improved if pharmacists would dispense cocain only to physicians well known to them. Since physicians themselves are restricting their use of cocain more and more and are employing substitutes instead, regulation of the amount manufactured or imported might be established. Professor Hahn, the hygienist, of Berlin, who estimates the number of cocain snuffers in Berlin as from 5,000 to 6,000 (in the other large cities of Germany the habit is, as yet, not so widespread), demands the cooperation of physicians and legislative enactments to curb this evil, which, owing to the form of proselytism adopted, spreads like an infectious disease. He holds that the government should adopt such a definite policy as will prevent the less harmful stimulants, such as tea, coffee and beer, from becoming so high in price that cocain comes to be substituted for them. Professor Anselmino and Professor Rost, both connected with the central public health office, discussed the measures that the administration had applied thus far with a view to checking the spread of this evil.

Marriages

EDWARD WHEELER WILDER, Boston, to Miss Harriet M. Wyman of Lincoln, Neb., at Madura, India, January 15.

MALCOLM MOONEY NEEL, Geiger, Ala., to Miss Martha Mae Dillard of Atlanta, Ga., February 22.

WILLIAM ARTIS DAWSON to Miss Harriette Marie Reder, both of Chicago, December 31.

FRANKLIN W. SELLS, Osceola, Iowa, to Miss Clara Beck of Los Angeles, February 1.

JOHN M. OGLESBY, Alexandria, La., to Miss Angela Leake of New Orleans, recently.

OLGA MCNEILE to Mr. Frederick W. Robinson, both of Los Angeles, February 2.

Deaths

Walker Gill Wylie ⊕ New York; Bellevue Hospital Medical College, New York, 1871; died, March 13, of pneumonia, contributary cause arteriosclerosis. Dr. Wylie was born in Chester, S. C., in 1848. Following graduation from the University of South Carolina, he served throughout the Civil War. After graduating from Bellevue Hospital he went abroad to study the Nightingale system, and returning established the first training school for nurses at Bellevue. Dr. Wylie served at Bellevue for twenty-five years as gynecologist. He was appointed professor of gynecology at the New York Polyclinic Medical School, in 1882, and was recently made professor emeritus. In 1876 he wrote "Hospitals, Their Organization and Construction," for which he received the Boylston prize essay from Harvard Medical School. Dr. Wylie was a member of the New York Obstetrical Society, the New York Pathological Society, the British Gynecological Society, and the Royal Society of Medicine of London.

Nelson Herrick Henry, New York; Columbia University College of Physicians and Surgeons, New York, 1879; member of the New York House of Representatives; formerly adjutant-general of the state and surveyor of the port of New York; veteran of the Spanish-American War; major general of the M. C., N. G. New York; member of the New York Academy of Medicine and of the Society of Foreign Wars; aged 67; died, March 16, of cerebral hemorrhage.

Burton Seymour Harris ⊕ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1904; for four years secretary of the Kings County Medical Society; member of the American Urological Association, and the Brooklyn Pathological Society; on the staff of the Wyckoff Heights Hospital; aged 39; died, March 5, of epidemic (lethargic) encephalitis, following influenza.

May Michael ⊕ Chicago; Northwestern University Woman's Medical School, Chicago, 1898; member of the Chicago, and the Central States pediatric societies; attending physician to the Chicago Home for Jewish Orphans, on the staff of the Cook County Hospital, the Mary Thompson Hospital and the Chicago-Winfield Tuberculosis Sanatorium, Winfield; aged 47; died, March 15, of pneumonia.

Carlyle Edgar Sutphen, Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1896; member of the Medical Society of New Jersey; formerly acting medical director of the Newark City Hospital; served in the M. C., U. S. Army, during the World War; aged 51; died, March 7, at the Mayo Clinic, Rochester, Minn., of pneumonia, following an operation.

William Caspari, Jr. ⊕ Baltimore; Baltimore Medical College, 1902; formerly associate professor of materia medica and pharmacy at the University of Maryland School of Medicine and the College of Physicians and Surgeons; on the staffs of the Maryland General and the Franklin Square hospitals; aged 61; died, February 13, of angina pectoris.

Thomas Oscar Edgar ⊕ Dixon, Ill.; Northwestern University Medical School, Chicago, 1907; member of the American Academy of Ophthalmology and Oto-Laryngology, the American Laryngological, Rhinological and Otological Society and the Chicago Ophthalmological Society; aged 51; died, March 5, of bronchopneumonia.

James Parton Haney, New York; Medical Department of Columbia College, New York, 1892; formerly president of the Council of Supervisors of Manual Arts and director of arts at the New York University Summer School; lecturer, New York University School of Pedagogy, 1895-1899; aged 52; died, March 3, of pneumonia.

William Scott Lawrence, New York; Beaumont Hospital Medical College, St. Louis, 1901; served in the M. C., U. S. Army, during the World War; acting assistant surgeon in the U. S. Public Health Service; formerly chief diagnostician for the St. Louis Health Department; aged 46; died, March 8, of cerebral hemorrhage.

Clair Clayton Patch, Chattanooga, Tenn.; National Medical University, Chicago, 1906; University of Tennessee College of Medicine, Memphis, 1914; formerly on the staff of the Eastern Indiana Hospital for Insane, Richmond, Ind.; aged 47; died, January 23, at the Columbus Hospital, Chicago, of peritonitis.

Philip Louis Hall, Lincoln, Neb.; Rush Medical College, Chicago, 1883; president of the Central National Bank, the Bank of Mead, and the Nebraska Bankers' Association; regent of the University of Nebraska; vice chairman of the Democratic national committee, 1908-1912; aged 73; died, March 14.

J. McLean Moulder, Kansas City, Kan.; Medical College of Ohio, Cincinnati, 1875; member of the Kansas Medical Society; formerly superintendent of the Methodist Hospital, Indianapolis, and superintendent of the Bethany Methodist Hospital, Kansas City, at the time of his death, March 4, aged 67.

George Albert McCulloch, Excelsior Springs, Mo.; University Medical College of Kansas City, Kansas City, Mo., 1901; served in the M. C., U. S. Army, during the World War; aged 58; died, February 27, of injuries sustained when the automobile in which he was driving was struck by a train.

Shailer Emery Lawton ⊕ Brattleboro, Vt.; University of Vermont College of Medicine, Burlington, 1881; for thirty years superintendent of the Brattleboro Retreat; member of American Psychiatric Association and the New England Society of Psychiatry; aged 69; died, March 4.

Agnes Eichelberger ⊕ Sioux City, Iowa; Northwestern University Woman's Medical School, Chicago, 1888; formerly medical director of the Sioux City Maternity Hospital, and on the staff of the Samaritan Hospital; aged 58; died, February 28, at Los Angeles.

Benjamin Merrill Hopkinson, Baltimore; University of Maryland School of Medicine, Baltimore, 1885; member of the Medical and Chirurgical Faculty of Maryland; supervising dentist of the Baltimore City Health Department; aged 62; died, February 22.

Simeon Newton Leo ⊕ New York; Bellevue Hospital Medcila College, New York, 1869; founder and physician in charge of the Home for Aged and Infirm Hebrews; formerly on the staff of the City Hospital; aged 74; died, March 9, of pneumonia.

Charles Nicholas Meriwether ⊕ Campbell, Neb.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1906; served in the M. C., U. S. Army, during the World War; aged 40; died, February 25.

John Forsythe McWilliam, Somerville, N. J.; Jefferson Medical College of Philadelphia, 1884; member of the Medical Society of New Jersey; veteran of the Spanish-American War; aged 62; died, February 12, of heart disease.

Charles Peters Large ⊕ Meyersdale, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1900; member of the school board; for several years medical director for Somerset County; aged 45; died, February 26.

Ferdinand F. Seeger, New York; New York Homeopathic Medical College, New York, 1869; founder of the Hahnemann Hospital and the Northeastern Homeopathic Dispensary; aged 75; died, February 27, of pneumonia.

Arthur Hanford Baldwin, Norwalk, Conn.; Hahnemann Medical College and Hospital of Chicago, 1881; aged 68; died, February 18, of a skull fracture sustained when his automobile was struck by a trolley car.

Frank T. Shaw, Westminster, Md.; University of Maryland School of Medicine, 1864; formerly member of the state legislature; at one time collector of the port of Baltimore; aged 81; died, February 24, of uremia.

Samuel A. Campbell, Malvern, Iowa; State University of Iowa College of Medicine, Iowa City, 1875; member of the Iowa State Medical Society; aged 72; died, February 22, at Long Beach, Calif., from senility.

Jose Martin Selden, Skyland, N. C.; University of the South Medical Department, Sewanee, Tenn., 1903; formerly chief of staff of the Erlanger Hospital, Chattanooga, Tenn.; aged 46; died, January 7, at Asheville.

Fenton Mercer Nichols, Purcellville, Va.; Medical Department of the University of the City of New York, New York, 1885; member of the Medical Society of Virginia; aged 61; died in February, of pneumonia.

Samuel Herman Meuer ⊕ New York; Gross Medical College, Denver, 1895; on the staffs of the Harlem Hospital, New York, and Sea View Hospital, Staten Island; aged 55; died, February 27, of septicemia.

David Orr Edson, New York; Columbia University College of Physicians and Surgeons, New York, 1891; on the staff of the New York Orthopedic Hospital; aged 59; died, February 27, of acute secondary anemia.

Edwin Dearth Orr, Mount Hope, Wis.; Rush Medical College, Chicago, 1883; member of the State Medical Society of Wisconsin; member of the school board; aged 75; died, February 11.

Eugene Myron Herbert, Roanoke, Va.; Atlanta College of Physicians and Surgeons, Atlanta, Ga., 1902; member of the Medical Society of Virginia; aged 54; died recently, of influenza.

John Wesley Ranck, Penns Grove, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1872; also a druggist; aged 78; died, February 18, of pneumonia.

David Wesley Harris, Carriers Mills, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1879; also a druggist; aged 66; died, February 10, of cerebral hemorrhage.

William Huckin, Wasco, Ore.; Rush Medical College, Chicago, 1903; member of the Oregon State Medical Association; aged 56; died, January 3, of chronic nephritis.

Joseph Freeman, Sullivan, Ind.; Medical College of Ohio, Cincinnati, 1879; member of the Indiana State Medical Association; aged 68; died, February 19, of carcinoma.

Ephraim De Groff, Hackensack, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1863; Civil War veteran; aged 86; died, February 17, of pneumonia.

William E. Stedman, Sullivan, Ill.; Kentucky School of Medicine, Louisville, 1880; formerly member of the state legislature; aged 75; died recently, of influenza.

Stephen D. Doar, McClellanville, S. C.; Medical College of the State of South Carolina, Charleston, 1860; Civil War veteran; aged 85; died, January 29, of senility.

James C. Harrell, Omaha, Ill.; Eclectic Medical College of Pennsylvania, Philadelphia, 1870; also a druggist; aged 75; died in February, of mitral regurgitation.

Thomas P. Coldwell, London, Ky.; University of Louisville Medical Department, Louisville, 1871; Civil War veteran; aged 81; died, February 26, of senility.

Daniel Henry Muir, Newaygo, Mich.; University of Michigan Medical School, Ann Arbor, 1871; aged 79; died in January, at Muskegon, of senility.

Richard Langford Patteson, Buffalo; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1885; aged 61; died, February 7, of myocarditis.

Francis Othyle Cornwell ⊕ Gainesboro, Tenn.; University of Tennessee College of Medicine, Memphis, 1912; aged 33; died, February 27, of paralysis.

Daniel Aloysius Hanrahan, Stamford, Conn.; Bellevue Hospital Medical College, New York, 1893; aged 54; died, February 27, of heart disease.

Charles Glendenning Willson, Chicago; Wisconsin College of Physicians and Surgeons, Milwaukee, 1896; aged 63; died, March 7, of chronic nephritis.

William Adler ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1896; aged 49; died, February 26, of polyneuritis.

Joshua Royston Green ⊕ Towson, Md.; University of Maryland School of Medicine, Baltimore, 1899; aged 48; died, February 22, of pneumonia.

John A. Hunter, Pittsburgh; Starling Medical College, Columbus, Ohio, 1891; Civil War veteran; aged 76; died, January 22, of pneumonia.

Harry Hilton Brown, Jasper, Tenn.; University of Tennessee College of Medicine, Memphis, 1921; aged 26; died, February 21, of tuberculosis.

Mary Lavinia Briggs, Dryden, N. Y.; University of Michigan Medical School, Ann Arbor, 1879; aged 74; died, January 12, of pneumonia.

W. E. Hall, Hallsburg, Texas; Chicago Homeopathic Medical College, Chicago, 1883; aged 75; died, February 20, following an operation.

Samuel Hyatt Wellings, Detroit; University of Michigan Medical School, Ann Arbor, 1871; aged 80; died, February 28, of heart disease.

Robert A. Davis, Brooklyn; Louisville Medical College, Louisville, Ky., 1878; also a druggist; aged 70; died, February 23, of asthma.

Douglas P. Adams, Columbus, Ohio; Cincinnati College of Medicine and Surgery, Cincinnati, 1892; aged 82; died, February 21, of senility.

Benjamin F. Wolfe, Jasper, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 89; died, February 22, of arteriosclerosis.

Henry Wilson Geissinger ✠ Grove City, Ohio; Ohio Medical University, Columbus, 1897; aged 54; died, February 22, of cardiac asthma.

Benjamin Henry Voelbel ✠ Newark, N. J.; Baltimore Medical College, Baltimore, 1901; aged 48; died, February 21, of heart disease.

Harry Edward Diers, Miamisburg, Ohio; Jefferson Medical College of Philadelphia, 1907; aged 38; died, February 24, of heart disease.

Martin Luther Dottin, Chicago; Howard University School of Medicine, Washington, D. C., 1915; aged 31; died, January 12, of diabetes.

Peter Cavanagh, Schuyler, Neb.; University of Michigan Medical School, Ann Arbor, 1883; aged 66; died, January 11, of pneumonia.

Tony L. Bryan ✠ Evansville, Ind.; Medical College of Evansville, 1882; aged 64; died, February 23, of asthma and heart disease.

Elmer Hinman Dwelle ✠ Northwood, Iowa; Northwestern University Medical School, Chicago, 1899; aged 48; died, February 28.

Thomas Parry Tyson, Wadsworth, Nev.; University of Pennsylvania School of Medicine, 1890; was shot and killed, February 17.

Rufus Berley Epting ✠ Greenwood, S. C.; University of Maryland School of Medicine, Baltimore, 1885; aged 65; died, February 18.

Ellis Wolcott Crater ✠ Oceanport, N. J.; Medical Department of Columbia College, New York, 1878; aged 65; died, February 22.

Clarence W. Webb ✠ Wellsboro, Pa.; College of Physicians and Surgeons, Baltimore, 1879; city physician; aged 67; died, February 6.

William M. Casey, Seymour, Ind.; Medical College of Ohio, Cincinnati, 1878; aged 75; died, February 27, of cerebral hemorrhage.

Hugh James Linn, Oakland, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1878; aged 72; died, February 9.

Gabriel C. Boudousquie, New Orleans; Medical College of Alabama, Tuscaloosa, 1893; aged 52; died recently, of pneumonia.

Jules G. Belknap, Sulphur Springs, Ark. (licensed, Arkansas, 1903); aged 67; died, February 26, of influenza and pneumonia.

John E. Gilmore, Baldwin, Iowa; Medical Department University of Iowa, Keokuk, 1867; aged 83; died, February 24, of senility.

Espy L. Smith ✠ Chicago; Chicago Homeopathic Medical College, Chicago, 1883; aged 70; died, March 5, of heart disease.

Charles Rufus Whitney ✠ Fonda, Iowa; Rush Medical College, Chicago, 1894; aged 57; died, February 21, of heart disease.

Daniel Orville Abrams, Independence, Mo.; Rush Medical College, Chicago, 1884; aged 75; died, February 27, of heart disease.

Uberto H. Merson, Anderson, Ind.; Pulte Medical College, Cincinnati, 1886; aged 59; died, March 3, of cerebral hemorrhage.

Ulysses Grant Richardson, Chicago; Barnes Medical College, St. Louis, 1895; aged 56; died, March 13, of pneumonia.

Maurice Isaac Heider, Philadelphia; Jefferson Medical College of Philadelphia, 1891; aged 57; died, February 14.

George Franklin Ketcham, Brooklyn; Long Island College Hospital, 1876; aged 66; died, February 14, of carcinoma.

Frank Caldwell, Cincinnati; Medical College of Ohio, Cincinnati, 1882; aged 65; died, February 14, of heart disease.

Luke Fox, Tacoma, Wash.; Detroit College of Medicine and Surgery, Detroit, 1895; aged 49; died, February 20.

Robert S. Wilson, Gainesville, Texas; St. Louis Medical College, St. Louis, 1876; aged 67; died, February 20.

William Joseph Johnstone ✠ Boston; Tufts College Medical School, Boston, 1896; aged 60; died, February 13.

Benjamin J. Milam, Macon, Mo.; Jefferson Medical College of Philadelphia, 1877; aged 74; died, February 17.

Arthur A. Milligan, Rogers, Ark.; Physio-Medical Institute, Cincinnati, 1883; aged 63; died, February 9.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

FRANZ C. A. GOERSS

How Oshkosh, Wisconsin, Dealt with an "Advertising Specialist"

Franz Carl Anton Goerss, who has been an "advertising specialist" for years, last December made the mistake of opening an office in Oshkosh, Wis. On January 18, on the complaint of the Social Medical Club of Oshkosh, through its secretary, Dr. Edward J. Campbell, Goerss was arrested for advertising in the *Daily Northwestern,* Oshkosh, to cure venereal disease, which is contrary to the Wisconsin statutes. Goerss first pleaded not guilty but later changed his plea to "guilty" and was fined $100 and costs. The local society followed up the matter and on March 3 Goerss' Wisconsin license was revoked in the Circuit Court. Goerss has left Wisconsin.

Goerss himself is a somewhat insignificant specimen of the genus quack, but his case is of interest because it points a moral. For years this man has been practicing medicine. As will be shown later, the evidence indicates that he was never graduated in medicine and there is reason to believe that the various state licenses that this man holds have been obtained by misrepresentation or fraud.

CLAIMS GRADUATION BY ERLANGEN UNIVERSITY

Goerss claims graduation from the University of Erlangen, Germany. He made this claim when he applied for a license from the Wisconsin Board of Medical Examiners in 1907. At that time he declared under oath that he had been graduated in 1869 by the Frederick Alexander University, Erlangen, Bavaria, Germany. As will be shown later, the state authorities of Illinois, as long ago as 1893, took up officially with the University of Erlangen the question of Goerss' graduation and published the reply from the University of Erlangen to the effect that no man of the name of Franz C. A. Goerss or any one of the name of Goerss was ever graduated either in 1869 or for ten years previously or ten years subsequently (1859 to 1879). In Goerss' application to the Wisconsin board he also swore that he had taken three courses of lectures at the Berlin Polytechnic Seminary.

WHAT ILLINOIS OFFICIALS FOUND

Some years previously Goerss had applied for a state license in Illinois. In this connection we cannot do better than publish verbatim a few paragraphs that appeared Dec. 31, 1894, in the Seventeenth Annual Report of the State Board of Health of Illinois:

> *"Case of Franz C. A. Goerss*: On March 23, 1889, Franz C. A. Goerss filed his application for the State certificate entitling to practice medicine and surgery in Illinois. He presented a diploma purporting to have been issued by the University of Erlangen, Bavaria, dated Jan. 26, 1869, with his affidavit that said diploma was the genuine diploma of that institution and has been issued to him after due examination.
>
> "He presented also letters of recommendation from medical men of East Saginaw and Detroit and paid the fee of $5.
>
> "On March 29, the receipt of his fee and application were acknowledged and he was asked to furnish letters from physicians residing in this State. Replying, he said:
>
> 'I am not acquainted in America, and send you the names of the doctors whom I know. I would ask you to send either the license or my diploma.'
>
> "On the 12th of May he writes to know whether the Board has decided his case, and says:
>
> 'Although I am poor and possess but $150, I would glady send $100 to get my license, if it can be more quickly obtained with money.'
>
> "On April 13th his application was declined and his fee returned. Nov. 8, 1889, he filed another application and

presented a letter of recommendation signed by Dr. G. Schlick and Dr. J. E. Harper of Chicago, and upon these credentials a State certificate was issued him.

"On Jan. 14, 1891, a letter was received from the Western Pennsylvania Medical College, asking for information concerning the professional standing of F. C. A. Goerss, who had presented to that college his diploma from Erlangen, Bavaria, and desired the endorsement of its faculty. Secretary replied, giving the history of the case. On April 15, 1893, a letter was received from Chicago in which it was charged that Goerss had purchased his diploma of Jno. Buchanan of New York. A letter was addressed July 31, 1893, to the dean of the University of Erlangen, asking whether the diploma of that institution had been issued to Goerss. To this he replied:

'I have had the list of the graduates of 1869 very carefully examined, also the lists for ten years before and after (1859-1879) and am convinced that the name Franz C. A. Goerss, or the name Goerss at all, does not occur in them.'

"Notice was sent to the Board's attorney in Chicago to be served on Goerss to appear at this meeting and show cause why his certificate should not be revoked for unprofessional and dishonorable conduct, but the notice was returned with the information that Goerss had left the State and was at present in San Francisco. The notice will be served on him as soon as his address can be ascertained."



Some typical Goerss advertising. The specimen on the left appeared in a Bartlesville, Okla. paper in 1919, when Goerss was the "Edinburgh Specialists." The other two specimens are recent advertising from the *Daily Northwestern* of Oshkosh, Wis. Note the claims in the advertisement on the right that Goerss is a "graduate of the Royal College of Physicians and Surgeons Edinburgh, Scotland." It would have been just as sensible to have said that he was "a graduate of the State Board of Medical Registration and Examination of Kansas." The "Royal College of Physicians, Edinburgh" and the "Royal College of Surgeons, Edinburgh" do not graduate anybody; they are licensing bodies. Notice also that Goerss claims the degree of "M.D." from the University of Heidelberg, Germany, and from Toronto University, of Canada. Goerss was never graduated by Heidelberg and is unknown to the University of Toronto.

In spite of this published record, Goerss seems to have obtained licenses in Kansas, Oklahoma and Arkansas, as well as in Wisconsin. In 1919 Goerss was advertising as the "Edinburgh Specialists" at Bartlesville, Okla. Presumably at that time "Berlin Specialists" or "Erlangen Specialists" would not have made a good advertising slogan.

THE OSHKOSH ADVERTISING CAMPAIGN

Goerss' activities in Wisconsin were first brought to the attention of THE JOURNAL by Dr. Ronald B. Rogers, President of the Twin City Medical Association, Neenah and Menasha, Wis., who sent in one of Goerss' preliminary advertisements and asked for some information on the man. Dr. Rogers was sent such material as the Propaganda department had regarding Goerss and was asked to bring the matter to the attention of the local county officials. Dr. Rogers turned the facts over to the Social Medical Club of Oshkosh, and that local organization through its secretary, Dr. Edward J. Campbell, immediately started an investigation of Goerss and his methods.

Preparatory to opening his office in Oshkosh, Goerss, like most advertising quacks, laid down a preliminary barrage of advertising. He seems to have especially favored the Oshkosh *Northwestern* and this paper was perfectly willing to be so favored. In the *Northwestern* for December 12 there appeared an advertisement, published in news style, with this heading:

"DR. GOERSS WILL SOON BE READY. The European Specialist Hopes to Announce His Opening Within a Few Days. Not a Little Speculation Has Arisen Regarding the Location in Oshkosh of a Distinguished European Medical Savant."

Then followed more than half a column of puffery and falsehood. One of the paragraphs in the article read:

"Dr. Goerss is a medical graduate of the Royal College of Physicians and Surgeons, Edinburgh, Scotland, one of the most famous universities in the world, and one of the most difficult to receive an M.D. degree from. Dr. Goerss also carries the degree of M.D. from Heidelberg, Germany, and from Toronto University, Canada. An array of medical degrees which are probably not possessed by any other physician in the United States."

FAKING THAT WAS NOT EVEN CLEVER

This paragraph illustrates the type of mind that goes with quackery. Goerss first claimed to be a graduate of the "Royal College of Physicians and Surgeons, Edinburgh, Scotland, one of the most famous universities in the world, and one of the most difficult to receive an M.D. degree from." There is no "Royal College of Physicians and Surgeons, Edinburgh." There is a "Royal College of Physicians, Edinburgh" and there is a "Royal College of Surgeons, Edinburgh." Neither one of these is either a university or a college in the American sense; each is a licensing body. Goerss might as well have claimed that he was a "graduate of the State Board of Medical Registration and Examination of Kansas, one of the most famous universities in the world and one of the most difficult to receive an M.D. degree from." Such a statement would have been just as sensible as the one that he published and more nearly accurate because, as a matter of fact, Goerss has been granted a license by Kansas. Goerss also made the statement that he "carries the degree of M.D. from Heidelberg, Germany, and from Toronto University, Canada." Two more falsehoods; Goerss was never graduated by Heidelberg and is utterly unknown to the University of Toronto.

In another of the Oshkosh advertisements Goerss claimed to have the "endorsement" of "Jefferson Medical University, Philadelphia." There is no "Jefferson Medical University." Jefferson Medical College of Philadelphia wrote that Goerss is unknown to them.

All of the facts in the case of Goerss were brought to the attention of Mr. D. K. Allen, District Attorney of Winnebago County by Dr. Edward J. Campbell, Secretary of the Social Medical Club of Oshkosh. The people of Oshkosh and vicinity owe Dr. Campbell and District Attorney Allen a debt of gratitude in driving this quack from their State.

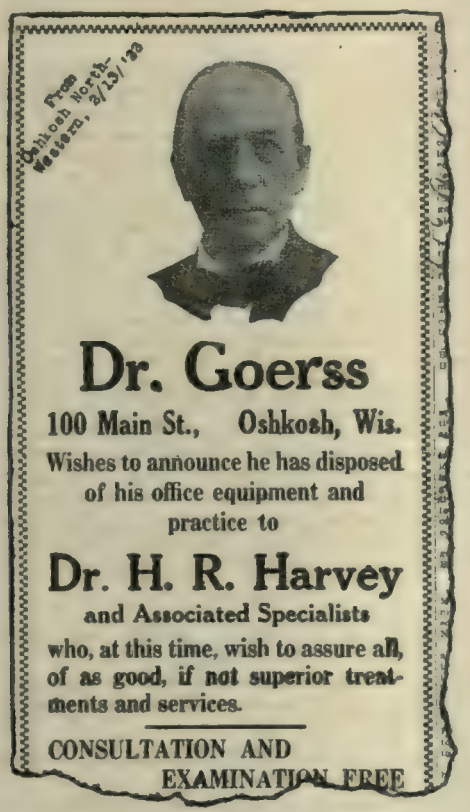
The Oshkosh *Northwestern*, instead of standing for the rights and protection of the public in this matter, has shown itself as morally culpable as Goerss in deceiving the public and violating the Wisconsin statutes. It is a pity that the Wisconsin law does not hold newspapers that publish illegal advertisements equally guilty with the advertisers. We are informed that Goerss while in Oshkosh was merely a hireling and that the individuals behind him were P. J. and William Surand.

THE SUCCESSORS OF GOERSS

Even after Goerss had been prosecuted and driven from the state the *Northwestern* failed to print anything relative to the departure of Goerss and immediately opened its adver-

tising pages to "Dr. H. R. Harvey and Associated Specialists" who held themselves out as "Successors to Dr. Goerss." Dr. Campbell tells us that the individual who registered in Winnebago County for the H. R. Harvey outfit is one George L. Gibbs of Milwaukee. To complete the records in this matter the following facts taken from data in the files of the American Medical Association may be of interest:

H. R. Harvey first located at Rockford, Ill., in 1915, where, apparently, he promptly went into the advertising business. Advertisements of the "weak men" type of "Drs. Francis and Harvey" appeared in the Rockford papers. Francis, with whom Harvey was associated, seems to have been Stanley D. Francis who for a while advertised as "Dr. S. D. Francis and Associated Specialists."



After Goerss had been found guilty of violating the Wisconsin statutes and fined and his Wisconsin license revoked, the Oshkosh *Northwestern* carried an advertisement stating that "Dr. H. R. Harvey and Associated Specialists" had taken up Goerss' business at the old stand! We are informed that "Dr. H. R. Harvey and Associated Specialists," as represented in Oshkosh, is really one G. L. Gibbs, M.D., of Milwaukee, who has Wisconsin license No. 941, granted in 1900. Gibbs is said to have a nurse in full regalia in his office, and is continuing the practice of "Dr. Goerss."

S. D. Francis and his brother G. Gordon Francis appear to have operated a string of advertising offices in various parts of the country. Harvey was apparently merely a hired man. G. G. Francis in August, 1921, wrote on the stationery of George L. Gibbs, M.D., of Milwaukee a letter to a physician whom he thought he was going to hire to run one of his, Francis', advertising offices. Francis instructed the man to go to Rockford and report to Harvey who would instruct him into the ways and means of conducting an advertising office. Francis wrote that the man would receive a salary of $40 a week and receive 25 per cent. of all money taken in over $500 a month. He wrote further "I also desire that you not tell Dr. Harvey too much or, in fact, anything about our financial arrangements."

In closing, it is pertinent to ask what will the other states (Kansas, Oklahoma, etc.) that have granted Goerss a license on the basis of claims that have been shown to be fraudulent do in the matter of revoking his license?

Correspondence

THE ALKALINE TIDE IN URINE, AGAIN

To the Editor:—Referring to the article of Drs. Hubbard and Munford in THE JOURNAL, February 3, it is remarkable that a substantial agreement in experience leads to so wide a divergence of opinion. In estimating the personal equation, it must be admitted that I have often been criticized for being too literal and pragmatic. While my letter in THE JOURNAL, Dec. 9, 1922, referred to the possibility of an alkaline tide in a "transcendental sense," the term alkaline to me means a change of color with phenolphthalein requiring an appreciable addition of acid to discharge it. The same personal tendency makes me eliminate certain of Browning's poems over which many persons pore for hours, and litmus as an indicator, whereas Drs. Hubbard and Munford have been more patient and have presented a beautiful table of correspondences in the amphoteric reaction.

Their method of estimating acidity directly in terms of cubic centimeters of tenth-normal alkali required to neutralize the hourly excretion of urine is much more sensible than my "acid units," except that for some purposes the larger numbers are more convenient and, as in the case of large and small calories, it is merely a question of placing a decimal point.

It seems to me that, aside from the question of adopting the doctrine of relativity and designating as alkaline what is merely a reduction of acidity, Drs. Hubbard and Munford have ignored the fact that the expression: "acid and alkaline tide in urine," as long employed in medical literature, usually, if not always, refers to the belief that this tide occurred conversely to digestive secretion, i. e., that the urine became alkaline shortly after a meal while the stomach was secreting acid (the tidal idea antedating the understanding that this acid was hydrochloric) and subsequently acid, while the intestinal and great tributary glands were secreting alkali.

It is this kind of tide that I deny, not only on empiric evidence but also because a true understanding of the process of digestion shows that there cannot be any true tidal action, although, in some degree and with various qualifications, certain tendencies in support of the old theory may be shown to exist, but in a transcendental sense which would only confuse the ordinary investigator. Table 1 of the authors mentioned in the absence of a statement of mealtimes and general make-up of the meals, and the lack of a separation of the urine from 7 p. m. to 7 a. m., does not show any evidence of such a tide except that the very moderate reduction of acidity after what may have been taken as the breakfast hour might be so interpreted. If they will subdivide the urine more accurately, with reference to mealtimes, they will find various inconsistencies. Sometimes, even after meals rich in acid-producing substances, the mere elimination of an excess of water in advance of the development of acid radicals from ingesta or as a result of catabolism of tissues will render the urine low not only in degrees of acidity but also in amount of alkali required to neutralize per hour, immediately after a meal. This, of course, looks like a verification of the alkaline tide theory, if we use the term in a relative sense; but the more plausible explanation is that the elimination of water precedes that of acid radicals which require more time for absorption or even for development.

In persons leading what is called a sedentary life, the evening meal often, perhaps usually, contains about half the total nourishment of the twenty-four hours, and rather more than half of the acid factors. Such persons are rather likely to have at least half of their physical activity after dinner. Thus, the evening urine, say up to 23 or 24 o'clock (not to

mention the occasional lengthening of the day to 25 or 26 o'clock) is very likely to be highly acid in degrees (from 90 to 100 not very rarely) and disproportionately abundant. Often the urine from 18 to 24 o'clock will represent 300 c.c. of tenth-normal solution (the total for the day from Table 1 being 321.10, if my understanding of the data is correct and I have made no mistake in arithmetic, this agreeing substantially with my own averages). At any rate, more than a quarter of acid elimination will occur in the last quarter of the day, and by morning the residue will be very low. It is not materially increased by the usual light breakfast, so that it is to be expected that the low point of acid elimination will occur sometime during the morning before any considerable quantity of acid radicals are introduced by ingestion or developed by catabolism. Probably farmers, soldiers and persons who eat a hearty breakfast and no luncheon would show corresponding differences in the curve, if the term curve is applicable to a fluctuation that is always exceedingly irregular.

A. L. Benedict, M.D., Buffalo.

"DIVERTICULUM OF BLADDER IN THE INGUINAL CANAL"

To the Editor:—In reference to diverticulum of the bladder in the inguinal canal, described by Dr. Stein in The Journal, March 3, it is interesting to note that in the surgical literature of one hundred years ago, frequent mention is made of inguinal cystocele. Samuel Cooper of London, in his Surgical Treatise (First Lines of Practice of Surgery with Notes, by Alexander H. Stevens, M.D., Vol. 2, New York, James V. Seaman, 1822), discusses at considerable length "Cystocele or Hernia of the Bladder." He writes: "The protrusion of the bladder at the abdominal ring is the most frequent. It is generally seen in male subjects, a large proportion of whom are considerably advanced in life, and have been repeatedly afflicted with retention of urine." As the author advises waiting until the fourth day to relieve, by operative procedures, complete retention of urine when catheterization is impossible, stating this to be the accepted dictum of the most eminent surgeons, such practice might account for the frequent occurrence he describes. To quote further: "Contrary to what is usual, however, a few instances are recorded in which the protrusion of the bladder at the abdominal ring has been noticed in young persons and even females. . . . a suspicion has originated that the disease may even sometimes be congenital."

Cooper cites numerous cases. Plater, a physician at Bâle, in attending a case of retention of urine, found the patient's scrotum considerably swelled. Thinking this might be the underlying difficulty in preventing urination, he punctured the tumor, when to his surprise urine burst forth. Guyon, Vander Wiel and others reported similar cases. Verdier is mentioned as recording numerous cases in which urinary calculi had made their way out of the groins by ulceration.

Pott, in operating for supposed inguinal hernia of the intestines, by mistake cut away a protruding portion of the bladder. Recovery being effected, the operation was advised for such bladder condition.

Even bilateral inguinal and femoral hernia of the bladder is described.

T. L. Eyerly, M.D., Denver.

Creative Intelligence Confined to Few.—The great mass of humanity has never had anything to do with the increase of intelligence except to act as its medium of transfusion and perpetuation. Creative intelligence is confined to the very few, but the many can thoughtlessly avail themselves of the more obvious achievements of those who are exceptionally highly endowed.—Robinson: The Mind in the Making.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE BITES OF INSECTS

To the Editor:—Inform me where I can obtain information on the treatment of bites and stings of (1) black ants, (2) spiders and (3) kissing bugs, or, as some call them, vinegerones. I believe that black spiders and kissing bugs are quite common in Arizona, but we have a few here. (4) Also tell me the latest treatment for the dermatitis caused by poison oak and poison ivy.

William G. Carson M.D., Cutler, Colo.

Answer.—1. According to Castellani and Chalmers' Manual of Tropical Medicine, a satisfactory treatment for the bites of black ants is a local application of 5 per cent. phenol (carbolic acid).

2. For spider bites the same authors recommend application of a proximal ligature, incision of the wound and application of a mild alkali, such as diluted ammonia water or a weak solution of potassium carbonate. A strong solution of potassium permanganate is suggested. An article on the black spider was published in The Journal, Feb. 14, 1920, p. 479.

3. The name vinegerone is not properly applied to the insects known as kissing bugs. The vinegerone is the whip-tailed scorpion, *Thelyphonus giganteus.* It produces an irritating excretion which has an odor resembling vinegar. The name "kissing bug" has been applied to several species of the order *Reduviidae,* such as *Rasahus biguttatus, Opsicoetes personatus, Melanolestes picipes* and *Conorhinus sanguisugus.* Their bites are painful, and may require medical treatment. Tincture of iodin and phenol ointment have been used with success (The Journal, July 22, 1899, p. 220).

4. The treatment for the dermatitis produced by poison oak and poison ivy is thorough washing of the parts with alcohol or, cautiously, with gasoline; or, if the parts are not too tender, with soap and water. Care must be taken that the skin is protected against contact with more of the irritant poison from clothing, tools and the like which had previously been contaminated by touching the plants.

CERTIFICATE OF NATIONAL BOARD OF MEDICAL EXAMINERS

To the Editor:—1. What are the advantages of passing the National Medical Board Examination? 2. Does California reciprocate with Massachusetts? Please omit name.

M. C. M., Mass.

Answer.—1. The advantages of passing the National Board of Medical Examiners are:

(*a*) The examination is rapidly becoming recognized as a thorough test of a physician's qualifications, and its certificate, therefore, carries with it a corresponding distinction. (*b*) Holders of its certificate are eligible for admission to the final examinations of the Conjoint Examining Board of England and the Triple Qualification Board of Scotland. (*c*) Its certificates are now recognized by the licensing boards of twenty-three states, which makes the holders eligible for license in those states without further examination. These states are:

Alabama	Idaho	Nebraska	Rhode Island
Arizona	Iowa	New Hampshire	South Carolina
Colorado	Kentucky	New Jersey	Texas
Delaware	Maryland	North Carolina	Vermont
Florida	Massachusetts	North Dakota	Virginia
Georgia	Minnesota	Pennsylvania	

The secretary of the board is Dr. John S. Rodman, 1310 Medical Arts Building, Philadelphia.

2. No.

TREATMENT OF DRUG ADDICTS WITH ALCOHOL

To the Editor.—At present it seems that we may experiment with the treatment of drug addiction. It has been proposed to reduce gradually, substituting alcohol for the narcotic. Since it has been reported that drug addicts cannot take alcohol, would it be dangerous to substitute alcohol hypodermically for morphin?

K. S., New York.

Answer.—Drug addicts can and do take alcohol. Instances are known in which drug addicts have taken whisky copiously in addition to morphin. Although alcohol is absorbed when given hypodermically, there is a sensation of burning and smarting. It would seem foolish to attempt to treat opium addicts by substituting alcohol for the drug.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

Arizona October Examination

Dr. Ancil Martin, secretary, Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, Oct. 2-3, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Tulane University	(1920)	85
University of Michigan Medical School	(1921)	85.5
FAILED		
Hahnemann Medical College and Hospital of Chicago	(1921)	63.2

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
College of Medical Evangelists	(1919)	California
Louisville Medical College	(1892)	Alabama
Tulane University	(1908)	Louisiana
Marion-Sims College of Medicine	(1892)	Missouri
St. Louis University School of Medicine	(1905)	Utah
University of Buffalo	(1894)	New York
University of Tennessee	(1919)	Tennessee

Colorado October Examination

Dr. David A. Strickler, secretary, Colorado State Board of Medical Examiners, reports the written and practical examination held at Denver, Oct. 10, 1922. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 10 candidates who took the physicians' and surgeons' examination, 2, including 1 osteopath, passed, and 8 candidates failed. Thirty-four candidates were licensed by reciprocity, and one candidate was licensed on government credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
St. Louis College of Physicians and Surgeons	(1920)	75.2
Osteopath		75.5
FAILED		
Illinois Medical College	(1897)	55
Kansas City College of Medicine and Surgery	(1921)	62.7
Kansas City University of Physicians and Surgeons	(1922)	56.3
St. Louis College of Physicians and Surgeons	(1922)	58.1
University of West Tennessee	(1918) 63, (1921) 55.9, (1922) 49.3	59.3
Undergraduate		

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of Arkansas	(1916)	Arkansas
College of Medical Evangelists	(1921)	California
Howard University	(1904)	Mississippi
College of Physicians and Surgeons, Chicago	(1908), (1910)	Illinois
Northwestern University	(1910)	Illinois
Rush Medical College	(1896)	Kansas
Drake University College of Medicine	(1910)	Iowa
Keokuk Medical College, College of Phys. and Surg.	(1906)	Iowa
State Univ. of Iowa Coll. of Med.	(1889) Nebraska, (1916) Iowa	
University of Kansas	(1920)	Kansas
Louisville Medical College	(1894)	Oklahoma
Tulane University	(1896)	Louisiana
Detroit College of Medicine and Surgery	(1921)	Michigan
Beaumont Hospital Medical College	(1892)	Illinois
St. Louis College of Physicians and Surgeons	(1903) (1909) Missouri	N. Dakota
St. Louis University School of Medicine	(1903), (1909) (1912) Missouri	Illinois
University Medical College of Kansas City	(1908)	Wyoming
Washington University	(1920), (1921)	Missouri
Creighton University	(1914)	Nebraska
University of Nebraska	(1902)	Nebraska
Eclectic Medical College	(1912)	Ohio
Starling Medical College	(1890)	W. Virginia
University of Pennsylvania	(1921)	Penna.
Meharry Medical College	(1906) Arkansas, (1907) (1908) Tennessee	Mississippi
Tennessee Medical College	(1900)	Tennessee
University of Virginia	(1917)	Virginia

College	Year Grad.	Endorsement with
ENDORSEMENT OF CREDENTIALS		
Rush Medical College	(1917)	U. S. Navy

Book Notices

ALOHA AROUND THE WORLD. By Karl Vogel. With an Introduction by Commodore Arthur Curtiss James. Cloth. Price, $3.50. Pp. 274, with 95 illustrations. New York: G. P. Putnam's Sons, 1922.

An interesting preface to this book by Commodore Arthur Curtiss James tells how he took the guests around the world in his yacht *Aloha,* thus fulfilling a dream of years, unfulfilled with previous vessels. Among the guests was Dr. Karl Vogel, who kept a daily diary of the progress of the trip, charting the position of the yacht and the distance covered each day. His book is distinctly one for other enthusiastic yachtsmen, for he gives fully all those points that are most likely to interest the sailor rather than the tourist. The trip proceeded leisurely; the days were spent in the usual mild amusements indulged in on such vessels. From the standpoint of the reader, the book would be greatly improved by condensation and the elimination of repetition and nonessential details. It would then lose, however, in representing a good record of the trip for those who took part in the voyage. The book is nicely printed, and is illustrated with numerous photographs taken en route.

DER CHRONISCHE HEREDITÄRE HÄMOLYTISCHE IKTERUS. (Konstitutionelle Hypersplenie). Eine nosographische Studie von E. Meulengracht. Paper. Pp. 226, with illustrations. Leipsic: Dr. Werner Klinkhardt. 1922.

This is a discussion of every known phase of hemolytic icterus. Although the book does not enrich our knowledge of this condition by many new facts, it is of great value because it brings to our attention in a clear and compact form the author's methods of examination and deductions from his experience—he saw fifty cases in the course of four years—and it reviews the literature. The rôle assumed by hereditary influence is so important that to it the author applies the term dominant factor, on the basis of mendelian inheritance. Many cases may show some evidence of an early existence, such as a severe icterus neonatorum. Familial existence is well known. The rare occurrence of a high color index renders it possible that the condition under observation may belong to another group. Vital staining reveals that from 20 to 50 per cent. of the red cells are immature. The author lays great stress on increased fragility. Although this occurs in many other conditions, it is never so marked or so constant as in hemolytic icterus. He decries the value of reports of many observers, because they do not take into consideration the influence of shaking the specimen, the effect of temperature, and normal physiologic variations of the red cells. This symptom is a phenomenon of regeneration. Jaundice is always present, but may be so slight as to escape unnoticed. Dissociated jaundice is always found in the blood serum. The spleen may not be found enlarged on physical examination, but at postmortem examination or at operation it is found enlarged. The author describes in detail the clinical course, the pathologic anatomy, the progress of the disease, the complications, of which gallstones are not infrequent, and cites many examples of the salutary effect of splenectomy, which he considers the best form of treatment. The theory that best explains the cause is hypersplenism. The last chapter is devoted to a citation of case histories.

THE TREATMENT OF FRACTURES WITH NOTES UPON A FEW COMMON DISLOCATIONS. By Charles Locke Scudder, M.D., Consulting Surgeon to the Massachusetts General Hospital. Ninth edition. Cloth. Price, $8.50. Pp. 749, with 1,252 illustrations. Philadelphia: W. B. Saunders Company, 1922.

This work comes to us too well known through many previous editions to require any detailed criticism here. The intelligent and critical analysis of the underlying anatomic, pathologic and mechanical principles shown by the author, combined with his masterly skill in presenting in minute detail the entire subject of fractures, undoubtedly makes this work one of our greatest treatises on the subject. The book is voluminous. It is profusely, almost extravagantly illustrated by line and wash drawings, photographs and roentgenograms. Excellent drawings and roentgenograms are used

to demonstrate the mechanism of displacement, a picture that the operator must be able to visualize if his treatment is to be intelligent. It is worth while mentioning that the text is not padded in description and in illustration with a host of methods and of apparatus that are obsolete. That the material presented is the development of a tremendous personal experience is seen in the chapter on the femur. The author's advocacy of skeletal traction, of Carrel-Dakin treatment in compound fractures, and of conservatism in the matter of open reduction in the majority of fractures, impresses the reader of experience as based on sound principles. Books that actually teach surgical treatment are rare. This is such a book.

LESSONS IN PATHOLOGICAL HISTOLOGY. By Gustave Roussy, Professeur Agrégé, Chef des Travaux Pratiques d'Anatomie Pathologique a la Faculté de Paris, and Ivan Bertrand, Chef de Laboratoire Délégué a la Clinique des Maladies Nerveuses de la Faculté de Paris. Translated from the second French edition by Joseph McFarland, M.D., Sc.D., Professor of Pathology and Bacteriology in the Medical Department of the University of Pennsylvania. Leather. Price, $3.25. Pp. 278, with 124 illustrations. Philadelphia: Lea & Febiger, 1922.

In this book, the right-hand pages present excellent black and white microscopic drawings, while the left-hand pages explain what is seen. The student is told, first, what the organ presents in the way of characteristic features on the naked eye inspection of the section, and then what may be seen with the microscope. The book is a capital guide to the microscopic study of morbid changes in tissues, and may be recommended without hesitation for that purpose.

Medicolegal

Insufficient Evidence of Malpractice or Maltreatment

(Kirby's Administrator v. Berea College et al. (Ky.), 244 S. W. R. 775)

The Court of Appeals of Kentucky, in affirming a judgment in favor of the defendants, says that the plaintiff sought to recover damages for the death of his daughter on account of alleged negligent, unskilful and wrongful treatment of her while she was an inmate of the hospital operated in connection with the college, she being afflicted with measles, which developed into pneumonia, followed by her death. Besides the college, the defendants were the chief surgeon in charge of the hospital, and his assistant; the superintendent of the hospital, and the superintendent of the nurses in it.

The patient contracted the measles; was put into the hospital, January 23, and died from pneumonia, February 4. The plaintiff introduced three physicians, not connected with the college or its hospital, who visited the patient, either, January 30 or 31; and they diagnosed the case as one of patchy pneumonia, a condition which they thought had been developing for, perhaps, forty-eight hours, although they were not absolutely sure of that fact. They were furnished, and examined, the chart made by the nurse or nurses in charge of the patient, on which was recorded not only her temperature, respiration, etc., but also the treatment given her; and they testified in substance that they saw nothing indicating improper treatment. Of course, they could not tell when the physician in charge of the patient discovered or detected the development of pneumonia. That physician, a woman, did not testify; nor was any statement of hers proved. No admissions of any dereliction of duty were proved against either of the defendant physicians further than that the chief surgeon stated that he had not discovered the pneumonia before the examination of the patient by the physician witnesses because the woman physician had charge of her, and he was busily engaged with the numerous other patients then confined in the hospital, there being an epidemic of influenza and measles prevailing at the time. It was furthermore testified that on some occasions, but how long prior to the development of the pneumonia was not shown, the patient was permitted to walk from her bed to the toilet, a distance of 25 feet; but it was proved that the hospital was warm and comfortable at the time, as well as kept in the best condition. Some of the physician witnesses testified that it might not be the best and most approved method to allow such action on the part of the patient, but they did not pretend to say that the pneumonia could be attributed with any degree of certainty to it; nor does the court understand that their testimony condemned it in an ordinary case of measles. There was an attempt to make much of the testimony of a witness that a nurse struck the patient on the shoulder while in the toilet, and at one time declined to hand her a drink of water. But the same witness testified that the patient was noisy and somewhat unruly, and that the striking was only a gentle stroke on the shoulder, with a request that she must not make so much noise; also, that the incident did not cause the patient to be excited, nor did it in any wise unnerve her so far as the witness could observe. Of course, if it had been shown that the nurse was guilty of acts of such cruel and brutal nature as to be reasonably calculated to produce nervousness, excitement or other conditions to which the development of pneumonia could be reasonably attributed, a different question would be presented. But the court is convinced, from all the evidence in the case, that the plaintiff failed to sustain his alleged cause of action.

Physicians and those having in charge the treatment of patients are not required by law to insure their recovery; their measure of duty is to possess such knowledge and skill as is possessed by others similarly engaged in the community, and to exercise ordinary care in the application of their knowledge and skill. That duty does not require the performance of every act which the most cautious and skilful would employ; and before liability will attach it must appear that the damages sued for were the proximate result of some alleged act of omission or commission on the part of the defendant in malpractice cases. Mere speculation or remote probability is not sufficient to fix liability.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
American Association of Anatomists, Chicago, March 28-30. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.
American Association of Pathologists and Bacteriologists, Boston, March 29-30. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
American Congress on Internal Medicine, Philadelphia, April 2-7. Dr. Frank Smithies, 1002 North Dearborn Street, Chicago, Secretary.
American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.
Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Joplin, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.
Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.
Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

January, 1923, 25, No. 1

*Physiology of Exercise in Childhood. I. Study of Normal Children of School Age. M. Seham and G. Egerer-Seham, Minneapolis.—p. 1.
*Celiac Disease. R. Taylor, Minneapolis.—p. 46.
*Treatment of Flat Warts by Internal Administration of Mercury. H. Fox, New York.—p. 55.
Comparison of Diphtheria Immunity in Mother and in the New-Born. H. O. Ruh and J. E. McClelland, Cleveland.—p. 59.
Chemical Studies of Blood of Mother and Fetus. M. G. Howe and M. H. Givens, Pittsburgh.—p. 63.
*Colloidal Gold Reaction in Acute Poliomyelitis. J. C. Regan, A. Litvak and C. Regan, New York.—p. 76.

Physiology of Exercise in Childhood.—Briefly, the Sehams found that all forms of exercise produce an increase in the pulse rate and the blood pressure, the increase depending mainly on the type of exercise.

Celiac Disease.—Taylor's report is based on a study of seven cases, the cardinal features of which agree with those described as being characteristic of celiac disease. Abstracts of their records and of the data gleaned from each are given. In all the seven patients the disease was preceded by a long period of bad feeding, or by a parenteral infection, or by both. Gastric achlorhydria was present in the five cases in which the stomach contents were examined. The liver was found smaller than normal in every case. As further evidence of the presence of liver pathology there was in one case a complicating Banti's disease; in another case leucin and tyrosin were present in the urine, and in a third case the duodenal juice contained a pathologic pigment. It appears that there are four points to be considered in successful dietary treatment: (1) In recognition of the achlorhydria, to use soured milk and fruit acids; (2) to supply readily absorbable carbohydrate primarily for its good effect on the liver; (3) to wait patiently for months on a high protein intake before adding starches and fats, and (4) to prevent fecal accumulations which can undergo bacterial decomposition.

Treatment of Flat Warts by Internal Administration of Mercury.—Fox's experience in trying the method suggested by White is confined to eleven cases, one of which is not suitable for analysis as the patient was treated by another physician with the roentgen ray after she had taken mercury for one week. The result in this case was successful at the end of a few weeks. Of the ten cases in which the mercury treatment was given a fair trial, the result was entirely successful in five. In these cases the disappearance of the eruption was absolutely complete in from three to eight weeks. There had, furthermore, been no return of the disease in these patients at the end of one, three, four and seven months and three years, respectively. The treatment consisted solely of the internal administration of mercurous iodid tablets in doses of ¼ grain, three times a day. Smaller doses were given the younger patients. No local remedies whatever were employed. In the five unsuccessful cases there was no improvement after two or four weeks of treatment.

Colloidal Gold Reaction in Acute Poliomyelitis.—In a series of forty-two cases of acute poliomyelitis, including 132 spinal fluids, a study of the colloidal gold reaction was carried out by Regan and his associates. There was always a reaction with colloidal gold solution in the case of every poliomyelitic fluid taken during the acute stage of the disease. This reduction was constantly in the same zone—the zone of low dilutions, the so-called syphilitic zone. In 88 per cent. of the spinal fluids examined, the reaction occurred in the first six dilutions between 1:10 and 1:320. In fourteen spinal fluids the reaction extended to the seventh dilution (1:640). These patients more or less characteristically presented marked polyneuritic or meningitic symptoms, or else pronounced paralysis. In no instance was a normal reaction encountered before the end of the third week of illness. In twenty-three patients the spinal fluid was examined as late as the eighth week, and fifteen, or 65 per cent., had become normal by that time.

American Journal of Psychiatry, Baltimore

January, 1923, 2, No. 3

Psychoneuroses. Problems and Lines of Investigation. C. M. Campbell, Cambridge, Mass.—p. 367.
*Blood Chemistry in Mental Diseases. K. M. Bowman, White Plains, N. Y.—p. 379.
Blood Fragility Studies in Certain Psychopathic States. T. Raphael, Ann Arbor, Mich., and F. C. Potter, Mercer, Pa.—p. 409.
*Aporrhegma Reactions in Psychoses. J. C. Whitehorn, Waverley, Mass.—p. 421.
*Hematologic Pictures in Endocrine Syndromes Found Associated with Epilepsy. H. A. Patterson, Buffalo.—p. 427.
Long Section Method, Contra Cross Section Method in Study of Mental Disease. H. Lundholm, J. S. Plant and J. C. Whitehorn, Waverley, Mass.—p. 439.
Follow-Up Work in Mental and Surgical Cases. E. D. Bond, West Philadelphia, Pa.—p. 445.
Psychology in Medicine. F. L. Wells, Boston.—p. 451.
Observations of Juvenile Court Psychiatrist. O. G. Wiedman, Hartford, Conn.—p. 459.
Constitutional Psychopathic Inferior. Problem in Diagnosis. A. E. Johnson, Philadelphia.—p. 467.
*Catatonic Dementia Praecox; Physiotherapeutics, and Results Obtained in Series of Twenty Cases. D. C. Main, Washington, D. C.—p. 473.

Blood Chemistry in Mental Diseases.—Two hundred and twenty-nine cases of mental disease were examined by Bowman as to the blood constituents. The average findings for blood nonprotein nitrogen, dextrose, uric acid and chlorids were found to be normal for all types of mental disease, except psychoses with cardiorenal disease and general paralysis, both of which conditions showed increased findings for nonprotein nitrogen and dextrose.

Aporrhegma Reactions in Psychoses.—The results presented by Whitehorn merely indicate that there is a tendency among some types of psychotic persons to give less than the usual normal reaction to histamin. The reaction appears to be sufficiently marked to encourage the hope that analytic procedures for the detection and estimation of certain aporrhegmas may yield information of value in the understanding of mental disorders.

Hematologic Pictures in Endocrine Syndromes Associated with Epilepsy.—One hundred and twenty-eight cases presenting some endocrine manifestation in an epileptic have been examined by Patterson. Of these, the overwhelming majority falls into the pituitary group. The leukocytic formula in all these disorders is either distorted or masked by the epileptic hyperleukocytosis.

Catatonic Dementia Praecox.—Main endorses the value of occupational therapy in this condition. He describes what is being done in this field at St. Elizabeth's Hospital, Washington, D. C.

Archives of Dermatology and Syphilology, Chicago

February, 1923, 7, No. 2

*Hydroa Vacciniforme Seu Aestivale. F. E. Senear and H. W. Fink, Chicago.—p. 145.
Pityriasis Rosea. W. J. Highman and R. H. Rulison, New York.—p. 163.
*Myeloid Leukemia of Skin. L. W. Ketron and L. N. Gay, Baltimore.—p. 176.
*Pityriasis Rubra Pilaris—Familial Type. E. P. Zeisler, Chicago.—p. 195.
Experimental Production of Paraffin Oil Tumors in Monkeys. F. D. Weidman and M. S. Jefferies, Philadelphia.—p. 209.
Tumor Formation After Injection of Mercuric Salicylate in Vegetable Oil: Case Report. I. C. Sutton, Anaheim, Calif.—p. 223.
Sporotrichosis. E. D. Crutchfield, Galveston, Texas.—p. 226.

Hydroa Vacciniforme Seu Aestivale.—To the seventy-eight cases recorded in the literature of what they feel can be considered as being cases of hydroa vacciniforme, Senear and Fink add two cases. The sun's rays alone were listed as the exciting factor in 80 per cent. of the cases. Hematoporphyrinuria was present in 17.5 per cent. Heredity apparently plays some part, as more than one member of the family was affected in five instances. Treatment has been of little avail, although ointments containing quinin or esculin have been reported as of value in some cases.

Myeloid Leukemia of Skin.—Ketron and Gay report the case of a woman, aged 63, who noticed an eruption of bluish-red nodules along the costal margins early in December, 1916. A few days later she began to have severe pain in

the lower portion of her back and upper abdomen. The nodules rapidly increased in size and distribution, appearing on the head and neck. They were associated with intense itching. Physical examination at this time revealed abdominal tenderness and enlargement of the liver and spleen. The blood examination showed only a secondary anemia. Within a period of two months the nodules had spread over the entire body. They had a mahogany color, and some of them measured as much as 3 cm. in diameter. The spleen and liver, however, had decreased somewhat in size, and there was no abdominal tenderness. The nodules then gradually disappeared, leaving only discolored macular areas. In February, 1917, there appeared over the left leg a hemorrhagic eruption. This was of two weeks' duration. Repeated study of the blood showed nothing of special importance. In the beginning of March, 1917, the skin nodules again suddenly made their appearance over the body and in the throat, associated with general weakness, a rise in temperature and enlargement of the spleen and liver. The blood count then for the first time showed the picture of myeloid leukemia. The patient died April 11, about four months after the first eruption of skin nodules, and one month after the blood examination had shown the presence of a myeloid leukemia. Necropsy confirmed the clinical diagnosis.

Pityriasis Rubra Pilaris; Familial Type.—Zeisler reports four cases which occurred in one family, a father and three children. This is said to be the first instance of the familial occurrence of the disease noted in this country, although there are two reports of a similar nature from Europe. Evidence is presented that heredity plays a rôle in the etiology of this rare condition.

Archives of Neurology and Psychiatry, Chicago

February, 1923, **9**, No. 2

Genesis of Cerebellar Functions. F. Tilney, New York.—p. 137.
*Acute and Chronic Chorea. G. Wilson and N. W. Winkelman, Philadelphia.—p. 170.
*Two Cases of Brain Tumor with Ventriculography. P. Bassoe and C. B. Davis, Chicago.—p. 178.
Difference Between Muscular and Neuromuscular Interpretation of Walking. W. M. Kraus, New York.—p. 184.
Nature of Certain Functional Nervous Disturbances and Their Treatment Along Metabolic Lines. R. Pemberton, Philadelphia.—p. 208.

Pathologic Anatomy of Chorea.—A clinicopathologic study was made by Wilson and Winkelman of a case of Sydenham's and another of Huntington's chorea. In the typical case of Sydenham's chorea, mitral endocarditis was found. The pathology in the brain—acute cell changes with the marked congestion—is attributed to the acute infectious disease from which the patient died. In the case of chronic chorea the process involved mainly the striatum (caudate and putamen) and the cortex; the changes being typical of a chronic degenerative process, selective in action. No relationship could be found between the acute and chronic varieties of chorea. The findings of epidemic encephalitis were not present in the case of Sydenham's chorea. When such are present, as in Marie's case, the authors believe them to be the result of the epidemic forms of encephalitis and not ordinary types of acute chorea.

Ventriculography in Brain Tumor.—The two cases in which Bassoe and Davis made use of this method point out that in the hands of novices ventriculography is likely to be misleading and dangerous. In the first case, sufficient air had not been introduced into the posterior horn to fill the anterior horns completely. In the second case, in which the ventricles were unexpectedly small, evidently too much air was introduced and death was caused by the acute compression. Aside from determining the absence of hydrocephalus, the authors did not learn to locate the tumor any more accurately than they had by the neurologic symptoms. However, they admit that in selected cases and in skilful hands the method occasionally will lead to localization and successful removal of a tumor which cannot be located by other known methods.

Delaware State Medical Journal, Wilmington

October-November-December, 1922, **13**, No. 4

Unusual Eye Conditions. E. R. Mayerberg, Wilmington.—p. 5.
Infant Feeding. R. R. Spahr, Middletown.—p. 11.
Essential Differences Between Three Schools of Medicine—Allopathic, Eclectic, Homeopathic. J. M. Scudder.—p. 18.

Illinois Medical Journal, Oak Park

February, 1923, **43**, No. 2

Ectopic Gestation: Report of Cases. T. W. Nuzum, Janesville, Wis.—p. 107.
Cancer. W. M. Harsha, Chicago.—p. 109.
Choriocarcinoma Following Extra-uterine Pregnancy. J. B. Moore, Benton.—p. 114.
Edematous Cardiopath. J. M. Patton, Chicago.—p. 117.
Surgery of Upper Abdomen Under Local Anesthesia. R. E. Farr, Minneapolis.—p. 120.
*Treatment of Chronic Fatigue Intoxication. E. H. Ochsner, Chicago.—p. 125.
Pernicious Anemia. R. D. Robinson, Chicago.—p. 129.
Anatomy, Physiology, and Diseases of Circulatory System, and Management and Treatment of Such Diseases. H. C. Houser, Westfield.—p. 133.
Diabetes Mellitus. R. F. Herndon, Springfield.—p. 137.
Industrial Eye Injuries. F. Allport, Chicago.—p. 145.
Thoughts on Medical Organization. A. F. Kaeser, Highland.—p. 149.
Etiology and Management of Neurasthenic Conditions. F. R. Fry, St. Louis.—p. 151.
Thoughts on Preventive Surgery with Special Reference to Focal Infection. G. H. Parmenter, Beecher City.—p. 156.
Treatment of Insane. C. H. Anderson, Anna.—p. 159.

Treatment of Chronic Fatigue Intoxication.—Ochsner reiterates his belief that chronic fatigue intoxication is a distinct disease entity with definite symptoms. In the treatment of patients suffering from this affection, four objects must constantly be kept in mind: (1) maintain or improve the nutrition of the patient as the individual case may demand; (2) prevent the further accumulation of fatigue material; (3) ameliorate the symptoms as much as possible, and (4) remove the already accumulated fatigue material. In nearly all of the severe cases the patients suffer much from hyperchlorhydria, eructation and belching of gas, and constipation. Proper diet, rest, and looking after the symptoms as they arise, sometimes make these patients more comfortable, but these alone will never cure them. The active treatment should have for its object the elimination of all accumulated fatigue material in the shortest possible time with the least risk and discomfort to the patient. Good air, both day and night, is absolutely essential in order that the products of fatigue may be properly oxidized and converted into a form which may be easily eliminated. Suitable baths are also valuable adjuncts. In the extreme cases the use of castor oil is very important. Some of these patients can be saved only if they are given one ounce of castor oil every evening on retiring or the first thing in the morning, in order that the end results of the faulty digestion may be cleared out of the gastro-intestinal tract daily and the fatigue material which may have found its way into the gastro-intestinal tract after massage may also be removed. The measures already mentioned must be supplemented by carefully supervised, intelligent massage. When the patient is completely relieved of all of the symptoms and of all of his fatigue spots, the time for physical exercise and physical reeducation of the atrophied muscles has arrived. The exercises must be increased gradually, always stopping short of exhaustion. Later more strenuous exercise such as golf, tennis, walking, rowing are indicated and moderate fatigue encouraged, but exhaustion guarded against in order that a relapse may be averted.

Indiana State Medical Association Journal, Ft. Wayne

January, 1923, **16**, No. 1

*Sensitivity to Epidermal and Pollen Proteins: Diagnosis and Treatment. J. A. Wynn, Indianapolis.—p. 1.
Safe Extraperitoneal Method for Drainage of Intra-abdominal Abscesses. J. R. Eastman, Indianapolis.—p. 6.
Treatment of Pulmonary Tuberculosis. A. Henry, Indianapolis.—p. 9.
Arrhythmia. I. E. Brenner, Winchester.—p. 14.
Ideals of Medical Profession. C. H. Good, Huntington.—p. 15.

Sensitivity to Epidermal and Pollen Proteins.—It is pointed out by Wynn that hay-fever, certain forms of asthma, and various skin conditions are but different manifestations of the state of sensitivity to some protein or proteins. A general method is outlined for differentiating these types on the basis of clinical history and the evidence of a specific skin reaction. Special attention is directed in pollen and epidermal protein cases, to the fact that they give a seasonal history in one case and a history of proximity to a given animal or fowl in the other; that both types are best treated prophylactically by removal of cause, but that desensitization

is possible and practical in case of the pollens. A method is outlined and the precautions are emphasized. Though at present desensitization must be left to those especially prepared for the work, with reasonable attention to the subject, the general practitioner should not only recognize cases of sensitivity, but classify them with considerable accuracy and accordingly give intelligent advice regarding management. The condition is common enough and important enough to warrant the attention of all engaged in the general practice of medicine.

Journal of Cancer Research, Baltimore

July, 1922, **7**, No. 3

*Transplantable Metastasizing Chondrorhabdomyosarcoma of Rat. F. D. Bullock and M. R. Curtis, New York.—p. 195.
*Primary Carcinoma of Liver. F. Helvestine, Jr., Charlottesville, Va.—p. 209.

Transplantable Metastasizing Chondrorhabdomyosarcoma of Rat.—The chondrorhabdomyosarcoma of the sternum of the rat described by Bullock and Curtis was a transplantable metastasizing tumor in which cross striated muscle fibers persisted through fifteen generations, although the cartilaginous elements early lost their power of differentiation.

Primary Carcinoma of Liver.—A primary carcinoma of the liver in a woman, aged 63, is described by Helvestine. The patient began to lose strength and weight about two months prior to admission. About three weeks before admission her abdomen became distended and a little later she became jaundiced. On physical examination the margin of the liver could be palpated below the costal margin. A diagnosis of carcinoma of the liver was made. Three days after admission the patient died. On the basis of the arrangement of the cells, the presence of capillary stroma, and the absence of proliferation of the bile duct epithelium, this carcinoma is classed as a hepatoma. Cirrhosis was not present in the liver tissue, and nowhere was there hyperplasia of the liver cells. Although there were numerous instances in which the cancer cells grow between parallel capillaries, and were in direct continuity with the liver cell trabeculae, there were no transitions between liver cells and cancer cells. The growth was unicentric in origin, the primary focus being in the right lobe, from whence it grew by direct extension, without using the portal system as a pathway. A case of primary carcinoma of the gallbladder, with invasion and metastases in the liver is also described. Appearances very similar to those observed in the case of primary carcinoma were seen.

Journal of Immunology, Baltimore

January, 1923, **8**, No. 1

Local and General Immunity. F. P. Gay, San Francisco.—p. 1.
Hereditary Blood Qualities: Statistical Considerations. R. Ottenberg, New York.—p. 11.
Relation of Antigen to Antibody (Precipitin) in Vitro. E. L. Opie, St. Louis.—p. 19.
*Protective Action of Normal Serum in Experimental Infection with Bacillus Diphtheriae. T. J. Mackie, Cape Town, South Africa.—p. 35.
Hepatic Reaction in Anaphylaxis. I. Vasomotor Reactions in Isolated Canine Liver. W. H. Manwaring and S. Brill, Palo Alta, Calif.—p. 47.
Relation of Antigen to Antibody (Precipitin) in Circulating Blood. E. L. Opie, St. Louis.—p. 55.

Protective Action of Normal Serum Against Diphtheria.—In guinea-pigs experimentally infected with *Bacillus diphtheriae*, normal serum (horse, ox, sheep, cat, rabbit, human), injected subcutaneously at the same time as the inoculation, Mackie says, exerts a definite protective action. Two cubic centimeters of normal horse serum may protect in this way against 12 M. L. D. (minimal lethal doses) of a *B. diphtheriae* culture. No protection occurs if the serum injection is delayed for two hours after the inoculation. The activity of the serum persists at 57 C., but is lost at 70 C. and higher temperatures. The serum of one guinea-pig injected subcutaneously into another may protect the latter when experimentally infected with *B. diphtheriae* or, at least, exerts a definite delaying effect on the course of the infection. Normal horse serum is also similarly protective in guinea-pigs injected with diphtheria toxin; 10 c.c. of serum may protect against 10 M. L. D. The serum of one guinea-pig is not protective to another injected with diphtheria toxin. In the case of animals surviving after protection by normal serum a marked local lesion develops at the site of inoculation.

Journal of Infectious Diseases, Chicago

January, 1923, **32**, No. 1

*Cultivation and Isolation of Gonococci. R. A. Kinsella, G. O. Broun and O. Garcia, St. Louis.—p. 1.
*Improved Methods for Isolation and Later Cultivation of Bacillus Pertussis. O. R. Povitzky, New York.—p. 8.
Existence of More Than One Immunologic Type of Bacillus Pertussis. C. Krumwiede, L. Mishulow and C. Oldenbusch, New York.—p. 22.
*Experimental Measles in Rabbits and Monkeys. M. Nevin and F. R. Bittman, New York.—p. 33.
Serologic Relationships in Streptococcus Viridans Group. Influenza Studies XI. J. F. Norton, Chicago.—p. 37.
*Production of Spasms of Diaphragm in Animals with Streptococcus from Epidemic Hiccup. E. C. Rosenow, Rochester, Minn.—p. 41.
*Production of Spasms of Diaphragm in Animals by Living Cultures, Filtrates, and Dead Streptococcus from Epidemic Hiccup. E. C. Rosenow, Rochester, Minn.—p. 72.
Atypical Typhoid Fever with Slowly Agglutinable Typhoid Bacillus in a Periosteal Lesion. M. A. Blankenhorn, E. E. Ecker and M. K. King, Cleveland.—p. 95.
Influence of Carbon Dioxid on Growth of Bacteria. G. E. Rockwell, Cincinnati.—p. 98.

Cultivation of Gonococcus.—For isolation of the gonococcus, Kinsell, Broun and Garcia found the use of a 1.6 per cent. agar of p_H 7.6 to which 30 per cent. beef serum was added while the agar was still hot (from 90 to 100 C.), quite satisfactory. It is important that the plates be not too moist when used. A study of various culture mediums has shown that Thallmann's agar and Vedder's starch are excellent for the cultivation of gonococcus. On semisolid 0.5 per cent. agar, 5 per cent. gelatin and 1 per cent. nutrose, the gonococcus has grown and survived for from three to four weeks. It appears that physical factors are possibly of equal importance with nutritional factors in the cultivation of the gonococcus.

Cultivation of Bacillus Pertussis.—It was found by Povitzky that a definitely acid reaction in a suitable medium is favorable for the isolation and growth of *Bacillus pertussis*. Such a reaction is especially valuable because it inhibits the growth of *Bacillus influenzae* and other organisms found in the sputum of patients with pertussis. The most favorable point of acidity for isolation was p_H 5. The limits of acidity favorable to the growth of *B. pertussis* are p_H from 6.1 to 4.4. *Bacillus pertussis* immediately after isolation grows most luxuriantly on potato-glycerol-veal agar medium unadjusted (p_H from 5.8 to 6.1) with blood in the proportion of 1:3 or 1:4 added at a temperature of 45 C.; but this medium is too favorable for the growth of various other organisms present in the sputum and is therefore not suitable for the isolation of *B. pertussis*. On the other hand, the Bordet-Gengou medium, which contains neither meat nor peptone, is less favorable for the growth of the associated organisms of the mouth and nasopharynx. It was found, therefore, that this medium after adjustment to a suitable acid reaction (p_H 5) was the best for the isolation of *B. pertussis*.

Experimental Measles.—In the first series of animals used by Nevin and Bittman the virus obtained from patients with measles on the second day of the disease was passed through four rabbits and then produced symptoms typical of measles in a monkey. In the second series of animals the virus obtained as stated was passed through three rabbits and then through three monkeys in which symptoms typical of measles were produced. The monkey to monkey passage eliminated any question of a rash due to foreign protein. A control monkey injected with normal human blood showed no reaction. The results of these two series of passages confirm previous findings that the virus of measles survives rabbit passage and produces symptoms typical of measles in the monkey *(Macacus rhesus)*.

Streptococcus in Epidemic Hiccup.—Eight cases of epidemic hiccup were studied by Rosenow. From the infection atrium of each a streptococcus, alike in morphology and cultural character, was isolated, and with each strain, spasms of the diaphragm, and other muscles were reproduced in animals. The organism was isolated from these animals and characteristic symptoms were induced on reinoculation. The streptococcus was demonstrated in the lesions and proved absent elsewhere on microscopic examination of sec-

tions. These results were not obtainable with streptococci from similar sources in other diseases. The possibility of an accompanying filtrable virus was excluded by the filtration experiments and by the successful reproduction of the disease after many rapidly made subcultures of the different strains. The methods with which positive results were obtained included procedures in which the conditions in the patient were closely simulated. The type of the disease and lesions induced were similar to those noted in the spontaneous disease in man. The conclusion that epidemic hiccup is due to a streptococcus having peculiar neurotropic properties seems warranted. The question of the origin and absolute specificity of this streptococcus remains to be determined.

Streptococcus Filtrates Cause Hiccup.—The streptococcus of epidemic hiccup has been found by Rosenow to produce a substance or complex of substances which on inoculation into animals produces spasms of the diaphragm sometimes associated with tremor and twitchings of the masseters and other muscles. It is demonstrable in filtrates, in the clear centrifugalized broth, and in the washed dead bacteria of young cultures at the time the living streptococcus produces like symptoms in animals, and disappears from these as the living bacterium loses this power from artificial cultivation. The symptoms and lesions produced were essentially alike, except as to duration and extent, following injections of active filtrates, suspensions of dead bacteria, and the living organism. Hence, the specific localizing power with the production to this highly characteristic syndrome would seem to be due to a chemical substance produced either by the streptococcus or during the reaction incited in the host.

Journal of Urology, Baltimore

January, 1923, **9**, No. 1

*Experimental Study of Various Chemicals Used in Pyelography. O. S. Lowsley and H. R. Muller, New York.—p. 1.
*Perirenal Insufflation of Oxygen. Wm. C. Quinby, Boston.—p. 13.
Pyelonephritis. W. C. Stirling, Jr., Winston-Salem, North Carolina.—p. 29.
*Germicidal Character of Emanations from Colloids of Certain Silver Salts. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 37.
Renal Torsion. W. F. Braasch, Rochester, Minn.—p. 53.
Case of Reduplication of Left Ureter and Left Renal Pelvis. R. F. O'Neil, Boston.—p. 63.
Three Cases of Hydronephrosis. R. F. O'Neil, Boston.—p. 69.
Gonococcal Infections of Kidney. J. D. Barney, Boston.—p. 79.
Intravenous Injection of Neo-Arsphenamin in Treatment of Pyelitis. C. H. Chetwood, New York.—p. 87.

Study of Chemicals Used in Pyelography.—Of all the fifteen chemicals investigated by Lowsley and Muller, sodium iodid, in 20 per cent. solution, proved to be the most graphic medium. It casts a deep shadow, is nontoxic, nonirritating and is easily prepared. The authors caution that pyelography should be done only in selected cases. Persons suffering from acute or subacute infections of the kidneys, those who are emaciated or in a weakened condition, should not be subjected to this examination. The solution should be introduced carefully. When the patient complains of a sense of pressure in the loin, a few drops should be released in order to avoid distention of the kidney pelvis, as experiments on animals have shown distention to cause definite damage to the renal tissue. The practice of placing the patient in a sitting posture and withdrawing the catheter as the sodium iodid is injected and then immediately taking a roentgenogram was found to bring out many lesions of the ureters which would otherwise not be demonstrated.

Perirenal Insufflation of Oxygen.—The value of the perirenal insufflation of oxygen as a diagnostic measure is fully appreciated by Quinby, but his experience has shown that in the usual case the presence of gas about the kidney does not give plates of any greater value. In the occasional case, however, when the patient is large and fat, or in those instances in which the ureter is blocked by stone, or when for any other reason it is found impossible to inject the kidney pelvis at all, a knowledge of the kidney outline, made possible by the injection of gas, is often of distinct value.

Value of Colloidal Silver Chlorid as Germicide.—Ballenger and Elder report further on their experimental work with colloidal silver chlorid as a germicide. The preliminary work so far done shows its harmlessness when used on inflamed surfaces and that, in certain conditions, it may be given intravenously in effective doses.

Kentucky Medical Journal, Bowling Green

January, 1923, **21**, No. 1

Dr. J. N. McCormack in His Relation to Medical Profession. D. M. Griffith, Owensboro.—p. 9.
Dr. J. N. McCormack in His Relation to General Public. J. C. W. Beckham, Louisville.—p. 11.
Dr. J. N. McCormack as a Man. J. A. Stucky, Lexington.—p. 13.
Dr. J. N. McCormack in His Relation to American Medical Association. C. A. L. Reed, Cincinnati.—p. 14.

Mental Hygiene, Albany, N. Y.

January, 1923, **7**, No. 1

Aspects of Animal Mechanism. C. S. Sherrington, London.—p. 1.
Methods of Evaluating Our Immigrant Peoples. K. H. Claghorn, New York.—p. 20.
Psychoanalysis and The School. H. C. Miller, London.—p. 32.
Significance and Management of Hypochondriacal Trends in Children. E. L. Richards, Baltimore.—p. 43.
Study of the Underwear Industry with Special Reference to Opportunities for Subnormal Girls. J. D. MacAlpine, New York.—p. 70.
Affective Factors in Vocational Maladjustment. L. Pruette and D. Freyer, Brooklyn.—p. 102.
Organization and Scope of State Bureau of Mental Health. W. C. Sandy, New York.—p. 118.
Nurses' Training Schools in State Hospitals. C. F. Read and M. Kennedy, Chicago.—p. 127.
Mental Health of 463 Children from Dementia Praecox Stock. M. M. Canavan and R. Clark.—p. 137.
Organization of Occupational Therapy in State Hospital. H. M. Pollock, New York.—p. 149.

Northwest Medicine, Seattle

January, 1923, **22**, No. 1

Modern Aspects of Etiology and Treatment of Bronchial Asthma. G. Piness, Los Angeles, Calif.—p. 1.
*Treatment of Pneumonia. H. Brooks, New York.—p. 10.
Treatment of Advanced Tuberculosis. J. E. Nelson, Seattle.—p. 17.
Adult Type Tuberculosis in Children. C. R. Castlen, Seattle.—p. 21.
Vomiting in Infancy and Childhood. P. D. McCornack, Spokane.—p. 24.
*End-to-End Intestinal Anastomosis. Experimental Study. D. V. Trueblood, Seattle.—p. 27.

Drugs in Treatment of Pneumonia.—In Brooks' opinion, as a rule, few or no drugs are required in most cases of pneumonia; with one exception he feels that the need for medication must appear before any drug is advisedly prescribed. There is, however, one drug which he believes should by preference be given before it is needed. This is digitalis. To get the best effect from digitalis it must be given before the heart muscle is either in a state of inflammation or degenerated. In the pneumonias of infants and children, he employs the drug infrequently, but as age increases, he uses it with increasing frequency and dosage. As a rule, he starts with full dosage, 15 or 20 minims of the tincture every two or three hours, for the first twenty-four hours, and follows with a rapid reduction unless the case demands otherwise. In cases of known cardiac defect, Brooks often digitalizes by the rapid method, 30 or 40 minims three or four times daily until digitalis effects are produced. When the muscle irritability appears to be impaired, Brooks may use strychnin with the digitalis. Caffein is his drug of second choice in instances of circulatory failure in pneumonia. He advises against its employment in cases of active delirium and in those instances in which sleep appears to be very necessary. Camphor is also a very useful drug, preferably, of course, given intramuscularly or subcutaneously. Epinephrin is used especially in cases with marked hypotension, that appear to be going into shock or collapse. All these drugs are employed for symptomatic reasons and few or none, except, perhaps, the digitalis, in anything like a routine manner. When cough is particularly annoying or exhausting, it should be controlled, if possible, by codein, heroin or morphin in the order named. Brooks emphasizes the fact that the greatest danger is, overtreatment, rather than undertreatment, and that each case is an individual problem.

New Method of Intestinal Anastomsis.—Trueblood describes an aseptic method of anastomotic suture in which the openings are all closed by basting threads, which are withdrawn after the anastomosis has been completed.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

January, 1923, **27**, No. 8

Barium Plaster Walls for Roentgen-Ray Treatment Cubicles. A. E. Barclay.—p. 234.
*Hitherto Undescribed Bone in Tarsus. P. D. Cameron.—p. 234.
*Separate Center of Ossification for Tip of Internal Malleolus. H. A. T. Fairbank.—p. 238.
Fibrocystic Disease of Upper End of Humerus. C. P. G. Wakeley.—p. 241.
Simple Method of Treating Superficial Lesions of Perineum and Intrapelvic Conditions from Below. M. R. J. Hayes.—p. 249.

Undescribed Bone in Tarsus.—The bone described by Cameron formed a distinct projection on the inner side of the foot, in the angle between the scaphoid and internal cuneiform bones. In the same foot there was a quite definite tibiale externum in close contact with the head of the astragalus, between the scaphoid and the sustentaculum tali, Neither of the extra bones was present in the foot of the opposite side.

Separate Center of Ossification for Tip of Internal Malleolus.—Fairbank reports three cases in which there was a separate center of ossification for the tip of the internal malleolus. He suggests that it is possible that the separate ossific center has been regarded as a sesamoid bone; sometimes, perhaps, a fracture has been diagnosed.

British Journal of Ophthalmology, London

January, 1923, **7**, No. 1

British Master of Ophthalmology Series. 13. Edward Nettleship. J. B. Lawford.—p. 1.
*Cases of Metastatic Carcinoma of Choroid and Iris. C. H. Usher.—p. 10.

February, 1923, **7**, No. 2

Statistical Enquiry into 1,000 Cases of Eye Injuries. A. Garrow.—p. 65.
Method of Recording Disc Alterations and Study of Growth of Normal and Abnormal Disc Cups. R. Pickard.—p. 81.

Metastatic Carcinoma of Choroid.—In one of the cases reported by Usher the primary tumor was not discovered, as permission for a necropsy was refused, and the general symptoms had not been sufficiently localizing. In the second case the primary tumor was in the breast, the eye symptoms manifesting themselves about eight months after removal of the breast. In the third case the lung was the seat of the primary tumor.

British Journal of Surgery, Bristol

January, 1923, **10**, No. 39

Eponyms. VII. Percivall Pott: His Own Fracture. D'Arcy Power.—p. 313.
*Abnormalities of Duodenum. J. H. Anderson.—p. 316.
*Large Myeloid Sarcoma (Myeloma) of Radius in Which Tumor is White Throughout. M. J. Stewart.—p. 322.
Cystoscopic Appearances in Tuberculosis of Urinary Tract. W. G. Ball.—p. 326.
*Acormous Embryoma, Consisting of Hydrocephalic Fetal Head Contained Within Ovarian Cyst, in a Child 2½ Years of Age: Ovariotomy. C. E. Shattock.—p. 334.
*Studies in Galbladder Pathology. W. Boyd.—p. 337.
Roentgenogram Prints: A Suggestion. A. P. Bertwistle.—p. 357.
Mayo and Crile Clinics: With Special Reference to Thyroid Surgery. W. H. Bowen.—p. 359.
*Method of Ligaturing First Stage of Left Subclavian Artery from Behind. A. K. Henry.—p. 367.
Place of Operations for Spinal Fixation in Treatment of Pott's Disease. G. R. Girdlestone.—p. 372.
Phosphorus Necrosis of Mandible. H. P. Pickerill.—p. 380.
Vesalius: His Delineation of Framework of Human Body in "Fabrica" and "Epitome." W. G. Spencer.—p. 383.
Effect of Gastro-Enterostomy on Gastric Function, as Interpreted by Fractional Test Meal. E. F. Guy.—p. 403.
Congenital Cyst of Common Bile Duct: Report of Two Cases. J. Morley.—p. 413.
Acute Hemorrhagic Pancreatitis: Ascaris Lumbricoides in Pancreatic Duct. H. M. Rigby.—p. 419.
Partial Obstruction of Pancreatic Duct by Round Worms. Novis.—p. 421.
Intestinal Obstruction from Hydronephrosis in Pelvic Kidney. H. T. Mursell.—p. 421.
Pelvic Hematocele in Male, Unnoticed Until Infected from Intestine. W. G. Spencer.—p. 423.
Endothelioma of Left Kidney Extending Down Ureter and Projecting into Bladder: Removal: Death Four Months Later. W. G. Spencer.—p. 423.
Large Intraperitoneal (Parovarian) Cyst Disappearing After Drainage. W. G. Spencer.—p. 424.
Two Cases of Ruptured Sigmoid Colon. R. M. Handfield-Jones.—p. 425.

Abnormalities of Duodenum.—It is Anderson's belief that gross anatomic abnormalities of the duodenum are more frequent than is generally supposed, and such abnormalities may exist without producing any clinical evidence of their presence.

Myeloid Sarcoma of Radius.—A case of myeloid sarcoma of the lower end of the radius is reported by Stewart in which the tumor, measuring 2½ by 1½ inches, was white throughout. The patient was aged 6 years, and the swelling had first been noticed three years before. As the tumor had burst through its bony capsule over a large area and was extensively invading the soft tissues, treatment by amputation was decided on, and carried out. Histologically, the growth was a typical myeloid sarcoma (myeloma). The axillary glands on the affected side were enlarged, but had completely subsided by the time the patient was discharged from hospital.

Acormous Embryoma.—Shattock removed a diseased ovary from a child, aged 2½ years, who had suffered from indefinite abdominal symptoms for six weeks. The left ovary was enlarged by the growth of an embryoma, which was composed solely of the head of a hydrocephalic fetus and completely filled a cyst in the ovary. The soft, easily separable, hydrocephalic brain measured 5.5 by 3 cm. in chief diameters, and was lined with ependyma through which the subjacent vessels were visible. Below the middle of the distended brain there was an elongated piece of cancellous bone closed in with a layer of compact bone, which may be taken as the basis cranii. Below the bone, and extending behind it as far as the skin, and beneath the brain, there was a triangular mass of young connective tissue and fat, in which microscopic examination demonstrated also the presence of a few islets of cartilage, and a compact, ill defined mass of well developed, intersecting bundles of unstriped muscle fibers. There were also included groups of ganglions furnished with large, typical nerve cells. The skin over the triangular mass of connective tissue already referred to was thickly covered with somewhat stiff dark hair embedded in sebum.

Gallbladder Absorbs Cholesterol.—The study made by Boyd of the gallbladder with the binocular dissecting microscope revealed a new view of the anatomy of the organ, and throws suggestive light on the question of its function. That function, Boyd says, is undoubtedly one of absorption, and it is possible that one of the chief substances absorbed is the cholesterol of the bile. The formation of deposits of cholesterol ester in the mucosa of the gallbladder is an important feature in many cases of early cholecystitis. These deposits occur both in the surface epithelium, in the connective tissue stroma, and possibly in the lymphatics. In some cases, at least, the first step in the development of gallstones may consist in this formation of cholesterol deposits. A new microchemical test for cholesterol in the tissues is described.

Ligaturing Left Subclavian Artery.—An approach to the first stage of the subclavian artery is obtained by Henry by costotransversectomy at the level of the second rib on the left side. Depression of the pleural dome leaves the artery naked from the aorta to the first rib, no structure (excepting the ansa subclavia) intervening between the operator and the vessel. The first stage of the vessel can be ligatured in any part of its course, and its branches, except the thyrocervical trunk, can be tied with relative ease.

Bristol Medico-Chirurgical Journal

January, 1923, **40**, No. 147

Debt of Medicine to the Fine Arts. J. A. Nixon.—p. 1.
Principles of Surgical Treatment of Infections of Peritoneum. F. Fraser.—p. 29.
Acquired Resistance to Tuberculosis: A Factor in Clinical Type and Prognosis. S. L. Cummins.—p. 41.

China Medical Journal, Shanghai

January, 1923, **37**, No. 1

*Use of Plaster Pylon in Leg Amputations. G. Van Gorder.—p. 1.
*Pneumonic Plague in Harbin (Manchurian Epidemic, 1921). J. W. H. Chun.—p. 7.

Congenital Occlusions of Alimentary Tract. Case Reports. E. D. Smith.—p. 18.
Practical Method for Delousing Chinese Clothes and Bedding. S. D. Joffick.—p. 25.
China As Field for Study of Nutrition of Human Teeth. J. F. McClendon.—p. 34.
Necrosis of Jaw. P. L. McAli.—p. 39.
Chronic Erythema Nodosum: Report of Case. W. W. Cadbury.—p. 41.
Preparation of Surgical Solution of Chlorinated Soda. J. Cameron.—p. 44.

Use of Plaster Pylon in Leg Amputations.—Because of the high incidence of joint tuberculosis, gangrene, and severe infections among Chinese patients, many amputations are necessary. The absence of artificial limb factories in China, and the great expense associated with importing appliances from Europe and America, have made the surgical after-treatment of patients with amputated limbs a difficult problem. In order to improve the condition of leg "amputee" cases, Van Gorder says some form of prosthesis should be given to every such patient before he or she is discharged from the hospital. The form of prosthesis recommended by Van Gorder for routine use in the hospital is the so-called "plaster pylon." This form of apparatus is quickly and easily made; the necessary materials are readily available; it is inexpensive, and at the same time effective.

Pneumonic Plague in Harbin.—Chun reviews some features of the epidemic of plague which existed in Harbin in 1921. The death rate was 10 per thousand as contrasted with 90 per thousand in the 1910 epidemic. The scheme of management and the clinical analysis of the cases are detailed. With regard to treatment, nothing was of avail.

Edinburgh Medical Journal

January, 1923, **30**, No. 1

Progress of Medicine and Retarding Influence of Credulity. E. Bramwell.—p. 1.
*Importance and Function of Teres Minor Muscle. D. M. Greig.—p. 16.

Importance and Function of Teres Minor Muscle.—Greig advances the ideas that the teres minor is not a muscle of lateral rotation; that lateral rotation is caused mainly by the infraspinatus; and that the function of the teres minor is to steady the head of the humerus in the glenoid during contraction of the deltoid.

Journal of Laryngology and Otology, Edinburgh

February, 1923, **38**, No. 2

Angioma of Larynx. I. Moore.—p. 57.
Pathologic Effects of Excessive Sounds on Cochlear Apparatus, Considered in Relation to Theories of Sound Perception. T. R. Rodger.—p. 66.
Temporosphenoidal Abscess: Two Cases. F. Muecke.—p. 72.
Unusual Termination (Peritonitis) of Case of Temporosphenoidal Abscess. F. G. Wrigley.—p. 76.
Two Cases of Fatal Osteomyelitis of Frontal Bone. H. Tilley.—p. 78.

Journal of State Medicine, London

January, 1923, **31**, No. 1

Prenatal Hygiene and Problems of Maternity and Child Welfare. W. M. Feldman.—p. 3.
Water Supplies with Reference to Those in Gallipoli Campaign. A. Gaskell.—p. 15.
Milk Problem. H. Scurfield.—p. 28.

February, 1923, **31**, No. 2

Specific and Nonspecific Formation of Antibodies. T. Madsen.—p. 51.
Prevention of Tuberculosis by Injecting Tubercle Bacillus Antigen. W. M. Crofton.—p. 74.
Treatment of Pyorrhea by Violet Ray Concentration (Pashler Lamp). R. Hodgson.—p. 79.
*Problem of Syphilitic Child. M. Rorke.—p. 82.

Problem of Syphilitic Child.—Rorke urges that, given a family history of syphilis, the mother should be treated during each pregnancy, and the child, when born, be instantly put on treatment. She is convinced that, short of absolute idiocy or marked mental defect, a quite considerable proportion of "difficult" and very naughty children are congenital syphilitics. These children are really feebleminded to some extent—at any rate, they are mentally subnormal, though perhaps not certifiable. These are the people who, when grown, crowd workhouses and prisons—the men unfit to keep a job at a living wage, and so inclined to theft and other crimes—the girls frequently immoral, mothers of illegitimate children and members of the pathetic crowd of prostitutes.

Archives des Maladies de l'Appareil Digestif, Paris

November, 1922, **12**, No. 6

*Roentgenography of Bile Passages. Duval et al.—p. 377.

Roentgenography of Bile Passages.—Duval, Gatellier and Béclère remark that the technic of roentgenography has improved so much that the results of their years of concerted study of the bile ducts, with and without gallstones, by internist, surgeon and roentgenologist may soon be surpassed. They state that Chappuis and Chauvel seem to have been the first who examined with the roentgen rays for gallstones. This was in 1896, but Carl Beck of New York was the first to show a gallstone in the gallbladder in 1899. The first unmistakable roentgenogram of a calculus in the common bile duct was secured by H. Béclère in 1919. Their long article is accompanied by eighty-six roentgenograms and explanatory diagrams. They insist that the roentgenologist should get with the patient a detailed clinical record of his pathologic past and the diagnosis that has been made. The radiologist should know whether the assumed gallstones are causing manifestations in the gallbladder or in the stomach and duodenum; whether the lithiasis is aseptic; whether the cholesterin content of the blood is normal, and whether the concretion is possibly or probably in the main bile duct. The gallstones may cast a shadow in one test and not in another, as the adjacent organs happen to contain more or less gaseous or solid contents. The findings are instructive only in about 60 per cent. of the cases at best.

Bulletin de l'Académie de Médecine, Paris

Jan. 9, 1923, **89**, No. 2

*Medical Examination of Chauffeurs.—p. 47.
*Incontinence Due to Spina Bifida. P. Delbet and A. Léri.—p. 49.
*Diabetes and Syphilis. M. Labbé.—p. 53.
*Cholesterinemia in Diabetes. Remond and Rouzaud.—p. 60.
*Vitamins and Cereal Decoctions. M. Springer.—p. 61.

Report on Medical Examination of Chauffeurs.—The academy adopted the resolution of a committee composed of Quénu, Tuffier, Vaquez and Fiessinger, recommending the following measures with regard to issuing licenses to persons driving automobiles: (1) The chauffeur must be without exception 20 years old. (2) No license is to be granted to persons with mental disturbances, organic lesions of the heart, vessels or nervous system. Sight and hearing must be examined by a special medical commission. Special rules must be published concerning the degree of the lesions which would make driving inadvisable. (3) Mutilated persons may drive if really able to do so with their prosthesis. (4) The driver must be reexamined after ten years or, in special cases, in three years. (5) The license should be revoked for intoxication, especially if repeated. (6) Every driver who causes an accident must be reexamined immediately.

Incontinence of Urine Due to Spina Bifida.—Delbet and Léri report a case of enuresis with occult spina bifida. They removed a transverse fibrocartilaginous band which compressed the cauda equina, and the patient recovered. The sacral region should be examined by roentgen rays in every case of persistent incontinence of urine. If a spina bifida is found, an operative exploration reaching as deep as the dura mater should be performed.

Diabetes and Syphilis.—Labbé finds that syphilitic diabetes is extremely rare. The coincidence of diabetes and syphilis is no more frequent than syphilis with other diseases or perhaps even in the otherwise healthy. He reviews the usual reasons which would seem to speak for a syphilitic etiology, and finds only one case in the literature in which antisyphilitic treatment certainly cured the diabetes. In his own experience this treatment was without favorable results in seven cases of diabetes with a history of inherited or acquired syphilis.

Prognostic Value of Cholesterinemia in Diabetes.—Remond and Rouzaud found among 189 cases of diabetes, fourteen with cholesterinemia of 3.12 to 8.28 gm. per liter. Only one of these patients survived two years after this finding. The others died much earlier.

Vitamins and Cereal Decoctions.—Springer points out that the new researches on vitamins explain his excellent experimental and therapeutic results with decoctions of cereals in 1894. The experiments concerned their action on the growth

of dogs; and the clinical work was done on wetnurses, babies, and patients with typhoid and tuberculosis. In explaining the results, he had pointed correctly to the low nutritive value of the decoctions and ascribed the action to ferments which favored the production and utilization of intra-organic energy.

Journal de Médecine de Bordeaux

Dec. 25, 1922, **94**, No. 24

*Toxemia in Pregnancy and Antianaphylaxis. L. Charron.—p. 787.
Chaulmoogra in Treatment of Tuberculosis. F. Leuret.—p. 789.
Fight Against Infant Mortality. Rousseau-Saint-Philippe.—p. 790.

Toxemia in Pregnancy and Antianaphylaxis.—Charron relates that a woman had had three pregnancies from three different husbands. Intense toxemia developed at the third pregnancy, and Charron injected the husband's serum on the assumption that, if the intoxication was due to an antigen from the male, the progressive introduction of this antigen would desensitize. Vomiting ceased at once, the pulse dropped from 108 to 80, and the arterial pressure and weight increased. The woman has been in good health since, and Charron expects that her pregnancy will follow its course without incident. He asks in conclusion whether the pregnancy toxins may not be merely toxic proteins from the male. The capricious character of the reaction phenomena could be explained by variations either in the quality of the graft or in the respective relations between the two subjects. In the case described, there had been severe toxemia at the woman's second pregnancy, with her second husband, but not so intense as at this third pregnancy with her third husband.

Jan. 10, 1923, **95**, No. 1

*Medicine in 1870 and Today. X. Arnozan.—p. 7.
Extra Wide Compression Forceps. F. Papin.—p. 18.

Medicine in 1870 and Today.—Arnozan's farewell address at the Faculté de Bordeaux was summarized in the Paris Letter, Feb. 24, p. 566.

Paris Médical

Jan. 6, 1923, **12**, No. 1

Tuberculosis in 1923. P. Lereboullet and L. Petit.—p. 1.
*Nontuberculous Pleurisy in the Tuberculous. E. Sergent and Durand.—p. 14.
*Tuberculosis in Nurslings. P. Nobécourt and J. Paraf.—p. 18.
*Tuberculosis and Pregnancy. L. Bernard.—p. 22.
*Control of Treatment of Tuberculosis. A. Gaussel.—p. 27.
*Phlebitis in Incipient Pulmonary Tuberculosis. Lafforgue.—p. 30.

Nontuberculous Interlobar Pleurisy in the Tuberculous.—Sergent and Durand point out that the fissure between the lobes is of distinct pathologic importance in tuberculosis of the lungs. Three sorts of syndromes can be observed: affections located in the fissure (interlobar pleurisy); affections practically restricted to the parenchyma adjoining the fissure, and lobar syndromes where the fissure serves as a barrier. They describe the purulent (nontuberculous) interlobar pleurisy which may occur in the tuberculous just as in otherwise healthy subjects. Since this origin is of special prognostic importance, they publish two observations. The roentgen-ray examination gives the typical picture of a localized pyopneumothorax. Contrary to such a condition in nontuberculous patients, it is usually limited by previous inflammations to a smaller part of the fissure, but differs from a large tuberculous cavity by the mobility of the level of its liquid content and its sudden appearance in a place where there were no signs before. The dark line starting from the cavity in the direction of the interlobar fissure is also a diagnostic point. The sudden appearance of large numbers of pneumococci or streptococci when the abscess perforates, and their disappearance when the purely purulent expectoration stops, are signs which speak for a nontuberculous origin. Recovery is usually prompt. Artificial pneumothorax may be necessary.

Tuberculosis in Infants.—Nobécourt and Paraf found among 1,296 infants 4.6 per cent. with tuberculosis. They believe that a systematic application of biologic tests would reveal many overlooked cases. Fever or respiratory phenomena need not be present, but all cases were more or less hypotrophic. Distinction of dyspeptic, anemic and rachitic forms of tuberculosis is not warranted; these are simply coincidences. The enlargement of supraclavicular lymphatic glands to the size of a pea or hazelnut is important, but not constant. Of all the biologic reactions, a positive tuberculin skin reaction is most important and reliable, unless the infants are anergic or anteallergic (between infection and the time of appearance of antibodies). Clinical diagnosis would in most of the cases be impossible.

Tuberculosis and Pregnancy.—Bernard's views have already been summarized, p. 512.

Rules for Experimentation and Control of New Measures in Treatment of Tuberculosis.—Gaussel gives a skeptical paper on the value of therapeutic observations in tuberculosis: A new sort of treatment is instituted. The physician begins it without waiting for the usual good influence of rest and treatment to become manifest. He reports the wonderful results as due to the remedy applied, and forgets to rectify his report when the patient dies a little later. Many of the best results are obtained in patients who were not tuberculous at all. He proposes the following rules for therapeutic experiment: (1) The new treatment must not start with the arrival of the patient in the hospital. He should first be carefully observed (including roentgen ray examination) for a long period under the ordinary general treatment. (2) There should be three groups of patients: one taking the treatment, one without any treatment, and a third, control group in which the patients are given to believe that they are receiving the same treatment that is being tried on the main group. (3) The treatment must be continued for a long period, and the eventual improvement must not be reported until at least several months later.

Phlebitis in Incipient Pulmonary Tuberculosis.—Lafforgue deals with the rare cases of phlebitis which occur in the early stages of tuberculosis—so early that some of them have been erroneously called pretuberculous. Many cases of supposed chlorotic phlebitis belong to this group, and careful examination may reveal the minor signs of tuberculosis, although not in every case. The affection is usually localized in a superficial vein of the leg, and rarely progresses into the femoral vein. Embolism is rare. The cardinal signs are: pain, which may be preceded by paresthesia; edema, which in some degree is always present and differentiates the condition from myalgia and neuritis; and the palpable and painful inflamed vein. The functional disturbance is small, the sensibility intact, and trophic and vasomotor disturbances are absent. Rest in bed for two or three weeks leads to complete local recovery. Some cases may be due to associated infection, but in some, the direct tuberculous etiology is proved or is very probable because of the doubtful outcome. Local trauma and congenital debility of veins are accessory factors. It seems also that some strains of bacilli are more liable to cause bacillemia. The diagnosis is difficult between chlorotic thrombosis (examination of blood), and a similar syphilitic affection. Although the immediate prognosis is good, these cases have to be considered with great caution as to the ultimate outcome of the tuberculosis. One third of the cases which could be kept under observation, developed miliary tuberculosis within two years (sometimes in a few months). In other cases the original tuberculous lesions ran a progressively more serious course.

Presse Médicale, Paris

Jan. 6, 1923, **31**, No. 2

*Warning Hypertension in Toxemia of Pregnancy. V. Le Lorier.—p. 13.
*Rapid and Profuse Alopecia. R. Sabouraud.—p. 14.
*Hydrocephalus and Its Treatment. C. Lenormant.—p. 18.

Warning Hypertension in Toxemia of Pregnancy.—Le Lorier measured the blood pressure as a routine in pregnant women, and found it a most valuable aid in preventing toxemia. A pressure of 120 mm. mercury is the warning line. If a pressure, which was below this, starts to rise, other symptoms of toxemia may be expected soon if the patient remains without rest and dieting. At 150 mm. mercury, albumin appears in the urine and eclampsia is imminent. Two cases illustrate this course. Since toxemia can usually be prevented by rest and a milk-vegetable, salt-free diet, it is very important to look for this early sign. Midwives should be taught to measure the blood pressure.

The Differential Diagnosis in Cases of Rapid and Profuse Alopecia.—Sabouraud describes cases of profuse alopecia; among them the case of a girl, aged 13, who lost her hair thirteen days after being raped. The hair grew again. Alopecia following roentgen rays and ingestion of thallium occurs also in about fourteen days, while hair killed during an infection (typhoid, etc.) keeps in place for seventy-five days.

Hydrocephalus and Its Treatment.—Lenormant describes the history of surgical treatment of hydrocephalus, and deals especially with Dandy's investigations.

Jan. 10, 1923, **31**, No. 3

*Cancer of the Tongue. R. Proust and A. Maurer.—p. 25.
*Hemoclastic Crisis in Drug Addicts. P. Sollier and D. Morat.—p. 28.

Treatment of Cancer of the Tongue.—Proust and Maurer combine ligation of arteries, extirpation of lymphatic glands and treatment by radium and roentgen rays. They describe the technic, with illustrations.

Hemoclastic Crisis in Drug Addicts.—Sollier and Morat found in a morphin and a heroin addict Widal's hemoclastic test positive. The test remains positive for from twenty to thirty days after stopping the drug, and the negative result is a good indication of recovery. Drug addicts have a hemoclastic crisis after injection of even a small dose of the drug. Therefore a very small injection relieves the severe symptoms after starting treatment, but the drug should never be used later for any reason whatever. Hypnotics cause the same crisis as milk or morphin, and should not be used in drug addicts.

Jan. 13, 1923, **31**, No. 4

*Respiratory Paralysis of the Larynx. Lermoyez and Ramadier.—p. 33.
*Regional Anesthesia of Uterus. G. Cotte.—p. 36.
*Milk Injections and Vaccine Therapy in Gonorrhea. Tansard.—p. 37.
Present Status of Physostigmin as a Heart Tonic. L. Cheinisse.—p. 39.

Paralysis of Dilators of Larynx.—Lermoyez and Ramadier believe that syphilis is the cause of symmetric paresis of the dilators of the larynx—a rule for which they admit very few exceptions. The affection is characterized clinically by a permanent inspiratory dyspnea, with attacks of suffocation which may terminate the life of the patient. The voice is clear. Laryngoscopy reveals the vocal cords in a fixed position near the middle line, leaving only a space of from 1 to 2 mm. between. Inspiration aspirates the cords and makes the passage still narrower. Among six cases, in only one, in which no spinal puncture was allowed, was it not proved to be due to syphilis. This clears up the frequent coincidence with Argyll Robertson pupil and aortic insufficiency. While unilateral paresis of the recurrent nerve is usually caused mechanically by dilatation of the aorta, and may be a very valuable sign of aneurysm, bilateral paralysis is simply a parallel affection ("sister, not daughter"), and the usual forced explanations are superfluous. The probable site of the disease is in the medulla oblongata. The syphilitic etiology gives at least a possibility of treatment. This must be prompt and vigorous, starting with mercury and then following with arsphenamin preparations. Iodids should not be used because they may cause cough. No time should be lost in trying to perfect the diagnosis. The patient who comes with a disturbance which he considers as a simple cold, may be suffocated a few hours later. If treatment is started very early, tracheotomy, which so far has been the only relief, will not be needed so often.

Regional Anesthesia of Uterus.—Cotte anesthetized the uterus by injections into the base of the broad ligaments. Others have already used this method for anesthesia of the vagina and perineum.

Milk Injections and Vaccine Therapy in Gonorrhea.—Tansard injected from 2 to 5 c.c. of milk intramuscularly every other day. The treatment had no effect in acute gonorrhea, but proved very beneficial in all the other manifestations, especially epididymitis and cystitis (ten to twenty injections). When the results were not perfect, he completed treatment with vaccines.

Jan. 31, 1923, **31**, No. 9

*The Jenner Centennial.—p. 97.

The Jenner Centennial. — The *Presse* reproduces the addresses delivered at the Académie de médecine by Achard and Camus. It also gives the facsimile of a letter written by Jenner to congratulate the French for their energy in introducing vaccination into France.

Progrès Médical, Paris

Jan. 13, 1923, **38**, No. 2

*Alimentary Leukocyte Influx into Stomach. Loeper and Marchal.—p. 13.
*Differential Diagnosis of Celialgia. Avierinos and Bourde.—p. 13.
Cold Abscess in Chest Wall. A. Broca.—p. 18.

Alimentary Leukocyte Influx into Stomach.—Loeper and Marchal state that the leukocyte influx into the stomach after ingestion of bouillon is a physiologic reaction. The leukocyte influx reaches higher than 1,000 leukocytes to 1 c.mm. The reaction is autonomous and is independent of other reactions. In hyperchlorhydria, polymorphonuclears predominate, while in hypochlorhydria lymphocytes are abundant and often outnumber the polymorphonuclears. This is pronounced in chronic gastritis and cancer. They will publish later the diagnostic value of these variations.

Diagnosis of Celialgia.—Avierinos and Bourde discuss the diagnosis of celialgia, based on Loeper's study of the subject. They state that its knowledge will be useful to surgeons as it will prevent many unnecessary laparotomies.

Revue Pratique des Maladies des Pays Chauds, Paris

October, 1922, **1**, No. 1

Introduction to Study of Tropical Diseases. G. Reynaud.—p. 1.
*Treatment of Amebiasis. P. Ravaut.—p. 8.
Progress in Treatment of Protozoan Diseases. L. Tanon.—p. 18.
*Gnats in Human Pathology. Neveu-Lemaire.—p. 25.
*Prophylaxis of Skin Cancer. H. Gougerot.—p. 34.
Syphilis and Pregnancy. C. Jeannin.—p. 53.
*Germ Carriers in Tropical Pathology. L. Nattan-Larrier.—p. 57.
*Medicine in Egypt. M. Zeitoun.—p. 72. Cont'd.

The Tropical Diseases Review.—This new journal bears the subtitle "Medicosurgical Egypt." One of the three editors resides at Cairo, one at Morbihan, and one at Paris. The subscription is 75 francs per volume. The editors appeal to physicians in tropical countries to send descriptions of their researches and observations. Address Dr. M. Zeitoun, 32 rue de Gay-Lussac, Paris, France.

Treatment of Amebiasis.—Ravaut describes what he calls the two modes of attack, emetin and arsenicals by injection, and charcoal by the mouth. He emphasizes the necessity for keeping up treatment long after the patient has been apparently cured. As a general thing, he advocates giving the emetin and arsenical both subcutaneously and by the vein in the acute phases, but by mouth and in enemas when the disease has become chronic. For this, he orders a charcoal compound: 100 gm. each of vegetable charcoal, bismuth subnitrate, simple syrup and glycerin, with 4 gm. of pulverized ipecac. This represents about 0.05 gm. of the ipecac powder and 1.25 gm. of bismuth in each teaspoonful. From 3 to 12 teaspoonfuls of this mixture are taken during the day, at mealtime, every second day for twenty days. On alternate days a tablet of 0.10 gm. of neo-arsphenamin is taken instead. From 0.15 to 0.30 gm. of the same arsenical, dissolved in 60 c.c. of boiled water, with or without laudanum, is injected into the rectum on retiring, to be retained all night. Substantial food is imperative and is usually well assimilated, with the exception of eggs, milk and uncooked articles. By changing thus the mode of administration from time to time, and keeping up treatment long enough, a complete cure was always finally realized in his experience.

Gnats in Human Pathology.—Three-day fever and Oriental sore can be transmitted by gnat bites; this is probable also with external leishmaniasis, and possible for Peruvian verruca.

Precancer Conditions.—Gougerot insists on the relative frequency of abortive and rudimentary forms of xeroderma pigmentosum, and reiterates that it is extremely liable to develop into cancer. The pronounced forms are rare; Rouvière in 1922 could find only 192 cases on record. Gougerot, however, has encountered a number of cases in the last fifteen years. Sailors, farmers and roentgenologists are subject to epitheliomatosis which closely resembles typical xeroderma pigmentosum, and the analogy is also striking with senile keratosis on regions exposed to the light.

Gougerot regards the action of sunlight as an important factor in the development of skin cancer. All these affections, he declares, represent merely different phases of this "cancer-breeding radiolucitis." The intensity is determined by the sensitiveness of the skin. Much can be done in prevention. This should include treatment of inherited syphilis, organotherapy as indicated, and protection against sunlight and roentgen rays. A broad brimmed hat, a veil, and colored salves (an absorbent quinin salve or calcium fluorid cream) should be used. The preepitheliomatous lesions in the skin must be systematically destroyed. Radiotherapy is preferable for diffuse epitheliomatous infiltration, but not for warty growths. Pigmented spots should be treated only with electrolysis. Even the gravest cases may be kept under control in infants, children, adults and the senile, by periodical surveillance and prompt treatment. To keep these *radiolucites cancérigènes* under control and prevent their development is the most effectual field for prophylaxis and cure of cancer.

Bacilli Carriers in Tropical Pathology.—Nattan-Larrier comments on the way in which during the World War diphtheria, cerebrospinal meningitis and bacillary dysentery disappeared from the barracks and camps under the vigorous measures applied to seek out and sterilize the chronic carriers. This method of prophylaxis is soon to be applied to sleeping sickness throughout the whole extent of French equatorial Africa. The recent report of Major Jamot of the medical corps covers an area of 100,000 square kilometers. In two years he has examined 89,743 natives, less than 11,000 escaping examination. He was assisted only by two European nurses and ten natives. The death rate has declined 65 per cent., and the blood was found sterile in 598 of the 753 given systematic atoxyl treatment. The mass of the virus in circulation has thus been reduced 80 per cent.

Medicine in Egypt.—Zeitoun describes the foundation of a medical school at Cairo in 1827. Dr. Clot, a French physician, was its initiator under Mehemet Ali, and 1,500 natives were trained in the school. Ninety of the French medical works of the day were translated into Arabic. Bilharz was one of the professors. Clot founded a military hospital, botanical garden and library; in 1827 he inaugurated a course in anatomy, and performed the first necropsy, Zeitoun says, at any point in the Orient in any epoch.

Schweizerische medizinische Wochenschrift, Basel

Jan. 4, 1923, **53**, No. 1

*General Neuroses. H. Sahli.—p. 1.
*Goiters and Their Action on the Blood. F. de Quervain.—p. 10.
*Obstetric Shock. Muret.—p. 14.
Sterilizing of Dressings. W. Silberschmidt.—p. 17.

General Neuroses.—Sahli tries to localize hysteric and neurasthenic symptoms in the brain, and to use the energy standpoint in their differentiation.

Goiters and Their Action on the Blood.—De Quervain with Hara and Branovacky experimented on rats with the serum and thyroid tissue from 119 different cases of goiter. He used the Asher-Streuli-Duran test of the sensitiveness of hyperthyroid rats to lack of oxygen. Normal serum and the serum of cretins had no influence (in some cases the latter increased the resistance), while exophthalmic goiter acted very strongly. The thyroid acted in a similar way, and it was interesting to note that even the thyroid from cretins was not without influence. Serum from cretins to a certain extent neutralized exophthalmic goiter serum. De Quervain believes that the thyroid secretes several substances. These tests seem to prove the presence of one of them in the serum of patients.

Obstetric Shock.—Muret describes a case of shock after delivery. The condition much resembles a large hemorrhage, but it can occur without excessive hemorrhage.

Riforma Medica, Naples

Jan. 1, 1923, **39**, No. 1

Domenico Cotugno, 1736-1822 L. Bianchi.—p. 1.
*Intestinal Putrefaction in Tuberculosis. V. Cassini.—p. 4.
*Epidemic Meningitis. A. Della Cioppa.—p. 7.
Conservation of Iso-Agglutination Property of Erythrocytes. P. Mino.—p. 10.
Mechanism of Wassermann Reaction. P. Rondoni.—p. 11.
Recent Literature on Cardiorenal Syndromes. A. Jappelli.—p. 13.

Intestinal Putrefaction in Tuberculosis.—Cassini studied the elimination of indican and combined sulphuric acid in tuberculous patients. He considers both substances important indications of intestinal putrefaction. The purulent pulmonary process and the increased decomposition of body proteins may contribute to the elimination of these substances. The increase in sulphuric esters in the advanced stage is greater than the increase in total sulphuric acid or sulphur. The elimination of neutral sulphur varies in these patients.

Epidemic Meningitis.—Della Cioppa emphasizes the importance of adenoids as germ carriers. They can be freed from meningococci by applications of a 3 to 5 per cent. solution of iodin in glycerin, or by inhalations of iodin fumes through the nose.

Semana Médica, Buenos Aires

Dec. 21, 1922, **2**, No. 51

*Prophylaxis of Puerperal Infection. Ubaldo Fernández.—p. 1265.
*Pneumococcus Infection in Infants. A. Casaubon.—p. 1268.
Welfare Work for Infants. F. Schweizer.—p. 1285.
Vaginal Access to Hydatid Cysts in Pelvis. A. Chueco.—p. 1288.
*Congenital Dystrophia of Fibro-Elastic Tissues. J. M. Macera.—p. 1291.
Obstetrics and Gynecology from Industrial Standpoint. J. B. González.—p. 1294.
The Chlorophyl Function in Plasmogenesis. A. L. Herrera.—p. 1319.

Prophylaxis of Puerperal Infection.—Ubaldo Fernández insists that in obstetrics the danger is from without; all the favorable elements are in the parturient herself. He describes how the application of this principle at the Alvear Hospital has given a morbidity in ten years of only 1 per cent. of women entering the hospital before the onset of labor; 3.8 per cent. after labor has begun. The average for the two groups is 2 per cent. The mortality has been 0.09 and 0.35, with an average for the two groups of 0.18 per cent.

Pneumococcus Infection in Young Children.—Casaubon gives an exhaustive summary of the present status of knowledge on this subject. He reports the details of six cases of purulent pleurisy with pneumonia in infants from 9 to 30 months old, all recovering under treatment by repeated puncture and aspiration of the pus. The total thus evacuated ranged from 20 to 780 gm. A 5 per cent. solution of methylene blue was injected. The infants were kept under the closest supervision, ready to call in the surgeon any moment, but all recovered without this, in from nine to fifty-five days. In cases of pneumococcus sepsis, blood can be obtained for examination from the veins in the neck or longitudinal sinus. These are also available routes for injecting the antiserum. Injection directly into the focus is a useful adjuvant, the lung excepted; local injection is dangerous in the lung. The great tendency in young children for pneumococcus meningitis to become partitioned off, justifies injection of the antiserum into the ventricles as well as intraspinally.

Dystrophy of Fibro-Elastic Tissue.—Macera ascribes to this general cause the congenital huge inguinal and umbilical hernia and pneumocele in a male infant. The apex of the lung on each side extends to the junction of the lower and middle thirds of the neck. The sternoclavicular ligaments are so small and loose that there is habitual subluxation of this joint. The father is 48 years of age, the mother 46, and there is nothing to suggest syphilis in the family, but another child has an inguinal hernia.

Siglo Médico, Madrid

Dec. 23, 1922, **70**, No. 3602

*The Oldest Known Case of Addison's Disease. G. Marañon.—p. 605.
The Bacteriologic Work of Pasteur. R. Turró.—p. 606.
Ultraviolet Rays in Treatment of Rickets. J. and V. García Donato.—p. 610.
Syndromes of the Centrum Ovale. C. Juarros.—p. 614. Conc'n.

The Oldest Known Case of Addison's Disease.—Marañon reproduces the description by a priest in the sixteenth century of the sickness of a young priest who died three years after the first symptoms. They developed after a fright; the building was struck by lightning and burned. The lay description portrays Addison's disease perfectly, but the pigmentation was ascribed to "smoke getting into the system during the fire." Marañon cites modern instances of an

emotional origin. One of his patients developed the disease after seeing his child killed by a street car.

Dec. 30, 1922, **70**, No. 3603

Epileptic Equivalents of Oniric Impulsive Type. A. Fernández-Victorio. —p. 633.
*Strangulated Scrotal Hernia. Ramiro Arroyo.—p. 635.
Gastro-Intestinal Disturbances in Children. F. García Martínez.—p. 636. Cont'n.
Medicolegal Study of Abdominal Wounds. J. Parra Eytier.—p. 641.

Jan. 20, 1923, **71**, No. 3606

Tabes with Few Symptoms. J. M. de Villaverde.—p. 49.
Pathogenesis of Cholelithiasis. C. Blanco Soler.—p. 53. Cont'd.

Strangulated Scrotal Hernia.—The hernia occurred suddenly while the man was lifting a heavy weight. It was of the peritoneum-vaginalis type, without any hernial sac, and it became strangulated at once. The quantity of fluid in the peritoneum and vaginalis suggested that there had been some cyst formation, the rupture of which had suddenly entailed the hernia.

Deutsches Archiv für klinische Medizin, Leipzig

Nov. 21, 1922, **141**, No. 1-2

*Renal Hypertrophy of the Heart. L. Braun.—p. 1.
*Encephalography. E. Schott and J. Eitel.—p. 16.
*Polycythemia Rubra. K. Gutzeit.—p. 30.
*Pressure in Pleural Cavity. G. Ganter.—p. 68.
*Action of Endocrines on Serum Calcium. H. Leicher.—p. 85.
Improved Method of Oscillography. S. Hediger.—p. 117.

The Kidney Factor in High Blood Pressure.—Braun considers experimental hydronephrosis as one of the best methods to induce hypertrophy of the heart. He mentions three necropsies which he considers instructive instances of this. He reviews the mechanism of this process, and believes that the origin of the vascular changes in renal sclerosis is also down stream from the glomeruli, in the secreting tissue of the kidneys. The circulation influences the secretion, but the secretion of urine can cause changes in the blood circulation.

Encephalography.—Schott and Eitel publish the results of their investigations on an anatomic model, on cadavers, and persons with and without brain lesions. After they found in one case that the insufflated air remained for twelve days in the ventricles of the brain, they used oxygen, which is resorbed much quicker. Yet the other very disagreeable symptoms remained, and were so severe that they advise limiting such investigations to cadavers. The diagnostic results are too insignificant in comparison with the disturbances caused by the method.

Polycythemia Rubra.—Gutzeit publishes clinical histories of five idiopathic cases and adds four others in which the polycythemia was due to other diseases. Some of his cases developed after infections, although the history pointed toward a previous latent polycythemia. The young son of one patient suffers from lymphatic leukemia. Investigations among the members of such families reveal sometimes latent polycythemia, although such persons may look rather "anemic." Two cases had a very protracted coagulation time, due to diminution of fibrinogen and thrombokinase. Several cases had a lowered osmotic resistance and a low nitrogen content in the erythrocytes. In one case which presented hypertension and normal spleen at first, the blood pressure later became normal, but the spleen was enlarged. Thus a polycythemia of the Gaisböck type changed into the Vaquez type, showing that probably neither of the distinguishing signs is essential.

Pressure in Pleural Cavity and Its Influence on Site and Shape of Exudates.—Ganter studied on a model and on patients the pressure within the pleural cavity, and proved that it differs in different parts of the pleura. This is due to the fact that the elasticity of the lungs is not uniform. These differences in pressure account for the well known parabolic upper limit of exudates; they cannot follow merely their gravity and do not change their level quickly. If the tension of the lungs is put out of play by pneumothorax or in a smaller degree by loss of elasticity (emphysema), free fluid in the cavity has a horizontal level. The lobes of the lungs keep together as long as there is no infiltration. If, however, the elasticity of the lower lobe is affected by pneumonia, the difference in pressure at the upper border of the left lobe allows the fluid to accumulate between the lobes.

Action of Endocrines on Serum Calcium.—Leicher used de Waard's method, and determined the calcium as Ca ion. He found in sixty healthy individuals a remarkable constancy among persons of the same age. The average in the first 20 years is 10.6 mg. in 100 c.c. of serum. From 20 to 30 the average was 11.5 mg.; then it decreased, at first (to 45 years) slowly, then quicker down to 10.8 mg. in persons over 50 years of age. The calcium content of the whole blood decreases quickly in the first 20 years (from 12 to 9), and presents another smaller diminution between 45 and 54. The amount of calcium in the serum does not change after ingestion of calcium salts prolonged for several weeks (20 persons), but is lowered by thyroid treatment, injections of pituitary extracts, and epinephrin. Exophthalmic goiter and especially tetany had a lower, myxedema a higher calcium content. No constant changes could be found under the influence of the sex glands, but it seems that pregnant women often have an abnormally low level in pathologic conditions.

Deutsche medizinische Wochenschrift, Berlin

Jan. 5, 1923, **49**, No. 1

Tuberculosis and Pregnancy. G. Winter and W. Oppermann.—p. 1.
*Pathogenesis of Carcinoma of Stomach. Askanazy.—p. 3. Cont'd.
*Treatment of Glaucoma. W. Uhthoff.—p. 6.
*Action of Alcohol on Acidity of Gastric Juice. K. Frehse.—p. 11.
*Pituitary Obesity. H. W. Knipping.—p. 12.
Diathermy in Surgery. H. Picard.—p. 13.
*Respiration of the Skin. O. Gans.—p. 16.
Acriflavin in Endocarditis. H. Mark and L. Olesker.—p. 17.
*Life Saving by Ventral Decubitus. E. Rautenberg.—p. 17.
*Catheterization of Trachea in the New-Born. H. Kritzler.—p. 18.
A Rare Injury in First Cohabitation. J. Friedemann.—p. 19.
*Labor with Flat Pelvis. M. Henkel.—p. 19.
*Compulsory Vaccination and Blindness in Smallpox. Hess.—p. 21.

Pathogenesis of Carcinoma of Stomach.—Askanazy mentions the importance of adenomas in chronic gastritis, and of ulcers, for the genesis of carcinoma, and deals chiefly with the origin of malignant tumors from heterotopic embryonal remnants in the gastric wall.

Treatment of Glaucoma.—Uhthoff reviews the problem and treatment of glaucoma. The chief point is the increase in intra-ocular pressure, with its deleterious influence, even if it occurs only in attacks as in simple glaucoma. Repeated measuring of the tension will reveal the increase, and it is suggested by the dimmed rainbow vision. Miotics relieve the tension, and may in rare instances even cure the process. They are indicated in chronic simple glaucoma. They are especially important in the pure noninflammatory cases, because the results of operation are not good in this condition. General treatment has hardly any influence, since the affection is purely local. He deals extensively with the surgical proceedings and recommends iridectomy, although the process progresses even after operation in about 5 per cent. of the cases. Some cases of severe myopia suffer from chronic glaucoma, which can be easily overlooked if examination of the field of vision is omitted.

Action of Alcohol on Acidity of Gastric Juice.—Frehse studied in 132 cases the influence of an addition of 2.5 or 10 per cent. of alcohol to Ewald's test meal. In healthy persons the acidity did not change. In most cases of ulcer, the acidity was lowered, while it was usually increased in nervous dyspepsia.

Pituitary Obesity.—Knipping continued on nineteen patients Plaut's investigation of the specific dynamic action of food in obesity. In most of these patients, although not all, other signs of pituitary disturbance were present. In two of them a preparation of the anterior lobe of pituitary was administered, and an increase of the specific dynamic action of food resulted. Two dogs with a partially destroyed anterior lobe showed the same influence of the preparation.

Respiration of the Skin.—Gans studied the oxygen consumption of small particles of healthy and pathologic skin, and found a parallelism between the rate of oxygen consumption and the sensitivity to roentgen rays.

Life Saving by Ventral Decubitus.—Rautenberg recommends a position on the chest and abdomen, with the foot of the bed raised, similar to the position used in reviving the drowned, in cases of edema of the lungs and in pneumonia in

the stage of lysis. Hypostatic pneumonia is also well influenced or prevented with this posture. The same mechanical principles are involved as in resuscitating the drowned.

Technic of Catheterization of Trachea in the New-Born.—Kritzler uses exclusively soft catheters in which a semi-elastic bougie may be inserted. In order to pass the instrument into the trachea and not, as often happens, into the esophagus, it is advisable to introduce the index finger into the latter.

Labor with Flat Pelvis.—Henkel warns very emphatically against indiscriminate use of forceps. It is a mistake to believe that forceps can overcome a serious disproportion between head and pelvis. It should be used only when the disproportion has already been overcome by natural forces. Other indications and contraindications should be also kept in mind. If from six to eight regular tractions are without result, perforation of the head should be performed. Version after a forceps attempt is malpractice. If version is successful, there is no indication for forceps. If it is not, it is a useless danger for mother and infant. Unsuccessful forceps attempts should be followed by perforation; unsuccessful version by embryotomy. Induced premature delivery, and especially symphysiotomy and pubiotomy, should be abandoned in favor of cesarean section.

Blindness in Smallpox.—Hess calls attention to the great number of blind people after smallpox in countries without compulsory vaccination.

Münchener medizinische Wochenschrift, Munich

Jan. 5, 1923, **70**, No. 1

*Blood Pressure. F. Müller.—p. 1.
*Colloid Treatment. H. Siegmund.—p. 5.
Treatment of Cancer. Kupferberg.—p. 6.
*Postoperative Irradiation of Cancer. F. Winter.—p. 7.
*Treatment of Urethral Gonorrhea in Women. Arneth and Fabritius.—p. 9.
*Indications for Thyroidectomy. M. Lebsche.—p. 11.
Plastic Induration of Penis. C. B. Hörnicke.—p. 13.
*Surgical Treatment of Gastroptosis. Pust.—p. 15.
Diagnostic Excision in the Bladder. K. Scheele.—p. 17.
Treatment of Sleeping Sickness with Bayer 205. W. Menk.—p. 18.
A Needle for Ventriculography. L. Benedek.—p. 19.
Technic of Ventriculography. E. v. Thurzo.—p. 19.
Tuberculin Inoculation. F. Wesener.—p. 20.
Suit for Alleged Obstetric Malpractice. A. Döderlein.—p. 20.
Semmelweis and Lister. W. v. Brunn.—p. 22.
Symptomatic Changes of Blood. P. Morawitz.—p. 23.
German Youth Welfare Law. M. Thumm.—p. 25.
*Types Seen by Pediatricians. E. Moro.—p. 26.

Blood Pressure.—Müller reviews the history of blood pressure determination, and emphasizes its central regulation. Expelling the blood from a lower extremity does not change the blood pressure, even in cases with hypertension. The peripheral resistance (smallest arteries and capillaries) and not the central force (heart) determines the blood pressure. In cases of genuine hypertension, the tunica media of all small abdominal arteries is hypertrophic from increased function (Huchard's presclerosis). This accounts for the fact that considerable hypertension may become normal. Arteriosclerotic changes of the vessels are secondary. Affections of kidneys leading to insufficiency—even retention of urine—have an unquestionable influence. Further, the constitution may play a part. He finds in the families of such patients migraine, asthma, gout, diabetes and arthritis. Women suffering from uterine fibroids have usually a high blood pressure, which may diminish after operation (not after roentgen-ray treatment). The prognosis is not as bad as we thought before measurement of blood pressure became universal. Digitalis and caffein may be given if the heart becomes insufficient, and may even lower the blood pressure. Coffee and tea are allowed; nicotin and wine must be forbidden. Low diet may be tried although the general starvation during the war did not seem to influence hypertension. Moderate exercise is to be recommended. Venesections act symptomatically well. Hypertension is not a contraindication to any operation.

Colloid Treatment and Active Mesenchymatous Tissue.—Siegmund found that the "storage" of different colloidal preparations in reticulo-endothelial cells increases the resistance of mice against a subsequent infection. He found that the mesenchymatous tissue, which stores these substances, becomes more capable of taking up a new supply—including bacilli—and that it proliferates. Organoid structures develop in the adventitial tissue. They consist of reticular cells capable of storage, and an indifferent hemopoietic parenchyma, which may develop into different cells according to the substance injected. Silver induces chiefly myeloid formations; iron, myeloid-erythroplastic elements; proteins cause a lymphocytic, and cholesterol an endothelial proliferation. The action of colloids consists in stimulating these cells to greater activity.

Postoperative Irradiation of Cancer.—Winter finds that his results with carcinoma irradiated after operation are a little better than in cases without after-treatment. The dosage requires further study.

Treatment of Urethral Gonorrhea in Women.—Arneth and Fabritius emphasize the importance of energetic treatment of urethral gonorrhea in women, even when the chief focus is in the cervix, which must be treated mildly.

Indications for Thyroidectomy.—Lebsche points out that the patient suffering from goiter, and not the thyroid itself, is the subject of treatment. Persons who previously had rachitis are very liable to postoperative tetany. In thyrotoxic heart disturbances, it is better to wait until rest and sedatives have improved the condition. True "goiter heart" is ameliorated by operation. Patients with compression of the trachea should be treated surgically. Sometimes the dyspneic condition is latent, because the patient has learned by instinct to avoid overexertion, until an attack of suffocation convinces him of the necessity for an operation. There is no question about the treatment of a malignant struma; cancer is to be suspected, if a goiter starts to grow quickly in old people. The most difficult decision is in children with vascular goiter in which the clinical signs (not only the histologic changes), speak for an exophthalmic goiter, while the aspect of the patient reveals cretinoid stigmas. Determination of the basal metabolism is a valuable aid in such cases. No goiter should be operated on merely for cosmetic reasons.

Surgical Treatment of Gastroptosis.—Pust has devised a simple longitudinal folding of the stomach, and reports twelve good results.

Types Seen by Pediatricians.—Moro complains that the consulting pediatrician has to deal almost exclusively with neuropathic children. He describes several types. Increased temperature is sometimes simply due to preceding exertion. Some children have permanent rectal temperatures between 37 and 37.8 C. Opium lowers this harmless "constitutional subfebrile state," but pyramidon has no effect. Fever reacts in the opposite way. In vasolabile children the difference in the pulse in standing and reclining is great, and increases after exertion; the rate in reclining may be even lower than before. "Umbilical colic" is usually associated with pallor during the attack. Most cases can be cured by suggestion. The faradic current works wonders in these cases of neurosis, and indifferent plasters applied with the proper suggestion are effective. The child should not be present during the whole taking of the history, and should not hear the diagnosis, unless it is negative.

Wiener klinische Wochenschrift, Vienna

Jan. 4, 1923, **36**, No. 1

*Organotherapy in Neuroses and Psychoses. Wagner-Jauregg.—p. 1.
Capillary and Parenchymatous Bleeding. P. Albrecht.—p. 4.
*Jarisch-Herxheimer Reaction. M. Oppenheim.—p. 7.
*Wassermann Reaction in Cancer of Uterus. R. Niedermayr.—p. 10.
The Epiglottis in Total Extirpation of Larynx. K. Kofler.—p. 11.
History of Vienna Medical School. M. Heitler.—p. 12.

Organotherapy in Neuroses and Psychoses.—Wagner-Jauregg recommends thyroid treatment in every case of retarded development of children. If a tumor of the pituitary is combined with a goiter or symptoms of hypothyroidism, thyroid tablets may improve the pituitary condition, and even the hemianopia may be favorably influenced. Dementia praecox is a group of diseases. The use of thyroid and sex gland has sometimes a favorable influence in the early stages of the hebephrenic type. Yet one should not forget in considering hypofunction and hyperfunction of glands that

qualitative changes (dysfunction) are possible. Complete recovery followed this treatment only in girls in whom the psychosis started at puberty and sex development had been arrested in the infantile stage. Similar good results were obtained in nervous girls with hypoplastic uterus who started to menstruate very late. Tics of the pubertal age were also favorably influenced.

The Jarisch-Herxheimer Reaction.—Oppenheim had 128 cases of Jarisch-Herxheimer reaction among 180 cases of syphilitic exanthemas. He observed them for two years and found that the cases which showed an intense reaction had an unfavorable course with regard to recurrences, their localization (liver, eyes, nerves), and the Wassermann reaction. Cases of tabes which have severe pains after injections of arsphenamin, are progressing. Similar reactions (dizziness, hallucinations) can occur in general paralysis. He found that mercury and arsphenamin are retained longer in the body after a strong Herxheimer reaction. To avoid these reactions, it is well (except in the abortive treatment) to start with mercury ointment or with small doses of mercury, before giving arsphenamin.

Wassermann and Meinicke's Reaction in Cancer of Uterus.—Niedermayr found among twenty-five cases of carcinoma of the sex apparatus one cachectic case with a positive Meinicke test and a weak positive Wassermann test with inactivated serum (negative with active serum). One case had a positive reaction after roentgen treatment.

Zentralblatt für Gynäkologie, Leipzig

Jan. 6, 1923, **47**, No. 1

Graviditas Ovarica, Graviditas Fimbriae Ovaricae and Graviditas Paratubaria. O. Hoehne.—p. 2.
*Parabiosis in Experimental Research. R. Nissen.—p. 11.
*Irradiation of the Spleen. L. Nürnberger.—p. 19.
*Treatment of Vulvar Pruritus. A. Littauer.—p. 25.
*Intraligamentous Ganglioneuroma. W. Stoeckel.—p. 33.
Enormous Cystoma. P. Weischer.—p. 37.

Parabiosis as a Means of Experimental Research in Sex Pathology.—Nissen has found parabiosis applied to rats and rabbits a valuable experimental method of research in studying certain questions of sex pathology. His experiments make it seem possible that the bodily changes in the female in pregnancy are not caused by hormones but by nervous impulses. On the other hand, the Sauerbruch-Heyde researches furnish evidence that the inauguration of labor pains is brought about by metabolic products which pass, in accordance with the humoral theory, from the fetus to the mother. Owing to the short existence of animals united by parabiosis, the difficulties of the investigations are very great.

Irradiation of the Spleen in Gynecologic Hemorrhage.—Nürnberger reports that he tried roentgen irradiation in twelve cases of hemorrhage due to tumors of the adnexa and thirteen cases of hemorrhage of ovarian origin. In eight of the former and ten of the latter, the hemorrhage was arrested within three days, frequently on the day of the irradiation, and in a few cases within half an hour of the application. He therefore regards roentgen irradiation of the spleen as a valuable therapeutic measure in the treatment of hemorrhage of genital origin. In some cases irradiation is of no avail, but these cases promise valuable physiologic, pathologic and therapeutic discoveries.

Treatment of Vulvar Pruritus with Special Consideration of Thrush and Trichomonas.—Littauer states that in cases of vulvar pruritus in the form of an oozing eczema the use of ointments usually causes an exacerbation. The best results are secured by dry treatment. The hot air jet and phototherapy, especially red light, are efficacious, but if the secretion has subsided, it is better to use blue light, which is also to be recommended in pruritus without eczema. For treating excoriations of the skin after the oozing has ceased, he finds 10 per cent. silver nitrate solution the sovereign remedy; this requires much patience on the part of the patient and physician but gives excellent results. In a few refractory cases of vulvar pruritus, extirpation of the vulva is the last resort. The operation presents no technical difficulties, and can be performed under local anesthesia. The labia majora et minora, together with the clitoris, are removed. The hemorrhage is easily controlled, if all the tissue to be removed is not excised at once. The excision is best begun from below. The plastic result is very good, and superficial examination would not reveal any change of the introitus following the operation. Even excision does not help in all cases, especially if the cause of the pruritus is elsewhere than in the tissues removed. Another cause of vulvar pruritus is thrush *(Monilia albicans)*, which sometimes requires careful inspection for its recognition. Treatment consists in painting the affected area every other day with a 10 per cent. solution of pyoktanin, which unfortunately stains the clothing for a time. In some cases he has found roentgen irradiation effective. *Oxyuris* or *Trichomonas* infection may also be suspected.

Intraligamentous Ganglioneuroma.—Stoeckel reports what seems to be the first operative case of ganglioneuroma of the true pelvis in a woman. These tumors are comparatively rare, only about two dozen having been thus far reported. They are found on the face, abdomen and other regions of the body. They are referable to disturbances of the sympathetic nervous system, and are sometimes multiple and sometimes solitary. They are composed of ganglion cells, nerve fibers, and connective tissue fibrils. The histologic structure, as Borst states, resembles a broken-down sympathetic ganglion.

Zentralblatt für innere Medizin, Leipzig

Jan. 6, 1923, **44**, No. 1

Determination of Real Blood Pressure. H. Chantraine.—p. 1.

Casopis Lekaruv Ceskych, Prague

Jan. 6, 1923, **62**, No. 1

Tubercle of the Optic Disc and Choroid. J. Janku.—p. 1. Cont'd.
A Pelvimeter for the Comjugata Vera. V. Rubeska.—p. 8.
Present Status of Acidosis. V. Laufberger.—p. 9.

Hospitalstidende, Copenhagen

Jan. 10, 1923, **66**, No. 2

*Partial Heart Block. O. V. C. E. Petersen.—p. 21.

Partial Bundle Heart Block.—Petersen remarks that electrocardiography is the most reliable criterion for hypertrophy of either ventricle. Systematic electrocardiograms from heart patients have confirmed that partial bundle block is an early phase of complete heart block, and a sign of an extensive affection of the myocardium. He tabulates the details of 28 cases of partial bundle branch block encountered in the course of five and a half years in 25 men and 3 women. Nine kept in comparatively good stationary condition; in 6 the course seemed to be gradually progressive, and 12 have died. Only 2 of the 28 had edema. The most frequent symptom, except panting and palpitation which were present in all, was angina pectoris. Eighteen of the patients had angina pectoris, with frequently repeated attacks.

Hygiea, Stockholm

Jan. 16, 1923, **85**, No. 1

*Disinfecting Action of Quinin. K. G. Dernby.—p. 1.
*Neurology of the Abdominal Wall. G. Söderbergh.—p. 5.

Disinfecting Action of Quinin Derivatives.—Dernby's research seems to suggest that the solubility of quinin derivatives diminishes as p_H increases; also that addition of sodium bicarbonate or other alkali enhances the bactericidal power. Lack of alkaline reaction may be the explanation for the difference between the disinfecting power of certain quinin derivatives in the test tube and in human tissues.

Neurology of the Abdominal Walls.—For ten years Söderbergh has been studying the motor functions and reflexes in the abdominal walls. This is his fifteenth publication on the subject, and he reviews the conclusions and shows their practical application in five cases.

Ugeskrift for Læger, Copenhagen

Jan. 25, 1923, **85**, No. 4

Recent Progress in Dietetics. C. Jürgensen.—p. 59. Begun in No. 3, p. 37.
The New Danish Law on Marriage.—p. 63.
Contract Practice in Norway. H. Rasmussen.—p. 66.

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THE PROBLEM OF PREVENTIVE MEDICINE

IN PRACTICE AND IN MEDICAL EDUCATION

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PITTSBURGH

The rapidly developing appreciation of the importance of preventive medicine by the general public and by the medical profession has brought home to the medical school the problem of teaching "disease prevention" in its broadest sense. It is my hope to summarize the influences of some of the more important agencies that have led up to the popular demand for preventive measures in medical practice, and to point out a way in which the average medical school, not associated with a school of public health, may prepare the prospective medical graduate to meet the situation. The material is discussed under two general headings: (1) influences that are developing an ever increasing demand for disease prevention in the practice of medicine, and (2) preventive medicine in the medical curriculum.

INFLUENCES DEVELOPING AN EVER INCREASING DEMAND FOR DISEASE PREVENTION IN PRACTICE OF MEDICINE

Preventive medicine is commonly defined as the medicine of the community, and contrasted with curative medicine or medicine affecting the individual. This interpretation was more appropriate before the importance of personal hygiene as a protective measure was fully appreciated and before the use of protective biologic products had become practical, than it is at present. While the right of the community to be protected from disease, whenever protection is possible, is gaining more and more recognition each year, the more modern interpretation is to consider the individual the unit of protection and to develop methods of disease prevention which can be applied for the protection of the individual, the group and the community. The term "health promotion" has already been suggested as a successor to that of "preventive medicine." Search for a term to take the place of "preventive medicine" seems rather premature, since preventive medicine, itself, is only just becoming established. The new term is quoted merely to show the present trend of thought, and to illustrate the popularity with which the movement in general has been received.

The practice of medicine has been changing for several years, and there has been a steadily increasing trend in the directions of prevention, and of earlier diagnosis and treatment. Many influences have combined to bring this about, among which may be mentioned the advance of medicine as a science, urbanization, political and legal influences, and the activities of semimedical and nonmedical health organizations.

First of all, let us establish the fact definitely that preventive medicine has been made possible only through the advances in medicine as a science. The "old style family physician," formerly the ideal example of medical practitioner who was family councilor and comforter as well as omnimedical adviser, is passing. Several most interesting articles have appeared which have emphasized his worth to the community, regretted his gradual disappearance, and suggested means of bringing him back; but he is the victim of human limitations, and in the "time honored" sense cannot "come back," because medical science has made it impossible. The "general practitioner" of today has more than taken his place medically and scientifically, but his absence is still sorely felt by the public because the selfsame science that has made possible a more accurate diagnosis and given more complete knowledge of prognosis will not permit the general practitioner honestly to hold out to the dangerously sick patient and to his friends the hope and the encouragement that was the primary psychologic factor in the success of the older type of family physician. Medical science has become too technically comprehensive and too specialized to be mastered by a single mind. Specialties are necessary, and will become more so and more varied as time goes on; and, with each new attainment in treatment, new means of prevention will become apparent and be brought into practice.

The discovery of the bacterial cause of many diseases, the uncovering of the great principles of immunology with their bearing on the course and termination of diseases, the disclosure of the constant organ and tissue changes affected by certain specific causes, the conception of measuring the changes in function wrought by disease with the use of the acquired information for more accurate diagnosis, the advent of the roentgen ray, the development of highly technical knowledge along special lines and the revelation that some diseases can be prevented more readily than they can be cured are the scientific bases for preventive medicine.

The growth of cities and the migration of the general population to them have made preventive measures imperative. The close physical contact of great numbers of persons has made it necessary to control water, food and milk supplies, to institute proper sanitation and drainage, and to appoint departments to enforce quarantine and similar measures. Medical men have always been and still are the leaders in the establishment of these measures. Hospitals and laboratories which have played a great part in the control of disease

are outgrowths of the common needs of the physician and the city. Urbanization has made hygiene, public health, sanitation and preventive medicine necessary specialties.

The greatest single factor in precipitating the present day activities in preventive medicine was probably that of the war. It showed indisputably that health measures summarily enforced would decrease, if not entirely control, many diseases that had formerly been among the most destructive agencies of war. The successes of vaccine prophylaxis for typhoid, dysentery, cholera and smallpox were emphasized; the value of prophylaxis against tetanus was realized as never before; the efficacy of venereal prophylaxis and the importance of general health and sanitary measures were demonstrated beyond all possibility of doubt. Educational measures in the army received a great deal of attention, and have borne so much fruit that most of the former "dough boys" have a fair basis for estimating the competence of the home doctor. At home, the war gave a great impetus to industrial medicine. The value of having the able man on the job was appreciated broadly for the first time. Hundreds of thousands of physical examinations made by local boards and medical advisory boards demonstrated the presence of thousands of unsuspected lesions in apparently healthy persons. Since the war, the United States Public Health Service, the various state, and municipal health departments have been attempting to apply the lessons of the war to civil life. Health institutes have been held in various cities. Circular letters of instruction on modern methods of prophylaxis and treatment have been sent to physicians, and their cooperation in health education has been invoked.

Various other agencies are engaged in teaching the public, or, more accurately, the "public's children" modern health measures. The public school and the health nurse are now being used extensively for this purpose. The difficulty for the physician is that the required knowledge is relative. For instance, the public is given a superficial smattering about a given health procedure, just enough to appreciate its value and feel its necessity. The public health nurse is given a very general idea of the involved principles, and is supplied with a technical training covering in minute detail the steps in the application of the procedure. The physician is expected to know the "whys and wherefores," the scientific principles, the method of application and the limitations; in short, the science as well as the art of the procedure. Infinitely more is required of him; and, if he is unprepared, the public and the health nurse are likely to assume his deficiency in the matter as an index of his general ability. There have been many instances wherein the physician has appeared at a disadvantage because he has been deterred from his apparent duty by his more complete knowledge, and has received undeserved censure from well meaning persons possessed merely of popular information.

The health nurse is essentially a field worker in preventive medicine. The work is comparatively new, the limitations of the field are not yet sharply drawn, and there is often friction with the physician where there should be cooperation. Physicians are inclined to feel that health nurses are going beyond the limitations of their training. They are too familiar with the training of nurses in general to appraise the health nurse at her actual value. They feel that the tendency on the part of nurses to prescribe drugs is dangerous and that the procedure is illegal, and they are not inclined to tolerate it, or to pardon the offender. On the one hand, the physician must realize that the health nurse cannot adapt herself to too many strange conditions at once; that she is here and here to stay; that the state and the public have accepted her and are providing for her, and that she is willing and anxious to do the right thing and to accept intelligent guidance. If the physician is not prepared to furnish that kind of guidance, he must take steps to acquire the training necessary for it. Otherwise he is open to the criticism that he will get. Nurses, on the other hand, must realize that they can gain little in cooperation by public defiance of a physician with whom they are forced to work.

Life insurance companies have done much to bring preventive medicine into the foreground. They began by accumulating great masses of statistics showing the influence of various diseases on the length of life. The Metropolitan Life Insurance Company of New York has been active in many ways, and has published much health propaganda. The company has tried out preventive medicine on a large scale with its own employees. The company gives the employee a physical examination annually, insures his family against destitution in case of his lost earning capacity, takes care of him when he becomes sick, and saves his job for him in case he recovers and is again able to resume work. Others have not been slow to take advantage of the physical examination, and we have had developed life-extension bureaus, health centers and the like.

Medical dispensaries, too, are constantly increasing both in number and in patronage, and they are being used as centers for teaching preventive measures. In 1921,[1] it is known, there were 3,243 dispensaries operating in the United States. It is estimated that there were in addition about 4,000 dispensaries connected with the various industries, totaling at least 7,243 dispensaries. In the known dispensaries, 3,872,345 patients were admitted for a total of 11,798,887 visits. Estimated on the same basis, the total number of patients received in the 7,243 dispensaries would mean that about 8,000,000 patients made 29,500,000 visits to dispensaries during the year. The total population of the United States is a little over 100,000,000, so that approximately one twelfth of the entire population was treated in clinics during the year. It is not possible to estimate the exact percentage of persons who require medical attention each year, so that the relative number left to the practitioner cannot be determined. The number making use of dispensaries showed a great increase over any preceding year, and the development of many new clinics of a special nature led to a steady increase in their use. Special clinics for mental hygiene, child hygiene and venereal disease were opened (119 of the latter by the United States Public Health Service). Perhaps the most interesting experiment of the year was the institution of the Cornell Pay Clinic[2] in November, 1921. This clinic admits no free patients, but maintains an elaborate set of eligibility rules for pay patients, based on the annual income compared to the size of the family and the cost of the medical service. A fee of $1 is charged on admission, and an additional dollar is collected at each subsequent visit. During the first five months, 18,803 patients were admitted, and a total of 43,899 visits were received. From the standpoint of the clinic, it appears to be a success. However, it is obviously not fair to admit a

1. Dispensary Service in the United States: First Presentation of Dispensary Data by the Council on Medical Education and Hospitals of the American Medical Association, J. A. M. A. 79: 464 (Aug. 5) 1922.

2. Typewritten Report, issued by the Cornell Clinic, June 1, 1922.

person having three in his family who earns $2,500 a year, and to exclude one in similar circumstances who earns only $2,600, so that the scope of the clinic will necessarily be increased from time to time, and no one can say where the practice may end. A different kind of dispensary has been in use for several years at the Massachusetts General Hospital. It is conducted for diagnosis only, and offers the services of a group of specialists and the advantage of thorough laboratory tests at very reasonable rates. It accepts no patients except those referred to it by a physician, and returns the patient to his own physician for treatment. It is known as a consultation clinic. The success of a dispensary depends principally on the grade of work it is able to do, and this, in turn, depends on its medical personnel. The practitioner who is not connected with a dispensary may or may not have to compete with one in a commercial way, but he does have to compete, on the basis of service rendered. If the dispensary has health education as one of its main objectives, the practitioner, too, must be prepared to give reliable information on disease prevention to his private patients.

Poverty and disease have always been closely akin. Poor food, bad housing, crowding and insufficient ventilation permit many diseases to spread more rapidly among the poor than among the well-to-do. Charitable organizations formed to handle social economic problems, as well as lay organizations caring for the sick and disabled of war and in other great emergencies, have been quick to see the advantages of preventive measures and to insist on their practice. The activities of the American Red Cross, the National Association for the Prevention of Tuberculosis, the Association for the Promotion of Child Welfare, the National Organization for Public Health Nursing and several others are too well known to need detailed discussion here. A great deal of credit is due them for their accomplishments. During the war and since that time there have appeared so many organizations having closely allied interests, and there has been so much competition among them, that many instances of confusion of purpose and conflict of fields have occurred. One might easily believe from the communications contained in the daily mail that membership in some organization to reform, promote, prohibit or educate is one of the ruling human passions. Cooperation between the older and more established associations and the physician has been good and mutually beneficial; but the average physician realizes that it is impossible to fulfil all requests made of him, and that he must either discriminate between them or discard them all.

Health officers frequently complain that practitioners are careless in complying with health department requests and mandates, and have attempted at times to force physicians to carry out their provisions through the use of police powers and by public criticism. Public criticism will not solve the problem, because it antagonizes the offender, misleads the public, and commits an injustice on the great majority of the profession.

Of interest in this connection was a discussion that took place at the 1922 annual meeting of the American Public Health Association in Cleveland, where the uninitiated were led to infer that the ordinary physician, not in public health, is ignorant, nonprogressive, noncooperative, short-sighted and generally antagonistic to all preventive measures. The chairman [3] in his opening address took the attitude that the physician antagonizes public health activities on commercial grounds, and that he, therefore, is short-sighted, since it is good business to prevent contagious diseases. According to this theory, the physician, instead of being called in to make two or three visits and sign a death certificate, saves the patient for the chronic diseases of elderly life, when many visits will result. If it were true that the physician is a wholly commercial person, and my experience indicates that usually quite the reverse is the case, the argument is a poor one because the business of saving the child to profiteer on the aged would put off dividends until the next generation of physicians. A point worthy of much more careful consideration made in the same address was the observation that when one physician is the recipient of a case referred by another, it is customary to drop a courteous note of thanks, but that when a school physician sends a note to a child's parents calling attention to an obvious ailment of the child with instructions to "see the family physician," the latter generally tears up the note and attempts to prove that the school physician was mistaken. Among other speakers who discussed the paper, the remarks of Dr. Martin seem particularly pertinent. He pointed out that the medical profession could be divided into three groups: an upper third, made up of leaders of the profession—high minded men devoted to research, to close observation and to progress; a middle third, of strong, clear sighted, intelligent men who follow the leads of the upper third, and who form the bulwark of the profession; and a lower third, of self centered, poorly trained, nonprogressive individuals who form an antagonistic group and whose antagonism one must have as an index that he is in the right.

At a session of the Child Hygiene Division, a group composed largely of nurses and welfare workers, a New Jersey state official [4] presented an immense amount of statistical evidence to prove that the death rate was less when obstetrics was done by midwives than when carried out by physicians. Without questioning the total figures, one would like to know how many of the infant and maternal deaths were due to puerperal infection or to poor obstetric technic, and how many to preexisting pathologic conditions and to concurrent diseases. It is a well recognized fact that pathologic pregnancies find their way to physicians, while the midwife's practice comes largely from the healthy women among the foreign element and hence are normal deliveries. It may be well to point out here that medically trained followers of men like Holmes and Semmelweis had reduced the obstetric death rate due to puerperal sepsis from about 10 per cent. prior to 1847 to less than 1 per cent. before infant welfare organizations as such had been thought of, and that the relatively less pronounced improvement since that time has been due to the strictest application of scientific medical knowledge. Under the circumstances, it scarcely seems just to infer that the discrepancy on the side of the physician is due to poor obstetric preparation and to carelessness, although that interpretation was made, and this before a group which has shown itself prone to become hypercritical on all possible occasions. The foregoing discussions are cited in the spirit of arousing the practitioner to eliminate any just causes for complaint which health officials may have, and not with the intention of increasing antagonism.

3. Discussion of John Dill Robertson's paper, "Challenge to the General Practitioner," read before Administration Section of American Public Health Association, Cleveland, Oct. 16, 1922. Paper published without discussion, Am. J. Pub. Health **13**: 1 (Jan.) 1923.

4. Levy, Julius: Maternal Mortality and Mortality in the First Month of Life in Relation to Attendant at Birth, Am. J. Pub. Health **13**: 88 (Feb.) 1923.

One of the resolutions of the meeting was based on the opinion that the physician generally is not keeping up with preventive medicine. It was pointed out that this was in part due to his medical school training, which is unbalanced in favor of treatment as weighed against prevention, and that *"it is essential that medical schools change their ideals of education before the general profession can be changed in its relation to the public."* The resolution was to the effect that a committee be appointed to suggest an outline of proper courses in public health and preventive medicine for undergraduate medical students and to confer with the Curriculum Committee of the Association of American Medical Colleges and with the various state medical licensing boards.

Numerous other influences might be discussed, for there are many "anti" societies which have appealed to law to have their ideas enforced, and many political and socialistic influences advocating health insurance and the like. There is the whole subject of industrial medicine, most of which is preventive in character; but I think I have cited a sufficient number of facts to emphasize the need of concerted action on the part of the medical profession in regard to a serious consideration of the part that the public expects it as a profession to play in the development of public health and preventive medicine. The statement has been made that health measures are directed toward "state medicine." Under lay leadership, "state medicine" may be brought about, but under medical leadership it is very unlikely. "State medicine" is to be avoided because it will impede medical progress. As medical progress is responsible for preventive medicine, the public should be given to understand that in advocating "state medicine" it is "killing the goose that laid the golden egg."

Under proper leadership and with the unhampered cooperation of the best medical minds, preventive medicine offers one of the greatest boons that civilization has yet known.

PREVENTIVE MEDICINE IN THE MEDICAL CURRICULUM

The problem of establishing satisfactory working relations between agents of the various health interests and medical practitioners already in the field is beyond the medical school; the function of preparing the future physician to fit in with the work is very definitely a part of its duty. Pritchett[5] has said, "The medical profession is rooted in medical education and will not rise higher than the soil in which it grows." The duty of the medical school is clear: it should establish adequate courses at once, and not wait to have them forced upon it. In Pennsylvania, steps have already been taken to include a group of questions in public health and preventive medicine among examinations for medical license. One set of "possible questions" has already been distributed by the board, and I am told that a second, much more comprehensive one is in preparation.

Medical instruction in public health may be directed toward any one of several objectives and, therefore, must vary accordingly. If it is the aim to prepare men for a public health career, the problem is a very different one from the instruction of medical men to practice preventive medicine as a part of their general work. If postgraduate work is under consideration, it must first be determined whether a complete course leading to a degree is to be undertaken, or whether a short course planned to bring practitioners up to date in health measures is the object.

If the idea is to prepare medical health officers, measures for establishing a school of public health must be taken; several such schools have already been founded. These require a five year course for the combined degree of M.D. and Dr.P.H. (Doctor of Public Health). They offer postgraduate courses for medical men leading to the degree of Dr.P.H., and a four year course for health officers, leading simply to the degree of B.P.H. The courses of study given at such schools include bacteriology, hygiene, entomology, sanitary chemistry, sanitary engineering, industrial toxicology, industrial physiology, dietetics, sanitary surveys, epidemiology, vital statistics, health laws and legislation, public health administration, industrial hygiene, child hygiene, mental hygiene, public school medicine, health education and physical education. In order to compete with the schools already established, a large faculty consisting of many experts will be required. At a meeting held in Washington in March, 1922, the education of the "Health Officer of the Future" was discussed at great length. It came out in the discussion that there is no immediate need for more schools of public health because the salary available for health officers at the present time is insufficient to encourage many students to undertake the complete courses.

The problem under discussion does not deal with public health schools, or at present with postgraduate courses, but with the undergraduate instruction of the student in the medical school. We must first decide what parts of a general public health education are essential to good medical practice and consistent with the teaching facilities of the school; we must find a suitable amount of time and a place for the course in the curriculum; we must arrange for a certain amount of expert instruction in some of the more highly specialized subdivisions, and we must adopt some means of keeping the "preventive idea" constantly before the student.

Precedent for the amount of ground to be covered is naturally found in the curriculums of schools that are giving adequate courses in preventive medicine. There is considerable difference of opinion, however, about the amount of time that should be devoted to teaching health habits, conduction of health examinations for incipient disease, etc. Only a few days ago a physician asked, "What is the use of teaching health habits, when nobody can be made to change his habits, and everybody does just what he pleases, anyway?" Many medical men feel the same way, and a word on the subject may not be amiss.

Education in health habits has been most successful in teaching the children to form good health habits instead of bad ones. A man's willingness to adopt and acquire health habits undoubtedly depends on how much he has come to be dependent on unhealthy habits, how much self denial he must exert, how difficult of execution the health measure is, and just how badly he dreads the disease he hopes to prevent. One would not expect success in teaching abstinence to a chronic drunkard, but one does have success in teaching dietetic temperance to the average chronic nephritis patient with high blood pressure. Inability to educate men out of promiscuous venereal habits is the only excuse for venereal prophylaxis. Prophylaxis is admittedly a much less efficient preventive measure than continence, but it has actually accomplished a great deal when an attempt to enforce continence would have failed com-

5. Pritchett, H. S.: Relation of Medical Education to Medical Progress, New York M. J. **115**: 1 (Jan. 4) 1922.

pletely. Medical men are often inclined to feel a little ahead of dentists, but there are few better examples of preventive medicine than that of dental prophylaxis. The ease with which the public has been taught to consult the dentist for prophylaxis once or twice a year is remarkable. A short time ago I asked a successful dentist how much dental prophylaxis has decreased his practice; he replied that it had not decreased it, but had actually increased it and made his work much more pleasant. He stated that now he saw pyorrhea and dental caries in the early stages, and almost never saw the "rotten mouths" that were so common in his practice a few years ago. The time is not far away when routine health examinations will be as common as dental prophylaxis is today. There may be a tendency for routinization in dispensary work, but when a physician has one of the families of his own clientele educated up to annual health examinations he will be as careful as possible in every step of his examination; his success will depend on it.

The Time and Place for Hygiene and Preventive Medicine in the Curriculum.—The report of the Curriculum Committee at the thirty-second annual meeting of the Association of American Medical Colleges in 1922 advised the increase in the number of hours allotted to hygiene and preventive medicine from fifty-four to 170. The prospect of the addition of approximately 100 more hours for this purpose raises the question of an available source for that time. The clinical branches are anxious to increase rather than decrease the amount of time assigned to them so that they may be left out of the consideration. The suggestion has been made that the time be taken from the laboratory courses. There are strong arguments against any further reductions in bacteriology, immunology and pathology. In the opening lecture in bacteriology and pathology this year I tried to bring before the students a conception of the practical benefits to be derived from the long grind through the laboratory subjects. The point was first made that the student often gets impatient because he does not see the connection between the work and clinical medicine. It was pointed out to him not only that he was benefited by gaining an intimate knowledge of the causes, processes and morbid changes of disease and the recuperating powers of the tissues, but also that he was acquiring, by application, the habits of observation and analysis, familiarizing himself with the great principles of research, and most of all gaining unshakable confidence in the correctness of his knowledge. For example, the student who has had the experience of watching the development of tuberculosis in an animal following inoculation is not easily influenced by statements coming from disciples of cults which assert that tuberculosis is a "state of mind" and that the tubercle bacillus is a "myth," while to the man who has not had the training the statement may not seem so unreasonable. Rather than rob any of the present courses of their allotted time, I think it would be better to encroach further on the students' vacant time. For several years educational committees generally have been urgently demanding that medical schools decrease the number of hours required of students so that they may have time to think for themselves. As a rest and relaxation measure, the idea may be a good one, though its value as a means of developing the average student's intellect is questionable. In a recent communication, Dr. James Ewing expressed my feeling in the matter much better than I have been able to do. He said: "Personally, I am not in favor of reducing the medical curriculum and allowing the students more time to think for themselves. I am much more concerned that they should have something proper about which to think."

Not only additional time, but also a suitable place for the course must be found. Hygiene and preventive medicine are very intimately associated, though they are not inseparable. Perhaps the most practical plan would provide for teaching hygiene in the sophomore year, and for giving preventive medicine proper in one of the last two years. During the second year the student's attention is focused on laboratory subjects: Bacteriology, and the preparation of vaccines and of other protective biologic products are fresh in his mind, and he has acquired an excellent foundation for knowledge of what constitutes good food, water, etc. He has had little or no clinical work up to that time, and hygiene furnishes added interest as a practical application of his scientific training. On the other hand, the best results in teaching the control of infectious diseases can be had only in the later years after the student has had clinical experience with such diseases and can appreciate the value of preventing them. In the University of Pittsburgh we are planning to give didactic and laboratory instruction in hygiene in the second year, and a lecture course in preventive medicine in the third year. In the course in hygiene, the influences on health and disease of food, water, air, soil and sewage disposal should be considered together with the preparation of protective biologic products, detection of carriers, the rôle of insects in the spread of disease, vital statistics, etc. The instruction in preventive medicine should be far more comprehensive. A centralized course should first be mapped out to include vaccine prophylaxis, control of carriers, the relation of the practitioner to the local health administration, effects of heredity, eugenics, and brief discussions of industrial hygiene, mental hygiene, health education, child welfare movements, etc. Secondly, arrangements should be made with the other departments to devote some time within their own courses to a discussion of preventive methods useful in their own subjects and which are too specialized or too technical for general discussion in the centralized course. Finally, the cooperation of the entire faculty should be obtained in keeping the "preventive idea" constantly before the student.

The latter plan was suggested by a statement made by Dodson,[6] who said: "Larger emphasis should be placed on prevention by every department in the school. When the instructor demonstrates typhoid, he should ask, 'Why did this patient get typhoid?' If the whole clinical curriculum presented subjects from the side of prevention, as well as from cure, much could be accomplished in a short time."

Acting on this suggestion, the Department of Hygiene of the University of Pittsburgh has solicited the help of every teacher in every department in the school in teaching preventive medicine. Some departments have greater opportunities for emphasizing prophylaxis than others. The department of medicine has perhaps the widest range of subjects. With every acute infectious disease, the means of spread should be discussed, the kinds and relative amounts of immunity afforded should be emphasized, and the means of controlling the spread to other persons mentioned. Much

6. Dodson, J. M.: Discussion of a paper at conference on the Education of the Future Health Officer, Washington, March, 1922.

of this is repetition, but it serves to fix the facts in the students' minds. Then there are the more technical subjects which fall under specialized instruction in medicine. For example, the discussion of prophylactic heart clinics, the technic for health examinations as well as those made purely for diagnostic purposes, and the hygiene of diet in some of the diseases of altered metabolism. A man said recently that he had known graduates of some of the best medical schools who could discuss metabolism very scientifically, but he had yet to find a single one who, without additional instruction, could make out an efficient economic diet for a poor family.

An excellent example of the complete plan for cooperative instruction in prevention is furnished by the subject of mental hygiene. The term is something of a scarehead, though the teaching can be carried out well in all three phases. One phase is that which the student would get in the centralized course in preventive medicine and which would include the effects on the mind of heredity, alcohol, other poisons, syphilis, emigration, etc., and a discussion of what various agencies are doing to improve conditions among mental risks. Another phase, the technical one, should be handled by the department of neurology because they are better prepared to teach it than any one else. In this division the student should be taught the forms of insanity in which preventive measures have had some success, the care of the insane, methods for making asylums more habitable, something about the influence of occupation on the insane mind, the effects of hydrotherapy, etc., and perhaps more important than many other things, what steps should be taken in the disposition and care of an obviously insane person who is at liberty in the community. The third phase, that of placing the sick or injured persons at rest and the importance of so doing, belongs in every field of medicine and surgery. *Students should be taught not to ignore anything which offers an opportunity of making the patient more comfortable.*

Dershimer [7] recently mentioned an instructive case in point: A very nervous woman, between 35 and 40 years of age, developed sudden abdominal pains and made her own diagnosis of stone in the kidney. Morphin and atropin in fair doses failed to lessen the pain, and there was no sediment or albumin, and no blood in the urine. Careful history elicited the fact that she had helped to take care of a patient with stone in the ureter a short time before. Further examination demonstrated that the symptoms of stone were limited to those which the patient had observed in the other case. The patient asked that a chiropractor be called, because her mother had been helped by one. She said that the chiropractor had made a sudden and very forcible pressure at a point on the abdomen, which she indicated. Dr. Dershimer replied that he could accomplish a similar cure by the same means, which he proceeded to do, and the pain stopped at once. After a few days the patient was carefully informed of the imaginary nature of her pains, and up to the time of the report had had no further attacks. Dershimer further reported that formerly his company had paid out more compensation for back injuries than for any other kind of accident, and that for several years past they had been paying special attention to all types of back injuries. The slightest injury is roentgenographed at once, the patient is sent home in the company's car and placed at rest, and is instructed to report for reexamination next day if he feels like it, and to call the company physician if he does not. As a result, compensation for back injuries has been limited to the severe and unquestionable ones.

The instructor should find a lesson in such examples and never fail to impress on a student the necessity of going into the mental side of every case and of allaying suspicion and uneasiness in the patient's mind. When he does so he is teaching mental hygiene. Christian science, chiropractic, practical psychology and the like owe much of their success to the carelessness of the average physician and to his overlooking the mental side of his patient.

It is not necessary to go into many further examples, though I should like to mention some possibilities; for example, venereal disease prevention should be discussed during the courses in gynecology, obstetrics, skin diseases and genito-urinary surgery; prevention of blindness, in ophthalmology and obstetrics; child welfare work, in obstetrics and pediatrics; cancer prevention, in medicine, surgery, gynecology and the specialties; fatigue, in physiology; dietetics, in metabolism and medicine; prevention of general infection, tetanus, anthrax, etc., in surgery, and so on indefinitely.

It is well recognized that these matters are receiving consideration at present, and I do not mean to insinuate that they are not. I do mean that still more emphasis should be placed on them, and that the instruction should be more pointed, namely, that both the instructor and the student should be conscious, at the time, that preventive medicine is being discussed. No matter what the department, the point should be made that the specific measure is a preventive one. The teaching courses in all departments should be reviewed thoroughly, with the object of stressing successful preventive methods for the benefit of the students.

The teaching should be carried out with a view to informing the student of the best preventive measures available, and should be directed toward preparing him for leadership in progressive health movements. If the public is convinced that the physician and student are doing everything within their power to decrease sickness and prolong life, there is no danger that it will not continue to extend to them the protection and support they have always enjoyed.

7. Dershimer, F. W.: Practical Mental Hygiene in Industry, read before Industrial Hygiene Section, American Public Health Association, Cleveland, Oct. 17, 1922.

Creosote Oil as a Mosquito Repellent.—In a study of rural malaria in Yazoo County, Miss., by the U. S. Public Health Service, a marked difference in the number of anopheline mosquitoes found under railroad bridges and the number found under county road bridges, only a few yards away, was noted. Investigation disclosed that the railroad bridge timbers had been treated with creosote oil before being used whereas the county bridge timbers had not been so treated, and that by actual count the number of mosquitoes resting under the former was very small in comparison to the number resting under the county bridges. To continue the observation, a series of twenty-five houses in different sections of the county was selected, and an application of creosote oil to the rooms—one gallon to 420 square feet—was made. These experiments indicated that creosote oil is a noticeable repellent of anopheline mosquitoes, and that it was still effective ten weeks after application. The total duration of its effectiveness is still to be determined. Coogle (*Pub. Health Rep.*, March 9, 1923), who conducted the investigation, concludes that creosote oil as a mosquito repellent is particularly applicable to and desirable for use in houses of poor construction where screening and other antimosquito measures cannot be effectively employed.

THE MORTALITY RATE FOLLOWING OPERATIONS ON THE THYROID GLAND*

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The diseases of the thyroid, such as exophthalmic goiter, and adenomatous goiter with hyperthyroidism have lost their former place among serious and fatal surgical ailments. The present great reduction in surgical mortality demonstrates the benefit of medical and surgical team work in the diagnosis and classification of thyroid diseases. Medical treatment is curative or beneficial in certain forms of goiter. In types of the disease formerly so fatal if untreated, and also having a high mortality surgically, improvement may be obtained by proper care. The actual dangers from avoidable surgical accidents and complications are now better recognized. This is all the result of the greater attention, both medical and surgical, paid to diseases of the thyroid. Any discussion or argument, any fad, medical or surgical, which will lead to more care, will lower mortality, as a by-product, so to speak, and therefore is justified by the results.

In order properly to evaluate the significance of the surgical mortality statistics following operations for disease of the thyroid gland, many considerations must be borne in mind, the foremost of which are the method of classification of the various thyroid diseases, and the care and accuracy with which individual cases are diagnosed and assigned to such classification. The general custom of grouping all diseases of the thyroid together, and of determining the mortality rate on such a basis is more or less valueless, and it is even worse to base the rate on the total number of operations. Failure to describe the method of computation is misleading, and results in erroneous conclusions. For example, during the past year, 1,983 operations were performed on the thyroid gland at the Mayo Clinic, with only nineteen "surgical deaths," a mortality rate of 0.96 per cent. Such data, however, as will be seen from the following discussion, not only fail to reveal the real truth, but conceal facts which, when brought out, prove to be of great value.

The clinical classification of thyroid disease used in the present report is that developed by Plummer, in which the structural, functional and etiologic characteristics are correlated on fundamental grounds into nine distinct diseases: (1) diffuse colloid goiter, (2) adenomatous goiter without hyperthyroidism, (3) adenomatous goiter with hyperthyroidism, (4) exophthalmic goiter, (5) myxedema, (6) cretinism, (7) myxedema of childhood, (8) thyroiditis and (9) malignancy.

Of the foregoing types of disease, only the first four need be considered from the point of view of mortality, because at least 99 per cent. of all operations on the thyroid gland are performed on patients who have one of these four diseases. Since in the series there were relatively few cases of thyroiditis and malignancy, and since no deaths occurred in these cases, they will not be considered in this discussion. Myxedema and cretinism are, of course, nonsurgical conditions.

The accuracy of the assignment of each case to its correct classification before operation is aided by the determination of the basal metabolic rate, and is verified after operation by pathologic examination of the thyroid tissue removed. Accepting the pathologic examination as correct, the clinical diagnosis has been found to be in agreement therewith in approximately 94 per cent. of the cases.

* From the Mayo Clinic.

DIFFUSE COLLOID GOITER

A diffuse symmetric enlargement of the thyroid gland, characterized pathologically by an excess of colloid in the acini and unassociated with symptoms of hyperthyroidism, is designated clinically as "diffuse colloid goiter." Except in very rare instances of extreme enlargement it is not a surgical condition; interest in it, surgically, lies in the fact that two errors of diagnosis are often committed. First and most important is an erroneous diagnosis of mild exophthalmic goiter in a young person in whom a colloid goiter is accidentally and independently associated with psychoneurosis, effort syndrome, or disordered action of the heart. That the condition of these patients may often be diagnosed as mild exophthalmic goiter is borne out by the fact that many reports on the pathology of exophthalmic goiter emphasize the finding of a diffuse colloid deposit without diffuse parenchymatous hypertrophy. Most of these errors can be eliminated by the accurate determination of the basal metabolic rate which, in this group, is normal, or below normal, while in exophthalmic goiter the metabolism is distinctly elevated. It is evident that in proportion to the inclusion of cases of nonhyperthyroid, or simple goiter, in the classification of exophthalmic goiter, the mortality of that disease will be apparently decreased. This point has been emphasized, not because it is of academic interest, but because the number of such cases that are erroneously diagnosed as exophthalmic goiter is large. Not one patient with diffuse colloid goiter and a normal basal metabolic rate was operated on at the Mayo Clinic during the past year. Another common mistake is to designate a large colloid adenomatous goiter simply as colloid goiter, thus confusing a disease which is often surgical with a disease that is but rarely surgical.

ADENOMATOUS GOITER WITHOUT HYPERTHYROIDISM

An adenoma, or an adenomatous enlargement of the thyroid gland which is not causing constitutional symptoms and is not altering the concentration or character of thyroxin in the body, is classified as "adenomatous goiter without hyperthyroidism." This group includes those cases of colloid adenomatous enlargement already referred to as being often erroneously designated as colloid goiters. Large numbers of cases of adenomatous goiter pass through the Mayo Clinic each year for which operation is unnecessary, and these patients are not, therefore, operated on. One patient with adenomatous goiter without hyperthyroidism, but with respiratory obstruction, who had had a tracheotomy before coming to the clinic, died from associated status lymphaticus before thyroidectomy could be performed. During 1922, thyroidectomy was performed on 663 patients with adenomatous goiter without hyperthyroidism with only one postoperative death, making a surgical mortality by case of 0.15 per cent.

Deaths in nonhyperthyroid conditions must be accepted by the surgeon as potentially preventable by improved surgical technic. The occurrence of postoperative pulmonary infection is decreased by avoiding even temporary injury to the recurrent laryngeal nerve, and unnecessary handling, exposure and rotation of the trachea.

ADENOMATOUS GOITER WITH HYPERTHYROIDISM

Adenomatous goiter with hyperthyroidism may be defined as a constitutional disease due to the presence in the thyroid gland of adenomatous tissue which, by maintaining an abnormally high and unregulated concentration of thyroxin in the body, causes an increased basal metabolic rate with the resulting secondary manifestations. The disease differs from exophthalmic goiter, and it is important surgically to recognize this fact, because patients even with intense hyperthyroidism from adenomatous goiter almost never die from the acute, typical "thyroid crisis" so common in exophthalmic goiter. The mortality in this condition is, however, likely to vary considerably from year to year, depending largely on the accidental association of degenerative organic changes from the long duration of the hyperthyroidism in a patient in whom the technical procedures are difficult, owing to the location of the adenomatous masses in relation to the thoracic strait and the recurrent laryngeal nerve. Likewise, the common occurrence of this disease in older and debilitated persons affects the death rate. Finally, the operative risk, whatever it may be, must usually be definitely accepted quite promptly after the patient comes under observation. Unlike exophthalmic goiter, the fluctuations in the intensity of the disease are less marked, and as soon as cardiac decompensation, if present, is relieved, little else can be done to improve the operative risk. Preliminary procedures, such as ligations, are so rarely beneficial that they are seldom performed.

During the year 1922, 201 patients with adenomatous goiter with hyperthyroidism came to thyroidectomy; there were seven postoperative deaths, or a surgical mortality of 3.48 per cent. Besides these, one patient with similar trouble died from myocardial degeneration and decompensation without operation. The apparent mortality rate can be readily decreased by including in this group patients with adenomatous goiter, uncomplicated by hyperthyroidism. In the series of cases referred to here, no case was considered as hyperthyroid unless there was an increase in the basal metabolic rate; all cases in which the basal metabolism was normal were classified as "adenomatous goiter without hyperthyroidism." If the mortality rate were determined for all cases of adenomatous goiter, including those with and without hyperthyroidism, it would be 0.93 per cent., or eight deaths in 864 cases. But a mortality rate determined in this manner, which unfortunately is so often the custom, is of no practical or scientific value, and is as absurd as if the mortality rate after appendectomies performed for chronic appendicitis, or between attacks, as well as for acute suppurative appendicitis with peritonitis was quoted as representing the mortality rate for the latter condition. On careful pathologic examination of the tissue removed from patients in this group with adenomatous goiter with hyperthyroidism, who died, diffuse parenchymatous hypertrophy was not found, thereby confirming within a negligible error the clinical diagnosis of adenomatous goiter with hyperthyroidism, as opposed to exophthalmic goiter.

EXOPHTHALMIC GOITER

Exophthalmic goiter is a constitutional disease, apparently due to an excessive, probably an abnormal, secretion of an enlarged thyroid gland showing pathologically diffuse, parenchymatous hypertrophy and hyperplasia. It is characterized by an increased basal metabolic rate with the resulting secondary manifestations, by a peculiar nervous syndrome and usually exophthalmos, and by a tendency to gastro-intestinal crises of vomiting and diarrhea. The cause of the altered pathologic condition and activity of the thyroid gland is not known. The most disturbing factor from the surgical point of view is the ease and unexpectedness with which a so-called postoperative acute thyroid crisis is initiated, to which the patient often succumbs in from eighteen to thirty-six hours. The average natural course of the disease is not known; that many patients get well spontaneously is undoubted; that there is an appreciable "medical mortality" is equally true.

There were only eleven deaths following operation; all the patients who were given any type of surgical treatment for the thyroid gland during their present visit, and who died from any cause while under immediate observation in Rochester, are considered to have died from surgery. In all, there were 1,093 operations, giving a mortality based on the number of operations of practically 1 per cent. (1.005 per cent.). However, this percentage is distinctly misleading, as multiple operations, such as preliminary hot water injections and ligations, were performed on many patients in a condition too serious for thyroidectomy. That deaths followed these several procedures was due to bad judgment. That the mortality was low showed an average of good judgment in which surgical preparation and accomplishment must be included. The several procedures represent the gravity of the patient's condition, and each has its definite mortality.

During 1922, ligations or thyroidectomy were performed on 633 patients with exophthalmic goiter. On this basis, the mortality rate from eleven deaths is 1.74 per cent. While this is a true mortality rate, so far as it can be determined for this group of patients at the present time, yet it must be emphasized that some of the patients will come to further operative procedures during the next year, and that surgical procedures were started on certain others during the previous year. Therefore, this percentage cannot be considered as representing a final mortality rate by cases. Each year carries its average; yet, dividing the total number of deaths (eleven), by the total number of new patients with exophthalmic goiter coming to the Mayo Clinic during the year (491), which gives a mortality rate of 2.24 per cent., is fully as much in error in the opposite direction because a risk was accepted in 633 cases. The true mortality by cases, therefore, is less than 2.2 per cent., and greater than 1.7 per cent.; the percentage most exactly representing the true mortality by cases, for a single year for a disease necessitating multiple operations at varying intervals, is the average of the two extremes. On this basis the surgical mortality, by case, for exophthalmic goiter is slightly less than 2 per cent. (1.99 per cent.).

Six of the eleven "surgical deaths" followed either ligations (four deaths), or injection of hot water into the gland (one death), or the subcutaneous injection of procain, preparatory to further operative procedures which were abandoned (one death, not to be credited to procain, but to hyperthyroid crisis). It is beyond the scope of this paper to discuss the cause of death. This phase of the subject will be presented elsewhere; but as all deaths from whatever cause are included, it may be said here that in at least four of the eleven "surgical deaths" the operation was not the primary factor.

The general clinical improvement in the condition of the patient that occurs in the two to three months following ligation is on the average so definite that in all

probability the mortality rate from thyroidectomy is sufficiently reduced to decrease the mortality calculated by cases below what it would have been if thyroidectomy had been undertaken immediately; on this assumption the mortality rate for ligations must be accepted as a legitimate individual risk which results in the end in saving life.

After all, the safety of thyroidectomy is the point of paramount importance, as it is this procedure which places the patient in a relatively safe condition, even if it does not bring about an immediate complete cure. During the year, 523 partial thyroidectomies were performed on 521 patients with true exophthalmic goiter, with five deaths, which gives a surgical mortality, by case, for thyroidectomy of less than 1 per cent. (0.96 per cent.).

What are the factors that have permitted a reduction in the surgical case mortality to less than 2 per cent. in cases of exophthalmic goiter, and the reduction in the mortality from thyroidectomy in this disease to less than 1 per cent. (which was the mortality rate for 1921 in cases of nonhyperthyroid adenomatous goiter), and finally reduction of the mortality rate in the latter condition during 1922 to less than one sixth of 1 per cent. (0.15 per cent)? The influence of the administration of iodin on this reduction will shortly be reported in detail by Plummer, and the details of the surgical technic, by Pemberton and Sistrunk. Suffice it to say here that the reduction in mortality is due to the close cooperation of the medical, laboratory and surgical services in seeking methods of avoiding or decreasing the frequency and severity of the so-called postoperative acute thyroid crisis.

SUMMARY

At the Mayo Clinic, during the year 1922, there were nineteen deaths following 1,983 operations on 1,497 patients for diseases of the thyroid gland, giving an operative mortality rate of 0.96 per cent. Such percentages, which are the common method of presenting statistics on goiter, not only fail to reveal the real truth, but conceal facts which, when brought out by a more detailed study, prove to be of great value. Statistics on surgery for goiter should be carefully and accurately analyzed, and the results presented for each disease on the basis of the number of cases.

An accurate basal metabolic rate is an index of the intensity of the disease in both exophthalmic goiter and adenomatous goiter with hyperthyroidism, and, therefore, in conjunction with other factors is of help in selecting the best time and type of surgical procedure. The basal metabolism is of even more importance as an aid in the establishment of a correct differential diagnosis of the various thyroid diseases, and as a result of its use many unnecessary and sometimes harmful operations are avoided.

In this report all patients who died while under immediate observation in Rochester after surgical intervention on the thyroid gland during their present visit are classified as having died from surgical procedures, regardless of the cause of death. The surgical mortality by case, according to Plummer's classification of thyroid diseases, is: adenomatous goiter without hyperthyroidism, 0.15 per cent.; adenomatous goiter with hyperthyroidism, 3.48 per cent., and exophthalmic goiter, 1.99 per cent. The mortality rate for thyroidectomy in exophthalmic goiter is 0.96 per cent. The surgical mortality represents the combined work of eight surgeons.

IMPLANTATION OF BILIARY FISTULA INTO DUODENUM

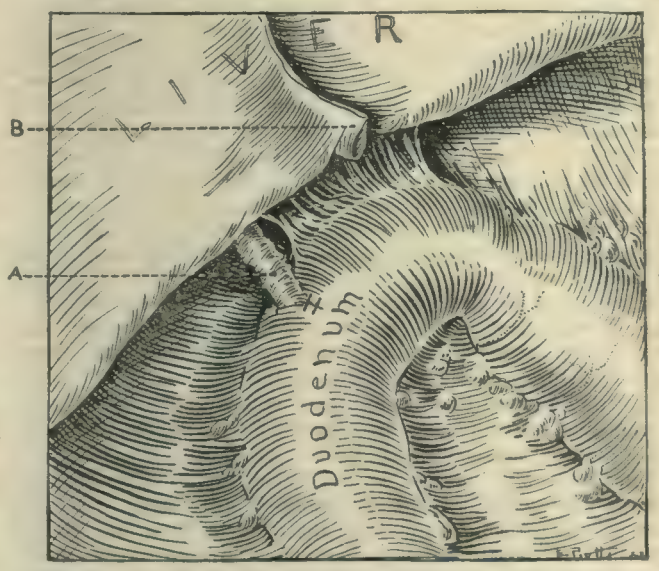
A NEW METHOD OF TREATMENT

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The two cases here reported are published because it appears that Dr. Hugh Williams' case is the first successful transplantation into the duodenum of a common duct fistula; that my case is the second, and that the method is of sufficient simplicity and value to be included in the group of operative procedures available in the treatment of common duct fistula.

REPORT OF CASES

CASE 1.—G. E. M., aged 5 years, white, was operated on, Sept. 3, 1912, at Massachusetts General Hospital. The preoperative diagnosis was embryonic tumor of the right kidney. A large retroperitoneal cyst was found but not identified. It was sutured to the abdominal wall. A section of the cyst



Implantation of fistulous tract into duodenum without dissection of tract from liver bed: *A*, fistulous tract implanted in duodenum; *B*, falciform ligament.

submitted to the pathologist was reported as suggestive of chronic inflammation of the gallbladder. The patient was discharged from the hospital, November 23, with a diagnosis of cyst of the biliary tract.

He reentered the hospital, May 12, 1913, with the statement that six weeks previous to admission the sinus backed up and became puffy, and the bowels were constipated. Since this time, the wound has backed up about every week with the same symptoms. Four days before admission, the patient began to complain of lumbar pain. The temperature was 103 F., and clots of "black stuff" were vomited. He was brought to the accident room, at 8:30 p. m., where a black stool was passed. Physical examination at this time showed a sinus in the middle of the scar of the old operation, draining bile freely. Over the left knee, there were three areas of discoloration. May 9, a blood transfusion was made by Dr. Vincent. The patient was seen in consultation by Dr. Hugh Williams, who advised operation on the biliary sinus. At this time, the stools were clay colored.

The condition improved up to June 25, when an operation for persistent and complete biliary fistula was performed by Dr. Hugh Williams. A circular incision was made about the old sinus, the abdomen was opened by excising the old scar 3 inches (7.5 cm.), the sinus being clamped. Adhesions on being separated revealed an hour-glass gallbladder about the size and shape of a large double peanut, with a cystic

duct about 1¼ inches (3.2 cm.) below the abdominal wall. The gallbladder and cystic duct were removed, and the stump of the duct was tied with fine silk. The adhesions were further separated, and the fistulous tract was found to be continuous with the common duct. A probe could be easily passed down the fistula and up the common duct to the hepatic. The duodenum was adjacent and normal. There was a prolongation of the common duct to the duodenum, but it could not be probed, apparently being obliterated. An intestinal clamp was then applied longitudinally to the duodenum, but opened for one-quarter inch (6 mm.) and anastomosis was done between the fistulous tract and the intestine, the end of the tract being sewed into the side of the intestine with an inner layer of No. 0 plain catgut and an outer layer of continuous silk. A wick was introduced into the side of the suture, and the wound was closed. There was excellent recovery from ether anesthesia.

June 26, the stools showed bile.

June 30, the wick was removed.

July 12, the patient was able to sit up in a chair.

Aug. 4, he was discharged in splendid condition. The wound was dry and solid.

Jan. 16, 1923, Dr. Williams reported that the patient had been seen recently and was entirely well and had been so since the operation.

Case 2.—Mr. G. G., aged 28, was operated on by me for cholecystitis and pancreatitis, Aug. 4, 1922, at the New England Baptist Hospital. The gallbladder was removed; the common duct carefully isolated, and opened longitudinally, and a drain inserted down to the pancreas. The tube was removed from the common duct at the end of fourteen days, following which all bile was discharged through the sinus. The stools became clay colored and remained so up to the time of the second operation, two and one-half months after the first. Since we were certain that the common duct was not cut off or injured at the first operation, it seemed probable that the persistence of the fistula was the result either of an obliteration or stricture of the common duct. Operation for the restoration of the biliary discharge into the intestinal tract was, therefore, undertaken, October 19.

Having in mind the possibility of considerable difficulty in finding and anastomosing the remaining segment of the common or the hepatic duct, I decided to dissect and preserve the fistulous bile tract in order that I might have it as a reserve to implant into the duodenum if necessary. An incision was therefore made around the fistulous tract and it was carefully cored out down to the under surface of the liver, care being taken to leave a thick wall of tissue about the tract.

The abdomen was opened, and when the common and hepatic duct area was exposed, it was found to be involved in such a mass of indurated tissue that I decided on immediate implantation of the fistula into the adjacent duodenum as the first procedure to be attempted. If this procedure failed, an attempt to find and anastomose the duct could then be made at a later operation. In the dissection of the fistula that ran along the inferior surface of the liver, care was taken not to free it from its liver attachment. The part that had extended from the liver edge to the abdominal wall was implanted in the duodenum, after the button of skin only had been excised. The dissected fistula, now represented by a tube of tissue, reached easily to the adjacent duodenum. A small opening was made in that structure by piercing it on the outer side with a sharp pointed hemostat. The opening was dilated until it would take a segment of No. 16 rubber catheter about 1 inch (2.5 cm.) long, about one half of this segment projecting into the duodenum. This was sutured to the wall of the duodenum and its external end was passed up into the open end of the fistulous tract, the end of which was brought down and sutured with interrupted No. 0 chromic catgut to the opening in the duodenum, and this anastomosis buried by inversion in the wall of the duodenum as with an appendix stump. The free portion of fistulous tract was then covered by omentum, as an additional precaution, and the abdomen was closed without drainage.

The wound healed soundly without leakage of bile, the stools being at once normally colored. The patient has progressed to date (three and one-half months after operation), with normal stools and no evidence of jaundice.

COMMENT

In addition to the foregoing procedure, the methods employed in the repair of permanent biliary fistula, in which the lower end of the duct is cut or obliterated, are: 1. Anastomosis of the end of the duct to the duodenum, jejunum or stomach. 2. Bridging of the gap between the end of the duct and the duodenum or stomach by means of a rubber tube, in some cases covered by attached omental grafts, in others entirely uncovered. 3. The fashioning of a new duct by means of a flap of gastric or intestinal wall and the anastomosis of this newly formed tube to the stump of the duct. Several successful operations by all these methods have been reported.

A search of the literature reveals the report of but one case similar to the two cases reported here. Von Stubenrauch [1] in 1906 reported an implantation of a persistent biliary fistula two months after an operation for drainage of the gallbladder and common duct for pancreatitis. In this case, the fistulous tract, 5 cm. in length, was introduced through the pylorus into the duodenum, and because of the resultant narrowing of the duodenum, an antecolic gastro-enterostomy was done. The operation was unsuccessful because of necrosis of the tract, and later a new duct was constructed from a flap of gastroduodenal wall.

The procedure undertaken in my case seemed logical to me for the reason that if the secretory pressure of bile is sufficient to keep an external biliary fistula permanently open, and this is an established fact, there seems no reason why it should not be sufficient to keep an internal biliary fistula open. If such is the case, as seems possible from Dr. Williams' and my cases, transplantation of the fistulous tract is a much simpler operation than the methods used hitherto, and still permits of their employment should this method prove a failure.

Priority as to the conception and successful employment of this method undoubtedly belongs to Dr. Hugh Williams.[2]

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1. Von Stubenrauch: Chirurgischer Congress, Deutsch. Gesellsch. f. Chir. **35**: 39, 1906.

2. While a guest at the joint meeting of the New York and Philadelphia Surgical Societies, held at Mount Sinai Hospital, New York, Jan. 23, 1923, I heard Dr. Howard Lilienthal report, as a new method of treating biliary fistula, the implantation of a common duct fistula into the stomach, at which time the two cases here published were reported in the discussion. As this paper is being written, I have another case of biliary fistula (common duct) which has been transplanted into the duodenum by the same technic. All sutures are now out, and the stools are well colored with bile.

Mentality of Foreign and Native Born Whites Compared.—Statistics compiled by Prof. H. H. Laughlin, Sc.D., assistant of the psychopathic laboratory of the Chicago Municipal Court, and assistant director of the Carnegie Research Bureau, Cold Springs Harbor, N. Y., and sent to Washington, D. C., show that of a foreign born population of 13,920,692 in 1920, about 8,500,000 rated below the average in fundamental intelligence. Of the native born population of 81,108,000, about 39,800,000 were below the average mentally. Among the native white population the number below average amounted to 49 per cent., and among the foreign born to 62 per cent. In the two lowest grades, the disparity was even greater. In a study of the feebleminded and insane, the statistics show that the native white population, with both parents foreign born, has 65 per cent. more than its expected ratio of feebleminded. In the group in which one parent was foreign born and one native born, the percentage of feebleminded was 90 per cent. above the expected average.

THE DISCOVERER OF THE MODE OF PRODUCTION OF BREATH SOUNDS

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In an article recently published in THE JOURNAL, I [1] reported the discovery that it was possible to abolish all breath sounds as heard over the larynx and the chest by a voluntary separation of the vocal cords. The discovery was entirely original on my part, yet it seemed incredible that so simple and easy a procedure as the voluntary widening of the rima glottidis should never have occurred to any one until the present time. A search through the literature now shows that I had been anticipated by nearly a century.

At the session of the Académie royale de médecine, June 10, 1834, Beau [2] described a case in which he heard a very marked bronchial souffle at the level of the subspinous fossa, in a patient with "effusion of the right pleura" who was breathing noisily. Wishing to know how much the noise of respiration contributed to produce the very loud bronchial breathing, he asked the patient to make less noise, but without changing the rhythm or depth of his breathing. It was then noted that the "tubal souffle" diminished in the same proportion as the respiratory sound in the throat. "I then asked," he says, "whether it would not be possible for him to breathe without making the least sound, and he succeeded in doing so after a few attempts, opening his mouth widely. I auscultated again and heard nothing. During all of this time," Beau continues, "respiration had not lost its frequency, and the chest walls rose as rapidly and as amply as before the experiment." In the case of other patients with bronchial breathing, the experimenter obtained similar results. "With all I caused it (the bronchial souffle) to be suspended or diminished in suspending or diminishing the respiratory sound of the throat. From these facts I conclude that the tubal souffle is not the result of the mechanical passage of air through the bronchi but is the resounding (retentissement) of a sound in the throat, and that it consequently differs from bronchophony only because in the latter the form of resounding is more conspicuous and less articulate (articulée)."

Beau then proceeded to study cavernous respiration, reflecting that there is the same relation between the cavernous souffle and pectoriloquy as exists between bronchial breathing and bronchophony, "the cavernous souffle being the index and, as it were, the condition of a perfect pectoriloquy." Experiments with consumptives decided the question that was in his mind. "I recognized that the cavernous souffle, like the bronchial souffle, was immediately dependent on the respiratory sound of the throat."

"But where and how," Beau goes on to inquire, "is the guttural sound produced? I sought light on this question by observing on myself what took place in the interior of the buccal cavity when one breathes naturally in a manner such as to cause a slight sound." Before a mirror, Beau noted movements of the uvula, more marked when the sound was loud, and concluded that the sound was the result of the breaking of the column of inhaled and exhaled air against the anterior and posterior surface of the veil of the palate. "But is this sound not modified and even often produced by the shock of the column of air against the walls of the nasal and buccal cavities and also against the brim of the glottis? I believe so firmly but I can affirm nothing positively in regard to this, my intention being less to explain the cause of the respiratory sound of the upper throat (arrière-bouche) than the influence that it has on the production of the respiratory sounds of the lung."

BEAU'S EXPERIMENTS

Beau then very logically asked himself "whether, if tubal and cavernous souffle are the effect of the resounding of the guttural sound, it is not the same with the sounds of vesicular and tracheal breathing." To answer this question, he retired to a quiet place and experimented with the aid of a pupil. The following are the most important of the conclusions that he reached in these experiments: 1. When the throat sound is suspended (and one suspends it easily by an instinctive dilatation of the superior respiratory passages), the vesicular sound, the bronchial, tracheal and cavernous souffles no longer exist. Respiration, though silent, is performed as usual; and, if one did not feel under the ear the thoracic walls alternately rise and fall, one might believe that the individual no longer breathed. 2. If one suspends the guttural sound in one of the two respiratory movements, one hears no tracheal or vesicular sound in that one of the two movements that is not accompanied by the sound of the throat. 3. If one produces a sound with the lips so as to blow in expiration and to make a whistling sound in inspiration, one hears the same sound in the trachea and in the vesicles. 4. There are introduced into the mouth of the subjects a few sheets of paper rolled in the form of a tube, large enough so that its diameter corresponds with that of the lips widely opened. This tube is pushed on to the middle of the tongue and is held in the direction of the isthmus of the throat. If in this position the subject holds his breath after a deep inspiration and one seizes the moment to blow through the tube against the veil of the soft palate in a manner to imitate the natural sound of the throat, one hears on auscultation tracheal and vesicular sounds, as when respiration was in progress. A note here gives a word of caution. It is important that the subject refrain from closing the glottis after the inspiration, and that he feel the free entrance of air into the larynx, "for one can see that an interruption in the continuity of the respiratory passages must prevent the sound produced against the isthmus of the pharynx from resounding beyond the point of interruption."

As for the origin of the sounds of respiration, "every respiratory sound transmitted by auscultation (that is, the sounds as they reach our ears) is the result of the resonation of the guttural sound in the column of air that fills the bronchial tree. The shock that this column experiences against the isthmus of the pharynx, or the glottis, determines an oscillation which is communicated rapidly throughout its whole extent and to its least ramifications."

ADVERSE OPINIONS

Such an attack on the accepted doctrine of the day naturally excited interest, and several writers assumed the rôle of defenders of Laënnec's theory. Of these, two will be mentioned. Raciborski's "Précis de diagnostic" was translated into English by Minturn Post and published in New York in 1839. Raciborski, after summarizing Beau's views, denies that a sound produced

1. Bushnell, G. E.: The Mode of Production of the So-Called Vesicular Murmur of Respiration, J. A. M. A. 77: 2104 (Dec. 31) 1921.
2. Beau, J. H. S.: Researches on the Cause of Respiratory Sounds Perceived by Means of Auscultation, Arch. gén. de méd. Series 11, 5, 1834.

by blowing against the soft palate is heard in the lungs, and, having denied this, appears to think that all of Beau's claims are satisfactorily disposed of. He apparently did not attempt to repeat Beau's fundamental experiment, "the dilatation of the superior air passages."

This was done, however, by William Stokes, who discusses Beau's experiments in his "Diseases of the Chest," published in 1839. He states that Beau's theory is that the air, striking against the fauces and pharynx, causes vibrations that are communicated downward through the larynx and the trachea. Beau holds, he says, that the mere expansion of the (air) cells produces no sound, and supports the doctrine by adducing the fact that when the individual breathes so as to inflate the lungs without producing the guttural sound, the vesicular murmur ceases to be heard. "I have carefully repeated the experiments of M. Beau and feel convinced that his conclusions are erroneous because I have found in all cases in which his 'respiration silencieux' was performed that I could plainly hear a murmur of expansion in the lung. It is certainly not as loud as natural, but the reason of this is manifestly the fact that to produce silent respirations we must inflate the chest more gently and, of course, with less impulse on the cells of minute tubes." He then brings forward the argument that has had the most weight with more recent authorities who support the view of the intrapulmonary origin of the vesicular murmur. "We can hear a natural respiratory murmur in patients who do not breathe through the mouth and nostrils. Of this we can easily satisfy ourselves by examining a person who has been operated on for laryngeal obstruction. I have now examined eight of these cases and found in all that the respiratory murmur could be heard with ease."

BEAU'S TREATISE

The adverse opinion of such authorities, in the judgment of the medical world of that day, seems to have decided the question of the validity of Beau's conclusions in the negative. In 1856, twenty-two years after the appearance of his article, Beau published a work entitled: "Traité experimental et clinique d'auscultation appliquée à l'étude des maladies de poumon et du cœur." The part of this work that is devoted to the question of the mode of origin of the vesicular murmur brings forward argument and report of experiments for the purpose of defending the propositions that he had enunciated at a so much earlier date. His views as to his fundamental experiments remain unchanged. He emphasizes with greater force the point that, if respiration is continued for some time in such a way that one phase is audible and the other inaudible over the chest, air must necessarily have been admitted, or expelled, during the noiseless phase, thus disposing of the objection that if the vesicular murmur is not heard during inspiration the reason is that air is not admitted. To support this point further, he tied a hog's bladder about the end of a tube, and breathed through the other end of the tube. The bladder, he says, expanded and collapsed. And, he adds, it was possible to abolish the sounds of breathing while using the bladder. But it was in vain that he thus republished and fortified his views. They seem to have attracted little notice and no following, and his name is rarely referred to by later writers on physical diagnosis. There is no occasion for surprise at this fact, for his theory of the production of the sounds of respiration was manifestly incorrect in the view of students of a later day, and that served to prejudice the acceptance of his experimental evidence.

It was Beau's misfortune that he made his discovery at a time when the rôle of the vocal cords in the production of the bronchial sounds of respiration had not been established as it now is. Nor had laryngology been erected into one of the recognized branches of medical science and art even at the time of the publication of his treatise. Liston,[3] in 1840, had reported the successful use of a laryngeal mirror which seems to have been similar to that now used by dentists. As he described it, the instrument was a speculum, or "a glass on a long stalk," and was used, of course, by direct illumination. Since Liston's time, nothing further seems to have been done until Garcia published in 1855 a series of laryngoscopic studies as to the mode of formation of the voice. Czermak began his laryngoscopic studies in the course of the winter of 1857-1858. During 1858, several articles were published in Vienna by him and by Turck, who disputed with him the honor of inventing the laryngoscope, and it is in that year that laryngologic literature may be said to have commenced. Czermak introduced a "large ophthalmoscope" as a reflector, and used artificial light, thus freeing the new art from its former dependence on the sun's rays, and making its systematic study possible. His work [4] appeared first in 1860.

VIEWS OF ANATOMY AND PHYSIOLOGY OF THE LARYNX

Beau's treatise, however, manifests some progress in acquaintance with the anatomy and physiology of the larynx. A change in his views as to the relative importance of the veil of the palate and of the glottis in the production of respiratory sound is shown in the following abstract.

The orifice of the glottis is mobile. Its lumen may be diminished until it disappears, or augmented until its diameter is that of the larynx. In the latter case the inferior (true) vocal cords fill the ventricles, and the superior cords efface themselves. When the lumen is normal (15 cm.), a distinct sound is produced in respiration, which increases with the narrowing of the orifice. The orifice of the glottis constantly presents an obstacle to the passage of air which causes vibrations. The glottic souffle is then heard. It is the sole normal sound that is connected regularly with the respiratory functions, and is the only sound with which henceforth we have to occupy ourselves. The opening of the larynx is immobile. It has a lumen of about 40 cm. If one accelerates the respiratory movements beyond forty-five respirations a minute (the vocal cords being fully appressed), a noise is produced which is heard loudest over the upper portion of the neck. The opening of the larynx has now become the narrowest part of the superior respiratory passages, and this orifice, which causes no sound when the air traverses it slowly, gives rise to sound when the air passes rapidly and in great volume.

From the foregoing, it appears that the larynx is now granted the chief rôle in the production of respiratory sound, but that the relation of the vocal cords to the sound is still not apprehended. The vocal cords for Beau were simply movable obturators which have the effect of increasing sound in proportion to their degree of approximation until their closure causes it to cease. The rima glottidis is still simply a crevice, and the sound produced on the passage of air through it is for him apparently dependent only on the size

3. Liston: Practical Surgery, 1840.
4. Czermak: The Laryngoscope and Its Employment in Medicine, Selected Monographs, New Sydenham Society, 1861.

of the aperture. It might be expected that the writer who so acutely compares bronchial breathing and bronchophony, on the one hand, with the cavernous souffle and pectoriloquy, on the other, would take the next step and see that the mechanism that is known to originate vocal sound must be the one that likewise originates respiratory sound. He was familiar with the experiment of Legallois, who exposed the vocal cords by an incision in the living rabbit and knew their respiratory movements. But he could hardly have seen the larynx of the living man, and was ignorant of the fact that the vocal cords, which shrink into insignificance after death, in life as they overhang the cavity of the larynx are ready when not under willed tension to flutter with the least current of air. In other words, he did not understand that the edges of the relaxed vocal cords assume a rôle in breathing analogous to that of the tense cords in phonation. His statement that, with sufficient rapidity and force of the air current, laryngeal sound is producible when the rima glottidis is wide open could be confirmed only by continuous laryngoscopic observation during the production of the sound. The belief of Stokes that shallow breathing is a necessary condition for the suspension of the respiratory sounds is unfounded.

Beau, in his article, indicates the true nature of the mechanism of dilatation. Speaking of cases of asthma with very labored breathing, he says: "In asthma inspiration is brusque, instantaneous, *silent*, and gives no guttural sound; to make it the patient throws back the head and opens the mouth wide, and this in a convulsive manner. Expiration, on the contrary, is long and noisy. One hears in inspiration no vesicular, bronchial or tracheal sound, although the thorax rises. . . . All of the inspiratory muscles are in a state of spasm, but it is not, as Laënnec thinks, a spasm that narrows the respiratory passages; on the contrary, it is a spasm that dilates them. It follows that the air, traversing rapidly, encounters no obstacle in mouth, pharynx, and glottis, convulsively dilated; there can be then no production of guttural sound, and hence no tracheal or vesicular resonation of the sound." This passage is quoted, not because I wish to side with Beau in his polemic against Laënnec, but for the light that his observations throw on the nature of the inspiratory phase of respiration that is accompanied by intense dyspnea. Other writers state that the vesicular murmur is not heard over the chest. This is generally explained, no doubt, by the assumption that very little air is admitted into the lung. Still, while the lung is undoubtedly overfull of air, it remains overfull. Air is expelled at each expiration, with, however, great difficulty; aeration is imperfect, to be sure, but life is preserved. There can be, of course, no doubt that air is admitted to some extent into the lungs at each inspiration. Now, to one conversant with the slightness of the current of air that will produce respiratory sound when the vocal cords are in their normal relations of approximation, the entire absence of the vesicular murmur is a fact that is of considerable significance in this connection, for it shows that the vocal cords are not in their usual position. The sounds of the trachea during the inspiration of very dyspneic asthma have been studied, so far as I know, only by Beau, who reports their absence.

MECHANISM OF THE NOISE OF RESPIRATION

In ordinary inspiration, the vocal cords diverge from their position of rest; with slight dyspnea (and always more or less in horses), the alae nasi also dilate; in intense dyspnea, the patient instinctively throws back his head, thus straighening the air passages, and opens his mouth wide. Whether the vocal cords are separated to their fullest extent at the same time is not known from other observations than those of M. Beau, but it is probable; the laryngeal muscles are capable of producing a much wider separation of the cords than that of normal inspiration, as I myself have demonstrated.

The process is conceived of in this way: The various dilating mechanisms of the upper air passages are linked together in a system, the various members of which are successively called into play as the nervous stimulation increases. The dilatation of the rima glottidis is the most important of all of the devices for the removal of impediments, even the slightest, to the access of the largest possible volume of air to the imperfectly aerated lung. When, therefore, the experimenter seeks to separate widely the vocal cords, he imitates the paroxysmal dilatation of extreme dyspnea. He throws back his head and opens his mouth wide and, as Beau says, he instinctively makes an effort to open the throat. This amounts chiefly to the activation of the laryngeal dilators, but is accompanied by the sensation of the activation also of the faucial musculature. There can be no question for one who is familiar with the method that, in bringing into play one portion of the dilating mechanism, one almost necessarily sets the whole process into automatic operation. With these muscular contractions is instinctively combined a mighty inhalation of air, so that after inspirations which have been successful in abolishing the vesicular murmur, the lung may be overfilled. Stokes' opinion, already referred to, that "to produce silent respiration we must inflate the chest more gently," is therefore incorrect; the experiment succeeds at first only when the chest is inflated ad maximum, although with more practice it is possible to acquire the knack of keeping the vocal cords separated without simulating so closely in other respects the dyspnea paroxysm.

The objection of Stokes that he could always hear a murmur of expansion simply shows that he had not mastered the method of Beau. It is extremely easy to open the larynx widely enough to eliminate the harsher tracheal sounds—several of my friends proved capable of doing this at the first trial. As I had no guide in my experiments, I for some time believed that the partial opening of the rima which I was effecting had been sufficient to eliminate the tracheal element of respiratory sound, and supposed that the remainder of the sound that persisted in the breathing represented the vesicular element originating within the chest. But further practice showed that the vesicular murmur could also be abolished when the cords were appressed against the walls of the larynx with a greater effort. When the idea occurred to me of checking up the success of the separation of the vocal cords by means of self-auscultation over the larynx through a binaural stethoscope, it became easy to control the procedure, and the complete dependence of thoracic on laryngeal sound was established to my satisfaction. If the larynx was silent during inspiration, an observer, listening over the chest, did not hear the vesicular murmur; and, conversely, if any sound was heard over the larynx, a sound was heard also over the lung.

Sound originating in the larynx and heard in the lung is carried down through the tracheobronchial tube to the air cells, as through a speaking tube. If this were all, tones of any pitch originating in the larynx would reach the ear applied outside the chest; or, more specif-

ically, the ear would hear tracheal breathing, which, of course, it fails to do if the pulmonary parenchyma is normal. The air cells, therefore, do not permit all manner of sounds to pass through them. The only sound that passes with ease is what we call the vesicular murmur, a deep-pitched sound. Investigators, among whom F. Müller of Munich and his associates are prominent, have shown that the pitch of the vesicular murmur and the pitch of the chest note of percussion are the same, and that both are approximately of the pitch of the fundamental tone of the thorax as a resonator. A perfect resonator answers tones of its own pitch and is silent to other tones. The thorax is not a perfect resonator from the standpoint of the physicist, but it would lead too far to discuss its peculiarities in the present connection. It is enough to say that the thorax is necessarily a resonator, just as all air-containing cavities with firm and elastic walls are resonators in the wider sense.

Beau, as has been shown by the preceding quotations, grasps at once the idea that the laryngeal sounds undergo resonation in the thorax. For him, a single sound in the upper air passages undergoes resonation in the various cavities connected with the respiratory apparatus, the differences noted in pitch and quality of tone being due, according to his idea, to the varying size of the cavities concerned. We would say today that laryngeal sound is a noise made up of a large number of individual tones, and that tones are selected by the various resonators (for the bronchi are also resonators) which are of or near to their fundamental tones. Sounds that have been amplified by resonators may owe their characteristics almost entirely to the resonator, and this is more likely to be true of weak tones, such as those of respiration. Just as the tones of the organ are not the tones of the air blast or of the reed, but of the pipes that are stimulated through these means to the production of vibrations of their own proper periodicity, so any noise that is present in the respiratory passages during inspiration, however created, if it contains tones of the proper rate of vibration, will give rise to a sound in the lungs that has the same pitch as that of the vesicular murmur, it may be to a sound indistinguishable from the vesicular murmur by its quality.

Beau is aware of the fact that sound is very easily produced by a current of air that issues from a narrow into a relatively wide air space. In his experiment with the hog's bladder, he is careful to call attention to the point that in this experiment a tube must be employed with an internal diameter at least equal to that of the trachea, which, he states, is about 2 cm. A narrower tube, he says, would produce sound at its extremity. Beau was clear-headed enough to perceive that it would be fatal to the success of his experiment if, though he held the larynx open and abolished the vesicular murmur, he nevertheless permitted a sound to be created within the apparatus which was capable of simulating that murmur. He thus practically solves the dilemma that his experiments create. The experiments have shown that the vesicular murmur depends on laryngeal sound; yet what seems to be the vesicular murmur may be heard, as Stokes, and many others, point out, though the current of air does not pass through the larynx at all in respiration. In view of his ignorance of the physiology of the larynx and of the laws of sound, M. Beau's clearness of vision is extraordinary.

One writer ranged himself at his side in this question. Robert Spittal,[5] in reviewing Beau's article of 1834, states it as his opinion that the guttural sound is loudest and has its main origin at the upper part of the larynx, and is probably produced at the rima glottidis, "where the air in passing to and from the lungs and meeting an impediment to its free passage is thrown into sonorous vibrations." The persistence of respiratory sounds observed by Raciborski in a rabbit, the trachea of which had been cut through, so that the animal breathed through the opening, Spittal thinks, does not affect the theory of Beau. It does not appear that any other writer up to the present time has entertained the possibility that the tracheotomy tube, or other apparatus, that side-tracks the vocal cords might itself become a source of sound. Yet it is extremely difficult, unless one resorts to the precautions urged by Beau, to avoid the production of sound by air which passes through a tube situated, like the tubes under consideration, within resonant cavities, because amplification by these cavities will increase the loudness of a sound that was insignificant, perhaps scarcely audible, outside the body.[6]

As reported in the previous article, I once underwent a laryngoscopic examination in connection with my experiment. The examination was prolonged; the laryngeal muscles wearied under the comparatively unwonted strain; they began to quiver. The resulting quivering of the vocal cords was seen by the laryngologist and felt by the subject. For those who listened with stethocopes over the lungs, it was made apparent by intermittent sounds. The minimal projection of the vocal cords, as they oscillated in the tremulous movement, was therefore sufficient to produce sound audible over the lung. That sound, however, alone was heard, and under the circumstances it was readily identified by its interrupted character as of laryngeal origin; otherwise the experiment would, no doubt, have been adjudged a failure. This experience shows clearly enough what extreme care must be used to prevent sound from causes so insignificant as to be readily overlooked.

Another point, Beau was only too much inclined to the belief that any and all sound in the upper respiratory tract would excite the lung sound; but later writers, as a rule, do not seem to appreciate the full significance of the fact that, independently of such special conditions as result from operative or other instrumental interference, sound may be produced in the upper air passages by vibrations other than those of the vocal cords, which is distinguished with difficulty from the true respiratory sounds. Spittal quotes Magendie[7] as stating that he (the latter) had noticed the sounds referred to by Laënnec as being formed in the back part of the mouth and in the nasal fossae (which Laënnec thought had no effect on respiratory sound), and thinks that they may have some influence on those perceived in the human chest. But we do not need a great man of the past to confirm these views. Does not every auscultator take pains that his subject shall breathe normally, making no noise in the throat or at the lips? Why, if not because such abnormal sounds are transmitted to the lung and may confuse the true breath sounds? And

5. Spittal, Robert: Experiments and Observations on the Cause of the Sounds of Respiration, Edinburgh M. & S. J. **138**: 99, 1839.

6. Baas (Deutsch. Arch. f. klin. Med. **9**: 257) first, after Beau, maintained the laryngeal origin of respiratory sound, modified in the infundibula to become vesicular breathing. He explained the persistence of inspiratory sound when the trachea is cut below the larynx by supposing that the sound originated from the striking of the current of inhaled air against the edges of the forkings of the bronchi. According to him, there is no expiratory breath sound under such conditions.

7. Magendie: Lectures, Lancet, 1834-1835, p. 793.

if abnormal admixtures are thus readily transmitted, what difficulties stand in the way of the transmission of the breath sounds themselves from larynx to lung?

VALUE OF BEAU'S DISCOVERIES

I have been able to confirm by my own experiments the statements of Beau as to the mode of production of the vesicular murmur, of tracheal breathing and of bronchovesicular breathing. I am therefore perhaps better fitted than any other to value at their true worth the discoveries of M. Beau, and it affords me great satisfaction to be in the position to rescue from oblivion, so far as I may, the work of an able man who was in advance of his time.

Beau's discoveries cannot be neglected by students of physical diagnosis, for they are fundamental for a correct understanding of the mode of production of breath sounds, both normal and abnormal. Here, at last, we have the problem put on an experimental basis. It is unnecessary to detail the results of theorizing on these points, for every one knows the variety of hypotheses that have been propounded, especially with regard to the origin of the vesicular murmur. Only one thing seemed settled, and that correctly, namely, the fact that the sound of expiration, as heard over the lung, is conducted from the larynx; but even this the latest writer on the subject, Martini,[8] puts again into question on the ground that bronchial breathing is heard over the seventh cervical vertebra when a tracheoscope is in position, and therefore has its origin in the bronchial tubes.

As I am not in active practice, I have not been able to conduct experiments as to the origin of morbid breath sounds, with the exception referred to above, for in this field the experimenter is obliged to depend on the patient. Beau was fortunate in finding patients both docile and at the same time intelligent enough to acquire quickly the art of opening the larynx.

It is to be hoped that observers who have control of clinical material will apply Beau's method to the study of the mode of origination of the morbid breath sounds.

IS ORTHOSTATIC ALBUMINURIA A UNILATERAL DISORDER?

CLARENCE QUINAN, M.D.
SAN FRANCISCO

Pavy, in 1885, described an affection of the kidneys in which albumin is present in the urine while the patient is up and about, but disappears after rest in bed. Most of his patients were young and apparently healthy persons. Although he was aware that the urine usually remains free from albumin during recumbency, nevertheless he gave it as his opinion "that albumin may be persistently present and yet not necessarily mean that a grave condition exists." Since then, his description of the now familiar orthostatic albuminuria has been confirmed in every particular.

There is but one pathologic report in the literature of the subject. Heubner found a single minute lesion, measuring 1 by 5 mm., in the right kidney of a girl, aged 10 years, who had a cyclic albuminuria, and who died of a cystic glioma of the brain. Otherwise both kidneys were normal.

In this paper I bring together for what they are worth the results of some kidney fixation experiments in a marked case of orthostatic albuminuria. The object of the investigation was to determine, if possible, whether this disorder is always left-sided. My results seem to show that such is not the case. However, as the data are quantitative in character and cover a period of eight years, they may be useful in a small way to others.

Previous work of pertinent interest deals with (1) palpatory albuminuria, (2) movable kidney and lordosis, (3) clinostatic albuminuria and (4) ureteral catheterization.

PALPATORY ALBUMINURIA

Menge, in 1900, demonstrated that albuminuria can be easily induced by manual palpation of the kidneys. His patients, twenty-one in number, all had movable kidneys. In twenty patients the right kidney alone was movable; in one patient both kidneys were movable. Albuminuria was noted in fifteen patients after palpation of the kidneys. In one instance, after manipulation of the right kidney, catheterization of the ureters revealed an albuminuria limited to that side. Menge believes that various unknown factors determine the palpatory sensitivity (Empfindlichkeit) of the organ. He suggests that pressure from without, possibly that due to the clothing, may be a contributory factor in orthostatic albuminuria. Schreiber, Zebrowski and Seelig confirm Menge's results, while Gomolitzky was successful in only eight out of thirty-five cases.

This direct reaction of the cortical pulp to external pressure, and the conditions that govern it, as a practical research problem, may have received less attention than it deserves. The fact seems to established, however, that manipulation of the renal cortex causes albumin to appear in the urine.

Many workers entertain the idea that orthostatic albuminuria connotes a venous stasis due to compression of the renal vein. Here, it is held, renal mobility and lordosis facilitate obstruction.

MOVABLE KIDNEY AND LORDOSIS

Nivière describes the case of a man, aged 20, who had a movable right kidney and orthostatic albuminuria, and he declares that a firmly applied abdominal bandage gave the patient great relief.

Mosny had a similar experience in the case of an hysterical young woman of the same age, who had a slightly movable left kidney. He states that when this kidney was supported with a proper bandage the albuminuria disappeared.

Lury tried to control orthostatic albuminuria in children by manual fixation of the kidneys. This procedure was carried into effect with the child's body bent in lordosis on the knee of an assistant. Albumin completely disappeared from the urine of four patients after fixation of the left kidney, and in three patients after fixation of the right kidney. In four other patients, in order to obtain urine free from albumin, it was necessary to support both kidneys. He does not express an opinion as to the value of bandaging in the treatment of movable kidney, but other workers object to this procedure. Menge, for example, emphatically warns against massage of the kidney region and the use of supporting bandages in nephroptosis. Sutherland, also, who has had considerable experience with this plan of treatment, condemns it.

Jehle made the important discovery that lordosis, in some persons, may exert a definite influence in postural albuminuria, and that, even in the horizontal decubitus, albuminuria can be induced by lying on a hard pillow.

8. Martini, Paul: Studien über Perkussion und Auskultation, Deutsch. Arch. f. klin. Med. **139**: 257.

Just what this curious phenomenon signifies is still problematic. It is usually held to indicate an obstruction of the renal circulation at some point external to the organ. But the explanation that it is due to compression of the renal vein by the advancing lumbar arch, in lordosis, would be more convincing if it were not for the fact that orthostatic albuminuria commonly occurs in movable kidneys. Moreover, cyclic albuminuria is not invariably orthostatic in type.

CLINOSTATIC ALBUMINURIA

Rolleston, in 1902, was first to note the clinostatic form of albuminuria. He states that "in some patients with considerable splenic enlargement, rest in bed or in the recumbent position may be accompanied by albuminuria, and the albumin may disappear from the urine when the patient assumes the erect position."

Amblard made a similar observation in three gouty patients. The urine collected in the period from midnight to 4 a. m. was albuminous—as much as 1 part per thousand—but was free from albumin throughout the day.

Dufour and Muller were able to prove that clinostatic albuminuria is not necessarily of mechanical origin. Their patient, a boy, aged 16, had an intermittent clinostatic albuminuria. They finally discovered that albumin made its appearance in the urine only after the act of masturbation, and therefore attributed it to nervous exhaustion.

URETERAL CATHERIZATION

Vorpahl catheterized both ureters of a girl, aged 12 years, who had orthostatic albuminuria and a left lumbar scoliosis, and found that the albumin came from the right kidney alone. The urine from the left kidney was normal.

Von Stejskal states that in three of his patients the albuminuria was bilateral. Of these, in one patient, he could detect no difference between specimens of urine from the two kidneys. Of the remaining two patients, the albuminuria was predominantly right-sided in one and left-sided in the other.

Sonne found that the albuminuria was left-sided in two out of six patients catheterized in lordosis. He advances the idea that orthostatic albuminuria is always left-sided, and that it is due to compression of the left renal vein by the lordotic vertebral column, the pressure probably being transmitted through the abdominal aorta.

REPORT OF CASE

History.—E. T., a man, aged 23, seen, Jan. 20, 1915, who was apparently in good health and whose family history was negative, had an attack of whooping cough in his seventh year, following which albumin was discovered in the urine. It had persisted ever since. In 1910, he was confined to his bed for five weeks with "kidney trouble"; he felt worn-out Otherwise he had always been free from sickness. He was an ardent sportsman, and for a number of years followed the life of a "field-naturalist." In 1916, he enlisted in the U. S. Army, for service on the Mexican border. Subsequently he transferred to the aviation service, in which he rose to the rank of captain. He was enabled to pass all physical examinations by substituting for his own urine that of a comrade. Shortly after the armistice was declared, after two years of continuous flying duty on the western front, his health broke down. He "got weaker and weaker, lost a lot of weight, and slept heavily." The urine at this time was lessened in quantity and dark in color. He had no localized edema nor any spasmodic symptoms. One month's rest in bed on a milk diet, together with relief from active duty, restored him to his usual health. Since leaving the army, his work, that of "outside solicitor" for a transportation company, had kept him almost constantly on his feet. Sept. 14, 1922, he complained of feeling exhausted; he had "gas-pains" and gastric distress. Rest, laxatives and a smooth diet gave relief. At present, January, 1923, he has every outward appearance of vigorous health.

Examination.—The patient, Jan. 20, 1915, was well developed, muscular, and of erect and athletic figure. There was no lordosis in the upright posture. His height was 5 feet 8 inches (173 cm.), and he weighed 148 pounds (67 kg.). With the exception of a slight facial pallor, he looked physically fit. The right kidney was freely movable; the left could not be felt. In other respects, the examination of the trunk was negative. The superficial and deep reflexes were normal. The eyegrounds were normal. No enlarged glands were felt. The urine contained a large amount of albumin. There were a few hyaline casts in the sediment. He was instructed to bring for examination samples of urine collected (1) before rising from bed in the morning, and (2) after being up and about for some time.

January 22, the two urine samples collected January 21, and a third sample voided at 3 p. m., contained, respectively, 0.75, 6 and 7.5 parts per thousand of albumin. A diagnosis of orthostatic albuminuria was made.

It was not until early in May, 1922, after the lapse of seven years, that I was enabled to resume the study of this patient.

May 4, 1922, the general physical status remained as reported in January, 1915. Blood counts showed 4,500,000 red cells and 7,900 leukocytes. The differential count was: polymorphonuclears, 62; small lymphocytes, 32; large mononuclears, 3; eosinophils, 1, and transitionals, 2. The blood pressure was 122 systolic, 85 diastolic, and was not appreciably modified by change of posture. The eyegrounds were normal. The orthostatic albuminuria persisted. Quantitative precipitation of the urinary proteins took place, on the water-bath, at from 73 to 75 C. The albumin was not precipitated in the cold by acetic acid.

EXPERIMENTS WITH A KIDNEY SUPPORT

Technic.—For a period of five months, from May to October, 1922, various experiments were carried out with a view to control the orthostatic albuminuria by unilateral kidney fixation. This work was facilitated by the employment of the simple mechanical device illustrated in Figure 1. This clamp can easily be taken apart or assembled, and with it one kidney can be braced up securely without exerting pressure on or impeding the movements of the other one. In applying it, we first slightly raised the pelvis on a pillow. The clamp was then adjusted in place, the sliding block was moved to the desired point, some wadding was slipped under the bearing surface, and after the kidney had been pressed upward with the hand, it was held in any desired position by pressure applied with the screw-nuts. Throughout the work, all the urine samples were obtained at the same hour of the morning, before breakfast. In a typical experiment, specimens were taken at 7, 7:20 and 7:40 a. m. The patient voided the first specimen while still in bed, and applied the clamp immediately thereafter. He then assumed the vertical position and moved about as he pleased. At 7:20 the clamp was removed, and the No. 2 specimen was collected. At 7:40 a. m., twenty minutes after the removal of the clamp, the third and final specimen was obtained. The amount of albumin in each sample of urine was determined by Esbach's method.

Results.—Forty experiments were made, in all, and 120 samples of urine were examined.

Appearance: The No. 1 specimens, voided at 7 a. m., usually were clear and normal in appearance. The two specimens collected during the ensuing forty minutes, on the contrary, were never quite clear, and they often more or less resembled suspensions of gum arabic.

Specific Gravity: The specific gravity of the urine collected before the patient rose from bed varied from 1.014 to 1.023. The mean value found for thirty-five of the No. 1 specimens was 1.018. Specific gravity determinations by

weight, on an analytic balance, Jan. 18, 1923, gave values for the urine samples collected on that date as presented in Table 1.

Albumin: Speaking in a general way of the albumin determinations, the results show that the orthostatic albuminuria was not in the least affected by the supporting of either kidney alone or both kidneys together. Lordosis could be ruled out. The grand averages given in Table 2 were obtained from 120 determinations.

At first, the relatively low values obtained for the No. 2 specimens seemed to indicate that the clamp retards albumin elimination. That this is not the case, however, became

TABLE 1.—*Specific Gravity in Orthostatic Albuminuria*

Specimen No.	Time	Posture	Specific Gravity	Albumin Parts per Thousand
1	7:00 a. m.	Horizontal	1.0150	9.90
2	7:20 a. m.	Vertical	1.0160	3.75
3	7:40 a. m.	Vertical	1.0161	5.00

TABLE 2.—*Average Albumin Output in the Urine in Orthostatic Albuminuria (Five Months' Period)*

Specimen No.	Posture	No. of Sp. Examined	Albumin Parts per Thousand
1	Horizontal	40	1.24
2	Vertical	40	4.30
3	Vertical	40	7.60

evident before long, for in every experiment this sample proved to be intermediate in value between the other two. Obviously, therefore, a time element governs the eliminating mechanism; the albumin elimination curve rises gradually.

One rather striking fact may be mentioned that seems to be of some practical value in connection with the treatment of this disorder. During the first three months, it was observed that the No. 1 specimens, voided before the patient rose from bed, contained from 1.5 to 2.5 parts per thousand of albumin. The presence of so much albumin in the urine during recumbency was surprising, because the usual clinical symptoms of nephritis were absent. The blood pressure was 122, the heart sounds were not accentuated, he had no head-

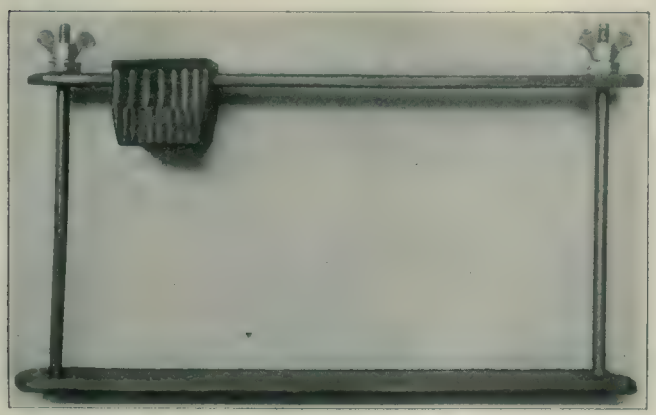


Fig. 1.—Kidney fixation clamp, 7½ by 12 inches; a wooden block 2 by 2¼ by 2 inches slides on a thin strip of ash wood measuring 1½ by 13 inches; the screw bolts are 8 inches long.

ache, and there were no other signs of chronic uremic intoxication. It seemed unlikely, therefore, that such a pronounced clinostatic albuminuria could be regarded simply as an expression of chronic interstitial nephritis. Subsequent experiments strengthened this impression, for it was found possible in the course of time to reduce the nocturnal albuminuria either (1) by having the patient sleep with the foot of the bed raised from 2 to 4 inches, or (2) by a small daily dose of cascara sagrada, with a light mercurial purge once a week.

Figures 2 and 3 give a fair idea of the way the albumin output is affected by this treatment. I suppose these simple measures produce their good effects by counteracting a general tendency to visceroptosis. At night, the gravity pull on an inclined plane promotes replacement; by day, the evacuation of the lower bowel perhaps minimizes a drag in the opposite direction. Whatever the explanation may be, a



A B C

Fig. 2.—Esbach tests: appearance after twenty-four hours; *A*, horizontal specimen, 7 a. m., patient recumbent; *B*, first vertical specimen, 7:20 a. m.; *C*, second vertical specimen, 7:40 a. m.; kidneys free.

combination of these two principles, together with plenty of rest and a smooth diet in which milk predominates, is worth trying in any case of orthostatic albuminuria in which reconstructive treatment seems worth a trial.

All the urine samples collected in the vertical position (Nos. 2 and 3) gave uniformly high albumin values. But as

TABLE 3.—*Albumin Elimination During Period of Eight Years in a Case of Orthostatic Albuminuria*

	Albumin in Parts per Thousand		
	7:00 a. m. Patient Horizontal No. 1	7:20 a. m. Patient Vertical No. 2	7:40 a. m. Patient Vertical No. 3
Jan. 20, 1915.....	0.75	...	6.0
May 4, 1922.....	2.25	4.0	8.0
Jan. 18, 1923.....	0.90	3.75	5.0

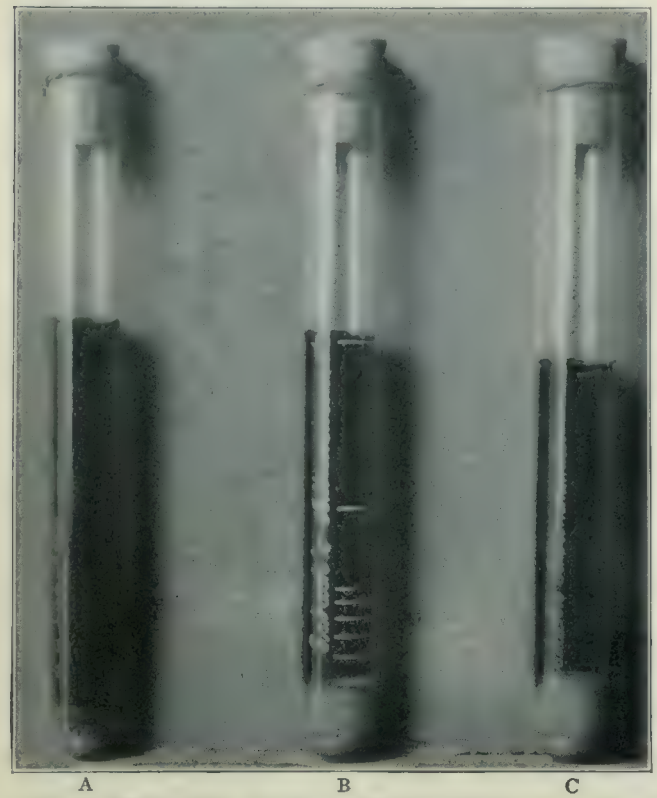
the figures noted from week to week do not vary much from the general averages already given, a detailed report of them seems unnecessary.

The fairly constant character of the albumin values in this case is best shown in a comparison of the data noted at different times throughout a period of eight years (Table 3).

COMMENT

A man, aged 30, erect of figure, muscular and free from lordosis, for at least eight years has had a clino-orthostatic albuminuria with slight evidence of nephritis. The clinostatic albuminuria varies from 0.4 to 2.5 parts per thousand of albumin; the orthostatic albuminuria from 5 to 8 parts. Most of the time his health has been excellent, but, at rare intervals, he has

had attacks of "kidney trouble." Mentally, he is highly temperamental, and he is rather easily depressed. His right kidney is freely movable. Experimentally, the orthostatic albuminuria is not affected by the supporting of either kidney alone or both kidneys together. On the other hand, the clinostatic albuminuria can be greatly reduced by having him sleep with the foot of the bed raised a few inches. How are these facts to



A B C

Fig. 3.—Esbach tests: appearance after twenty-four hours; effect of raising foot of bed 4 inches; *A*, horizontal specimen, 7 a. m., patient recumbent; *B*, first vertical specimen, 7:20 a. m.; *C*, second vertical specimen, 7: 40 a. m.; kidneys free.

be interpreted? Obviously, they lend no support to Sonne's theory that orthostatic albuminuria must be left-sided. On the contrary, the circumstance that the clinostatic albuminuria quickly diminishes when the bed is raised would tend to focus attention on the freely movable right kidney as the seat of the disorder. Unfortunately, I was unable to examine this patient by ureteral catheterization, and therefore cannot settle this point by direct evidence.

CONCLUSION

I would suggest that the results which other workers have obtained by various experimental methods are of such a conflicting character that it appears impossible to uphold a purely mechanical theory of orthostatic albuminuria. There are most likely several unknown factors to reckon with, one of which, quite possibly, will have to be sought in the autonomic nervous system.

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Tuberculosis Campaign.—For the time being, it seems the part of wisdom for the organized tuberculosis movement to broaden its horizon and its scope; to take cognizance of all of those agencies and means of health promotion which may contribute to the efficiency of its work, looking forward to a day when it will become practicable to consolidate all of those organizations whose work is so closely akin.—George T. Palmer, *Am. Rev. Tuberc.* **3**:275 (July) 1919.

CONGENITAL SARCOMA OF KIDNEY IN A CHILD OF TWENTY-NINE DAYS*

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The object of the report of this case is to emphasize (1) the value of complete cystoscopic examination in children; (2) the fact that urograms are just as essential in the examination of infants as in that of adults, and (3) that local anesthesia may be used for nephrectomy in infants.

REPORT OF CASE

History.—A boy, aged 29 days, admitted to the urologic service of the New Haven Hospital, Nov. 22, 1921, the first child in a family in which there had been no other pregnancies, gave an unimportant family history. At birth, which was natural and spontaneous, the weight was 7 pounds 8 ounces (3,398 gm.). During the first, third and fourth days of life, the child passed blood in the urine. On the fourth day especially, the urinary passage resembled pure blood which was bright red. Blood was also noticed in the stools at this time, by the family physician. Subsequently, no blood was noted from either tract. The child, although a breast-fed infant, did poorly and lost weight, so that when 14 days old, it weighed only 5 pounds 4 ounces (2,378 gm.). It then began to gain, took the feedings well and slept well. The stools were often green and their passage was attended by a moderate amount of colicky pain. Vomiting and regurgitation were present, but were not a marked feature until a week before entry to the hospital, when the child vomited half or more of every feeding. The mother had noticed that the abdomen had gradually become larger, and she had thought it unusually large since birth.

Physical Examination. — The weight was 7 pounds (3,171 gm.); rectal temperature, 99.6 F.; pulse, 96. The child was pale and poorly nourished. There were no congenital malformations of head or extremities. The main features of interest were found in the abdomen, which was enlarged, especially on the right side. Collateral circulation was present in the large, distended superficial veins of the abdominal wall. The outline of a mass could be seen in the right side during respiration. Palpation revealed a mass filling the whole right side of the abdomen and extending a finger's breadth beyond the navel. The lower border reached to the crest of the ilium and the symphysis pubis. Superiorly, the mass escaped beneath the costal margin. The demarcation between it and the liver was not definite. The upper border of the liver, as noted by percussion, reached to the fourth interspace in the right nipple line. The lower pole of the mass was rounded and smooth. Its surface was also smooth and tense, and gave the sensation of a cystic tumor.

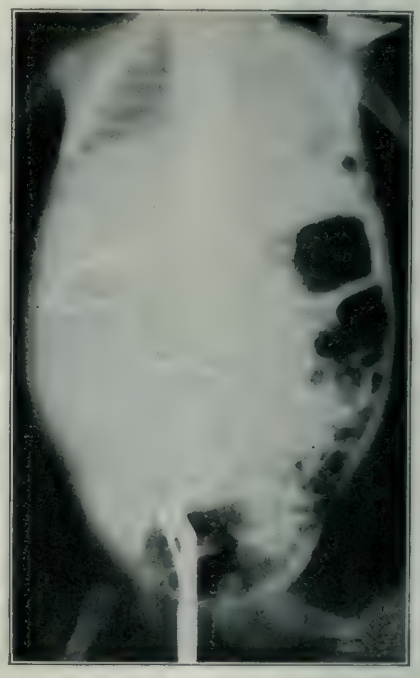


Fig. 1.—Course of ureter and transverse position of the kidney pelvis. The kidney tumor occupies the right side of the abdomen, replacing the intestine to the left.

* From the section of surgery, Yale University, and the surgical clinic of the New Haven Hospital.

It descended slightly with respiration, and could be moved slightly upward and a little to the left. The percussion note over it was everywhere flat. The spleen was not enlarged. The left kidney could not be felt. A roentgenogram showed that the right side of the abdomen was occupied with a mass which pushed the intestines over to the left side.

Cystoscopic Examination.—Enough ether was administered to produce relaxation, so that a child's cystoscope could be introduced. The bladder capacity was 100 c.c. The inner

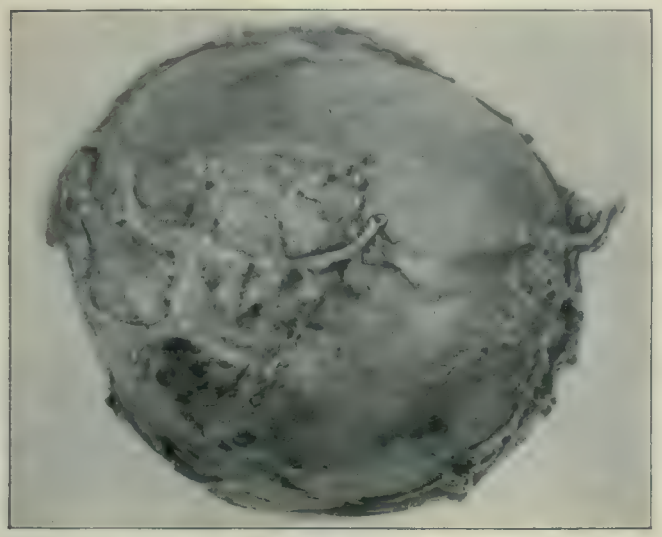


Fig. 2.—Kidney tumor showing the ureter.

surface of the bladder was of normal appearance. The ureteral orifices were large, and were normally situated. The left functioned, but the right did not. A No. 5 catheter was passed for a distance of 4 cm. up the right ureter, where it met an obstruction. No function was obtained, while the left could be seen to act more rapidly than normal. An effort was made to take a urogram, 7 c.c. of sodium bromid solution being injected. The roentgen ray showed the ureter to be well filled and its course abnormal. It passed from the right side upward, toward the left opposite the second lumbar vertebra on the left, thence upward and outward toward the right side. The pelvis of the kidney was crescent shaped, and lay more or less horizontally, opposite the twelfth dorsal vertebra. The large and small intestines were seen on the left side of the abdomen.

Laboratory Findings.—The urine was free from blood, albumin, pus cells and casts; the red blood count was 2,920,000; hemoglobin, 65 per cent.; white blood count, 9,800; differential count: polymorphonuclears, 70 per cent.; large mononuclears, 6 per cent.; small mononuclears, 22 per cent.; transitionals, 2 per cent. A blood smear showed nothing of note. The Wassermann reaction was negative.

The clinical diagnosis was cystic tumor of the right kidney, most probably sarcoma.

Operation.—A nephrectomy was done under local anesthesia (procain, 1:200). The tumor was so large that approach was made through the right rectus muscle by an incision extending from the costal margin to the pelvis. The muscles were separated, and the peritoneum was opened, exposing the tumor, which extended from the liver above and overlapped it, to the pelvis below and to the umbilicus medially. It was adherent above to the liver and gallbladder, medially, to the ascending colon, and at its lower pole, to the cecum and appendix. The adhesions were carefully freed, and the tumor was mobilized. But, as it was otherwise impossible to demonstrate the pedicle, the cyst was tapped, and about 100 c.c. of blood and gelatinous fluid was aspirated. The pedicle was then clamped and ligated. The wound was closed in layers, with a small rubber tissue drain inserted at the lower angle. The patient withstood the procedure quite well, showing marked shock only when the pedicle was being held tense.

Convalescence.—The postoperative course was uneventful save for slight superficial infection of the wound, which was controlled with mercurochrome-220 soluble. The skin separated, but the muscle sutures held. Although the child was markedly emaciated, and the transformation from breast to artificial feeding was in process, it gained weight, and was discharged in thirty-four days, completely cured. There was a bulging of the right side of the abdominal wall, as a result of weakness of the right rectus muscle, but there was no hernia. This bulging persisted for about six months. The child was seen recently, twelve months after operation. It now weighs four times the original weight, and is able to walk at the age of 13 months. So far as can be determined, there is no recurrence of the tumor.

The Tumor.—Grossly, the specimen was a cystic kidney, the size of a grapefruit. Section showed that it consisted of one large cyst, not connected with the pelvis, which was flattened, and extended along the side of the thin wall of the cyst. The ureter was of normal size and was patent. There was a very small amount of renal tissue, which extended along the pelvis and included the cyst wall. The cyst contained sanguineous fluid, organized blood clot, and grayish white, soft, friable tissue. There were also small areas of yellowish white tissue projecting from different portions of the cyst wall, the greater portion of the growth being opposite the pelvis, but not involving the cavity of the pelvis, which was normal, white and glistening. Several blocks were cut for histologic examination.

Microscopically, the thin wall of the cyst showed a simple fibrous wall, and in places a thin layer of kidney tissue presenting no other changes than that due to pressure. The tumor consisted of a dense mass of spindle shaped cells, which in most sections were densely packed together. In a few areas, the structure was more delicate, simulating a myxomatous tissue, with relatively long fusiform-like cells separated by a small amount of nonstaining intercellular stroma. The tumor cells were large and showed marked variation in size and shape, and in the chromatin of their nuclei. Many of the cells were deeply pyknotic. No typical mitotic figures were seen. There were occasional minute focal accumulations of brownish pigment. There was nothing to suggest a mixed tumor.

The pathologic diagnosis was congenital spindle cell sarcoma of the kidney.

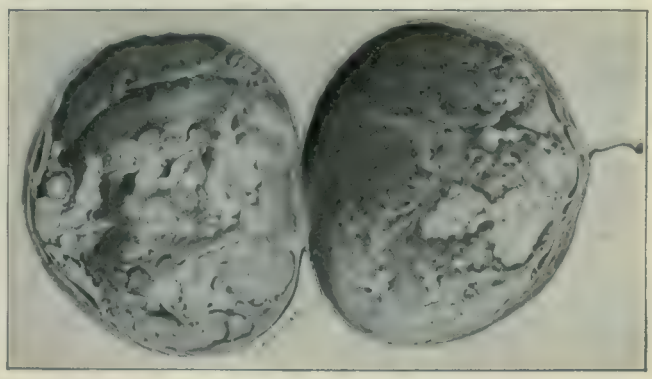


Fig. 3.—Kidney tumor: cross section.

COMMENT

The literature is not lacking in case reports of congenital sarcoma of the kidney, but one finds surprisingly few cases followed by cure. Morris,[1] Albarran and Imbert,[2] Rosenstein,[3] Kelynack[4] and Walker[5] discuss the subject thoroughly and correlate the clinical and operative data up to the year 1900; but since then there

1. Morris, H.: Diseases of the Kidney, 1886.
2. Albarran, J., and Imbert, L.: Les tumeurs du rein, Paris, 1903.
3. Rosenstein, Samuel: Pathologie und Therapie der Nierenkrankheiten, 1870.
4. Kelynack, T. N.: Edinburgh and London M. J., 1898.
5. Walker, S.: Sarcoma of Kidney, Ann. Surg. **26**, July, 1897.

have been only a few scattering references to single cases. Many of these do not indicate progress. Walker [5] presents the details of seventy-four cases, and shows, in an analysis of 138 cases, that congenital sarcoma is most commonly found between the first and the second year, when 19.5 per cent. occur. From 6 months to 1 year, 13 per cent.; under 6 months, 5 per cent.; at birth 6.5 per cent., and from the seventh to the eighth month of embryonic life, 2 per cent. are seen. The case here reported belongs to the group under 6 months, and the discussion will be limited to sarcomas appearing during the first six months and the first twelve months. Walker,[5] in his series of seventy-four cases, gives an account of two patients aged under 12 months—one, 11 months, who died two days after a nephrectomy, and one 6 months, who was operated on by Schmidt [6] successfully and remained well for four years. No cases are reported in detail below the sixth month. This condition must be more rare than reports would have us believe.

The causes for such tumor growth are hypothesized as: 1. Trauma, as there was a history of injury in thirty out of 142 cases. Rindfleisch sought to explain by "the injury done to the regulating nerve fibers thus permitting their abnormal growth." 2. Misplaced embryonic tissue (Cohnheim's theory). 3. Heredity, as a predisposing factor. 4. Stone as an irritating influence, which is seldom seen in adults and never in children. 5. Exanthems, especially scarlet fever. Infectious diseases are so common in children without the development of renal sarcoma that little credence can be placed here.

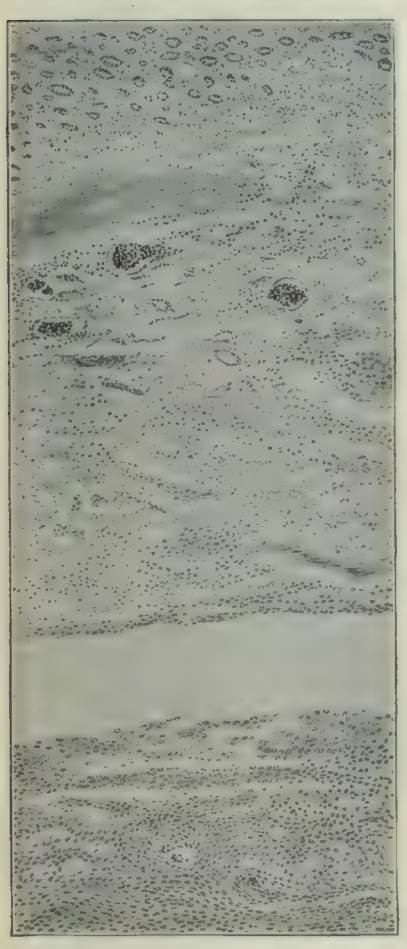


Fig. 4.—Section of kidney tumor showing junction of kidney and tumor tissues. (Low power.)

The diagnosis in many of the cases was delayed until several months after the onset of symptoms. Early diagnosis is the panacea for malignant conditions. Now that cystoscopy has been so perfected that ureteral catheterization and even pyelography are possible in infants both male and female, we may expect early diagnosis and better results. If there is any question of doubt about an abdominal mass being liver, kidney or something else, a diagnosis of the kidney lesion can be accurately determined so that we need no longer hesitate, "wondering what it is." So far as can be ascertained, my patient is the youngest male infant in whom a diagnosis of congenital sarcoma of the kidney has been made by the cystoscopic method. The cardinal symptoms of tumor, pain, hematuria and cachexia, although all present during some phase of the tumor development, were not obvious in many cases. Tumor, being the most prominent sign, was confused with enlarged liver. Secondary symptoms of pressure were common, especially those of pressure on the stomach, such as noted in the case here reported. There was no ascites, edema or varicocele, yet the superficial abdominal veins were prominent, indicating both pressure and collateral circulation.

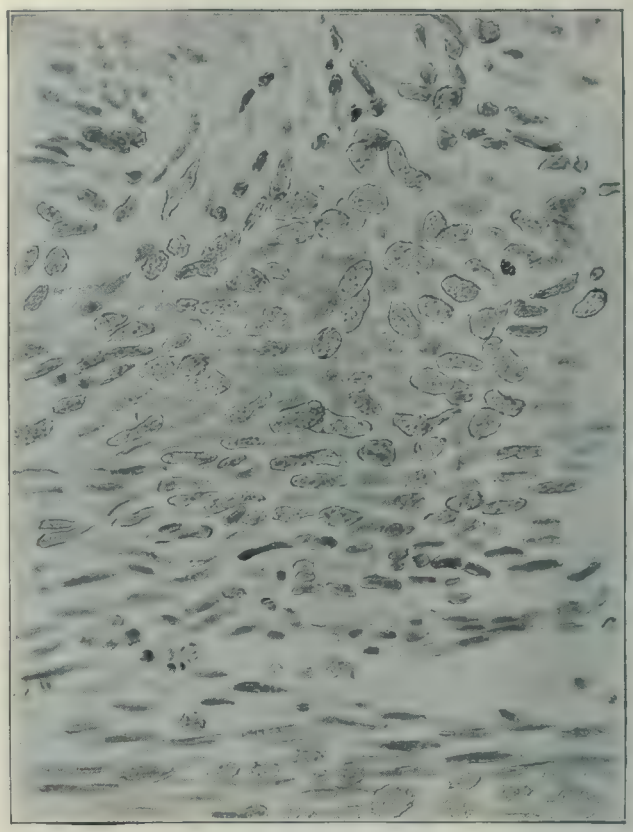


Fig. 5.—Section of kidney tumor. (High power.)

The operative mortality is so appalling that operation seems almost inadvisable; but with the newer methods of anesthesia and with better knowledge of preoperative and postoperative difficulties, we should hear better reports following nephrectomies in children. In Walker's series of seventy-four cases, twenty-seven patients died of shock and hemorrhage. Eight in this group who were under 2 years of age died within four days. The anesthetic administered was ether or chloroform. Granting that children take general anesthetics well, it may be assumed that, since 38 per cent. died as a result of the operation, the anesthetic played a much greater part in the mortality than was thought. In my case, operation was performed under local anesthesia successfully; and only at one time did the infant show signs of shock, and that while the pedicle was being held tense. Drug stimulation was not necessary. Hypodermoclysis of 150 c.c. of physiologic sodium chlorid solution was given between the scapulae twice during the first twenty-four hours after operation. Fluid

6. Schmidt: München. med. Wchnschr. **39**: 256, 1892.

ingestion is just as important in infants as in adults, to allay shock and promote renal secretion.

Added to the appalling statistics of operative mortality are the discouraging end-results, due to recurrences and metastasis. Congenital sarcomas grow rapidly and prove fatal early. Walker reports that without operation these patients live 8.08 months, and with operation, 16.77 months. In his series of seventy-four cases, only one patient under 1 year was cured by operation, and only four under 14 years, a percentage of 5.47 cures. Recurrences took place in from three to eighteen months. No child under 2 years who died of recurrence lived longer than eleven months after the operation. Hence, it is fair to believe that, since my patient was only 29 days old when operated on, has gained four times its weight, has lived twelve months, and is in perfect health, without any signs of recurrence, a cure may be expected.

330 Cedar Street.

FRACTURE OF THE SPINE OF THE TIBIA

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The condition with which we are concerned in this paper is one of rather extreme rarity. In reviewing the literature, it is difficult to find very much written on the subject. In all probability, the injury occurs more frequently than the records would indicate, as in the last six years I have seen two cases.

REPORT OF CASES

CASE 1.—In the fall of 1917, at Base Hospital No. 9, American Expeditionary Forces, a patient was brought in with a severe knee injury. He was about 19 years old, and while playing football was tackled round the knees and thrown to the ground. He experienced a severe twist in his knee as his body lunged, and when he attempted to get up the knee was found to be severely injured. Several hours after the accident he came under our observation, and at this time presented an extremely painful, swollen and discolored knee. There was extensive ecchymosis, heat, increased fluid, and almost complete limitation of motion. There was no marked lateral mobility. A roentgenogram (Fig. 1) showed a fracture of the upper end of the tibia in the knee joint with a fragment including the entire spine of the tibia, which was definitely separated but displaced upward very little. An ice bag was applied, and the leg elevated and immobilized with a posterior splint. Unfortunately, I was unable to see the patient later, as he was transferred after a short time to another hospital. I also regret that I have no records on this case except the roentgenogram. The foregoing notes are not complete, as they are merely from memory.

CASE 2.—J. H. V., aged 16, admitted to the Hospital for Ruptured and Crippled, Aug. 2, 1922, was tackled about the knees in November, 1921, while playing football, and thrown violently to the ground. As he fell he felt something snap in the left leg, and experienced sudden, severe pain in the knee. He was treated for a few days for a "sprained knee" by a lodge physician. For four months he was unable to use the leg, from that time had pain in the joint when stretching out the leg, and found the knee stiff after sitting for any length of time. Examination was negative except for the left knee. On walking there was a slight limp. There was no tenderness, redness, swelling, heat or discoloration. No lateral mobility was found, and flexion was normal, but extension was limited about 10 degrees. A roentgenogram (Fig. 2) taken at this time showed a fracture of the external tubercle of the spine of the tibia, with two small fragments detached but not much displaced. This picture, along with the limitation of complete extension, established the diagnosis.

August 3, a large, U-shaped incision through the skin and subcutaneous tissues was made about the patella, giving a flap with base upward, which was retracted. A longitudinal cut was then made through the center of the quadriceps tendon, the aponeurosis over the patella, and the patellar ligament. The patella was then split along this line with a chisel, and the fragments were retracted laterally. Most of the fat pad behind the patella was removed, and an excellent exposure of the joint was thus obtained. The spine of the tibia was found to be fractured, just as one would expect after seeing the roentgenogram. The small bone fragments were embedded in fibrous tissue, and in this way attached to the tibia. The crucial ligaments were seen posterior to the fracture, and appeared normal, as did all other structures in the joint. Moving the knee demonstrated that this mass became



Fig. 1 (Case 1).—Fracture of upper end of tibia in the knee joint, with the fragment including the spine of the tibia.

jammed between the femur and tibia and prevented extension beyond 170 degrees. The mass of fibrous tissue, including the bone fragments, was excised, and full extension was then possible. The fragments of the patella were allowed to go back in place, and the longitudinal incision was closed with three chromic and several plain catgut interrupted sutures. The patella was not sutured. The skin incision was closed with continuous plain catgut sutures. An alcohol dressing was applied and a tight muslin bandage from toes to groin, with the leg extended and the foot elevated.

There was no unusual reaction after the operation, and the wound healed by primary union. Active motion was instituted immediately, and walking was begun on the tenth day. At this time motion was painless and was free from 90 degrees to 170 degrees. The patient left the hospital on the eighteenth day with normal function. The patient was seen two months later and again five months after operation, and at both times walked without a limp, had normal motion, and stated that he had had no discomfort of any kind. A roentgenogram taken after the operation merely showed that the fragments of the tibial spine had been removed

COMMENT

This case may be considered solely a fracture of the spine of the tibia. In the majority of cases there is some injury to the crucial ligaments. If this case had been seen early, I believe that the conservative treatment of rest and immobilization would have been tried; but from the findings at operation it was certainly proved that there would always have been limitation of complete extension, and discomfort due to the jamming of the mass between the femur and tibia.

Fracture of the spine of the tibia has never received much consideration, although some of the cases referred to by Fosdick Jones [1] date back prior to 1873. The first operation was performed by J. Hogarth Pringle, and reported by him in 1907. The best account of the lesion was by Sir Robert Jones [2] in 1913, when he reported a group of seventeen cases of injury to the spine and crucial ligaments. Fosdick Jones mentioned these and nine other cases, and also reported seven cases from Denver. This total of thirty-three cases up to this time has led to the belief that the condition is



Fig. 2 (Case 2).—Anteroposterior view showing two fragments of external tubercle of spine of tibia.

extremely rare, but I rather think this is a false impression. So far it has apparently not been considered of sufficient frequency to be noted in textbooks of orthopedic surgery or fractures, as I was unable to learn much on the subject from such sources.

The cause of this lesion is always some severe traumatism, usually something that holds the leg and causes the body to twist violently with the strain at the knee joint. It is associated so frequently with rupture of the crucial ligaments that it more or less makes us consider the two together. In most cases of fracture there is a rupture of one or both crucial ligaments or else a severe injury with torn lateral ligaments and fracture of the tuberosities of the tibia when the spine fracture is really of secondary importance.

The mechanism involved in this fracture may be one of two types. The spine may be broken off by impingement of a femoral condyle, most likely the external margin of the internal condyle, directly on the tibial spine. Freiberg [3] lays considerable stress on the proximity of these two structures, and shows how the spine may injure the condyle in the condition with which he deals. The other possibility, and to me the most likely mechanism, is that in a twisting injury the strain is brought on one or both of the crucial ligaments, and if they do not rupture they tend to damage the bone at their insertion. Sir Robert Jones refers to this type as an "avulsion." A very unusual case was reported by Kahle [4] of fracture of the internal condyle of the femur by pull of the posterior crucial ligament. In this case the fracture occurred at the upper end of the ligament rather than at its insertion into the tibia. In fractures about the ankle we see fragments of the internal or external malleolus which have been pulled off by the lateral ligaments, showing that the ligaments often can stand more strain than the bone near their insertion. This I consider a parallel condition to our present one.

If cases are seen early, the diagnosis may be made in severe injuries of the knee with signs of pain, tenderness, swelling, limitation of motion, particularly complete extension, and with lateral mobility in some of the cases. When seen late, as in the second case here reported, there may be only slight blocking of full extension, and some discomfort. The diagnosis can really be definitely made only by roentgen-ray examination.

The treatment should be conservative, with ice bag, rest and immobilization, even for many weeks if the patients are seen soon after injury. In the late cases this treatment may be tried, but I believe that operation is most always necessary. If the crucial ligaments are ruptured, they will generally become repaired by the conservative treatment; but in rare cases it may be necessary to suture or reconstruct them.

The operation is best accomplished through a split-patella route, as advocated by Jones.[5] This gives excellent exposure, and does not lead to any ill effects on the structure of the joint.

From the scanty literature, we must assume that the ultimate result in all cases is very satisfactory, as no unsuccessful cases have been reported.

CONCLUSIONS

1. Fracture of the spine of the tibia is a rather unusual condition, but not so rare as one would assume from reviewing the records.

2. It is due to a severe traumatism, usually of the twisting variety.

3. Rupture of the crucial ligaments is a frequently associated lesion, and is probably due to pull by these ligaments.

4. Diagnosis is difficult without the roentgen ray.

5. Conservative treatment is usually successful in recent cases, and occasionally in old cases.

6. In old cases, particularly with blocking of extension, operation is indicated.

7. Operation through a split-patella incision is the best, and removal of the offending fragments is very easy.

8. The final results are excellent in all cases; for, if the conservative treatment does not give a perfect recovery, operation will accomplish this end.

119 West Fifty-Eighth Street.

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2. Jones, Robert, and Smith, S. A.: Brit. J. Surg. **1**, No. 1, 1913.
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5. Jones, Robert: Notes on Military Orthopedics, 1917.

Value of Pasteur's Discovery.—Huxley estimated that the money value of Pasteur's vaccination treatment was sufficient to cover the war indemnity paid by France to Germany in 1879.

APPLICATION OF SWIMMING POOL SANITATION TO THE PUBLIC BATHING BEACH *

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The approved sanitation of swimming pools requires attention to certain details of construction, treatment of water used and regulations for the bathers entering the pool. Pools constructed with smooth or glazed walls and rounded corners lend themselves to easy cleansing. An overflow gutter about the edge serves to skim off floating débris and acts as a cuspidor for the bathers. The desire for some active disinfectant within the water itself has made the addition of chemical substances more popular than either ozone or ultraviolet ray treatment, both of which sterlize the water outside the pool. Chlorin is the disinfectant of choice because of its ease of application, either as chlorinated lime or as liquid chlorin, because of its high germicidal property and its low cost. Bathers are usually required to take a complete shower bath with soap before entering the pool, and those suffering from any infectious disease are excluded.

Commonly the pools are of two types: the "fill and draw" pool that is cleaned out and refilled at stated intervals, and the "constant refiltration type," in which the water circulates continuously through certain treatment devices outside the pool, the water being used over and over again.

The nature and source of the water being the same as that supplied to the community for drinking purposes, it is apparent that its control and treatment in

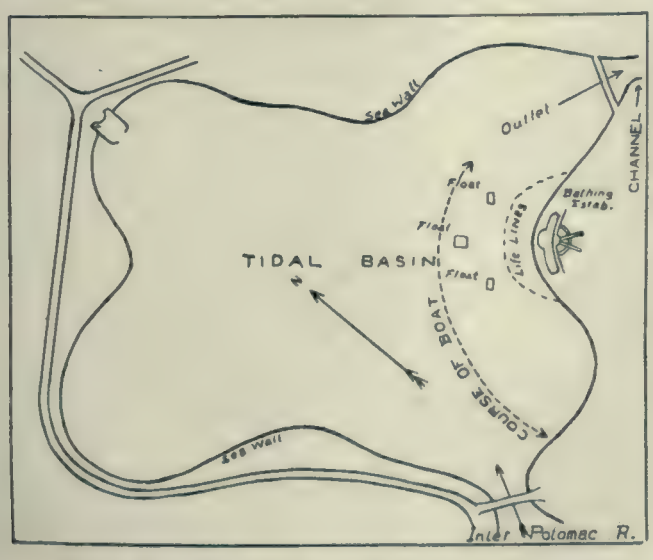


Fig. 1.—Situation of Tidal Basin and route of Chloroboat.

swimming pools aim to prevent the spread of communicable disease from one person to another, by disease germs introduced into the water by carriers of such organisms. A disease virus being liberated into the water by one bather might infect another bather if the germicidal property of the chemical in the water was not sufficient to destroy it. Such infections as the typhoids, dysentery, diphtheria, tuberculosis, common colds, streptococcus infections, conjunctivitis, skin infections, vulvovaginitis and some protozoal infestations are susceptible of being transmitted in this manner.[1]

The bathing beach on the shore of a lake, river or ocean is not commonly suspected of assuming a rôle in the transmission of these infectious diseases. The reason for this supposed freedom from danger lies in the enormous dilution at once apparent. However, aside from the possible transmission of disease from an infected bather to a susceptible one, the problem of infectious disease arising from water polluted by sewage is becoming more important at the bathing beaches near all large cities. Even when domestic sewage



Fig. 2.—Chloroboat; engine in bow of boat forces water through the chlorination device, the treated water being reintroduced at the stern of the boat through a double hose which extends 3 feet below the surface.

passes through a disposal plant, there is still danger of pollution by the fluid effluent from it. The chemical engineer's statement that he is discharging an "effluent which is clear," of "high relative stability," "non-putrescible," and containing an "optimum dissolved oxygen content" cannot be accepted by the sanitarian as proof that this water is not dangerously polluted with disease producing micro-organisms.

For example, such a clear, chemically satisfactory effluent from the modern sewage disposal plant at Baltimore contains more than 250,000 bacteria for each cubic centimeter, with a high percentage of acid formers (presumptive *B. coli*). Sedimentation, storage, digestion, filtration and aeration have removed the putrescible organic content, but the bacteria contained in the sewage may have largely passed through. Successful chemical disinfection of raw sewage, or the liquid effluent from disposal plants, has been successfully carried out by several municipalities. Here again chlorin seems to be the disinfectant of choice.

TIDAL BASIN IN WASHINGTON

In Washington, D. C., the public bathing beach is located on the shore of an artificial lake, called the Tidal Basin (Fig. 1). At high tide this basin contains approximately 323,000,000 gallons of water, and is 110 acres in area and 9 feet deep. It connects with, and obtains its water from the Potomac River; a tidal gain and loss equivalent to about one fifth of the volume of the basin occurs twice daily. By means of automatic gates, water enters with the incoming tide from the Potomac River and discharges at ebb tide into the Washington Channel.

Sewage from the city of Washington, with a population of 467,000, is disposed of untreated by pumping it into midstream of the Potomac River, 2½ miles below the bathing beach. Water within the Tidal Basin is highly polluted with this sewage, as is apparent by chemical and bacteriologic analyses.

* From the Laboratory Division, Army Medical School, and Office of U. S. Public Buildings and Grounds.

1. It is theoretically possible that certain helminth diseases are also transmissible in this way.

CHLORINATION OF TIDAL BASIN WATER

To overcome this condition, the U. S. Army engineer officer in charge of United States public buildings and grounds has attempted chlorination of the water within the basin. At first the Potomac River water was chlorinated at the entrance gates. This showed a beneficial effect on the water within the basin; but from the bacteriologic point of view it was not wholly satisfactory. In an attempt to attain greater safety by treating the beach water more directly and continuously, a chlorinating apparatus was mounted on a motor boat which could closely circuit the beach, especially during bathing hours, and thus treat this water more directly.

A standard United States Navy motor boat was equipped with a dual M. S. V. pedestal type of chlorin control apparatus. This is a recently developed apparatus, is extremely simple and rugged, and is well adapted to the rough handling and vibration of a small open boat. A high speed four-cylinder gasoline motor connected with a centrifugal pump is mounted in the bow of the boat. The water pressure is maintained within desired limits by regulating the speed of this

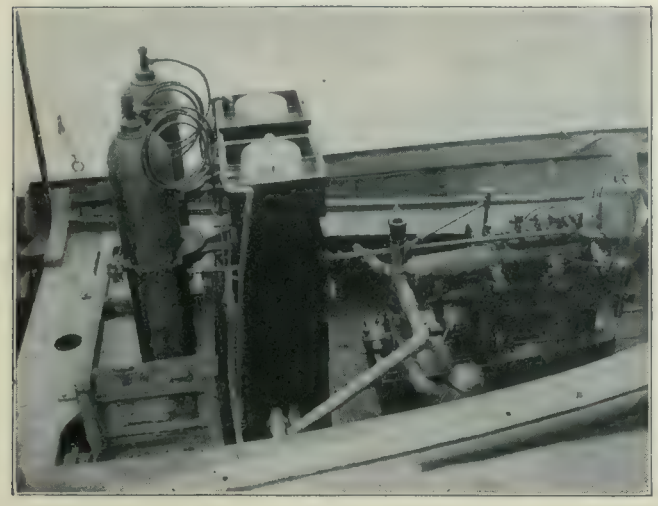


Fig. 3.—Chlorin control apparatus and water pump.

engine, and thus also the rate at which chlorin gas is admitted to, and absorbed by, the water in the vacuum bell jar. Between 600 and 800 pounds of liquid chlorin is introduced daily, chlorination being started one hour before bathers are admitted to the water and continued throughout the bathing period. An attempt is made to maintain a residual chlorin content of between 0.02 and 0.5 part per million in the beach water.

There are two operators in the boat; one, the pilot, attends to the marine engine; the other operates the chlorin apparatus and water pumping engine. The latter man makes frequent rough qualitative tests for free excess chlorin in the water by taking a 50 c.c. Nessler tube of water and comparing the color developed by the addition of 0.5 c.c. of orthotolidin solution with that of prepared standards. The proximity of the boat to the beach and the speed of chlorin introduction are governed by these simple analyses.

During the past season, daily quantitative tests for residual chlorin and complete bacteriologic analysis of beach water were carried out in the laboratories of the Army Medical School. Samples for these tests were collected independently at different hours each day, and at different places and depths within the life lines on the beach. They have shown a residual of chlorin varying between 0.01 and 0.8 part per million, the average sample showing about 0.2 part per million. The bacteriologic analyses have been particularly satisfactory. From a total count of more than 175,000 bacteria for each cubic centimeter contained in the water entering from the Potomac River, chlorination has caused

Table 1.—*Sanitary Chemical Analysis (Parts per Million) of Water Entering from Potomac River (Average of Several Determinations)**

Odor	None
Color	25
Turbidity	Very slight
Total solids	115
Ignition	Slight charring
Alkalinity as calcium carbonate	125
Cl as chlorids	15
N as nitrates	None
N as nitrites	0.008
Sulphates as sulphuric acid	None
Oxygen consumed	5
Free ammonia	0.026
Albuminoid ammonia	0.035
Temporary hardness as calcium carbonate	65
Permanent hardness as calcium sulphate	95
Iron	0.5

* Standard Methods of Water Analysis, American Public Health Association, 1920.

a reduction to an average of less than 100 bacteria for each cubic centimeter; the *B. coli* in untreated water from 500 for each cubic centimeter to its occasional presence in two or three of five 10 c.c. portions. It has been noticed that anaerobic lactose fermenters are not affected by chlorin of this concentration. These organisms belong to the *Clostridium welchii* group.

Table 2.—*Bacteriologic Analysis of Untreated Potomac River Water**

Total count	175,000 per c.c.
Total red colonies on lactose plate	500 per c.c.
Lactose broth fermentation	+ in 0.1 c.c.
Bacillus coli confirmed	+

* Standard Methods of Water Analysis, American Public Health Association, 1920.

RESULTS OF BATHING BEACH SANITATION

Several hundred thousand persons bathe at this beach each season, and no water-borne infections traceable to such bathing have occurred during the last two seasons. No objection to the chlorin in the water has been made by the bathers. If the concentration of free chlorin is kept below 0.5 part per million, its presence is not even detectable by the average bather. Life guards who have been in the water more or less every day for two seasons have shown no irritation of the skin or mucous membranes.

Table 3.—*Bacteriologic Analysis of Water on Bathing Beach**

Total count	100 per c.c.
Total red colonies on lactose plate	4 per c.c.
Lactose broth fermentation	± in 10 c.c.
Bacillus coli confirmed	±

* Standard Methods of Water Analysis, American Public Health Association, 1920.

Regulations at this beach exclude persons suffering from contagious diseases. While such a regulation seems desirable, its strict enforcement does not seem practicable when applied to the general public. The same may be said of the shower bath preliminary to entering the beach. The question of expectoration and cleansing of the nostrils while bathing seems more

serious, and yet 90 per cent. of all bathers do this frequently and quite unconsciously.

It is thought that this chlorin treatment takes care of any ordinary soiling of the water by infected bathers along with the destruction of bacteria from the constant sewage pollution, and that its continuance represents a cheap insurance against water-borne epidemics.

PRIMARY CARCINOMA OF THE LIVER*

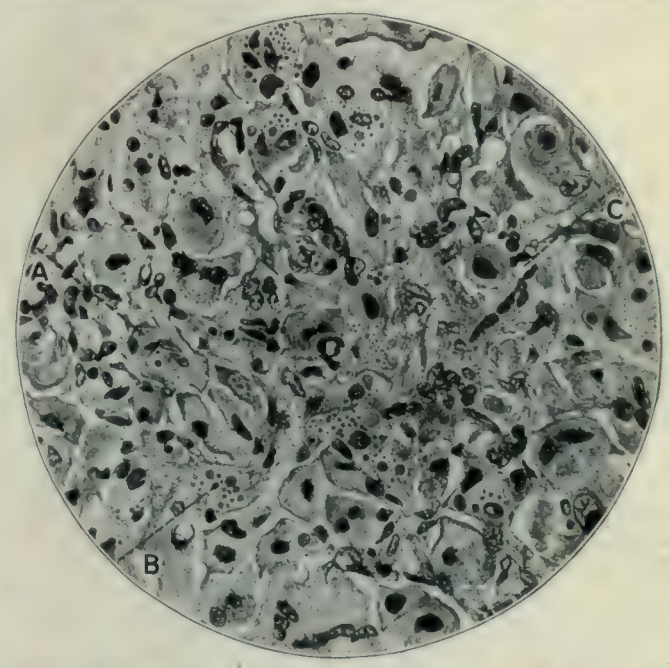
B. J. CLAWSON, M.D.
AND
V. S. CABOT, M.D.
MINNEAPOLIS

Data concerning primary carcinoma of the liver previous to 1870 are apparently not to be relied on, as primary and metastatic carcinomas were not well differentiated. The many writers reporting primary carcinoma of the liver agree that it is rare. In 1890, von Hansemann[1] gave a report of 258 cases of malignant epithelial tumors of the liver, four of which were primary. Goldzieher and von Bokay,[2] in a series of 6,000 necropsies, found eighteen definite primary carcinomas. Eggels,[3] in his review of the literature up to 1901, reported 163. Karsner[4] reviewed the literature up to 1911, and reported nine cases coming under his observation. Winternitz[5] summarized the reports up to 1916, and decided that primary carcinoma of the liver occurred in from 0.028 to 0.3 per cent. of all necropsies. In a series of 3,700 postmortem examinations at the Johns Hopkins Hospital, he found three cases. Many scattered individual cases have been reported since 1916. In general, these reports agree with those previously given. In the 5,100 necropsy reports at the University of Minnesota there is but one primary liver carcinoma—the one reported in this paper.

This condition has been found at practically all ages. Griffith[6] compiled fifty-seven cases in children ranging in age from 1 year to 16 years. Wollstein and Mixsell[7] reported a case in a child of 4 months. Dansie[8] compiled twenty-three cases in children under 2¼ years of age. In the cases reported by Eggels[3] and Yamagiwa[9] the majority were found in the sixth and seventh decades. Karsner[4] concluded that primary carcinoma of the liver was more frequent in men than in women, and occurred most frequently in the fifth and sixth decades.

A relationship seems to exist between cirrhosis of the liver and primary carcinoma. Karsner agreed with most of the reports in stating that cirrhosis was present in almost all cases. In 107 cases reviewed by Winternitz, cirrhosis was present in 87 per cent. Pirie[10] emphasized the significance of cirrhosis as a predisposing factor in the relatively large number of primary carcinomas of the liver in the natives of Africa, and suggested that schistosomiasis might be the cause, since this has been shown experimentally to be a cause of cirrhosis of the liver. The frequency of cirrhosis is greater in the liver cell type than in the intrahepatic bile duct cell type. Both Winternitz and Karsner are convinced that these tumors are unicentric in their development.

The liver cell carcinomas, according to Ewing,[11] fall into three anatomic groups: the primary massive liver cell carcinoma, the multiple liver cell carcinoma, and the carcinomatous cirrhosis. The first occurs as a single yellowish friable mass in either or both lobes, but mostly in the right. Commonly, several smaller secondary tumors are present in the liver. Both primary and secondary tumors tend to become soft, necrotic and hemorrhagic. The blood and bile color makes them resemble the melanoma from which they must be differentiated. A more or less wide variation in histologic structure exists, yet there is always a close resemblance to liver cells in morphology and staining properties. The cellular arrangement may be in cords closely resembling liver cell cords, in adenomatous clusters, or all order of cell arrangement may be lost and the cells may assume a diffuse irregular arrangement. The second gross type or the multiple liver cell carcinoma differs from the solitary type by the presence of many tumor nodules throughout the liver, none of which are more definitely primary than the others. The third group shows a diffuse arrangement in a diffusely cirrhotic liver. The individual cells in all these types vary in size and shape and are acidophilic, with large or small, irregular, hyperchromatic or hypochromatic nuclei in which frequent mitotic figures are present. Giant cells and multinucleated cells are frequent. Bile is commonly but not always found in the tumor cells.



Section of tumor from pancreas, reduced from a drawing × 325: *A*, multinucleated cell; *B*, bile pigment; *C*, capillary.

Extrahepatic metastasis is not uncommon. Metastasis into adjacent parts, such as the periportal, pancreatic and retroperitoneal lymph nodes, frequently

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* From the Department of Pathology, University of Minnesota Medical School.

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9. Yamagiwa: Zur Kenntniss des primären parenchymatosen Leberkarcinom (Hepatoma), Virchows Arch. f. path. Anat. **206**: 437, 1911.
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11. Ewing: Neoplastic Diseases, Ed. 2, p. 682.

occurs. Metastasis into other parts of the liver is common. Catsaras [12] reported a case in which there was metastasis into the head and neck of the right femur. The lungs are a common site in general metastasis. In Eggels' series of 163 cases, definite metastasis occurred in 66 per cent.

REPORT OF CASE

A white man, aged 22, was always well until the summer of 1921, when he had several periods of suffering from epigastric pain and nausea, each period lasting three or four days. In March and April, 1922, he had similar attacks. About the last of May, 1922, he began having persistent epigastric pain, which continued until his death, Oct. 30, 1922. The sclera first became icteric, June 22, 1922. A mass was palpated in the liver immediately below the costal margin. The urine contained bile. The blood contained 4,900,000 erythrocytes and 9,100 leukocytes. The blood Wassermann reaction was negative at all determinations. July 8, 1922, the abdomen was explored. About 100 c.c. of a yellow, serous fluid was found in the peritoneal cavity. The liver was studded with many yellowish masses varying in size from 1 m. to 1.5 cm. The gallbladder was thickened and matted in a mass involving the cystic and hepatic ducts. A diagnosis of inoperable carcinoma was made. The patient made a good recovery from the operation, but his condition grew worse with an increasing icterus until death occurred.

A necropsy limited to the abdomen was made on the day of death. The body was poorly nourished, and a marked icterus was present. There was no ascites. The liver extended 10 cm. below the costal margin, and was much enlarged. A large, whitish, hard nodule was present in the right lobe. Numerous smaller, greenish white nodules were scattered over the surface of the liver. On section, a large tumor mass was seen to occupy most of the right lobe and part of the left. The mass was greenish red to white, was firm, and grossly resembled a melanoma (a tumor from which bile stained hepatomas must be differentiated). Several other similar smaller masses were scattered through the liver. The gallbladder was thickened, and was studded with many tumor nodules. Bile could not be expressed from the common bile duct. An involved lymph node was pushed into the lumen of the hepatic duct. The lymph nodes about the pancreas and bile ducts, and those in the retroperitoneal region were greatly enlarged and similar in appearance to the tumor in the liver. A tumor mass was present in the pancreas which was similar in appearance and consistency to the tumor in the liver.

Histologically, in the uninvolved liver a considerable amount of cirrhosis was present. In the area near to the tumor mass, scattered here and there, were typical solitary tumor cells which showed large irregular hyperchromatic nuclei often containing mitotic figures. Giant cells were present. There were also many lymphocytes and polymorphonuclear leukocytes in the cirrhotic areas. The cirrhosis was more or less diffusely distributed, but the bulk of it was in close relation to the periphery of the lobules. In the tumor mass, connective tissue trabeculae extended irregularly through areas of the tumor. A few bile ducts were present. There was no attempt to form lobules. Many capillaries were found throughout the tumor. The tumor cells were arranged mostly in cords of single cells, which branched and anastomosed. Some areas were adenomatous in appearance, but the large part of the tumor showed a diffuse, irregular grouping of the tumor cells. Large multinuclear cells and giant cells were numerous. The individual cells varied greatly in size. Some nuclei were hyperchromatic, while others were hypochromatic. Many mitotic figures were present. Many of the cells were darkly stained with bile pigment, which was removed from sections by treating with chloroform. This pigment can also be removed by soaking sections for a short time in a 10 per cent. solution of sodium hydroxid. This does not differentiate the pigment from melanin, for some melanins are soluble in alkaline solutions. Sections of a melanotic tumor were treated with chloroform, but the melanin was not affected. The structure of the metastatic nodules in the pancreas and lymph nodes was similar to that of the large tumor in the liver, except that no bile ducts were found.

This tumor seems to be an example of the massive solitary liver cell carcinoma. It is similar to most of the previously described liver cell carcinomas in structure, in being associated with cirrhosis, and in producing metastasis into adjacent parts.

12. Catsaras: Liver Cancer with Metastasis in Bones, Ann. de méd. **10**: 295, 1921.

TRYPANOSOMA CRUZI IN THE TISSUES OF THE ARMADILLO*

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CHARLESTON, S. C.

In 1912, Chagas [1] reported finding *Trypanosoma cruzi* in the hind gut of *Triatoma geniculata,* which was collected in the burrows of the armadillo (*Tatusia novemcincta*) in the zone in which American trypanosomiasis is endemic. Following this he found the trypanosomes in the blood of the armadillo, from which he was able to infect guinea-pigs, and these presented all the phenomena of parasitization by *Trypanosoma cruzi.* Since then the trypanosome has been found in

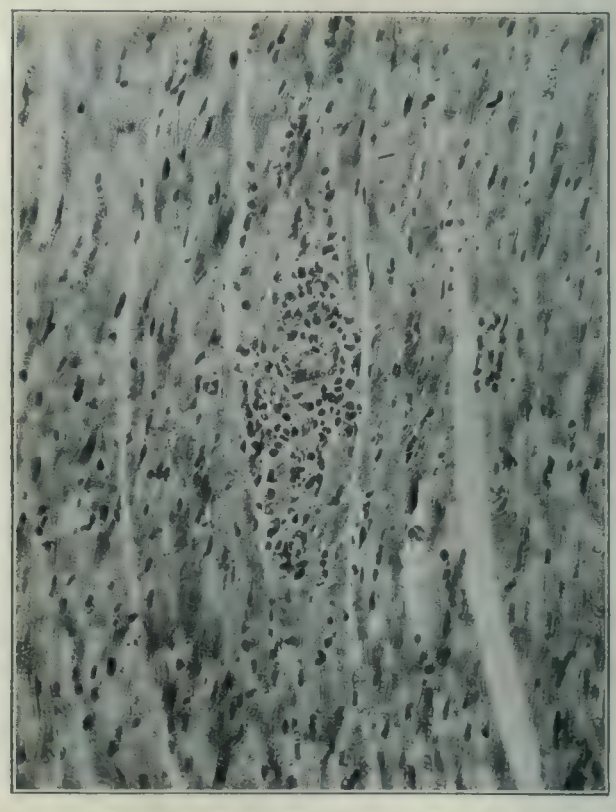


Fig. 1.—Section of heart of armadillo (infested with Trypanosoma cruzi), showing perivascular infiltration with mononuclear cells.

the blood of the armadillo in places far removed from human habitations.

From these findings Chagas concluded that the armadillo is the vertebrate reservior of *Trypanosoma cruzi.* The trypanosome of the armadillo is carried by *Triatoma geniculata,* which accidentally frequents human residences, infecting human beings; and the

* This work was done at the Oswaldo Cruz Institute, Rio de Janeiro.
1. Chagas, C.: Brazil-med., 1912, No. 30.

human infection is carried on by *Triatoma megista*. *Triatoma infestans* and *Triatoma sordida* have also been found infected, and Chagas concluded that several kinds of blood-sucking insects may act as hosts to the trypanosomes of vertebrates. He further referred to the possibility that this is a case in which the parasite of a wild animal may adapt itself to the human organism and carry an infection, or, vice versa, that a disease-producing parasite of man may adapt itself to a wild animal, perhaps without pathogenic action.

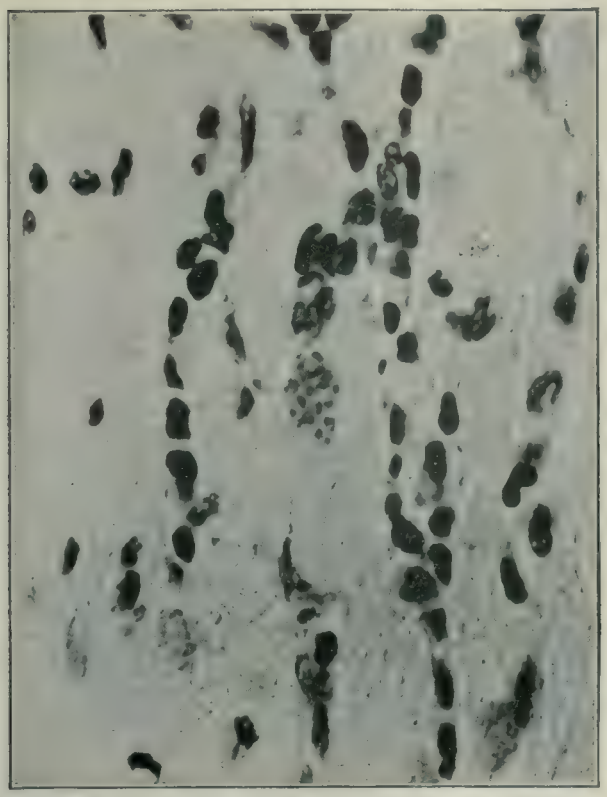


Fig. 2.—Section of heart of armadillo showing parasitization of muscle fiber by T. cruzi.

Trypanosoma cruzi has also been found in domestic animals, such as the cat and dog, in households heavily infested by *Triatoma megista*, which is generally recognized as the chief transmitter of the human disease.

Up to the present time, the parasite has not been demonstrated in the tissues of the armadillo, nor have lesions attributable to it been described in this animal.

I have recently had the opportunity of examining an armadillo that was brought to the Oswaldo Cruz Institute from Lassance, the center of the endemic zone of Chagas' disease. This armadillo was captured in the wild state and presented a spontaneous infestation with trypanosomes. These trypanosomes were numerous in the peripheral blood, were morphologically identical with *Trypanosoma cruzi*, and infection experiments on guinea-pigs have proved their identity with that parasite.

This armadillo I killed with chloroform, and performed a necropsy at once. The gross necropsy findings were not striking, other than the presence of a hemopericardium due to cardiac puncture performed to withdraw blood for inoculation of the guinea-pigs.

Examination of the heart of this armadillo has shown the presence of lesions of the myocardium, which will be described and illustrated in detail, and parasitization of the cardiac muscle fibers. An interesting finding was the presence of a parasitic thrombus in a small artery in the myocardium, this thrombus being literally filled with *Trypanosoma cruzi*. The trypanosome in this heart assumes the same rounded, leishmania-like form that it does in the human cases. The trypanosomes were rare in the sections that have been studied, thus presenting an analogy with the chronic cardiac human cases.

Neither lesions of the myocardium nor parasites were found in sections taken from the apex of the heart. Further sections taken from the region of the auriculoventricular sulcus showed a marked infiltration of the type that I have come to consider characteristic of the trypanosome infection. Thus encouraged in the search for parasites, I was soon able to demonstrate them as illustrated. The infiltration is almost exclusively of the mononuclear type of cells, occurring in small groups scattered about the vessels and between the muscle fibers. In some cases the accumulations of cells form veritable cuffs about the vessels, of a thickness of from seven to ten layers of cells. Between the muscle fibers there are seen strands of these cells, and there is also a considerable multiplication of the nuclei of the muscle fibers. Fibrosis is not present except to a very slight extent just beneath the epicardium. This lesion is similar in many respects to that encountered in human syphilis, and is identical with that found in human trypanosomiasis. The lesion has not been described as a characteristic of trypanosome infections in the heart when the infection is with other trypanosomes than *Trypanosoma cruzi*, but I have abundant material showing that it is a characteristic of this infection, and forms one of the best criteria for the diagnosis of the disease.

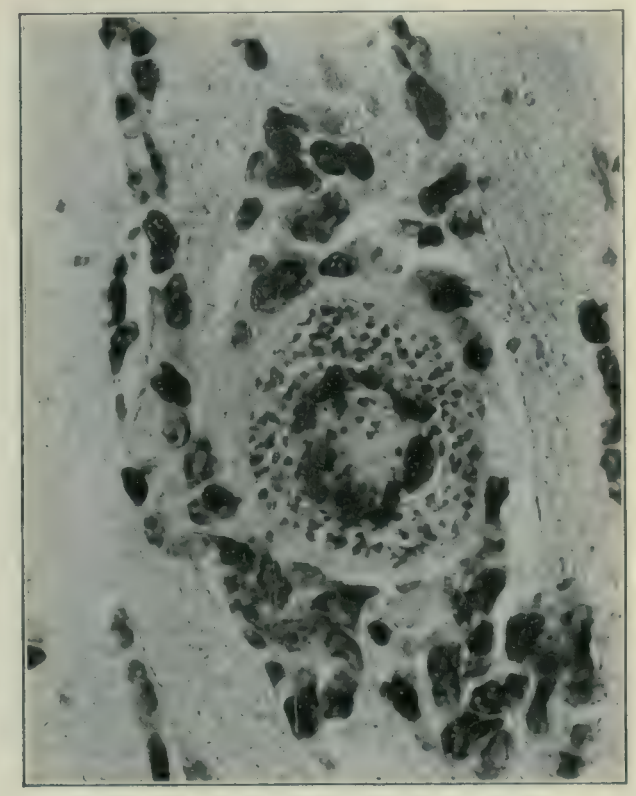


Fig. 3.—Section of heart of armadillo showing T. cruzi within a thrombus.

The parasitized fiber that is illustrated, when seen in one plane, shows approximately fifteen of the trypanosomes, in some of which all the features of this form of the trypanosome can be seen. In the region of this fiber there is a considerable infiltration between the muscle fibers, but the fiber itself does not appear to

have undergone regressive changes. On the contrary, it appears somewhat broader than the neighboring fibers.

The other organs of this armadillo showed no discoverable histologic lesions that could be attributed to the parasitization.

This finding of the parasite and lesions attributable to its presence in the heart of the armadillo is of significance in showing that the trypanosome is essentially a histoparasite in all animals examined, and that it is pathogenic for the armadillo, although this pathogenicity may be slight.

CALCIFICATION OF THE OVARY

REPORT OF CASE

T. C. BOST, M.D.
CHARLOTTE, N. C.

This case is reported because of its interest and because of the rare occurrence of the condition. Moschcowitz [1] in 1916 compiled five cases and made a pathologic study of the specimens. Dicken [2] has since reported another case. The case here reported brings the total to seven. The specimen is the largest on record.

In this group of studied cases, two specimens contained osseous tissue in addition to calcium. They all were of stonelike consistency, with no ovarian tissue present. This does not include the cases in which there were mere deposits of lime in the ovary, which have occasionally been observed by the pathologist and also by the surgeon at the time of operation.

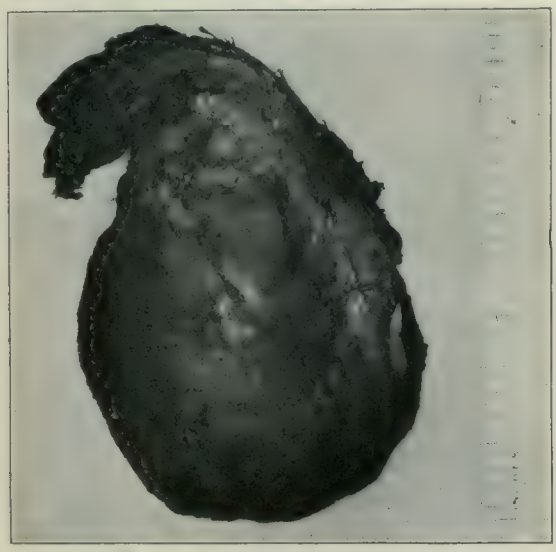


Fig. 1.—Specimen as removed, with fallopian tube attached (actual size).

REPORT OF CASE

History.—B. M., aged 38, married, with one son, aged 16, gave a negative family history, and previous personal history which had no bearing on the case up to the age of puberty. The menses began at 14, were fairly regular and normal for about ten years, and then gradually became very irregular, with menorrhagia and metrorrhagia and severe attacks of cramplike pain in the back and lower abdomen. These grew more frequent and progressively worse, especially as to pain in the back, radiating down the left leg. Also the irregular bleeding became more marked. There were no miscarriages.

Examination.—The general appearance was somewhat anemic, but the patient was well developed and rather obese. There was a slight tenderness over the lower abdomen, and a very hard irregular mass with limited mobility was palpable above the pubes. On pelvic examination, two lateral masses could be made out in addition. All were only slightly movable, with slight tenderness. There was a slight bloody discharge with no characteristic odor. The cervix was apparently normal. Urinalysis revealed nothing abnormal. The leukocyte count was 9,000; red blood count, 3,900,000; hemoglobin, 80 per



Fig. 2.—Specimen sawed open with probe inserted in tube.

cent. Wassermann reaction was negative. The preoperative diagnosis was fibromyoma of the uterus and ovarian cyst.

Operation and Result.—The uterus contained a large multiple fibroid about the size of a half-gallon measure; the right ovary was degenerated into a cyst about the size of a small orange, and the left ovary was of stonelike hardness and about the size of a hen's egg. All were involved in very dense adhesions, evidently of long standing. Panhysterectomy was done. The patient made a good recovery and returned home in two weeks. I have recently heard from the patient and from her physician that she has been completely relieved, and is in good health two years after operation.

Pathologic Report (by Dr. Eli Moschcowitz).—The specimen consisted of a mass measuring 4.75 by 3.75 by 3 cm., apparently occupying the site of the ovary. A normal fallopian tube was attached to the upper surface of it. The mass, which was long and hard, with a surface rough and shaggy, was slightly uneven, but the general shape was that of a flattened egg. On section, the mass was found to consist of a very dense calcified structure covered by a very thin fibrous capsule. The lower surface of the mass resembled bone in structure, consistency and color. The surface was comparatively smooth and mottled yellow. No soft tissue was noted in any portion. The tissue appeared of uniform bony hardness.

Microscopic Structure: There was uniform calcification of a comparatively dense hyaline connective tissue matrix. The lime was deposited in various sized irregular masses, many of which are confluent. The masses were irregular in outline. The edges appeared scalloped or crenated, and the deposition of lime followed the structure of the connective tissue matrix, so that it appeared spongy and even vacuolated. Sometimes the lime had been deposited in a larger connective tissue space, so that it appeared encapsulated. In places, the lime deposit did not quite fit the enclosing capsule, so that there

1. Moschcowitz, Eli: Bull. Johns Hopkins Hosp. **27**: 71 (March) 1916.
2. Dicken, W. E.: J. Oklahoma M. A. **9**: 107 (May) 1916.

was a space between the outer margin of the lime deposit and the capsule. This space sometimes contained a granular débris; at other times, the lime deposit contained a central cavity, which was empty or contained the lime granular débris. The connective tissue framework was practically acellular and contained few and isolated blood vessels. In no portion was any formation of osseous tissue noted. The diagnosis was calcification of the ovary.

COMMENT

Calcification has been described as occurring in various body tissues. It is not a very uncommon pathologic phenomenon.

In the instances in which this process has been studied, it has been observed that it occurs only in areas of tissue that are dead or inert; for instance, necrotic areas due to caseation or coagulation necrosis, tuberculous glands, pleuritic thickenings, atheromatous plaques, heart valves in the circulatory system, thyroid glands, various kinds of tumors, notably fibromyoma, and walls of various kinds of cysts, walls of long standing hernial sacs, long retained dead fetuses and old scars from traumatic wounds.

Thus, it is observed that calcification possesses a peculiar predilection for connective tissue structures that have undergone sclerotic or hyaline degeneration, which, owing to their complete lack of blood vessels, can justly be regarded as inert tissue. The corpora albicantia can be cited as examples. Moschcowitz, in his study of specimens collected, showed that discrete deposits of lime were made within the hyaline connective tissue matrix, in the corpus albicans as a base, and that these deposits coalesce and form a solid amorphous calcareous mass. This being true, it is

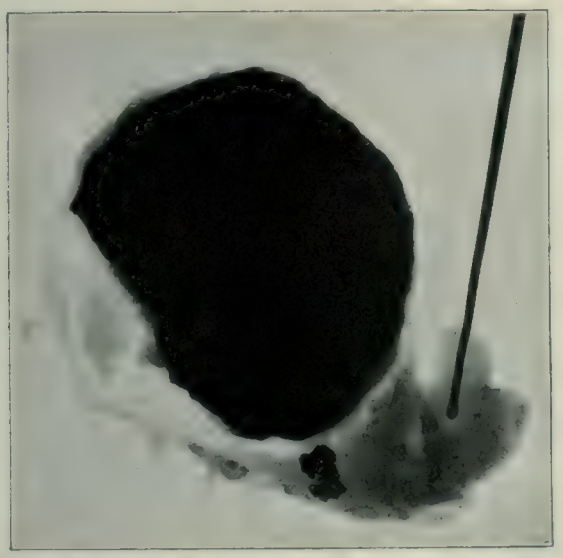


Fig. 3.—Roentgenogram of specimen, showing density as compared with steel probe.

quite possible to conceive of this sequence of events. Yet, with the highly specialized function of the ovary, with its many cycles and with a degenerating hyaline connective tissue matrix resulting each time, it is surprising that lime is not more frequently deposited. With such a deposit, it is not so easy to understand why it enlarges to many times the size of the ovary itself, as in the case here cited.

In the cases which go on to the formation of osseous tissue, Moschcowitz has pointed out that the process is entirely analogous to physiologic endochondral ossification, the difference being that, instead of being cartilage, the matrix is hyaline connective tissue infiltrated with lime. In each instance, the corpus albicans was involved and four distinct stages were recognized: (1) an early discrete multiple deposit within a healed corpus luteum; (2) a definitely circumscribed deposit of amorphous lime within a corpus albicans; (3) the formation of primary haversian canals, and (4) true bone formation.

Calcification occurs only in dead tissue, and ossification occurs only after a preliminary calcification.

Medical Building.

Clinical Notes, Suggestions, and New Instruments

A CASE OF ECTOPIC PREGNANCY AT TERM WITH LIVING CHILD

B. J. O'NEILL, B.S., M.D., AND W. W. CRAWFORD, M.D.,
SAN DIEGO, CALIF.

History.—Mrs. B., aged 39, born in Denmark, who had been married thirteen years and had never before been pregnant, was seen, April 4, 1922, when suffering from influenza.

Examinations.—Routine examination revealed a pregnancy of about six months. The patient gave a history of regular menstruation up to about six months before, and thought the cessation was due to change of life. She had not noticed any increase in size of the abdomen, and gave no history of nausea or of quickening.

June 6, she was again seen, and a diagnosis of pregnancy of about seven months was made. The heart and lungs were normal; the pelvic measurements were adequate, and the fetal heart tones were clear and distinct to the left of the umbilicus. The urine showed a small ring of albumin and a few casts. The blood pressure was: systolic, 140; diastolic, 90; and there was some edema of the feet and ankles. A rigid diet and rest were prescribed, in spite of which the amount of albumin steadily increased, the blood pressure gradually rose and edema became rapidly more marked, until, June 29, the albumin was 2.1 per cent., by Purdy's method. Casts were very numerous; the blood pressure reached 210, systolic, 155, diastolic, and there was very marked general anasarca, moist râles in the chest and rapid irregular heart tones. On this date, black spots were noticed before the eyes, and severe headache and dizziness developed. The eye-grounds were not examined and no vaginal examination was made. A diagnosis of pregnancy of about eight months with impending eclampsia was made, and an immediate cesarean operation was decided on.

Operation.—This was performed at St. Joseph's Hospital, June 29, at 7:30 p. m., under gas and oxygen anesthesia. The abdomen was opened by a right rectus incision, and a dark, bluish, smooth mass, resembling an ovarian cyst, was revealed. On palpation, fetal parts were felt, separated from the hands by a thin membrane, which ruptured almost at once, with a gush of water. The baby was lifted out in the usual way, the head offering considerable resistance. The cord was clamped, and the baby was revived by an assistant, with no more difficulty than is usual in a cesarean section.

After removal of the child, there was a fair amount of hemorrhage, which was controlled by pressure with gauze. Exploration now revealed the presence of a uterus somewhat enlarged and containing a subserous fibroid the size of a half-walnut on top of the fundus, and a large pea-sized fibroid on the posterior surface. The right adnexa were normal. The left tube was about 6 inches (15 cm.) long, and the expanded fimbriated extremity was directly continuous with the cavity formed by the membranes, as shown in the accompanying illustration. The placenta was thin and widespread, being planted on the posterior surface of the left broad ligament and on the sigmoid and the intervening pelvic wall, beside being adherent to both the large and the small intestine. The placenta thus formed the left and upper side of the sac. The left ovary was not identified, but was prob-

ably spread out in the wall of the sac. Actively bleeding vessels entered through adhesions from the large and small intestines, and some very large vessels entered the placenta from the broad ligament.

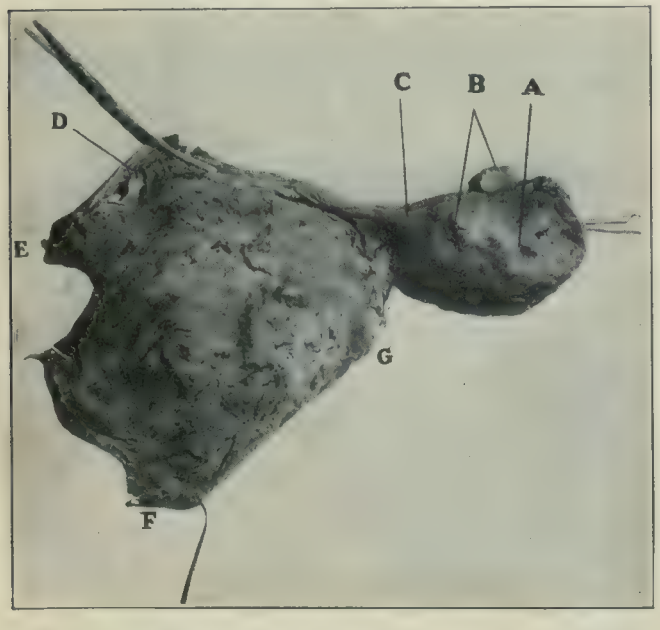
While bleeding was controlled by pressure and clamps, the adhesions were rapidly freed, and the upper part of the uterus containing the fibroids was removed, together with the left tube and the placenta and sac, as completely as possible. A large number of vessels were tied and the raw surfaces covered with peritoneum, the sigmoid being sutured over the stump of the uterus. The right adnexa were conserved. Closure was made without drainage, the entire operation consuming about fifty minutes.

The baby, a boy, weighing 6 pounds and 3 ounces (2,800 gm.), had hair and well developed nails, indicating birth at practically complete term. The skull was somewhat deformed from resting on the sacrum, and there was a moderate calcaneovalgus of the right foot, a marked talipes equinovarus of left foot and a partial dislocation of left hip, with indication of some bony pathologic process in the left knee.

Course.—The postoperative course for both mother and child was uneventful. The urine cleared up rapidly, the albumin disappearing in nineteen days. The eyes cleared rapidly; the headaches disappeared, and the mother left the hospital in good condition on the twenty-second day.

Up to the present time, after seven months, there has been no return of albumin, casts or any toxic symptoms. Blood pressure is now, systolic, 130; diastolic, 80. The patient weighs 145 pounds (66 kg.). Normal weight before pregnancy was about 155 pounds (70 kg.).

The baby had slight fluttering of the eyelids for a few days, but no convulsions. There being no lactation, he was kept in hospital five weeks on artificial feeding. At 7 months, his weight is 16 pounds (about 7.3 kg.). The shape of head has improved a good deal, but it is still somewhat deformed. Orthopedic treatments have been carried out since the second month, and the right foot is practically normal. The left foot, knee and hip are considerably improved.



Uterus and portion of sac (posterior view): *A*, uterus; *B*, fibroids; *C*, *D*, tube; *D*, beginning of fimbriae; *E*, *F*, *G*, portion of sac, which is adherent to under surface of tube and posterior surface of broad ligament. There is no demonstrable connection between tube and sac at any place except extremity of tube, *D*.

COMMENT

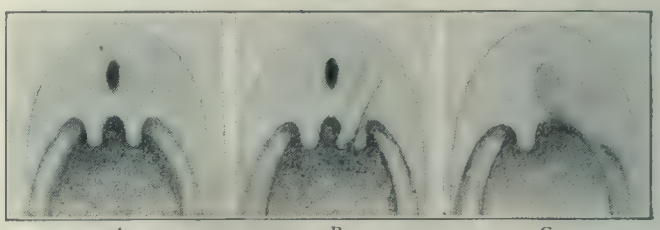
The presence of a complete tube with the sac starting at the fimbriated end and the disappearance of the ovary would indicate that fecundation took place either in the fimbriated extremity of the tube or in the ovary itself. As to the diagnosis of the case, a vaginal examination would have helped to make it more definite, but this was omitted on account of the decision to terminate the pregnancy by cesarian section. The fact that the uterus did not surround the fetus made the mass smaller than normal, so that pregnancy was apparently of about eight months' duration; whereas, in reality, it was at term.

First National Bank Building—Timken Building.

CONGENITAL PERFORATE SOFT PALATE AND DOUBLE UVULA, WITH REPAIR OF PERFORATION

JOHN H. TRINDER, M.D., FORT SAM HOUSTON, TEXAS
Major, Medical Corps, United States Army

This case shows two anomalies: a defect in the soft palate and two distinct uvulas. Both were corrected at one operation. The tissue for the graft was generously provided by Nature.



Perforate soft palate, two uvulas, with repair of perforation: *A*, before; *B*, incision of uvula; *C*, after.

REPORT OF CASE

A white man, aged 26, a private in the Air Service, whose family and previous personal history was negative, had a perforation of the soft palate at birth. In 1920 an unsuccessful attempt was made to close it. On admission to the hospital he had a central perforation of the soft palate, 1 cm. long by 0.5 cm. wide. He also had two normal sized uvulas, symmetrically placed, lateral to the median line of the curtain of the soft palate. His speech was somewhat blowing in character, and he regurgitated fluids. As he expressed it, he "drank water like a chicken," by getting a mouthful and raising his head in the air and then swallowing. He was somewhat under weight, 135 pounds (61 kg.), with a height of 67½ inches (170 cm.). Food often lodged in this perforation.

Oct. 22, 1922, under procain, 1 per cent., by injection, the left uvula was split in the lateral plane, and the dissection extended upward and outward over the soft palate, thus making two mucous flaps. The edges of the perforation were denuded and the anterior flap turned upward and inward, and sutured around the margin of the perforation. The posterior flap was then turned upward and outward, covering the denuded area of the soft palate, extending over as far as the beginning of the tonsillar fold, and sutured in place. Union took place by first intention with the exception of a pinpoint area at the upper angle.

At present the perforation is closed, except a minute hole at the upper angle. The patient no longer regurgitates. The speech has decidedly improved, and he has gained in weight. The accompanying illustrations show the condition before and after operation.

Station Hospital.

CONGENITAL DISLOCATION OF THE HIP, WITH INTRACAPSULAR EXOSTOSIS

CARROLL L. STOREY, M.D., DETROIT

History.—M. B., aged 13, a schoolgirl, seen, Nov. 10, 1920, complained of pain in the left hip and knee, of one year's duration. The family history was negative for bone tumors or congenital dislocation of the hip. The patient had had no serious illnesses. Birth had been difficult, with breech presentation, and instrumental delivery following version. No abnormality of the hips was noted at this time. The patient walked at the usual time, but had always limped. No relief was sought for the painless limp, until the child was 11 years

of age, when the limp became worse and was accompanied by pain in the left hip and knee. A physician made a diagnosis of rheumatism. The pain and limp had continued.

Physical Findings.—The general physical examination was negative. The patient walked with a marked left-sided limp, with characteristic left side-sway when weight was shifted to the left leg. The left leg was 1¾ inches (45 mm.) short. There was limitation of motion in all directions, more marked in abduction and hyperextension. The trochanter was 1 inch (25 mm.) above Nélaton's line. Trendelenburg's sign was positive on the left. Passive motion of the joint was not painful. The diagnosis at this time was congenital dislocation of the hip.

Roentgen-ray examination confirmed this, and in addition disclosed an intracapsular exostosis projecting from the under surface of the neck of the femur (Fig. 1). The other joints were normal.

Operation and Result.—Feb. 8, 1921, the hip joint was approached through a Smith-Peterson incision, and the capsule incised, which incision disclosed the head of the femur resting on the wing of the ilium above and behind the acetabulum. Extending downward, forward and inward from the under surface of the neck of the femur was an exostosis about 1½ inches (40 mm.) long and three-quarters inch (20 mm.) thick at its narrowest part. The exostosis had a broad base, a narrow neck and a mushroom-like head, the surface of which was free and covered with small, cartilaginous excresences. The growth was entirely intracapsular and free except for a narrow line of attachment to the capsule at the inner border of the base, neck and head of the exostosis. The growth was removed and an attempt made to reduce the hip, but the patient developed shock symptoms and the effort was given up. Following the healing of the wound, heavy traction was applied to the leg for three weeks. Then an attempt was made to reduce the dislocation by the closed method, the



Fig. 1.—Intracapsular exostosis of left hip in connection with dislocation, Nov. 13, 1920.

Bradford hip machine being used. This attempt was successful. The thigh was immobilized in a position of 90 degrees of flexion, abduction and outward rotation. Roentgen-ray examination showed the reduction complete.

The last cast was removed, Dec. 9, 1921, and treatment given to reduce stiffness. This was not successful. May 20, 1922, under gas anesthesia, the thigh was forcibly adducted and extended, followed by baking, massage and manipulation daily. June 7, 1922, there was three-quarters inch shortening, with 35 degrees flexion deformity of the hip. There was also 15 degrees outward rotation. There was no adduction or abduction deformity. At this time the patient was under treatment by baking, massage, and active and passive motion. A roentgenogram, July 14, 1922, showed no recurrence of the dislocation, but the head of the femur was being absorbed gradually and with loss of cartilage (Fig. 2). No evidence of the base of the exostosis could be seen. At present (Jan. 24, 1923) the left hip is practically stiff in 25 degrees of



Fig. 2.—No trace of exostosis, July 14, 1922. The dislocation has been reduced; some bone absorption has taken place, and the hip is stiff in a useful position.

flexion and 15 degrees of outward rotation. The patient is able to walk without fatigue and without pain.

The special point of interest in this case is the intracapsular exostosis. I have not been able to find a similar case in a thorough search of the literature. This case presents none of the ear marks of the type of mutiple hereditary deforming exostoses described by Ollier and Ehrenfried under the name of chondrodysplasia. A traumatic displacement of osteogenic tissue from the epiphyseal line seems the most reasonable conclusion as to the etiologic factor.

10 Peterboro Street.

A SIMPLE, INEXPENSIVE AND EFFICIENT EXTENSION APPARATUS FOR TREATING FRACTURES OF THE TIBIA AND FIBULA

E. M. STANTON, M.D., SCHENECTADY, N. Y.

The principle of a screw-controlled extension apparatus rigidly attached to a divided plaster cast has long been used by a number of surgeons in the treatment of certain simple and compound fractures of both bones of the leg. The screw-extension apparatus so far described has been of a rigidly built type, often quite expensive and procurable only through instrument makers. This type of apparatus is usually not available when needed; and, when it is available, often the mechanical perfection of its construction tends to make it too rigid to be readily adapted to the exigencies of individual cases. The screw extension apparatus employed by me is so constructed that it can be readily fitted to any cast at any point from the ankle to the knee, and can be altered at will to meet any special requirements of individual cases.

Figure 1 illustrates the general construction of the extension units. Six pieces of ¾ by ⅛ inch strap iron from 8 to 10 inches long are drilled about ⅜ inch from one end with

a hole a little larger than the diameter of the ¼ inch bolts used for the extension screws. Each piece is bent at a right angle about 1 inch from the drilled end. These pieces are now applied to the cast in pairs and held in place by plaster-of-Paris bandages, as shown in Figures 2 and 3. The holes in each pair of the extension pieces should line up to admit the extension bolts. For extension screws, we use ¼ inch bolts usually 4 or 5 inches long. Each must be provided with four nuts placed one on each side of each extension piece.

The strap iron and bolts can be procured in almost any village, and the extension pieces can be made from the strap iron in a few minutes with a hack saw and a hand drill. If the bolts used for the extension screws are not already threaded along the entire shaft, a ¼ inch die, to thread the bolt down to the head, will also be needed. In Figure 1, one of the pieces of strap iron has been bent to fit the front of the cast over the ankle and foot. We have found it advisable to bend the ends of the irons distal to the extension screws so that they will dig into the cast slightly and thus prevent slipping if the extension is applied before the plaster has had time to set firmly.

In treating fractures by this method, the leg is held in an ordinary pillow and side splint or other appropriate retention apparatus until the swelling has subsided. In compound fractures, if there is no systemic evidence of infection, the original dressing is not disturbed for a period of eight or ten days, after which the dressing is changed and the cast applied. In simple fractures, the cast is applied as soon as the swelling has subsided.

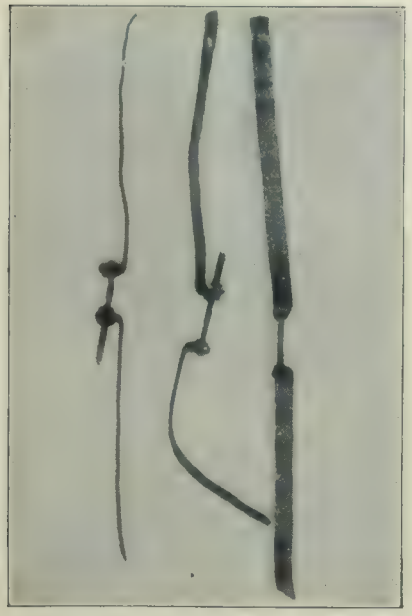


Fig. 1.—A set of extension units separate from the casts.



Fig. 2.—Extension apparatus applied to fracture of middle third of left leg.



Fig. 3.—Extension apparatus applied to fracture of middle third of right leg. Spaces between upper and lower halves of cast are filled in with plaster before the extension units are removed.

Since the pressure from the extension comes against the knee and foot, it is absolutely essential that these points be properly padded. For this purpose, we use a good grade of felt, about ¼ inch thick, fitted over a cotton stocking. The felt must be cut to fit the knee and foot accurately, and the edges of the felt pieces should be stitched together so as not to become displaced while the plaster is being applied. In compound fractures, a small sterile dressing is applied before the stocking is put on.

With properly applied padding, the extension pressure is applied evenly against the sides of the heel, the malleoli and the dorsum of the foot, and we have never had any trouble due to pressure. In obese patients, we have sometimes observed trouble owing to the upper half of the cast slipping upward over the knee; but, if the cast is applied properly, this is not likely to occur.

Except in children, no anesthetic is used; but before the cast is applied, a special effort is made to impress the patient with the fact that the leg is to be handled very gently, and that if he will completely relax and avoid sudden muscular contractions, there will be almost no pain associated with the application of the cast. While the cast is being applied, every effort is made to keep the knee and foot in good orthopedic relationship; but no effort which might produce pain is made to improve the position of the fragments at the site of fracture. The cast is usually allowed to harden for twenty-four hours before the extension apparatus is applied, although it can be applied as soon as the plaster has set.

After the plaster has hardened, the extension irons are applied at three equidistant points, usually one on each side and one in front, with the bolts opposite the point of fracture. Before the bolts are inserted, the cast is cut entirely around at the level of the fracture, and in compound fractures, an additional portion of the cast is cut away, if necessary, to allow for dressings.

Extension is obtained gradually, thus being accomplished without causing pain or exciting muscle spasm. In oblique or comminuted fractures with considerable shortening, we try to gain about ¼ inch a day. In compound fractures in which there is danger of breaking down barriers to infection, we are often satisfied with a slower rate of correction.

The apparatus was originally designed to treat a compound comminuted fracture of the lower third of the tibia and fibula which came into our hands eight weeks after occurrence, at which time there was 2¼ inches of shortening. Full extension was obtained in about twelve days, without anesthesia, without pain and without any exacerbation of the rapidly subsiding infection. Complete extension was easily maintained until firm union had taken place, and the ultimate result was practically perfect. Since then, we have employed this method in all fractures of the leg in which there has been any tendency toward shortening.

Taken together, the three points of extension form a rigid junction between the upper and lower halves of the cast, and yet any one or two can be readily bent so that, by the application of greater extension at one side or by the releasing of the extension at another, any degree of angular deformity may be corrected at will. Even lateral deformities may be corrected by the insertion of wedges here and there.

The ability to obtain and maintain slow, painless correction of deformity without exciting muscle spasm is of distinct advantage in the treatment of simple fractures. In compound fractures, the ability to obtain and maintain gradual correction of deformity is an essential factor of success. Next to

asepsis, the chief rule for preventing infection in compound fractures is to avoid active manipulation in the region of the fracture. Nearly all surgeons realize that it is dangerous to reoperate in a compound fracture until long after the wound has closed. Many surgeons, however, fail to realize that it is almost equally dangerous actively to manipulate the fragments of a compound fracture a few days or weeks after the accident. We have many times seen compound fractures progress without active infection for about ten days, when, with the wound practically healed and no evidence of active infection, the surgeon has felt called on to improve the position of the fragments, with the immediate result of developing an active infection.

With the slow correction method, the first ten days or more of treatment can be devoted entirely to the avoidance of infection. In my practice, this consists chiefly in leaving the original dressing severely alone unless symptoms of active infection develop. Later, shortening and deformity can be corrected by moving the fragments so gradually that protective granulation tissue and other barriers are not broken down, and therefore no opportunity is allowed for active infection to develop.

When union has progressed to such a degree that there is no longer danger of recurrence of shortening, the extension cast may be removed and a new cast applied; or occasionally, as shown in Figure 3, it may be deemed advisable simply to fill in the space between the two halves of the cast with plaster, and then remove the extension apparatus from the original cast.

Medical Arts Building.

CORNEAL ULCER CURED BY TONSILLECTOMY: REPORT OF CASE

CHARLES B. WILLIAMS, M.D., MINERAL WELLS, TEXAS

Mr. P. O. B., aged 35, an oil field contractor, came to me, April 12, 1922, for treatment of corneal ulcer of the left eye. He had been an active, healthy man save for an attack of what was diagnosed as influenza in January, 1922, from which he seemed to have never quite fully recovered. About the middle of March, a foreign body, presumably a small piece of steel, that had injured the left eye was removed in Fort Worth, where the patient remained during the following three weeks under the care of a competent oculist.

When first seen by me there was a shallow ulcer of the left cornea covering the inner third of the surface, with a deep area about 1 by 2 mm. at the upper, inner margin of the pupil. Iritis was not particularly marked. Pain was sufficiently intense to interfere with sleep.

METHODS OF TREATMENT

In routine fashion I examined the patient's nose and throat at the first sitting, giving possibly a bit closer attention than usual on account of the history. The nose and sinuses were apparently normal, as seemed also the tonsils, save for two or three open crypts in the right tonsil, from which was expressed a little mushy débris. The left tonsil appeared normal. The dilated crypts in the right tonsil were cleaned and treated with mercurochrome-220 soluble a number of times during the following month. Microscopic examinations of scrapings from the ulcer revealed nothing significant.

From April 12 to May 13 I tried various methods of treatment. Feeling that there must be some systemic cause for the condition, I repeatedly pressed the patient for a history of syphilis or gonorrhea, but always received a negative reply. Finally I gave the left tonsil a forcible squeezing, and it literally burst open an encapsulated abscess in the submerged upper pole, from which about a dozen drops of thick, creamy pus was expressed. On the following morning both tonsils were enucleated, and the left showed a concealed cavity about 7 mm. in diameter lined with a complete sac, which came away intact. By the third day after operation, the corneal ulcer showed improvement. The patient was discharged ten days after the tonsils had been removed, with the ulcer completely healed.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 847)

[NOTE.—This is the thirteenth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

FEEDING DURING DIFFERENT PERIODS OF THE FIRST YEAR

The First Four Weeks of Life.—During the first two or three weeks of life, lesser relative quantities of food must be given than is recommended for later periods. During the first week, skimmed milk may be used in place of whole milk in amounts approximating 1 ounce to the pound of body weight. During the second week, the skimmed milk may be gradually replaced by whole milk, so that at some time during the third week the infant will be receiving one or more ounces of whole milk per pound of body weight. By the fourth week the infant can usually take the recommended 1½ ounces of milk per pound of body weight. Beginning with the addition of 0.5 gm. of cane or milk sugar for each pound of body weight, these can be increased to 1 gm. by the beginning of the second week, and to 2 or 3 gm. by the beginning of the third week. At all times an endeavor should be made to administer at least one sixth of the infant's body weight in water during the twenty-four hours.

Such mixtures must of necessity show a lower caloric value than will meet the infant's needs for growth and development, but, as suggested, the weak formulas should be used for mixtures for the new-born, and the strength increased according to the infant's tolerance. When there is positive evidence that the mother will have an insufficient milk supply, the milk mixtures should be increased in strength somewhat more rapidly during the first two weeks, or larger quantities fed than outlined in Table 27.

TABLE 27.—*Diet for New-Born Infants During the First Four Weeks of Life*

	1st 48 Hrs.	3d to 4th Days	5th to 6th Days	7th, 8th and 9th Days	10th, 11th and 12th Days	13th and 14th Days	3d Wk.	4th Wk.
Milk (whole), ounces	..	..	..	3	4	6	8	11
Milk (skim), ounces	..	6	8	5	4	4	2	..
Sugar (cane), drams	1	1	2	2	2	3	4	6
Water (boiled), ounces	16	10	8	8	8	8	8	10
Calories in mixture	15	81	118	148	158	215	250	321
Feedings:								
Amount in ounces	1	2	2.5	2.5	2.5	3	3	3.5
Number daily	6	6	6	6	6	6	6	6
Intervals in hours	4	4	4	4	4	4	4	4

These mixtures should be boiled for three minutes over the direct flame, or a double boiler may be used. In the latter case the water in the outer vessel should boil for eight minutes. Boiled water should be added to make up the original quantity.

Additional Foods from the Second to the Sixth Month.—The milk mixtures may be supplemented by the following additions to the diet:

Cereal waters may be used as the diluent beginning with the second month. These are best made from

whole cereals, as the dextrinized flours are devitalized. From one-sixtieth to one-thirtieth ounce (from 0.5 to 1 gm.) of cereal for each pound of body weight may be used for making the amount of cereal water desired in the mixture.

Orange juice should be begun during the second month, beginning with one-quarter teaspoonful, diluted with water, twice daily, and increasing gradually until from one-half to 1 ounce is given by the end of the sixth month.

Cod liver oil, either phosphorized or plain, should be started by the third month, beginning with 5 drops daily, and increasing to 1 teaspoonful twice daily, by the end of the sixth month.

Cereal gruels (oatmeal, farina, cream of wheat) can be started by the beginning of the fifth month. They should be well cooked. The gruel can be added to one of the midmorning meals and later to the evening meal as well, starting with one-half teaspoonful and increasing gradually until 2 or 3 tablespoonfuls is given twice daily.

BARLEY, OATMEAL AND RICE WATER

Soak 2 tablespoonfuls of the cereal grains in water overnight, pour off the water, add 1 quart of fresh water, and boil down to 1 pint (which takes about two hours). Add boiled water to make 1 pint, if necessary. Strain through fine cloth. Keep in icechest.

Cereal water may be from barley, oatmeal or rice flours by using 1 rounded tablespoonful to 1½ pints of water, boiling it for twenty minutes in an open stew pan, and stirring constantly.

CEREAL (OATMEAL, FARINA, CREAM OF WHEAT)

2 tablespoonfuls cereal.
½ pint water.
½ pint milk.
1 pinch salt.
Cook in double boiler for one hour.

Additional Foods from the Sixth Month to the End of the First Year.—A broth and vegetable meal may be gradually substituted for the midday meal. This is best given as a vegetable soup. Feeding should begin with 1 ounce, gradually increased to 8 ounces, 1 ounce of milk mixture being omitted for each ounce of soup given. If less than a full feeding is given, the meal should be finished with sufficient milk mixture, from a second bottle, to make a full feeding.

VEGETABLE SOUP (LAMB, CHICKEN, VEAL)

¼ pound of lean meat cut into small pieces.
1 potato, moderate size.
1 carrot.
2 stalks of celery.
1 tablespoonful of pearl barley.
2 tablespoonfuls of rice.
2 quarts of water.
1 pinch of salt.

Finely divide the vegetables. Add vegetables, barley and rice to the water. Boil down to 1 quart, cooking three hours. Add salt. Rub vegetables through a fine sieve. When in season, spinach, tomato, peas and beans may be added to the soup stock, if desired.

If kept in the upper compartment of the icechest against the ice, it may be used on the second day, but never later.

Strained vegetables (spinach, carrots, potatoes) may be added in small portions by the eleventh or twelfth months as a side dish. There is little advantage in so using them before this time, for the vegetables in the soup, when rubbed through a fine sieve, are incorporated in the broth.

Toast or dried bread crumbs may be added to the soup, if desired.

Stewed fruits (apples and prunes) may be fed in small quantities by the end of the first year. So far as their accessory food value is concerned, they are inferior to orange juice.

An infant should be taught to drink from a cup at least once daily in the latter part of its first year. This also holds true for the taking of its semisolids from a spoon.

Iron medication may be begun in the second half of the first year or earlier by administering some of the organic iron preparations or small doses of inorganic preparations, such as iron and ammonium citrate, one-half grain, twice daily.

EXAMPLES OF APPLICATION OF FEEDING RULES FOR WHOLE MILK DILUTIONS

Normal Infant, Aged Three Months.—This infant should weigh 11 pounds (average birth weight, 7 pounds, plus 4 pounds, representing a gain of 5 ounces weekly for thirteen weeks).

Estimating 1½ ounces of milk per pound of body weight, the result is 16½ ounces of milk.

Adding *3 gm. of cane sugar per pound of body weight,* or 1 ounce for each 10 pounds, the result is 1 1/10 ounces of sugar, or 2¼ level tablespoonfuls for 11 pounds.

To make the total daily quantity 33 ounces (3 ounces of fluid per pound of body weight) it is necessary to add 16½ ounces of water to the quantity of milk used.

The baby should be fed five or six times daily, and should receive 5½ or 6½ ounces of the mixture at each meal.

For practical purposes cow's milk may be considered as averaging: fat, 4 per cent.; protein, 3.5 per cent.; carbohydrate, 4 per cent.

The amounts of the various elements in the mixture and the grams of each and calories per pound of body weight in the milk mixture as given above, for a normal 3-months old infant, weighing 11 pounds, are given in Table 28.

TABLE 28.—*Amounts in Mixture for Normal Infant Aged Three Months*

	Protein	Fat	Carbohydrate	Salts Gm.	Calories
Milk (16.5 oz. = 495 c.c.)	17.3	19.8	19.8	3.46	346
Water (16.5 oz. = 495 c.c.)	....	....	....	....	...
Sugar (1.1 oz. = 33 gm.)	....	....	33.0	....	132
Total mixture (33.0 oz. = 990 c.c.)	17.3	19.8	52.8	3.46	478
For each pound of body weight	1.575	1.8	4.8	0.31	43

We thus find that the infant fed on the prescribed diet receives 33 ounces of the mixture containing: fat, 1.8 gm.; protein, 1.575 gm., and sugar, 4.8 gm. for each pound of body weight.

The infant receives 43 calories per pound of body weight.

Orange juice and cod liver oil should be included in the diet.

It should be remembered that the needs of the individual infant are to be covered, and some infants need food of a higher caloric value for each pound of body weight.

The mixture may readily be strengthened to meet indications for more fat and protein by the addition of milk or cream, and for more carbohydrates by the addition of flour and sugar. With the addition of more milk, the water should be decreased.

Infants inclined to vomit part of the feeding will often retain the food to better advantage by being fed

small quantities (2½ ounces to the pound of body weight for the day) of a more concentrated mixture.

Normal Infant, Aged Eight Months.—The infant should weigh 17¼ pounds (average birth weight 7 pounds, which should be doubled in the first five months—14 pounds, plus a gain of 4 ounces a week for the remaining thirteen weeks—3¼ pounds).

The following mixture will be prepared:

One and one-half ounces of milk per pound of body weight, equals 26 ounces.

Water to make 1 quart, equals 6 ounces.

Sugar, 1½ ounces. As previously stated, the amount of sugar to be added is usually limited to 1½ ounces, further carbohydrate needs being furnished by the addition of cereal waters or cereals.

Starch, one-fourth ounce, or 8 gm. (approximately 1/60 ounce, or 0.5 gm. per pound).

This is to be fed in four feedings of 8 ounces each, and the fifth may be replaced by a soup and vegetable meal. A cereal feeding (from 2 to 4 tablespoonfuls) can also be given with one or two of the meals, part of the bottle of milk being poured over it, and the meal being finished with the remainder of the bottle.

TABLE 29.—*Amounts for Normal Infant Aged Eight Months*

	Protein	Fat	Carbohydrate	Salts Gm.	Calories
Milk (26.0 oz. = 780 c.c.)	27.3	31.2	31.2	5.46	546
Water (6.0 oz. = 180 c.c.)	....	....	....	....	...
Sugar (1.5 oz. = 45 gm.)	....	....	45.0	....	180
Starch (0.25 oz. = 8 gm.)	....	....	8.0	....	25
Vegetable soup (8.0 oz. = 240 c.c.)	2.0	4.5	8.0	2.4	144
Cereal (1 hpg. tblspoonful 1.0 = 30 gm.)	....	....	15.0	....	50
Total feeding	29.3	35.7	107.2	7.86	945
For each pound of body weight	1.7	2.1	6.2	0.46	55

Further needs of the individual child may be supplied by concentrating the milk until 1 quart of whole milk is given, the carbohydrates in the mixture being gradually decreased and given in another form, as gruel or custard.

Underweight Infant, Aged Three Months, Weight Eight Pounds.—For beginning, this mixture should be prepared: milk, 12 ounces (1½ ounces for each pound of present weight); water 12 ounces; cane sugar, 8/10 ounce (1½ level tablespoonfuls, or 1/10 ounce or 3 gm. for each pound). This mixture is sufficient to make six feedings of 4 ounces each.

To meet the requirements of this infant for growth and development, the needs of a full-weight infant of the same age must be approximated as rapidly as the infant's tolerance for food permits. These increases can usually be made rapidly, if the infant is well other than for its underfeeding. The first increases are made in the carbohydrates by further addition of sugar and cereal water, until one-tenth ounce (3 gm.) per pound of sugar and from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) per pound of cereal flour, are added in the form of cereal water. These increases are calculated on the basis of average full weight (11 pounds for this age). The milk can be increased until from 1½ to 2 ounces per pound of full weight, or from 16.5 to 22 ounces for the total mixture is given. The total fluids should represent a minimum of 3 ounces per pound.

If the infant is suffering from digestive disturbances, it may be necessary to begin with 1 ounce of milk or even less per pound of its present weight, that is, 8 ounces or less in the mixture, adding only 1 or 2 gm. of sugar per pound. It must, however, be remembered that the infant will require 32 calories for each pound of body weight to sustain it; and if it is underfed for too long a period, inanition will result.

With equal simplicity, errors in the mixture received by infants seen in the daily routine of practice may be interpreted almost at a glance.

Example: An infant, aged 5 months, weight 12 pounds, on bottle feedings of milk, 15 ounces; water, 20 ounces; sugar, 2 ounces; feeding, 7 ounces, times, 5. Bowel movement three times daily.

An average infant at this age should have doubled its weight to 14 pounds and should therefore be receiving a minimum of 21 ounces of milk and 1 4/10 ounces of sugar. The error lies in the quantity of fat and protein, which is too small in proportion to the quantity of sugar. This, in most instances, would account for the increased number of stools and subsequent stationary weight.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

SULPHARSPHENAMINE. — Sulpharsphenamina. — The salt, disodium 3,3'-diamino-4,4'-dihydroxyarsenobenzene-*N*-dimethylenesulphonate, $NaOSO_2.CH_2.NH.OH.C_6H_3.As:As.C_6H_3.OH.NH.CH_2.O_2SONa+4H_2O$, adjusted by the addition of inorganic salt to an arsenic content of 18 to 20 per cent. The arsenic content of 3 parts of sulpharsphenamine is approximately equal to 2 parts of arsphenamine. According to claims, it differs from neoarsphenamine in having two side chains instead of one and in that the sulphur has a valence of four (with an extra oxygen atom) and not two as in neoarsphenamine.

Actions and Uses.—The same as those of neoarsphenamine over which it is claimed to have the advantage of somewhat greater stability of solution in the presence of air, and of permitting subcutaneous injection.

Dosage.—For intramuscular or subcutaneous use the drug is dissolved in sterile, freshly distilled water in the proportion of about 0.1 Gm. to 0.3 Cc.; for intravenous use a greater dilution is desirable, about 0.1 Gm. to 2 to 3 Cc.

Sulpharsphenamine is an orange yellow powder possessing an odor resembling that of sulphur dioxide and arsine. It is readily soluble in water yielding a yellow solution which is acid to litmus (*distinction from neoarsphenamine which is neutral and sodium arsphenamine which is alkaline*). On standing over night, the solution darkens and a precipitate is formed.

A *freshly* prepared solution of sulpharsphenamine (1: 100) yields no immediate precipitate on the addition of diluted acetic acid, whereas neoarsphenamine yields a precipitate sooner (*distinction from arsphenamine*). The general reactions with silver nitrate and ferric chloride, the tests for the presence of sulphur, the assay and the toxicity tests are the same as those for neoarsphenamine.

Sulpharsphenamine-Abbott.—A brand of sulpharsphenamine-N. N. R.

Manufactured by the Dermatological Research Laboratories, branch of the Abbott Laboratories, Chicago, under U. S. patent 1,024,993 (April 30, 1912; expires 1929) by license of the Chemical Foundation, Inc.).

Sulpharsphenamine-Abbott, 0.2 Gm. Ampules.
Sulpharsphenamine-Abbott, 0.3 Gm. Ampules.
Sulpharsphenamine-Abbott, 0.4 Gm. Ampules.
Sulpharsphenamine-Abbott, 0.6 Gm. Ampules.

Research Library to Commemorate Birth of Copernicus.—Copernicus, the great Polish astronomer, whose theory that the earth moves around the sun revolutionized astronomy, and who was born 450 years ago, was also a physician. One of the best research libraries in Poland is being erected at Torum, the home town of Copernicus, to commemorate his birth.

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SATURDAY, MARCH 31, 1923

CIRCULATORY ADAPTATIONS TO EXERCISE

The human body exhibits a remarkable versatility in meeting the rapidly changing exigencies of every-day life. In part, this unusual adaptability, which can rarely be duplicated in mechanisms of human construction, is due to the "extravagance of nature" in the development of the animal organism. As Meltzer once described the situation, numerous important organs and complex tissues are built on a plan of great luxury. Some organs possess at least twice as much tissue as a normal or even maximal activity would require. In other organs, especially in those with an internal secretion, the margin of safety amounts to ten or fifteen times the actual need. It is surely no disadvantage in the long run if Nature is not as economical with her resources in the body as a stricter guardian might demand. Those species that are provided with an abundance rather than a paucity of useful structure and energy, and are thus prepared to meet many emergencies, are presumably best fitted to survive in the struggle for existence.

Another factor of advantageous adaptability is often found in the instances in which one and the same function can be cared for by more than one mechanism. In reference to this, Meltzer has called attention to the vasomotor apparatus. It has long been known that, after eliminating the influences of the sympathetic and the control nervous system, the blood pressure is well taken care of by the peripheral mechanism of the walls of the blood vessels. A further instance of the existence of parallel devices for the accomplishment of one function has been demonstrated anew recently by Meek and Eyster [1] at the University of Wisconsin. It is well known that an increased circulation is one of the conspicuous effects of physical exercise; indeed, such circulatory activity is an obviously indispensable requisite for the transport of essential oxygen and food material to the contractile tissues, as well as the prompt removal of rapidly accumulating wastes and heat. By an ingenious device for determining the cardiac size and output, the data being computed from the silhouettes secured from roentgenograms taken during the diastolic and systolic phases of the heart cycle, it has been made evident that not all persons respond in the same manner to exercise. Usually the cardiac output per beat is increased by activity, the effect being represented by an average output of 79 c.c. before exercise, which increased to 94 c.c. following work. In a few persons the heart rate alone changed. Sometimes the diastolic size of the heart showed an increase during exercise; often it did not. In any event, the minute volume output always increases with exercise, a characteristic change being represented by the figures 5,900 c.c. at rest and 10,750 c.c. during work.

One cannot avoid concurrence with the belief of Meek and Eyster that in exercise the output of the heart may be increased either by a larger output per beat or by an acceleration of the pulse or by any combination of these two factors. In any event, the outcome is a beneficent one for the body. The multiple protection against unexpected contingencies is not the least of unique superiorities of the devices for human function.

1. Meek, W. J., and Eyster, J. A. E.: Cardiac Size and Output in Man During Rest and Exercise, Am. J. Physiol. **63**: 400 (Feb.) 1923.

BIOLOGIC REACTIONS OF ARSPHENAMIN

The complexity of the physical and chemical properties of arsphenamin probably accounts for the complexity of the biologic reactions resulting from its passage through the body. Among the most disturbing of these reactions are the nitritoid or anaphylactoid symptoms occurring after intravenous injection. Their frequency and severity are sufficiently marked to continue to attract attention, despite the refinements of technic of preparation and of administration of the agent. In 1918, the number of deaths reported in Germany was 3.8 in 10,000, and in England, 4; complications in England were 16 in 10,000. The extent of the less severe degrees of the reactions is not statistically reported, but is probably considerable, in view of the large number of administrations annually throughout the world.

The earlier studies of the anaphylactoid reactions from arsphenamin cleared up certain features, more or less obviously explainable, but left the underlying causes untouched. There were no difficulties in the way of understanding why improperly prepared, acid and precipitated solutions should be deleterious when injected intravenously; why respiratory and circulatory embarrassments were due to cardiac depression and disproportionate adjustments between the systemic and pulmonary circulations; what the effects of emboli and thrombi were when these occurred, and why true anaphylaxis was not the correct explanation. Dosage, and altered functional state of various organs, are

other factors entering into the causes of the reactions. However, there are certain fundamental features about the combining properties of arsphenamin with tissues and cells that were not sufficiently appreciated until the work of Jean Oliver [1] and associated workers at the Department of Pathology of Stanford University. These features probably concern not only the anaphylactoid reactions from arsphenamin, but also its reactions with tissues in general and even with spirochetes. They are based on the conception that arsphenamin can exist in the colloidal state, temporarily at least, and that the temporariness of this state is essential to the anaphylactoid reactions in particular.

Another observation has been that arsphenamin has a fairly constant agglutinating titer for red blood corpuscles of different species, human cells being most and chicken cells the least strongly acted on. The presence of electrolyte is essential for the agglutination; old and turbid, and the clear supernatant fluid of precipitated, solutions do not agglutinate the corpuscles, which bind or adsorb freshly prepared arsphenamin with great avidity. The rôle of the electrolyte (sodium chlorid) appears to be that of precipitant of the adsorbed arsphenamin, presumably in the corpuscular membrane. Precipitation occurs simultaneously with agglutination. Sugar (nonelectrolyte) does not cause agglutination of the adsorbed arsphenamin. It was found further by these investigators that certain hydrophilic colloids, such as gelatin and serum (under proper conditions) protect the erythrocytes against arsphenamin agglutination in vitro. The hemolysis that occurs appears not to be associated with the agglutination phenomenon. These results suggest that agglutination by arsphenamin occurs during the transition stage from its colloidal into a near crystalloid or completely crystalloidal state in the circulation, and that stabilization of the colloidal state prevents the agglutination.

The results in vitro were a forecast of the results in vivo; for it was found that the injections of large and repeated small doses into rabbits caused extensive intravascular agglutination and embolism. Single small doses resulted in no demonstrable emboli and thrombi, but, after several days of repeated administration, agglutinated cells were found in the lungs and spleen. Fundamentally, therefore, the adsorbed arsphenamin resulted in clumping of the cells; but, when these existed in small numbers, they were disposed of by phagocytosis and deposited in the various hematopoietic organs (liver, spleen, bone marrow and lungs) in the usual way known to occur with foreign particles.

From their work, the California investigators conclude that there are two phases to the reactions from arsphenamin: (1) the early or physical phase, which is concerned with the physical properties of the agent, and results in corpuscular agglutination with multiple embolism, the outcome being fatal sometimes, and (2) the later or chemical phase, which results in parenchymatous degeneration of viscera (kidney and liver), this being due to the action of the arsenic ion in the usual way. On the basis of the protection experiments in vitro, protection should be obtained with hydrophilic agents in vivo, i. e., with mixtures of arsphenamin and serum or gelatin; but how this will work out in practice remains to be seen. Meanwhile, the study of biologic reactions from arsphenamin has been advanced along lines that offer the best hope for progress, and, it may be hoped, not only for the elucidation of arsphenamin, but also of other agents which cause anaphylactoid reactions.

1. Oliver, Jean, and Douglas, Ethel: Biological Reactions of Arsphenamin, I, The Mechanism of Its Agglutinative Action on Red Blood Cells in Vitro, J. Pharmacol. & Exper. Therap. **19**: 187 (March) 1922. Oliver, Jean, and Yamada, So Sabro: II, The Protective Action of Hydrophilic Colloids on the Agglutination of Red Blood Cells by Arsphenamine, ibid. **19**: 199 (March) 1922; III, Its Immediate Toxicity as Contrasted with Its Late Ill Effects, and the Rôle of Agglutination in the Production of the Former, ibid. **19**: 393 (July) 1922. Oliver, Jean: The Relative Therapeutic Efficiency of Arsphenamine and Gelatin-Arsphenamine, Proc. Soc. Exper. Biol. & Med. **20**: 56, 1922.

INTRAPERITONEAL BLOOD TRANSFUSION

Transfusion of blood, an operation which cannot be described as conspicuously simple under any conditions, encounters special difficulties in the very young, in whom the anatomic obstacles call for special skill and training. In the youngest babies, transfusion is often carried out by the anterior fontanel route, which Helmholz [1] particularly recommended a few years ago. It is doubtful, however, whether injections into the longitudinal sinus should be attempted by the general practitioner. The puncturing of the region indicated is not without its dangers, as has only recently been indicated in THE JOURNAL.[2] Furthermore, after the age of 18 months, the fontanel is not usually patent, so that other places of transfusion then become inevitable. Direct transfusion through anastomosis of veins by means of cannulas is a method of theoretical choice; all too often, however, the requisite skill in blood vessel surgery is lacking when relief is imperative.

The difficulties cited have doubtless led to considerable effort to find substitute procedures. Subcutaneous and intramuscular injections have been demonstrated to be unsatisfactory from several standpoints. Falls [2] of the University of Iowa College of Medicine has therefore given renewed consideration to intravenous paths. In view of the frequent impossibility of entering the median basilic vein with success in infants, he has developed the technic of injections of citrated blood into peripheral vessels and especially the external jugular vein. Falls regards the procedure as safer

1. Helmholz, H. F.: The Longitudinal Sinus as the Place of Preference in Infancy for Intravenous Aspirations and Injections, Including Transfusion, Am. J. Dis. Child. **10**: 194 (Sept.) 1915.
2. Falls, F. H.: Blood Transfusion by the Citrate Method in Hemorrhages of the New-Born, J. A. M. A. **80**: 678 (March 10) 1923.

than the injection of blood into the longitudinal sinus; and it is not too difficult technically for the average physician.

At the University of Minnesota, Siperstein and Sansby [3] have investigated a still different method—that of intraperitoneal transfusion of citrated blood. The fundamental considerations for the success of such a plan have been carefully tested on animals. Absorption of blood from the peritoneal cavity was demonstrated to occur rapidly, so that in a few hours as much as a fifth of the estimated blood volume can thus be taken up. There is not merely a concentration of blood volume: the erythrocytes actually enter the blood stream without undergoing any morphologic changes. The intraperitoneal transfusion in both anemic and normal animals causes a sharp, temporary rise in blood values during the absorptive period. This is followed later by a more permanent increase in the blood picture.

Consequently, the process acts as a true transfusion, and not as the absorption of a nutrient material. That the intraperitoneal method with citrated blood can apparently be used in cases in which transfusion is indicated, when other routes are unavailable or impracticable, has been substantiated anew by Siperstein [4] at the Minneapolis General Hospital. Henceforth, the possibility of employing citrated blood intra-abdominally will demand careful consideration in pediatric practice.

3. Siperstein, D. M., and Sansby, J. M.: Intraperitoneal Transfusion with Citrated Blood, Am. J. Dis. Child. **25**: 107 (Feb.) 1923.
4. Siperstein, D. M.: Intraperitoneal Transfusion with Citrated Blood, Am. J. Dis. Child. **25**: 202 (March) 1923.

SOME NORMAL STANDARDS FOR THE DETECTION OF ABNORMAL PHYSIOLOGIC PERFORMANCES

It is of the highest importance that the standards of comparison that are used in medicine, whenever a problem of deviation from the normal arises, should be thoroughly dependable. One can readily understand how futile it is to discuss pathologic excesses of blood pressure, for example, so long as there is uncertainty as to the range of variations in this function which admittedly healthy persons may manifest. A similar statement may be ventured for numerous other features of human physiology, such as the normal ranges of body temperature, the concentration of sugar and hemoglobin in the blood, and the volume and specific gravity of the urine. The number of circulating leukocytes is one of the factors in the organism regarding which information is often sought by the direct method of the "blood count." The existence of a "physiologic" leukocytosis at the height of digestion and after strenuous exercise has long been recognized; but there is frequently considerable uncertainty in the mind of the clinician as to how much allowance should be made for such normal changes in the numbers of the blood cells. The current belief is that the "digestive leukocytosis" is most marked when a person, after fasting, eats a meal containing large quantities of protein. It is said that under such conditions the number of white cells in the peripheral blood may be increased by about a third, the augmentation being particularly marked in the neutrophilic cells.

It seems worth while to direct attention to the somewhat unusual mass of statistics recently submitted by Feinblatt.[1] Examinations were made on eighty healthy persons, each of whom consumed 200 c.c. of milk after a period of fasting. The normal leukocyte counts gave surprisingly small variations, with an average of 7,400 cells for each cubic millimeter. There was postalimentary leukocytosis in every case, indicating averages of 8,800, 9,700, 9,800 and 9,200 white cells, half an hour, one hour, an hour and a half and two hours, respectively, after the meal. The results were so consistent that a postalimentary leukopenia may now be looked on as being, beyond question, of pathologic moment.

An illustration of a widely mistaken impression regarding what constitutes normal physiologic function and deviation from it is furnished by many of the current statements about the gastric juice. Carlson [2] has lately called into question the existence of true gastric hyperacidity. Actual hyperacidity, he states, in the sense of a gastric juice of greater than normal acidity has not been demonstrated in any disease, and probably does not exist. The pathologic deviation in acidity is always in the direction toward anacidity. But actual hypersecretion may exist, although we have no accurate measure of the total gastric secretion in normal persons in the course of a day. It is not less than 1,500 c.c., and may be double that quantity.

There is now an abundance of carefully secured evidence that the normal gastric juice of man has an acidity of between 0.4 and 0.5 per cent. hydrochloric acid, although the gastric content usually shows a lesser concentration. Carlson summarizes the best information now available by maintaining that in otherwise normal persons the gastric secretion may vary from hypersecretion, through normal, down to complete anacidity. These variations by themselves do not, therefore, produce disease symptoms. In chronic disorders, gastric secretion and gastric acidity are decreased, on the whole, parallel with the degree of general cachexia. The most important factor in this depression is probably the cachexia of the gastric glands. There is no disease known capable of inducing true gastric hyperacidity. The pathologic deviations in acid and pepsin concentrations are invariably in the direction of a decrease.

1. Feinblatt, H. M.: Alimentary Leukocytosis in Eighty Normal Men, J. A. M. A. **80**: 613 (March 3) 1923.
2. Carlson, A. J.: The Secretion of Gastric Juice in Health and Disease, Physiol. Rev. **3**: 1 (Jan.) 1923.

Current Comment

THE COUNTRY DOCTOR—A LAY OPINION

In a whimsical essay, "Small Town Stuff," Mr. Burges Johnson laments the gradual disappearance of common sense, and ascribes its departure to the gradual movement of the population from the country to the urban community. The herding together of great numbers of human beings makes for the limiting and specializing of each person's experience. Physicians know the tendency to specialize in city practice, but it is doubtful whether any one has put the matter more humorously or revealingly into words than has Mr. Johnson. To quote:

> This conflict between specialization and common sense is well illustrated by the effect of a large city upon the learned professions. "To succeed here you must specialize," says the veteran doctor to his young friend. "Get to know a little more about the duodenum than anybody else in the city, and your fortune is made." So the young man moves forward up a straight and narrow road of learning, whose summit and crown is the duodenum and all that pertains immediately and directly thereto. Other roads may lead to epiglottises or vermiform appendices. Such roads and all the by-paths leading into them he must studiously avoid. The result is that he becomes a great practitioner in a great city. All sufferers as to the duodenum are sent to him, if they can afford it. Great practitioners upon the stomach or the eyeball or the something-or-other-gland refer to him as "my distinguished colleague." It seems almost sacrilegious to refer to him as a big toad in a little puddle, and yet think how small his puddle is! It is no bigger than the duodenum. A patient who comes to him with a commonplace and well located pain must either be persuaded that the pain really arises from the duodenum, or he must be sent to Dr. Jones up the street, whose highly trained and uncommon sense about such pains makes him the only other man in the city to see.

In support of his view, Mr. Johnson cites the statement of Dr. Veiga, out of whose mouth Arnold Bennett says, in "Mr. Prohack":

> "I'm admirable on the common physical ailments, and by this time I should have been universally recognized as a great man if common ailments were uncommon; because you know in my profession you never get any honour unless you make a study of diseases so rare that nobody has them. Discover a new disease, and save the life of some solitary nigger who brought it to Liverpool, and you'll be a baronet in a fortnight and a member of all the European academies in a month. But study colds, indigestion, and insomnia, and change a thousand lives a year from despair to felicity, and no authority will take the slightest notice of you."

Of course, the statement of Dr. Veiga is not to be accepted as strict fact. Freud has achieved greatness by concentrating on dreams, and a host of investigators have gained public notice by efforts at the cause of influenza. But there is just enough of satirical truth in it to gain it serious attention! This is particularly the case since Mr. Johnson is led by his consideration to a definite conclusion:

> The old fashioned country doctor whose chief asset was his common sense may be as out of place and impossible today as the little red schoolhouse of legendary memory. A more complicated civilization is making greater demands than either can now supply. And yet even today the best type of small town doctor is a better diagnostician than many of the great specialists who have bought their special knowledge at the cost of their common sense. The ignorances of the one may be balanced against the "accidents" of the others.

There are a number of specialists in the problems of medical education and the supplying of physicians to rural communities, who have arrived at the same conclusion as Mr. Johnson, after a more circuitous route of exhaustive investigation. It is interesting to have a fresh view of the subject from such a source, and it may be well to consider whether urban communities might not also be better served by a broad, rather than by a limited, comprehension of the human body and its disease.

MEDICAL LICENSURE IN MISSOURI

Missouri now has the opportunity of restoring better standards of medical licensure, the governor having signed the bill recently passed restoring the word "reputable" to the medical practice act in the reference to medical schools. About two years ago, a certain element succeeded in inducing the legislature to substitute for this word in the practice law the words "legally chartered." As stated in our editorial at that time,[1] the words "legally chartered" are meaningless, since the worst diploma mills that have ever existed have been chartered, but they have been very far from reputable. The effect of this change, therefore, was to take away from the licensing board the authority to refuse admission to its examinations to graduates of notoriously low grade medical schools. Unfortunately, the bill just enacted cannot correct the harm already done. It will, however, prevent the growth of the evil and encourage those who are striving so hard under many difficulties to maintain proper standards of medical education.

THE UBIQUITY OF BACTERIA

Micro-organisms are looked on by most persons as unfriendly neighbors from which there is no escape, and many have dreamed of far away lands where the smallest of living forms of matter are unknown. From various reports there is reason to believe that, far from inhabited regions, as on the great oceans or in the unexplored polar regions, the number of bacteria in the air is greatly reduced. That the micro-organisms are nevertheless present even in the virgin soils of the far north can no longer be denied in the light of bacteriologic studies. Barthel,[2] who has had an opportunity to examine samples collected by Wulff in the neighborhood of Cape York and also during one of Rasmussen's expeditions to the north of Greenland, has succeeded in isolating and identifying many familiar species. Not only in the previously untouched soils, but also in the contents of the intestine of arctic animals, is found a motley group of bacteria, yeasts and molds—most, if not all of them, familiar to us of the more contaminated zones. We must therefore admit the ubiquity of the common micro-organisms, whether in the torrid tropics or in Greenland's icy

1. Unfortunate Missouri, Current Comment, J. A. M. A. **76**: 1251 (April 30) 1921.
2. Barthel, C.: Recherches bactériologiques sur le sol et sur les matières fécales des animaux polaires du Groënland septentrional, Den II. Thule Ekspedition til Grønlands Nordkyst 1916-1918, 1922, No. 1.

regions; and in doing so let us remember that these lowly forms of life, while often baneful, are quite as frequently most beneficent to mankind.

THE EFFECTS OF RADIATIONS ON CELLS

Radiant energy, whether in the form of rays emitted by radioactive elements, especially radium, or in such manifestations as roentgen rays and ultraviolet light, is acquiring a rapidly growing importance in the work of the physician. The stimulus afforded by the various types of radiation may be beneficial or detrimental to biologic function, the outcome depending in part on the character and dosage, that is, the duration of exposure. For example, ultraviolet rays acting for a brief period on sugar cane may not only facilitate growth but also produce an increase in the content of sugar in the plant.[1] If, however, this optimal amount of radiation is overstepped, the plant being submitted to a longer exposure or to a greater concentration of rays, depression, culminating in complete arrest of physiologic function, is produced. The profound retrogressive changes produced by rays of radium on tissue cells is well known. The explanation for this phase of the reaction has been varied. Some investigators have reached the conclusion that the growth-promoting factors in cells can be inactivated by exposure to radiation; and the therapeutic usefulness of radium in checking the cell growth in tumors has been ascribed to such a destructive reaction. According to other observations, however, another cell factor may be altered. Thus, Packard[2] of the Peking Union Medical College has demonstrated on unicellular animals that one of the physical effects of the radiations is to increase the permeability of the cells by injuring the cell wall. If the treatment is continued long enough, the cells cytolyze completely. From this it follows that when cells are already highly permeable, as they are during growth and division, complete cytolysis quickly ensues; whereas, when the cell membrane is relatively impermeable, as it is in resting cells, radiation must be long continued before destructive cytolysis can be observed. It is only by the study of such details that we can hope to gain a larger insight into the major effects of radiant energy on living tissues.

1. Burns, D.: An Introduction to Biophysics, New York, the Macmillan Company, 1921, p. 126.
2. Packard, D.: The Susceptibility of Cells to Radium Radiations, Proc. Soc. Exper. Biol. & Med. **21**: 226, 1923.

Bedtime Stories.—It is an accepted fact supported by psychologists that one of the most effective methods of instilling right thoughts and habits into a child's consciousness is by stories told at bedtime, when the child's body is quiescent and the conscious mind drowsy with sleep. The subconscious self, which is then in control, may be molded, by suggestion, into what we desire it to be. The mistake is often made of relating at this hour tales of thrilling adventure and exciting wonder. By such stories, the child is wrought up to a nervous pitch that often persists throughout the night. The bedtime story should be one of Mother Nature, or one illustrating a certain trait of character desired in the child, and should be told with a calm voice such as induces a quiet restful sleep.—Moore, Nutrition of Mother and Child, J. B. Lippincott Company, 1923.

Association News

THE SAN FRANCISCO SESSION

Special Train of the Chicago Medical Society

Arrangements have been completed by the Chicago Medical Society to operate a special train by way of the Chicago and Northwestern, Union Pacific, Denver and Rio Grande Western and Western Pacific railroads from Chicago to San Francisco for the annual session of the American Medical Association. This train will leave Chicago over the C. & N. W. Ry., at 11:30 p. m., Thursday, June 21, and will arrive at San Francisco at 5:45 p. m., Monday, June 25. The train will be composed of the finest equipment, and the schedule has been so arranged that practically all the principal points of scenic interest, including Denver, Colorado Springs, Pueblo, the Royal Gorge, Salt Lake City and the Feather River Canyon, will be passed in the daylight hours.

For accommodation of the members of the Chicago Medical Society who will not find it possible to leave Chicago, June 21, a second schedule has been arranged whereby members and Fellows going to San Francisco may leave Chicago at 8:10 p. m., Friday, June 22, on the San Francisco Overland Limited and arrive in San Francisco at 2:30 p. m., Monday, June 25. Special sleepers will be attached to the regular Overland Limited for the benefit of members of the Chicago Medical Society.

Railroad and Pullman rates from Chicago and other Western cities were printed in THE JOURNAL, February 3. Reservations may be secured by communicating with Mr. H. G. Van Winkle, General Agent, C. & N. W. Ry., 148 South Clark Street, Chicago. Dr. R. R. Ferguson, secretary of the Chicago Medical Society, 25 East Washington Street, Chicago, represented that society in the completion of the arrangements for the special trains referred to above.

The House of Delegates Will Meet Monday, June 25

The House of Delegates will convene in San Francisco at 10 a. m., Monday, June 25. A number of special trains that have been arranged for the accommodation of Fellows of the American Medical Association will not arrive in San Francisco until Monday afternoon or evening. Members of the House of Delegates should, if possible, time their arrival in San Francisco so as to be present at the opening meeting of the House of Delegates on Monday morning.

Diagnostic Clinics at San Francisco

Diagnostic clinics as part of the program of the annual session will be held in accredited hospitals in San Francisco and Oakland on Monday, June 25, and Tuesday, June 26. Visiting Fellows and Fellows of the American Medical Association residing in California will take part in the clinics at each hospital. The San Francisco hospitals in which clinics will be held, and the names of the chairmen of the committees on diagnostic clinics at each hospital, are as follows: University of California Hospital, Wallace I. Terry; Lane-Stanford Hospital, George B. Somers; St. Joseph's Hospital, A. S. Musante; Franklin Hospital, Otto F. Westerfeld; French Hospital, George H. Juilly; Children's Hospital, Robert Langley Porter; Mount Zion Hospital, E. O. Jellinek; San Francisco Hospital, E. B. Frick; St. Francis Hospital, Bertram F. Alden; St. Luke's Hospital, L. J. Schermerhorn; Mary's Help Hospital, F. H. Rodenbaugh; St. Mary's Hospital, Thomas J. Nolan.

Hospitals in Oakland and the names of the chairmen of the committees are as follows: Fabiola Hospital, Daniel Crosby; Providence Hospital, O. D. Hamlin; Livermore Sanitarium, V. H. Podstata.

A central Committee on Diagnostic Clinics has been organized to harmonize and coordinate the clinics of each hospital so as to combine the results of all these clinics into a valuable review of progress in the diagnosis and treatment of a large variety of pathologic conditions. Dr. Walter B. Coffey is chairman and Dr. Edna L. Barney is secretary of this committee. The clinic program is practically complete for some of the hospitals, and plans are being perfected rapidly for the presentation of more than 100 clinics. Fellows

who are interested in these clinics and who wish to participate are invited to send their names and the subject of the proposed clinic to Dr. Frank Billings, secretary of the Board of Trustees of the American Medical Association, 1550 North State Parkway, Chicago, or to Dr. W. B. Coffey, chairman of the Committee on Diagnostic Clinics, 806 Balboa Building, San Francisco.

In addition to the clinics to be held in San Francisco and Oakland hospitals, a number of postconvention diagnostic clinics will be held in hospitals in other places in California on Monday and Tuesday, July 2 and 3. Further information about these postconvention clinics will be presented later in THE JOURNAL.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 854)

MEDICAL EXAMINATIONS AND LICENSURE

MARCH 5—AFTERNOON

DR. DAVID A. STRICKLER, Denver, President of the State Medical Boards of the United States, in the Chair

Enforcement of the Medical Practice Act

DR. H. M. PLATTER, Columbus, Ohio: It is comparatively easy for an administrative department to control the physician who transgresses, either through suspension or revocation of his license or by prosecution. The issue is clear, and the public supports it. Why is it, then, that when attempt is made to compel the cultist to conform to the same laws, we encounter opposition, not only from the cult organizations but also from citizens, many of whom are intelligent? While there is general agreement that high educational qualifications are necessary to practice medicine and surgery, just what is meant by that phrase is not clear in the public mind, and, therefore, a group of designing individuals may announce some new system of treatment without drugs or operative surgery, and by means of publicity delude the credulous and make them believe the discovery is not medicine or surgery and that any attempt at enforcement of the laws governing the practice of medicine as applied to them is the result of prejudice, bias and jealousy inspired by a mythical "medical trust." To a great part of the public, the phrase "medicine and surgery" means only the giving of drugs or the use of the knife. This narrow conception should be combated by us as individuals, as officials and as educators.

The practice of medicine and surgery means any agency whatsoever employed in the treatment of bodily injury, infirmity or disease. Massage, manipulation, hydrotherapy, electrotherapy and all the other single idea panaceas have been recognized by the medical profession as of value in a limited way for years, and not one of them can cure or relieve all conditions, and their employment in many conditions is worthless, even dangerous. The public regards the cultists as practitioners, whereas they should be classified in the public minds as *limited* practitioners.

Once the public understands that each system is in reality a *limited* branch of medicine and surgery, it will understand also that the field of operation should be limited, to be used only by intelligent persons in selected cases, and at no time should such practitioners in the eyes of the law or the public be placed on an equal plane with the doctor of medicine. I do not think it fair to condemn utterly any therapeutic procedure, nor do I know of any therapeutic panacea. The practitioner of medicine and surgery may use any means his judgment indicates in a given case; he would be foolish to discard all our discoveries and remedies save one, and attempt to employ it in every case.

The task of public education falls to the educator and to the health official. From the first should come a clear statement of the need of preliminary education and professional preparation necessary for medical practice. The various means of therapy that may be used in treatment of cases of a particular kind should be enumerated, and their limitations defined. The need of education in the fundamentals of the healing art, by which I mean anatomy, physiology, chemistry, pathology and diagnosis, is just as necessary for the cultist or limited practitioner as it is for the physician. The health official, through bulletins and the press, should emphasize that to administer his department efficiently he must have a cooperative and qualified profession; that control of epidemics and complete morbidity and mortality statistics require such qualifications, and that the permitting of unqualified and ignorant persons to care for the sick is a distinct menace to the public health.

Most of our laws are so wofully weak in their penalty sections that enforcement as applied to organized opposition is impossible, and I would recommend that the legal authorities of the several states be consulted and requested to put some action into the penalty section by which an individual offender, even though he is backed by an organization, may be promptly tried and punished. If it is possible for an offender, through appeal and release on bond, to continue in practice while the matter drags through the courts, no prosecution should be attempted generally; it should be reserved for flagrant violation.

I would call attention to the penalty sections of the Louisiana and Ohio laws. The former is superior in that it also includes procedure by injunction. Both are sufficiently active to cause consternation in the ranks of organized opposition, and I hope bring to successful realization the protection of the public.

In 1915, Ohio, in common with many other states, amended the medical practice act to permit the state medical board to examine and license persons desiring to practice a limited branch of medicine and surgery. Fourteen limited branches were specified. The state medical board was empowered to define each branch, make rules and regulations governing their practice, and inspect and recognize schools teaching limited branches. The board has had the assistance of all groups except the chiropractors. These individuals, through schools and associations, defied the department, and prosecution became necessary. In two years, twenty-eight were successfully prosecuted before a jury. Each appealed his case and continued in practice. In 1919 the penalty section was amended to eliminate trial by jury and to provide that each day's continuance in practice constitute a separate offense. Court procedures were invoked attacking the constitutionality of the law, the reasonableness of our definitions, rules and regulations, and administrative acts. All have been sustained. Since Jan. 1, 1923, we have been engaged in a program of prosecution of all unlicensed practitioners. Many have left the state; some are remaining in jail to pose as martyrs, while their sympathizers besiege and petition the legislators to deliver them from the "medical trust," and give them a special board of examiners. We believe their efforts will fail.

DISCUSSION

DR. KEMP P. B. BONNER, Morehead City, N. C.: There are two principal reasons for the failure of medical practice laws. First and most important is the failure of the public to appreciate that medical practice laws are for their protection and not for the protection of physicians. The public is beginning to think more seriously, however, of the importance of medical practice laws. For example, two editorials have appeared recently, written by Josephus Daniels, commenting on certain acts which were introduced into the general assembly granting special licensing legislation to individuals. Heretofore the medical profession has been inclined to cloak its methods, and to hold so aloof that the public did not understand the need of practice acts. The next reason for the failure to enforce medical practice laws is the weakness of the penalty sections. A clear definition should be inserted in every penalty section of the medical practice act of every state, because this penalty section is what is presented to the jury in the prosecution of violators of the medical practice act. If the penalty section includes no definition, the jury is free to make its own definition to fit the particular case. That has been a drawback in practically every one of our prosecutions. We could not convict the defendant, because the penalty section was silent as to what constitutes the prac-

tice of medicine. A universal fault in the penalty section of various states is the insertion of the fee and reward clause. It is absurd to place the burden of truth on the party receiving compensation for service rendered, and to imply that he is not guilty because he did not receive money for it. The state should not be interested in what a man receives for service; it is a question of incompetent service. The practice acts of four states in the Union have fee and reward clauses which defeat conviction under the penalty section. In one state, besides the fee and reward clause the act states that a man is not practicing medicine unless he uses some poisonous drug. He can use any drug he pleases so long as it is not poisonous. The enforcement of the medical practice law is best secured through a commission, a board of examiners, or some official body representing the state.

Dr. Samuel W. Welch, Montgomery, Ala.: The public is not entirely in sympathy with the idea that medical practice laws are made in the interest of the public, and the cry of the cults, that a medical trust is behind these prosecutions, finds favor with the average jury. We have a great deal of trouble in enforcing violations of the medical practice act against doctors. We had no difficulty until the chiropractors came along. As fast as we put them in jail they appealed to the supreme court, and the supreme court decided that it was a violation of the medical practice act. Each one appealed his case, and in the meantime kept on practicing just the same. I do not know just how we in the Southern states are going to handle the chiropractor invasion. It is the only thing that is giving us trouble. Osteopaths have begun to raise their standards, and are fairly respectable. We have only one examining board in Alabama, and only graduates of Class A medical schools are allowed to be examined by our board. Not a single failure has been registered against any graduate from a Class A school since we adopted that rule in 1918. Prior to that time three fourths of the applicants had failed. I believe that the best way to stop violation of the medical practice act is by injunction.

Dr. Charles E. Humiston, Chicago: The whole country owes much to Ohio for the manner in which it has administered its medical practice act, and for the medical practice act itself. A medical practice act can be enforced the same as any other act, if it is reasonable and brought to the attention of those whose duty it is to enforce laws intended for the protection of the citizens of the state. While I have not had much to do with the enforcement of any medical practice act for Illinois, I took occasion to inform myself as to the conditions in other states and the laws which the other states have. Illinois has a civil administrative code. Our medical practice act must be administered by a layman; this is a step in the wrong direction. It takes a professional man to understand professional questions. The courts generally recognize the treatment of any human ailment by any means whatsoever as the practice of medicine. While the fee and reward clause is useful, it should not dominate the definition. It can be used in some way so that mercenary persons treating the sick by questionable means for money would be reached only by this means. They treat disease under the guise of religion, which can be reached in that way. The medical practice act under conditions in Illinois must not be discriminatory. We have formulated such a bill. As to methods of treatment of disease, we say nothing in the bill except to restrict those to a particular form of treatment, which the license may do, and place a penalty on any method of practice other than the one for which the individual holds a license. The bill we have prepared not only recognizes every one treating the sick in any way, but also recognizes the fact that the practitioner must have a fundamental knowledge of the subject and a knowledge of the human body in sickness and in health, and whoever seeks and asks this high privilege must approach it on the same scholastic plane as every one else. Physicians should help the public to understand what they are doing for the public, and then they will not be misunderstood and maligned as they have been in the past.

Dr. Arthur T. McCormack, Louisville, Ky.; For thousands of years there has developed from time to time, and always will develop, some cult taking up some discarded or neglected function of medicine. Cults have developed because we have failed to use the knowledge we have for the benefit of sick people generally and specifically. Our medical ancestors were just as violent against our homeopathic and eclectic friends, because they were trying to do something we did not believe in. We thought at one time that they were just as bad as the chiropractors or the osteopaths. The better element of those who become members of any of these cults will have enough influence after a little while really to educate their cults. In Kentucky we recognize all cults or systems under the law. They are given the same examination in the fundamental branches. Whereas we had at one time 267 osteopaths, we now have only twenty-five or thirty in the state. The majority of the osteopaths have graduated in medicine and are now practicing it. It is very important that we carry on educational propaganda with the public and point out the importance of enforcing the medical practice act, which is for the purpose of protecting public health. We are not protecting physicians. We have lots of prosecutions for violation of the medical practice act that are not carried through because we fail to convict, but we ruin a man's reputation by testimony. If a chiropractor or osteopath, after failing in his examination, practices, he is prosecuted. We file his examination papers so that the jury will know he did not know anything. Our lawyer appeals to the jury on that basis, and not infrequently we have a rough and tumble fight. The population in that neighborhood turns out to hear the trial, and our attorney, an ex-governor of the state, a real leader of men, when he gets through, has educated the public to the importance of enforcing the medical practice act.

Dr. Thomas J. Crowe, Dallas, Texas: I have had some recent experience with medical legislation, and I know just what you can do with legislators. After having studied this question for about twenty-two years, I have arrived at the conclusion that one solution of this medical problem, and the only one that will be successful for very long, is a single standard for every man or woman who pretends to treat the sick. You cannot regulate the practice of medicine by legal enactment. Every man who is granted a license, limited or unlimited, will practice everything he knows when he becomes a legalized practitioner. He will give morphin if he thinks the patient requires it. All our men receive the same license, and all are privileged to practice whatever they please, so that a legalized osteopath can give morphin to a patient if he desires. You may not be quite ready for it now, but ultimately you will come to the conclusion that after you have properly established a fundamental education, you can let the question of practice settle itself. The individual practitioner will use his judgment.

Some Needed Revisions in Medical Licensure in Accordance with Present Day Medical Education

Dr. Kendrick C. Babcock, Urbana, Ill.: This article will be published in full in The Journal.

DISCUSSION

Dr. W. S. Leathers, University, Miss.: The licensing boards have in a large measure followed in the wake of the requirements of the Council on Medical Education and Hospitals of the American Medical Association and the advanced standards of medical education in our medical schools. The licensing boards are following these standards rather than setting standards for the colleges or the Council, and for that reason it appears to me that a revision of the requirements of the licensing boards should be made from the standpoint of a number of things. In the first place, the licensing board is passing through a transitional stage just the same as many other things in medicine. There was a time when the examining board was especially important to prevent unqualified students from practicing medicine; that was one of the outstanding functions of the board. At that time the examining board served as a stimulus to correct defects in medical education and in medical colleges; but since the Council on Medical Education and Hospitals, in cooperation with the medical schools, has greatly advanced the standards of medical education, it is no longer necessary for examin-

ing boards to shoulder the responsibility of correcting the defects in medical education in medical schools. Students who graduate from Class A medical schools and have been examined by men who are experienced examiners, and have been given the thorough training that is guaranteed by these institutions, should not be required to stand a further examination to practice medicine. I hope that the time will rapidly come when graduates from A grade schools will not be required to stand an examination before any examining board.

DR. ARTHUR T. MCCORMACK, Louisville, Ky.: I cannot agree with Dr. Leathers that men who are the graduates of Class A schools should not submit to examination. We cannot ask of our legislature to provide for such discrimination. I believe, however, that we can accomplish the same results if the examining board in each state will associate with the faculties of the institutions in that state and supervise examinations in such a way that they can accept the examinations as legal. For instance, the Illinois board might supervise the examinations given in such institutions as Illinois and Rush, but conduct separate examinations for institutions when the character of the examinations and standards is doubtful. I look forward to the time when it will not be necessary to impose the regulations that Dr. Babcock refers to of requiring an exact number of hours that were necessary at one time. Some schools are still so commercially inclined, however, that an attempt might be made to let students slip by without adequate preparation. Every state board, as rapidly as possible, should recognize that the colleges in Class A are themselves competent to determine the medical curriculum, and we should gladly look forward to the time when the medical institutions will reduce the curriculum and eliminate a lot of things that are now so much dead wood and are not of practical educational value.

DR. THOMAS MCDAVITT, St. Paul: All of these laws should cover only fundamental points. A medical practice act should not enter into detail, but should lay down the fundamental facts to manhood and leave the board with enough elasticity to take in all the points that are raised by Dr. Babcock. We blunder along in our medical practice legislation by putting too much in it. As to recognizing the Class A or Class B medical schools, and of excusing their graduates from the examinations, it is out of the question because it is purely class legislation.

DR. WALTER E. LEE, Darby, Pa.: As one of the younger workers on the Pennsylvania state board, my impression, after a few examinations, has been the uselessness of these examinations of graduates. In a conference with the deans of the various schools in our state, I was told that almost invariably the men we turned down in our examinations were those who they anticipated would fail. In one examination there were five men turned down, and when the dean was told that he had five men fail, he named them one after another. The medical colleges are far more competent than we are to judge of the character of men they present to us. We asked them why they send these lame ducks up for state board examinations, and they said that as practical physicians they were competent, but they feared their ability to pass theoretical examinations. Our examinations in Pennsylvania cannot be practical with 200 and 300 men to examine, and they do not compare with the practical examinations which are given by the national board with the few candidates that come before it. A tentative plan which has been discussed is that the state board be furnished by the deans of colleges with the final ratings in the freshman, junior, sophomore and senior years of any of these men as they pass through their undergraduate training, and those that pass during the four years a certain grade be given an exemption for the hospital year to the state board of Pennsylvania. This will eliminate nearly 80 per cent. of those we examine.

DR. BURTON D. MYERS, Bloomington, Ind.: There is one problem the medical schools of America are facing today which members of examining boards may not be acquainted with. Many of the A plus schools are turning away from their doors hundreds of young men who a few years ago would have been admitted. Where do these young men go? Where can they go? I believe the A schools could find some way of increasing the number of medical students they can take. That can be done by increasing the physical equipment or by doubling the size of the plant. Some of those men who come to us could perfectly well complete their medical course in three years if it were not for the trouble they get into when they come up for examination. If medical education today were organized on the quarter system, so that a student could begin his medical course at two different times during the year, manifestly a greater number of students could be cared for during the year. We could have two groups running at the same time, and the best of these groups could complete their course in three years.

DR. KENDRICK C. BABCOCK, Urbana, Ill.: As dean of a college of liberal arts and as an adviser of premedical students, I know something of how these fellows are looking at the problem, and I know very well the difficulties they are up against. They are perfectly honest, capable, strong thinking fellows, who are desirous of getting into medical colleges, but many of them are blocked by a waiting list. They talk with me during the freshman year as to where they are going to get in, not where they are going to get off, and take their chances with the rest. The matter of adjusting the curriculum to accommodate more students is going to be an expensive one. Every institution considers that it costs a good deal more money to use a plant all the time. You have to have some one to do the work, but it is a serious problem for young fellows where they are going to get their medical education.

The Hospital Intern Year as an Essential for License

DR. ALEXANDER MACALISTER, Camden, N. J.: Among the fundamental changes for betterment of medical education are the higher requirements for entrance into the professional school. Most, if not all, of our institutions today demand two years or more of college work of those who are admitted. This better preparation is reflected in the better type of medical student. The school term now consists of nine months, the course has been lengthened to four years, and many states require at least one year of hospital intern service before admitting students to the state board examinations and granting a license to practice. The requirement of a hospital intern year is still a matter of discussion. Its advantage, not to say its necessity, is so apparent that no arguments are needed in its favor. It is a great step in advance to have the prospective practitioner have his early actual experience in practical work under the guidance of experienced members of hospital staffs, to say nothing of the advantage to the patients who are not so often subjected to the danger of being experimented on by the tyro in medicine or surgery. One year of such practice does not make a physician, but the varied experiences and the degree of responsibility it entails are of inestimable value in developing self-reliance and conscientious work. The question of the supply of physicians throughout the country is not so much one of more physicians as of better physicians; and with the tendency to raise the standard of medical education, including the year in training in practical work, there is some chance of supplying this demand. One year should be the minimum requirement. Unfortunately, the economic question is an insistent one, and many of our embryo physicians cannot afford more than the year demanded for this minimum. It should not be reduced where it is in existence, and should be a law in every state. It were well also if there were some uniformity with regard to the essentials of intern service throughout the country. The minimum demanded in Pennsylvania represents what the minimum requirement should be. The Pennsylvania board demands a fifth year of instruction in medicine, consisting of an intern service in a hospital of at least seventy-five beds with medical, surgical and obstetric departments; the intern to serve at least six weeks in each department, during which time he shall have been in attendance or participated in at least six confinements. The hospital should also offer instruction in anesthetics and laboratory work, both clinical and pathologic. Pennsylvania recognizes and gives credit for a six months' service in hospitals having a fixed general staff representing all or most of the departments of medicine, but in which the work performed is largely either surgical or medical, with proportionate oppor-

tunities for laboratory experience. It also recognizes a three months' service in special hospitals, capable of giving a competent and valuable training in certain special lines which they cover: such as hospitals for the insane, for tuberculosis, for contagious diseases, children's hospitals, eye and ear hospitals, orthopedic hospitals, cancer hospitals, and the like. Standardization along these or similar lines together with compulsory intern service in all states would help to increase the supply of good physicians. Such standardization would also go a great way toward avoiding friction and increasing cooperation among the various states, since an internship served in one state would be recognized by other states. With the hospital standardization program established by the American College of Surgeons, as the minimum that is recognized throughout the country, the opportunity for adequate intern service is considerably enhanced and there is reasonable assurance that the chances for adequate practical work will be good. It is only a natural step from hospital standardization to standardization of state programs for granting of license to practice, and I have no doubt that this necessity will gradually become apparent, and that among the standard requirements will be an intern service of at least one year as an essential for license.

DISCUSSION: REPORT ON INTERN TRAINING

Dr. I. D. Metzger, Pittsburgh: Investigations of medical boards and other interested organizations indicate certain definite problems which need immediate consideration: 1. A clear, definite conception of the province of the hospital as an educational institution. 2. A more or less uniform organization in hospitals which shall offer the best possible care to patients with a maximum amount of helpful information and experience for professional attendants. 3. A systematic course of instruction which mutually aids the patient and student. 4. An adequate equipment for all needful investigations and a record system which tells all essential information pertaining to the case. 5. A type of internship which will render the best training in every department of medicine and will vouchsafe to the community safe, sane, well-informed, well-balanced, responsible, general practitioners of medicine. 6. A catalogue of hospitals in America which indicates the type of service given to interns in each, and which is formulated after an intelligent standardization on the distinctive type basis. 7. An earnest consideration by states, not now requiring it, of the value of the intern year, with a speedy readjustment in legal and medical technicalities so as to make it possible throughout the country. 8. Hospitals to be so sensitized to the requirements of the community that they will be not only rescue centers, but also health centers, from which are sent faithful servants in the care of the sick as well as effective harbingers of disease prevention and of health preservation.

Dr. N. P. Colwell, Chicago: In 1912, we made a survey of the hospitals which were willing to take graduates as interns, and found there were not enough hospitals at that time to provide internships for those who wanted them. Since then, however, the number of hospitals has tremendously increased. Many new hospitals have been built and others have been enlarged, so that they require larger numbers of interns. At present, therefore, more hospitals seek interns than can be supplied from the present number being graduated each year from the various medical schools. That disproportion may not continue to be so marked, since the indications are that within the next three years the number of graduates will be greatly increased. The number graduated this year was small—those who entered in 1918, the war year. Based on the numbers of students enrolled in the next three classes, there will be about 3,000 graduates this year; 4,000 or more in 1924, about 5,000 graduates in 1925—the largest number since 1906. For that reason there may be enough graduates to supply the hospitals that are worthy of obtaining them. Some hospitals which want interns should not have them. All hospitals should be investigated to see which are in position to provide a satisfactory training for interns. In some hospitals the interns are merely orderlies, or are turned loose in the hospitals, without instruction or supervision, and therefore get little out of their internships. An internship ought to be a year of more advanced instruction than the last clinical year in a medical school; and if it can be made that, it will be of real value to any graduate.

Dr. William Dick Cutter, Albany, N. Y.: When we issue a license to a man to practice medicine, we by no means certify that he is competent to practice medicine in all its phases and qualified to deal with emergencies that may arise in the course of his practice. If we certified to any such thing as that, we would have to extend the course of training to five or ten years more than at present. I should like to quote the words of President Hadley to one of the graduating classes at the Yale Medical School. He said: "Young gentlemen, your education is not now completed but only just beginning. Do not think you have learned to practice medicine. You have acquired merely the tools of medicine; you get your education as you go out into practice, and we hope you have been so taught to use these tools that you will learn to do things correctly." I agree with Dr. Colwell that a year of internship, if it is required, should be a period of instruction, not merely a period of service as an orderly in a hospital. At present, however, in very few hospitals is the work so arranged that an intern really acquires any additional instruction, experience or responsibility which is at all commensurate with the time he is obliged to give. Before we undertake to require that our medical students should go through this period of training, we ought to be in a position to tell them where their time can be profitably spent.

Dr. William Pepper, Philadelphia: I am sorry to hear the last speaker in a way cast discredit on the hospital year, because I think it is the most important year of all. We all acknowledge and admit that it is not what it might be or what we should like it to be. We cannot control these outside hospitals. We cannot say that all these staffs have proper instructors, but what we can do is to improve them. The best way to improve teaching hospitals is to improve the work which the interns get there by some sort of control. About ten years ago I read a paper in favor of the state control of the intern year, and I am still in favor of that method of requiring that year. Pennsylvania, through its medical board of examiners, has done a great deal to improve matters in the hospitals of the state. Our graduates who go into intern services in the hospitals of the state are getting better service than they did. When this law went into effect, the hospitals thought it was a good thing for them because it gave them control over the interns. They now find they are the ones who must improve, and the state board has control over them more than it has over the interns. Before the law went into effect, nearly all the graduates in the schools of Pennsylvania had served internships, so that it did not force, except in a few instances, a man to take that important year of work. I look on the state law as justly beneficial on account of what it has done to improve matters in hospitals.

Dr. Thomas J. Crowe, Dallas, Texas: We made an effort to get the hospital year as a statutory qualification in the medical practice act of Texas, but find that the legislature is not yet prepared for it. I believe that in the study of this matter we have been too specific about some things in our qualifications. I believe we have hampered a great many ambitious men by being too specific in our two year premedical college requirement. I know some young men who have been kept out of medicine because of that specific requirement. The man that has pride, the man that can get along and get through in less time, should be taken care of.

Dr. Austin A. Hayden, Chicago: I am very much interested in the administration of the fifth year or hospital intern year. It seems to me that, rather unawares, a new medical school has been formed in the United States which very soon will be national in character. This new medical school, as Dr. Colwell has informed me, will have this year a membership of about 3,000. Next year it will be 4,000, and the following year about 5,000. The faculty to a considerable extent consists of men who are doing general practice or men who are not connected at present with teaching institutions. When you come to see the number of hospitals that are not connected with medical schools that house interns and instruct them, you will find that the majority of interns are receiving

their fifth year of instruction in that sort of institution. I believe that the proper regulation or proper standardization of that year constitutes perhaps the most important medical educational problem the profession, as well as state examining boards, has to do with. By all odds the fifth year is the most important year of the entire five. Medical students themselves are a factor in deciding the desirableness of a hospital internship. Verbal information has been handed from one intern to another that a certain hospital has been deemed desirable or undesirable for interns. The hospitals in Chicago are mostly of the rotating type of service and of one year's duration. It is most desirable to establish this type and length of service as the standard for the fifth year requirement. The single service is not an adequate preparation for the graduate of medicine. The special and single service hospitals should be reserved for postgraduate use.

DR. S. G. DAVID, Grand Rapids, Mich.: This discussion has been of the utmost importance to me. A few years ago the American College of Surgeons, without any particular authority, attempted to introduce into the hospitals of the country a standardization program. You are all aware of the trials and tribulations they have had in attempting to secure anywhere near 100 per cent. perfection. They set up minimum standards and sent investigators to determine whether the staffs were beginning to live up to these standards. Last year, at one hospital session in one of our states, it was said that there were not three of all the hospitals in the state where the staffs were fulfilling 90 per cent. of the requirements of the American College of Surgeons; yet it has done a great deal toward improving the practice of medicine where a standard has been established in hospitals. From my knowledge of hospitals throughout the country, the intern is getting the poorest and lowest type of training. In all honesty and fairness to the medical student, those states that demand a fifth year should standardize the service and the teaching of the intern in the hospital that he goes into. If the staff is not able to set up standards, then that hospital has no right to an intern, nor has the state a right to permit that young man to go to that hospital.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

County Hospital Opened.—The Mobile County Tuberculosis Sanatorium, at Cottage Hill, was formally opened to the public, March 4. More than 1,000 persons attended the opening exercises, and each person, as requested, brought a book for the hospital library. Dr. Lee W. Roe and Dr. Edward S. Sledge will be the attending physicians at the new institution.

ARIZONA

State Tuberculosis Association Elects.—At the annual meeting and banquet of the Arizona Antituberculosis Association, February 15, the following officers were elected: president, Gen. John C. Greenway, Douglas; vice presidents, Drs. Samuel H. Watson, Tucson, John W. Flinn, Prescott, and the Rev. B. R. Cocks, Phoenix; treasurer, Dr. William Warner Watkins, Phoenix, and secretary, R. C. Cuvellier, Phoenix. Arthur J. Strawson of the National Tuberculosis Association addressed the assemblage.

CALIFORNIA

Higher Requirements for Pharmacists.—Senator Crowley's bill for higher standards for pharmacists was favorablly reported out of the senate public health and quarantine committee, March 9. The bill requires of applicants for license to practice pharmacy a minimum age of 21 years, American citizenship, and a five years' college course. The state board of pharmacy is backing this measure.

California Institute of Technology Given Endowment Fund.—Mr. Arthur H. Fleming of Pasadena, for many years president of the board of trustees of the California Institute of Technology, has recently given to the institute $4,200,000 as a permanent endowment fund. This, with previous donations, makes a total of more than $5,000,000 given by Mr. Fleming. Conditions made by the donor are that the institute limit its enrolment to not more than 2,000 students, and that it continues to specialize in research in chemistry and physics.

County Medical News.—Orange County has appointed Dr. William Leland Mitchell as full-time health officer.——Monterey County has appointed Dr. Bailey T. Tally as county health officer on a full-time basis. Dr. Tally, formerly of North Carolina, has been selected county health officer of Monterey County to succeed John A. Beck.——The Riverside County Medical Society gave a banquet to Dr. John C. King, Banning, on his retirement from active practice, and decided to form a medical library to be known as the John C. King Memorial Library.

CONNECTICUT

Personal.—Dr. Millard Knowlton has been appointed epidemiologist of the Connecticut State Department of Health, beginning April 1.——Dr. Ethel C. Dunham, instructor in the department of pediatrics at Yale School of Medicine, New Haven, read a paper on "Earliest Signs and Symptoms of Rickets," before the New Haven Medical Association, March 20.——Dr. Howard A. Kelly, Baltimore, who was a guest of the staff of Grace Hospital, New Haven, held a surgical clinic at the hospital, March 16. A dinner was given for Dr. Kelly at the Graduates Club.——Dr. William S. Miller, associate professor of anatomy at the University of Wisconsin Medical School, Madison, gave a series of lectures, March 7-14, at the Veterans' Bureau Hospital, New Haven, in connection with the school of tuberculosis.

FLORIDA

New Medical Society.—The Jacksonville Medical Society, recently organized, met, March 6, to adopt a charter and elect officers. Dr. Perye E. Watts was elected president, and Dr. Alvah H. Weathers, secretary-treasurer. Forty-six physicians of Duval County comprise the new society.

GEORGIA

Hospital News.—Work will start at once on the $300,000 Steiner Memorial Hospital to be erected at Atlanta. The hospital will be used for the free treatment of cancer, and will be operated in conjunction with the Grady Hospital.——The Carrollton Memorial Hospital at Carrollton has been closed owing to lack of funds, it is announced.

HAWAII

Medical Society of Hawaii.—The annual meeting of the association will be held in Honolulu, April 28-30, under the presidency of Dr. J. E. Strode. Dr. W. K. Chang is secretary.

New Building for Queen's Hospital.—A new four-story concrete addition is under construction at Queen's Hospital, Honolulu, which will increase the capacity to 256 beds, and makes this the largest and most modern hospital in the islands of the Pacific. The approximate cost of constructing the addition will be $500,000.

ILLINOIS

Full-Time Health Officer for Peoria.—It is reported that the city council in Peoria has appropriated $4,500 for the annual salary of a full-time medical health commissioner, and $1,800 for a full-time experienced milk inspector.

Addition to St. Margaret's Hospital.—An addition to St. Margaret's Hospital, Spring Valley, will be erected at a cost of $110,000. The new structure will be six stories high, and will join the north end of the present building. The work is to be completed by December 1.

Personal.—Dr. Edward V. Anderson, Woodstock, for forty-two years physician to the McHenry County Poor Farm, has resigned and will reside in San Diego, Calif.——Dr. Daniel D. Raber, Bloomington, was reelected county physician for the third term by the board of supervisors, March 7.

Whooping Cough Test at Lincoln School.—Through the cooperation of the state department of public welfare, the department of public health is studying the intracutaneous test for the early diagnosis of whooping cough, at the

Lincoln State School and Colony. More than a hundred tests have already been made.

Physicians and Undertakers Fined.—Drs. William F. Lambkin of Watson and Harry A. Dimond of Dietrich were fined $5 and costs recently, for failure to report births in accordance with the law. J. A. Johnson of Effingham and George W. Markwell of Newton, undertakers, paid fines in the same amount for violating the law which requires the obtaining of burial permits prior to interment. Court action in each case was instigated by a special field agent of the state department of public health.

Society News.—The Montgomery County Medical Society, at the annual meeting at Litchfield, elected Dr. Christian H. Zoller, Litchfield, president, and Dr. Charles H. Lockhart, Witt, secretary-treasurer.——Dr. Bransford Lewis, St. Louis, was the guest of honor at a dinner given by the Adams County Medical Society at Quincy, March 12. Following the dinner, Dr. Lewis gave an illustrated lecture.——Dr. Edwin W. Ryerson, Chicago, professor of orthopedics at Rush Medical College, was the principal speaker at a meeting of the Rock Island County Medical Society, March 13, at Moline.

Health Promotion and Safety Week.—April 22-28, inclusive, has been set aside by a proclamation of the governor for the annual observance of health week in Illinois, the occasion to be known as "Health Promotion and Safety Week." The safety feature has been added with the idea of bringing strongly to public attention the importance of preventive measures against automobile accidents, which have increased at an alarming rate in the state. The other items on the program will relate chiefly to public health measures, such as frequent physical examinations, maternity and child hygiene promotion, the application and extension of sanitary measures and the importance of safe milk supplies. A definite program for the occasion has been worked out by the state department of public health, and information relative thereto may be obtained on application.

Chicago

Psychologist Arrested.—It is reported that Premel E. Adoros, teacher of psychology and head of the Transcendent Scientist Society, was arrested, March 17, for violating the medical practice act, after he had prescribed for a patient.

Dr. Geraghty Addresses Medical Society.—Dr. John T. Geraghty of Baltimore addressed the Chicago Medical Society, March 28, on "The Present Status of the Treatment of Malignant Diseases of the Prostate and Bladder." The address followed a dinner in honor of Dr. Geraghty given by members of the society at the Hamilton Club.

Improved Medical Service for Prisoners.—Under new regulations adopted by the sheriff, prisoners with venereal disease, will be segregated, and provision made for a venereal disease clinic to be held in the jail under the direction of the city health department. At a meeting, March 28, plans were outlined for more intensive medical service in the jail, the details to be worked out by the city health commissioner.

Coroner to Investigate Deaths from Tuberculosis.—On and after April 1, 1923, the coroner of Cook County will prohibit the health department issuing burial permits for persons reported dead from tuberculosis unless the cases had been reported previously as tuberculosis. The coroner will investigate all such cases to establish the cause of death. During 1922, says the president of the board of directors of the Municipal Tuberculosis Sanitarium, the death certificate constituted the first report in too many of these cases. The usual explanation for failing to report cases is that physicians are called in at the termination that the family may obtain a death certificate and thus a burial permit. "There should be no reason why a doctor should feel that he must sign a death certificate on a case which has not been under his care and treatment, but has been treated by some cultist, who under the law has no power to sign a death certificate."

INDIANA

Hospital News.—April 30 to May 5 has been set aside for a state-wide campaign to complete the building fund of the James Whitcomb Riley Memorial Hospital, Indianapolis, it was recently announced.——The Deaconess Hospital, Indianapolis, has been purchased by the Ohio and Senate Realty Company. The property will continue to be operated as a hospital.

Pictures of Trip to San Francisco.—The Indianapolis Medical Society at a meeting, March 13, displayed five reels of motion pictures of the trip planned for physicians who attend the Annual Session of the American Medical Association at San Francisco. Dr. Charles R. Sowder, chairman of the legislative committee of the society, spoke on "Medical Legislation Passed and Its Future."

IOWA

Gift for Child Welfare.—The Rockefeller Foundation has given $22,500 to the Child Welfare Research Station of the State University of Iowa, of which Prof. Bird T. Baldwin is director. This sum will be received in three instalments over a period of three years.

LOUISIANA

Medical Meeting Postponed.—The annual meeting of the Southern States Medical Society has been postponed until April 24-26, according to Dr. M. W. Swords, secretary of the state board of health. The society was to meet, April 14, but will be postponed until the return of Dr. Oscar Dowling, who is now in South America.

MARYLAND

Medical Meetings.—The medical societies of Johns Hopkins Hospital, honored the memories of Louis Pasteur and Edward Jenner, March 26. Dr. Simon P. Flexner of the Rockefeller Institute and Dr. William H. Welch addressed the meeting. Dr. Henry B. Jacobs exhibited rare volumes from the pen of Pasteur, and presented prints and portraits pertaining to his life.

Personal.—The state health commissioner has appointed the following physicians on the staff of the Children's Dispensary, to be maintained at the Robert Garrett Hospital for Children: Dr. Henry L. Sinskey, director of the eye and ear clinic; Dr. W. Raymond McKenzie, in charge of the nose and throat clinic, and Dr. Gustav H. Woltereck, pediatrician.——Dr. Kyle W. Golley has been appointed superintendent of the Mercy Hospital, Baltimore, the appointment to become effective, July 1.

MASSACHUSETTS

Admission of Voluntary Patients to Hospitals for Insane.—The following regulations for the admission of voluntary patients to hospitals for the insane have been formulated by Dr. Kline, commissioner of mental diseases:

No person shall be admitted as a voluntary patient who can be regularly committed by the courts as an insane patient.

No minor shall be received as a voluntary patient in any asylum.

No patient shall be admitted as a voluntary patient unless he or she is fully competent to understand the conditions of admission and is fully aware of the fact that immediate release can be secured on request.

Every person admitted as a voluntary patient must first have signed his or her own admission petition.

If at any time the patient signifies his or her desire to leave, the officer must at once supply the patient with a written application for release.

MICHIGAN

Narcotic Measure Passes.—Representative Burn's bill making it a felony to sell or have in one's possession any habit-forming drugs, was finally passed by the house, March 14. The measure, as well as making the offense a felony instead of a misdemeanor, has a search and seizure clause, with the same scope as that applying to the liquor laws. The bill will go into effect immediately.

MINNESOTA

Staff for Shriners' Hospital Appointed.—The staff for the Twin City Shriners' Hospital for Crippled Children, Minneapolis, was approved by the board of governors, March 3. Dr. Wallace Cole, St. Paul, will be surgeon-in-chief. The following physicians will be among those on his staff: Paul W. Giessler, Iver F. Selleseth, Alexander R. Colvin, Carl C. Chatterton, Frederick A. Olson, Harry B. Zimmerman, James T. Christison, Frederick C. Rodda and C. Eugene Riggs.

Personal.—A banquet was given by the staff to Dr. Henry M. Bracken, head of U. S. Veterans' Hospital No. 68, Minneapolis, on the occasion of his transfer to the Veterans' Hospital at Atlanta, Ga.——Dr. Milton J. Rosenau, Harvard Medical School, Boston, gave the annual address of the Alpha Omega Alpha Honorary Medical Fraternity in Minneapolis, March 7. His subject was "Food Poisoning."——Dr. Leverett D. Bristol, professor of public health and preventive medicine at the medical and graduate colleges of the University of Minnesota, Minneapolis, has been appointed county health officer for Cattaraugus County. Dr. Bristol

will be in general charge of the tuberculosis and public health demonstration which is being carried on in Cattaraugus County with the assistance of the Milbank Memorial Fund.

MISSOURI

State Association Changes Date.—Dr. E. J. Goodwin, St. Louis, secretary of the Missouri State Medical Association, announces that the annual meeting of the association will be held in Joplin, May 8-10, instead of May 9-11, as previously announced.

Clinical Society Organized.—The Kansas City Clinical Society was recently organized to develop the educational advantages of the clinical material of Kansas City and to coordinate the clinics of greater Kansas City that they may be available throughout the year to visiting physicians. Officers of the society are: president, Dr. Edward H. Skinner; vice president, Dr. L. F. Barney; secretary, Dr. James R. McVay, and treasurer, Dr. Joseph Kimberlin.

NEBRASKA

Omaha Physician Sentenced.—Reports state that Dr. John T. Mathews, Omaha, aged 70, was sentenced in the district court, March 12, to five years in the state penitentiary on a charge of causing the death of Miss McDermott, of Basset, through an illegal operation. Dr. Mathews will appeal to the state supreme court.

NEW YORK

State Hospital Commission.—An inspection tour of the thirteen hospitals for the insane in the state by the state hospital commission started March 13. The purpose of the tour is to outline a plan to relieve overcrowding.

State Hospitals to Be Fireproof.—State Architect Sullivan W. Jones has started on plans to make the various state hospitals fireproof. The Manhattan State Hospital on Ward's Island, which was recently burned, will be rebuilt and made fireproof throughout. There is $250,000 available for the work which will begin within a month.

New York City

Tenth Harvey Society Lecture.—The Harvey Society announces that its tenth lecture will be given, April 14, by Professor Otto Meyerhof, University of Kiel, Germany, on "Auto-Oxidation Processes of the Cell."

Fund for Pediatrics.—The College of Physicians and Surgeons of Columbia University has received $5,000 from William Perry Watson, consulting medical director of the Prudential Insurance Company of America, for a permanent fund for pediatrics. The annual income of the fund will be given to the member of the graduating class doing the most valuable work in diseases of infants and children during the regular course at the college.

Postgraduate Medical Courses.—Graduate courses for physicians in Brooklyn will be instituted at seven borough hospitals, April 16, through the joint efforts of the Kings County Medical Society and the Long Island College Hospital. The institutions in which teaching courses will be given are Brooklyn Home for Consumptives, Greenpoint Hospital, Jewish Hospital, Kingston Avenue Hospital, Long Island College Hospital, St. Catherine's Hospital and Wyckoff Heights Hospital. Thirty-five courses have been planned.

Chiropractors Protest.—More than 700 chiropractors of Brooklyn and their friends met recently to protest against what they term "the insidious propaganda of the medical profession" which they assert is keeping them from winning legal recognition in New York state. They approved a bill offered in the Assembly last week by Assemblyman Peter A. Leininger of Long Island City giving state recognition to chiropractic. Ways and means were outlined for bringing the measure to the attention of the legislators.

Motor Exhaust Imperils Health.—The question of the amount of carbon monoxid gas in the air due to the large number of motor vehicles in the city was submitted to the public health committee of the New York Academy of Medicine, which has submitted a preliminary report. The report states that at certain periods of the day and in certain areas of the city the concentration of carbon monoxid gas is such as to call for remedial measures. While all the data have not been made public, they are said not to be startling, yet serious enough to warrant continuing the investigation.

Hospital News.—Flooding of the excavation for the new Reconstruction Hospital at One Hundredth Street and Central Park West, through bursting of a six-foot sewer, March 16, caused alarm lest the north wall of the present hospital building be undermined. As a precautionary measure, the patients were transferred to other hospitals.——Members of the board of directors of the Manhattan Eye, Ear and Throat Hospital celebrated the fifty-fourth anniversary of the founding of the institution at the Hotel Astor, March 15, and launched a $300,000 campaign for funds with which to provide additional quarters. The plan is to add three stories to the present six-story building, which will provide a total of 165 beds in wards.

NORTH CAROLINA

Physician Honored.—At a meeting of the Mecklenburg Medical Society at Charlotte, March 6, Dr. Isaac W. Faison, former president of the state medical society, was presented with a gold watch in honor of his seventieth birthday, and his forty-seventh year of practice in North Carolina.

State Board of Health News.—Dr. James S. Mitchener, Raleigh, has been appointed director of the division of medical inspection of schools to succeed Dr. George M. Cooper, who has been appointed assistant secretary of the state board of health, a position which has been vacant for several years. Dr. Mitchener formerly served as epidemiologist of the board. ——Dr. Knox E. Miller of the U. S. Public Health Service, for several years assigned to the State Board of Health of North Carolina as director of county health work, has been assigned to Louisiana for similar duties. He is succeeded in Raleigh by Dr. Everett F. Long.

John McTyeire Flowers Lectures.—Dr. W. W. Keen, emeritus professor of surgery at the Jefferson Medical College of Philadelphia, will give the John McTyeire Flowers lectures at Trinity College, Durham, April 10, 11 and 12, in the Craven Memorial Hall. Dr. Keen will lecture on "The Value of Medical Research to Mankind and to Animals, Especially as Illustrated by the Achievements of Louis Pasteur," "Victory over Various Diseases," and "The Duty of the Citizens of the Community to Promote and Support Medical Research." Dr. Keen will also address the alumni of Jefferson Medical College, April 12. All Jefferson alumni who can be present are requested to notify Dr. Joseph A. Speed, Durham.

OHIO

Medal Awarded.—Dr. Harold J. Gordon, Akron, has been awarded the distinguished service medal. Dr. Gordon held the rank of major in the Medical Corps and participated in the engagements in the Argonne and at St. Mihiel.

Chiropractor Fined.—Reports state that Edward Schuette of Cincinnati was fined $25 and costs, March 15, by Judge Bell, for practicing medicine without a license. Schuette will appeal. Trials of twelve other chiropractors opened March 19.

OKLAHOMA

Health Bulletin Reissued.—The *Oklahoma Health Champion*, the official monthly publication of the Oklahoma Public Health Association, which suspended publication due to lack of funds, has been revived with the March issue.

OREGON

University News.—A bill was recently passed by the legislature and signed by the governor, appropriating $200,000 for the next two years for maintenance of the University of Oregon Medical School, Portland. The school has at present an enrolment of about 200 students.

PENNSYLVANIA

Personal.—Dr. Salvatore Lojacono, superintendent of the Grandview Sanatorium, Oil City, has resigned.——Prof. Arthur A. Hamerschlag, president of the Carnegie Institution of Technology, Pittsburgh, has been elected president of the Carnegie Research Corporation of New York City.

A Municipal Mental Clinic.—A municipal mental health clinic has been opened in Pittsburgh, under the auspices of the department of charities, at the City-County Building. This clinic accepts persons with mental disorders regardless of their ability to pay for treatment, and will assist the courts and welfare organizations by examining drug addicts, alcoholics, and juvenile delinquents. The clinic has four psychiatrists and two psychiatric social workers. Dr. E. E. Mayer is director.

University News.—A statement of the financial needs of the University of Pennsylvania, Philadelphia, has been sent

to Governor Pinchot by Dr. J. H. Penniman, provost of the university. The statement was prepared in accordance with the governor's request for data to present to the state council on education, which is to recommend a policy toward higher education. At least $1,500,000 is needed from the state if a deficit is to be avoided in the next two years. Last year, the difference between the amount paid by students and that expended by the university for education was $814,250.

Physicians Oppose Vaccination Bill.—At a hearing on the Lauver bill, before the house committee on public health and sanitation, March 20, the medical profession of Pennsylvania was well represented. This bill would make vaccination optional and repeal the present compulsory law. The physicians strenuously opposed the bill. The proponents of the measure were principally nonmedical men, who presented well known antivaccination propaganda. Drs. C. Lincoln Furbush, G. W. McCoy, A. A. Cairns, W. F. Donaldson, Walter Cornell, H. C. Frontz and George A. Knowles were among the physicians present at the hearing.

Philadelphia

An All-Philadelphia Conference.—All phases of charitable, civic and social work in Philadelphia are to be represented in a conference of more than 300 agencies, April 18-21, which will be known as the All-Philadelphia Conference on Social Work. The main sessions will be held in the auditorium of the Academy of Natural Sciences.

Germantown Hospital to Rebuild.—The older buildings of the Germantown Dispensary and Hospital, at Penn and Chew streets, will be replaced by modern fireproof structures at a cost of $1,000,000, it was announced, March 15, by Francis R. Strawbridge, president of the hospital. A campaign to raise the necessary money will be started next month.

Cornerstone for Samaritan Hospital Laid.—Ground for the new building for the Samaritan Hospital was broken, March 21, with appropriate exercises. This building will be erected in front of the middle wing of the present hospital at Broad and Ontario streets. Gifts to the building fund of $20,000 by the Edward G. Budd Manufacturing Company, and $5,000 by the Freihofer Baking Company, were announced following the ceremonies.

Surgeons Attack Anatomic Bill.—The future of Philadelphia as a center of medical learning is declared by leading surgeons and teachers of anatomy throughout the state to be tied up in a bill recently introduced into the state legislature by Representative Golder. The measure is bitterly opposed by physicians and surgeons and, March 20, a group of surgeons went to Harrisburg to fight it in committee. The act is designed to take from the state anatomic board nearly all the authority it had over the disposition of the bodies of paupers and unidentified persons, it is alleged. The executive committee of the state anatomic board, which will fight the measure, includes Dr. J. Parsons Schaeffer, president of the board; Dr. Hewson, secretary, and Dr. Henry Morris, treasurer.

TEXAS

State Health Week.—Governor Neff has designated April 2 as the date for the opening of a state-wide health promotion campaign, to be conducted by the state board of health.

UTAH

Chiropractic Bill Passed.—An examining board of five chiropractors will be selected and recommended to the state department of registration, in compliance with the new law. Under the law, recently enacted, chiropractors will be licensed to treat disease as other practitioners are, and will be amenable to the state and city laws regarding contagious diseases and the signing of death certificates.

WASHINGTON

Typhoid Survey.—The Washington State Board of Health has asked the legislature to appropriate $8,000 for a survey of the Yakima Valley, in which there has been an annual epidemic of typhoid fever and enterocolitis.

Personal.—Dr. Herbert L. Moon, Seattle, suffered a fracture of three ribs in an automobile collision, March 8.——Dr. Park W. Willis, Seattle, has been appointed a member of the state board of medical examiners to succeed Dr. Charles C. Tiffin.

Graduate Medical Lectures.—The University Extension Graduate Medical Lectures at the University of Washington Medical Department, Seattle, will be given in July. There will be four regular courses this year, consisting of twenty lectures altogether. Drs. Finney, Stengel, Ormsby and Rosenow will be the lecturers.

WEST VIRGINIA

Personal.—Dr. John H. Bird, Rock, has been elected president of the Mercer County Medical Society.——Dr. Fred O. Marcum, who has been ill for the past two years, has returned to Ceredo to resume practice.——Drs. Page Dameron Barlow and Robert A. Ashworth have been elected president and secretary, respectively, of the Marshall County Medical Society.——Prof. A. P. Mathews, of the University of Cincinnati, lectured at the School of Medicine of West Virginia, Morgantown, on "The Origin of Organic Matter," March 15.

Society News.—The annual meeting of the West Virginia State Medical Association will be held at Beckley, June 12-14. Instead of the usual banquet, an old fashioned barbecue will be held at the Raleigh Country Club, June 13.——Resolutions were passed at the Mingo County Medical Society opposing the creation of a special board of chiropractic examiners for West Virginia. It is now illegal for chiropractors to practice in the state, and owing to the diligence of the county society no chiropractors are located in Mingo County, it is stated.

WISCONSIN

Health Show.—A health show will be held in Milwaukee, April 21-28, under the auspices of the state board of health. The profits will be used to promote child welfare in the city.

CANADA

Drugless Healer Fined.—It is reported that J. J. O'Malley, a drugless healer of Calgary, was fined $50 and costs for practicing medicine without a license, March 4. O'Malley was arrested following the death of Mrs. Elizabeth Parker as a result of diphtheria. O'Malley treated her for the disease, it was stated, by making her wear spectacles containing strong lenses.

Hospital Superintendents Appointed. — Dr. Edward M. Pearse has been appointed general superintendent of the Provincial Royal Jubilee Hospital, Victoria, B. C., to succeed Dr. Edward S. Hasell, who resigned because of ill health, following twenty years' of service.——Dr. Clarence B. Farrar, Ottawa, has been appointed superintendent of the Homewood Sanatorium, Guelph, Ont., to succeed Dr. Alfred T. Hobbs, who resigned recently.

McGill University News.—An endowment of $25,000 for the departmental library of chemistry at McGill University, Montreal, by John Baillie, was recently announced. The endowment will be a memorial to the donor's son, Lieut. George Irving Baillie, who was killed during the World War.——A series of luncheon lectures on industrial medicine was recently arranged by the governors of McGill University, in order to bring before the manufacturing and industrial sections of the community the importance of preventive and sanitary medicine in industry. Dr. B. L. Wyatt, Laurentide Health Service, spoke on "Industrial Medicine"; Dr. Haven Emerson, Columbia University, New York, on "Periodic Health Examination in Industry"; Prof. George C. Whipple, Harvard University, Boston, on "Industrial Sanitation"; Dr. Linsly R. Williams, National Tuberculosis Association, on "Industrial Health from the Standpoint of Tuberculosis," and Dr. Wilbur A. Sawyer, Eastman Kodak Company, New York, on "The Physician in Industry."

GENERAL

Dr. Victor C. Vaughan Receives Medal.—The French government presented the medal of the Legion of Honor to Dr. Victor C. Vaughan, March 28, for meritorious service in science and in the World War. The decoration was presented at the Chicago Club by Mr. Barthelemy, the consul, in the presence of a few medical friends.

Child Health Test to Be in South.—The American Child Health Association, which recently selected Fargo, N. D., for its child health demonstration, announced, March 11, that the second of the three experiments will be carried out in some community south of the Mason and Dixon line and east of the Mississippi River. A rural county of not more than 30,000 population and containing no town of more than 5,000

inhabitants, will be selected. The demonstration will continue five years.

National Clean-Up and Paint-Up Campaigns.—Under the auspices of the Bureau for Better Home Towns, St. Louis, clean-up and paint-up campaigns have been carried out in 7,000 cities in the United States in the last ten years. The *Spotless Town News,* issued by the bureau, gives methods for conducting these campaigns, and illustrates the benefits derived. Trophies in the form of solid silver cups have been presented to various cities which have been deemed "the cleanest town." Lynn, Mass., won the cup in 1922, and Boston in 1921.

Society News.—The thirty-fifth annual meeting of the American Pediatric Society will be held at French Lick Springs, Ind., May 31-June 2, under the presidency of Dr. L. Emmett Holt. This will be the occasion of the first annual golf tournament of the society.——The nineteenth annual meeting of the National Tuberculosis Association will be held at Santa Barbara, Calif., June 20-23.——The annual meeting of the American Bronchoscopic Society will he held in Atlantic City, N. J., May 9, the day preceding the meetings of the American Laryngological, Rhinological and Otological Society.——The sixty-eighth semiannual meeting of the Southern California Medical Society will be held at Long Beach, Calif., April 6-7.

The Prevention of Juvenile Delinquency.—Through a special gift of the Commonwealth Fund, the National Committee for Mental Hygiene has been able to create a division on the prevention of delinquency. The work of this division falls into two groups: (1) department of psychiatric field service and demonstration clinics, and (2) department of experimentation. The first department provides two traveling clinics to juvenile courts and other interested agencies throughout the country, to demonstrate the value of psychiatric work in the prevention of delinquency and conduct disorders of childhood. These clinics will remain from six to twelve months in each community chosen. It is planned, during a five-year demonstration, to select at least eight centers where it will be possible to organize the social forces of the community most effectively, to deal with the problem of juvenile delinquency. The first traveling clinic completed its demonstration in St. Louis, December, 1922. Every child coming before the juvenile court received a preliminary physical, mental, and social survey. Following this, a careful summary of all the findings, an estimate of the essential causative factors involved in the child's behavior and recommendations for treatment were made, along medical, psychiatric, educational and social lines. This clinic was transferred to Norfolk, Va., in December, at the request of the judge of the juvenile court and the city council, and will remain until June. Following the visits of the traveling clinic, the director of the division keeps in touch with the work and organizes groups of those persons who had been under training during the demonstration period, to carry on the work until the city takes over the entire support of the undertaking.

FOREIGN

Child Labor in Japan.—Japan has adopted the Convention of the International Labor Organization of the League of Nations prohibiting generally the employment in industry of children under 14 years of age. This step involves the repeal of the present Japanese law that admits children under the age of 12 to certain light industrial employment.

Medical School at Batavia, Java. — According to an announcement received from the Government Medical School at Weltevreden (Batavia), Java, this institution is conducted to train the natives of Java to practice medicine among their own people. The course extends over seven years, the first two of which are largely devoted to premedical subjects including English, Dutch, and the native languages and literature, botany, zoology and other subjects. During 1922 there was an enrolment of 131 students.

Medical Education in Jugoslavia.—A schedule of minimum requirements for the regulation of medical colleges has been issued by the board of health of Jugoslavia, in which a certificate of moral character, and evidence of preliminary education (high school) are requirements for admission to lecture courses. The curriculums of the medical schools are to embrace four years of instruction and one year's internship in a hospital, aggregating at least fifty months. Subjects to be included in the course of instruction must comprise anatomy; physiology; chemistry; physics; materia medica and therapeutics; theory and practice of medicine, including ophthalmology; otology, dermatology and neurology; pathology and bacteriology; surgery, including orthopedic surgery; obstetrics and gynecology; hygiene and medical jurisprudence.

Foreign Congress.—The Ligue Française d'Hygiène Mentale, the Ligue Belge d'Hygiène Mentale and the U. S. National Committee of Mental Hygiene will hold a congress in New York, April, 1924. Among the subjects to be discussed will be the abuse of stupefying drugs, the reorganization of teaching of backward children, reform of penal systems, psychophysiologic vocational selection and the technic of psychotherapy. Dr. Genil-Perron, Ligue d'Hygiène Mentale, 99 Avenue de la Bourdonnais, Paris, is general secretary.——The fourth annual British Congress of Obstetrics and Gynecology will be held in Edinburgh, April 19-21.——The National Council of Social Hygiene, a federation of nine private associations dealing with public health, held its sixth session in Prague, February 7. Dr. Alice G. Masaryk of Czechoslovakia was reelected chairman of the council.——A national congress for research work in tuberculosis will be held in Prague, May 19-21, under the auspices of the Czech Association for the Promotion of Research in Tuberculosis. Prof. Ivan Honl is chairman.——The Oxford Ophthalmological Congress will be held at Keble College, July 4-6. The Doyne memorial lecture will be delivered by Dr. H. M. Traquair on "The Differential Characters of Scotomata and Their Interpretation."

Personal.—The Académie de médecine at Paris recently elected Dr. Salimbéni of Acquapendente, Italy, a foreign corresponding member. He was formerly connected with the Pasteur Institute. Dr. Malvoz, professor of bacteriology at the University of Liége, was elected at the same time.—— Dr. John Weir has been appointed a physician to the Prince of Wales. This is the first official recognition of a homeopathist on the part of a member of the royal household.—— Major Gen. Sir William B. Leishman, director of pathology at the War Office, London, has been appointed to succeed Sir John Goodwin as director general of the Army Medical Service.——The Prix de Carthage, a biennial prize founded in 1921 for scientific or historical work, has been awarded to Dr. Nicolle of the Pasteur Institute of Tunis, for his investigations of typhus fever, kala-azar, trachoma and Malta fever. ——Sir T. W. Edgeworth David has resigned as president of the Australian National Research Council on account of ill health. Orme Masson, professor of chemistry in the University of Melbourne, has been appointed his successor in this position.——*Science* relates that a grant of $100 has been made from the E. Thompson Science Fund to Professor Wiedemann of Erlangen, in order that he may continue his research on the physical properties of colloidal substances. A grant of $150 was made to Professor Lipschütz of Vienna, for further research on mouse tar cancers.——Prof. P. Flechsig of Leipzig has been elected an honorary member of the Swedish Society for the Advancement of Science.—— Dr. J. L. Yagüe of Madrid has been awarded the Roel prize of 3,000 pesetas by the Instituto Medico of Valencia for his work "Extragastric Purgative Medication."

Deaths in Other Countries

Dr. **Ian D. C. Howden,** surgeon and radiologist to the Royal Victoria Hospital, Dover.——Dr. **Peter C. Smith,** for twenty-two years medical officer of health for Wandsworth, London, and one time editor of the *Sanitary Journal;* aged 65, of cerebral hemorrhage.——Dr. **Lucius Spengler** of Davos-Platz, noted for his operative work in tuberculosis.——Dr. **Diógenes Vargas** of Mendoza, president of the public health service of the province, and senator.——Dr. **Surbek,** president of the medical licensing board in Switzerland.——Dr. **E. Lejeune** of Brussels, formerly inspector general of the army medical department, aged 82.

CORRECTIONS

Leprosy in New York.—In THE JOURNAL, March 17, mention is made of a case of leprosy at Bellevue, and it is stated that "this is the only case of leprosy in New York City as far as known." Dr. Howard Fox points out that approximately fifty lepers are to be found in New York City at any time.

Tuberculosis Instructors Erroneously Reported. — The Assistant Director of the U. S. Veterans' Bureau writes that the following names were erroneously included in the list of instructors from Yale University who will teach in the Veterans' Bureau schools for instruction in pulmonary tuberculosis (THE JOURNAL, March 24, p. 860): Drs. J. S. Ely, E. K. Hunt and A. M. R. Lauder.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 5, 1923.

Science in the Army

Sir William Leishman, F.R.S., has been appointed director general of the army medical service. The appointment marks a new departure in the service, for previously the position was given to men who had distinguished themselves as administrators, never to a scientist. Sir William Leishman entered the army medical department in 1887, and became major in 1905, colonel in 1915, and major-general in 1918. He has done a considerable amount of research in bacteriology, and is known all over the world for his discovery of the parasite of kala-azar, which he observed in films taken from the spleen of a soldier who had died from the disease in 1900; but he did not publish a description of it until 1903, when the same observation was independently made by Lieutenant-Colonel Donovan of the Indian medical service, who found the organism by splenic puncture during life. In 1903, he became assistant professor of pathology at the Army Medical School, and in 1910 professor. When the war broke out he was sent to France as adviser in pathology, and when he returned to England in 1918 he was appointed director of pathology at the war office. He has also done valuable work on tick fever, and has devised a method of chromatin staining which is used in laboratories all over the world.

Physician Sued for Negligence in Setting a Fracture

A case of considerable medical importance has been heard at the Somerset assizes. A woman claimed damages against a physician, alleging negligence in treating a fractured forearm, as he failed to set the bones in apposition, set them out of alinement, and did not take reasonable care to see that they were set so as to unite. In consequence, there was displacement of the lower fragments, and the bones failed to join properly. An operation in which the bones had to be sawed through and reset with plates and screws became necessary. It was also complained that he did not make a roentgen-ray examination. The accident occurred, June 9, 1921, and both bones of the forearm were fractured. The defendant was sent for and first applied a temporary splint. He removed the plaintiff to his office, where he set the arm. At the end of the sixth week, when the splints were taken off, the bones had not united. The patient then consulted a surgeon, who performed the operation described. The result was a fair arm, but she could not do hard work. The surgeon who performed the operation stated in evidence that he took a roentgenogram which showed the bones overlapping at the fracture. Judging from what he found, proper treatment had not been afforded to the arm. It was a difficult fracture to set, and in his opinion nothing could have been more helpful than a roentgenogram to see that the setting was satisfactory; he regarded that as a routine practice nowadays. When the arm did not mend, he thought that it amounted to a lack of reasonable care not to have taken a roentgenogram. He did not agree that the plaintiff was a poor bone-forming subject. Another surgeon gave evidence confirming the operator. The physician described his treatment, and said that he did not consider a roentgen-ray examination necessary. July 22, he found that there was nonunion. The girl was in a bad state of health, and he prescribed a tonic to improve her general health and bone-making capacity. August 19, he again removed the splints, and the bones seemed to be united. He instructed the patient to keep the arm in a sling and have massage performed. August 27, the arm was in good condition, but on September 9 he found a good deal of swelling around the seat of fracture, which suggested to him that there had been some violence. He then found that the bones were not in alinement, and he reapplied the splint after placing them in alinement. Another physician gave evidence that he examined the arm, September 19, in consultation with the patient's physician, and found it perfectly straight, but there was no union. He considered that the treatment had been correct, but suggested that the bones should be rubbed together to encourage union. A nurse who performed the massage also gave evidence that at first she found nothing abnormal, and that afterward deformity and swelling appeared. Mr. T. H. Openshaw, consulting surgeon to the London Hospital, stated that it was not usual to take a roentgenogram of a limb in a case of ordinary simple fracture of this nature. One could get the bones into perfect alinement without the roentgen rays. The advice as to massage was perfectly correct. He saw no reason why the two physicians in consultation could not find by manipulation whether the bones were straight. If the patient had been operated on immediately, she might not have had as good an arm as she had. His theory was that she was a poor bone maker. In cross-examination he was asked by the plaintiff's lawyer: "Do you say that an x-ray examination was not necessary"? He answered "Yes. It would have prevented this case being brought. You would not have a leg to stand on if there had been an x-ray examination." Mr. Richard Warren, formerly surgeon to the London Hospital, and examiner in surgery at the Universities of Oxford and Cambridge, stated that, having heard the physician's evidence, he could not criticize the physician's treatment in any way. The judge told the jury that the patient of an ordinary physician was entitled to expect fair skill, but not such as from a specialist. If a physician made a mistake and it was not due to want of reasonable skill and care, that was a misfortune. One could not expect infallibility in physicians more than in other professional men. It was for the jury to say whether the physician had been guilty of negligence. If it found for the plaintiff, it was a case for moderate damages. The jury returned a verdict for the defendant. The case once again emphasizes the fact that if physicians would avoid litigation in fracture cases they should, except in the most simple, have roentgenograms taken.

A Condemnation of Spiritualism

In a lecture on "The Forces Behind Spiritism" before the Victoria Institute, Dr. A. T. Schofield, a writer on psychotherapy, strongly condemned occult practices. Being a denial of Christ, he urged that these forces must be of evil origin and their influence diabolical. Spiritism was not all fraud, for marvelous phenomena were produced. The evidence was too strong for denial that in certain instances heavy furniture was moved. There was the testimony of several well known persons that they saw the famous medium, D. D. Home, float out of a window 85 feet above the ground, travel 7½ feet to the next window, and there glide in feet foremost. The chief force in spiritualistic manifestations was that of evil spirits, ever seeking to possess the medium or inquirer, and many sorrowing war mothers had been deceived by them. The second force was also nonhuman, but it was less terrible, being merely freakish and useless, and was often imitated fraudulently in conjuring. This category included levitation and such performances as the floating of Home, luminous appearances and automatic writing. We could only fall back on Maeterlinck's suggestion that old demons loved to fool those who sought the secrets of the other world. The third force was not superhuman, but consisted of occult powers that human beings mostly possessed. They were connected with the unconscious mind and thought transference, which accounted for most supposed messages from the dead. The

seeker was convinced by the truth of the information about the departed perhaps known only to him or her, but these details, presumed to come from the spirit world, in reality came from the seeker's brain, which the medium unconsciously read. Sometimes, however, this process might be combined with communications from evil spirits. Spiritualism was a hoary evil, condemned in the scriptures, and "Harley Street" was making a good harvest out of its injurious influence.

The Fellowship of the Royal Society

The highest scientific distinction in this country is the Fellowship of the Royal Society (F.R.S.), which is granted only for eminence in original research. The council has recommended fifteen persons for election to the society. Those that are members of the medical profession are Dr. E. D. Adrian, university lecturer in physiology, Cambridge; Dr. E. Fawcett, professor of anatomy in the University of Bristol; Dr. R. T. Leiper, professor of helminthology in the University of London, and Dr. J. J. R. Macleod, professor of physiology in the University of Toronto.

Investigations in Animals on Vitamin and Mineral Deficiencies

The Rowett Institute was founded near Aberdeen to explore the wide field of animal nutrition. Its work was begun in 1914, interrupted by the war, and resumed on full scale in 1920. This consists generally of feeding experiments on farm animals. So far, the results seem to show that too much reliance has been placed on feeding experiments made on rats and guinea-pigs, and that conclusions drawn from them do not necessarily apply to other and larger animals. A litter of pigs was divided into three groups and fed on a basic ration boiled and stirred for an hour (which destroys vitamin C and seriously affects vitamin A). One group had the three vitamins added in the form of fresh-cut grasses and clover; the second had A in the form of cod liver oil, and C in the form of fresh-grated swede; the third had no addition of vitamins, but was given a practically vitamin-free extra ration to make up for the energy value in the extra rations of the others. All three had access to a box containing mineral matter according to an analysis of the ash of sow's milk. All three did equally well. In a similar experiment, pigs, given an abundant supply of minerals, were fed on a diet so free from vitamin C that guinea-pigs fed on it developed scurvy in the third week; they flourished. Experiments were made on pigs with a basic diet as free as possible from vitamin A, but with mineral deficiency. To one group, cod liver oil, which contains A in abundance, was added; to the other, linseed oil, which is deficient in A. The interesting result followed that cod liver oil had a definite beneficial effect on health and the rate of growth, but the effect was greatest when the diet was ill balanced or defective in its mineral constituents. Moreover, the beneficial effect was greater in the sheep than in pigs. In young pigs a condition closely resembling rickets in children was brought about by deficiency in minerals.

On a ration consisting only of grains which contain an excess of magnesium, potassium and phosphorus, and a deficiency of calcium and sodium, a condition indistinguishable from that of rickets in children, quickly arose. The addition of cod liver oil to the diet improved the general health, but did not prevent the disease. But adjustment of the mineral contents of the diet enabled the animals to grow from weaning to sexual maturity without any signs of rickets. Thus, in pigs the chief factor in the production of rickets is the lack of mineral matter in the food. The beneficial influence of vitamin A and sunlight is most marked when the mineral balance is defective. The conclusion is drawn that there is little warrant for paying the heavy prices of food stuffs rich in vitamins for farm animals.

PARIS

(From Our Regular Correspondent)

March 2, 1923.

The Inadequacy of the Sanitary Passport

According to the regulations in force at present, any person entering France from a country known to be contaminated by any of the so-called pestilential diseases (plague, cholera, yellow fever, typhus) must be provided with a "sanitary passport." From the moment the person in question is given this document, he becomes subject to sanitary surveillance, which does not cease until the time, as indicated on the passport, has elapsed within which incubation of the disease to which he has been exposed, and of which he may have brought the germ to France, might occur. In reality, however, this is the way the thing works out: At the frontier or at the port of disembarkation, the traveler is asked to state the name of the place to which he is going, and, if possible, to give also his future address. The public health officer, after filling out a double blank form, gives one sheet to the traveler, and mails the other to the mayor of the commune in question. The sheet that the traveler receives constitutes his sanitary passport, which the bearer must present or have presented to the mayor of the commune, within twenty-four hours after his arrival. The second sheet is called the "sanitary advice." It gives to the local public health authorities the name and address of the traveler, the region from which he has come, and the reasons for, and the duration of, the surveillance to which he must be subjected. The purpose of these formalities is to put the municipal authorities in a position to exercise toward this class of travelers a special sanitary surveillance, which shall consist in assuring themselves that, within the time specified, they do not contract any suspected affection, or, if they do, that all the necessary measures as regards isolation and prophylaxis are instituted. However, experience has shown that, in the majority of cases, the traveler gives a false address to avoid being discommoded, with the result that in that case no control can be exercised.

In order to remedy this deplorable state of affairs, Drs. P. Vigne and R. Crémieu (Lyons) propose that every traveler holding a sanitary passport be required to leave a cash deposit at the point of entry, the amount to be determined by the financial condition of the traveler and the exigencies of the case. This sum would be returned by the municipal authorities or the public health office of the locality to which the traveler was proceeding, on presentation of the receipt given at the point of entry. In order to recover their deposits, travelers would thus be compelled to present themselves to the authorities responsible for the sanitary surveillance.

The Abuse of Intravenous Injections

In the third volume of his Année Thérapeutique, which has just appeared (Paris, 1923, Masson et Cie, publishers), Dr. L. Cheinisse protests against the present exaggerated use of intravenous injections. This abuse, he says, seems to be based partly on the false idea that the intravenous route is always preferable to the hypodermic method, and partly on the belief in the absolute harmlessness of intravenous injections. As for the supposed superiority of the intravenous method, the fact is often lost sight of that, while it is true that injections by the vein carry the drug immediately to the blood stream, it is no less true that the drug disappears just as quickly, which is not an indifferent matter in the case of numerous medicaments. For instance, if an intravenous injection of antidiphtheric serum is given, which is indicated only in hypertoxic diphtheria, it must be followed immediately by an intramuscular or subcutaneous injection, by reason of

the rapidity with which the antitoxin introduced by the vein is eliminated. It cannot, therefore, be upheld that intravenous injections are always more efficacious than subcutaneous injections. With respect to the harmlessness of intravenous injections, it may be stated that, unfortunately, the dangers associated with injections by the vein are greater than is commonly supposed. Péry recently reported to the Société d'obstétrique et de gynécologie of Bordeaux serious complications following an intravenous injection of hexamethylenamin (hematuria, epistaxis, and pulmonary congestion with hemoptysis). Then, again, certain substances employed in intravenous injections, such as sodium carbonate and calcium chlorid, are particularly irritating to the perivascular tissues; one should, therefore, take great care in giving intravenous injections to avoid allowing the injected drug to penetrate the subcutaneous cellular tissue. Other substances, such as iodin-iodid solutions, which have been recommended of late, have the disadvantage of soon causing induration of the veins.

These facts, taken as a whole, are of a character to cause the practitioner to be on his guard against too widespread use of intravenous injections.

Examination, During Actual Flight, of Candidates for Aviation

The organism of the aviator must rapidly adapt itself to abnormal and ever changing conditions of existence. Aviation demands functional suppleness, as it were, and the estimation of such suppleness furnishes one of the best criteria of the physical aptitude of a candidate for aviation. It is important, therefore, to be able not only to evaluate certain physiologic functions of the aviator but also to study these functions under conditions as much like those encountered in actual flight in an aeroplane as possible. The aviator during flight is subjected to various abnormal influences, among which may be mentioned as exceedingly important the diminution of atmospheric pressure, and its corollary, the diminution of the partial tension of oxygen. Experimentation on mountains, in balloons, and in caissons containing air under pressure, has brought out many important physiologic facts. The use of caissons is especially valuable in securing experimental data of a delicate nature. But depression and diminution of partial tension of oxygen are not the only factors affecting the flight of the aviator, and it has proved interesting and instructive to carry out during flight certain researches on the variations of arterial pressure, the maximal vital capacity and the variations of the blood urea. Dr. Beyne, a member of the army medical corps, presented lately an interesting communication on this subject to the Société de médecine militaire française.

The performance of experiments, even though very simple, on board ordinary aeroplanes is both difficult and troublesome. The instability of the instruments, the vibrations of the motor, the cold, the abominable ventilation, and the lack of space, disturb, to a considerable extent, both examinee and examiner. Beyne has been able to secure more favorable conditions of experimentation by utilizing a closed aeroplane of the sanitary service, which has a cabin sufficiently large to convert into a miniature laboratory, perfectly sheltered from the wind, well lighted, and where, if necessary, an electric heater can protect the occupants and the instruments from the cold. Beyne has been able, in this aeroplane, to record arterial pressure curves, cardiographic and sphygmographic tracings, and tracings showing the vital capacity, and all this at various altitudes, up to 4,200 meters. This new use of the aeroplane will render good service in certain researches, and will allow the examining physician to secure better data on the influence of certain factors on the organism of the aviator, during actual flight, than he would be able to obtain if he waited on the ground below, until the aviator landed.

New Doctors "Honoris Causa" of the University of Paris

The council of the University of Paris, on recommendation of the faculties concerned, decided at its last session to confer the degree of doctor honoris causa on a number of men of science in other countries. The Faculté de médecine will so honor Dr. Keen, formerly professor of surgery in Jefferson Medical College, Philadelphia, and Dr. Golgi, professor of histology at the University of Pavia, Italy. The diplomas and the corresponding insignia will be bestowed on the men thus distinguished during the ceremonies connected with the reopening of the university next fall, which will be held, Nov. 24, 1923.

PEKING, CHINA

(From Our Regular Correspondent)

Feb. 1, 1923.

Shanghai Medical Congress

In Shanghai, during the week of February 14-21, a congress of medical men from all over China will be held under the auspices of the China Medical Missionary Association. In the morning and evening sessions, addresses of a general medical nature will be delivered. In the afternoon there will be sectional meetings. The program includes addresses under "General Medicine" on diabetes, epidemic (lethargic) encephalitis in China, syphilis, radium, kala-azar in China, growth and development of Chinese children, carbon tetrachlorid as an anthelmintic in uncinariasis, physical examination of medical students, malaria, vital capacity studies and leprosy. Under "Surgery" are included papers on skin grafts, ruptured spleen, bone surgery, tuberculosis of the knee, fistula in ano, pathologic changes in the scrotal contents, lymphosarcoma and ankylosis. Other sections are clinical physiology, pharmacology, obstetrics and gynecology, ophthalmology, ear, nose and throat, roentgenology, parasitology and hygiene and public health.

In the special morning sessions the following subjects will be discussed: "Medical Mission Policy," Dr. Henry Fowler; "Medical Evangelism," Dr. F. M. Auld, Dr. H. F. Love and others; "Medical Ethics," Dr. Merrins and others; "Government Public Health in China," Surg.-Gen. S. H. Chuan; "The Problem of the Future of the Council on Health Education," Dr. W. W. Peter; "The Problem of the Future of the National Health Association of China," Dr. S. M. Woo; "Hospital Administration," Dr. J. H. Snoke; "Training of Hospital Technicians," Dr. J. A. Snell. In the general evening sessions, papers will be read on "The Activated Sludge Process of Sewage Disposal in Shanghai," Charles Harper; "What Public Health Activities Are Possible of Immediate Initiation in China?" Dr. Wu Lien Teh; "Report of the Work of Central Epidemics Prevention Bureau in Peking," Dr. Edgar Tsen; "Public Health Activities in Nanking," Dr. C. W. Woodworth; "Pasteur," Dr. C. Noel Davis; "Lister," Dr. E. G. Gauntlett; "Nursing," Miss Cora E. Simpson, executive secretary, Nurses' Association of China; "Medical Education," Dr. H. S. Houghton and Dr. Harold Balme; "Public Health," Dr. W. W. Peter.

A Consolidation of Medical Schools

From the standpoint of medical education in China, an important consolidation has taken place in the absorption of the North China Union Medical College for Women in Peking by the School of Medicine of the Shantung Christian University at Tsinanfu. The former institution was established about twenty-five years ago as a part of the plan of the North China Educational Union, composed of four missionary

bodies. The cost of its establishment and maintenance was borne by the Board of Foreign Missions of the Methodist Episcopal Church in America. The original investment for buildings and equipment was $100,000 gold. The budget for the past year was $75,000 gold. During the past year it has had twenty-four students in the medical school, and forty students in the school of nursing. This board has also supplied the largest part of the teaching staff, although some of the teachers were supported by other missionary bodies. The teaching staff has consisted of ten full-time and several part-time instructors.

Prior to the establishment of the new Peking Union Medical College by the China Medical Board of the Rockefeller Foundation in 1919, it was the only organized medical school in North China giving medical education to women. In that capacity it served a useful purpose, even though its equipment was limited.

With the resources and equipment of the new medical college in Peking made available for women, the possibility of funding the resources of the North China Union Medical College for Women with the medical school at Tsinanfu was proposed. The School of Medicine of the Shantung Christian University is the best of the mandarin-speaking and mandarin-teaching medical schools in China. It is supported by a union of missionary bodies, but up to this time the Methodist board has not had a large share in the work. The present transfer will bring the resources of the Methodist board into the union in Shantung, and will result in a great improvement in the facilities for both men and women students, and an increase in the professional staff. Women will enter as first year students with the men in the fall of this year. The rest of the school will be transferred in January, 1924.

BELGIUM

(From Our Regular Correspondent)

Feb. 8, 1923.

Rinderpest, or Cattle Plague

M. Leynen, inspector of the veterinary service, has just published a report on the incidence of the rinderpest in Belgium during 1920. Since 1865, the rinderpest had not appeared in our country. An investigation was therefore instituted by the department of agriculture to discover the origin of the present epizootic, and it was found that the plague had been introduced into the quarantine stables of the port of Antwerp by zebus brought from India. These animals were much more resistant to the plague than our indigenous cattle, and the mortality in this herd was not very high, so that the presence of the plague was not suspected. The appearance of the rinderpest in Belgium, and likewise of dourine at the present time, shows that diseases that we scarcely anticipate may be introduced within our borders. Hence the necessity arises of having a veterinary service ever on the alert and ready to institute an energetic campaign against epizootics. Such a service is of prime importance not only to safeguard the particular interests of each country but also to protect Europe as a whole. It is quite probable that if a vigorous campaign had not been waged against this epizootic in our country, it would soon have assumed threatening aspects for the neighboring countries. The results secured in Belgium in the fight against the rinderpest prove that in any country in which this disease has been accidentally introduced it should be completely eradicated by the formulation and strict enforcement of sanitary rules.

The Belgian Bureau of Eugenics

The Belgian Bureau of Eugenics was created through the generosity of M. Armand Solvay, and is located in the Solvay Institute of Sociology at Brussels. The inauguration of the bureau was celebrated, a few days ago, in the presence of several departmental ministers. This bureau will occupy itself, from the beginning of its activities, with the organization of research services that will be capable of rendering valuable aid to societies that are dealing with problems of social hygiene.

Workers will be trained in the redaction of geneological tables, in their schematization according to pedigree, and in the analysis of the personality of people with whom they have dealings, in order that the nature of such persons may be understood better. The investigator in eugenics must not neglect any source of information, such as teachers, instructors, civil and religious authorities, schools, asylums, prisons, hospitals, charity organizations and public health organizations, in order to accumulate a mass of data with regard to the history of families that are dangerous on account of their faults or misdemeanors, or remarkable for their eminently good qualities. This information is then sent to the central office, where it is digested in accordance with a particular classification comprising such groups as families, professional groups and ethnic elements. Thus, the Belgium Bureau of Eugenics brings out the indispensable complementary need of societies of public health and welfare, for the reason that they are pursuing similar ends: an amelioration of the conditions under which new life is generated, and an improvement of the conditions under which lives are lived. It is in these two different domains that the Belgian Bureau of Eugenics will pursue its practical studies, aside from its scientific researches.

A Course in Hydrology and Climatology

Until such time as regular instruction in medical hydrology can be provided in our universities, the Société belge d'hydrologie et de climatologie médicales is about to establish special courses, which will begin soon in Brussels (the definite time will be announced later). Dr. Terwagne will open the course of instruction and will give three lectures on thalassotherapy. Dr. Wybauw will give nine lectures on hydrology. Drs. Guilleaume and Schaltin will speak on hydrotherapy. A second course has been planned, for which Dr. Moreau has already been engaged.

Transmissibility of Bovine Tuberculosis

In a communication presented recently to the Société royale des sciences médicales et naturelles of Brussels, M. Hamoir took up the controversial question as to whether bovine tuberculosis is transmissible to man, which was answered negatively by the "dualists" of the Koch school. As is well known, this question is one of great importance for the continental countries, in which 4 per cent. of the cattle are affected with tuberculosis. The udder is infected in 5 per cent. of the cows presenting a positive reaction, and in from 25 to 50 per cent. of the cows affected with generalized lesions. The milk preserves a normal appearance for a long time, although its acidity and its butter and lactose content are diminished. The test for *Bacillus tuberculosis* is always positive, and is observed even in cows not yet affected with tuberculous mammitis but reacting to tuberculin. Bacteriologic control of milk should therefore be demanded, since the Koch bacillus is so frequently found in milk delivered for human consumption: in Berlin in 14 per cent. of the specimens examined, in Naples in 50 per cent., and in Washington in 13 per cent. It is well known that there are numerous transitional types between the bovine bacillus and the human bacillus. The human bacillus may be transmitted to cattle by the venous, subperitoneal or subdural route. The human virus, by passage through guinea-pigs, becomes virulent for cattle. The cases of tuberculous meningitis of the bovine type

collected by Adams are frank. In cases of mesenteric and cervical adenitis in children, bacilli of the bovine type are frequently found. The writer considered, therefore, that the ingestion over a prolonged period of tuberculous raw milk constituted a real danger for the child.

Autotransfusion of Blood

Speaking before the Belgian Surgical Society, Moons of Antwerp emphasized that operative statistics might be improved by a more extended application of blood transfusion. In six cases in which either he or one of his assistants operated, recovery was much facilitated by the autotransfusion of blood that had collected in the peritoneal cavity. From 700 to 1,200 gm. of blood was recovered with a spoon and filtered through sterile gauze, 1 per cent. of sodium citrate was added, and the blood was injected into the median basilic vein. In a seventh case in which autotransfusion was employed, death resulted eighteen hours after the operation. A rapid rise of temperature had occurred, but there had been no peritoneal symptoms. Moons was in doubt whether death was due to postoperative sepsis or to the autotransfusion of blood. He thinks it is possible that the addition of sodium citrate in this case, in which the amount injected was particularly large (1,200 c.c.), may have been a factor, as recent studies in France and the United States would seem to indicate. Moons stated that in the future he will employ for transfusion noncitrated blood, preferably from a donor, rather than resort to autotransfusion.

VIENNA

(From Our Regular Correspondent)

Feb. 25, 1923.

Weight and Size of Children of the Working Classes in Vienna

During the last four years all youths coming under the notice of the section "for the care of apprentices" of the ministry of health have been carefully weighed and measured for the purpose of obtaining data on their physical development. There is excellent opportunity for this statistical work, especially in the recreation homes, and the results obtained give a good insight into the variations and changes that are taking place in the working classes of Vienna, for these contribute almost all the inmates of these homes. Dr. Lebzelter has compared the figures for 1919 and 1921. He reports that in 1919 the number of boys in each age year between 14 and 18 was 1,316, 1,776, 812 and 189. The corresponding figures for 1921 were 1,016, 1,518, 1,373 and 681. The average heights in these groups for 1919 were 151.84, 155.34, 160.50 and 165.30 cm. For 1921 they were 154.6, 158.6, 162.62 and 163.39 cm. The average weights for 1919 were: 41, 42.66, 47.5 and 51.35 kg.; in 1921 the corresponding weights were: 44.35, 45.5, 50.0 and 52.5 kg. It is clear, therefore, that the general health of the children of the working classes in 1921 was much better than in 1919; the diminished height of the oldest group of 1921 is perhaps due to the small number examined in 1919 (184 boys as compared with 687 in 1921). The younger groups show, in each instance, more improvement than the older ones; in these the year of starvation had caused damage that was not so easily reparable. Among the boys examined, those whose parents were employed in the electric and metal industries made the best showing; these classes of laborers commanded the highest wages. There is not yet available a suitable basis for conclusions concerning the girls, as regular measurements in 1919 were not obtained. In 1921, however, investigation was conducted on the same lines as with the boys, and the following figures were obtained. The four age groups included 317, 367, 322 and 324 girls, respectively. The average heights were 153.6, 154.5, 155.5 and 155.75 cm.; the average weights, 43.9, 46.96, 48.4 and 52.1 kg. During the stay in the recreation homes, the youths have increased in weight without exception, the six weeks' stay resulting in an average gain of approximately 1.1 kg. for the boys, and 2.25 kg. for the girls. This shows that the importance of such institutions cannot be overestimated.

Reforms in Dealing with Juvenile Delinquents

In the last quarter of a century, many reforms in the methods for dealing with juvenile delinquents have been under consideration in this country, but no conclusion has been reached. The ministry of justice finally appointed a commission of legal experts—judges, lawyers and politicians—and child welfare workers to draw up regulations for the use of courts and judges. The outcome of this cooperation has just been published, and will shortly receive the sanction of the ministry as a guide for dealing with such cases. The chief underlying principle is the complete separation of male juvenile delinquents from adult criminals, both in prison and while under trial; in addition, special juvenile courts are instituted. The girls are detained either in a "juvenile" prison or in that for adults, but even there they are segregated. The psychic influence of adult criminals on young minds is most deleterious, not only with first offenders, but also with youths who have served a previous prison term; but it must be kept in mind that not too rarely the young criminal is in no way behind his older "compère" in mental depravity. The new regulations permit the judge to transfer juvenile (below 18 years) cases to the "juvenile court" now in Vienna, even when the crime was committed in a distant part of the country. Heretofore the law has required trial and imprisonment of the offender in the place where the offense was committed. The principle is also established that the punishment should act, not simply as a deterrent, but rather as a means for training a deviated mind; detention in a suitable educational institution will be frequently ordered by the judge. The increasing moral and psychic deterioration of adolescents, noted in the last dozen years, has assumed such proportions as to have become alarming. In fact, alienists and psychologists have declared that the minds of those now in the age groups from 14 to 18 are quite different from those encountered before the war; ethical considerations and self-control play but a small part in the mentality of present-day adolescents of both sexes.

Public Health Arrangements in the Frontier Districts of Austria and Czechoslovakia

By mutual consent of the governments, an understanding has been reached between Austria and Czechoslovakia concerning medical practice in the frontier districts, on these lines: Physicians, veterinary surgeons, and midwives residing in these districts will in future be allowed to practice on both sides of the frontier without obstacles from the customs, medical or public health bodies. In emergency they may administer medicines that they carry with them. They must always carry a card of identification that shows their residence in the frontier districts. The inhabitants of these districts are allowed to transport medicines, in appropriate small quantity, across the frontier, if they can satisfy the custom officials that the remedies were obtained on the prescription of a duly qualified practitioner. Simple remedies, the nature of which can be readily ascertained from the package or the label, may also be transported over the frontier without a prescription. Altogether, an amicable understanding in all points relating to public health—notification of diseases, disinfection, water supply and hygienic matters—is being sought.

BERLIN

(From Our Regular Correspondent)

Feb. 24, 1923.

Bad Health Conditions in Germany

At the session of the reichstag, held February 20, Bumm, chief of the central public health bureau, gave an exceedingly unfavorable account of prevailing health conditions among the German people, basing his statements on replies to inquiries sent out to the governments of the federated states. The mortality rate has again increased; likewise war dropsy so called, meat poisonings and suicide. Among the causes assigned for the spread of disease are the lack of housing facilities, the advance in medical fees, and the high cost of medicines.

Hygienic Illumination

According to Professor Korff-Petersen, assistant in the Berlin Hygienic Institute, a white light of 25 standard candles may be regarded as furnishing the necessary minimum of illumination for reading and writing. The demand for 10 candles, which was formerly made, was in the nature of a compromise in view of what was then attainable, and must now be considered as superseded. For certain industrial purposes, still higher illumination may be needed. Whether artificial illumination is furnishing an adequate amount of light at a given place can be easily ascertained by means of a modern photometer. It is, however, more difficult to determine the quality of natural illumination by sunlight; for a photometric apparatus gives only the momentary values, whereas the degree of natural illumination varies widely from moment to moment. In judging of the illumination of a given place, it does not suffice to determine whether or not type of a certain size can be read at that point. We must consider factors that are independent of the changing illumination from the sun; therefore, for purposes of investigation, the total expanse of the apparent heavens or celestial horizon has been reduced to an area, measured in quadratic degrees, that would furnish the same amount of light by direct incidence. For the illumination of a place to be regarded as adequate for reading and writing, it must receive an amount of light equivalent to that of a *"Raumwinkel"* (space) comprising 50 reduced quadratic degrees. In such places one can expect, under normal conditions, an illumination of 10 standard candles, even though the sky may not be very clear. But the requirement of a space equivalent to 50 reduced quadratic degrees satisfies only the former minimal demand, so that such illumination might not be adequate for intensive work. In this measurement the reflected light is left entirely out of account, for which reason, many places that have not the light represented by 50 quadratic degrees of celestial space may nevertheless be adequately illuminated. It is even more difficult to state whether an apartment may be regarded as adequately lighted. In such cases it should be required that at least one third of the floor space should receive the direct rays of light. As a rule, it is sufficient to hold a small mirror 1 meter from the floor and 1 meter from the window and see whether the sky can be seen in it. If that is the case the room can usually be regarded as adequately lighted, provided the desks or work tables are located near the windows.

A Merger of Social Insurance and Public Welfare Bureaus

A merger of all the public health and welfare centers in the province and the free state of Waldeck has been brought about in order to prevent public health and welfare work in the rural districts from deteriorating. The district leagues, the free state of Waldeck, the provincial insurance bureau, the agricultural bureau, the leagues of the health insurance societies and the central insurance bureau for employees have formed a merger in order to combine their slender means and place them at the disposal of the welfare bureaus, with the idea that thus the arrangements already made for combating tuberculosis, the establishment of homes for convalescents and the creation of infant welfare stations will be better preserved and, if feasible, further improved. In this merger the medical profession is represented by a physician from each district. It is estimated that, during 1923, 22 million marks will be available to carry out the plans of the merger. According to the expressed wishes of the donors, the funds are not to be given to the welfare bureaus with no conditions attached, but are to serve as a stimulus to renewed activity on the part of the forces already lined up in the various societies. Therefore, the local welfare societies will not be able to draw on the central funds unless they can show that they are equipped to do welfare work and that they themselves are raising money for this purpose. When this proof has been furnished the central office, the local societies will be granted a subsidy, the maximal amount of which will be equal to twice the amount of money the local societies have themselves raised. The merger also claims the privilege of making suggestions to the local societies as to the best means of carrying on public health and welfare work, and it is assumed that the local societies will give these suggestions careful consideration and be guided thereby as far as possible in the local administration of their work.

A New Center for the Testing of Drugs

In recent months, various writers for THE JOURNAL, including myself, have called attention to the endeavors of the Deutsche Gesellschaft für innere Medizin in creating, several years ago, a testing center for drugs, at the head of which was Professor Penzoldt, formerly director of the Erlangen Medizinische Klinik, with whom was associated Professor Holste, the pharmacologist, of Jena. Recently the establishment of a new testing center for drugs has been undertaken through the cooperation of the central league of the German local health insurance societies and the commission of the Deutsche Gesellschaft für innere Medizin. It is evident that the health insurance societies are particularly interested in keeping worthless drugs away from their patients and in preventing useless expense by the use of immoderately priced preparations. For this reason, they had previously established their own testing center at the headquarters of the board of directors. This arrangement, however, has not proved to be entirely adequate for their service. Without the cooperation of the medical profession, and especially the aid of the clinicians and pharmacologists, the desired goal was not attainable. It remains to be seen whether this new cooperative body will be more successful.

Marriages

GEORGE A. MACQUEEN, Charleston, W. Va., to Mrs. Nelle Eubank of Hot Springs, Ark., February 1.

THOMAS DEWEY DAVIS, Richmond, Va., to Miss Willie Evelyn Owens of Marion, S. C., recently.

WILLIAM BURNS MCMURTRIE, Marble, Minn., to Miss Helen E. Thompson of Minneapolis, in January.

ALFRED A. GUMBINER, Los Angeles, to Miss Hope Florence Gibb of Ottawa, Canada, February 28.

JESSE I. JONES, Manchester, Iowa, to Mrs. Irma Frank Howell of Independence, recently.

MAURICE W. MCINERNY to Miss Elizabeth Marshman, both of Minneapolis, in January.

BERNARD L. TREY to Miss Florence Minor, both of Marshalltown, Iowa, recently.

LAETITIA L. BELAU to Mr. John C. Alford, both of Chicago, March 10.

Deaths

Arpad Geyza Gerster, New York; University of Vienna, Austria, 1872; emeritus professor of surgery at the New York Polyclinic Medical School and at one time professor of clinical surgery at Columbia University College of Physicians and Surgeons; member of the Medical Society of the State of New York; the Southern Surgical and Gynecological Association, the American Gastro-Enterological Association, the German Surgical Association, the Berlin Academy of Medicine, corresponding member of the Royal Medical Society of Budapest and former president of the American Surgical Association; on the staffs of the Lenox Hill and Mount Sinai hospitals, and the Isabella Home; author of *The Rules of Aseptic and Antiseptic Surgery, and Recollections of a New York Surgeon;* aged 74; died, March 17, of angina pectoris.

Herbert Burr Howard, Reading, Mass.; Medical School of Harvard University, Boston, 1884; died suddenly, March 6, at Lynchburg, Va., of heart disease. Dr. Howard was born in Fitchburg, Mass., in 1855. He was superintendent of the Peter Bent Brigham Hospital, Boston (1908-1919), a member of the Massachusetts Medical Society, the Boston Society of Psychiatry and Neurology, the New England Society of Psychiatry, the American Psychiatric Association, the Massachusetts State Board of Insanity (chairman 1908-1913), the Boston Society for Medical Improvement, the Boston Medical Library, and formerly president of the American Hospital Association. Dr. Howard was chairman of the Hospital Section of the American Medical Association in 1913.

William Post Herrick, New York; Columbia University College of Physicians and Surgeons, New York, 1898; member of the Medical Society of the State of New York; the American Urological Association, and the American Public Health Association; formerly instructor of surgery at the New York Post-Graduate Medical School; on the staffs of the Vanderbilt, New York, and Metropolitan hospitals, the DeMilt Dispensary and the Hospital for the Ruptured and Crippled; served in the M. C., U. S. Army, during the World War; aged 53; died, March 13, at St. Luke's Hospital, of pneumonia.

George Brune Shattuck ✠ Boston; Medical School of Harvard University, Boston, 1869; formerly instructor of clinical medicine, and overseer at his alma mater; past president of the Massachusetts Medical Society, and the Boston Medical Library Association; senior physician to the Boston City Hospital and at one time president of the Massachusetts Charitable Eye and Ear Infirmary; ex-editor of the *Boston Medical and Surgical Journal;* aged 79; died, March 12.

Samuel Whitehill Latta ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1868; member of the state board of medical examiners, the American Public Health Association, formerly president of the Pennsylvania Railroad Surgeons' Association; Civil War veteran, assistant surgeon U. S. Navy, 1868-1873; chief medical examiner for the Pennsylvania Railroad, 1886-1918; aged 74; died, March 13, of heart disease.

Patrick Henry McCarthy, Butte, Mont.; John A. Creighton Medical College, Omaha, 1902; member of the Radiological Society of North America; served in the M. C., U. S. Army, during the World War; member, and at one time president, of the state board of medical examiners; for fifteen years on the staff of St. James Hospital; aged 47; died, March 9, at Rochester, Minn., of pneumonia, following an appendectomy.

Logan Dillon Hooper Russell, Liverpool, England; M.R.C.S., London, England, 1870; F.R.C.S., Edinburgh, Scotland, 1880; University of Vermont College of Medicine, Burlington, 1884; for several years justice of the peace in Jamaica, West Indies; medical officer of health for the Port of Bonny, West Africa; formerly a practitioner in the United States and Canada; died, February 13, aged 72.

James Joseph Roach, Chicago; Rush Medical College, Chicago, 1901; member of the Illinois State Medical Society; professor of operative surgery and pathology, Chicago Medical College; formerly instructor in anatomy at Northwestern University Medical School, and on the staffs of the Cook County, Fort Dearborn and St. Bernard hospitals; aged 45; died, March 24, of cerebral hemorrhage.

Alexander Everett Harris ✠ Little Rock, Ark.; Jefferson Medical College of Philadelphia, 1901; formerly professor of clinical medicine at the University of Arkansas Medical Department, Little Rock, and on the staffs of the Memorial City and St. Vincent's hospitals; served in the M. C., U. S. Army, during the World War; aged 44; died, March 7.

Samuel Albert Graham ✠ Lincoln, Ill.; Rush Medical College, Chicago, 1887; formerly district health officer for Central Illinois; for five years assistant superintendent of the Kankakee State Hospital, Kankakee; superintendent of the Lincoln State School and Colony, Lincoln; aged 74; died, March 10, of pneumonia.

Eugene Daniel McCarty, Columbus, Ky.; National University of Arts and Sciences Medical Department, St. Louis, 1915; member of the Kentucky State Medical Association; served in the M. C., U. S. Army, during the World War; aged 33; died suddenly, March 7, of cerebral hemorrhage.

Clarence Augustus Jacobson, Chicago; University of Illinois College of Medicine, 1916; served in the M. C., U. S. Army, during the World War; on the staff of the U. S. Veterans' Hospital No. 76 (Edward Hines, Jr., Memorial), where he died, aged 29, March 22, of appendicitis.

Richard Franklin Bennett, Litchfield, Ill. (licensed, Illinois, 1887); served for five terms as mayor of Litchfield; member of the state board of health, former president of the school board and superintendent of the Hospital for the Insane, Anna; aged 83; died, March 9, of senility.

Walter Nevin Sharp ✠ Indianapolis; University of Vermont College of Medicine, Burlington, 1885; member of the American Academy of Ophthalmology and Oto-Laryngology; formerly on the staff of the Indianapolis City Hospital; aged 64; died, March 8, of pneumonia.

Charles Ammon Wishart ✠ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1875; member of the American Academy of Ophthalmology and Oto-Laryngology; founder of the Columbia and the Eye and Ear hospitals; aged 70; died, March 4.

William Buford Pigg, Okmulgee, Okla.; Kentucky School of Medicine, Louisville, 1882; member of the Oklahoma State Medical Association; formerly president of the Okmulgee County Medical Society; aged 62; died, March 7, at Richmond, Ky.

Winfield Scott Hill, Augusta, Me.; Bellevue Hospital Medical College, New York, 1867; practitioner in Augusta for fifty-five years; surgeon to the Augusta City Hospital; veteran of the Civil War; aged 84; died, March 7, of acute bronchitis.

Edwin Clifford Chipman, New London, Conn.; Medical Department of Columbia College, New York, 1891; member of the Connecticut State Medical Society; president of the Home Memorial Hospital, where he died, March 9, aged 62.

H. M. Cox, San Luis Obispo, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; formerly superintendent of the San Luis Obispo County Hospital and county health officer; aged 73; died, March 4, of cerebral hemorrhage.

John Hamilton Potter Conover ✠ Elizabeth, N. J.; Columbia University College of Physicians and Surgeons, New York, 1898; city bacteriologist; on the staffs of the St. Elizabeth's and General hospitals; aged 49; died, March 4.

Levi Welts Case ✠ Montclair, N. J.; Medical Department of Columbia College, New York, 1880; on the staff of the Essex County Hospital for Contagious Diseases, Belleville; aged 72; died, March 3, of cerebral hemorrhage.

Florence L. Marsh ✠ Mount Pleasant, Pa.; Jefferson Medical College of Philadelphia, 1868; Civil War veteran; founder and president of the Memorial Hospital; aged 74; died, March 10, of cerebral hemorrhage.

David Enrique Algorta, Lima, Peru; University of Nebraska College of Medicine, Omaha, 1922; serving his internship at the Swedish Mission Hospital, Omaha; aged 26; died, March 6, following an appendectomy.

Absolom Jerome Christopher, Laurens, S. C.; Atlanta Medical College, Atlanta, Ga., 1888; member of the South Carolina Medical Association; died, January 11, at Rochester, Minn., following an operation.

Ashbel A. P. Bridges, Danville, Ind.; Medical College of Indiana, Indianapolis, 1892; member of the Indiana State Medical Association; aged 67; died, March 14, at the Methodist Hospital, Indianapolis.

Miles Lewis Davis, Lancaster, Pa.; Bellevue Hospital Medical College, New York, 1870; member of the Medical Society of the State of Pennsylvania; Civil War veteran; aged 78; died, March 8, of paralysis.

Charles L. Olsen, Salt Lake City, Utah; Eclectic Medical Institute, Cincinnati, 1898; former secretary of the board of medical examiners and member of the board of registration; aged 66; died, March 8.

Ethan A. Barnes, Plattsburg, N. Y.; University of Vermont College of Medicine, Burlington, 1885; member of the Medical Society of the State of New York; aged 61; died, March 17, of angina pectoris.

Walter W. Rangeley, Christiansburg, Va.; Baltimore University School of Medicine, Baltimore, 1896; member of the Medical Society of Virginia; aged 55; died, March 4, following an operation.

Joseph Rhodes, Chewton, Pa.; Bellevue Hospital Medical College, New York, 1874; for thirty years medical examiner for the Pennsylvania Railroad; aged 75; died suddenly, March 2.

Henry E. Battle, Andalusia, Ala.; University of Tennessee College of Medicine, Memphis, 1896; member of the Medical Association of the State of Alabama; died, March 5, of heart disease.

Edward Baumhoff Le Saulnier ⊕ Eureka, Mo.; Barnes Medical College, St. Louis, 1910; veteran of the Spanish-American War; aged 47; died, March 9, following a long illness.

Addison McCurtain, Los Angeles; Louisville Medical College, Louisville, Ky., 1881; Bennett College of Eclectic Medicine and Surgery, Chicago, 1884; aged 64; died, February 21.

John Isaac Darby, Columbus, Ga.; Louisville Medical College, Louisville, Ky., 1880; member of the Medical Association of Georgia; aged 71; died, March 4, at Panama City, Fla.

Herbert G. Richards, Glastonbury, Conn.; Eclectic Medical Institute, Cincinnati, 1879; aged 66; died, February 23, at the Hospital of St. Raphael, New Haven, following an operation.

Samuel W. Murphy, Washington, D. C.; Medical College of Virginia, Richmond, 1863; Confederate veteran; aged 85; died, February 27, at the John Dickson Home, of senility.

Burton Edgar Manchester, Milwaukee; University of Buffalo (N. Y.) Department of Medicine, 1886; aged 58; died, March 8, at Columbia Hospital, following an operation.

Frederick Tigh ⊕ Newburyport, Mass.; Medical School of Harvard University, Boston, 1889; on the staff of the Anna Jaques Hospital; aged 60; died, March 3, of pneumonia.

Clarence Resseguie Blake, Northville, N. Y.; University of Vermont College of Medicine, Burlington, 1884; aged 60; died, March 12, of cerebral hemorrhage, due to a fall.

Edward Bair, Murphysboro, Ill.; Medical College of Indiana, Indianapolis, 1890; died, March 7, of an overdose of heroin hydrochlorid, presumably self-administered.

Robert Donald Reynolds ⊕ Greenspring, Ohio; Medical Department of Western Reserve University, Cleveland, 1897; aged 56; died, March 6, of influenza and pneumonia.

Mariette Grant, New York; Eclectic Medical College of the City of New York, 1891; aged 55; died, February 16, of a skull fracture sustained when struck by a taxicab.

Albert Sperry Pierce, Omaha; Georgetown University School of Medicine, Washington, D. C., 1867; Civil War veteran; aged 83; died, March 8, of senility.

Jesse Robert Gilbert ⊕ Alamogordo, N. M.; University of Louisville Medical Department, Louisville, Ky., 1894; aged 52; died suddenly, of heart disease, March 1.

Herbert Pinckney, New York; Medical Department of the University of the City of New York, New York, 1898; aged 64; died, March 10, of heart disease.

James O. Latimer, Rock Creek, Ohio; Eclectic Medical Institute, Cincinnati, 1868; Civil War veteran; aged 86; died, January 30, at Grand Junction, Colo.

Benjamin Green Brown, Dalton, Ky.; University of Tennessee College of Medicine, Memphis, 1882; aged 72; died recently, following a long illness.

W. E. Arnold, Prescott, Ark.; Atlanta Medical College, Atlanta, Ga., 1861; Civil War veteran; aged 85; died, February 25, following a long illness.

Charles Manning Freeman, Metuchen, N. J.; Medical Department of Columbia College, New York, 1884; aged 63; died, March 7, of heart disease.

Joseph N. Gardner, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1889; aged 63; died, February 22, of heart disease.

Marion Fairweather Stirling, San Leandro, Calif.; Northwestern University Woman's Medical School, Chicago, 1885; aged 68; died, February 28.

Richard Lee Bohannan, Stamford, Conn.; New York University Medical College, New York, 1874; aged 71; died, March 4, of heart disease.

Harold Metcalf ⊕ Wickford, R. I.; Medical School of Harvard University, Boston, 1887; aged 62; died, March 3, of cerebral hemorrhage.

Thomas Jefferson Jacobs, Somerfield, Pa.; New York University Medical College, New York, 1878; aged 69; died, March 9, of pneumonia.

George W. Bulmer, Brooklyn; New York Homeopathic Medical College, New York, 1884; aged 67; died, March 8, of cerebral hemorrhage.

Phoebe N. Bucknam, Brooklyn; Hygeio-Therapeutic College, Bergen Heights, N. J., 1866; also a druggist; died, February 17, aged 80.

David Ginther, North Manchester, Ind.; Eclectic Medical Institute, Cincinnati, 1891; aged 74; died, February 18, following a long illness.

Herbert Henry King, Unionville, Mich.; Michigan College of Medicine and Surgery, Detroit, 1905; aged 41; died, March 5, of diabetes.

Albert Sanders Burtt ⊕ Momence, Ill.; New York University Medical College, New York, 1878; aged 68; died, March 10, of pneumonia.

John R. Couch, Richmond, Va. (licensed, years of practice); member of the Medical Society of Virginia; aged 54; died, March 2.

Edgar Thomas Smith, Boonsboro, Md.; Bellevue Hospital Medical College, New York, 1886; aged 62; died, March 9, of pneumonia.

William G. Scott, Los Angeles; Cincinnati College of Medicine and Surgery, Cincinnati, 1862; aged 84; died, February 26, of senility.

Joseph Frank McMahon, New York; Bellevue Hospital Medical College, New York, 1882; aged 64; died suddenly, February 20.

Robert Alfred Windett ⊕ Aurora, Ill.; Rush Medical College, Chicago, 1887; aged 63; died, March 4, following a long illness.

Hugh Livingston ⊕ Hopkinton, Iowa; Rush Medical College, Chicago, 1890; also a druggist; aged 79; died, March 10, of senility.

A. D. Berryhill, McKenzie, Tenn.; University of Tennessee College of Medicine, Memphis, 1892; aged 58; died, March 4, of uremia.

John T. Dougherty, Hudson, Pa.; Baltimore University School of Medicine, Baltimore, 1896; aged 54; died, February 27.

Thomas J. Gipson, Lawton, Okla.; University of Arkansas Medical Department, Little Rock, 1889; aged 61; died, February 2.

Nelson Clifton Davis, Boston; Medical School of Harvard University, Boston, 1909; aged 40; died, March 2, of tuberculosis.

Thomas Griffin O'Connor, Imogene, Iowa; Rush Medical College, Chicago, 1896; aged 50; died, March 6, of pneumonia.

James B. F. Morgan, Clarksburg, Ohio; Medical College of Ohio, Cincinnati, 1869; aged 86; died, March 6, of neuritis.

John Silas Bass, Iola, Kan.; Meharry Medical College, Nashville, Tenn., 1878; aged 72; died, March 4, of pneumonia.

Albert Smilie Hague ⊕ Fairfield, Iowa; Keokuk Medical College, Keokuk, 1897; aged 51; died suddenly, March 12.

Edgar Alonzo Ward, Hedgesville, W. Va.; Kentucky School of Medicine, Louisville, 1893; aged 69; died, March 6.

Nota A. Glebow, Boston; University of Würzburg, Germany, 1908; aged 49; died, February 27, of influenza.

Thomas Kittredge ⊕ Salem, Mass.; Long Island College Hospital, Brooklyn, 1874; aged 70; died, March 11.

John Butler Grover ⊕ Peckville, Pa.; Albany (N. Y.) Medical College, 1892; aged 54; died, February 21.

Jesse Augustine Swem, Henry, Ill.; American Medical College, St. Louis, 1884; aged 64; died, March 1.

Jasper Tope, Algonquin, Ohio (licensed, Ohio, 1896); aged 87; died, March 3, of senility.

H. L. Bowyer, Emory, Va. (licensed, years of practice); died, January 28.

Correction.—In THE JOURNAL, March 17, it was erroneously stated that the late Dr. Carroll Kendrick was a member of the Kentucky State Medical Association; this should have read Mississippi State Medical Association, of which he was formerly president.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

PERALGA

A New Foreign "Synthetic"

For the past few years, American physicians have been relatively free from the propaganda of the foreign synthetic drugs—real or alleged. Recently, however, there have been signs of a revival of this type of product. One of the products now being endowed with the halo of creative chemistry

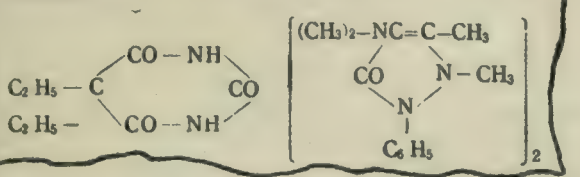
AMONG the most ambitious aims of modern Creative Chemistry, and closely in line with recent pharmacologic teachings, is the endeavor to intensify a given, therapeutically valuable, radical in one chemical compound by synthesis with a radical of similar therapeutic action in another.

If, in the course of this synthetic procedure, the drawbacks and undesired by-effects of either are simultaneously eliminated, the resulting new compound must be regarded as a valuable and welcome new remedy.

PERALGA, known in Europe as "Veramon," a new synthetic analgesic, originated in the Pharmacologic Laboratory of Prof. Starkenstein, University of Prague, Czecho-Slovakia, well known for his Atophan researches, furnishes a rather brilliant illustration of what can be accomplished in this direction.

Here the soundly established, rational pain-relieving properties of Amidopyrine have been chemically potentiated by the highly valued sedative properties of Diethylbarbituric Acid, while the hypnotic effect of the latter has been eliminated.

The result is a definite chemical compound of the formula:



Photographic reproduction (reduced) of part of a Peralga advertising circular. Note the formidable structural formula (alleged) reminiscent of a decade ago.

is Peralga (Schering & Glatz), known in Europe as Veramon. But let Schering & Glatz describe the new creation—the new chemistry (according to S. & G.) "to intensify a given, therapeutically valuable, radical in one chemical compound by snythesis with a radical of similar therapeutic action in another":

"Peralga, known in Europe as 'Veramon,' a new synthetic analgesic, originated in the Pharmacologic Laboratory of Prof. Starkenstein, University of Prague, Czecho-Slovakia, well known for his Atophan researches, furnishes a rather brilliant illustration of what can be accomplished in this direction."

Incidentally it might be said that Starkenstein has lent his name to a number of statements valuable to the proprietary interests, but which cannot stand scientific light.

Peralga, it is claimed, is a "definite chemical compound," the alleged structure of which appears in the accompanying illustration reproducing a page from an advertising circular. According to Starkenstein Peralga is made by heating a mixture of diethylbarbituric acid (barbital) and amidopyrin (first introduced as "Pyramidon"). It is also claimed that Peralga is absorbed without being split up into its component radicals.

To a chemist, this new "synthetic" resembles a mixture more than it does a compound; it is reminiscent of the days of fake synthetics. Consequently the A. M. A. Chemical Laboratory investigated Peralga. The product is a yellow powder with a methylamine-like odor. It is claimed to melt at 95-97 C., to be readily soluble in hot water and organic solvents, less soluble in cold water. As already mentioned it is said to be formed by heating a mixture of barbital and amidopyrin until fusion takes place.[1]

That Peralga is *not* a "definite chemical compound" as claimed will be seen from what follows: When Peralga is treated with water, or 0.2 per cent. hydrochloric acid solution, in sufficient quantity easily to dissolve the theoretical amount of amidopyrin, an insoluble substance can be removed. The latter has the melting point of barbital and when mixed with a known specimen of barbital, the melting point is not depressed thus identifying it as barbital. In common with barbital, Peralga is more soluble in sodium bicarbonate solution than in water. It is readily soluble in sodium hydroxid solution. Some Peralga was dissolved in sodium hydroxid solution, and shaken, in a separator with chloroform, the choloroform extract was evaporated to dryness in a current of warm air. The substance melted at 103 C. to 105 C., a mixture of the substance and amidopyrin melted at 105 C. to 107 C., and the amidopyrin control melted at 107-108 C. This shows the extracted substance to be practically pure amidopyrin. Quantitatively the amount of barbital extracted from Peralga was 26.1 per cent. and the amidopyrin extracted was 72.0.

Evidently, then, Peralga is not a "definite chemical compound." From a chemical viewpoint it seemed improbable that Peralga (a fusion mixture of barbital and amidopyrin with some decomposition product) will produce any effect different from a mechanical mixture of barbital and amidopyrin in the same proportions.

To determine this, a mechanical mixture of barbital and amidopyrin in the same proportion as in Peralga and also some original Peralga were sent to the Pharmacologic Laboratory of Cornell University Medical College for comparative tests. The summary of the laboratory report was:

> "We can see no difference in the behavior of cats towards similar doses of the two preparations: the mechanical mixture made in the A. M. A. Chemical Laboratory and the preparation of Schering & Glatz—and they show very little difference between similar doses of barbital and those contained in Peralga. . . . Of course, there is no chance to make observations on cats that would show analgesic actions in headache. But since the observable effects on cats are so nearly identical, it is only fair to presume that the 'synthetic' and the mixture are practically alike in action."

Thus it is seen that Peralga, stripped of the glittering claptrap, is revealed as essentially a mixture of two well known drugs—deserving no claim of originality; in fact it contains a chemical impurity caused by decomposition of the mixture under heat. Certain it is that a mixture of barbital and amidopyrin is not a contribution to synthetic chemistry[2] as we know the term in this country.

1. If barbital or amidopyrin is placed in an oven at 100 C., no apparent change takes place; but when mixed fusion occurs (such as happens in a depressed melting point determination), with formation of yellow color and amine odor. In this manner there is formed a relatively small amount of a decomposition product, or probably products, not identified.

2. Since this was written, an abstract of an article by J. Herzog has been published (Chem. Zentralbl., Feb. 14, 1923) wherein essentially the same conclusions are reported as given above.

Necropsy Findings After Clinical Cure of Leprosy.—The sailor of 59 seemed to have recovered completely from his severe mutilating leprosy, under several years of local and general treatment at Hamburg. After two years without any signs of recurrence, he succumbed to an intercurrent pneumonia, and necropsy revealed a recent leprous infection in the ulnar nerve, with lepra bacilli. This was the only focus discoverable. The case is reported by Unna and Plaut in the *Dermatologische Wochenschrift* **75**:1013, 1922.

Correspondence

THE STATUS OF THE CLINICAL PATHOLOGIST

To the Editor:—When is a physician not a physician?

Answer: When he is a clinical pathologist.

This is apparently the opinion of the Advertising Committee of the American Medical Association, as expounded in THE JOURNAL, Dec. 2, 1922, p. 1937, reporting the session of the trustees at which the question of commercial laboratories came up for discussion. The impropriety of their advertisements as being subversive of the Code of Ethics as well as of good taste had been called to the attention of the trustees by the American Society of Clinical Pathologists, a national organization of the ethical laboratory men of the country. The members of the society firmly adhere to the thesis that the status of the clinical pathologist is on a par with that of the internist, surgeon or other specialist or consultant in medicine, and he is, therefore, subject to the same code of ethics and high moral standards. This is formulated in the By-Laws of the American Society of Clinical Pathologists as follows:

SECTION 1.—The Code of Ethics of this society shall be the same as that of the American Medical Association.

SECTION 2.—It is deemed unethical to publish advertisements in medical journals calling attention to the merits of a particular laboratory or announcing the fees for laboratory examinations.

SECTION 3.—It shall be deemed unethical for a member of the society to lend his name for publication in the laboratory advertisements violating this Code of Ethics.

The justice of the request for elimination of the objectionable advertisements was so apparent that the trustees at a previous meeting had decided in its favor. At a subsequent session, however, the Advisory Advertising Committee brought forward a report which caused the board to rescind its action. The arguments advanced by the committee are so astounding as to merit a rebuttal from outside.

[The Board of Trustees made no previous decision regarding the advertising of commercial laboratories. The Advertising Committee had presented a report to the Executive Committee of the Board, and the Executive Committee referred the report to the full Board of Trustees.—ADV. COMM.]

OMISSION OF PRICE

Under the head, "Omission of Price," the Advertising Committee says:

The omission of price permits the man who calls himself a laboratory specialist to make charges for laboratory tests on a sliding scale. Such variations in price are not warranted by the character of the work done. It permits the laboratory man to be a superspecialist of that type which is being opposed in other branches of the profession. The status of the clinical pathologist is not the same as that of the internist or surgeon. The latter deals with variables—human beings. The former conducts manipulations on fixtures—inanimate substances. If the tests are scientifically performed, the results must be the same in the hands of all well-qualified men. Personality does not enter in; training does. It is known that when the prices are not generally known, some laboratories charge physicians unwarranted fees for services. At the same time, when prices are not made public, an unscrupulous physician may charge patients unwarranted prices for laboratory work. Such work as the Wassermann test, urinalysis, blood counts and similar technical procedures are standard *commodities* which can be furnished by persons of a certain minimum training at a reasonable fixed price which may be estimated and controlled through the advertising committee of THE JOURNAL.

Assuming, for a moment, that a Wassermann test is as staple a commodity as, say, a quart of milk, we even find great variations in the price of the latter in different groceries or creameries. If it is the object of the committee "in the interest of the patient and physician" to reduce laboratory fees to the same dead level, why permit these fluctuations of prices in the advertisements? The American Medical Association, following the logic of the committee, should start a holy crusade against variations in fees for appendectomy—an operation which may be termed standardized, only differing from a Wassermann test in that it is a scientific procedure in vivo, while the Wassermann test is in vitro. The reasoning is, of course, a reductio ad absurdum. Just as there are differences among surgeons in their learning, judgment and technic, so there are among pathologists.

[It should be reiterated that routine laboratory tests and examinations are in no way comparable to surgical operations. Routine tests, as a rule, deal with materials outside the body, while surgical operations are made on the living patient.—ADV. COMM.]

As physicians and gentlemen, both can be trusted to serve the best interests of their patients without heralding from the house tops the price of their work. They should be accorded the same right to fix a value on their services as any other professional men. "The Wassermann or urinalysis is a commodity!" says the Advertising Committee. This is the unkindest cut of all. In real life what do we find? The clinician goes over the case with the pathologist—he tells him the history of the patient, gives him the findings of the physical examination, inquires what laboratory tests would aid in the diagnosis and, lastly, when the tests are performed, asks for an interpretation, and the two coordinate their laboratory and clinical investigation toward making the diagnosis.

[The statement that "in real life . . . the clinician goes over the case with the pathologist" and asks the pathologist what tests are to be made does not hold good in even 1 per cent. of cases in our larger cities, and is not at all applicable to smaller communities. It is safe to say that there are not specialists in clinical pathology available for 1 per cent. of such consultations as Dr. Hillkowitz states are regularly held over all patients by the clinician. Certainly, the general practitioner, and particularly those physicians practicing in smaller towns, when in need of laboratory service depend on the regularly established commercial laboratories or on the state laboratory. From the very nature of the case, the specialist in clinical pathology conducts laboratory examinations on a relatively small scale with a naturally higher price, while the commercial laboratory carries on its work on a large scale, and can well afford to do so at a low price. —ADV. COMM.]

The committee says that we are not dealing with variables. If determination of the basal metabolic rate of a nervous patient is not working on a variable, we would like to know their definition of a constant. Where would the committee classify the quick decision whether a breast tumor is benign or malignant while the patient is on the operating table? If we are to employ the mathematical terminology of the committee, the pathologist is dealing with a variable of transcendental functions requiring solution by a ratiocination as difficult as integral calculus.

PERSONNEL

Says the committee, "The personnel is a variable factor in laboratory service." We are grateful for this grudging admission of variability. "Hence," argues the committee, "the personnel should be published and thus, in the interests of the physicians and public alike, . . . stimulate competition on the basis of qualification of those doing the work." If this is so, then why in the name of the physicians and the public shall we not encourage the surgeons to advertise their qualifications and their fees for the operations in the pages of THE JOURNAL so that the family physician may know on whom to call and protect his patients from exorbitant charges of so-called supersurgeons? For, in the words of the committee, "The interests of the public are served by competition, provided that advertised claims are verified and honestly established; they are not served by the secrecy that

would inevitably follow if advertising of laboratory service were limited merely to the names of individual clinical pathologists."

To this we would reply that The Journal of the American Medical Association has the choice of two methods: Either investigate the individual clinical pathologist before accepting his card, or, what is the better solution, refuse all advertisements from clinical pathologists as it would that of the surgeon or other specialist.

[Dr. Hillkowitz urges that commercial laboratories be prohibited from advertising in medical periodicals, but he seems willing that proprietors of laboratories be permitted to advertise by means of cards as "specialists in clinical pathology."—Adv. Comm.]

CONSULTANTS

A deplorable phase in the evils of laboratory advertising is the organization of commercial clinical laboratories on the "chain of stores" idea. Men of ability, occupying teaching positions in medical schools, are tempted by the offer of higher salaries either to relinquish their academic posts and take up a directorship in one of the branch laboratories, or to retain their former chair, and lend dignity to the commercial establishment by functioning as consultants. If socialization of medicine is combated by the rank and file of the medical profession, what should be our attitude toward exploitation of medical talent by a private corporation?

Behold, then, the lamentable spectacle of a body of physicians—clinical pathologists—begging the great American Medical Association to let them practice their specialty in accordance with the A. M. A. Code of Ethics, only to be told that they are not in the same category as their colleagues—that they are only technicians—pariahs, as it were, in the eyes of the healing caste. Shades of Koch and Pasteur! To think that clinical pathology—the most scientific of the specialties, the one based on precision, clear thinking, cold logic, the branch of medicine that requires a knowledge of all the allied sciences in addition to medicine—should be declared an outlaw! This will be a great blow to those who have chosen this field as their life's work.

In all seriousness, we would like to point out the great danger lurking in the dictum of the Advertising Committee. If no encouragement is held out to the clinical pathologist, if his activities are to be classed with department store bargain sales, he will forsake his specialty for the more lucrative and respected field of surgery or internal medicine for which his knowledge and previous training have eminently fitted him. Graduates in medicine will not take up the laborious study and long training in pathology. Communities will be left without the aid of this indispensable adjunct to diagnosis. In this period of standardization of hospitals, when half of the institutions cry in vain for competent laboratory directors, no obstacle should be thrown in the way of those aspiring to take up this field of medicine. There should be clinical pathologists in every community to promote the practice of scientific medicine by a wider application of clinical laboratory methods to the diagnosis of disease.

We do not question the motives of the Advertising Committee. We have no doubt that they are actuated by what they consider the best interests of The Journal, the profession and the public. The American Medical Association, however, is a democratic organization. We present our side of the case to the entire medical profession in the columns of our official journal. We are confident that the Association which has successfully fought for proper medical education and which has eradicated the nostrum evil in medical advertising will also help us check the commercial degeneration of this important branch of medicine. We have no doubt that eventually the American Medical Association will answer that a physician is always a physician even when he is a clinical pathologist.

Philip Hillkowitz, M.D., Denver.

[Comment.—The comments in brackets in the preceding communication were made by the Advertising Committee of The Journal and are endorsed. In taking this stand, the Advertising Committee was concerned primarily with the interests and every-day practice of the general practitioner, with the best possible service to the public and with the greatest good for the greatest number. It is believed that The Journal is doing good in making available information regarding such laboratories which the general practitioner outside of the large cities needs. No advertisement of a laboratory is admitted to the advertising pages of The Journal until the laboratory has been investigated as to the equipment, the type of work done, the personnel, and the ethical manner in which the work is conducted.—Ed.]

CANCER STATISTICS FOR JAPAN

To the Editor:—Some of your readers may be interested in cancer statistics for Japan, which have recently reached me and which I have consolidated into the form of a five year average, for the period 1914-1918. For the empire of Japan the total mortality from cancer was 192,530, equivalent to a rate of 70.0 per hundred thousand. For males separately considered, the rate was 70.8, and for females, 69.2. This close conformity of the two sex rates would indicate a relatively high measure of accuracy in terminal diagnosis.

For the city of Tokyo separately, and also for the period 1914-1918, there were 7,677 deaths from cancer among both sexes, equivalent to a rate of 79.6 per hundred thousand population. For males the rate was 81.4, and for females, 77.7. The excess rate for Tokyo, over the rate for Japan, is in conformity to general experience, and also supports the conclusion that terminal diagnosis has reached a high degree of perfection in Japan, probably as much so as the corresponding conditions in this country.

The cancer problem in Japan is one of extraordinary interest and well deserving of more critical consideration. Cancer of the female breast is very rare among Japanese women, the rate being approximately one tenth of the corresponding rate for the women of this country and Great Britain. Regardless of this fact, the general cancer death rate of Japan must be looked on as having reached almost the same alarming proportions as the disease has in this country.

Frederick L. Hoffman, Newark, N. J.

THE ABDOMINAL REFLEX IN EPIDEMIC (LETHARGIC) ENCEPHALITIS

To the Editor:—In an earlier paper (June, 1922), I mentioned the frequency of changes in the abdominal reflex in epidemic encephalitis, and stated that I felt this had not been sufficiently emphasized. With this thought in mind, the last fifty cases examined (most of them seen during the epidemic of the past winter), have been carefully studied with reference to this symptom, with these findings:

Normal reflex in all quadrants	8
Absent reflex in all quadrants	26
Absent reflex in one quadrant	6
Absent in quadrants of one side, normal opposite side	2
Absent in quadrants of one side, present but rapidly exhausted on opposite side	3
Absent in upper quadrants, normal in lower quadrants	1
Absent in upper quadrants, rapidly exhausted in lower quadrants	1
Present in all quadrants, but exhausted after two or three attempts	2
Present in all quadrants, but distinctly exaggerated on one side	1
Total	50

The abdominal reflex was normal only eight times, or in 16 per cent. of the cases, and in the patients seen within one month of the onset of the disease only three presented normal abdominal reflexes in all quadrants. Of the remaining five patients, one had developed the infection six months previous to the examination, one eight months, two two years and one three years.

To offset this, the reflex was absent in all of the abdominal quadrants in patients as late as one and one-half years, one year and eight months, and two and one-half years after the initial infection.

On the foregoing facts, I feel justified in concluding that change in the abdominal reflex is an important diagnostic sign of epidemic encephalitis, and that when the case is seen early (within the first month), it is the most frequent single neurologic symptom.

It may be of interest to note that during the epidemic of the past winter in the Northwest, the radicular and myoclonic types of the disease predominated, and that the greatest number of cases developed during or shortly after a severe cold wave, in which the thermometer registered from 10 to 15 degrees below zero.

GEORGE E. PRICE, M.D., Spokane, Wash.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PRIZES FOR RESEARCH

To the Editor:—Please publish a list of the various prizes offered for research papers by American foundations, societies and associations.

G. S. M., Missouri

ANSWER.—The following list of prizes was compiled from the columns of THE JOURNAL. THE JOURNAL will be glad to hear of additional prizes not included in this list.

1. The Leonard prize of $1,000, awarded by the American Roentgen Ray Society for the best original research in the roentgen ray, radium or radioactivity fields of investigation. Papers are to be submitted by July 1, 1923, to G. E. Pfahler, M.D., chairman, 1321 Spruce Street, Philadelphia.

2. The Sofie A. Nordhoff-Jung cancer research prize of $500, awarded annually by a committee composed of members of the University of Munich for the most conspicuous work in cancer research.

3. The Casselberry prize fund of more than $500 (April 1, 1922) to be awarded for research in laryngology and rhinology. For further details write Dr. Norval H. Pierce, 31 East Washington Street, Chicago.

4. The Boylston medical prize of $300, awarded for the best paper on research in medicine. Address Harvard Medical School, Boston.

5. The Roaldes prize, an award of $200 by the American Laryngological Association for the best thesis on a subject connected with laryngology and rhinology.

6. M. Douglas Flattery fund, the income from a gift of $7,500 to Harvard Medical School to be used annually to present a gold medal and cash prize of $500 to him who in any branch of science discovers the greatest means of good to humanity in disease prevention and health conservation.

7. The Cartwright prize of $500, awarded every two years for original investigation by the Association of the Alumni of the College of Physicians and Surgeons, New York.

8. The Ebert prize of about $40, awarded annually by the American Pharmaceutical Association to the member who presented the best paper at the previous annual session.

9. The Samuel D. Gross prize of $1,500, awarded every five years by the Philadelphia Academy of Surgery for the best essay founded on original investigation in surgical pathology or surgical practice.

10. The Gorgas prize medal, awarded annually at the graduating exercises of the Army Medical School by the Association of the Medical Reserve Corps, New York State Division, for the paper that shows the most advance in medicine and surgery, preferably a medicomilitary subject.

11. The Alvarenga prize of about $180, awarded annually by the College of Physicians of Philadelphia for the best essay on any medical subject.

12. The University of Pennsylvania surgical prize of about $75, awarded annually to senior undergraduate students for the best essay based on observations at the university clinics in anatomy, physiology and pathology.

13. The Mary Putnam Jacobi research fund, a fellowship (value about $800), awarded by the Women's Medical Association of New York City to women medical graduates for graduate research work.

14. The George Crocker research fund of $1,500,000, supervised by Columbia University, New York, and for research only.

PRESCRIBING CODEIN SULPHATE

To the Editor:—What is the maximum amount of codein sulphate a pharmacist is legally permitted to supply to one patient, on a single prescription by a physician? Please omit my name. D. S. B.

ANSWER.—The Harrison Narcotic Law fixes no limit on the amount of any narcotic drug that a physician may prescribe. The prescribing of unusually large amounts, however, raises a question as to whether a physician may not be merely pandering to the cravings of a drug addict, and not treating an injury or a disease; and as a prescription issued merely for the purpose of satisfying the cravings of an addict is not a prescription issued in the course of professional practice within the meaning of Section 2 (a) of the Harrison Narcotic Law, and not only exposes to punishment the physician who issues it but affords no protection to a pharmacist who fills it, it is necessary for a pharmacist to exercise his judgment, for his own protection, and to refuse to fill prescriptions that he believes may expose him to penalties.

Where the prescribing of unusual quantities of narcotic drugs may be necessary because a patient is suffering from an incurable and painful disease, an understanding between the physician, the pharmacist and the internal revenue officer is established if the physician writes on the prescription "Exception 1, Article 117." Similarly, if a drug addict is so old and so infirm that withdrawal of the drug would jeopardize his life, his needs may be met and an understanding arrived at by a physician writing on the prescription, "Exception 2, Article 117." Even in such cases, however, a physician cannot prescribe a supply of narcotic drug to last an indefinite period, and under a memorandum issued by the Prohibition Commissioner (Pro. Mim. No. 217), a physician may not prescribe more than one week's supply of a narcotic drug to any one patient, without having obtained a special permit governing the case treated. For information as to the issue of such a special permit, the physician should communicate with the local collector of internal revenue by whom he was registered under the Harrison Narcotic Act.

What has been stated above with respect to narcotic drugs generally is true of codein sulphate, which, being a derivative of opium, comes within the purview of the Harrison Narcotic Act, no matter what the individual physician may believe with respect to its habit-forming properties.

ENDOCRINE THERAPY IN BALDNESS

To the Editor:—I shall appreciate any suggestion you may offer in this case: About fifteen years ago, a woman, at the age of 27, had a complete oophorohysterectomy and suffered the loss of a heavy head of hair almost immediately. Recently she has had an operation for rectocele, and the remaining hair has fallen out until she is practically bald. The scalp is tight and slick to the touch. Is there a glandular extract or other means that will restore the hair growth?

T. G. CALHOUN, M.D., Tenaha, Texas.

ANSWER.—Falling of the hair after illness or operation is usually thought to be due to a toxic disturbance, as a rule an intoxication that produces a febrile disturbance. The hair after this form of baldness very frequently regrows, but not always. No known endocrine fault is connected with baldness of this origin. Massage or other methods of stimulating the scalp by mechanical or other means may do some good. There is some ground for believing that certain forms of baldness, particularly extensive diffuse baldness, may be due to endocrine disturbance. The most tangible reason for this belief is that thallium salts, which produce endocrine disturbance, also cause baldness. There is no endocrine therapy that has proved to be definitely of use in any form of baldness, with the possible exception of the diffuse thinning of the hair that occurs in myxedema. For the ordinary forms of baldness, endocrine therapy has not been found useful.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.

ILLINOIS: Chicago, April 10-12. Director, Mr. A. M. Shelton, Springfield.

MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

Iowa November Examination

Dr. Rodney P. Fagen, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Nov. 1-3, 1922. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University	(1922)	85.1,	90.4
Rush Medical College	(1882)		85.4
Harvard University	(1922)		89.1
University and Bellevue Hospital Medical College	(1922)		88.7
University of Budapest, Hungary	(1918)*		86.2

* Graduation not verified.

Rhode Island April Examination

Dr. Byron U. Richards, secretary, Rhode Island State Board of Health, reports the written and practical examination held at Providence, April 6-7, 1922. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Four candidates were examined, all of whom passed. The following colleges were represented:

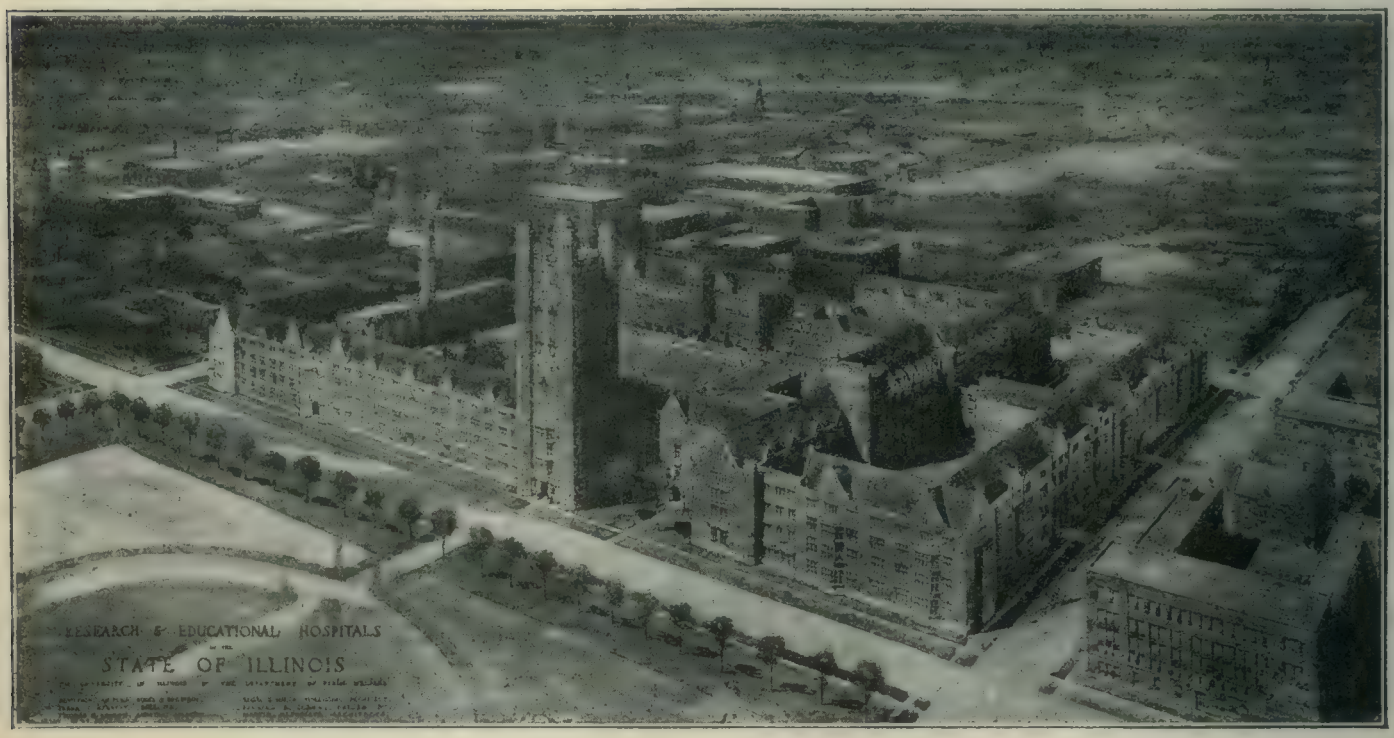
College	PASSED	Year Grad.	Per Cent.
Tufts College Medical School	(1903) 96,	(1921)	88.2
Cornell University	(1918)		92.4
University of Toronto, Ontario	(1905)		95.3

NEW MEDICAL BUILDINGS OF THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

The accompanying illustrations show the research and educational group of hospitals, laboratories and library, of the state of Illinois, which are now being erected by the state department of public welfare and the state university on the site of the old Cubs ball park in Chicago.

DISTRIBUTION OF SUBJECTS

The main building will contain the outpatient department, medicine, surgery, obstetrics and gynecology, together with some of the specialties, such as eye, ear, nose and throat, and dermatology. A large wing of the main building will be devoted to the study of nervous and mental diseases, and a separate building has been erected for crippled children. As a supplement to these buildings, which have been largely erected by the department of public welfare, the university is now erecting a research laboratory and library.



Research and educational hospitals.

When these buildings are completed, the group will form the nucleus of a great medical institution devoted to the study and teaching of the causation, prevention, alleviation and cure of disease, and the promotion of public welfare.

NATIONAL BOARD OF MEDICAL EXAMINERS

Report of Examination in Part III During 1922

A candidate to be eligible for Part III must have successfully passed Parts I and II and have completed one year in an acceptable hospital. The examinations in Parts III are entirely clinical and practical, and are held at the various subsidiary centers established in fifteen large cities in different parts of the country by the National Board. The candidates listed below have therefore been granted the Certificate of the Board, having now completed all of the requirements.

Name and Medical College	Year of Grad.
Ahlfeldt, Florence E., Woman's Medical College	1916
Braddock, William Hallock, Columbia Univ., P. & S.	1914
Darrow, Dan Cady, Johns Hopkins Medical College	1916
Dodd, William Earle, University of Pennsylvania	1916

Eagan, Joseph T., Yale University....1917
Fink, Walter H., University of Minnesota....1917
Forster, Neslen K., University of Illinois....1915
Foshay, Lee, University of Pennsylvania....1916
Gardner, Leon L., University of Pennsylvania....1916
Hawkey, Vincent G., University of Pennsylvania....1921
Hayman, Joseph M., University of Pennsylvania....1917
Jennings, Mary Hill, Woman's Medical College....1917
Kilgore, Allen M., Rush Medical College....1918
Marx, Frederick William, Harvard Medical School....1917
McFarland, Sadie, Woman's Medical College....1917
Miller, Herbert Payne, University of Iowa....1917
Nast, Max S., University of Pennsylvania....1916
Neupauer, M. G. Adolph, Jefferson Medical College....1917
Potter, James Craig, Johns Hopkins Medical College....1917
Putnam, Marian C., Johns Hopkins Medical College....1917
Riegel, Donald, University of Pennsylvania....1918
Schaeffer, Howard William, University of Pennsylvania....1917
Smith, Woodruff, Johns Hopkins Medical College....1914
Spoenemann, Walter H., Rush Medical College....1916
Starr, Merritt Paul, Rush Medical College....1915
Stater, Wayne J., Harvard Medical School....1917
Sziklas, Charles, Harvard Medical School....1917
Van Den Berg, William J., University of Wisconsin....1916

Miscellany

CHILD LABOR IN THE BEET FIELDS OF MICHIGAN

Children's Bureau representatives investigated more than 500 families in which either a child under 16, or a mother of a child under 6, worked in the beet fields of Michigan in 1920. A report of the investigation, soon to be issued by the Department of Labor, says that in the families studied, 67 per cent. of the children between 6 and 16 years of age were at work in the sugar-beet fields. One fourth of these child workers were less than 10 years old, and only one fifth were 14 years old or older.

Family labor in the Michigan fields was secured by agents of the sugar companies from Detroit, Chicago, Ohio, the mining districts of West Virginia, and even from Texas and Mexico. A miner from West Virginia said that he had come to the beet-growing country because his children were too young to work in the mines. All four of his children, the oldest 12, the youngest 5 years of age, worked in the fields; nine tenths of mothers having children under 6 years of age worked in the fields and did housework in addition. So long as pay for beet-field work is practically a family wage, the report states, it is not to be expected that children will be kept in school regularly.

Laborers are assigned as many acres to thin, hoe and harvest the beets, at a fixed rate per acre, as they and their families can take care of. The family working-day during the "thinning" season begins about 6 a. m., and continues, with a time for meals, until 6, 7, and sometimes 8 p. m. Over a fourth of the children worked from eleven to fifteen hours a day. One fourth of the laborers' families received less than $600 for six or seven months' work in the beet fields. In all but 7 per cent. of the families, the earnings from beet-field work were supplemented by the father's earnings from another occupation during the winter.

Three fourths of the children of school age included in the study had been absent from school on account of their work. Even children of workers who resided permanently in the district attended only 78 per cent. of the average school term, and a large proportion of these children were over age for



Research laboratory and library.

Averages Obtained

Cand. No.	Medicine	Surgery	Obstetrics & Gynec.	Public Health	Final Count
37	100	91.6	89.3	69	318.7
57	84	80.1	84	86	291
77	76.8	82.4	82	74	277.2
82	94.4	88.1	85	63	302.3
83	85.6	87.2	90	84	303
85	81.4	82.2	88	87	291.5
96	94.3	84.5	84.3	85	308.2
99	90.6	87.2	94	88	313.3
103	85.2	83.8	75	86	291.8
104	86.4	84.8	90	84	301
108	100	86.4	83.3	76	312.6
110	83.5	83.2	94	76	293.5
114	85.6	84.8	86	94	303
115	83.6	81.7	85	84	291.2
118	92.8	86	83.3	77	287.6
121	71.7	80	88	74	270.8
132	81.6	90.8	99	87	308.6
135	74.7	68	97	83	268.4
136	79.5	80.5	85	79	282.1
140	81.8	76.1	92	81	283.9
142	88.8	83.2	84	85	299.7
144	86	88.7	80	76	296.5
145	86.4	80	72	82	285
148	86	82.9	88	74	292.2
149	83.3	83.7	91	86	297.4
152	84.5	90.9	90	80	304.4
159	88.8	83.2	86	88	302
160	85.2	85.6	81	88	298.3

the grades they had attained. A supplementary study by the Children's Bureau, in the same three counties of Michigan, of the school attendance of children who did not work in the beet fields, showed that these children had about a third or a fourth as much absence from school as children working in the beet fields.

The sugar companies usually rented old farm houses for their workers or furnished small portable houses, which were sometimes crowded and in bad repair; from three to ten persons in many of the beet-field families were obliged to sleep in one small room. Occasionally a shack of tar paper or tin, or a caravan wagon, was the only shelter provided. One child told the Children's Bureau agent that the family had to take turns going in, as there was not room for all of them at once.

INFANT MORTALITY AND EMPLOYED MOTHERS

New evidence bearing on the influence of the industrial employment of mothers on infant mortality will soon be published by the Department of Labor. The evidence, which relates to births in Baltimore, indicates that the mother's employment away from home either preceding confinement or during the infant's first year of life is detrimental to the child's health. The employment of mothers during pregnancy is associated with a high stillbirth rate, a high premature birth rate and a high mortality rate during the first month of life. The stillbirth rate among mothers who were employed in industrial pursuits during the year preceding confinement was more than twice as high as that among mothers who were not so employed. Of the live births to mothers employed, 6.2 per cent. were premature, as compared with 5.7 per cent. to mothers not employed. The mortality rate during the first month of life was 77.3 for each thousand among babies of mothers employed or nearly twice the rate, 39.9, among babies of mothers not employed.

That the employment of a mother, if continued until a short time prior to the confinement, is especially harmful is confirmed by this new evidence. Nearly 40 per cent. of mothers employed away from home worked until within two months, and 25 per cent. until within two weeks, of confinement. The employment of mothers too soon after confinement also appears to be a factor in the infant mortality rate. The mortality rate among babies included in this study whose mothers were employed away from home during the babies' first year of life was one and one-half times the rate among babies of mothers not employed.

Breast feeding is denied the baby whose mother works away from home. A much larger proportion of infants of mothers employed away from home were artificially fed than of those whose mothers did not work. That artificial feeding has serious consequences is apparent. The mortality among artificially fed babies averages between three and four times that among breast-fed babies.

That the small earnings of the father are chiefly responsible for the employment of the mother is shown by the contrast between the several income groups in respect to the proportion of mothers employed. Of mothers in families in which the fathers earned less than $450, 29.2 per cent. were gainfully employed away from home during pregnancy, while 1.2 per cent. of the mothers in families in which the fathers' earnings were $1,250 or over were employed at that period. The contrast is equally striking in the case of employment following confinement. Of the mothers in homes in which the fathers' earnings were less than $450, 22.1 per cent. were gainfully employed away from home during the infant's first year of life, as compared with only 0.6 per cent. of the mothers in homes in which the fathers' earnings were $1,250 or over.

Previous reports of the Children's Bureau on infant mortality have shown a definite connection between income and infant mortality. As the income increases, the infant death rate decreases. This Baltimore study, based on a larger group than the previous studies, permits a closer analysis of the single factor of employment of mothers. The importance of this factor may be realized from the fact that even within the same income groups the mortality rate is higher for babies whose mothers are employed outside the home.

Book Notices

PHYSICAL DIAGNOSIS. By W. D. Rose, M.D., Lecturer on Physical Diagnosis and Associate Professor of Medicine in the University of Arkansas. Third edition. Cloth. Price, $8.50. Pp. 755, with 319 illustrations. St. Louis: C. V. Mosby Company, 1922.

This edition, well indexed, considerably enlarged, partly rewritten, and containing a chapter on the cardiac arrhythmias by Dr. Drew Luten of Washington University School of Medicine, is designed for the medical student and the busy practitioner. The chapters devoted to the physical diagnosis of the chest seem adequate from the standpoint of the medical student; those dealing with the cardiovascular system and the abdomen are less adequate, while those concerned with blood pressure, electrocardiography, the roentgen ray, and examination of the nervous system are sketchy and of doubtful value. Following the usual custom, the author has introduced the principal "systems" by chapters on clinical anatomy. These consist largely of information gleaned in the mortuary, appropriate in regard to the chest, but entirely inadequate in the case of the abdominal viscera and particularly of the gastro-intestinal tract. As in other textbooks on physical diagnosis, the advance in our knowledge of relations and normal variations of the abdominal viscera in living subjects furnished by the roentgen ray and by surgery has been largely disregarded. The modern textbook should substitute for old diagrams of the hollow viscera made from the dead the knowledge obtained from the study of the living. For example, the student should be taught that there are normal and individual variations in the shape, size and position of such organs as the stomach. It would seem, also, that a work would be of more value to the student if, instead of attempting to cover the whole field of physical diagnosis in the broadest sense, it limited the subject matter to the actual phenomena that may be observed in health and in disease, with detailed description of the means of eliciting signs, their probable mode of production, their significance and their relation to symptoms. This, after all, is what the author attempts to do. Inclusion of chapters on the roentgen ray and electrocardiography, subjects that require special and separate consideration, serve to emphasize the inadequate presentation of the chapters mentioned. A textbook of which three editions have appeared in five years, particularly one placed largely in the hands of medical students, deserves careful scrutiny from the standpoint of medical education. Viewed from this standpoint, the book does not meet the requirements of the ideal textbook on physical diagnosis.

THE PHYSIOLOGY OF REPRODUCTION. By Francis H. A. Marshall, Sc.D., D.Sc., F.R.S., Reader in Agricultural Physiology in the University of Cambridge. With Contributions by William Cramer, Ph.D., D.Sc., M.R.C.S., James Lochhead, O.B.E., M.A., M.D., and Cresswell Shearer, M.D., Sc.D., F.R.S. Second edition. Cloth. Price, $12 net. Pp. 770, with 187 illustrations. New York: Longmans, Green & Co., 1922.

The first edition of this work has been out of print for some time. In the present edition all departments have been brought up to date by the addition of new material, particularly new research on the generative organs. The work is almost encyclopedic on the subject it covers. The physiology of breeding in every type of life is described. Special chapters are devoted to the changes of the reproductive organs and to the process of reproduction. Two valuable new chapters concern the biochemistry of the sexual organs, and "the testicle and ovary as organs of internal secretion." In the latter chapter the newer attempts to show whether or not these glands have an internal secretion and the various extirpation, ligation and roentgen-ray methods are given special consideration. The author seems to be particularly impressed with the rejuvenation experiments of Professor Steinach. The chapter on fetal nutrition has been little changed from the previous edition, since the authors believe that few new contributions have been made on this subject. Nevertheless, some excellent work done in this country has been overlooked by the English writers, especially that done at Yale University under the supervision of Dr. Slemons.

Among other chapters of great interest are those on lactation, fertility and the factors that determine sex. After a complete consideration of the literature, the authors conclude that sex is not determined by the same factors in all cases, and that it is not determined at the same period of development but may be called into being at a later stage of life; in fact, they state that there is evidence of a change in the metabolism even in comparatively late life which may initiate changes in the direction of the opposite sex or even bring about a complete sex reversal.

I BELIEVE IN GOD AND IN EVOLUTION. By William W. Keen, M.D., Emeritus Professor of Surgery, Jefferson Medical College. Cloth. Price, $1. Pp. 100. Philadelphia: J. B. Lippincott Company, 1922.

Dr. Keen, who is now over 87 years of age and who years ago retired from active practice, seems to be as active now as are many men in their prime. And his activities are all altruistic—for the benefit of his fellows, morally and spiritually, and in defense and praise of that profession to which he devoted his life. The present book is an illustration. It is an elaboration of the commencement address which he delivered before the Crozer Theological Seminary last June; and presumably is a reply to the small group of propagandists against evolution, led by W. J. Bryan. Dr. Keen's main points are the analogy of the anatomy and physiology of man to other animals, the rudimentary organs—as, for instance, the appendix and embryonic deformities. The facts presented here will not convince W. J. Bryan and his followers—nothing will—but they make interesting reading. However, while it may not accomplish the purpose for which it was written, Dr. Keen, apparently without knowing it, has given us a book that, with a little deletion of irrelevant matter, would make a splendid bit of literature to use as evidence of the practical value and righteousness of animal experimentation.

LES PHÉNOMÈNES DE DESTRUCTION CELLULAIRE: AUTOLYSE—HÉMOLYSE—BACTÉRIOLYSE—ORGANOLYSE—L'IMPORTANCE DE LEUR RÔLE EN PATHOLOGIE. Par Louis Bory, Chef de Clinique à la Faculté de Médecine de Paris. Préface de M. le Prof. G.-H. Roger. Paper. Price, 12 francs net. Pp. 211. Paris: Masson et Cie, 1922.

This is an attempt to correlate numerous lytic phenomena as divergent and unrelated as postmortem autolysis, hemolysis by chemical agents, and bacteriolysis of the d'Herelle type. As these processes have in common only the disintegration of complex protein structures, brought about by measures that are extremely dissimilar, the result of the attempted correlation is not convincing and does not seem to lead to any particular goal. The author, apparently, is unfamiliar with most of the modern work on the topics under discussion, for among the numerous references cited are virtually none that are less than ten years of age. To discuss autolysis at length without taking into consideration the fundamental influence of H-ion concentration is not profitable. Since most of the references are of the period of 1907 to 1912, except for a brief reference to the bacteriophage, and the discussion is based on the knowledge of that date, the suspicion is aroused that this publication has been lying dormant for about ten years, and then published without modernization.

ABNORMAL BEHAVIOR. Pitfalls of Our Minds. An Introduction to the Study of Abnormal and Anti-Social Behavior. By Irving J. Sands, M.D., Instructor in Neurology, Columbia University Medical School, and Phyllis Blanchard, Ph.D., Psychologist, Monmouth County Mental Hygiene Clinic. Cloth. Price, $4. Pp. 482. New York: Moffat, Yard & Co., 1923.

This volume contains the results of the authors' study of cases observed in the psychiatric service in Bellevue Hospital. These cases were usually conduct disorders showing various forms of abnormal behavior, resulting from social maladjustment and in many instances terminating in delinquency or insanity. In the course of the book, 137 cases are reported in literary style, technical terms being avoided as much as possible. The book is especially adapted to social workers, probation officers, parents and teachers rather than to the technical psychiatrist. It is not, however, adapted for the general reader, since comprehension will require more than ordinary knowledge of modern psychiatry and abnormal psychology. Throughout the discussion the authors show an excellent balance and good judgment as to that which is proved in psychanalysis, physiology and pathology. They wisely reject much of the advanced interpretation that does not rest on any solid basis of proved fact.

THE GOLD-HEADED CANE. [By William Macmichael, M.D.] New edition with introduction and annotations by George C. Peachey. Cloth. Price, $4.50. Pp. 195, with illustrations. London: Henry Kimpton, 1923.

Four editions of the "Gold Headed Cane" have appeared previous to the one here reviewed, the first in 1827 and the second in 1828; the third edition, published in 1884, was edited by William Munk and supplied with notes, and continued the narrative up to the year 1858; in 1915 an edition was issued with an introduction by Sir William Osler and the preface by F. R. Packard, and this edition was reprinted in 1920. The present edition is printed as a quarto on large sheets with wide margins. It is edited and has an introduction by George C. Peachey, who has also provided notes concerning some of the other characters mentioned in the book. The "Gold Headed Cane" is one of the classics of English medical history. Readers will no doubt remember that the cane is assumed to have passed through the hands of Radcliffe, Mead, Askew, the Pitcairns and Baillie, and the story it tells is interspersed with anecdotes of the lives of these great physicians. The book merits the excellent format of this new edition.

DIE INDICANÄMIE: IHRE BEDEUTUNG ALS NIERENFUNKTIONSPROBE. Von Dr. Gustav Baar. Paper. Price, 750 marks. Pp. 148. Berlin: Urban & Schwarzenberg, 1922.

This is a supplementary study to "Die Indicanurie," published in 1912, and represents Baar's investigations to test the truth of the assertions of Haas and of Rosenberg that an increased indican content of the blood is of special value in the diagnosis of renal insufficiency. Haas had stated that a blood indican value of 0.16 mg. for each hundred cubic centimeters was indicative of renal insufficiency, while Rosenberg showed that certain gastro-intestinal disorders as well as many cases of cardiac incompetence were associated with values of 0.16 mg. per cent. and over. The method used in this study was the quantitative one of Jolles, in which the blood protein is precipitated by addition of 20 per cent. trichloracetic acid and the filtrate treated with 5 per cent. alcoholic thymol solution and concentrated hydrochloric acid containing 5 per cent. of ferric chlorid. The violet colored mixture is then extracted with chloroform and compared colorimetrically with similarly treated standard solutions of pure indican. As is well known, indicanuria is a frequent finding in intestinal and septic conditions as well as in true "metabolic" states in which an increased nitrogen decomposition occurs. However, Baar's results seem to indicate that indicanuria and indicanemia do not necessarily run parallel, and that absorption of excessive indican from the bowel, as indicated by an indicanuria, causes no increase of the blood indican in cases in which the kidney is normal. In 37.5 per cent. of his cases of gastro-intestinal diseases an increase in the blood indican was noted without any evidence being present of renal insufficiency, but he does not believe this finding due either to increased intestinal decomposition or to an increased urea retention. His work seems to show that the value of the nitrogen determinations of the blood is far less than that of the blood indican, since excessive blood indican values are typical for a renal insufficiency (with the exceptions mentioned by Rosenberg), while the nitrogen values, even in irreparable renal insufficiency, may at times be within normal limits and at times far above normal. Baar reports cases in which there was no increased blood nitrogen, but increased blood and urine indican and, on the other hand, a group of cases without increased blood nitrogen or blood indican but with markedly increased urine indican. A further group, associated with renal insufficiency, showed marked increase in blood nitrogen and indican but very little urine indican. From these results, Baar draws the conclusion that the indicanemia in nephritis is not dependent on the increased nitrogen values of the blood or on increased indican formation in and absorption from the bowel but, rather, depends on retention of indican as a result of renal insufficiency. In acute nephritis, while the blood nitrogen values may be increased and may later rise or fall, the blood indican seems

to show a persistent increase, although cases may be found in which neither nitrogen nor indican are increased. In chronic nephritis, the blood indican is constantly increased if the nitrogen values are increased, yet one cannot assume that the blood indican will sink if the nitrogen values sink, as he often finds an increase of indican in spite of decrease of nitrogen. His figures show that in uremia and chronic nephritis, as well as in severe anemias in which we have a "metabolic indicanemia," the blood indican values were virtually never under 0.16 mg. for each hundred cubic centimeters of blood. In uremia the urine indican is almost always under 1 mg., the normal value being 0.65 mg., that is, very little of the blood indican is excreted by the urine. Unless there is a renal insufficiency, the urinary indican runs parallel to the indican of the blood. These results of Baar are certainly significant, and seem to prove conclusively that figures of 0.16 mg. of indican for each hundred cubic centimeters of blood speak for a renal insufficiency in the absence of gastro-intestinal disorders and of certain cases of cardiac incompetence.

THE ART OF ANAESTHESIA. By Paluel J. Flagg, M.D., Lecturer in Anaesthesia, College of Physicians and Surgeons, New York. Third edition. Cloth. Price, $4.50. Pp. 371, with 136 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

This edition contains an additional chapter on selection of the anesthetic and the method of administration, and a brief discussion of synergistic anesthesia and status lymphaticus. As in the previous editions, the author has succeeded in providing a manual that may be studied with profit by student and anesthetist. The individual experience of the specialist in anesthesia will doubtless lead to divergent opinions, particularly as to the safety and efficacy of the open method of anesthesia. The author's objections to this method are not well founded, as can be demonstrated whenever the method is properly used. Why draw conclusions from the results seen in a clinic in which lay anesthetists improperly employ the method? The dangerous practice of touching the cornea to determine the degree of anesthesia is certainly open to criticism. The chapter on the point of view of the patient should be read by every surgeon and anesthetist. There is a good index, and the illustrations are ample.

PNEUMOCOQUES ET AFFECTIONS PNEUMOCOCCIQUES. Par L. Cotoni, C. Truche et Mlle. A. Raphael. Paper. Pp. 224, with 4 illustrations. Paris: Masson et Cie, 1922.

In the first part the history and characteristics, morphologic, cultural and immunologic, of the pneumococci are discussed. In the historical part the independent discovery in 1881 of the pneumococcus in the sputum by Sternberg, later surgeon-general of the U. S. Army, is not mentioned. The remarkable antiopsonic substance in virulent pneumococci (Rosenow's "virulin," the "antiphagin" of Russian investigators) also seems to have escaped mention. Part 2 deals with the habitat of the pneumococci and the pneumococcal infections. Here again is noted a failure to consider certain American contributions. Part 3 is devoted to the treatment of pneumonia, but sufficient evidence is not presented to justify any conclusion that in practice this treatment is of decisive value. To students of the pneumococci, this book will be of interest in that it presents the subject from the French point of view, and as such contains much that is of great value.

RICKETS. A Study of Economic Conditions and Their Effects on the Health of the Nation, in Two Parts Combined in One Volume. By J. Lawson Dick, M.D., F.R.C.S., Deputy Commissioner of Medical Services, London Region. Cloth. Price, $5.50. Pp. 488, with illustrations. New York: E. B. Treat & Co., 1922.

This deals especially with the etiology of rickets; much space is devoted to the geographic distribution of the disease and the explanations for its confinement to the industrial districts of northern Central Europe and the United States. The extensive recent work done in America by Howland, Park, MacCallum and others on the etiology and treatment is not touched on. The chapters on the literature of rickets dealing with Glisson and his times, and on ancient medicine and rickets, will be of some interest to the medical historian. The economic aspects of the disease are dealt with in considerable detail.

Medicolegal

Revenue Law Regulation of Prescribing Narcotics—Conspiracy of Physician and Druggist

(Smith et al. v. United States (U. S.), 284 Fed. R. 673)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment of conviction of a physician and a druggist for conspiring to violate Section 2 of the Harrison Narcotic Law as amended, says that it was argued that the Harrison act is a purely revenue measure; that, so treated, it does not forbid prescriptions for narcotics by physicians given with no intention of medical treatment but to satisfy drug cravings of addicts, and does not forbid druggists filling such prescriptions, with full knowledge of their character. The Harrison act is a revenue measure. However, Congress had the power to enact all requirements in connection with that, or any other act, which it deemed advisable, for the purpose of enforcing and making the law effective; and such power is limited only by the restriction that requirements are reasonably related to its apparent purpose. Considering the character of the traffic and the difficulty of enforcing this revenue act, this court thinks that the requirement that physicians should prescribe bona fide in the course of professional treatment in order to bring them within the exception in the statute is reasonable and germane to the revenue purpose. This is equally true of a sale by a druggist with knowledge that the purchaser is seeking the drug on a bogus prescription.

In the instructions given to the jury, they were told, among other things, that this case came under the federal statute which provides that it shall be unlawful for two or more persons to combine, confederate or agree to commit an offense against the United States. It does not require any formal action on the part of the parties to set it in motion. It is sufficient if, in a given case, as charged, there is a common understanding, tacit or otherwise, so that the parties understand among themselves that they are going to do the forbidden thing, that one or both of them is to do some act, or the acts, which are essential to bring it to a successful conclusion. Here there was evidence that a government agent went with another man, through some arrangement made by the latter, to the office of the defendant physician to get some prescriptions, 100 in all; but only 35 were ready; and when other persons came in and asked for prescriptions for drugs, they were handed some of those that were already prepared, and their place was supplied by writing others until 100 were written. And, on request, the physician called the druggist on the telephone and notified him that the agent was coming over with these prescriptions.

Now, the circuit court of appeals holds, a conspiracy must usually be established by evidence of different actions by the separate conspirators showing knowledge of and execution of the conspiracy. Here it was entirely proper to show what either the physician or the druggist did in connection with the transaction, for the purpose of establishing a conspiracy. These acts fitted together perfectly, forming a mosaic which showed the conspiracy in outline and detail. The large number of such prescriptions given by the physician and filled by the druggist; the acquaintance between them; the unhesitating act of the physician in giving the agent a large number of prescriptions and of the druggist in filling them without even looking at them; the telephone conversation, and the anxiety of the druggist for the purchaser's safety and the method of delivery at the garage all showed clearly a concerted plan of action. These were enough of themselves to prove the conspiracy and the fact that it was in existence and operation before the agent went to the physician's office for the prescriptions.

The court does not find error in an instruction a part of which was that it is no enticement to ask a physician to write an illegal prescription, if you suspect that he might do it, and you want to find out whether he does it; nor to ask a druggist to sell narcotics illicitly, because both of them know better, and if they are going to obey the law they will not fail to do so in response to any form of petition or

inducement, and it is perfectly within the rights of investigating officers to determine, by such means as were here disclosed, whether a party, or parties, are engaged in violation of the law, and, if they are, to take steps accordingly.

Physician Held Liable for Leaving Drainage Tube in Wound

(Chesley v. Durant (Mass.), 137 N. E. R. 301)

The Supreme Judicial Court of Massachusetts says that, July 29, the defendant operated on the plaintiff for appendicitis; and, August 4, symptoms of sepsis having appeared, he inserted in the wound, for the purpose of drainage, a piece of rubber tubing about 2½ inches long and one-eighth inch in diameter. Until August 13, he dressed the wound and inserted a new tube each day. On the 15th he went on a vacation, leaving the patient in the care of another physician, whose first dressing was applied the 16th. The latter physician continued as the one in charge until the patient left the hospital, and thereafter at her residence up to September 6, when the wound appeared to be clean and healed. In his treatment, he did not insert a drainage tube, and the jury could find on the plaintiff's evidence that after leaving the hospital she improved rapidly and gained in strength, until the following September, when her health began to decline, and she experienced much tenderness, with a sensation of circulation in the wound, which in November opened, and something protruded from it. A nurse who was called pulled from the wound a tube covered with blood, about 2½ inches in length.

The defendant last dressed the wound on August 14, and the evidence was conflicting as to whether he then removed the old tube and inserted a new one. The jury could disbelieve the statements of the defendant and the other physician that the old tube had been withdrawn, and of the defendant that it was not replaced by a new one, and accept the plaintiff's statement that whenever a tube was inserted she had a feeling or suspicion that it was being done, and that at the defendant's last dressing she had no such sensation. They also had before them the plaintiff's evidence that when she told the defendant that the tube had been found and extracted, he did not deny her statement that he had not inserted a tube at his last visit, as well as the testimony of the other physician that at that time no tube was inserted, because the drainage had substantially ceased.

The outstanding fact on the record was that after the wound apparently had fully healed and after pronounced symptoms of irritation and inflammation became manifest, the wound reopened and a tube of the kind admittedly used by the defendant was discharged. A finding was warranted that this abnormal and dangerous condition arose from the defendant's treatment while he was in attendance and before he placed the plaintiff, during his absence and with her consent, in the care of the other physician, who in a similar action tried with the present suit was exonerated by the jury. The defendant was required to use such reasonable skill and diligence as members of his profession commonly possess and exercise under corresponding conditions, and it was for the jury to say, under appropriate instructions, whether under all the circumstances his conduct came up to the required standard.

The jury returned a verdict in favor of the plaintiff for $1,500, and the defendant brought exceptions, which are overruled. His motion for a directed verdict, and his request for an instruction that there was no evidence to warrant the jury in finding that there was any negligence on his part, were rightly denied. His request for an instruction that there was no evidence to warrant a finding that the plaintiff's nervous and other trouble after the tube was removed, and the wound healed up, was in any way caused by the leaving of the drainage tube in the plaintiff's wound while she was at the hospital; and his request for an instruction that there was no evidence to warrant the jury in finding that the plaintiff was incapacitated for work at any time later than two weeks following the removal of the tube, November 7, which in substance asked that the jury be instructed to disregard the plaintiff's testimony of her physical suffering, which the jury could find in character and duration was caused by the defendant's negligence, could not have been given.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.

American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.

American Congress on Internal Medicine, Philadelphia, April 2-7. Dr. Frank Smithies, 1002 North Dearborn Street, Chicago, Secretary.

American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.

American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.

American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.

American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.

American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.

Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.

Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.

Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.

Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Joplin, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.

Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.

Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.

South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.

Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.

Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Thirty-Third Annual Meeting, held at Ann Arbor, Mich., March 2 and 3, 1923

The President, DR. CHARLES P. EMERSON, Indianapolis, in the Chair

Problems of the Two Year Medical Schools

DR. HARLEY E. FRENCH, Dean, University of North Dakota School of Medicine: These problems or difficulties may be grouped thus: 1. The difficulty in securing and holding qualified teachers. 2. The possible difficulty in securing adequate clinical facilities to satisfy the best interests or the demands of our curriculum committee. 3. The transfer of men to clinical schools. 4. What to do in the face of the recommendation of the Council on Medical Education and Hospitals that four year courses be established in all states where adequate finances can be obtained. For a time no difficulty was experienced in transferring students to clinical schools. Today the reduced number of schools plus the limited possibilities for clinical instruction place the two year schools in a precarious position. Most of the two year schools should be encouraged to go on in their present lines if their work measures up to reasonable standards. The building of university hospitals and the location of certain state institutions with reference to these medical schools should be encouraged by both the authorities of these schools and the leaders of medical education. This should be done

for many reasons, but not with the idea that these schools will necessarily be enabled thereby to establish four year courses.

DISCUSSION

DR. C. R. BARDEEN, University of Wisconsin: The two year schools perform a good service. It is important for the two year school to keep in touch with clinical medicine, and it is probably more important for the two year school to have men with medical training in charge of the laboratories. The two year school, if it keeps in touch with the practice of medicine, can perform a very good service.

DR. C. P. LOMMEN, University of South Dakota: In South Dakota it will probably take a great many years before we can provide anything like adequate clinical instruction. Some scheme should be developed for taking care of the product of the two year schools. The problem of placing our students is a difficult one.

DR. W. S. LEATHER, University of Mississippi: We have formed an affiliation with the four year medical schools of the different universities so that we have had very little trouble in placing our students.

DR. WILLIAM DARRACH, Columbia University: The two year schools are doing splendid work. We have taken a great many students of advanced standing from the two year schools. With the increased numbers of students seeking to enter medical schools, we have been driven to limit our classes. This limitation demands a careful selection of students.

DR. WALTER L. NILES, Cornell University: Ultimately the number of two year students will increase to the extent we expect in other years, which will provide for a considerable number of desirable students from the two year schools. Our experience has been that the work of the students from the two year schools has been very satisfactory.

Four Years in Medicine: The Hospital Medical School

DR. THOMAS ORDWAY, Dean, Albany Medical College: We should recognize that, just as there are two general types of colleges of arts and science, there may also be two types of medical schools. One type might be termed the medical university, and consist of a group of departments or institutes and the more or less special schools of public health, tropical medicine, industrial medicine, etc. In this medical university, the undergraduate departments would be but a small part of its manifold activities. Such medical universities should be particularly important, and are very necessary for the training of real specialists in medicine and its allied branches. The hospitals associated with such a school would be specialized clinical institutes. In such a large medical university, the relations between departments or institutes would naturally be somewhat formal because of its size and the distribution of its buildings. The second type of medical school should also be the medical department of a university, for only university relationship can give the educational requirements and stabilizing influence necessary. This form of school might be termed the hospital medical school. It should be a school with small classes (from twenty to thirty students in each), housed in a large general hospital. It would have the advantage of intimate relation between student and teacher and, the departments being essentially under one roof, should facilitate interdepartmental cooperation, not only between the clinical branches but also between the clinical and laboratory departments. The teachers of the specialties should confine their work almost entirely as consultants and also to emphasize and correlate their specialty. Elective courses and special problem assignments should be arranged. Representatives of the departments, preferably the heads, should have definite office or consultation hours. The advantages of cooperation are immediately apparent in the better diagnosis and treatment of the patient, and such interchange of criticism and knowledge is stimulating and helpful in keeping the various departments in touch with advancing knowledge. It tends also to have a stabilizing influence, for it prevents isolation and the tendency to the development of special fads. It facilitates our search for the truth.

DISCUSSION

DR. G. CANBY ROBINSON, Vanderbilt University: The cooperation of the various departments of the medical school must be one of the advances we must all attempt to accomplish in the future. The distinction between what the author calls a medical university and a hospital medical school is a very good one. The ideal of bringing the school as a whole into a unified one is an ideal that we must all strive for.

DR. A. C. ABBOTT, University of Pennsylvania: We are now ready for some one to wipe the slate clean, as it were, and start a more logical medical curriculum, so that students will have more time to think and to work independently, and not try to cover the whole field of medicine.

DR. HUGH CABOT, University of Michigan: We are making a plea for getting away from the water-tight compartment system. If each one is teaching his subject every day, without any relation to anything else, it is in a sense a return to the conditions that existed before the concentration of the fundamental subjects. That this concentration was a great step forward, I do not believe any one doubts. I do not believe medical education would be where it is today if that concentration had not been made. I am satisfied it has served the greatest usefulness, and we must spend much time in bringing together again those things which we somewhat violently separated.

DR. E. P. LYON, University of Minnesota: The physical contiguity of the plan is a big factor, and very much can be gained if the preclinical teachers and the clinical teachers can come together frequently. Mr. Pritchett has not offered a solution of the problem. As a laboratory man I shall cooperate in every effort to get a curriculum that works up from an objective point, and particularly one that tends to make the student think—give the student independence.

DR. J. PARSONS SCHAEFFER, Jefferson Medical College: Something should be done to bring freshmen in contact with patients which will help teach anatomy. If a certain amount of anatomy and physiology could be taught in the fourth year, it would be a great help, and if a correlation course could be arranged whereby the student can study patients and think in terms of anatomy, biology, chemistry and physics, internal medicine and surgery, it would be a great advance for the whole fabric of present day medicine.

DR. RAY LYMAN WILBUR, Stanford University: There are knotty places in the medical curriculum that should be blown up. While I believe in a slow process, we have to go faster to get results. We know what ought to be done and should strive toward that end. We have to deal with this problem differently in different institutions. We have varying personalities to deal with; but, when certain fundamentals are agreed on, we should go to work and do the best we can with them.

Shall a Fifth or Intern Year Be Required for the M.D. Degree and for Admission to the Licensing Examination?

DR. WILLIAM DICK CUTTER, Secretary, State Board of Medical Examiners of New York: Shall the medical course be extended to five years? The two years' premedical work represents part of the training of the student for his profession; hence the course is really one of six years, and if we add another year it would be seven years. Is it necessary to add another year to the length of the period which is required for the training of men before entering on their life work? The time we now have at our disposal (six years) is not fully utilized; hence there is not any necessity for extending the course. Our department has compiled statistics showing that the length of the teaching period diminishes progressively from the elementary schools up to the colleges and universities. Is there any reason why, if a child of 8 can study for forty-two weeks, a young man of 21 cannot study for thirty-four weeks? If we take out all time given to vacations, holidays, Sundays and half a day on Saturday, we can lengthen the period of instruction, and that we should do before we undertake to add another year to the course. By increasing the amount of study in the premedical year and increasing the length of the college year in a professional school, eight weeks' more time can be secured without the

addition of another eight months according to our present schedule. The other question is whether or not an internship in a hospital should be made a part of the legal requirement for admission to the licensing examination or be required as a prerequisite by the university for its degree. If a medical school is so located that it has a hospital under its control of sufficient size and capacity to provide internships for all its students, they might carry on practical work under the direct supervision of the members of the faculty of the medical school or university, and there would be very little objection to such a procedure; but I know of no medical school so located that it can give to all its students internships in its own hospital. The result is that those schools which have adopted this plan are those states which send students into hospitals scattered all over the country where they serve one year or more as interns. During that time, they are a part of the machinery of the hospital. Their duties are largely routine. Instruction is secondary, and, in many such hospitals, facilities for instruction are inadequate. The state of New York will not require the lengthening of the present medical course from six years to seven years until it is shown that the time already available has been fully utilized. Again, New York will not require the placing of students in all sorts of hospitals until the medical schools have found some way to give adequate training under their own supervision and control.

DISCUSSION

DR. ARTHUR T. MCCORMACK, State Board of Health of Kentucky: Regardless of any campaign on the part of state boards, many more men will become interns in the future than in the past because the character of the training is more basic, and the art of medicine makes it necessary for students to go into hospitals, and a man, after he has been educated in our modern institutions, realizes that he must learn a good deal of the art of medicine after he has finished his course. In order to become a successful practitioner, he must associate himself with the artisans in medicine. For that reason, while some of the teaching in a hospital cannot be quite as effective, I believe that his contact with his fellows practicing the art of medicine is a very important thing to him.

DR. JOHN S. RODMAN, National Board of Medical Examiners: The National Board of Medical Examiners started seven years ago assuming that a hospital year was an essential part of the training of the medical student, and I think our experience up to this time has led us to feel that we shall continue that practice.

DR. C. A. HAMMAN, Western Reserve University: The hospital year is necessary, but hospitals should be suitable for intern instruction. I am heartily in favor of an intern year. If the rest of the course can be shortened, it should be done. Time should be utilized to better advantage. It may be said that interns are not under the supervision of competent teachers at all times. That is true in many cases, but they are given an opportunity to learn, and that is of great value.

The Place of Anatomy in the Medical Curriculum

DR. WILLIAM KEILLER, Acting Dean, University of Texas Department of Medicine: To fix anatomy in the student's mind, he must grow up in an anatomic atmosphere. His anatomic pictures must be impressed on his brain again and again till they have some permanence. To attain this end, I would distribute his ordinary dissection into two hour periods throughout his freshman and sophomore years. I would revivify his freshman-sophomore impressions by a laboratory course of applied anatomy in his junior year, when he is beginning to be appreciative of the clinical side of things. Applied anatomy is in most schools an elective lecture course. As a lecture course, it is very dry at best. As a laboratory course, applied anatomy is intensely interesting, and affords a great opportunity for manual training and for impressing the student with the appeal of accurate anatomy to clinical problems. Twenty years ago, the main study of nervous diseases was symptomatic only; today, nine tenths of ordinary nervous diseases are most interesting problems in applied anatomy and physiology.

DISCUSSION

DR. H. VON W. SCHULTE, Creighton Medical College: I do not feel like asking for more time in teaching anatomy, as the present curriculum will not warrant it. Anatomy might be carried over into the clinical field by clinicians who know anatomy. Then 90 per cent. of the difficulty of teaching anatomy would disappear. Students should be taught to apply their anatomy in clinical work.

DR. W. F. R. PHILLIPS, University of South Carolina: A fault I have observed is not in the anatomic department; it is the fact that the clinician and the surgeon do not use their knowledge of anatomy. What we need are men who are good anatomists, who keep up with anatomy, and who think in terms of anatomy when they teach other branches. If they will do that, there will be no need of asking for more time in which to teach anatomy.

DR. ALEXANDER S. BEGG, Boston University: We are getting at the problem in a different way. We have a rule that every young surgeon on our hospital staff must serve two years in the dissecting room. They are very keen to do it. We have more applications for positions than we have positions to fill. It is a question of cooperation between the departments. I attend all staff meetings, and make anatomic demonstrations as far as the clinicians will allow me.

DR. C. R. BARDEEN, University of Wisconsin: A student can learn anatomy if he is skilful with his hands and understands the necessity of making clean dissections. Heretofore, it was a mistaken idea in teaching anatomy to students that it meant memorizing words, whereas the most important thing in anatomy is to teach students to think in terms of structure, and one of the best ways to do that is by the kind of training referred to by Dr. Keiller, whereby the student is encouraged to visualize the thoracic and abdominal viscera, making drawings of them and comparing them with what he sees when the abdominal wall is opened, and so on.

DR. THOMAS ORDWAY, Albany Medical College: More coordination between the work of the anatomist and that of the pathologist could very well be undertaken. At necropsies there is no reason why the anatomist and pathologist with members of the class should not be present. In our experience this has proved valuable to the anatomist.

DR. G. CARL HUBER, University of Michigan: The modern anatomist thinks in terms of microscopic anatomy, in terms of embryologic and functional anatomy, in terms of nervous anatomy, as well as gross anatomy. Twenty-five years ago we did practically no work in histology, no work in embryology, and very little work in neurology. Fundamental work in anatomy should be taught by men who are interested in the work.

DR. J. PARSONS SCHAEFFER, Jefferson Medical College: Embryology should be taught in the first year, if physiology is taught early in the second year. It would be much better if we could correlate structure and function. When the student has reached clinical work, he sees the importance of that correlation. A third year course in practical anatomy is a very good thing. I would urge that anatomy be taught not only in the first year but also in all years, to the clinicians.

The Moral Qualifications of the Medical Student

DR. CHARLES P. EMERSON, Indiana University: The real product of the medical school is the general practitioner. He is and must be the corner stone of the medical profession. Just as soon as specialists individually, or as officers of a national society, offer their services direct to the public, and just as soon as the public learns to appeal to the specialist directly for help, thus ignoring the general practitioner, the medical situation becomes unfortunate. We of the schools pay too much attention to the specialists. The family doctor —that is our job. We should do everything in our power to qualify him to win the confidence of the public and not feel that every public health official, specialist and public health society is his rival and enemy, and that his professional salvation will depend on his ability to escape from general practice into one of the specialties. The important thing needed now is to teach the medical student not alone the medicine and surgery of the twentieth century but also the

accompanying responsibilities. The weakness of our graduates of today is that they have the professional power of the twentieth century but the more convenient ethics of the mid-nineteenth, and the result is disastrous. We should early convince our students of the sacrificial character of their calling. We should encourage the development of strong Y. M. C. A.'s and similar societies in the school. The faculty should attend these meetings and show a strong religious background in all of our own practice.

The Special Medical Student

Dr. John T. McClintock, University of Iowa: The term "special student" directs attention to the fact that this is an exception to the ordinary procedure in the registration of the student. One group of such students has wandered from one institution to another, but finally finding a berth somewhere under the head of "special" students, with the proviso that the conditions of entrance requirement shall be removed before they enter on the second year, and sometimes that five years shall be spent in the school instead of four. Is not that a direct evasion of the rule not permitting any entrance condition? Does the proviso of the additional fifth year make up for the entrance condition? A second group comes in a different way. There has been created a demand for bacteriologists, serologists, physiologic chemists, and so on. These persons find it to their advantage to take some medical work in the preparation for their special field of activity. They apply for admission to a college of medicine to take some of these courses. In medical colleges associated closely with general universities, these persons can be admitted by having registered in some college in the university; and, by making preparations with the department of clinical medicine, they can be handled satisfactorily. Other medical colleges not associated directly with a university admit these applicants as special students. A real question arises later. That student, after completing certain subjects of the medical course, wishes to go on and take the M.D. degree. What credit is to be allowed him for the work which he took in the college of medicine when he seeks registration as a regular medical student? Supposing we grant full credit to him, what is the difficulty? We open the door to the first class of special students. They now apply for admission as regular students, give an explanation where they wish to go, and prepare themselves for some other special line of work connected with medicine. They are admitted to some of the courses. Meanwhile, they have taken up other work and removed their entrance conditions. Now they apply for the full course. That presents a real difficulty, and the solution of the problem must be one which will be just to the college, permitting the college the greatest leeway possible to meet the obligation of all students. It must be one which is just to the individual student and not unjust to the regular student, and it must be one which will not compromise the individual college with any of the other members who have signed up for the same rules and regulations.

The Dean's Problems

Dr. Irving S. Cutter, University of Nebraska: The personality of the student ought to be known by the dean. I have for many years, at a certain hour of each day, had as many students as possible come to my office to talk over their problems, their successes, their failures, their financial struggles, their social problems—in fact, anything they chose to talk about. This is not done individually. Occasionally a student may want to see me alone regarding a matter of a personal nature, but, as a rule, they are glad to talk before one another because their problems have an interrelation, and they learn from one another as they talk things over. In furthering efficient work of administration among the student body, we are neglecting to use some of the means immediately at hand. One of these is the college fraternity. I ask some one of the faculty, not a member of a given fraternity, to visit that fraternity once a month to talk over with these fellows their problems, and these groups are now very keen for that monthly visit of the faculty member. To stimulate scholarship among students, the university record or register publishes annually a statement of the scholarship of each medical fraternity as well as each fraternity group in the university hall, and these fraternities vie with one another as to who shall win honors year after year. Another factor is the graduate student. We have for several years encouraged students at the end of the sophomore year to drop out of the medical course and become graduate students in one of the departments. These graduate students meet with the departments when they have their meetings to talk over their problems. These men live in fraternity houses and they carry back not only the point of view of the students but also the fraternity spirit and the point of view of the staff. This does a lot of good in student examinations, which is one of the big problems of the dean and in the administration of the school. We have a small dormitory, which accommodates fifty or sixty men. There is at present great rivalry in our students' scholarships between dormitory groups and groups living in the several fraternity houses. No matter how efficient the hospital superintendent may be, the university or teaching hospital is one of the dean's important problems.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

January, 1923, **31**, No. 3

*Absorption of Cerebrospinal Fluid Into Venous System. L. H. Weed, Baltimore.—p. 191.
Interstitial Cells of Gonads of Cattle with Especial Reference to Their Embryonic Development and Significance. K. F. Bascom, Chicago.—p. 223.
*Human Types and Growth Reactions. C. R. Stockard, New York.—p. 261.
Pancreatic Ducts and Pancreatic Bladders. J. L. Bremer, Boston.—p. 289.
Mast Leukocytes in Adult Guinea-Pig Under Experimental Conditions. A. R. Ringoen, Minneapolis.—p. 319.

Absorption of Cerebrospinal Fluid Into Venous System.—The pathway of absorption of the cerebrospinal fluid into the blood stream under normal conditions is by way of arachnoid villi into the great dural venous sinuses. Under the influence of an increased salt content of the blood, produced by the intravenous injection of strongly hypertonic solutions, Weed asserts that absorption takes place also by way of the perivascular channels and through the ependymal lining of the cerebral ventricles into the capillary bed of the nervous system. In the normal process, filtration may be the physical factor of greatest importance, but after the intravenous injection of strongly hypertonic solutions, osmosis and diffusion apparently play the only active rôles.

Human Types and Growth Reactions.—This paper is presented by Stockard as an introduction to a series of studies now under way which bear on the origin and development of certain well marked types found among the mammals. It is stated that the growth rate of the individual depends on both internal and external factors—hereditary composition and functional activities—the latter being modified largely by surrounding conditions. The two groups into which almost all ordinary persons fall more or less exactly may be termed the "linear" type and the "lateral" type. The linear type is the faster growing, high metabolizing, thin, but not necessarily tall, group, while the lateral type is slower in maturing and is stocky and rounder in form.

American Journal of Ophthalmology, Chicago

February, 1923, **6**, No. 2

Pulsating Exophthalmos. L. B. Whitham, Baltimore.—p. 81.
Strabismus. E. Landolt, Paris.—p. 93.
Considerations of Ocular Vergence. G. F. Alexander, Scarborough, England.—p. 102.
Graduated Tenotomy of Inferior Oblique Muscle in Correcting Certain Forms of Squint. J. L. McCool, Portland, Oregon.—p. 107.
Heterophoria. L. W. Fox, Philadelphia.—p. 110.
Transfer of Function of Ocular Muscles. E. Jackson, Denver, Colo.—p. 117.

Vision After Cataract Extraction. F. Nicolas, Manila.—p. 123.
Corrected Report of Colonel Smith's Cataract Operations. W. A. Fisher, Chicago.—p. 124.
One Hundred Consecutive Cataract Operations. E. A. Knorr, Baltimore.—p. 126.
Final Result of Carcinoma of Orbit Probably Originating in Lacrimal Gland. C. N. Howard, Warsaw, Indiana.—p. 128.
Gunshot Wound of Orbit, Operation, Recovery. J. A. Morgan, Honolulu, T. H.—p. 129.

American Journal of Public Health, Detroit

February, 1923, **13**, No. 2

Prevention of Simple Goiter. O. P. Kimball, Cleveland.—p. 81.
Maternal Mortality and Mortality in First Month of Life in Relation to Attendant at Birth. J. Levy.—p. 88.
Influence of Epidemiology on Present-Day Methods of Control of Communicable Disease. H. Emerson, New York.—p. 100.
Lima, Ohio, Sewage Disposal Problem. G. W. Fuller, New York.—p. 103.
Heat Resistance of Bacillus Botulinus Spores. J. R. Esty, Detroit.—p. 108.
Law Enforcement in Control of Tuberculosis. E. A. Jonas, Chicago.—p. 113.

American Journal of Syphilis, St. Louis

January, 1923, **7**, No. 1

*Effects of Mercury Inhalation on Animal Organism. J. Gutman, Brooklyn, N. Y.—p. 1.
Syphilitic Genital Chancre. M. B. Parounagian and H. Goodman, New York.—p. 43.
Venereal Disease Clinic. Toledo Municipal Hospital. E. W. Huffer, Toledo.—p. 56.
*Syphilis of Suprarenals. W. H. Deaderick, Hot Springs National Park, Ark.—p. 72.
Syphilis. V. H. H. Hazen, Washington, D. C.—p. 83.
Argyria and Its Relation to Silver Therapy. I. Argyria—Historical. II. Retention and Elimination of Silver with Special Reference to Silver Arsphenamin and Silver Therapy. (To be continued).—C. N. Myers, Brooklyn.—p. 125.
*Mercury Inhalation Therapy of Syphilis. II. Historical Review. J. Gutman, Brooklyn.—p. 145.
*Case of Syphilitic Reinfection. H. Schoenrich, Baltimore.—p. 153.
*Wassermann Reaction in Pregnancy. W. A. Hinton, Boston.—p. 155.
Reactions Following Arsenobenzene Administration and Their Treatment. A. R. Fraser and A. G. B. Duncam, Aberdeen.—p. 160.

Effects of Mercury Inhalation on Animal Organism.—Experiments are presented by Gutman in which the symptomatology and the gross and microscopic pathologic changes in the organs of animals (guinea-pigs and rabbits) subjected to inhalations of mercurial vapors are described. A comparison is made between the effects of mercury when it is administered by inhalation and the effects of oral, hypodermic and inunction methods as described by Kolmer and Lucke. It was found that under like circumstances, the pathologic changes following the administration of mercury, in whatever form and by whatever route, are approximately identical. It was found that the toxic changes following mercurial inhalations consist of marked congestion of many organs, severe destructive processes affecting the intestinal tract and kidneys and lesser injuries to the liver, spleen, suprarenals and nervous system. It is also stated that the effect of mercurial vapors upon the respiratory system depends on their concentration and the manner of their administration. Strenuous inhalations of concentrated vapors induce serious pathologic lesions. Diluted vapors, smaller and less frequent dosage are not productive of harmful effects in the lungs.

Syphilis of Suprarenals.—A case of probable Addison's disease of syphilitic origin is reported by Deaderick. The patient was a woman, aged 40, who had married for the second time eight years previously. The husband admitted syphilitic infection twenty-eight years before with insufficient treatment. She had three miscarriages but no full term labors. Nine years ago she had pains in the liver region followed by marked jaundice, which was very persistent. For the past seven or eight months she has had vomiting attacks preceded by nausea. At first these attacks came on from one to three times a week, then they became more frequent until they occurred after almost every meal. She has lost 15 pounds in weight during this period. For eight months she has been very weak. During some of the "weak spells" she is able to sit up, but frequently she is compelled to lie down, being too weak to sit. She has had dyspnea on exertion for several years. Seven months ago she consulted two throat specialists on account of sore throat and enlargement of the cervical glands. Both diagnosed syphilis and one prescribed antisyphilitic treatment by mouth which she took for two and one-half months causing resolution of the throat and gland trouble. About two months ago she noticed a cloudiness of the right cornea. Her present complaint is pigmentation of the skin, pain in the right hypochondrium and precordium, backache, weakness, vomiting and constipation. The treatment consisted of daily, intramuscular injections of mercury benzoate, up to one-third grain, and of the oral administration of suprarenal gland. After three weeks' treatment all the systemic symptoms were improved but no change could be detected in the cutaneous pigmentation. A month after discharge she reported that the discoloration was fading.

Mercury Inhalation Therapy of Syphilis.—According to the historical evidence presented by Gutman the preponderance of evidence is in favor of claims for the beneficent properties of inhaled mercury vapor. While there is much in the past history of mercury vapor therapy that is unfavorable, he says there is much more which commends the method and places it among other well recognized and lauded therapeutic procedures in the history of medicine.

Syphilitic Reinfection.—Schoenrich reports the case of a man, aged 26, who developed, and presumably was completely cured of, two separate and distinct syphilitic infections within a period of less than ten months; furthermore, the clinical and serologic response was unusually favorable under a rather mild antisyphilitic medication. The duration of the first infection was approximately three months; thence an interval of less than two months was followed by a second attack of probably one month's duration.

Wassermann Reaction in Pregnancy.—A study of the Wassermann reaction was made by Hinton on the blood of 10,427 pregnant women. The method employed utilized two cholesterinized antigens prepared from a plain alcoholic extract of human heart muscle and a more sensitive antigen, also cholesterinized, made from guinea-pig hearts. Sheep's cells were used as indicators. In 4.18 per cent. of these cases a positive reaction, and in 38.5 per cent. a doubtful reaction was obtained. In Hinton's experience, properly standardized cholesterinized antigens have yielded a negligible number of false positive reactions in child bearing women.

Annals of Otology, Rhinology and Laryngology, St. Louis

December, 1922, **31**, No. 4

Mishaps in Puncture and Irrigation of Maxillary Sinus. W. E. Grove, Milwaukee.—p. 913.
Surgery of Ethmoid Labyrinth. A. H. Andrews, Chicago.—p. 947.
Pathologico-Anatomic Difference Between Fetid and Nonfetid Ozena. A. Rundstrom, Chicago.—p. 950.
*Abscess of Lung and Method of Prevention in Nasopharyngeal Surgery. C. W. Richardson, Washington, D. C.—p. 960.
Hyperplasia and Infection in Postethmoid-Sphenoid Ocular Complications. G. F. Harkness, Davenport, Iowa.—p. 964.
Some Phases of Esophageal Stenosis. R. McKinney, Memphis.—p. 977.
*Brain Abscess of Rather Long Duration. C. J. Adams, Kokomo, Ind.—p. 984.
Septic Type of Temperature not Referable to Ear in Cases of Acute Suppurative Otitis Media. H. I. Lillie, Rochester, Minn.—p. 990.
Extradural Abscess Complicating Frontal Sinusitis: Report of Case. R. H. Skillern, Philadelphia.—p. 997.
Method of Demonstrating Surgical Anatomy of Mastoid by Models. J. W. Downey, Jr., Baltimore.—p. 1009.
*Technic of Thyrotomy. A. E. Hertzler, Halstead, Kan.—p. 1013.
Subcutaneous Emphysema of Neck and Chest Following Tonsillectomy in an Epileptic. Recovery. S. Rosenheim, Baltimore.—p. 1027.
*Case Showing Unusually Early Metastasis in Carcinoma of Vocal Cords. A. E. Hertzler, Halstead, Kan.—p. 1032.
Fatal Case of Vincent's Angina. D. N. Husik, Philadelphia.—p. 1039.
Roentgen-Ray Treatment of Tonsillar and Lymphoid Tissue. J. H. Trinder, Fort Sam Houston, Texas.—p. 1044.
Formation and Function of Accessory Nasal Sinuses and Mastoid Cells. A. W. Proetz, St. Louis.—p. 1083.
Operation of Total Laryngectomy for Cure of Intrinsic Cancer of Larynx. J. E. McKenty, New York.—p. 1101.
*Abscesses of Larynx and Trachea Following Influenza. C. F. Theisen, Albany.—p. 1118.
Some Points in Comparative Anatomy of Nose and Accessory Sinuses Which Account for Variations in These Structures in Man. J. M. Ingersoll, Cleveland.—p. 1123.
Intranasal Injection of Alcohol in Treatment of Hyperesthetic Rhinitis and Some of Nasal Neuroses. O. J. Stein, Chicago.—p. 1129.
Barnes' Drum Membrane Knife and Spatula. G. E. Barnes, Herkimer, N. Y.—p. 1137.

Prevention of Abscess of Lung in Nasopharyngeal Surgery.—The technic which Richardson has adopted and which seems to have eliminated this type of surgical risk in faucial surgery

consists in careful preoperative preparation of the patient; the presence of a skilled anesthetist; placing the patient in the moderate Trendelberg position during the operation; removing pus, cheesy material or liquid exudate from the tonsils by suction; gentle manipulation in applying compression and swabbing, and, finally, returning the patient to bed resting on the left side, and placing him in bed fare downward until he has thoroughly recovered from the anesthetic.

Technic of Thyrotomy.—For the removal of intrinsic tumors of the larynx Hertzler advocates the external operation, asserting that it is technically safe and simple; complications following the operation are negligible. He describes his technic.

Unusually Early Metastasis in Carcinoma of Vocal Cords.—Hertzler reports a case of malignancy of the vocal cord marked by the discovery of a metastasis before the intralaryngeal lesion was discovered. He attributes the failure to recognize the importance of a metastasis in the particular gland in question to ignorance of the lymphatic drainage of the larynx. Knowledge on this point, Hertzler says, should have led to the conclusion, when the malignancy was discovered in the lymph gland in that particular location, that there must be a hidden malignancy somewhere within the larynx.

Abscesses of Larynx and Trachea Following Influenza.—Six cases of abscess of the larynx and trachea occurring during epidemics of grip and influenza are reported by Theisen. The bacteriology of five of the cases was worked out. In none of the cases was the influenza bacillus found. In three cases, cultures showed mixed staphylococcus and streptococcus infection, and in the other two streptococcus. Theisen believes that the laryngeal and tracheal abscesses start as localized inflammatory processes, and then, owing to the patient's run down condition, with the addition of pyogenic organisms, the abscess gradually develops.

Archives of Occupational Therapy, Baltimore

February, 1923, **2**, No. 1

Music as Means of Mental Discipline. W. Van De Wall, New York.—p. 1.
Physical Exercise and Dancing. E. M. Huseby, Towson, Md.—p. 27.
Games and Dramatics. G. E. Harrington, White Plains, N. Y.—p. 31.
Toy Making as Therapeutic Occupation: Con. W. R. Dunton, Jr., Towson, Md.—p. 39.
In Defense of Toys. H. J. Hall, Marblehead, Mass.—p. 43.
Rejoinder. W. R. Dunton, Jr., Towson, Md.—p. 47.

Arkansas Medical Society Journal, Little Rock

January, 1923, **19**, No. 8

Important Points in Bone Surgery. A. Watkins, Little Rock.—p. 145.
Need of Sanatorium Care for All Tuberculous Persons. J. Stewart, Booneville.—p. 152.
Drug Addiction. T. B. Bradford, Brinkley.—p. 158.

February, 1923, **19**, No. 9

Modern Concepts of Tuberculosis. G. B. Webb, Colorado Springs, Colo.—p. 169.
Report of Case of Congenital Hypertrophic Pyloric Stenosis. W. R. Brooksher, Fort Smith.—p. 172.
Radiation in Treatment of Menorrhagia. D. A. Rhinehart, Little Rock.—p. 175.
Excision of Sensory Root or Trifacial Nerve. J. H. Scroggin, Little Rock.—p. 176.

Boston Medical and Surgical Journal

Feb. 15, 1923, **188**, No. 7

*Diagnosis of Cardiovascular Syphilis. W. D. Reid, Boston.—p. 189.
Viewpoint of a Physician. J. H. Nichols, Tewksbury, Mass.—p. 193.
Physiology of "Autosuggestion." D. Gregg, Wellesley, Mass.—p. 195.
Value of Medical Society to Community and Its Own Members. D. R. Lyman, Wallingford, Conn.—p. 196.

Diagnosis of Cardiovascular Syphilis.—The first essential in the diagnosis of cardiovascular syphilis, in Reid's opinion, is that it be given a place among the various diagnoses to be considered in any patient with suspected heart disease. Every case infected with syphilis is a case of potential heart disease, i. e., cardiovascular syphilis, and syphilis should be considered in every case of heart disease of obscure origin, even when the Wassermann test is negative. A positive Wassermann reaction is of value in supporting the diagnosis, but a negative report is often received and should not be allowed to shake the diagnosis of cardiovascular syphilis if sufficient other data point to the presence of that disease. The general examination should include a search for evidence of syphilis elsewhere in the body. Cardiovascular syphilis may be symptomless unless complications have ensued. The therapeutic test for syphilis is of distinct value in doubtful cases, and resort to this should be made more frequently.

Feb. 22, 1923, **188**, No. 8

*Progress and Results in Cancer Control. F. L. Hoffman, Sonoma, Mich.—p. 221.
Cancer as an Outpatient Problem. H. F. Day, Boston.—p. 225.
Cancer as a Preventable Disease. J. C. Bloodgood, Baltimore.—p. 226.
Wirsung to Riolan on Pancreatic Duct, and Riolan's Reply. J. Donley, Providence, R. I.—p. 229.

Results in Cancer Control.—Hoffman closes his discussion of this subject as follows: "Hence the problem of cancer increase and cancer control is a world wide phenomenon, calling upon the medical profession, in particular, to exert itself still more strenuously than as heretofore was the case, to bring about the control of a menace, which strikes sooner or later into every home in the land. If the mortality of tuberculosis in twenty years has been reduced 50 per cent., it should not be impossible, by deliberate means, to reduce the mortality from cancer 25 per cent. during the next twenty years, equivalent to an annual reduction in cancer deaths of possibly 25,000 to 30,000. The mortality can be reduced and it must be reduced, but a reduction can only be brought about through the wholehearted and thoroughly perfected cooperation of the medical profession, the general public and the health authorities of the state."

Colorado Medicine, Denver

February, 1923, **20**, No. 2

Fractures Involving Joints: Question of Movement. G. W. Miel, Denver.—p. 34.
Medicine and Publicity. P. Hillkowitz, Denver.—p. 43.
Mortality of Jews in Denver. Study in Group Vital Statistics. C. D. Spivak, Denver.—p. 46.

Florida Medical Association Journal, St. Augustine and Jacksonville

December, 1922, **9**, No. 6

Preliminary Suggestions in Roentgen-Ray and Laboratory Therapy. R. R. Kime, Orlando, Fla.—p. 97.
Medical Legislation. J. D. Raborn, Plant City, Fla.—p. 100.
Molluscum Contagiosum with Multiple Lesions on Body and Extremities. J. L. K. Smith, Jacksonville, Fla.—p. 104.
Tests for Deafness. F. J. Walter.—p. 105.

Iowa State Medical Society Journal, Des Moines

February, 1923, **13**, No. 2

Cases of Foreign Body in Eyeball. W. B. Small, Waterloo.—p. 41.
Recurrent Hemorrhage into Vitreous: Report of Case. M. J. Joynt, LeMars.—p. 45.
Anterior Poliomyelitis: Review of Thirty Sporadic Cases. C. G. Field, Fort Dodge.—p. 48.
Diagnosis of Vascular-Renal Disease. N. B. Foster, New York.—p. 52.
Intestinal Obstruction. M. M. Ghent, St. Paul.—p. 56.

Journal of Bacteriology, Baltimore

January, 1923, **8**, No. 1

Micromanipulator for Isolation of Bacteria and Dissection of Cells. R. Chambers, New York.—p. 1.
Certain Phases of Nitrogenous Metabolism in Bacterial Cultures. G. G. De Bord, Boston.—p. 7.
Device for Tubing Cooked Meat Medium. W. L. Holman, Yosemite Valley, Calif.—p. 47.
Bacteriophage Phenomena. A. G. Kuttner, New York.—p. 49.

Journal of Industrial Hygiene, Boston

February, 1923, **4**, No. 10

Industrial Dermatoses. H. N. Cole and J. R. Driver, Cleveland.—p. 425.
Two Fatalities Due to Inhaling Phosgene. S. Delepine.—p. 433.
Reliability of Comf-Thermometer (Fresh-Air Gage) as Indicator for Cooling Effect of Air. H. I. Eadie, D. H. Ash and T. C. Angus. Cleveland.—p. 441.
*Pharmacology of Some Phenylenediamines (continued). P. J. Hanzlik, Cleveland.—p. 448.

Pharmacology of Phenylenediamines.—The results of Hanzlik's study indicate that the phenylenediamines are definitely toxic compounds. Dimethyl-para-phenylenediamine was found to be the most toxic, and meta-phenylenediamine probably the least toxic, although in some animals it appeared to be about

as toxic as para-phenylenediamine. Diethyl-para-phenylenediamine is about as toxic as the para compound. A summary of the principal actions of the phenylenediamines studied is presented. They stimulate the circulation, respiration, and smooth muscle of excised organs, and cause bronchoconstriction. Asthma and local inflammations of the respiratory tract among workers in the fur dyeing industry are commonly reported. Therapeutically, the phenylenediamines are of no significance. A scientific basis for the alleged antidiarrheal and antidysenteric properties of meta-phenylenediamine (lentin) is lacking, and its use is unwarranted. Experimental evidence indicates that it would increase persistalsis if anything, and that it might be harmful otherwise (by the production of effusions). The results of this investigation indicate that workmen should be protected against the phenylenediamines used in various industries, and that the use of para-phenylenediamine in hair dyes and cosmetics should be prohibited.

Journal of Infectious Diseases, Chicago

February, 1923, **32**, No. 2

Comparative Study of Precipitinogen and Precipitin Curves, with Especial Reference to Later History of Precipitin Curve. G. F. Forster, Madison, Wis.—p. 105.
Influence of Saturation on Properties of Antigen in Wassermann Test. C. L. A. Schmidt and S. E. Coffey, Berkeley, Calif.—p. 119.
Study of an Organism Resembling Bacterium Pullorum from Unabsorbed Yolk of Chicks "Dead in Shell." F. B. Beaudette, L. D. Bushnell and L. F. Payne, Manhattan.—p. 124.
*Relationship of Orange and White Pyogenic Staphylococci. I. J. Kligler and E. Krause, Jerusalem, Palestine.—p. 133.
Effect of Thyroidectomy, Controlled by Respiratory Exchange Measurements, on Antibody Formation in Rabbits. N. M. Take, New York.—p. 138.
*Microscopic Demonstration if Bacteria in Lesions of Epidemic (Lethargic) Encephalitis. E. C. Rosenow and G. H. Jackson, Jr., Rochester, Minn.—p. 144.
Food Accessory Factors (Vitamins) in Bacterial Growth. R. C. Robertson and D. J. Davis, Chicago.—p. 153.
*Studies of Fusiform Bacilli and Spirochetes. II. Their Occurrence in Normal Preputial Secretions and in Erosive and Gangrenous Balanitis. J. Brams, I. Pilot and D. J. Davis, Chicago.—p. 159.
Specific Precipitin Reaction of Semen. L. Hektoen and L. S. Manly, Chicago.—p. 167.
*Incidence of Hemolytic Streptococci in Normal Preputial Secretions of Men. I. Pilot and J. Brams, Chicago.—p. 172.

Relationship of Staphylococcus Pyogenes Aureus and Albus.—A systematic study was made by Kligler and Krause of the immunologic types of orange and white staphylococci for the purpose of preparing a proper polyvalent stock vaccine. Two main types of *Staphylococcus aureus* and two strains of *Staphylococcus albus* were selected. The vaccines prepared with these strains were as effective therapeutically as were autogenous vaccines.

Bacteria in Lesions of Lethargic Encephalitis.—The presence of organisms in or adjacent to the lesions in a series of cases of encephalitis which occurred in widely separated communities, their absence in tissues free from changes, and in control sections from persons that died from other diseases, Rosenow and Jackson believe indicate causal relationship. The shape and grouping of, and the gradation between, large and small organisms, and the breaking of large forms into small bodies, indicate that the various forms are modifications of the same micro-organism.

Bacteria in Preputial Secretions.—Under normal conditions fusiform bacilli and spirochetes were found by Brams, Pilot and Davis in the preputial secretions of fifty-one of 100 men examined. As about the teeth and tonsils, these organisms exist as saprophytes in the preputial sac. Associated with these bacteria were always pyogenic organisms, including staphylococci, *Streptococcus hemolyticus, S. viridans* and colon bacilli. A comparative study of the flora of the normal preputial secretions and the secretions from cases of erosive and gangrenous balanitis revealed a striking similarity in smears and cultures. Of special interest is the fact that, with fusiform bacilli and spirochetes normally present in the preputial sac, balanitis is not entirely dependent on the introduction of these organisms from other sources but may arise locally, particularly in men with phimosis, retention of secretions and lowered general resistance.

Hemolytic Streptococci in Preputial Secretions.—Hemolytic streptococci were isolated and identified by Pilot and Brams in the preputial secretions of nine of 100 normal men. They always occurred in small numbers. These streptococci agree in their morphology, cultural characteristics and fermentation reactions with the *Streptococcus pyogenes.* They appeared to be somewhat less pathogenic than similar streptococci from tonsils and adenoids.

Kansas Medical Society Journal, Topeka

February, 1923, **23**, No. 2

Upper Femoral Fractures. E. D. Ebright, Wichita.—p. 29.
Determination of Uric Acid in Blood. M. Dupray, Hutchinson, Kan.—p. 33.
Prostatic Hypertrophy—Its Treatment and Relief by Perineal Prostatectomy. J. E. Burns, Kansas City, Mo.—p. 38.
Use of Derivatives of the Tendo Achillis in Wound Infections and in Their Prevention. B. M. Deep.—p. 42.

Maine Medical Association Journal, Portland

February, 1923, **13**, No. 7

Louis Pasteur. T. J. Burrage.—p. 173.
Case of Erythrasma. R. B. Josselyn, Portland, Me.—p. 183.

Michigan State Medical Society Journal, Grand Rapids

February, 1923, **22**, No. 246

Indications for Use of Therapeutic Pneumothorax. H. M. Rich, Detroit.—p. 55.
Treatment of Mild Diabetes Mellitus. P. L. Marsh, Ann Arbor, Mich.—p. 56.
Chronic Mastoiditis. R. D. Sleight and W. Haughey, Battle Creek, Mich.—p. 61.
Indications for Radium Therapy in Ophtho-Oto-Laryngology. R. E. Loucks, Detroit.—p. 63.
Roentgen-Ray Treatment in Diseases of Ear, Nose and Throat. W. A. Evans, Detroit.—p. 65.
True Eclampsia and Renal Eclampsia. W. E. Welz, Detroit.—p. 71.
Acute Complete Inversion of Uterus. L. W. Haynes, Detroit.—p. 75.
Radium Treatment in Cancer of Cervix. C. D. Brooks, and Wm. R. Clinton, Detroit.—p. 80.
Carcinoma of Breast, Its Combined Treatment, Surgery, Roentgen-Ray and Radium. W. J. Cassidy, Detroit.—p. 83.

Military Surgeon, Washington, D. C.

February, 1923, **52**, No. 2

Extracts from History, Medical Department, United States Military Mission, Berlin, Germany, August 10, 1919. A. L. Parsons.—p. 113.
Medical Officer and Employees' Compensation Act. J. C. Pryor.—p. 131.
Tests for Cure of Syphilis. G. L. Qualls and A. G. De Quevedo.—p. 140.
Neurosyphilis. R. Sheehan.—p. 149.
Possible Fallacy in Calculation of Annual Death Rates. M. W. Hall.—p. 157.
Medical Contributions of Linnaeus. A. Egdahl.—p. 166.
Medical Man and Medical Reserve Corps, U. S. Army. N. W. Sharpe.—p. 174.
*Treatment of Hookworm Disease by Carbon Tetrachlorid. A. T. Cooper and A. J. Vadala.—p. 187.
Plea for Closer Relationship Between Pharmacy and Medicine. R. C. Holcomb.—p. 190.
Results After Orbital and Ocular Battle Injuries. R. A. Fenton.—p. 193.
Treatment of Chronic Otorrhea. J. D. Whitham.—p. 200.

Treatment of Hookworm Disease by Carbon Tetrachlorid.—The result obtained by Cooper and Vadala with only one dose of carbon tetrachlorid in the treatment of hookworm disease has been 100 per cent. cure. The drug was administered in soft gelatin capsules each containing 1 c.c. and was given in the mornings, preferably without breakfast.

New Orleans Medical and Surgical Journal

February, 1923, **75**, No. 8

What Are Vital Statistics? J. G. Dempsey, New Orleans.—p. 415.
Duties of Officials Relative to Public Health. M. W. Swords, New Orleans.—p. 421.
Some Phases of Rural Health. O. Dowling, New Orleans.—p. 423.
Typhoid from a Public Health Standpoint. J. Callan, New Orleans.—p. 430.
Treatment of Thyrotoxicosis. T. P. Lloyd, New Orleans.—p. 436.
Schick Test and Toxin-Antitoxin Immunization in Control of Diphtheria. W. H. Seeman, New Orleans.—p. 443.
*Relation of Gallbladder Disease to Diabetes. A. Eustis, New Orleans.—p. 449.

Relation of Gallbladder Disease to Diabetes.—Of thirty-six cases of alimentary glycosuria seen by Eustis, fifteen have shown definite gallbladder disease. Six of these patients have definite diabetes today, with hyperglycemia and other cardinal symptoms of the disease. Treatment and diet aimed at sparing the liver has given better results than a low carbohydrate

diet, and some have even become sugar free on a low protein diet. Eustis urges that more systematic examinations of patients with glycosuria should be made, with the object of determining what percentage of cases of glycosuria and true diabetes are associated with gallbladder disease.

New York Medical Journal and Medical Record

Feb. 21, 1923, **117**, No. 4

Theories and Theorizers Connected with Development of Laws of Heredity. J. A. Buchanan, Rochester, Minn.—p. 193.
Experimental Study of Immobility of Diaphragm. F. C. Baldberry, Perrysburg, N. Y.—p. 202.
General Theory of Neuroses. Part I. A. Polon, New York.—p. 206.
Localized Iris Changes. S. P. Sobel, New York.—p. 212.
*Belladonna Poisoning by Topical Application. H. Fried, New York.—p. 212.
Chronic Ulcerative Colitis and Its Treatment. M. Einhorn, New York.—p. 214.
Rôle of Focal Infection in Disease. S. Pern, Melbourne, Victoria.—p. 218.
Reinfection of Tonsillar Remnants After Incomplete Tonsillectomy. Report of Four Cases. J. A. Glassburg, New York.—p. 221.
Quackery de Luxe: Form of Medical Charlatanism Known as Orificial or Constructive Surgery. J. F. W. Meagher, Brooklyn.—p. 224.
Louis Pasteur. L. Gershenfeld, Philadelphia.—p. 231.
Pasteur's First Patient. M. W. Thewlis, Providence, R. I.—p. 235.

Case of Belladonna Poisoning by Topical Application.—In a case of so-called myalgia lumbalis, Fried prescribed as a liniment: tincture of aconite, 2 drams; tincture of belladonna, 4 drams; spirit of chloroform, 4 drams; sufficient soap liniment to make 6 ounces, to be applied by gently massaging or rubbing the muscles of the back. About twenty-four hours later Fried found the patient in bed, restless, giddy, very talkative, complaining constantly of pain in her throat and persistently trying to get out of bed. Her face was flushed, eyes bright, pupils dilated, tongue coated and dry, fauces and uvula reddened. Her chest was covered with a patchy erythematous rash. Pulse and respiration were markedly accelerated. Rectal temperature was 101 F. At times she was delirious. Inquiry brought out the information that the liniment had been continually applied to her back until the entire amount called for in the prescription had been consumed, resulting in belladonna poisoning. Three other cases are recorded in the literature.

Ohio State Medical Journal, Columbus

February, 1923, **19**, No. 2

Acute Infective Osteomyelitis. C. D. Hoy, Columbus.—p. 77.
Problem of Radium and Surgery in Treatment of Cancer. A. Strauss, Cleveland.—p. 85.
Vital Capacity with Respect to Diagnosis and Prognosis. L. A. Levison, Toledo.—p. 89.
*Use of Convalescent Serum as Prophylaxis in Measles and Chickenpox. K. D. Blackfan, M. F. Peterson and F. C. Conroy, Cincinnati.—p. 97.
Malignant Tumors of Sinuses. J. M. Waugh, Cleveland.—p. 100.
Traumatism of Kidney. T. P. Shupe, Cleveland.—p. 104.
Modern Methods in Prevention of Diphtheria. F. G. Boudreau, Columbus.—p. 107.
Blood Transfusion in Obstetrics. W. R. Barney, Cleveland.—p. 111.
Trachoma. J. W. Wright, Columbus.—p. 114.

Use of Convalescent Serum as Prophylaxis in Measles and Chickenpox.—Blackfan, Peterson and Conroy are of the opinion that the serum of patients convalescing from measles or chickenpox does confer an efficient temporary immunity when injected into susceptible individuals within five days after exposure. Even incomplete immunity limits the disease to a mild form and these serums afford a very efficient means of preventing severe epidemics in hospitals and institutions. These serums also afford valuable protection to those children exposed to measles and chickenpox, in whom the natural resistance has been lowered by other existing afflictions, and it is recommended that this protection be afforded all children exposed, not only while convalescing from acute diseases, but also when suffering from nutritional disturbances, tuberculosis and other chronic diseases.

Pennsylvania Medical Journal, Harrisburg

February, 1923, **26**, No. 5

Present Standard of Obstetric Practice in Rural Pennsylvania. C. G. Brumbaugh, Huntingdon.—p. 283.
More Important Obstetric Emergencies Met by General Practitioner. G. V. Janvier, Lansdowne.—p. 284.
Indications for and Technic of Cesarean Section. H. A. Miller, Pittsburgh.—p. 289.
Case of Epidural Abscess of Spinal Canal. E. M. Green, Easton.—p. 293.
Faulty Posture as Cause of Obscure Digestive and Nutritional Disorders; Report of Treatment of Fifty Cases by Abdominal Belt. P. Nicholson, Ardmore.—p. 296.
Spinal Anesthesia. Study of About 15,000 Inductions. W. W. Babcock, Philadelphia.—p. 303.
Acute Abdominal Conditions in Children from Medical Standpoint. J. P. C. Griffith, Philadelphia.—p. 312.
Nervous and Mental Symptoms in Case of Pellagra. C. C. Wholey, Pittsburgh.—p. 318.
Relationship of Appendicitis to Upper Abdominal Disease. J. B. Deaver, Philadelphia.—p. 321.
Status of Physician in Relation to Compensation Law. M. Behrend, Philadelphia.—p. 324.

Philippine Journal of Science, Manila

January, 1923, **22**, No. 1

*Treatment of Amebic Dysentery. A. W. Sellards and L. Leiva.—p. 1.
*Effect of Stasis on Development of Amebic Dysentery in Cat.. A. W. Sellards and L. Leiva.—p. 39.
Chemical Characters of Waters of Angat and Montalban Rivers. R. H. Aguilar.—p. 43.
Lycopodiaceae Philippinenses. V. W. Herter, Berlin, Germany.—p. 57.
*Antiscorbutic Vitamin in Some Oriental Fruits and Vegetables. H. Embrey, Peking.—p. 77.
Elacatidae of Philippine Islands and Adjacent Regions. E. A. Chapin, Washington, D. C.—p. 83.
Geographic Distribution of Cucujidae (Coleoptera) I. Laemophloeini. V. F. Kessel.—p. 91.
New Cercopides of the Philippines. V. Lallemand, Brussels.—p. 101.
Effects of Extracts of Ascaris Vitolorum on Experimental Animals. B. Schwartz.—p. 109.

Treatment of Amebic Dysentery.—Infections with *Endameba histolytica* were produced by Sellards and Leiva in cats, and treated successfully with emetin and with quinin. Papaverin was inefficacious. In the treatment of cats with quinin very large doses were required; but, in contrast to emetin, repetitions of the therapeutic dose could be tolerated for many days. Experimental amebic dysentery is a somewhat artificial condition; nevertheless, it responds to emetin in a manner similar to spontaneous dysentery in man. All of the patients studied had frank amebic dysentery, and were seen either in the first attack or during a typical relapse. Five were treated with *Castela nicholsoni*, two with *Brucea amarissima*, and two with *Harrisonia perforata*. Preparations of these plants were always given by mouth, except in one instance, when a few doses were given by rectal injection. Prompt relief of symptoms, accompanied by the disappearance of amebas from the stools, was obtained only with *Castela nicholsoni*. With each of the others, some clinical improvement occurred for a few days, but in three of the four cases the amebas persisted and the symptoms returned while the patients were under treatment. One patient relapsed; three patients remained entirely free of symptoms, although one was passing cysts of *Endameba histolytica*.

Effect of Stasis on Experimental Development of Amebic Dysentery.—A laparotomy was performed by Sellards and Leiva on three cats under general anesthesia and a ligature was placed around the large bowel in order to produce stasis in its upper end. A suspension of *Endameba histolytica* was inoculated into the cecum. All three animals developed lesions above the ligature. This experiment explains: (*a*) the usual occurrence of the initial lesions of amebic dysentery in the cat in the lowermost portion of the large bowel; (*b*) the superiority of intracecal inoculations over injections by rectum for insuring infection with ameba, and (*c*) the occasional failure of virulent amebas to infect susceptible kittens. Stasis is probably an important factor in determining the location of the lesions within the large bowel in spontaneous amebic dysentery in man.

Antiscorbutic Vitamin in Oriental Fruits and Vegetables.—Of the foods examined by Embrey, pomelo, cucumber, chico, and guava afforded the best protection from scurvy. In each case 10 gm. of the food given daily protected the animals from scurvy for a period of nine weeks. When deaths occurred on these diets after a few weeks, postmortem examination showed the causative factor to be pneumonia. Fifteen grams of banana each day gave protection from scurvy for a period of nine weeks; 15 gm. each of kangkong leaves and of camote leaves daily gave protection for a period of from seven to nine weeks.

Porto Rico Medical Association Bulletin, San Juan

Dec. 31, 1922, **16**, No. 140

*Surgery of Gallbladder. Jorge del Toro.—p. 235.
*Micro-Analysis of Blood. R. del Valle Sárraga.—p. 239. Cont'n.
*Lessons for Surgery from War. Amalio Roldán.—p. 246.

Surgery of Gallbladder.—Del Toro urges the necessity for varying the operative measures according to the individual case. His experience has demonstrated the wisdom of being content at times with an incomplete operation that does not follow any preconceived plan.

Microchemical Analysis of Blood.—In this instalment of his report of research on the blood, del Valle Sárraga presents evidence to show that the Ambard uresecretory constant does not yield any information which is not already available from the chemical findings in the blood.

Lessons for Surgery from World War.—Roldán discusses the evolution and revolution in surgery which resulted from the teamwork of the war. Operative surgery now, he says, seems to be in a period of retrogression. We operate so much earlier that the big operations of the past are not required. Greater skill in obstetrics prevents extensive vesicovaginal fistulas, and prompter operation for strangulated hernia has done away with the necessity for extensive enteroanastomosis. He adds that gastro-enterostomy seems to be coming into its own again, after a period of eclipse. The combination of operative measures and fulguration for cancer has proved successful in some cases. He believes, however, that neither physiotherapy nor surgery can effectually combat cancer. We must look to biology, biochemistry and chemotherapy for this. If we can effectually combat the predisposition to cancer, the cure of confirmed cancer will then be within sight.

Public Health Journal, Toronto

February, 1923, **14**, No. 2

Work of Public Health Nurse in Montreal. E. Gagnon, Montreal.—p. 49.
Child Welfare in Prince Edward Island. A. E. MacMahon, Prince Edward Island.—p. 57.
Sewage Treatment for Isolated Houses and Small Institutions Where Municipal Sewage Is Not Available. E. Parry.—p. 62.
Canadian Social Hygiene Council. Social Case Sheet Investigation. M. Kensit, Toronto.—p. 68.
Venereal Disease Control in Ontario. E. L. Moore, Ontario.—p. 74.
Public Health Nurses in Venereal Disease Clinics. F. E. Brown, Toronto—p. 76.

Rhode Island Medical Journal, Providence

February, 1923, **6**, No. 2

Postoperative Lung Sequelae. J. Perkins, Providence.—p. 17.
*Postoperative Pulmonary Complications. C. O. Cooke and W. Pickles, Providence.—p. 18.

Postoperative Pulmonary Complications.—Of 1,000 operative cases on the surgical services of the Rhode Island Hospital which are analyzed by Pickles, thirty-nine patients developed some form of postoperative pulmonary complication. Nine of these patients died. Fewer deaths were caused by pneumonia. Two patients developed lung abscesses following operation. One of these died. Of four cases of lung infarction, one ended fatally.

Southern Medical Journal, Birmingham, Ala.

February, 1923, **16**, No. 2

*Gallbladder Disease. M. E. Rehfuss, Philadelphia.—p. 75.
Surgical Treatment of Diseases of Gallbladder. I. Abell, Louisville, Ky.—p. 83.
*Report of 3,080 Cases of Measles with Special Reference to Pneumonia. H. R. Mixsell, and E. Giddings, New York.—p. 90.
Dermatology. W. A. Pusey, Chicago.—p. 94.
Carbohydrate Metabolism. M. Smith, Jacksonville, Fla.—p. 99.
Radiotherapeutic Technic of Face and Mouth. W. A. Weed, Birmingham.—p. 102.
Clinical Aspects of Botulism. J. C. Geiger, Chicago.—p. 106.
Summary of Dengue Research, October to November 13, 1922. W. L. Holt, Little Rock, Ark.—p. 112.
Colloidal Preparations, Especially Colloidal Silver Chlorid. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 114.
Correction of Cleft Palate. W. A. Bryan, Nashville, Tenn.—p. 117.
Retroperitoneal Cysts: Report of Case. J. K. Simpson, Jacksonville, Fla.—p. 121.
Postoperative Care of Urinary Cases. A. L. Chute, Boston.—p. 124.
Training of an Obstetrician. C. R. Hannah, Dallas, Texas.—p. 131.
Aural Conditions Resulting from Pool and Sea Bathing. H. M. Taylor, Jacksonville, Fla.—p. 134.

Gallbladder Disease.—Medical men, Rehfuss states, cannot cure a diffuse, chronic cholecystitis in which there is infection and infiltration of the gallbladder wall. They cannot cure demonstrable gallstones. They cannot absorb adhesions between the gallbladder and duodenum and the stomach, nor can they by any stretch of the imagination replace an altered topography due to an extensive lesion in the upper right quadrant. On the other hand, the medical man can and does relieve low grade infections, biliary stasis, functional alterations of the digestive tract with unquestioned functional disturbances in the liver and gallbladder. In many instances he makes a patient with gallstones entirely comfortable, and for years, in many instances, he succeeds in rendering a person immune to further attacks which are unquestionably those of infection of the gallbladder. As to whether the gallbladder ought or ought not be removed, it is Rehfuss' opinion that if the gallbladder wall shows unquestioned evidence of infection, it should always be removed. No form of drainage succeeds in controlling a form of focal infection. But the surgeon who operates upon the gallbladder simply operates upon the end-product of the forces producing gallbladder disease. The rest of the hepatoenteric circulation is still intact and the deviations which have brought about the disease are still present. Therefore, it is urgently necessary for the medical profession to realize the necessity for some form of postoperative procedure in gallbladder cases in precisely the same way that it realizes the postoperative ulcer cure.

Pneumonia Following Measles.—In this series of 3,080 cases of measles, pneumonia, bronchial and lobar, occurred in 826, a percentage of 26.8. In other words, one out of every four patients with measles, either had pneumonia on admission to the hospital or developed it during the course of the disease. Of the 826 cases of pneumonia, 424 terminated in death, 51.33 per cent. The number of deaths from all causes was 476, so that 89.20 per cent. of all the deaths in measles were due to pneumonia.

Surgery, Gynecology and Obstetrics, Chicago

February, 1923, **36**, No. 2

*Carcinoma of the Jaws, Tongue, Cheek and Lips. G. W. Crile, Cleveland.—p. 159.
*Carcinoma of Tongue. E. S. Judd and G. B. New, Rochester, Minn.—p. 163.
*Carcinoma of Lip and Cheek. G. E. Brewer, New York.—p. 169.
*Polycystic Kidney. R. H. Crawford, Rutherfordton, N. C.—p. 185.
Leukoplakia of Renal Pelvis: Report of Case. R. E. Cumming, Detroit.—p. 189.
*Echinococcus Disease of Kidney. H. L. Kretschmer, Chicago.—p. 196.
*Hitherto Unrecognized Mode of Origin of Congenital Renal Cysts. O. F. Kampmeier, Chicago.—p. 208.
*Uterine Secretion: Experimental Investigation Into Its Effect on Coagulation of Blood. I. Kross, New York.—p. 217.
Surgical Importance of Iodin Idiosyncrasy and Poisoning. H. G. Rowell, New Bedford, Mass.—p. 219.
*Association of Fetal Monstrosities and Deformities with Placenta Praevia. J. P. Greenhill, Chicago.—p. 227.
*Immediate Versus Delayed Operation in Cases of Collapse Following Ruptured Ectopic Pregnancy. E. M. Hawks, New York.—p. 232.
*Carcinoma Mammae. J. E. Sadlier, Poughkeepsie, New York.—p. 235.
Full Term Ovarian Pregnancy. F. L. Good, and T. K. Richards, Boston.—p. 239.
Treatment of Hydatiform Mole and Chorio-Epithelioma; Relative Frequency of Each. O. A. Gordon, Jr., Brooklyn.—p. 242.
Fibroma of Ovary. Report of Fifty-Five Cases. M. R. Hoon, Rochester, Minn.—p. 247.
Intracranial Aerocele Following Fracture of Skull. Report of Case with Review of Literature. F. C. Grant, Philadelphia.—p. 251.
*New Method of Gallbladder Dissection. G. L. McWhorter, Chicago.—p. 256.
Intestinal Resection in Massive Umbilical Hernia. H. L. Foss, Danville, Pa.—p. 263.
Aseptic Resection of Intestine. E. D. Highsmith, Atlanta, Ga.—p. 271.
*New Technic for Posterior Gastro-Enterostomy. R. R. Villegas, Buenos Aires, Argentine.—p. 273.
New Method of Making Ureteropyelograms. N. P. Sears, Syracuse, New York.—p. 274.
*Heart Massage as Final Resort for Resuscitating Hearts Failing Under General Anesthesia. T. C. Bost, Charlotte, N. C.—p. 276.
*New Procedure in Treatment of Eclampsia. H. J. Davidson, Seattle, Wash.—p. 280.

Carcinoma of Jaws, Tongue, Cheek and Lips.—The logical technic for removal of cancer of the cheeks, lips, jaws and tongue, Crile says, is a complete block excision of the regional lymphatic system, together with a wide excision of the primary focus. In operations for cancer of the buccal mucous membranes, a "platter" of underlying bone should be removed

together with the intact growth. No cancer tissue should be cut or handled. Gas oxygen combined with local anesthesia or local anesthesia alone is the choice. A single treatment with deep, accurately measured roentgen ray or radium dosage is employed after operation.

Carcinoma of Tongue.—All patients with operable cancers of the tongue, Judd and New state, should be given the benefit of surgery, including cauterization of the local lesion and excision of the glands of the neck. Radium should also be employed in order to give these patients every possible chance.

Surgical or Radium Treatment for Cancer.—Brewer's statistics are said to prove that the results of surgical treatment of the lip are far superior to those as yet obtained by radium, and that surgeons are not justified at the present time in advising radium treatment in early operable cases. On the other hand, in cancer of the cheek, the results by radium are so evidently in advance of those obtained by operation, that until it can be demonstrated by a series of cases observed for three to five years that operation gives equally good results, all cancers arising in the mucous membrane of the cheek should be treated by radium.

Polycystic Kidney.—Crawford cites the case of a man who had a polycystic kidney and many of whose ancestors for three generations had had the same disease. Hence, Crawford concludes, that polycystic kidney is a familial affection.

Echinococcus Disease in Right Kidney.—In Kretschmer's case, a preoperative diagnosis of tumor in the right kidney was made, but the nature of the tumor was not recognized.

Origin of Congenital Renal Cysts.—Several interesting and significant observations in the developing human kidney have been made by Kampmeier, which have a direct clinical bearing. These are: (1) the existence of avestigial primary generation of uriniferous tubules; (2) the occasional cystic transformation of such vestigial tubules; (3) the early communication of the next or second order of uriniferous tubules (the first generation of previous authors) with collecting ducts of the corresponding order, namely the second; (4) the temporary detachment of most of these tubules from the secondary collecting ducts and their reunion with ducts of the fourth and fifth orders; (5) the later permanent separation of these uriniferous tubules from those ducts and the cystic transformation of most of them; in other words, the apparently constant appearance of renal cysts at a certain period of fetal life. That these vestigial tubules may have an important clinical significance is shown by the discovery of their occasional cystic transformation. It is easily conceivable how not only a single renal cyst may be derived from them in a kidney otherwise normal, but by its further growth and pressure might readily become the starting point of a progressive formation of cysts involving the entire neighboring portion of the kidney.

Effect of Uterine Secretion on Coagulation of Blood.—In a series of preliminary experiments with human endometrium, Kross tested the effects of the extract on coagulation of human blood. The results obtained were inconstant and contradictory. The problem was then approached from the animal experimental side to determine its effect on the coagulation of blood as a step in the solution of the problem of pathologic uterine hemorrhage. These experiments gave evidence that the uterine secretion in rats contains a substance or substances that have the power of delaying coagulation time and of dissolving blood clots. Kross is of the opinion that the results of his experiments justify the theory that the cause of abnormal uterine bleeding, not accounted for on anatomic grounds, i. e., neoplasms, etc., lies in a deviation from the normal physiology of the secretion formed in and by the uterine mucosa. That this, in turn, is controlled by the ovary, either in whole or in conjunction with other glands of internal secretion, is regarded as most likely.

Fetal Monstrosities and Placenta Praevia.—An attempt is made by Greenhill to prove that fetal monstrosities and deformities not infrequently occur in cases of placenta praevia. To fifteen cases found in the literature he adds six. It is his belief that the monsters associated with placenta praevia are due to the faulty relation between the placenta and the fetus which gives rise to arrests in development.

Statistics for Ectopic Pregnancy.—Of 824 cases of ectopic pregnancy, in which Hawks analyzed the histories, 187 patients were prostrated from hemorrhage. There were ten deaths from hemorrhage in seventy-four of these cases. The remaining 113 patients were operated on immediately. In 1921 there were twenty deaths from ectopic gestation in the borough of Manhattan and five of these women died from hemorrhage unoperated on. The mortality in 113 consecutive cases of collapse in which operation was done immediately was 8.8 per cent. The mortality in seventy-one consecutive cases of collapse with expectant treatment and deferred operation was 17 per cent.

Breast Cancer Statistics.—Seventy cases of breast cancer which were submitted to operation are reviewed by Sadlier. The mortality in this series was 51.4 per cent. The patients died from other conditions without recurrence of carcinoma and with an interval of from one to ten years of perfect health; 32.85 per cent. of patients are living without recurrence; eighteen patients are living more than three years after operation; fourteen are living more than five years after operation. The total number cured, based on a five-year period, is seventeen.

New Method of Gallbladder Dissection.—McWhorter describes what he terms a lateral posterior approach to the gallbladder, followed by posterior dissection. He claims that the dangers from hemorrhage from a torn cystic artery and injury of the bile ducts from hurriedly applied hemostats are avoided, and the method is easier mechanically than any other.

New Technic for Posterior Gastro-Enterostomy.—The technic described by Villegas differs from the usual technic in that clamps are not employed, and that after inserting the first line of serous sutures the jejunum is turned from the right to the left side of the patient.

Heart Massage for Resuscitation After Anesthesia.—Of seventy-five cases on record in which heart massage was employed, sixteen were successful, ending in complete recovery; twenty-three were partially successful in that the heart beat and respiration were resumed, but the patients died in from one-half hour to two or three days. Bost has had two cases. One patient lived fourteen hours from the time of resuscitation; the other seventy-seven hours. In the first case heart action had been suspended for about six minutes before heart massage was begun; and in the other case, for about twenty-five minutes.

Treatment of Eclampsia.—Davidson's routine treatment in postpartum eclampsia consists in first injecting from 0.5 to 1 grain morphin hypodermically, repeating as indicated. Every four hours from 1 to 1.5 liters of water is put into the stomach through the tube, the larger quantity unless signs of retching supervene, in which case the tube is quickly withdrawn. In a total of more than seventy gavages, Davidson says he has never recovered a drop of water introduced four hours previously. From 1 to 1½ ounces of magnesium sulphate is given twice in the twenty-four hours and 20 grains of potassium acetate and potassium citrate or some alkaline diuretic is given with each gavage. Excessive bed clothing, artificial heat, hot packs and bleeding are all discarded.

U. S. Naval Medical Bulletin, Washington, D. C.

February, 1923, **18**, No. 2

Military Surgeon as Specialist. D. N. Carpenter.—p. 177.
Equipment of Transports During World War. J. J. Snyder.—p. 185.
Plastic Surgery. L. W. Johnson.—p. 214.
Clinical Value of Blood Chemistry in Chronic Nephritis. J. J. O'Malley.—p. 219.
Correction of Occlusal Stress on Inlay Patterns Without Distortion. H. E. Harvey.—p. 224.

West Virginia Medical Journal, Huntington

February, 1923, **17**, No. 8

Evolution of Modern Diagnosis; Historical Review. G. B. Capito, Charleston, W. Va.—p. 297.
No More Doctors Needed in West Virginia. A. B. Butt, Elkins, W. Va.—p. 303.
Plea for Early Operative Measure in Gallstones. C. F. Hicks, Huntington.—p. 310.
Diseases of Female Bladder. L. W. Bremerman, Chicago.—p. 313.
Pott's Disease—Its Unsuspected Frequency in Adults and Its Comparative Difficult Early Diagnosis. C. Riely.—p. 321.
Case of Brain Tumor. W. A. Wallace.—p. 325.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 10, 1923, **1**, No. 3241

*Some Problems of Gastric and Duodenal Ulcer. B. Moynihan.—p. 221.
Sleep and Sleeplessness. W. J. Smyth.—p. 226.
Instruments Left in Peritoneal Cavity: Analysis of Forty-Four Unpublished Cases. C. White.—p. 228.
*Treatment of Trypanosomiasis. C. H. Marshall and S. M. Vassallo.—p. 231.
*Histologic Conditions in Case of Addison's Disease. E. E. Hewer.—p. 235.
Two Cases of Horsehoe Kidney. C. Morson.—p. 236.

Some Problems of Gastric and Duodenal Ulcer.—The number of cases reviewed by Moynihan is 718. These consisted of 531 cases of duodenal ulcer (men 433, women 98); 164 cases of gastric ulcer (men 83, women 81). In 152 cases one ulcer was present: in twelve cases two or more ulcers existed. There were twenty-three cases of gastric and duodenal ulcers together (men, ten; women, thirteen). In the total number of cases of gastric ulcer (187) a duodenal ulcer was found, therefore, in 12.3 per cent. The last death from any operation for duodenal ulcer occurred in 1912; since then there have been more than 500 consecutive cases without a death. Among the total number of patients operated on for duodenal ulcer there were six who later developed jejunal ulcers. The mortality in cases of gastric ulcer, and gastric and duodenal ulcer, treated by gastrectomy is 1.6 per cent. Moynihan approves of the fractional method of Rehfuss in the examination of the gastric contents. Only 20 per cent. of thirty-nine cases of gastric ulcer showed a high normal curve or hyperchlorhydria, whereas the percentage of such changes in seventy-one cases of duodenal ulcer was 72.7. The comparative value of medical and surgical treatment is discussed. Moynihan's position is well known.

Treatment of Trypanosomiasis.—In the cases analyzed by Marshall and Vassallo only one complete treatment was given—that is, one intravenous injection of arsenic and one intrathecal injection of serum the following day, as against the prolonged treatments of others and all the patients (twenty-nine) are "alive and well."

Histologic Condition in Addison's Disease.—In the case recorded by Hewer old pleural adhesions were present over the whole of the right lung; a few scars of old healed tubercles were found at the right apex. The bronchial glands showed no evidence of tubercle. The heart weighed 230 gm. and was normal. The liver weighed 1,450 gm. and was slightly nutmeg. The gallbladder was distended and contained a single small black stone; there was no evidence of inflammation. The spleen weighed 200 gm.; there was moderate perisplenitis. The kidneys were normal. The right suprarenal weighed 16 gm.; the left, 22 gm. The right gland was small and fibrous, the left showed much fibrosis and some areas of caseating material. No evidence of accessory suprarenal tissue was found. Only one small area of cortical tissue was found involved in a chronic tuberculous process with round cell infiltration showing an unusually high percentage of plasma cells. There was much fibrosis, some calcification, and formation of many giant cell systems. The cells of the cortical tissue were of the type belonging to the zona fasciculata, many of them spherical with strongly eosinophil cytoplasm and excentric nuclei; other cells were very irregular, with poorly staining nuclei. Hewer argues that the unhealthy appearance of these cells might have been due to postmortem changes, but more probably indicates the breakdown of the last remnants of true cortical tissue. No medullary tissue was found. The surrounding fat was unusually rich in small round cells. A small ganglion just outside the organ showed some cellular degeneration and pigment deposition.

Feb. 17, 1923, **1**, No. 3242

John Hunter (1728-1793): His Affairs, Habits and Opinions. J. B. Sutton.—p. 267.
*Properties of Certain "Colloidal" Preparations of Metals. A. J. Clark.—p. 273.
*Five Cases of Diabetes Mellitus in Young Children. F. J. Poynton.—p. 277.
Botulism as Seen in Scotland in 1922. T. K. Monro and W. W. N. Knox.—p. 279.
*Cause and Cure of Chronic Rheumatism. E. H. Freeland.—p. 281.
Treatment of Three Cases of Oriental Sore by Phosphorated Oil. A. Castellani.—p. 283.

"Colloidal" Preparations of Metals.—The physicochemical tests employed by Clark indicated that the active principles of some of the "colloidal" preparations investigated were entirely in the colloidal form; in other cases the active principles were partly in colloidal form and partly in true solution; while in some cases the whole of the active principle appeared to be in true solution. The pharmacologic tests employed failed to show any marked difference between the action of the "colloidal" preparations tested and the action of the same substances in true solution.

Diabetes Mellitus in Young Children.—Poynton's patients varied in age from 5½ to 9 years. The quantity of sugar in the urine varied from 2.2 per cent. to 8.6 per cent. One patient had suffered from diabetes for eleven months. Death was sudden. A necropsy was not permitted. Another patient died about three years after the onset of the disease. The liver was large, pale and flabby; the kidneys appeared natural. The pancreas was small and soft, and microscopy showed no increase of fibrous tissue but atrophy of cells. The gland looked exhausted, and the cells of the islands of Langerhans were atrophied and separated by connective tissue. The third case was of especial interest because there had been a history of only one week's illness. The fourth patient was ill about two years. The postmortem examination showed, as in the second case, a fatty liver, but the pancreas was shrunken and even more wasted than in the former case. Microscopy showed no active reaction, no trace of inflammatory change, but similar shrinking of the cells of the islets and relative increase of connective tissue. The fifth patient was ill about two and one-half years. There was no necropsy. Poynton says that this fact, if nothing more, is to be learned from these cases—that even in the young, with careful dieting (and presumably some care will always have to be taken with the diet), sugar and ketone bodies may disappear for weeks and months.

Cause and Cure of Chronic Rheumatism.—Freeland asserts that rheumatism is a definite disease due to the invasion of the part affected by the *Streptococcus rheumaticus* of Poynton and Paine, and that the only method of treatment which can be expected to give results is vaccine therapy.

Journal of Tropical Medicine and Hygiene, London

Feb. 1, 1923, **26**, No. 3

Description of the Diseases of Mongalla, Central Africa. E. B. N. Cantlie.—p. 35.
Porocephalus Pomeroyi. W. N. F. Woodland.—p. 45.
Clinical Experience with Insulin (Pancreatic Extracts) in Treatment of Diabetes Mellitus. F. G. Banting, W. R. Campbell and A. A. Fletcher.—p. 50.
Case of Bronchomoniliasis. M. J. Parmanand.—p. 54.

Lancet, London

Feb. 10, 1923, **6**, No. 5189

*Relation of Disease of Gallbladder to Secretory Function of Stomach and Pancreas. H. E. Griffiths.—p. 265.
Progress and Problems in Epidemiology. R. J. Reece.—p. 271.
*Pernicious Anemia Analysis of 117 Cases. P. N. Panton, A. G. M. Jones and G. Riddoch.—p. 274.
Intrathoracic Catastrophes Simulating Acute Abdomen. J. H. Pringle.—p. 279.
Treatment of Kala-Azar by "Stibenyl." Report of Ten Cases. L. E. Napier.—p. 280.
Case of Enuresis Treated by Electricity. M. O'. Beadon.—p. 283.
Herpes and Varicella. J. F. McClean.—p. 283.
*Case of "Subpleural" Lipoma in Child. C. F. Beyers.—p. 283.
Acute Osteomyelitis Treated by Early Incision; Recovery. P. B. Kittel.—p. 284.

Relation of Disease of Gallbladder to Secretory Function of Stomach and Pancreas.—Griffiths endeavors to show that the gallbladder is only a unit in a definite digestive complex embracing the liver, gallbladder, pancreas and stomach, and that any disease affecting one unit is bound to be reflected in the whole system. A careful analysis of the history and clinical examination of a patient suffering from disease of the gallbladder will reveal many points indicative of involve-

ment of the stomach and the pancreas, but which none the less point to the original trouble. Infection of the gallbladder acting reflexly through the vagus nerve tends to cause hyperchlorhydria and regurgitation. In some cases, in which the sensory stimulus is greater, pylorospasm is the result of a sympathetic reflex through the ninth thoracic segment. Regurgitation from the duodenum may also be attributed to the unregulated flow of bile in cases in which a gallbladder is no longer capable of acting as a reservoir. The pancreas is peculiarly prone to infection from the gallbladder. In the majority of cases infection occurs through the lymphatics; in others by the regurgitation of bile along the main duct consequent upon obstruction at the ampulla of Vater. This obstruction is frequently due to spasm of Oddi's sphincter and occurs with pylorospasm. The secretion of the pancreas into the duodenum is seldom markedly diminished, the exception being in cases of catarrhal pancreatitis; but through lack of adequate admixture of bile, the digestive function of the pancreatic juice may be seriously diminished. The internal secretion of the pancreas, except in very rare cases—e. g., pancreatic necrosis—is not very much upset, although the increased amount of diastase in the urine and occasional positive Loewe's reaction are indications of some slight alteration. In some obscure cases of gallbladder disease, in which the cause cannot be found by the ordinary clinical methods, exhaustive examination of the functions of the stomach and the pancreas may lead to a correct diagnosis.

Pernicious Anemia.—The clinical records of 117 cases of pernicious anemia are analyzed by Panton, Jones and Riddoch. The average age of the patients was 46, with extremes of 20 and 68, the average duration of symptoms up to admission to hospital was seventeen months, the two extremes being seven days and six years. One hundred and seven patients complained of weakness, and in forty-nine it was the chief complaint. Thirty-three patients had noticed a change of color. The primary complaint of eight patients was loss of weight, and twenty-six patients were noted as being wasted. Fever was noted at one time or another in ninety cases, the average range being from 99 to 100 F. It was noticed in studying the temperature charts that improvement in a patient's condition was, as a rule, synchronous with the disappearance of the fever. Further, the more acute the case, the more constant was the presence of the fever. Eighty-six patients complained of symptoms referable to the gastro-intestinal system; in fifty-three cases complaints of this nature were primary. On analysis, fifty-one patients complained of vomiting, thirty of diarrhea, twenty-six of anorexia, and twenty-four of epigastric pain. The authors are not of the opinion that oral sepsis has any proved etiologic significance in pernicious anemia, although it cannot but be detrimental to a patient's health and may at times produce a secondary anemia such as is caused by any other chronic suppurative process. While the very frequent occurrence of achylia was noteworthy, it is not considered an essential etiologic factor. Hematemesis was complained of by three patients, and in one instance only was it copious. The spleen was palpable in twenty-one cases, and the liver was enlarged in nineteen cases. Sixty-three patients complained of cardiovascular symptoms. Sixty-two patients had cardiac murmurs. Twenty-five patients complained of headache and eighteen of numbness and tingling of the hands and feet. Albuminuria was present in twenty-four patients, two passed bile pigment in the urine, and one showed glycosuria. In the authors' opinion, recovery from pernicious anemia is an event of such rarity that it cannot be accepted in any case without the fullest confirmation.

Subpleural Lipoma in Child.—Beyers' patient was only 22 months of age. A swelling on the front of his chest was first noticed by his mother when he was 10 months old. It was painless and caused no symptoms, but grew steadily larger. Its surface was somewhat lobulated, and it gave a feeling of fluctuation. At operation it was found to occupy the anterior mediastinum, pushing the pleurae away from each other and resting on the pericardium. It was circumscribed, lying quite loose in the areolar tissue and having no obvious organic connection with either pleura or pericardium. It was a fatty tumor.

Feb. 17, 1923, **1**, No. 5190

John Hunter, His Affairs, Habits and Opinions. J. B. Sutton.—p. 315.
Physicochemical Mechanism of Cell Respiration. O. Meyerhof.—p. 322.
*Cases of Delayed and Immediate Anaphylactic Shock: Circulatory Phenomena. J. Fawcett and J. A. Ryle.—p. 325.
The Standard of Cure in the Treatment of Gonorrhea. W. L. Harnett.—p. 327.
Psychotherapeutics. E. F. Buzzard.—p. 330.

Cases of Delayed and Immediate Anaphylactic Shock.—Fawcett and Ryle cite the case of a woman who because of a "septic" finger was given 50 c.c. of antistreptococcal serum subcutaneously at the time of amputation of the finger. Four days later patches of urticaria began to appear, and there was slight evening pyrexia. Eight days after the serum was given the patient was wakened by breathlessness. She was seen sitting up in bed with "asthmatic" type of breathing. Within twenty minutes the asthmatic attack was over, but she felt cold and shivery, the pulse remained quick, and urticaria continued to appear. Under expectant treatment recovery occurred almost abruptly about thirty-four hours after the first appearance of urgent symptoms. In the second case the symptoms of anaphylactic shock appeared one hour after receiving a third dose of antitetanic serum.

Feb. 24, 1923, **1**, No. 5191

*Therapeutic Inoculation. L. Colebrook, E. J. Storer and S. E. Wright. (To be continued.)—p. 365.
*Clinical Results of Treatment of Malignant Disease by Roentgen Rays. J. H. D. Webster.—p. 373.
Chronic Fecal Typhoid Carrier Successfully Treated with Detoxicated Vaccine. J. P. Watt.—p. 378.
Lethargic Encephalitis: Intensive Outbreak in Small School. L. L. Fyfe.—p. 379.
Two Cases of Acute Lymphatic Leukemia. W. E. Cooke.—p. 382.
Use of Rhubarb in Acute Bacillary Dysentery. H. C. Brown.—p. 382.

Therapeutic Inoculation.—In this instalment, Colebrook, Storer and Wright discuss the original pasteurian code, the bactericidal and opsonic changes produced in the blood by the inoculation of vaccines into the patient, and the changes produced in the blood by inoculation of vaccines in vivo and in vitro.

Treatment of Malignant Disease by Roentgen Rays.—The literature on this subject is reviewed and analyzed by Webster, and he agrees with Schmieden and Holfelder in their conclusions which represent what may be called cautious progressive present day opinion: (1) With few exceptions every operable carcinoma should be operated on, with prophylactic postoperative irradiation in addition. (2) In addition to postoperative irradiation, a single intensive irradiation before operation is coming to be considered important. (3) Practically all inoperable carcinomas and all inoperable recurrences should be irradiated. This gives in many cases clinical cure, in others it results in operability, often less bleeding, irritation and pain, as well as limitation of further metastasis. (4) Facial carcinoma, even when operable, can well be treated exclusively by irradiation for cosmetic reasons. (5) Sarcoma, as a rule, should only be irradiated, certainly in all cases in which operation would cause considerable bodily mutilaton. The time has not yet come when comparative statistics can show the value of operation or irradiation.

Acute Lymphatic Leukemia in Children.—The points of interest in the two cases recorded by Cooke are (1) the ages of the patients, 3 and 2½ years, respectively; (2) one is a female, and (3) in one case the lymphatic tissue enlargement was confined entirely to the abdominal glands, while in the other case all the lymph glands in the body were involved.

Medical Journal of Australia, Sydney

Jan. 13, 1923, **1**, No. 2

Infant Feeding. E. S. Morris.—p. 29.
Action of Hexamethylene-Tetramine. M. G. Sutton.—p. 31.
Mechanism of Hyperchlorhydria. F. L. Apperly.—p. 33.
Dietetic Survey of Infants. F. H. Beare.—p. 37.
Case of Malignant Ovarian Cyst with Involvement of Appendix. A. L. Bryant.—p. 41.

Jan. 20, 1923, **1**, No. 3

Diagnosis and Treatment of the Neuroses. M. C. Lidwill.—p. 57.
Deep Roentgen-Ray Therapy for Inoperable Malignant Disease. B. J. Harrison.—p. 62.
Case of Nocturnal Enuresis Presumably Due to Defective Cerebral Development. J. H. Anderson.—p. 68.

Bulletin de l'Académie de Médecine, Paris

Jan. 16, 1923, **88**, No. 3

*Smallpox Statistics. J. Arnaud.—p. 69.
*Blood Serum Reaction in Diagnosis of Cancer. R. Fischer.—p. 71.
*Treatment of Diabetes with Insulin. L. Blum.—p. 73.

Smallpox Statistics in Marseilles.—A report on the 121 cases of smallpox in Marseilles, from 1916 to 1922, shows the predominance of imported cases, and the value of good isolation.

Blood Serum Reaction in Early Diagnosis of Cancer.—Fischer assumes that as a rule the globulins protect the albumins from precipitation, forming a certain stable balance between them in normal conditions. He calls this faculty of the blood serum "prostaxis." A 2:1,000 solution of gelatin makes albumin coagulate more readily, while the globulin becomes less coagulable. When the protective action of globulins exists, the coagulation of the whole serum by alcohol is less pronounced after addition of gelatin than after the addition of normal saline. This protective action is not present in paroxysmal hemoglobinuria, cachexia and cancer. He used this reaction in twenty-nine cases of cancers and in controls with other diseases. He compares the response to the coagulant (alcohol) of serum diluted with normal saline and of serum diluted with a 2:1,000 solution of gelatin in normal saline.

Treatment of Diabetes with Insulin.—Blum prepared insulin according to Banting and Best's method, and reports two favorable clinical experiences. In the debate, Achard mentioned similar organotherapeutic experiments at his school in 1919, and especially some experiments, never published, which his pupil Gardin made with decoctions of pancreas. The transient suppression of glycosuria, valuable as it is, is not a cure for diabetes. Gley mentioned also his experiments. He did not use ligation of ducts, because they regenerate too easily. He injected fats into the ducts, and stained them to see whether the whole pancreas was injected. He deplores the lack of facilities for keeping animals for experimental work, which prevents many researches in France.

Jan. 23, 1923, **88**, No. 4

*Centennial Commemoration of Jenner's Death.—pp. 83-168.

The Jenner Centennial.—The proceedings at this special meeting in honor of the hundredth anniversary of the death of Jenner were mentioned in the Paris Letter, February 10, p. 416, and in the News department, p. 488.

Jan. 30, 1923, **89**, No. 5

*The Cancer Ferment. A. Robin.—p. 174.
*Earning Capacity of the War Disabled. Gourdon et al.—p. 177.
*Mohammedan Prayer Customs. Dinguizli.—p. 181.

The Ferment of Cancer.—Robin found that autolysis is stronger in a liver affected by cancer than in normal livers. The autolysis was more pronounced in the relatively sound portions.

Vocational Training of the War Disabled.—Gourdon reports the results of reeducation of soldiers who were mutilated or became sick during the war. The results are better in those who were injured (earning capacity of 90 per cent.).

Mohammedan Prayers and Hygiene.—Dinguizli describes the Mohammedan daily prayer ritual, prescribed movements, and the ablutions which should precede them. He proves, by quotations, that Mohammed was perfectly conscious of the hygienic importance of both the exercises and the ablutions. The author sees in these movements—five sets of six genuflexions, etc., daily—also a prophylaxis of appendicitis. Of course, the prescription of frequent washing cannot be observed by the poor classes or by inhabitants of deserts, who are allowed to use sand instead. Yet the middle classes are at least as clean as other races of the same social status.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 12, 1923, **47**, No. 1

*Retention of Bile Elements. Lemierre and Lévesque.—p. 5.
*Treatment of Gonococcemic Abscess. Léri and Luton.—p. 7.
*Kala-Azar in France. M. Labbé.—p. 10.
*Artificial Pneumothorax. E. Rist and F. Hirschberg.—p. 10.
*Sputum Examination. Caussade and Mme. Cribier.—p. 18.
*Chronic Bronchial Spirochetosis. P. Pagniez and A. Ravina.—p. 27.
*Progressive Lipodystrophy? L. Babonneix.—p. 29.
*Shock Treatment of Typhoid. A. de Verbizier.—p. 33.
*Roentgenologic Control of Bismuth Treatment. L. Veillet.—p. 35.
*Hyperesthesia of Thyroid Region. C. Lian.—p. 36.
*Typhoid Spleen and Paresis of Diaphragm. V. de Lavergne.—p. 43.
*Intermittent Fever of Meningococcus Origin. A. Netter.—p. 46.
*Temperature After Injury of Spinal Cord. S. I. de Jong.—p. 53.
Charcot-Leyden Crystals and Eosinophils. Idem.—p. 55.

Dissociated Retention of Bile Elements.—Lemierre and Lévesque observed a case of Weil's disease in which the Hay reaction (for bile salts) remained positive during convalescence while there was no bilirubin or urobilin in the urine. Yet the jaundice cannot be considered as dissociated, because examination of the blood revealed an increased proportion of bilirubin.

Treatment of Gonococcemic Abscess. — Léri's patient recovered from a gonococcus abscess on his shoulder after four injections of antigococcus serum directly into the cavity of the abscess.

Kala-Azar in France.—Labbé points out that the two cases of kala-azar recently reported as acquired in France bring to four the total already known.

Artificial Pneumothorax from Economic and Social Standpoints.—Rist and Hirschberg estimate that the actual financial gain from restoration of earning ability in their thirty cases of tuberculosis treated by artificial pneumothorax amounted to a total of 67,450 francs. Deducting the cost to the authorities of the free treatment, leaves still an important surplus on the right side of the ledger.

Comparison of Methods for Sputum Examination.—Caussade and Cribier examined the sputum from twenty cases by various methods. They found that Petrof's medium is very sensitive and gives results in fifteen days. The enrichment method of Bezançon, Mathieu and Philibert is far superior to methods based on simple staining. Negative results with all these methods may be explained by local congestion around the tuberculous process, blocking it, and thus preventing the elimination of the tubercle bacilli. Inoculation of animals should never be omitted in dubious cases.

Chronic Bronchial Spirochetosis. — Pagniez and Ravina report the case of a young woman who for fourteen years has had blood in the sputum every morning. There are no clinical nor radiologic changes to be detected in the lungs, and the patient feels well except for occasional migraine. The upper respiratory passages also have a healthy appearance. The sputum contains numerous spirochetes of the type described by Castellani, and especially shows the typical lysis after standing a few hours. Arsphenamin and iodids were without effect, and emetin only temporarily diminished the amount of blood in the sputum. In the discussion that followed, Debré related his experiences with inoculation of the rabbit cornea and testicle with sputum from two patients with this bronchial spirochetosis.

Progressive Lipodystrophy?—Babonneix demonstrated a case in a girl of 17 who had lost most of the subcutaneous fat above the waist, while fat had accumulated in the lower portions of the body. Deposits of fat on the posterior aspect of the arms, general asthenia, and some minor signs made the condition atypical.

Shock Treatment of Typhoid.—De Verbizier reports a case of typhoid with extremely severe onset in a young man. He was given two intravenous injections of colloidal gold, and defervescence followed on the fifth day of the fever, with speedy recovery. The shock reaction to the second injection was so violent that stimulants had to be applied.

Radiologic Control of Bismuth Treatment.—Veillet recommends roentgen-ray examination for determination of the complete resorption of bismuth before starting a second course.

Hyperesthesia of Thyroid Region.—Lian reports his further experiences with the sign described by him in 1918. It is necessary to avoid all suggestion, and to estimate the extent of hyperesthesia by merely observing the face of the patient. The point of a pin is drawn along the skin of the neck, very lightly pricking the skin. He does this on suspicion of exophthalmic goiter before he mentions the thyroid or attracts attention to it. This sign is not found very frequently, but it is reliable if it is distinctly present over the thyroid as a

whole or over the isthmus or one lobe. It may be a special form of what Mackenzie calls viscerosensory reflexes.

Typhoid Spleen and Paresis of Diaphragm.—De Lavergne attributes to paresis of the diaphragm the difficulty in palpation of a distinctly enlarged spleen in typhoid.

Protracted Intermittent Meningococcus Septic Fever.—Netter's patient was a boy, aged 11 years, who presented fever for 112 days without meningitis. The clinical diagnosis of meningococcemia was confirmed later by positive complement fixation. The child recovered after two injections of 1 or 2 c.c. of pus obtained by injection of turpentine into a horse.

Subnormal Temperature After Injury of Spinal Cord.—De Jong observed a temperature of 28 C. (82.4 F.) with pulse rate of 36 in a soldier paralyzed after a fracture of the laminae of the sixth and seventh cervical vertebrae by a bullet. The next day the temperature was 32.2 C., the pulse 40. The patient's mind was clearer, and the third day the temperature was 36 to 38.5 and pulse 84. The fourth day the temperature rose to 40 C. and the man died. A hemorrhage had compressed the spinal cord.

Paris Médical

Jan. 13, 1923, **13**, No. 2

*Hemiplegia in Heart Disease. H. Roger.—p. 37.
*Cold Abscess After Thoracentesis. Carnot and Blamoutier.—p. 45.
*Acute Meningitis in Infants. Lisbonne and Leenhardt.—p. 47.

Hemiplegia in Heart Disease.—Roger reviews the pathology and clinical features of hemiplegia due to heart disease. In young persons the hemiplegia is usually caused by a small embolus, and rarely persists. In old persons the condition is more serious, and the hemiplegia remains, if the patient does not die in coma. In contrast to this immediate prognosis, the cardiac disturbances are to be considered more seriously in young persons, because they may be due to malignant endocarditis. In old persons the absolute rest enforced by the paralysis may improve the condition of the heart. In the differential diagnosis, syphilis must be considered. Sometimes the spinal fluid presents characters of the puriform aseptic type: a milky white opalescent fluid with many polymorphonuclears which are however, absolutely intact. Albumin is slightly increased; the reducing power is normal; culture plates remain sterile.

Cold Abscess of Thorax After Thoracocentesis.—Carnot and Blamoutier publish four cases in which a tuberculous abscess of the chest wall developed after punctures of the thorax. It is easy to secure initial asepsis in making such punctures. But the asepsis cannot be maintained while drawing back the needle from an infected pleural cavity. One should not make useless exploratory punctures. The physician should especially avoid making several punctures close together at the same session, because such local lesions lead easily to the formation of an abscess. It would be well to put a drop of tincture of iodin into the needle before withdrawing it from the thorax. Autoserotherapy has very doubtful results. It is better avoided.

Primary Acute Meningitis with Influenza Bacillus in Infants.—Lisbonne and Leenhardt publish a fatal case of purulent meningitis, due to Pfeiffer's bacilli. The germs were very polymorphic.

Presse Médicale, Paris

Jan. 20, 1923, **31**, No. 6

Evolution of Surgical Obstetrics. Brindeau.—p. 57.
*Sugar in Blood and Spinal Fluid. Polonovski and Duhot.—p. 60.

Sugar in Blood and Spinal Fluid.—Polonovski and Duhot found a balance between the sugar levels in the blood and spinal fluid. This does not mean identity but a mutual relation expressed in parallel changes, as, for instance, after injection of epinephrin and in diabetes. The increase in the reducing power of the cerebrospinal fluid in encephalitis is due to hyperglycemia. They confirm the importance of a low sugar level in the fluid in purulent meningitis, but emphasize the necessity for determining the sugar content of the blood at the same time. The changes of equilibrium between the sugar content of the blood and of the spinal fluid are more significant than the absolute figures in the spinal fluid alone.

Jan. 24, 1923, **31**, No. 7

*Blood Supply for Sutured Intestine. E. Desmarest.—p. 69.
*Bacilli of the Colon and Lactic Group. H. Violle.—p. 70.
*Bronchial Asthma from Appendicitis. R. A. Gutmann.—p. 72.

Blood Supply to Sutured Portion of Intestine.—Desmarest considers an inadequate blood supply to the sutured stumps in operations on the duodenum or colon as the real cause of subsequent sloughing and peritonitis. Operations on the colon become comparatively harmless if the surgeon takes care to incise the free ends longitudinally until he gets into a freely bleeding part. Resection of the few centimeters beyond makes the results much better.

Differentiation of Bacilli of the Colon Group.—Violle recommends Lemoigne's reaction for determination of acetylmethyl-carbinol which is constantly produced by *Bacillus lactis-aerogenes* but never by the colon bacillus.

Asthma of Appendicitic Origin.—Gutmann reports four new cases in which attacks of bronchial asthma failed to reappear after appendectomy. In these cases of asthma of appendicitic origin, an attack of asthma can be brought on by applying pressure to the ileocecal region. His theory is that chronic appendicitis causes an abnormally irritable condition of the vagus nerve, and this vagotonia forms the soil on which disturbances of the colloidal equilibrium entail asthmatic attacks. He mentions a case of asthma in which the attacks were provoked by antipyrin. The patient bore this drug without disturbances after appendectomy.

Revue Franç. de Gynécologie et d'Obstét., Paris

Jan. 10, 1923, **18**, No. 1

Technic for Low Transperitoneal Cesarean Section. O. Beuttner.—p. 3.
*Late Syphilis of the Uterus. J. Mouchotte.—p. 9.

Tardy Syphilitic Disease of the Uterus.—Mouchotte discusses in particular uterine hemorrhage for which syphilis is responsible. Metrorrhagia without any signs of a gynecologic affection should be treated for syphilis, even with a negative Wassermann reaction. He wasted considerable time on other measures in a case described before he applied specific treatment and cured his patient, a woman aged 30. Franceschini warns that the cases of rapidly fatal uterine hemorrhages without known cause were probably all the result of syphilitic disease of the uterus.

Schweizerische medizinische Wochenschrift, Basel

Jan. 11, 1923, **53**, No. 2

Air Embolism from Criminal Abortion. T. Wyder.—p. 29.
*The Retroflexion Question. H. Meyer-Rüegg.—p. 34.
Research on Coagulation of Blood. A. Fonio.—p. 36. Cont'd.
Severe Injury During Manual Evacuation of Abortion. L. Raemi-Boesch.—p. 41.

Retroflexion of the Uterus.—Meyer-Rüegg believes that women would be less affected by disturbances due to uterine anomalies if physicians would agree to consider retroflexion as merely one of the various positions of the uterus. The condition does not require treatment except (1) in certain cases of sterility without other findings; (2) if there is danger of incarceration in the fourth month of a pregnancy; (3) if the uterus lies on the levator ani or extends into the genital hiatus; (4) as a mode of suggestion when psychotherapy otherwise has failed.

Policlinico, Rome

Jan. 8, 1923, **30**, No. 2

*Complement Fixation with Old Serums. G. Pansini.—p. 41.
*Calcium Treatment of Vomiting and Diarrhea. R. Monteleone.—p. 48.
Pyelotomy for Calculus in Kidney. A. di Blasio.—p. 51.
*Roentgen Treatment of Malaria. Committee Report.—p. 53.

Complement Fixation with Old Serums.—Pansini finds that serums giving a positive Wassermann reaction keep their power of complement fixation. Negative serums are liable to acquire this property. It seems that the direct anticomplementary action was not tested.

Calcium in Treatment of Vomiting and Diarrhea in the Tuberculous.—Monteleone publishes fourteen observations of the action of slow intravenous injections of 5 or 10 c.c. of a 10 per cent. solution of calcium chlorid. The results were very good.

Roentgen-Ray Treatment of Malaria.—The Italian official commission appointed by the government to study the question of roentgen-ray treatment of malaria here publishes its first report, edited by A. Busi. It states that this treatment is contraindicated in acute malaria. Large doses may bring on a severe attack with extensive invasion of the blood stream by the parasites. Chronic enlargement of the spleen frequently subsides under the irradiation. Some forms of malaria with infrequent attacks may be cured by roentgen treatment without drugs. The quinin-resistant forms should be treated with quinin again after the use of the roentgen rays.

Jan. 15, 1923, **30**, No. 3

Experimental Research on Hydrocephalus. A. Chiasserini.—p. 73.
*Hematuria Due to Strongyloidosis. P. Fornara.—p. 75.
*Test for Thiosulphuric Acid. E. Pittarelli.—p. 80.
Extrapyramidal Rigidity. R. Antoniotti.—p. 81.

Hematuria from Strongyloidosis.—Fornaro's patient, a previously healthy woman, suddenly developed pain, of the kidney colic type, and the urine contained blood, albumin and numerous larvae resembling filaria. Larvae of *Strongyloides intestinalis* were found in the stools. His retrospective diagnosis was that the larvae entering the body had made their way to the lungs and thence to the heart, and then had been swept in the blood stream to the kidney. The urine was free from blood in five days. Under treatment with hexamethylenamin, clinical recovery was soon complete, although strongyloides larvae were still present in the stools a month later. He found thymol in large doses, 6 to 8 gm. daily, the most effective means for expelling this nematode. The larvae die in a few minutes in a 1:1,000 solution of thymol.

Test for Thiosulphuric Acid in Organic Fluids.—Pittarelli comments on the delicacy and reliability of the para-amidophenol test he describes, which reveals even traces of hyposulphurous or thiosulphuric acid in organic fluids. A few crystals of the para-amidophenol, which is a common photographic developer, are dissolved in the fluid under examination, and hydrochloric acid is added in the proportion of 1 c.c. to 40 or 50 c.c. of the fluid. Then a 10 per cent. solution of ferric chlorid is added, a drop at a time. In the presence of thiosulphuric acid the tint changes to orange and then to yellow. With hydrosulphuric acid (sulphureted hydrogen) the tint is red. The response is distinct with one part of $H_2S_2O_3$ in 400,000 parts of water.

Jan. 22, 1923, **30**, No. 4

Incision at Lowest Point for Empyema. D. Taddei.—p. 105.
Epidemic Encephalitis with Parkinsonism. Lucherini.—p. 108.
*Experiences with Spinal Anesthesia. G. Ciaprini.—p. 111.

Spinal Anesthesia.—Ciaprini states that the anesthesia was complete in all but 27 of the 284 cases in which he applied it, and in these the stovain proved to be defective. No serious by-effects were ever observed, but pallor, vomiting, and slowing and weakening of the pulse were frequent. They all promptly subsided under injections of camphor or caffein. It was never necessary to inject the caffein or camphor into the spinal canal. In 11 cases there was retention of urine, but the catheter was not used, and the patients urinated spontaneously before the end of twenty-four hours. In 7 cases there were paresis, paralysis, incontinence, headache or backache, coming on a month or six weeks after the spinal anesthesia. In 5 there was rachialgia and in 2 paralysis of the legs, but all subsided within a few weeks. Local anesthesia was applied in another group of 105 cases. For operations on the kidneys and liver, the intraspinal anesthesia seems to be superior to other methods.

Jan. 29, 1923, **30**, No. 5

*Chronic Inflammation of Submaxillary Gland. G. Baggio.—p. 137.
Primary Influenzal Mastoiditis. G. Bilancioni.—p. 140.
Slow Breathing as Physiologic Aid in Repose Treatment of Pulmonary Tuberculosis. S. A. Knopf.—p. 142.

Chronic Inflammation in Submaxillary Gland.—The chronic fibrous inflammatory process in the young man was explained by the discovery of a scrap of grain in the submaxillary salivary gland.

Feb. 5, 1923, **30**, No. 6

Causes of Error in Radiologic Urinary Diagnosis. Dondero.—p. 169.
*Cerebral Thrombosis with Tubal Pregnancy. G. Lavezzi.—p. 174.
Fibroma in Round Ligament. G. Gaeta.—p. 177.
Improved Technic for Darkfield Microscopy. Vanni.—p. 177.

Cerebral Thrombosis as Complication of Ruptured Tubal Pregnancy.—The severe internal hemorrhage was accompanied by coma persisting after the laparotomy. This persistence was explained by the thrombosis found in the centrum ovale region. It seemed to have developed almost at the same time as the tube had ruptured. Cerebral hemorrhage had been suggested by the unconsciousness, but had been apparently refuted by finding profuse intra-abdominal hemorrhage.

Jan. 15, 1923, **30**, Surgical Section No. 1

Certain Anomalies in Plantar Aponeurosis. P. Barco.—p. 1.
*Sagging Liver. M. Fasano.—p. 6.
*Nonparasitic Cysts in the Liver. O. Margarucci.—p. 16. Conc'n.
*Recent Literature on Stomach Functioning. M. Ascoli.—p. 43.

Sagging Liver.—Fasano declares that many operations on the stomach and bowel attack merely the consequences of displacement of the liver, leaving the cause, the hepatoptosis, untouched. If the sagging liver had been restored to place, instead, these secondary affections of the stomach or bowel would have spontaneously corrected themselves in time. He describes a case in which the symptoms and roentgen findings indicated ulcer near the pylorus in the woman, aged 60. The whole harmlessly subsided after the liver had been restored to its normal place. The sagging of both liver and stomach had been evident, but the physicians consulted had assumed an ulcer in addition, to explain the severe clinical picture. In another woman, aged 48, the symptoms suggesting gastric ulcer were of four years' standing and the woman was very weak and emaciated. In both these cases the sagging stomach and liver were somewhat twisted, but were otherwise apparently normal. He cut the round ligament of the liver away from the abdominal wall and freed it up to the liver. He then drew it up to the ensiform process, and sutured it to the aponeurotic fascia. This lifted up the pylorus 6 cm. A few U stitches were taken also in the anterior margin of the liver and tied through the aponeurosis a little above the costal arch. In two other women, aged 51 and 46, the cecum was abnormally movable and distended, and a kink in the bowel was bound down by adhesions. After breaking up the adhesions, the sagging liver was restored to place. The assumption that the other disturbances were secondary to the visceroptosis and especially the hepatoptosis, was confirmed by the complete and permanent clinical recovery after hepatopexy with the round ligament. Fasano has had equal success in five other cases; suspending the liver corrected all the anomalies.

Nonparasitic Cysts of the Liver.—This is the conclusion of the article summarized on page 513. It has eight photomicrograms and nearly five pages of bibliography.

The Pathologic Physiology of the Stomach.—Ascoli reviews and compares modern views on the mechanism and functioning of the stomach. The contradictory phenomena observed in regard to pain in the stomach show that some of the factors involved are still a mystery. When the splanchnic nerves are blocked, the stomach is absolutely dead to pain from an operation, even although the vagus nerve is intact.

Riforma Medica, Naples

Jan. 22, 1923, **39**, No. 4

*Trapezius in Early Diagnosis of Tuberculosis. G. Iafolla.—p. 73.
*Modification of Blood Groups. P. Mino.—p. 75.
*Causes of Error in Folin's Test for Creatinin. E. Pittarelli.—p. 78.
Technic for Appendectomy. B. Matassa.—p. 80.
Vasomotor Disturbances in Surgical Affections. E. Aievoli.—p. 80.
Prophylaxis of Diphtheria. L. Torraca.—p. 82.

Hypotrophy of the Trapezius as Early Sign of Pulmonary Tuberculosis.—Iafolla asserts that Boeri called attention in 1906 to the importance of tenderness and hypotrophy of the trapezius muscle as a sign of incipient tuberculous disease of the lung. Many years later this sign was rediscovered by others, and hailed as instructive and reliable, an actual precursor of apicitis. Iafolla applied electric tests to the trapezius in these conditions, and found that the responses differed materially from normal. The charts given show that the muscle behaves as if fatigued or poisoned. The restriction of this to the trapezius alone suggests that the distur-

bance is a neurotrophic atrophy; this seems to be confirmed by the local tenderness which precedes or accompanies the hypotrophy.

Unchangeability of Blood Groups.—Mino's experience indicates that it is impossible to modify the iso-agglutinins and change blood grouping. He relates experiments with numerous patients and various drugs, all negative from this point of view.

Causes of Error in Folin Test for Creatinin.—Pittarelli declares that Folin's original method is entirely unreliable, and that no technic is known to date for a practical and accurate test for creatinin in the urine.

Jan. 29, 1923, **39**, No. 5

*Slight Fever with Latent Pleurisy. U. Baccarani.—p. 97.
*Wildbolz' Urine Reaction in Tuberculosis. M. Venuti.—p. 98.
*Chronic Invagination of Colon. G. Pinardi.—p. 101.
Treatment of Alopecia. E. Savini.—p. 103.
The Hemoclastic Crisis and Intravenous Therapy. G. Martinico.—p. 103.
Splenomegaly in Malaria. E. Aievoli.—p. 104.
Therapeutic Application of Anaphylaxis. I. Iacono.—p. 106.

Protracted Slight Fever.—Baccarani has had several cases of a prolonged slight fever in women, between 18 and 35 years of age, without cough, or pain anywhere; the respiratory organs were apparently normal except on light superficial percussion at the base of the thorax. This revealed mild pleurisy with effusion, confirmed by puncture. The pleurisy would have escaped discovery without this light percussion. For about six months the patients had been complaining of loss of appetite and flesh. The evening temperature ranged from 37.2 to 37.9 C. (99-100 F.); in the morning it was normal, as also when the patients stayed in bed. This orthostatic febricula suggested tuberculosis, but the diagnosis was not confirmed until the patient entered the hospital for a thorough examination.

Wildbolz Urine Reaction.—Venuti reports extensive experience with the Wildbolz auto-urine reaction which has demonstrated, he says, that a negative reaction almost certainly excludes tuberculosis. A positive reaction cannot be accepted as reliable unless controlled by testing the patient's own urine, physiologic urine, and the urine of a tuberculous subject, also testing the patient's urine on a tuberculous subject. These control tests remove all possible doubt as to the specificity and reliability of the reaction.

Chronic Invagination of the Colon in Adult.—Pinardi relates that the disturbances were of six weeks' standing in the case described. The diagnosis had been mucomembranous enterocolitis, but the persistent disturbances compelled operative intervention which revealed an old invagination of the cecum and ascending colon into the transverse colon. It was impossible to reduce the invagination and, as haste was imperative, the small intestine was joined to the sigmoid loop. It was the intention to remove the injured portion at a second operation, but the man would not consent to further intervention, and has been in good health during the eight months since.

Brazil-Medico, Rio de Janeiro

Jan. 13, 1923, **1**, No. 2

*Emotional Factor in Glaucoma. G. de Almeida.—p. 15.
Parasites of Trichomonas. A. Marques da Cunha and J. Muniz.—p. 19.
Brazilian Tick. New Species. H. de Beaurepaire Aragão.—p. 20.
The Rhodnius. New Species. A. Neiva and C. Pinto.—p. 20.
*Medical Impressions of British Guiana. H. C. de Souza Araujo.—p. 24.

Sudden Transient Glaucoma.—De Almeida reports six cases in which the emotional stress of an operation for cataract seemed to have been a factor in the sudden increase in the eye tension. The acute glaucoma was transient, and had disappeared by the next day. One elderly patient had borne the operation on one eye calmly, but was extremely agitated at the operation on the other eye, a month later, and the glaucomatous condition developed at once. Another patient was a young man with traumatic cataract, and his dread and excitement at the operation were extreme. The operator must be on the alert to detect the first sign of augmented tension and apply the necessary measures without a moment's delay. To this he attributes the favorable outcome and the fact that he has never had expulsive hemorrhage after his numerous cataract operations.

Medical Impressions of British Guiana.—De Souza Araujo was on a scientific mission from the Oswaldo Cruz Institute. Since 1913 there has been a well organized infant welfare service with visiting nurses at Georgetown. In 1920 the infant mortality was 14.8 per cent. when it was 17.1 at Rio de Janeiro. With a population of 360,000, it is estimated that there are 800 lepers; 540 are segregated at the Cocorite asylum, founded in 1845. In 1921 the government bought an island 20 miles from Port of Spain, and has arranged there a large colony for lepers. There are eleven hospitals in all for British Guiana. If Brazil were supplied with hospitals in the same proportion to the population, it would have to have 917 hospitals for its 30,000,000 inhabitants. He adds that the authorities keep the importation and sale of liquor under control. The saloons must close at 7 p. m. at Port of Spain. The morbidity is the same as that of northern Brazil. In 1921 there were 10,000 cases of *bouba* recorded, mostly in children, and the neo-arsphenamin treatment was applied in the home. The disease was epidemic at Trinidad and Tobago.

Jan. 20, 1923, **1**, No. 3

*Malaria. A. Godoy and C. Pinto.—p. 29.
*Roentgen Study of Digestion of Snakes. M. Rodolph.—p. 33.
The Physician and Eugenics. Renato Kehl.—p. 35.

Malaria.—This is an official report of a survey of malaria in the state of Campos, with suggestions for feasible prophylaxis.

Roentgen Study of Digestion in Snakes.—Rudolph reproduces a few roentgenograms of small animals in the digestive tract of snakes. He emphasizes the instructive data that can be thus learned in regard to ova and embryos in snakes, and other biologic problems.

Jan. 27, 1923, **1**, No. 4

*Three Cases of Blastomycosis. F. Terra.—p. 41.
*Bacteriophagy. Costa Cruz.—p. 44.
Triatomas in Rio District. A. Neiva and C. Pinto.—p. 45.
*Otosclerosis. S. C. da Silva.—p. 47. Conc'n No. 5.

Blastomycosis.—Terra reviews the two dozen cases that have been published in Brazil, and describes three cases recently treated in his service at Rio de Janeiro. In one of his three personal cases the man died, and blastomycetes were found in the lungs, spleen, kidneys and elsewhere. The affection was of three years' standing. In all the cases the diagnosis wavered betwen syphilis, tuberculosis and mycosis until the discovery of blastomycetes.

Bacteriophagy. — Costa Cruz' new experiments with d'Herelle's phenomenon confirm the facts observed by others but he interprets them differently. The pure bacteriophage does not lose its lysant power in contact with silver, even for weeks. Although this does not prove absolutely that the bacteriophage is a living virus, yet it harmonizes with this assumption better than with Bordet's view that the bacteriophage is enzymatic in nature. This question was discussed editorially in THE JOURNAL, Dec. 9, 1922, p. 2005.

Otosclerosis.—Cesar da Silva summarizes the latest works on this subject, and emphasizes the fact that different factors may be responsible in different cases. The various histologic changes, however, all blend into a uniform process in the course of their evolution.

Feb. 3, 1923, **1**, No. 5

*Tube-Casts in the Urine. H. L. and Renato de Souza Lopes.—p. 55.
Research on the Blastocystis. H. de Beaurepaire Aragão.—p. 58.
Toxicity of Chenopodium. Areobaldo Lellis.—p. 63.

Tube-Casts in Urine.—When hyaline tube-casts are masked by mucus, de Souza Lopes adds a small quantity of a saturated solution of sodium chlorid. This not only releases the casts from the mucus but induces retraction of the hyaline substance by an endosmotic current. The urine is set aside with some antiseptic for twelve or twenty-four hours to settle. Centrifugation does not answer the purpose so well.

Semana Médica, Buenos Aires

Dec. 28, 1922, **2**, No. 52. Pasteur Number

*The Glory of Pasteur. C. Richet.—p. 1326.
The Philosophic Legacy of Pasteur. E. Melchor de Vogué.—p. 1328.
Reminiscences of Pasteur. Jules Simon.—p. 1334.
Address on Twenty-Fifth Anniversary of Pasteur Institute. Roux.—p. 1336.

Influenza in 1921. A. Olivera.—p. 1348.
Hydatid Cysts of the Orbit. Paulina Satanowsky.—p. 1349.
*Nitrous Oxid Analgesia in Labor. F. R. Pasman.—p. 1355.
*Glycemia in the Pregnant. F. A. Deluca.—p. 1361.

The Glory of Pasteur.—The French Academy offered a prize in 1914 for the best poem on this subject; it was awarded to Prof. Charles Richet of Paris for the poem which is here reproduced in French. It fills two two-column pages.

Nitrous Oxid Analgesia in Labor.—Pasman reports five cases; he quotes the women's own description of the effect of the anesthesia, and emphasizes the lack of toxic action on mother or child, and the almost complete analgesia.

Glycemia in the Pregnant.—Deluca does not admit that the glycogen producing function of the liver is inadequate in pregnancy, as a rule. The sugar content of the blood and of the urine is not a reliable index of the functioning of an organ so complex as the liver.

Jan. 4, 1923, **1**, No. 1

Program and Aims of Course on Operative Medicine. Zorraquin.—p. 2.
*Rickets. Juan P. Garrahan.—p. 8.
*The Thermo-Injector. L. Samengo.—p. 17.
Case of Scleroderma with Hemorrhagic Tendency. Segura.—p. 20.
*Tuberculosis and Pregnancy. F. Etcheverry Boneo.—p. 24.
*The Liver in Pregnancy. Rafael Mestre.—p. 28.
*Physiologic Tests in the Insane. A. M. Sierra.—p. 31.
*Ocular Complications of Erythema Nodosum. P. Satanowsky.—p. 33.

Rickets.—Garrahan gives illustrations of several extreme cases, and discusses the present status of knowledge as to its etiology. Treatment must be based on air and sunlight, a well balanced diet, tonics, treatment of inherited taints, and means to promote fixation of calcium. The chief difficulty is to convince the family of the advantages of systematic heliotherapy for children, with or predisposed to rachitis. He protests against allowing children with pronounced rachitic deformity to walk or even stand. A hard bed should be used if there is any tendency to curvature of the spine. While the children are kept in bed, massage, tepid brine baths and rubbing with a coarse towel are useful. Rest should not be kept up after improvement is evident, but the exercise should be closely supervised to avoid excess. A 0.01 per cent. solution of phosphorus in cod liver oil is the most effectual method yet known to promote fixation of calcium.

The Thermo-Injector.—This is Samengo's name for his syringe with electric control which allows injection of a fluid at a given temperature—actually boiling water—without loss of heat or burning the hands. He has applied the Porter boiling water local treatment of exophthalmic goiter in six cases with excellent results. In two cases, previous Porter treatment with an ordinary syringe had failed of effect.

Tuberculosis and Pregnancy.—Of thirty tuberculous women supervised through a pregnancy and since, nine died, and the disease has progressed in two; this group of eleven were all in the third stage of tuberculosis. The disease remained stationary or materially improved in all the others. No ill effects from pregnancy were observed in any of them. When tuberculous women become pregnant or pregnant women become tuberculous, treatment should be applied as under other conditions, and with almost as good an outlook. All depends on the stage of the disease, the general condition, and the promptness with which treatment is begun. The premonitory and early signs and symptoms of tuberculosis are too often assumed to be toxic or reflex manifestations from the pregnancy itself. The subfebrile temperature, lassitude, pains in the shoulder, tachycardia and similar slight symptoms are overlooked until the tuberculosis has an irreparable hold on the lung.

The Liver in Pregnancy.—Mestre found the hemoclastic crisis pronounced in 40 per cent. of fifty women in the last three months of pregnancy. The Roch test was positive in 30 per cent. and the two tests were concordant in 64 per cent. The Roch test is with ingestion of methylene blue.

Physiologic Tests in the Insane.—Sierra reports the findings in 100 insane persons tested with the Löwi, Goetsch, Woodbury and Asoli drug tests and the Sergent and Marañon physical tests. No regular connection could be discovered between them and the mental disease. His findings demonstrate, however, that the Goetsch epinephrin test is not specific for hyperthyroidism.

Ocular Complications of Erythema Nodosum.—Satanowsky summarizes from the literature instances of ocular lesions accompanying skin affections, and especially erythema nodosum. Many of these patients were unmistakably tuberculous, and Foerster accepts a tuberculous origin when no other cause is manifest. One case has been reported with pains in joints and positive Wassermann reaction, in which the erythema nodosum and all the symptoms promptly subsided under mercurial treatment. Other cases have been reported with a similar course and prompt recovery under sodium salicylate. She reports the case of a woman, aged 36, who had been healthy until she developed exophthalmic goiter at 32. It improved materially under systematic thyroid and roentgen treatment. Recently patches of erythema nodosum developed on the legs and a red patch appeared in the left cornea. The connection with the erythema nodosum was evident. The erythema lasted for two and a half months and the episcleritis for a month and a half. Treatment was with twenty daily intravenous injections of about 0.35 gm. of sodium salicylate, although at the time there was nothing to suggest rheumatism.

Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1922, **176**, No. 4. L. Heidenhain Number

*Malformation of Intestine. K. Braeunig.—p. 227.
*Roentgen-Ray Treatment of Exophthalmic Goiter. C. Fried.—p. 254.
*Action of Roentgen Rays on Inflammation. C. Kemp.—p. 272.
*Gangrenous Femoral Hernia. A. Becker.—p. 281.

Malformation of the Intestines.—Braeunig's attention was attracted to developmental anomalies in the bowel by a case of invagination of the cecum in the colon down to the sigmoid flexure. Six cases are described, and the embryonal factors discussed.

Roentgen Treatment of Exophthalmic Goiter.—Fried has reexamined regularly every month thirteen patients with exophthalmic goiter since they were apparently cured by roentgen treatment. Both thyroid and thymus had been exposed to the rays, the dose being 80 and 91 per cent. of the erythema dose, with zinc filter. The exposure was repeated after an interval of two to six months. In one case a third exposure was given, and in three only a single exposure was made. The hemoglobin percentage always increased. No drugs were given, but out-door life was considered an essential element in the treatment. The women were all outpatients. Subjective improvement was noted first, but the objective signs soon followed. The exophthalmos seems to have subsided in all but one case; but in nearly all there is still a tendency to vasomotor instability and excitement, so that the patients cannot be regarded as fully recovered.

Roentgen-Ray Treatment of Subacute Inflammatory Processes.—Kemp witnessed the healing under roentgen treatment of circumscribed peritoneal suppurative processes, either of appendicitic origin or consecutive to abortion. Furuncles in the axilla also subsided under roentgen exposures after a small incision. Leg ulcers, long rebellious to other measures, cleared up in forty-eight hours. Pneumonia was also favorably influenced in several cases which seemed to suggest subacute or chronic suppuration. The subjective benefit was always pronounced. The turn for the better was particularly prompt in two cases described in detail. He exposed always a single large field, and warns against cross-fire exposures, for fear of the effect on the general health. He used from 20 to 40 per cent. of the erythema dose.

Treatment of Gangrenous Femoral Hernia.—Becker relates that the interval before operation in 36 cases in the last ten years ranged from one to eight days; one of the patients with the longest interval recovered. Unless the entire incarcerated loop can be drawn through an incision above, it is dangerous to attempt a radical operation if there is the slightest suspicion of infection of the fluid in the hernia. The immediate radical operation was attempted only in 11 of the 36 cases; in 4 a phlegmon developed in the abdominal wall and the patients succumbed to pyemia from thrombosis. The mortality was 26.5 per cent. if 2 moribund cases are excluded; 30.4 per cent. including them. This high death

rate demonstrates anew that practitioners do not call in the surgeon until too late. There need be no mortality if conditions could be corrected within a few hours. Thirteen were saved in the 17 cases in which the gangrenous loop was resected at the hernial opening. In 5 cases the gangrene was sutured-in, with 2 deaths. Both patients recovered in the 2 cases in which the gangrenous loop was brought outside to serve as an artificial anus. The suturing-in method, associated with entero-anastomosis, was possible only with a small hernia or when the gangrene was restricted to the constricting ring. In these circumstances the method proved very valuable.

Klinische Wochenschrift, Berlin

Jan. 8, 1923, **2**, No. 2

Lowering of the Living Standards in Germany. W. His.—p. 53.
German Physicians at the Sickbed of the German People. Dippe.—p. 56.
German Children in Need. Krautwig.—p. 58.
Metabolism of the Food. F. Knoop.—p. 60.
*Histology of Edema. W. Hülse.—p. 63.
*Excretion of Uric Acid in Gout. Thannhauser and Hemke.—p. 65.
*Trophic Function of the Sympathetic. Brüning.—p. 67.
*Blood Changes in Oxygen Breathing. Full and Friedrich.—p. 69.
Phrenicotomy in Pulmonary Tuberculosis. A. V. Frisch.—p. 72.
*Seasons and Weight of the Newly Born. Hellmuth and Wnorowski. —p. 75.
Action of Treatment on Blood Calcium in Spasmophilia. Blühdorn and Thyssen.—p. 78.
Etiology of Impetigo Nephritis. R. Deussing.—p. 79.
Comment on "Functional Thyroid Tests." G. Deusch.—p. 80. Reply. Hellwig.—p. 80.
Proof of Myogenous Stimulus Formation in Vertebrate Hearts. L. Haberlandt.—p. 81.
Casein Autolysis. Ehrenberg and Loewenthal.—p. 81.
Action of Glucose on Vessels. Handovsky and E. Meyer.—p. 82.
Traumatic Argyll Robertson Pupil. R. Botzian.—p. 82.
Surgical Treatment of Congenital Deformities. J. R. Gossmann.—p. 83.
Recent Literature on Creatin-Creatinin Metabolism. Bürger.—p. 87. Conc'n.

Histology of Edema.—Hülse points out that in normal conditions there are no gaps in the tissues. The blood and lymph capillaries are separated by cells and intercellular substance and do not communicate by canals containing "tissue fluid." The exchange of substances does not occur between blood and a free tissue fluid, but between blood and the colloidal system of the living tissue. Such movements of substances are regulated more by the surface tension than by diffusion. The connective tissue is always swollen in the stage of preedema. The endothelium of the capillaries swells before the formation of free fluid in the tissues. The inhibition of resorption which this entails may be the cause of edema. It is probable that the lymph capillaries are affected in a similar way. During the formation of edema, the thoracic duct and the cisterna chyli are almost empty, while they are overfilled during the period of resorption of edemas. Formation of acids may be either the cause or the result of edema.

Excretion of Uric Acid in Gout.—Thannhauser and Hemke do not lay as much stress on the maximal concentration of uric acid as on the comparison of the concentration in the urine with the amount present at the same time in the blood. The relative proportions are changed in constitutional gout.

Trophic Function of Sympathetic Nerves.—Brüning contends that trophic ulcers are due to augmented tonus of the sympathetic nervous system. They develop only some time after the injury, not until a neuroma has formed or pressure from the cicatrix begins to act. Periarterial sympathectomy lowers the tonus also proximal to the field of operation. In a case of injury of the cauda equina, not only the ulcer on the right heel, but also a large bedsore on the right buttock healed after periarterial sympathectomy on the femoral artery. Excessive sympathicotonia leads to degeneration and even necrosis. Reduction of the sympathicotonia is followed by regeneration and even hypertrophy. The way to produce artificially a gastric ulcer would be to augment the sympathicotonia.

Blood Changes in Oxygen Breathing.—Full and von Friedrich found in experiments with breathing of oxygen with a pressure of 10 to 18 cm. of water, that the blood became diluted. At the same time the blood chlorids declined. In some patients with hypertension a marked decrease in the blood pressure occurred.

Weight of the Newly Born and the Seasons.—Hellmuth and Wnorowski show by their extensive material that the differences in the weight of the newly born at different seasons do not exceed the limits required by the theory of statistics.

Medizinische Klinik, Berlin

Jan. 7, 1923, **19**, No. 1

*Puerperal Infection. E. Bumm.—p. 1.
*Postoperative Secretion of Cerebrospinal Fluid. H. Schloffer.—p. 4.
Focal Symptoms with Lesion of Left Parietal Lobe. O. Pötzl.—p. 7.
*Poisoning by Carbon Monoxid. R. Jaksch-Wartenhorst.—p. 11.
Eclampsia.—p. 14. Cont'd.
*Changes of Refraction in Diabetes. A. Elschnig.—p. 17.
*Prevention of Congenital Syphilis. G. A. Wagner.—p. 18.
Connection Between Trauma and Tuberculosis. Flesch-Thebesius.—p. 21. Conc'n No. 2, p. 50.
*Extrapulmonary Infection in Tuberculosis. Ghon and Wertheimer.—p. 26.
Review on Pediatrics. Rietschel.—p. 28.

Chemotherapy and Serotherapy in Puerperal Infection.—Bumm objects to the reports on treatment of puerperal infection that they do not make enough distinction between the different conditions, which have in themselves a very good or very bad prognosis. The determination of prognosis is of course difficult. The almost exclusive presence of bacilli (rods) in the lochia speaks for simple putrefaction of the retained secretions, while streptococci are found almost exclusively in the more virulent infections. Ruge determines the virulence and at the same time the humoral resistance by observation of the growth of the cocci in the serum of the patient. Local antisepsis cannot reach all the germs and may do harm. It should be abandoned. It is quite common that the first chill occurs after irrigating the vagina. The immune serums and general chemotherapy are of use only if applied early. Seventy-six per cent. of the fevers are due to retention of lochia, and heal without specific treatment. The severe cases should be given large doses of antistreptococcus serum, some chemotherapeutic preparations, light baths to increase the temperature of the body, hot applications (no ice), alcohol and ergot. The results are very good (85 per cent. localized) if the treatment begins early.

Secretion of Fluid After Extirpation of Brain Tumor.—Schloffer's patient (large epithelioma of the parietal lobe) had to be treated by lumbar puncture for nine months after the extirpation of the tumor, until she recovered. This shows that the disproportion between the formation and resorption of cerebrospinal fluid may last for a very long time after the cause has been removed.

Poisoning by Carbon Monoxid.—Jaksch-Wartenhorst describes three cases of poisoning by carbon monoxid. All three had very marked cerebral symptoms (spasms, psychic disturbances, Cheyne-Stokes breathing) and one a cerebral hemorrhage two days after the poisoning.

Changes of Refraction in Diabetes.—Elschnig reviews briefly the theories on the origin of sudden myopia or hypermetropia in diabetes. He publishes a case in which one lens had been removed for cataract. The diabetic hypermetropia occurred only in the other eye, which suggests that the lens was responsible for the condition, though there were no clinical signs of a change in the lens.

Prevention of Congenital Syphilis.—Wagner considers the Wassermann reaction as specific only in the first half of pregnancy. The "antenatal" treatment, if instituted early, gives very good results. The previous treatment (before the pregnancy started) is not sufficient. The blood should be tested in every pregnant woman as early as possible.

Primary Extrapulmonary Infection in Tuberculosis of Children.—Ghon and Wertheimer found among 395 necropsies on tuberculous children only six cases with a certain extrapulmonary primary infection (four intestinal, one nose and one middle ear), and three cases in which the primary lesion could not be determined.

Jan. 14, 1923, **19**, No. 2

*Treatment of Diabetes. C. von Noorden.—p. 41.
Congenital and Acquired Syphilis in Children. J. Fabry.—p. 43.
Tuberculin Reaction. H. Gerhartz.—p. 45.
Case of Paratyphoid B. Kraus and Reisinger.—p. 45.
Collective Inquiry on Eclampsia.—p. 47. Cont'n.
Treatment of Exostosis on Heel-Bone. Taendler.—p. 56.

Action of Some Emulsions of Salts. P. Saxl.—p. 57.
Diseases of Bladder. E. Portner.—p. 59.
Recent Literature on Rhinolaryngology. Haenlein.—p. 61.

Treatment of Diabetes.—Von Noorden points to the importance of heredity for the prophylaxis of diabetes. Children of diabetics should avoid sweets and too much protein. The tendency to consult a specialist causes many overlooked cases of diabetes—especially in dermatology and neurology. Almost every diabetes starts as alimentary glycosuria. Alimentary glycosuria is always a sign of real diabetes. The practitioner should leave the determination of carbohydrate tolerance to a specialist, and take the treatment over after two or three weeks, and regulate it according to the advice of the specialist. In beginning coma, no food should be given except 150-200 gm. of brandy in a day. Alkali should be given intravenously or in enemas.

Wiener klinische Wochenschrift, Vienna

Jan. 11, 1923, **36**, No. 2

Treatment of Eclampsia. P. Werner.—p. 21.
*Influence of the Thyroid on Blood Production. G. Holler.—p. 23.
Normal Histology of Stomach. Paschkis and Orator.—p. 26.
Benefit from Vaccine Therapy of Affections of Auditory Nerve. R. Leidler and E. Stransky.—p. 28.
Retroperitoneal Tumors. H. Kunz.—p. 28.
Technic and Indications for Diathermia. R. Grünbaum.—p. 29.
The Campaign Against Tuberculosis. A. Götzl.—p. 30.

The Thyroid and Formation of Erythrocytes.—In patients with hyperthyroidism Holler found that the average diameter of the erythrocytes was at the upper limits of normal or above. While there are only few polychromatophilic erythrocytes to be found with usual methods, vitally stained corpuscles are more frequent than in healthy persons (several tenths of 1 per cent.). The limits of resistance against osmotic influences are broader.

Zeitschrift für klinische Medizin, Berlin

Jan. 27, 1923, **96**, No. 1-3

Heinrich Quincke. G. von Bergmann.—p. 1.
*Motility, Nerves and Pathology of the Bile Ducts. K. Westphal.—p. 22; p. 52; p. 95.
*Etiology of Hypertension. W. Weitz.—p. 151.
*Blood Platelets and Thromboblasts. R. Stahl.—p. 182.
*Heart in Sportsmen. H. Herxheimer.—p. 218.
*Pulse Changes as Heart Function Test. P. Holzer and E. Schilling.—p. 236.
*Proteolytic Ferment in Grippal Pneumonia. O. Abraham.—p. 245.
*Blood Sugar and Alimentary Glycemia in Old People. A. Punschel.—p. 253.

Action of Nerves on the Bile Ducts.—Westphal observed with roentgen rays in many cases of gallstone colic a marked restriction of the movements of the right side of the diaphragm (a visceromotor reflex). An analogous sensory reflex is the sensitiveness of the right phrenic nerve in the neck which was present in many cases (15 among 25), similar to that found by Costa and Troisier in Weil's disease. He found in experiments on animals that the sphincter musculature extending to the duodenal papilla shares also in expulsion of the bile. Its function resembles that of the antrum and sphincter of the pylorus. Slight electric and pharmacologic irritation of the pneumogastric causes a contraction of the gallbladder and peristalsis of the sphincter. Strong irritation causes a general increase of tonus and retention of the bile. Irritation of the sympathetic or paralysis of the pneumogastric decreases tonus and inhibits motility. The evacuation of the bile is inhibited by hyperfunction of the muscles in the duodenal portion, by hypofunction of the muscles of the ducts and bladder, and as a reflex. He believes that the basis of pathologic conditions is a neurosis, which may appear either as an increased motility (for instance, in cholelithiasis of pregnancy), in other cases as a decreased motility. A survey of literature is given.

Etiology of Hypertension.—Weitz made careful investigations among the families of eighty-two persons suffering from hypertension. He found that a larger percentage of the parents had died from apoplexy or heart disease than in other families. Also that death occurred earlier in parents of younger patients than in the parents of older persons with hypertension. In his material, always one parent, at least, suffered from hypertension. Fully 50 per cent. of the brothers or sisters of the patients by the time the age of 55 was reached were suffering from or had died from hypertension. It seems that the condition is inherited as a dominant character. He did not find any indications suggesting exogenous factors like nicotin or alcohol. Such factors and emotions seem to injure the heart and make the existing hypertension more manifest. There was no relation of the general habitus to the disease.

Blood Platelets and Thromboblasts.—Stahl examined the number and morphology of blood platelets in the healthy and 125 sick persons. He emphasizes the importance of platelets with basophilic protoplasm; he considers them as young forms and calls them thromboblasts. Typhoid, Werlhof's disease (hemorrhagic purpura) and the hemorrhagic stage of pernicious anemia are good instances for study of the changes of platelets.

The Heart in Athletes.—Herxheimer examined 171 prominent sportsmen. The heart averaged only a little larger than in other persons. The largest hearts were found in ski skaters. The boxers had smaller hearts than average persons, and relatively the largest right ventricle. The ski skaters had a larger left ventricle.

Pulse Changes as Heart Function Test.—Holzer and Schilling confirmed the prognostic value of the difference between the heart beat and the radial pulse. When both figures become identical under the influence of treatment, the prognosis is good, especially if work does not cause a difference.

Proteolytic Ferment in Sputum and Urine in Influenzal Pneumonia.—Abraham examined the sputum and urine in eleven cases of grippal pneumonia. The proteolytic ferment did not appear in the sputum before the crisis or lysis, and its action corresponded to the number of polymorphonuclears present. The urine did not give parallel results, and even normal urine may contain a proteolytic ferment.

Blood Sugar and Alimentary Glycemia in Old People.—Punschel found that the elderly have a higher glycemia than the young (0.106 per cent. between 58 and 70 years, and 0.110 per cent. between 70 and 91 years, against 0.094 in younger persons). The blood sugar level after ingestion of 20 gm. of glucose is higher in older persons, and remains high longer than in young people. No glycosuria occurred in spite of this.

Zentralblatt für Chirurgie, Leipzig

Jan. 20, 1923, **50**, No. 3

Small Circular Instead of Linear Openings for Drainage of Wounds. Schubert.—p. 82.
*Resection Versus Gastro-Enterostomy. F. v. d. Hütten.—p. 84.
*Experiences with Operations for Goiter. K. Urban.—p. 86.
Nongonorrheal Epididymitis. V. Winkler.—p. 89.
Modified Operation for Hallux Valgus. S. Keszly.—p. 91.
Extra-Articular Means for Ankylosing of Hip Joint. Schmidt.—p. 94.

Resection or Gastro-Enterostomy in Gastric Ulcer.—In recent years, von den Hütten states, radical operative methods in gastric ulcer have been almost universally demanded, but of late he has noted that gastro-enterostomy has again come more into favor. Excision produces in place of the old channel an easily injured scar tissue, in which the blood supply cannot be as good as it was in the original lesser curvature. He has had again and again surprisingly good results from simple posterior gastro-enterostomy without exclusion of the pylorus. He therefore prefers gastro-enterostomy even for hard ulcers and those distant from the pylorus, because he is able to cure by this relatively safe intervention, and does not need to resort to resection with its much higher mortality. The only absolute indication for resection he finds is evidence of malignant disease.

Twenty-Two Years of Goiter Surgery.—Urban surveys his 2,500 goiter operations under local, or regional, anesthesia. The last fifteen years he employed as an anesthetic a 0.5 per cent. solution of procain for adults, with a preparatory injection of 0.01 gm. of morphin, and a 0.25 per cent. solution of procain for children. The normal dosage for adults, was 0.5 gm. He had no serious mishaps with this dosage. The addition of epinephrin caused rather serious hemorrhages and was discarded without lessening the anesthetic effect. He injects the anesthetic quite extensively through the operative

area, and endeavors to instill it into the underlying tissues of the lower pole of the goiter. He gave up deep instillations at the upper pole on account of the danger of blocking the vagus nerve. For children and very nervous patients he combined the local anesthesia with a few whiffs of ether. He used the Kocher so-called collar incision. If thyroid insufficiency was feared, he implanted goiter tissue from young persons, at first in the bone marrow or the spleen, but later, subcutaneously, beneath the mamma. He performed more than 100 such implantations. By these precautions, not a single case of myxedema occurred. He leaves a remnant of the thyroid at the mouth of the inferior thyroid artery, and proceeds very cautiously with the enucleation of the lower pole of the gland, since very often the inferior parathyroid lies embedded here in the loose connective tissue and, in adults especially, can scarcely be distinguished from fat. In every case of strumectomy, for a week at least (and in exophthalmic goiter, for several weeks) after the operation, the patients received only a milk and vegetable diet. This was done by reason of the fact that postoperative tetany is said to occur much less frequently in herbivora than in carnivora. He did not have a single instance of tetany in his whole series of 2,500 cases, whereas Kocher reports 0.5 per cent. tetany in his last thousand cases. The total number of cases ending fatally was 20, a mortality of 0.8 per cent. Cures or nearly complete cures were effected in about 80 per cent. of the 200 cases of exophthalmic goiter. Recurrence of nonmalignant goiter required a second operation in twenty-eight cases. In malignant goiter (sarcoma, carcinoma) no patient survived longer than one year.

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Modified Operation for Ectopia Vesicae. J. H. Zaaijer.—p. 114.
Early Surgical Treatment in Acute Poliomyelitis. Peiser.—p. 116.
*The Albee Operation in Tuberculous Spondylitis. König.—p. 119.
*Access for Periappendicular Abscess. Lükö.—p. 122.
Extra-Oral Anesthesia of the Mandibular Nerve. Chrapek.—p. 124.
Simplified Drip Irrigation After Prostatectomy. Cordua.—p. 126.
*Double Mask for Ether Narcosis. Jatrou and Wessely.—p. 127.

The Albee Inlay Graft in Pott's Disease. — König reports the results of the Albee operation in forty-six cases of tuberculous spondylitis. He designates 30 per cent. of the cases as failures; in about 70 per cent. of the cases the results of the operation were good, and in some instances extremely favorable.

Lumbar Incision in Periappendicular Abscess.—Lükö recommends the lumbar incision in most cases of periappendicular abscess. The evacuation of pus is complete, and the period of recovery is shortened. The lumbar incision is on the line of the Bergmann-Israel kidney incision, but he begins the incision 4 to 5 cm. lower down. After dividing the musculature and the fascia lumbodorsalis, the palpating finger along the cecum locates the abscess cavity, which is opened by blunt dissection. The lumbar incision is indicated, Lükö holds, in every case when a tympanitic percussion sound is heard over the abscess, and external examination makes it evident that the abscess can be reached from behind. The lumbar operation is contraindicated when palpation shows the abscess adherent to the anterior abdominal wall; also when the abscess inclines toward the true pelvis, as in this event a lumbar incision may injure the ureter.

Double Mask for Ether Narcosis.—The inside mask, which is covered with gauze, has a second much higher mask fitting tightly over it, which is likewise covered with gauze. On the second mask, the gauze is held in place by a metal ring with a spring. At the highest point of the outside mask an opening is made in the gauze, and either a small funnel is introduced to carry the anesthetic to the mask below, or the ether is poured a drop at a time directly on the inside mask. The amount of ether required is thus reduced one half, as the fumes do not evaporate so quickly in the enclosed space. No disagreeable features have been noted.

Casopis Lekaruv Ceskych, Prague

Jan. 13, 1923, **62**, No. 2

*Bacteriophagy in Pyocyaneus Cultures. J. Cancik.—p. 25.
*Treatment of Maxillary Sinus. V. Tesar.—p. 26.
*Tarry Stools in Cholelithiasis. V. Vysin.—p. 30.
*Tuberculosis of Lungs and Pregnancy. V. Müller.—p. 34.
Tubercle of Optic Disk and Choroid Tuberculosis. J. Janku.—p. 38. Cont'd.

Bacteriophagy in Pyocyaneus Cultures. — Cancik observed in fresh and old cultures of *Bacillus pyocyaneus* two types of colonies: one of them was bluish green and on this silvery spots appeared within forty-eight hours. These spots grew until the place appeared empty. Another type of colonies remained slightly green and seemed to be resistant. The lytic agent did not influence other bacilli.

Treatment of Purulent Inflammations of Maxillary Sinus. —Tesar describes his method of operation.

Tarry Stools in Cholelithiasis.—Vysin describes a case of cholelithiasis after operation with extensive changes and adhesions of the gallbladder. Tarry stools during the attack led to the wrong diagnosis of an ulcer of the duodenum.

Tuberculosis of Lungs and Pregnancy. — Müller observed twenty-two pregnant tuberculous women. He finds that pregnancy has no unfavorable influence on tuberculosis. The use of forceps is advisable. He found in guinea-pigs a favorable influence of pregnancy on experimental tuberculosis.

Hospitalstidende, Copenhagen

Jan. 17, 1923, **66**, No. 3

*Sugar Content of the Blood. K. M. Hansen.—p. 37.
*Agglutinin Tests in Icelanders. S. Jonsson.—p. 45.

The Sugar Content in Arterial and in Venous Blood.—The charts from four persons show a rise in the sugar content of venous blood and blood from the ear after ingestion of 60 gm. of glucose. The curves diverge widely in normal subjects. Hansen tries to explain why, on the other hand, the two curves tend to run parallel in patients with polyarthritis and diabetes.

Agglutinins in the Blood of Icelanders.—Jonsson examined the blood for iso-agglutinins in 800 subjects at Reikjavik; neither age, complexion, health or sickness, or region seemed to have any influence.

Jan. 24, 1923, **66**, No. 4

*Roentgen Localization of Brain Tumors. A. Wimmer.—p. 53.
*The Heart After Severe Physical Training. K. Secher.—p. 61.

Roentgen Localization of Brain Tumors.—The partly ossified brain tumor in Wimmer's case gave a clear roentgenogram, allowing a permanent cure by its safe removal. His patient was a woman, aged 42, with hemiplegia of gradual onset three months before.

Size of Heart After Cessation of Active Physical Training. —Secher tabulates the findings from twenty-two animals. His experiments confirm anew the remarkable power of adaptation of the heart to extra work and to return to normal conditions.

Jan. 31, 1923, **66**, No. 5

*Wassermann Test in the Tuberculous. H. Boas and C. With.—p. 69.
*Decline in Weight of Heart After Epinephrin. K. Secher.—p. 90.
*Total Acidity in Stomach. R. Ege.—p. 94. Conc'n No. 6, p. 101.

The Wassermann Reaction in the Tuberculous.—A positive reaction was obtained only in three of 1,343 cases of tuberculous skin affections. The response was always negative in 758 cases of surgical tuberculosis, and in 376 of pulmonary tuberculosis. The research was done at the official Serum Institute for Denmark.

Subsidence of Heart Weight After Injection of Epinephrin. —Secher has reported recently that hearts enlarged by physical training subside to normal again when the extra work is suspended. He here presents similar evidence of the adaptation of the heart to a transient chemical influence and its recovery thereafter. Rats were the animals used in these experiments.

Determination of Total Gastric Acidity.—Ege explains that the simplest method is to titrate the aspirated contents to the original reaction of the test meal. The best indicator for this with the Ewald test meal is the "brom-cresol-purple reagent." The figure thus obtained is a relative measure of the acid secreted by the stomach. He comments on the causes of error when phenolphthalein or other indicator is used.

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EARLY RECOGNITION AND ECONOMIC ASPECTS OF HEART DISEASE*

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NEW YORK

It is the acquirement of skill in perception and logical deductions therefrom that justify the restrictions of public health measures, which are often so irksome and irritating to the individual. More accurate and more detailed knowledge of disease requires wider gathering and immediate recording of information by trained observers.

Experience teaches the value of learning what organ or function is impaired when a person is incapacitated, but the importance of applying the same known principles of investigation in public health problems is not widely recognized.

Just now it is my desire to direct attention to the incapacity and increasing number of deaths due to disease of the heart.

It has become a routine to examine a patient for the evidence of impairment of the heart during, or soon after, the occurrence of diseases such as tonsillitis, rheumatism, chorea, bone or joint pains, scarlet fever, diphtheria, pneumonia, typhoid, syphilis or gonorrhea; but in many instances active diseases or actual defects do not cause incapacitating effects until long after the destructive process was initiated and skilled observers could have recognized it. Yet it is not common for the apparently well to be examined.

To illustrate how insidious the source of the infection of rheumatism may be, it was stated recently,[1] at an interhospital conference in Budapest, that acute rheumatic fever was an infection passed to children in breast milk. St. Lawrence,[2] in a study of 100 cases of heart disease in 100 separate families, found that there were 480 other persons, adults and children, in these families, who could be considered as exposed. In the group of 580, excluding the original 100 with heart disease, he found that seventy-one, or 14.8 per cent., had had acute rheumatic infections; forty-nine, or 10 per cent., had had acute rheumatic fever, and thirty-eight, or 8 per cent., had heart disease. That is, for every hundred children with heart disease, he found thirty-eight others in the families exposed, and not all of them knew of their condition until after his examination. These figures are instructive, and are suggestive of the possibility of an actual infection distributed by contact. It does not, of course, exclude the possibility of simultaneous exposure to similar climatic and weather living conditions and to the same sources of an infection with a selective affinity for the myocardium. One can venture safely the remark that few of the exposed described above are examined regularly or frequently for evidence of active or past infection. This finding is a definite indication for the careful, general, periodic examination of all those living in contact with persons having rheumatism or heart disease, at least, until other findings corroborate or refute these.

The examination of large numbers of children attending the schools of New York City shows that there are somewhat less than 1 per cent. with organic heart disease. Assuming this morbidity to apply to the schoolchildren of the whole country, there would be approximately 200,000 children with heart disease between the ages of 6 and 16 years. Most of these children enter school with the handicap; therefore, it is clear that there is a large group of children of preschool age with heart disease.

During the war there were, up to December, 1917, 3,764,000 men sent to camp from civil life,[3] of whom 550,000 were rejected because of defects, of which 11.5 per cent. were cardiac defects, while other circulatory defects brought the percentage up to 15, which makes circulatory defects rank second as a cause of disqualification in the whole group. Organic heart disease disqualified 3.1 per cent. of all the drafted men in the second, third and fourth decades of life.

Examination of those working in industry and of those applying for life insurance finds two in every hundred handicapped by organic heart disease. Children of preschool age, schoolchildren, young men and industrial workers all show the presence of a relatively large percentage of defects due to the circulatory system.

A survey recently completed by the Association for the Prevention and Relief of Heart Disease of ten hospitals of New York City, having 7,799 beds, representing nearly 25 per cent. of the hospital beds (32,000) of the city, showed that there were cared for 4,831 patients, requiring 244,521 bed days, or nearly 10 per cent. of the total capacity (2,836,635 bed days) of those hospitals. The average daily cost was $2.69, and amounted to a total of $658,379.10, an average cost for each patient of $1,961.17.

Nov. 1, 1922, there were registered in forty-three cardiac clinics in New York 5,904 patients, or approximately 25 per cent. of the patients visiting all the outpatient departments of the city in one month. This proportion is somewhat larger than one person in

* Read before the Section of Social and Economic Sciences, American Association for the Advancement of Science, Boston, Dec. 28, 1922.

1. Acute Articular Rheumatism in Children, Budapest Letter, J. A. M. A. **79**: 1441 (Oct. 21) 1922.

2. St. Lawrence, William: The Family Association of Cardiac Disease, Acute Rheumatic Fever, and Chorea, J. A. M. A. **79**: 2051 (Dec. 16) 1922.

3. Ireland, M. W.: Physical Defects Discovered in Selective Draft Men During the World War, J. A. M. A. **79**: 1579 (Nov. 4) 1922.

every thousand (0.1 per cent.) of the total population of New York City, 5,751,859, who are under special care for organic heart disease. This group represents an economic loss of at least $600,000, and, considered with the group cared for in the hospital beds, shows that New York City had a known loss or expense of $1,250,000 last year. This does not consider loss from impaired productivity because of unrecorded or unrecognized heart disease. The care of ambulant and bed patients with heart disease costs a large outlay in actual funds each year.

TABLE 1.—*States in Which Death Rate Was Greater than 150*

	Death Rate	Excess*
Vermont	228.5	86.6
New Hampshire	204.6	62.7
Massachusetts	195.2	53.3
New York	191.5	49.6
Maryland	165.1	23.2

* The number of points above the rate for the registration area is ascertained by subtracting 141.9 from the death rate.

TABLE 2.—*Increases in Death Rate*

	Death Rates		
	1910	1920	Increase
Washington	86.3	115.8	29.5
Minnesota	89.4	113.7	24.3
New York	167.5	191.0	23.5
Utah	83.3	106.8	23.5
Maryland	142.1	165.1	23.0

TABLE 3.—*Cities in Which the Death Rate Greatly Increased*

	Death Rates		
	1910	1920	Increase
Boston	192.8	233.7	40.9
Syracuse	168.2	215.8	47.6
Grand Rapids	123.0	155.6	32.6
Minneapolis	95.1	130.2	35.1
Chicago	140.3	158.5	18.2
New York	142.5	167.8	25.3
Borough of Manhattan	131.0	167.3	36.3

FIGURES FOR ACTUAL DEATHS

In 82.2 per cent. of the population,[4] there was a death rate of 141.9 for each hundred thousand, and the total number of deaths was 124,143, which represents 10.9 per cent. of the number of deaths from all causes.

During the six years 1915-1920, there were more deaths from organic heart disease than from tuberculosis. Several states show death rates over 150, and from 23 to 86 points above the rate for the registration area (Table 1).

Several states show increases in the death rate of 23 or more points since 1910 (Table 2).

Several of the cities show great increases in the rate for ten years (Table 3).

The increase in the borough of Manhattan was 10 points greater than for the city as a whole. Fourteen cities had death rates greater than 150, and showed from 16 to 91 points above the rate for the registration area, 141.9 (Table 4).

If the rate in the registration area outside the cities is compared with rates in the cities, a large increase is found in the cities (Table 5).

During these ten years, the rate in the registration area increased only 2.3 points, while the rate in the cities increased 15 points. The rate in cities in 1910 was only 7.3 points higher, but in 1920 it was 20 points higher than the rate in the registration area outside the cities.

4. Report of Department of Commerce, Bureau of Census, 1920, p. 49.

The number of deaths from organic heart disease in 1920 in the cities was greater than that for the registration area outside the cities (Table 6).

The total deaths from all causes in the registration area totaled 1,142,558, a rate of 13.1; in cities, 613,508, a rate of 14.2. Thus though the death rate of cities is higher and the actual number of the deaths in cities was 53.6 per cent. of all, deaths in cities from heart disease were 54.2 per cent. of all deaths from heart failure.

In the state of New York, there were 19,961 deaths from organic heart disease, or 16.07 per cent. of all the deaths from heart disease, while the total number of deaths from all causes (144,558) in the state forms only 12.6 per cent. of the total number of deaths (1,142,558) in the registration area. In Massachusetts, the deaths from all causes (53,498) are only 4.6 per cent. of the total deaths in the registration area, while deaths from organic heart disease (7,569) are 6.1 per cent. of all the deaths from organic heart disease in the registration area. Thus, in both states, deaths from organic heart disease form a relatively higher proportion of the total deaths from organic heart disease in the registration area than do deaths from all causes in each one of those states compared with the total deaths from all causes.

In the city of New York there were 9,507 deaths, or 7.6 per cent. of all deaths from organic heart disease. Thus, one in every six deaths from organic heart disease occurs in the state of New York, and one in every twelve occurs in the city of New York. In Boston (1,756), only 1.41 per cent. of all the deaths from organic heart disease occurred.

TABLE 4.—*Cities in Which Death Rates Were Greater than 150*

	Death Rate	Excess Over Registration Area
Boston	233.7	91.8
Albany	228.2	86.3
Worcester	227.6	85.7
Syracuse	215.8	73.9
San Francisco	212.2	70.3
New York	167.8	25.9
Chicago	158.5	16.6

TABLE 5.—*Increase in Cities over Rate in Registration Area Outside the Cities*

Year	Registration Area Outside Cities	Cities	Increase in Cities
1910	186.0	193.3	7.3
1920	188.3	208.3	20.0
	2.3	15.0	

TABLE 6.—*Deaths from Organic Heart Disease*

	Registration Area	Cities	
		Number	Per Cent.
White	113,059	61,669	54.5
Colored	11,084	5,660	51.0
	124,143	67,329	54.2

COMPARISON WITH MORTALITY FROM OTHER DISEASES

The importance of the mortality from organic heart disease may be stated in another way; for, in age group 1 to 4, heart disease causes one-third as many deaths as scarlet fever, and one-fourth as many deaths as whooping cough. At ages 5 to 9, heart disease causes [5]

5. Statistical Bulletin, Metropolitan Life Insurance Company 3:6 (No. 8) 1922.

more deaths than do any of the so-called children's diseases, excepting diphtheria, and has a higher death rate than pulmonary tuberculosis. Between 10 and 14, heart disease has a heavier mortality than all four children's diseases combined.

If an analysis of the deaths for 1920 is made, one finds that 621, or 0.5 per cent. of all deaths from heart failure, occurred in the first year; 1,094, or 0.8812 per cent., in the first five years; 2,015, or 1.622 per cent., in the first ten years. In the age period from 10 to 59, 38,318, or 30.86 per cent. of all the deaths, occurred, and 83,660, or 67.39 per cent. of deaths, after 60 years. After 40 years, 109,759, or 88.4 per cent. of all deaths from heart disease, occurred. Dr. Dublin [6] has said that one must not permit the relatively high death rate of later life to obscure the importance of death from heart disease in childhood, for, expectancy of life at birth is 55.08 years, while the expectation at 60 is only fifteen years.

The same author has thus stated the importance of heart disease before 1920 in terms of adult disease: Under 25 years of age, organic heart disease causes as many deaths as typhoid fever. Between 25 and 34 years of age, organic heart disease causes as many deaths as lobar pneumonia. Between 35 and 44 years of age, organic heart disease causes more deaths than chronic interstitial nephritis. After 45 years of age, organic heart disease shows a higher death rate than any other cause.

During the last nine and one-half years, life expectancy at birth has been raised from 46.63 to 55.08, or 8.45 years; but during the same period actual deaths from organic heart disease have been increasing.[7] If one considers the extension of life expectation to 65 years, as Dr. Dublin has shown in his lecture to the Harvey Society, to be quite rational with our present knowledge, the probability of adding to this expectancy by saving or preventing deaths from heart failure in the younger age group is great, as has been shown, while the possibility of reducing the high rates of some states and cities to the average for states and cities affords a second great field for prevention and economic saving.

If one assumes the population of the United States to be 106,418,175, and that 2 per cent. have organic heart disease, it would show a figure of more than 2,000,000, which, compared with the number of deaths, shows a proportional morbidity figure of seventeen cases for one death.

The extension of life expectancy one year means to this country 100,000,000 life years; and, figured at $100 a year, means $10,000,000,000. With 2,000,000 of the population directly or indirectly handicapped by organic heart disease, the production of the whole country is impaired at least $100,000,000 worth; for persons with heart disease not only cannot support themselves, but are an economic burden.

It is interesting to reproduce here the figures some statistician has collected and published, showing that in 1921 there was expended in the United States an average per capita of $10 for candy, $9 for education, 50 cents for chewing-gum, and 29 cents for health.

CONCLUSIONS

1. There is undoubtedly a large, increasing economic waste from organic heart disease, particularly heavy in the cities. The measure to which it is reducible and preventable depends on the vigor with which it is combated.

2. There is need of more education of the laity and of the profession to procure a periodic examination of the sick and the well.

3. A program must be devised which all public health agencies, correlated and coordinated, can execute without duplication of effort.

4. With a promising program, the community can and undoubtedly would give its support, so that the $9 spent for education would produce the expenditure of at least 30 cents to purchase health, as well as $10.50 for candy and chewing-gum.

152 West Fifty-Eighth Street.

6. Statistical Bulletin, Manhattan Life Insurance Company **2**: 3, 1921.

7. Statistical Bulletin, Manhattan Life Insurance Company **3**: 1 (No. 9) 1922.

THE LIFE INSURANCE VALUE OF GRAPHIC HEART RECORDS

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Applicants for life insurance are generally free from gross, conventional physical signs of heart disease. Persons who have such signs—shortness of breath, early limitations on effort, murmurs, cardiac enlargement, etc.—are probably aware of their limitations or are already acquainted with the physical findings in their case through previous examinations. Therefore, they do not, as a rule, expose themselves to the stigma of rejection.

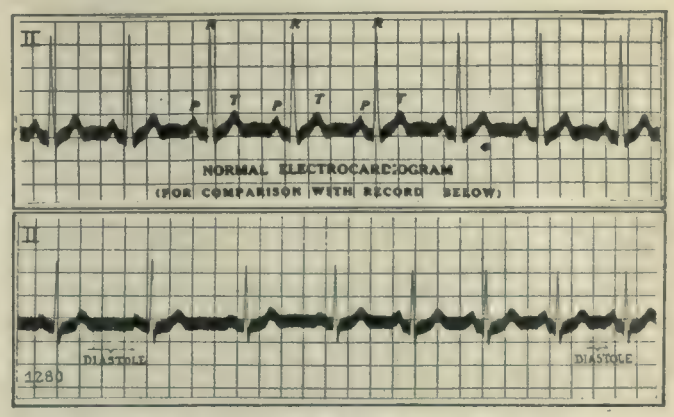


Fig. 1.—Sinus arrhythmia: The lower figure shows only a gradual shortening of the space between beats as the record proceeds. However, the normal auricular-ventricular sequence of events remains unchanged, for each P (auricular) wave is followed by the R-T (ventricular) waves.

DETECTION OF EARLY HEART DEFECTS

There is a further reason why the applicant is not likely to present any of the customary and classic signs of heart defect. The average age of those seeking life insurance is probably around 30 years. At this period of life, the powers of resistance are at their highest and vitality is at its best. Therefore, if the heart has some defect, as yet unrevealed, which may be a heritage from the infections of childhood, the defect is usually not manifest in physical signs; or if focal infections are throwing a load on the heart which may eventually result in a cardiac break, the high bodily resistance and recuperative powers of young adult life are usually sufficient to overcome the earlier signs of heart load.

Since such masked possibilities may invalidate the customary methods of heart appraisal, it is of definite value to know that in such apparently healthy men the

recently introduced methods of cardiographic examination often yield evidence of unsuspected heart conditions; conditions which, were they to continue until the age of perhaps 45, would by that time have so progressed as to be manifest in physical signs of heart fault sufficiently pronounced to constitute cause for rejection of the applicant. It is well known that there is an increased percentage of rejections for cardiovascular cause at 45 years, over similar rejections during the third decade of life; and a quite likely explanation is that, as the years advance, the wear and tear on a heart that has been resisting the effects of focal infection or resisting a heritage from the "innocent" infections of childhood may be uncovered by the manifestation of physical signs.

PHYSIOLOGIC IRREGULARITIES AND HEART PROTESTS

On the other hand, there are certain irregularities which are characteristic of the youthful heart (Figs. 1 and 2) and which are at times accompanied by auscultatory phenomena that cause the cautious examiner to reject the applicant as a potential heart risk, even though the life histories of persons similarly affected have, time and again, shown the error of such judgment. A heart record made at the time of examination would have identified the irregularity as physiologic; the acceptance of the applicant would have been warranted and the clinical judgment fortified by the physiologic record written by the heart itself. Again, it is perfectly possible for the more severe focal infections and toxins (Figs. 3 and 5) to produce clinical symptoms of heart muscle inefficiency to a degree that simulates actual structural heart disease with the attendant physical signs of heart enlargement and abnormal sounds. Such symptoms and signs are present as long as the toxic causes are present and are sufficient warrant for the rejection of the applicant. But on removal of the cause, the heart no longer protests (Figs. 4 and 6), the symptoms abate, the physical signs disappear and the heart is amply able to support the individual indefinitely.

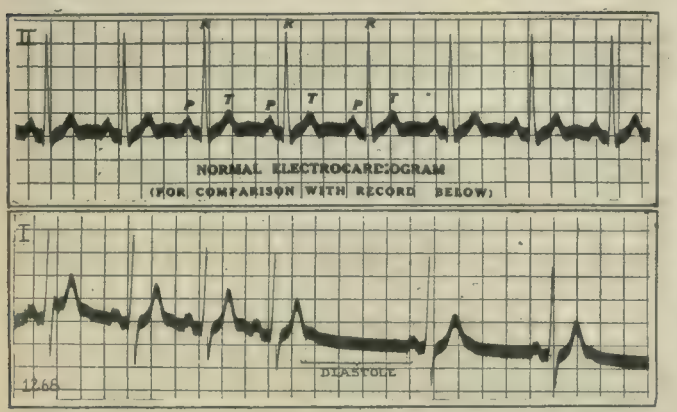


Fig. 2.—Sino-auricular block: In the middle of the lower record the diastole suddenly lengthens, as though a beat had dropped out. Here again the P-R-T sequence remains unchanged, as in sinus arrhythmia. Both irregularities are believed to be due only to a change in vagal tone.

ECONOMIC LOSS THROUGH INSUFFICIENT HEART APPRAISAL

In the first of the foregoing instances, that of the applicant rejected because of a physiologic irregularity, and in the second instance, that of the applicant rejected on account of remediable heart protests, profound economic losses have been sustained by the individual and by the corporation concerned. The applicant has not only been denied the protection which life insurance affords him or his dependents: his efficiency is impaired by the thought that rejection for heart disease is a pronouncement sufficient to curtail his activities and limit all his undertakings. The insurance companies suffer an annual loss in premiums which, in the aggregate, must be enormous. Both sources of economic loss could have been avoided in many instances by the employment of cardiographic investigation. A further avoidable source of loss is that attendant on the payment of death benefits to insured persons who, at the time of

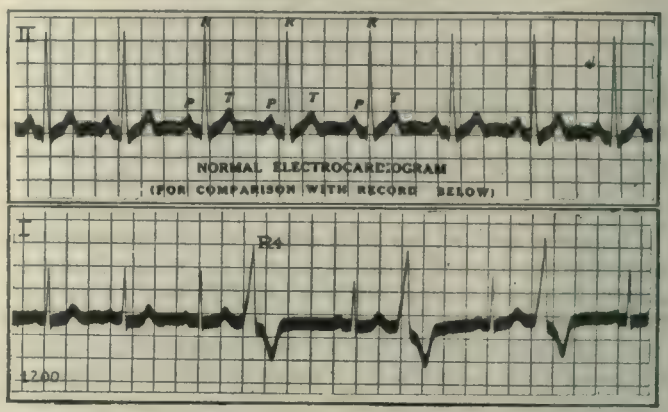


Fig. 3.—Ventricular premature contractions: The fourth R (ventricular) spike in the lower record is distorted and occurs in advance of its anticipated interval, shortening the usual flat rest period between beats. It is followed by a longer diastole than usual, called the "compensatory pause." R waves 6 and 8 are also premature.

examination, were free from the usual clinical signs of heart defect and were yet nevertheless victims of structurally defective heart musculature (Figs. 7, 8, 9 and 10), a fact which is being proved repeatedly by written heart records.

Consideration of a few recent cases will illustrate the points set forth above and will serve to establish the life insurance value of graphic heart records.[1]

ILLUSTRATIVE CASES

CASE 1.—During a routine examination for life insurance, a young man was found to be in good physical condition excepting for an irregular pulse. The previous history was negative. There were no symptoms or signs referable to a possible heart defect, nor was the youth conscious of any physical limitations. It had been noted that the pulse was more irregular in rate at the beginning of the examination than it was half an hour later; therefore the applicant was referred for cardiographic study. The record (Fig. 1) identified the irregularity as sinus arrythmia, which is a physiologic condition in youthful hearts, due to the effect of respiration on the vagus; the pulse rate increases on inspiration, decreases on expiration and remains unchanged when the breath is held. Naturally, the more rapidly a person breathes (as when under the excitement incident to the beginning of an examination), the more marked are the rate variations. On cardiographic determination of the innocent nature of the arrhythmia, the applicant was accepted.

1. In order to simplify the illustrations, only one of the customary three records is shown in each figure. (Illustrations are reduced one-third.) Each of the illustrations is surmounted by a normal record. When a heart record is normal, each group of movements begins with the P wave, which is associated with auricular contraction. This P (auricular) wave, two tenths of a second later, is followed by a tall spike called the R wave, which is associated with ventricular contraction. The R (ventricular) wave, which is synchronous with the first sound of the heart, represents that ventricular activity which produces the pulse at the wrist. The R (ventricular) wave is followed by a more slowly rising wave called T, which is also associated with ventricular activity. Following the T wave, the record is flat, and this flat line corresponds with the diastole of the heart. Every P-R-T event is a rhythmic repetition of its predecessor. Each wave is directed upward and is evenly spaced; that is, each wave occurs at a stated and regular distance from its fellows. Furthermore, every wave is the same shape and size. These features, in brief, constitute a normal electrocardiogram. The record is abnormal when one or more waves change in sequence, amplitude, direction, duration or distance.

CASE 2.—A very active youth of the athletic type had been refused life insurance on three occasions for the reason that the pulse was irregular after exercise. An agent for a fourth company was sufficiently impressed by the youth's physical powers and freedom from heart symptoms to refer the applicant for cardiographic study. The irregularity (Fig. 2) was

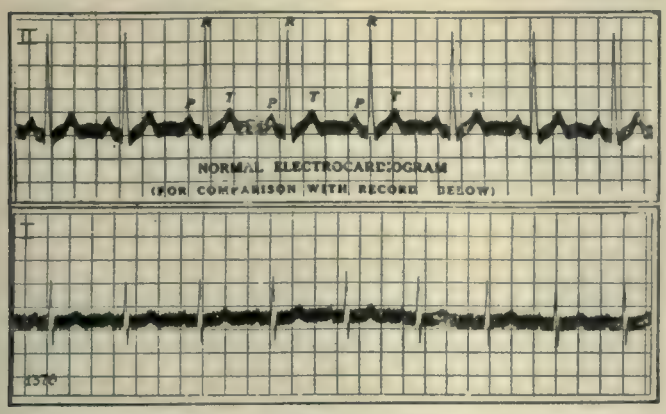


Fig. 4.—Disappearance of premature contractions: The lower record, taken several months later, demonstrates that the premature contractions shown in Figure 3 have completely disappeared, following the removal of a toxic cause; viz., infective tonsils. The record is now normal.

found to be due to "sino-auricular block," which is produced by a change in vagal control; no evidence of heart defect was found, and on submission of the record the applicant was "accepted for any amount up to $100,000"; although one wonders why any limit whatever was placed on the applicant's insurability by the accepting company.

CASE 3.—The person whose record is shown in Figure 3 was advised not to apply for insurance, as the multiple premature systoles would produce a disturbance of the pulse and a synchronous alteration in heart sounds which might readily be considered as an evidence of structural heart muscle fault. Further physical examination and bacteriologic culture

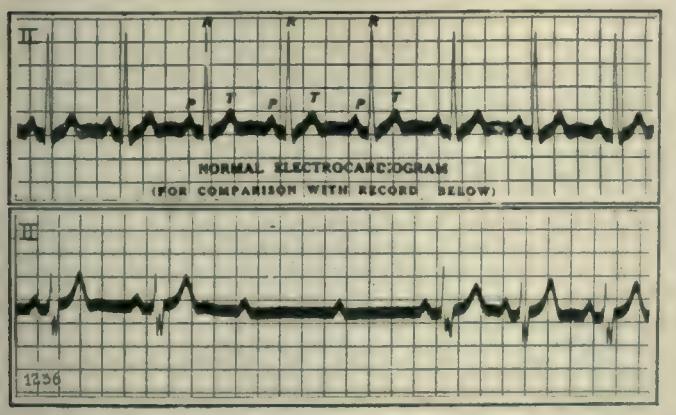


Fig. 5.—Actual dropped beats: In the lower record, the auricles continue to beat uniformly, but the ventricles fail to respond to the third and fourth auricular impulse. Following this long pause, the pulse begins to beat regularly again, as shown by the presence of the R waves.

revealed infective tonsils as a possible toxic cause of the heart disturbance, and the tonsils were removed. The pulse irregularity soon began to decrease in frequency following tonsillectomy, and after a few months disappeared completely (Fig. 4). As subsequent records remained normal, there was no cardiographic evidence of heart disturbance, and the person was advised that insurance might be applied for.

CASE 4.—The person whose record is presented in Figure 5 was considered a poor risk on account of an irregular pulse, and the graphic record established the cause of the irregularity to be actual dropped beats. The auricles contracted regularly, but at times the ventricles failed to respond. This ventricular silence was accompanied by an absence of the pulse at the wrist. The condition is a low grade heart block and may eventuate in block of higher grade; hence, it is not an insurable condition. It seemed from the history that the irregularity was present only when the patient had been drinking liquor of undetermined source and purity; when the poisonous liquor was abandoned, the pulse irregularity disappeared (Fig. 6) and, from a cardiographic standpoint, the man became insurable.

CASE 5.—Figure 7 shows auricular flutter, in which the auricles are contracting regularly at 225 beats a minute, while the ventricles average 105 beats a minute. The irregularity is a serious one, impossible of recognition by clinical examination; electrocardiographic records alone can establish its presence. On detection of auricular flutter, I should reject, without further consideration, any person in whom it had once been graphically proved; for no matter by what means it is corrected, auricular flutter has a tendency to recur. The young man whose record is presented in Figure 7

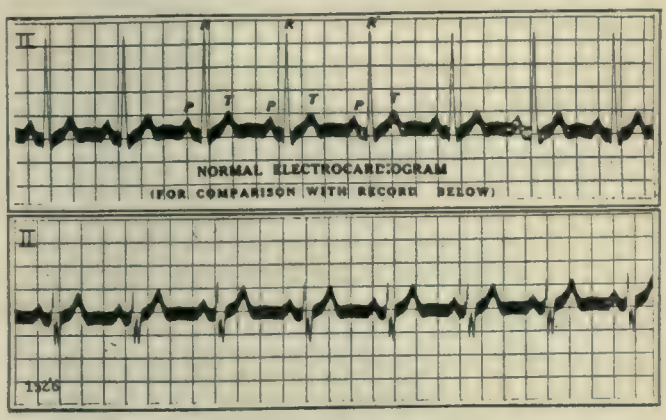


Fig. 6.—Disappearance of dropped beats: The lower record, taken a few weeks later, demonstrates that the actual dropped beats shown in Figure 5 have completely disappeared, following the removal of a toxic cause; viz., poisonous liquor. The record is now the individual's normal.

was conscious of "only a rapid beating of the heart when climbing stairs to the elevated train" and was surprised when his dentist insisted that the heart rate, during dental extraction, was too fast to be counted. Figure 8, taken after exercise, proves that the statement of the dentist was correct, for either excitement or exercise would cause the ventricles to respond to *every* auricular impulse, rather than to every other auricular impulse as before; and the pulse rate at the wrist was 255 beats per minute.

The insurance moral of this case lies in the fact that the man, two weeks previously, had been accepted by two insurance companies. It is left to the reader to estimate how long

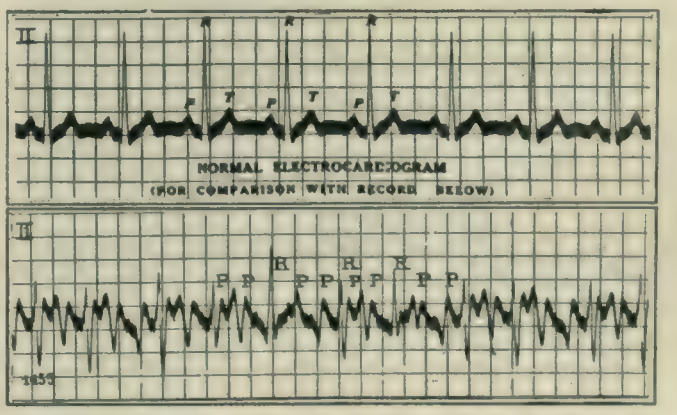


Fig. 7.—Auricular flutter: In the lower record, the auricles (P waves) are beating twice as fast as the ventricles (R waves), the rates being 255 and 105, respectively. It is impossible to establish this condition by clinical examination. Auricular flutter is indicative of serious heart muscle abnormality.

the heart may be able to respond to physical effort which raises the ventricular rate to 255 beats per minute. Certainly, an effective circulation cannot be maintained for long, and two insurance companies are likely soon to have to pay sick

benefits to a person invalided by heart disease, or death benefits to a widow.

CASE 6.—The applicant in this instance was middle aged and sought a great amount of insurance. The previous history was good as far as ascertainable, and the pulse was fairly regular; but the graphic record established that auricular fibrillation was present (Fig. 9). Auricular fibrillation, as is well known, is indicative of grave heart muscle

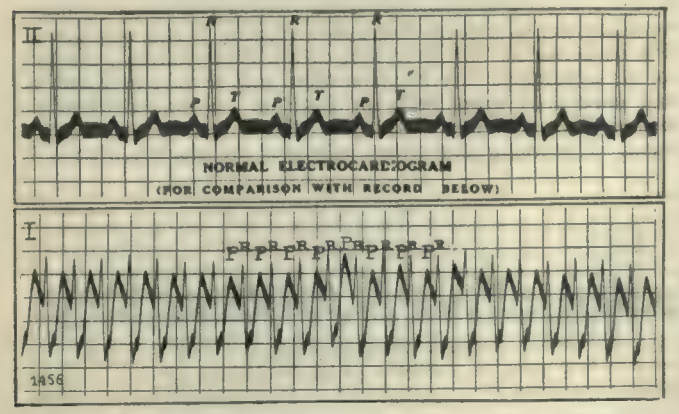


Fig. 8.—Auricular flutter aggravated by ordinary effort: The lower record shows a ventricular rate of 255 beats a minute, following the simple exercise test of stair climbing. In Figure 7, the ventricles responded only to every other auricular impulse; in this figure, the ventricles respond to each auricular impulse.

disease; in persons who are up and around, it usually signifies structural heart muscle damage, although it may occasionally be transient and of fleeting toxic origin. When confronted by the record, the applicant stated that electrocardiograms taken in Germany twelve years previously, and at intervals since, had established the same irregularity to his satisfaction, but that he had learned to modify his life so that he had no discomfort or inconvenience whatever, and had recently been insured by two insurance companies for large amounts.

The applicant, in deceptive health, was rejected on two premises: 1. Auricular fibrillation may terminate spontaneously at any time, and, when it does, emboli are likely to be set free from the enlarged right auricle, with resultant death from embolism. 2. The applicant was already middle aged, and the affected heart could not be expected to hold

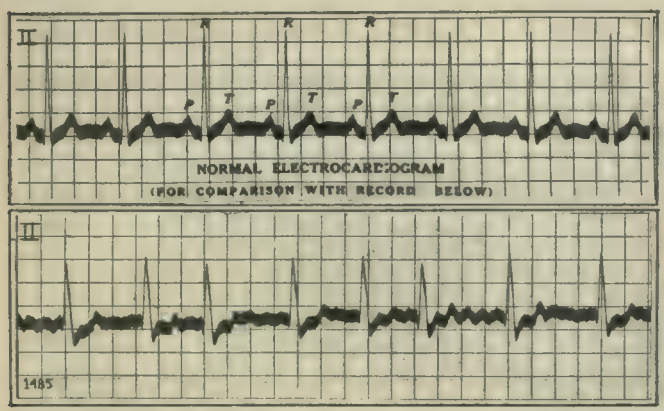


Fig. 9.—Auricular fibrillation: Despite the fact that the pulse beats in the lower record are fairly regular, as shown by the R (ventricular) spikes, auricular fibrillation is definitely established by the absence of regularly recurring, definitely formed and evenly spaced auricular (P) waves in front of the R spikes.

out as well in the future against the burden of advancing years as it had in the past, when the bodily recuperative powers were at a higher level.

CASE 7.—A man past middle age asked on his own account that a cardiogram be made, giving as his reason the fact that his curiosity had been aroused by an insurance examiner who, a few weeks before, had been "puzzled by the heart sounds." The record (Fig. 10) showed that the ventricular muscle was so structurally altered that it delayed the passage of the contraction impulse and one ventricle contracted later than its fellow. It was a cause for rejection of the applicant, had the "puzzled" examiner but desired to avail himself of the information which written heart records can often give when the heart sounds are split or unduly prolonged. The policy, however, was delivered. That was fifteen months ago. The death benefits have since been paid.

CONCLUSIONS

1. It is possible, by written heart records, to detect heart affections that cannot be recognized by any other method of examination. Thus electrocardiography is of importance in any life insurance or other examination in which a knowledge of the physical fitness of the individual is of first consideration.

2. There are certain pulse irregularities that are not an evidence of heart disease, and graphic records that establish the physiologic character of such irregularities are additional warrant for the acceptance of the applicant for insurance.

3. The heart can protest, symptomatically and physically, against the effect of toxins without being structurally diseased, and such heart protests will often

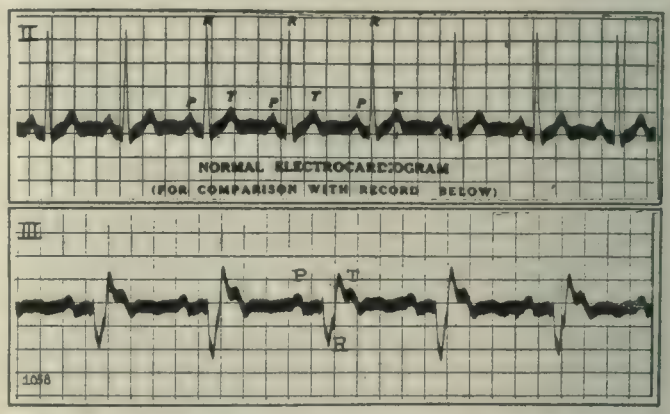


Fig. 10.—Structural change in heart muscle: "Chronic myocarditis": Because the ventricular muscle was diseased, the passage of the ventricular impulse was so delayed that the usually slender R spike (directed downward in this instance) is broadly spread out at its base; also, the distance from the beginning of the P (auricular) wave to the beginning of the R (ventricular) wave is much longer than normal, a further indication of delay in the passage of the impulse. Such a condition could be clinically suspected perhaps, but when it is established by a heart record, there is no longer room for doubt.

disappear on removal of the cause, thus rendering the applicant insurable.

4. The routine employment of cardiographic investigation will prevent economic losses to insurance companies in three ways: (1) by determining the innocent nature of certain pulse irregularities which might be considered cause for rejection by those insufficiently trained in modern cardiology; (2) by furnishing written evidence that a remediable heart fault has been corrected, and (3) by furnishing definite, indisputable evidence of structural heart muscle defect that is impossible of determination by any other method of examination.

323 South Eighteenth Street.

History of Medicine in America.—At the Sixth Latin American Medical Congress, held recently at Havana, Dr. D. Tamayo stated that, within eighty years after the discovery of America, four universities had been founded, and by the end of the third century there was a total of eleven. His address on the history of medicine in America is reproduced in *Vida Nueva* **14**:261, 1922.

PARTIAL OBSTRUCTION AT DUODENO-JEJUNAL JUNCTION AS CAUSE OF ULCER OF DUODENUM

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The most frequent cause of partial obstruction at the duodenojejunal angle is the mesocolic band, described by W. J. Mayo in 1908. Until that time the vicious circle following gastro-enterostomy was the terror of all operators. Since Mayo published his description of this band and advocated its separation before gastro-enterostomy is performed, the vicious circle after gastro-enterostomy has been rarely seen. However, he seemed to attach no importance to the presence of this band as the cause of duodenal ulcer.

My attention was drawn to its presence as a cause of duodenal ulcer in 1910. After separation of the band that extended down for 5½ or 6 inches below the duodenojejunal flexure, the contents of the stomach and duodenum were seen immediately to pass down into the jejunum. The patient appeared to be dying on the table, and the abdomen was closed without the performance of a gastro-enterostomy, although the duodenum and the pylorus were apparently involved in a large ulcer, and many large gallstones were present in the gallbladder. The patient recovered from the operation, and was apparently clinically cured of the ulcer. Two years later, she was operated on again for the relief of recurrent attacks of gallstone colic. At the second operation, no evidence of ulcer could be seen. Cholecystectomy and appendectomy were done, and she has remained clinically well to the present time.

In 1911, I observed by fluoroscopy the last portion of the test meal remain in the duodenum for more than two hours. The stomach emptied in four and one-half hours, but enough of the last portion of the test meal remained in the duodenum to be plainly seen for two hours longer. The action of the duodenum was carefully watched. Five hours after the meal was swallowed, half an hour after the stomach appeared to be empty, quite a mass was in the transverse and ascending portions of the duodenum. Ten minutes later it had returned to the first portion of the duodenum. A fairly well defined cap was present. Some of the test meal passed back through the pylorus and was plainly seen in the stomach. The last portion of the test meal made the excursion from the pyloric region to the distal end of the duodenum and back again about every twenty minutes. Pain was always present while it was returning to the pyloric region. Six and one-half hours after the meal was taken, the patient became very hungry and faint. Another test meal was given, and the stomach commenced to empty rapidly. Three fluoroscopic examinations were made four weeks apart with practically the same findings. At operation we found, not the jejunomesocolic band we expected, but a very strong ligament of Treitz that was kinking the intestine at the duodenojejunal flexure and holding it tightly against the head of the pancreas. Separation of most of the ligament of Treitz relieved the kink and afforded more room. Immediately the duodenal contents passed into the jejunum. Nothing more was done, although the large duodenal ulcer seemed to have invaded the pylorus. The patient made a good clinical recovery, and no duodenal stasis has since been discovered, although she has had several similar examinations.

Since that time we have demonstrated fifty-two times at operation that duodenal ulcer and partial obstruction at or near the duodenojejunal flexure were present at the same time, and that surgical relief of the partial obstruction permitted the duodenal contents immediately to pass freely down into the jejunum. This makes, with the two cases reported, fifty-four.

In fourteen, a definite jejunomesocolic band was present. In ten, veils or light adhesions, seemingly of inflammatory origin definitely kinking the jejunum near its origin, were found. In nine, the obstruction was due to the irregular shape of the opening through the mesocolon or to the ligament of Treitz. In six of them the duodenum was ptosed to such an extent that a very acute angle was formed at its terminal portion. In fifteen cases the obstruction was due to more than one of these causes.

The operative procedure of the fourteen cases in which there were jejunomesocolic bands consisted merely in separating this band up to the duodenojejunal flexure and covering over the raw surface on the under side of the mesocolon with peritoneum, and then attaching the jejunum to the under side of the mesocolon in such a way as to approximate the raw surface left on the jejunum after the separation of the band with the under surface of the mesocolon in such a position as to eliminate the kink. In all these cases it was turned to the left, while before operation it turned sharply to the right. The appendix was removed in five cases, the gallbladder in four; both appendectomy and cholecystectomy were done in two. Nothing else was done in three cases.

In the ten cases due to veils or inflammatory bands, the kinking seemed to be due more to twisting of the jejunum than to angulation. In two of these ten cases the bands extended entirely around the jejunum, making a definite and inelastic ring that narrowed the caliber of the intestine. Cholecystectomy was done in four of these ten cases, cholecystotomy in two, appendectomy in two, and both appendectomy and cholecystectomy in two.

In the nine cases due to irregularities in form at the mesocolic opening, the condition seemed to be aggravated in four cases by a very low pancreas, and in five by a large, irregular head of the pancreas. In two, severance of a portion of the ligament of Treitz seemed to relieve the interference at once. In four, it was necessary to notch the edge of the opening in the mesocolon and to anchor the jejunum in a different position. In three cases it seemed necessary to separate several small bundles of fibers that appeared to be narrowing the opening and constricting the intestine, and then anchor the jejunum to the mesocolon for a short distance from its origin. Cholecystectomy was done in two cases, appendectomy in one, and both cholecystectomy and appendectomy in one. In five there was no other surgical interference.

The six patients with ptosed duodenum were subjected to plication of the inferior layer of the mesocolon, notching of the edge of the mesocolic opening, and change in direction of the first part of the jejunum. Three of them were subjected to suspension of the right kidney. One had appendectomy, four had appendectomy and cholecystectomy, and one had cholecystotomy.

In the fifteen cases in which there were more than one cause for the partial obstruction, there were ptosis of the duodenum and acute angle from fixation by bands or veils of the jejunum to the right in seven.

Plication of the right mesocolon and notching of the edge of the opening and anchoring of the jejunum to the left were done. In four there was general enteroptosis, and the intestine was kinked at the flexure like a rubber tube hung on a nail. In these four cases the mesocolic opening was notched, and the jejunum anchored in the left position. A Bainbridge intestinal stasis operation was performed, with a colon, kidney and liver suspension by the Hazen method. One patient had a strong jejunomesocolic band 6 inches below the flexure, and many slight adhesions above that point, with thickening and dilatation of the jejunum proximal to the band. One had an apparent hernia of the terminal portion of the duodenum down through the opening. It appeared to be fixed at the right side of the opening but not at any other point; about 1½ or 2 inches of the left side seemed to slide down through the opening. Narrowing of the opening, anchoring of the jejunum to the left and severance of several adventitious bands were done.

The other two patients had, in addition to jejunomesocolic bands, an irregular mesocolic opening that caused the intestine to pass for a distance of 1½ inches between the folds of the mesocolon before it emerged from between the layers. As some large blood vessels were in the edge of the folds, the mesocolon was split anteroposteriorly and the peritoneum tucked into the enlarged opening and sewn in place. The jejunomesocolic band was severed and the jejunum fixed to the left. Four appendixes and two gallbladders were removed, and stones were removed from the common duct in one case. Nothing else was done in three cases.

These fifty-four cases of duodenal ulcer in which gastro-enterostomy was not done were selected from a series of 264 consecutive cases of duodenal ulcer. In the other 210 cases, gastro-enterostomy was done.

During the same period of time, gastro-enterostomy was done in thirty-two cases of ulcer of the stomach. When any obstruction is present at the pylorus, we consider gastro-enterostomy absolutely necessary.

During this period of time, while the abdomen was open for other procedures we severed a jejunomesocolic band, separated adhesions, or notched the edge of the mesocolic opening or the ligament of Treitz 310 times, when the preoperative diagnosis included "probable ulcer of the duodenum," but ulcer could not be definitely demonstrated at operation. Doubtless, ulcer was present in many of these cases but could not be demonstrated.

These fifty-four cases were carefully selected. All but eleven patients had some other operative interference at the same time, but the final clinical recovery from ulcer in all of these cases has been so satisfactory that we believe that obstruction at or near the duodenojejunal angle is at least one of the causes of duodenal ulcer.

Nine different times during the last two years the bismuth solution has been observed passing up into the bile ducts while the duodenum was being injected. In one case the gallbladder entirely filled, and its outline was definitely seen by the fluoroscope. By the time that a roentgenogram could be made, most of the solution had disappeared from the gallbladder and from the duodenum. Some very fine, soft stones were present in the gallbladder, and these showed up beautifully in the roentgenogram. They were doubtless still covered with a fine film of bismuth.

CONCLUSIONS

Partial obstructions at the duodenojejunal junction are sometimes the cause of duodenal ulcer, or make the conditions favorable for its development. In some appropriate cases, removal of these partial obstructions without gastro-enterostomy will be sufficient for the cure of the ulcer.

DEFECTIVE DIET AS A CAUSE OF STERILITY

FINAL REPORT OF FERTILITY STUDIES IN THE ALBINO RAT *

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In 1920 and 1921, working at the Bussey Institution in collaboration with Dr. Edward Reynolds [1] of Boston, I carried out certain experiments with rats to determine the effect of deficient diets on breeding and to see whether we could produce sterility by this method. The work had been suggested to us by certain effects of deficient diet as reported by Dr. E. V. McCollum [2] of Johns Hopkins University. He had found that rats on deficient diets not only failed to make satisfactory growth but often failed to reproduce. The diets used in our experiments were so designed as to permit growth (Table 1). They were, however, deficient in one or more important elements.

TABLE 1.—*Composition of Diets*

Stock Diet—Normal			
Hominy	33.25	Skim milk powder	11.0
Rolled oats	33.25	Salt	0.5
Meat scrap	22.0		
In addition, unlimited amounts of special "dog" bread with analysis: carbohydrate, 65%; protein, 15%; fat, 7%; calcium phosphate, 6.7%; fiber, etc., 6.3%.			
Diet A—Low in Calcium			
Whole wheat	67.5	Sodium chlorid	1.0
Casein	15.0	Inert substance	1.5
Whole milk powder	10.0	Cod liver oil	5.0
Diet B—Low in the Fat Soluble Factor			
Rolled oats	40.0	Salt mixture (McCollum)	3.7
Gelatin	10.0	Dextrin	40.3
Casein	5.0	Cod liver oil	1.0
Diet C—Low in Protein and Calcium			
Wheat whole	60.0	Dextrin	32.5
Sodium chlorid	1.0	Cod liver oil	5.0
Inert substance	1.5		
Diet D—Generally Deficient Diet			
Wheat bran	20.0	Gluten meal	10.0
Wheat middlings	14.0	Meat scrap	12.0
Ground oats	13.0	Alfalfa meal	20.0
Corn meal	9.5	Powdered chalk	1.5

The result of these early experiments bore out what might have been anticipated, and we did actually produce a certain number of completely sterile animals. Postmortem examination showed that there were no gross anatomic abnormalities, and sections of ovaries and testicles failed to show any noteworthy changes in these organs. We had used for our work a strain of albino rats that had been inbred by Dr. Helen D. King [3] of the Wistar Institute for thirty-three generations,

* This work was aided by a grant from the Elizabeth Thompson Science Fund.

1. Reynolds, Edward, and Macomber, Donald: Defective Diet as a Cause of Sterility, J. A. M. A. **77**: 169-175 (July 16) 1921; Certain Dietary Factors in the Causation of Sterility in Rats, Am. J. Obst. & Gynec. **2**: 379 (Oct.) 1921.
2. McCollum, E. V.: The Newer Knowledge of Nutrition, New York, the Macmillan Company, 1918; Ed. 2, 1922.
3. King, Helen D.: J. Exper. Zool. **26**: 335, 1918; **27**: 1, 1919; **27**: 29, 1919.

brother and sister mating. She had found that inbreeding at first much reduced health and fertility, but that if the individuals chosen for continuing the strain were selected for vigor, the fertility and health of the stock became restored, though at a somewhat lower level than for controls. In order to accumulate a sufficient number of these rats for our experiments, it became necessary to continue the inbreeding.

In this way we accumulated records of a good many matings of rats on normal diet. We found that there was the greatest possible difference in the fertility of the various individuals. For instance, the matings of certain individuals were practically invariably successful, whereas in other cases only one or two out of a number might be positive, and there were all degrees of variation between them. We were forced, therefore, at the outset to the conclusion that, even in this closely inbred strain, individuals varied as to fertility as well as in other characteristics. As stated above, we found that the effect of deficient diets was to produce some actual sterility; but when we came to consider the breeding records of the animals placed on these diets, we discovered that we had made all of them less fertile than those raised and kept on the stock diet. It seemed at first that we had produced a great deal of sterility. Our method had been to keep the animals on the diets at least one month, and then to mate them while still on the diet with other animals treated in a similar manner. A very large proportion of these matings was unproductive. We did not feel, however, that it was fair to conclude that the animals were sterile unless further matings had been tried. For this purpose we used highly fertile animals which had been raised and proved to be fertile on the stock diet. The result of these rematings in many cases was immediate reproduction. In thirty-seven cases it proved that both of the animals supposed to have become sterile through diet and which were unable to have young together proved to be promptly fertile when remated with these new and highly fertile partners. In many other cases, one of the original pair proved fertile.

It seemed impossible to explain these results with any knowledge at our command, and we were forced to formulate an hypothesis of relative fertility. The problem was how to explain the fact that two individuals who might have a sterile mating together would promptly reproduce with other partners. They must have been fertile in some degree all the time; but, apparently, their degree of fertility was not sufficient when combined to produce young, and yet was sufficient for reproduction with more highly fertile partners. Our theorem, in brief, was that the fertility of a mating could be expressed as the product of the fertility of the individuals concerned, and that if this mating fertility was below a certain level, which we called the threshold for reproduction, no young would result, but that if it was above this level the mating would be positive. This hypothesis we advanced in a tentative way, for we realized that we had not sufficient experimental proof to confirm it in any conclusive way. It seemed advisable to collect a large number of breeding records to test it out. As controls, we had the records of 1,381 rats bred by Dr. Castle on stock diet. They were of many varieties as far as genetic constitution is concerned, and were as a whole highly fertile. Out of 1,172 females, 1,109 were fertile, four were completely sterile, fifteen were doubtful, and forty-four were killed or died from disease or other cause. Of 209 males, 190 were fertile, seven were sterile, nine were doubtful, and three died or were killed. The fertility of this stock was therefore very high, and is to be contrasted with that of the inbred rats, in which the percentage of sterile and doubtful cases was very much higher.

We now proceeded to mate these animals with our rats of decreased fertility. As stated above, the effect of diet on the inbred animals had been to reduce fertility still further and to increase the amount of sterility. We have records of 622 matings of these inbred rats. Some of the matings were between rats whose fertility had been artificially lowered by deficient diet; some were between inbred rats naturally of lowered fertility, and some with proved animals from the control stock. Thus, every possible combination was made in our matings.[4] An analysis of these records shows that there were forty-six rats which were mated five or more times; nineteen, four times; thirty-three, three times, and forty-two with only one or two matings each.

If we for the moment disregard all those rats which had less than five matings, and classify these forty-six animals according to the percentage of successful matings which each had, we can get perhaps a rough indication of their comparative fertilities. There were only two in which 80 per cent. or better of the matings were successful; in five, between 60 and 80 per cent. were successful; in ten, from 40 to 60 per cent.; in ten, more than 20 to 40 per cent., and in five, less than 20 per cent. In addition to these, thirteen other animals proved to be completely sterile.

This immediately gives us a rough method of classifying the fertility of these individuals, but it will, of course, give a false picture to this extent, namely, that the other partner of each mating must be taken into consideration, and that a negative mating with a rat all of whose matings are equally negative should not be counted as necessarily detracting from the fertility of the first individual. In other words, the breeding record of every individual must be considered in conjunction with that of the individual with which he has been mated, and the latter in turn with the records of those other rats with which they have been mated. It will be seen that it is possible by a method of trial and error and repeated revaluation gradually to approximate figures which will represent the degree of fertility for all individuals concerned. It is convenient to make these estimates as percentages; when fertilities are so estimated, it is found that in practice the figures so obtained can be used to calculate the fertility of a mating, and to predict whether it will be a productive or an unproductive one. If equations are made, substituting for these individual fertilities as calculated, figures will be obtained giving various mating fertilities. When these are arranged in a series, it will be seen that the value for all matings found experimentally to be positive is above a certain figure, and, on the contrary, all those that proved to be unproductive will be below that figure.

This figure proves to be in the neighborhood of 0.50, or 50 per cent. We gave it the name of the threshold for reproduction. There were, however, certain exceptions to the general rule, but it was found that they were grouped closely about this level. In order to explain these anomalous cases, we put forward the suggestion that, instead of a rigidly fixed value, such as 50 per cent., for the threshold, there is rather

4. These records are being published in greater detail in an article to appear shortly in the American Naturalist.

a doubtful zone extending above and below it. With this change we can now state definitely that all matings above the doubtful zone were positive, and all matings below were negative. With our present rough methods of estimating individual fertilities, it is impossible to predict certainly whether a given mating will be positive or negative if it falls within this zone.

If this theory of the threshold value for fertility is accepted as a working hypothesis, it proves to be of the greatest help in further correcting some of the estimations of individual fertilities.

These estimated values have been gathered together in Table 2 and arranged in five columns. The first column is made up from 1,300 odd breeding records furnished us by Dr. Castle as controls. These were

TABLE 2.—*Fertility Distribution* *

	Castle Rats on Stock Diet	King Rats on Stock Diet	Fertile Adults on Deficient Diets	Growing King Rats on Deficient Diet	Growing King Rats on Special Deficient Diet
100	1,299 individuals	1, 3, 4, 5, 6, 9, 12, 24, 25, 26, 45, 48, 49, 50, 51, 52, 67, 69, 70, 118, 53		87a, 95b	
90			3b.		
		66, 80		35b, 54b, 57a, 62a, 72b, 97b, 58b, 92a	122, 123, 125, 130, 132, 137
80	1 individual		4b, 5b, 26b, 67b, 25b, 48a?	27b, 36b, 37b, 71b, 74b, 75b, 77b, 83c, 84c, 86c, 93a, 94b, 104a, 59b	94, 124, 128
70		44, 63, 64, 68	6c, 12c	16a, 61c, 76a, 78a, 101a, 103a, 105a	131
60	8 individuals	43	9c?	32Fb, 55b, 73b, 88a, 96b, 106b, 107b, 108b, 15c, 21a, 28b, 17c, 85a, 99a, 100b	120, 126, 146
50	8 individuals	65, 79			
40	10 individuals	116	24b, 50c, 51b, 52c, 69c, 53a	13c, 14c, 18c, 19c, 20a, 29a, 30b, 32Ma, 34b, 38a, 39a, 56c, 60c, 81c, 82c, 98b, 102a	119, 121, 127 129, 136, 143
0		Spontaneous variation in fertility of inbred (King) rats	Effect of deficient diets on fertility of inbred adults	Effect of deficient diets on fertility of growing inbreds	Effect of generally deficient diet on growing inbreds

* Numbers are experimental numbers assigned individual rats. When followed by a small letter a special diet is indicated; a stands for Diet A; b stands for Diet B, and c for Diet C. For the explanation of this table, the reader is referred to the text.

between vigorous animals raised and mated on the stock diet. Their genetic constitution was, as stated, of the most varied type. The second column is made up of all the inbred albino rats on the stock diet of which we had definite records. The last three columns show the effect of various deficient diets on the fertility distribution among the inbred rats. The third column is for adults which had been raised to maturity on stock diet, and whose fertility had already been proved before they were submitted to the deficient diets. The fourth and fifth columns show the distribution for young inbred albino rats that were allowed to grow to maturity on the deficient diets (compare Table 1, Diets A, B, C and D). As will be noted, the control animals are recorded by totals only, whereas the experimental number of each of the other rats is given. These numbers are arranged on a fertility scale from 100 per cent. down to zero. The small letter after each number designates the particular diet to which that rat was submitted, and an analysis of these diets is given in Table 1.

Study of Table 2 brings out several interesting facts. The typical fertility distribution for highly fertile animals on a normal diet is shown in the first column. It will be observed that a good 95 per cent. are in the most fertile class; that there are a few animals which are of lesser degrees of fertility, and that there are a few more which are sterile.[5]

Column 2, while showing a somewhat similar distribution to the preceding, has more animals that are relatively less fertile. The series is too small to form a basis for deciding on the percentage of actual sterility developed by inbreeding; furthermore, when one considers the method by which these animals had been bred (only from those selected for vigor), it will be seen that this will be no true guide as to the effect of inbreeding on the production of sterility. Columns 3, 4 and 5 show that the effect of deficient diets on fertility is greatly to increase the numbers of relatively infertile and sterile animals, and this is true for adult animals as well as for growing animals, though to a lesser extent. The effects of the individual diets do not vary materially, except that the effect of Diet C, which is defective in two elements, is much greater than for either A or B, which are defective in only one. The diets used with the rats in Column 5 were generally deficient and were not specially designed, as were Diets A, B and C. They were made up chiefly of cereal products, and were lacking in vitamin content and succulence (Diet D, Table 1, gives the typical analysis).

The kind of dietary deficiency, therefore, is not important. It seems rather to be the degree, since, the greater the deficiency, the larger the proportion of sterility. The way in which the diet seems to affect sterility is through its general effect on the health of the individuals. The less the effect on health, the less on the average the effect on fertility.

CONCLUSIONS

There may be great individual variation in fertilities. Such variation is increased by inbreeding and by deficient diet. When the variation is great, the amount of sterility is also great. There are individuals whose fertility is so low that they are unable to reproduce with one another, but whose fertility remains sufficiently high to allow immediate and successful reproduction with highly fertile individuals. We have formulated a theory of fertility to explain these facts. It may be thus summarized: The fertility of a mating is the result of the product of the fertility of the two individuals concerned. If this mating fertility is above a certain level, the mating is productive; if not, it is unproductive. This level we have called the threshold of reproduction. A fairly large series of further matings and rematings has seemed to confirm this theory, at least in its general aspects. The subject requires further experimental study, and it would be interesting to determine whether there is any hereditary factor involved in fertility.

321 Dartmouth Street.

5. Postmortem examinations of these ten sterile rats showed nothing abnormal except pyometra in one female, and pus in the seminal vesicle in one male.

Phases of Hospital Work.—There are two main phases of hospital work to be kept in mind. The first is concerned with the advancement of medical science, the second with the care and cure of those who apply to the hospital for healing.—Howard and Lennox, *Mod. Hosp.* **20**:119 (Feb.) 1923.

HYPERTENSION HEART

THE MOST COMMON FORM OF SO-CALLED CHRONIC MYOCARDITIS *

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Preventive medicine has scored great triumphs in the realm of epidemic and infectious diseases, reducing the death rate from these diseases in civilized countries remarkably. This reduction is largely due to the accurate knowledge of the etiology of these affections gained through scientific studies on their causative organisms.

Whereas the death rate from epidemic diseases in consequence of our knowledge of their pathogenesis has on the whole been falling, the death rate from chronic diseases, notably cancer and heart disease, has been rising, 124,000 persons having died of organic heart disease, exclusive of acute endocarditis and pericarditis, in 1920.[1] Heart disease has now become the leader of the forces of death.

If we are to prevent heart disease in the future, or even increase the expectancy of persons having it, we must increase our knowledge of the factors concerned in its production. In this paper I shall attempt to prove that hypertension is the most important factor in the etiology of chronic heart muscle disease.

Chronic heart disease usually developing after the age of 40, due to a primary failure of the heart muscle and unassociated with valvular defect,[2] is generally termed chronic myocarditis.[3] Foci of chronic infection somewhere within the organism are most frequently assumed to be the cause of this heart muscle weakness. The greater majority of these hearts show marked hypertrophy and dilatation of the left ventricle, and diffuse connective tissue proliferation between the muscle bundles as well as into the muscle bundles. In addition, cicatricial patches are found, though much less frequently than generalized connective tissue proliferation. The above mentioned histologic changes are found in the heart muscle of those chambers of the heart that are called on to do increased work, and apparently are not due to inflammatory processes to any great extent.

For example, I found a great hypertrophy of the muscle of the right ventricle and auricle, the typical interfascicular and intrafascicular increase of connective tissue and large scars in the right ventricular musculature in two cases of marked pulmonary stenosis of congenital origin recently seen at necropsy. There was no microscopic evidence of active inflammation or of healed inflammatory processes in the heart muscle, and no history of any more than the usual amount and kind of childhood infections, as measles, mumps and an occasional cold. Both children had lived until late adolescence. Both had attempted to keep up so far as possible in work and play, and had shown signs of gradually increasing myocardial weakness. Here the chambers of the heart called on to do an excessive amount of work, and only these, had responded by hypertrophy, connective tissue proliferation and scarring. The left ventricles were slightly atrophied. To assume that a chronic infection extending over fifteen years and localizing only in the right ventricles and auricles was the cause of the histologic changes and heart failures in these cases is to do violence to our sense of logic.

The medical department of this university recently saw a patient with bronchial asthma of apparently great severity present since the age of 3 years, who died of heart failure at the age of 19. Necropsy revealed a marked hypertrophy and dilatation and some slight connective tissue hyperplasia of the right ventricle and auricle only. There were no signs of infective processes in the heart muscle. The left ventricle was normal. Here, again, that part of the heart called on to do increased work in overcoming the increased peripheral resistance in the alveolar circulation during forced expiration showed the most common findings of chronic heart muscle disease.

In cases of arteriosclerosis of the finer pulmonary arteries of such a degree that an increase in the pressure of the lesser circulation is necessary to keep up an adequate blood flow, hypertrophy and connective tissue hyperplasia are found in the right ventricle. The left ventricle of these patients usually shows no change. In valvular disease of the heart, the hypertrophy and connective tissue increase of the heart muscle are always found at necropsy in those chambers doing increased work.

It is true that in some hearts coming to necropsy with the diagnosis of chronic myocarditis, focal lesions strongly indicative of inflammatory processes are sometimes found. But, as Aschoff [4] has remarked, after a most careful examination of 150 hearts, the amount of apparent anatomic damage due to inflammatory processes both in chronic heart muscle insufficiency and in rheumatic fever heart disease is usually so small that other factors must be invoked to explain the progressive heart failure resulting finally in these conditions.

Stadler [5] has produced myocardial changes, such as hypertrophy, interfascicular and intrafascicular fibrosis and the cardiac edema and lymphatic infiltration described by Letulle,[6] by aseptically producing aortic and tricuspid valve lesions in animals which were kept alive for months after the operations. The myocardial changes were always found in the chambers called on to do increased work. The myocardium of these hearts corresponds histologically very closely to the usual picture of heart muscle in chronic heart muscle disease. Only the small and large scars frequently seen in so-called chronic myocarditis and due to small and large vessel thrombi are lacking in the heart muscles of these experimental animals.

No one has ever produced experimentally by inoculation with micro-organisms cardiac hypertrophy and interfascicular and intrafascicular fibrosis, the most common histologic changes in so-called chronic myocarditis. I therefore believe that there are no good grounds for assuming that chronic infections are the most important or the primary etiologic factor in the production of chronic heart muscle disease. On the other hand, I do not wish to be misunderstood. I recognize certain types of chronic heart muscle disease, as, for example, abscess in the walls of the heart, rheumatic fever nodules of Aschoff, and parenchymatous degeneration, due to invasion of micro-organisms. But the cases are rare in which a heart muscle is so extensively invaded by

* From the Department of Medicine, University of Minnesota Medical School.

1. Mortality Statistics, 1920.
2. Relative mitral insufficiency or relative tricuspid insufficiency is not included under valve defect. The valve is not damaged, but the muscle narrowing the insertion of the valve leaflets is ineffective in narrowing the ring to its normal systolic diameter.
3. Christian: Chronic Myocarditis, Tr. A. Am. Phys. **33**: 67, 1918.
4. Aschoff: Die heutige Lehre von den pathologisch-anatomischen Grundlagen der Herzschwäche, Jena, 1906.
5. Stadler: Experimentelle und histologische Beiträge zur Herzhypertrophie, Deutsch. Arch. f. klin. Med. **91**: 98, 1907.
6. Letulle: Recherches sur les hypertrophies cardiaques secondaire, Thèse de Paris, 1879.

inflammatory processes that these areas are sufficient to explain the myocardial insufficiency. It is therefore necessary to seek for other etiologic factors for chronic heart muscle disease not accompanied by valve defect.

INCIDENCE OF HIGH BLOOD PRESSURE IN FAILURE OF HEART MUSCLE

Dr. E. T. Bell of the department of pathology of the University of Minnesota suggested to me that hypertension must be associated with most of the cases of chronic heart muscle disease unassociated with chronic valvular disease. Following his suggestion, I have investigated the subject and have come to the conclusion that approximately three fourths of all so-called chronic myocarditis is due to a primary hypertension. Allbutt [7] and others have emphasized the frequency of heart failure in hyperpiesia, but I know of no one who has attempted to explain the majority of heart muscle failures unassociated with valvular defect on the basis of chronic hypertension and its effects on the heart muscle.

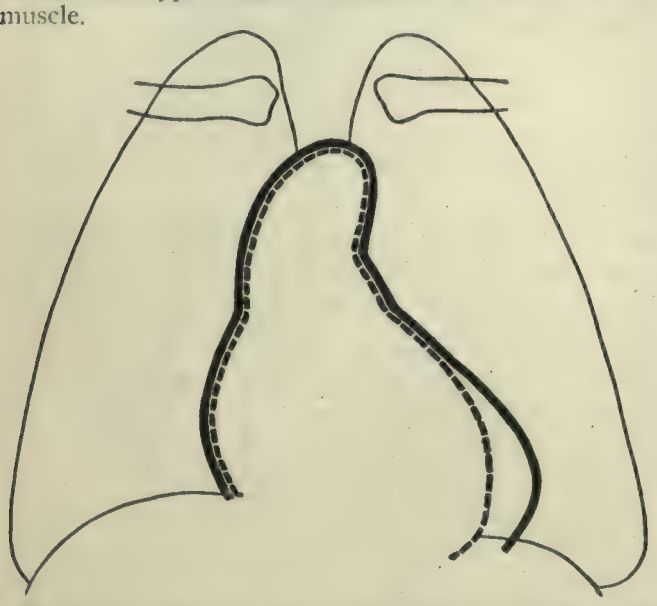


Fig. 1.—Frontal projection of pure left ventricular dilatation: solid line, aortic and hypertension heart outline; broken line, normal outline.

In 1918, Christian [8] showed that in 45 per cent. of 400 cases so diagnosed at the Peter Bent Brigham hospital, there was a systolic pressure of 170 mm. of mercury or higher.

I have examined the records of 142 cases diagnosed "myocardial insufficiency" or "hypertrophy and dilatation of the heart" at the Minneapolis General Hospital and at the University Hospital during 1922, and find that 109, or 75 per cent., had a systolic blood pressure record of 170 or over, and a diastolic pressure of 100 or over. About 10 per cent. of these cases came to necropsy and showed marked increase in weight of the heart, largely due to left ventricular hypertrophy.

It is well known that blood pressure not infrequently falls in hyperpiesis when cardiac insufficiency sets in. Moreover, blood pressure tends to fall in later stages of hyperpiesis, especially when arteriosclerosis of the larger vessels predominates, and tends to lower resistance. Some of our patients with chronic myocarditis were in the last stages of heart failure when they entered the hospital, and the blood pressure record taken only a few hours before death showed a pressure lower than 170 systolic, in consequence of which the case counted in our statistics as unassociated with high blood pressure, despite the fact that the patient may have had a very high blood pressure for years previous to the period of heart failure. Two of these cases in which there was a systolic blood pressure of only 140 were demonstrated at postmortem by Bell to present the typical picture of arteriosclerotic kidneys in the moderately advanced stage, so that there can be no doubt that these patients carried around with them high blood pressures for several years. I do not hesitate, therefore, to assert that our figures are probably lower than the actual incidence of high blood pressure in cases of chronic heart muscle failure at these two hospitals for 1922.

Traube and Sahli [9] have emphasized hypertension as a result of heart failure. The mechanism whereby increased blood pressure would result from heart failure was assumed to be an asphyxia of the medullary vasomoter center in consequence of lowered oxygen and increased carbon dioxid content of the arterial blood. In my estimation, high blood pressure of this type is an exceedingly rare condition. As a rule, the blood pressure falls somewhat during decompensation and rises during compensation in chronic heart muscle disease. This was the rule in our cases whenever blood pressure records were taken systematically over the period of compensation and decompensation. There was not a single instance in which the evidence favored a diagnosis of high blood pressure in consequence of stasis. We know that rest in bed results frequently in a drop in blood pressure in hyperpiesis, and it seems probable that some of the instances of supposed "high blood pressure of stasis" are simply those of a fall in pressure due to rest in bed with concomitant improvement of the heart. The systolic blood pressure in the majority of our cases was over 200. When the high blood pressure of medullary asphyxia results only in an increase of a normal systolic pressure of from 120 to about 160, the pulse frequency falls about one half. There was no evidence of vagus slowing in our records. It would seem that an increase in blood pressure due to heart failure is a factor of little importance in our statistics.

HIGH BLOOD PRESSURE AS PROBABLE CAUSE OF HEART MUSCLE FAILURE

Having pointed out the high incidence of high blood pressure in chronic heart muscle failure, it becomes necessary for me to show that it is the probable cause of heart failure. Allbutt,[7] the best informed student of hyperpiesis, remarks on the frequency with which these patients develop heart failure. Krehl,[10] in his treatise on heart muscle disease, attributes a certain amount of heart failure to high blood pressure. Romberg,[11] in his treatise on heart disease published in 1921, states that 35 per cent. of all chronic heart muscle disease is associated with arteriosclerotic kidney, which is equivalent to saying that at least 35 per cent. of chronic heart muscle disease is associated with chronic hypertension.[12] Forty-five per cent. of 117 patients with nephrosclerosis who came to necropsy in his clinic died of heart failure; 44 per cent. died of apoplexy, and only 11 per cent. died of uremia. His percentage for apoplexy seems very high. Bell, in reviewing the necropsy findings of some 4,000 necropsies performed here, finds that in approximately 70 per cent. of all those cases that could be proved to be cases of hyper-

7. Allbutt: Diseases of the Arteries, London, 1915.
8. It is only fair to Christian to state here that he did not attribute much importance to the blood pressure as a cause of chronic myocarditis in his cases.
9. Sahli: Tr. XIX Kong. f. inn. Med., 1901.
10. Krehl: Die Erkrankungen des Herzmuskels, Wien, 1913.
11. Romberg: Krankheiten des Herzens, Ed. 3, Leipzig, 1921.
12. The mean blood pressure in Romberg's cases of arteriosclerotic kidney was 184 systolic and 102 diastolic.

tension [13] by clinical records or shown with reasonable surety to be such by the pathologic findings, the patients died of heart disease. My own series of cases of hypertension not associated with glomerulonephritis contains a large proportion of early cases, so that it does not give an accurate idea of the proportion of cases that will finally end in death from cardiac failure. Despite the fact that many of my patients are in the earliest stages of hyperpiesis, 75 per cent. of them show definitely dilated hearts on accurate roentgen-ray examination. About 30 per cent. show mild or severe degrees of heart failure, as dyspnea on exertion, edema of the lower extremities, winter cough, paroxysmal attacks of cardiac asthma, enlarged liver, and angina pectoris. Not 5 per cent. show marked renal insufficiency at the present time. It looks very much as if the greater majority of these patients are destined for a death from heart failure.

Pathology offers some very good indirect evidence that chronic heart muscle failure is frequently associated with hypertension. Hecht,[14] in analyzing the results of 4,000 necropsies, finds that if valvular disease and chronic glomerulonephritis are excluded, 72 per cent. of all hearts showing hypertrophy and dilatation of the left ventricle are associated with arteriosclerotic kidneys. As arteriosclerotic kidney of this type is always associated with hypertension, it is clear that something like at least 70 per cent. of all chronic heart muscle disease must be associated with hypertension. Bell, in reviewing the necropsy findings of 4,000 necropsies performed here, finds that something like 70 per cent. of all the hearts of bodies showing the anatomic signs of cardiac decompensation and weighing over 400 gm. show left ventricular hypertrophy and dilatation, and no valvular defect to explain this hypertrophy. Increased blood pressure alone could give left ventricular hypertrophy and dilatation when aortic disease is excluded, for increased work of the heart due to increased minute volume must affect all chambers equally.

There is very good roentgen-ray evidence also that most of the so-called myocarditis or chronic myocardial insufficiency is associated with hypertension. I have now followed a large number of hypertension cases over varying periods of time with accurate roentgen-ray examinations. Some of these patients have been examined by the orthodiagraphic method and some by the teleroentgenographic method. The most common finding is the so-called "sabot" shaped heart (Fig. 1). This shape of heart is also found in aortic regurgitation. It represents a left ventricular dilatation without right ventricular dilatation. When these hearts fail, they frequently assume the form shown in Figure 2, which represents right ventricular as well as left ventricular dilatation. The failing heart in aortic regurgitation frequently assumes the form of Figure 2 also. I have seen a normally shaped heart under the influence of hypertension assume the form of Figure 1, and have seen Form 1 go over into Form 2 within one month's time during the development of a severe and fatal heart failure. Figure 1 can therefore be taken to represent the form of hypertension heart as well as that of the aortic heart. Figure 2 can be taken to represent the end stage of hypertension heart and aortic heart, though cases of both aortic disease and hypertension heart may prove fatal before Form 1 develops into Form 2.

13. Hypertension associated with glomerulonephritis was excluded from these statistics by microscopic examination of the kidneys.

14. Hecht: Statistisches über die Ursachen der Herzhypertrophie, Zentralbl. f. Herz. und Gefässkrankheiten **10**: 169, 1918.

Eight years ago, while practicing orthodiagraphy at Bad-Nauheim with Professor Weber, I was struck by the number of "sabot" shaped hearts among patients with chronic myocarditis. I have followed this subject for about eight years, and find that at least 75 per cent. of all hearts diagnosed "chronic myocarditis" "myocardial insufficiency" or "myocardial degeneration" show this type of heart. A few show the Type 2 form, mostly badly decompensated cases. Only hypertension and aortic disease can produce Type 1, for it represents a nearly pure left ventricular dilatation. As soon as mitral incompetency develops, the form approaches Type 2, which represents left ventricular dilatation, bulging at the conus pulmonalis area, right ventricular dilatation and right auricular dilatation. It is very interesting and suggestive that practically all our cases of hypertension heart roentgenographed this year by a most competent radiographer were diagnosed "aortic type of heart" by him when the heart was of Type 1, and "mitral disease" when the form approached Type 2.

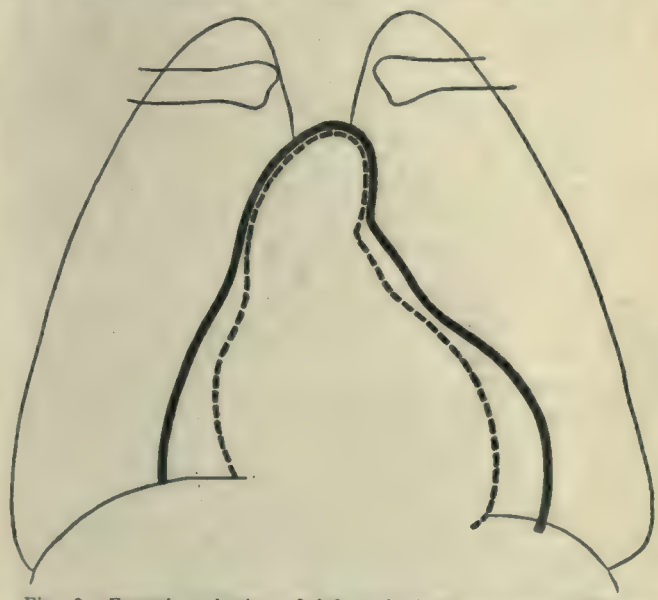


Fig. 2.—Frontal projection of left and right ventricular dilatation: aortic and hypertension heart outline in later stage after relative mitral insufficiency has developed; stippled line, normal outline.

I feel that the roentgen-ray evidence at present proves that about 75 per cent. of all heart muscle disease is associated with hypertension when valve defect is not present.

WHY THE HYPERTROPHIED HEART FAILS

I feel that the foregoing evidence proves that at least 75 per cent. of all chronic heart muscle disease unassociated with valve defect is due to hypertension. Why the hypertrophied heart fails, we can only conjecture at the moment. I am engaged on experimental work designed to get at the solution of this problem, and at present care only to point out that the heart in hypertension performs an amount of work far in excess of the work performed by the hearts of most athletes. It is to be remembered that the blood pressure in hypertension remains elevated throughout the day, dropping to nearly normal only during the night in early cases. Later on it remains above normal during the night also. If we assume a systolic blood pressure of 200 and a day of sixteen hours, then the hypertension heart performs approximately 65 per cent. more work during the sixteen hours than a heart in which the blood pressure is 120. Krogh has shown that the minute volume in severe exertion can be increased seven

severe exertion the blood pressure rises to 160, then it is easy to see that only when this severe exertion is performed continuously for about two hours and fifty minutes every day does the increase in work done by the heart equal that done by the hypertension heart. The increase in work done by the heart of the average athlete does not compare with the increase in work done by our hypertension heart. The factor of fatigue may very well be one of the factors in finally bringing about heart failure in hypertension.

Hill [15] has shown that the efficiency of the isolated voluntary muscle is less at high than at low tensions. Palmen [16] has shown that fatigue takes place sooner in a muscle doing the same amount of work per minute when the weight lifted is greater and the path shorter than when the path is longer and the weight correspondingly lighter. Finally, Evans [17] has shown that increasing the work of the heart by increasing the systolic pressure from 120 mm. to 160 mm. of mercury decreases the mechanical efficiency of the heart about 8 per cent., whereas increasing the work of the heart an equal amount through minute volume increase decreases the mechanical efficiency only about 2.5 per cent. In other words, a given increment of heart work probably causes greater fatigue when brought about by raising the pressure than when brought about by raising the minute output. Unquestionably, the rapid reduction of the mechanical efficiency of the heart muscle when it is forced to work against increased pressure is an important factor in inducing fatigue of the heart muscle.

In addition to this, I wish to point out that the hypertrophic heart muscle fiber is placed at a disadvantage in metabolism. All anabolic substances, as well as catabolic products, must enter or leave the cell through the cell membrane by diffusion. When a fiber enlarges, it does so only in diameter and not in length. The volume of the cell increases as the square of the diameter, the cell surface only as the diameter. If, therefore, the metabolic processes are proportional to the volume, the hypertrophic muscle fiber is placed at a disadvantage in the exchange of nutritive substance and waste products. The heart muscle remains contracted a larger fraction of the heart cycle when increased pressure is to be overcome, and it is possible that the consequent increase in the time during which the coronary flow is shut off is also a factor.

My examination of the case records used in my statistics revealed no evidence for the assumption that infections are an important factor in the production of heart failure in chronic heart muscle disease. Most of the patients showed no fever or leukocytosis. When there was fever, bronchopneumonia was usually diagnosed by the intern or attending staff man. On the other hand, I have frequently seen a case of hypertension holding its own up to the time of onset of severe upper respiratory infection, when decompensation would set in abruptly and terminate the case in a few weeks. That acute infections may cause enough damage to bring about severe decompensation in already weakened hearts is a fact of such universal observation that it can hardly be questioned. It is possible that chronic foci of infection do have an adverse effect on the overworked heart in hypertension. It remains for some one in the future to demonstrate this conclusively and to show quantitatively how great this factor may be. At present, the effect of chronic foci of infection on the heart in hypertension is more a matter of belief than of demonstration.

15. Hill, A. V.: J. Physiol. **46**: 435, 1913.
16. Palmen: Ueber die Einwirkung verschiedener Variabeln auf die Ermüdung, Skand. Arch. f. Physiol. **24**: 198, 1910.
17. Evans and Matsuoka: The Effect of Various Mechanical Conditions on the Gaseous Metabolism and Efficiency of the Mammalian Heart, J. Physiol. **49**: 378, 1914.

IMPORTANCE OF HYPERTENSION HEART TO THE PHYSICIAN

In 1920, more than 96,500 persons 45 years of age or older died of organic heart disease exclusive of acute endocarditis and pericarditis, 18 per cent. of all deaths in persons 45 years or over being due to this cause, according to the official mortality statistics. From a careful study of necropsy data as well as statistical data which I have collected on the incidence of valve defect, I believe that if we allow 6 per cent. of all deaths for valve defect and syphilitic aortitis, we are allowing more than is justified. This would leave 60,500 deaths for chronic heart muscle disease. Assuming that our figure of 75 per cent. is fairly accurate, we may reckon that 48,500 persons 45 years of age or older died of hypertension heart in 1920. In the same year, 60,500 persons 45 years of age or over died of cancer and other malignant tumors. The importance of hypertension heart is of the same order as that of cancer.

CONCLUSIONS

1. Hypertension is the most constant and most important factor in causing chronic heart muscle disease, often called chronic myocarditis.
2. About 75 per cent. of all cases of chronic heart muscle disease are associated with hypertension, or follow in its wake.
3. Chronic or acute infection plays a minor rôle in the production of heart muscle disease. Acute infection is an adverse factor in chronically weakened hearts.
4. Approximately 50,000 persons in the United States die of hypertension heart every year.

THE SURGICAL MANAGEMENT OF PATIENTS WITH GOITER*

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Perhaps in no other morbid condition does preoperative management count for more than in the patient with toxic goiter. In many respects, such patients react to surgical intervention not unlike epileptic and other neurotic patients; that is to say, one should be prepared for the unexpected. Despite intensive, continuous studies by the clinician, the goiter problem has baffled all attempts at standardization.

Disease of the thyroid is marked by distinct periods of rise and fall in the severity of the symptoms and intervals of quiescence. It is chiefly in the misinterpretation of the ebb and flow of these clinical phenomena that we ride to a fall in the management of patients with goiter. The history sheet should indicate the status on admission, i. e., whether the symptoms are increasing in severity, becoming less annoying, or are stationary.

One should determine as fully as the means at his command will admit the physiologic condition of the patient, with especial reference to the functional activity of the heart, liver, kidneys and nervous sys-

* Read before the Mississippi Valley Medical Association, Rochester, Minn., Oct. 10, 1922.

tem, before suggesting any line of treatment. Laboratory methods for determining metabolic rate and calcium content and the clinical reaction of the patient to epinephrin have, in a limited personal experience, been disappointing in results. Definite knowledge of the urinary output and of the intake of food, and its digestion and assimilation, is highly essential to success in the management of these patients. Observation of the patient's ability to withstand work and the influence of exercise and rest on the musculature of the heart is of signal value in determining the course of treatment necessary to bring such patients to the operating table in the best possible condition.

The history of the reaction of the patient's nervous system to the strain of his daily duties will give valuable evidence relating to the extent to which pathologic change and functional derangement have taken place in the various organs. An experienced clinician subconsciously observes the appearance of the eyes, skin, hair and nails in his attempts at interpreting the patient's physical condition.

The correlation of clinical and laboratory evidence will be of greatest value when we cease to give the latter precedence if it conflicts with the clinical history and physical findings. By far the greater number of patients with toxic goiter are suffering from acidosis; furthermore, the physical exertion which such patients put into their daily lives is not commensurate with the wear and tear they experience.

Mental and physical rest is the chief requisite in the preoperative management of toxic patients. In order to secure the fullest benefits from this measure, the physician must possess the unqualified confidence of the patient, and establish a mental repose wherein the patient becomes subservient to the persuasive commands of the physician, whose directions he obeys implicitly without asking why. In gaining this influence, the first move on the part of the physician should be directed toward disarming the patient's mind of all apprehension relative to final recovery from the disease. This is the stepping stone to controlling the mental trend and physical action of the patient.

The marked change for betterment in symptoms that follow a few hours of mental calm and physical relaxation are evidence of the merits of this plan. Manifestly, such patients should never be placed in the ward amid the confusion attendant on the going and returning of patients to and from the operating pavilion, and their recovery from anesthesia.

Physiologic repair and its ancillary rest, at best only relative terms, are insufficiently comprehended by physicians in their relation to the management of patients with toxic goiter. Rest, to be beneficial, must include repose not only of the body but also of the mind and the diseased organ. From this point of view, rest becomes, indeed, the balmy restorer, whose purpose it is to check needless expenditure of nerve force and other tissue exhaustion, to stay excessive chemical action and facilitate repair of damaged organs. The devitalizing influence of loss of sleep, with its attendant mental and physical fag, predisposes the healthy to disease, and the sick to despair. Our efforts to obtain relaxation are enhanced by cheerful surroundings and complete change in the mode of living. The addition of soothing strains of music and light stories has a place in the restoration of nerve force, muscular fatigue and cell waste.

Heretofore, our greatest concern in the preparation of the toxic patient has been for the restoration of heart function, omitting attention to skeletal muscular weakness, and altered liver, kidney, skin and gastrointestinal secretions.

The frequency with which altered secretions, as evidenced by jaundice, acidosis, constipation and scanty urine, complicate the history of such patients should serve to withdraw the attention of the clinician from the classic flamboyant syndrome of nervousness, tachycardia and exophthalmos. They are but so many notes in the physical disaster which involves the patient: local expressions of a central complaint demanding attention and correction for the safety of the patient.

Rest and relaxation in the horizontal position lessen the amount of force requisite to supply the tissues with blood, and this, in turn, decreases the frequency of the pulse rate and prolongs the interval of heart rest.

When drugs are required, opium, properly administered, becomes our sheet anchor in the production of rest for this organ.

Continued effort on the part of the attendants to solve the mental make-up of the patient, and the application of knowledge thus gained, will usually prove highly beneficial in allaying the patient's fears relative to his recovery, and permit him to glide into a mental poise that will induce coordinate action on the part of the patient to the suggestions of his attendants. In some of the highly toxic patients, this becomes a long and tiresome task; but diligence, perseverence and gentleness are usually successful.

Diet should be selected with special reference to overcoming the rapid oxidation which marks all toxic processes; the food should be light, agreeable and easily digestible, and the carbohydrates should predominate in the selections.

An elevation of temperature is frequently present in such patients; this aggravates the nervousness, and induces sleeplessness. Marked improvement follows the use of cold sponging, the application of the ice cap and the free use of alkaline drafts. In patients with myocardial degeneration, scanty urine, cloudy sclerae, dry skin and sluggish returning circulation, the full physiologic influence of digitalis renders signal service.

The drug must be employed with understanding, and the patient should be under the constant surveillance of one familiar with its practical application.

Digitalis, when indicated and properly administered, has a beneficial influence, not alone on the musculature of the heart but likewise on the skin, liver and kidney.

Constipation and disordered digestion are present in consequence of damaged musculature of the gastrointestinal tract, and altered stomach, biliary and pancreatic secretions. Constipation should be overcome, preferably by diet, fruits, cereals and alkalis.

Small doses of sodium salicylate will best serve our purpose as an hepatic stimulant. For many years I have taught my students to be alert for three common diseases: the red, the white and the black plague—that is to say, syphilis, tuberculosis and malignancy. Their frequency, clinically, occurs in the order in which I have written them. Such complications always have an important bearing on the complaint for which the patient consults a physician. Latterly, focal infections have been added to this list, and one finds an ever increasing demand for recognition and appropriate treatment of any member of this group, when present, in the management of patients with toxic goiter.

In syphilis complicated by toxic goiter, mercury is more efficient than the iodids, the latter in some instances increasing the severity of the symptoms of

toxicity to an alarming degree. Inunctions of the skin covering the thyroid with ointment of red mercuric oxid, from 4 to 30 gm., followed by direct exposure to the sun's rays, have a highly beneficial effect in reducing the activity of the gland.

Two or three per cent. of the thyroids removed will show, on examination, evidence of tuberculous infection. The postoperative management of such patients becomes a subject for protracted supervision by the family physician. Malignancy of the thyroid is well-nigh hopeless. Hertzler has not seen a single recovery from this malady.

In the successful management of patients with toxic goiter, one must visualize the far reaching influence of the toxic process. There is not a vestige of tissue or a cell in the entire body but may be damaged and functionally crippled by the influence of thyrotoxin. The outcome in a given patient will depend largely on the clinician's ability to determine how hard the patient has been hit, and the success with which toxic symptoms are combated prior to operation. Removal of focal infections, and the resultant changes which quickly follow, are common observations; but the excitation following such procedures almost invariably has a bad effect on the patient with toxic goiter.

According to one of the most acceptable theories of hyperthyroidism, one of the functions of thyroid secretion is to combat infection; with the acute manifestations of infection under control, the gland, in some instances, continues in the overproduction of thyroid secretion, establishing a vicious circle wherein that which was a prophylactic measure may become a menace to the life of the patient.

Experience has taught us to deal with the goiter first, leaving removal of focal infections for the future.

A definite knowledge of the structures of the neck, gentleness, celerity and thorough hemostasis are essential in operating for the removal of the thyroid. Perhaps in no other region of the body is shock following operation so out of proportion to the amount of trauma as in the neck.

While operating, one should remember the neck as a privileged region. Notwithstanding the dictum of the mordacious old historian Carlyle that men everywhere are the born enemies of lies, I am mistrustful of the average report on goiter cure perce .tages. Figures will not lie, but they may become very enthusiastic when not zealously guarded.

This iconoclastic spirit is born of a generous personal experience in the operative treatment of goiter and in checking the postoperative history of many of the patients over a period of nearly two decades. The high percentage of cures becomes greatly modified in the course of time.

Hyperthyroidism or myxedema may follow operation in consequence of the removal, respectively, of too little or too much of the gland; but the bone hard fact remains that a number of cured patients do not remain cured, regardless of the alibi the surgeon may claim. End-results of many a well timed and successful thyroidectomy have been defeated in consequence of negligence pertaining to the postoperative care of the patient.

It would require an experienced pen, directed by a trained mind and a rare vision indeed, to predict what the future will develop for the relief of the goitrous patient. From the present status of the subject may we not conclude that a disease so freakish in symptoms, so disastrous in tendency, may not long be safely entrusted to other than radical treatment by removal of the most prominent factors in the production of the goitrous syndrome, which, unchecked, will end in morbidity or death of the pateint?

Furthermore, although I am not convinced that operation is the ideal treatment in the management of goitrous patients, it is the best treatment that has been employed.

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ORIENTAL SORE (CUTANEOUS LEISHMANIASIS) IN THE UNITED STATES *

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The importance of a wider knowledge of oriental sore, or cutaneous leishmaniasis, on the part of American physicians and public health officials is indicated by the fact that in the last two years at least eight cases of this infection have been reported in this country and Canada.[1] While all of the patients were newly arrived foreigners, it is quite possible, as Faber and Schussler [2] have recently pointed out, that, with the repeated importation of cases among immigrants, particularly from southern Europe and the Near East, the disease may soon become established in the United States. From our knowledge of the transmission of the infection, there would appear to be no reason why it should not become implanted here.

The usual mode of infection has not been definitely established, but clinical and experimental observations have indicated certain possibilities. First of all, it has been proved, through the autoinoculation experiments of Wenyon and Marzinowsky, that direct infection may take place through the abraded skin. Secondly, the selective localization lesions on the exposed parts—face, hands, arms and feet—indicate transmission by a biting insect. Several species of insects, including the house fly, sand fly and mosquito, have been incriminated. Regarding such transmission, two possibilities are considered: (1) mechanical transfer of the virus by one of the various biting insects; (2) the existence of a specific, intermediate insect host, in which, as in malaria, the organism passes through a developmental cycle. The wide geographic distribution of the disease is in harmony with the first conception; whereas, the strikingly high infection rate in certain districts may be considered as favoring the latter view. It is conceivable, as Manson and others have suggested, that both methods of transmission obtain.

This brief statement regarding the manner of spread is sufficient to make clear the danger referred to in the beginning. Early recognition of the lesion, therefore, is particularly important, if the establishment of the disease in the United States is to be prevented. It is probable that cases frequently pass the immigration authorities unrecognized, as apparently happened

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* From the Department of Pathology and Bacteriology, Yale University School of Medicine.

1. Spencer, R. D.: A Case of Oriental Sore (of Italian Origin) Encountered in the United States, J. A. M. A. **76**: 1494 (May 28) 1921. Smith, D. K.: Oriental Sore: Report of Four Cases, Arch. Dermat. & Syph. **5**: 69 (Jan.) 1922. Fox, Howard: Two Cases of Oriental Sore (Cutaneous Leishmaniasis), New York M. J. **116**: 365 (Oct. 4) 1922. Faber, H. K., and Schussler, Hermann: Leishmaniasis in the United States, J. A. M. A. **80**: 93 (Jan. 13) 1923.

2. Faber, H. K., and Schussler, Hermann: Footnote 1 (fourth reference).

with six of the eight recently reported cases. Furthermore, owing to the occasionally long incubation period, the lesion may not develop until some time after the infected person has entered the country. One of two cases that were recently referred to me for diagnosis illustrates very well this possibility. The case brings out certain other characteristics of the disease which make it worthy of detailed report.

REPORT OF CASES

CASE 1.—An Armenian boy, aged 17 years, left his home in Aintab, southern Asia Minor, June 1, 1920, en route to America by way of Aleppo, Beirut and Marseilles. He stopped two weeks in Killis, near Aleppo, a district in which "Aleppo button"—a local name for oriental sore—is very common. He remembers that while there he went about without shoes and stockings, and flies and mosquitoes were prevalent. After leaving Killis, he wore shoes and stockings regularly. He spent two months in Beirut, leaving there early in August, 1920. He was six weeks in Marseilles, and arrived in New York about Nov. 1, 1920. He went immediately to New Haven, where he has lived ever since.

About Feb. 1, 1921, he first noticed a pimple on his left ankle, about the line of his shoe top. This was three months after his arrival in the United States, six months after leaving Syria, and nearly eight months after leaving Killis, where he had commenced wearing shoes regularly. The pimple gradually increased in size, and after some weeks became ulcerated. There was some local tenderness, with considerable discomfort from the rubbing of the shoe. About June 1, 1921, several months after the appearance of the lesion, he consulted a physician, who excised it. The result was a larger and a very angry looking sore. The rapid recurrence led the physician to make a diagnosis of sarcoma, and the patient was referred to a surgeon for radical operation. The patient demurred and went to an Armenian physician, who, suspecting that the lesion was an "Aleppo button" and not a neoplasm, referred the patient to me for examination of the tissue.

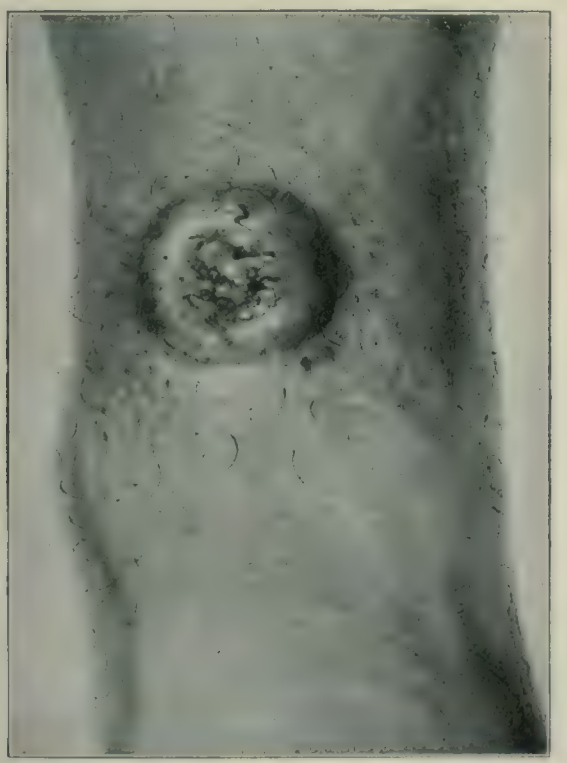


Fig. 1 (Case 1).—Oriental sore on ankle. The characteristic circular form and the prominent indurated margin may be noted.

The size and general appearance of the ulcer at this time, July 1, 1921, are shown very well in Figure 1. After removal of the superficial exudate, smears were made from the granulations, and a piece of the indurated margin of the ulcer was excised. Both smears and sections showed typical Leishman-Donovan bodies. The entire margin of the ulcer was then excised to provide tissue for further histologic study and for animal inoculation. Three roentgen-ray treatments were given at weekly intervals, and after preparatory irrigation with surgical solution of chlorinated soda (Dakin's solution), autoplastic Riverdin grafts were applied.[3] Healing was complete after about four weeks, and there has been no subsequent trouble. The Wassermann reaction was negative; the leukocyte count, 8,800; differential count: polymorphonuclears, 59; large mononuclears, 15; small mononuclears, 26.

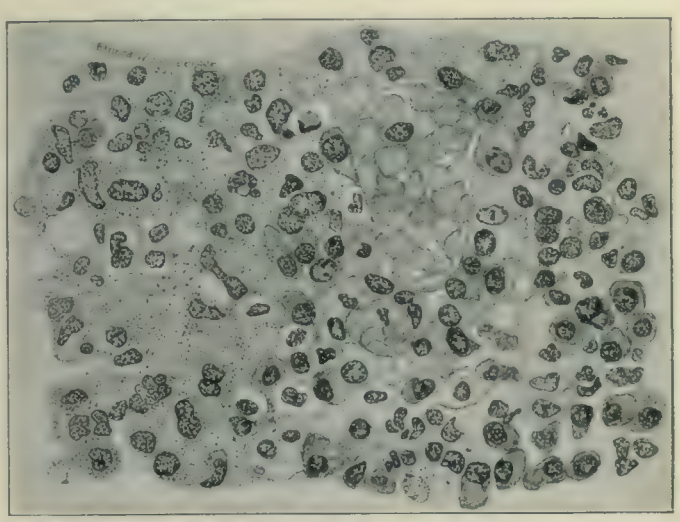


Fig. 2 (Case 1).—A section through the margin of the lesion showing a mononuclear cellular reaction, with numerous organisms (leishmania) in the cytoplasm of the large cells of the endothelial type. Lymphocytes and plasma cells do not contain organisms.

The case presents several interesting features. In the first place, the history indicates that the infection was acquired before the patient left Turkey; that is, about eight months before the appearance of the lesion. It is possible that inoculation may have occurred in Beirut, Syria, the port of embarkation, where the disease is endemic. But this would still make the incubation period at least six months. The fact that after leaving Turkey the patient had worn shoes and stockings regularly is a strong point in favor of the longer period of infection. While the period of incubation in this case is considerably longer than is generally recognized, from a week to two months being the figures usually given, it is probable that similar instances of latency are not rare. It may be recalled that in Wenyon's self-inoculation experiment the lesion did not appear until six and a half months after infection. Manson reports a case in which the interval was five months, and refers to another with an incubation period of fifteen months.

A second interesting feature of this case was the rapid recurrence, after excision, which led to a diagnosis of malignancy. This error might have been avoided, of course, if the tissue first removed had been examined histologically.

The study of the case brings up still another point which we believe should be emphasized, namely, the possible advantage of biopsy over smears for the demonstration of the specific organisms. In spite of our efforts to obtain good deep smears from the granulations, considerable search was required to

3. The skin grafting was done in the New Haven Hospital by Dr. Beverly Douglas; the roentgen-ray treatments were given by Dr. C. R. Scott, and the patient was cared for in the New Haven Dispensary by Dr. Isao Hirata. I am indebted to these physicians for the use of their notes. The case was referred to me by Dr. A. S. Apelian.

demonstrate the organism, whereas every well stained section showed enormous numbers of parasites. The large mononuclear cells of the endothelial type, the chief element in the inflammatory reaction, were crowded with organisms (Fig. 2). Under low magnification, the cytoplasm of these cells presented a uniform granular appearance, the granules being the double nuclei of the organisms (Fig. 3). There is further advantage in excision in that a small piece of tissue embedded in paraffin will yield from 25 to 200 sections, thus permitting use of various stains or other modification in technic on identical preparations. On the other hand, the morphology of the parasite is not so easily studied in sections, and by the untrained observer identification may not be easy. A combination of methods is, therefore, desirable in such cases. For sections, a prolonged Giemsa stain (from twelve to twenty-four hours), with careful differentiation, gives excellent results. Zenker fixation is a necessary prerequisite. We were able, however, to see the organisms clearly in hematoxylin-stained frozen sections, after formaldehyd fixation. The double nuclear bodies in the organism and the intracellular position of the parasites in sections constitute safe diagnostic criteria.

CASE 2.—An Armenian girl, aged 15 years, in 1915, was deported, with other Armenians, from her home in Harpoot, Turkey, to Aleppo, Syria, where she remained until Jan. 1, 1920. From Aleppo, she came to America by way of Egypt, arriving in the United States in the latter part of the same year. She noticed several pimples on the right arm and the left wrist before leaving Aleppo. These developed into typical "Aleppo buttons," and were treated with red mercuric oxid. After more than a year, the lesions began to heal.

When the patient was first seen by me, healing was progressing satisfactorily (Fig. 4). No organisms could be demonstrated in the scanty secretion. Biopsy did not seem justified, owing to the advanced state of healing, and to the fact that there was no doubt as to the diagnosis.

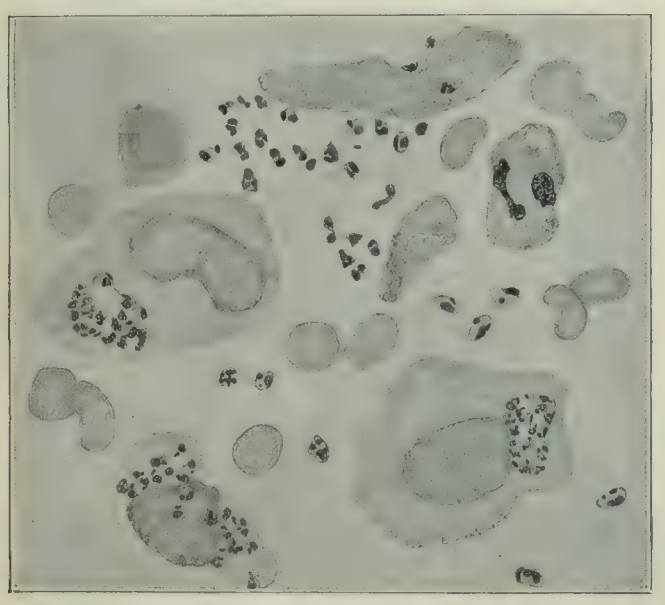


Fig. 3.—Leishmania tropica in smear preparations. Characteristic double nuclei may be noted.

This case presents no unusual features and is cited simply as another example of leishmania infection which would ordinarily pass unnoticed.

COURSE AND TREATMENT

As is well known, the disease is self-limited, and, even without treatment, healing generally takes place from six months to a year and a half after the appearance of the lesion. Occasionally, severe secondary infection or some other unfavorable condition may retard the healing process. Recurrence and reinfection are rare, one attack conferring a permanent immunity, a fact that is said to have led to the custom among the Bagdad Jews of inoculating their children on the legs,



Fig. 4 (Case 2).—Healing oriental sores in region of elbow.

in order that disfiguring lesions on the face, resulting from infection acquired in the usual way, might be prevented.

In spite of the self-limited course, active treatment of the lesions is justified to (1) shorten the course; (2) prevent autoinoculation; (3) lessen the tendency to disfiguring scar formation, and (4) prevent the spread of the infection to other individuals.

Of the various methods of treatment proposed, only three or four warrant mention. A number of reports during the last few years indicate that antimony, in the form of antimony and potassium tartrate (tartar emetic), administered intravenously, is practically a specific. Roentgen-ray therapy, advocated by several observers, has an advantage over antimony in that hospitalization is not necessary. When the lesions are superficial, freezing by carbon dioxid, strongly recommended by Adams of Beirut, seems to give very satisfactory results. In the case of very early lesions, such as are frequently called to the attention of physicians practicing in areas where the disease is endemic, it is claimed that prompt excision and cauterization is effective.

SUMMARY

1. The two cases of oriental sore in the United States here reported make a total of ten cases recorded in the last two years.

2. There is a possibility of a long incubation period. In one of the reported cases, the lesion did not appear until three months after the patient's arrival in the United States, and probably eight months after infection.

3. Biopsy is to be advocated in suspected cases, the specific protozoa (*Leishmania tropica*) being more readily demonstrable in properly stained sections than in smears.

SUBCUTANEOUS IMPLANTATION OF THE HUMAN OVUM*

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Rare cases of extra-uterine pregnancies have been described in which the fetal mass is found lodged in a hernial sac, projecting as a surface swelling in the inguinal region.[1] A few cases of perforation of old tubal pregnancies, in which the remnants of the fetus escaped into the urinary bladder, have been encountered.[2] But, as far as I can learn, no case has ever before been reported in which the human ovum became implanted and underwent development entirely outside the abdominal cavity, as happened in the instance about to be described. As a curiosity, the case appears to be unique; but over and above that, what really merits our attention is the astonishing fact that the human chorion is capable of developing to the size of a hen's egg in such an environment as is furnished by the superficial fascia of the abdomen.

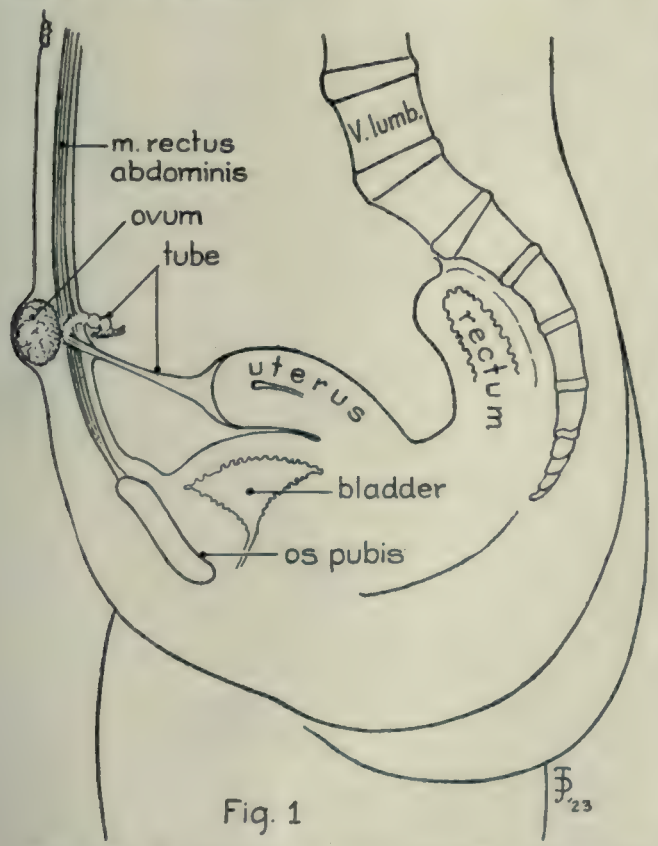


Fig. 1.—Seat of implantation of ovum, and probable relations of the deeper parts.

The patient, aged 25, who had been married four years, with no children and one abortion, when first seen by Dr. George Lenz of Gloversville, N. Y., exhibited a mass the size of a cherry in the lower abdominal region at the upper end of a scar from a previous operation. A provisional diagnosis of wound-hernia was made. When seen two weeks later, the swelling had doubled in size, and on account of its rapid growth an exploratory examination was decided on. This was performed by Dr. Lenz four weeks after the patient had first come to him, and by that time the enlargement had reached the size of a hen's egg. Operation disclosed, just beneath the skin, embedded in the superficial fascia, a relatively thin-walled and partially transparent cyst, which on removal proved to be an intact chorionic sac, and on being opened was found to contain a well-formed embryo. Naturally, this was a most unexpected type of tumor. The operative area was thereupon carefully examined, but no

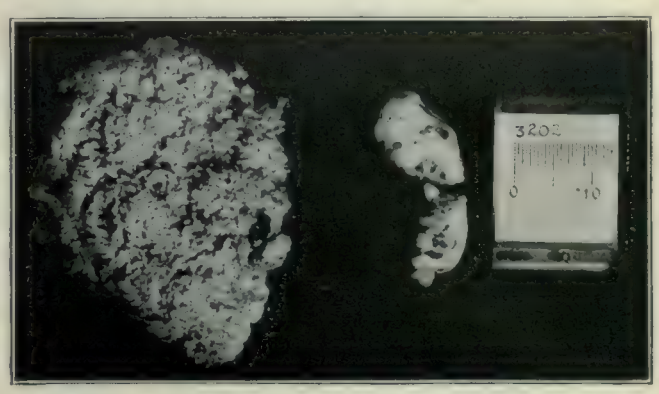


Fig. 2.—At left, collapsed chorionic sac, covered with a rich growth of normal appearing villi. Near the millimeter scale is the embryo, broken in the neck region, with the heart exposed and projecting upward. Natural size.

opening through the deep fascia or connection with the abdomen could be found. Nor was there any enveloping capsule or any structure other than is normally present in the abdominal fascia, although there seemed to be some enlargement of the blood vessels leading to the area of implantation.

On searching for an explanation as to how the ovum was able to reach this site, it turned out that two years previously another surgeon had performed a ventral fixation of the uterus, adopting the procedure in which the round ligaments are pulled through the rectus muscles. As it is possible to mistake the fallopian tube for the round ligament, it is to be supposed that either this mistake was made or that the tube was drawn through the rectus muscle along with the round ligament. In either event the topography of the tube would be somewhat as is shown in Figure 1. In the course of two years the uterine portion of the tube would be stretched out, although still permitting the passage of spermatozoa. The ovum, entering the fimbriated end, would thus be fertilized. It is to be supposed that the fertilized ovum in this case was arrested at the tubal kink and, eroding through the mucosa of the tube wall, continued its development in the loose tissues superficial to the rectus muscle.

Dr. Lenz, recognizing the great embryologic importance of the specimen, generously placed it at the disposal of this laboratory. It can be readily understood that the detailed study of the specimen was approached with great eagerness, for here is an experiment in which it is possible to determine the histologic reaction of the developing ovum under the circumstances of a very simple type of environment. I may say at once that the chorion and its contained embryo appear to have grown, up to the time of their removal, about as well as they would have done had the implantation occurred in the uterine mucosa. In general form and microscopic structure they cannot be distinguished from normally implanted ova of the same stage of development. The tissues of the embryo, however, show beginning degenerative changes, indicating that it had reached its maximum development and that the heart had stopped beating before the time of operation. On its arrival at the laboratory, the embryo had been broken apart and mechanically injured in the region of the neck and upper thoracic wall, as shown in Figure 2. With the two parts placed in position it is 22 mm. long. The relative development of the hands, feet, ears, eyes and mouth region is

* From the Carnegie Embryological Laboratory, Johns Hopkins Medical School.

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2. Haggard, W. D.: Removal by Vaginal Cystotomy of Skeleton of Ectopic Fetus Ulcerating into Bladder, Am. J. Obst. **50**: 690, 1904.

normal for the length of the embryo, and corresponds to about the end of the eighth week. The external genitalia are developed in proportion to the other parts of the body and are female in type, the urogenital opening extending well in front of the coronary sulcus. Whereas the embryo shows a development of eight weeks, the clinical record obtained from the patient at the hospital gives a menstrual age of ten weeks. This discrepancy of two weeks is what we would expect with retardation and arrest in development, as seems to have occurred ultimately in the case of this embryo.

The chorionic sac, as can be seen in Figure 2, is everywhere covered with a thick growth of normal appearing villi. There is no trace of a decidual membrane. When the villi are examined under a lens or binocular microscope there are numerous Langhans' or villous nodules present, perhaps more than are usually present in chorions of this size. Two of these can be seen in Figure 3 as black masses and their frequency can be judged, as the section is 15 microns thick. When sections of the chorion are studied under higher magnification, the villi are found to be well vascularized and the stroma appears to be normal, aside from the fact that some of the stroma cells stand out conspicuously as Hofbauer cells. The ectoderm covering the villi shows a marked proliferation of the syncytial layer, but this is commonly seen in normal chorions of this size. The proliferation of the Langhans layer in the form of villous nodules is shown in Figure 4, and it illustrates the striking resemblance these cells bear to decidua. At its periphery the nodule is partially covered in by irregular masses of syncytial tissue. The centers of most of the nodules show areas of marked degeneration, consisting of a diffusely staining mass peppered with nuclear fragments of cells, the outlines of which are mostly lost. Toward the

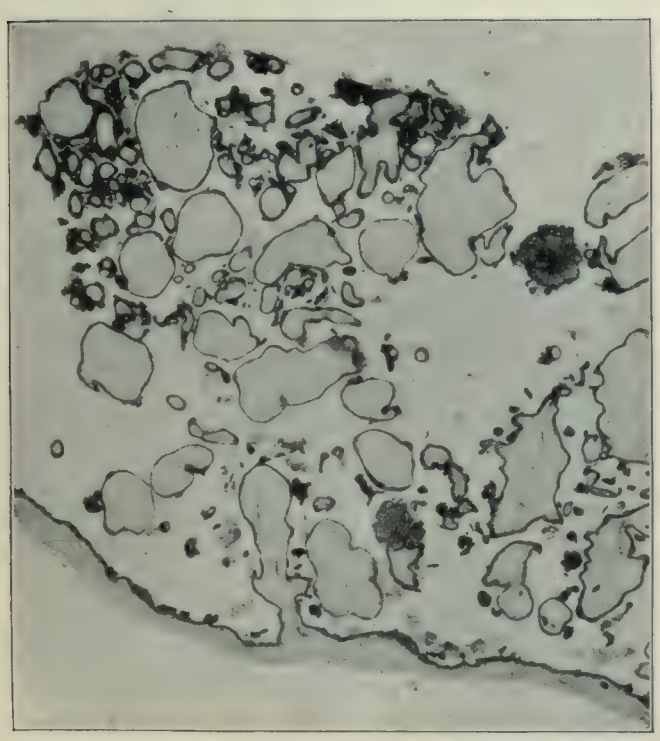


Fig. 3.—Section of chorion, showing chorionic membrane with a villus arising from it. At the periphery there is a thick cluster of smaller villi. Owing to the exuberant growth of their syncytial layer, they tend to adhere and form a surface crust. Two villous nodules can be seen, one of which is shown under greater magnification in Figure 4. Section 15 microns thick, enlarged 20 diameters.

surface of the chorion the villi give off many small branches, and their syncytial layer tends to agglutinate them into crust-like, adherent areas, which are the nearest approach to a decidual capsule that the specimen presents. Over some areas there is a thin coating of old bloodclot, with many pigment granules. Some of these granules had been ingested by the syncytial cells, and can be seen in them as large granular aggregates. Some cells are so laden with pigment that their nuclei are obscured. From the age of the clot it is evident that small hemorrhages occurred around the ovum preceding the operation, though this phenomenon was much less marked than is usual in tubal cases.

The chorionic sac was certainly growing up to the time of the operation, and its histologic condition is compatible with still further growth, although the prominence of the so-called Hofbauer cells is a signal of an approaching arrest in development. It thus



Fig. 4.—A typical villous nodule surrounding a small villus and adherent to another. It is made up of cells which resemble decidua but which are derived from the Langhans cells of the villi or chorionic membrane. In reality, it is a minute, self-limiting epithelial tumor, the center of which soon breaks down and is seen as a diffusely staining mass with here and there fragments of nuclei. The surface of the nodules is partially covered in by islands or streamers of syncytial cells. Enlarged 165 diameters.

follows that, under these circumstances, the growth of the sac tends to continue longer than that of the embryo. This conforms to the experience we have had in this laboratory with abortion material in general—the chorion is proportionately farther developed than the embryo rudiment. It is to be remembered that the fascia in this region is not so profusely vascularized as are the tissues surrounding the tube and uterus, and this might have played a part in the arrest in development. We can only speculate on what would have happened if the mass had not been removed. It is not likely that it would have grown much larger. Reasoning from tubal specimens, we might expect further hemorrhages, although not serious ones, and in the end the whole structure might have been slowly absorbed. On the other hand, there is the remote possibility of the villi giving origin to a malignant chorio-epithelioma. The case is a very suggestive one to the experimental embryologist.

Top Minnows.—It is said that 750,000 top minnows were employed in the recent successful campaign in Peru against yellow fever.

OSTEOMYELITIS OF THE ILIUM IN CHILDREN

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BOSTON

While infection of the iliac bone is not common, it is far from rare. When it occurs in children, it is a particularly serious condition, because the diagnosis at first may be difficult. Since immediate prognosis, prevention of complications and shortening of convalescence depend on early treatment, early diagnosis is essential.

This condition has been looked on as infrequent from such published reports as that of Monsaigeon,[1] who was able to compile only fourteen cases during a period of thirteen years in one of the large clinics in Paris, and of Simmons [2] who, in his report of ninety-seven cases of general osteomyelitis in the Massachusetts General Hospital, listed only two cases of ilium infection. In addition, at the German Surgical Congress,[3] Lücke reported twenty-four cases of osteomyelitis, including one of the ilium; Volkman, twenty-nine, including none of the ilium; Schede, twenty-four, including two; Kocher, thirty, including one; and Heidenhain, forty-six, including one.

On the other hand, Geist [4] recently reported from Minneapolis three cases of osteomyelitis of the ilium seen by him within a period of three years, and I have had two such cases within a period of three months.

When infection of the short and flat bones alone is considered, the ilium is one of the bones most frequently involved. Fröhner,[3] in analyzing fifty-one such cases out of a total of 545, found involvement of the ilium to be second in frequency. In considering infections of the bones of the pelvic girdle alone, he found it to be the most frequent, as in his series he had ten cases of ilium infection, four of the pubis and none of the ischium.

REPORT OF CASES

CASE 1.—*History.*—P. S., aged 9, referred by Dr. A. S. Troupin, seen, July 19, 1922, for the last six years had been under treatment at various institutions, first for osteomyelitis of the radius and sternum, and then for the infection of the right ilium. The parents were recent immigrants, and for long periods at a time kept the boy away from clinics for the trial of home remedies. From the onset, there had been a draining sinus. For the previous two weeks, he had been at home, having been taken out of an institution where he had been kept for one and a half years. Two days previously, a swelling appeared at the right hip, with fever and prostration.

Examination.—The boy was fairly well developed but somewhat undernourished and of sallow complexion. The temperature was 102.4 F., the pulse, 120. The abdomen was markedly distended, but soft and not tender, and contained no fluid. The liver was markedly enlarged and firm, the lower edge being at the pelvic brim. The sternum and left forearm showed old scars, the result of the healed bone infections at these sites. Over the right ilium was a fluctuant abscess, the size of an orange, and below it a sinus discharging considerable watery pus. Motion at both hips was normal, and the spine was normal. The right leg and hip were drawn up in extreme flexion.

Operation.—Under ether anesthesia, the abscess was incised. A cupful of pus was obtained. The wound was explored, and a hole was found in the ilium near the crest, large enough to admit a thumb. The abscess was drained. The convalescence thus far has been uneventful. The operation wound has contracted down to a small sinus, and at the present time, six months later, is still draining pus.

Outcome.—The postoperative treatment has been quite unsatisfactory, as the parents refuse to send the boy to an institution, and the home environment is unfavorable.

CASE 2.—*History.*—R. L., aged 13, referred by Dr. G. A. Haines, seen, Oct. 24, 1922, had fallen, striking the right hip, one week before while playing football. He walked home, but owing to the intense pain had to go to bed. The following morning, because of the continuation of the pain in the right hip, together with fever and voiding of bloody urine, the family physician was called. He found the temperature 104 F., and the right hip so sensitive that the slightest motion was exceedingly painful. The urine examination showed only red blood cells. After six days of observation with conservative treatment, and with no relief, I was requested to see him in consultation.

Examination.—The boy was well developed and well nourished. The face was flushed and hot to the touch. The temperature was 101.8 F. There was full range of motion in both hips, but the right ilium was exquisitely tender. When, after palpation of the sacrum and sacro-iliac joint, which were not sensitive, this ilium was touched, the patient reacted with immediate outcry of pain. The right hip was so sensitive that the patient for the last six days had insisted on lying on the left side, keeping both legs and thighs fully flexed. There was no swelling and no redness or local heat. An immediate operation was advised, but was deferred by the parents for two days. The night before operation, which was nine days after the injury, a roentgenogram was taken, but showed no pathologic condition.



Fig. 1 (Case 1).—Appearance of ilium.

Operation.—Under ether anesthesia, a 4 inch (10 cm.) incision was made over the most tender spot of the ilium. Within the last two days a swelling had appeared at this area, so that the focus was well localized. When the fibers of the gluteus maximus muscle were divided, there was an escape of about 4 ounces (120 c. c.) of pus. The ilium was explored and a bare area about the size of a silver dollar was found, in the center of which was a perforation large enough to admit a lead pencil. Ample drainage was established. A culture showed the growth to be pure *Staphylococcus aureus.*

1. Monsaigeon, Maurice: De l'ostéomyélite aiguë de l'os iliaque, Paris theses, 1911-1912.
2. Simmons, C. C.: The Treatment of Osteomyelitis, Surg., Gynec. & Obst. **20**: 129, 1915.
3. Quoted by Monsaigeon (Footnote 1).
4. Geist, Emil: Osteomyelitis of the Pelvic Bones, J. A. M. A. **77**: 1939 (Dec. 17) 1921.

Outcome.—The convalescence was uneventful and rapid, and at present, three months after the operation, the patient is back in school and his general condition is excellent. There is still a scanty discharge from the sinus, which is appreciably diminishing.

COMMENT

These cases, the two most recently seen by me, are illustrative of the sequence of a neglected case, on the one hand, and of an early recognized case, on the other hand. The first patient, owing largely to the ignorance of the parents, has developed an amyloid liver because of the long continued suppuration. His condition is such that, even if the local condition quickly cleared up, he has this permanent damage to his liver. His infection of the ilium is of the metastatic type, following infection of the radius and sternum. Previous infections have conferred on him a certain immunity, for, as is shown in the roentgen ray, the process is localized; whereas, usually the disease spreads by extension.

The second case shows the result of early operation. The recovery was rapid and the amount of involvement



Fig. 2 (Case 2).—Appearance of ilium three months after operation.

small. This infection without question was due directly to trauma, and since the boy had no previous infection to give him any immunity, it is fair to assume that had the operation not been promptly performed, the destruction might have kept on.

GENERAL CONSIDERATIONS

The causes of osteomyelitis in the ilium are the same as in osteomyelitis of other bones. The systemic manifestations are also the same, but the local symptoms are likely to be deceptive in that they are usually referred to the hip joint, and not the ilium. The diagnosis is made on the localized tenderness in the acute cases, and on the swelling in the chronic case; and there may be spasm of muscles of that buttock and also below it. There are pain and spasm in that hip on attempted motion, but with care motion can be obtained. The roentgen ray is a decided aid in old cases; in early cases, it often shows nothing. Stereoscopic plates [5] may help, but once the disease process is localized, the roentgen ray is an aid in watching the progress of the disease.

The course of the disease in the ilium is similar to that in other flat bones. It is evident that, in an infection of a flat bone with a thin cortex, there will be early perforation; if the disease progresses, there will be extension of this perforating destruction or a new perforation will appear nearby. By roentgen ray, this is at first evidenced by a punched out appearance or rarefaction, which may gradually increase in size. In advanced cases in which there are several perforations, the bone may take on a mottled or "moth-eaten" appearance.

Complications are frequent. I have had under my care, in all, four cases of this condition. Of these, one had such extensive destruction of the ilium that the head of the femur slipped out of the acetabulum. Another had subsequent metastatic infection in three other bones. A third, because of long continued suppuration, developed amyloid liver. Other complications that have been recorded are arthritis of the hip, erosion of the femoral artery, which required ligation, phlebitis of the iliac vein, and the development of pus pockets.

The treatment is based on general surgical principles, and varies with the condition found. When the bone lesion is adequately drained through a perforation in the cortex, incision of the abscess may be sufficient. If perforation has not taken place, or if bone drainage is inadequate, trephining is the operation of choice.[6] If the process is diffuse, a partial or total resection [7] of the dead bone should be done, depending on the amount of involvement.

CONCLUSIONS

1. Osteomyelitis of the ilium is more common than is generally supposed, and should always be borne in mind in a case of painful hip that permits motion.
2. The local symptoms are often referred to the hip joint, and not to the ilium.
3. The important factor in diagnosis is tenderness over the ilium, without restriction of motion at the hip joint. The roentgen ray is at first of no help, but is later of decided aid.
4. Owing to the structure of the ilium, there is early perforation, and if the disease extends there are further perforations.
5. While the prognosis in this condition is grave because of proximity to the hip joint and the peritoneal cavity, early recognition and treatment renders it more favorable. Serious complications may arise at any stage of the disease.
6. The treatment is early operation with adequate drainage, and removal of dead bone, even if it means resecting the whole ilium.

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5. LeWald, L. T.: Perforative Osteomyelitis of the Iliac Bone, American Atlas of Stereoroentgenology, Troy, N. Y. **2**: 60, 1917.

6. Skillern, P. G.: Acute Pyogenic Osteomyelitis of the Ilium with Iliac Fossa Abscess, Internat. Clin. **4**: 1919, 1917.

7. Bergman: Resection of the Ilium for Acute Osteomyelitis, Arch. f. klin. Chir. **504**, 1906.

The Physician in Court.—The physician in court, whether as a party or as a witness, has impressed me as a man who is not thoroughly enjoying himself—he appears irritated by the interruption of his professional labors, impatient with the lay ignorance of his science evidenced by court, counsel or jury, or disgusted with the possibility of grave injustice that may be visited upon him. These feelings may be mixed with a strong self-confidence springing from a realization of his professional skill, that may cause him to assume toward the court an attitude of condescension or superiority.—G. W. Whiteside, *New York State J. M.* **23**:73 (Feb.) 1923.

KERATODERMIA BLENNORRHAGICA

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Keratodermia blennorrhagica is a very rare complication of gonorrhea, and because of this fact one would naturally expect the literature on this subject to be decidedly limited. This is especially true of the literature of this country. According to Simpson and Beeson,[1] the first American case was reported by Simpson [2] in 1912, and, in 1917, Simpson and Beeson jointly reported two cases. In addition to the cases just mentioned, Roark,[3] Haase,[4] Gager [5] and McDowell [6] in this country have reported cases—seven in all.



Fig. 1.—Extensive involvement of soles of feet and little toe of left foot.

In the foreign literature, cases have recently been reported by E. Graham Little,[7] Little and Hayne,[8] Montpellier,[9] Gougerot and Cara,[10] Brown and Davidson,[11] Brown and Hargreaves,[12] Lundie,[13] Lévy-Franckel,[14] Dyke,[15] Isaac,[16] Adamson,[17] Allport,[18] Doble[19] and Lindeman.[20]

1. Simpson, F. E., and Beeson, B. B.: Kératodermie Blennorrhagique, J. A. M. A. **68**: 1169 (Aug. 21) 1917.
2. Simpson, F. E.: Kératodermie Blennorrhagique, J. A. M. A. **59**: 607 (Aug. 24) 1912.
3. Roark, B. H.: Blennorrhagic Keratosis, J. A. M. A. **59**: 2039 (Dec. 7) 1912.
4. Haase, M.: J. Cutan. Dis. **34**: 817 (Dec.) 1916.
5. Gager, E. C.: Keratodermia Blennorrhagica, J. A. M. A. **78**: 941 (April 1) 1922.
6. McDowell, J. E.: New York M. J. **115**: 518 (May 3) 1922.
7. Little, E. G.: Practitioner **97**: 531 (Dec.) 1916; Proc. Roy. Soc. Med., Sec. Dermat. **14**: 90, 1920-1921.
8. Little and Hayne: Tr. Roy. Soc. Med., Sec. Dermat., June, 1916.
9. Montpellier, J.: Ann. d. mal. vén. **12**: 309, 1917.
10. Gougerot and Cara: Ann. d. mal. vén. **12**: 108, 1917.
11. Brown, W. H., and Davidson, A. M.: Brit. M. J. **2**: 453 (Oct.) 1917; J. Cutan. Dis. **36**: 225 (April) 1918.
12. Brown, W. H., and Hargreaves, H.: Brit. J. Dermat. **29**: 107 (April-June) 1917.
13. Lundie, Crawford: Brit. J. Surg. **5**: 389 (Jan.) 1918.
14. Lévy-Franckel, A.: Ann. d. mal. vén. **13**: 386, 1918.
15. Dyke, S. C.: Lancet **2**: 328 (Aug. 23) 1919.
16. Isaac, C. L.: Brit. J. Dermat. **32**: 195 (June) 1920.
17. Adamson, H. G.: Brit. J. Dermat. **32**: 183 (June) 1920.
18. Allport, A.: Proc. Roy. Soc. Med., Sec. Dermat. **14**: 91, 1920-1921.
19. Doble, F. C.: Proc. Roy. Soc. Med., Sec. Dermat. **14**: 91, 1920-1921.
20. Lindeman, Grant: Med. J. Australia **9**: 126 (Feb. 4) 1922.

Because of the rare occurrence of this condition, and also because of the scarcity of case reports, it seems desirable to report a case that recently came under my observation:

History.—F. B., a man, aged 22, referred by Dr. W. W. Ross of La Porte, Ind., had had measles, mumps and chickenpox in childhood, and smallpox two years before I saw him. He contracted gonorrhea two and a half years before, for which he had since been under treatment. The patient entered the Alexian Brothers Hospital, May 6, 1922, complaining of pain in the right wrist and finger joints, swelling of the joints, nocturia, skin lesions, and loss of function of both knees. He stated that about eighteen weeks before he had some pain and swelling in the left toes which afterward spread, in the order named, to the joints of the right great toe, right hand, fingers, ankles, knees, elbows, left hip, and at present to the right wrist and right index and middle fingers. Pain and swelling of the right wrist and fingers occurred, May 2, 1922. This was the third exacerbation of the process in the right wrist and fingers, the first occurring three weeks, and recurring two weeks, previously. Nocturia had been present since the onset, two and a half years before. At present the patient voided two or three times during the night. Skin lesions appeared several weeks after the joints became involved, or about fifteen weeks before entrance. At first they were noticed on both heels as small pimples with a hard center. They gradually became worse and were scattered over both legs and hands, but less so on the thighs. There was loss of function of both knees for about seven weeks; immediately after the loss of function there was swelling, with much pain. The patient was confined to bed; there was no exercise of the knees.

Physical Examination.—The patient was very pale and anemic; evidently he had lost much weight as a result of his long illness. The scalp, ears, eyes, nose, nostrils, mouth, throat and tonsils were normal. The muscles of the upper and lower extremities had undergone marked atrophy from disuse, this being particularly noticeable in the lower extremities.



Fig. 2.—Extensive involvement of nail of left great toe.

The right wrist was enlarged, swollen and tender, showing evidence of recent arthritis. The right first phalangeal joint was enlarged, red and swollen, as was the same joint of the middle finger. The right forearm just above the wrist showed a lesion, and another was seen over the left knuckle and one over the first phalanx of the middle finger. Two lesions were seen over the dorsum of the left hand: one over the first phalanx of the middle finger and one over the fourth metacarpal bone; and another lesion was situated over the middle of the right radius on the anterior surface. The skin of the trunk was free.

There was a slight discharge from the external urethral orifice; this was negative as regards gonococci. On the right side, the glans and sulcus were covered with superficial cysts. Along the line of incision of the circumcision and in the coronary sulcus there were small pustules, and a similar condition existed on the scrotum on this side. Evidently the patient had

had similar lesions on the other side; but they were healed, or nearly healed, on admission to the hospital.

The lower extremities presented by far the largest number of lesions of the typical character. There were a few lesions on the outer aspect of the thigh, and a smaller number in the popliteal space. The muscles of the lower extremities were decidedly atrophic. The right leg had two large lesions on the outer aspect, and similar lesions were on the left leg. The dorsum of the right foot was covered with many lesions; in one area they were confluent, but in other areas a large number were isolated. On the dorsum of the left foot, however, the isolation of the lesions was more evident. They were also seen on the posterior side over the Achilles tendon, and were particularly marked over the heels, though some were also seen along the toes. The toe-nail of the left great toe consisted entirely of a large horny structure, the nail evidently having undergone complete cornification; and there was a large, horny lesion on the fourth toe of the left foot on its median aspect. The little toe of the left foot, in its entirety, had undergone almost complete cornification, for nothing that resembled a nail could be seen. There was a similar lesion on the median aspect of the little toe of the right foot. On the soles of the feet were the largest lesions, evidently the oldest ones and the ones that presented the most advanced cornification. There were three lesions on the left sole and three on the right.



Fig. 3.—Lesions on dorsum of feet; muscular atrophy of lower limbs.

The lesions were yellow, greatly resembling the color of beeswax, were hard, not tender, and varied in size from 1¼ to 1½ inches (3.2 to 3.8 cm.). The largest was 1½ inches in diameter. Some of the lesions of the soles of the feet had a lamella-like formation, but on the dorsum their outline was more or less rounded, a hyperemic zone encircling them, beyond which the color was rather white, with the center thicker than the periphery and of distinct waxy appearance. Evidently the cornification took place in the center. When the crust was pulled off, an area, which appeared moist and had a reddish hue, remained.

The prostate was broad and flat, not tender and not very much enlarged; the seminal vesicles were thickened.

Blood examination revealed: erythrocytes, 4,400,000; leukocytes, 12,000; hemoglobin, 90 per cent. The differential leukocyte count was: polymorphonuclears, 71 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 4 per cent.; eosinophils, 1 per cent.; transitional cells, 4 per cent.



Fig. 4.—Large lesion over heel.

The blood Wassermann test was negative; the gonococcal fixation test was + +.

The patient left the hospital at the end of two weeks. His condition was unimproved, and the final result is not known.

SYMPTOMS

Keratodermia blennorrhagica occurs, with few exceptions, in the male sex, only one[16] of the recent case reports being in the female. It is characterized by three cardinal symptoms; namely, urethritis (either recent or remote), arthritis, and the presence of hyperkeratosis.

Urethritis.—As a rule, a urethral discharge, which has repeatedly been described as mucopurulent, is noted. Brown and Davidson, Franckel and Dyke, Lindeman and McDowell have reported gonococci in the discharge. A history of previous attacks of urethritis can frequently be obtained. In the absence of an active discharge, filaments can be seen in the urine, and exploration of the urethra may show stricture formation. No gonococci were found in the discharge in the case reported here.

Arthritis.—On account of its constancy, arthritis is regarded as one of the three cardinal symptoms. It is nearly always multiple. The knee-joint is most frequently involved, and one or both joints may be affected,

ankle-joints being second in point of frequency. Wrists and feet are less often attacked. Involvement of the acromioclavicular joint was reported by Isaacs, and the vertebrae were involved in Doble's case. In McDowell's case the joints involved were shoulder, elbow, wrist, hip and ankle. In the case reported in this paper the joints affected were the toes of both feet, the right wrist, the fingers, both ankles, both knees, both elbows and the left hip. From this, it would appear that the arthritis is generally multiple.

Hyperkeratosis.—The extent or distribution of the lesions is variable with a seeming predilection for the feet, particularly the soles. At times the lesions are found on the feet only, plantar or dorsum surface or both. In a case reported by Brown and Davidson, the lesions were limited to the penis; likewise in a case reported by Jeanselme and Blamontier. In Lévy-Franckel's case the lesions were found on the lower limbs and soles of the feet, as well as on the penis. Involvement of the nails was reported by Lindeman, by Dyke, and also in the case reported in this paper.

As examples of extensive distribution may be mentioned the heel, soles, nails, face, shoulders, arms, trunk, scrotum, buttocks and legs (Lindeman); knee, thighs, hip, leg, back and soles of feet (McDowell).

Rarely do lesions of the eye occur, though iritis has been noted in cases reported by Isaac and Lundie.

Muscular atrophy, due to loss of function, may become quite marked, as in the case here reported.

DIAGNOSIS

The diagnosis can be made quite readily from the presence of urethritis, arthritis and hyperkeratosis. This clinical entity has been confused with other skin lesions. Adamson raises the question whether keratodermia blennorrhagica is not a form of psoriasis. His observations have shown that: (1) There are cases of arthropathic psoriasis in which the lesions on the palms and soles strikingly resemble those of gonorrheal hyperkeratosis; (2) in many cases of gonorrheal hyperkeratosis there are eruptions on the limbs or trunk indistinguishable from psoriasis; (3) there are cases in which it is difficult to make a definite diagnosis between arthropathic psoriasis and gonorrheal hyperkeratosis; (4) there is a close similarity between the histopathology of psoriasis and of keratodermia hemorrhagica.

TREATMENT

Since the lesions are metastatic in origin, the treatment should be directed toward cleaning up the focus of infection in the prostate gland and seminal vesicles by massage, irrigations or instillations. Vaccines have been used, the results of their use being variously stated as beneficial or without effect on the skin lesions.

Arsenic in the form of neo-arsphenamin was followed by good results (Doble-Lees).

LIPEMIA RETINALIS*

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It seems time to draw to the attention of medical men a subject which has been discussed usually by ophthalmologists, and often too only in relatively inaccessible society transactions. We have been able to find only twenty-six cases reported so far.

REPORT OF A TWENTY-SEVENTH CASE

Mrs. R. was 50 years and 9 months old when the onset of diabetes was announced by blurred vision; this, with subsequent urinary incontinence, caused examination and diagnosis a month later. Almost exactly a year afterward, she came under Dr. Joslin's care. The twenty-four-hour urine then contained 85 gm. of sugar, and diacetic acid was +++; the alveolar carbon dioxid was 31 mm.; the blood before breakfast showed creamy plasma, with 5.12 per cent. fat (Bloor) and sugar 0.31 per cent.; the net weight was 30 kg., 46 per cent. below her maximum of 113 pounds (51 kg.) three months before the onset of symptoms. The weight at onset and the height were unknown. The diet is summarized in Table 1 by averages for weekly periods, together with the blood fat at the end of each period; no relation is evident. After discharge from the hospital the patient was not seen again; despite a restricted diet at home, she failed and finally died in diabetic coma four months and nineteen days after recognition of the retinal lipemia.

TABLE 1.—*Summary of Diet in Twenty-Seventh Case by Averages for Weekly Periods, with Blood Fat at End of Each Period (Joslin Case No. 2216)*

Period No. of Days	Average Daily Diet: Carbohydrate, Gm.	Protein, Gm.	Fat, Gm.	Calories	Calories per Kilogram	Weight, Kg., Net	Urine: Sugar, Gm.	Urine: Diacetic Acid	Alveolar Carbon Dioxid Mm. Mercury	Blood Before Breakfast, per Cent.: Sugar, Folin-Wu	Blood Before Breakfast, per Cent.: Fat, Bloor
Adm.	..	..	..	...	....	30.0	85	+++	31	0.31	5.12
8.....	36	27	4	288	8.8	32.8	0	0	38	....	2.54
6.....	13	33	29	445	14.8	30.0	0	0	..	....	2.20
7.....	17	38	47	643	22.3	28.8	10	0	36	....	4.24*
7.....	12	29	41	533	17.3	30.8	0	0	..	....	4.70
12.....	12	29	41	533	17.3	31.8	0	0	38	0.20†	

* Ophthalmoscopic note by two persons: "Arteries and veins have a creamy appearance, evidently due to lipemia."
† At discharge.

REPORT OF A TWENTY-EIGHTH CASE

Mr. D. was 35 years and 11 months of age when the onset of diabetes was indicated by a gradual but distinct increase of his thirst over that of the men with whom he had been playing cards during the preceding fortnight of his vacation. Nocturia did not begin until two weeks afterward; and it was a month later that a cold took him to his physician, who, on hearing of the thirst, examined the urine and diagnosed the diabetes. Sugar and bread were omitted without material relief, so a fortnight later he was referred here for treatment. The urine then contained 6 per cent. in a single specimen four hours after a hearty meal, and in the night the twelve-hour amount, 3.9 per cent., or 55 gm., diacetic acid, ++; blood sugar before breakfast, 0.25 per cent.; blood fat, 0.58 per cent., and plasma not creamy. The weight was 57.7 kg. net, i. e., 13 per cent. below his maximum of 157 pounds net (71 kg.) six months before the onset; 12 per cent. below his weight of 145 pounds net (65.8 kg.) at onset, and 25 per cent. below the insurance average for his height and age. He was discharged eighteen days later, Oct. 13, 1922, sugar and acid free, with a fasting blood sugar of 0.10 per cent., and on a diet of: carbohydrate, 155 gm.; protein, 70 gm.; fat, 99 gm.; calories, 1,746; total glucose (Woodyatt), 206 gm.; weight, 56.8 kg., making 2.7 gm. of carbohydrate and 31 calories per kilogram.

* From the Service of Dr. E. P. Joslin at the New England Deaconess Hospital.

He returned to work in the midst of the autumn rush of business. Although he followed his diet and weighed his food, he became very tired. About December 21, work had become much heavier, and two days before Christmas he had to quit. In the attempt to gain strength, he increased his diet to: carbohydrate, 155 gm.; protein, 100 gm.; fat, 125 gm.; he showed sugar, and could get free only by reducing the fat or by fasting. Glycosuria and weakness caused him to return to the hospital four months after he had left it.

Events after readmission, Feb. 9, 1923, are shown in Table 2. Now the plasma was creamy and the retinas presented a grayish, hazy appearance, not sufficiently accounted for by the very moderately increased black pigmentation. The arteries and veins looked much alike. The white line was extremely prominent, and the usual contrast between it and the red artery was absent, while there was a silvery glow or sheen about the vessels.

Dr. F. M. Spalding reported that there was no question about this being a case of lipemia retinalis. The most prominent feature was the appearance of the arteries. They had a distinct yellowish color, in some places, almost whitish, with the silvery glow or sheen as described. The nerve heads were of fairly good color and did not show the waxy look as described in some cases. The veins had more of a chocolate color than the purple one would expect. The choroidal vessels were also more of a yellowish color.

Table 2.—*Course in Twenty-Eighth Case*

Date	Diet: Carbohydrate, Gm.	Diet: Protein, Gm.	Diet: Fat, Gm.	Diet: Calories	Diet: Calories, Kg.	Weight, Kg., Net	Urine: Sugar, Per Cent.	Urine: Sugar, Gm.	Urine: Diacetic Acid	Alveolar Carbon Dioxid, Mm. Mercury	Blood Plasma Before Breakfast, per Cent.: Sugar, Folin-Wu	Blood Plasma Before Breakfast, per Cent.: Fat, Bloor	Insulin Units
Feb. 9, 1923	..	..	..	...	....	....	5.8	..	++++	34	....	....	..
Feb. 9-10, 1923	..	..	..	...	....	50.9	5.0	12 hrs. 75	+++	..	....	....	9
Feb. 10-11, 1923	66	24	37	689	14.0	50.7	0.7	41	0	..	0.29	6.30	15
Feb. 11-13,* 1923	40	30	61	853	16.7	51.1	0.5	17	0	..	....	....	13
Feb. 14, 1923	..	..	..	...	....	....	...	..	....	..	0.29	2.95	

* For February 11 to 13, inclusive, the figures given are daily averages.

A second ophthalmoscopic examination, February 14, revealed no evidence of retinal lipemia. This was confirmed by Dr. F. S. Thorne, who noted that the retinal changes were no longer characteristic of lipemia retinalis. The color of the vessels was now practically normal. The chief thing present was a haziness of the fundus, probably due to a low grade retinitis.

The interval before disappearance of retinal lipemia as hitherto reported was two months (White), two weeks (Hardy), and seven and five days (Wagener). This transitoriness rather than rarity is well emphasized by Wagener as the probable cause for the paucity of observations on retinal lipemia. The even shorter interval of four days in the present case enables us, like Wagener, to confirm Heine's estimate seventeen years ago as to the blood fat level necessary to produce the characteristics of lipemia retinalis: "I think, therefore, that with 4-5 per cent. fat content of the blood the diagnosis of lipemia becomes possible with the ophthalmoscope, while with 8 per cent. the changes are very outspoken."

The patient received a total of 63 units of insulin, during which time the blood sugar percentage was unchanged, but ketonuria disappeared and the percentage of plasma lipoids was reduced one half in four and a half days. Insulin treatment was very likely of great importance in bringing about the rapid improvement.

COMMENT

The excessive brevity of the description of the retina in our first case suggests the notion that other observers, too, may have missed the chance to make adequate records on this little known peculiarity of diabetes for like reasons: (1) the absence of stimulating information in the standard textbooks; (2) the difficulty of assembling the original sources of this information, and (3) the incompleteness of any summary yet compiled. Much the best are the tables of recorded cases by Hardy and by Wagener. We have been able to extend the list of prior observers so that with the two cases here described, the total comes to twenty-eight: Case 1, Heyl[1] and Starr;[2] Case 2, White;[3] Case 3, Reis;[4] Case 4, Fraser;[5] Case 5, Turney and Dudgeon;[6] Cases 6 and 7, Krause;[7] Cases 8 and 9, Heine;[8] Case 10, Marx;[9] Case 11, Hertel;[10] Case 12, Köllner;[11] Case 13, Stoerk;[12] Case 14, Darling;[13] Case 15, Ulbrich;[14] Cases 16 and 17, Moore;[15] Case 18, Moore;[16] Case 19, Williamson;[17] Case 20, Cohen;[18] Case 21, Hardy;[19] Case 22, McGuire;[20] Case 23, Benedict;[21] Cases 24, 25 and 26, Wagener.[22]

Nomenclature.—The name favored by the discoverer, Heyl of Philadelphia, was intra-ocular lipemia, but subsequent students have uniformly preferred his second choice: retinal lipemia or lipemia retinalis. Lipemia angioretinalis was suggested as more accurate by Cohen in 1921, but seems unlikely to supplant the original term of forty-three years' standing.

Eyeground.—The diagnosis is based on the ophthalmoscopic aspect of the vascular net, (1) as to the color, variously described as light salmon (Heyl), strawberry and cream (White), milky (Heine), light pink (Köllner, Darling), creamy, waxy (Heine, Köllner, Darling, Moore), ground glass effect (Moore), malted

1. Heyl, A. G.: Remarks on Lipaemia Retinalis Occurring in a Case of Diabetes Mellitus, Philadelphia M. Times **10:** 318 (March 27) 1880; Intra-Ocular Lipaemia, Tr. Am. Ophth. Soc. **3:** 54 (July) 1880.
2. Starr, L.: Lipaemia and Fat Embolism in Diabetes Mellitus, M. Rec. **17:** 477 (May 22) 1880.
3. White, W. H.: Guy's Hosp. Gaz. **16:** 295 (July 19) 1902; A Case of Diabetic Intra-Ocular Lipaemia, in Which the Blood was Examined During Life, Lancet **2:** 1007 (Oct. 10) 1903.
4. Reis, W.: Zur Kenntniss eines bisher kaum beachteten Augenspiegelbildes bei Lipaemie in Folge schweren Diabetes, Arch. f. Ophth. **55:** 437 (March 24) 1903.
5. Fraser, T. R.: Lipaemia in Diabetes Mellitus, Brit. M. J. **1:** 1205 (May 23) 1903.
6. Turney, H. G., and Dudgeon, L. S.: A Case of Intra-Ocular Lipaemia Associated with Diabetes, J. Path. & Bacteriol. **11:** 50, 1906.
7. Krause, P.: Ueber Lipämie im Coma diabeticum, Verhandl. Cong. f. inn. Med. **23:** 521 (April 26) 1906; La lipémie dans le coma diabétique, Sem. méd. **26:** 225 (May 9) 1906; Zur Symptomatologie des Coma diabeticum, Deutsch. med. Wchnschr. **33:** 85 (Jan. 10) 1907.
8. Heine, L.: Ueber Lipaemia retinalis und Hypotonia bulbi im Coma diabeticum, Klin. Monatsbl. f. Augenh. **44:** 451 (Dec.) 1906; Augenspiegelbefunde bei diabetischer Lipaemie, Deutsch. med. Wchnschr. **33:** 85 (Jan. 10) 1907.
9. Marx, E.: Ein geval von lipaemia retinalis, Nederl. Tijdschr. v. Geneesk. **2:** 808 (Sept. 21) 1907.
10. Hertel, C.: Mikroskopische Präparate und Abbildungen von einem Fall von Lipaemia retinalis, Ztschr. f. Augenh. **21:** 551 (May) 1909.
11. Köllner, K.: Lipämie, Centralbl. f. prakt. Augenh. **34:** 212 (July) 1910; Mitteilung über Lipämie, Klin. Monatsbl. f. Augenh. **49:** 109 (July) 1911; Lipaemia retinalis, Ztschr. f. Augenh. **27:** 411, 1912.
12. Stoerk, E.: Ein Fall von hochgradiger Lipämie bei juvenilem Diabetes mellitus, Wien. med. Wchnschr. **61:** 1297 (May 13) 1911.
13. Darling, C. G.: Retinal Lipaemia in Severe Diabetes, Arch. Ophth. **41:** 355, 1912.
14. Ulbrich: Lipaemia retinalis, Tr. Ophth. Gesellsch. in Wien, Nov. 11, 1912, Ztschr. f. Augenh. **29:** 83, 1913.
15. Moore, R. F.: Lipaemia Retinalis, Lancet **1:** 366 (Feb. 20) 1910.
16. Moore, R. F.: Diabetes in Relation to Diseases of the Eye, Tr. Ophth. Soc. U. K. **40:** 15, 1920.
17. Williamson, R. T.: Ophthalmoscopic Appearances in Certain Rare Cases of Diabetes, Brit. M. J. **1:** 120 (Jan. 22) 1921.
18. Cohen, M.: Report of a Case of Lipaemia Retinalis with Hypotony in Diabetic Coma, Arch. Ophth. **50:** 247 (May) 1921.
19. Hardy, W. F.: Lipaemia Retinalis, Tr. Am. Ophth. Soc. **19:** 229 (June 15) 1921.
20. McGuire, H. H.: Observations in a Case of Lipaemia Retinalis, Tr. Am. Ophth. Soc. **20:** 235 (May 1) 1922; Am. J. Ophth. **5:** 862 (Nov.) 1922.
21. Benedict, W. L.; Discussion of McGuire's paper, Tr. Am. Ophth. Soc. **20:** 241 (May 1) 1922.
22. Wagener, H. P.: Lipemia Retinalis: Reports of Three Cases, Am. J. Ophth. **5:** 521 (July) 1922.

milk (Hardy), silvery sheen or glow (Case 28); (2) as to the size of the vessels, seemingly about twice the normal diameter (Heyl); (3) as to the similarity of arteries and veins (Heyl, Reis, Heine, Marx, Hertel, our experience); (4) as to the flat, ribbon-like aspect of the vessels accompanied by absence of the light streak (Heine, Marx, Moore, Hardy, Wagener); or (5) conversely as to unusual breadth of the light streak (Case 28).

Hemorraghic points were noted by Czerny [23] twenty-four hours after the injection of fat into the veins of a dog with a normal fundus. This experiment was generously credited by Heyl with having shown "doubtless intra-ocular lipemia," but Czerny recorded nothing about the looks of the vessels, and later attempts at experimental reproduction of the condition have been unsatisfactory. Cohen did observe two small hemorrhages in his diabetic boy.

The retina itself may be tessellated from the lack of pigmentation frequently reported in diabetics (Cohen), but usually is commented on for its surprising normality.

The nerve head may be fawn color (Reis), chocolate color (Köllner) or waxy (Wagener), but it is usually normal, as are the media and the patient's visual acuity.

The iris pigment epithelium may exhibit glycogenous degeneration, indeed, to such an extent as to be characteristic of diabetes (Reis).

Illustrations of the ophthalmosocopic picture have been published by White, Heine,[24] Köllner, Darling, Dimmer [25] and McGuire. Those by the first two authors, especially Heine, are beautifully colored plates.

Differential diagnosis may be made from (1) leukemia by (*a*) the white cell count; (*b*) the exaggeration of the usual difference in size between the narrow arteries and wide veins (Heyl), and (*c*) tortuosity of arteries and particularly of the veins (Dimmer), and from (2) polycythemia by (*a*) the red cell count and (*b*) the deep color of the vessels (Heine gives a plate in parallel colors).

Coexistence of lipemia and leukemia was, however, demonstrated by Wagener in one of his cases, and the possible coexistence of lipemia and nephritis was considered by Moore [26] in 1922. He examined a series of 119 cases "as to their eye condition. Of these, four had well-marked lipemia or lecithinemia, but in none of them was it sufficiently marked to give rise to the ophthalmoscopic picture of lipemia retinalis."

Blood Fat.—The natural explanation for the appearance of retinal lipemia has been sought for by chemical determination of the ether-soluble fraction of the circulating blood. This was first done in one of these cases by Reis: total fat, 18.13 per cent.; cholesterol, 2.51 per cent. The former value has been recorded in seventeen of the twenty-eight patients cited, and in five of these the cholesterol also, though from the latter no interpretation has been drawn. The total fat in these cases averaged 9 per cent., and ranged from 26.25 (Köllner) down to 4.24 per cent. (in Case 27) and 3.50 per cent. (Wagener's Case 3).

When the blood fat diminishes, the retinal vessels appear much more normally pink (Köllner), or even perfectly normal (the facts are given in Table 3). In Case 28, the shortness of the periods, together with the relative closeness of the fat figures, synchronous with the presence and absence of retinal lipemia, enables us to limit the threshhold to between 3 and 6 per cent. of plasma lipoids by Bloor's method. More accurate fixation of the critical level will evidently require fat determinations daily or oftener, with due regard to the time elapsing between the last meal and the venipuncture.

The accuracy of such high fat values as those of Reis, Fraser and Köllner is questionable, as Wagener has already remarked.

Acidosis.—The data are not very complete. Ferric chlorid is positive in at least 57 per cent. (sixteen cases), and is not stated in ten cases; it is definitely negative in the pneumonia case and in Case 27. In Case 28 the strong Burgundy reaction in the twelve-hour amount ending just before the creamy blood was drawn had entirely disappeared in the ensuing twenty-four-hour collection. The extremes of the blood carbon dioxid were 56 per cent. by volume, i. e., normal, on admission when the retinal lipemia was recognized (Hardy); and 1 per cent. by volume five hours before death (Moore's first case). This last low figure may be skeptically received in view of the rarity of a value as low as 6 per cent. by volume.

TABLE 3.—*Diminution of Blood Fat*

	Blood Fats, per Cent.	Interval
White	.....	2 months
Köllner	26.25 → 13.50	Not stated
Hardy	9.50 → 2.90	2 weeks
Benedict	8.50 → 3.50	Not stated
Wagener	8.20 → 1.90	24 days
Case 28	6.30 → 2.95	96 hours

Blood Sugar.—This was stated only in the reports of 1921 and later, in which it was given as 0.28, 0.18, 0.54, 0.42, 0.40, 0.31, and 0.29 per cent., averaging 0.34 per cent. Oddly enough, the figure 0.54 (McGuire) rose during eight weeks' observation to 0.65 per cent., at the same time as the blood fat fell to 3.7 per cent. and the fundi became normal.

Urine Sugar.—The data are defective. The amount in twenty-four hours exceeded 170 gm. (White), 300 (Turney), and 660 gm. (Fraser). The greatest glycosuria in Case 27 was 85 gm. for twenty-four hours, and in Case 28 was 75 gm. in the twelve hours following admission.

Age.—Retinal lipemia has been said to be "a terminal symptom of juvenile diabetes" (Köllner, Moore). The facts are: For the twenty-four patients whose age was stated, the youngest was 9 (Wagener), the average 25, and the oldest 51 years (Case 17).

Sex.—Four patients were women, the sex of two patients was not stated, and there were twenty-two males, that is, 79 per cent. of the series. Probably the factor of sex is of no significance.

Soft Eyeball.—Hypotonia bulbi as a sign peculiar to diabetic coma was first reported by Krause in 1904, and in conjunction with retinal lipemia was reported by the same observer in 1906, and then by Heine, by Hertel and by Cohen. Darling tested for it with a Schiötz tonometer and got normal figures, possibly because soft eye seems to be an agonal phenomenon and because his observation was made so long before death; namely, six weeks. The two signs appear to be quite independent.

Condition on Discharge.—The immediate outcome was death in 57 per cent. of the series; of the sixteen

23. Czerny, V.: Ueber die klinische Bedeutung der Fettembolie, Berl. klin. Wchnschr. **12**: 593, 605 (Nov. 1 and 8) 1875.
24. Heine, L. (Footnote 8): Die Krankheiten des Auges, Berlin, 1921, p. 170.
25. Dimmer, F.: Der Augenspiegel, Ed. 3, Leipzig and Vienna, 1921, p. 338 (photomicrograph of the fundus of Ulbrich's patient).
26. Moore, R. F.: Medical Ophthalmology, Philadelphia, 1922, p. 168.

patients who died, one had pneumonia (Turney), while coma clearly claimed ten and probably also the remaining five.

Duration.—The duration of lipemia retinalis from diagnosis to death or, when that was unknown, to discharge from the hospital, varied from twenty hours (Moore, Case 2) to seven weeks (Heyl, Darling), nine weeks (Köllner), and four months, nineteen days (Case 27). These long intervals before death, together with the recoveries mentioned, prove that the outlook, while grave, like that of hyperlipemia in general, is by no means immediately alarming.

CAFFEIN INTRAVENOUSLY—THE BEST OF STIMULANTS

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In discussing the use of caffein as a stimulant, I wish to discuss it as a stimulant only, not as a permanent remedy. As a temporary stimulant, it is the one and only drug which in my experience never completely fails. Stimulants such as strychnin, atropin, strophanthin, digitalis intravenously, and the weak member camphorated oil have the unhappy faculty of usually failing when they are most needed—that is, in desperately ill patients. This we should expect. The poisons elaborated in many diseases are so much more potent than drugs that, in the majority of such cases, stimulating drugs seem to amount to little more than the water in which they are dissolved. Caffein does not come in this class, however, if given intravenously. If given subcutaneously, it fails as other stimulants do. My attention was first drawn to its usefulness by a case observed when I was a house officer in the Massachusetts General Hospital in 1911:

An old man with bronchopneumonia was admitted to the hospital one afternoon. His condition seemed good. I promised his relatives I would notify them if there seemed to be any immediate danger. This gratified them greatly, since there were several important matters which they wished to settle if his illness appeared likely to terminate fatally. I left the hospital for about two hours during the evening, and on returning found that the old man had suddenly taken a turn for the worse and was at that time apparently moribund. He was as deeply comatose as a living person could be. He was practically pulseless. Breathing was of the Cheyne-Stokes type and labored during the periods of dyspnea. Large, coarse, tracheal râles were audible throughout the ward, owing to accumulation of mucus in the trachea.

The patient had been given strychnin, atrophin, camphorated oil and strophanthin intravenously, and had shown no response to them whatever. At the time I saw him it appeared useless to give medication subcutaneously. In his state there seemed little likelihood of its absorption. For this reason, in a desperate effort to resuscitate him, he was given 2 grains of caffein sodiobenzoate intravenously. He opened his eyes almost immediately and began to talk. His recovery was so unexpected as to be positively uncanny. He began to breathe regularly and deeply, and was troubled no further with mucus in the trachea. The pulse became strong and regular. When his relatives arrived, he conversed with them brightly and intelligently, and arranged his business affairs. During the remainder of the night he had a good pulse, regular respiration, and was mentally as clear as one could wish for. This lasted until the following night, when he again lapsed into the state just described and passed away, this time in spite of further use of caffein.

This experience has been repeated many times with almost equally good temporary results. The drug has been used in moribund cardiorenal cases; in uremia associated with coma; in prostate cases with ascending infection; in uremia and coma; in bronchopneumonia with coma, and in general sepsis with coma. The result in the majority of cases has been temporary, and while the drug has often been repeated two or three times with good effect, the later doses have rarely been as effective as the first. In the case about to be reported, however, caffein was repeatedly used with the result that the patient recovered from an illness which otherwise would have almost certainly terminated fatally:

An old man for three years had been troubled with prostatic hypertrophy and infected residual urine. He lived a catheter life for about one month, and finally, on account of his serious ill health, gave his consent to operation. A suprapubic cystostomy was performed without much preliminary preparation. He got along well for several days, when one evening he rather suddenly lapsed into coma. I saw the patient then for the first time. He evidently had bronchopneumonia; the temperature was 103. This, with the fact that he was nearly uremic, made the outlook grave. In fact, he actually looked moribund. It seemed that the duration of life should be estimated in hours rather than days. His pulse was very weak and irregular; breathing was of the Cheynes-Stokes type and difficult because of mucus in the trachea. Coma became so deep that he could not be roused at all.

He was given intravenously two grains of caffein sodiobenzoate. The result was about like the one described in the previous case. He gained consciousness almost immediately, the breathing, pulse and color improved—in fact, his general condition improved to such an extent that there was no concern about his going through the night without difficulty.

The same comatose condition recurred the following evening and was again relieved with caffein. On the two days that followed, several doses of caffein were required both during the day and during the night. At the end of this time his temperature came to normal. The crisis had evidently occurred, and convalescence and recovery had begun. One month later the prostate was removed without untoward result.

In attempting to account for the splendid effect of caffein when given intravenously, it might be said that caffein is a time honored and recognized stimulant. It has been used by mouth, by rectum, subcutaneously and perhaps intravenously. Its subcutaneous use in my hands has not given striking results as a strong stimulant, and has had the unfortunate effect of interfering with sleep. In every case in which it has been needed sorely, it has failed when given subcutaneously.

The impression has been gained from its intravenous use that it is the best of drugs that can be used as a stimulant. Following its use, the mind usually becomes bright, and the depressed vital reflexes so important to the life and welfare of the individual become active and normal. The good effect of the drug has seemed to me to lie chiefly in the brightening up of consciousness with improved cortical control of the vital reflexes, and a resulting improvement in breathing, circulation and other fundamental functions which may have been impaired.

The chief sphere of usefulness for intravenous caffein lies in its employment in desperate cases when other remedies fail and when consciousness and reflex activity are at a low ebb; for example, in cases of coma, shock, collapse under anesthesia, and poisoning from morphin and other depressant drugs. The remedy should not be used unnecessarily, nor repeated unless indicated. I have never seen marked untoward effects

from its use, but one would think that the strain of a stimulant so powerful as intravenous caffein should be avoided unless actually needed.

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THE SCOPE OF THE ROENTGENOLOGIST'S REPORT

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There are two recognized extremes in the conception of what the report of a roentgenologic examination should include. The one extreme is typified by the report which describes in detail all that the roentgenologist sees in the film or on the screen, but does not tell what he thinks about it, what conclusions he draws from it, what it means to him. Such a report is, in its perfect form, a bald recital of roentgen signs, like the pathologist's description of a postmortem specimen, or a dermatologist's description of a skin lesion: at its best a perfect word picture but without meaning to one unable to interpret it. This form of report puts most of the burden on the stenographer; it commits the roentgenologist to nothing except accurate vision and good description; it is bound to be verbose; it tells much, yet almost nothing. It would be the ideal form of report from one roentgenologist to another; but, coming from the roentgenologist to the internist or the surgeon, it conveys information only in proportion as the recipient of the report knows technical roentgenology.

At the other extreme is the report which gives merely a roentgen-ray diagnosis. This may be done in a sentence; it is economical of time and effort, it commits the roentgenologist absolutely, but I think it is even a worse form of report than the other. Such a report, it is true, gives the roentgenologist's opinion; but it utterly fails to give his grounds for that opinion. If it is unwise to assume that the internist or surgeon is technically familiar with the finer points of roentgen diagnosis, it is equally unjustifiable to conclude that he is entirely unskilled in weighing roentgen-ray evidence. Any consultant in an obscure case is expected to give not only his opinion but also his method of arriving at that opinion and his evidence in favor of it; and the roentgenologic consultant should be no exception. Roentgen-ray diagnoses can seldom be made. I mean by this that it is relatively rare that the roentgen-ray evidence alone suffices to establish the whole truth about a clinical condition. Even in a recent fracture, it would be foolhardy to attempt to prescribe treatment and venture a prognosis without seeing the patient as well as the roentgenograms.

There is a negative form of this type of report which is also, in my judgment, very bad. I refer to the gastro-intestinal report, for instance, which says, "The gastro-intestinal tract of Mrs. Blank was examined by means of a barium meal and enema. No evidence of intrinsic disease was found." Such a report is extremely incomplete, even though, in the judgment of the roentgenologist, it is perfectly truthful. No roentgen-ray man, simply because a patient had been referred to him on suspicion of gastric ulcer, would fail to mention a gastric cancer if he found it; yet such a report as that cited may be almost equally misleading. The patient may have had a marked ptosis, or strongly suggestive indirect evidence of gallbladder disease, or a spastic colon, or ileocecal incompetence without impairing the technical truthfulness of the report, if the examiner does not happen to attach much importance to these things. In short, such a report is only of as much value as the roentgenologist's unsupported opinion, and utterly fails to convey the detailed data which an analytic mind would require.

The roentgen-ray findings, to insure their most effective use, must be interpreted in the light of the clinical data. This does not mean that the roentgenologist must take an accurate and detailed history, or make a physical examination. Sometimes it is well that he should do these things; but, if they are done, they should as a rule follow, rather than precede, his plate or screen examination. The fact remains that, to derive from them their utmost value, the roentgen-ray signs must be correlated with the clinical aspects of the case. It is certainly not ordinarily the function of the roentgenologist to do this, but it is his function to aid the surgeon or the internist to the fullest extent in doing it. This function is not fully subserved by either of the forms of report dealt with.

The ideal report is one that embraces, from the clinician's point of view, the advantages, and from the roentgenologist's, the disadvantages, of both the types mentioned. It paints the word picture of what the roentgenologist saw on the screen or the plate as fully as the first form, and it gives conclusions, nay, even perhaps a diagnosis, as did the second type. It not only commits the roentgenologist as to his opinion, but it makes him give his grounds for that opinion. It involves more work on the part of both the writer and the reader than either of the other forms. It puts the roentgenologist out in the open where the clinician can shoot at him, and then provides the ammunition. But it does offer a fair chance to correlate the laboratory and the clinical aspects, and thus arrive at the truth.

If there are films and the clinician is to look at them, this type of report serves as a guide book and enables him, perhaps, to observe points of interest with less waste of time and more comprehension. If there has been a fluoroscopic examination, such a report enables the clinician to visualize it perhaps better than if he had been present; surgeons, particularly, are notoriously impatient about waiting for their pupils to dilate sufficiently to get the most from the fluoroscopic image.

The report should often include, if negative, a statement of the limitations of the particular examination conducted. For example, if the urinary tract is being examined for calculus, and none is found, it is mutually helpful for the roentgenologist to state that 25 per cent. of bladder stones, 15 per cent. of ureteral stones, and 10 per cent. of kidney stones are not demonstrable by roentgen methods. If the chest is examined fluoroscopically only, it should be mentioned that this sort of examination reveals only the grosser changes, and may entirely fail in revealing early lung changes. If films of the gallbladder region are asked for, and prove negative, it is well to state that only perhaps 30 or 40 per cent. of gallstones can be seen on the film, and perhaps 60 or 70 per cent. of diseased gallbladders; while, if a complete gastro-intestinal examination is made, positive evidence will be obtained in perhaps 80 per cent, or more of diseased gallbladders.

In certain examinations, topography is of as much importance as pathology, and should be fully entered into. This is particularly true in sinus and mastoid

examinations. The mere discovery that a frontal sinus is absent, that a sphenoid in a small child is large enough to be clinically important, or that the mastoid air cells are unusually extensive may aid materially in the solution of a clinical puzzle.

Wherever it is possible conservatively to do so, an estimate should be made of the activity and clinical importance of the pathologic changes revealed on the film or screen. Disease which has passed and gone often leaves an historical record in altered roentgen-ray densities, and it is particularly important for the clinician to be reminded that not all positive roentgen-ray findings mean active disease. The most common example of this is the almost universally present group of calcified hilum glands seen in adult chests. These vary in number and in density, and are simply a record of the universal early tuberculous infection. Instead of implying active disease, they are more likely to indicate a normal resistance to infection. As Bushnell has pointed out, the person who has had no tuberculosis is most unfortunate. Another commonly seen historical record of past disease is the increased density in an antrum shadow. Sinus infections of the more common type are accompanied by a thickening of the bony wall which remains after active infection is past. Such densities are properly interpreted as evidence of sinus disease past or present. If the walls of the air cells in the ethmoid labyrinth or in the mastoid are once broken down by infection, they do not regenerate. If spontaneous healing occurs, the roentgen-ray picture may be much the same five years later, as during the active course of the pathologic process; hence the necessity for stating that the part shows evidence of disease, but not that disease is present. Only the clinician can say that. On the other hand, it is possible with most tuberculous lesions of the lung to say whether or not there is present activity. The active duodenal ulcer can as a rule be distinguished from the scar of the healed lesion.

Another instance of the variable relation between roentgen pathology and the clinical aspect is the so-called silent urinary calculus. Not infrequently, large urinary calculi are discovered in the course of an examination of the spine, gallbladder or sacro-iliac joint. Such an accidental finding may somewhat overshadow the really important condition, in case the stone so discovered is of the silent variety and is not causing symptoms. On the other hand, in the course of the examination of the urinary tract, it is not unusual to find marked osteo-arthritis of the lumbar spine, which, however, may be making no trouble whatever. It is not the function of the roentgenologist to determine in the individual case whether such a condition of the spine can explain the symptoms present. It is, however, his duty to note and describe the condition. The point is that, incidentally and for the moment, any important pathologic change may in the films overshadow the really significant condition.

Occasionally, one finds, in a patient referred for fracture, not only the fracture suspected but also a bone cyst or tumor which far overshadows the fracture in importance, in that it is not only the cause of the present fracture but may lead to a general condition much more serious to the patient than a mere broken bone. On the other hand, the existence of marked obvious bone disease should not lead one to neglect, as it often has, the presence of a fracture without much displacement.

In roentgenology, as in other departments of medicine, there are controversial points on which opinion is still in the formative stage. The roentgenologist's report on any such condition is certain to be colored by his own attitude toward the controversy. It is right that this should be so; but it is particularly important, under such circumstances, that the report make clear the fact that the evidence in such instances is not universally accepted, or that its interpretation is still somewhat a matter of doubt. A particularly apt example of this situation exists in the present attitude of the roentgenologic fraternity toward roentgen-ray diagnosis of gallbladder conditions. About gallstone shadows there can, of course, be no question. If seen, they indicate with certainty the presence of gallstones and, by inference, past or present gallbladder disease. There are, however, two other types of positive roentgen-ray evidence with regard to the gallbladder which have assumed steadily increasing importance during the last few years. First in point of time is the so-called indirect evidence of gallbladder infection consisting in deformities of the duodenum, alterations in tone of the pyloric portion of the stomach, and fixation or other abnormality in the hepatic flexure of the colon. These phenomena are, of course, caused either by adhesions resulting from inflammatory processes in the gallbladder and ducts, or by reflex nervous disturbances originating in the same locality, or by both causes acting together. In their typical form they give a picture that is characteristic and convincing to a large proportion of roentgen-ray men. More recently, the effort to demonstrate the gallbladder itself on the roentgen-ray film has somewhat overshadowed these indirect signs. George and Leonard of Boston, and Kirklin of Muncie, Ind., have been largely responsible for the theory that any gallbladder which can be definitely shown on the film is pathologic. All have large and convincing series of cases in which their findings have been surgically confirmed. They believe that it is often possible to show a gallbladder which contains stones when the stones themselves are not shown. They believe that the normal gallbladder can never be shown as a distinct shadow on the film. I am told that the surgeons with whom they work accept their findings without much reservation, as a result of confidence born of a rather prolonged experience. However, I think that perhaps most surgeons, and I know that many roentgen-ray workers, are extremely dubious about accepting the fact of a gallbladder shadow as proof of gallbladder disease. The whole point is one which will require much more work and a much larger series of operative checks to clear it up to every one's satisfaction. In the meantime, reports of gallbladder examinations in which the gallbladder, but no stones, is shown, should indicate clearly that such a finding, while indicative of gallbladder disease with or without stones, latent or active, does not by any means imply that surgical interference is called for on that basis alone.

SUMMARY

It would seem that the ideal roentgen-ray report should present a careful and accurate description of the picture seen. It should offer whatever explanation of variations from the normal may be conservatively given on a basis of established roentgen pathology. It should give, when this can be conservatively done, an estimate of the activity and present importance of the lesion, such estimate, however, to be derived entirely from the roentgen signs. It should place in the hands of the

clinician all the information the roentgenologist has been able to obtain by his peculiar method of examination, and should offer it in such form as will most facilitate the correlation of the roentgen and clinical evidence.

Special Articles

THE CARE AND FEEDING OF INFANTS

(Continued from page 919)

[NOTE.—This article completes the series on the care and feeding of infants. These articles, with additional tabular matter and an historical account of the subject, together with illustrations, will be reprinted in book form. When the book is available, announcement will be made in THE JOURNAL.—ED.]

FEEDING AFTER THE FIRST YEAR

The average infant fed on cow's milk mixtures will require as a minimum, per kilogram of body weight, during the later months of its first year, fat, 4 gm.; protein, 3.5 gm.; carbohydrates, 12 gm.; calcium oxid, 0.17 gm., and a total water content in its day's food including that contained in the milk equal to 125 c.c. per kilogram, which approximates one eighth of its body weight. (Per pound of body weight at 1 year: protein, 1.5 gm.; fat, 1.8 gm.; carbohydrates, 5.5 gm.; calcium oxid, 0.08 gm.; water, including that contained in the milk, equal to 2 ounces.)

A diet so constructed will furnish approximately 100 calories per kilogram, or 45 calories per pound of body weight.

In a study of the diets of a large group of normal infants and children, Holt and his co-workers found that the food requirements of older infants and children showed a gradual decrease per kilogram of body weight after infancy. The *fat* taken diminished to 3 gm. per kilogram by the *sixth year*, while the *protein* intake decreased to about 2.5 gm. per kilogram at 6 years, and remained at this value or slightly below it until the end of growth. Of the protein, about 66 per cent. was in the form of animal protein from milk, eggs, meat, etc., the remainder being taken as vegetable protein. The *carbohydrates* should, to a large extent, be used to supplement the fat and the protein in the diet, the fat and protein, however, being first provided for. Holt believes on this basis that about 12 gm. of carbohydrates per kilogram at 1 year, with decreasing amounts to between 10 and 11 gm. per kilogram at 6 years, will properly balance the diets. The average of all ages showed that about 50 per cent. of the carbohydrate was taken in in some form of sugar and an equal amount of starch. (Per pound of body weight at 6 years: protein, 1.2 gm.; fat, 1.35 gm.; carbohydrates, 5.0 gm.)

TABLE 30.—*Amounts and Calories at One Year and at Six Years* *

	Grams or Cubic Centimeters per Kilogram				
	Protein, Gm.	Fat, Gm.	Carbohydrates, Gm.	Calcium Oxid, Gm.	Water, C.c.
At 1 year.....	3.5	4.0	12.0	0.17	125
At 6 years....	2.5	3.0	11.0	0.17	125
	Grams or Cubic Centimeters per Pound				
At 1 year.....	1.5	1.8	5.5	0.08	60
At 6 years....	1.2	1.35	5.0	0.08	60

* The percentage distribution of the calories in the diet will approximate: protein, 15.0; fat, 35.0; carbohydrates, 50.0.
Note.—1 gram of protein = 4.1 calories; 1 gram of fat = 9.3 calories; 1 gram of carbohydrates = 4.1 calories.

At 6 years the diets will approximate 85 calories per kilogram, or 38 calories per pound of body weight.

The essential mineral salts will be contained in sufficient amounts to meet the child's requirements in a well balanced diet. The total fluid requirements also decreased to an average of about one eighth of the body weight, 125 c.c. per kilogram, 60 c.c., or 2 ounces, per pound.

While the average healthy infant will require a greater amount of food per pound of body weight to meet its needs for growth and development, the average percentage distribution of the amounts and calories will remain approximately the same at the different ages.

TABLE 31.—*Average Amounts of the Various Food Constituents Required by Children*

Age in Years	Weight		Protein, Grams	Fat, Grams	Carbohydrate, Grams	Calories
	Pounds	Grams				
1	21.0	9,513	31.5	37.8	115.0	952
1½	25.3	11,460	38.0	45.5	140.0	1,153
2	28.0	12,684	39.2	47.6	154.0	1,235
3	32.9	14,905	42.5	52.6	164.0	1,336
4	36.1	16,353	46.93	54.15	180.0	1,434
5	41.2	18,663	49.4	57.7	206.0	1,584
6	45.0	20,385	54.0	60.75	225.0	1,709

ADDITIONS TO THE DIET AFTER THE FIRST YEAR

The diet of a growing child should be so constituted as to contain sufficient quantities of the following:

Whole Milk.—It has become our custom to postpone the feeding of whole milk without the addition of carbohydrates until after the first year. While there is no contraindication to feeding whole cow's milk by the beginning of the ninth month, or even earlier, when indicated, the milk being boiled or alkalized, the addition of carbohydrates above the amount contained in whole milk is of advantage to the infant, both from the standpoint of its metabolic needs and in lessening the tendency toward constipation in the artificially fed infant.

At no time is the infant to be fed more than 1 quart of whole cow's milk in twenty-four hours.

Unless the infant shows a tendency to take less than the required amount of milk in the form of a mixture, some water and 1 ounce of sugar are retained in the mixture until the infant is 1 year old. The water is gradually lessened from the tenth month so that by the end of the twelfth month only 2 to 4 ounces are retained— an amount sufficient to the sugar. The total fluid needs after the first year are a minimum of 2 ounces per pound of body weight daily. Water may be given from a bottle two or three times daily, although not essential if the diet contains sufficient to meet the infant's needs.

Cooked Cereals.—These should form a part of at least one or two meals. Those made from whole grain are the most valuable. The process of milling which removes the outer shell of the grain causes a loss of the greater part of the protein, mineral matter and vitamins.

Toast and Bread Crusts.—Toast and bread crusts which have been spread with *butter* or *jelly* may be given at the end of one of the meals.

Green Vegetables.—These are especially valuable because of their mineral salts and vitamins. They

also give a needed bulk to the food, thereby tending to prevent constipation. They may be classed in two large groups—the tubers, such as potatoes, turnips, beets and parsnips—and the green vegetables. Of the latter group the leafy vegetables, such as spinach, lettuce, cabbage, sprouts, chard, cauliflower, asparagus, celery, turnip and beet tops, have an especially high mineral and vitamin content, as well as being rich in iron. Peas and beans have a high protein content, but this is not sufficient to replace the animal proteins in the diet of the growing child. Tomatoes are especially valuable as an antiscorbutic. Whenever possible, the water in which the vegetables are cooked should be retained, as it contains a large part of the mineral salts of the plants.

Beef Juice.—Because of its high iron content, beef juice proves a valuable addition to the diet in the latter half of the first year. Beginning with one-half ounce, the quantity may be increased to 1 ounce or, at most, 2 ounces daily. It can be mixed to advantage with the vegetable purée.

Bacon.—A slice of crisp bacon containing very little lean may be given to advantage during the last months of the first year.

Broiled Lamb Chops; Scraped Beef; Chicken and Fish.—These may be added to the diet during the second year. All meats should be finely divided. Beef steak, roast beef and lamb are better withheld until the child shows a tendency to masticate its food. Even young children may be allowed to gnaw meat from bones, because of the beneficial influence on the teeth, gums and salivary glands. The flesh foods confer a desirable palatability on vegetable foods with which they are served. They should form only a limited part of the diet of young children.

Fruits.—Fruit or fruit juices should always be considered a necessary addition to the daily diet, and should form a part of at least one meal. They can be used to best advantage at the end of the meal. Raw fruits are of even greater value than cooked fruits. Scraped apple and banana may be given early in the second year.

Honey and Jellies.—These may be spread on toast and bread.

Eggs.—These contain every factor vital to the needs of the body for development, but nevertheless need to be combined with other foods to balance the diet properly. They can be started at the beginning of the second year, either in the form of coddled egg or as egg custard. Very small amounts should be given at the first feeding until it is ascertained whether the infant has an idiosyncrasy to egg. After the fourteenth month, a half egg or more may be fed every second day. It may be alternated with beef juice or scraped beef.

Cottage and Cream Cheese.—These may form a part of the diet at the end of the second year.

Desserts.—Simple desserts, such as custard, pap, junket, gelatins, tapioca and rice pudding, are recommended during the second year. Only moderate quantities should be served, and then only at the end of the meal. The child should be taught to consume the major items of the meal before taking the dessert.

FACTS TO BE CONSIDERED IN FORMULATING THE DIET

Children should be watched to see that they do not swallow their food without chewing it. It is stated that when we chew fibrous foods we exert a pressure of one hundred or more pounds on the teeth, and this insures a good circulation of blood in the inner part, and is an important factor in developing the teeth and jaws. It is especially important for children that the last article eaten should be of such a nature as to cleanse the teeth.

Soft foods require little or no mastication, and therefore call forth a minimum secretion of saliva and are of no aid in developing the jaws and preserving the teeth.

Green vegetables require mastication, and therefore have a beneficial effect in the development of the teeth; and, because of their bulk and some of their constituents, they stimulate intestinal peristalsis. Breadstuffs and meat have an added value in that they require mastication.

Carbohydrate residues tend to favor decay more than do meat and vegetable particles. It is therefore of great advantage to finish the meal with fruits, vegetables or hard crusts rather than with soft desserts and other sweets.

Eating Habits.—Young children should be fed at regular hours. Incessant eating is one of the greatest handicaps to proper development. The child should be taught what kind of a diet best promotes health, and encouraged to eat the food placed before it by the good example of the other members of the family. Eating between meals necessarily will result in a loss of appetite, and sooner or later the result becomes manifest in the child's lack of development. It often becomes necessary to cultivate slowly a liking for spinach and other vegetables. It is always to be remembered that milk, cereals and vegetables must take precedence over meats and sweets. The diet should be so constructed in the individual case as to overcome any tendency toward constipation.

Overeating.—This is less likely to occur when the number of meals is limited to stated hours. The combination of overeating and constipation is probably the most important factor in the development of anorexia in childhood. It has been established that a reverse peristalsis may follow, with a flowing of the contents of the intestine back toward the stomach, with nausea and belching. This abnormal nervous reaction soon results in repugnance to all foods. Carbohydrate fermentation and protein decomposition in the intestinal tract aggravate the condition.

Poor Hygienic Conditions.—Lack of fresh air, too limited exercise and sleeping in closed rooms all have a detrimental influence on appetite, digestion and physical development.

PSYCHOLOGY OF CHILD FEEDING

Two factors are of prime importance—inheritance and environment. In order to meet the needs of the many children with whom the physician comes in contact, he must remember that individual children develop and grow at different rates, and that many, by reason of bad heredity, are neurotic and anemic; and when improper feeding is added to their difficulties, the resulting problem calls for tact in its solution.

The high tension, nervous child is frequently the offspring of neurotic parents. A nervous mother has a direct influence on the development of the infant. In such an environment, unless the child is an exceptional one, there is great liklihood of the daily routine being broken to meet the whims of the child. The introduction of new foods and changes in the methods of

administering them often results in a rebellious attitude on the part of the child. These tendencies should be recognized in early infancy, and the importance of counteracting them impressed on the mother. The attitude that she is to assume toward the infant must be definitely explained, and, on her readiness to cooperate, the physician should base his opinion as to her fitness to have charge of her own child. If the child is placed in care of a nurse, the physician must painstakingly explain the requirements and handicaps of the individual case. It is self evident that a neurotic attendant does not improve the situation.

The modern tendency to provide an endless variety in foods for the growing child leads it to acquire false dietetic inclinations. The same may be stated about the more recent tendency to keep detailed notes on the calories consumed by the family. This habit in many instances is carried to the extreme, thus influencing the mother's better judgment. It should be the physician's duty to provide a suitable diet, and the mother's to serve it. To accomplish the desired result the child should be taught to enjoy proper exercise—rest periods should be maintained and good hygienic surroundings provided.

The appetite must not be considered a safe guide in the selection of food. The physician should consider it sound practice to prescribe what the child should eat, and the mother's duty to serve it.

A complete change of surroundings, such as moving from the city to the country, away from the influence of the parents, placing the child in charge of a proper attendant, commonly results in a speedy improvement in the general condition and stabilization of the nervous system.

Temporary hospitalization is sometimes necessary if the more ideal course cannot be realized.

THE END.

New and Nonofficial Remedies

ETHYLENE AS AN ANESTHETIC

Preliminary Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following statement on the experimental status of ethylene in medicine.

W. A. PUCKNER, Secretary.

A report on "The Physiologic Effects of Ethylene—a New Gas Anesthetic," by A. B. Luckhardt and J. B. Carter, was published in THE JOURNAL, March 17, 1923, p. 765.

Ethylene is a well known substance chemically, having the formula $CH_2:CH_2$. At room temperature and ordinary pressure it is a gas slightly lighter than air; it is not very soluble in water, is more soluble in alcohol, but is soluble in ether. A mixture of ethylene and oxygen explodes when brought in contact with a naked flame. It is solid below —169.4 C., and boils at —103.9 C. It is generally prepared from alcohol by a so-called dehydrating action. The product reported in the paper was prepared by interaction of alcohol and orthophosphoric acid. So far neither the product prepared by the authors nor any commercial product has been examined in the A. M. A. Chemical Laboratory. As soon as a satisfactory market product is found, standards of purity will be elaborated.

The animal experiments reported by Luckhardt and Carter indicate that ethylene has a direct action on the nervous system when a concentration of 90 per cent. is used; that the motor reflexes are abolished at this concentration, and that the phenomena produced by the undiluted gas are partly asphyxia, which factor can be removed by the addition of oxygen, when it is seen that narcosis results from the ethylene itself. The authors believe that the ethylene does not react with the hemoglobin of the blood.

The trials carried out by Luckhardt and Carter on human subjects appear to confirm the anesthetic value of ethylene, as demonstrated on animals. Their experiments indicate that deep surgical anesthesia can be induced without marked unpleasantness. Analgesia is reported to come on easily and apparently long before surgical anesthesia is established. The authors believe, as a result of the experiments, that ethylene will be found more desirable than nitrous oxid, because of its ease of administration and rapid recovery after long continued administration. However, the anesthetic results reported have been only on persons in normal health.

The available evidence for the value of ethylene as a new anesthetic is thus far limited to the report mentioned. Particular attention is called to the conclusion of the authors: "This must be considered as a preliminary report of experimental work which has not been carried far enough to warrant general clinical use." In view of this, the Council considered the report and recommended that confirmation of the work obviously is necessary before more than a tentative acceptance of ethylene can be accorded. Nevertheless, it is recognized that the status of ethylene as an anesthetic is such as to warrant further research with the substance; as preliminary to such research the quality of the product, particularly absence of toxic impurities, must be determined. The Council has deferred acceptance of ethylene for New and Nonofficial Remedies until proof has been furnished that the product is a useful addition to the list of already accepted anesthetics, and until a satisfactory product is on the market.

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

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Dosage.—The average dose of Tincture No. 111 Digitalis-P. D. & Co. is 0.65 Cc. (10 minims) three or four times a day or oftener if indicated. To minimize deterioration through action of light and air, the preparation is marketed in one ounce amber vials and is saturated with carbon dioxide. It is claimed to retain its full activity for one year from date of manufacture (which is stated on the label).

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Rabies in Greece.—The *Grèce médicale* gives the report of the Pasteur Institute at Athens, since the foundation of the Lyssiatrion in 1894 to date. There have been 18,846 applicants, and treatment was given to more than 80 per cent. This, in proportion to the population of Greece, is five times the number of persons bitten by animals in comparison to France. The bite had been cauterized in only 13 per cent. of the cases. The total mortality was 0.4 per cent., but omitting those who died within two weeks, it was only 0.1 per cent. of the 15,170 treated.

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SATURDAY, APRIL 7, 1923

SOME MISCONCEPTIONS ABOUT HYPERTENSION AND DIET

The study of some of the chapters of medical history are singularly illuminating, in that they show a steady progress, from time to time, in the direction of more adequate and dependable knowledge. This is true, for example, of the story of our information regarding the cause and treatment of some of the infectious diseases. The successive pages have usually disclosed additions to the sum of what was known before; but there are other fields of medical interest in which the years have not brought a gradual increment of understanding in the same way. In some of these, one will find that history presents a succession of dogmatic views, each replaced in turn by some other conception, supported more strongly by the confidence of its advocates than by the validity of objective evidence. Perhaps there is no serious injustice in saying that these comments apply in considerable measure to the problem of hypertension.

A few years ago, the dietotherapy of high blood pressure was directed to the exclusion of purin foods and alcohol from the regimen of the patient. When the purins with their end-product uric acid lost some of the terror with which they seized the clinician of the end of the last century, the dietary caution was extended to include high protein foods, with special emphasis on those of animal origin. Subsequently, the consideration of focal infections as a possible etiologic factor diverted attention somewhat from the diet in cases of hypertension; but, lately, therapeutic success has been made to correspond with restriction in salt intake. What the next fashion in dietary proscription will be remains to be learned. There are lipoids and vitamins and carbohydrates still left in the list of possibilities.

Most of the considerations involved in the foregoing proposals for the management of arterial hypertension hark back to a not very distant period when this symptom was assumed to be a sequence to arteriosclerosis and chronic nephritis. The overindulgence in purins and proteins was believed to lead to these degenerative conditions in the blood vessels and kidneys. Of late, however, a critical consideration of the accumulating evidence is leading to the conclusion that certain types of high blood pressure—the so-called essential hypertension—may occur independent of the arterial disease or demonstrable lesions of the cardiovascular and renal systems. As a recent writer has indicated, the fact that patients with essential hypertension may later in life develop cardiorenal complications affords no justification for the conclusion that the primary cause of the high blood pressure lies in the organ or organs which secondarily show evidence of disease. He reminds us that a study of histories of patients, and careful continuous clinical observation, will reveal many patients with hypertension of fairly high grade and yet with no evidence of myocardial degeneration, arterial change or disturbance in kidney function. Furthermore, Moschcowitz has brought forward evidence—experimental and clinical—suggesting, if not actually proving, that, even in cases of frank nephritis, hypertension may be the earliest demonstrable symptom.

In consequence of such views, some writers are beginning to feel a hesitancy in connecting arterial hypertension in any way with the metabolism of nephritis. At any rate, there are numerous calorimetric studies which lead to the conclusion that the utilization of protein proceeds in the usual manner even in nephritis, in the majority of cases, at least. Sir Clifford Allbutt has denied the alleged remedial effects of the purin-free regimen. And Mosenthal [1] feels convinced that a low protein diet is not effective in lowering blood pressure or a high protein diet in raising it, judging by the effects observed in suitable patients over a period of weeks. Benedict has noted that the underfeeding of healthy persons for some time, so that reduction in weight ensues, is followed by decrease in metabolism and a lowering of blood pressure. But, as Mosenthal has remarked, such phenomena are likely to be the expression of a depression of vitality and efficiency that is of the general state of the person concerned, rather than the specific result of a low protein intake.

Most recently, Strouse and Kelman [2] have studied carefully the effect of diet on patients with hypertension and with varying degrees of damage to the cardiovascular or renal systems. Even when no impairment of renal function was detectable there were marked variations in blood pressure; and the latter bore no relation to the intake of protein food. In cases of frank progressive nephritis with hypertension, a diminution of protein intake sufficient markedly to lower the figures for blood nonprotein nitrogen and urea did not cause lowering of the blood pressure. Strouse and

1. Mosenthal, H. O., in Barker's Endocrinology and Metabolism, 1922.
2. Strouse, Solomon, and Kelman, Sarah R.: Protein Feeding and High Blood Pressure, Arch. Int. Med. **31**: 151 (Feb.) 1923.

Kelman regard their observations as further evidence to prove the existence of a clinical entity characterized by a primary hypertension. They further suggest that variations in blood pressure in this condition are the direct result of vasomotor disturbances. Perhaps it will lead to more rapid progress in the study of hypertension if we frankly admit that "at present there are no definite facts to point to any of the food substances as having a causative relation to blood pressure."

A CHEERFUL PROSPECT IN THE FIELD OF PUBLIC HEALTH ACTIVITIES

Courage is essential to many of the struggles which man must face, and they are not always confined to the conventional battlefield of contending armies. Good fights must often be fought in the course of every-day life. Nothing helps more to maintain courage in the face of severe obstacles than does a firm conviction in the rightness of the cause involved. It is doubly needed when the victory seems far away and the desired outcome is slow in arriving. It has recently been remarked that the question of living satisfactorily, in the present state of society, frequently resolves itself into combating the prevalent agencies of disease transmission. In addition to this, we are reminded further, are the dangers lurking in harmful foods, the hazard of acute poisoning, the menace of hereditary taint, the perils of degenerative disease, the attacks of pathogenic bacteria, and the deplorable functional disturbances. To face squarely the problems involved, Williams [1] adds, requires more courage than some can muster.

From day to day, or even from year to year, the efforts of modern preventive medicine sometimes appear to have made little, if any, progress. We are reminded of the wealth of investigation devoted to the problems of tuberculosis, while the disease is still with us. All the many cancer research institutes throughout the world, so the pessimist argues, have not decreased the incidence of the malady. Yet there are so many instances of great progress that one can easily recover courage and strengthen conviction through the mere enumeration of some of them. Against smallpox and yellow fever, the great victory has been sustained. Our latest annual summary of typhoid death rates in the large cities of the United States [2] shows a continuance of the typhoid decline which has been so striking a factor of the epidemiology of the disease for the last twelve years.

We have already remarked that the condition in the larger cities for the most part may now be regarded with pride instead of being pointed to with obloquy as awful examples. However forceful exhaustive statistics may be, they sometimes do not impress the individual so directly as the perhaps less accurate data derived from a smaller range that comes within his personal observation. As an illustration of the changing health conditions in our American communities, we may cite an interesting personal experience recently recounted by a physician in one of the Southern states.[3] Here is the striking testimony:

> During the five summer months of 1909, I saw 158 town patients. During the same period of 1922, I saw 202 town patients. Of the 158 patients seen in 1909, ninety-six had well-defined cases of malaria, with chill, fever, sweats, etc.; fifteen had cholera infantum ileocolitis, or dysentery, with two deaths, and seven had typhoid fever, making a total of 108 out of 158 that should have been prevented. During the five summer months of 1922, I did not have in town a single typical case of malaria, typhoid fever or cholera infantum. I had one atypical case of malaria that was most probably contracted out of town. I had only one case of ileocolitis that lasted over five days, and this was the only case of dysentery or infectious diarrhea in town this summer. There has not been a case of typhoid fever since February, 1919. Malaria, typhoid and infantile diarrhea have about disappeared.

Nor does this tell the entire story. Hookworm disease has been controlled in that community, and people once "sallow, anemic, sick and thin" have become "healthy, prosperous and happy." Here is the record of a community in which some one or, rather, many who had both courage and the conviction of their hygienic precepts have labored, and not in vain. Who shall say that health is not a purchasable commodity?

PROPOSED TESTS FOR FATIGUE

There is obvious wisdom in the belief that any activity in which the human body plays so large a part as it does in industry must be organized on a physiologic basis before the highest degree of efficiency can be secured. During the World War, at a time when the most or the best was expected of every citizen, Lee [4] reminded us that no factory mechanism approaches the human machine in its intricacy, the perfection of the correlation of its working parts, its combination of delicacy and strength, and its adaptability to the work required of it. None is so essential to industry. Nevertheless, as Lee has further pointed out, the present ways of handling the human machine are empiric and crude. Experience has taught most industrial managers what they believe to be the proper ways of dealing with the workers, and experience is conceived to be the best guide. The thought that the worker is a physiologic mechanism and should be treated as such, that the problem of the worker is a physiologic problem, is regarded as academic, fit for the laboratory, but not "practical" enough for the factory.

Every one realizes that the foremost limiting factor in work is fatigue, the antidote to which is rest. Incidentally, the condition of personal health is of great

1. Williams, J. L.: Personal Hygiene Applied, Philadelphia, W. B. Saunders Company, 1922, p. 351.
2. Typhoid in the Large Cities of the United States in 1922, J. A. M. A. **80**: 691 (March 10) 1923.
3. Bagby, B. B.: Changes in a Small Town Brought About by the Health Department, Pub. Health Rep. **38**: 456 (March 9) 1923.
4. Lee, F. S.: The Human Machine and Industrial Efficiency, New York, Longmans, Green & Co., 1918.

importance in the readiness with which fatigue ensues; and, conversely, some persons believe, with Sir James Paget, that fatigue has a larger share in the promotion or transmission of disease than has any other single causal condition. The admittedly important study of the phenomena of fatigue hinges on the availability of suitable methods of investigation. Fatigue must be detected with assurance and measured with some approach to reliability, if it is to be accepted as an index of bodily fitness, and if physical performance is to be gaged in accordance with its dictates.

Within recent years, a considerable number of physical tests have been proposed as indicators of fatigue in human beings. Some of them, which have found useful application in furnishing evidence of the changes in physiologic "fitness" attending pathologic states or exertion under extreme conditions of environment, have been referred to from time to time in these columns. There can be little doubt of the importance of having a procedure like Martin's "resistance strength test" or "spring balance muscle test" for measuring the muscular impairment in such conditions as infantile paralysis. It is one thing, however, to detect pronounced physical deterioration, and another to measure physical fatigue resulting from the usual routine of healthy work. In connection with the latter, Lee and Vanbuskirk [5] of Columbia University have failed to find a reliable criterion of the daily physical fatigue of the individual in any of the tests heretofore proposed. The cardiovascular reactions depended on in the Crampton and Schneider tests fail when applied to ordinary strenuous exertion, however useful they may be in indicating the deterioration associated with disease, drugs or overwork. The human electrocardiogram likewise fails to reveal changes due to such exercise as walks of 14 miles entail in untrained persons. The vascular skin reaction was undependable in healthy persons, as were the respiratory observations employed in detecting incipient stages in the breakdown of aviators suffering under the stress of flying.

The preservation of normal functions and reactions in healthy persons, despite ordinary vigorous exercise, speaks eloquently of the factors of safety in the human body. As Lee and Vanbuskirk point out, the cardiovascular system, serving as it does the needs of the whole body, ought, in the interests of the organism, to maintain its efficiency and its capacity for work unimpaired as long as it is possible. Observations show that this indispensable condition is maintained, even after strenuous demands are made on this physiologic system. It is sensitive, and constantly reacts to a host of intrinsic and extrinsic influences. When these reactions are persistent and leave a continuing impress, they may be detected by appropriate tests; and here some of the tests that have been used appear to have proved practicable and valuable. But in the ordinary affairs of life, the reactions are temporary and fleeting. It may therefore be futile, as the Columbia physiologists actually imply, to search among the physical manifestations of cardiovascular phenomena for an objective test for daily fatigue. If this is true, the findings of abnormalities by the current methods should gain all the more importance from the standpoint of their possible clinical usefulness.

5. Lee, F. S., and Vanbuskirk, J. D.: An Examination of Certain Proposed Tests for Fatigue, Am. J. Physiol. **63**: 185 (Jan.) 1923.

Current Comment

A FRENCH SURGEON TURNS LITTERATEUR

Georges Duhamel, doctor of medicine, winner of the famous Goncourt prize in literature, is 38 years old. Before the Great War he was a physician; during the war he wrote "The New Book of Martyrs" and "Civilization"; today he is a writer with a world audience, for he interprets life as only a physician can see it, and he writes with the tone of the great artist. His human compassion seems endless. As Malcolm Cowley expresses it in an essay in the current *Bookman*, Duhamel studied science because of his passion for the truth, but it was human pity that made him a writer. Consider with the point of view of the physician the following phrases from the first named book of sketches:

> Lerondeau has good strong teeth. Carré has nothing but black stumps. This distresses me, for a man with a fractured thigh needs good teeth. [Then comes a brief description of the dying man.] I look at the ash, the smoke, the yellow, emaciated face, and reflect sadly that it is not enough to have the will to live; one must have teeth.

Many a scientific treatise resulting from the experiences of war surgeons has taken thousands of words to say the same thing. Again:

> Each sufferer has his characteristic cry when the dressing is going on. The poor have only one, a simple cry that does service for them all. It makes one think of the women who, when they are bringing a child into the world, repeat, at every pain, the one complaint they have adopted.

Who but a physician could have made this observation, and who but a Duhamel could have so well expressed it? Consider also these phrases:

> It was fortunate that Carré brought such a stock of courage into the hospital, for he needs it all. Successive operations and dressings make large drafts upon the most generous supplies.
>
> And tomorrow, and for many days after, Carré will have to be constantly calling up those reserves of the soul which help the body to suffer while it waits for the good offices of Nature.
>
> The swimmer adrift on the open seas measures his strength and strives with all his muscles to keep himself afloat. But what is he to do when there is no land on the horizon, and none beyond it?
>
> While I am adjusting the new trough, a solid comfortable one, but rather different in appearance, he casts an eloquent glance at the discarded one, and his eyes fill with copious tears. The change is a small matter; but in the lives of the sick, there are no small things.
>
> Tricot had suffered greatly; only some fragments of his hands remained; but above all, he had a great opening in his side, a kind of fetid mouth, through which the will to live seemed to evaporate.

Thus, one may go on and on through the whole of this distinguished book, finding on every page living phrases which cry again and again the great call of human despair. As an army surgeon, Georges Duhamel partook of the suffering of every patient whom he served; and, passing with them through their travail, he wrote an immortal record. He expresses the most profound philosophy in that simple expression which is the greatest eloquence. A final quotation:

> To make up one's mind to die is to take a certain resolution, in the hope of becoming quieter, calmer, and less unhappy. The man who makes up his mind to die severs a good many ties, and indeed actually dies to some extent.

THE UNDETERMINED NITROGENOUS COMPOUNDS OF THE URINE

Analysts who have dealt exhaustively with chemical examination of the blood and urine have long frankly recognized their inability to identify all the components normally present. In the case of the nitrogenous components, the unrecognized fraction is frequently referred to as "undetermined nitrogen." There has been much speculation concerning the nature of the substances represented. Although amino-acids are continually circulating in the blood and sometimes escape into the urine, there is little evidence for the occurrence of any noteworthy amounts of these protein fragments in the fluid secreted by the kidneys under normal conditions. The urine usually contains a small amount of colloidal nitrogenous material, not protein, which is said to be increased in certain types of malignant disease. In 1897, Bondzynski and Gottlieb of Heidelberg reported that they had determined the existence of a group of protein derivatives containing both nitrogen and sulphur, and apparently of high molecular structure. The substances seemed to be characterized by an acid nature, and received the name "oxyproteic acids." Since then, numerous investigators have attempted to differentiate what they have assumed to be a variety of more or less related nitrogenous compounds belonging to this category, with the result that the literature has become enriched with a number of newly coined terms, such as alloxyproteic acid, antoxyproteic acid, and uroferric acid—formidable words, if nothing more. Even the precursor of the urinary pigment urochrome has been considered to be related chemically to the oxyproteic acids. Some writers have been inclined to regard them as incompletely oxidized polypeptids or complexes of amino-acids which have escaped destruction in the processes of metabolism. A renewed investigation by Edlbacher [1] in the physiologic institute at Heidelberg makes untenable much of the earlier hypothesis with respect to the so-called oxyproteic acids. It has long been recognized that they give none of the identifying reactions of simple proteins. Those urinary products which he has examined critically are now shown to yield, at best, no more than traces of characteristic amino-acids. On the other hand, it is surprising to learn from Edlbacher's studies that some, at least, of the oxyproteic acids yield considerable urea by simple chemical manipulation. Perhaps a new urea derivative characteristic of urine will presently be discovered. Such a possibility has occasionally been discussed in the past. As Fürth of Vienna wrote a few years ago, it will probably be a long time before the misty atmosphere at present enveloping these subjects, and, in fact, covering them as in thick clouds, will be dissipated. However, even here there is beginning to be a little more light.

1. Edlbacher, S.: Ueber die Proteinsäuren des Harns, I, Die Oxyproteinsäure, Ztschr. f. physiol. Chem. **120**: 71, 1922.

ALCOHOL AND DISEASE

Since the debate regarding the prohibition of the manufacture and sale of alcoholic beverages has hinged largely on the scientific aspects of the liquor problem, every pronouncement on the subject is awaited with interest. Recently a statistical report regarding the possible influence of alcohol on the prognosis of pneumonia in a large municipal hospital was published in THE JOURNAL.[1] The data for nearly 3,500 cases of lobar pneumonia showed, with reference to the patients' habits of indulgence in alcoholic drinks, that the mortality was higher in moderate users than in light users or abstainers, and that the mortality in excessive users was much higher than in moderate users. It seems important to define the limits of interpretations to be made from these data. The investigators themselves insisted that their findings demonstrate only what a harmful effect the use of alcohol may have on the course of a disease. They have no bearing on the question whether legislation has or has not diminished the prevalence of drinking. In commenting on the paper referred to, a prominent newspaper pointed out further that the statistics have no bearing on the possible use of alcohol in therapy. It cannot be too strongly emphasized or too frequently reiterated that alcohol, like many drugs, may have a usefulness in medicine which by no means justifies the assumption that it is of equal value in dietetics. Strychnin is recognized as a helpful drug and also as a deadly poison. Hydrochloric acid can act as a violent corrosive; it may also facilitate gastric digestion. The contradictions are in the statements of persons, and not in the facts of science.

THE EMERGENCY FUNCTION OF THE SUPRARENALS

The hope that, with the discovery of an "active principle" in the suprarenal tissues, the physiologic function of these structures would be speedily elucidated has not justified itself. Despite the profound pharmacologic potency of epinephrin, it has not been possible to demonstrate conclusively that this "hormone" plays an important part in the every-day performances of the living organism. At any rate, the thesis that the secretion of epinephrin into the circulation is the determining factor in the maintenance of vigorous blood pressure has not substantiated itself, so that the suprarenal glands cannot be looked on as the preeminent regulators of vasomotor tone. Some

1. Capps, J. A., and Coleman, G. H.: Influence of Alcohol on Prognosis of Pneumonia in Cook County Hospital, J. A. M. A. **80**: 750 (March 17) 1923.

of the more recent writers have even gone so far as to deny to epinephrin any action comparable with that of a true "internal secretion," and to place it in the category of excretory substances without routine physiologic effects.[1] In this country there has been a lively debate as to whether epinephrin is an agent in the mobilization of energy in times of stress. The latest contribution to the subject from the University of Buffalo [2] supports the general conclusion that strong stimulation of many varieties—reactions such as are likely to rise in difficult situations or unusual environmental conditions—increases the discharge of epinephrin into the circulation. The evidence has been secured by observations of the reaction of the denervated iris, which Meltzer showed to be particularly sensitive to epinephrin. The responses elicited with various types of stimuli fail when the suprarenals are eliminated. The evidence for the "emergency" function of the suprarenals has been strengthened by these findings.

Association News

GRANTS FOR RESEARCH IN THERAPEUTICS

The Committee on Therapeutic Research of the Council on Pharmacy and Chemistry will consider applications for grants to assist research in subjects which, in the opinion of the committee, are of practical therapeutic interest to the medical profession, and which research might not otherwise be carried out because of lack of funds.

Requests should state the specific problem which is to be studied, the qualifications of the investigator, the facilities available to him, and, if work is to be undertaken in an established research institution, the name of the individual who will have general supervision. The committee will also appreciate offers from research workers to undertake investigations of questions which may be suggested by the Council.

Applications should be addressed to: Chairman, Therapeutic Research Committee, Council on Pharmacy and Chemistry, 535 North Dearborn Street, Chicago, Illinois.

THE SAN FRANCISCO SESSION

Indiana Special Train

Dr. Ralph S. Chappell, 305 Terminal Building, Indianapolis, has been delegated by the Indiana State Medical Association to arrange for a special train for the accommodation of members of that association, their families and friends who will go to San Francisco to attend the annual session of the Association, June 25-29. This train will be assembled at Indianapolis and will proceed to San Francisco by way of St. Louis, Kansas City, Colorado Springs, the Grand Canyon and Los Angeles. Dr. Chappell will give information concerning the details of the tour to those who are interested.

Woman's Auxiliary of the American Medical Association

The Woman's Auxiliary of the American Medical Association, through its president, Mrs. S. C. Red, 817 Caroline Street, Houston, Texas, extends an invitation to the wives of all the members and Fellows of the American Medical Association to join this organization and take part in the first annual meeting to be held in San Francisco, June 25-29. The Woman's Auxiliary was organized at St. Louis in 1922. It has for its purposes the extension of the aims of the medical profession, through the wives of physicians, to the various women's organizations which work to the advancement of health and education; to assist in the entertainment of those in attendance at medical conventions, and to promote acquaintanceship among physicians' families so that closer fellowship may exist. Any information that may be desired concerning the first meeting of the Woman's Auxiliary may be secured by writing Mrs. S. C. Red at the address given.

Associations of Alumni and Fraternities at San Francisco

The alumni of Jefferson Medical College in San Francisco are represented by a committee, which is arranging a program of entertainment for all visiting alumni of that institution during the annual session. The committee consists of Dr. W. P. Read, Flood Building, San Francisco; Dr. Claude A. Phelan, 760 Market Street, San Francisco, and Dr. Dudley Smith, Hutchinson Building, Oakland. Members of this committee will be glad to hear from Jefferson alumni in other parts of the country.

The Nu Sigma Nu Fraternity has arranged for a banquet to be held at the Bohemian Club at San Francisco, Thursday, June 28, at 7 o'clock. Dr. H. D. Crall, 1242 A-2d Avenue, San Francisco, will be in charge of arrangements for this banquet. Any members of the Nu Sigma Nu Fraternity who wish to attend should write to Dr. Crall.

Dr. Harry E. Alderson, chairman of the Committee on Entertainment, 806 Balboa Building, San Francisco, asks that members and Fellows of alumnus associations and medical fraternities send suggestions to him as to dinners or other meetings that they may wish to have arranged for during the annual session.

Official Transportation Representative

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements, San Francisco, announces that the American Express Company has been designated official transportation representative for that committee. This company has offices in all principal cities and is in close touch with all steamship, railroad and other transportation agencies. Their offices are in position to answer all inquiries and furnish information about any contemplated trip. In San Francisco, the American Express Company is located on the ground floor of the Balboa Building, in which the Local Committee of Arrangements has its headquarters. A branch office will be maintained at the Civic Auditorium during the week of the annual session.

An Invitation from the Pacific Northwest Medical Association

The Pacific Northwest Medical Association, through its president, Dr. J. Earl Else, 709 Stevens Building, Portland, Ore., extends a very cordial invitation to eastern physicians to visit the meeting of that association to be held in Seattle, June 19-21. The Pacific Northwest Medical Association embraces within its membership physicians of Montana, Utah, Idaho, Oregon and Washington, and the provinces of British Columbia, Alberta and Saskatchewan.

Northern Pacific Railway Special Train

The Northern Pacific Railway will operate a special train for the accommodation of visitors to the annual session who wish to return by way of the Pacific Northwest. The tour will be conducted personally by Dr. A. W. Ide of St. Paul. The train will be designated the "M.D. Special," and will leave San Francisco at 10:20 p. m., June 29, for Portland, where a day will be spent. Seattle, Tacoma, Rainier National Park, Spokane, Livingston and Yellowstone Park will be visited. From Portland, Seattle, Tacoma and Gardiner, trips will be taken for the purpose of visiting the points of scenic and historical interest. About two days will be spent in Rainier National Park, and three days will be spent in Yellowstone Park. The train will leave Gardiner at 7:30 p. m., July 10, and will arrive in Chicago at 9 p. m., July 12. Full particulars about this train and all stops and side trips may be secured by writing to Dr. A. W. Ide, 914 Northern Pacific Building, St. Paul, Minn.

1. Gley, E.: Traité élémentaire de physiologie, Ed. 4, Paris, 1919, p. 661.
2. Hartman, F. A.; McCordock, H. A., and Loder, M. M.: Conditions Determining Adrenal Secretion, Am. J. Physiol. **64**: 1 (March) 1923.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 929)

TUESDAY, MARCH 6—MORNING

MEDICAL EDUCATION

DR. CHARLES P. EMERSON, Indianapolis, President of the Association of American Medical Colleges, in the Chair

The Danger of the Stereotyped Curriculum

DR. CHARLES P. EMERSON, Indianapolis: We of the American universities have long been struggling to develop a standardized medical curriculum. Our student who, for illustration, earns fifteen semester hour credits in chemistry in one university can, if he changes schools, be credited with this number of hours in that subject in almost any other university of equal rank in the country. But here the analogy ceases, for we have developed a much too stereotyped curriculum, and it is this which is hampering the satisfactory evolution of medical education. This is in part the fault of our state medical boards, which in one examination try to test a recent graduate's ability in every possible medical subject; but more it is the rivalry of our special departments, all of which demand an opportunity to meet the medical students; and still more it has been due to a conservative tendency to hold all we have as we add still more courses, with the result that our curriculum is so overcrowded that to reach a minimum in each subject takes so much time that there is no chance to reach a maximum in any.

While it may be true that our medical students are better able on graduation than those of other countries who begin at once the practice of medicine, it may also be true that they are less able to keep abreast, year by year, of their profession. The stream of medical advance flows swiftly; can our students swim? Will this current, as in the past, carry them to medical worlds greatly unlike those in which they learned their medicine? Will they be able to grow and to accept new and strange ideas? What is more important, will they accept the responsibilities and the leadership which this progress imposes on them? For illustration: the young practitioners of 1885 were taught to pay strict attention to practice and to avoid publicity, and the laboratory men were eagerly advancing the new science of bacteriology. Neither felt any responsibility for the well public. "Let the quack make public lectures," they said. They would prove their ethical "regularity" by avoiding all such advertising. But the next few decades proved that these laboratry discoveries were of the greatest value to the public, for of them public health and preventive medicine were born, and it became the duty and privilege of the best medical men to lead in the education of the public, to struggle for better public utilities, better laws, etc., in order that the public might benefit by what was their right; for there is the general truth that to whom much is entrusted, of him, also, much shall be required.

Our curriculum is overcrowded, and it contains so many subjects that only a minimum can be required in each. We touch the high points of all the specialties, and our students learn some of the tricks of therapy in each. They give a good account of themselves for the first few years out of school, but unless they mastered the fundamental clinical branches, they do not grow with their subjects, but cling to the medicine with which they were graduated and even fight for legislation to prevent its further modification.

The inadequate preparation of our graduates is proved also by the quality of our postgraduate schools, the most of which are not postgraduate at all in the sense that their courses are built on those of the undergraduate years and carry the student to still higher professional levels, but are for the most part designed to bring the graduate of a few years ago up to the level of the undergraduate of today or to allow the practitioner to change his field of activity to some other specialty.

We would urge a curriculum containing three main clinical subjects: medicine, general surgery and obstetrics. We would double the time allotted to these, and in addition would allow the student the right to elect perhaps one specialty; we would urge a vertical rather than a horizontal line between the laboratory and clinical subjects. The latter idea, popular in this country thirty years ago, was borrowed direct from Germany. During the middle of the nineteenth century, Germany made little progress in the sciences because of the paralyzed influence of her so-called naturphilosophie. Let us break away from the applied naturphilosophie of this century and train our students to study patients. Let us limit our curriculum to that which we can teach well; get away from the dangers of a stereotyped curriculum, and graduate boys who not only are well trained now, but who can keep always abreast of the times, and lead the public as well as their patients in paths of right living.

Present Ideals of the Physical Plant in Medical Education

DR. CHARLES R. BARDEEN, Madison, Wis.: This article will appear in full in THE JOURNAL.

DISCUSSION

DR. G. CANBY ROBINSON, Nashville, Tenn.: When Vanderbilt University received a large gift for the reorganization of its medical department, it seemed to us that we ought not to do the conventional thing, but to make some experiment if it gave promise of success. This change has been in the physical plant, the success of which will depend on the future. We hope we are making a contribution to the subject of medical education from the point of view of the physical plant.

One question was in regard to the location of the medical school. At present it is about two miles from the campus of the university, and we decided that it would be wiser to scrap or vacate the old buildings, and erect a new plant directly on the campus of the university, so that the medical school would be not only in direct continuity with the main Vanderbilt University, but also adjacent to or just across the road from a college for teachers, perhaps the best endowed teachers school in the South. We do not know what that may hold for us and for them in the future. At any rate, we hope very much that we may cooperate.

One of the deans reported yesterday that correlation was becoming the watchword of the day, as we used to hear so much about science for science's sake. We are all interested in correlation, and it is along this line that we are endeavoring to construct the new plant at Vanderbilt.

The idea of correlation is not confined to America. Embryo attempts at correlation are now embodied in the curriculum which for the last two years has been going through the German universities. It has been accepted by eighteen of the twenty-three German universities. They are placing students in the outpatient department during the first year as orderlies during the summer vacation. They feel that clinical work should begin early. One professor in Berlin spoke of it as the American plan, so that we are beginning to have some influence on German ideas of American education. They are much interested also in England and Scotland, as evidenced by a report of the Pathologic Society of Edinburgh two years ago.

In Holland they are building a new plant at Leyden which will cost fifteen million dollars when completed. They put pathology and bacteriology in the same building. In this country we are very definitely cooperative in spirit. Therefore, we shall have the opportunity and spirit of forging ahead along the lines we have been discussing in the last two days.

Vanderbilt University Medical School is not going to be an elaborate affair, as compared with the plants Dr. Bardeen has gone over, especially those plants showing extensive future development. We have attempted to bring the laboratories and hospitals in relation to one another. We hope to spend two and a half million dollars on the new plant. Vanderbilt University has eight million dollars for medical education, and we have done our best to keep the cost of equipment down. If we can do that, we will be able to manage with a minimum amount of money expended for equipment.

Dr. A. C. Abbott, Philadelphia: I should like to know whether any provision has been made for the teaching of public health.

Dr. G. Canby Robinson, Nashville, Tenn.: There is a series of rooms that are set aside for the teaching of hygiene and public health. There are three or four rooms which will be available for laboratory purposes, where public health, preventive medicine and hygiene are to be taught. These rooms are on the same floor as the department of clinical pathology.

Dr. E. P. Lyon, Minneapolis: I want to express sympathy with all that has been said here in a general way, but we can easily overdo in this direction as we have in the opposite direction. Our whole effort should be to keep a sane balance and to go forward carefully, and reasonably slowly. The water tight compartment is a very valuable feature in unification, although we would not advocate an absolute water tight compartment in education—the mind is not built on the principle of a water tight compartment. There is some tendency on the part of those who take extreme views to substitute another water tight compartment in which the diaphragm or neck, instead of being the boundary, is now put between the preclinical sciences and clinical sciences. I see as much danger in the one as in the other. One speaker who presented a paper yesterday left out physics, chemistry and biology as departments which were all to be affected by the relations of the clinical department, and I wondered why that was so. When a student is studying electricity, it would be considered of additional interest and advantage if the electrocardiograph was introduced and he was taught the applications that can be made of that instrument, and if he saw a few patients with heart disease and noted the changes in the records produced under those conditions. In studying physics and light, the student would be interested if the ophthalmologist demonstrated the anomalies of refraction. In the course in general chemistry, when calcium is taken up, it would be a great advantage for the student to know that calcium is a part of the constituent of bone and to have bones demonstrated to him, etc. I will not dwell on the practical difficulties which one would find if we should attempt to carry out an extreme scheme. Let us take biologic chemistry. Imagine what would happen if we should attempt to have four classes in the laboratories. An enormous equipment would be necessary which none of us would be willing to stand for, or we must have lockers for the whole four classes, and the practical aspect will make one hesitate and go slowly.

Dr. Arthur Dean Bevan, Chicago: I think it might be helpful in this discussion if I present a brief summary of the ideas of a medical educator with a great deal of experience and very sound judgment, Dr. Charles H. Frazier of Philadelphia, who is absent on account of illness:

"At Pennsylvania we are so impressed with the advantages of early contact with clinical problems that we have introduced clinics into both the first and second years. On the question of correlation I feel very strongly. After all, the instruction given the student in the fundamental sciences, anatomy, physiology, chemistry and pathology, is selected with a view to its application to clinical problems. I am not in sympathy with the plan that crept into our educational program, by which these sciences were presented abstractly. If there are clinical applications to the laboratory phenomena, why should not this application be demonstrated synchronously with the laboratory demonstration? Let me cite an example: There are a number of demonstrations in the laboratory to illustrate shock; would the practical importance of these scientific laws not make a deeper impression on the student if, at the time, he were taken to the hospital to see shock in the patient and the treatment of it? Or let the subject be hemorrhage. The student makes a number of observations on the lower animals as to the effect of loss of blood, the constitutional effect on the animal, the change in the blood picture, etc. How telling these observations would be if, at their conclusion, the students were taken to the bedside of a patient, the subject of an acute or chronic anemia, observed the clinical aspects, and saw the influence of a blood transfusion. This dovetailing method might be applied to bacteriology, pathology and physiology.

"Instruction in a specialty should be restricted to the diagnosis of the more common lesions, emphasizing those which are an expression of systemic disease and those which, because of their grave potentialities and need for immediate treatment, require prompt recognition. To the postgraduate schools should be left the comprehensive study of any specialty.

"Surgery should be catalogued as a major specialty and, except for certain emergency operations, the student should not be burdened with the details of operative technic. He should know the significance of gallbladder disease and what may be accomplished by surgical intervention, but nothing more.

"As to how the medical student should be taught, speaking for the clinical subjects, I would urge the reduction to a minimum of didactic lectures and the expansion of the clinical program. To plan an ideal curriculum, we should wipe the slate clean and rebuild the curriculum without the handicap of any preexisting practices."

Dr. William Darrach, New York: With reference to ideals of plants, no one will dispute the statement that the brain needs a compartment of its own. We also need the great clinical associates, the peripheral nervous system and general circulatory system to work in active cooperation in carrying on the work of the parent body. If we can apply this to the physical plant we shall have taken a great step in advance, as aptly illustrated in the plants for Vanderbilt and Rochester universities. We also have to take into account certain personal tendencies on the part of human beings. Department heads must have places in which to work so that they are disturbed as little as possible. There also seems to be an inherent quality that human nature will not travel very far in a horizontal direction if it can avoid it. We seem to have approached a happy solution in the Vanderbilt and Rochester plants, where the different clinical and laboratory departments are brought into potential contact, which can be taken advantage of if need be, and isolation can be taken advantage of if the desire is in that direction.

At the Bellevue Hospital, New York, we have tried to reduce the horizontal distance to that distance which men will travel if they desire contact, and at the same time make use of the vertical direction whereby all departments can be brought into potential elevator contact in a short time.

The Art of Medicine

Dr. Irving S. Cutter, Omaha: During the last decade, it has become a rather popular diversion among too many of our teachers of medicine and surgery to decry the "art" or the methods of applying the fundamental facts of science to the relief of the sick individual. The abrupt dismissal of the usefulness of such teaching is startling and disconcerting.

Are those who are dealing directly with medical students, and who are largely responsible for the tendencies of the modern medical curriculum, keenly alive to deficiencies evident in the applications of science to practice? Are we so strenuously engaged in cramming the student with scientific facts—too frequently uncorrelated—that we defeat the fundamentals of education, namely, thought and the development of judgment? Are we compelling the student by precept or example in his undergraduate or intern years to form a proper concept of medical practice and of his relation to the public? It is easier to remember than it is to think, and to think to a logical conclusion is the most difficult of all. Reams of data may be gathered by the student, but until he is able to weigh the evidence, arrive at a safe conclusion and apply those conclusions to a given case, medical education falls short. To apply the science of medicine with the highest possible skill, the student must learn to think in terms of the patient. This can come only through thought and careful observation. We are too prone to bewilder the student in the heart clinic with the interpretation of electrocardiograms, when a proper evaluation of physical findings and the observation of a well correlated symptomatology would mean an accurate diagnosis, and make for a normal life for the patient. The student may know the pharmacologic action of digitalis, but, after all, the proper administration of digitalis must be determined by a careful study of the individual case, coupled with systematic

observations on the effects of the drug. That nice balance and discrimination which must be arrived at in the administration of digitalis means success or failure.

In our eagerness to teach scientific diagnostic methods based on laboratory examinations, we forget to study the daily life of the patient, his history, his environment, his relations to his fellows. Owing to overreliance on laboratory diagnostic methods, there is often slighted the bedside examination made with the full confidence of the patient and with his entire cooperation. One may justly fear for the future of medical practice with the apparent unthinking attitude of many of our graduates. They fail to look squarely at the patient. An appalling number of roentgen-ray examinations and laboratory tests on secretions, excretions and blood are made, together with examinations by specialists, and as a result the patient is told that he is physically sound, that there is nothing the matter, and that he may proceed to his home and forget his troubles—all this at a total fee for specialists and others that is often a serious factor. The fact remains that the patient is sick. He needs help and, because of the failure of the physician, he drifts into the welcoming arms of the theatrical healer. That functional disease is a distinct entity cannot be gainsaid. It destroys the efficiency of the individual, and renders him a burden to himself, his family and his friends, and the trained physician, conversant with every detail of modern medicine, too often fails to look squarely at his patient and recognize the disease. As a result of our training, a graduate is in a sense helpless, unless he is in immediate touch with a large laboratory, manned by skilled technicians. We have trained away from self-reliance, from accurate observation, owing to the sense of security and dependence created by the laboratory. It has shown the easy way to diagnosis. Present methods have had the effect of crowding graduates into the cities, where splendidly equipped laboratories, hospitals and expert consultants are immediately available. The very multiplicity of precision determinations constitutes a weakness. Too little do we teach that the patient is not made up alone of tissue structures but is a personality functioning in a given environment. Too often, hospital, outpatient and even office practice becomes a mere routine, and the attending physician fails to remember that every case represents a human heart, crushed to the point of despair by sickness and resultant poverty.

The cultivation of a bedside manner may, in the extreme, be an affectation; but personality and the attitude of the physician may mean the difference between life and death. To inspire groundless hope in a patient is criminal; but to give the patient a sense of your appreciation of his suffering, your hope for ultimate relief, and the feeling that you will do all that is possible, is but a natural justifiable and humane attitude. How much of all this does the student get in the medical curriculum or during his intern service? How coldly callous do many of our brilliant graduates appear? Modern graduates may wonder why the citizens of a community remain faithful to the "old fogey" doctor, as the old practitioner is termed, when they, with modern training and equipment, have so much to offer. A study of the methods of the old doctor and the application of many of them would mean greater success for the recent graduate. The apotheosis of pure science must give way to the larger conception of the conscientious care of the sick, and science for science's sake assume its most important but proper place. Evaluate pure science fairly, evaluate research sanely, and emphasize the skilful management of the sick individual. Teach those principles calculated to relieve human suffering. Stress the service side of the physician's job. Modern medicine must be the applications of science at the bedside—science so applied that every factor tending to restore the individual to a normal regimen of life shall be utilized. Science is the armament of the physician; and his skill in the use of this armament in overcoming disease reflects his training and his attitude toward his fellow man. Medicine must maintain its superstructure of service as its foundation of science. "Knowledge is proud that he knows so much. Wisdom is humble that he knows no more."

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Chiropractor Sentenced.—It is reported that H. C. Saunders, a chiropractor of Huntington Beach, was sentenced to four months in the Orange County jail by Judge Works, recently, for practicing medicine without a license.

The Physique of Mentally Superior Children.—Drs. B. T. Baldwin of the University of Iowa, Iowa City, and L. L. Terman of Sanford University, San Francisco began, March 20, an investigation of 1,000 mentally superior children in California to determine the relation between physical growth and mental development. Detailed measurements of each child will be made. The investigation is being financed by the Commonwealth Fund of New York.

Hospital News.—Work has been started on a new $100,000 ward unit at the Santa Clara County Hospital at San Jose. It will contain fifty beds.——Plans have been prepared for the new eight-story and basement hospital building for the St. Vincent Hospital Association, Los Angeles, to be erected at a cost of $1,250,000. The building will be of Spanish design and will contain 300 beds.——Formal opening of the U. S. Veterans' Hospital No. 24, Palo Alto, took place, March 12. This institution comprises nine buildings, having a capacity of 515 beds.

CONNECTICUT

Maternity and Child Welfare Conferences.—In cooperation with local physicians, the bureau of child hygiene of the state department of health is holding a series of maternity and child welfare conferences in counties of the state where the infant mortality rate is highest. Exhibitions will be given in the afternoon, at which model rooms will be displayed, home care by the public health nurse demonstrated, and a "well baby" conference held. Literature on communicable diseases and the care of mothers and children will be distributed, and evening lectures with stereopticon views bearing on maternal and child hygiene given.

DISTRICT OF COLUMBIA

Board of Trade Opposes Antivivisection.—The Board of Trade, Washington, went on record, March 22, as unanimously opposing any legislation designed to restrict the use of animals for experimentation.

Statistician Dies.—Richard Corcoran Lappin, for many years chief of the bureau of vital statistics of the bureau of the census at Washington, died, March 18. Mr. Lappin served as secretary of the vital statistics section of the American Public Health Association. His name is well known to the medical profession in connection with the annual vital statistics reports, the "Monograph on Cancer and Other Malignant Tumors in the United States," and the "Standard Nomenclature of Disease and Pathological Conditions, Injuries and Poisonings."

ILLINOIS

Physicians Close Offices in Afternoons.—Physicians of Decatur will close their offices every Thursday afternoon between May 1 and November 1, in accordance with a vote taken, March 14, which was later confirmed at the regular monthly meeting of the Decatur Medical Association.

Personal.—Dr. Louise H. Keator, Polo, has been appointed physician at the Dixon State Hospital for Epileptics, Dixon. ——Dr. Oliver B. Simon, city health officer of Batavia, and his wife were seriously injured, March 21, when the automobile in which they were riding was struck by a train.

Addition to St. John's Hospital Completed.—The new 100 bed maternity addition to St. John's Hospital, Springfield, erected at a cost of $250,000, is completed, and will be ready for occupancy this month. This gives St. John's Hospital a capacity of 520 beds, exclusive of the tuberculosis sanatorium at Riverton, which has 200 beds.

Chicago

Chicago Tuberculosis Institute.—The annual meeting and banquet of the Chicago Tuberculosis Institute, was held, March 26. Dr. Alice Hamilton, assistant professor of industrial medicine at Harvard University Medical School, Boston, was the principal speaker.

Illegal Practitioner Sentenced.—Reports state that Robert E. Parks, alias Treadwell, Chicago, was sentenced, March 30, to one year in the Bridewell, and fined $200 for practicing medicine without a license. Park, it is stated, obtained a job in the U. S. Veterans' Hospital No. 30 on a fake diploma purporting to show that he was a graduate of Rush Medical College, 1901.

Society News.—At the April 23 meeting of the Chicago Society of Internal Medicine Dr. Leonard G. Rowntree, Rochester, Minn., will speak on "Water Intoxication." Dr. Norman M. Keith, also of Rochester will speak on "Studies in Experimental Dehydration."——Dr. F. B. Moorehead of Chicago, gave an address before the Vermont State Dental Association in Burlington, recently.

Physicians Urged to Back Sanitary Canal.—A resolution was adopted by the Physicians' Fellowship Club, all members of which belong to the Chicago Medical Society, March 30, that an appeal be sent to members of the medical profession throughout Illinois, Wisconsin, Minnesota, Michigan and Indiana, to the state boards of health, and other public health welfare societies to back the sanitary district in its fight against reduction of the flow of water from Lake Michigan through the drainage canal.

INDIANA

Illegal Practitioner Fined.—It is reported that Luther C. Rhee, Elkhart, was fined $25 and costs in the superior court, March 19, when he pleaded guilty to a charge of practicing medicine without a license. A dissatisfied patient filed the complaint.

Physician Loses Malpractice Suit.—Delmar Clements, aged 16, obtained a judgment for $30,000 in the superior court of Tippecanoe County, March 16, it is reported, in his suit against Dr. John Stuart of Monon, alleging malpractice. It was stated that Dr. Stuart treated Clements for rheumatism when the boy was suffering from osteomyelitis arising from a dislocated hip, and that as a result the boy is permanently crippled.

Health Council Organized.—A permanent state health council was organized, March 21, in Indianapolis, by representatives of state organizations, engaged in some form of public health work. The health council will follow the lead of the Massachusetts State Health Council, organized last summer, for the purpose of coordinating all state health work under one head. The following organizations and agencies were represented: Indiana Parent Teachers' Association, the Child Welfare Association, Indiana Dental Society, the state industrial board, the medical department of Indiana University, the state federation of women's clubs, the Indiana Tuberculosis Association, the nursing bureau of tuberculosis and child hygiene, Indiana Medical Association, and the state board of health.

IOWA

Personal.—Dr. Frank W. Mills, Ottumwa, has been appointed county physician to succeed Dr. L. A. Hammer. ——Dr. George Donohoe has been reappointed superintendent of the Cherokee State Hospital.——Dr. John K. Kutnewsky has resigned as superintendent of the State Home and School for Feebleminded at Redfield.——Dr. Wilbur M. Walliker, Clinton, was shot and seriously injured by a patient, March 19.

MAINE

Medical Examiner Appointed.—Dr. Frank N. Whittier, Brunswick, has been appointed medical examiner for Cumberland County.

Joint Medical Meeting.—The annual meeting of the Maine Medical Association will be held in Houlton, June 5-7, in conjunction with the New Brunswick (Canada) Medical Society. Members of both societies will be guests of the Aroostook Medical Society at Fort Fairfield, Me., and the Carleton Medical Society at Woodstock, N. B., at banquets.

MICHIGAN

Plan for School Medical Inspections Changed.—The Detroit Department of Health has reorganized the medical inspection of schoolchildren. Formerly, each physician took charge of three or four schools and did all types of health work, including diagnosis, immunization, and physical examination. With forty or more physicians reporting a particular kind of work, it was impossible to compare one school with another. Under the new plan, one group of physicians does diagnostic work; another group does only immunization work, and a third group makes all of the physical examinations. During the school year 1921-1922, these physicians examined 58,000 children. Of 8,887 children underweight, nearly three fourths had one or more physical defects. It was found that Russian children had more eye defects than any other national group.

MISSISSIPPI

Physician Sentenced.—It is reported that Dr. Simon A. Miller, Jackson, was sentenced to serve five years in the penitentiary and to pay a fine of $2,000, in the federal circuit court, March 24, for violation of the Harrison Narcotic Law.

NEW JERSEY

Academy of Medicine Dedicates Auditorium.—The new auditorium of the Academy of Medicine of Northern New Jersey, at Newark, was formally dedicated, March 21, the twelfth anniversary of the organization of the academy. The auditorium has a seating capacity of about 400. Dr. George E. de Schweinitz, Philadelphia, President of the American Medical Association; Dr. John M. T. Finney, professor of surgery at Johns Hopkins University, Baltimore; Dr. James Hunter, Westville, president of the Medical Society of New Jersey, and Dr. Edward J. Ill, first president of the academy, addressed the audience. Dr. Henry J. Wallhauser was elected president of the academy for the ensuing year: Dr. Maurice Asher, vice president; Dr. William Petry, corresponding secretary, and Dr. Henry C. Barkhorn, treasurer.

NEW YORK

Bill for Medical Care of Schoolchildren.—A bill is before the legislature which would provide medical service for all pupils attending public schools in this state. Dental care and the service of trained and registered nurses would be included. A clause is appended, stating that nothing in this bill is to be construed as limiting the power of a parent or guardian to determine what treatment or correction should be provided and the agencies to be employed for that purpose.

New York City

Hospital Project Halts City Improvement.—A plan to widen Riverside Drive between One Hundred and Fifty-Eighth Street and Fort Washington Park, recently submitted to the board of estimate, has been referred back to Borough President Miller, because it would take about 27 per cent. of the property acquired by the Presbyterian Hospital and Columbia University for a medical center. Dr. Walter B. James presented the point of view of the university and hospital, showing that the plan for the park would materially interfere with the projected medical center. Mr. Miller has been instructed to try to coordinate the city's plans with those of the hospital.

Hospital News.—The Sydenham Hospital will erect a new eight-story building at One Hundred and Twenty-Fifth Street and Manhattan Avenue. Dr. Siegfried Wachsmann, formerly medical director of the Montefiore Hospital, and professor of clinical medicine at Columbia University, New York, has been appointed superintendent of the new institution.——Plans have been made for a $1,500,000 training school for nurses at Mount Sinai Hospital. The new structure will be the eighteenth building maintained and supervised by the institution. Half the cost has been promised by the trustees. The new school will accommodate 400 nurses, as against 220 housed by the present building. This announcement was made as a part of the annual report of the hospital, which showed that during 1922 the institution had expended $923,286, whereas the income was but $889,952.

Personal.—Mayor Hylan has appointed Dr. Aspinwall Judd as trustee of Bellevue and allied hospitals, to fill the vacancy made by the death of John G. O'Keefe.——Dr. Fridjof Nansen, head of the League of Nations' Commission for Russian Famine Relief, will open a commissariat in New York, affiliated with the American Committee for the Relief of Russian Children. Dr. Nansen's committee is concentrating on child feeding, medical supplies and the purchase of seeds, stock and farm machinery.——Dr. Joseph A. Blake, formerly chief surgeon of the American Hospital in Paris, has accepted the position of surgeon-in-chief of the Reconstruction Hospital, to succeed Dr. Charlton Wallace, who resigned recently.——

Dr. William H. Pound has been appointed sanitary superintendent of the health department of New York City. This was the position held by Dr. Monaghan before his appointment to succeed Dr. Copeland.

NORTH CAROLINA

Orthopedic Clinics.—Following a census of crippled children taken by the state board of charities and public welfare, orthopedic clinics are being held in various points in the state. The first of these was held in Wilmington, March 29, under the auspices of the State Orthopedic Hospital, with Dr. Oscar L. Miller, Gastonia, in charge. The state board of health has the names of more than 700 crippled children in North Carolina who need treatment.

OHIO

Physician Fined for Violating Narcotic Law.—It is reported that Dr. George E. Kerns, Galion, pleaded guilty to violation of the Harrison Narcotic Law, March 13, and was fined $100 and costs by Judge Glosser, at Crestline.

Chiropractors Fined.—Reports state that John Good, James A. King, E. A. Bellen and Frank Downing, chiropractors, all of Cincinnati, were fined $25 and costs, each, by Judge Bell, March 20, for practicing medicine without a license. They were granted ten days to appeal.

Hospital News.—William Cooper Proctor will erect a $500,000 hospital on Bethesda Avenue, Cincinnati, it is announced.——Contracts have been let for the new hospital building for Miami Medical College, Cincinnati, to be erected at a cost of $85,000.——The $150,000 addition to Middletown Hospital, Middletown, was formally opened, March 1.

OKLAHOMA

University Gets New Medical Building.—The Oklahoma legislature, March 29, voted an appropriation of $100,000 for a new medical building to be located on the University of Oklahoma campus, at Norman.

Senate Opposes Evolution.—The Oklahoma senate, March 27, according to report, voted 16 to 12 against the teaching of evolution in the public schools of that state. The leader of the opposition is said to have referred to the measure as a return to the twelfth century in thought and action.

PENNSYLVANIA

Dr. Thomas S. Blair Resigns.—Dr. T. S. Blair, Harrisburg, chief of the bureau of drug control of the Pennsylvania Department of Health, has resigned and will move to southern California. A joint meeting of the Harrisburg Academy of Medicine and the Dauphin County Medical Society was held, March 30, to honor Dr. Blair.

A New Ice Cream Law.—A new ice cream law, which became effective, March 20, prohibits the use of coconut fat and other foreign fats and oils in the manufacture of ice cream, and the use of paraffin in chocolate-coated ice cream. The clause legalizing the use of gum tragacanth in ice cream making is omitted from the new law, and the sale of any imitation or substitute for ice cream under any coined or trade name is prohibited. It further declares unlawful the selling of ice cream from any cabinet or container which contains any article except ice cream, as, for example, oysters or fish. Cream and its products will henceforth be the principal ingredients used in the manufacture of ice cream. The secretary of the state department of agriculture has appealed to ice cream manufacturers to cooperate with the bureau of foods in carrying the provisions of the law into effect.

Philadelphia

Physicians Petition to Change Compensation Law.—Twelve hundred physicians of Philadelphia, March 22, forwarded to the medical legislative conference of Pennsylvania petitions calling on the members of the legislature to amend the state workmen's compensation act to provide for payment of fees for surgical and medical treatment. The petitions were forwarded by the Philadelphia County Medical Society to Dr. George A. Knowles.

SOUTH CAROLINA

Hospital News.—The Mullins Hospital, Mullins, was completely destroyed by fire, March 8, at an estimated loss of more than $30,000. Drs. Lonnie M. McMillan and Frank L. Martin owned the institution.

SOUTH DAKOTA

Historical Society Honors Physician's Memory.—At its annual meeting in Pierre, the South Dakota Historical Society unveiled a portrait of Dr. Leonard C. Mead, in commemoration of his service to the state during his thirty years' work as superintendent of the State Hospital for the Insane, Yankton. Dr. Mead died in 1920.

VERMONT

Physician Loses Suit.—A verdict of $7,000 against Dr. Frank M. Walsh, St. Johnsbury, was rendered by a jury, March 16, in a suit for $23,000 brought by G. W. Cole, North Troy, for alleged malpractice.

VIRGINIA

Hospital News.—With the $250,000 bequest left the Danville General Hospital by the late John E. Hughes, it is planned to erect a new building. The present institution will be sold and a new site selected, it is reported.

WISCONSIN

Physician Fined.—It is reported that Dr. Frank D. Millard, Milwaukee, was found guilty by Judge Page recently of being involved in an illegal operation and was fined $500.

Free Clinics.—The fifth of a series of free chest clinics was held in Eau Claire, February 9, under the auspices of the Wisconsin Antituberculosis Association. Dr. A. A. Pelyte, Milwaukee, conducted the clinic, with the assistance of local physicians.——The first free clinic in Wisconsin, designed to give attention to orthopedic cases in rehabilitation work, was conducted at St. Mary's Hospital, Oshkosh, by Dr. Frederick J. Gaenslen, Milwaukee.

CANADA

Epidemic of Typhoid.—Reports state that one eighth of the population of Cochrane, a town in northern Ontario, has been stricken with typhoid fever, due to contaminated drinking water. Four hundred and fourteen cases have been reported, with three deaths.

Manitoba Medical Association.—At the annual meeting of the Manitoba Medical Association, held recently, the following officers were elected: president, Dr. Sidney J. S. Pierce, Brandon; vice presidents, Drs. David A. Stewart, Ninette, and Fortunat Lachance, Winnipeg, and secretary, Dr. Norman W. Warner, Winnipeg.

Dr. Klotz to Succeed Dr. MacKenzie.—Dr. Oskar Klotz, recently engaged in reorganizing the pathologic department of the University of Buenos Aires, under the direction of the Rockefeller Foundation, has been appointed to the chair of pathology of the University of Toronto Faculty of Medicine, left vacant by the death of Dr. John J. MacKenzie. Dr. Klotz was at one time director of the Magee Pathological Laboratory, Pittsburgh.

University News.—Application has been made to the Ontario legislature to amend the act of incorporation, changing the name of Western University Medical School, London, to the University of Western Ontario, the desire of the authorities being to make this university the educational center of the western part of the province.——Construction work on a new administration building for the University of Toronto, that will be erected south of Knox College, has been started. This building will provide accommodation for all the administrative offices.

GENERAL

Juvenile Suicides.—Dr. Harry M. Warren, president of the Save-a-Life League, in his annual report states that the total number of suicides tabulated for the year was 13,530, and that suicides among young people have practically doubled since the World War. From 477 juvenile suicides listed in 1919, the number increased in 1922 to 900.

Secretary of Interior to Visit Indians.—The Secretary of the Interior will make a trip in April through the Southwest to study problems affecting the Indians. Dr. Work is particularly interested in the improvement of health and sanitation among the Indians. He will be accompanied by Indian Commissioner Burke.

Appeal for Greek Refugees.—A letter has been sent out by the American Women's Hospitals of New York appealing

for funds for the relief of the Greek and Armenian refugees. At present, 8,000 people in quarantine are being cared for by the American Women's Hospitals on Macroni Island. Checks should be made payable to Dr. Sue Radcliff, treasurer, 637 Madison Avenue, New York City.

Society News.—The annual meeting of the American Physical Education Association will be held at Springfield, Mass., April 11-14.——The twenty-fourth annual meeting of the American Proctologic Society will be held in Los Angeles, June 22-23, under the presidency of Dr. Emmet H. Terrell, Richmond, Va.——The annual meeting of the National Academy of Sciences will be held in the U. S. National Museum, Washington, D. C., April 23-25.——The eighteenth annual meeting of the American Association of Museums will be held in Charleston, S. C., April 4-6.

Second Annual Clinical Tour.—The program of the second annual clinical tour for physicians of the United States and Canada has been announced. The main party will leave Montreal on the S. S. *Megantic*, June 16. The tour will include trips through Scotland, England, Holland, Belgium, France, Switzerland, Italy and Germany, with clinics at Edinburgh, Leeds, London, The Hague, Paris, Rome and Berlin. The clinical work will be under the supervision of Dr. Alexander J. MacKenzie.

Embargo on Narcotics Modified.—The embargo on narcotic drug importations was partially removed following a meeting of the Federal Narcotic Control Board and drug manufacturers at the Treasury Department. Manufacturers, under the agreement made at this meeting, may import narcotics in an amount equal to their imports during the corresponding period of the year 1922, pending a second conference to be held, July 1, to discuss subsequent supplies and demand. Illicit use of narcotics was not a major topic of the conference, which was confined to a consideration of the needs of the medical and drug professions, the supply for which has been materially reduced by the recent embargo.

Passengers' Liquor Allowance Questioned. — Passengers landing at New York from vessels arriving from foreign ports were authorized to bring ashore 1 quart of liquor for medicinal purposes, according to an order issued this week by Thomas W. Whittle, surveyor of that port. The validity of the order has been questioned by Assistant Secretary Moss of the Department of the Treasury, and it was indicated that it would probably be materially altered. Mr. Moss declared that the Treasury Department understood that the order was intended to permit passengers who were ill to bring alcoholic stimulants ashore with them when necessary, but that on the face it appeared to be a direct violation of the Volstead Act and of customs regulations prohibiting the inclusion of liquor as a part of a passenger's baggage.

Traffic in Peyote Prohibited.—The campaign of the Department of the Interior to suppress the use of peyote among the American Indians has been augmented by the passage of bills in Colorado and South Dakota which prohibit the manufacture and traffic in this drug. These states, with the number already having laws forbidding the sale of peyote, brings the total up to seven, the other states being Kansas, Montana, Nevada, North Dakota and Utah. Annual appropriations were made at the last session of Congress for the suppression of liquor and peyote among Indians. This drug was first used as a medicine by Indians in Mexico and in parts of Arizona and New Mexico, but its use has spread to Indian reservations throughout the Western states, particularly Oklahoma and Nebraska. Peyote is the dried flowering tops of the peyote cactus, which when chewed has an effect similar to that of cocain.

International Opium Commission to Meet Again.—Information has been received that Dr. Rupert Blue, the American representative at the recent meeting of the International Opium Advisory Commission of the League of Nations at Geneva, proposed that all the nations concerned in suppressing the illicit traffic in narcotics adopt measures similar to the Harrison and Jones-Miller narcotic acts that are now in force in the United States, regulating the import, export and internal traffic. Dr. Blue found, according to the report submitted to Washington, D. C., that the laws of England are ideal but that India, a British possession, is more responsible than any other country for the large quantities of opium and its derivatives that are smuggled to other countries. The Geneva meeting, which was attended by representatives of the United States, Great Britain, France, China, Germany, India, Japan, the Netherlands, Portugal and Siam, adjourned to meet again some time during the present year.

Conference Board of Physicians in Industry Meets.—The thirty-seventh meeting of the Conference Board of Physicians in Industry was held, March 17. In a discussion of methods of resuscitation from carbon monoxid poisoning it was the concensus of opinion that no form of mechanical inhaler should be operated by an untrained person and that the use of these appliances should be restricted to those who have been specially instructed in their construction and operation. For general resuscitation, the conference reaffirmed its endorsement of the prone pressure method over all others. In injuries to the lower back, the importance of the fifth lumbar vertebra was emphasized by the conference. This vertebra is the most important of all the spinal segments as it is the last mobile segment above the sacrum and as such bears the greatest weight, owing to body movement. It is also the one most frequently fractured. Anatomic abnormalities of this segment, such as elongated transverse processes, malposition of the facets and undeveloped pedicles, together with elongated spinous processes, may be present. If the elongated transverse processes rest on the crest of the ilium, they are likely to produce pain. The variation in the lumbosacral angle is also of importance when these processes are of abnormal length. Malposition of the facets may cause a twisting of the vertebra, producing a strain. Contact between the elongated spinous processes of the fifth lumbar and the first sacral vertebra may also be the cause of discomfort. In early life, before ossification is complete, the spinal column is more mobile and may maintain its anatomic balance without producing symptoms, but if, after complete ossification, an injury occurs which disturbs this balance, it will be impossible for the patient to obtain a readjustment, and pain and disability will result.

Opportunities for Study at French Clinics.—There are available through the offer of the Medical Faculty of Paris twenty-four positions as foreign assistant in the clinics of the following professors: surgery (5): Professors Hartman, Delbet, Gosset, Lejars, Duval; medicine (6): Professors Gilbert, Widal, Achard, Chauffard, Vaquez, Sergent; pediatrics (2): Professors Nobecourt, Marfan; surgery of children (1): Professor Broca; gynecology (1): Professor Faure; obstetrics (2): Professors Couvelaire, Brindeau; dermatology and syphilology (1): Professor Jeanselme; neurology (1): Professor Pierre-Marie; psychology (1): Professor Claude; contagious diseases (1): Professor Teissier; genitourinary diseases and surgery (1): Professor Legueu; ophthalmology (1): Professor de Lapersonne; laryngology and otology (1): Professor Sebileau.

Besides these official positions, there are, in other clinics, numerous nonofficial positions: gastro-enterology and bacteriology, at the Pasteur Institute; radiology, at the Curie Institute; roentgen-ray diagnosis and therapeutics at many clinics, and tropical medicine, at the Colonial school. These positions are given by personal appointment depending on credentials offered by the applicant. There are also offered each year one or more scholarships under the American Field Service Fellowships for research in medicine. There will be four rotating internships available at the American Hospital of Paris in 1924. Opportunities are available to visiting American physicians for the organization of private group instruction in the specialties under leading teachers in Paris for moderate fees. Detailed information can be obtained by writing the secretary of the American Medical Society of Paris, care of the American University Union, 1 rue de Fleurus, or the secretary in the United States, Dr. D. M. Stiefel, Massachusetts General Hospital, Boston.

Bequests and Donations.—The following bequests and donations have recently been announced:

Huntington Hospital, Huntington, L. I., $100,000; Society of St. Johnsland, for a cot in a children's hospital, $10,000; New York Orthopedic Hospital and Dispensary, $5,000; State Charities Aid Association, $2,000; Home for Incurables, New York, $1,300; American Red Cross, $1,000, and St. Agnes Hospital, Raleigh, N. C., $1,000, by the will of Miss Cornelia Prime.

St. Vincent's Hospital, Taylorville, Ill., $55,000, from a drive for funds.

Georgetown University, Washington, D. C., $50,000, for the nurses' home at University Hospital, by an anonymous donor.

St. Elizabeth's Hospital, Utica, N. Y., $50,000, by the will of James A. Murphy.

Warren County Hospital, N. J., $50,000, for the establishment of the institution, from a campaign for funds.

Oregon Tuberculosis Association, property valued at between $50,000 and $60,000 by the will of Mrs. Jean Holton of Portland, Ore.

Mount Sinai Hospital, New York, the residuary estate of Henry Lowy, amounting to about $35,000.

Calvary Cancer Hospital of the Bronx, N. Y., $33,788, by the will of Josephine N. Besson.

Roosevelt Hospital, New York, and the Masonic Hall and Asylum, $20,000 each; the New York Eye and Ear Infirmary and the Manhattan

Eye and Ear Infirmary, $10,000 each, under the will of Mrs. Jemina Sinclair Simms.

Associated Jewish Charities, $18,000; United Charities, $10,000, and the Michael Reese Hospital, Chicago, $6,000, by the will of Adolph Nathan of Chicago.

Pennsylvania Missionary Society, $10,000; The Babies' Hospital Philadelphia, $10,000, by the will of William Thompson. One of the beneficiaries of the residuary estate plans to invest the funds for the benefit of the endowment fund of the University of Pennsylvania Hospital, Philadelphia.

Committee for Men Blinded in Battle, New York, $10,000, and St. Michael's and All Angels' Home for Colored Cripples, $5,000, by the will of Helen Smythe.

Goshen Hospital, Goshen, Ind., $10,000, by the will of Charles F. Kelly.

Touro Infirmary, New Orleans, $5,292, by E. V. Benjamin; $2,500 by Silvan Newgurger, and $1,000 by J. E. Bouden, Jr.

Long Island College Hospital, Brooklyn, Dr. Howard F. Whitney, $6,000; Mr. Van Sindereu, Mrs. Walter Gibb and Mrs. J. Rogers Mazwell, each $5,000; Mr. John F. Talmage, in memory of Dr. J. Sulivan Thorne, $3,000, and Frederick Loesser and Company, $1,000.

Fairview Sanatorium, New Lisbon, N. J., $3,000 for a modern roentgen-ray laboratory to be known as the Benjamin F. Rowland Memorial Laboratory, in memory of her husband, by Mrs. Mary A. Rowland, of Metuchen, Conn.

Montefiore Home, Beth Israel Hospital and the Hebrew Sheltering Society, New York, and the Consumptive Relief Society of Denver, each, $1,000; Home for Aged and Infirm Hebrews and the Jewish National Hospital for Consumptives, Denver, each $500, by the will of William S. Slater.

St. Luke's Methodist Episcopal Hospital, Dubuque, Iowa, $1,000 by the will of Anna Cook of Warsaw, Ind.

New York Academy of Medicine, his manuscripts and pamphlets on the history of medicine, by the will of Dr. Arpad Gerster of New York.

FOREIGN

Melbourne University.—The council of Melbourne (Australia) University has raised the fees in medicine from £23 per annum to £25 (approximately $120).——The new anatomy building will be ready for occupancy about July or August. The present anatomy buildings will afford additional housing facilities for the medical school library.——The university is about to adopt a superannuation plan for all full-time officers of every grade. Professors will be able to retire at the age of 60, and other officers at 65.

Personal.—Surg. Commander Thomas B. Shaw, bacteriologist at the Royal Naval Hospital, Plymouth, has been appointed professor of hygiene and director of medical studies at the Naval Medical School at the Royal Naval College, Greenwich, to succeed Surg. Capt. Reginald Bond. ——Sir Joseph J. Thomson, master of Trinity College, Cambridge; Prof. Frederick G. Donnan of the University of London, and James C. Irvine, principal and vice chancellor of the University of St. Andrews, arrived in New York on the White Star liner *Majestic*, March 27, to attend the dedication of the Sterling Chemistry Laboratory at Yale University, New Haven, Conn., April 4.

Roentgen's Monument.—The fact that Roentgen never tried to capitalize his great discovery and that he lived on a small pension and died poor is said by our exchanges to be the greatest of all monuments to his memory. He even presented the Nobel prize conferred on him to the German Society for the Advancement of Science, the Naturforscher- und Aerzte-Gesellschaft, at a meeting of which in 1895 he told the news of his discovery. He was the first recipient of the Nobel prize in physics, in 1901, and was showered with other honors of all kinds. A Spanish exchange suggests that every one benefited by the roentgen rays in any way should make a point of telling his children about the glory of this modest professor of physics. Characteristic of Roentgen was his reply to the English scientist who asked what he thought when he saw the first roentgen-ray picture: "I did not think, I investigated."

Deaths in Other Countries

Dr. **Norman Dalton,** senior physician to King's College Hospital, March 9, in London.——Dr. **David C. Alexander** of Selkirk, Scotland, in Florida, U. S. A., February 17.——Lieut.-Col. **Herbert S. Taylor,** R. A. M. C., at Kampti, India, aged 53.

CORRECTIONS

Physicians' Licenses in Nebraska.—Competent Nebraska lawyers who have investigated the matter uniformly agree that no Nebraska physician's license issued since 1919 is in jeopardy in any way. The rumor to the contrary is thus set at rest.

Vienna Society Issues Statement Regarding "Blue Book." —In the letter published in THE JOURNAL, April 22, 1922, page 1219, certain statements are made concerning the relation of Dr. I. Lange to the American Medical Society of Vienna. Professors Holzknecht and Stoeck write that the Society of Vienna Instructors did not defray the expenses of Dr. Lange on his homeward trip, nor did it pay for the issue of the "Blue Book."

Government Services

Hospitals Authorized

The authorization of Evacuation Hospital No. 25 (West Suburban Hospital Unit, Melrose Park, Ill.), has been amended to read Evacuation Hospital No. 25 (West Suburban Hospital Unit, Oak Park, Ill.).——Pursuant to instructions of the Secretary of War, the organization of a surgical hospital, organized reserves, to be known as Surgical Hospital No. 4 (Washington University Medical Unit, St. Louis) has been authorized.

Physicians Wanted for Indian Service

A call from the national civil service commission is being made for physicians to fill positions in the Indian Service. There are fifteen vacancies at various western schools and agencies.

Colonel Ashburn Goes to West Point

Col. Percy M. Ashburn, commandant of the Medical Field Service School, U. S. Army, at Carlisle, Pa., has been detailed surgeon at the West Point Military Academy, to become effective in August. Colonel Ashburn has been stationed at Carlisle for three years. He will be succeeded by Lieut.-Col. Charles R. Reynolds, from the Surgeon General's Office.

Physicians Qualify for Navy

The Surgeon General of the Navy announced this week the following appointments as assistant surgeons with the rank of lieutenant (junior grade) in the Naval Medical Corps: Drs. James Root, Jr., Temple, Texas; Roscoe E. Avery, Barre, Vt.; James F. Hays and John McL. Brewster, Philadelphia; James D. Viecelli and Joseph D. Market, Denver; Earl S. McRoberts, Indianapolis.

Navy to Commission Recent Graduates

Sixteen students who will graduate from medical colleges this year have been examined and found qualified for appointment as medical officers in the Navy, and will be commissioned with the rank and pay of junior lieutenants. Twelve of these students are members of the graduating class of the Indiana University School of Medicine, Indianapolis, Ind.; two are from Jefferson Medical College, Philadelphia, and two from the University of Colorado Medical School. This is a departure from the usual policy of in Navy Department. There still remain approximately twenty vacancies in the Navy Medical Corps.

Additions to Medical Reserve Corps

Recent additions to the Medical Reserve Corps of the Army include Dr. Hubert Work, former Postmaster General and now Secretary of the Interior. Dr. Work, who was commissioned a colonel, was formerly president of the American Medical Association, and in the World War served as liaison officer between the Surgeon General of the Army and the provost marshal. Another public official recently commissioned in the Medical Reserve Corps is Representative John W. Summers of Walla Walla, Wash. Congressmann Summers has practiced medicine for twenty-five years.

Posthumous Medal for Dr. Register

The War Department made the posthumous award of the Distinguished Service Medal to Lieut.-Col. Edward Chauncey Register, Jr., M. C., U. S. Army, February 27. The medal was presented to Mrs. Jeannie Register, widow of the deceased. Dr. Register died at Tarnapol, Poland, in January, 1920, of typhus fever, contracted while establishing a hospital for victims of a typhus epidemic.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 12, 1923.

Prohibition

In no country in the world, not even in the republics, does the individual enjoy so much liberty as in Great Britain. Regard for his rights has been carried in some cases to the point of national danger. Thus, we were the only power that fought for years in the Great War with a voluntary army, and only sheer necessity brought about conscription, gradually and with difficulty. Compulsory vaccination has been practically abolished out of regard for the opinions of the antivaccinationists. It will therefore be seen that the prohibition of alcohol as a beverage is not likely to come about, although we are keenly alive to its evils, and have had for more than half a century an active temperance party containing many of our greatest social reformers. What this party has agitated for is "local option," i. e., giving the local authorities the power of controlling and prohibiting the liquor traffic in their own districts. But the temperance party has never been large enough to make the proposal an issue of practical politics. However, the experiment of prohibition in the United States is being keenly watched here and has given rise to hopes among the temperance people and fears among those interested in the liquor trade. These fears are manifested by the founding of an antiprohibition league, whose views and arguments were well put forward at a recent meeting at the Mansion House (the official residence of the lord mayor). The president, Lord Lonsdale, who was unable to be present, wrote that, while he would gladly do all that he could to prevent excesses, he held that all Englishmen know best how to fit themselves for their respective spheres in life, and because there may be excesses at times, he does not see why the majority of temperate men should be dictated to in the interest of a minority. Prohibition would be a serious blow to all, and cause the creation of illegitimate poisons injurious to life. The chairman, Lieut.-Col. Cuthbert James, M.P., gave a lurid picture of prohibition in America: "Young people who before prohibition did not tend to alcoholic excess now drink cocktails out of soup plates and are doing all they can to evade the law. Outside the pharmacists' shops in the great cities, queues wait to get their doses of alcohol, be it wood or genuine stuff, of cocain, morphin and other pernicious drugs, which do more injury, physically, morally and mentally, than the much condemned alcoholic refreshment." Lady Astor's bill (referred to below) was class legislation in its worst form. The children of the well-to-do could drink as much as they liked in their homes, but the bill prevented children of the poor from buying even a glass of cider or a glass of beer. The colonel concluded by reading a letter from a well known physician and teacher, Sir Thomas Horder, which must carry much more weight than the previous arguments. Sir Thomas wrote:

> There is an unfortunate tendency among the advocates of prohibition to invoke the aid of science on their behalf. Science—and I include medical science—has no support to give them. Science is often prostituted by the quotation of ill-devised experiments, the results of which are said to be condemnatory of the use of alcoholic beverages even in moderation. Formerly it was common to hear about plants fed with alcohol; and because they withered and died, this was said to be proof that alcoholic beverages are prejudicial to health. Less crude experiments than this, but with fallacies nearly as gross underlying them, are being quoted today, and are being made arguments in favor of prohibition. No experiments have yet been devised which prove that the moderate use of alcoholic beverages is injurious to health. Experience shows that the output of the brain work, and the maintenance of life in our highly civilized conditions at its best level, are both of them assisted by the moderate use of these beverages. Let us not, therefore, be stampeded into a false position by the ulterior motives of pseudo-scientists.

In the House of Commons, Vicountess Astor introduced a bill making it illegal to sell to any one apparently under 18 any kind of intoxicant for consumption in a saloon. She pointed out that the bill had the support of the medical profession. The period in a boy's or a girl's life from 14 to 18 was the most difficult one. The point of the bill was to develop self-control and the powers of resistance. The chief medical authorities were at one as to the dangers arising during adolescence. In 1921, 2,172 boys and girls between 16 and 21 were arrested for drunkenness. The bill was supported by the Labor party, and the first reading was carried by a majority of 338 to 56. In a letter to the *Times*, under the caption of "The Nation's Youth," four leaders of the profession—Lord Dawson, Sir Thomas Barlow, Sir Thomas Horder and Sir George Makins—support Lady Astor's bill. They regard it as a matter quite apart from the principle of general prohibition, saying that

> There can be no doubt as to the desirability of employing all possible safeguards to prevent the danger of starting alcoholic habits in those who have just entered on the period of stress which puberty involves and are on the threshold of adult life. Rapidly developing organs, new functions, and increased activities require all the protection that can be secured for them during that period, when readjustments of vital importance have to be made. It is difficult to conceive any valid objection that can be raised against Lady Astor's bill.

Birth Control Libel Action

Birth control has come prominently before the public in the last few years, largely in consequence of activities of the "Society for Constructive Birth Control and Racial Progress," which held a congress on the subject last summer, as reported in THE JOURNAL. While the movement has received the support of many influential persons both inside and outside the medical profession, it has also encountered strong opposition, particularly from the Roman Catholic Church. The position is well shown by a libel action which has just taken place. Dr. Marie Stopes, a doctor of science of the University of London, of philosophy of the University of Munich, president of the society and author of several widely read books on sexual subjects, brought an action against a physician, Dr. H. G. Sutherland, because in a book entitled "Birth Control" he thus attacked her character:

> Secondly, the ordinary decent instincts of the poor are against these practices; and, indeed, they have used them less than any other class. But, owing to their poverty, lack of learning, and helplessness, the poor are the natural victims of those who seek to make experiments on their fellows. In the midst of a London slum, a woman, who is a doctor of German philosophy (Munich), has opened a birth control clinic where working women are instructed in the method of contraception, described by Professor McIlroy as "the most harmful method of which I have had experience." It is truly amazing that this monstrous campaign of birth control should be tolerated by the home secretary. Charles Bradlaugh was condemned to jail for a less serious crime.

For the plaintiff, it was stated that her sole object was to prevent the unhappiness which arose from people having more children than they could properly bring up. Several leading members of the medical profession gave evidence on her behalf. Sir James Barr, F.R.C.P., consulting physician to the Liverpool Royal Infirmary, said that the plaintiff's clinic was doing an enormous amount of good. The information all wealthy people had at the present day should be given to the poor. The methods described were very safe. On cross-examination, he stated that Dr. Stopes' books "Married Love" and "Wise Parenthood" were more suited to the married than to the young, but he did not think that they were demoralizing. The plaintiff, in her evidence, stated that the object of her society was to counteract the steady reduction of the birth rate among the thrifty and sound, and the reckless breeding of persons at the other end of the social scale. Her clinic was founded to help overburdened women of the working class who were ignorant of the knowledge contained in her writings. Besides the midwife in charge, there was a visting physician who saw patients. There had been no experiments.

Sir William Arbuthnot Lane, consulting surgeon to Guy's Hospital, gave evidence that he had seen intense misery and distress due to multiple pregnancies. Assuming cleanliness, there was no danger in the measures advocated by the plaintiff. He, himself, had advised numbers of women to use a contraceptive method. Mr. Harold Chapple, gynecologist to Guy's Hospital, approved the measures advocated by the plaintiff, stating that, if employed with average intelligence, they would not be harmful. Sir William Bayliss, F.R.S., professor of physiology in the University of London, said that he saw nothing objectionable in the plaintiff's books. They served the excellent purpose of instruction in a noble and elevating way in the mysteries of sexual relations which every one should know as soon as he or she began to get information on the subject.

For the defendant, Miss Louise McIlroy, professor of gynecology at the Royal Free Hospital, stated that the method recommended was the most dangerous form of contraception. The unrestrained use of contraceptives without medical advice was extremely bad. She admitted that one method of contraception was not harmful to women. She had known cases in which a woman could not have a child because of the previous use of contraceptives. She was not opposed to contraceptives for medical reasons. The defendant gave evidence that he wrote his book to make known arguments against birth control. He was a Roman Catholic, but it was not at the behest of any Roman Catholic that he wrote his book. Indiscriminate broadcasting of knowledge of sex and contraceptives would do no good. Dr. Stopes' writings contained a nauseating mixture of physiology and emotion instead of the cold language of physiology. Dr. A. E. Giles, gynecologist, said that the method recommended by Dr. Stopes might be attended with danger. Similar evidence was given by two other gynecologists, Dr. F. J. McCann and Mrs. Mary Scharlieb.

In summing up, the judge (the lord chief justice) said that the defendant had to show that his statement of facts was true and his comments fair. Nobody disputed the wisdom of explaining in innocent, helpful language to young persons the mysteries of sex, but controversy began as to the method. The next step was a kind of jump from this: that they should be taught about contraceptives because they were desirable for some persons in some circumstances. Then they came to the method recommended by Dr. Stopes, which had become a sort of panacea for social ills, both public and private. He noted the difference of opinion among the medical witnesses as to this method. The jury had the plaintiff's books submitted to it. Could it say that they fell short of being obscene? He submitted to the jury four questions which were thus answered: Were the words complained of defamatory? Yes. Were they true in substance and in fact? Yes. Were they fair comment? No. What should the amount of damages be? Five hundred dollars.

A legal argument took place as to which party was entitled to the verdict. It was contended for the defendant that if the libel was found true in substance and in fact, the question of justification did not arise. The judge agreed and gave judgment for the defendant. On the medical question of the harmlessness of contraceptives, the contradiction between leading gynecologists is noteworthy.

Fatal Air Embolism During Urethroscopy

At a meeting of the urologic section of the Royal Society of Medicine, Mr. R. Ogier Ward, first assistant of the directorate of surgery, St. Bartholomew's Hospital, described a remarkable fatality from air embolism during urethroscopy:

A man, aged 68, had stricture of the urethral bulb, the result of gonorrhea contracted forty years previously. During aero-urethroscopy, in which slight bleeding occurred and in which rather more than the usual air pressure was necessary, the patient suddenly became dyspneic and cyanotic, had a convulsion and died. Cardiac massage failed to revive him. The heart could be felt to contain air. Froth issued from the right ventricle when, later, it was incised. All the chambers of the heart contained frothy blood. Bubbles were found in the aorta, common iliacs, pulmonary vein, inferior cava and other vessels.

The case showed the danger of aero-urethroscopy with laceration of the mucous membrane of the urethra and a tight stricture preventing the escape of air into the bladder. Mr. Ward suggested that the use of oxygen might give a greater margin of safety.

The Fatal Toy Balloon

For the second time in recent weeks, a child has been killed by a toy balloon. While a 5-year-old girl was trying to inflate a balloon, it slipped down into her larynx (evidently by inspiration), and she died from suffocation a few hours later. A physician who gave evidence at the inquest said that every time the child breathed, the balloon became partially inflated. Why an attempt was not made to save her life by operation is not stated. In the other case, the child was also a girl of 5.

Abrams Outdone: Diagnosis by Machine

The lay press is regaling its readers with a "discovery" which enables the physician to diagnose obscure cases. All that he has to do is to obtain a specimen of the blood or saliva and have it tested by an "uncanny instrument," the invention of a young Glasgow physician. The idea, we are told, originated with a San Francisco physician, Abrams, who discovered that every disease had its own special rate of vibration. The new instrument is termed "Boyd's emanometer' and is superior to Abrams' "oscilloclast," being more accurate and more sensitive. It is so sensitive that a strong light or even a strong scent puts it out of gear and interferes with the "disease reactions." Not only are disease conditions registered, but the exact intensity of each is measured, such maladies as cancer and tuberculosis being discoverable in their earliest stages, long before any other known method of examination would reveal them. Further, the patient's vital resistance is measured, and its increase or decrease at a subsequent test is a sure sign of progress or retrogression. But perhaps the greatest marvel of all is the power to find in each case exactly what medicine is needed.

PARIS

(From Our Regular Correspondent)

March 9, 1923.

Risks Incurred by Hospital Interns and Externs

Several deaths among hospital interns and externs, who succumbed to diseases contracted at the bedside of patients, have attracted attention to the risks incurred by these young men during the performance of their duties. Considerable surprise has been expressed that no legal provision has been made that will insure to interns and externs or their families adequate indemnities for sickness, accidents and death resulting from the practice of their profession. At the last meeting of the general council of the Association générale des médecins de France, M. Justin-Besançon, president of the Association professionnelle des externes et anciens externes des hôpitaux de Paris, recorded his dissatisfaction with this state of affairs. Nurses are protected by law against occupational accidents, because they are salaried persons. Interns and externs, however, are not considered as recipients of salaries, and are therefore not protected under this law, for the hospitals are public establishments and are not deriving any profits, whereas the law of 1898 in regard to occupational accidents deals only with industry and trade. Consequently, in order for an intern or extern to be entitled to an indemnity, he would have to prove that the disease was contracted

through some fault of the administration, which is a matter very difficult to prove. A hospital extern died recently, leaving orphans, who have no claim whatsoever to any indemnity. Another extern has been suffering from a phlegmon; he was planning to become a surgeon, but has now two contracted fingers, which prevents him from carrying out his purpose. Nevertheless, he has no right to an indemnity. Furthermore, the administration of the Assistance publique (public charities) has decided not to grant, henceforth, free hospital treatment to externs, unless they can show that their disease was acquired in the service to which they are attached. In view of the justified protests awakened by this state of affairs, the minister of public health has consented to examine into the situation as affecting the medical and surgical personnel of the hospitals.

The Fight Against Syphilis

Until the last few years, it was not permitted to speak in public of venereal diseases. Fortunately, public opinion has been undergoing a change in this regard. It is beginning to be recognized that venereal diseases constitute a real public danger, and that this menace has become especially threatening since the war. Professor Bayet of Brussels recently delivered an address in Paris, before a large gathering, on the fight against syphilis in Belgium and on the Union internationale contre le péril vénérien, which has just been founded in Brussels. This society is in the nature of a league of all the antivenereal societies throughout the world, including the league of the Red Cross societies. At Paris an attempt is being made to utilize motion pictures to instruct the general public in regard to what should be a matter of common knowledge with respect to antivenereal prophylaxis.

Granting of Diplomas to Masseurs

The minister of public health having demanded the creation of diplomas for masseurs, the administrative council of the Syndicat des médecins of the department of the Seine, acting in agreement with the Société des chirurgiens des hôpitaux de Paris, has filed a protest, in which it is set forth that massage applied to a patient is essentially a medical act, which is not without its dangers and presupposes the exercise of good judgment, for which reason the indications should always be formulated by a physician, and the massage should be given under his direction and control. Consequently, a masseur should be formally prohibited from applying massage, in any form, to a patient, except in accordance with a medical prescription. It is further urged, that to create an official diploma for "masseurs" or "surgical masseurs," or even to grant a certificate or to bestow any other analogous authority would result in encouraging the illegal practice of medicine, and would consequently cause serious detriment to public health. Such an innovation would be, furthermore, in contravention of the text and spirit of the law of 1892, which reserves to doctors of medicine the practice of the medical profession. The administrative council of the Syndicat des médecins utilized this opportunity to call the attention of the public authorities, and, more particularly, of the minister of public health, to the inadvisability and the danger of so-called paramedical diplomas in general, which, conferring, as they do, apparent scientific authority on mere aids of physicians, are of a character to deceive and work a detriment to the public.

Books for the War Blinded

The American committee in aid of the war blinded, which is under the patronage of M. Millerand, president of the French Republic, President Wilson, and the king and queen of Belgium, is about to open shortly a large publishing house for books printed in the braille system. It is thought that the annual capacity of the plant will be around 30,000 volumes. The plates will be made of zinc and will be preserved. The work to be printed will be dictated by machines, and six or seven operators will be able to work simultaneously. The final proof pages will be read by a blind man. It has been found feasible to print the braille characters on both sides of the paper, an innovation which will permit a saving of 50 per cent. in paper, while the more extended use of abbreviations will mean a further economy of 30 per cent. Books in braille characters will thus be less bulky and more easily handled. The organizing committee estimates that it will be possible to publish a volume in less than twelve days. This publishing house will distribute gratuitously books published in the language desired to the blind soldiers of France and allied countries. It will also furnish to the civilian blind any surplus of books not needed by the war blinded. It will publish a journal in braille characters, and plans also to get out reading courses.

The Committee on Prophylaxis Against Tuberculosis

The American Rockefeller Mission, which, for several years, has been pursuing in France an active propaganda against tuberculosis, has just turned over its services and its activities to the Comité national de défense contre la tuberculose, which, under the direction of M. Léon Bourgeois, Professors Calmette and Léon Bernard and M. Georges Risler, president of the Musée social, will assume this publicity campaign, by means of lectures, motion pictures, etc.

The Dangers of White Lead

At the instigation of the Ligue des sociétés de la Croix-Rouge, a league which comprises today the national societies of forty-three countries, a special meeting was called recently in the large amphitheater of the Sorbonne, the object of which was to support the universal adoption of resolutions proposed by the third international conference of labor, held at Geneva in 1921, for the protection of workmen painters against the grave dangers connected with the use of white lead.

Practical Instruction in Child Welfare

M. Léon Bérard, minister of public instruction, and M. Strauss, minister of public health, recently addressed to the departmental prefects a circular letter concerning practical instruction in child welfare in the primary schools for girls. The circular emphasizes how essential it is for girls from 10 to 13 years old to know the main rules to follow and the elementary principles to be applied to promote the health of young children, especially in the fight against infant mortality. This instruction would not overload the curriculum if it were reduced to the imparting of a few well established facts, outside of class hours, by a woman who would assist the pupils every Thursday morning (Thursday is a holiday in the French schools) in a consultation hour for infants, a *crèche* or something of a similar nature.

Sex Education in the Lycées, or Secondary Schools

An inquiry has been instituted among the various associations whose membership is made up of the parents of the pupils in the lycées, in order to get an expression of opinion on the question of introducing into the course in natural science, as now given in the lycée, the study of the phenomena of human reproduction. Five such associations of parents (Angoulême, Calais, Cherbourg, Lyons and Lycée Janson de Sailly at Paris) have taken a pronounced stand against such instruction. Four associations (Bordeaux, Grenoble, Marseilles and Philippeville), on the other hand, have expressed themselves in favor of the modified course. Some associations have not as yet expressed an opinion, and others have expressed themselves in such doubtful terms as to make it impossible to classify them among either the advocates or

the opponents of the proposed plan. All the associations, however, are agreed that sex instruction is incumbent on the family as such, but, since it has been established that, for various reasons, most parents fail to perform their duty in this respect, some associations of parents hold that the schools should be asked to take over the task.

Eighth Congress of Legal Medicine

The eighth congress of Médecine légale de langue française will assemble in Paris, May 24-26, 1923, under the chairmanship of Dr. Pierre Parisot, professor of legal medicine of the Faculté de médecine of Nancy. The questions on the program are: (1) traumatisms of the spine and industrial accidents, papers by Professor Etienne Martin (Lyons) and Dr. Mazel; (2) the law in regard to industrial diseases, papers by Professor Balthazard (Paris) and Dr. Piédelièvre, and (3) international regulation of the sale of cocain, paper by Dr. Courtois-Suffit of Paris.

BUENOS AIRES

(From Our Regular Correspondent)

Feb. 20, 1923.

Government Intervention in Student Strikes

Hardly had President Alvear assumed charge of the government, when it was realized that order and discipline would again prevail in the universities, which are here under government control. At Rosario, immediately after several unruly actions by medical students, the directing board applied disciplinary measures to those responsible. The rector of the university revoked these measures, but the faculty, considering the matter one purely under its jurisdiction, refused to pay any attention to the rector's decree. Then the rector, at the head of a number of students, presented himself at the school, demanding that the faculty obey his instructions. The dean again refused to yield, and the federal government sent a commissioner, Dr. B. Nazar Anchorena, to deal with the situation. An agreement was reached, but the rector refused to carry out his part of it. Dr. Nazar Anchorena was again sent from Buenos Aires, with full powers to decide the matter. On reaching Rosario, he found the dean and several professors besieged in their own office by a number of students, who had cut off both water and light. On the evening of Dr. Anchorena's arrival, he was hooted by a group of students headed by the rector and several professors. On receipt of Dr. Anchorena's report, the rector, a few other professors and the student ringleaders were dismissed. Thus all attempts to create trouble failed, in spite of some political encouragement. It is felt that the government will not put up with further disturbances, and that it will uphold discipline even at the cost of closing the school.

At Cordoba, the professors in the medical school and a great many other prominent persons have petitioned the government to investigate affairs at the school, as its management, they assert, is now in the hands of students who boast of being communists and antinationalists.

Reorganization of Tuberculosis Sanatorium

The Commission on Regional Homes and Hospitals, consisting of Drs. Cabred, Justo and Reibel, was compelled to reorganize the tuberculosis sanatorium at Santa Maria (Cordoba), as strikes by either patients or nurses, or serious internal disturbances, had become of daily occurrence. This was chiefly due to the fact that politicians had got hold of the administration. To put an end to such an anomalous situation, Dr. Luzuriaga was appointed acting superintendent so that he might reorganize the sanatorium. Once this was done, Dr. Roballos was appointed superintendent. The commission is planning to build in the vicinity of the sanatorium a sufficient number of cottages to care for 1,000 patients.

At Rosario, a tuberculosis sanatorium was opened at Saladillo, one of the most populous suburbs of the city.

Control of Habit-Forming Drugs

The steady increase in the use of habit-forming drugs, such as morphin, and especially cocain, is forcing the authorities to intervene in the matter. The provincial government of Cordoba has just approved a very rigid law to combat drug habituation, and the federal government is empowered by congress to assume charge in the whole country.

Colony for Deserted Minors

A large and up-to-date colony and reformatory for deserted minors has been opened at Olivera, Buenos Aires Province. The institution is well equipped, and has been placed in charge of the Commission on Regional Homes and Hospitals.

Smallpox

With the exception of sporadic cases at Corrientes and Embarcacion (Salta), smallpox has apparently disappeared. The Cordoba board of health states that it has vanished altogether from the province. The disease, however, persists in Chile and has just made its appearance in Uruguay, where it was imported from Brazil. It was so mild at first that it was diagnosed chickenpox. The physicians have confirmed the diagnosis of mild smallpox. Mortality has not exceeded 10 per cent. There have been several hundred cases in Uruguay, and the disease has spread to Montevideo, although the authorities there assert that the outbreak has come to an end.

Health Conference

At the call of the president of the National Department of Public Health, a meeting of national and provincial authorities will be held in this city, for the purpose of making the laws uniform, broadening the powers of the national government, and coordinating the efforts of the several authorities. The preliminary program is quite comprehensive.

Conference on Hygiene, Microbiology and Pathology

The Third South American Conference on Hygiene, Microbiology and Pathology was held in Montevideo, January 28-February 3. The first conference on medical pedagogy was held concurrently. Besides the many Uruguayan delegates, representatives from other countries included: Drs. F. A. Justo, A. Bachman, J. Carbonell, B. A. Houssay, G. Araoz Alfaro and A. Sordelli from Argentina; Drs. A. de Castro, S. Libanio, A. de Assos, G. Moura Costa and Toledo Dodsworth from Brazil; Dr. D. Fernandez Espiro from Ecuador; L. Migone from Paraguay, and J. Gonzalez from Peru. Many papers were presented on such subjects as hookworm disease, malaria, typhoid fever, venereal diseases and tuberculosis. Favorable comment was made on public health work at Minas Geraes by Sr. S. Libanio, and at Corrientes and Tucuman by A. Bachman. Valuable studies were submitted by Dr. A. Sordelli on antigangrenous polyvalent serum; by Cleaux and Assis on classification and preservation of meningococci, and by Houssay and Kraus, on snake venom.

At the meeting on medical pedagogy, two reports and three papers were presented. Aloysio de Castro sketched a general plan for the international exchange of professors. G. Araoz Alfaro insisted on the need of creating a special health corps, well paid and independent of politics. Dr. B. A. Houssay dwelt on the need of developing research institutes in medical schools, and of infusing the research spirit in students. A convention was signed at referendum.

creating at Montevideo an office headed by Professor Ricaldoni, which will have charge of correlating medical curriculums and establishing exchange of professors, and which will publish a journal with abstracts of all Latin American work on medicine and medical pedagogy. The next conference will be held at Buenos Aires in May, 1925.

HOLLAND

(From Our Regular Correspondent)

March 3, 1923.

The Campaign Against Diphtheria

The public health authorities of the Netherlands recommend the launching of a more active campaign against diphtheria. The royal serologic institute has on hand an adequate supply of toxin-antitoxin, which has been placed under the control of Professor Spronck, who has also succeeded in preparing a toxin the judicious use of which appears absolutely harmless to persons under examination. The minister of labor has authorized the free distribution of this toxin and of the toxin-antitoxin mixture to physicians who wish to apply the Schick test and immunization under the direction of the public health officer of the district. The purpose of the latter stipulation is, partly, the unification of methods, and, secondly, the securing of information that will make it possible to perfect the methods. Every physician who, on his own responsibility, may wish to employ vaccines prepared in a different manner is likewise, and for the same reasons, requested to take advantage of the cooperation of the public health officer.

Mortality Among Women

Dr. Sanders has published the results of his inquiry into the mortality statistics of married and unmarried women in Rotterdam. From the standpoint of social hygiene, this inquiry presents considerable interest for the reason that the statistics are quite extensive, covering, as they do, the period from 1913 to 1921. It appears from his report that the mortality among unmarried women, from 20 to 49 years of age, is 4.97 per thousand, whereas the mortality of married women is 5.65 per thousand. But the relation of the two figures is entirely reversed when we consider the mortality from tuberculosis, which, among the causes of death, was the most frequent. The mortality rate from tuberculosis among the unmarried women was 2.25 per thousand; among the married women it was only 1.58 per thousand. One peculiar fact is revealed when we compare the mortality rates during recent years; namely, that, during the years of the war, mortality from tuberculosis among unmarried women increased enormously as compared with the rate found among married women.

Tumors in the Dutch East Indies

An excellent study on the pathology of tumors in the Dutch East Indies has been presented by Drs. Guyders and Stroub to the Nederlandsche vereeniging voor tropische geneeskunde. Some general points deserve to be noted in this communication, more particularly the frequency of malignant tumors. The Javanese and Chinese coolies in the Dutch East Indies are affected by malignant tumors at least as much as persons inhabiting European countries. The writer does not seem to accept the aphorism of Hoffmann to the effect that the frequency of cancer diminishes as one approaches the equator. Certain peculiarities with respect to the classification of tumors are very remarkable. For instance, primary carcinoma of the liver is extremely frequent not only among the Chinese but also among the Javanese, occurring in 90 per cent. of the cases of cirrhosis of the liver. Cancer of the stomach is common in the Chinese but rare in the Javanese. In spite of the multiplicity of intestinal affections in the tropical countries, malignant tumors of the gastro-intestinal tract are very rare. Melanomas and uterine fibromas are seldom found.

Ceremonies in Honor of Pasteur

Like most countries, Holland also was pleased to celebrate the hundredth anniversary of the birth of Pasteur. The Société hollandaise pour le progrès de la médecine appointed a committee to plan and take charge of the ceremonies, which were held at Amsterdam. Drs. Jaeger, Kluyver and Spronck referred in their addresses to the threefold scientific activity of the great savant: chemical, microbiologic and pathologic. Dr. Calmette, assistant director of the Pasteur Institute in Paris, reviewed the principal events in the life of this eminent Frenchman. In the museum of the hygienic laboratory, an exhibition of engravings, relics and apparatus pertaining to the life of Pasteur was held. The committee also collected subscriptions toward the erection of the contemplated Pasteur monument at Strasbourg.

The Plague in the East Indies

The Koloniaal Verslag of 1922 contains some interesting facts on the subject of the cases of plague observed during 1921 in the Dutch East Indies. There had been only a few cases up to the middle of the year, but after July they increased until the incidence was five times what it had been at the beginning of the year, reaching the climax in December, in which month 1,800 cases were reported.

Organization of the Fight Against Tuberculosis

The government commission charged with the organization of the fight against tuberculosis has continued its important work, which includes the campaign against insanitary dwellings, the introduction of better methods of discovering the cases that exist, the amelioration of living conditions, and prophylaxis through education and through the adoption of stricter hygienic measures. In a supplement to its publications it outlines the methods employed in the fight against tuberculosis in the Netherlands. All the powers are centralized in the minister of public health. He has as his aids an inspector and a committee, composed of members of the Council of Hygiene, which is organized for the purpose of securing information. The organizations which are the effective factors in the fight against tuberculosis are formed by the local societies, with their offices of consultation, which are under the jurisdiction of the inspector and keep in close touch with the hygienic services of the district and with the directors of these services. Besides these services scattered all over the country, it is necessary to create an institute for scientific research in the field of tuberculosis. In addition, in the principal town of every district it is well to organize a central bureau of consultation with a modern, up-to-date equipment, much more complete than the consultation offices that function in each locality.

Marriages

FRANK VAN DOREN, Seaside, Ore., to Miss Josie L. Housken of San Francisco, February 3.

G. W. WAINWRIGHT to Miss Edith Anderson, both of London, Ont., Canada, January 17.

ERNEST W. ZUMSTEIN to Miss Margaret Vail, both of Delhi, Ont., Canada, recently.

MADISON J. KEENEY, Phoenix, Ariz., to Miss Cecile Boyd of Los Angeles, February 15.

CLAUDE MOSLEY BAKER, Minden, La., to Miss Lily Posner of New Orleans, March 20.

OLIVER BERNARD SIMON to Miss Edith Burr Baker, both of Batavia, Ill., recently.

Deaths

Lewis Coleman Morris ⊕ Birmingham, Ala.; University of Virginia Department of Medicine, Charlottesville, 1892; professor of gynecology and abdominal surgery since 1912, and formerly dean at the University of Alabama Graduate School of Medicine, Birmingham; member of the American Association of Obstetricians and Gynecologists, and the Southern Surgical Association; past president of the Medical Association of Alabama; member of the board of health; aged 51; died suddenly, March 23, of heart disease.

William Robson Nichols, Winnipeg, Manit., Canada; Trinity Medical College, Toronto, Ont., 1886; F.R.C.S., England, 1902; L.R.C.P., London, 1899; president of the Winnipeg Clinical Society; examiner in surgery at the Manitoba Medical College, Winnipeg, in 1908; at one time house surgeon at Guy's Hospital, London, England; member of the American Association of Gynecology; aged 63; died recently, of cerebral hemorrhage.

Ernest Eugene Levers ⊕ Sheridan, Wyo.; Ohio Medical University, Columbus, 1898; president of the Sheridan County Medical Society, and past president of the Wyoming State Medical Society; formerly member and president of the state senate; member of the state board of medical examiners; at one time medical director of the Wyoming General Hospital (Sheridan County Memorial Hospital), where he died, March 16, of septicemia, aged 51.

Robert M. Funkhouser ⊕ St. Louis; New York University Medical College, New York, 1874; also a lawyer; formerly professor of topographical anatomy, pathology and clinical surgery, Beaumont Hospital Medical College, St. Louis; at one time president of the state medical association and the St. Louis Medical Society; served in the M. C., U. S. Army, during the World War; aged 73; died, March 13, of heart disease.

Charles E. Preston, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1904; L.R.C.S., L.R.C.P., Edinburgh, 1906; L.R.F.P.S., Glasgow, Scotland, 1906; served during the World War with the Canadian Army Medical Corps in France; aged 38; died, February 7, of pneumonia.

James Samuel LaBelle, Windsor, Ont., Canada; Detroit College of Medicine and Surgery, Detroit, 1897; Trinity Medical College, Toronto, 1898; for twenty years coroner of Essex County; member of the school board and the city council; aged 55; died suddenly, March 9, of heart disease.

Cummins E. White, Buckhannon, W. Va., Baltimore University School of Medicine, Baltimore, 1892; member of the West Virginia State Medical Association; formerly superintendent of the Weston State Hospital, Weston; aged 54; died, March 14, of carcinoma of the stomach.

John Edward North, Rock Rapids, Iowa; Hahnemann Medical College and Hospital, Chicago, 1895; member of the Iowa State Medical Society, and president of the Lyon County Medical Society; member of the board of education; aged 54; died suddenly, March 14, from asthma.

Howard Aiken Ijams, Knoxville, Tenn.; University of Michigan Medical School, Ann Arbor, 1897; served in the M. C., U. S. Army, during the World War; formerly city physician; aged 49; was instantly killed, March 7, when his automobile was struck by a street car.

Albert D. Lake, Gowanda, N. Y.; Western Reserve University School of Medicine, Cleveland, 1868; physician to the New York State Indian Agency and the Thomas Indian School on the Cattaraugus reservation since 1888; aged 77; died, March 14, of heart disease.

Levi B. Casey, Marion, Ill.; University of Louisville Medical Department, Louisville, Ky., 1885; University of Illinois College of Medicine, Chicago, 1888; member of the Illinois State Medical Society; aged 60; died, March 14, of pneumonia following influenza.

Archibald McLay, Woodstock, Ont., Canada; Victoria University Medical Department, Toronto, 1868; practitioner in Woodstock for half a century; member of the city council, board of education and for many years health officer; aged 80; died, January 28.

James Edward Keating, Portland, Me.; Medical School of Maine, Portland, 1895; formerly professor of clinical medicine at his alma mater; on the staffs of the Maine General and Children's hospitals; aged 58; died, February 26, following a long illness.

Ralph Ellis Leidy, Boyertown, Pa.; Jefferson Medical College of Philadelphia, 1914; for three years president of the board of health; served in the M. C., U. S. Army, during the World War; aged 36; died, March 13, of pleuropneumonia.

Julius B. Ransom ⊕ Dannemora, N. Y.; University of Vermont College of Medicine, Burlington, 1880; for thirty-four years chief physician at Clinton State Prison and Hospital for Criminal Insane; aged 68; died, March 15, of cerebral hemorrhage.

John Eugene Breglia, New York; Cornell University Medical College, New York, 1909; member of the Medical Society of the State of New York; formerly on the staff of the New York Post-Graduate School and Hospital; aged 36; died, March 19.

Otis Talbert Morey, Salisbury, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1898; member of the Missouri State Medical Association; served in the M. C., U. S. Army, during the World War; aged 46; died, March 8, of influenza.

Thomas Matthews Watson, Griggsville, Ill.; Eclectic Medical Institute, Cincinnati, 1874; member of the Illinois State Medical Society; secretary of the board of education for thirty-seven years; aged 71; died, March 18, of influenza.

James M. Raby, Windsor, Va.; University of Louisville Medical Department, Louisville, 1885; member of the Medical Society of Virginia; founder and president of the Farmer's Bank of Windsor; aged 62; died, February 28.

Mary Bridges White, Palo Alto, Calif.; Chicago Homeopathic Medical College, Chicago, 1880; Hahnemann Medical College and Hospital, Chicago, 1896; formerly a practitioner in Wisconsin; aged 66; died, March 17.

David S. Hollenback, Shamokin, Pa.; Jefferson Medical College of Philadelphia, 1882; member of the Medical Society of the State of Pennsylvania; Civil War veteran; aged 87; died, March 20, of senility.

Louis E. Barton ⊕ Malta, Ill.; State University of Iowa College of Medicine, Iowa City, 1886; formerly president of the DeKalb County Medical Society; aged 63; died, March 20, of cerebral hemorrhage.

William Henry Neumeyer, Fort Wayne, Ind.; Bennett Medical College, Chicago, 1913; formerly a practitioner in Chicago; member of the Indiana State Medical Association; aged 60; died, March 14.

Carl Ernst Wilhelm Levin, New York; New York University Medical College, New York, 1895; member of the Medical Society of the State of New York; aged 58; died, March 15, of pneumonia.

Andrew B. Beattie, Anna, Ill.; St. Louis Medical College, St. Louis, 1859; Civil War veteran; for thirty-five years on the staff of the Anna State Hospital; aged 90; died, March 28, of septicemia.

Rolph Brown ⊕ Toledo, Ohio; Detroit College of Medicine and Surgery, Detroit, 1897; member of the Michigan State Medical Society; aged 50; died, February 26, of cerebral hemorrhage.

Lewis Whaley ⊕ Birmingham, Ala.; Atlanta Medical College, Atlanta, Ga., 1873; aged 75; was instantly killed, March 15, when the automobile in which he was driving was struck by a train.

Sidney P. Cooke, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1869; practitioner in Ottawa for more than half a century; aged 79; died, January 30.

William Campbell Hays, Lorain, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, Cleveland, 1901; aged 49; died, March 20.

John Holderread, Chicago; St. Louis College of Physicians and Surgeons, 1881; aged 65; died, March 6, of heart disease, and the effects of narcotics at the Cook County Hospital.

Theodore Fassitt, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1869; Civil War veteran; aged 78; died suddenly, March 12, of heart disease.

Frank P. Gillis ⊕ Lake Helen, Fla.; Missouri Medical College, St. Louis, 1876; formerly a practitioner in Illinois; aged 68; died, March 12, following a long illness.

William Earley Burtless ⊕ St. Clair, Mich.; University of Michigan Medical School, Ann Arbor, 1878; proprietor of the St. Clair Hospital; aged 76; died, March 11.

⊕ Indicates "Fellow" of the American Medical Association.

Ulrich H. Hon, Los Angeles; University of Louisville Medical Department, Louisville, 1875; aged 72; was instantly killed by an electric train at Alhambra, March 15.

Samuel W. Fariss, Lafayette, Ga.; University of Tennessee College of Medicine, Memphis, 1878; member of the Medical Association of Georgia; aged 68; died, March 12.

Robert Newton Greenfield ⊕ Springboro, Pa.; University of Michigan Medical School, Ann Arbor, 1869; Civil War veteran; aged 80; died, March 11, of myocarditis.

Alonzo O. Blair, Pittsburg, Kan.; St. Louis Medical College, St. Louis, 1877; member of the Kansas Medical Society; aged 69; died, March 17, following a long illness.

Ernest T. Horton, Whitehall, N. Y.; New York Homeopathic Medical College, New York, 1881; aged 54; died, March 16, of epidemic (lethargic) encephalitis.

Robert H. Scott, New Westminster, B. C., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1905; aged 41; died, January 23, following a long illness.

Arthur Wilson Taylor, Glendale, Calif.; Medical Department of Columbia College, New York, 1880; captain, M. C., U. S. Army, retired; aged 66; died, March 8.

Louise Erich, Baltimore; Woman's Medical College of Baltimore, 1895; emeritus professor of orthopedic surgery at her alma mater; aged 60; died, March 6.

Elijah Wooley, Saybrook, Ill.; Hahnemann Medical College and Hospital, Chicago, 1880; Civil War veteran; aged 80; died, March 14, of cerebral hemorrhage.

Lewis S. Walter, Fife Lake, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1876; aged 74; died, March 13, of cerebral hemorrhage.

Orville Nalle, Elkwood, Va.; University of Virginia Department of Medicine, Charlottesville, 1884; aged 60; died, February 18, of cerebral hemorrhage.

D. Edgar Hutchison ⊕ Downington, Pa.; Medico-Chirurgical College of Philadelphia, 1905; aged 40; died, March 12, following a long illness.

John A. Brown, Belgique, Mo.; Barnes Medical College, St. Louis, 1898; member of the Missouri State Medical Association; aged 46; died, January 12.

Alfred T. Livingston ⊕ Jamestown, N. Y.; University of Buffalo (N. Y.) Department of Medicine, 1873; aged 73; died, February 18, at Baltimore.

Elias La Fontaine Burnham, Millbrook, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1865; aged 80; died, February 9.

Luther Reeve Hallock ⊕ New York; New York University Medical College, New York, 1888; aged 74; died, March 18, of carcinoma of the liver.

Charles T. Kennedy ⊕ Greenville, Texas; Georgetown University School of Medicine, Washington, D. C., 1892; aged 50; died, March 11.

James Dunlavy, Maramee, Okla.; College of Physicians and Surgeons, Keokuk, Iowa, 1870; Civil War veteran; aged 75; died, March 7.

Henry T. Knapp, Sackville, N. B., Canada; McGill University Faculty of Medicine, Montreal, Que., 1895; aged 51; died, January 31.

John D. Herman ⊕ Conde, S. D.; Medical College of Ohio, Cincinnati, 1886; also a druggist; aged 64; died, February 24, of pneumonia.

John M. Linegar, Fairfield, Ind.; Louisville Medical College, Louisville, Ky., 1894; aged 61; died, March 12, of cerebral hemorrhage.

Harvey Shaw Clerke, Toronto, Ont., Canada; Victoria University Medical Department, Toronto, 1883; aged 70; died, March 22.

Dewitt F. Eskew, Poplar Bluff, Mo.; University of Tennessee College of Medicine, Memphis, 1877; aged 74; died, February 14.

Thomas Hazen Humphreys ⊕ Kissee Mills, Mo.; Drake University College of Medicine, Des Moines, 1884; aged 59; died recently.

J. C. Wells, East Stone Gap, Va. (licensed, years of practice); Civil War veteran; aged 79; died, March 11, of acute indigestion.

Frank Campbell, Hepworth, Ont., Canada; Trinity Medical College, Toronto, 1885; aged 64; died, January 30.

Eugene Stanley Hay, Wyoming, Pa.; Detroit Medical College, Detroit, 1881; aged 64; died, March 17.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

OWL ENAMEL TOILET CREAM

A Poisonous Cosmetic Sold with No Warning to the Public

"Owl Enamel Toilet Cream" manufactured by the Owl Drug Co. of Kansas City, Mo., is sold for the alleged purpose of "Beautifying the Complexion and Rendering the Skin Soft and Velvety." The jar in which this preparation comes bears a label reading:

"Think of a remedy having the power of summoning instantly to the face and neck the color and brilliancy of youth! Just what you want to use before going to the theatre or shopping, as it may be applied as often as you choose during the day it gives the face instantly a soft beautiful flush and brilliancy."

Some months ago Dr. Henry W. Woltman of Rochester, Minn., sent to The Journal a report[1] of a case of lead poisoning in a woman who had been using Owl Enamel Cream. With his report Dr. Woltman sent an opened and partly used specimen of the preparation which he stated, on analysis, had showed a very high lead content. At the time Dr. Woltman's article was ready for publication in The Journal, the Propaganda department obtained from the Owl Drug Company of Kansas City some original unopened packages of Owl Enamel Cream which were submitted to the A. M. A. Chemical Laboratory for a more exhaustive analysis. The laboratory reported:

LABORATORY REPORT

An original, unopened package of Owl Enamel Toilet Cream (Pink), manufactured by the Owl Drug Co., Kansas City, Mo., was submitted to the A. M. A. Chemical Laboratory for analysis. No information was given on the label concerning the composition of the preparation. The package contained a pink, perfumed mass, having about the consistency of fresh putty. On standing the preparation became harder and apparently drier. Qualitative tests indicated the presence of a lead compound, a calcium compound, a carbonate, glycerin and traces of phosphate, iron and some substance insoluble in nitric acid which was probably talc. Bismuth salts, mercury salts, zinc salts, casein, fats, lanolin, petrolatum or starch, substances sometimes found in face creams, were absent. Analysis indicated that the composition of the preparation is essentially as follows:

Lead carbonate (basic)	42.5 per cent.
Calcium carbonate	40 per cent.
Glycerin	7 per cent.
Insoluble matter (probably talc)	0.5 per cent.
Iron, phosphate and coloring	traces
Water (by difference)	10.0 per cent.

It is evident from this analysis, therefore, that Owl Enamel Toilet Cream (Pink) is composed essentially of lead carbonate, calcium carbonate and glycerin.

The indiscriminate sale of a preparation of this sort is not merely a menace to the public health but a commentary on the laxity of our laws. It is notorious that certain salts of lead have for years been responsible for cases of chronic lead poisoning, due to their employment in cosmetics. As Peterson and Haines in their Text-Book of Legal Medicine and Toxicology said twenty years ago "the use of 'flake white' as a cosmetic has caused every form of chronic lead poisoning." In spite of this any concern, responsible or irresponsible, can sell for the indiscriminate use of the girls and women of the country a cosmetic loaded down with this poisonous ingredient, and they are not required to give any hint as to the potential dangers nor even to declare the presence of the poison.

1. Woltman, H. W.: Lead Poisoning from Face Enamel, J. A. M. A. **80**: 1685 (Nov. 11) 1922.

Correspondence

CAUTION IN USE OF MERCUROCHROME-220 SOLUBLE

To the Editor:—Mr. E. J., who had been receiving injections of a 2 per cent. solution of mercurochrome-220 soluble into the bladder twice a week, complained of severe burning and inability to retain the solution, and stated that he would refuse further treatment unless the inconvenience could be controlled.

I then injected into the bladder 1 ounce (30 c.c.) of a 5 per cent. solution of procain, followed in five minutes by 1½ ounces (45 c.c.) of mercurochrome-220 soluble. He left the office in a few minutes without any discomfort. Three hours later he returned unable to urinate. I passed a No. 22 French catheter and withdrew 8 ounces (235 c.c.) of urine, together with numerous pieces of solidified mercurochrome. The catheter became plugged, so I withdrew it and introduced a 26 French metal evacuating catheter and proceeded to clean the bladder. Innumerable pieces of solidified mercurochrome were evacuated, but, as the process became very painful to the patient, I stopped and filled the bladder with 6 ounces (175 c.c.) of a 1 per cent. solution of sodium carbonate, which he retained for one hour. He urinated freely, and the solution was highly crimson with dissolved mercurochrome. I irrigated the bladder twice a day for three days; finally the solutions remained colorless. Later, cystoscopy revealed the bladder clear.

CHARLES E. STOLZ, M.D., Los Angeles.

"THE INTRACUTANEOUS GUINEA-PIG TEST FOR HUMAN SUSCEPTIBILITY AND IMMUNITY TO DIPHTHERIA"

To the Editor:—The tendency to attach names to surgical procedures, to clinical phenomena and to various laboratory tests is exemplified by the second paper of Dr. W. H. Kellogg (THE JOURNAL, March 17, 1923, p. 748) describing a "new" test for immunity to diphtheria. This test is a modification of the old established method of Römer's for the intradermal demonstration in the guinea-pig of small amounts of diphtheria antitoxin contained in human serum. Ten years ago I used successfully a similar but more accurate modification of this test, which I described later (*J. Infect. Dis.* **19**:557 [Oct.] 1916).

These antitoxin tests were made by me to establish some of the fundamental principles in the active immunization with toxin-antitoxin before Dr. Park and I introduced the Schick test as a part of the process of active immunization against diphtheria. We were only too glad to discard the routine use of the intradermal test in the guinea-pig, and to adopt the Schick test. This test is well known now for its great simplicity and extreme reliability when properly carried out. It is a direct test on the human being instead of a roundabout and complicated one in the guinea-pig. The very reliability of the Schick test, which has been confirmed now by many observers in different countries, is proof of its value. The so-called "Kellogg" test is simply a crude application of my own modification of Römer's method.

Dr. Kellogg's suggestion has one advantage, that when a physician does not know the Schick test and wishes to determine the presence or absence of antitoxin in an occasional child, "Kellogg's" application of "Zingher's" modification of Römer's test is of practical value.

Some of the objections that Dr. Kellogg raises to the Schick test are overdrawn. After making the test on more than 200,000 children in this city, I have become thoroughly convinced that the Schick reaction is the method of choice in simplicity and reliability for the testing not only of large numbers but also of a single individual. It is up to the physician to demand from the manufacturing laboratories reliable Schick outfits and to learn the simple technic of the test and its interpretation. He will then not have to take samples of blood from his patients and depend on central laboratories for his knowledge whether these patients are susceptible or immune to diphtheria. He will also not have to fear the various sources of error that may so easily creep in to render the intradermal guinea-pig test unreliable and untrustworthy in its results.

ABRAHAM ZINGHER, M.D., New York.
Assistant Director, Bureau of Laboratories,
New York City Department of Health.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DOSAGE OF BETANAPHTHOL AND OF CARBON TETRACHLORID

To the Editor:—What is the dosage of (1) betanaphthol and (2) of carbon tetrachlorid?

OSWALD O. KAFER, M.D., Edward, N. C.

ANSWER.—1. The dose of betanaphthol given in the U. S. Pharmacopeia is 0.25 gm. (4 grains). The dose used by Leach and Hampton (THE JOURNAL, Jan. 6, 1923) in the treatment of hookworm disease was 3.25 gm. (50 grains) in powdered form, administered on an empty stomach and without purge.

2. The dose of carbon tetrachlorid as used by Lambert in the treatment of hookworm disease (THE JOURNAL, Feb. 24, 1923) was 0.2 c.c. (3 minims) for each year of age up to 15 years. Adults were given from 3 to 4 c.c. (45 to 60 minims); with this dosage a total of 42,000 cases was treated without untoward results. There were three fatalities, however, in the last 8,000 of their 50,000 cases. While it was assumed that these deaths were due to using an impure drug, Lambert says, it is possible that the dose, as noted, is larger than is desirable. Smillie and Pessoa (*Am. J. Hygiene*, January, 1923) caution that larger doses than 3 c.c. are unnecessary and may be dangerous. Alcoholics are stated to be especially susceptible to the toxic effects of the drug, and partially intoxicated persons or those recovering from drunkenness should not be treated.

INTESTINAL TRICHOMONIASIS

To the Editor:—I should like to know the details of Escomel's treatment for intestinal trichomoniasis.

M.D., Necaxa, Mexico.

ANSWER.—Escomel has described two treatments for intestinal trichomoniasis in his book "La Tricomonosis Intestinal." In the one that he prefers, for three days a tablespoonful of this prescription is taken every two hours: pure oil of turpentine, from 2 to 4 gm.; camphorated tincture of opium, from 6 to 12 gm.; acacia, 120 gm.; syrup of acacia, 30 gm. Diet is restricted to carbohydrates, and liquid ingestion to rice water. In addition, from one to three enemas are given, alternated as follows: first, an evacuating injection; second, a retention enema comprising 4 spoonfuls of boiled water, a beaten egg yolk, 10 drops of tincture of opium and from 15 to 30 drops of oil of turpentine. After three days' treatment a fecal examination is made. If *Trichomonas* is not found, all treatment ceases and the diet is gradually changed to normal. If cysts are found but no living organisms, the treatment is continued, the dosage of oil of turpentine being gradually decreased until the cysts finally vanish. If there are living protozoa besides cysts, the treatment is pushed until *Trichomonas* disappears. Escomel has also used with success turpentine in keratin capsules. (See also abstract, THE JOURNAL, March 17, 1919, p. 1501.)

Escomel insists on the value of correct diagnosis, as the treatment must be modified, if the infection is mixed,

NOURISHMENT OF THE MUSCLES

To the Editor:—Please tell me how the nerves nourish the muscles. Is it by the blood? Why do the muscles not shrink more? The paralyzed muscle shrinks away from one-third to one-half its volume—why does it not continue to shrink if it is the only cause? Have the vasomotor nerves anything to do with it? Or the medulla oblongata?

D. O., Urbana, Ohio.

ANSWER.—The muscles obtain their nourishment directly from the blood as it circulates through them. A healthy nerve is, however, necessary for the health of the muscle, for the reason that when the stimulation of the muscle stops, as it does when the nerve is cut or otherwise interrupted, the muscle cells no longer have work to do and rapidly atrophy and disappear. The amount of wasting depends on the degree of loss of function, and this is completely lost only when the peripheral nerve is gone. If the paralysis is due to damage to the connections which exist between the brain and the peripheral nerve, the muscle can no longer be set in action through the will, but it can still be stimulated through the lower reflex centers in the spinal cord. Under these circumstances there is some loss of use and slight wasting. But when the peripheral nerve is gone, no stimulation at all is possible and the muscle wastes away entirely. Partial wasting to the extent mentioned by our correspondent is usually due to the fact that the nerve fibers to the particular muscles are not all interrupted. The vasomotor nerves go to the unstriped muscles of the walls of the blood vessels and assist in the regulation of the size of the vessel, and thus help in the control of the blood supply to the voluntary muscles. The medulla oblongata contains the cell bodies of some of the cranial nerves (the peripheral nerves of the tongue, face and lips, and also those which move the jaws). Damage in this part of the nervous system would therefore cause atrophy of the corresponding muscles, just as damage in the spinal cord will result in atrophy of the limb muscles that happen to be supplied from nerve cells lying in the part of the cord damaged.

ZONITE

To the Editor:—The subject "Zonite" was referred to me . . . to find out its true germicidal value. . . . I understand it is a trade name for what was formerly known as the Carrel-Dakin solution, except the new product is supposed to be much stronger and now used as a disinfectant for iceboxes, etc. It is in view of the latter that I am writing to you to ask for a report on Zonite.

D. H. S., New York.

To the Editor:—Will you kindly inform me as to the action of the Council on the preparation "Zonite," manufactured by the Zonite Products Company of New York. I have had numerous inquiries from patients as to its value.

C. W. FRIDY, M.D., Philadelphia.

ANSWER.—Zonite was first put on the market in 1916, the firm at that time being called the "Foose Chemical Co.," Dayton, Ohio. Later it was advertised as a typical "patent medicine," the firm name being the "Zonite Products Co.," New York. Zonite is exploited as a new and wonderful discovery, based on the "Carrel-Dakin" solution; according to the advertisements which have appeared within the last year, it took six years after the announcement of the "Carrel-Dakin" solution before certain defects could be overcome, and the new product "Zonite" could be presented. This, of course, is quite at variance with the fact that Zonite was known in 1916. The propaganda for Zonite is, in effect, a capitalization of the work of Carrel-Dakin and others. The write-up purports to be that of the chemist who "perfected the process," but the name of the chemist is not given.

Chemically, Zonite, after dilution with an equal part of water, is claimed to be essentially the same as Surgical Solution of Chlorinated Soda (Carrel-Dakin) of New and Nonofficial Remedies. The action and uses of Surgical Solution of Chlorinated Soda, N. N. R., have been fully discussed in medical literature.

Zonite has been exploited to both the physician and the public. It has not been submitted to the Council on Pharmacy and Chemistry.

RELATIVE WEIGHT OF PARTS OF BODY

To the Editor:—Kindly inform me what percentage of the total weight of a normal man his upper leg, lower leg, foot, trunk, upper arm, lower arm, hand and head represent.

E. L. TODD, Jersey City, N. J.

ANSWER.—The relative weight of the parts of the body of a normal man, according to Vierordt (Anatomische, physiologische und physikalische Daten und Tabellen, Jena, Gustav Fischer, 1906, p. 32) is: upper leg, 13.25; lower leg, 5.2; foot, 2.17; trunk, 54.845; upper arm, 3.833; lower arm, 2.15; hand, 1; the entire body, 118.46.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.

DISTRICT OF COLUMBIA: Washington, April 10. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

ILLINOIS: Chicago, April 10-12. Director, Mr. A. M. Shelton, Springfield.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Charles E. Prior, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

OKLAHOMA: Oklahoma City, April 10-11. Sec., Dr. J. M. Byrum, Shawnee.

Virginia December Examination

Dr. J. W. Preston, secretary, Virginia State Board of Medical Examiners, reports the written examination held at Richmond, Dec. 5-8, 1922. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Ten candidates were examined, all of whom passed. Thirteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University	(1920)	84, (1921)	83.5
University of Maryland		(1922)	84
Cornell University	(1922)	84,	85.5
Jefferson Medical College		(1922)	87.9
Medical College of Virginia	(1917)	87.8, (1922)	85.9
University of Virginia	(1921)	85.9, (1922)	91.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University		(1908)	Dist. Colum.
Emory University		(1915)	Alabama
Loyola University		(1918)	Illinois
College of Physicians and Surgeons, Baltimore		(1895)	Penna.
Johns Hopkins University		(1920)	Maryland
University of Maryland		(1921)	Maryland
Albany Medical College		(1899)	New York
Jefferson Medical College	(1908) Pennsylvania,	(1920)	W. Virginia
Medical College of the State of South Carolina		(1921)	S. Carolina
University of Tennessee		(1915)	Oklahoma
Vanderbilt University		(1916)	Florida
University of Virginia		(1921)	N. Carolina

South Carolina November Examination

Dr. A. Earle Boozer, secretary, South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, Nov. 14-16, 1922. The examination covered 18 subjects and included 90 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Cornell University		(1917)	89
University of Oklahoma		(1915)	79.5
Jefferson Medical College		(1918)	87.7
University of Tennessee	(1898)	86.7, (1905)	75.7
McGill University, Quebec		(1904)	81.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Tulane University		(1921)	Alabama, Louisiana

Louisiana December Examination

Dr. Roy B. Harrison, secretary, Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Dec. 7-9, 1922. The examination covered 12 subjects, and included 100 questions. An average of 75 per cent. was required to pass. Of the 16 candidates examined, 12 passed and 4 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Tulane University	(1921) 87.2, (1922) 82.8,	85.5,	86.3, 86.3
University of Maryland		(1917)	90.6
Meharry Medical College		(1922)	82.4

Memphis Hospital Medical College	(1908)	77.6*
University of Tennessee	(1920) 81.2, (1921)	87.2
Baylor University	(1913)	78.3
University of Tomsk, Siberia	(1915) †, ‡	84.8

FAILED

Flint Medical College of New Orleans University	(1910)	61.6
Meharry Medical College	(1915) 63.7, (1917) 58.5, (1921)	70.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University		(1921)	Tennessee
Tulane University		(1903)	Mississippi, (1907) Alabama
Columbia University		(1914)	Mississippi
University of Texas		(1917)	Texas

* This candidate was given 14 per cent. credit for 14 years of practice.
† Graduation not verified.
‡ Temporary license granted until completion of citizenship.

Oregon July Examination

Dr. Urling C. Coe, secretary, Oregon State Board of Examiners, reports the written and practical examination held at Portland, July 4, 1922. The examination covered 12 subjects and included 106 questions. An average of 75 per cent. was required to pass. Of the 21 candidates examined, 12 including 1 osteopath, passed and 9, including 5 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Rush Medical College		(1920)	2
Harvard Medical School		(1922)	1
Creighton University		(1921)	1
University of Oregon		(1922)	7
Osteopath			1

FAILED

Loyola University	(1919)	1
St. Louis College of Physicians and Surgeons	(1914)	1
University of Oregon	(1921) 1, (1922)	1
Osteopaths		5

Book Notices

BRONCHOSCOPY AND ESOPHAGOSCOPY. A Manual of Peroral Endoscopy and Laryngeal Surgery. By Chevalier Jackson, M.D., F.A.C.S. Professor of Laryngology, Jefferson Medical College. Cloth. Price, $5.50 net. Pp. 345, with 118 illustrations. Philadelphia: W. B. Saunders Company, 1922.

In this work the author has combined brevity, thoroughness, detail, simplicity and a clear style with the judgment that comes to one after years of careful work in a given field. The result is an excellent reference book on endoscopic proceedings, taking up in detail the necessary equipment, its care and intelligent use, and the endoscopic anatomy of the respiratory and upper digestive systems, and calling attention to the important structures affecting endoscopic proceedings. The author omits nothing that must be remembered if the welfare of the patient is not to be jeopardized, discussing the preparation of the patient, the anesthetic to be used, and the ever present danger of respiratory arrest, which may call for tracheotomy. He is constantly reminding amateur endoscopists of the danger from overenthusiastic but misguided endoscopic proceedings, and suggests at least 200 hours of practice as the minimum before attempting the removal of a foreign body from a patient. This practice may be secured with a rubber tube manikin or by means of dogs, and any foreign body problem should be solved in this way before it is attempted on a patient. One should not telegraph for a set of instruments and expect to remove a foreign body from a bronchus immediately after receiving it. The result will probably be fatal. Symptomatology and pathology of foreign bodies in the respiratory and digestive tract are discussed, and the author describes in detail his method of passing endoscopes, and of direct laryngoscopic examination. He also gives many concrete illustrations of the solution of foreign body problems. A small amount of space is given to the value of endoscopic methods in the removal of foreign bodies from the pleural cavity, especial mention being made of drainage tubes lost during the treatment of empyema. Considerable space is given to the consideration of benign and malignant neoplasms of the respiratory and upper digestive tracts, with a discussion of the symptoms, etiology, pathology, prognosis and treatment. Here, as in the removal of foreign bodies, the motto of the endoscopist must be, "I will do no harm." Diseases of the esophagus and trachea, other than neoplastic, are discussed, and their relation to endoscopy emphasized. Gastroscopy is also touched on. Laryngeal stenosis, both acute and chronic, with the treatment, forms the closing chapters of the book. The indications and method for tracheotomy, decannulation, and treatment of stricture following intubation are discussed in detail. Any one planning to do endoscopic work would do well to study carefully the many important aphorisms in this volume.

PATHOLOGY: GENERAL AND SPECIAL FOR STUDENTS OF MEDICINE. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., Professor of Bacteriology in the University of London. Fifth edition. Cloth. Price, 18 shillings net. Pp. 531, with illustrations. Philadelphia: Lea & Febiger, 1923.

The book is divided into nineteen chapters; the first nine deal with general pathology, the last nine with special pathologic anatomy, and Chapter 10 takes up diseases of the endocrine organs and abnormalities of internal secretion. The student is offered an enormous amount of detailed information in highly condensed form. Here and there are statements that should be eliminated because not of enough value to occupy the space, as, for instance, this from page 435: "In one remarkable case recorded by Paget an apparently pure cartilaginous tumor [of the testicle] gave rise to secondary cartilaginous growths in the vena cava and lungs, and was described as a 'malignant enchondroma.' It was reexamined by Kanthack and Pigg forty years later [1897], and found to be in reality a carcinoma." In view of the large field the book covers, the accuracy with which it reflects the present knowledge of pathology is noteworthy. As examples of improvements and corrections for future editions, attention may be called to the present inadequate consideration of teratoma of the testis and its derivatives, and to the incorrect statement on page 104 that the opsonins of normal serum differ from immune opsonins in being nonspecific and heat-labile. The illustrations, all microscopic, are good.

CATALOGO DELL OFFICINA ORTOPEDICA DELL ISTITUTO RIZZOLI IN BOLOGNA. Boards. Pp. 115, with 248 illustrations. Bologna: Istituto Rizzoli.

Since the foundation of the Rizzoli Institute, an orthopedic laboratory has been connected with it, and since the close of the war this laboratory has been greatly enlarged. In the first exposition of appliances at Bologna in 1917, and in the interallied sanitary conference in Paris, London and Rome in 1917, 1918 and 1919, the laboratory figured among the best, and it was given the title of the "National Laboratory of Artificial Appliances." During 1920, the laboratory produced 8,500 cast apparatus, 6,100 lower extremity appliances and 2,100 various other orthopedic appliances. The laboratory has also furnished various civil and military hospitals with complete outfits for mechanotherapy and thermotherapy, and with orthopedic appliances and surgical instruments. The laboratory produces orthopedic appliances for locomotion, physiotherapy apparatus, artificial limbs, surgical instruments, plaster models and casts. As a rule, the artificial arms are made of celluloid or hard rubber, but in some cases wood and metal are used. For the lower extremity most appliances are made of wood. To protect the wood from moisture it is covered with cow hide and then varnished. These products then have the advantage of lightness, resistance and beauty. There are illustrations of orthopedic apparatus for amputated limbs and deformities of the extremities and vertebral column, of physiotherapy apparatus and of surgical instruments designed by V. Putti.

LA RACHICENTESI ED IL LIQUIDO CEFALO-RACHIDIANO. Por F. Bonola. Paper. Price, 12,00 lire. Pp. 190. Bologna: L. Cappelli, 1922.

The author describes in a simple way the various methods of examining the arachnoid fluid. Different forms of puncture to obtain the fluid are discussed. As the book is intended primarily for practical use, no bibliographic references are given. There are no illustrations. Physicians familiar with Italian will find the book a useful and reliable guide to the examination of the arachnoid fluid for clinical purposes.

Medicolegal

Infliction of Death Penalty by Use of Lethal Gas

(State v. Gee Jon et al. (Nev.), 211 Pac. R. 676)

The Supreme Court of Nevada holds, in this homicide case, that the statute of that state of 1921, which provides that the judgment of death shall be inflicted by the administration of lethal gas, is not unconstitutional on the ground of imposing cruel or unusual punishment. The court says that the revulsion on the part of many to the idea of execution by the administration of gas is due to an erroneous impression. The average person looks on the use of gas with horror, because of the experiences incident to the late war. They forget that there are many kinds of gas, ranging from the harmless nonpoisonous tear gas, which may be used for the quelling of a mob, and the ordinary illuminating gas, which may produce painless death, to the highly poisonous gas which sears and destroys everything with which it comes in contact. It may be said to be a scientific fact that a painless death may be caused by the administration of lethal gas. That suffering and torture may be inflicted by its administration is no argument against it. It must be presumed that the officials intrusted with the infliction of the death penalty by the use of gas will administer a gas which will produce no such results, and will carefully avoid inflicting cruel punishment. That they may not do so is no argument against the law. The court thinks it fair to assume that the legislature, in enacting the law, sought to provide a method of inflicting the death penalty in the most humane manner known to modern science.

Validity of Ordinances Requiring Vaccination

(Zucht v. King et al. (U. S.), 43 Sup. Ct. R. 24)

The Supreme Court of the United States, in dismissing a writ of error, says that ordinances of the city of San Antonio, Texas, provided that no child or other person should attend a public school or other place of education without having first presented a certificate of vaccination. Purporting to act under those ordinances, public officials excluded Rosalyn Zucht from a public school because she did not have the required certificate and she refused to submit to vaccination. They also caused her to be excluded from a private school. Thereupon, she brought this suit against the officials in a court of the state. The bill charged that there was then no occasion for requiring vaccination; that the ordinances deprived the plaintiff of her liberty without due process of law, by, in effect, making vaccination compulsory; and also that they were void, because they left to the board of health discretion to determine when and under what circumstances the requirement should be enforced, without providing any rule by which that board was to be guided in its action, and without providing any safeguards against partiality and oppression. The prayers were for an injunction against enforcing the ordinances, for a writ of mandamus to compel the admission of the plaintiff to the public school, and for damages. A general demurrer to the bill of complaint was sustained by the trial court; and, the plaintiff having declined to amend, the bill was dismissed. This judgment was affirmed by the court of civil appeals; and an application for a writ of error to the Supreme Court of Texas was denied by that court. Now the case was before the Supreme Court of the United States on a writ of error, it being assigned as error that the ordinances violated the due process of law and equal protection clauses of the Fourteenth Amendment to the Constitution of the United States, and that as administered they denied to the plaintiff equal protection of the laws.

But, although the validity of a law was formally drawn in question, long before this suit was instituted, *Jacobson* v. *Massachusetts*, 197 U. S. 11, 25 Sup. Ct. 358, had settled that it is within the police power of a state to provide for compulsory vaccination. That case and others had also settled that a state may, consistently with the federal constitution, delegate to a municipality authority to determine under what conditions health regulations shall become operative; and still others had settled that the municipality may vest in its officials broad discretion in matters affecting the application and enforcement of a health law. A long line of decisions by this court had also settled that in the exercise of the police power reasonable classification may be freely applied, and that regulation is not violative of the equal protection clause merely because it is not all-embracing. In view of these decisions, this court finds in the record no question as to the validity of the ordinance sufficiently substantial to support the writ of error. These ordinances conferred, not arbitrary power, but only that broad discretion required for the protection of the public health.

The bill of complaint contained averments to the effect that in administering the ordinance the officials had discriminated against the plaintiff in such a way as to deny to her equal protection of the laws. These averments presented a substantial constitutional question. But the question was not of that character which entitles a litigant to a review by this court on writ of error. The question did not go to the validity of the ordinance; nor did it go to the validity of the authority of the officials. This charge was of an unconstitutional exercise of authority under an ordinance that was valid. Unless a case is otherwise properly before this court on writ of error, questions of that character can be reviewed by this court only on petition for a writ of certiorari.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.

American Association for Thoracic Surgery, Chicago, May 28-29. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City.

American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.

American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.

American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.

American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.

American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.

American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.

American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.

Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.

Hawaii, Medical Society of, Honolulu, April 28-30. Dr. W. K. Chang, Honolulu, Secretary.

Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.

Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.

Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.

Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.

North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.

Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.

South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.

Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.

Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

February, 1923, **165**, No. 2

*Clinical Investigation of Tropical Sprue. B. K. Ashford, San Juan, Porto Rico.—p. 157.
*Total Circulating Volume of Blood and Plasma in Cases of Chronic Anemia and Leukemia. N. M. Keith, Baltimore.—p. 174.
Case of Multiple Myeloma. G. McConnell, Cleveland.—p. 184.
*Occupational Sensitization to Castor Bean. H. S. Bernton, Washington, D. C.—p. 196.
Diagnosis of Obscure Chronic Abdominal Conditions. J. L. Ransohoff, Cincinnati.—p. 202.
Diagnosis of Spleen Function. M. H. Kahn, New York.—p. 214.
*Autolysate-Precipitin Reaction in Typhoid Fever. J. L. Laird, J. R. Conover and D. C. A. Butts, Philadelphia.—p. 241.
*Thrombosis of Coronary Arteries, with Infarction of Heart. J. T. Wearn, Boston.—p. 250.
*Hematemesis in Nephritis. H. F. Shattuck, New York.—p. 276.

Clinical Investigation of Tropical Sprue.—Of 616 cases of sprue, 453 were examined by Ashford by laboratory methods and 85 per cent. yielded a positive finding for *Monilia psilosis*. Of 259 cases of glandular deficiency, 124 were examined by laboratory methods and all were negative for *Monilia psilosis;* the rest were not examined in the laboratory. All of the phenomena in the syndrome of glandular insufficiency were more frequent and, clinically, far more vivid in sprue, generally about double that of the former condition. But the salient point is found in that in sprue the tongue lesions are more than fifteen times, and the frank diarrhea more than five times as frequent as in glandular insufficiency. In fact, the strictly classical raw tongue and white, frothy diarrhea were never found in glandular insufficiency.

Volume of Blood and Plasma in Chronic Anemia and Leukemia.—Wide variations in blood and plasma volume were observed by Keith in twenty-four patients presenting definite evidence of chronic disease of the blood forming organs. These variations were sometimes noted in the same patient. In certain cases of chronic anemia there was a striking increase in the volume of plasma; in others, a normal plasma volume. In all cases the blood volume was normal or reduced. In cases of chronic anemia no exact relationship could be determined between the amount of plasma and the hemoglobin percentage, although in individual cases these varied somewhat inversely with one another. An experiment in vitro on the blood of a patient with splenomyelogenous leukemia failed to show that any appreciable amount of the dye, vital red, is taken up by the leukocytes. In chronic leukemia the blood volume is almost invariably increased. The plasma volume often reaches a high value, especially in the splenomyelogenous type. In chronic leukemia no definite relationship could be demonstrated between the basal metabolic rate and the variations in blood or plasma volume.

Occupational Sensitization to Castor Bean.—Bernton narrates the case of a chemist who in the course of his occupation acquired a sensitiveness to the dust of the castor bean. Attacks of sneezing and of asthma were the clinical manifestations of this sensitiveness. The fat-free castor meal produced an urticarial wheal at the site of a superficial scratch on the forearm. A cutaneous reaction was obtained with a drop of the protein solution of the meal in a dilution of 1 : 250,000. Symptoms of protein intoxication resulted from the absorption of extracts of the castor meal from skin abrasions. The presumptive evidence indicates that the globulin fraction possesses antigenic properties, and that exposure to organic dust in industries may cause an acquired sensitiveness. Cutaneuous testing with the suspected material would be of value in diagnosis and treatment.

Autolysate-Precipitin Reaction in Typhoid Fever.—The autolysate-precipitin reaction described by Laird and others is dependent on the determination of the existence of the autolyzed typhoid bacilli in the excretions of the patient by means of a typhoid-immune rabbit serum, in direct contrast to the older method which depended on a precipitin reaction in the serum of the suspected patient by means of a known typhoid solution. The reaction showed clearly positive in all carriers and in cases of typhoid fever up to the fifty-sixth day of the disease. The carriers were active for many years, one for eighteen years. The bacteriologic diagnosis was positive in only about 6 per cent. of known typhoid cases. Apparently, the autolysate-precipitin reaction is distinctly more sensitive and accurate than any of the previous methods of typhoid determination. The technic is described in detail.

Thrombosis of Coronary Arteries.—Wearn analyzed nineteen cases of this affection, cases in which the clinical diagnosis was confirmed by a necropsy. He uses the findings to reconstruct the clinical picture of a typical case.

Hematemesis in Nephritis.—A case of severe hematemesis is reported by Shattuck, due, as far as could be ascertained, to chronic nephritis with hypertension. A review of the literature shows several reports of this rather unusual complication, but gives no uniform conclusions about the cause or pathology of this symptom.

American Journal of Physiology, Baltimore

February, 1923, **63**, No. 3

Supposed Relation of Suprarenals to Reflex Volume Changes in Denervated Limb. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 436.
Unusual Appearances of Nucleated Erythrocytes in Circulation Following Repeated Injections of Splenic Extract. N. B. Eddy and A. W. Downs, Edmonton, Canada.—p. 479.
Absorption from Intestine and Excretion Through Kidney of Unaltered Complex Protein Substance, Tissue Fibrinogen. C. A. Mills, S. E. Dorst, G. Mynchenberg and J. Nakayama, Cincinnati.—p. 484.
Effect of Potassium Cyanid on Metabolism in Two Fresh Water Arthropods. W. C. Allee, Chicago.—p. 499.
Effect of Restricted Diet. I. On Growth. J. R. Slonaker and T. A. Card, Palo Alta, Calif.—p. 503.
*Variations of Blood Sugar of Rabbit Throughout the Day and Effect of Subcutaneous Injection of Glucose. G. S. Eadie, Toronto, Canada.—p. 513.
Concentration of Sugar in Blood of Rabbit During Inanition and After Ingestion of Glucose. E. L. Scott and T. H. Ford, New York.—p. 520.
*Direct Influence of Blood of Parathyroid Tetany Animals on Excitability of Motor Nerves. C. Jacobson, Chicago.—p. 535.
Occurrence of Citric Acid in Sweat. C. D. Leake, Madison, Wis.—p. 540.
Proof that High Protein Diet Increases and Starvation Decreases Catalase Content of Entire Animal. W. E. Burge, Urbana, Ill.—p. 545.
Living Peritoneum as Dialyzing Membrane. T. J. Putnam, Baltimore.—p. 548.
Effects of Epinephrin on Heart of Common Bull-Frog (Rana Catesbiana). C. I. Reed and E. Smith, Lawrence, Kan.—p. 566.
Heat Liberated by Beating Heart. IV. C. D. Snyder, Baltimore.—p. 583.

Diurnal Variation in Blood Sugar of Rabbit.—When 1 gm. glucose per kilogram of body weight is injected subcutaneuously into rabbits, Eadie found that there is a sharp rise, reaching its maximum in one half hour and reaching normal in about three hours. This is followed by a smaller secondary rise. Hypoglycemia does not occur. With subcutaneous doses of 2 gm. glucose the rise is much greater but the variation in the height to which the curve rises is also much greater. The curve then falls for from three to five hours, shows a slight secondary rise and returns in about seven hours to a value near the normal. This study was made in connection with the study on the effect of insulin.

Effect of Parathyroid Tetany Blood on Motor Nerves.—The results obtained by Jacobson are interpreted as supporting the theory of a chemical change in the tetany blood directly affecting nerve excitability. But before such data can be accepted as proving this point, Jacobson says it must be shown that the results are not due to temperature change in the transfused leg.

American Journal of Roentgenology and Radium Therapy, New York

February, 1923, **10**, No. 2

*Studies of Mechanism of Movement of Mucous Membrane of the Digestive Tract. G. Forssell, Stockholm, Sweden.—p. 87.
Importance of Indirect Roentgen Ray Findings in Chronic Infection of Biliary Ducts and Gallbladder. M. P. Burnham, San Francisco.—p. 105.
Roentgen Ray Study of Absorption of Tuberculous Exudate Within Lung. K. Dunham and V. V. Norton, Cincinnati.—p. 112.
Deep Roentgen Ray Therapy. R. Morton, London, England.—p. 119.
*Case of Double Spontaneous Pneumothorax. C. P. Emerson and R. C. Beeler, Indianapolis.—p. 126.

Anatomic Cross Section Charts in Estimating Roentgen Ray Dosage. A. U. Desjardins, Rochester, Minn.—p. 134.
Injuries from Roentgen Rays in Deep Therapy. H. Wintz, Erlangen, Germany.—p. 140.
Radium Treatment of Cancer of Esophagus; Review of Forty-Four Cases. R. W. Mills and J. B. Kimbrough, St. Louis.—p. 148.
Treatment of Superficial Cancer. D. T. Quigley, Omaha.—p. 161.
History Chart for Radium Therapy C. Chase, Brooklyn.—p. 163.
Two Important Points from Radium Therapist's Standpoint Regarding Cancer Immunity. C. Chase, Brooklyn.—p. 167.

Mechanism of Movement of Mucous Membrane of Digestive Tract.—Forssell states that the folds of the mucous membrane of the colon, as well as those of the stomach, duodenum and small intestines, are not modeled by a contraction of the muscular coat only, but by autonomous appropriate movements of the mucous membrane. The folds of the mucous membrane do not consist of passive structures, but represent a momentary state of movement. The whole rigid whorl of folds and furrows becomes alive and proves to be formed by independent motor forces which may be of great importance for the mechanical regulation of the digestion. It is apparent that the complicated relief of the intestinal mucous membrane not only forms a passive depository for digestion and resorption of the food, but also constitutes a mechanism with a subtle and wonderful organization for regulation of the chemistry of digestion. The muscular tube of the digestive tract and the special motor mechanism of the mucous membrane collaborate in the mechanism of digestion. The movements of the muscular coat determine the rough division and the large displacements of the contents of the stomach and the intestines. The movements of the mucous membrane produce an extremely differentiated distribution and restraining of the food in digestive chambers of varying form and size, and procure the fine regulation of the current by the passage of the contents in the alimentary canal. The rôle that disturbances of the motor mechanism of the mucous membrane may be playing in the pathology of the alimentary tract has not yet been investigated.

Case of Double Spontaneous Pneumothorax.—Emerson and Beeler report what they believe to be the only case on record of double pneumothorax due to emphysema.

Annals of Surgery, Philadelphia

February, 1923, **77**, No. 2

*Regeneration of Meninges. I. Dura Mater. W. Y. Sayad and S. C. Harvey, New Haven, Conn.—p. 129.
Chronic Empyema. C. Eggers, New York.—p. 142.
Inguinal Hernia in Male. Late Results in 978 Traced Cases. S. Erdman, New York.—p. 171.
*Improved Technic for Gastrectomy and Gastro-Enterostomy. L. Freeman, Denver.—p. 190.
Limitations of Ochsner Treatment in Certain Cases of Suppurative Peritonitis. J. H. Jopson and D. B. Pfeiffer, Philadelphia.—p. 194.
Spontaneous Intraperitoneal Rupture of Bladder. J. F. Geisinger, Richmond, Va.—p. 206.
Mechanism of Formation of Urinary Calculi. L. D. Keyser, Rochester, Minn.—p. 210.
Skin Grafting by Exact Pattern: Report of Cosmetic Results Obtained Without the Employment of Sutures. B. Douglas, New Haven, Conn. —p. 223.

Regeneration of Meninges.—Defects in the dura of the dog, operatively induced by Sayad and Harvey, without injury to the adjacent arachnoid, healed rapidly in from one to two weeks and without the formation of adhesions.

Improved Technic for Gastrectomy and Gastro-Enterostomy.—The special equipment used by Freeman consists of two mattress needles, a foot or so in length (long needles used in the manufacture of mattresses and to be obtained in most hardware stores); four Allis forceps and several ordinary rubber bands about one-eighth inch in width. In gastroenterostomy, after exposure of the stomach and jejunum, a fold is picked up from each with the Allis forceps and brought alongside of each other in the position in which they are to be united. A mattress needle is then placed well down on either side of these folds, pressing them closely together into two prominent opposed pouches, such as are formed when forceps are used. While the needles are held in place by an assistant, a rubber band is wound around their ends on either side, tightly enough to bring the elasticity of the bands into play, and clamped with forceps. The operation is then completed in the usual manner.

Archives of Internal Medicine, Chicago

February, 1923, **31**, No. 2

*Protein Feeding and High Blood Pressure. S. Strouse and S. R. Kelman, Chicago.—p. 151.
Relation Between Hemoglobin, Cell Count and Cell Volume in Venous Blood of Normal Human Subjects. H. C. Gram and A. Norgaard, Copenhagen.—p. 164.
*Toxic Manifestations Following Alkaline Treatment of Peptic Ulcer. L. L. Hardt and A. B. Rivers, Rochester, Minn.—p. 171.
Simple Immersion Electrode for Taking Clinical Electrocardiograms. H. E. B. Pardee, New York.—p. 181.
*Paroxysmal Ventricular Tachycardia. C. C. Wolferth and T. M. McMillan, Philadelphia.—p. 184.
*Surgical Treatment of Angina Pectoris. W. B. Coffey and P. K. Brown, San Francisco.—p. 200.
Fatty Degeneration of Heart. A. M. Master, New York.—p. 221.
*Intrapericardial Rupture of Aortic Aneurysm in Boy Sixteen Years of Age. De W. G. Richey, Pittsburgh.—p. 232.
Blood Sugar Standards. Part I. Normal and Diabetic Persons. H. Gray, Boston.—p. 241 .
Blood Sugar Standards. Part II. In Conditions Neither Normal Nor Diabetic. H. Gray, Boston.—p. 259.
Intracutaneous Reactions in Lobar Pneumonia to Pneumotoxin. C. Weiss and J. A. Kolmer, Philadelphia.—p. 263.
Value of Index and Angle of Bordet-Vaquez in Cardiac Examination. D. S. Dann, Boston.—p. 269.
*Pathologic Physiology of Polycythemia Vera. R. Isaacs, Cincinnati. —p. 289.
*Etiology of Acute Intestinal Intoxication in Infants. G. L. Boyd, Toronto.—p. 297.

Protein Feeding and High Blood Pressure.—A careful study made by Strouse and Kelman of a number of patients has shown that marked variations in blood pressure occur in patients with hypertension and with slight or no impairment of renal function. Such variations bear no relation to the intake of protein food. In such cases no damage to renal function and no increase in nonprotein nitrogen or urea nitrogen of the blood was found to follow protein feeding up to 150 gm. daily. In three such cases strong stock soup and coffee, given daily, did not increase blood pressure. In cases of frank progressive nephritis with hypertension, a diminution of protein intake, sufficiently marked to lower the figures for blood nonprotein nitrogen and urea, did not cause lowering of the blood pressure. The experiments reported add further evidence to that already accumulated to prove the existence of a clinical entity characterized by a primary hypertension. They further suggest that variations in blood pressure in this condition result from vasomotor disturbances.

Toxic Manifestations Following Alkaline Treatment of Peptic Ulcer.—Forty-eight patients with peptic ulcer, the diagnosis in each case being confirmed by roentgenograms, were studied by Hardt and Rivers. They found that patients with duodenal ulcer who were treated by the Sippy method may develop definite symptoms of toxemia associated with renal changes, increased blood urea, and normal or increased carbon dioxid combining power of the plasma. The gastric acidity during the period of toxemia is usually normal or there is hyperacidity. In fact, patients with duodenal ulcer and renal complications are more inclined to develop these toxic manifestations and to a much greater degree.

Paroxysmal Ventricular Tachycardia.—Four cases of paroxysmal ventricular tachycardia are reported by Wolferth and McMillan, one with auricular mechanism of normal type and three with auricular fibrillation. The electrocardiographic findings through which the diagnosis was arrived at in these cases are discussed. Emphasis is placed on the value for diagnosis, when the auricles are fibrillating, of comparing the relations of coupled beats to the onsets of paroxysms. The literature is reviewed and from the study of the cases previously reported together with those here presented, the following data have been assembled: (*a*) Twenty-two cases have thus far been reported in which electrocardiograms justify the diagnosis of paroxysmal ventricular tachycardia. (*b*) During paroxysms, the following types of auricular action have been recognized: (1) normal mechanism; (2) retrograde auricular beats; (3) auricular flutter, and (4) auricular fibrillation. (*c*) Slight irregularity of rhythm just after the onset of paroxysms is not unusual. It may also occur just before the offset. (*d*) In about half the cases reported, none of the paroxysms observed exceeded five minutes in length. The longest paroxysm reported apparently lasted for eleven days. In long paroxysms, severe cardiac failure usually occurs. (*e*) Profound myocardial disease is

usually associated. Other disturbances of the cardiac mechanism are remarkably frequent. Eleven of the twenty-two patients are known to have died shortly after coming under observation. (*f*) Short paroxysms occurring during auricular fibrillation may cause the ventricles to behave in a manner simulating auricular flutter and lead to a mistaken diagnosis of flutter. (*g*) The results from quinin and quinidin in treatment have been promising, but further observations are necessary in order to determine whether or not these drugs are of real value in this condition.

Surgical Treatment of Angina Pectoris.—Sympathectomy was done by Coffey and Brown in five cases of angina pectoris, two of them presumably being due to syphilitic aortitis. Death occurred in one case. Marked improvement was noted in the remaining four cases. In view of the obstinate and painful nature of the symptom angina pectoris, the relief following operation in these cases seems to the authors sufficient to warrant further trial of this or similar operative procedures.

Intrapericardial Rupture of Aortic Aneurysm.—In the case reported by Richey there was no evidence of syphilis or mycosis. No coarctation of the aorta could be found, but there was a uniform narrowing of the aortic arch just beyond the aneurysm of the ascending limb, which was regarded as a hypoplasia associated with status thymicolymphaticus. The author failed to find a similar case recorded in the literature.

Case of Polycythemia Vera.—A case of polycythemia vera with an unusually high red cell count is reported by Isaacs. Counts at intervals during three years varied from 7,360,000 to 15,940,000.

Etiology of Acute Intestinal Intoxication in Infants.—Boyd asserts that extracts of intestinal mucous membrane from cases of acute intestinal intoxication in children contain a toxic substance, which, when injected into animals, produces a definite symptom complex, consisting of depression and narcosis, anorexia, circulatory failure, increase in the number of intestinal evacuations, and in some cases convulsions and death. Younger animals were much more susceptible to this toxic substance than older ones. The toxin is not destroyed by boiling and passes through a bacteria tight filter. Boiled aqueous extracts of fresh stools proved nontoxic when injected into animals. Systemic blood from cases of acute intestinal intoxication was slightly toxic when injected into animals. Portal blood from patients was very toxic. No distinctive pathologic findings were seen in any of the fatal cases.

Boston Medical and Surgical Journal

March 1, 1923, **188**, No. 9

*Prevention and Control of Diphtheria. B. Schick, Vienna.—p. 255.
Traumatic Third Degree Laceration of Perineum in a Female Child Seven Years Old. L. E. Phaneuf, Boston.—p. 258.
Injuries to Spleen. E. H. Pool, New York.—p. 262.
Hare-Lip. W. E. Ladd, Boston.—p. 270.
Tuberculous Cervical Adenitis in Children. J. S. Stone, Boston.—p. 272.
Ventriculoscopy and Puncture of Floor of Third Ventricle. W. J. Mixter, Boston.—p. 277.

Prevention and Control of Diphtheria.—Discussing the therapy of diphtheria, Schick comes to the following conclusions: The injection of serum must be made as early as possible. Every hour of delay may be harmful and is particularly dangerous in severe cases in which the quantity of toxin produced in the throat is considerable. In all mild and medium cases 100 antitoxin units per kilogram of body weight are sufficient. In severe cases 500 antitoxin units per kilogram of body weight are to be injected. Repeated injections should be omitted as superfluous. Fifty antitoxin units per kilogram of body weight suffice for immunization. A slight improvement in the curative results may be achieved by intravenous injection; this may be repeated in dangerous cases.

Traumatic Laceration of Perineum in Female Child.—Phaneuf's patient was impaled on an iron picket fence. Examination showed a laceration extending through the hymen, the vaginal mucosa, the levator ani muscles and the external sphincter; the rectal mucous membrane was intact. The rectum could be seen bulging between the torn perineal muscles with each deep inspiration.

Canadian Medical Association Journal, Toronto

February, 1923, **13**, No. 2

Importance of the Emotional or Psychic Nature of People in General in Practice of Medicine in Its Widest Sense. A. McPhedran, Toronto.—p. 82.
Aches and Pains of Renal Origin. A. Fullerton, Belfast, Ireland.—p. 85.
*Study of One Hundred Cases of Chorea with Particular References to Cardiac Complications. G. F. Strong, Vancouver, B. C.—p. 92.
Tetany. S. G. Ross, Montreal.—p. 97.
Acute Leukemia in a Child Aged 6 Years. F. F. Tisdall, Toronto.—p. 104.
Diagnosis and Treatment of Hyperthyroidism. H. W. Riggs, Vancouver.—p. 106.
*Case of Primary Sarcoma of Heart. L. G. Pinault, Campbellton, N. B.—p. 108.
A New Cysto-Urethroscope for Examining and Operating on Any Part of Urinary Tract by Direct-Telescope or Indirect-Periscope Methods. G. S. Gordon, Vancouver, B. C.—p. 110.
Industrial Medicine. B. L. Wyatt, Grand Mere, Que.—p. 114.
Case of Septic Arthritis in an Infant. A. M. Forbes, Montreal.—p. 118.

Study of Chorea with Particular References to Cardiac Complications.—There were sixty-six females and thirty-four males, a ratio of two to one in the group of 100 cases analyzed by Strong. The average age was 13.3 years, the oldest patient being 23 and the youngest 4 years old. There was a history of definite acute rheumatic fever in 20 per cent. of the cases. In addition there were fourteen patients who gave a history of joint pains, bringing the total possible cases of preceding rheumatism up to 34 per cent. Scarlet fever occurred in the past history in 18 per cent. of these cases, but in only one instance did the attack of scarlet fever seem to bear any relation to the chorea. Tonsillitis occurred in 34 per cent. of these cases. There was a positive blood Wassermann in 11.6 per cent. of the patients. In four cases in this series there was an absolutely negative past history. In eighteen cases the onset of the disease dated from some sudden fright. There were forty-five instances with organic cardiac disease; in every case these was involvement of the valves; in a few cases there was further cardiac damage, such as pericarditis or actual myocarditis. There was only one case of pericarditis in this series. Partial or complete heart block occurred in only one case, or 2.2 per cent. of those patients of whom electrocardiograms were taken. In 29 per cent. of the patients in this study there had been recurrences of chorea. The incidence of cardiac disease was higher in these twenty-nine cases than in the group as a whole or in the cases without previous chorea. In the whole group, 45 per cent. of patients had cardiac disease; the twenty-nine patients with previous chorea, fifteen, or 51.7 per cent., had heart disease; and in the seventy-one cases with only one attack of chorea, thirty, or 42.2 per cent., had a diagnosis of organic cardiac disease on their discharge from the hospital. The incidence of cardiac disease was much increased in those patients who had had acute rheumatic fever. Of twenty such cases, fourteen, or 70 per cent., had heart disease, while of the remaining eighty cases only thirty-one, or 38.7 per cent., had cardiac involvement. The occurrence of tonsillitis did not seem to increase the incidence of cardiac disease. Of the forty patients with temperatures over 99 F., twenty-two, or 55 per cent., had organic disease. Only 38.3 per cent. of the sixty patients with temperatures of 99 F. or less had organic disease. The occurrence of an elevation of temperature during an attack of chorea would seem therefore to increase slightly the likelihood of cardiac involvement. Of the forty-five patients in this whole series who developed organic heart disease only twenty-two had temperatures over 99 F. In the forty-five cases of organic cardiac disease the mitral valve was involved in forty-four and the aortic valve in only five cases.

Primary Sarcoma of Heart.—The symptoms in Pinault's case were: generalized edema, marked dyspnea and a disturbance of digestion. The first symptoms began two months previously with dyspnea, and swelling of the lower limbs and abdomen. The patient was a female, aged 47. Her personal and family history was good. The diagnosis was made of myocarditis with the probability of a mediastinal tumor interfering with venous blood return. The patient died four weeks after entering the hospital. The postmortem examination disclosed a tumor, the size of a hen's egg, completely filling

the right auricle. The left auricle, both ventricles and the valves were apparently normal. It proved to be a round cell sarcoma.

Florida Medical Association Journal, St. Augustine and Jacksonville

January, 1923, **9**, No. 7

Catatonic Dementia Praecox; Physiotherapeutics, and Results Obtained in Twenty Cases. D. C. Main, Washington, D. C.—p. 113.
Physician as Business Man. L. A. Bize, Tampa.—p. 118.
Medical Practitioner and American Society for Control of Cancer. J. E. Rush.—p. 121.

Georgia Medical Association Journal, Atlanta

February, 1923, **12**, No. 2

Use of Radium in Treatment of Cancer of Cervix. O. D. Hall, Atlanta.—p. 45.
Treatment of Leukemia by Means of Roentgen Ray. J. W. Landham, Atlanta.—p. 51.
Review of Six Months' Experience with Radium. W. L. Cooke, Columbus.—p. 54.
Roentgen-Ray Treatment of Uterine Hemorrhage and Fibroid Tumors. Review of Literature and Report of Cases. J. S. Derr, Atlanta.—p. 56.
Roentgen-Ray Treatment. W. F. Jenkins, Columbus.—p. 64.
Cancer of Lip; Treatment by Radium and Surgery Combined. C. K. Wall, Thomasville.—p. 67.
Cancer of Stomach. Report of Case. C. W. Roberts, Atlanta.—p. 69.
Secondary Effect of Scoliosis on Internal Organs. T. Toepel, Atlanta.—p. 77.

Indiana State Medical Association Journal, Ft. Wayne

February, 1923, **16**, No. 2

Differential Diagnosis of Meningitis. C. F. Neu, Indianapolis.—p. 33.
Treatment of Meningitis. M. F. Porter, Jr., Fort Wayne.—p. 36.
Otitic Meningitis. H. B. Snee, South Bend.—p. 37.
Endonasal Operation on Lacrimal Sac. W. B. Chamberlin, Cleveland.—p. 42.
Gallbladder Surgery. S. J. Young, Gary.—p. 50.

Wisconsin Medical Journal, Milwaukee

February, 1923, **21**, No. 9

Neuroses and the Chronic Invalid. H. T. Patrick, Chicago.—p. 387.
*Challenge of Chronic Heart Patient to Medical Profession. R. H. Babcock, Chicago.—p. 391.
Relationship of Cardiovascular Renal Disease to Chronic Invalid. A. R. Elliott, Chicago.—p. 393.
Value of Blood Chemistry in Clinical Diagnosis. B. C. Ford, Minneapolis.—p. 397.
Intra-Ocular Manifestations in Various Brain Conditions Associated with Brain Pressure and Modus Operandi by Which These Manifestations are Brought About. J. A. Bach, Milwaukee.—p. 401.
Pseudo-Exophthalmic Goiter. Report of Case. A. S. Jackson, Madison.—p. 412.
Case of Pellagra in Wisconsin. H. E. Marsh, Madison.—p. 413.

The Chronic Heart Patient.—Babcock directs attention to that large number of patients who come to the physician because alarmed by unwonted pain or other sensation in the region of the heart or on account of a sudden attack of palpitation, so-called. Either of these sensations may occur alone or the precordial pain may be accompanied or followed by rapid or irregular heart action. In all such instances it should not be concluded that heart disease is present until convinced by careful inquiry into the history and by the discovery of indubitable evidence of a cardiac defect. The etiologic factor may be some toxic agent producing an intercostal neuritis or upsetting cardiac action through the vagus. Therefore, before assuming the heart to be at fault and telling the patient his pumping apparatus is responsible, the toxin or other disturbing factor should be sought for and removed. The cause may reside in diseased tonsils or teeth or digestive tract in cases of nerve irritation or in some agent introduced into the system from without, such as the abuse of tea, coffee, tobacco and (nowadays rarely) alcoholic beverages. Palpitation has been found in women the direct result of visceroptosis or pelvic displacements. The point particularly emphasized by Babcock is that not only is it seldom necessary but usually unwise to send the patient to bed. Physicians should be careful never to frighten the patient even should auscultation disclose a systolic murmur. It is not uncommon for a systolic bruit to appear during the disordered cardiac action and then to disappear when the heart has become quiet and regular. In short, the psychical management is as essential, often more essential, than is rest, digitalis and other commonly employed therapeutic measures.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

February, 1923, **4**, No. 1

Complement Fixation Test in Coccidiosis of Rabbit. S. W. Patterson.—p. 1.
*Influence of Vitamin A on Blood Platelets of Rat. S. P. Bedson and S. S. Zilva.—p. 5.
*Variations in Some of Urinary Constituents and Alveolar Carbon Dioxid Tension in Relation to Meals. E. C. Dodds.—p. 13.
*Testing the Antigenic Value of Diphtheria Toxin-Antitoxin Mixtures. A. T. Glenny, K. Allen and B. E. Hopkins.—p. 19.
"Gastrin" Content of Human Pyloric Mucous Membrane. S. E. Ammon and R. K. S. Lim.—p. 27.
Schick Test and Active Immunization. R. A. O'Brien, A. J. Eagleton, C. C. Okell and M. Baxter.—p. 29.
Diagnostic Value of Rabbit Inoculation in Encephalitis Lethargica. J. McIntosh.—p. 34.

Influence of Vitamin A on Blood Platelets.—The findings of Bedson and Zilva reveal the fact that young growing rats when deprived of vitamin A show a slightly lower platelet count than do normal rats. In those experiments in which consecutive counts were made, the general tendency of the platelet count is in the direction of a diminution, but even here, accepting the experimental error as 10 per cent., only four out of the six rats show a fall beyond this limit. The greatest diminution was 244,000. The authors are not convinced that this minimal change in the platelet count could not be produced by other dietetic deficiencies.

Effect of Meals on Urinary Constituents.—By examining specimens of urine before and after meals, Dodds found that the first meal of the day was followed by a decrease in the excretion of acid and ammonia calculated per hour. This alkaline tide lasted from one to two hours, and was followed by a period of increased excretion of acid and alkali per hour. This acid tide lasted for about two hours, the period of the whole meal effect taking roughly from four to five hours. The changes following lunch were obscured, in the majority of cases, by the acid tide of the breakfast. Diurnal origin of these variations was excluded by starvation experiments. In view of these results, the alkaline tide was associated with gastric secretion and the acid tide with pancreatic secretion. The p_H of the urine was found to rise after a meal, and to fall later.

Antigenic Value of Diphtheria Toxin-Antitoxin Mixtures.—Evidence is brought forward by Glenny and his associates to show that the toxicity test alone may give incomplete or erroneous conclusions as to the immunizing value of a toxin-antitoxin mixture intended for immunization against diphtheria. Four methods are described for testing the antigenic value of mixtures: (*a*) Tracing the antitoxic value of the blood of rabbits after a single subcutaneous injection of the mixture as a "primary stimulus." (*b*) Accelerating the results of (*a*) by a subsequent injection, as a "secondary stimulus," of either the same mixture or of a Schick dose of toxin. (*c*) Tracing the increase in antitoxic values of the blood of immune rabbits after a subcutaneous injection of the mixture as a secondary stimulus. (*d*) Injecting guinea-pigs, which have survived the test for toxicity of the mixture, with Schick doses of diphtheria toxin at weekly intervals commencing three weeks after the injection of the mixtures.

British Medical Journal, London

Feb. 24, 1923, **1**, No. 3243

*Aches and Pains of Renal Origin. A. Fullerton.—p. 309.
Certain Diseases of the Cow and Their Interest to the Physician. F. Hobday.—p. 313.
*Scientific Basis for Nonspecific Protein Therapy. A. J. Clark.—p. 315.
*Diastase in Blood and Urine in Diabetes Mellitus. G. A. Harrison and R. D. Lawrence.—p. 317.
Brachial Neuritis Due to Cervical Rib. W. Wrangham and J. Phillips.—p. 319.
*Asthma and Suprarenal Inadequacy. T. Drummond.—p. 320.
Thyrofissure for Malignant Disease in Man Aged Seventy-Four. W. J. Harrison.—p. 322.
*Primary Union After Operation for Suppurative Appendicitis. R. G. Riddell.—p. 322.
Osteitis of Temporal Bone with Meningitis. H. L. Whale.—p. 323.
Fatal Thrombo-Arteritis of Right Middle Cerebral Artery of Uncertain Causation. F. P. Weber.—p. 324.

*Rupture of Renal Artery and Vein by Slight Injury: Operation: Recovery. E. M. Atkinson.—p. 324.

Aches and Pains of Renal Origin.—As causes of renal pain Fullerton discusses renal calculus, tuberculous kidney, pyelitis, hydronephrosis and pyonephrosis, renal tumors, hematuria, movable kidney, carcinoma of the bladder, a papilloma at a ureteral orifice, an enlarged prostate or stricture of the urethra, certain forms of chronic nephritis, infarcts, hydatid cyst in which small cysts are sometimes passed, other cysts of the kidney, and horseshoe kidney. The idea running through this address is that the pain is due in a large proportion of cases to distention of the renal pelvis. Treatment should be directed toward removing the cause, and involves, in some instances, ablation of the kidney. In selected cases it may be possible to relieve the patient by interrupting the nerves carrying the painful impressions.

Scientific Basis for Nonspecific Protein Therapy.—Discussing the changes observed in the blood during nonspecific protein therapy, Clark says, that the bulk of the evidence points to the fact that nonspecific protein therapy causes a washing out of the tissue fluids into the blood, and that this process causes a number of changes in the composition of the blood. The evidence at present available is insufficient to indicate which of the changes observed is really of chief clinical importance.

Diastase in Blood and Urine in Diabetes Mellitus.—Estimations of diastase simultaneously in the blood and urine have been made by Harrison and Lawrence in fifty-five cases of diabetes and in a large number of controls, due attention being paid to the reaction of the urine, the diet, etc. The findings are in support of those investigators who have concluded that the presence of amylase is more or less accidental and of little or no value in the diagnosis, prognosis, or treatment of diabetes mellitus.

Asthma and Suprarenal Inadequacy.—Evidence is presented by Drummond to support the theory that inadequate suprarenal function is the cause of asthma.

Primary Union After Operation for Suppurative Appendicitis.—Of seven cases of suppurative appendicitis in which Riddell used flavine, 1:1,000 solution, the incision healed by primary union except in one case, in which the tissues were soaked with purulent fluid as soon as the peritoneum was incised, and the operation was of long duration and the patient weak. Violet green, iodin and eusol were tried in other cases but failed to affect primary union.

Rupture of Renal Artery and Vein by Slight Injury.—Atkinson's patient fell while playing cricket and pushed his elbow into his left side. The pain was very slight, and he thought so little of the accident that he continued playing. The next day his side was stiff and painful, and he was passing blood in his urine all day. Because of symptoms of peritoneal involvement, a laparotomy was performed. There was no peritonitis. The abdominal wound was closed and the kidney exposed from the loin. It was found to be a very large hydronephrosis in which virtually no kidney tissue was left. It was removed. An examination of the kidney showed a hydronephrosis due to a congenitally narrowed ureteric strait, the kidney substance being almost nonexistent. On searching for the renal vessels they were found, not in the piece of tissue which had been ligatured, but torn off close to the kidney just below this. The injury had apparently been sufficient to tear through both vessels, and the resulting hemorrhage had ceased spontaneously.

Journal of Pathology and Bacteriology, Edinburgh

January, 1923, **26**, No. 1

*Relation of Vitamin C to Bacterial Infection. G. M. Findlay.—p. 1.
Complement Fixation Reaction in Liver Fluke (Fasciola Hepatica, L.) Infection. N. H. Fairley and F. E. Williams.—p. 19.
*Pathology of Schistosomiasis (S. Hematobium and S. Mansoni) in Human Subject. H. R. Dew.—p. 27.
Case of Symmetrical Cortical Necrosis of Kidneys Occurring in an Adult Man. J. Bamforth.—p. 40.
*Further Stage in Fatty Change Occurring in Cell Degeneration, Resulting in Production of Deeply Pigmented Bodies. E. Emrys-Roberts and H. A. Haig.—p. 46.
Differential Medium for Streptococci. H. W. Crowe.—p. 51.
Desiccation of Serum and Other Protein Solution; Special Reference to Reagents Used in Wassermann Reaction. P. Hartley, A. J. Eagleton and C. C. Okell.—p. 53.
Properties of Dried Complement with Reference to Its Use in Wassermann Reaction. C. H. Browning and E. M. Dunlop.—p. 66.
*Relation Between Appendicitis, Oxyuris Vermicularis and Local Eosinophilia in Appendix Wall. E. H. Eastwood.—p. 69.
*Foreign Body Tubercles on Serous Coat of Stomach, Caused by Escape of Particles of Oat Seed. T. Shennan.—p. 82.
Herpetic Meningo-Encephalitis in Rabbits. C. Da Fano.—p. 85.
Tomato Extract as Culture Medium. C. E. Jenkins.—p. 116.
Making Dilutions of Antiserums. J. S. C. Douglas.—p. 118.
Serum Constituents Responsible for Sachs-Georgi and Wassermann Reactions. T. J. Mackie.—p. 120.
Alterations in Morphologic and Biologic Characters in Streptococcus Group Brought About in Vivo: (1) Streptococcus Mucosus; (2) Chronic Pneumococcus Infections. C. H. Browning and R. Gulbransen.—p. 121.
Influence of Colon Bacillus on Growth of Bacillus Typhosus, with Special Reference to Enrichment by Brilliant Green in Typhoid Carriers. R. P. Smith.—p. 122.

Relation of Vitamin C to Bacterial Infection.—The results of Findlay's experiments with four species of bacteria seem to show that guinea-pigs fed on a diet deficient in vitamin C succumb to a smaller infecting dose of bacteria than animals fed on a complete diet. The symptoms of toxemia are manifested more rapidly in scorbutic than in control guinea-pigs either because the tissues, especially the heart, are more susceptible to the action of bacterial toxin or because in scorbutic animals there is more toxin formed by the bacteria as a result of some rupture in the defense mechanism of the body. It has long been known that degeneration in the hemopoietic bone marow is associated with a reduced resistance to bacterial infection. In chronic scurvy there is present such a degeneration in the bone marrow. It, therefore, seems not improbable to Findlay that the lesion in the bone marrow may be at least one of the factors in the reduction of the resistance to bacterial infection exhibited by animals with chronic scurvy.

Schistosomiasis.—Dew emphasizes the fact that in spite of many general resemblances the helminthology and the pathology of the two infections (*Schistosoma mansoni* and *S. hematobium*) are distinct. The worms themselves produce a toxin, the reaction to which is manifested by eosinophilia and deviation of complement, and which is probably a big factor in the production of many of the pathologic changes, especially those found in the liver.

Pigmented Fatty Change in Cell Degeneration.—A description is given by Roberts and Haig of a further stage in fatty change, occurring in cell degeneration in certain subacute lesions, consisting in an alteration of some of the fatty or lipoidal globules, whereby a gradual deposition of pigment occurs at the periphery or margin of the affected globules, together with a progressive loss of their fatty or lipoidal contents. This is accompanied by a shrinkage process, resulting eventually in the formation of minute, deeply pigmented, granules. It is suggested that these granules, and the bodies preceding them, are in the nature of altered lipochrome, possibly a reduction product.

Oxyuris Vermicularis in Appendix.—No evidence was found by Eastwood in support of the theory that *Oxyuris vermicularis* is frequently a cause of appendicitis. *Oxyuris*, when present in the appendix, does not cause local eosinophilia. Eosinophils were found in the mucosa of the appendix in much greater numbers in pathologic than in normal appendixes, their numbers showing a definite relation to the stage of inflammation. They rise to above normal twenty-four hours after the onset of the attack, reach a maximum in the second week, and then gradually subside, but remain considerably above normal even three or four weeks after the attack. This local increase of eosinophils in the appendix is not accompanied by a general eosinophilia. Pigmentation of the appendix is said to occur as frequently in normal as in diseased appendices, and is more common after the thirtieth year.

Oats in Tubercles in Stomach Wall.—Shennan relates the case of a woman, aged 36, who gave a history of indigestion of several months' duration. She complained of more or less constant discomfort across the upper part of the abdomen, aggravated by food. On opening the abdominal cavity, the surgeon could find no sign of acute inflammation or ulceration of new growth; but he noticed an eruption of raised pink nodules—in size up to that of a grain of boiled rice—

over the visceral peritoneum in the right upper quadrant of the abdomen, mainly over the pyloric end of the stomach. These were at first thought to be tuberculous nodules, but in consistence they differed from tuberculous nodules, and their distribution and position were unusual. On microscopic examination, the nodules were found to be made up of granulation tissue, embedding elongated fragments of a vegetable substance which proved to be an oat seed. Shennan suggests that they escaped through a small perforation in the wall, which healed up speedily and perfectly, without much reaction even locally.

Journal of Tropical Medicine and Hygiene, London

Feb. 15, 1923, **26**, No. 4

*Unusual and Fatal Case of Undulant Fever Contracted in Khartoum. R. G. Archibald.—p. 55.
*Case of Myositis Purulenta Tropica. R. L. McConnell.—p. 57.
Identification of Inulin and Maltose, by Mycologic Method. Cases of Maltosuria. A. Castellani and F. E. Taylor.—p. 59.

Unusual Case of Undulant Fever.—Archibald records a case of malignant undulant fever contracted in Khartoum in which death occurred after an illness of twenty-seven days' duration. Clinically, the case lacked many of the typical manifestations of the disease. On the twenty-first day of the illness no agglutinations for *B. melitensis* were present in the patient's serum. *B. melitensis* was recovered by hemoculture on the twenty-second day of the disease; it was also obtained from postmortem cultures of the spleen. Archibald emphasizes that serodiagnostic methods are not always reliable; where they fail, hemoculture, urine culture, or splenic blood culture should be made. Patients should not be discharged from the hospital till repeated bacteriologic investigations show the urine to be free from *B. melitensis*.

Myositis Purulenta Tropica.—McConnell's patient complained of very severe pains in all the large joints and in the back, the elbows and knees suffering most. The evening temperature was about 103 F. The joint pains were so severe that he could not sleep. In the course of the next four months abscesses developed on the chest wall, shoulder, thighs, neck, rib and over the superior iliac spine. Much pus of anchovy sauce color was evacuated from each abscess. Filarial larvae were looked for without sucess. What appeared to be a nematode larva was found in a fresh specimen of pus. Later, in a stained specimen, a similar organism was found, likewise a small coiled up worm.

Medical Journal of South Africa, Johannesburg

January, 1923, **18**, No. 6

Control of Malaria. G. A. P. Ross.—p. 134.
Some Points in Plastic Vaginal Surgery. W. G. Grant.—p. 147.
Intestinal Obstruction from Hydronephrosis in a Pelvic Kidney. H. T. Mursell.—p. 148.
Headache and Weak Cylinders. A. Verwey.—p. 149.

Practitioner, London

January, 1923, **110**, No 655

Ophthalmic Operations. A. Critchett.—p. 5.
Throat, Nose and Ear Operations. J. Dundas-Grant.—p. 11.
Surgical Emergencies, with Special Reference to Abdominal Region. D'Aarcy Power.—p. 26.
Operation on First and Last Kink. W. A. Lane.—p. 33.
Operations on Bones and Joints. J. Lynn-Thomas.—p. 40.
Operations on Rectum. C. G. Watson.—p. 51.
Genito-Urinary Operations. F. S. Edwards.—p. 61.
Operations in Gynecology and Obstetrics. C. Berkeley.—p. 73.
Operations for Sports Injuries. F. Romer.—p. 99.
Antiseptics in Common Operations. W. E. Dixon.—p. 113.
Anesthetics in Common Operations. D. W. Buxton.—p. 121.

South African Medical Record, Capetown

Jan. 13, 1923, **31**, No. 1

Malaria on the Lowveld. H. A. Spencer.—p. 3.
Some Aspects of Scurvy in the Native, and Its Treatment by Orange Juice Intravenously. S. Donaldson.—p. 7.
Case of Glandular Fever. W. G. Robson.—p. 13.

Jan. 27, 1923, **21**, No. 2

Cerebral Trauma and Osteoplastic Repair of the Skull. T. L. Sandes.—p. 26.
A Plea for Radiation as an Alternative to Surgery. D. De Vos Hugo.—p. 29.
Hyperchlorhydria — a Manifestation of Endocrine Abnormality. J. Drummond.—p. 34.
Standardization in the Treatment of Prostatic Obstruction. A. R. McLachlan.—p. 37.

Journal d'Urologie, Paris

December, 1922, **14**, No. 6

*Share of France in Progress of Urology. E. Jeanbrau.—p. 433.
*Kidney Functioning on Salt-Free Diet. Negro and Colombet.—p. 467.
*Correction of Balanic Hypospadias. G. Marion.—p. 473.

Share of France in the Origin and Progress of Urology.—Jeanbrau remarks that three new chairs of urology have been installed in France since 1920, and reviews the history of this branch of medicine to which France has contributed so much. Urea was recognized by Le Cadet in 1771, and although sugar was suspected in diabetic urine by Willis in 1677, it was Chevreuil in 1815 who identified the sugar in the urine as glucose. The French were leaders in constructing a practical catheter and lithotrite, and in internal urethrotomy, endoscopy and the ureteral catheter. Ségalas exhibited in 1826 a speculum for urethra and bladder but it did not give enough light. Desormeaux of Necker Hospital devised in 1853 an efficient endoscope for the bladder, and thus became the father of cystoscopy, as Nitze, the inventor of the prism cystoscope, always acknowledged. This instrumental period of urology is almost exclusively French, and the same can be said for the scientific period which followed, inaugurated by Guyon, Albarran, Tuffier, Janet, Cathelin and Luys. Israel of Berlin remarked at the International Urologic Congress in 1910 "All the urologists of the world have been pupils of Guyon's school at the Necker Hospital." Legueu, the present head of the Necker school has simplified local anesthesia for prostatectomy. His latest achievement was the reconstruction of the entire spongiosa portion of the urethra after a war wound, utilizing the abdominal aorta from a dog. Papin in 1921 introduced the method of denervating the kidney as the last resource to control pain in the organ. Pousson at Bordeaux has popularized surgical treatment of nephritis with hematuria, uremia or rebellious pains. The article is illustrated.

Influence on Functional Tests of the Kidney from Salt in the Diet.—Negro and Colombet report as the result of their research that salt has no influence on the phenolsulphonephthalein test of the functional capacity of the kidneys. But the Ambard ureosecretory constant is modified decidedly by variations in the intake of salt. They give tracings from two typical cases. No regular law could be deduced governing the behavior of the constant.

Correction of Balanic Hypospadias.—Marion's illustrated description shows the various steps of the intervention which has proved eminently successful in four cases in which he has applied it. The technic is that of Chocholka, slightly modified, and this, he states, is based on the operation described by Bevan in The Journal, April 7, 1917, p. 1032. The new urethra is made from a square flap cut from the underside of the penis, entirely above the abnormal opening. The portion close to the abnormal opening is left attached. The flap is then drawn up around a sound and fastened with five stitches to make a tube. The passage is dug for it through the glans, using a trocar and then enlarging the passage with forceps. The forceps then draw the newly formed tube back through the new passage. His modification, which he considers very important, consists in slitting and turning back the skin on each side below the abnormal opening, after the new urethral tube has been sutured to the proximal stump. This slit on the median line allows a triangular flap to be turned back on each side, and the whole region is freshened. The flaps are then sutured together on the median line, aided by Galli tubes, and the whole heals smoothly without any tendency to fistula at any point. The flap is cut long enough so that the new tube projects beyond the glans at first. Its nourishment is insured by the narrow pedicle close to the former abnormal opening.

Schweizerische medizinische Wochenschrift, Basel

Jan. 18, 1923, **53**, No. 3

*Accommodation in Ametropic Eyes with Glasses. C. A. Hegner.—p. 53.
*Predisposition and Cancer. K. Nather.—p. 54.
*Surgical Treatment of Tuberculosis of Lungs. H. Alexander.—p. 56.
*Chronic and Incurable Patients. J. Kollarits.—p. 59.
Coagulation of Blood. A. Fonio.—p. 60. Conc'n.
History of Inspection of Leprous Persons in Switzerland. A. Martin.—p. 64.

Accommodation in Ametropic Eyes After Correction with Glasses.—Hegner demonstrates that a shortsighted person wearing correcting glasses does not need to accommodate as strongly as with normal vision. The stronger the glasses and the nearer the object, the greater is the difference in the two groups. Therefore it is not necessary to prescribe special glasses for fine work for myopia in the young. The farsighted person is at a disadvantage, because the stress of accommodation is greater with the glasses.

Predisposition and Cancer.—Nather examined the blood serum for ferments dissolving carcinoma cells (Freund-Kaminer's method, with Koritschoner's and Morgenstern's modification). He found that these ferments persist in about 20 per cent. of patients suffering from a cancer—especially of the squamous type; 77 per cent. of healthy persons under 45 years of age had the ferment, while it was present only in 22 per cent. after this age. Yet these persons remained healthy. He never saw a return of these ferments after radical operations for cancer (cured over ten years). It seems, therefore, that Freund-Kaminer's reaction is not caused by the cancer, but on the contrary seems to be a manifestation of the cause of cancer.

Surgical Treatment of Tuberculosis of Lungs.—Alexander recommends thoracoplasty in severe progressive unilateral cases. Stationary cases may be treated with it, if the chest is already so contracted that a further collapse of the lung seems impossible, and the patient continues to expectorate bacilli from a cavity which cannot close. The combination of thoracoplasty with removal of part of the phrenic nerve is advisable. Pneumothorax has the disadvantage of being a protracted treatment, and causing exudates. The advantage with artificial pneumothorax is the possibility of restoring the former condition of the lung.

Psychic Direction of Chronic and Incurable Patients.—Kollarits emphasizes the necessity of providing some sort of occupation for such patients.

Riforma Medica, Naples

Jan. 15, 1923, **39**, No. 3

Malformation of Cecum and Pericolic Membrane. Alzona and Valenti.—p. 49.
*Antimony in Treatment of Leprosy. A. Versari.—p. 53.
Functional Nervous Disturbances After Trauma of Orbit. Cozzoli.—p. 55.
Resistance of Vessel Walls in Clinical Pediatrics. Muggia.—p. 56.

Treatment of Lepra by Antimony.—Versari reports two cases of leprosy with very good palliative results from intravenous injections of tartar emetic. He injected every other day from 2 to 10 c.c. of a 2 per cent. solution, adding each time 1 c.c. The second patient required twenty-two injections (total 1.84 gm. tartar emetic). Though the drug acts very favorably on the lesions, it does not sterilize the patient.

Feb. 5, 1923, **39**, No. 6

*Rapid Diagnosis of Cholera. I. Iacono.—p. 121.
*Diagnosis of Intestinal Metastasis of Cancer. G. Aperlo.—p. 123.
*Paradoxic Postencephalitis Kinesia. A. Salmon.—p. 129.
Modern Views on Infantile Paralysis. G. Gianturco.—p. 131.
Prophylaxis and Treatment of Deficiency Diseases. Torraca.—p. 134.

Rapid Diagnosis of Cholera.—Iacono reviews eight different methods in vogue for isolation of cholera vibriones, and extols the superiority of what he calls the polyserum method. It is based on Castellani's discovery that when serums agglutinating typhoid, paratyphoid and cholera germs are mixed, and added to culture mediums containing these germs, the only one that proliferates is the one that does not have its corresponding agglutinating serum in the mixture. For example, if loops of paratyphoid and typhoid bacilli and cholera vibriones are added to a culture medium containing serums agglutinating the cholera germs and the paratyphoid bacilli, the typhoid bacilli alone will proliferate. He reports twenty-two tests of the method in practice; it proved rapid and reliable, showing the cholera vibriones in pure culture in eight hours.

Diagnosis of Metastasis of Cancer of the Pylorus.—Aperlo quotes Tansini's statement in 1906 to the effect that when there is intestinal metastasis of malignant disease in the pylorus region the abdomen is not sunken in as usual but looks rounded and full, as in a well nourished, healthy person. Aperlo relates six instructive cases in which this Tansini sign warned of metastasis even when there was no ascites, palpable tumor nor enlarged glands, and the general condition rendered the assumption of malignant disease uncertain. Riva-Rocci has noticed a similar rounding up of the abdomen in children with peritoneal involvement in the course of tuberculous meningitis, instead of the usual *depressione a barca*. Other signs of abdominal metastasis of gastric or duodenal cancer are the enlarged glands in the left supraclavicular fossa, hardening and retraction of the umbilicus, and a hard patch in front of the rectum, which can be felt through the rectum.

Postencephalitic Paradoxic Kinesia.—Salmon refers to the strange fact that certain persons with parkinsonian symptoms after epidemic encephalitis are able sometimes to dance or ride the bicycle whereas they are stiff and seem to have scarcely any control over their legs at other times. He points out the difference between the parkinsonian symptoms that follow epidemic (lethargic) encephalitis and those of true Parkinson's disease. In the postencephalitic immobility, the mental factor seems more prominent than the muscular rigidity. It seems to be more of a disinclination to move than an inability to move. Naville calls it "bradyphrenia"; Hesnard and Verger call it "mental viscosity." The subjects seem incapable of attention, thought or desire. The phenomena observed seem to confirm the assumption of a center for emotions located in the gray substance of the base of the brain.

Crónica Médica, Lima

September, 1922, **39**, No. 711

*Abdominal Aortitis. M. Gonzáles Olaechea.—p. 336.
*Colloidoclasis and Malaria. J. A. Monteverde.—p. 341.
*Breast Nursing at Lima. Rómulo Eyzaguirre.—p. 357.
*Blocking the Celiac Plexus. M. N. Carrillo.—p. 359.
Pathogenesis of Auricular Fibrillation. R. M. Alzamora.—p. 364.

Abdominal Aortitis.—Olaechea says the prognosis is grave in the case described, as the man aged 55 has high blood pressure and kidney disease, besides abdominal attacks resembling the symptoms of angina pectoris. The abdominal aorta is tender in its entire length, and part of it is unusually large. Moist heat to the abdomen relieves the pain, and treatment as for syphilis is now under way. In another case the insufficiency of the abdominal aorta was evidently due to loss of elasticity in its walls. The result was attacks of intense pain, tenderness along the aorta, and edema of the legs and lower trunk, ascites, and finally fatal anuria, with death forty-five days after the onset of the edema. Throughout, the pulse had been good, the heart working well, and there was no trace of edema above the abdomen.

Colloidal Shock in Relation to Malaria.—Monteverde gives a summary of what is known in regard to anaphylaxis and the hemoclastic crisis, and relates a number of experiences with malarial and other subjects. He explains the hemoclastic crisis as due to the same pathogenic mechanism as anaphylaxis, namely an upset in the colloid balance. The malarial attack is a hemoclastic phenomenon. The irruption into the blood stream of the newly fledged malarial parasites acts as an antigen. The blood changes occur in the same way and sequence as under shock treatment from parenteral injection of proteins. All hemoclastic phenomena have the same pathogenesis, and the malarial attack belongs in the same category with the rest.

Breast Feeding at Lima.—Eyzaguirre states that only 44 per cent. of 600 infants under observation were breast fed. "The infant is thus forced into being the parasite of the cow."

Blocking the Celiac Plexus.—Carrillo describes the application of Labat's technic for anesthetizing the celiac plexus, and extols its advantages for operations in the abdomen. He urges this nerve blocking as a harmless treatment for algias in the viscera as well as for operations.

November, 1922, **39**, No. 713

*Depopulation. L. Avendaño and G. Fernández Dávila.—p. 431.
*Parasitic Diseases of Lungs in Peru. A. Corvetto.—p. 471.
*Technic for Pulmonary Docimasia. G. Fernández Dávila.—p. 479.
The Stegomyia Calopus in Peru. N. E. Cavassa.—p. 484.

Factors Contributing to Depopulation.—This long article describes conditions in Peru and means designed to improve them. It was read at the recent Latin-American medical congress, and concluded with an appeal to the governments of the countries of America for concerted action on ways and means to promote the natural and eugenic increase of the population.

Parasitic Disease of the Lungs in Peru.—This was summarized on page 807 when it appeared in another exchange.

Pulmonary Docimasia.—Fernández Dávila has modified Icard's technic for pulmonary docimasia and extols the extra precision it confers on the test. He uses a 40 or 50 per cent. aqueous, instead of alcoholic, solution of potassium hydroxid. This takes a little longer to digest the lung fragments and release the air in them, but the process never exceeds two or three hours. Another improvement is a long, graduated glass tube, 5 mm. in diameter, which is mounted in the rubber stopper of the test tube holding the lung fragments suspended in the caustic fluid. Then more fluid is poured into the small tube until it reaches nearly to the top and the tube is plugged. The air released from the lung by the action of the caustic can thus be easily and accurately estimated.

Deutsche medizinische Wochenschrift, Berlin

Jan. 12, 1923, **49**, No. 2

*Disinfection of the Mouth. H. Leo.—p. 39.
*Proteins as Antigens and Antibodies. W. G. Ruppel.—p. 40.
*Modified Technic for Meinicke's Test for Syphilis. E. Meinicke and E. Grün.—p. 43.
Tuberculosis and Pregnancy. G. Winter and W. Oppermann.—p. 45. Cont'n.
Radium Castration and Dosage. P. W. Siegel.—p. 47.
*Gastric Cancers. M. Askanazy.—p. 49. Conc'n.
Fat-Splitting Function of the Lymphocytes. S. Bergel.—p. 51. Idem. L. Aschoff and H. Kamiya.—p. 53.
*Thoracocentesis and Thoracoplasty. K. E. Neumann.—p. 53.
Disinfection of Tuberculous Sputum. F. Kirstein.—p. 54.
Dangers of Ethyl Chlorid for Children. Seiffert.—p. 55.
Improvised Tonometer. P. König.—p. 56.
*Asphyxia During and After the Birth. M. Henkel.—p. 56.
Dementia Praecox in General Practice. Henneberg.—p. 58.
*Increase in Drunkenness and Alcohol Addiction. E. Meyer.—p. 60.
The Campaign Against Tuberculosis in Switzerland. K. Söpfle.—p. 60.
Medicolegal Questions in Medical Practice. Ebermayer.—p. 61. Cont'd.

Disinfection of the Mouth.—Leo found that the disinfecting action of water soluble drugs ends in a few minutes. The bacteriologic content was just as high fifteen minutes after cleaning the mouth with water or hydrogen peroxid. Yet the latter has the mechanical advantage of cleaning the gaps between the teeth, by the foaming and probably also because of its action on pathogenic germs. Preparations which are insoluble in water, like some of the substitutes for iodoform, may remain and be active in the mouth over night.

Lyophil and Lyophobe Proteins as Antigen and Antibody.—Ruppel used the electro-osmotic method for separating different fractions of proteins. He found that the agglutinins and amboceptors (except the hemolytic) and syphilitic reagins are contained in the lyophobe euglobulin fraction (precipitated in water free from electrolytes). The protective and curative properties, especially antitoxins, are in the lyophil fraction (with pseudoglobulins). Albumin does not produce anaphylaxis against itself, nor does it contain any antibodies. Bacilli can be disintegrated by the electric current, and their lyophobe fraction, though its toxicity is diminished, is a suitable antigen for immunizing purposes in disease.

Modified Meinicke Reaction in Diagnosis of Syphilis.—Meinicke and Grün report good and rapid results from the addition of tolu resin to, and the omission of cholesterol from, the alcoholic extracts.

Cancer of the Stomach.—Askanazy deals with the pathogenesis of carcinoma of the stomach, and especially with congenital inclusions in the walls of the stomach.

Puncture of Thorax and Resection of Ribs.—Neumann points out that a fresh exudate can be expected low in the phrenicocostal sinus, while an older one should be looked for higher up.

Asphyxia Neonatorum.—Henkel admits that asphyxia may be an indication for forceps, but states that the forceps often aggravates the asphyxia.

Increased Frequency of Alcoholism.—Meyer's psychiatric statistics show the rapid increase in alcoholism since 1918. The percentage of cases of alcoholism in the Königsberg psychiatric clinic in 1921 and 1922 (12.58 per cent. men and 2.18 per cent. women) almost reached the pre-war level (16.75 men and 2.26 women). On a recent Saturday evening, between 8 and 10 p. m., he met between thirty and forty drunken persons on the streets of Königsberg. He recommends prohibition of the manufacture of strong liquors and strong beers as a start for general prohibition.

Jan. 19, 1923, **49**, No. 3

*Korotkow's Method of Blood Pressure Determination. Rumpf.—p. 71.
*Sedimentation Speed of Blood Corpuscles. Moral.—p. 74.
Tuberculosis and Pregnancy. Winter and Oppermann.—p. 76. Cont'n.
*Determination of Tubercle Bacilli in Blood. O. Köster.—p. 78.
Treatment of Arthritis. Roeser.—p. 79.
*Pernicious Anemia. Autor.—p. 80.
Thrombolytic Purpura and Aplastic Anemia. F. Sternberg.—p. 81.
Anemia Due to Anguillula Intestinalis. Hemsen.—p. 83.
Nature of Rickets. E. Aschenheim.—p. 85.
*Puncture of Lymphatic Glands in Syphilitics. F. W. Oelze.—p. 86.
Stimulating Roentgen Ray Doses in Alopecia Areata. Thedering.—p. 89.
Proposed Prussian Law on Tuberculosis. E. Hartmann.—p. 90.

Korotkow's Method of Blood Pressure Determination.—Rumpf recommends Korotkow's auscultation method. In healthy persons it usually gives a little higher figures for systolic pressure than the palpation method. If the brachial artery is sclerotic, the method gives lower values.

Sedimentation Speed of Blood Corpuscles.—Moral observed the sedimentation speed of blood in about 400 patients. Only increased speed is of diagnostic value. Slow speed does not exclude organic disease. In later stages of tuberculosis, slow speed has a good, high speed a bad significance.

Determination of Tubercle Bacilli in Blood.—Köster did not find bacilli in the blood in fourteen cases of tuberculosis (one of them a meningitis). Zeissler's oxalate method gave reliable results, when 1:500 of a loop of the tubercle bacilli was mixed with 5 c.c. of blood.

Pernicious Anemia.—Autor was not able to produce anemia in rabbits by injections of extracts of bacilli cultivated from the stool of pernicious anemia, nor by extracts of colon bacilli. Care is necessary in estimating the blood changes; one of his rabbits had 335 normoblasts in 1 c.mm. of blood before the experiment. Anisocytosis, polychromophilia and normoblasts are quite common in rabbits.

Puncture of Lymphatic Glands in Syphilitics.—Oelze combines the methods of Schultz and Mitchell (injection of 0.25 to 0.5 c.c. of normal salt solution and leaving the needle in the gland for two to five minutes). The method should be used in cases with negative Wassermann reaction more often than it is.

Klinische Wochenschrift, Berlin

Jan. 15, 1923, **2**, No. 3

*Change of Cell Metabolism as Basis of Pathologic Reactions. A. Gottschalk.—p. 109.
Anesthesia with Pure Acetylene. C. J. Gauss and H. Wieland.—p. 113. Cont'd.
*Intensity of Metabolism and Diuresis. H. Vollmer.—p. 117.
*Uremia and Nitrogen Retention. H. Lax.—p. 119.
*Food and Acidity of Urine. C. M. Hasselmann.—p. 122.
Mercurial Stomatitis as Occupational Disease. L. Möller.—p. 123.
*Pituitary Tumor and Diabetes Insipidus. G. Domagk.—p. 124.
Dwarfism. M. Berliner.—p. 126.
"Inflammation and Nervous System." G. Spiess.—p. 128. Reply. Kauffmann.—p. 128.
Uniting of Nerves in Parabiotic Rats. B. Morpurgo.—p. 129.
Intravital Hemolysis and Transfusion Shock. W. Jantzen.—p. 129.
Botulism After Use of Canned Beans. L. Wagner.—p. 130.
Pyelography. A. Lichtenberg.—p. 130.
Insurance of Sick Persons. J. Sturm.—p. 133.

Change of Cell Metabolism as Basis of Pathologic Reactions.—Gottschalk reviews the recorded experiments on the increase of noncoagulable nitrogen compounds in the liver after injections of proteins, especially of bacterial origin. He points to the possible consequences for allergic conditions and infectious diseases.

Intensity of Metabolism and Diuresis.—Vollmer found that hormones which increase the metabolism decrease diuresis

and the acidity of the urine. Proteins have generally a similar action. Hormones which decrease metabolism, especially extracts of testes, increase diuresis.

Uremia and Nitrogen Retention. — Lax found in three nephritis cases with death from insufficiency of the kidneys, a nitrogen equilibrium or, rather, a greater elimination than intake of nitrogen. He attributes the uremia to "isosthenuria of the tissue cells," because he found, with Rohonyi, that normal tissues contain about ten times more noncoagulable nitrogen than the blood; the figures are equal in uremia.

Food and Acidity of Urine.—Hasselmann found in men the lowest acidity after a meat diet, while a diet rich in oats caused a very acid urine.

Pituitary Tumor and Diabetes Insipidus.—Domagk's case was diabetes insipidus with metastasis of cancer in the nervous part of the pituitary, which did not present macroscopic changes. There were no macroscopic changes in the brain.

Münchener medizinische Wochenschrift, Munich

Jan. 12, 1923, **70**, No. 2

*Encephalography. W. Alwens and S. Hirsch.—p. 41.
*Mechanical Strain on the Epiphysis. W. Müller.—p. 44.
*Metabolism in Scurvy. Knipping and Kowitz.—p. 46.
*Atropin in Treatment of Parkinsonian Symptoms. W. Szyszka.—p. 47.
Contracture in Talipes Valgus. G. Hohmann.—p. 48.
Caustics in Intra-Uterine Treatment. W. Sigwart.—p. 50.
*Revision of Uterine Cavity in Puzzling Hemorrhages. W. Hesse.—p. 51.
*Treatment of Gastroptosis. E. Wehner and H. Böker,—p. 52.
*Infection in Tuberculosis. F. Hamburger.—p. 54.
Laceration of Umbilical Cord in Normal Delivery. Death of Infant. M. Nassauer.—p. 55.
Unusual Findings in Abortions. E. Hönck.—p. 56.
Cataleptic Rigor Mortis. Lochte.—p. 56.
*Sphenoidal Sinusitis in General Practice. G. Spiess.—p. 57.
Physicians and Social Insurance. E. Sardemann.—p. 58.

Encephalography.—Alwens and Hirsch report one death attributable to the encephalography among their patients. In another case breathing stopped for a short time but the patient recovered. In some cases intraspinal insufflation seemed to have a favorable influence on the condition of the patient. This was especially noticeable in three persons, aged about 23, suffering from "a sort of migraine."

Mechanical Strain on the Epiphysis.—Müller resected in animals a large part of the shaft of the radius in order to compel the ulna to carry the weight of the body. He found that this induced changes in the bone histologically and radiologically similar to the bone changes in rickets. Therefore these changes are not specific for rachitis. They are simply the result of an insufficiency of the bone in respect to the function required of it.

Metabolism in Scurvy.—Knipping and Kowitz encountered a number of cases of scurvy affecting exclusively single men who prepared their own food or frequented cheap restaurants serving canned foods. The basal metabolism was increased as long as they were kept on a diet sterilized in the autoclave. Addition of lemon juice brought the oxygen consumption down to normal.

Atropin in Treatment of Parkinsonian Syndromes. — Szyszka relates excellent, though transient, results in the treatment of postencephalitic parkinsonian syndromes. He gave from four to six pills daily of 0.0005 gm. atropin sulphate for three to six days. Then he interrupted the treatment for two or three days to delay habituation. In some of the patients the dose had to be gradually increased to 0.004 gm., but without causing untoward effects. One patient who had required over five minutes to copy sentences was able to do the copying in two minutes and twenty seconds after six days of atropin. Similar effects were observed in the time required in dressing.

Revision of Uterine Cavity in Puzzling Cases of Hemorrhage.—Hesse recommends digital examination of the cavity of the uterus in cases of uterine hemorrhage. He reports cases in which polyps were thus discovered that had escaped other means of investigation.

Operative Treatment of Gastroptosis.—Wehner and Böker review the methods for operative correction of gastroptosis. They applied the Duret suspension method in fourteen cases, and in eleven the roentgenologic effect was perfect. Clinical cure was realized only in three in this group; six others were only improved.

Infection in Tuberculosis. — Hamburger supplements his previous report on the infection of his oldest son with tuberculosis, narrating the tragedy of the infection of his four other children. It was caused by a tuberculous servant, with intermittently "open" tuberculosis. All four children had a typical phlyctenular conjunctivitis after the infection. He declares that the servants in the homes with small children should be reexamined for tuberculosis every three months.

Sphenoidal Sinus Disease.—Spiess discusses the symptomatology, diagnosis and treatment of sphenoidal sinusitis. He stresses the feeling of pressure in the head, the anxious expression of the face, narrowing of the visual field, and thoughts of suicide.

Jan. 19, 1923, **70**, No. 3

Chemotherapy of Gallbladder Disease. G. Singer and R. Willheim.—p. 73.
*Hyperemesis of Pregnancy. H. Albrecht.—p. 75.
*Prognosis of Tuberculosis of Infants. H. Langer.—p. 76.
Technic of Pleural Puncture. Hammer.—p. 79.
Surgical Treatment of Tuberculous Spondylitis. M. Baumann.—p. 81.
Treatment of Congenital Irreducible Luxation of Hip Joint by Subtrochanter Osteotomy. F. Hahn.—p. 82.
*Intestinal Arteriosclerosis. F. W. Strauch.—p. 83.
Fight Against Intestinal Parasites in School Age. Hage.—p. 85.
Animal Chimeras: Parts of Different Species Joined to Make Living Animal. Goetsch.—p. 87.
Poisoning by Atropin. Malade.—p. 87.
Symptomatic Changes of Blood. P. Morawitz.—p. 89.
The Right of Physicians to Sell Drugs. Hildebrand.—p. 91.

Hyperemesis of Pregnancy. — Albrecht believes that the basis of the vomiting of pregnancy is increased irritability of the pneumogastric nerve from psychic causes. Psychotherapy proved successful in his fifty-two cases.

Prognosis of Tuberculosis of Infants.—Langer emphasizes the bad influence of superinfection, and believes that isolation of infants for a year would decrease the mortality. Previous tuberculosis of the parents increases the resistance of the infant against acute tuberculosis. The prognosis is not as unfavorable as is generally assumed.

Intestinal Arteriosclerosis. — Strauch finds that pains ("abdominal angina") are not always the first sign of arteriosclerosis of the abdominal vessels. A feeling of fullness, sudden hyperacidity, idiosyncrasies may be due to it. Measuring the blood pressure is important. Intolerance against nicotin is very frequent. In all these conditions theobromin preparations, possibly atropin and papaverin, are indicated.

Wiener klinische Wochenschrift, Vienna

Jan. 18, 1923, **36**, No. 3

*Roentgen-Ray Treatment of Tuberculosis of Skin. R. Volk.—p. 41.
*Treatment of Tuberculosis. J. B. Andreatti.—p. 44. Cont'd.
*Action of Sodium Chlorid. M. Engländer.—p. 51.
Oxygen Consumption During the Latent Period of Roentgen Injury. Petry.—p. 51.
Death of Infant: Aspiration of Vomit or Infanticide? Schwarzacher.—p. 52.
Ligation of Hypogastric Artery in Treatment of Inoperable Uterine Cancer. F. Orthner.—p. 54.

Roentgen-Ray Treatment of Tuberculosis of Skin.—Volk believes the roentgen rays are good as a rule, but that they are superfluous in tuberculids like lichen scrophulosorum, acnitis and folliclis. This treatment is advisable in indurated erythema. Lupus which lies level with the skin is not influenced by roentgen rays; they should be used only in the ulcerative form. The rays act well also in lupus of the nasal mucosa, though radium gives excellent results after excochleation of the granulations.

Treatment of Tuberculosis.—Andreatti believes that uncomplicated tuberculosis lowers the body temperature. He attributes the fever to mixed infection, which should be treated by a vaccine. The temperature should be taken every two hours.

Action of Sodium Chlorid.—Engländer found that sodium chlorid increases the speed of decomposition of potassium permanganate in an alkaline medium. The salt is therefore chemically not as indifferent as generally assumed.

Zeitschrift für Kinderheilkunde, Berlin

Jan. 18, 1923, **34**, No. 5-6

*Endogenous Infection of the Small Intestine. K. Scheer.—p. 223.
*Prognosis in Tuberculous Infants. W. Stoeltzner.—p. 235.
*Food Consumption of Rats. I. John and B. Schick.—p. 239.
*Arneth's Blood Count in Normal Infants. Arneth and Nienkemper.—p. 263.
*Motor Underdevelopment of Children. T. Heller.—p. 287.
"Concentrated Food for Infants." Heller.—p. 291. Reply. Nobel.—p. 292.
Real Acidity of Mouth Fluid in Infants. Jacobi and Demuth.—p. 293.
Stomach Function Tests in Healthy Infants. F. Demuth.—p. 297.
*Fat Tissue in the Newborn. J. Becker.—p. 301.
Angioma of Lung in Infant. C. de Lange and S. B. de Vries.—p. 304.
*"Temporary Dwarf Growth." J. Rosenstern.—p. 310.
Treatment of Tuberculosis in Children. B. Salge.—p. 326.
Cryoscopy with Small Amounts of Fluid. B. Salge.—p. 330.
*Scurvy and General Dystrophy. Flora Rosenbund.—p. 333.
*Occult Bleeding in Feces of Infants. H. L. Ratnoff.—p. 340.
Idiosyncrasy Against Human Milk. E. Aschenheim.—p. 351.

Endogenous Infection of the Small Intestine.—Scheer cultivated strains of colon bacilli from the stomach or duodenum of fifteen dyspeptic infants. These strains showed a strong faculty to supplant other cultivated microbes (Nissle's antagonistic index). A similar occurrence in the feces was found by other authors, who pointed out the different significance of these active strains of colon bacilli in adults and in infants. They seem to prevent infection by other germs in adults, while they are probably pathogenic in infants. Three children were injected with formaldehyd solution after death. The histologic findings did not speak for an invasion of the body through the walls of the intestine. Agglutination tests with the serum of the patients were usually also negative. In some cases ferments dissolving proteins from colon bacilli were found. In such cases an invasion of the whole body may be assumed.

Prognosis in Tuberculous Infants.—Stoeltzner admits that the new finer methods of diagnosis allow a little brighter outlook in such cases. Yet the mortality among his thirty-three tuberculous infants was at least 72 per cent. Other authors have reported 65 per cent.—figures which are surpassed only in hydrophobia and lepra.

Food Consumption of Rats in Pregnancy and During and After Lactation.—John and Schick publish careful studies on ten rats. Pregnancy does not increase consumption. The sudden and regular increase in weight of the rats six or eight days before the termination of pregnancy is due to retention of water. The consumption of food increases immediately after delivery and, with the increase in milk secretion, quickly reaches more than two and one-half times the normal figures. These amounts of food cause dyspeptic disorders in normal animals.

Arneth's Blood Count in Normal Infants.—Arneth and Nienkemper analyzed in detail the white blood corpuscles of ten infants under 10 days old. To the distinctions between classes of leukocytes according to the number of nuclear lobes, Arneth added similar attempts to classify the lymphoid cells.

Motor Underdevelopment of Intellectually Normal Children.—Heller draws attention to children who are intellectually normal or supernormal, but who fail in the motor sphere. They are clumsy in dressing; do not learn to run, jump, or dance gracefully. Treatment must be individual, and should bring the child to understand the mechanical details of such movements, training both mind and muscles.

Fat Tissue in the New-Born.—Becker found large qualitative and quantitative differences in the fat tissue of fetuses and new-born infants. It seems that an embryonic type is frequent in those whose glands are also underdeveloped.

"Temporary Dwarfs."—Rosenstern publishes five cases of children, who are much smaller than other children of their age. This is chiefly due to the shortness of the lower extremities. The mutual proportions of the parts of the body correspond to a younger stage. Some of them change later to normal proportions.

Scurvy and General Dystrophy.—Rosenbund concludes from her observations on thirty-four cases, that dystrophic conditions in children suffering from scurvy are caused by primary infectious troubles or by lack of other necessary substances, but not by the scurvy itself. The striking simultaneous improvement of the scurvy and the dystrophy is due to the increased appetite, or to the presence of other vitamins in the hospital diet, or to a correct proportion between food and vitamins.

Occult Bleeding in Feces of Infants.—Ratnoff found very often occult intestinal bleeding in children in the second half of the first year and the beginning of the second. He points out that this age predisposes also to cutaneous hemorrhages (Rumpel-Leede's phenomenon).

Zentralblatt für Chirurgie, Leipzig

Feb. 3, 1923, **50**, No. 5

Operation for Pylorospasm in Infants. B. Heile.—p. 162.
*Cicatricial Stenosis of the Pylorus. E. Elischer.—p. 165.
*A Substitute for Drainage of Hepatic Duct. Ahrens.—p. 169.
Preparation of Operative Field. P. Rosenstein.—p. 170.
Gastroscopy and Mechanics of Esophagus. W. Sternberg.—p. 172.

Stenosis of the Pylorus Caused by Corrosive Substances.—Elischer emphasizes the fact that the portion of the gastrointestinal tract chiefly injured by the ingestion of corrosive substances depends to a great extent on the condition of the stomach as to fullness at the time of the accident. If the stomach is empty, the changes may affect the whole gastric mucosa, but if the corrosive fluid enters a full stomach, it passes along the sulcus gastricus or gastric channel directly to the pyloric portion of the antrum and causes here the greatest changes. The possibility of stenosis of the pylorus must always be considered. If roentgenoscopic examination is possible, we can establish the indications for operative intervention. If the esophagus is nearly closed, the pylorus will usually be found free if the stomach is much contracted and hard to draw forth. If stenosis of the pylorus is present, however, there is usually a distended and somewhat flaccid stomach, which is easily drawn forth, and the pylorus shows characteristic changes: radial scars, especially on the anterior surface of the stomach—possibly adhesions, or hard scar tissue extending down to the muscle layers. These changes were especially characteristic of the effects of concentrated solutions of hydrochloric acid. In this condition of the pylorus there are two ways open: jejunostomy or gastro-entero-anastomosis. Jejunostomy is to be recommended only in case the stricture of the esophagus is complete and the stomach has been so badly damaged that there is scarcely a sound portion left for the gastro-enterostomy, but these conditions rarely exist. Gastro-enterostomy is preferable to jejunostomy, as the introduction of food into the small intestine may set up chemical irritation which will render proper nutrition impracticable.

A Substitute Method for Kehr's Drainage of the Hepatic Duct.—During the past two years, in a number of cases, after removing stones from the choledochus, Ahrens has extirpated the gallbladder, closed the incision in the common bile duct, and joined the stump of the cystic duct to the duodenum or end-to-side with the stomach. In this manner he used for drainage a biliary passage that is not subject to obliteration and constitutes, to a certain extent, an accessory common bile duct. The stump of the cystic duct is ligated with fine catgut; a fold of the duodenum or of the juxtapyloric stomach is raised up with two forceps; a scalpel is inserted and this small opening is enlarged with fine forceps introduced. The cystic duct is inserted in this opening, and the duodenum is sutured for some distance to the peritoneum of the gallbladder bed and the choledochus. The cystic duct thus becomes an integral portion of the duodenal wall. A small tampon placed beneath the hepatoduodenal ligament holds the anastomosis in place until healing is effected. The principle is like that of Maylard's method.

Zentralblatt für Gynäkologie, Leipzig

Jan. 20, 1923, **47**, No. 3

Transverse Division of Sacrum in Narrow Pelvis. Eymer.—p. 98.
*Roentgen-Ray Therapy of the Adnexa. W. Flaskamp.—p. 100..
*Treatment of Rebellious Pains in Lumbar Region. G. Burckhard.—p. 107.
Changes in the Mamma at Menstruation. A. Rosenburg.—p. 111.
Case of Genuine Missed Labor. F. Kok.—p. 116.
Total Inversion of Uterus in Woman Aged 70. Fleischmann.—p. 121.
Connection Between Measures to Protect the Perineum and a Hematoma in Head of Infant. Schneider.—p. 123.

Deep Roentgen-Ray Therapy in Inflammations of the Adnexa.—Flaskamp has found in roentgen rays a valuable adjuvant of other forms of conservative treatment of inflammations of the adnexa. He reviews the ordinary methods of treatment and points out the weak points of each. Physicotherapy (heat, cold and light), while it alleviates pain and checks hemorrhage, effects a cure in only the milder cases. The patient is usually confined to bed for a long period. In the majority of cases the local condition is little changed. Ovarian function remains disturbed. With roentgen rays, 30 per cent. of the Seitz-Wintz erythema dose being employed, it is possible to inhibit for a time the functioning of the follicle apparatus, by which ovarian hemorrhages are engendered, without injuring the endosecretory portion. This technic of temporary sterilization is what Flaskamp employs. It requires precise adjustment, from the physical and biologic side, of the roentgen-ray tubes. Patients with inflammatory changes of all kinds were thus treated and with good success. The first or second week of the intermenstrual period is the appropriate time for the application. Contraindications are endosecretory disturbances, exophthalmic goiter, tendency to myxedema, and psychoses of other than ovarian origin. In 40 per cent. of the patients, amenorrhea was set up at once. The induced menopause lasts from eighteen months to two years. The possibility of conception is not impaired. In thirty-five reported cases, normal children were born following temporary sterilization. A further justification for temporary sterilization is the commonly observed fact that ovarian functioning hampers the curative process in general.

Treatment of Pains in Lumbar Region.—Burckhard recommends what he terms "episacral anesthesia" to combat chronic pain in the sacral region. The results are surprisingly good. He has used the method so far in ten cases (all women), in several of which the patient has been observed for more than a year. The back pains disappeared soon after the injection. A second injection was in no case necessary, but he would not hesitate to give a second injection if needed. No patient has had a recurrence, though several have been doing hard physical labor. A slender needle, such as is usually employed for local anesthesia, is inserted, right or left of the midline of the sacrum. The distance of the sacral foramina from the midline is determined by palpation. The needle is then pushed forward to the third, then to the second, and finally to the first sacral foramen, while, at the same time, small quantities of the fluid are injected. At each sacral foramen he injects from 10 to 15 c.c. of the 0.5 per cent. procain-epinephrin mixture. Then the needle is drawn back almost to the site of the first puncture, turned, and in the same manner, the fourth and fifth foramina are provided for. He then proceeds in the same manner on the other side. No bad effects were ever noted following the injection. As his series of cases is small, Burckhard gives this merely as a preliminary report, recommending the method for trial.

Casopis Lekaruv Ceskych, Prague

Dec. 30, 1922, **61**, No. 52

Coxalgia of Adolescents. J. Divis.—p. 1241.
*Action of Lymphocytes in Tuberculosis. M. Kaplanova.—p. 1246.
Extraction of Fetus in Breech Presentation. M. Wassermann.—p. 1248.
Obturator Hernia. F. Kudlac.—p. 1249.

Action of Lymphocytes in Tuberculosis. — Kaplanova observed a pleuritic exudate in a case of tuberculosis. Many erythrocytes were arranged around single lymphocytes. This resembled the pictures seen in the peritoneal fluid after intraperitoneal injections of blood corpuscles.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 27, 1923, **1**, No. 4

Hay Fever Plants in Utrecht District. Benjamins et al.—p. 330.
Myosclerometer. S. Koster.—p. 342.
*Preclimacteric Corpulence. A. Willemse.—p. 351.
Vaccination Against Typhoid. H. Klein.—p. 355.
Frontal Sinusitis Involving Brain. D. A. van Walree.—p. 365.

Preclimacteric Corpulence. — Willemse remarks that the period just preceding the involution of the ovaries and testes has been studied very little. The climacteric occurs about fifteen years later in men than in women. He has noticed in the preclimacteric stage that the skin feels less elastic as the hair turns gray and the teeth decay, but the most striking change is the accumulation of fat. In women, just above the wrist there is often a local accumulation of fat, an actual *plica adiposa antibrachii*. Another common deposit of fat is close to the lower jaw. These two locations for local accumulations of fat seem to be peculiar to the approaching menopause, and may warn of its imminence.

Feb. 3, 1923, **1**, No. 5

*Formation of Hippuric Acid. I. Snapper et al.—p. 426.
*Myoclonic Reflexes. L. J. J. Muskens.—p. 433.
*Treatment of Epilepsy. F. J. Stuurman.—p. 442.
*Deafness in Schoolchildren. A. Binnerts.—p. 445.
*Acute Dilatation of the Stomach After Delivery. L. van der Perk.—p. 454.
Job van Meekren, M.D., 1611-1666. E. D. Baumann.—p. 456.

Formation of Hippuric Acid.—The research reported from the Amsterdam physiology institute confirms the production of hippuric acid in the kidneys of the dog, hog and sheep, and likewise in man. It further demonstrated that the production of hippuric acid and its elimination in the urine are two distinct functions, and must be estimated separately.

Myoclonic Reflexes.—Muskens analyzes the mechanism of the latent and refractory period with myoclonic reflexes and experimental epilepsy as studied on cats and other animals, with and without drugs.

Treatment of Epilepsy.—Stuurman recorded the number of seizures in patients during periods when they were being treated with bromids or with phenobarbital. The results showed that the latter is useful, and possibly a little more effectual than the bromids, but not enough to compensate for its higher price as a rule. It acts more rapidly than the bromids and hence may be preferable in status epilepticus, and in cases that do not respond to bromids. He noted that the urine after an epileptic seizure was always strongly acid, while preceding the attack it was less acid than normal or even weakly alkaline. Treatment with alkalis or acids kept up for two or three months failed to show any influence, either favorable or unfavorable, on epilepsy.

Deafness in Schoolchildren. — Binnerts comments on the advantages of special schools for the partially deaf. He urges the organization of such a school in every community of 100,000 inhabitants or even less. The difficulty is that the parents often do not recognize the defect in the child, and combat the special schools as inferior. A campaign of enlightenment for teachers and parents must be organized. In the Netherlands, from 0.2 to 2 per cent. of the children are unable to hear a whisper at 2 meters or less.

Acute Dilatation of the Stomach After Childbirth. — No anesthetic had been given, and the acute dilatation gradually subsided after the primipara had been turned to lie on her right side.

Acta Medica Scandinavica, Stockholm

Jan. 27, 1923, **57**, No. 5

*Wassermann Reaction in Metasyphilis. T. E. Hess Thaysen.—p. 419.
*Perception and Representation. S. E. Henschen.—p. 458.
Ulcerative Syphilitic Colitis. C. Gram.—p. 502.
Action of Muscle Dehydrogenases. G. Ahlgren.—p. 508.

Prognostic Value of Wassermann Reaction in Metasyphilis.—Thaysen is skeptical about the prognostic value of a positive Wassermann reaction in the blood or spinal fluid in fully developed tabes. In abortive cases, a negative reaction seems to give a better prognosis. The course of the disease is not changed if the treatment changes the reaction of the blood.

Perception and Representation from the Anatomic and Clinical Standpoint.—Henschen tries to define exactly these and similar terms, and discusses the cerebral localization in cases from the literature and one of his own.

Hospitalstidende, Copenhagen

Feb. 7, 1923, **66**, No. 6

*Hemoglobin and Corpuscle Volume in Infants. P. Drucker.—p. 110.
Myeloblasts and Partly Granular Myelocytes. Ellermann.—p. 124.

Hemoglobin and Corpuscles in Infants. — Drucker gives eight tables of the findings in large numbers of infants with

acute or chronic digestive disturbance, stenosis of the pylorus or anemia. Nothing was found to show any connection between rachitis and anemia. The blood findings were within normal range in the dyspepsia cases.

Norsk Magazin for Lægevidenskaben, Christiania

February, 1923, **84**, No. 2

*Objective Test for Neurasthenia. G. H. Monrad-Krohn.—p. 113.
*Tuberculous Brain Tumor. F. Harbitz and Monrad-Krohn.—p. 119.
*Autogenous Vaccine in Pyelitis. O. Jervell.—p. 126.
*Erythema Nodosum. A. Wiborg.—p. 135.
*Determination of Nonprotein Nitrogen in Blood. Arnesen.—p. 136.
*Specific and Nonspecific Therapy. K. Hansen.—p. 153.

Test for Fatigue in Neurasthenia. — Monrad-Krohn gives an illustrated description of an apparatus with movable diaphragm which shows the visual field for each eye separately, and the amount of overlapping of these fields in binocular vision. The test is made with a single long number of thirty digits. In his hundreds of applications of this test, the overlapping digits were numerous only in persons much fatigued from recent exertion. By this means we can tell whether the neurasthenic subject is overdoing, and thus be able to guide him into safe channels. He adds that work at home, or family "scenes" are often more fatiguing than a day's work outside.

Tuberculosis of Base of Brain. — Harbitz and Monrad-Krohn report a case of tuberculoma of the optopeduncular region, and signs of old and manifestly regressive tuberculous meningitis; the pituitary was intact. The man aged 27 had been apparently healthy until frontal headache developed and vision became impaired. The symptoms progressed to a fatal termination in five weeks.

Autogenous Vaccines in Treatment of Pyelitis. — Jervell relates that only nineteen of his fifty cases of pyelitis were treated with autovaccines. The colon bacillus was responsible for the pyelitis in these cases. Only six were cured and five improved; no effect was apparent in eight. The patient's serum agglutinated the colon bacillus only in seven cases.

Erythema Nodosum.—Wiborg states that in a recent series of thirty cases of erythema nodosum 86.67 per cent. were children. Most of the cases occurred in a single month, but there were only single cases in the different families. The affection seemed to rouse a latent tuberculosis in some of the cases.

Nonprotein Nitrogen in the Blood. — Arnesen points out some sources of error in the current tests for nonprotein nitrogen in the blood or serum, and describes means to insure precision. He tabulates the findings in a number of cases for comparison.

Specific and Nonspecific Therapy.—Hansen reviews recent literature on protein therapy and shock therapy in general. The nonspecific substances seem to act alike, and there is not much choice between them. Certain facts observed suggest, however, that some of these substances have an elective stimulating action on certain cells. This opens a new field for research.

Ugeskrift for Læger, Copenhagen

Feb. 1, 1923, **85**, No. 5

*Psychic Disturbances After Epidemic Encephalitis. K. Winther.—p. 73.
*Calcium Treatment of Nervous Headache. C. I. Baastrup.—p. 75.
Cannula and Syringe for Treatment of Syphilis. K. Philipsen.—p. 77.

Postencephalitic Psychic Disturbances. — Winther relates that 8 of his 31 patients with epidemic encephalitis presented confusion, delirium or stupor during the acute phase. In 4 cases the acute phase was followed by a state of apathy and inability to work, which lasted for from six months to three years. In 4 others this psychasthenia was accompanied with irritability and emotional instability. This stage lasted from six months to two and a half years. The trend was towards final complete recovery in these two groups. In 2 men, aged about 50, a manic-depressive condition followed the acute phase, and incapacitated the men for a year, with final recovery. Two men in the twenties had apparently recovered from the encephalitis, but two years later developed maniacal excitement and motor agitation. This condition gradually subsided in a month, but one was left with a complete change of character, irritable and thieving. The connection with the encephalitis two years before was evident from the bilateral paresis of accommodation and insufficiency of convergence, which testify to epidemic encephalitis, as well as the severe motor symptoms suggesting chorea. The complete Korsakoff syndrome developed in one man, aged 47, four years after epidemic encephalitis. In 6 cases of the disease in previously normal children, the acute phase was followed by symptoms of psychopathic degeneration. They have persisted unmodified for two years to date. Probably many of the inmates of our asylums have a history of epidemic encephalitis in childhood although the disease may have escaped recognition at the time. The children with these congenital and acquired degenerative psychopathies should be placed in a special institution where they would be under strict supervision and teaching. Kleptomania is common among them. In Winther's 25 cases of epidemic encephalitis, 1918 to 1922, 11 patients died in the acute stage and he has lost track of 2. Of the other 12, none had recovered within six months; severe mental disturbances were still evident two years later in 5, and 2 others presented disturbances of a milder form.

Calcium Treatment of "Nervous Headache." — Baastrup reports experiences which justify tentative calcium treatment in all cases of rebellious headache for which no special cause can be discovered. In some patients in this class a tendency to recurring attacks of Quincke's edema suggested that the headache might be due to the intracranial extension of the process, and that calcium would be the logical treatment. A familial predisposition was always evident in this group. The recurring attacks and puffiness under the eyes, swelling of the lips and other manifestations of Quincke's edema were accompanied by the severe headache. The portrait of the grandfather of one of these patients showed the same puffiness under the eyes. Baastrup gave calcium lactate, 1 gm. one to three times a day for three weeks, and then with longer intervals for ten days. The results were excellent: The edema and the headache subsided, as also a vasomotor rhinitis which had proved refractory for several years. In other cases absolutely no cause could be discovered for the "nervous headache," but the calcium tablets proved equally effectual. The children in these families were usually of the exudative diathesis type. The blood may show a lymphatic tendency in cases of nervous headache, and this is a further indication for calcium treatment.

Feb. 8, 1923, **85**, No. 6

Fracture of Coronoid Process of Ulna. H. Abrahamsen.—p. 89.
Metal Bands for Fractured Bones. Schleisner.—p. 91.
Modern Treatment of Tropical Diseases. H. C. Gram.—p. 92.
*Calcium Treatment of Nervous Headache. A. Tofte.—p. 97.

Nervous Headache.—Tofte confirms Winther's statements and reports an instructive case of rebellious headache after an abortion. The blood was of the lymphatic type, and the woman was weak and languid. Under calcium, conditions returned to approximately normal, and a normal pregnancy followed. The calcium was kept up throughout, and only once was there a transient tendency to headache.

Upsala Läkareförenings Förhandlingar, Upsala

Feb. 10, 1923, **28**, No. 3-4

*Psychic Energy and Mental Insufficiency. H. Sjöbring.—p. 163.
*Sugar Content of the Blood in Fever. B. Jacobowsky.—p. 215.
*Anatomy of Rabbit Skeleton. H. A. Landing.—p. 237.

Psychic Energy and Mental Insufficiency.—Sjöbring discusses (in English) what energy means in relation to psychic activity. He explains the importance of the energy problem for both organic psychoses and functional psychic disturbances.

The Blood Sugar Curve After Heat Puncture.—Jacobowsky concludes from his experiments on rabbits that the rise in temperature induced by heat-puncture does not cause hyperglycemia. Consequently he assumes that the high sugar content of the blood in febrile infectious conditions is not due to the fever itself but to the action of infection toxins.

Study of Skeleton at Different Ages. — Landing reports extensive research on the anatomy and course of ossification of the bones in fifty male and fifty-five female rabbits.

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THE DIAGNOSIS OF BRONCHIAL ASTHMA *

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The term asthma is one which has been rather loosely applied to all conditions in which dyspnea is a pronounced symptom, but we can now obtain sufficient evidence to restrict its use to the affection known as bronchial or spasmodic asthma; in other words, to that condition characterized by dyspnea, the result of allergenic reaction.

The accumulated knowledge of the last ten years is greatly in favor of hypersensitiveness as the basic factor. It is not germane to the present purpose to discuss the pioneer work which placed bronchial asthma on an allergenic basis. At least from a clinical standpoint, the evidence is too overwhelming to deny the existence of this association, so it is desired to emphasize those factors that should be considered before applying the term asthma to a given condition.

THE HISTORY OF SIMILAR SYMPTOMS IN THE ANTECEDENTS

Longcope [1] believes there is an apparent definite tendency toward inheritance. He states that the symptom of allergy appears early in many and may be observed on first contact with a given protein. Cooke and Vander Veer [2] found a positive family history for hypersensitiveness in 48 per cent. of their cases of clinical hypersensitiveness, while only 14.5 per cent. of normal persons gave a positive antecedent history. Adkinson,[3] in Walker's cases, found 48 per cent. giving a positive family history. Again, Rackemann [4] found 58 per cent. of sensitive cases presenting a positive family history, while only 10.5 per cent. of nonsensitive cases gave such a history. Among the pediatricians, Talbot [5] found a positive family history in all of nineteen cases of asthma in children that he studied in great detail; Schloss,[6] 59 per cent. in eighty children; Herman,[7] 65 per cent. in sixty-one children with a positive family history. By a positive history is meant the occurrence of asthma, hay-fever, eczema and urticaria.

Thus it becomes pertinent that the family history of approximately 50 per cent. of cases supplies one link in the diagnosis. One should be warned that scrupulous attention must be observed in obtaining this history. All types of dyspnea have been called asthma in the past, so that one applies to this antecedent history the same safeguard that one applies in obtaining the history of the present illness. The question of hay-fever and urticaria in the antecedent is rather easily determined, but the question of asthma and eczema is one that is shrouded in all sorts of phantasies in the lay mind.

AGE OF ONSET

It has been shown that the age of onset is very important and seems to bear a definite relationship to sensitivity.[8] By means of sensitization tests, it has been found that the earlier in life symptoms of hypersensitiveness manifest themselves, the more likely they are to be due to sensitization. Approximately 80 per cent. of patients whose symptoms commence before the age of 2 years have given positive cutaneous reactions; then, as the age of onset increases, the percentage of sensitization decreases, and necessarily the percentage of nonsensitive cases increases. More definitely stated, the nonsensitive cases number more than 50 per cent. when the age of onset is beyond 20 years. When the age of onset is past 40 years, the great probabilities are that they are nonsensitive. Walker,[9] finds no positive cases after fifty years; Cooke and Vander Veer,[10] only one case, which covers the two largest reported groups of asthmatics. In our own smaller group, there is one instance in which the suspicion of sensitivity in a man past 60 years is very strong, but the proof is difficult, owing to the associated pathology.

Cooke and Vander Veer [2] believe, further, that the age of onset is influenced by heredity. They have presented evidence that when the inheritance is derived from both the maternal and the paternal sides, the period of greatest liability is the first five years; that when it is derived from either parent alone, the age of onset is between 10 and 15 years; that when the age of onset is after 20 years, no history of parental hypersensitiveness is obtained. In the latter instance, if one subscribes to the theory of heredity it can be presumed that the inheritance is more distant.

It is well to point out here that asthma in infants and young children is manifested most frequently by so-called colds and bronchitis. These symptoms take on the appearance of chronicity very easily, owing to the fact that, if due to a food, it would be one eaten rather frequently, or if due to inhalation, there would be constant exposure to the keratoproteins usually found

* From the Medical Clinic, Washington University Dispensary.

1. Longcope, W. T.: The Susceptibility of Man to Foreign Protein, Am. J. M. Sc. **152**: 625 (Nov.) 1916; Protein Hypersensitiveness and Its Importance in the Etiology of Disease, J. A. M. A. **77**: 1535 (Nov. 12) 1921.

2. Cooke, R. A., and Vander Veer, Albert, Jr.: Human Sensitization, J. Immunol. **1**: 201 (June) 1916.

3. Adkinson, J.: Genetics, **5**: 363, 1920; Oxford Medicine **2**: 233.

4. Rackemann, F. M.: A Clinical Study of 150 Cases of Bronchial Asthma, Arch. Int. Med. **22**: 517 (Oct.) 1918.

5. Talbot, F. B.: Asthma in Children, II. Its Relation to Anaphylaxis, Boston M. & S. J. **175**: 191 (Aug. 10) 1916.

6. Schloss, O. M.: Allergy in Infants and Children, Am. J. Dis. Child. **19**: 433 (June) 1920.

7. Herman, Harold: A Critical Study of Sixty-One Cases of Asthma and Eczema in Infancy and Childhood Controlled by Cutaneous Protein Sensitization Tests, Am. J. Dis. Child. **24**: 221, 1922.

8. Walker, I. C.: A Clinical Study of Four Hundred Cases of Bronchial Asthma, Boston M. & S. J. **179**: 288 (Aug. 29) 1918.

9. Walker, I. C., in Oxford Medicine **2**: 229.

10. Cooke, R. A., and Vander Veer, Albert, Jr., in Tice's Medicine **5**: 499.

to be etiologic factors. Further, since infants spend most of their lives sleeping, by themselves, especially after eating, they could have true asthmatic attacks without the immediate family being cognizant of an ailment, and thus develop bronchitis as the presenting symptom.

Thus, we have another factor which materially assists us in arriving at the diagnosis of bronchial asthma. When one learns that there is an early age of onset of symptoms characteristic of paroxysmal dyspnea due to protein sensitization, if one can fortify this knowledge with a positive antecedent history, one has at least strong presumptive evidence that one is dealing with bronchial asthma.

SYMPTOMS

All attacks of paroxysmal dyspnea can be divided into two classes. In one, in which positive cutaneous protein reactions have been obtained, the first symptom noted by the patient is a sense of constriction or tightening in the chest, followed by increasing respiratory difficulty, more pronounced with expiration, and eventuating in a cough, which is dry at first, but becomes in a short time characteristically productive. This sequence of events will not vary in the sensitive cases, no matter how long standing the condition. This type of attack occurs at any time, day or night, not with any regularity, and unassociated with exertion. Often this type of paroxysmal dyspnea is preceded by so-called head colds, which consist of sneezing and the production of a colorless coryza. I believe that when the coryza remains colorless, it is but the nasal manifestation of hypersensitiveness, and that the subsequent dyspnea is the bronchial manifestations of the same protein irritant. Clinically, it apparently makes no difference how the protein is introduced. This sequence of symptoms, from sneezing and coryza to spasmodic dyspnea, or spasmodic dyspnea alone, has been observed to occur in sensitive patients, whether the exposure to the offending protein is by inhalation (keratoprotein and pollen) or ingestion (food proteins).

Records of the following cases will help to illustrate the foregoing.

REPORT OF CASES

CASE 1.—A boy, aged 5 years, had complained of asthma since the age of 1 year, preceded by eczema existing since the age of 6 weeks. He had asthmatic attacks at least once each month, and frequent head colds, with much sneezing and coryza. He had had thorough nose and throat attention without relief. Of significance to us in the family history is the fact that the father has "rose fever," consisting of paroxysmal sneezing and coryza, commencing about the first of June and lasting to mid-July. This patient gave positive cutaneous reactions to the split proteins of wheat, potato, egg, oat, horse dander, wool, cat and dog hair, goose feathers and ragweed. Appropriate treatment by nonexposure to the offending proteins has made this child asthma free and also free from head colds. To be noted in this case, particularly, are the early onset of asthma preceded by eczema, which is a very frequent preceding factor; the positive antecedent history; the removal of laryngologic foci without benefit, and the improvement by the mere withdrawal of the etiologic factors.

CASE 2.—A woman, single, white, aged 37, seen, Feb. 14, 1921, had complained of asthma, distinctly nonseasonal, since the age of 6 weeks. The family history for allergenic phenomena was unreliable. Physical examination, including laryngologic examination, was essentially negative. Positive cutaneous reactions were obtained to casein, barley, oat, rice and pea. Appropriate abstinence in her diet has made this patient practically asthma free.

CASE 3.—A man, white, aged 54, seen, Dec. 5, 1921, complained of asthmatic attacks for the last thirty-five years. The essential features in this patient were positive cutaneous reactions to horse dander, chicken feathers and dog hair. Through the elimination of these factors, he has been asthma free since Dec. 19, 192..

To be noted in these adult cases is the early age of onset and the improvement with nonexposure to the offending proteins despite the long continuance of symptoms. The last patient received desensitization injections of horse dander because his employment required the handling of horses. During the year of observation, he had one week of discomfort, which is to be compared to his previous more of less constant dyspnea. In all three cases, it is noteworthy that the physical examination was essentially negative. In the adult cases, the existence of emphysema can be assumed, although at the present time it is producing no clinical manifestations.

In the other type of paroxysmal dyspnea, in which no positive cutaneous protein reactions are obtained, the attack is initiated by cough, of progressive frequency and severity, that by its very nature produces dyspnea, a dyspnea rather inspiratory than expiratory, and finally relieved by productive expectoration. The sputum is more frequently purulent, particularly if there are head colds in which the nasal secretion is yellow and thick. If these attacks have existed for some time, there is noticeable dyspnea on exertion, or exertion may provoke the attack. This type is found in children and young adults associated with nasopharyngeal and respiratory infections. But when it develops during or past middle age, the symptoms usually come on with cold weather, so-called "winter asthma," the sputum in the latter type being more frequently watery and frothy, rather than purulent. The description of emphysema in Osler's Practice of Medicine exactly fits the latter type. There is, however, a "winter asthma" occurring in children and young adults in whom positive reactions are obtained to the keratoproteins, due to their more intimate exposure to the offending protein during the winter months (keratoproteins).

It can be presumed that there is some bronchial constriction in these nonsensitive cases, since they are partially relieved by the inhalation of antispasmodic fumes. These drugs release the muscular constriction, thus setting free the sputum, which is expectorated, with consequent relief. The muscular constriction probably results from local irritation due to protracted coughing and to the tenacious secretion. It has been our observation that the relief obtained from antispasmodic remedies in the nonsensitive cases is not as marked as that obtained when the bronchial constriction is due to protein irritation. In the nonsensitive case, there is usually a gradual diminution of symptoms, and not the startling rapid relief seen in the true bronchial asthmatic.

It has been mentioned that irregularity of attacks characterizes the sensitive cases. There are exceptions. Patients sensitive to pollen usually have their attacks of dyspnea at night. It is thought that this is so because hay-fever sufferers are forced to become mouth breathers while asleep, and thus the same turgescence and edema are produced as in the nasal apparatus. Just recently, we have had some support in this belief in a patient who had nonseasonal hay-fever, or allergenic coryza, from flour dust, giving positive cutaneous tests to the split proteins of wheat. In order that he might continue his work, he plugged the nostrils with cotton, which resulted in a noticeable amelioration of the nasal

symptoms; but he developed an irritative cough and paroxysmal dyspnea, for which he sought relief. Also, patients sensitive to the keratoprotein necessarily have the greater number of their attacks at night because it is at this time that they are in contact with these proteins.

One cannot be too dogmatic in outlining the symptoms of paroxysmal dyspnea. Frequently, repeated attacks in the true asthmatic may produce sufficient bronchitis, so that the symptoms simulate the nonsensitive dyspneic. Constant exposure to one offending protein may produce continuous dyspnea or the clinical picture of emphysema. The history and sensitization tests are an invaluable aid and will make the diagnosis. But from the standpoint of symptomatology, one feels safe in saying that the great majority of sensitive cases are characterized by spontaneous attacks, usually unassociated with exertion, and initiated by an oppressive feeling in the chest or chest tightening and dyspnea, followed by cough; while in the nonsensitive cases the attacks are initiated by cough, followed by dyspnea and chest oppression, and more frequently associated with exertion. In general, one can say that dyspnea on exertion or nocturnal dyspnea does not indicate bronchial asthma. Our observation has been that the conditions most frequently appearing in the asthma division of the general medical clinic of the Washington University Dispensary under the diagnosis of bronchial asthma are: hypertension, aneurysm, chronic cardiac diseases, pulmonary tuberculosis, emphysema and obesity.

The following cases will illustrate a few of the wide variety of clinical entities appearing with the diagnosis of asthma; they are presented because the patients stated that they had been previously treated for asthma.

CASE 4.—A man, colored, aged 48, seen, Oct. 9, 1922, complaining of asthma of six weeks' duration, suffered from dyspnea on exertion and nocturnal dyspnea. The salient features of the examination were aneurysm of the decending aorta, by fluoroscopic examination, and a positive Wassermann reaction.

CASE 5.—A woman, white, aged 56, seen, March 24, 1922, complaining of asthma since December, 1919, at the age of 19 years had an attack of asthma which lasted for three days and was relieved by compound licorice powder. At the age of 36 years, she returned to St. Louis from San Francisco, and had a similar attack, occurring in the fall and lasting until late spring. She returned to St. Louis in the fall of 1919, and again commenced having difficulty in breathing. Since the onset of the trouble in 1919, asthma consisted of dyspnea on exertion and orthopnea. The patient was an obese woman, 5 feet 3 inches tall, and weighing 217 pounds (98.2 kg.). The family history for all allergenic phenomena was unreliable. Salient points of the physical examination were: blood pressure, systolic, 180, diastolic, 90; pulse rate, from 90 to 100, and pretibial pitting. The electrocardiogram shows left ventricular preponderance. Cutaneous sensitization tests were negative. After appropriate therapy for the evident decompensation, the patient was placed on a reduction diet, and when last seen weighed 171 pounds (77.7 kg.). It is also interesting to note that at this time the blood pressure was 120, systolic; 80, diastolic. Commencing with this reduction, there has been improvement of her dyspnea. Despite the previous history, which might lead one to believe that she was, or had been, suffering from seasonal bronchial asthma, she passed through the last ragweed season without any symptoms referable to sensitization. We felt certain that this would be the case on account of the negative tests obtained with pollen.

CASE 6.—A man, married, aged 46, seen, Nov. 21, 1922, complaining of asthma, for which he had been treated for the last twelve years, with dyspnea on exertion and nocturnal dyspnea, the latter being relieved by productive expectoration, had had no spontaneous asthmatic attacks. He had lost 50 pounds (22.7 kg.) during the course of his illness. The essential feature of the physical examination was an advanced pulmonary tuberculosis, which was substantiated by roentgenologic studies of the lungs and the presence of many tubercle bacilli in the sputum. It is unnecessary to point out that this man lost twelve years of proper treatment by being passed along as an asthmatic.

CASE 7 (Courtesy of Dr. A. E. Strauss, director of heart clinic).—A man, colored, aged 68, seen, Feb. 20, 1922, stating that he had been treated for bronchial asthma for the last year, complained of smothering spells and orthopnea. As a result of examinations, pulsus alternans, chronic myocarditis, hypertension and general arteriosclerosis were diagnosed.

In this group of cases, we have patients treated for asthma for periods varying from twelve years to six weeks, in whom the dyspnea was but the symptom of a condition unrelated to the allergenic phenomena. Also, it is to be emphasized that the symptom "asthma" in these cases consisted of orthopnea and dyspnea on exertion, and that the age of onset was late in life.

I do not desire to minimize the physical examination, for it is of invaluable assistance in establishing the differential diagnosis. However, it is unfortunate that there are no physical findings typical of bronchial asthma. During an attack, the prolonged wheezing expiration heard and the expiratory effort seen will come nearer identifying the attack as a result of bronchospasm than any other physical finding, but it will not definitely class the case as one of bronchial asthma. It is difficult to differentiate the cause of an attack of paroxysmal dyspnea by physical examination alone, many clinical entities giving similar pictures. Between attacks, it is more usual for the nonsensitive cases to have the physical findings of chronic bronchitis contrasted, with certain exceptions, with the clear chest of the true asthmatic between attacks.

We have available, then, three factors with which to build up our diagnosis of bronchial asthma: the history of similar symptoms in the antecedents, the age of onset and the typical symptomatology of the true asthmatic. This conception does not relegate the sensitization tests into disuse, for they remain the keystone of the diagnosis. A positive sensitization test, proved to be the etiologic factor by production of the dyspnea through exposure to the protein which gave the positive reactions, makes the diagnosis of bronchial asthma, even if the factors before mentioned were all negative. On the other hand, negative sensitization tests in a patient with an early age of onset, the symptomology of a true asthmatic and a hereditary influence could properly lead to a diagnosis of bronchial asthma. The negative tests may be due to the fact that one has not tried the proper protein, that the product used has deterioriated or that the patient is sensitive to a protein hitherto unsuspected as a causative agent. The knowledge concerning etiologic factors in bronchial asthma advances very rapidly. It is but recent that house dust,[11] glue,[12] the dander of the rabbit[13] and goat hair[11] have been implicated, to any extent, as causa-

11. Cooke, R. A.: Studies in Specific Hypersensitiveness, IV, New Etiological Factors in Bronchial Asthma, J. Immunol. **7**: 147 (March) 1922. Vander Veer, Albert, Jr.: The Present Status of the Treatment of Hayfever and Asthma, Am. J. M. Sc. **164**: 97 (July) 1922.

12. Cooke, R. A.: Studies in Specific Hypersensitiveness, III, On Constitutional Reactions: The Dangers of the Diagnostic Cutaneous Tests and Therapeutic Injection of Allergens, J. Immunol. **7**: 119 (March) 1922.

13. Ratner, Bret: Rabbit Hair Asthma in Children, Am. J. Dis. Child. **24**: 346 (Oct.) 1922; M. Clin. N. America **5**: 1129 (Jan.) 1922; Herman, Harold (Footnote 7). Cooke, R. A. (Footnote 11). Larsen, N. P., and Bell, S. V.: Classification and Management of Asthma in Children, Am. J. Dis. Child. **24**: 441 (Nov.) 1922.

tive agents. However, Sewall,[14] in 1914, reported a case of asthma related to him by V. C. Vaughan, Jr., due to exposure to rabbits. Vander Veer[15] notes, in a summary of cases investigated since 1917, that his percentage of undiagnosed cases has decreased from 29 in 1917 to 17 in 1920, owing to the increasing knowledge of new etiologic factors.

As examples of difficulties encountered, Cases 8, 9 and 10 are presented.

Case 8.—A girl, aged 10 years, seen in the asthmatic division of the general medical clinic, Sept. 14, 1922, with complaint of asthma existing for two years, the difficulty in breathing following a persistent head cold with copious watery nasal discharge, and the attacks being distinctly nonseasonal, since onset of illness had done considerable sneezing, sometimes in paroxysms. Since February 28, she had been under observation in the pediatric service. From April 3 to June, she was under observation in the Children's Hospital, during which time there were no asthmatic attacks. Suppuration in the ethmoidal and sphenoidal sinuses, and infected tonsils and adenoids were the outstanding features of the examination. After some local treatment in the nose and throat clinic and a resumption of the asthmatic attacks, the patient reentered the Children's Hospital, July 6, and had most thorough laryngologic operative work done. During the period of her stay in the hospital, she had no asthmatic attacks, but very shortly after her return home the asthmatic attacks recommenced. We have seen this patient in an effort to determine the etiologic factor. She has given borderline positive reaction to cat and to camel hair. There has been no specific treatment, but a search for the source of contact with the offending protein has been made. The attacks became rather severe during the latter part of December, and she reentered Children's Hospital the first week of January. She is still there at the time of writing, and has been asthma free ever since. In this case, to be noted are the onset with copious watery nasal discharge; the purulent nasal condition, being secondary infection; the operative relief of the evident pathologic condition, without influence on the asthmatic attacks, and the prompt relief, without specific treatment, by removal from her usual environment.

Case 9.—A woman, white, married, aged 33, who entered Barnes Hospital with extreme dyspnea, a condition of three weeks' standing, has just returned from the West, where she had gone thirteen years previously on account of attacks similar to the one she had at the present time. She became progressively better while under our observation in the hospital, without any particular treatment. Cutaneous sensitization tests were negative, as were the general physical examination and all laboratory findings. We have heard recently of this patient, and she is again having attacks of paroxysmal dyspnea. Questioning has brought out the fact that during the first attack of paroxysmal dyspnea, thirteen years ago, she was working in a grocery store and living in quarters above it; that at the present time, she is similarly situated, and that while in the West she was not so situated.

Case 10.—A woman, white, aged 40, who was seen, Oct. 18, 1921, complained of asthma of ten years' standing, which had become progressively worse for the last two or three years. Her attacks were associated with exertion and occurred at night, but she also had spontaneous attacks during the day time. At the time of examination at the dispensary, she was in evident respiratory distress. She was placed in Barnes Hospital for study. During her stay there, she had no asthmatic attacks. Exercise tolerance tests produced dyspnea. Cutaneous tests were negative. Roentgenograms of her lungs were interpreted as revealing pulmonary tuberculosis. Frequent sputum examinations did not show tubercle bacilli. At this admission, she was not considered as having bronchial asthma, and it was thought that she had dyspnea on exertion as the result of either a cardiac or a pulmonary condition. After her discharge from the hospital, she was seen again. The asthmatic attacks recurred after her return home from the hospital.

This patient has had three admittances to Barnes Hospital with practically immediate relief from the asthmatic attacks, and attacks have occurred almost immediately on return to her home. Many cutaneous tests have been made on this patient, and one obtains only suspicious positive reactions to the keratoproteins.

These three cases can be diagnosed as bronchial asthma, despite inconclusive cutaneous reactions, because prolonged observation has shown that in these patients the attacks occur only in certain localities; they give a typical symptomatic history, and have an early age of onset. From our observations, we conclude that they are sensitive to a protein peculiar to their environment. They readily fall into the class of dust asthmatics, recently called to our attention by Cooke and Vander Veer. It is believed that dust is an etiologic factor in some cases only so far as it contains the offending protein. In one of the instances cited, we have not found the offending protein; in the other two, we are suspicious that they are sensitive to one of the keratins.

CONCLUSION

I desire to stress the fact that in addition to a thorough physical examination, a painstaking history gives us the diagnostic solution of many of our cases of paroxysmal dyspnea. It is a history that requires patience, thoroughness, system and intelligent cooperation on the part of the patient. Such a history, with the information obtained from sensitization tests, and complete physical examination, makes it possible for us to restrict the term bronchial asthma to those conditions the result of allergenic reaction. We should inculcate the fact that bronchial asthma is an allergenic manifestation characterized by recurrent attacks of paroxysmal dyspnea, due to spasm of the bronchioles, developing as the result of exposure to a foreign protein to which the individual is sensitized; and thus eliminate such terms as cardiac, renal, uremic and winter asthma. The application of the term asthma to any other condition is a nosologic error, alike confusing to the medical profession and misleading to the patient.

401 Humboldt Building.

14. Sewall, Henry: Some Relations of the Brain and of the Olfactory Apparatus to the Processes of Immunity, Arch. Int. Med. **13**: 856 (June) 1914.

15. Vander Veer, Albert, Jr. (Footnote 11, second reference).

Factors Affecting Plankton.—Some years ago, it was said the degree of pollution of a stream was indicated by certain species of plankton, a collective name for the minute free-floating organisms which live in practically all natural waters. While this has never been disproved, other factors which require prolonged study must be considered. In a bulletin on the self-purification of the Ohio River, the U. S. Public Health Service points out that among the sanitary problems awaiting solution are: (1) the relations between plankton and the pollution of streams; (2) the correlation of this fact and other known factors, and (3) the mechanism of these and other factors in the self-purification of water. Plankton are subjected to many hazards. As they are carried down stream their number varies with the depth, velocity, and turbidity of the stream, with the temperature and amount of sunlight and organic matter, with the increase and decrease of other plankton that form their chief food. Sluggish water favors multiplication in most plankton; flood waters interfere with their feeding and bury them under sand and mud. Cold weather decreases their number; warm weather increases it. Pollution, in brief, is only one factor that affects the number and kind of plankton in a stream, and before any deduction can be drawn from them concerning pollution, it is necessary to know many other factors—industrial acids entering the stream, weather conditions, floods, etc.—which vary with each stream and at almost every location on a stream.

REFLEX ANURIA

REPORT OF CASE WITH UNIQUE BLOOD CHEMISTRY FINDINGS AND AN UNUSUAL APPLICATION OF THE DUODENAL TUBE *

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If the statement so often repeated is true that medical progress occurs in cycles, with equal verity it may be stated that we are now in the cycle of physiologic chemistry. Fortunately, our own work has been guided by men in the forefront of this movement of whose studies and advice we have freely availed ourselves, being taught thereby, from a surgical standpoint, when to lay hands on and when to keep hands off an operative urologic case. They have, at least in the borderline case, converted a clinical "hunch" into something approximating a reasonable degree of certainty. Notable in the above mentioned efforts has been the striking benefit to the clinician and the surgeon afforded by the relatively simple and accurate methods of blood analysis introduced by Folin, Benedict, Myers and others. Following the introduction of these methods, a considerable amount of valuable clinical data has already been accumulated. In this connection, we desire to record a case, with the idea that it may serve as a stimulus to others to publish findings pertinent to this field of endeavor, so that the knowledge derived therefrom may soon be sufficient to standardize, if possible, our points of view on this subject.

REPORT OF CASE

Mr. L. M., aged 35, a bank clerk, native of Canada, admitted to the hospital, March 7, 1922, complained chiefly of pain on the left side, persisting at irregular intervals for the last five months. The family history was negative, and there was nothing of note in the past illness save a loss of weight of about 10 pounds (4.5 kg.) in the last five years. The present illness began about five months prior to the patient's admission to the hospital, with pain in the upper left quadrant of the abdomen. This pain suddenly appeared after dinner. It was of a sharp, colicky nature, radiating to the left testis, persisting with the same intensity for about a week, and necessitating administration of codein and heat for its alleviation. At this period, urination occurred from eight to ten times a day. Dysuria was absent. Vomiting was recorded three hours after the onset of pain. The patient thought that during the first week blood had been observed in the urine (his wife called the attention of his physician to it). Marked rectal and vesical tenesmus was also noted. The temperature rose as high as 103.8 F. the first night and remained at 102 for about the first week. The second week, the temperature was about 100. No chills or chilly sensations were experienced.

Following the first attack, the patient had about six similar attacks, though not as severe as the first, nor with the temperature excursions then noticeable. At the time of admission, the urine had a specific gravity of 1.025, and was negative for protein and sugar. Three succeeding examinations gave similar reports, except that triple phosphates and oxalates, a few leukocytes and some mucus were found. Later examinations revealed a trace of protein and a few hyaline casts. From the foregoing history, a tentative diagnosis was made of left sided ureteral calculus. The patient was admitted to the medical department for gastro-intestinal roentgen-ray examination, since the patient as well as his family physician, who was a relative, wished to rule out the gastro-intestinal tract as the offending factor.

Aside from the fact that the patient was a poorly developed and indifferently nourished person, the physical examination brought out nothing worthy of note. The roentgen-ray examination, March 10, gave comparatively negative findings. The first roentgenographic examination of the genito-urinary tract showed what appeared to be kidney shadows of comparatively normal contour and illumination, although the left was a shade larger than the right; the latter was lower in its position on the two exposures to such a degree that in one it was above, in the other below, the level of the transverse process of the third lumbar vertebra, whereas the left kidney had retained its position. The upper urinary tract was clear of calculi or calcareous deposits. However, on each side of the pelvis appeared several pea-sized shadows. On the right side, these were fairly low and outside the course of the ureter, and, therefore, probably phleboliths. On the left side, there appeared a single smaller shadow, probably also a phlebolith. On the other hand, it was necessary to consider a calculus.

On the morning of the 15th, another roentgen-ray study of the genito-urinary tract was undertaken. Here, it was noted that a mass appeared overlying the lower pole of the left kidney, and a pyelogram was suggested to confirm this finding. March 15, the patient was turned over to one of us for examination of the genito-urinary tract, with these findings: An exploratory examination with a 16 F. McCarthy cysto-endoscope revealed the bladder, both ureteral orifices and the internal sphincter normal; the bladder was intolerant to inflow of fluid above 8 ounces; the urethra was deep; the verumontanum was somewhat enlarged; there was moderately increased congestion.

On rectal bimanual examination, both lateral lobes of the prostate were similar in outline and size, and not enlarged. Nothing of significant nature was elicited. Abdominal palpation was negative, and no subrenal tumefaction was found, as indicated in the roentgen-ray examination. On advice, further exposure to roentgen rays was deferred for a time, and a differential renal function test was made. The urethra would not admit a cystoscope larger that a 16 F., so we were limited to catheterization of one ureter, the left, which admitted a No. 6 ureteral catheter to the renal pelvis. A specimen collected was sent to the laboratory for microscopic and cultural findings. Aside from a few pus cells, these were negative. A fifteen-minute phenolsulphonephthalein estimation was made, and from the left side but 3 per cent. was obtained, whereas, from the bladder, through the cystoscope that represented the right side, together with possible leakage along the left ureteral catheter, the return amounted to 40 per cent. The patient had a pronounced reaction from this examination. After a day or two, he was permitted to go to his home for a short sojourn until the roentgenologist deemed it advisable to take a pyelogram.

March 22, an 18 F. cysto-endoscope was introduced, and the left ureter was catheterized to the pelvis, a roentgenogram being taken before and after the introduction of 20 c.c. of a 25 per cent. solution of bismuth and ammonium citrate. After the exposure, this solution was drained off, apparently completely. The roentgenogram showed a dilated renal pelvis, the shadows previously noted being extra-urinary. Following this, the patient had a restless night, and vomited a moderate amount of light colored fluid. The next day, he complained of headache, and vomited continuously, but the bowels moved at regular intervals. The usual report on urine voided was noted, but the amount was not stated. Treatment given at this time consisted of applications of a Pressnitz dressing to the abdomen, and the administration of alkalis, cerium oxalate and bismuth subcarbonate. On the 25th, the vomiting continued. A specimen of urine was sent to the laboratory, the amount of which was not stated. The therapy employed consisted of colonic irrigations and a Pressnitz dressing. On the 26th, the patient voided, but the amount was not recorded. Apparently from the 27th (five days after the pyelogram was taken) a condition of comparative anuria supervened and the patient grew increasingly restless, with more or less constant vomiting of light brownish fluid. From 6 a. m. on the 26th to 6 a. m. on the 29th, three days, the patient voided 48 c.c. of urine. The treatment comprised administration of

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infusion of digitalis, and the bromin sodium salicylate, colonic irrigations with sodium bicarbonate, and employment of the rectal drip and of heat. Subsequently, the patient expelled the drip, and he became intolerant to the use of the rectal tube so that this avenue of relief was closed. At 8 a. m. on the 29th, he voided 24 c.c. of urine.

To clear up the possibility of a retention of pyelographic fluid in the renal pelvis, an attempt was made to pass a ureteral catheter up the left side, but an obstruction was encountered from 6 to 8 cm. from the vesical orifice of the ureter. This obstruction was not met in the previous examinations. In the late afternoon of the 30th, the advisability of double renal decapsulation was considered, but the majority opinion opposed this procedure on the ground that it was of dubious value. The usual conservative measures of hot packs, hypodermoclyses of 1,000 c.c. physiologic sodium chlorid solution were employed. Shortly after this, the patient voided 205 c.c. at one time. The urinary output from the 28th was: 28th, 16 c.c.; 29th, 210 c.c.; 30th, 205 c.c.; 31st, 107 c.c.

On the 31st, 500 c.c. of blood was withdrawn, and 500 c.c. of 3 per cent. sodium bicarbonate solution was introduced intravenously. On this day, the feasibility of employing the duodenal tube was discussed. This suggestion appealed to one of us as offering the only possible means of assistance, since the vomiting had almost reached the projectile stage, and the patient was intolerant to anything by rectum. The twenty-four hours of the day the duodenal tube was first employed, beginning in the late afternoon, the urinary output was 170 c.c. Next day, the output was 330 c.c. Medication employed through the duodenal tube was 5 per cent. glucose solution, 2 per cent. sodium bicarbonate, and, for catharsis, sodium sulphate. On the day after, the patient voided 1,055 c.c., and on the next succeeding day 2,250 c.c. For some days prior to this, he had the typical appearance of a nephritic, being more or less edematous, with the face rather puffed, palpebral orifices narrowed, edema of the extremities, and twitching and hiccup of a most persistent nature. The feeding through the duodenal tube consisted of peptonized milk, sodium bicarbonate, cream, water and glucose solution, about 1,000 calories every twenty-four hours.

The patient was now in a semistuporous condition except when aroused or during the feeding. At other times, he would lie with the eyes closed, although his responses were almost always clear. Following this phenomenal improvement in the renal output, April 3 the duodenal tube was discontinued. The patient was put on very small quantities of spinach soup, cauliflower, sweet potato, baked apple and lemonade. The feedings were given in very small amounts. The urinary output during this twenty-four hours was 2,250 c.c. This diet was continued another day, and on the evening of the 5th, after two days without the tube, the patient had a definite convulsion, lasting fifteen minutes. He was placed in hot packs for twenty minutes, but was seized with another convulsion lasting ten minutes. Chloral and bromids were administered; 500 c.c. of blood was withdrawn, and 500 c.c. of 5 per cent. glucose solution was administered intravenously about three hours after the last convulsion. Use of the duodenal tube was resumed the following morning, the 6th, and continued until the 12th. It was introduced at times merely for feeding; at others, it was retained for a period of from four to six hours. At one period, it was left in situ for forty-eight hours without removal. Later, in the employment of the tube, a feeding would be followed by a six hour wait, when a half gallon to a gallon of water would be passed through the tube for the purpose of irrigation. Immediately following the onset of the grand lavage, stools increased from two each day to from ten to fifteen. The stools, which at the outset of this procedure gave every evidence of profound putrefactive changes, promptly lost these qualities.

In the accompanying table are tabulated the chemical changes in the blood of the patient during his stay in the hospital. It will be noted that the chemical analysis of the blood on admission gave normal figures for urea nitrogen, sugar and chlorids. The uric acid (4.6) is slightly but definitely above normal. This increase of blood uric acid, in spite of the restricted hospital diet, coupled with the presence of a trace of protein and blood cells in the urine, would signify a mild impairment of kidney function at this time. It has frequently been pointed out by Myers [1] and his co-workers that the uric acid concentration of normal blood is from 2 to 3 mg. per hundred cubic centimeters, but as the permeability of the kidney is lowered in the initial stages of renal impairment, this is first indicated in the analysis of the blood by an increase in the concentration of uric acid. Later in the progress of the damage to the kidney function, the urea accumulates in the blood; but in general there is no perceptible rise in the creatinin until the urea nitrogen has been doubled or more than doubled.

Kast and Wardell [2] have placed the urea nitrogen content of normal blood between 12 and 15 mg. per hundred cubic centimeters, and Folin has stated that the maximum concentration of this component in normal blood is from 14 to 15 mg. per hundred cubic centimeters. For normal individuals, the creatinin of the blood amounts to from 1 to 2 mg. per hundred cubic centimeters. Myers and Killian [3] have shown that the blood creatinin furnishes a better prognostic insight into the extent of the involvement of kidney function than either a test of the urea of the blood or the phenolsulphonephthalein test. Many cases with a creatinin concentration of 4 mg. or less have shown improvement under treatment; cases with more than 4.5 or 5 mg. almost invariably terminate fatally.

Chemical Changes in the Blood

Date	Uric Acid, Mg. per 100 C.c.	Urea Nitrogen, Mg. per 100 C.c.	Creatinin	Sugar, per Cent.	Chlorids, per Cent.	Carbon Dioxid Combining Power
3/13/22	4.6	12.1	....	0.117	0.487	....
3/27/22	...	62.5	12.5	0.230	0.413	50.4
3/30/22	...	83.3	17.0	0.246	0.400	31.9
3/31/22	...	92.0	23.1	0.290	0.357	21.4
4/ 2/22	...	98.6	20.4	0.226	0.350	55.7
4/ 3/22	...	82.0	20.0	0.270	0.326	81.5
4/ 4/22	...	104.0	21.2	0.332	0.300	63.0
4/10/22	...	56.0	9.2	.....	0.450	56.0
4/15/22	...	48.0	4.4	.....	0.538	62.6
4/22/22	...	12.9	3.2	0.141	0.550	60.7
5/ 4/22	...	9.7	2.7	0.109	0.513	56.8
7/11/22	4.2	16.0	....	0.097	0.550	....

	Comment
3/22/22	Pyelogram
3/25–26/22	Oliguria
3/27/22	Anuria; obstruction noted in left ureter
3/28–31/22	Daily urine excretion varied from 16 to 205 c.c., about one seventh total fluid intake
3/28–31/22	P. M., about 1,000 c.c. of alkaline fluids were given daily in infusions, hypodermoclyses and rectal drips
3/31/22	P. M., duodenal tube introduced; solutions of glucose and sodium bicarbonate and tap water given through duodenal tube
7/1–3/22	Fluid intake, from 780 to 3,840 c.c.; daily urine excretion, from 170 to 1,055 c.c.
4/3/22	Alkali therapy discontinued
4/3–4/22	Administrations of fluids and medications and feedings through duodenal tube discontinued
4/4/22	P. M., convulsions
4/5–12/22	All fluids and feedings through duodenal tube
4/8/22	Calculus passed in urine
5/6/22	Patient left hospital

March 27, after the period of oliguria and anuria, we find the urea nitrogen has risen to 62.5, and the creatinin to 12.5 mg. per hundred cubic centimeters. The concentration of sugar in the blood has been doubled, but the chlorids are diminished. Following the suggestion of Myers and Short,[4] the chlorids of the whole blood rather than the plasma have been determined, and these authors place the normal range at from 0.45 to 0.50 per cent. The carbon dioxid combining power shows a beginning decrease in the alkali reserve of the blood plasma. On this date, an obstruction was encountered during an attempt to catheterize through the left ureter. Three days later, March 30, the urea nitrogen has reached 83.3 mg., and the creatinin, 17.0 mg., and twenty-four hours later, these components have increased to 92.0 and 23.1 mg., respectively.

1. Myers, V. C.: Practical Chemical Analysis of Blood, St. Louis, G. V. Mosby Company, 1921.
2. Kast, Ludwig, and Wardell, E. L.: Urea in Human Blood, Arch. Int. Med. **22**: 581 (Nov.) 1918.
3. Myers, V. C., and Killian, J. A.: Am. J. M. Sc. **157**: 674 (May) 1919.
4. Myers, V. C., and Short, J. J.: J. Biol. Chem. **44**: 47 (Oct.) 1920.

It is evident from a comparison of these figures that the nitrogenous waste products were rapidly accumulating in the blood, but all to an equal degree. This fact, as Foster[5] has demonstrated, indicates an anuria of mechanical origin, either in the kidneys or in the ureters. There is, moreover, a precipitous drop in the carbon dioxid combining power to 31.9, March 30, and to 21.4, March 31. During this four day period, about 1.5 to 2 liters of alkaline fluids had been given in infusion, hypodermoclyses and rectal drips. It is significant that, in spite of this large fluid intake, the retention of the nitrogenous waste products progressed and a severe acidosis developed.

There is a well established clinical doctrine stressed by numerous experimentalists and clinicians that cases of nitrogen retention require a large volume of fluid intake to provoke a diuresis since the damaged kidney can excrete the nitrogen compounds at but a low concentration. This principle finds confirmation in the experiments of Foster, who showed that in such cases the amount of nitrogen excreted in the urine bears a definite relation to the volume of urine. It is evident from the blood finding that the introduction of fluid through these channels had little or no influence on the excretion of urine and, consequently, little or none on the retention of nitrogen. The daily volume of urine ranged from 16 to 205 c.c., only one seventh of the total fluid intake.

On the afternoon of March 31, the duodenal tube was introduced, and through it the administration of fluids, medication and feedings begun. For the subsequent four days, the fluid intake varied from 780 to 3,840 c.c., and the urine excretion rose from 170 to 1,055 c.c. A large quantity of fluid was also lost in the frequent semifluid stools passed during this period. It will be noted that although there was a slight rise in urea nitrogen, April 2, to 98 mg., it dropped the following day to 82 mg., and the creatinin was decreased to 20 mg. The influence of this mode of therapy on the alkali reserve of the blood was more striking. Van Slyke, Stillman and Cullen[6] have shown that the normal blood has an alkali reserve equivalent to from 53 to 70 c.c. of carbon dioxid per hundred cubic centimeters of plasma. A decrease of the carbon dioxid combining power below 50 per cent. by volume indicates an alkali deficit, or acidosis, whereas an increase above 77 per cent. by volume denotes an alkali excess, or alkalosis. The carbon dioxid combining power, April 2, had reached 55.7, and, April 3, 81.5.

The drop in the carbon dioxid combining power of the blood plasma from 50.4 to 21.4 within four days demonstrated an extreme depletion of the blood plasma base despite the administration of large amounts of sodium bicarbonate in colonic irrigations, rectal drips and intravenous infusions. Hence, sodium bicarbonate was added to the duodenal lavage, but the use of this alkali was controlled by changes in the carbon dioxid combining power of the plasma. April 2, the alkali reserve of the plasma had risen to 55.7 and, April 3, to 81.5 per cent. by volume. To avoid the development of an alkalosis, the alkali therapy was discontinued. Since it was thought that the patient had passed the most critical period of his damaged renal function, the duodenal tube was removed, and for the subsequent two days feedings were given by mouth. The night of April 4, the patient had two severe convulsions. A specimen of blood obtained at this time showed that the urea nitrogen had risen to 104 mg. and the creatinin to 21.2 mg., whereas the carbon dioxid combining power had dropped to 63. The duodenal tube was again introduced, April 5, and used until April 12, for feedings and lavage. Since the carbon dioxid combining power remained well within normal limits, the use of alkalis in the fluids was abandoned. Tap water alone served for the lavage. April 8, the urine contained several brick-red fragments of a calculus. These were recovered, dried and weighed. The total weight of the fragments was 0.5 gm. They were composed of urate and ammonium magnesium phosphate crystals embedded in material of a protein nature.

It is of interest to note that the decrease of the urea nitrogen preceded the drop in the creatinin. A comparison of the relative concentration of the chlorids with that of the nitrogenous waste products and sugar reveals an interesting phenomenon. As the nitrogenous compounds accumulated in the blood, and the sugar rose with them, the concentration of the chlorids progressively diminished. April 4, when the urea nitrogen and sugar had reached the highest levels, 104 mg. and 0.332 per cent., respectively, the chlorids had dropped to their lowest figure, 0.300 per cent. But after this time, the retention of the nitrogenous compounds diminished and the chlorids simultaneously rose to an abnormally high concentration. An explanation of the significance of this balance in the crystalloids of the blood cannot now be presented; however, analogous changes have been observed by one of us[7] in cases of mercuric chlorid nephrosis.

5. Foster: Harvey Lectures, 1921.
6. Van Slyke, D. D.: Stillman, E., and Cullen, G. E.: J. Biol. Chem. **30**: 401 (June) 1917.

SUMMARY AND CONCLUSIONS

A patient of low resisting capacity, a bank clerk, who had been indoors for a number of years and who entered the hospital with most of the clinical symptoms of a ureteral calculus, at the time of admission to the hospital gave blood chemistry findings within normal limitations, save for relative high uric acid. This, with the urinalysis, might seem to indicate a mild impairment of kidney function, as there was at times a low specific gravity, with a trace of protein and an occasional hyaline cast. Cystoscopy was performed, with a little more reaction than usual, March 15. On the 19th, cystoscopy was again performed, and the ureters were catheterized. A relatively low function was shown for the left side, 3 per cent. for fifteen minutes, it being presumably the affected side; and roentgenographically a shadow of bean shape was revealed, resembling a tumefaction encroaching on the lower third of the left kidney. This was ruled out on the 22d, with a pyelogram, 20 c.c. of 25 per cent. bismuth and ammonium citrate solution being used. The patient for several days was quite restless, and there was some vomiting. On the fifth day thereafter, he developed anuria of a very pronounced character, which became practically complete, two days later.

Again a cystoscopic examination was made. An attempt to introduce a ureteral catheter in the affected side revealed an obstruction at 6 to 8 cm. The inferential diagnosis at first was toxic nephritis, as the result of pyelography. An alternative diagnosis was: displacement of a ureteral calculus (which failed to throw a shadow, roentgenographically), followed by an obstruction on this side, and a reflex anuria on the other. All the customary remedial measures, such as medication by mouth, rectal drips, colonic irrigations, hypodermoclyses; bloodletting with intravenous infusion of glucose solution and sodium bicarbonate having been exhausted, the patient continued in a condition of uremia, with pronounced muscular twitching; semicomatose, with projectile vomiting, expulsion of the rectal drip, etc. His insusceptibility to these measures led us to the only remaining procedure offering relief: the use of the duodenal tube, which was attended with spectacular results. First, there was cessation of vomiting, reducing it to a negligible factor; second, an immediate and tremendous increase in urine output was secured, with but slight change in the blood chemistry findings. Four or five days later, lavage of the entire intestinal tract with from a half gallon to a gallon (2 to 4 liters) of tap water, three times every twenty-four hours, increased the number of stools by from ten to fifteen a day. There was a pronounced reduction in the blood retention, which dropped in six days from 104 mg. of urea nitrogen and 21.2 mg. of creatinin, to 56.6 mg. of urea nitrogen and 9.2 mg. of

7. Killian, J. A.: J. Lab. & Clin. Med. **7**: 129 (Dec.) 1921.

creatinin. Five days later, there was a reduction to 48 mg. of urea nitrogen and to 4.4 mg. of creatinin, until finally there was 9.7 mg. of urea nitrogen and 2.2 mg. of creatinin.

Another feature of note was the pronounced albuminuria coincident with the culmination of the symptoms following pyelography. The passage of the calculus has cleared up the diagnosis: in all probability, the patient had a ureteral calculus, which was dislodged at the time of the last ureteral catheterization, producing an obstructive anuria on this side, with a reflex anuria of the opposite side.

The interesting questions of the renorenal reflex and the ureterorenal reflex are here involved. By this, of course, is understood the secretion inhibiting influence exerted by a sudden obstruction of one kidney or ureter on the healthy kidney of the opposite side. In this connection, Pflammer [8] states that opinions are still greatly at variance concerning the renorenal reflex. He goes on to say that the existence of this so-called renorenal reflex is by no means generally admitted. He previously investigated the reflex vesicorenal modification of water secretion through the automatically regulated influence of repletion of the bladder, but he was able to elicit a reflex from one ureter to the opposite kidney through irritation of the mucosa. He positively demonstrated a reflex anuria of both kidneys and stimulation of the vasomotor center and a reflex anuria of one kidney derived from the corresponding ureter; but contralateral anuria, namely, anuria derived from the opposite kidney or its ureters, is, so he states, hypothetic. Only case reports can be accepted as proof of a reflexly inhibited secretion in which the apparently reflexly inhibited kidney was shown to be healthy. It has been established that the urinary secretion not only is dependent on the blood supply of the kidney, but also is perhaps even more delicately governed by the venous drainage. In view of the fact that the vena cava is situated to the right of the vertebral column, it is entirely possible that, in operative manipulations of the right kidney, the left renal vein becomes completely or partly obstructed, owing to the shortness of its veins or other factors, thereby interfering with the urinary secretion.

This author adds that numerous experiments with all sorts of stimuli, with experimentally displaced kidneys under the skin, have invariably left the secretion of the other kidney entirely unmodified. The experiments showed that neither an increased intrarenal pressure nor renal ischemia of one kidney will induce a reflex intermission of the secretion of the other kidney. According to Haines and Taylor,[9] apparently about ten cases of renorenal reflex pain or anuria, or both, have been reported, with complete studies by roentgen ray and catheterization. To this number, we add a personal observation of a man about 38 years old, who had repeatedly suffered from severe right sided renal colic. Examination showed nephrolithiasis of the left kidney with obstruction of the renal pelvis and subsequent hydronephrosis. Nephrectomy was performed, followed by recovery. No phenomena on the part of the right kidney were noted later on. The clinical diagnosis must be centered on the demonstration of the seat of the disease, and a renorenal reflex enters into consideration only provided the kidney is absolutely healthy and functionally efficient. The causes of the recurrence of this reflex anuria apparently are not demonstrable, although the reflex is easily explainable on anatomic grounds. Bartrina [10] states that the renorenal reflex apparently played a part in a case of right sided calculus of the renal pelvis, in which there were severe attacks of renal colic, gradual increase of the urea contents of the urine (sufficient amount of urine), and increase of Ambard's constant.

After the extirpation of the right kidney, the urea contents of the urine rapidly increased to above the normal standard. Finally, Mingazzini [11] states that by means of seventy-five experiments on thirty-three dogs, he endeavored to ascertain how reflex anuria takes place in renal colic during the passage of small calculi through the ureter. At the same time, the functional activity of one kidney was tested during temporary occlusion of the other kidney. In these experiments, he states that the ureter was closed for half an hour by means of elastic clamps. It was found that irritation of the ureter in its upper half did not produce anuria, whereas irritation of the ureter in the upper half of the lower third induced anuria in a series of cases. Compression of the ureter in its upper half induced no change of the entire urinary secretion, although the other kidney was stimulated to do a temporarily increased amount of work. Occlusion of the ureter in its lower half was followed by a modified function of the kidney of the opposite side, sometimes also by anuria. In these cases, the total secretion of the kidney was considerably diminished even before intervention. The operative traumatism of such procedures, as well as the evisceration of the kidney; insufficient general anesthesia, and other similar factors do not by themselves induce anuria. The author emphasizes that the method of temporary compression of the closed ureter may be utilized also, being practiced for the functional testing of the kidneys when the other functional tests, such as ureteral catheterization, are not applicable.

The courage and fortitude of the patient in the case presented were admirable. Though at times in a semicomatose condition, he assisted in the passage of the duodenal tube, often insisting on passing it himself. The results obtained through the use of the duodenal tube in this case were so striking and impressive, we are convinced that this procedure opens a wide field of possibilities: (1) through the enormously increased absorption capacity of the upper intestinal tract as opposed to the lower, as proved by experiments by Killian and Cherry, with phenolsulphonephthalein and other agents, and in this particular case, in the fact that there was little or no absorption of the sodium bicarbonate when introduced in the colonic irrigations and rectal drips, whereas in the bicarbonate administrations through the tube there was rise in the carbon dioxid combining power of the blood so rapid that it became necessary to discontinue it; (2) through the absorption capacity of nitrogenous end-products in the intestinal tract.

It will therefore readily be seen how advantageous is a complete flushing, such as is possible only by means of this tube, especially when urea nitrogen and creatinin retention is of the rapidly cumulative type, as in toxic drugs taken accidentally or with suicidal intent; in postoperative cases, especially following prostatectomy,

8. Pflammer, E.: Ueber Reflectorische Anurie: Giebt es einen Reno Renalen Reflex? Beitr. z. klin. Chir. **122**: 326, 1921; Zur Frage der Reflex Anurie, Ztschr. f. Urol. **14**: 450, 1920.

9. Haines, W. H., and Taylor, K. P. A.: The Reno Renal Reflex, New York M. J. **113**: 197 (Jan. 29) 1921.

10. Bartrina, T. M.: Les réflexes de l'appareil génito-urinaire, Presse méd. **29**: 293 (April 13) 1921.

11. Mingazzini, E.: Contributo sperimentale all esclusions temporenea chiusa di un rene, Clin. chir. **27**: 577, 1920.

nephrectomy, etc., or in any case in which the retention of these products in the blood stream is relatively acute, and the basic kidney substance has not been destroyed by organic change.

We hope that from being regarded as essentially an appliance for internists, the duodenal tube in the immediate future will earn the esteem it merits on the part of the surgical side of the profession.

40 East Forty-First Street.

THE OLD HEAD INJURY CASE

A CLINICAL STUDY OF ONE HUNDRED CASES *

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MINNEAPOLIS

The literature on head injuries has been greatly augmented as a result of the many observations made during the World War. The treatises, however, deal in the majority of instances with the acute cases and early complications.

For several years the opportunity for observing old head injury cases, incurred chiefly during the year 1918, has presented itself. The questions What becomes of the man who has suffered a head wound? How is he able to carry on? What measures does he require as time goes on? are rather vital. The clinical pictures show many and varied symptoms. One is early impressed by the degree of associated disability. The latter phase particularly seemed worthy of special study and prompted a grouping of these cases, aiming at setting down, as far as possible, a fair longitudinal section of the chronic case.

This study deals with 100 patients, all of whom, except two, are now living. It concerns men between

TABLE 1.—*Etiologic Features*

	No. and Per Cent. of Cases
1. Patients unconscious at time of injury	70
2. Operated on at time of injury or later	57
3. Patients actually wounded externally	97
4. Patients not visibly wounded externally (concussion)	3
5. Scalp wound only	7
6. Scalp and bone wounds:	
(a) Cranial fracture (not gunshot wounds)	31
(b) Gunshot wounds	40
7. Scalp, bone and actual brain destruction:	
(a) Penetrating gunshot wounds	17
(b) Penetrating brain wounds (not gunshot wounds)	2
8. Cysts (all removed)	3
9. Date of injury incurred in years closely averaging 1918	91
Date of injury, 1903 to 1916	9
10. Site of region chiefly involved:	
(a) Frontal	22
(b) Parietal	38
(c) Temporal	13
(d) Occipital	21
(e) Base	3
11. Cerebral abscess (complicating)	3

17 and 35 years of age. Data were obtained from records made during the acute phases as well as at subsequent intervals, either in the hospital or in the outpatient clinic, chiefly during the last four years. Not infrequently, the notations on the earliest clinical phases, when the injuries were incurred, were rather meager; nevertheless, many times the history made amends for that deficiency. Essentially complicating diseases were ruled out in the cases of this series.

* Read before the Southern Minnesota Medical Association, Mankato, Dec. 5, 1922.

ETIOLOGIC FEATURES

Table 1 shows that 70 per cent. of the patients had immediate loss of consciousness as a direct effect of concussion. The traumatic deliria come in this group. Fourteen patients gave histories of a period of primary unconsciousness continuing over twenty-four hours. Table 5 is presented to show the relation of these traumatic deliria to permanent complications, including vocational capacity.

More than half, or 57 per cent., of the patients had surgical intervention. The three patients not visibly

TABLE 2.—*Symptom Groups*

	No. of Cases
1. Subjective complaints of so-called "head injury syndrome type" (not including psychotic)	80
2. No subjective complaints at all	8
3. Psychosis, persisting	12
4. Having organic neurologic symptoms early	39
5. Permanent organic neurologic symptoms: (Compare Table 4)	44
6. Epilepsy (compare Table 3)	36
7. Vocational ability:	
(a) Totally handicapped	18
(b) Having major handicap with but little occupational ability	35
(c) Minor handicap with fair success	37
(d) Having no trouble at all	10

wounded made uneventful recoveries. Nearly one fifth of the patients suffered penetrating brain wounds. Of these, all excepting one are living. The parietal area was most frequently the site of trauma, the base being affected in only a small proportion.

SYMPTOM GROUPS

Table 2 presents the high incidence of the so-called functional complaints. Of these, headache and dizziness and general irritability are most frequent. Others are insomnia, restlessness, shakiness, black spots before the eyes, a feeling of generalized weakness, loss of appetite, nausea, palpitation, periods of difficult breathing, vasomotor irritability, inability to stand the warmer or colder extremes in climate, varied paresthesias, fainting episodes (not necessarily epileptiform), a feeling of inadequate memory or thinking capacity, the inability to withstand, in short, the usual excesses, strains and exertions. Case 1 illustrates this type:

CASE 1.—S., in November, 1917, was struck in the occipital region by an unloaded hand grenade. He was unconscious two hours, and dizzy and confused for the subsequent three days. After ten days he returned to duty. He remained in the army until April, 1919. He said that during this time he was easily exhausted by the hikes and drills, and for that reason was given the lighter company duties. He felt quite well until the summer of 1920, when headache became more frequent and severe. Sharp pains would come on, affecting his forehead chiefly. In winter the pains were less troublesome. Fatigue would cause the pains to become severer. He also suffered from a dizzy feeling in the head and a general tremulousness. Though sleep was said to be fairly good, he was very easily awakened. He dreamed a good deal. He suffered from dull headache for an hour after rising. He was easily irritated and frightened. He was also very restless. The previous personal history and family history were unimportant. Examination presented a depression in the occipital area the size of a nickel. Roentgen-ray and other findings were negative. The patient is reported as now doing fairly well in his vocation.

The number of persons suffering from definite psychosis is not large. The proportion of permanent invalidity in the nervous system from the objective point of view is a seemingly large one; the same is to be said for the number of true epilepsies. Reactions

to alcohol were not observed. More than half of our patients may be considered unable to sustain themselves by earning their own livelihood. These factors become important in the field of industry.

EPILEPSY

When looking at the list of epilepsies in more detail in Table 3 we note that 36 per cent. of all our patients have this complication; 75 per cent. of the patients with psychosis come under this grouping. The preponderance of epilepsy in cases in which there are injuries

TABLE 3.—*Epilepsy—Thirty-Six Cases*

	No. of Cases
1. Types:	
(a) Jacksonian	6
(b) Sensory	3
(c) Grand and petit mal	21
(d) With psychosis	9
2. Area of head injured:	
(a) Frontal	11
(b) Parietal	21
(c) Temporal	1
(d) Occipital	3
3. Not operated on immediately after trauma	8
4. Cases appearing during first nine months	21
5. Vocational handicap:	
(a) Unable to do anything	12
(b) Seriously handicapped and showing very little occupational ability	10
(c) Carrying on in some selected vocation with some success	14
(d) Having no handicap whatever	0
6. Late operation (a year or more)	13
(a) Cessation of seizures (3 years following operation)	1

to the frontal and parietal areas of the cranium is striking. Only five patients of this series with epilepsy had sustained the brunt of head trauma in areas other than the frontal or parietal. Seizures developed within nine months after injury in a little less than two thirds of the cases in which there was this type of complication. The vocational handicap is pronounced. Worthy of emphasis is the obviously intractable course in spite of late surgical intervention. Of the thirteen patients operated on during a period when the acute symptoms had subsided, only one failed to have recurrence of seizures. This patient was operated on three years ago. Cases 2, 3 and 4 are illustrative:

CASE 2.—G. had been well until March, 1919, when he sustained a skull fracture in an automobile accident. The left parietal region chiefly was involved. He was unconscious four hours. He developed epileptiform seizures six weeks later, which recurred at the rate of one each month until February, 1921, when a surgeon performed a decompression at the site of injury, removing a cyst. Seizures ceased for one year, after which time they recurred. Immediately following the operation in 1921, he developed right sided hemiplegia, residuals of which were present during examination six months later and also one year later. Short intervals of severely painful paroxysms in the paralyzed side were complained of. Some dysphasia was present. No signs of increased intracranial pressure were found. Until May, 1922, he made fair progress in his work as a student in radio engineering, but has been having increasing difficulties since then. Epileptiform attacks with increasing general instability persist.

CASE 3.—L., aged 35, sustained a fracture of the right temporal area of the skull in 1910. No complications were noted. He had his first epileptiform seizure during army service in 1918. He worked as a railroad conductor five months, when his employers learned of his seizures and discharged him. When examined in April, 1920, roentgenograms were negative and the optic fundi were normal. A typical grand mal attack was observed in the hospital. He underwent a decompression operation three months later at the site of the old fracture. He was placed on phenobarbital (luminal). Two years later he reported that he had no fainting spells and that he was getting along well in his work as a freight train conductor. He was given his old job back a year after the operation.

CASE 4.—A., aged 27, was struck by a steel pipe in the right frontal region, eight years before, and was unconscious twelve hours. A decompression operation over the site of the injury was performed. He suffered from stiffness and weakness in his left hand until a year later, when another surgical operation was performed, at which a piece of loose bone was removed and a bone graft was introduced. In 1918 he was kicked accidentally by another sailor at the site of the old wound, and was again unconscious. He could not work because of weakness and twitching in the left side of his body. This increased, and considerable mental depression developed. Another operation was performed in Cincinnati in 1921, but in three months the former complaints of dull pain in the head, irritability, restlessness, sleeplessness, depression, difficulty in mental concentration, and weakness all returned.

PERMANENT ORGANIC NEUROLOGIC FINDINGS

A very detailed and elaborate analysis of the permanent organic neurologic findings was not always feasible, but a rather rough classification is attempted. Motor phenomena are most frequent. The incidence of irregularity in pupillary reactions and speech disorder deserves particular note. Of the nine patients giving abnormal pupillary reaction to light or presenting irregular outlines, five sustained determinable penetrating brain tissue injury, whereas in four cases fracture of the cranial bone only could be satisfactorily demonstrated to have occurred at the time of injury.

PSYCHOSIS

Of our twelve chronic mental cases, there was epilepsy in nine. We have looked on the mental symptoms in these nine cases of dementia as being directly associated with the epileptic constitution. They invariably followed the onset of the seizures.

CASE 5.—R. sustained a gunshot wound of the parietal area of the brain in 1918. The bullet was removed at a field hospital. Right sided motor palsy has persisted since the period of injury. He developed epileptiform seizures within several weeks after trauma, and had been entirely unable to do any work. When interviewed two years after the injury, he limped in the right foot; contractures were present in the right arm. The left pupil presented only a very little reaction to light and accommodation. Vision, including the fields, was normal. The speech was slow and hesitating. The psychomotor activity was markedly reduced. The memory was faulty, and a tendency to confabulate was noted. Serologic findings were negative throughout. He fell into the hands of a surgeon six months later, and was operated on to "relieve pressure on the brain." Two months after this operation he was reported to be in the same condition as he had been prior to operation. More recent reports show more deterioration.

The three cases in which there was no epilepsy had unmistakable histories of psychosis prior to the trauma. Thus, there is now not one case which could be labeled unqualifiedly as "traumatic psychosis."

CASE 6.—P., aged 30, in 1919 fell 50 feet in the coal bunker of a transport, and fractured the bones in the left frontal region. He was unconscious four hours. He remained in the hospital four months, after which he was discharged from the naval service. He had headaches and dizziness after the time of the injury. When seen in the summer of 1921, he complained of headache, dizziness, irritability and soreness in the body "all over." His voice seemed low and lacking in vigor, and he was noted "not to be himself mentally." The bodily systems presented no important findings. He was committed to the state hospital a half year later where a diagnosis of dementia praecox was made, and has remained there since. In 1919 he was discharged from the navy with the same diagnosis. The examining board had convinced

itself that similar mental symptoms were present prior to his period of naval service. It was observed that this man had definitely paranoid ideas during his period of service prior to the injury.

Köppen [1] has described the after-effects of head injury. Bullard [2] reviewed seventy old cranial fracture cases, and found that thirty-seven of the patients did not complain of any symptoms. Eight patients presented only "slight" symptoms; eighteen had troublesome symptoms, but they were able to earn a livelihood; seven presented serious symptoms. Of fifteen patients operated on, twelve had no symptoms. Bailey [3] has written a treatise on nervous diseases following head trauma. Cannon [4] points out that the increase of intracranial pressure is due to edema of the injured tissues. Meyer [5] indicates the salient types of posttraumatic conditions; he reviews their pathogenesis and reports illustrative case histories. English [6] emphasizes the prevention of sequelae, and discusses prognosis. According to him, about 10 per cent. of the patients will show mental impairment, but rarely does definite insanity develop.

Cushing [7] has reported his physiologic investigations and also outlined the surgical technic to be followed. Demmer [8] emphasizes that the total impacting influences on the entire brain, rather than local edema, is the essential pathologic process. LeCount and Apfelbach [9] review postmortem observations in 504 cases, and note that cerebral edema was the commonest observation. Apfelbach [10] states that edema is most frequently noted postmortem in periods of from two hours to two or three days after the injury, and that the part played by edema in the production of symptoms is not exactly known. Wilensky [11] emphasizes that advancing intracranial pressure is the most important operative indication, and that the irritative or paralytic focal symptoms are second in importance. Lumbar puncture has given little more than temporary relief in most cases. Munro [12] refers to the indications for surgery in head trauma as the presence of a compound or comminuted fracture or increasing intracranial pressure. Blood in the spinal fluid has no bearing on operability. Murard [13] reports on forty cases observed for a year. Nineteen patients died; ten still complained of headaches and other symptoms. He notes that the motor symptoms are the slowest to disappear; also that the French government decided not to offer further military service to a person who had suffered head trauma.

Frazier and Ingham [14] describe a series of 200 cases observed during the first year following the trauma. They state that the functional symptoms, almost without exception, diminished gradually, and ultimate recovery, apparently complete, occurred in from three to nine months after the injury when gross damage to the brain was absent.

The large percentage of our patients giving these complaints would seem to indicate that the apparently complete recoveries emphasized by Frazier and Ingham did not persist in the majority of cases. In our group of this type, fifteen patients had actual brain tissue destruction, and of the seven patients from whom practically no functional complaints were elicited, four suffered brain injury.

Dana [15] thus refers to the startling similarity of these functional complaints: "It seemed to me, finally, that there must be an underground school for the education of those who have been hit on the head and desire permanent total disability compensation."

Chatelin and DeMartel,[16] who have observed a very large number of head injury cases at the Salpêtrière in Paris, report the same uniformity in functional complaints in cases with and without signs of objective trouble. These complaints, according to Dana, follow, in civil life, with litigation and compensation, and without either. He gives it as his opinion that, if the state refused all compensation after an injury, there probably would be 50 per cent. less who would continue to complain of this frequent head wound syndrome.

What percentage of head injuries was fatal during the war is, of course, not possible to state. However, the report of Hanson [17] is here in point. Out of a total of 449 classified cases of head injuries observed in a field hospital in 1918, 136 patients sustained scalp wounds only, and of these none died; 103 had skull fracture with intact dura, and seventeen patients had other wounds. In all of these there was a mortality of only 3.9 per cent., whereas eighty-nine cases of penetrating brain injuries, in all except three of which operation was performed, gave a mortality rate of 44.2 per cent. Of these deaths all were classified as operative excepting three. The total deaths were about 10 per cent up to Jan. 1, 1920, when his review was made.

TABLE 4.—*Permanent Organic Neurologic Findings*

	No. of Cases
1. Olfactory disturbance	1
2. Visual disturbances	4
3. Auditory disturbances	8
4. Pupillary abnormalities	9
5. Somatic motor phenomena	32
6. Somatic sensory phenomena	18
7. Aphasic disturbances	10

TABLE 5.—*Cases in Which there Was Primary Delirium Continuing Over Twenty-Four Hours and Permanent Invalidity*

Case	Days Unconscious	Type of Injury	Organic Neurologic Findings	Psychosis	Estimated Present Vocational Ability	Epilepsy
5	60	Brain	Present	Present	None	Yes
7	5	Brain	Present	Present	None	No
8	14	Skull fracture	Absent	Absent	33⅓% normal	No
9	12	Skull fracture	Absent	Absent	60% normal	Yes
10	14	Concussion	Present	Present	33⅓% normal	Yes
11	5	Skull fracture	Absent	Absent	None	No
12	24	Skull fracture	Present	Present	None	Yes
13	8	Brain	Absent	Absent	50% normal	No
14	12	Brain	Present	Present	(?)	Yes
15	10	Brain	Present	Absent	50% normal	Yes
16	4	Brain	Absent	Absent	75% normal	No
17	3	Skull fracture	Absent	Absent	50% normal	No
18	10	Brain	Present	Absent	None	No
19	8	Brain	Absent	Absent	75% normal	No

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Sharpe [18] reports from 46 to 64 per cent. mortality based on the New York hospital records filed between 1900 and 1910. He attributes this high mortality to too frequent surgical intervention without due regard to shock, or to medullary or terminal edema. Of the patients who recovered, he could locate only 34 per cent., and, of these, 67 per cent. were still suffering from the usual head syndrome. He states that wet, swollen brain, thickening, and gradual induration about the supracortical veins in the cerebral sulci, resulting no doubt from organized blood, were the usual observations.

PATHOLOGY

The seemingly well defined functional syndrome, so called, suggests a fairly uniform causative mechanism. Meningeal adhesions, obstruction of the sinuses, particularly the longitudinal, and actual concussion of the brain and of the labyrinth are believed by various authors to figure in the pathogenesis of the chronic head syndrome. Chronic irritation of nerve cells can explain persistent symptoms of functional complaints.

Assuming the correctness of the assertion that 80 per cent. of the excretion of the spinal fluid is through the supracortical veins in the cerebral sulci, it is logical to deduce that there is local impairment of the cerebral circulation.

We should not lose sight of the fact that the 100 men are compensation cases. No doubt the desire for reimbursement and the difficult situations of the postbellum period have contributed to the degree of invalidity incurred. The psychopathologic elements frequently indicate a defense or escape reaction in these individuals. The uniformity in the group of functional complaints and the large percentages of objective permanent complications will lead us to look on the pathologic factors from a broad point of view. Vocational ability has been judged largely from the standpoint of the prewar occupation.

SUMMARY

1. One hundred old head injury cases were studied with special reference to the neurologic complications and the probable factors in their production, as well as to the degree of the vocational handicap.

2. The prognosis for life of the patients overcoming the immediate complications is very favorable, excepting those who incurred penetrating brain injury.

3. Freedom from invalidity is uncommon. Of the total group, 53 per cent. are unable to sustain themselves.

4. Careful, early treatment will do much to prevent chronic invalidity.

5. Increased intracranial pressure and signs of local irritation are the only indications for surgery on the head in the acute as well as in the chronic case.

6. Handling of the patients with intractable head injury syndrome constitutes a problem of great magnitude.

18. Sharpe, William: Diagnosis and Treatment of Brain Injuries With and Without a Fracture of the Skull, Philadelphia, J. B. Lippincott Company, 1920.

Public Health Directors at Large.—Each year, as more persons become interested in the work of the county public health association, they should be honored by election to membership as "directors at large." Their advice and aid would be at all times of great value to the officers. Success is entirely dependent on the active cooperation of the citizens of a county.—*Minn. Pub. Health A. J.* **4**:409 (March 11) 1920.

SUDDEN ACUTE PAIN IN THE SHOULDERS ASSOCIATED WITH ACUTE PELVIC PAIN IN WOMEN

A SYMPTOM OF RUPTURED ECTOPIC PREGNANCY, INDICATING SUBPHRENIC BLOOD EXTRAVASATION (SUBPHRENIC HEMOPERITONEUM) *

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Pain in the shoulders is associated, as a rule, with disorders of the shoulder joint and in the proximity; and with various intrathoracic and subdiaphragmatic lesions, such as angina pectoris, pleurisy, pneumonia, new growths and lesions of the gallbladder, liver, stomach and intestine.

While I was engaged in studying the significance of shoulder pains in uterine insufflation, my attention was called to the occurrence of shoulder pains in patients with ruptured ectopic pregnancy.

The first observation was made on a ward patient in October, 1921. The patient presented the history characteristic of tubal pregnancy. There was a fulness in the pouch of Douglas, tenderness, moderate abdominal distention, and shifting dulness in the flanks. The patient stated that she had severe darting pains in the shoulders, which had begun two days before her admission to the hospital. On further questioning, this pain was said to follow an attack of fainting. She had not suffered from "rheumatic" pains before, and was at a loss to account for these pains.

At the laparotomy there was a large amount of free blood in the general peritoneal cavity, and clotted blood in the pelvis. The tubal rupture was found on the left side. From both lateral abdominal regions there poured down a large amount of fluid blood so that it was impossible to wipe the abdominal cavity dry. While the pelvis was successfully wiped clean, suction being used, the blood continued to gravitate down from above. The following morning the patient was completely relieved of her shoulder pains.

This symptom was so marked before the operation that it gave rise to some discussion as to its mechanism. Some ventured the explanation that it was due to reflex radiation from the seat of the tubal rupture. But as the spinal nerve trunks by which the sensation of pain in the shoulders is conveyed are far removed from the sacral autonomic fibers, it would be essential to trace the pain stimuli produced in the pelvis through intermediary nerve paths which should connect the cervical with the lumbosacral cord. Such associating fibers, however, so far as I have been able to ascertain, have never been identified. A more direct explanation is to be found in the observation, repeatedly made, of instances of subphrenic pneumoperitoneum when artificially induced, by way of the uterus and tubes, for the purpose of determining tubal patency. Shoulder pains have been found uniformly with artificial subphrenic pneumoperitoneum, so that they have come to be regarded as pathognomonic of that condition.

The mechanism by which these shoulder pains in subphrenic pneumoperitoneum are produced depends on the relations between the diaphragm and the suspensory ligament of the liver. When gas displaces the diaphragm upward, the liver is simultaneously displaced downward. The falciform hepatic ligament is

* From the gynecologic service of Mount Sinai Hospital, Dr. Joseph Brettauer, chief of service.

consequently stretched, and thus the phrenic nerve is stimulated. As the phrenic nerve has its origin in the third, fourth and fifth cervical cord segments, and as it actually connects with cervical peripheral nerves supplying the shoulder girdle, pain produced in the diaphragmatic area is referred to the shoulders by sensitized cutaneous nerves of the cervical segments.

Capps and Coleman have recently demonstrated [1] that localization of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself: "It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion produces pain over a sharply limited point somewhere along the trapezius ridge." It may be added that in patients with an artificial subphrenic pneumoperitoneum the same phenomena have been observed. The extent, distribution and intensity of the shoulder, interscapular and subcostal pain depend on the quantity of gas that reaches the subphrenic space and on its diffusion over the liver.

If gas under the diaphragm can cause shoulder pains by distention and stretching, it may also be assumed that fluid suddenly accumulated in the subphrenic space may also produce these referred pains. It should therefore not be surprising to encounter shoulder pains in cases of ruptured ectopic pregnancy, when large quantities of fluid blood are extravasated in the peritoneal cavity, extending upward along the lumbar gutters as high as the subphrenic spaces. Just as with gas in subphrenic pneumoperitoneum, the fluid also may be confined to one side or the other; it may be unevenly distributed, giving rise to unilateral or bilateral shoulder pains, their intensity varying with the amount of distention. The one point of difference in the behavior between gas and fluid within the free peritoneal cavity is that gas expands in all directions, and may travel upward to either side, regardless of its source. Thus, for example, if the gas passes into the abdominal cavity through a patent right tube, it does not necessarily follow that a right sided subphrenic pneumoperitoneum will result. Fluid blood, on the other hand, tends to course along the lumbar gutter on the side of the tube from which it issues, so that unless the hemorrhage is very large, the shoulder pain will correspond to the side of the tubal rupture. When the hemoperitoneum is extensive, bilateral shoulder pains are present, but affect more intensely the shoulder corresponding to the side of the tubal rupture. When the hemorrhage is not extensive and is confined to one side, the shoulder pain will indicate the side of the rupture.

ILLUSTRATIVE CASES

CASE 1.—*Bilateral shoulder pains, more intense in the left shoulder. Findings: Ruptured left sided tubal pregnancy, with large amount of extravasated blood.*

H. G., aged 35, single, was admitted to the gynecologic service of Mount Sinai Hospital, Dec. 7, 1921, as an emergency case. Menstruation began at 15 years, was always regular, and was of four days' duration. The flow was usually scanty, and was accompanied by severe cramps on the first day. The last menstrual period was a normal one, and had occurred three weeks before admission to the hospital. The patient was well for a week and then began to bleed moderately without pain until two days before examination, when the flow became scanty.

On the morning of the day of her admission, the patient fainted on walking to the bathroom, got up unaided, and went to her room. Bleeding was still scanty, although a definite decidual cast was discharged. After that she complained of severe pains in both sides of the abdomen, "radiating" to the shoulder, and worse on the left side. These pains had continued in spasmodic attacks. A decidual polyp extruded from the cervix, which was otherwise of normal appearance. The uterus was soft and appreciably enlarged. There was a very tender elastic mass in the left fornix, and bogginess in the culdesac as well as in the right fornix. The diagnosis of ruptured ectopic gestation of the left tube was made. The hemoglobin was 55 per cent.

At the laporotomy, which was done the same day, I found a left tubal gestation of the dissecting type, which had ruptured. The peritoneal cavity was filled with free and clotted blood, which came down from both lumbar gutters, more abundantly from the left side. The right tube was infantile, and the ovary was normal.

CASE 2.—*Severe pain in the right shoulder. Findings: Right sided tubal abortion and moderate blood extravasation.*

P. M., aged 28, married, the mother of three children, the youngest being 8 months old, had always had regular menstrual periods of six days' duration and painless. The last regular period began, Jan. 25, 1923. January 26, the patient was seized with violent pain in the right lower abdominal quadrant. Shortly afterward she was seized with severe pains in the right shoulder, requiring counterirritants. Faintness preceded the spasmodic pain attack, which lasted about two days. The period changed in character from the normal moderate flow to staining, which had continued until February 14, when she was taken with severe pains in the right side, which were very severe in the right shoulder. Syncope preceded this attack. Bleeding had slightly increased during the last two days, the pains persisting both in the right shoulder and in the abdomen. The uterus was in the anterior position, slightly enlarged, and there was slight bleeding from the external os. A smooth, elastic, tender mass was present to the right of the uterus, and there was bogginess in the pouch of Douglas. The left adnexa were not palpable. At the laparotomy, February 16, a tubal abortion involving the right tube was found. The omentum and intestine were covered with small blood clots. A moderate amount of free blood was in the pelvis, larger blood clots being adherent to the right tubal fimbria. Blood and fibrin covered the right tube and ovary.

Of all the cases of ectopic pregnancy observed since October, 1921, shoulder pains have been encountered in four; these were complicated by large extravasation of free blood. In one, most of the blood accumulated in the lumbar gutters and in the subphrenic spaces. This was in all probability due to the fact that the bleeding was brisk and followed the initial syncope, rendering the patient prostrate until she was relieved by the operation. When bleeding is gradual and not associated with collapse, the patient may walk about for a while, thus allowing the blood to gravitate down in the deep pelvis. It is possible also that the common practice of elevating the lower extremities as a first aid measure to relieve syncope may cause the first gush of blood to reach the subphrenic spaces, where it remains more or less confined, until liberated by laparotomy.

In the unruptured cases and in those complicated only by pelvic hematocele with or without syncope, shoulder pains were absent. While pelvic pain is perhaps one of the most constant symptoms of ruptured ectopic pregnancy, the presence of shoulder pains and, to a less degree, subcostal pains makes the differential diagnosis from other pelvic lesions more complete. Together with other signs and symptoms of ectopic pregnancy, the sign of referred pains in the shoulders may help in the differentiation from rupture of other hollow abdominal viscera, such as perforated gastric or duodenal ulcer, appendix or intestine (typhoid).

1. Pleural and Peritoneal Pains, editorial, J. A. M. A. **80**: 403 (Feb. 10) 1923.

From twisted ovarian cysts or torsion of tubes, from acute inflammatory pelvic lesions, the differential diagnosis should, in the presence of shoulder pains, render the diagnosis practically certain in favor of ruptured ectopic pregnancy.

261 Central Park West.

GONOCOCCAL INFECTION OF KIDNEY WITH SPONTANEOUS RECOVERY

REPORT OF CASE

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While mixed renal infection in the course of gonorrhea is not infrequent, a pure gonococcal invasion of the kidneys may be considered a rare complication. The leading textbooks on urology devote only a few lines to this condition, and some textbooks fail to mention it at all. Exhaustive search of the literature reveals but twenty cases in which the gonococcus was the sole cause of the trouble. Hagner, in 1910, compiled ten cases that were purely gonococcal in origin, and ten others attributed to mixed infections. Since then, various authors have reported seventeen cases, ten of which represented a pure gonococcal infection.

Of the twenty cases of pure gonococcal infection, sixteen occurred in men, and four in women. The right kidney was involved in nine cases, the left in five, and both kidneys in four. In two cases, we could not ascertain which kidney was involved. Cultures were made in eleven cases, the nine other cases being proved by stained smears. Three cases were discovered at necropsy, and one at operation (nephrotomy). In four cases, surgical interference was indicated (two nephrectomies and two nephrotomies); eight cases were cured by pelvic lavages. Two cases were treated with serum and vaccines; there was spontaneous recovery in one case. The outcome in one case could not be determined.

Few writers were able to find any characteristic vesical lesions, absence of any marked changes in the bladder mucosa being the rule. In the majority of the cases, there was a distinct history of chronicity. This was absent in our case.

REPORT OF CASE

Gonorrheal infection of the left kidney, hydronephrosis and gonorrheal ureteritis with a stricture. History.—J. M., a man, aged 28, single, in February, 1922, contracted a gonorrheal urethritis, which subsided under routine local treatment in the course of two or three weeks. One month following the onset of the urethral discharge, he began to complain of weakness, general malaise, loss of appetite, fever and rapid loss of flesh. He had no pain or frequency on urination at any time, but what brought him under our observation was an acute, agonizing, colicky pain in the left hypochondrium, radiating backward and lasting a few hours, and hematuria.

Examination (April 2).—The patient was emaciated, and apparently acutely ill, with the tongue heavily coated; the temperature was 102.2 F.; the pulse, 110. The chest was normal. Examination of the abdomen revealed an enlarged left kidney, the lower pole of which was distinctly palpable in the left lower region at the level of the umbilicus. The prostate gland was not enlarged, and the expressed secretion contained no pus and no gonococci. There was no evidence of urethral discharge at the meatus. The catheterized bladder urine was very turbid, and contained a heavy trace of albumin and pus. Smears showed innumerable intracellular gram-negative diplococci, having all the morphologic characteristics of gonococci. No tubercle bacilli were found after an exhaustive search. The roentgenologic examination of the urogenital tract revealed no shadows suggestive of urinary calculi. Blood count revealed: 9,400 white cells, with 71 per cent. polymorphonuclear leukocytes, and 3,400,000 red cells. The hemoglobin was 60 per cent.

Cystoscopy.—This was performed, April 7. The bladder mucosa was moderately injected, but presented no other unusual characteristics. The right ureteral orifice was normal in appearance. The left ureteral orifice was inflamed and somewhat edematous. A No. 6 F. catheter of the whistle tip variety entered the right renal pelvis with great ease. The urine obtained from the right kidney was clear, and on microscopic examination showed no pus and no organisms. Numerous attempts to pass olive tip catheters of various sizes into the left ureter failed, an obstruction being invariably encountered at 6 cm. Even a filiform bougie could not surmount the obstruction. After considerable manipulation, a gush of about 10 c.c. of pale, shreddy urine was obtained in a continuous stream through a No. 4 F. olive tip catheter. On microscopic examination, the urine was found to be thickly studded with innumerable pus cells. The stained specimen looked like a smear obtained from a urethral discharge, containing numerous gram-negative intracellular diplococci having all the morphologic characteristics of gonococci. Unfortunately, as in the cases of other writers, the rarity of the condition was not realized, and for this reason no cultures were made. Phenolsulphonephthalein injected intravenously appeared at the end of three minutes in the urine obtained from the right kidney. Concentration was good. The urine from the left kidney was collected about twenty minutes after the injection of the dye, and practically no trace of the latter could be detected in it.

Following cystoscopy, the patient was admitted to the People's Hospital, where we kept him under observation. His condition gradually improved, but the enlargement of the kidney and pyuria persisted. Another cystoscopy for the purpose of lavaging the pelvis of the diseased kidney and obtaining urine for culture was refused.

COMMENT

It was evident that we were dealing with an acute gonococcus infection of the kidney, pyelitis or pyelonephritis, associated with hydronephrosis, the latter being subsequent to ureteritis and a stricture, as evidenced by the inability of the smallest olive tip catheter and filiform bougie to overcome the obstruction, and by the obtaining of the urine in a continuous stream. The severe renal colic of which the patient complained was undoubtedly due to the distention of the hydronephrotic sac with fluid. The improvement noted after cystoscopy was probably due to the reestablishment of urinary drainage from the left kidney. The patient was in the hospital two weeks, and there was a gradual improvement in the general and local kidney condition. He was seen again five months later. He had gained 20 pounds (9 kg.) in weight and had been working for the last two months. On examination, the kidney was no longer palpable, and the urine was sparkingly clear and free from gonococci.

307 East Seventeenth Street—221 Second Avenue.

More Mind to Save Civilization.—If we are courageously to meet and successfully to overcome the dangers with which our civilization is threatened, it is clear that we need more mind than ever before. It is also clear that we can have indefinitely more mind than we already have if we but honestly desire it and avail ourselves of resources already at hand. Mind is our "conscious knowledge and intelligence, what we know and our attitude toward it, our disposition to increase our information, classify it, criticize it, and apply it."—Robinson: The Mind in the Making.

OTIOBIOSIS, THE EAR TICK DISEASE

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According to Toomey,[1] "the tick that invades the ears of cattle and man, the 'spinose ear tick,' is an ectoparasite belonging to the family *Argasidae*. It is no longer considered a species of the genus *Ornithodoros*, as it was made the type species of a new genus by Banks, 1908. Its proper technical name is now *Otiobius megnini* (Duges, 1883), Banks, 1908."

Among the first to become acquainted with tick infestations of the ear were the natives and early colonists of Mexico. The ear ticks were not, however, considered as members of a distinct species, but were described together with the other ticks found on man as members of *Ixodes hominis* by Koch in 1844. In the manuscript reports of French surgeons and veterinarians who accompanied the invading French army to Mexico in 1864, we find particular mention of the ear tick. "The horses of the expedition were frequently infested, and not a few cases occurred among the soldiers." Toomey gives, as the date of the first printed record of the tick infesting man, the year 1867, in a report by Guérin; but it was not until 1883 that Alfred Duges recognized it as a separate species. Duges gave it the name of *Argas megnini*, in honor of his former teacher, Prof. Pierre Mégnin of Paris. Two years later, Mégnin published a new description with illustrations based on specimens sent him from Mexico by Duges. Hooker [2] first described its life history in 1908. Since then, the spinose ear tick has been mentioned and described more or less thoroughly in various of the United States government bulletins, and in 1918, Imes [3] published an eight-page bulletin dealing exclusively with the spinose ear tick, and methods of treating infested animals. In 1921, Toomey of St. Louis published an article entitled "Otiobiosis (Ear Tick Disease)" discussing the subject particularly from the standpoint of the human infestation.

The tick *Otiobius megnini* is found throughout Mexico and those states of the union along the Mexican border. It has been reported from Idaho, Nebraska, Kansas, Iowa, Kentucky, Colorado, Montana, Nevada, California and Oregon. It is very possible that the same species is found in South America, and Bedford has shown that it occurs at Vryburg and Fauresmith in the Transvaal, on the stock. It was first reported in South Africa in 1912.

Toomey tells us that there seems to be no well-marked seasonal prevalence, but the tick is found more frequently in dry hot seasons; according to Imes, moisture is apparently detrimental to the tick during certain stages of its life cycle.

DESCRIPTION OF THE PARASITE

According to all authorities, this tick is remarkable for the difference in appearance between the spiny nymphal form and the adult. Toomey's description of the tick is remarkably clear, and particularly adapted to the medical man without technical training in entomology:

The larva is an elongate ovopyriform hexapod, with a long terminal capitulum; it measures 0.6 mm. from tip of hypostome to posterior extremity, but gorged larvae attain to 4 mm. by 2 mm., and are then nearly oval. The integument is finely striated with symmetrically arranged pits, from which bristle-like hairs issue. The unengorged larva is white, the gorged larva is violet brown.

The nymphal stage is covered with spines; hence the popular name. The body is lozenge-shaped, slightly longer than broad, rounded anterior to third legs, suddenly contracted posterior to them; 3 to 4 mm. long when unfed; gorged stage measures 5.5 by 8.5 mm. Color, unfed, earthy yellow; replete, violet brown. Integument, both ventrally and dorsally, is beset with posteriorly directed spines or bristly hairs; ventrally the spines extend to the anus. Integument finely striated, pits absent.

The adult body is panduriform, being broadest at level of third legs, and suddenly contracted behind fourth pair. Eyes absent. Integument with small circular, shallow pits with short central hairs, the whole surface being finely granular. On the ventral surface, between the two postanal grooves, extremely small and crowded spines. Legs comparatively thinner and shorter than in nymph. Color brownish violet or black. Size: female 5 to 7 mm. long by 3.5 to 4.5 mm. wide, males somewhat smaller.

The eggs are large and dark brown.

LIFE HISTORY OF THE PARASITE

Hooker divides the ticks into three classes according to their habits of molting, as suggested by Ransom: (1) those which pass both molts on the host (*Margaropus and Dermacentor*); (2) those which pass the first molt on the host, but the second molt off the host (*Ornithodoros megnini* and two African species, *Rhipicephalus bursa* and *evertsi*); (3) those which pass both molts off the host (most of the ticks in this country). Thus, as Toomey says, except for *Rhipicephalus bursa* and *evertsi*, the life history of *Otiobius megnini* is unique among the ticks in that only one molt, from larva to nymph, takes place on the host, and the nymph stores up enough food to make it unnecessary for the adult to feed before fertilization and oviposition take place. The life history, as described by Hooker and Imes is about as follows.

1. The first, or larval, stage is the most active stage. It is in this stage that the tick enters the ear. The tiny six-legged animal is not easily visible with the naked eye. Having gained entrance to the ear, the parasite penetrates deep down the canal and buries itself between the folds of skin; it has even been known to attach itself to Shrapnell's membrane in man.

2. The parasites gorge themselves with blood from five to twelve days, having increased several times their original size, attaining a length of 4 mm. and a width of 2 mm. The engorged larvae are inactive, and grublike in appearance, of a yellowish-white or pink.

3. The engorged larva sheds its skin and appears as an eight-legged nymph, covered with small spines. Unengorged, the nymphs are from 3 to 4 mm. long.

4. The nymphs attach themselves to the skin inside the ear and suck blood from the host, slowly increasing in size. The nymphs feed for several weeks and sometimes for months (from fifty-one to more than 200 days), and have been known to remain in the ear for seven months, according to Imes. They change their position in the ear frequently. When fully grown and completely gorged, their length ranges from 5.5 to 8.5 mm. On the completion of their development as parasites, they drop out of the ears and crawl up several feet from the ground, secreting themselves in dry, protected places, such as cracks and crevices of buildings, fences, corral walls and trees. Hooker believes that the fertilized females are negatively geotropic, for he has noticed that they crawled up posts and shrubs and

1. Toomey, T. N.: Laryngoscope 31: 930 (Dec.) 1921.
2. Hooker: J. Econ. Entom. 1: 34-51, 1908.
3. Imes: Farmer's Bull. 980, U. S. Dept. Agric., 1918, pp. 3-8.

deposited their eggs on such objects at about the level of the ox's head when in the act of grazing. This tropism he correlates with the parasitic activities of the larvae, and considers it a mechanism acquired, favoring access to the ears of cattle.

6. In about a week's time, in midsummer or early autumn, after the nymph leaves the ear, the second molt takes place, the membranous skin is shed and the adult tick appears, without spines. Fertilization then takes place and oviposition commences. So far as known, the adult never attaches itself to animals, nor does it take food. J. D. Mitchell has kept the nymphs alive in a pill-box, without food, for one and a half years. It is evident that the nymph is capable of storing up a great deal of food. While Toomey remarks that the eggs are often laid on the ground, Imes states that the eggs are laid in cracks and crevices of buildings and fences. According to Imes, "the egg-laying period may be intermittent and continue over a period as long as six months." But as soon as the egg-laying is completed, the females die. Unfertilized females have been known to live more than a year. Mégnin has kept them alive for two years without feeding. Many authorities believe that the adults never feed, and this view is supported by the fact that the adult capitulum is very small and the hypostome unarmed.

7. The eggs, large and dark brown, may hatch as early as ten days after they are laid; but, if the climate is temperate, two or three weeks is required. Shortly after hatching, the seed-ticks are ready to attach themselves to any suitable animal. But they may live for three months without feeding. "The primitive hosts are the wild mammals of the tropical and subtropical prairies, particularly the hares and gophers . . . . Horses, asses, dogs, coyotes and man are less frequently infested."

SYMPTOMS IN MAN

"Besides the common feeling of fulness, the other sensations are described as a tickling and ringing rather than the frank scratching felt after a beetle has crawled down the canal. Throbbing may occur, but is not so frequent as in invasions of the canal by larvae of other insects. Dizziness and nausea are not so common as in myiasis. Excruciating pain may occur at times." Little bleeding occurs. It seems likely that the tick secretes an exotoxin that has a slight keratolytic effect, according to Toomey. "Damage to the skin of the canal is slight when infestation has lasted for only four or five weeks. . . . Most cases of longer duration are, however, complicated by secondary mycotic invasions—more frequently by the saprophytic molds than by the penetrating fungi. . . . In time, a chronic eczematoid dermatitis may result. Furunculosis or cellulitis are not common complications." It has been noted that the presence of the tick causes the secretion of surprisingly little cerumen, as compared with insect infestations of the ear. But an increased amount is almost invariably noted. Simpson and Wheler[4] reported that in one ear of a patient who had a tick in each ear, the canal was almost entirely occluded by cerumen. They also found one of the ticks spread over the tympanic membrane. Toomey remarks that "the unexperienced may mistake the six-legged larvae for a beetle. The beetles usually found in the human ear canal may in a popular way be described as six-legged, relatively very much narrower than the larval ear tick; with longer, more jointed legs, free from hairs; their mouth parts are much smaller, and the body surface is apt to be more convex and more shiny."

4. Simpson and Wheler: Lancet 1: 1197-1198, 1901.

PREVIOUS REPORTS OF CASES

1. The first instance of infestation of man, to appear in print, was recorded by Guérin in 1867.

2. Duges, in his description of the parasite in 1883, said: "This epizoon, very abundant in the state of Guanajuato, is found on the horse, the ass and the ox, principally in the ears, and is spread frequently to other animals, in particular to man, for I have often removed it from the ear passage of children and even adults."

3. Townsend,[5] in 1893, noted that Dr. W. M. B. Lyons of Las Cruces informed him that he had on several occasions extracted this tick from the ears of children in the neighborhood. He recommended a little chloroform or phenol (carbolic acid) in sweet oil.

4. Rev. W. J. Holland[6] tells of a friend who got a tick in his ear while sleeping on the ground in Arizona. This caused extreme pain, prohibiting sleeping and finally causing loss of hearing. A physician, on examination, called it a case of polypus. In his efforts to remove this, he removed the tick. The hearing was restored at once, but the irritation remained for some time. The patient had since heard of two other cases of the same kind, which were relieved by tobacco juice. Holland said the species was *Ixodes bovis*. I wonder whether it was not the spinose ear tick.

5. Dr. Fernando L. Arguelles of El Paso, Texas, showed Toomey five ear ticks that he had removed from three Mexicans. Two of the patients had two ticks each. One of the patients had eczema as a sequel.

6. Two specimens in the nymphal state were taken from the ears of a visitor to Cambridge by Dr. J. Christian Simpson. They were supposed to have entered the ears when the patient was camping out in Arizona. There was one tick in each ear. One of the ticks was spread out over the tympanic membrane, and the canal was almost entirely occluded by cerumen.

7. Mr. J. D. Mitchell of the Bureau of Entomology reports two cases at Victoria, Texas, in 1905, in which specimens were taken from human ears by a physician, following prolonged, severe pain.

8. Herms[7] records the case of a man whose ear was entered by a tick while sleeping on the ground in the vicinity of cattle during the month of September. The tick lived in the ear until December 9, causing much inconvenience. It was finally removed by peroxid applied with a syringe.

9. Prof. Myron H. Swenk of the Department of Entomology and state entomologist of Nebraska lent me a specimen and a letter received in connection with a hitherto unreported case of otiobiosis. The patient was a 3 year old boy living at Lodgepole, Neb. The tick, an unreplete nymph of *Otiobius megnini*, was removed after three months' infestation, by sweet oil and water. There was but little pain, and that only at intervals. Preserved in alcohol, the tick appeared dark brown, with a prominent hypostome and constricted at the sides behind the third pair of legs. It was 4 mm. long by 3 mm. wide.

10. While serving as a medical officer with the National Guard of Pennsylvania, while the latter was stationed at Camp Stewart, near El Paso, Texas, during 1916, Dr. Noxon Toomey removed an ear tick from one of the men. Though the cerumen was syringed away, the tick could not be dislodged. After the canal was cleared, he introduced a probe tipped with cotton, soaked in chloroform. After three minutes had elapsed, he was able to remove the tick. It proved to be a young nymph of *Otiobius megnini*. It had been in the ear six or seven weeks, and had produced no other disturbance except a slight itching deep in the canal.

AUTHOR'S CASE

In 1922, a 7 year old boy, who had recently come with his parents from Arizona, was brought to me for examination. The mother noticed what she thought to be a blood blister in the boy's ear while washing it. The boy had not complained

5. Townsend, C. H. T.: New York J. Entom. Soc. 2: 49-52, 1893.
6. Holland, W. J.: Canadian Entomologist, 1898.
7. Herms: Medical and Veterinary Entomology, 1915, pp. 328-329.

of any trouble with his ear. On closer examination, I found what might have been taken for a polypus, but which proved to be a tick of the species *Otiobius megnini*, attached to the membrana flaccida. After removal it proved to be quite active, moving about on the table. A small bleeding point was noticed where it was attached to Shrapnell's membrane. No further trouble was experienced by the patient. The tick was bluish gray, and covered with coarse hairs or spines, a replete nymph. After immersion in alcohol, it became dark brown. It was 7 mm. long by 4.5 mm. wide.

TREATMENT IN MAN

The tick should be narcotized with chloroform vapor introduced into the canal on a cotton-wound probe, after

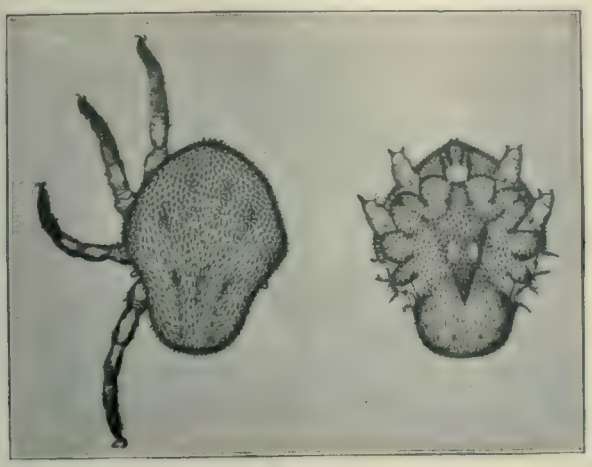


Fig. 1.—Otiobius megnini, unfed nymph, dorsal and ventral aspects (from Marx).

which syringing the canal will easily remove the parasite. Should there be no chloroform or ether at hand, an instillation of liquid petrolatum or any bland oil will close the breathing pores of the tick and cause it to release its hold. It can then be removed with aural forceps or by syringing. Toomey recommends an ointment containing salicylic acid and benzoic acid, 3 per cent. each, in any neutral base, as the best treatment for any complicating eczematoid dermatitis, mycotic in origin.

PROPHYLAXIS

Toomey reminds us that the wild mammals of the subtropical prairies furnish an ineradicable reservoir of ear tick infestation. "Infestations of cattle can be prevented," he says, "by instillations of pine tar-cottonseed oil mixture into the ears once a month." He is of the opinion that man is most frequently infested during the tropical sandstorms. Persons who are exposed to horses or cattle should have the ears examined by a physician every three or four months.



Fig. 2. — Engorged nymph (Hunter and Bishopp).

Because of its peculiar life history and the remarkable difference in appearance between the spiny nymphal form and the adult, *Otiobius megnini* interests the zoologists; but the physician is interested in the prevention of otiobiosis, or its efficacious treatment, should the disease occur. Pierce [8] calls attention to another factor that will probably add to the interest in the spinose ear tick:

> We should be familiar with this tick since a considerable part of our military activities in this country have been and will probably continue to be in the Southwest, where the species abounds. It is probable that by exercising some care in locating camps and in choosing places for sleeping, some degree of immunity from attack will result. The seed ticks are, of course, concentrated about feed lots, corrals and watering places of live stock, and these should be avoided in choosing a camp site.

1503 South Twenty-Second Street.

8. Pierce: Sanitary Entomology, Boston, Richard G. Badger, 1921, pp. 424-426, 433-434, 444-445.

SUBDIAPHRAGMATIC ABSCESS *

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Subdiaphragmatic abscess, or a localized collection of pus in contact with the under surface of the diaphragm, is becoming less frequent, as diagnosis and surgical technic improve; but the condition, I believe, is more common than discussions of the subject usually imply. It certainly occurs occasionally in almost every hospital; and since early diagnosis and treatment usually mean a cure, while late diagnosis is often followed by serious complications and death, subdiaphragmatic abscess should be carefully eliminated in every postoperative case showing evidence of suppuration somewhere in the body, or in the case of any acute abdominal catastrophe followed by evidence of suppuration.

The subphrenic space is divided anatomically into four intraperitoneal and two extraperitoneal spaces. The falciform ligament divides the entire space into a right and left side, these being further divided into anterior and posterior intraperitoneal spaces by the lateral ligaments. The left extraperitoneal space is just above the pole of the kidney, where the peritoneum reflects on to the diagphragm; the right lies between the layers of the coronary ligament.

Piquand [1] classifies these abscesses into: (1) anterior inferior abscesses, mainly with abdominal signs; (2) retroperitoneal abscesses, with signs of lumbar swelling, and (3) superior abscesses with thoracic symptoms.

Gravitation, the suction action of respiration, and the lymphatic connection between the lower and upper portions of the abdomen, are the usual explanation of the occurrence of subphrenic abscess. In infections in the lower part of the abdomen, the subphrenic spaces may be involved in several ways: (1) by direct extension up the lumbar fossae; (2) through the lymphatics; (3) through the portal circulation, or (4) associated with or following a general peritonitis. According to Ullman and Levy,[2] infection by the peritoneal route produces intraperitoneal abscess; by the cellular tissues and blood stream, extraperitoneal abscess; and by the lymphatic route, both types.

The commonest sources of subphrenic infection are the appendix, ruptured gastric and duodenal ulcer, and gallbladder and liver infections, although an abscess may follow infection of any abdominal organ or may be secondary to a focus elsewhere in the body. Lock-

* Read before the Fifty-Third Annual Session of the Medical Society of Virginia, Norfolk, Va., Oct. 31-Nov. 3, 1922.

1. Piquand, G.: Les abcès sous-phréniques, Rev. d. chir. **39**: 156-179, 373-393, 812-831, 962-982, 1909.

2. Ullman, Alfred, and Levy, Charles S.: Subphrenic Abscess, Surg. Gynec. & Obst. **31**: 594-600 (Dec.) 1920.

wood [3] states that in a hundred cases at the Mayo Clinic twenty-two originated primarily from the stomach and duodenum, twenty-two from the appendix, and thirty-five from the liver and gallbladder. He estimates, in an analysis of cases occurring in several large clinics, that from 0.6 to 1 per cent. of all cases of appendicitis are followed by subdiaphragmatic abscess.

In the diagnosis of subdiaphragmatic abscess, a history of recent injury, operation, or infection elsewhere in the abdomen is very important. There may be pain and tenderness over the infected area, hiccup or nausea, a slight cough, painful respiration, or a feeling of distention on the affected side. In the acute cases the temperature, pulse and blood picture are those of marked suppuration; the respiratory rate is not usually increased in proportion to the pulse and temperature. When the condition becomes chronic, the general symptoms are not so marked and the leukocytosis not so great. The physical findings are usually those of pulmonary compression and elevated diaphragm. The heart may be displaced, but not so much as in pleural effusion; and the liver may be displaced downward. A pleural friction rub is frequently present. When there is gas in the abscess, an area of tympany may be found. There may be a bulging in the upper abdomen anteriorly, laterally or posteriorly.

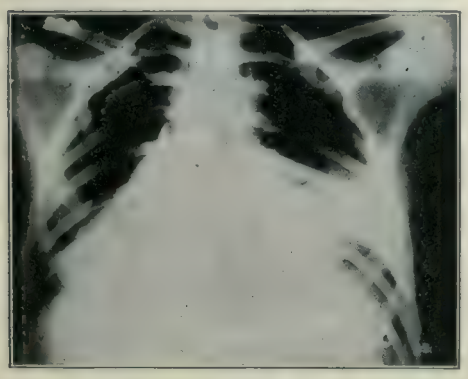


Fig. 1 (Case 2).—Abscess with air pocket beneath right diaphragm, result of gunshot injury to the liver.

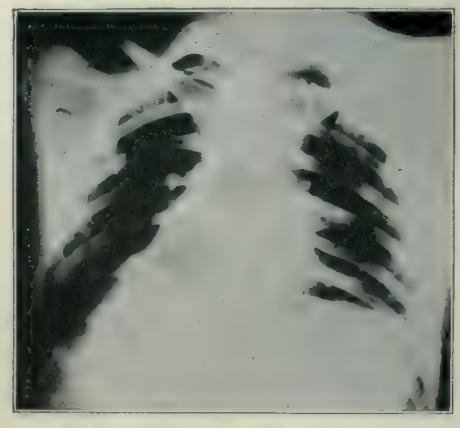


Fig. 2 (Case 2).—Appearance three weeks later: The diaphragm is now lower on the right side, and the air pocket is much smaller.

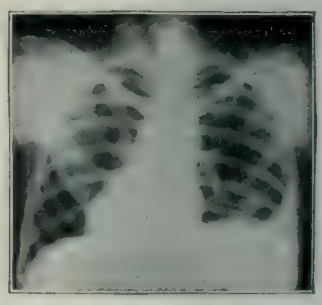


Fig. 3 (Case 2). — Appearance six weeks later: chest normal.

Bulging posteriorly in the lumbar region, with local pain and tenderness, usually means extraperitoneal abscess.

Burke [4] describes an irregular line of the upper border of the liver dulness, the highest point being in the median or anterior axillary line. He found Litten's sign in only one of eighteen cases, though this sign is said to persist in subdiaphragmatic abscess.

Some [2] state that, except in the gaseous type, it is impossible to distinguish between the impairment in the lower chest due to pleurisy and that due to subdiaphragmatic abscess.

When there is gas present within the abscess, three different zones of resonance may be made out. In the lower area there is dulness, due to the fluid within the abscess and the liver dulness; in the middle area there is tympany, due to the gas within the abscess, and in the upper area there is the normal lung resonance.

Hoover noted, in a case of subphrenic abscess, that the costal border had a greater lateral excursion on the affected than on the sound side, owing to the loss of the normal antagonism of the diaphragm to the action of the scaleni and intercostals of the affected side. In one of our cases of left side abscess this was true, but in the others it was negative.

Lee [5] reports four cases of subdiaphragmatic inflammation, with physical signs and roentgen-ray appearance of abscess, but with spontaneous recovery without suppuration. The diaphragm was elevated just as in abscess. In one of his cases a few cubic centimeters of cloudy fluid was removed from the pleural cavity on the affected side. These were evidently instances of subdiaphragmatic inflammation in which recovery took place before suppuration occurred, and must be borne in mind in the interpretation of a high diaphragm.

In our series of nine cases, seven were on the right side, and two on the left; three followed appendectomy; one, a gunshot wound; one, perinephritic abscess; one, resection of the cecum for carcinoma; one, perforated duodenal ulcer; one, perforated gastric ulcer, and one, multiple liver abscesses. Of this group, four patients are well; one is still under observation, and four are dead.

In two of the four deaths, the importance of an early diagnosis was exemplified. The patients were weak and emaciated, the abscess having been present for more than six months. In one fatal case there were multiple abscesses of the liver in addition to a chronic abscess. The liver abscesses were probably primary. The fourth case was acute, and the patient probably should have recovered, except for the fact that a large empyema developed following transpleural drainage. In one of the cases ending in recovery we felt reasonably sure that the pleura was infected by an exploring needle. The day the needle was used, no fluid could be found in the pleural space by either physical examination or the roentgen ray. Thirty-six hours later, symptoms of pleurisy developed. This was followed by a fairly large empyema.

In only one case was a definite diagnosis made prior to the roentgen-ray examination. The evidence furnished by the roentgen ray is almost entirely due to changes in the position and contour of the diaphragm, except when, in addition to change of contour, there is an air pocket or collection of gas beneath the diaphragm. The diaphragm is almost always elevated, usually less so in the extraperitoneal cases; the dome is accentuated, and the excursion limited. Occasionally the diaphragm is flattened, but in the case in which this

3. Lockwood, A. L.: Subdiaphragmatic Abscess, Surg. Gynec. & Obst. **33**: 502-516 (Nov.) 1921.

4. Burke, Joseph: Surgical Aspects of Right Subphrenic Abscess, Ann. Surg. **68**: 383-394 (Oct.) 1918.
1939 (Dec. 17) 1921.

5. Lee, R. I.: Subdiaphragmatic Inflammation with a Syndrome of Physical Signs and Spontaneous Recovery Without Suppuration, J. A. M. A. **54**: 1307-1310 (April 17) 1915.

was noted there was practically no excursion even with forced respiration. Only twice did we find an air pocket beneath the diaphragm, and these showed the fluid level when the patient was in the lateral position. One of these followed a gunshot injury to the chest. In this and two other cases there was an accompanying small empyema, but the diaphragm could be made out distinctly.

The action of the diaphragm in diseases of the thorax has been carefully studied, but its various reactions to disease beneath the diaphragm have been neglected. We occasionally see the diaphragm nonmotile when there is an infection some distance away, as in the appendix, though there is no pain on deep inspiration. Sayle[6] has shown limitation in the movement of the diaphragm in a large percentage of patients with acute appendicitis. We have been able to confirm this in two cases in which a routine fluoroscopic examination was made prior to an examination of the genito-urinary tract for stone in the right kidney or ureter. In both of these cases the pain was that of kidney colic; in one the blood picture and other findings were those of appendicitis, but in the other the absence of motility of the diaphragm gave the first evidence of other trouble than renal colic. Operation in each instance showed an acutely inflamed appendix. In three other cases with less severe reactions in the appendix, the diaphragm was normal.



Fig. 4.—Abscess beneath diaphragm on left side, following fracture of eighth and ninth ribs; a fairly large air pocket can be seen; pneumonia in the right lung.

The diaphragm seems to splint the upper abdomen almost as effectively as the recti do the lower quadrants. An elevated and more or less rigid diaphragm is as reliable evidence of infection just beneath, as is a rigid rectus of an acute appendicitis. Some observers report an elevation of the diaphragm with little or no decrease in the excursion in subdiaphragmatic abscess, but this has not been our experience. In every instance we found marked limitation, as compared with the normal side. Shifting dulness on percussion cannot always be explained by what is seen with the fluoroscope. We have not noticed a complete filling in of the costophrenic space by the lungs, as is seen in normal chests.

In all of our cases but two, an empyema was either suspected or diagnosed prior to the use of the roentgen ray. Probably in many instances the needle is draining the abscess itself, when a liter or more of fluid is supposed to be withdrawn from the pleural cavity before the abscess is entered by radical surgical measures.

Abscesses containing gas are not so common. Moore,[7] in 1921, in a study of the subject, found only a few illustrations in the literature. He showed one well illustrated case. Lockwood, however, in a hundred cases, found that one third contained gas. The gas may be from the intestine, from the lungs, or of bacterial origin.

If there is a large collection of fluid in the pleura and no gas in the abscess beneath the diaphragm, the roentgen ray is of little value in the diagnosis, since the position of the diaphragm cannot be determined until the pleura has been drained. This really has little practical bearing, since an empyema of this character would in any event be drained.

Abscess of the liver, cyst, large tumor of the kidney and perinephritic abscess must be considered in the differential diagnosis; but the clinical history, physical examination and laboratory findings usually help to eliminate these.

In massive collapse of the lung, the diaphragm is elevated on the affected side, but the heart is usually displaced to this side instead of upward and to the opposite side, as in subdiaphragmatic abscess.

Promiscuous needling is probably never justified, certainly not until every other method of diagnosis has been exhausted. In the large majority of cases the condition above the diaphragm and a fairly definite location of the abscess beneath the diaphragm can be determined prior to the use of the needle. A large needle is necessary, if any dependence is to be placed in it as a diagnostic measure. Therefore, unless the position of the diaphragm is carefully considered, the pleural cavity may be entered and infected.

REPORT OF CASES

CASE 1.—R. B. M., a man, aged 65, operated on in August, 1921, for an acute purulent cholecystisis, remained in the hospital until September 15, during which time pus drained freely.

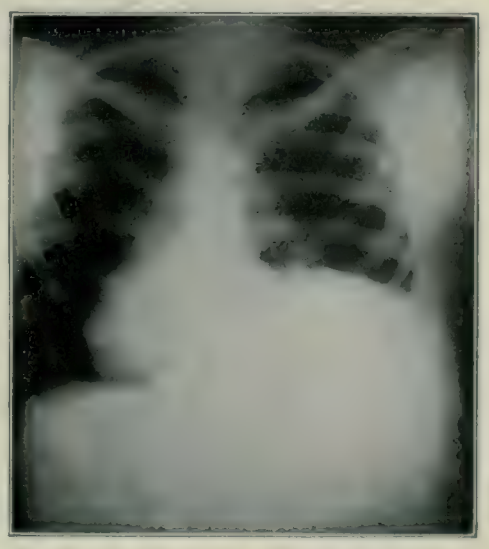


Fig. 5.—Right side elevation due to subdiaphragmatic abscess following perforating duodenal ulcer.

During February, 1922, about 1 ounce (30 c.c.) of bile drained daily. The patient had chills and fever, the temperature ranging from 100 to 104, pulse from 84 to 124, and the blood count from 12,300 to 22,100. Physical examination showed dulness, diminished breath sounds, and râles at the right base. Roentgen-ray examination, February 22, disclosed the lungs clear; the aorta slightly dilated; the right diaphragm acutely arched, extending almost to the third rib, with excursion markedly limited. The findings were very suggestive of subdiaphragmatic abscess. Pus was withdrawn from the liver area, in the anterior axillary line, at about the seventh rib.

6. Sayle, Llewellyn: A Study of Diaphragmatic Movements in Acute Abdominal Inflammation, J. A. M. A. **61**: 505-508 (Aug. 17) 1918.
7. Moore, Sherwood: The Roentgenological Findings in a Case of Pyopneumothorax Subphrenicus Dexter, Am. J. Roentgenol. **6**: 83 (Feb.) 1919.

The rib was then resected and the pleura sutured. Several ounces of pus was then withdrawn. The patient died, March 14. Postmortem examination showed small multiple abscesses of the liver, with pus in the anterior intraperitoneal space and in the lesser peritoneal cavity.

CASE 2.—J. W., a man, aged 26, wounded, Sept. 15, 1918, got along very nicely for about a week, when chills, a rapid pulse, and high temperature developed. He also had a good deal of pain and tenderness in the right lower chest. This continued for several days, his condition becoming more serious. September 30, a roentgen-ray examination showed the diaphragm very high on this side, with a large air pocket beneath the diaphragm. The fluoroscopic examination confirmed this, and a definite fluid level could be made out beneath the diaphragm. A diagnosis of subdiaphragmatic abscess with a gas pocket was made. This was drained, and further roentgen-ray examinations, October 9, 14 and 23, showed the progress of the case. November 15, the patient was perfectly well clinically, and a short time later returned to duty.

CONCLUSIONS

1. The occurrence of subdiaphragmatic abscess is still sufficiently frequent, especially in postoperative cases, to be of marked clinical importance.

2. Early diagnosis and treatment usually lead to a cure, while late diagnosis often means serious complications or death.

3. A history of a recent abdominal operation or infection, followed by an unexplained elevation of the pulse and temperature, should require a careful elimination of subdiaphragmatic abscess.

4. The roentgen ray is a very important diagnostic aid, and will almost invariably give valuable and definite information.

5. In any acute upper abdominal infection, an elevated and rigid diaphragm should lead to the suspicion of subdiaphragmatic abscess.

6. A diaphragm normal in position, contour and motility usually eliminates the possibility of an abscess just beneath.

7. Promiscuous needling is never indicated, since in this way the pleural cavity may be unnecessarily infected.

801 West Grace Street.

Bladder Tumors in Anilin Dye Workers.—The occurrence of tumors of the bladder in workers in anilin and a number of like products used in the dyeing industry has attracted considerable notice on the continent in recent years. Rehn, in 1895, was the first to draw attention to the occurrence of cases of tumor of the bladder in workers in fuchsin in the anilin factory at Frankfort-on-the-Main. Leuenberger of Basel published in 1912 collected reports of forty-six cases of tumors of the bladder, of which approximately two thirds were carcinoma and one third papilloma, and three cases of carcinoma of the kidney. He estimated that these conditions were thirty-three times as frequent in the 840 men employed in the anilin industry in Basel, as in the rest of the male population of that town. The condition was rarely seen prior to 1900; but, with the growth of the anilin industry, tumor of the bladder became much more frequent. Leuenberger cites safranin, dianisidin, dihydrothioxilin, congo red and benzopurpurin as capable of provoking vesical tumors. Benzidin and betanaphthylamin are regarded as especially dangerous.—Hope: Industrial Hygiene and Medicine, 1923.

A SIMPLE METHOD FOR DEMONSTRATING MOTOR PARALYSIS OF THE LOWER EXTREMITIES

WITH SPECIAL REFERENCE TO HOOVER'S SIGN

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DES MOINES, IOWA

In 1908, C. F. Hoover [1] of Cleveland described a new sign for the detection of malingering and functional paresis of the lower extremities. Hoover observed that if a normal person, lying in a dorsal position, attempted to lift one of the lower extremities while extended, the heel of the opposite extremity tended to be forced downward in an endeavor to counterbalance the lifting effort expended in the elevation of the opposite leg. If the hand of the observer was placed beneath the Achilles tendon of one extremity and the opposite leg elevated while extended, it was found that the muscular resistance offered by the passive extremity equaled that necessary to elevate the opposite leg. In patients suffering from organic motor paresis of one lower extremity, it was found, when effort was made to elevate the extended and palsied member, that the opposite and unaffected leg made counterpressure downward, whether or not any voluntary muscular strength was exhibited on the affected side.

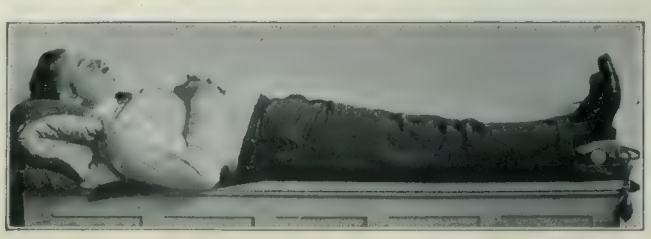


Fig. 1.—Position of patient with sphygmomanometer in place beneath the right heel: Extremity is elevated sufficiently to clear the leg muscles from contact with the horizontal surface.

The foregoing, in brief, describes the findings of Hoover in normal persons and in those having organic motor paralysis of one extremity. In order to be concise concerning that author's findings in regard to nonorganic motor palsy of the lower extremities, I take the liberty of quoting the following verbatim:

> In two cases in which paresis of one leg was claimed by the plaintiffs in suits for personal injuries, there were wanting the characteristic physical signs to sustain the claim of paresis of the lower extremity as the result of injuries. Furthermore, in both of these cases, when the patient was asked to lift the normal leg off the couch, the leg which was alleged to be very paretic was opposed strongly against the surface when resistance was offered to lifting the normal leg. When the patient was requested to lift the paretic leg, there was an apparent attempt to respond to my demand, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch. Had the paresis been genuine, the sound leg would have been firmly opposed against the surface of the couch when an uninhibited attempt was made to lift the paretic leg.

There can be no question that Hoover deserves credit for calling attention to the discrepancy that occurs in cases of organic palsy of the lower extremities, and in those in which the palsy is of a functional or of a simulated nature. In fact, I feel that the valuable sign has not been made use of sufficiently, either through ignorance of the sign or because it is not fully understood. In the latter instance, no doubt some confusion might arise owing to the fact that no visible means was at hand whereby the observer could accurately observe

1. Hoover, C. F.: A New Sign for the Detection of Malingering and Functional Paresis of the Lower Extremities, J. A. M. A. **51**: 746 (Aug. 29) 1908.

the downward pressure expended by the nonelevated leg, and thus the real significance of the sign might at times be left in doubt or even lost. To overcome this deficiency, I carried out a series of experiments in the hope of finding some simple means of recording the downward pressure exerted by the lower extremities in health and in paretic conditions. The results of such efforts I now present in this preliminary note.

For years, at least among the older neurologists, the hand dynamometer was used as a means of determining the amount of grip present in either hand. For a long time it had been my thought that an instrument to measure the downward pressure of the lower extremities in cases of motor paralysis, either organic, functional or simulated, similar to the recording of the grip by means of the hand dynamometer, might be of value in further elucidating Hoover's findings and at the same time give to those less trained in other means of neurologic diagnosis a method of demonstrating visually the presence or absence of any such difference in the complemental pressure as described by Hoover. Accordingly, at first a spring balance type of scale was used, the patient lying in dorsal decubitus with one heel resting on the platform of the scale. It was thus observed in those cases in which no paralysis was present that the downward pressure exerted by the passive leg resting on the scale was equal, or nearly equal, on the two sides as registered in pounds; whereas in cases in which there was paralysis of one extremity, either organic or functional, variations in the complemental pressure between the two sides occurred.



Fig. 2.—Manner of elevating the opposite extremity, with leg fully extended. The absence or presence of any complemental contralateral pressure can thus be determined and the amount visualized by means of the recording dial.

In view of the impracticability of using scales as an instrument for recording the downward pressure made by the passive extremity, the sphygmomanometer apparatus was brought into use, with very gratifying results. The use of this instrument is simple and apparently is thoroughly accurate for the taking of the necessary readings. The patient is caused to lie flat on his back with the lower extremities extended. The arm band of the sphygmomanometer apparatus is then placed under one heel, and, after the recording dial has been attached, air is introduced. In order to obviate the possibility of the calf muscles coming in contact with the bed, couch or extended chair, usually a book or other firm object is placed beneath the arm band to elevate the leg sufficiently. The air pressure in the arm band is now increased until the upper and lower surfaces of the cuff are separated to such an extent that downward pressure with the heel will not bring the two surfaces into apposition, thus assuring that the heel will always be resting on an air cushion. The amount of air necessary to bring this about was usually found to be sufficient for adults when the recording hand of the instrument reached 30 mm. With the heel resting on the air cushion, the leg entirely free from contact with the bed, and the starting point on the dial observed, the patient is instructed to raise the opposite leg, *while keeping the extremity extended*, to an angle of about 45 degrees with the body. The maximum excursion of the recording hand, particularly the point at which the downward pressure of the heel sustains the hand, is then noted. Usually it is well to repeat the test a time or two to make sure that the readings show no great variations. Variations will sometimes occur if the patient does not fully relax the muscles of the extremity to be elevated. After the reading has been taken on one side, the air cushion is placed beneath the opposite heel. Here, for several reasons, the starting point may be found different than was the one used in trying out for the first set of readings. If too low, more air is introduced; if too high, the release valve is opened and sufficient air allowed to escape until the starting point is uniform. In normal persons, i. e., when no paralysis of the extremities exists, the readings on the two sides are, for all practical purposes, one and the same, clearly demonstrating that Hoover was correct when he asserted that an equal amount of pressure was made downward by the nonactive leg as was necessary to elevate the active limb.

In cases of motor paresis of a lower extremity, the findings, as registered by means of the sphygmomanometer, were interesting. Usually a test of the nonaffected leg was made first, the heel of the palsied extremity resting on the air cushion while the normal extremity was voluntarily caused to be elevated. The test was then reversed, and a reading taken with the palsied extremity elevated. In cases in which the paralysis was only partial, and of some duration, it was found that when the nonparalytic leg was elevated, the maximum reading was sustained, whereas elevation of the organically palsied extremity produced a maximum reading not only lower than the one obtained when the normal leg was elevated, but a reading that was not well sustained, tending to decrease as the muscles of the paralytic extremity failed to maintain the elevation. The following is an illustrative case:

A man, aged 56, had right hemiplegia following a "stroke" sustained the preceding year. There was residual paralysis now mostly in the right lower extremity. Increased tendon jerks, slight ankle clonus, and pathologic toe signs were present on the affected side. Elevation of the left (normal) leg gave a sustained pressure reading of 52 mm. by the right heel, the starting point used being 30 mm. Elevation of the right (palsied) leg gave a maximum reading of 40 mm., gradually declining to 34 mm.

When the paralysis was recent and progressive, it was noticed that attempts to elevate the palsied extremity produced a far greater contralateral pressure on the nonaffected side than occurred when the normal extremity was elevated. In a patient thus tested, the readings, 30 mm. being taken as a basis, were as follows: Elevation of the normal extremity gave a sustained reading of 34 mm. pressure beneath the heel of the paralytic extremity, whereas attempts to elevate the markedly palsied leg gave a reading of 70 mm. pressure downward by the nonaffected extremity. The attempt of the patient to elevate the paralytic extremity naturally brought forth an unconscious effort to aid

on the part of the muscles of the nonaffected extremity, with the result that a greater contralateral pressure downward was the resultant. When the normal extremity was elevated, only a slight pressure was exerted downward by the heel on the affected side, owing to the inability of the patient to fix the paralytic muscles, which resulted in little or no contralateral assistance in elevating the sound limb, and a correspondingly low reading by the sphygmomanometer. Variations in readings between extremities, normal and paretic, must of necessity vary in different individuals; but it would seem that the foregoing is fairly typical of what one may expect to find in those cases in which one leg is organically paralyzed, when the paralysis is by no means complete, or when it becomes more progressive.

Motor paralyses of a lower extremity, either functional or simulated, have not the diagnostic earmarks that stamp so clearly at times a frank lesion of the corticospinal neurons. In hysterical paralysis, for instance, there is an absence of any extensor toe sign, although the tendon jerks may be increased and clonus present. Anesthesia involving the entire extremity, or of a "stocking-like" nature, may be also present, an anesthesia which has no known anatomic basis. While there may be sufficient neurologic evidence to convince the examiner that the paralysis in a given case is purely hysterical in origin, still the application of Hoover's method in determining the departure from the normal, as far as complemental opposition of the limbs is concerned, merely serves to add another strong link in the chain of diagnostic evidence. In a case of hysterical hemiplegia, with hemianesthesia of the left arm, trunk and leg, the sphygmomanometer readings, 30 mm. being taken as a basis, showed a pressure of 38 mm. when the nonaffected right leg was elevated, as against 34 mm. when an attempt to elevate the paralytic left leg was made. It was peculiar to note that while at one time a reading of 34 mm. was observed, the majority of attempts to elevate the paralytic leg resulted in either a slight downward pressure on the right heel, not exceeding 34 mm., or else complemental elevation of the right extremity, which naturally resulted in a negative reading—i. e., below 30 mm. These findings, I feel, are sufficient to show that Hoover's statement concerning functional paralysis is, in the main, correct, namely: "When the patient was requested to lift the paretic leg, there was an apparent attempt to respond, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch." The use of the sphygmomanometer does show, however, that downward pressure may occur to some extent on the nonaffected side, even in a case in which the paralysis is, without question, of a hysterical origin.

CONCLUSIONS

1. Motor paralysis of a lower extremity may be organic, functional or simulated.

2. Normal persons show little or no variation between the two sides in the counterpressure made by the passively extended leg when the opposite extremity is elevated while extended.

3. The counterpressure phenomenon is still retained, but differs on the two sides when the paresis of an extremity is secondary to a corticospinal pathway involvement.

4. In cases of hysterical paralysis of the lower extremity, counterpressure is still preserved on the affected side, whereas on the nonaffected side, counterpressure is slight, or may be entirely absent.

5. Hoover's sign should be used as a routine in all cases of suspected hysterical paralysis involving a lower extremity.

6. The use of the sphygmomanometer apparatus in ascertaining the amount of complemental counterpressure in paralysis of the lower extremities is simple, accurate and reliable.

IDIOPATHIC SPONTANEOUS PNEUMOTHORAX, APPARENTLY NON-TUBERCULOUS

REPORT OF CASE

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SAN ANTONIO, TEXAS

The occurrence of spontaneous pneumothorax in the course of pulmonary tuberculosis is, of course, relatively not infrequent. Its similar relative rarity in other diseases, apart from traumatism, or in the healthy individual, is the occasion for the report of this case:

REPORT OF CASE

E. H. B., aged 36, married, a grocer, who was seen, Oct. 26, 1922, through the courtesy of Drs. C. E. Scull, P. I. Nixon and J. W. Nixon of San Antonio, and whose family history was negative for tuberculosis, had had no severe illness, and had had no occasion to consult a physician for any cause whatsoever from childhood up to his present illness. For the last eighteen years, however, he had had five or six attacks of asthma a year, usually coming on in the winter months and never lasting more than two or three nights. The attacks always were of no great severity, and were relieved immediately by sitting up in the fresh air. There was never any cough between attacks. He was subject to frequent colds, possibly of vasomotor origin.



Fig. 1 (Sept. 7, 1922).—Huge spontaneous pneumothorax with total lung collapse; no bands of adhesions.

While lifting a heavy sack of beans (80 pounds), Aug. 19, 1922, he felt a sensation of discomfort and smothering in the left part of the chest. Soreness in the chest commenced at once, with some shortness of breath, especially noticeable on even slight exertion. He consulted a physician three hours later, and was advised to go to bed, though really he did not feel ill enough to do so. He noticed a tight pressure cough with every change of position, but there was no expectoration. He had a slight fever for two weeks. He was referred

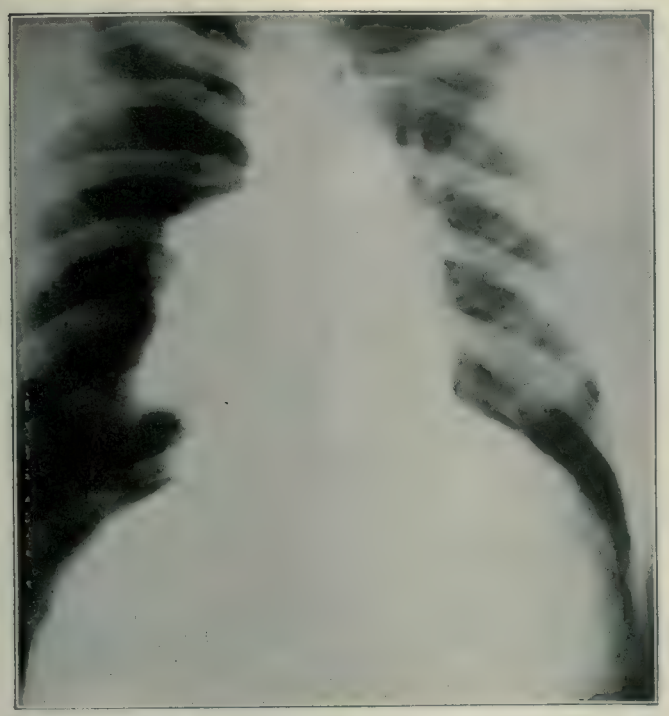


Fig. 2 (October 27).—Appearance after removal of 800 c.c. of air; roentgenogram taken before operation revealed identical condition seen in Figure 1.

to Drs. Nixon and Scull of San Antonio, September 7, who recognized the condition present.

Physical and roentgen-ray examinations at that time revealed a total collapse of the left lung, with cardiac dislocation to the right, causing no discomfort to the patient beyond rapidity of the pulse and shortness of breath on exertion. The pleural cavity contained no fluid. In view of the ordinary tendency of the air to be absorbed promptly in these cases, the patient was advised to rest and to return in a month for observation.

October 26, seven weeks later, he returned with the statement that he felt fairly well, but was still very short of breath on exertion. Physical and roentgen-ray examinations showed the thoracic condition as at the initial examination, the collapsed lung not showing the slightest tendency to expand—the pleural cavity evidently not having absorbed any of the extravasated air, instead of most of it, as should ordinarily have taken place. The absence of fluid and infection precluded a persisting opening in the tear. Because of the danger of a permanent loss of the lung, which had now been totally collapsed nine weeks, and subsequent later collapse of the thoracic wall and permanent disability, it was decided to remove part of the air.

October 27, under local anesthesia, a needle was inserted into the pleural cavity, attached to an artificial pneumothorax apparatus with the bottles reversed. A manometer reading of + 1 cm. of water was obtained, with little or no evidence of the respiratory excursion. Then 800 c.c. of air was slowly withdrawn, leaving a manometer reading of — 1.5 cm. Owing to beginning substernal distress at that point, the air withdrawal was stopped. No shock or pain followed. The roentgenogram taken that afternoon showed restoration of the normal convex diaphragm dome and the lung about one-third expanded.

It is, of course, a well known fact that partial removal of a serous pleural exudate, which previously had shown no tendency to absorption, will often be followed by its complete disappearance. Evidently a similar process was called into play in this case, subsequent to the partial air removal. Physical and roentgen-ray examinations, November 8 and 22, showed such rapidity of air absorption and lung expansion that further operative measures were deemed superfluous. December 18, physical and roentgen-ray examinations showed the air entirely gone and the lung expansion complete. None of the usual stigmas of either active or inactive tuberculosis could be found by either method of examination, and the patient was completely free from cough or other suggestive symptoms.

REPORTS IN THE LITERATURE

Weber [1] says that there are practically 200 cases on record in which this accident has occurred in apparently healthy persons, without obvious exciting cause beyond sudden respiratory efforts.

Terry [2] reports a case of a young man in good health who had had no previous illnesses of any kind, and in whom several routine chest examinations had proved normal. While he was taking a cold shower, something was felt to give way in his chest, and a total spontaneous pneumothorax was discovered. Symptoms were rather trivial, and a return to normal occurred in about four weeks. No cause for the accident was discovered. Clinically, there was nothing further to suggest tuberculosis.

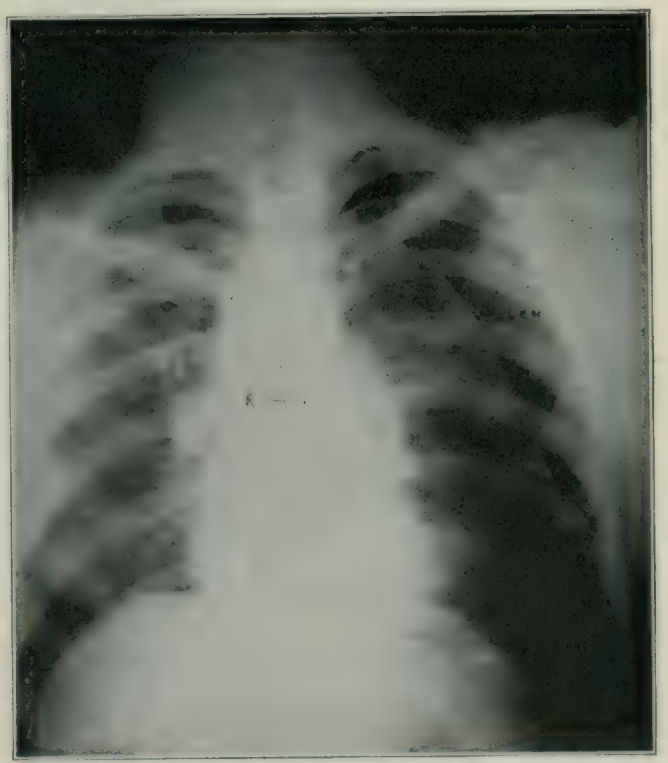


Fig. 3 (November 8).—Rapid absorption of air, and lung expansion.

Crockett [3] reports a similar case in a young athlete, also without tuberculosis, though modifying this statement with the remark that pleuritic adhesions seen in the roentgenogram indicated that there nevertheless

1. Weber, F. P.: Spontaneous Pneumothorax, Practitioner **102**: 190 (April) 1919.
2. Terry, A. H.: Spontaneous Pneumothorax of Uncertain Etiology, J. A. M. A. **66**: 1776 (June 3) 1916.
3. Crockett, James: Spontaneous Pneumothorax, Lancet **2**: 330 (Aug. 12) 1922.

may have been an active tuberculous lesion of the lung at some time previously.

Hawes [4] reports a case in which, between 1911 and 1921, there had been several bilateral spontaneous pneumothoraces, first in one side, then the other, occurring at times every few months. All roentgen-ray findings between attacks were negative. Hawes was disposed to regard this case as tuberculous, though there had never been a positive sputum, and his last

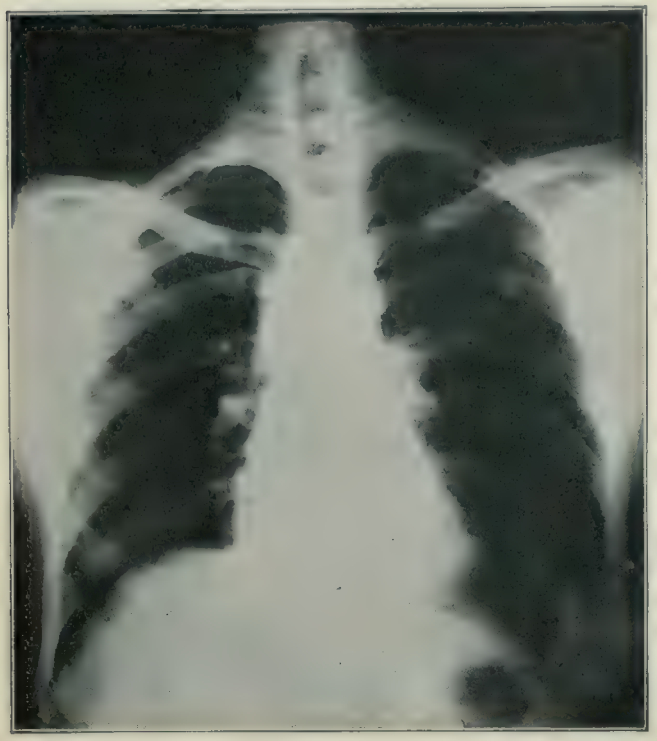


Fig. 4 (November 22).—Further absorption of air, and lung expansion.

physical examination report of 1919, in my opinion, is not conclusive. When last heard of in 1921, this patient was apparently able to do light work, though he had one or more probable recurrences of his spontaneous pneumothoraces after 1919.

Pierson [5] reports four cases, one in a new-born child. Only two of these four patients were definitely tuberculous. He states that about ninety such nontuberculous cases were reported in the literature up to the time the paper was read. Curiously enough, in the discussion of the paper before the San Francisco County Medical Society, Sept. 4, 1917, occurred the report by Dr. E. S. Kilgore of the only other case I have been able to find in the literature in which there was any necessity to withdraw the air in any of these nontuberculous cases. Here the condition of lung collapse had lasted a year.

Hamman [6] reports five cases, in two of which the patients were definitely tuberculous, but in three of which the accident occurred in persons in good health and in whom no evidences of tuberculous disease could be found or developed later, one after one year, one after two years and one after five years. However, he regards these cases all definitely tuberculous, and due probably to the rupture of a pleural adhesion into a small peripheral tuberculous focus, with closure of the focus following the lung collapse.

Weber [7] reports a fatal case of spontaneous pneumothorax occurring on the seventh day of influenzal bronchopneumonia. He quotes seven similar cases of other authors, four with recovery. He quotes a report of 7,868 cases of pneumonia up to 1908, with only three cases of spontaneous pneumothorax.

Berkley and Coffen [8] report two cases due to influenzal bronchopneumonia, only one of which was tuberculous. They state that in many of their 1,700 bronchopneumonia cases, necropsies showed ruptured air sacs in the peripheral borders of the lungs, and in many cases numerous adjacent air sacs ruptured, forming large air spaces, which they termed emphysematous excavations. These emphysematous blebs were found in many cases at postmortem in which spontaneous pneumothorax was absent. They were also able to recognize these blebs roentgenographically. They believe these cases potential pneumothorax cases, reporting one actual rupture from this cause.

Abt [9] reports a similar case in a child with bronchopneumonia.

Meyer [10] reports a case of bilateral spontaneous pneumothorax with necropsy, the case having been seen in the third attack of the year. The postmortem revealed extreme emphysema of both lungs and no tuberculosis.

However, cases of spontaneous pneumothorax due to emphysema certainly must be very rare. I was

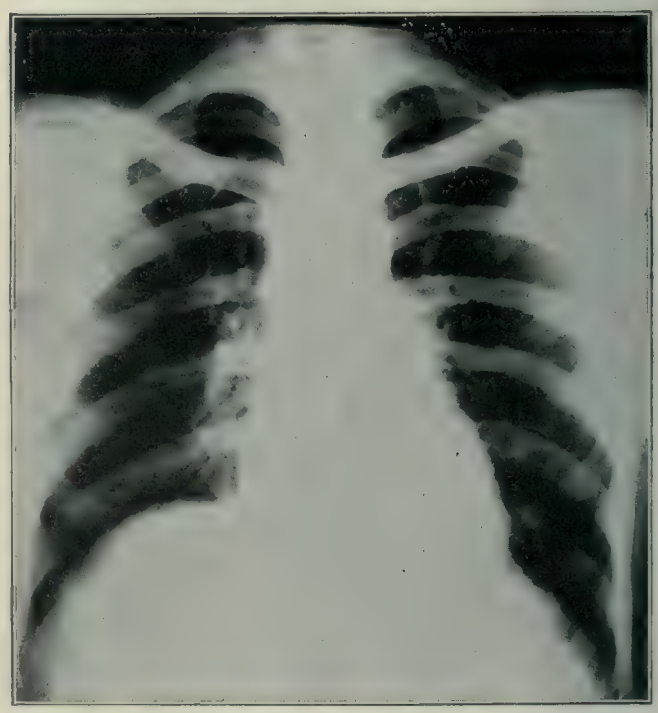


Fig. 5 (December 18).—Complete absorption of air, and full expansion of lung without roentgenographic evidence of tuberculosis.

unable to find a single case in medical literature of spontaneous pneumothorax due to a ruptured emphysematous vesicle, wherein a definite specific history of

4. Hawes, J. B.: A Case of Spontaneous Pneumothorax, Boston M. & S. J. **186**: 528 (April 20) 1922.
5. Pierson, P. H.: Spontaneous Pneumothorax, Boston M. & S. J. **178**: 385 (March 21) 1918.
6. Hamman, Louis: Spontaneous Pneumothorax, Am. J. M. Sc. **151**: 229 (Feb.) 1916.
7. Weber, F. P.: Spontaneous Pneumothorax in Influenzal Pneumonia, Brit. M. J. **1**: 9 (Jan. 4) 1919.
8. Berkley, H. K., and Coffen, T. H.: Generalized Interstitial Emphysema and Spontaneous Pneumothorax, J. A. M. A. **72**: 535 (Feb. 22) 1919.
9. Abt, I. A.: Spontaneous Pneumothorax, M. Clinics, Chicago **2**: 1291 (May) 1917.
10. Meyer, Alfred: Case of Bilateral Spontaneous Nontuberculous Pneumothorax with Autopsy, New York M. J. **105**: 1238 (June 30) 1917.

previous asthmatic attacks was mentioned, and asthma is, of course, our common cause of emphysema.

Patients who recover, of course, offer no postmortem studies, and the few cases coming to necropsy have presented other obscuring conditions. That these cases of idiopathic spontaneous pneumothorax in apparently healthy persons are definitely and invariably due to the rupture of a subpleural minute tuberculous focus, followed by its subsequent entire healing, is difficult of proof. Should healing of the focus not occur, active pulmonary tuberculosis should follow months or years later. Case 1 of Hamman's series is the only one I have been able to find.

Recurrence of these pneumothoraces is not uncommon. Only the future, in this particular case, can determine the question of recurrence. Whether his accident was due to the rupture of an emphysematous bleb from asthma or was due to the rupture of a tuberculous focus is impossible to be stated definitely. Certainly, careful roentgen-ray studies reveal no evidences of tuberculosis, parenchymal or pleural, and no adhesions. The expanded lung, by physical examinations, shows no râles or adventitious breath sounds suggestive of tuberculosis.

RECURRING ILEOCECAL INTUSSUSCEPTION

REPORT OF A CASE COMPLICATED BY TUBERCULOSIS OF THE INTESTINE

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SANTA MARIA, CALIF.

The cause of intussusception is not always clear. It is easy enough to understand how a pedunculated tumor large enough to be caught in a peristaltic wave ahead can cause the intestinal wall at its base to become invaginated. But what is the particular cause, or causes, responsible for intussusception occurring most frequently at the ileocecal junction? Is it due to a too mobile cecum, or to a less mobile one, as either condition could mechanically predispose to invagination? Or is it due to violent enterospasm of the small intestine just at its juncture with the cecum? For the latter reason, ileo-ileac invagination does occur. With such an enterospasm, however, intussusception into the cecum could not occur if the ileocecal valve were small enough, and of sufficient firmness.

One can understand that the small intestine, having far greater peristaltic activity than the sluggish colon, might be constantly tending to invaginate itself. But there are other conditions that prevent it, two of which stand out prominently: (1) a small, firm ileocecal valve, and (2) a tendency of the small intestine to kink itself just before the junction. It would not be hard to conjecture that a prominent Lane's kink is the result of Nature's effort to prevent intussusception by diverting the axis of the small intestine peristalsis.

It was just these two theories that tempted me in the case here reported to make futile efforts at narrowing effectively the ileocecal lumen, on the one hand, and, finally, to succeed in diverting the axis of peristalsis by performing a lateral anastomosis between the ileum and the cecum.

It seems that one should apologize for finding it necessary to operate for an intussusception so many times before discovering an effective cure for the condition. At the same time, the mere reduction of the intussusception, and the anchoring of a part of the cecum or ileum or mesentery, as is usually practiced, does not offer sufficient reason for the cure of the pathologic state, and prevention of its recurrence. The case here reported clearly demonstrates this fact, it seems to me, as will be shown in reciting the steps taken in its cure.

REPORT OF CASE

History.—M. D., a girl, aged 11 years, referred by Dr. R. W. Brown, March 10, 1921, with the diagnosis of intussusception, when seen, ten hours after the initial attack, was suffering with severe abdominal cramps, occurring cyclically. The attack would begin rather sharply, reaching its acme of pain after about two minutes, and gradually subsiding to a steady cramp. This cycle recurred every few minutes, accompanied by nausea and vomiting. At the beginning of the attack, the bowels moved without aid; but subsequent efforts by the use of high enemas were unsuccessful, except for the return of blood-stained fluid and mucus. There was only slight rigidity of the right abdominal wall, and a mass of considerable size could easily be felt through it, in the right umbilical region.

First Operation.—Twelve hours after the attack began, under gas-ether anesthesia, a Kammerer-Battle, right rectus incision, with retraction of the rectus muscle, was made. A large, sausage-shaped mass was delivered into the wound, which proved to be an ileocecal intussusception, including the proximal end of the appendix. The reduction was not easy, as traction on the ileum and an attempt at sliding over the invaginating walls was ineffectual. We attempted then, successfully, the following technic:

Technic of Reduction: The upper end of the entire mass was grasped between the fingers of either hand, while the two thumbs pressed firmly but gently on the contained mass; the fingers then slid and drew the outermost intestinal walls toward the operator. At the same time the assistant made gentle but firm traction in the opposite direction on the protruding ileum. This effort was constantly repeated until reduction was complete. In effect, the effort was similar to that of reduction of a paraphimosis. It was found that gases were imprisoned between the intestinal walls, forming a cushion, which prevented the walls from sliding over; for when this was released, a fact which could be heard, and felt by the fingers, the reduction became easy.

The invagination consisted of about 10 inches of the ileum, a part of the cecum, and the proximal end of the appendix. Effort was made to determine a palpable cause for the intussusception, but no tumor or ulceration could be found. The mesenteric glands in the vicinity were enlarged. There was a prominent cuff of fat partially surrounding the ileocecal junction, and this, together with a very patent ileocecal valve, was thought to be a predisposing factor. The cuff was inverted by suture into the bowel lumen, and with an additional mattress-inverting suture, the patency of the ileocecal valve was considerably reduced. The appendix was removed, and the caput coli and terminal ileum were each sutured by a single mattress to the peritoneal reflection from the pelvis. The wound was closed in the usual manner.

Progress of the case was uneventful. The bowels moved on the second day, and the patient was out of bed on the third. The wound healed by first intention, and the skin stitches were removed on the eighth day.

The symptoms recurred, April 2. The attack was acute, with symptoms exactly as in the initial onset, but all the symptoms were immediately relieved by high enemas given in the knee-chest posture. As the bowels moved daily, the patient was allowed to go home, April 7.

There was a recurrence of the attack, April 19, unrelieved by enemas. A large mass was felt in the right umbilical region.

Second Operation.—Six hours after the attack, an incision was made parallel to the first one, and to the right of the umbilicus. There were considerable omental and intestinal adhesions. On separation of the omentum from the intestines, these were found to be thickly covered with miliary tubercles; the mesenteric glands were much enlarged. About 1 foot of ileum was invaginated into the cecum. The intussusception

was easily reduced by the technic previously described. On account of the presence of the large number of tubercles, no further radical means for prevention of recurrence was undertaken. It was hoped that the dense adhesions which ordinarily follow would in themselves prevent future invagination.

The further course was uneventful; the temperature and pulse remained normal; the bowels moved well on the second day; the patient was out of bed, April 25. She left the hospital, April 29, in excellent general and local condition.

The patient remained well, with steady gain in weight until July 18. The attack really began on the evening before with slight abdominal pain in the umbilical region. In the morning the pain became acute, of the usual cyclic type, accompanied by vomiting, and bloody mucus from the bowels.

Third Operation.—Six hours after the acute attack, a cut was made through the first incision. There were no adhesions to the abdominal wall. The intestines, however, in this region were very adherent. It was interesting to note that they appeared healthy and not without tone, in marked distinction to the previous time, and with complete disappearance of the tubercles. After the reduction, as before, the ileocecal orifice was found to be very patulous, and was considerably narrowed by three puckering mattress sutures of chromic gut, encircling the lumen of the intestine at this junction. The abdominal wound closed as usual.

There was slight temperature reaction, to 100 F., for three days following the operation. The temperature became normal on the fourth day, and the bowels moved well. There was complete subsidence of all symptoms. The stitches were removed on the ninth day, the wound having healed.

The patient was kept in bed a longer time on this occasion, but after two weeks she was allowed up and about. The general and local condition was excellent. July 30, the bowels moved normally, without cramping; no mass was to be felt; otherwise the local and general condition was excellent. There was recurrence, December 19, of a typical attack, unrelieved.

Fourth Operation.—Four hours after the acute attack, an incision was made over the last one, but extended downward in the right iliac region. Omental adhesions were encountered, not to the wound line, but beyond and lateral to it. A large mass consisting of cecum with invaginated ileum was delivered into the wound. Reduction was performed by the previous technic. No tubercles were found. The ileocecal orifice was as patulous as before, easily admitting three fingers.

Still imbued with the idea that the patulous ileocecal valve was a sine qua non for an invagination at this point, we again decided to narrow the lumen, but with three Halsted inversion stitches of Pagenstecher linen following about the lumen of the bowel. The lower end of the cecum was again anchored to the pelvic peritoneal band to prevent excessive motility. The mesentery of the ileum near the cecum was reefed, also with Pagenstecher linen, imitating a Lane's kink. The wound was closed as usual.

December 22, the pulse, respiration and temperature were normal; the bowels moved well; there was subsidence of all untoward symptoms; the patient was allowed out of bed.

The subsequent course was uneventful. The wound healed by first intention; the bowels moved well; Jan. 10, 1922, the general condition was excellent. Local examination revealed no definite mass in the right iliac region; there was some tenderness on deep pressure.

There was a recurrence, February 11. The patient did not suffer so acutely, but she was more nervous, and had pain in the right side of the abdomen. Palpation disclosed a much smaller mass than in the former attacks; she was relieved by enemas.

February 12, the bowels moved well; all symptoms were relieved; the mass was not felt. The pulse, respiration and temperature were normal; she was sent home.

There was a recurrence, February 14. The attack was markedly acute, and a large mass could be felt in the right umbilical region.

Fifth Operation.—This was undertaken within six hours after the beginning of the attack. There were adhesions all about, but particularly between the omentum and the intestinal coils. These were released, and the intussusception was reduced as usual. The ileocecal orifice was as patulous as before, and no evidence of the Pagenstecher stitches was found. It seemed that everything possible was engulfed in that insatiable cecal maw—bowels, adhesions, et al.

The futility of anchoring by stitches, or extensive adhesions even, was thoroughly brought home, and no further attempt was made to narrow the ileocecal lumen.

Two procedures were now open: either resection of the cecum and the lower part of the ileum, with anastomosis, or ileocecostomy. After all the previous efforts, which thus far had preserved the life of this little patient, it was felt that the graver radical operation (resection) should be reserved for a possible last hope. Therefore a lateral anastomosis of the ileum and the cecum was done.

The ileum was brought down to near the lower end of the caput coli, and there anastomosed to avoid the cecal pouch which would remain if anastomosed above the ileac junction. Pagenstecher linen was used for the Czerny-Lembert, and No. 0 chromic for the through and through intestinal suture. A stoma somewhat larger than what would admit the thumb, in all diameters, remained after closure. The abdominal wound was closed as usual.

February 20, recovery had been uneventful. The wound healed by first intention. The bowels moved well; the appetite was fair; the pulse, respiration and temperature were normal; the general condition was good, though the patient looked rather peaked. She was sent home.

Jan. 31, 1923, after the lapse of almost a year, the patient was robust, and had been entirely free from any abdominal distress since the last operation. She was active in athletics, being on the basketball team of her school. She had two well healed scars, one 2 inches, and the other 4 inches in length. There was no hernia or lack of muscular tone or strength. No mass could be felt in the right iliac region.

Stereoscopic roentgenograms revealed the barium entering the terminal ileum, and both the cecum and the ileum lay in the right iliac fossa, where they were anchored at the last operation.

COMMENT

At the first operation there were only very slight, young adhesions at the invaginated site, operation being performed twelve hours after the diagnosis was made. All the other operations were performed within six hours after the sharp attack of cramps, and at each, extensive adhesions, even of the intussusception, were found. This would indicate that the invagination had taken place to a certain extent without causing distress, and without complete obstruction. But it would seem that when a fresh part of the ileum was drawn into the invagination, the characteristic attack, with complete obstruction, ensued.

In reviewing the conditions found at the different operations on this patient, I cannot imagine that any but the densest adhesions, which would immobilize both cecum and ileum, could prevent a recurrence of invagination. This was the case here, where adhesions between the apposed serous coats were found on the invaginated intestine. How, then, can the simple anchoring of the bowel to any part of the abdominal cavity be effective in preventing invagination, unless it is done to such a great extent as seriously to interfere with the motility and function of the intestine?

This advances the idea that if the axis of peristalsis of the ileum is diverted, the beginning invagination cannot proceed beyond this point. The kink, thought by Lane to be pathologic and perhaps inimical, may, after all, have its function in performing this very act, i. e., diverting the onward intestinal rush.

A small, firm ileocecal orifice must, axiomatically, prevent invagination at this point. It was this fact that caused us repeatedly to make the effort of its permanent narrowing, the wedgelike action of the con-

tained intestine tearing out the stitches, however, and rendering the procedure ineffective.

It would seem that the rational effort should be to divert the axis of ileac peristalsis. Ileocecostomy is ideal in accomplishing this, when the general condition of the patient permits, for the important reason, also, that the function of bowel evacuation is not interfered with.

All means of extensive anchoring of the bowel or mesentery to the peritoneum of the abdominal walls or to the neighboring intestine must eventually seriously interfere with bowel function, so that, while mortality is averted, morbidity is substituted. In the former method, both may be averted.

From reports of cases appearing in the literature during the last ten years, I have been able to collect only twelve cases of recurring intussusception. Though this may be a relatively small number, from the reports, these recurrences are from cases that evidently were originally thought to be cured. Probably, many fatal cases do occur, but are not reported, when simple reduction, without radical preventive measures against recurrence, is practiced.

Sufficient attention has not been given by surgeons to this dangerous pathologic condition, and one awakens to the need of more published experience to aid in the cure when the case is encountered.

I report in detail this obstreperous case because of the stimulus it may afford to surgeons to standardize operative procedure in these cases; also to suggest a simple technic for the reduction of the invagination, and to accentuate the effectiveness of the ileocecal anastomosis as practiced in this case, by attaching the ileum below, to the caput coli, rather than above its junction.

A TYPE OF POSTOPERATIVE FEVER, PROBABLY MALARIAL RELAPSE*

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RICHMOND, VA.

These three cases are typical of a certain group seen at St. Elizabeth's Hospital during the summer and early fall months of each year.

REPORT OF CASES

CASE 1.—W. F. S., a man, aged 28, physician, admitted, Sept. 5, 1922, had always lived in South Carolina. He complained of attacks of gnawing epigastric pain accompanied by nausea and weakness, coming from one to two hours after meals, and relieved by food and soda. These attacks had lasted for six years. One year, and again two weeks, before admission to the hospital he passed large, tarry stools for several days, and on the last occasion he spat up some fresh blood. The family history and past history were irrelevant, except for "malaria" during childhood.

The patient was tall and fairly well nourished, with marked pallor and a "washed-out" appearance; the physical examination was otherwise essentially negative. Routine urine, feces, phenolsulphonephthalein kidney function, and Wassermann tests were negative. Gastric analysis showed a slight hyperacidity and a faintly positive benzidin test for blood. Blood examination revealed a mild secondary anemia, a white count of 6,000, differential count, lymphocytes, 36 per cent., transitionals, 1 per cent., and neutrophils, 63 per cent. No malarial parasites were noted in the blood smear. Fluoroscopic examination of the gastro-intestinal tract following a barium meal showed a persistent filling defect in the first portion of the duodenum. A diagnosis of duodenal ulcer with mild secondary anemia was made.

A duodenal ulcer was found at operation, September 8, and both the appendix and gallbladder were chronically inflamed and adherent. The operation consisted of appendectomy, cholecystectomy, excision of the ulcer and pyloroplasty (Horsley).

Nausea and vomiting were much more marked than usual after such an operation. Six days after operation the patient had in the afternoon a slight chill, after which the temperature was 101 F. The next afternoon, one hour later, he had a decided chill, following which the temperature was 102. The white count was 12,000 and neutrophils 80 per cent., which is about normal for a person recovering from a rather extensive operation. No malarial parasites were found in blood smears. Thorough physical, urinary and wound examinations gave no evidence of any cause for the chills and fever. The patient was given 2 grains (0.13 gm.) of calomel, followed in one hour by 6 ounces (175 c.c.) of magnesium citrate; quinin bisulphate, 5 grains (0.3 gm.) every six hours, was prescribed for four days. Within a few hours after this treatment was begun the patient felt much better, and the temperature came down to 98.6 the following morning. It remained about normal for eight days, when it rose in the afternoon to 100. Quinin was given as above for three days, after which convalescence was uneventful.

CASE 2.—Miss B. C., aged 46, entered the hospital, Oct. 2, 1922, for operation on an abdominal mass of four months' duration. She had always lived in Virginia. The family history and past history were irrelevant, except for malaria with chills and fever when she was 5 years old.

Physical examination was essentially negative, except for a large, firm, nodular mass attached to the uterus. Routine blood, urine, feces, phenolsulphonephthalein kidney function and Wassermann tests were negative. A diagnosis of uterine fibroids was made, and a hysterectomy and appendectomy were done the day following admission.

The second day after the operation she began to have a temperature varying from 99 F. in the morning to 101 during the evening. This continued for one week. The white count was 11,600. This was accounted for by the development of a stitch abscess which was treated by constant hot supersaturated boric acid dressings and insertion of a small, superficial drainage tube, which was irrigated with 1 per cent. chloramin-T solution twice daily. For four days her temperature varied between 99.6 and 100, and the wound was doing well. The next afternoon (twelfth postoperative day) the temperature was 102.2. It returned to the usual level the following day. On the fourteenth postoperative day the morning temperature was 97.5, and at noon 101. About 1:30 p. m. the patient had a mild chill, following which the temperature was 103.4. The white count was 11,000, lymphocytes 12 percent., neutrophils, 88 per cent. No malarial parasites were found in the blood smear. Thorough physical, urine and wound examinations gave no evidence of the cause of the chill and fever. The patient was given 5 grains (0.3 gm.) of quinin bisulphate every four hours for three and a half days. The day following the chill her temperature returned to its usual level, varying from normal to slightly above normal. After six days the wound infection cleared up and the temperature remained normal. Quinin therapy was continued at intervals of a few days.

CASE 3.—A. A. D., a man, aged 25, student, who had lived practically his entire life in a malarial district of South Carolina, entered the hospital Aug. 14, 1922, for repair of a deformity of the right forearm and hand which had resulted from an injury in a cotton gin nine and a half months before. His family history and past history were irrelevant, except for mild attacks of malaria with chills and slight fever for several consecutive summers, for which he had received no special treatment.

The patient was small and thin, with contraction deformities of the right forearm, hand and fingers. Otherwise the physical examination was negative. Routine blood, urine, feces phenolsulphonephthalein kidney function, and Wassermann tests were negative.

The patient had five plastic operations performed, two under ether anesthesia, and three under local anesthesia. He progressed satisfactorily for thirty days with only a slight

* Read before the Staff Meeting of St. Elizabeth's Hospital, Oct. 24, 1922.

occasional afternoon rise in temperature, which could be explained by the condition of the wound. The last operation was performed, September 14, and the day following the temperature rose to 101.4, returning to 99 in the morning and 101.7 the next afternoon. Two days of practically normal temperature passed, and then, September 19 a rise to 102 occurred, which persisted for twenty-four hours. Thorough physical, urine and wound examinations gave no evidence for cause of fever. Blood examination showed a moderate increase in the white cells, 28 per cent. lymphocytes, 72 per cent. neutrophils and no malarial parasites in the blood smear. Quinin bisulphate, 5 grains (0.3 gm.) every six hours, was prescribed for five days. The patient showed marked symptomatic improvement and a return of the temperature to normal within twelve hours after quinin was begun. Further convalescence was normal.

COMMENT

Most fevers which follow operations can usually be explained by wound sepsis, pyelitis, phlebitis, pulmonary or upper respiratory infections, severe dehydration, or other less common postoperative sequelae. When these usual complications are ruled out, when the patient has a definite history of having had malaria and presents the symptoms of malaria, all of which disappear after quinin therapy, it would seem to indicate that the condition is a malarial relapse.

A review of the literature on malarial relapses (prepared by the information service of the Rockefeller Foundation) mainly of British, Italian, Dutch and American sources, shows that it has long been recognized that malarial relapses may occur after long intervals. A number of authentic cases can be cited, which are thought to prove that the period of latency in malarial infections is often long enough to justify the conclusion that a proportion of the attacks of malaria developing in a given season are malarial relapses from infections of the previous season.

The theory of the etiology of relapse in malaria, which is supported by the majority of authorities of today, is that the diminution in the number of malarial parasites to a certain level at which active symptoms disappear may be due either to the action of quinin or to the protective forces of the body, or to both. The process of asexual reproduction is continued through the interval without modification or interruption, and no abnormal change occurs in the form of the parasite. The number of parasites is small, however, so that no symptoms are produced, until, for some reason, such as exhaustion, exposure to extremes of temperature, unfavorable climatic conditions, surgical operations, or illness from some other disease, the bodily powers of resistance are lowered, when the parasites multiply rapidly and relapse occurs.

One point against considering the fever of the foregoing cases as due to malarial relapse is the fact that in none of them has there been found malarial parasites. Several blood smears of each patient were examined. In this type of malaria, however, the parasites are supposed to be held in a latent state in the red cells of the internal organs, chiefly the spleen, and they cannot be found in the peripheral blood. This probably accounts for the failure to demonstrate them.

Bass [1] says:

> It has been well established again, as is recognized by the planter in malarial country, that malaria feeds on indolence and inactivity, and that recovery is more sure and speedy for him who keeps going while taking his quinine. Among troops the observation has been general that men excused from duty or sent to hospital, while not necessarily worse than others who kept on with their duties, invariably become worse and less amenable to treatment. Again it has been a rare thing for an officer to be actually incapacitated with malaria, while the men who came before the medical officer for malaria almost certainly reached hospital and succumbed to a period of sympathetic treatment, with relapse after relapse, owing to interrupted, inefficient, and insufficient quinine treatment.

1. Bass, in Nelson Loose-Leaf Medicine 7: 345.

In many persons the initial malarial attacks cause the mildest illness, and many have the infection without any symptoms that are recognized as due to malaria. It is, therefore, possible for similar symptoms and conditions to occur in a patient who gives no history of malaria. Quinin is an antipyretic, but it lacks the power of permanently reducing fever and relieving the type of symptoms seen in the three cases cited above, unless the condition is due to malaria. Bass claims that if the therapeutic test uniformly causes clinical symptoms to disappear, it can be depended on to establish malaria as the diagnosis in suspected cases.

The standard treatment recommended by the national committee should be followed in these cases. It consists of 10 grains (0.65 gm.) of quinin sulphate three times a day for a period of three or four days to relieve the acute symptoms, to be followed by 10 grains every night before retiring for a period of eight weeks, to cure the infection.

SUMMARY

1. Certain postoperative fevers occurring during the summer and early fall months in patients who have lived in a malarial district are due to malarial relapses.

2. In three typical cases of postoperative malarial relapse, the therapeutic test for malaria caused the clinical symptoms to disappear.

3. The standard treatment recommended by the national committee should be followed in these cases.

SKIN PREPARATION IN HYPODERMIC NEEDLE PUNCTURES

GAS BACILLUS INFECTION WITHIN TWELVE HOURS AT SITE OF HYPODERMIC PUNCTURE

C. E. TENNANT, M.D.
DENVER

The use of the hypodermic syringe is not altogether free from danger, even though administered under the most careful aseptic conditions. It has long been known that the skin is a common carrier of pathogenic organisms, but the universal use of the hypodermic syringe is so common, and unfavorable results so rare, even when carelessly used by the layman, that it would seem quite impossible for a tragedy, such as is here recorded, to have occurred when the most strict aseptic conditions were present.

Alcohol for commercial use, and even for hospital administration, is not what it was before the Volstead Act. It is quite probable that it should not now be depended on as an antiseptic as it formerly was when made by the old process in regular distilleries, since much of the alcohol now being purchased is a by-product in the manufacture of "near beer," the alcohol being extracted at the last moment, in order to make the product approximate real beer and yet meet the requirements of present legislation.

Alcohol rubbed over the skin causes no discoloration; hence there is no target or landmark apparent to which the point of the needle may be directed in order to come well within the so-called sterilized bacteria-fixed

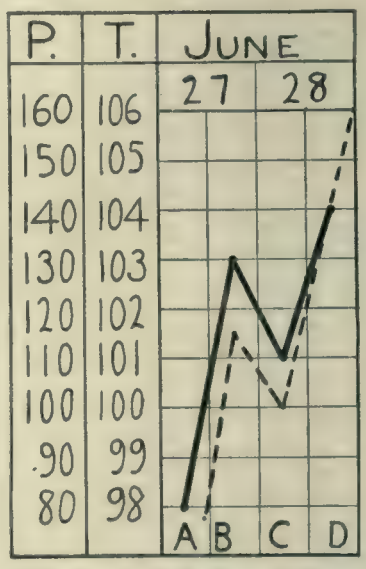
area. Under such conditions, no doubt, it frequently happens that the hypodermic needle is plunged into an altogether unprepared spot. Consequently, although the technic of hypodermic syringe and solution sterilization may be ever so carefully executed, the unexpected happens, since the needle, passing through an unclean area, may carry with it whatever is lodged on the skin.

I know of no more embarrassing or troublesome postoperative complication to the surgeon and the hospital authorities, and nothing more distressing to the patient, than a postoperative infection, abscess or systemic bacteremia resulting from inoculation at the site of a hypodermic injection.

While it is true that there has been some discussion, pro and con, relative to any preliminary skin preparation prior to the use of the hypodermic needle; until it has been successfully shown that we can do routine operative work without prior skin preparation, or until we can demonstrate 500 consecutive cases without postoperative infection directly traceable to skin contamination, I shall not be quite ready to accept the argument and abandon the usual postoperative routine.

The use of iodin as the agent best adapted to skin preparation has been universally accepted, and why alcohol is permitted, or recognized as equally effective when applied to hypodermoclysis, or the administration of drugs by hypodermic needle, is beyond comprehension, especially since the commercial forms of alcohol are generally used. Many, however, endorse it, and consequently hospitals permit the habit, while nurses and interns are growing more in the habit of using alcohol, because it is to be found in every patient's room and at every ward bed.

The best evidence we have that the patient's local resistance and the mechanical wiping of the needle by the closely fitting epidermis are great sources of protection is the fact that we have so few cases of infection following the use of the hypodermic needle; but this is not sufficient justification for not throwing all barriers we can command around the patient in order to minimize postoperative accidents and distress.



Continuous line, temperature; broken line, pulse; *A*, gastro-enterostomy and appendectomy; *B*, hypodermic injection of atropin sulphate; *C*, crepitation discovered in right thigh; *D*, death after two hours of coma.

REPORT OF CASE

A white man, aged 26, had had pain in the upper right quadrant frequently since childhood, increasing in severity after January, 1922. The pain occurred usually five hours after meals, and was relieved by food. Roentgen-ray examination disclosed a shallow duodenal ulcer. Operation at 9 a. m., June 27, 1922, disclosed a stellate ulcer at the junction of the duodenum with the anterior surface of the pylorus. After a posterior gastro-enterostomy and appendectomy, the patient was returned to his room in good condition. One-fourth grain (0.016 gm.) of morphin sulphate was administered hypodermically. The nurse called the house physician to visit the patient at 2:45 p. m., as he was very much cyanosed and breathing hard, and I was promptly notified and visited the patient in company with Dr. J. N. Hall, when we found a typical morphin narcosis, the pupils contracted and the respirations slow. At 4:10 p. m. a hypodermic injection of atropin $\frac{1}{150}$ grain, was ordered. Alcohol was used by the nurse in preparation of the skin, and the injection was made in the outer aspect of the right thigh, the hypodermic syringe having been sterilized first by the sister in charge of the floor. At 8 p. m. the patient was very much improved, and complained of pain at the site of the abdominal incision; evidently, he was recovering from the morphin narcosis.

June 28, at 3 a. m., the nurse reported that the patient was very restless, with severe pain in the abdomen; and with the full knowledge of the effect of morphin on this patient, 1 grain of codein sulphate was administered hypodermically, which afforded relief for one hour. At 8 a. m., he complained of pain in the right thigh, and a hot water bottle was applied by the nurse. When I saw the patient at 8:30, there was a reddened area on the right thigh, about 2 inches in diameter, at the site of puncture by the hypodermic needle when the atropin was introduced on the preceding afternoon. Pressure provoked pain and ischemia, the color quickly returning on removal of the finger tip. There was no crepitation at this time, and it was assumed that we had a simple local hypodermic needle infection and the hot water bottle was continued. The patient was seen again at 11 a. m., the pain having increased in intensity, accompanied by swelling and redness, which extended from the hip to the knee. Crepitation was distinctly perceptible on palpation, and the temperature was 104 F. A diagnosis of gas bacillus infection at the site of the hypodermic puncture was at once made and a needle was introduced, withdrawing serum for microscopic examination, which proved negative.

At 11:30 a. m., consultation was held with Drs. J. N. Hall and Leonard Freeman, when it was decided to open the leg. A smear taken from the first incision gave numerous gas bacilli (*B. aerogenes-capsulatus*, Welch, 1891) which finding was later confirmed by our pathologists, Drs. Hillkowitz and Craig. Under local anesthesia, three long incisions were then made through the fascia lata, at 1 inch intervals, and copious applications of hydrogen peroxid were made, no fresh surgical solution of chlorinated soda (Dakin's solution) being available at that time, and amputation being out of the question. The dressings were saturated every ten minutes thereafter, but the patient grew steadily worse, blood appearing in the urine at 5 p. m., the pulse becoming weaker, and death occurring at 12 midnight after two hours of coma.

The remaining tablets of atropin sulphate and the hypodermic syringe and needle were at once submitted to careful laboratory tests by the pathologist, Dr. Helen Craig, anaerobic cultures being made, all of which failed to produce the organism. A possible clue to the source of this infection may be found in the history subsequently obtained from the wife, that the day prior to the patient's coming to the hospital he had spent a portion of the afternoon in cleaning the stable.

It is in such experiences as this that one regrets not having used the other method of sterilization of the skin. A generous spotting with iodin, given a few seconds to dry, makes the target for a well directed needle, the center of which should be approximated with certainty. The sterilizing efficacy of iodin is no doubt superior to alcohol, especially in view of the quality of the latter now so commonly found on the market.

Maintenance of Industrial Efficiency.—Periodical medical examination, whereby minor ailments may be recognized and treated, also the testing of men's physical fitness for work, after a few months or years of factory service, would, by the elimination of the unfit, tend to maintain industrial efficiency. Physical incapacity for work as revealed by such examination should not, however, be made the excuse for dismissal of the men, but the occasion for providing them with lighter employment.—T. Oliver, *J. State M.* **29**:322 (Nov.) 1921.

Clinical Notes, Suggestions, and New Instruments

INJURY TO CAROTID ARTERY AND JUGULAR VEIN, WITH LIGATION AND RECOVERY

C. S. LAWRENCE, M.D., WINSTON-SALEM, N. C.

A boy, aged 12 years, entered the hospital, Aug. 6, 1922, with a wound of the neck, due to an automobile accident. The impact of a collison threw the boy, who was riding on the front seat, into the wind-shield, breaking it and at the same time inflicting a wound in the left side of the neck. There was a sudden, profuse hemorrhage; the boy got out of the car and stood for a second; then his father and other occupants of the car laid him on a cushion and applied a handkerchief compress to the bleeding wound, placed the boy in the car, and drove to the hospital, a distance of 4 miles. On the way, they stopped at the office of a physician, who advised them to rush to the hospital at once.

I saw the boy within a few minutes after admission. He lay perfectly quiet, blanched from loss of blood; the pulse was soft and feeble; there was an incised wound in the left side of the neck, clean cut, with no bleeding. The boy held his head flexed on the neck, closing the wound. His clothing was soaked with blood, and his shoes were full of it. The other occupants of the car were sprinkled with blood.

The wound was so extensive that we decided to give the boy light ether anesthesia to repair it. Things were made ready, and Dr. Stirling started the anesthetic. As soon as the patient got enough ether to stimulate him he moved his head to the right, opening the wound, with a spurt of blood that was, indeed, alarming. I immediately applied a compress, holding it with my hand and controlling the hemorrhage. The wound was slowly opened. At the same time, pressure was made below until I could see the cut end of the internal jugular vein and a wound into the carotid artery. The jugular vein and the carotid artery were clamped with a curved Kelly clamp, transfixed, and ligated with No. 2 chromic catgut. When the clamp was released, blood was seen to flow from the carotid, so it was again ligated above and below the wound, after which there was no bleeding. The artery was cut about half through. The upper end of the jugular was found retracted high up under the cut ends of the neck muscles; it was clamped, transfixed, and ligated with No. 2 chromic catgut. The glass made its mark on the thyroid cartilage from front to back, and almost entered the larynx. The wound ranged from above down; hence the carotid was cut at a lower line than the jugular.

The muscles of the neck were approximated by No. 1 chromic catgut, and the skin was closed with silkworm gut. The boy left the table in a very feeble condition; 500 c.c. of salt solution with 500 c.c. of black coffee, given by rectum, with heat to the body, revived him at once, the pulse improved, and the general appearance improved markedly. Salt solution was given by rectum for twenty-four hours, when the condition was so much improved that the treatment was discontinued.

RECORD OF CONVALESCENCE

August 7, there was ptosis of the left eyelid; the left pupil was contracted, and reacted sluggishly to light. The voice was husky, the patient being able to speak only slightly above a whisper; 1,500 units of antitetanic serum was given. The face muscles were relaxed on the left side.

August 9, the left pupil was dilated with homatropin, and the eye ground examined. The nerve head was somewhat anemic, and the margins were not clearly defined. The vessels looked normal in every way. No abnormality was seen in the retina; there was a mild degree of ptosis of the left lid.

August 12, two silkworm stitches were removed. The margins of the wound separated, with discharge of pus. The patient could not speak above a whisper.

August 15, the eye grounds were normal.

August 21, aside from a slight discharge from the wound, the general condition was good. The left pupil was still smaller than the right. There was ptosis of the left lid, and relaxation of the muscles of the left side of the face. The voice was husky. The patient was discharged from the hospital to return for dressings.

October 17, fluoroscopic examination showed the excursion of the diaphragm equal on the two sides. The heart and the lungs appeared normal. The pupils reacted to light and accommodation. The left pupil was slightly smaller than the right. The drooping of the left lid and the relaxation of the face muscles were much improved. There was no improvement in the voice. Distinct pulsation was felt in the carotid artery below the point of ligation, with none above. There was a very feeble pulsation in the left temporal artery, demonstrable for the first time since injury. The boy was much improved in general health.

Jan. 29, 1923, five months after the injury, the general health was good. The left pupil was half the size of the right. The voice was husky. There was slight improvement in the voice and in the muscles of the face.

COMMENT

When the common carotid artery or internal jugular vein is divided or punctured, the time required for fatal bleeding is so short that few patients have been saved. Lejars and Larrey have shown, by reported cases, that the life of patients so injured can be saved. In their cases a surgeon happened to be close at hand when the accident happened, and controlled hemorrhage by compression until the vessels could be ligated.

In the case here reported, the patient was literally soaked in his own blood. In my opinion the reasons he did not bleed to death were that: (1) he bled until the blood pressure was nil; (2) the severed neck muscles retracted, taking with them the cut vessels, the bleeding vessels coming in contact with fresh cut muscle, which has a tendency to control hemorrhage; (3) a handkerchief compress was applied by a layman present at the time; (4) the flexed position in which the boy held his head on the neck to the injured side had a tendency to close the wound.

There is no doubt that the recurrent laryngeal nerve was severed at the time of the accident, for all I did was a rapid ligation of the vessels, and if the suture had included the nerve I do not believe it would have destroyed it. There were no symptoms of pneumogastric or phrenic injury. The contraction of the pupil on the side of injury was due, evidently, to sympathetic injury, and the partial paralysis of the face muscles was due to the same cause together with anemia.

NEW TECHNIC FOR THE FLOCCULATION TEST OF SYPHILIS

ARTHUR R. CASILLI, M.D., NEWARK, N. J.

The various modifications of the original Sachs-Georgi precipitation test of syphilis have dealt with the preparation of antigen, the technic used, or both. One thing has become evident, however, and that is the use of concentrated but freshly diluted antigen. Kahn's preparation of antigen and modification of technic used in performing the reaction have gone far to show that the flocculation test may eventually replace the difficult complement fixation procedure of Wassermann.

The technic I have evolved takes advantage of Kahn's antigen, but the reaction gives decided, clear flocculation results.

TECHNIC

The clear serum is inactivated at 56 C. for half an hour. One-tenth c.c. of serum is diluted with 0.9 c.c. of physiologic sodium chlorid solution (0.8 per cent.). At the bottom of a clean, dry, one-fourth by 4 inch test tube made of nonsoluble glass is put 0.05 c.c. of pure cholesterinized antigen (not diluted), and to this the 1 c.c. of diluted serum is added. The mixture is vigorously agitated and incubated at 37 C. Within three hours there will be a sharp, clear-cut flocculation in positive serums. I prefer to incubate over night and read the reaction in the morning when the precipitate all sinks to the bottom of the test tube, leaving a clear, supernatant fluid. The negative serums remain turbid, but with no flocculation.

While the cholesterin antigen gives the best results, the positive serums also react to noncholesterin antigen, but the reaction is less sharp. The stock antigen is always to be kept in the incubator.

For quantitative work, two test tubes are used. In each is put 0.05 c.c. of cholesterinized antigen. To the first tube is added 0.2 c.c. of serum previously diluted to 1 c.c. with saline solution; to the second tube is added 0.1 c.c. of serum previously diluted to 1 c.c. with saline solution. Both tubes are vigorously shaken and incubated at 37 C. Within three hours there will be distinct gross flocculation in both tubes, but more in the first tube if the serum is of four plus reaction. It is interesting to note that, in four plus reactions, the precipitation occurs in the first tube long before flocculation occurs in the second. With a flocculation of equal quantity in the two tubes, or with a fainter precipitation in the second tube, the reaction is read three plus. If there is complete flocculation in the first tube and none in the second, the reaction should be two plus. When the flocculation is only faint in the first tube and none in the second, the reaction is given one plus. Of course, with no flocculation in either tube the reaction is negative. These readings are based on my observation that 0.1 c.c. of serum is just enough to produce a complete flocculation in a four plus reaction. It is an advantage to be first acquainted with the degree of flocculation given by 0.1 c.c. of serum of a known four plus reaction.

RESULTS

I have tried this technic with a large number of serums, and for the present I can only say that the results thus attained are in perfect accord with the Wassermann reaction. My only reason for the publication of this preliminary note is to acquaint other investigators with the technic, which, if adopted, may be of service in their research and may give me no opportunity to compare their results with mine by the time I am ready to give a full account of the test.

111 Park Avenue.

AN UNEXPECTED EPINEPHRIN REACTION FOLLOWING INFILTRATION WITH PROCAIN-EPINEPHRIN SOLUTION AS A LOCAL ANESTHETIC

CHARLES E. DOWMAN, M.D., ATLANTA, GA.
Assistant Professor of Surgery, in Charge of Neurologic Surgery, Emory University School of Medicine

M. S., a woman, aged 31, was admitted to the Piedmont Sanatorium, Feb. 1, 1923, with a diagnosis of tumor of the cerebellum. Her symptoms had begun one year before, and consisted principally of dimness of vision, headaches, vomiting, and staggering gait. The general examination was negative for hyperthyroidism. The blood pressure was systolic, 100; diastolic, 70; the pulse was 80; hemoglobin, 70 per cent. The neurologic examination disclosed bilateral choking of the optic disks, a markedly staggering gait with tendency to lean to the right, and asynergia of the right arm and right leg. February 7, the patient was prepared for operation. The field of operation was infiltrated with 5 ounces of 1 per cent. procain solution, each ounce of the solution containing 7 minims of epinephrin chlorid solution (1:1,000). Before the infiltration was begun the systolic blood pressure was 102 mm. of mercury; the pulse, 80. At the completion of the infiltration, the systolic blood pressure rose suddenly to 180 and the pulse to 180 a minute. There was sudden loss of consciousness followed by a generalized convulsion. The extremities became blanched. The thyroid gland appeared increased in size. A few minutes later there was projectile vomiting. Fifteen minutes after the reaction began, the blood pressure began to fall, and came down within a few minutes to 115. As the blood pressure began to fall, consciousness returned. It was then noticed that the left pupil was dilated and that there was a paresis of the left side of the face. After two hours, these findings disappeared. During the twelve hours following the reaction, the patient vomited several times. At the end of this time the patient had returned to the same condition that preceded the infiltration. Two days later a cerebellar operation was successfully performed under ether anesthesia.

The use of local anesthesia in neurosurgical operations is a matter of routine with me except in children and very nervous adults whose cooperation cannot be relied on. The solution that we use contains from 0.5 to 1 per cent. of procain. To each ounce of the solution, 7 minims of epinephrin chlorid solution (1:1,000) is added. The epinephrin is used for three reasons: (1) to prevent the absorption of the procain; (2) to prolong the duration of anesthesia, and (3) to lessen the usual troublesome scalp hemorrhage. Although as much as 6 ounces of the solution has been frequently used, there have been no reactions which could be attributed either to the procain or to the epinephrin, with the exception of the case reported.

In view of the possibility of severe epinephrin reactions in the use of local anesthesia when this drug is added to the solution, it would seem advisable to determine beforehand whether or not the patient is particularly susceptible to epinephrin. This might be done with the Goetsch test. When several ounces of the solution are required, the epinephrin content should be correspondingly reduced.

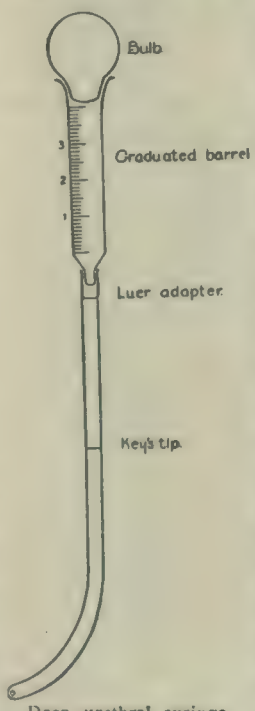
75 Forrest Avenue.

A DEEP URETHRAL SYRINGE

SIMPLE AND INEXPENSIVE ADAPTATION OF THE BULB TYPE*

H. J. SCHERCK, M.D., AND W. E. JOST, M.D., ST. LOUIS

From time to time efforts have been made to overcome the disadvantages of the ordinary type of leather-tipped piston syringe. The disadvantages are well known, especially on account of the difficulty of sterilizing and the impossibility of keeping the plunger continuously tight. Other suggestions have been made to overcome these objections, but we believe that in this idea all objections have been overcome, and that a most practical and simple adaptation has been made, as demonstrated in the accompanying illustration. The idea occurred to us on observing an illustrated advertisement relative to these types of syringe. One of the small syringes was graduated, and the tip adapted to a hypodermic needle of the Luer type.



Deep urethral syringe.

The advantages are as follows: that it is simple, inexpensive, and easy to sterilize; by removal of the bulb, the contents of the bladder can be evacuated, and should more than the usual amount of solution be required, the instrument can be filled any number of times without its being necessary to remove the tip. The only requirement for assembling the instrument is to use an adapter of the Luer type between the tip of the syringe and the metal Key's tip. These syringes are graduated and contain about 3.5 c.c.

849 Century Building.

*From the Urological Department, St. Louis University School of Medicine.

Problem of Malaria in Marines in Haiti.—Malaria was responsible for 16,986 days of illness in the First Brigade in Haiti in 1921. The average strength of the brigade was 2,115; the number of admissions was 2,056, with five deaths, hence almost every man and officer who served in Haiti during that year was infected. In the first six months of 1922, the number of admissions was 425, with three deaths, and 4,358 days of illness. Lieutenant-Commander Allen, M. C., U. S. Navy, in an address before the medical officers of Haiti, urged the necessity of an antimalaria campaign.

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SATURDAY, APRIL 14, 1923

THE THYMUS GLAND

As in so many other instances in which each of two conflicting interpretations of a phenomenon were eventually shown to be in part correct, so the early problem concerning the endocrines: Do they act by putting something into the blood (internal secretion) or by taking something out (detoxication)? is simmering down to the answer, "Both." The thyroid and pancreas yield extracts which seem able to replace completely the intact organs in the animal economy (excluding, of course, the digestive action of the pancreas) and may, therefore, be reckoned as functioning through a secretion. The extracts of suprarenal, pineal and hypophysis have definite actions, but have not yet been shown capable of subserving the functions of the intact gland, and judgment of the most salient action of these glands must be deferred. The parathyroids have never yielded active extracts, and have been recently identified with a detoxicating action.

An interesting light is shed on the whole problem by the elaborate studies of Hammar [1] on the thymus. This organ, as revealed by examination of the bodies of healthy persons accidentally killed, increases in size till puberty (from 11 to 15 years), and then slowly recedes with advancing age. The whole remains functional through life, as shown by its delicate response to varying body conditions and by the continued formation of lymph elements and Hassall's corpuscles. The thymus, it will be remembered, consists of two rather distinct tissues: the cells from the endoderm of the fourth gill cleft, which form the epithelioid core or medulla of the gland and are present with lymph tissue as the reticular cells in the cortex, and the lymphoid cells, which invade the gland early in its development. Hassall's corpuscles are being formed continually from the medullary reticular cells by hyperplasia of a small group of them, and are as continually reverting back to the normal reticular cells or, in the case of the larger corpuscles, undergoing cystic, hyaline, calcareous or other degeneration. The lymphatic tissues constantly produce lymphocytes which pass into the blood, as witnessed by numerous mitoses in the lymph "corpuscles," and an increased number of lymphocytes in the blood leaving the gland, as compared to the entering blood.

These two tissues, though related, are, Hammar believes, essentially individual in their function. Increase or decrease in Hassall's corpuscles and lymphatic tissues or corpuscles may occur independently, changes in the latter being usually merely part of a general change of lymphatic tissues. In age and inanition involution, the cortex is greatly reduced (the whole gland may decrease to a hundredth of the normal weight) by increased emigration and lessened production of lymph cells, while Hassall's corpuscles are slowly decreased because their continual formation is retarded while the steady regression continues. The roentgen ray may completely destroy the lymphoid cells and not modify Hassall's corpuscles. Acute infections are first associated with a marked decrease in the lymphoid cells and a great increase in the number of Hassall's corpuscles (in diphtheria, for instance, there may be ten times the normal number, new small ones being formed while the large ones degenerate); and later, when wasting sets in, with a decrease in both. Exophthalmic goiter is definitely accompanied by increase of both the thymic tissues, and the same follows the feeding of thyroid to animals. In cases of mors thymica (and in suicides) there is, if any significant change, a decrease in Hassall's corpuscles and increase in lymphoid cells. Wherever an increase or decrease of thymic lymphatic tissue appears, the same holds for the purely lymphatic tissue and the blood lymphocyte count, though to a lesser degree. The reverse does not always hold: the thymus is spared in some diseases of the lymph tissues proper.

Hammar concludes that Hassall's corpuscles and lymphoid cells are controlled separately by excitor and depressor factors, acting probably through the blood, and he reasons that the factors stimulating production of the corpuscles give the truest index to the unique functions of the gland. Any true antigenic toxin, as diphtheria toxin, snake venom or thyroid, when introduced into the body, leads to the formation of new Hassall's corpuscles, whereas nonantigenic poisons, as phosphorus, carbon monoxid or lye, are devoid of such effect. Hammar suggests that the thymus is essentially concerned with the production of antibodies, and that Hassall's corpuscles "form the morphological expression of an antitoxic activity." He notes that in inanition with lowered thymic activity the resistance to infection is less; that the increase of Hassall's corpuscles in diphtheria (a definite toxin) is especially marked; that, in response to a new intoxication, new corpuscles are formed while the old ones degenerate—possibly because new specific antibodies cannot be formed by the same elements which had produced

1. Hammar, J. A.: Endocrinology 5: 543 (Sept.), 731 (Dec.) 1921.

other antibodies; and that the lymphatic tissues in general are known to be concerned in immune processes. This somewhat speculative evidence is fortified with the results of Barbara,[2] who demonstrated that the thymus produces "stimulins," which activate the phagocytic cells, increase the opsonins, and either produce complement itself or incite its production in other organs.

The thymus, then, from this point of view, is not a gland of internal secretion in that it gives no substance *sui generis*. It is detoxicating in that it protects against toxins. This action is probably not, however, as in the liver, due to the direct action of the gland cells on the toxic bodies, but rather through the intermediacy of a cell product free in the blood stream, which one might choose to call an internal secretion as well as an immune body. Such a detoxicating secretory action may be the key to a number of endocrine antinomies. The futility of tissue extract therapy in "disorders" of such glands hardly requires mention.

THE THERAPY OF EXOPHTHALMIC GOITER

Exophthalmic goiter has long offered a problem of serious import to the clinician, since it causes much immediate distress to the patient and presents uncertainties of prognosis in most cases. Until recently, errors in diagnosis were frequent, for few clearly defined aids to clinical judgment were available. Now that there is more agreement in respect to the distinguishing characteristics of exophthalmic goiter, the therapy of the disease has become the subject of active discussion. In a recent issue of the *Archives of Internal Medicine*[3] is presented the outcome of serious researches by competent investigators which emphasize the conflicting points of view.

The crux of the situation involves the natural or spontaneous course of the disease. This is admittedly fundamental to any final evaluation of specific measures of treatment that may be undertaken. It is often alleged that the natural course of exophthalmic goiter is a most uneven one, and that improvements and relapses may occur at any time spontaneously. Means and Holmes of Boston have wisely remarked, however, that until some one produces a satisfactory experimental exophthalmic goiter, controls will be secured only by chance. Under such circumstances, therefore, it will not be easy to withhold promising treatment from patients, even if a considerable element of uncertainty as to its fundamental value may exist.

Recent treatment of exophthalmic goiter has for the most part proceeded on the theory that it really represents an aspect of hyperthyroidism. Means and Holmes remark that if we accept the theory that the symptoms manifested in hyperthyroidism are due to increased activity of the cells composing the thyroid gland, then the application of any method of treatment which is known to inhibit or destroy cell function would be rational. Surgery and roentgen-ray treatment have accordingly vied with each other for favor in bringing about the desired result. Rarely has it been possible to study such an array of carefully collected data as the intelligent collaboration of the internist, the surgeon and the roentgenologist has made possible in the study of a large number of patients at the Massachusetts General Hospital by Means and his collaborators. About two thirds of these cases exhibiting unmistakable exophthalmic goiter showed either recovery or improvement coincident with treatment by suitable irradiation with roentgen rays. The Boston clinicians assert that in exophthalmic goiter, when treated by the roentgen ray, if good results are not secured in a few months, surgery should be employed. Prolonged roentgen-ray treatment in patients showing no response is undesirable. They also believe that some patients with exophthalmic goiter who are not cured by the roentgen ray are, perhaps, made better operative risks by it. A combination of the two forms of treatment may sometimes accomplish more than either does alone.

In contrast with this is the report of the course of fifty cases of fully developed exophthalmic goiter observed at the Mount Sinai Hospital, New York, by Kessel, Hyman and Lande. The course of the illness was followed with as little interference with the natural tendency of the disease as was compatible with the comfort of the patient. At any rate, "specific" therapeutic procedures were not instituted. Such observations on patients kept essentially at rest alone may quite properly be regarded as a control investigation for comparison with the result attributed to irradiation and surgery. In the opinion of the New York clinicians, the spontaneous course of exophthalmic goiter is toward arrest in the vast majority of cases. In patients who develop the disease late in life (after 45 or 50) the prognosis is poor. If these cases are excepted, the prognosis is excellent under a regimen of "skilful neglect." To establish the efficacy of any specific therapeutic measure, we are told further, one should demand that definite proof be offered that the results obtained are better than those reported here of the "spontaneous" course of the disease.

All investigators now agree that until a specific diagnostic test is discovered, no reported case of exophthalmic goiter should be accepted as a genuine case unless the basal metabolism is distinctly and repeatedly elevated. According to the New York clinicians, by this alone can the disease be differentiated from "autonomic imbalance." In the stage of arrest, differentiation can be made only by the history of the crisis. The clinical picture varies as the age of the patient at the time of onset of the disease. In other words, the variation.

2. Barbara: La fisiopatologia della tiroide e del timo nei rapporti colle infezioni, Milan, 1918, pp. 1-260.
3. Means, J. H., and Holmes, G. W.: Further Observations on the Roentgen-Ray Treatment of Toxic Goiter, Arch. Int. Med. **31**: 303 (March) 1923. Kessel, Leo; Lieb, C. C., and Hyman, H. T.: Studies of Exophthalmic Goiter and the Involuntary Nervous System: Kessel, Leo; Hyman, H. T., and Lande, Herman: III. A Study of Fifty Consecutive Cases of Exophthalmic Goiter, ibid. **31**: 433 (March) 1923.

especially in regard to the presence and extent of the exophthalmos, is dependent, we are told, on the end tissues of the patient, rather than on the specific elaboration of any toxic product. It may be well to reiterate here that thyroid hyperplasia and thyroid adenoma may exist for years without at any time causing sympathomimetic symptoms or alteration in metabolism. Kessel, Hyman and Lande insist that in exophthalmic goiter the dominant derangement is in the realm of the involuntary nervous system. This may not be primary; but the primary cause, whatever it is, must at least operate through the mediation of the involuntary nervous system. Means and Holmes point out, further, that, in toxic adenoma, roentgen-ray treatment appears to effect a similar improvement to that noted by them in exophthalmic goiter; but so far they have used irradiation only with patients who have refused operation. In toxic adenoma, in contrast to exophthalmic goiter, surgery probably removes the actual cause of the disease, the adenoma. The indication for surgery, they add, would, therefore, seem more definite than in exophthalmic goiter. Even in toxic adenoma, however, in certain cases that are too thyrotoxic for safe operation, the roentgen ray may be used to advantage. In the light of present-day evidence, the choice of therapeutic procedure presents, indeed, a difficult perplexity.

A RAPIDLY ELIMINATED DIGITALIS BODY

That the action of digitalis persists after the drug has been withdrawn was recognized by Withering in 1785. In recent years, Bastedo determined the presence of digitalis heart block three and a half weeks after the administration of digitalis had been stopped. Cohn observed by means of electrocardiograms that, in relatively healthy hearts, delayed conduction always persisted for at least two days, and occasionally for two weeks, while Eggleston reported coupled beats from four to twelve days, heart block from three to six days, auricular fibrillation three days, and extrasystoles two days after withdrawal of the drug. Agassiz found, after the intravenous injection of strophanthin, that the heart rate present before treatment returned in about a week. The action of digitalis persists, therefore, for several days in most cases, and in exceptional cases for three weeks. It is evident that better control of the action of digitalis is desirable.[1]

Hatcher, at the request of the Council on Pharmacy and Chemistry of the American Medical Association, undertook to elaborate a digitalis preparation that would be stable, that would contain a definite amount of the readily absorbable principle, and that would be suitable, if possible, for intravenous administration. As a result of extensive experimentation he has isolated a digitalis body which behaves unlike any constituent of digitalis heretofore described. That the new substance has a true digitalis action has been shown by tests on the frog's heart, and by its quantitative synergistic action with ouabain. A nearly fatal dose of this substance is completely eliminated within a few hours after its intravenous injection into the cat, whereas a nearly fatal dose of digitoxin is not completely eliminated for several weeks. Hatcher obtained this rapidly eliminated fraction from digitalis leaf, from the tincture, and from other digitalis preparations by simple methods of extraction. Several chloroformic percolates of digitalis, but not all of them—which, *a priori,* might be expected to contain digitoxin mainly—consist almost wholly of the rapidly eliminated substance, apart from inert matter. This is remarkable in view of the fact that digitoxin is the only chloroform-soluble substance, other than digitalin, obtainable from digitalis.[2]

The rapidly eliminated digitalis body has been separated quantitatively from other digitalis principles, and prepared in a state of purity approaching that of commercial digitoxin. Its importance is due to the effect it will have on the dosage and the biologic standardization of digitalis. Its therapeutic value must be determined by further investigations in which the clinician and the pharmacologist work hand in hand.

The intravenous administration of digitalis is rarely necessary if digitalis is properly given by mouth. For rare cases, in which intravenous digitalis therapy may be indicated, it appears that Hatcher has prepared a product whose action is less persistent than other digitalis preparations now available, and which is simply and inexpensively prepared.

1. Robinson, G. C.: The Therapeutic Use of Digitalis, Medicine **1**: 122 (May) 1922.

2. Weiss and Hatcher: A Study of a Digitalis Body Which is Eliminated Rapidly After Its Intravenous Injection in the Cat, J. Am. Pharm. A. **12**: 26 (Jan.) 1923.

Current Comment

DANGER OF ARSENIC IN CLOTHING

Recently an active advertising campaign has been utilized to promote the use of a solution containing arsenic (equivalent to 0.05 per cent. arsenic pentoxid) as a larvicidal spray for clothing.[3] It is proposed to induce manufacturers of woolen garments to have their materials treated with the arsenic solution to protect the cloth against moth invasion; in turn, the retailer guarantees to the consumer that the fabric will remain moth free. In view of past experiences with arsenic poisoning and the almost universal legislation against its presence (except in minute traces) in foodstuffs, wall paper and even in dyed clothing, this propaganda is surprising. Even though only a small amount of arsenic in the form of the larvicide solution is directed for use as a moth preventive, it may be potent for harm, while carelessness in application may result in greater concentrations. When treated clothes are brushed, the arsenic compound may pollute the air

3. "Larvex," manufactured by the Process Chemicals Company, New York.

more than was the case with the now forbidden arsenic-bearing wall paper. Even the infant in arms may be poisoned by sucking treated woolens. Skin rashes, due to the close contact of treated underclothing, may become frequent, as happened years ago, from stockings colored with a dye carrying a small amount of inorganic arsenic as an impurity. Such contingencies should not be permitted. Unfortunately, the public is led to believe that the government endorses the product. The advertisements state that Larvex—as it is now called—was subjected by the U. S. Bureau of Entomology to the severest test possible and approved. An inquiry by THE JOURNAL reveals that the bureau does not endorse Larvex, nor were the tests the severest possible. It seems that a naval commandant requested the product to be examined and then turned the report—favorable as far as it went—over to the manufacturers, who capitalized it. Thus was one department imposed on by another government agency to the gain of financial interests; thus one arm of the government unwittingly served to defeat the spirit and purpose of legislatures in prohibiting the employment of arsenic in dangerous proportions in every-day commodities. Before it is too late, it is hoped that dealers in wool clothing will not allow themselves to be parties to the distribution of this potent poison, nor allow their names to be used in connection with a misleading endorsement.

POTENTIAL DANGERS IN CHEMICAL PRESERVATIVES

Several years ago, when the question of artificial preservatives, bleaching processes and colors in connection with food products was being actively agitated, Folin said that we need preserved foods now more than ever before. Therefore, he added, there is a legitimate and highly important field for the application of suitable chemicals (if such preservatives can be found) to food which would otherwise be wasted. Whatever the attitude of the individual may be toward the larger questions so long at issue here, there can certainly be no defense of alleged chemical preservatives which do not preserve. To employ such products means to proceed with false assurance. Yet this is apparently what is happening to those who use certain "canning compounds" now widely sold. The problem is one of large significance at the present time from the standpoint of the public health, for "canned goods" have become the object of inevitable suspicion, in view of the outbreaks of botulinus intoxication from preserved products. Levine [1] of the Iowa State College has found that one "compound," consisting of about 95 per cent. boric acid mixed with 5 per cent. of common salt, possessed a selective antiseptic action. Some varieties of colon bacilli and the spore-forming aerobic bacteria tested were inhibited, but the colon forms that have been associated with food poisoning (*B. enteritidis*, *B. paratyphosus* and *B. typhosus*) and the anaerobic spore formers (*Clostridium sporogenes* and *Clostridium botulinum*) grew, the latter readily, in the concentration of the compound which would be employed in canning. *Clostridium botulinum* grew in twice the concentration and survived three times the period of boiling recommended for canning with the compound. The bacteria normally present on asparagus, corn, carrots, string beans and green peas grew luxuriantly in the presence of the compound. A method which affords no adequate safeguard against food poisoning is a potentially dangerous one. Chemical preservatives do not exclude the need of eternal vigilance, even when they are sold in packages that glibly guarantee safety.

1. Levine, M.: The Value of Boric Acid Canning Compound in Food Preservation, J. Home Econom. **15**: 64 (Feb.) 1923.

CONDITIONS ATTENDING THE EXCRETION OF UREA

That the elimination of urea is one of the important functions of the organism requires little argument. It has become an established fact that urea is not confined to one or two organs in the body. This nitrogenous end-product of metabolism occurs in all tissues, except in fat and the urinary tract, in approximately uniform concentration. Its diffusion to all parts of the body is accomplished with great readiness. With this knowledge has come the realization that in health the excretion of urea is easily accomplished. In disease, however, the process of elimination is not always so favorable, so that retention may occur to a variable degree. If the normal process were well understood in all its details, a study of the situation in individual pathologic cases might reveal the character and extent of some defect in the excretory organs. On one side of the urea-secreting cells of the kidney there is blood, and on the other is the urine. Of late years, evidence has been increasing to show that the concentration of urea in the blood plays an important part in the speed of its transfer to the urine. Ambard and his associates conceived another factor to reside in the concentration of urea in the urine. Long ago, however, the studies of Marshall and Davis on animals showed that, when plenty of water is given, the rate of urea excretion is directly proportional to its concentration in the blood. This has now been verified for man, notably by the recent observations of Addis and Drury [1] at the Stanford University Medical School. In their experiments under conditions in which an abundance of water containing varying amounts of urea to alter the content in the blood was ingested, the proportionality between the amount of urea in an hour's urine and the amount in a unit of blood was constant within very narrow limits of variation, over a wide range of blood urea concentration. Such knowledge of the "laws" of urea excretion in health should lead to a useful technic in the detection of abnormalities of the eliminatory processes. It has long been appreciated that although the function of excreting urea may be much impaired in disease, a recognition of this fact simply from the output of urea is difficult or, at times, virtually impossible. The correlation of data derived from both blood and urine gives the greatest promise of furnishing helpful information and promoting an advance in diagnostic method.

1. Addis, Thomas, and Drury, D. R.: The Rate of Urea Excretion, V. The Effect of Changes in Blood Urea Concentration on the Rate of Urea Excretion, J. Biol. Chem. **55**: 105 (Feb.) 1923. Drury, D. R.: The Rate of Urea Excretion, VI. The Effect of Very High Blood Urea Concentrations on the Rate of Urea Excretion, ibid. **55**: 113 (Feb.) 1923.

Association News

THE SAN FRANCISCO SESSION

Postconvention Diagnostic Clinics

Thirty-five or more county medical societies in California will participate in diagnostic clinics, which are to be conducted throughout the state on Monday, July 2, and Tuesday, July 3. These clinics will be in all respects similar to those to be held in San Francisco and Oakland during the annual session of the American Medical Association (THE JOURNAL, Feb. 17, 1923, pp. 481-482). These clinics are to be held under the direct auspices of the county medical societies or by committees representing accredited hospitals. In some instances, the clinic program will be combined with a social program, all to constitute a well rounded day of review work and pleasure. It is hoped that, through these diagnostic clinics, physicians may get new and helpful ideas of diagnosis, treatment and renewed enthusiasm for their work, and that the public may gain information and fuller appreciation of the efforts and accomplishments of scientific medicine.

Representatives of various county societies and hospitals in California will be in San Francisco during the annual session to offer postconvention hospitality to visiting Fellows and to help arrange their postconvention itineraries. Some of the smaller county societies have combined to hold diagnostic clinics, while others that cannot provide facilities for clinics have created hospitality committees to assist visiting Fellows in arranging vacation trips.

The Los Angeles County Medical Society has appointed a committee to arrange the clinic program in Los Angeles, Monday and Tuesday, July 2 and 3. These clinics will be held in the Los Angeles County Hospital, White Memorial Hospital, St. Vincent's Hospital, Good Samaritan Hospital, Children's Hospital, California Lutheran Hospital, Methodist Hospital, Seaside Hospital and Pasadena General Hospital.

The San Diego County Medical Society, in cooperation with accredited hospitals and the United States Naval Hospital, has arranged for clinics at the United States Naval Hospital, St. Joseph's Hospital and the San Diego County Hospital. At the United States Naval Hospital, specially prepared clinics on tropical medicine will be held, offering a unique opportunity to physicians to see many rare diseases.

Societies of the following counties, singly or in cooperative groups, will conduct clinics and entertain visiting Fellows: Butte, Contra Costa, Fresno, Glenn, Humboldt, Imperial, Kern, Lassen-Plumas, Madera, Marin, Mendocino, Merced, Monterey, Napa, Orange, Placer, Riverside, Sacramento, San Benito, San Bernardino, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Siskiyou, Solano, Sonoma, Stanislaus, Tehama, Tulare, Tuolumne, Ventura, Yolo and Yuba-Sutter.

The postconvention diagnostic clinic program outlined offers splendid opportunity for utilizing the experience of many of the teachers and clinicians among the Fellows of the American Medical Association. Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements, 806 Balboa Building, San Francisco, will be glad to provide additional information about the postconvention clinics.

From San Francisco to Hawaii

The members and Fellows of the American Medical Association who wish to go to Hawaii from San Francisco can leave that city on the S. S. *Wilhelmina,* July 3, returning to San Francisco, July 25, or on the S. S. *Matsonia,* July 11, returning to San Francisco, July 31. Those sailing on either of these two vessels will have eight days in Hawaii. The approximate cost of the trip, including first class steamship accommodations, side trip to Hilo, scenic railroad trip along coast of Hawaii, a visit to Kilauea Volcano, automobile trip to Puna District and return to Honolulu and hotel accommodations at Volcano House and at Moana Hotel in Honolulu, will be $365. Those who wish to remain longer in Hawaii may sail on the S. S. *Wilhelmina,* July 3, and return on the S. S. *Matsonia,* July 31. Thus sixteen days will be allowed in Hawaii. The cost of this trip will be approximately $400. Any who wish to have further information may communicate with the Matson Navigation Company, 120 Market Street, San Francisco.

Michigan "Golf Special" to San Francisco

Dr. F. C. Warnshuis, secretary of the Michigan State Medical Society, informs THE JOURNAL that about fifty reservations have already been made on the Michigan "Golf Special," which will be operated from Chicago to San Francisco for the benefit of members of the Michigan State Medical Society and their friends who will attend the annual session. Reservations have been made from seven states. This special train will leave Chicago at 8 p. m., June 17, and will arrive in San Francisco on the morning of June 23. Stops will be made each day at places where good golf courses are available. Reservations have been made and arrangements have been completed for transportation to and from the golf courses. The cost to those who go on the Michigan "Golf Special" for railroad fare, Pullman, meals and incidentals will be $235. Requests for reservations should be sent to Dr. F. C. Warnshuis, Powers Theater Building, Grand Rapids, Mich.

To Delegates and Alternate Delegates

Credentials will be given all delegates to the American Medical Association, signed by the presidents and secretaries of their respective state medical associations. In cases in which delegates cannot attend the annual session, their credential cards should be assigned to their respective alternates. These cards are arranged conveniently for this purpose, the authorization for the alternate delegate being printed on the reverse of the card. It is to be hoped that every delegate who has been elected or who will be elected to represent his constituent state association at the annual session will be present on that occasion, or that in the event that any delegate cannot attend, he will notify his alternate delegate and provide him with proper authorization.

Invitation from Salt Lake County Medical Society

The Salt Lake County Medical Society is arranging for the entertainment of visitors who may be able to stop over en route, either going to or coming from San Francisco. The stop over here can be made inexpensive. Our society has already appointed committees to greet and assist in making arrangements to see the city and, if possible, some of the surrounding territory, which may include wonderful mountain drives; a visit to Saltair, which is situated on Great Salt Lake, and a visit to the great copper mines in this vicinity.

Large parties intending to make this stop over are requested to give us notice as far in advance as possible as to the number in party and length of time of stop over. Any inquiries relative to this matter may be directed to the secretary, Dr. Floyd F. Hatch, Deseret Bank Building, Salt Lake City, Utah.

THE SCIENTIFIC EXHIBIT

The Committee on Scientific Exhibit calls attention to the fact that applications for exhibit space or for time on the motion picture theater program must be in the hands of the director of the Scientific Exhibit not later than May 1. Judging by the applications thus far received, the exhibit at San Francisco will be of a high order. The exhibit constitutes an avenue through which research workers and practitioners may present visually and orally the results of their scientific endeavors. Efforts are also being made to coordinate the work of the sections with the exhibit. Each speaker before a section has received a letter from the secretary of the section suggesting that the features of his paper may lend themselves to effective visualization. In order that the available space may be apportioned to the best advantage, applications will not be passed on, nor assignments made by the committee until after May 1.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 1011)

TUESDAY, MARCH 6—AFTERNOON

HOSPITAL SERVICE

DR. FRANK BILLINGS, President of the American Conference on Hospital Service, in the Chair

The Program on Hospital Service

DR. FRANK BILLINGS, Chicago: Two years ago, the conference took part for the first time in this annual congress, and through those who had charge of the congress I was given the responsibility of compiling a program on hospitals. Last year, those in authority made the American Conference on Hospital Service responsible for the program on hospital service hereafter. Last year the officers of the conference prepared a program on subjects that were entirely new; they felt that it was necessary because in many instances various subjects relating to hospitals were threshed out repeatedly without getting anywhere, so this year new subjects are presented that have not heretofore been discussed before the congress.

The Rôle of Nonmedical Clinical Assistants in Hospitals Without Interns

DRS. S. S. GOLDWATER and E. M. BLUESTONE, New York: The rôle of the nonmedical assistant in hospitals without interns is one which has not yet been thoroughly investigated or appraised. The subject may be considered by ascertaining the actual contribution that such assistants are making to hospital service by considering the manner in which and the extent to which their services may be utilized to advantage, and finally by inquiring into opportunities for the training of such assistants, and the logical content of a course of training to fit nonmedical aids for fruitful hospital service. It is encouraging to know that the American Conference on Hospital Service has taken official cognizance of this problem.

The activities of nonmedical clinical assistants have a twofold origin: the fact that many hospitals that desire interns are unable to secure them, and the fact that hospitals that employ interns have in some instances deemed it wise to relieve their interns of time-honored and arduous, but relatively simple, duties. The shortage of interns has become chronic. In 1920, out of 6,440 hospitals that were requested by the American Medical Association to express an opinion on the subject of interns, only 1,126 reported that they desired to have interns, and of this number only 593, or approximately one half, were found in condition to furnish satisfactory internships. Roughly speaking, about 10 per cent. of the hospitals in the United States having more than ten beds each are able to offer satisfactory internships, and these hospitals, which represent approximately 50 per cent. of the total hospital bed capacity of the United States, are in a position to absorb all the graduating medical students, thus leaving unsupplied with interns 50 per cent. of all hospital beds.

Hospitals accustomed to the services of interns experience acute distress when deprived of such services. The sudden withdrawal of interns from hospitals during the war started something like a panic. Hospitals were unwilling to do without a system which they had come to regard as indispensable, and, in their eagerness to keep their organizations intact, began to offer financial rewards for interns. In hundreds of hospitals the unsalaried intern was replaced by the salaried intern, but although by this means a small number of older physicians were induced to abandon private practice and resume institutional work, the general hospital situation was not greatly altered, for the principal effect of the bidding up of salaries was the mere fruitless shifting of interns from one hospital to another. The cessation of the war brought no adequate relief. The number of hospital beds, and, more especially, the demand for intensive technical service incidental to diagnosis and to the treatment of hospital patients, continue to increase at a rate which indicates a continued shortage of interns; and this is a condition which cannot be disregarded, since it is now generally believed that hospitals which are deprived of interns are more than likely to be frustrated in any attempt at the proper organization and standardization of their clinical work.

Clinical records are important in all hospitals, both great and small, but it is futile to talk about perfecting the clinical records of small hospitals unless a substitute for the intern can be provided. With the best will in the world, the visiting staff of hospitals that have no interns cannot see patients promptly enough after admission; they cannot take proper histories, satisfactorily record operations, furnish or secure adequate and timely assistance at major surgical operations, render prompt first aid in minor accident cases, make adequate clinical notes of the progress of their cases, make sufficiently frequent urinary analyses and blood examinations, or give suitable attention to infected wounds which require time-consuming treatment. For all of this work resident assistants are needed, and for some of it nonmedical aids are already extensively employed.

It would be folly to enlist the services of a nonmedical personnel to satisfy a need that is fundamentally a medical need, if any other expedient were available. Apparently, no other expedient will entirely meet the situation. The growing enrolment of medical undergraduates offers some, but not sufficient relief; for, as the number of medical graduates increases, so also does the ratio of interns to patients in well organized hospitals. Here and there, visiting physicians in attendance at small hospitals assert that in the absence of interns the visiting staff assume the interns' duties. If the larger hospitals which employ interns exclusively could be persuaded to employ mixed forces of interns and nonmedical technicians, a considerable number of interns might thus be released for service in the smaller hospitals. But who will persuade the larger hospitals to do this? Not a few of the larger hospitals are employing nonmedical anesthetists, surgical assistants, laboratory workers, and clinical secretaries, but the ratio of interns to patients is usually greatest precisely in those hospitals in which these extra workers are employed. In these hospitals, the chief purpose of the employment of nonmedical clinical aids is to relieve rapidly changing and relatively unskilled interns of the duties which they perform least satisfactorily, and to substitute workers who, through long continued practice, eventually acquire a high degree of technical proficiency. The relatively extensive employment of nonmedical persons in the most progressive and scientifically productive hospitals suggests that progress in medical science is dependent in a measure on efficient, nonprofessional aid in the performance of work which does not necessarily require medical training and judgment.

The inauguration of a comprehensive course of training for nonmedical clinical aids was first publicly suggested by us about three years ago. Many women had previously been intensively trained as either anesthetists, surgical assistants or laboratory workers; but women with this special training are not qualified for the broader and more varied work of clinical aids. Moreover, most of the women who have taken this special training have been rapidly absorbed by the larger hospitals as helpers to the intern staff, and have therefore failed to bring relief to the smaller institutions that have no interns to be relieved or helped out in this way.

In a typical medical or surgical service, the duties of the house staff begin, on the arrival of the patient, with the taking of the history. The time devoted to history taking is dependent on many factors. The patient may be an adult or a child; may or may not be intelligent in his replies; may require an interpreter, or may be stuporous or unconscious, in which case it may be necessary to obtain the history from a friend or a relative. The clinical condition may call for a simple history, or it may require painstaking historical research. Histories must be taken at all hours, and often in bunches. The time for taking histories is lessened where clerical help is available. Although the visiting staff does not read lengthy histories conscientiously, but, as a basis for its clinical judgments, contents itself with a series

of rapid fire questions addressed to the patient, it is commonly considered good practice for the intern to write histories, and the importance of complete records cannot be gainsaid. In studying the time factor in taking histories, we must remember the importance of searching for and abstracting old charts in the case of patients who were previously admitted. The average time for taking a history in a general hospital is half an hour or, in a 100 bed service, having an average of forty admissions a week, three hours a day.

Laboratory procedures may be considered as those done by laboratory experts, and those done by interns or laboratory technicians. In the former group are included the more difficult bacteriologic and pathologic examinations; in the latter, routine clinical pathology. Routine clinical pathology is usually assigned to the younger members of the house staff as part of their medical education. In Mount Sinai Hospital, one full-time technician for both surgical services, and another for the two medical services would be sufficient. As to general and special therapeutic measures, directions for treatment are necessarily given by the clinician; but the administration of drugs, and other forms of therapy, are carried out by nurses. Operative treatment belongs to the staff. Special therapeutic procedures, such as hydrotherapy, physical therapy and radiotherapy, are rarely assigned to members of the house staff. In Mount Sinai Hospital, the entire staff of each surgical service spends five hours daily in the operating room; but it is generally conceded that the second and third surgical assistants (interns in this case), the anesthetist, and the intern who passes instruments, might be replaced, perhaps with profit to the surgeon and the patient, by trained clinical aids. Other house staff duties are prescribed at Mount Sinai Hospital purely for the training of the interns. These include duties in the admitting room and in the pathologic laboratory. A large number of the duties of the house staff, fully one third, are extraclinical, such as obtaining necropsies, consulting with the relatives of patients, writing certificates and reports, and issuing notices.

DISCUSSION

Dr. Charles P. Emerson, Indianapolis: The county hospital is an expression of county pride. We have potentially ninety-two county hospitals in Indiana. If in Indiana we go to one of the counties and say, "You cannot support a hospital in your county," we arouse county pride. An appeal is made at once to the citizens of that county for the establishment of a hospital, and bonds will be issued. The more we discourage county hospitals, the more rapidly they will grow. Small hospitals are an expression of county pride, but in my opinion are menaces to the community. In this country, more than half of the patients are treated in hospitals with less than fifty beds which never have the advantages of interns. Of fifty hospitals in Indiana, we can persuade our seniors to go to but seven. They will not go to the smaller hospitals. They go more and more to the teaching hospitals unless they have a personal interest in a particular small hospital.

The reputation of a hospital depends on one man, whether it has twenty or fifty beds; it makes no difference, so long as it is run by a good man. A county hospital which is under lay organization deserves careful study. It encourages surgeons to operate in it who would not dare to operate in a larger institution. If a man operates on or treats a patient in such a hospital, the responsibility will not lean heavily on him but on the hospital. If a man has a private hospital, he will be held responsible for all that is done for patients; but when he sends a patient to a hospital for which he is not responsible, the hospital itself is responsible for his cases for which he shoulders no responsibility. In such hospitals, the danger to the patient is serious. Hospitals not responsible to one single man are not organized efficiently. Some of the larger hospitals are not efficient, but there is a minimal size below which a public hospital cannot be very efficient. A public hospital which is not under one man's personal direction has to have a staff covering the housekeeping side, the business side, the nursing side, the professional side, etc. You cannot have two persons on a full salary to do that. If you put in one of these small hospitals a woman who is trained as a clinical assistant, her time must be so spent about the administration and the housekeeping department of the hospital that she would have little time left for the professional care of patients. To maintain nonmedical clinical assistants in a twenty-five bed hospital, you would have to have a staff of three people at work, one each on the housekeeping, the business and the professional side, and the salary demands would be great. Therefore, from the standpoint of the safety of the patients, the problem is serious in these hospitals. If a physician sends a patient to one of these hospitals, he must do what he can and depend on the hospital to do the rest.

What good would an intern be in these small hospitals? Supposing, by some legal means, we could force eighty medical students to each be an intern in a separate county hospital: would it be to the advantage of the institution? Medical students will not go there, but want to go to the larger hospitals where they can work in place of the physicians. The value of interns to hospital organization will be in direct proportion to the supervision they receive. The physician who sends patients will not have the time to give the supervision and neither the housekeeper nor the business manager will be competent to do so. Hospitals under direct church organizations have firmly held that interns could act more efficiently for patients than those who are not trained in medicine. Three years ago I was asked to find out why so many interns left their jobs. I found that interns did not leave their jobs when a religious organization was holding them up to their lay point of view. These hospitals did not lose their interns. The interns naturally make business relationships with some physicians, and when openings present themselves they begin practice before their intern service is over. If we could send interns to these hospitals, it would be a great advantage to the hospitals and to the patients. Those who maintain these hospitals of less than 100 beds need a great deal of education. Interns go more and more to hospitals of more than 100 beds. Those interested in hospitals should know that these smaller hospitals are not necessarily assets to the community. It depends on who runs them. We must educate the public as well as the medical profession. You cannot open a hospital to all physicians in the county and give them equal rights. It will not work. The public should pick out a surgeon and a medical man who can be held personally responsible for the patients in that hospital, no matter whose patients they are.

Dr. N. P. Colwell, Chicago: In 1912, at the time the Council on Medical Education and Hospitals was thinking about putting into effect a year of hospital internship, or considering making that a requirement, an investigation showed that there were not enough hospitals to provide internships for the students then graduating, which was in the neighborhood of 5,000. But since that time, the number of hospitals has so greatly increased that the situation has been reversed. At present it has been found necessary to list only those hospitals which can furnish a satisfactory training for interns. These are general hospitals of 100 or more beds which have a rotating service. No hospital can establish a proper rotating service if it has less than 100 beds.

The problem that Dr. Goldwater speaks of is most acute in hospitals of less than 100 beds, and these hospitals care for a large number of patients. Dr. Goldwater referred to some hospitals offering salaries in an effort to get interns, but experience shows that medical students are not attracted nearly so much to those hospitals which are offering salaries of $50 or $100 a month as they are to those hospitals where it is known that excellent intern service is available.

The situation in regard to the number of graduates each year is not nearly as bad as it was a few years ago. The graduating class of last June represented the war class. The class which matriculated in 1918 was the smallest freshman class on record, and this class of 2,600 graduated in June. From the present enrolment of medical students in the classes which are to graduate in the next three years, there will be an increase of approximately 1,000 each year. The coming June there will be 3,000; in 1924 about 4,000 graduates, and in 1925 about 5,000. That increase will relieve the situation

in the hospitals of 100 beds or more, but it will not solve the problem of the smaller hospitals.

The investigation made of graduate medical education during the year shows another factor that enters into the problem. Some hospitals having large staffs of able men who can provide a higher grade of medical education are taking in as interns only those who have served a general internship elsewhere. The student would be assigned to a member of the hospital staff for future work as second assistant and later as first assistant and in that way preparing himself in some chosen specialty. Some hospitals are doing that with great advantage, both to the hospital and to the student. The Johns Hopkins Hospital is doing it now. They have their own interns, and from those interns they select those who are to serve a year as assistant residents and a second year as residents of the hospital. At the Mayo Foundation, every one who enters is required to have obtained a general internship elsewhere. They are assigned to the clinical department representing those chosen specially, and willingly serve for from three to five years. These educational hospitals could easily serve twice as many students if places for them were available. We are planning a separate list of the hospitals which are giving this advanced training for interns. It will include not only general hospitals, but also the special hospitals, such as eye, ear, nose and throat hospitals, and lying-in hospitals.

What is to be done for the large number of smaller hospitals is a problem we are still confronted with. Whether or not a nonmedical assistant can be trained to do the larger part of that work is a matter which should be studied closely and carefully before any definite decision is made about it.

DR. FRANK BILLINGS, Chicago: I am sorry no one has said a word for or against the nonmedical clinical assistant. I should like to have those who discuss the subject further consider that phase. Regarding the inefficiency of small hospitals, after all, it is the man behind the gun. One does not need to look with despair in this big country for want of efficient men in every community. They are bound to come to the front when the need arises. You know what Dr. Sampson did in Iowa in starting a community hospital, and I want him to tell you what he thinks of the nonmedical clinical assistant in such institutions.

DR. F. E. SAMPSON, Creston, Iowa: Dr. Emerson, in his remarks, touched on the matter of the small hospital. Whatever the institutional standards may be, the small hospital is here to stay. As to the nonmedical clinical assistant, there are many other factors to be considered before turning to nonmedical clinical assistants as hospital aids. The county hospital is one of the factors in Indiana, the same as in Iowa. We have a law which enables the people to vote bonds to build hospitals. If we can establish a minimum legal requirement for the county hospital and center that in the university hospital, we can not only settle the problem of the nonmedical clinical assistant, but also make the small hospitals places of opportunity for medical interns. I do not know very much about nonmedical clinical assistants in hospitals, but at Creston we could not get along with them and we train them ourselves. We have a nurse big enough to run a small hospital, and if we only had some place to train the type of superintendents we need for the increasing number of small hospitals, it would be the greatest service we could render in the development of the small hospital, and the nonmedical clinical assistant problem will settle itself.

DR. FRANK BILLINGS, Chicago: Students serving in hospitals as interns have complained to me that the methods are ultrascientific and not keeping pace with modern medicine; that staff members order a certain routine to be carried out with every patient, such as a blood examination, urinalysis or feces examination, and often that routine is kept up day after day. The purpose of an internship is to afford the medical student an opportunity to round out his medical education by daily clinical observations and laboratory work, and several licensing boards require that the physician coming up for examination shall have served the so-called fifth year in a hospital. In many teaching hospitals the routine work required of the intern is not educational. He does not have the opportunity or time which he should have to make clinical observations or the higher types of laboratory examinations, because he is engaged in this routine work, often unnecessary, and which has become a routine through the want of clinical judgment of the attending staff. Therefore, it was stated in the resolutions passed by the conference in Atlantic City, that nonmedical clinical assistants would be available as aids to interns in hospitals. That side of the question was not taken up by Dr. Goldwater, because his paper dealt with the need of nonmedical clinical assistants in small hospitals. The original resolutions passed at the conference in Atlantic City made reference not only to a nonmedical clinical assistant but also to a nonmedical anesthetist. Mention of the latter was omitted from the booklet, copies of which have been passed around, because there is a law on the statute books of Canada that no nonmedical individual can give anesthetics. In this country also that question has been discussed by the National Association of Anesthetists, which does not believe that any nonmedical individual should give anesthetics. It is a controversial question, and therefore it is omitted. The question comes up as to whether a national association like this, with its seventeen constituent organizations, should not take the initiative and attempt to supply qualified nonmedical individuals who may assist in the small hospitals. I hope you will state whether or not you think it wise to do so.

FATHER P. J. MAHAN, Chicago: The nonmedical anesthetist is already in existence and is quite generally used, indicating that there is a demand for and an appreciation of the help rendered. To a less extensive degree the surgical assistant is likewise existent, but I believe that there the need is not so great. When we come to the question of the record keeper and the clinical laboratory assistant, whence does the demand arise? Does it arise from the demands of the small hospitals, or in the minds of those who understand the need of accurate records in hospitals, and the need of thorough laboratory findings for the benefit of patients? That is an essential question, because if the small hospitals do not realize the need of this service, supposing you were to supply it, would they accept it? There are numbers of hospitals in the North Central states which have been supplied with record keepers, properly qualified, where every effort is made to supply stenographers for the physicians in order to get histories, and the histories cannot be obtained. The physicians resort to subterfuges of all kinds to avoid furnishing histories of their cases, and even when the histories have been written and the rest of the record taken, the physicians oftentimes do not look at them. In my own experience the demand does not arise from the hospitals, but from the medical men practicing in these hospitals. A large number of these men do not know what a good clinical record is, and the example by the older men has led the younger men to lose their interest in clinical records.

DR. I. D. METZGER, Pittsburgh: In 1914, it became the duty of the Pennsylvania board to make it worth while for medical students to enter hospital training, so we had to standardize the hospitals of Pennsylvania. While we demanded twenty-five beds for each intern, a hospital with less than 100 beds cannot rotate the interns satisfactorily throughout the whole service in which they should have experience. If a hospital with 100 or more beds has less than four interns, the interns must rotate throughout the service just as if there were four present, and the uncovered services must be cared for by the staff. We did not allow the rotating service to be set aside because there were less than the number of interns required. In 1916, the approval or disapproval of all hospitals of the state was placed in the hands of the medical bureau. Immediately we took the opportunity to standardize all hospitals, the small as well as the large. The first thing we did during those two years in which we had the power, because we lost the power at the end of that time, was to go over the state and examine all small hospitals. We found that very few of them had roentgen-ray departments; still fewer had laboratory departments. We immediately established these various departments in all hospitals.

It was obviously impossible for experts to give their entire time to these departments in small hospitals; therefore, we were compelled to place nonmedical assistants in the hos-

pitals. We call them technicians. We established pathologic laboratories, not as extensive as in larger hospitals, but laboratories in which all the essential investigations might be made, and placed in that laboratory as a pathologist a general practitioner of the community who had shown some special interest in that type of work. We required the hospital to place in the laboratory a trained technician who could take care of the details of the work and keep the materials in condition and make all tests required. These technicians eventually became strong and efficient people in the laboratories, so that a bill has been introduced in the legislature at Harrisburg providing for the licensing of technicians. They are establishing laboratories of their own and becoming professional people so that it becomes necessary to control them.

In the roentgen-ray department we also have a technician with an assistant trained to an extent that he can take pictures and do the rough work that might be necessary in emergencies and leave to the physician in charge the more technical work of the hospital. In anesthesia we have found that nonmedical people are by far the most expert anesthetists. That is their business, and the surgeon assumes the responsibility. We have nurses or sisters in various hospitals giving anesthetics, and we have no reason to regret it. The department of anesthesia is self-sustaining in all our hospitals. So are the laboratory departments. We must have persons to take care of the records who are not necessarily professional people. The whole story of efficiency in hospital work is told by the records.

Dr. F. F. Lawrence, Columbus, Ohio: As Dr. Goldwater has told us, 80 per cent. of all hospitals are the smaller community hospitals which cannot provide services for interns, and practically all of these hospitals are unendowed. They are business corporations rather than charity organizations; hence they are legally responsible for every act of every individual in them. Then, added to that, they all have wide open staffs. Every physician in the community has a perfect right to use these hospitals. As there is no organization, there is absolutely no system. There can be no system without organization, and how much less system are we apt to have if we have untrained nonprofessional people as assistants, laboratory technicians, and so one, in and about a hospital? What will records amount to? The moral responsibility for the well-being of patients entrusted to the care of these people is much larger. I do not know how the question can be solved. I was wondering whether the modern movement which has abolished the system of a preceptor taking students in his office and training them has been for good, and whether it would not be a good thing to return to that system in our hospitals, requiring each hospital to have a fundamental working staff which is held responsible for the different departments of the hospital and which will take one or more junior or sophomore students to do the work that is done later by interns.

Dr. A. R. Warner, Chicago: Nearly every one has discussed this problem from some point of view in which he is particularly interested. The records represent a small part of the need of the hospital for nonmedical assistants. The letters that come to my office day in and day out deal with two things: First, "Where can I get an intern? We have not had one since the war, and we are badly needing one." Second, "Where can we get a nurse properly trained to do this or that work?" I can answer neither question satisfactorily. There is a demand from small hospitals which realize they cannot have interns. There is a demand for some one to do the work which the staff will not do for most of the patients. Other information was obtained by a questionnaire sent to about 3,000 people, asking how their roentgen-ray laboratory and anesthesia departments were getting the work done. All the smaller hospitals were suffering greatly in that they did not have sufficient professional service, but had other people doing this type of work. In regard to the roentgen-ray department, a large number stated that they had a full-time head of the department, although the hospital was under fifty beds, which meant that they had a full-time technician. The majority stated that pictures were taken by the superintendent or by the technician, meaning that they had no roentgen-ray professional head. Many explained that the plates were interpreted by the physicians, which meant that every general practitioner read plates taken by the technician. The hospitals cannot get professional work from the physicians. They cannot get histories written or get professional men to do the roentgen-ray or laboratory work, so they have done the next best thing, namely, get it done by properly trained technicians when they can get them; but they cannot get enough. Most of the hospitals say they train their own assistants. It is not a question of "what is best for patients," but of what we can do when hospitals cannot get adequate professional services.

Dr. Frank Billings, Chicago: During my professional life I have witnessed a good deal of the advancement in medical practice, including the evolution of nursing and the increase in hospital organization, including the employment of interns. Forty-two years ago I was an intern at the Cook County Hospital when there was no training school for nurses. There were only six interns for more than 500 beds, and little demand for them then. Not more than 5 per cent. of the graduates obtained internships in that day. The authorities fought the organization of a training school for nurses, and I worked for five years before a training school was established in that hospital. In three of the main hospitals in which I have worked in Chicago, I had to organize laboratory services, the last one was twenty-four years ago. The changes occurring since then show that the world moves. The demand for nonmedical clinical assistants or technicians is not a new thing. Nonmedical technicians are employed in every university laboratory in this country. The innovation, is in having technicians trained to do clinical work, not as interns but as substitutes when interns cannot be obtained, and as aids to relieve interns of routine work.

The seventeen constituent national organizations that comprise the hospital conference should continue to exert their influence to improve hospitals, so that there will be better staff organizations, better records which are better filed and properly utilized, and improved laboratories and laboratory service. I hope that the hospital will grow beyond the mere purpose of furnishing efficient care for the sick and injured and be also an educational institution, since, as Father Mahan said, we of the medical profession need education as much as the public needs it. I agree with him fully in regard to the lack of interest on the part of professional staffs of hospitals in record making and in record keeping. As chairman of the record committee of a hospital, I had to use moral force and sometimes a little physical force, to make staff members furnish written histories; and even then some histories were not worth the paper they were written on.

Dr. S. S. Goldwater, New York: The question was asked, What is the source of the demand for this service? Is it a demand because of hospital conditions, or is it a demand on the part of the hospital administrators to get the needed service which they recognize and are clamoring for? As a matter of fact, it is both.

Liability of the Hospital for the Acts of Its Servants

John A. Lapp, Chicago: As to the relationship of the law of prudence to the management of hospitals, and the responsibility which they carry for the acts of their physicians, nurses and other assistants, there are three types of hospitals which need to be discussed separately, for in some institutions the responsibility depends on other considerations than pure negligence. Public institutions have slight liability for the acts of assistants, while private hospitals conducted for profit have very few exceptions from liability, and private benevolent or charitable institutions have a limited liability. The distinction among the three is very important.

Public institutions and hospitals created by the federal, state or local government are not liable for damages caused by negligence or incompetence of their officers or employees, unless that liability has been definitely fixed on them by the constitution of the state or by statutes, or unless that liability has been expressly accepted in the constitution or the law. A person may sue the individual or officer who is responsible for the negligence, but all that is necessary to do to offset the charge is to show that the officer or individual was acting within the law. If an officer cannot show statutory authority

to do certain things, he will be personally guilty of negligence and liable to the one injured. This rule makes the definite requirement on officers and employees that they act within the law. It does not offer relief to an injured person even at best, for it would be of doubtful value to sue an individual employee or petty officer, even though he may be directly chargeable with negligence.

The legislature may make and has made hospitals liable for injuries to their own employees under the workmen's compensation laws. In such cases all hospitals have the same liability as the industries of the state. Private hospitals for profit are subject to all the liabilities which similar enterprises are subject to, and charitable hospitals are made liable for negligence, but only when it is proved that they did not exercise due care in the selection of competent help.

Since the hospital for profit escapes none of the risk of negligence, and charitable hospitals have a large immunity, it is highly important that all institutions seek to come in the latter class—to look to their legal foundations.

Another class of institutions comprise the hospitals connected with medical schools. In such schools conducted by the state, the hospitals are exempt from liability, In hospitals connected with privately conducted schools, the same rules apply as in other hospitals. The whole question is one of the character of the parent institution—the medical school. If the medical school is organized for profit, or has any of the earmarks of a business corporation, the hospital which it conducts is not a charitable institution, whether it gives its work to charity or not. It has been held in several cases involving privately owned medical schools that such hospitals are conducted for the advantage of the school; and, the school being a profit making enterprise, the hospital cannot be exempt from liability.

The Kentucky Court of Appeals summed up the matter of the liability of a hospital owned by a private medical school as follows:

> It is manifest from the evidence that the hospital is maintained because it is necessary to the successful conduct of the school of medicine. Without the clinical instruction and the operations by the professors in the presence of the students, the school could not be maintained with success. The hospital is an adjunct and part of the medical school. Whatever gain may result from the operation of the medical school goes to the owners of the property. While the evidence shows a great deal of charity work is performed in the treatment of patients and in dispensing medicines, still the institution is conducted for profit.

In considering the charity hospital, quite a different rule applies. In a few states, notably Massachusetts, charity hospitals are entirely exempt from liability under present court decisions. No matter how much negligence may be chargeable to an employee, the hospital is not liable. In the case of a private physician treating a patient in such a hospital, the physician alone would be liable for negligence.

Should the hospital be liable for physicians whom it selects on a closed staff? Probably so, if the physicians on such staff are selected by the trustees, or with their approval. If a staff physician operates on a charity patient who is the patient of the hospital, then the hospital should be liable, unless such physician were chosen with due care. In the case of private patients brought to the hospital by a member of the staff, the liability should rest with the physician himself.

DISCUSSION

DR. A. R. WARNER, Chicago: There is no adequate or satisfactory amount of literature on this subject. It is growing as rapidly as any subject involving hospital administration, but there is great need for definite information on the subject. Two warnings to hospitals should be given due consideration by the trustees of hospitals as well as by staffs and administrators: First, to secure a maximum of protection by charter. I have known of several instances in which it was a desire of certain groups to retain control of hospitals which were known as charity institutions; but sharp questioning brought out the fact that they were business organizations. One of these was controlled by women physicians of the community. The second warning is the probability that court decisions in the near future will hold hospitals more closely responsible for the exercise of due care in their obligations to patients. Supreme court decisions may, indeed, be often settled temporarily by little points of evidence, but there is an unmistakable tendency on the part of the courts to assume more responsibility for protecting the public rather than the hospitals or the medical profession.

The best hospitals of the country are public service institutions and are doing good work for the public, some of whom can pay and others cannot. The term charity is out of date, and the hospital as a charity organization is quite out of date, and the courts are so interpreting them more and more. Trustees must keep in mind also that they can have 99 per cent. of the patients treated free if they wish, but the public will be protected by the courts whether that is 1 per cent. or 99 per cent.

There has developed a changed attitude and interpretation of the word "staff." Some years ago we could sharply define the word. For instance, this hospital had an organized staff, and that one did not. There was a time when we could sharply differentiate between the private patients of Dr. So and So and a case of the hospital. You cannot safely do it today. The so-called open community hospitals have learned so much about conventional duties and responsibilities of staffs that as far as they can they will hold the medical profession legally responsible for records and other things. The medical profession of the community, functioning as the staff of a hospital, carries corresponding responsibilities, so that the classification of institutions into staff and nonstaff institutions is no longer quite justfied because nonstaff institutions have a great many benefits that were in the past confined only to the staff institutions. I want to read an Ohio opinion which shows more than any other one thing the trend in court decisions: "Where a public charitable hospital has failed to exercise due and reasonable care in the selection of physicians, nurses or attendants, and injury results from the negligence of such persons, the hospital is liable." The only safe course for the trustees of any hospital to pursue is to recognize this tendency and use due and reasonable care in the selection of all agents, including all physicians who are permitted to bring patients or to practice on patients inside the institution.

The Relation of the State University Hospital to the Medical Profession

DR. C. P. HOWARD, Iowa City: This article will be published in full in THE JOURNAL.

DISCUSSION

DR. RAY LYMAN WILBUR, Stanford University, Calif.: This morning we were shown that the ideal plant was located on the state university campus with a close association between the medical school, hospitals and the university itself. A number of our state institutions have had certain difficulties in getting into a position of real leadership in the development of these institutions. Dr. Howard has indicated how Iowa has obtained that leadership.

One of the most serious problems is to get adequate clinical material on a university campus. That means some state law, some arrangement with state hospitals, and usually it must be brought about by common consent. There is such a scheme, I understand, at the University of Minnesota, where municipal hospitals are used by the state institutions; but often there is a struggle to obtain a university hospital so that there will be direct supervision by the institution.

The other problem, of whether members of the staff of a university conducting the medical school shall indulge in any form of private practice in the hospital and in the state, is an important one.

We have heard of the "full-time" or "whole-time" professor, and at the meeting of the Association of American Medical Colleges at Ann Arbor I objected to the use of these terms. I think the proper title should be academic professor. For generation after generation the academic professor has had certain privileges. He received a salary. If a professor of Greek wrote a book on Greek grammar and there were any royalties that came from the sale of the book, he got them. There is no legitimate reason, from the standpoint of university organization, why a professor of obstetrics or surgery on an academic basis should not receive compensation for services rendered outside the university in proportion to the

amount of service rendered, provided in such instances adequate work is done for the salary given. The same thing applies all along the line. Because of the type of organization and political relationship, there has been in some instances an attempt to corral the academic professor in the state medical schools inside the walls of the institution, not allowing him to engage in private practice, consultations, etc. This is entirely wrong. Every hospital medical school taking medical students must have teachers who deal with private patients. We must not have medical students trained simply by guinea-pig doctrines. The teachers must know the game of medicine. They must understand the problems of consultation in the communities in which they live and in which their students are going to live. It is not to the advantage of the medical student to have a teacher who can do things only when he has all the conveniences, necessities and assistants about him. He must know how to practice medicine if he is going to teach it. There must be a limit in all academic appointments and in the amount of private work done. These limits can be determined by the man himself. There should be adequate arrangements for him in the institution to do a limited amount of work. The right man will not abuse the privilege, and the wrong man can be removed.

We must not forget that in state institutions the problem of medical education is just the same. Medical students need just the same kind of training as our teachers need. The future of medicine will revolve largely around state-supported institutions, and we in the medical profession must be very broad in our conceptions of leadership in these institutions, and must get them in the right conditions for teaching rather than dealing with causes that seem to come into competition with us.

DR. IRVING S. CUTTER, Omaha: In Nebraska, we have a somewhat different situation from that of Iowa, because our hospital is wholly charity. Therefore, we have no difficulty in getting clinical patients. We are not trying to educate the physician to send patients to the hospital, but we educate him to take care of his people. In 1917, after we had our hospital well going, we thought about the country practitioner. In 1919, we organized a summer course for practitioners which differs from the Iowa course considerably, in that emphasis was laid on clinical pathology and physical diagnosis, after considerable search as to what the country practitioner not only most needed but wanted. The program was filled from Monday morning of one week until Saturday night of the week following. The course was held in June. We have had from twenty to thirty men each summer, and we expect to hold it again this summer. The first year, twenty-two men came, and they represented graduates of twelve different schools, but they had not been inside of a modern hospital or laboratory for from twenty to thirty years. They were just the fellows we could help the most. Instead of confusing them by asking them how to read an electrocardiogram, we began with the A, B, C's of medical practice, and emphasized physical diagnosis. They heard a lecture on the chest, one on the heart, and then divided into small groups and were taken into the wards and shown cases. Many of them expressed a choice as to what service they wanted to work in. We taught them also to give intravenous medication—something which most of them had no conception of. That was of great value since these men were trying to give arsphenamin and could not do it. Little things like that have not only accomplished a lot for us but have helped the country practitioner. We have to have men to take care of the sick, and the more we can do to make them better men, the greater service we render. It is not the university hospital alone that can do this, but any teaching hospital can do it, and why should they not do so?

DR. CHARLES R. BARDEEN, Madison, Wis.: Dr. Howard has given a clear account of the splendid service rendered by the university hospital of Iowa. He has been able to base this account on long personal experience. Wisconsin is now erecting at the university a state general hospital. I am naturally interested in seeing it develop along lines of greatest usefulness to the public. Michigan and Iowa took the lead in developing state general hospitals on a broad scale. At both institutions the primary incentive in establishing these hospitals was doubtless the need of providing clinical material for medical students. It was soon discovered, however, that these hospitals met a public need quite apart from their value in medical education. They have come to be regarded as among the most beneficent institutions in the state, and have a popularity much wider than would be possible were their main function the somewhat abstract one of providing medical education. In Wisconsin, the public interest and support of the hospital now being erected are in the main due to a recognition of the value of a stitch in time. The new hospital, as in Iowa, will contain a psychopathic department in which earlier treatment can be given than is now the case in the hospitals for the insane; an orthopedic department in which early treatment can be given in case of inherited or acquired physical defects, and a pediatric department in which infants thrown on the public charge may receive proper medical attention. It will provide facilities for doing what is possible medically to aid the deaf and the blind who now receive merely custodial care. It will provide facilities for the care of patients suffering from various other medical and surgical conditions who are now without resources to obtain the proper care. The law covering these cases is similar to the laws of Michigan and Iowa, but is even broader.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Memorial Hospital Opened. — The Memorial Hospital, Brewton, was recently opened under the supervision of Drs. R. A. Smith and M. H. Hagood.

Australian Health Workers Visit Alabama.—Drs. A. H. Baldwin and F. McCallum of Melbourne, Australia, members of the commonwealth department of health, have been inspecting the activities that are being carried on by the local health units of Alabama for the prevention of malaria, hookworm and other diseases. Drs. Baldwin and McCallum have for the last six months been pursuing a public health course at Johns Hopkins School of Hygiene and Public Health, Baltimore, under the auspices of the International Health Board.

CALIFORNIA

Hydrophobia in California.—A large portion of San Bernardino County has been quarantined for rabies. More than 400 dogs in Berkeley have been vaccinated against rabies by the one injection method. All dogs that have not been vaccinated are taken to the pound.

Hospital News.—A campaign to raise $100,000 is being conducted in San Francisco, to build and equip a hospital, exclusively for Chinese patients.——The Woman's Maternity Hospital, Pasadena, was dedicated, with appropriate ceremonies, April 1. It is under the management of the Pasadena Settlement Association.——Dr. M. H. Rohland, U. S. Army, retired, will reopen the Hillcrest Hospital, located between San Jacinto and Hemet. The hospital was closed about one year ago.

COLORADO

University of Colorado.—Contracts totaling $1,237,988 have been let for the immediate construction of the University of Colorado School of Medicine and Hospital in Denver, it has been announced by the regents of the university. The hospital will be erected on a 20-acre field on Colorado Boulevard.

CONNECTICUT

Professor Mendel to Lecture in California.—Lafayette B. Mendel, professor of physiologic chemistry at Yale University, left New Haven, April 6, for the Pacific Coast, where he will lecture at the University of California on "Nutrition." Professor Mendel has leave of absence from Yale for the balance of the college year.

GEORGIA

Mental Hygiene Society Reorganized.—Reorganization of the Georgia Mental Hygiene Society was effected, March 8, at a meeting in Atlanta. Ex-Governor Dorsey was elected president, and Dr. E. Bates Block vice president. Dr. Victor V. Anderson of the National Mental Hygiene Committee stated there was a possibility of Atlanta's obtaining one of the Commonwealth Fund's demonstration clinics for a year. A committee headed by Dean Goodrich White of Emory University will look into the advisability of Atlanta's applying for one of the Commonwealth Fund's clinics.

ILLINOIS

Dr. Stilson Acquitted.—Dr. Jesse M. Stilson, Freeport, was acquitted by a jury, March 24, of a charge of murder, arising through the death of a patient following an illegal operation.

University Appropriation Bill.—The bill to appropriate $10,500,000 for the University of Illinois passed the house of representatives, Springfield, April 5, and was sent to the senate.

Chicago

Personal.—Dr. Clifford G. Grulee spoke on "Acute Hemorrhagic Nephritis in Children," and Dr. Herman L. Kretschmer on "Urology in Infants and Children," before the Medical Society of Milwaukee County, Wis., April 13.

Arrest Illegal Practitioner.—It is reported that Mrs. Emilie Ehlert, a self-styled spiritualist, was arrested, April 5, on a charge of practicing medicine without a license, by a member of the department of registration and education. Mrs. Ehlert, it is alleged, anointed her patients with a "mysterious" salve for $2.

Medical Library Donated to Rush.—At a meeting of the Society of Medical History of Chicago, April 6, a collection of books formerly the property of the late Dr. Edward Mease and presented by his son to Rush Medical College was exhibited. The collection, numbering nearly 300 volumes, ranging from the sixteenth to the eighteenth century, contains first editions of a great many of the famous medical books of that period.

IOWA

"Beauty Doctor" Sentenced.—According to reports "Dr." C. A. Furrey, a beauty specialist of Des Moines, convicted of obtaining money under false pretenses, was sentenced to serve seven years in the state penitentiary, March 31.

Southwestern Iowa Medical Society.—At the annual meeting held in Creston, March 29, the following officers were elected: president, Dr. William S. Reiley, Red Oak; vice president, Dr. Joseph W. Beauchamp, Bedford, and secretary, Dr. Jesse S. Coontz, Garden Grove.

Gifts to University Assured.—The passage of the bill providing for the granting of $2,500,000 by the state to the University of Iowa College of Medicine will enable the university to obtain two gifts of $1,125,000, each, one from the General Education Board and one from the Rockefeller Foundation, for the enlargement of the Perkins State Hospital and the university medical school. Construction work will start as soon as the necessary arrangements are completed.

KANSAS

Community Physician Appointed.—Two hundred families of Sharon have hired a community physician. Each family will pay $15 a year for necessary medical and surgical attention. Dr. E. S. Haworth, the appointee, says the plan thus far has worked well.

MARYLAND

Colony for Epileptics Under Construction.—Work on the buildings at the Springfield State Hospital, Sykesville, designed for the epileptic colony, has been commenced. The group, under a $200,000 appropriation from the legislature, comprises four buildings, which will accommodate 200 patients.

Psychiatric Clinic on Full-Time Basis.—Sufficient funds to place the Henry Phipps Psychiatric Clinic on a full-time basis are practically in hand, as all but $35,000 of a fund of $2,000,000 has been raised. This, it is confidently expected, will be raised before the end of the month, the time limit set by the anonymous donor who contributed $1,000,000 on condition that it be equaled within a specified time. In addition to the initial gift of $1,000,000, the Rockefeller General Education Board has contributed $750,000, and Mr. E. W. Harkness of the Standard Oil Company, $125,000. Other contributions have amounted to $90,000. With the exception of the psychiatric department in the University of Iowa, this will be the only department of psychiatry in a medical school on a full-time basis.

MASSACHUSETTS

Springfield Public Health Conference.—The Massachusetts Public Health Conference will be held in Springfield, April 26-28. Organizations participating are: Boston Association for the Prevention and Relief of Heart Disease, Massachusetts Association of Boards of Health, Massachusetts Association of Directors of Public Health Nursing Organizations, Massachusetts Association for Occupational Therapy, Massachusetts Committee of the American Society for the Control of Cancer, Massachusetts Dental Hygiene Council, Massachusetts Society for Mental Hygiene, Massachusetts Society for Social Hygiene, Massachusetts State Department of Health, Massachusetts State Nurses' Association, Massachusetts Parent-Teacher Association, Massachusetts Tuberculosis League, New England Division, American Red Cross, public health committee of the Massachusetts Medical Society and the public health committee of the Massachusetts State Federation of Women's Clubs.

MICHIGAN

Medical Society Sells Property.—The Wayne County Medical Society has sold its land and buildings for $110,000. The library of the society has been given to the Detroit Library Commission and will be moved to the Detroit College of Medicine and Surgery.

MINNESOTA

Epidemic of Lethargic Encephalitis.—Thirty cases of lethargic encephalitis with nineteen deaths have been reported to the Minneapolis Health Department since the end of February, it is stated by officials of the board.

MONTANA

Personal.—Dr. William A. Hulbush has been elected president of the Cascade County Medical Society to succeed Dr. Enoch M. Porter of Great Falls.——Dr. Howard W. Bateman, Choteau, has been appointed to the Montana State Board of Medical Examiners to fill the vacancy caused by the death of Patrick Henry McCarthy of Butte.——Dr. Byron L. Pampel, Livingston, has been appointed a member of the state board of health.

NEBRASKA

Personal.—A dinner was given to Dr. Irving S. Cutter, dean of the University of Nebraska College of Medicine, Omaha, at the Omaha Club, March 14, in honor of his recent election to the presidency of the Association of American Medical Colleges.——Dr. LeRoy Crummer, Omaha, delivered an illustrated address before the medical history section of the American College of Physicians, in Philadelphia, April 11. His subject was "Early Anatomical Fugitive Sheets."

NEW YORK

Governor Signs Davison Bill.—Governor Smith has signed the Davison bill, appropriating $1,500,000 for the construction of the Kings Park State Hospital for war veterans. This is part of the state hospitalization program advocated by the American Legion of New York.

Epidemic Encephalitis.—According to reports made to the division of communicable diseases of the state department of health, there were 308 cases of epidemic (lethargic) encephalitis in New York State during February of this year, more than in any one month during the last two years.

Diphtheria Prevention.—The state health commissioner, in compliance with a request of the public health council, has written to all physicians in the state to emphasize the importance of toxin-antitoxin. Several deaths from diphtheria have occurred due to the failure of physicians to use antitoxin. Four of seven members of one family died of diphtheria. The attending physician stated he "did not believe in toxin-antitoxin."

New York City

Academy of Medicine Drive.—It has been announced that $100,000 of the $250,000 fund for the erection of a new building at Park Avenue and Sixtieth Street has been contributed by 400 subscribers.

Medical Jurisprudence Society.—The New York Medical Jurisprudence Society held its annual banquet at the Hotel Brevoort, April 7. April 9, this organization held a joint meeting with the New York Roentgenological Society, at which Prof. L. P. Wilson of the College of Law of Cornell University delivered an address, on "The X-Ray in Court."

Hospital Centennial.—The New York Nursery and Child's Hospital passed its one hundredth year of service, April 1. The seventy-five thousandth infant born in the institution arrived on that day, and was elected to membership on the Honorary Centennial Committee comprising 100 physicians, government officials and laymen. The centennial celebration will be held, April 29.

NORTH CAROLINA

Summer Graduate Course on Internal Medicine.—A summer graduate medical course for physicians, to cover nearly all sections of the state not included last year, will be held by the extension division of the University of North Carolina, in cooperation with the medical school. Three circuits of six centers each will be organized, and each group of physicians will receive twelve lectures and clinical demonstrations. The courses will begin June 18 and end September 8. Internal medicine, with special emphasis on physical diagnosis, will be the subject of the lectures.

OHIO

Medical Building to Be Sold.—A bill, authorizing trustees of the old Ohio Medical University Building, Columbus, to sell the structure to White Cross Hospital, passed the house, March 28.

Nine Chiropractors Fined.—Municipal Judge Mahaffey, according to reports, March 31, assessed fines of $100 and costs, each, in the case of nine chiropractors, J. H. Farrand, C. A. Jorgensen, Thomas L. Young, Verne T. DeVille, W. H. Wooley, R. A. Martin, C. J. Rectenwald, Newton T. Miller and R. S. Graves, all of Columbus, charged with practicing medicine without a license.

Summit County Medical Society.—The Summit County Medical Society will organize a surgical and a medical section which, in addition to the regular monthly meeting of the society, will each hold a monthly meeting to discuss papers on its own work. President Corwin T. Hill has appointed Drs. John H. Weber and Roy H. McKay to organize the surgical section, and Drs. Joseph N. Weller and Horace E. Groom to organize for the medical section.

OREGON

Personal.—Drs. William Ross Eaton, Oregon City, and Dr. Donald H. Jessop, Portland, are suffering from epidemic (lethargic) encephalitis.——Dr. Ernest F. Tucker, head of the department of gynecology of the University of Oregon Medical School, Portland, since 1898, has resigned.

PENNSYLVANIA

The Jones Filled Milk Law.—The Jones Filled Milk Law becomes effective, June 19, and not May 20, as previously stated. The director of the state department of agriculture announces that all filled milk must be removed from wholesale stock and retail shelves before the date set for the final inspection. The new law means that no filled milks can be offered for sale in the state of Pennsylvania.

Philadelphia

Professors Resign.—Dr. Ruth Webster Lathrop, professor of physiology; Dr. Alice W. Tallant, professor of obstetrics; Dr. Esther M. Weyl, acting professor of pathology; Dr. Laura E. Hunt, professor of otology, and Dr. Frances C. Van Gasken, professor of clinical medicine, the Women's Medical College of Pennsylvania, Philadelphia, have resigned.

Hospital's Ninetieth Anniversary.—April 2, which was the ninetieth anniversary of the founding of the Wills Hospital, was "Donation Day" also. The hospital owes its existence to James Wills, Jr., who died in 1828, leaving it $108,390. The work of the institution has increased so that the original endowment is insufficient to meet expenses, and state aid has been necessary to keep the hospital open.

City Water and Typhoid.—Following the publication of statistics giving the typhoid records of Reading and Trenton for 1922, Dr. C. L. Furbush, director of the department of public health, stated that, because of the pollution menace, it had been necessary last year to use greater quantities of chlorin than ever before in the city's history. Philadelphia's death rate from typhoid fever in 1922 was only 2.7.

Personal.—Dr. Hubert Work, Secretary of the Interior, will address the Medical Club of Philadelphia, April 20.——Dr. J. B. Murphy of the Rockefeller Institute, New York, spoke on "Experimental Studies of Resistance to Cancer," before the Pathological Society of Philadelphia, April 12.——At the annual meeting of the Alumni Society of the University of Pennsylvania Medical Department, recently, Dr. Floyd E. Keene was elected president.

New York Obstetricians Visit Philadelphia.—By invitation, the fellows of the New York Obstetrical Society were the guests of the Obstetrical Society of Philadelphia. Clinics were held throughout the day. In the evening, following a dinner at the Adelphia Hotel, the New York members reported on clinics visited, and Dr. O. P. Humpstone of Brooklyn read a paper on "The Sociological Responsibility of Obstetrics and Gynecology."

TENNESSEE

Health Officers Convene.—The county health officers and their sanitary inspectors of the Tennessee Valley held a convention in Huntsville, Ala., March 30. This was the first meeting to be held by the Tennessee physicians and their assistants. A permanent organization that will hold monthly meetings will be effected. The chief subject of discussion was malaria control.

Maternity Bill Passes House.—The house of representatives at Nashville passed the maternity and infancy bill, March 15. Governor Peay has indicated he will sign the bill. Tennessee is one of a number of states which have accepted the provisions of the Sheppard-Towner Law and have qualified for the federal aid received under the statute. The state will pay $10,000 biennially, and will receive $15,540 from the federal government.

The Annual State Meeting.—At the ninetieth annual meeting of the Tennessee State Medical Association, held in Nashville, April 10-12, under the presidency of Dr. Holland M. Tigert, Nashville, the oration in surgery was delivered by Dr. E. Starr Judd, Rochester, Minn., and the oration in medicine by Dr. Marvin L. Graves, Galveston, Texas. Dr. Olin West, Chicago, spoke on "Medical Organization."

WISCONSIN

Optional Vaccination Bill.—The assembly, March 28, finally passed and sent to the senate a bill which makes vaccination for smallpox optional instead of compulsory. There was no opposition or debate.

PHILIPPINE ISLANDS

Legislative News.—The House of Representatives, January 18, passed a bill providing for the establishment of hospitals in the provinces and appropriating 500,000 pesos annually for this purpose.——A bill was recently introduced in the House of Representatives providing for the creation of a department of health.

Medicolegal Association Organized.—Under the auspices of Prof. Sixto de los Angeles, head of the department of legal medicine in the University of the Philippines, the Philippine Island Medicolegal Association has been organized. The secretary of justice was the guest of honor at the inaugural meeting, January 12, at which the subject for discussion was "Chiropractic."

Leprosy Research Board.—A board for the promotion and coordination of all work on leprosy in the Philippine Islands was recently created in Manila and approved by the governor general. Members of the board are: Major George R. Callender of the U. S. Army Medical Research Board, chairman; Dr. Jose P. Bantug, Philippine Health Service, secretary; Drs. Libozio Gomez y Pineda and I. Otto Schobl of the Bureau of Science, and Drs. Herbert W. Wade and Granville A. Perkins from the Culion Leper Colony.

CANADA

Health Officers Convention.—The annual meeting of the Ontario Health Officers' Association will be held at the University of Toronto, May 21-23. Dr. Henry F. Vaughan, health officer of Detroit, and Dr. Frederick G. Banting, Toronto, will give addresses.

Typhoid Epidemic.—The number of persons suffering from typhoid fever in the Cochrane, Ont., epidemic (THE JOURNAL, April 7, p. 1013) has now reached a total of 570, and the disease shows no sign of abating, it is stated. Twelve persons have died, and a lack of physicians and nurses is adding to the distress. The disease is spreading to other towns, Heart, Kapuskasin and Amos reporting cases. Amos alone has reported forty cases.

GENERAL

American College of Physicians Elects Officers.—At the annual meeting of the American College of Physicians in Philadelphia, April 6-7, the following officers were elected for the ensuing year: president, Dr. Harlow Brooks, New York; vice presidents, Drs. Jabez H. Elliot, Toronto, Canada, and Alfred S. Warthin, Ann Arbor, Mich.; treasurer, Dr. Clement R. Jones, Pittsburgh, and secretary, Dr. Frank Smithies, Chicago.

Dye Chemists Appointed.—The Secretary of Agriculture has appointed a committee of dye chemists to formulate plans of work for the color laboratory. The committee consists of R. Norris Shreve, secretary of the dye division of the American Chemical Society; Willard H. Watkins of the the National Aniline and Chemical Company, Buffalo; Louis A. Olney, president of the American Association of Textile Chemists and Colorists; William J. Hale, chairman of the dye division of the American Chemical Society, and Clarence G. Derick, Buffalo.

Scholarships Endowed by Congress on Internal Medicine.—The seventh annual clinical session of the American Congress on Internal Medicine, which opened in Philadelphia, April 2, announced the endowment of free scholarships to each of Philadelphia's five medical colleges for the best work in clinical research. The following officers were elected: president, Dr. Elsworth Smith, St. Louis; vice presidents, Drs. Edward J. G. Beardsley, Philadelphia, and William C. MacCarty, Rochester, Minn.; secretary general, Dr. Frank Smithies, Chicago, and treasurer, Dr. Clement R. Jones, Pittsburgh.

National Antinarcotic Conference.—Embassies of foreign governments, governors of states, medical, civic and welfare organizations, clubs, fraternities and societies, are invited to cooperate in a national antinarcotic conference, in Washington, D. C., May 3-4, for the elimination of the narcotic evil in the United States and other nations. An international dinner will be given the first day. A permanent committee will be appointed to confer with representatives of foreign governments, and to establish a definite plan to prevent the illegitimate manufacture, sale, distribution and use of narcotic drugs. Secretary of State Hughes will give an address at the dinner, May 3.

Bequests and Donations.—The following bequests and donations have recently been announced:

Springfield (Mass.) Hospital, $500,000; Springfield Home for Aged Women, Springfield Home for Aged Men, Hampden County Children's Aid Association, and the Massachusetts Society for the Prevention of Cruelty to Animals, each $10,000, by the will of Mrs. Martha S. Ludington.

University of Chicago, for sociological research, $21,000, and rare manuscripts valued at $9,000, by the alumni council.

Good Will Farm, Hermansville, Mich., $20,000, by Dr. George W. Earle, in memory of his son.

Charity Hospital, New Orleans, $10,000, by Joseph A. Breaux, former chief justice of the Louisiana Supreme Court, and $1,000 from "a friend."

Kurn Hattin Homes, Westminster, Vt., and the Sunset Home, St. Johnsbury, each $3,000; Brightlook Hospital, St. Johnsbury, and the Deaconess' Home, Barre, each $1,000, by the will of Mrs. Nancy Rollins.

Beth Israel Hospital, New York, $500, by the will of Mitchell B. Bernstein.

Beth Israel Hospital, New York, Jewish Maternity Hospital and the Hebrew Sanatorium, Rockaway, N. Y., each $500, under the will of the late Cecilia Rosett.

Long Island College Hospital Medical School, Brooklyn, $300, by Dr. Rufus E. Hagerthy, Sedgwick, Maine.

St. Michael's Clinic, Anniston, Ala., two beds, one endowed by W. W. Stringfellow in memory of Susie Parker Stringfellow, and the other by Henry J. Edmondson, as a memorial to his mother.

Disease in Other Countries.—The prevalence of disease in other countries is contrasted with that of the United States in the following statistics for 1922, given out by the U. S. Public Health Service:

In Russia, from January 1 to October 7, there occurred 83,367 cases of cholera; and from January to September, 369,125 cases of relapsing fever and 307,329 cases of typhus fever.

In October, there were 886 cases of typhus fever, with seventy-seven deaths, in the Union of South Africa.

The Island of Java reported 454 cases of plague, with 338 deaths in one month.

Bagdad, Mesopotamia, with a population of a quarter of a million, reported 153 deaths from smallpox in October.

Poland in one week had 291 cases of typhus fever and in one month 863 cases of dysentery, with 157 deaths.

From November 19 to December 2, the Madras Presidency, India, reported 700 cases of plague, with 449 deaths.

In less than a month, fifty-one deaths from smallpox were reported from Valparaiso, Chile.

The death rate for 1919, the latest for which comparative statistics are available, was for the United States, 12.9; England and Wales, 13.7; France, 19.1; Ireland, 17.6; Italy, 19.0; Spain, 23.3, and Sweden, 14.4. Australia and New Zealand had the lowest death rate, reporting 12.8 and 9.5, respectively.

Enforcing the Eighteenth Amendment.—Prohibition Commissioner Haynes has compiled the following statistics on federal arrests and seizures for violation of the National Prohibition Act for the six months ending Dec. 31, 1922:

	Six Months' Period Ending June 30, 1922	Six Months' Period Ending Dec. 31, 1922
Illicit distilleries seized and destroyed	3,838	4,781
Illicit distilleries seized and not destroyed	1,218	530
Illicit stills seized and destroyed	3,503	4,688
Illicit stills seized and not destroyed	2,470	2,492
Gallons of spirits seized and destroyed	68,538.03	92,221.78
Gallons of spirits seized and not destroyed	129,886.93	131,193.37
Gallons of malt liquor seized and destroyed	1,782,467.94	1,909,706.23
Gallons of malt liquor seized and not destroyed	37,259.37	459,443.71
Number of automobiles seized	1,362	2,211
Value of automobiles seized	$ 609,097.00	$1,100,100.85
Number of boats and launches seized	32	87
Value of boats and launches seized	$ 29,060.00	$ 777,150.00
Total appraised value of property seized and destroyed	$1,306,539.41	$1,663,326.97
Total appraised value of property seized and not destroyed	$1,479,312.27	$5,248,300.24
Number of agents killed on duty	2	12
Number of agents injured in performance of duty	16	33
Number of arrests	25,766	34,253

National Health Exposition Association.—The establishment of permanent headquarters for the National Health Exposition in Louisville, was recently announced. This association was formed by a group of state and city health officials to conduct health expositions along ethical lines and to eliminate promotional methods and profits from such enterprises. The organization will maintain a permanent staff and its personnel will be sent to various cities wherever required. Dr. George Parrish, Portland, Ore., is first vice president; Dr. Hiram M. Read, Seattle, second vice president, and Mr. Logsdon, secretary-treasurer. Members of the advisory council are: Drs. L. M. Powers, Los Angeles; H. L. Sayler, Des Moines, Iowa; F. W. Almond, Boise, Idaho; R. C. Turck, Jacksonville, Fla.; Thomas Tetreau, Portland, Maine; Rodney P. Fagen, Des Moines, Iowa; W. M. Dickie, Sacramento, Calif.; R. M. Olin, Lansing, Mich.; W. S. Rankin, Raleigh, N. C.; E. G. Williams, Richmond, Va.; S. J. Crumbine, Topeka, Kan.; J. D. Dowling, Birmingham, Ala.; Oscar Dowling, New Orleans; S. W. Welch, Montgomery, Ala.; C. C. Slemons, Grand Rapids, Mich.; W. S. Leathers, Jackson, Miss.; Charles Duncan, Concord, N. H.; I. H. Dillon, Lincoln, Neb.; W. C. Fowler, Washington, D. C.; Henry R. Vaughan, Detroit, and C. W. Garrison, Little Rock.

LATIN AMERICA

Dr. Forero Offers Another Prize.—Dr. Manuel Forero founded a prize some years ago in the Academia Nacional de Medicina at Bogotá. The income from it is awarded triennially for the best work received in competition, the Academia varying the topic. Forero has recently presented the *Repertorio de Medicina y Cirugía* of Bogotá with 200 pesos, to be presented to the author of the best work sent in for publication during the year by a Colombian writer. The presidents of the Academia and of the two medical societies form the jury of award.

New Pediatric Journal.—We have received the first two numbers of the *Revista Brasileira de Pediatria*, the official organ of the Brazilian Pediatric Society, of which Prof. Fernandes Figueira is president. The founder and director of the new journal is Dr. Alvaro Reis, of Rio de Janeiro. It is to be issued monthly in the interests of child welfare in general and in particular. The leading articles in the first number are "Diagnostic Importance of a Negative Response to Tuberculin Tests," by J. P. Garrahan; "Well Baby Clinics," by C. Ferreira, and "The Failure of Tuberculin Treatment," by E. Campos. The new journal makes a fine appearance and has a full abstract department.

FOREIGN

Hospital Inspection.—A party of British medical men, including several directors of London hospitals, are visiting hospitals in Basle, Berne and Zurich, Switzerland.

Pasteur Laboratory at Tientsin.—The new Pasteur laboratory in the French concession on the newly named Rue Pasteur, Tientsin, was formally opened in February, by the French consul. Dr. H. Y. King, director of the Peiyang Naval Medical School; Dr. Lassouarn, superintendent of the Pasteur laboratory; Dr. O'Neill and Dr. Lespinasse were among the resident physicians attending the ceremonies.

Distemper Investigation.—The medical research council of Great Britain has undertaken to organize an investigation of distemper in dogs. The investigation will be brought into relation with other studies in human and animal pathology. The following scientific advisory committee has been appointed to direct the work: Sir William B. Leishman, director of pathology at the War Office; J. B. Buxton, Capt. S. R. Douglas, Prof. F. Hobday and Dr. C. J. Martin.

Medical Education in Czechoslovakia.—A 1923 report from the U. S. Bureau of Education states that the Charles IV University of Prague, organized in 1348, is the largest university in the new republic. In 1920-1921, in its Czech and German departments, it had a teaching force of 256, including seventy-three teachers of medicine, and 8,078 students, including 2,520 in the department of medicine. In 1919, the T. G. Masaryk University, with a medical department, was established at Brno, and in the same year, the Komensky University at Bratislava was organized, with departments of law and medicine.

The Grassi Foundation.—The pupils and friends of Dr. B. Grassi, the malariologist of Rome, are collecting funds to endow a foundation in his honor for zoologic research on parasitic diseases. The occasion is the seventieth birthday of Professor and Senator Grassi, and the fortieth anniversary of his teaching. The address of the committee in charge of the fund is *Rivista di biologia*, via della Dogana Vecchia 27, Rome. Grassi received in 1920 the Mary Kingsley medal, given by the School of Tropical Medicine at Liverpool. His work on the exclusive transmission of malaria by mosquitoes was published in 1900.

The Aronson Prize.—The prize founded by the late Professor Aronson was awarded by the Berlin Hygiene Institute this year to Professor Doerr, director of the institute for experimental pathology and hygiene at Basle, for his works on the connection between the ultravisible and general biologic problems. In receiving the prize, he made an appeal for closer collaboration between the manufacturers of apparatus and experts in physics and chemistry. The institute at the same time gave a prize to C. Ruge for his works on streptococci, and to Vernbach for his research on the causal agent of influenza.

Deaths in Other Countries

Dr. **P. Morelli,** professor emeritus of surgery at the University of Naples and frequent contributor to surgical literature, aged 78.——Dr. **E. Pinzanni,** professor of obstetrics at the University of Pisa, aged 70.——Dr. **K. Arnd,** professor of surgery at the University of Bern.——Dr. **G. Bulius,** professor of gynecology at the University of Freiburg, aged 60.——Dr. **K. J. Schopper,** director of the state bacteriologic laboratory at Linz, formerly privatdozent at Vienna.——Dr. **Paul Devillers** of Paris, noted for having served as principal, second or physician in more than sixty duels.——Dr. **E. de Reynier,** who has practiced medicine at Neuchâtel for more than sixty years, aged 88.——Dr. **Adolfo Puebla,** member of the national legislature of Argentina and medicolegal authority, died at Buenos Aires, at an advanced age.——Dr. **José Gonzâlez Castro,** a well known Spanish medical writer.——Dr. **E. Salkowski,** professor emeritus of physiologic and pathologic chemistry at the University of Berlin, aged 78. His works on excretion of phenol and alkali salts, autodigestion of organs and the chemistry of the urine, and his tests are familiar in our textbooks.——Dr. **B. Scheube,** long professor at the University of Kioto, author of the popular manual "Diseases of Warm Countries," aged 71. He practiced at Greiz in Germany.

CORRECTION

Millimicrons Instead of Microns.—The word "microns" in the abstract "Bactericidal Action of Ultraviolet Light" (THE JOURNAL, March 10, 1923, p. 723) should have been "millimicrons" in both instances.

Government Services

U. S. Veterans' Bureau News

The U. S. Veterans' Bureau's preliminary course in the treatment of tuberculosis given at New Orleans (District No. 6) was concluded, March 31. Among the physicians of New Orleans who assisted in the course were: James M. Bamber, Henry Bayon, Charles W. Duval, Irving Hardesty, Adolph Henriques, Foster M. Johns and Professor Ashton.

Director F. D. Hines of the Veterans' Bureau has called a conference of district managers of the Bureau, to be held in Washington, April 23-25. Director Hines expects the district managers to make careful surveys of their respective organizations and to be prepared to discuss them in detail. Among other things, the director wants information as to whether or not a survey has been made to determine surplus medical personnel.

The Senate Committee charged with the investigation of waste and extravagance in the Veterans' Bureau will hold no public hearings for at least six or seven weeks. All members of the committee are absent from Washington, and from information available a quorum of the committee cannot be had for some time. Gen. J. F. O'Ryan, general counsel for the committee, is occupied in preliminary investigations.

Hospital Train Organized

Pursuant to instructions of the Secretary of War, the organization of a hospital train, organized reserves, to be known as Hospital Train No. 11 (a Pennsylvania state unit), has been authorized.

Second Physiotherapy Course

The next course of instruction in physiotherapy to be given at the Walter Reed General Hospital, Washington, will begin, Oct. 5, 1923, and continue four months. It is open to women who have had at least two years' training in an approved school of physical education. For information, apply to the commanding officer, Walter Reed General Hospital, Washington.

Report of Consultants on Hospitals for War Veterans

The group of consultants: Drs. W. C. White, J. C. Bowman, Frank Billings and Pierce Bailey (deceased), appointed by the Secretary of the Treasury in March, 1921, to consider the provision of additional hospital facilities for war veterans, has made its report. The consultants were assisted by an advisory committee consisting of Dr. Haven Emerson, representing the War Risk Insurance Bureau; Drs. C. H. Lavinder, W. L. Treadway and F. C. Smith, the U. S. Public Health Service; Col. C. M. Pearsall, the National Home for Disabled Volunteer Soldiers; Dr. T. W. Salmon, the National Committee for Mental Hygiene, and Dr. H. A. Pattison and Mr. T. B. Kidner, representing the National Tuberculosis Association. The Secretary of the Treasury gave instructions early in the work that all construction should be permanent and fireproof; that additions should be made to existing, permanent government hospitals when possible, and that when this was not possible construction should take place on property already owned by the government before the purchase of new property was undertaken. In gathering data, hearings were granted to more than 100 groups of persons interested in the location of hospitals in their particular districts, and officers who had personal knowledge of existing conditions were consulted. Fundamental principles to guide in the location of hospitals were established after due consideration was given to the distribution of the population, the existing government hospitals, accessory facilities, such as available state and civilian hospitals, the number and distribution of ex-service men, actuarial studies based on the expectation of sickness traceable to war service, railroad facilities, and the probable future economic use of buildings such as were to be provided. In view of the great delay necessary in constructing a complete hospital program, a preliminary report was submitted, which was approved by the Secretary of the Treasury, April 23, 1921. At the request of the Secretary of the Treasury, the President devoted a long session to the study of this problem, June 11, 1921, and approved the program submitted. The hospital plans were then submitted for criticism and advice to the chairman of various interested committees of the Senate and the House

of Representatives, each of whom gave his approval. The complete hospital program as eventually worked out, after several unavoidable delays due to pending legislation and the establishment of the Veterans' Bureau, comprises projects in nineteen cities, and the provision of 6,334 hospital beds. The average cost per bed from funds provided (Public Act No. 384) was $2,936, which includes allotments for everything—fixed equipment, personnel quarters, power, service, etc. An inspection of a number of the finished hospitals by members of the consultants' staff led to the conclusion that there is nothing better in the United States and probably in the world for the special care of disabled veterans suffering from tuberculosis and nervous and mental diseases.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 19, 1923.

The Census of London

The third volume of the census report of 1921, dealing with London, has been published. The total population enumerated as in the "administrative county" was 4,484,523. At the first census, taken in 1801, the population of the same area numbered 959,310. This number was doubled by 1841 and quadrupled by 1881, and reached the highest figure recorded, 4,536,267, in 1901. But the decline in the "administrative county" does not mean that the growth of London has been arrested. The present county boundary has long ceased to enclose, with any approach to completeness, the aggregation of districts which make up the metropolis. In what is known as "Greater London," the population reached in 1921, the highest figure recorded, 7,480,201, and is still increasing. The housing shortage, due to the war, is shown by these figures: The number of families for each occupied dwelling increased from 1.51 in 1911 to 1.59 in 1921. Analysis of the data on dwellings occupied by private families according to the number of rooms shows that 18.1 per cent. contained three rooms or less; 27.2 per cent. from four to five rooms; 42.3 per cent., from six to eight rooms, and 12.4 per cent., nine rooms or more. The average size of the family has fallen from 4.15 persons in 1911 to 3.79 in 1921, a drop of 9 per cent. This reduction will probably be explained by the returns from other parts of England. At the same time, the average unit of occupation for each family has decreased from 3.56 rooms for each family in 1911 to 3.38 in 1921, a decrease of only 5 per cent. The consequence is that the number of occupied rooms per person has improved from 0.88 to 0.91.

Disregarding differences in type of accommodation and size of rooms, the London population is the less densely housed by an average of one than in 1911. The average size of families in the several boroughs varies from 4.26 to 3.12, the largest being found in the poorest boroughs. With regard to birthplace and nationality, about 92 per cent. of the persons enumerated were born in England, about 3 per cent. in the remainder of the British isles, nearly 1 per cent. in the various dominions and colonies, and rather more than 3 per cent. in foreign countries, one fifth of the latter being British subjects either by birth or by naturalization.

"Safety First"

The sixth annual meeting of a very useful body called the "Safety First" Council has been held at the Mansion House. Its object is to call the attention of the public to the various ways in which the dangers due to vehicular traffic may be avoided. It operates by means of placards and by propaganda among schoolchildren. Speaking at the meeting, Lord Newton said that though we suffered from too large a population, nobody wished to reduce it by killing people in the streets. Last year no fewer than 675 persons were killed by vehicles in London, and more than 56,000 were injured, an increase of 16 per cent. on the figures of the preceding year. At present, there were two rules of the road—one for the pavement and the other for the road. On the former, the rule is keep to the right; on the latter, to the left. But in keeping to the right, the pedestrian in crossing the road is prone to step off the pavement in such a way that his back is to the vehicular traffic, and he runs the risk of injury. It has therefore been proposed to make the rule of the road, "Keep to the left," for both pavement and road. Then when the pedestrian wants to cross, he naturally turns round, as he is on the side of the pavement distant from the road; and he thus gives himself the opportunity of seeing any vehicle that may be passing. The question of "Keep to the left" has been considered by more than a hundred authorities, who with one exception have agreed to it.

Dangerous Drugs

As reported in previous letters, elaborate regulations have been made by the government to prevent persons addicted to drugs from obtaining them. One regulation was that physicians, dentists and veterinary surgeons, when prescribing "dangerous drugs," must sign their full names, including Christian names. This piece of "red tape" causes great inconvenience without any corresponding advantage. The government has therefore amended the regulation and now requires only the usual signature. On the other hand, a pharmacist shall dispense a prescription only (*a*) if he is acquainted with the prescriber's signature and has no reason to doubt the genuineness of the prescription, or (*b*) if he has taken reasonably sufficient steps to satisfy himself that the prescription is genuine.

The Calcutta School of Tropical Medicine

The Calcutta School of Tropical Medicine has adopted an important scheme of research, for which large monetary provision has been made by the government and also by private subscribers. A feature of the school is six special laboratories housed on the fourth floor, which was added by public subscription. The hospital, in addition to a large outpatient department, has ninety-eight beds, and it is hoped to add a special ward for female Indian patients. The students are all qualified and practicing physicians, with experience, in varying degree, with tropical diseases. There is a rigorous system of selection for admission of students, and classes are restricted in number to fifty. Special attention is paid to protozoology, of which Major R. Knowles of the Indian Medical Service is professor. The number of subjects dealt with in a six month's course considerably exceeds those for any other course of tropical medicine, and includes special clinical and laboratory instruction for six research workers on kala azar, leprosy, ancylostomiasis, diabetes, filariasis and the dysenteries. A high standard both in practical and in theoretical knowledge is maintained for the diploma of the school. The intention is to make the Calcutta D.F.M. not merely a medical diploma but an evidence of efficiency in tropical medicine, as the F.R.C.S. is in English surgery.

Dermatitis from Dyed Furs

On the continent of Europe, cases of dermatitis due to dyed furs have been recorded in the last year. The lower part of the face and the neck show an erythematous, lichenoid or eczematous eruption. The fur responsible, known by the trade name of "biberette," is probably rabbit's fur dyed to imitate beaver. The dye is paraphenyldiamin, which has been used for many years to dye fur brown. In England, some cases of dermatitis supposed to be caused by the dye on

cheap furs have recently been reported. The public health department of the London County Council has started an investigation, and a conference of representatives of the London Fur Traders' Association with the ministry of health has been arranged.

Bernard Shaw and the Profession

A favorite subject of Mr. Bernard Shaw's caustic wit is the medical profession. A vegetarian, antivivisectionist, antivaccinator and anti-almost everything, he can easily find topics. The Jenner centenary gave him the opportunity for the quip: "We should burn Jenner in effigy." Now he has, curiously enough, taken Sir Almroth Wright under his wing, but only for the purpose of disparaging previous workers. As Sir Almroth will not publish in the lay press because the proper place for his work is "the scientific journals," Shaw writes, in a letter to the *Nation and Athenaeum:* "What is a scientific journal? Is it a wadge of advertisements of every pill, potion, appliance, instrument and utensil that can be used in the bedroom of an invalid, with a few medical lectures in the middle to help the sales? Clearly not; that is a trade paper. Why does not Sir Almroth contribute to the *Times* supplements, the *Nation and Athenaeum,* the *Spectator,* the *New Statesman* or the *Saturday Review* and the rest of the serious weeklies? Dean Inge gives himself no airs of condescension when he contributes his weekly sermon." The reason, Shaw says that physicians will not write in the lay press is that their "trade union" would have them removed from the register. "Sir Almroth cannot say these things; his loyalty to his colleagues forbids him. Fortunately for the public, I can and do. I shall go ahead until the government purges the general medical council of its trade unionist doctors and makes it representative of contemporary science and the consumer, putting the doctors in their proper place as assessors only. Then it will be safe for Sir Almroth to explain his work to the public instead of having to depend on me." Ignoring the fact that the advances of science depend on the work of previous investigators, even when that work is improved on or supplanted, Shaw misrepresents it all as disastrous mistakes. Thus: "But there is not much vogue for reverence and gratitude in science. Copernicus and Galileo were grossly ungrateful to Ptolemy, and Einstein's irreverence for Newton has lacerated many sensibilities; so poor Jenner must take his turn, and Pasteur be reviled for a second-rate sciolist by young lions trained by Sir Almroth Wright himself. Even I, who have conferred on the world benefits less questionable than inoculating three generations of infants with cow syphilis, have my infallibility challenged quite often and most disrespectfully. *C'est comme cela que la Science marche.*"

Antivaccinationist Methods of Controversy

The Jenner Centenary has been made the occasion for the Anti-Vaccination League to issue a lengthy pamphlet entitled "An Inquiry into Vaccine Lymph: Its Origins, Varieties, Nature and Effects, with a Brief History of Its Compulsory Inoculation in England." The pamphlet is packed with statistics and quotations, and as a piece of special pleading will no doubt be effective with those ignorant of medical science. Dr. Hadwen, the protagonist of antivivisection, figures in the pamphlet. As an example of his methods and of the antivaccinators in general, the following is an example. The ministry of health issued a pamphlet showing the enormous decline of smallpox in Germany since the adoption of compulsory vaccination in 1874. The antivaccinationists asserted that this was a misrepresentation, as compulsory vaccination had existed in Prussia since 1835. They even put forward this contention in two questions in the House of Commons. The fact is that the regulations of 1835 provided only for compulsory vaccination in the event of an outbreak of smallpox in a house. Yet with his usual capacity for rhetoric and for disregard of fact, Dr. Hadwen, in the *Nation,* says: "The Compulsory Vaccination and Revaccination Acts of Prussia were passed in 1834 for the army and in 1835 for the civil population—the most tyrannical and brutal regulations ever framed by a civilized state—and at the end of thirty-five years of this despotism, Prussia was overwhelmed by the greatest scourge of smallpox on record." That the general vaccination of the population followed, and did not precede this epidemic, Dr. Hadwen takes care not to mention.

PARIS

(From Our Regular Correspondent)

March 16, 1923.

The International Confederation Against Venereal Disease

This confederation, which has just been founded under the chairmanship of Professor Bayet of Brussels and which has its headquarters at Paris, 7, rue Quentin-Bauchart, is the outgrowth of an agreement entered into between the Ligue des sociétés de la Croix-Rouge and the various national societies formed to combat venereal disease. Its purpose is: 1. To serve as a clearing house for all information concerning the world-wide campaign against venereal disease; to institute scientific and social inquiries on the incidence, prophylaxis and treatment of venereal disease in the different countries, and to publish an international bulletin of information. 2. To serve as a connecting link and a means of coordination between the various national societies that are combating venereal disease, national organizations such as the Red Cross, government organizations, etc., with a view to establishing uniform methods in the campaign against the venereal menace, together with exchange of experiences and comparison of results. 3. To facilitate the study of questions pertaining to venereal disease, from the international point of view; to insure the introduction of prophylactic measures to prevent the spread of venereal disease from one country to another; to favor the progress of national legislation, and to promote international agreement. 4. To assist pecuniarily scientific research in this field and to aid every society or national league whose program conforms with that of the international confederation; to found and support all model institutions for the study of all questions pertaining to venereal diseases as a whole. 5. To organize lectures and congresses dealing with venereal disease. 6. To make known to the various governments, through the medium of the constituent national societies, the results of all investigations; likewise, to spread information in regard to the best means of supporting the campaign against the venereal menace, from both the national and the international point of view.

As among the measures needed at once, the confederation proposes the adoption of international measures against charlatanism; the elaboration of a moral code identical for the two sexes, and a study of the principles of legal responsibility, notification of disease, obligatory treatment, sanctions, etc. All countries without exception will be invited to enter this confederation, including Germany, if assurance is given that its delegate did not sign the famous manifesto of the ninety-three German scientists.

Medical Inspection of Schools

In a report presented to the municipal council of Paris, M. Charles Joly gives the results of the medical inspection of schools. During the course of the school year, 23,963 pupils, 11,666 boys and 12,297 girls, have been examined, with the result that 9,054 boys and 9,678 girls were found to be in a normal state of health. With respect to the boys, the following classification was reached: general condition

good, 51.6 per cent.; fairly good, 26 per cent.; passable, 16.6 per cent.; bad, 5.8 per cent. The classification of the girls was: general condition good, 52.4 per cent.; fairly good, 26.5 per cent.; passable, 15.9 per cent.; bad, 5.4 per cent.

Influenza and Mortality from Pulmonary Tuberculosis

Dr. G. Ichok gives in the *Revue d'Hygiène* the results of his special study on the influenza epidemics of Paris, occurring between 1900 and 1920, in their relation to mortality from pulmonary tuberculosis. During this period there were twelve influenza epidemics of varying intensity and duration. Ichok publishes a table that gives evidence of an undeniable recrudescence of deaths from pulmonary tuberculosis corresponding in time to the influenza epidemics:

Difference Between the Weekly Mortality from Pulmonary Tuberculosis Before and During the Periods of Influenza Epidemics

Years of epidemics	1900	1901	1905	1907	1911	1918-1919	1920
Difference between the mortality from tuberculosis before and during the influenza epidemic	+12.2	+38.4	+28.6	+45.7	+30.8	+41.3	+35.4

In 1907 and 1918, the difference between the mortality before and during the influenza epidemics is very marked. Again, in comparing the mortality from tuberculosis and from influenza during the epidemic of influenza and during the first and the second three months after the epidemic, it may be noted that, during the first quarter after the influenza epidemic, the danger was not entirely eliminated; deaths from influenza still occur, though it is evident that the force of the epidemic is broken. As for the mortality from pulmonary tuberculosis, it is noticeable that, with the exception of the year 1905, there was a considerable decrease during the first three months after the epidemic, and a still further decrease during the second three months afterward. In other words, the incontestable increase in mortality from tuberculosis during the influenza epidemics is followed by a decrease. The figures are approximately the same as those recorded before the epidemics, and are at times even lower. One is, therefore, entitled to conclude that the curve of mortality from pulmonary tuberculosis is influenced unfavorably by influenza epidemics.

A New Institute of Colonial Medicine

The deliberations of the council of the University of Algiers establishing an institute of hygiene and colonial medicine in northern Africa have been approved by the issuance of a governmental decree.

Difficulties in the Application of the Compulsory Smallpox Vaccination Law

Dr. A. Delon, director of the municipal bureau of public health in Nimes, has called the attention of the Société de médecine publique to the difficulties encountered in enforcing the compulsory smallpox vaccination law, especially in the matter of revaccination. The vaccination of children proceeds quite regularly, and young men are revaccinated when they enter the army, but young women are, on the other hand, almost never revaccinated. After men and women have reached their majority, they almost never think of being revaccinated. As a consequence, a large portion of this part of the population is in a state of morbid receptivity. It is to be hoped that the vaccination law will be so modified as not only to make the revaccination of adults compulsory but also to furnish the necessary legal weapons for the complete enforcement of the law.

BUENOS AIRES

(From Our Regular Correspondent)

Feb. 20, 1923.

University Reforms

The professors in the Buenos Aires Medical School held a meeting recently to consider existing laws on university organization, and reforms that seem necessary. A committee was appointed to make a study of the matter and submit a report at the next meeting. Dr. Alfredo Lanari, former dean and present representative of the medical school on the superior board of education, has presented a plan, which is essentially as follows: 1. The faculties, and not the government, shall determine the length of courses (it is unanimously accepted here that seven years of study should be required, besides preparatory courses). 2. On the governing board, the professors shall have six representatives; the assistant professors, four, and the students, four (it is generally thought that the last number is excessive), appointment being made at separate meetings. 3. The dean shall be appointed at a general meeting of professors, assistant professors and students. This plan has been received with approval by many; others, however, attack its provisions and claim that all present evils are due to student ascendency, which they consider both harmful and unjustified.

The evident insufficiency of university funds will apparently be obviated to some extent, as congress has increased the annual appropriation granted to the Buenos Aires University by $800,000.

A number of newspapers are conducting a persistent campaign against present university conditions. The attacks are obviously unjust, in the light of the important progress achieved in the last few years.

Medical Visits

The rector of the university, Prof. José Arce, who has returned from the United States, expresses his satisfaction with the splendid organization of the surgical clinics he visited.

There is general interest in the announced arrival of a group of American physicians, now touring South America.

The Salomon Case

Prof. Hugo Salomon of Vienna, on his arrival a few months ago, tried to validate his diploma here. In this, he succeeded only partially, as he failed in one subject. In the meantime, he opened an office, meeting with an amazing success in the treatment of diseases of nutrition. The physicians' syndicate reported him for illegal practice of medicine. In spite of the explicit terms of the law governing the matter, the judge discharged Dr. Salomon. The incident has caused much agitation and has furnished the defendant with no end of free advertising. Dr. Salomon, whose competence in his field is beyond doubt, intimates that he is using new methods, originated by him. The faculty has denied him the privilege of validating his diploma, and has just issued validation rules far more rigid than those previously in force. This action has undoubtedly been influenced by the rush of European physicians to all these countries since the war.

Eye Hospital

The Public Welfare Society has just opened an ophthalmologic hospital and dispensary, which will replace the old Santa Lucia Hospital. The new institution is considered the best of its type in the world.

Cancer Institute

The cancer institute, officially known as the Institute of Experimental Medicine, has just opened its doors. The institution, in charge of Dr. A. H. Roffo, will have room for

sixty patients. There are well-equipped laboratories, and a large personnel. The annual appropriation is over 300,000 pesos ($110,000). Normally, the institute is a dependence of the medical school.

Public Health Work in the Provinces

The National Department of Health has opened small hospital-dispensaries at Chamical y Chilecito (La Rioja), Molinos y Guemes (Salta), Copacabana y El Alto (Catamarca), Perico y La Quiaca (Jujuy) and La Banda (Santiago del Estero), and in the cities of Corrientes, Rosario and Santa Fé y Posadas. These stations are used for smallpox vaccination, disinfection and serum distribution, and are centers for infant welfare work. In addition, ten beds are available for emergency cases. The hospitals in Corrientes and Rosario y La Quiaca are acting as disinfecting stations for freight imported from abroad. A station of the same type is to be established at Las Cuevas, where the Chilean railroad first enters Argentina.

PRAGUE

(From Our Regular Correspondent)

Feb. 28, 1923.

Campaign Against Tuberculosis

The ministry of railroads is undertaking an intensive campaign for the eradication of tuberculosis among its employees. A report was recently published of a tuberculosis survey carried out among the railroad employees in Ruthenia, which is being used as an experimental district. In the course of the survey, 2,929 employees were examined for the ministry by Drs. C. Amerling and V. Mikenda. In addition to a routine physical examination, each patient was given the Mantoux tuberculin test. On the basis of the results, the persons examined were divided into five groups: The first, group comprised those who had no physical signs of pulmonary tuberculosis and did not react to the tuberculin test; it numbered 43.6 per cent. of the total. The second group, 15.5 per cent., consisted of those in whom the tuberculin test was negative but examination disclosed slight physical changes in the chest. The third group, 12.5 per cent., gave positive tuberculin reactions, but did not show any physical signs of the disease. In the fourth group were classified those cases in which there were positive tuberculin reactions and positive signs of a tuberculous process in the lungs. Finally, in the fifth group were placed those cases presenting definite signs of pulmonary tuberculosis, and already under treatment for the disease by the insurance physicians. In all cases, the social condition of the employees, particularly of those who showed positive signs of tuberculous infection, was investigated. It was found that tuberculosis is most common among that category of railroad workers employed in building new roads. A chart was prepared showing the percentages of positive tuberculous infection in different railroad stations. It is notable that the percentage of persons who reacted positively to tuberculin is unusually low, but that, on the other hand, the number of persons who showed definite signs of tuberculosis is very high. Because the tuberculosis death rate of the railroad employees is very high—the proportionate mortality for tuberculosis in 1920 was 23 per cent.—the results of the survey seem to indicate that, while the tuberculosis morbidity rate in general in this part of the country is not very high, there are very frequent tuberculosis infections in a later period of life. On the basis of these studies, the ministry of railroads has constructed a very complete program for the eradication of tuberculosis among its employees. It is in an advantageous position for this purpose because it has an efficient machinery in the well developed system of health insurance for its employees. It employs 749 physicians for the care of about half a million employees. Not only the employees themselves, but also the members of their families, are included in the scheme of health insurance. In order to make expert service accessible to all employees, tuberculosis dispensaries are being created in every district under the direction of specialists. These dispensaries are also used as places from which tuberculous patients are sent to a sanatorium maintained by the ministry for the care of railroad employees affected with tuberculosis. Recently, an interesting experiment was made which aimed at a better follow-up of those patients who have been treated in the sanatorium or have attended the dispensary clinics. Several male social workers were appointed for the different districts, whose task it will be to follow up the tuberculous employees and to see that the efforts of the ministry to promote their health are not being thwarted through ignorance or lack of interest on the part of the employees themselves. This is the first experiment of the kind in which an intensive effort has been made to eradicate tuberculosis from a social unit of the republic; it is, therefore, being followed with keen interest by public health workers.

Venereal Disease Decree

The ministry of health recently issued a decree based on recommendations by the venereal disease survey conducted by Dr. Hynek L. Pelc under the auspices of the ministry last year. It was brought out by the survey that new infections with syphilis have apparently diminished since the close of the war, but that syphilis was carried by the returning soldiers to their families. It therefore seems necessary to make the diagnosis of syphilis among children as easy as possible. The decree makes it the duty of the state Wassermann laboratories to examine, free of charge, all blood specimens sent to the laboratory by child welfare centers, orphanages, children's homes, children's hospitals and kindred institutions. Lying-in hospitals and prenatal clinics are also included among institutions enumerated in the decree. Prior to this time, the institutions had to pay for the examinations unless the blood was taken and sent to the laboratory by a state health officer. It is anticipated that through this measure the diagnosis of syphilis will be made easier for the pediatrician, and that he will therefore take a more active part in the eradication of this disease.

BERLIN

(From Our Regular Correspondent)

March 3, 1923.

Modern Theories of Color Vision

Professor von Hess, the ophthalmologist, of Munich, has been devoting himself of late years to the problem of color vision. Especially his researches on the color vision of insects have awakened general interest. An interesting article on the history of the various theories of color vision since Newton's time, written by Wilhelm Ostwald, formerly professor of chemistry in Leipzig, was published in the *Deutsche medizinische Wochenschrift*, Sept. 15, 1922. He distinguishes two periods of development since Newton: (1) the qualitative, and (2) the quantitative. In the first period, not only physicists and mathematicians made a special study of color vision, but also such men as Goethe and Schopenhauer manifested considerable zeal for the subject. But owing to their lack of knowledge of physics, they were unable to get a clear conception of anything more than the psychologic aspects of the problem. It was only with the advent of Young and Helmholtz that further progress was made from the side of physics. Ewald Hering treated mainly the physiologic and the psychologic aspects of the question. He rejected the three-color theory (yellow, red, blue), and

succeeded in establishing in the circle of color vision four fundamental colors (yellow, red, blue, green). The quantitative theory of color vision, which is based on the discovery that by means of proper light filters the three components of every color; namely, the *Vollfarbe* (the main color principle in which is inherent the shade of color present), the white index and the black index can be exactly determined, was thoroughly studied by Wilhelm Ostwald in 1915. The researches of Professor Hess are based on the important finding of Hering that colors as seen by the totally color blind have about the same relative luminosity that they have for the normal eye when seen in the deep twilight, when the colors are not perceived as such but present merely varying shades of gray. In other words, of the colors of the spectrum, red, orange, yellow, green-yellow, green, blue and violet, the color that appears the brightest by daylight is yellow; then follow green-yellow and orange, green, red, blue and violet. In deep twilight, however, conditions are quite reversed, for here green-yellow presents the brightest gray; then follow yellow and green; then green-blue and blue; then orange, and finally red. A deep blue corn-flower (*Kornblume*) appears in a gray dusk much brighter than a flaming red poppy. If one draws a curve, as was done by Hering, representing the relative brightness of the various colors when seen in a gray dusk, green-yellow will be found at the top; it is surprising to note that red appears almost like black. The relative brightness of the colors as seen in a normal light by the totally color blind will be the same as the foregoing. Professor von Hess has examined a large number of animals, and has found that all invertebrates and fishes see colors in the same way as the totally color blind. For instance, for an animal that has the habit of seeking out the brightest place in the examining vessel, yellow is not the brightest spot but green-yellow; red is for such an animal exceedingly dark, much darker than dark blue, etc. It is a well known fact that the pupil of the human eye contracts in direct proportion to the brightness of the light that enters it. Hess found that the pupil of the eye of the cuttlefish, which in its external appearance resembles the human eye, contracts most under the influence of green-yellow and least under red, since, for the eye of the cuttlefish, green-yellow has the highest and red the lowest degree of brightness. The reaction of the eyes of the totally color blind would be the same as that of the cuttlefish.

The examination of railroad men for partial or total color blindness has usually been carried out by requiring the examinee to select red, green, etc., from a large number of colored yarns. The engineer who in 1918 was responsible for a railway accident in Dresden, in which forty-two persons were killed, had been examined five times by physicians who used this method and had been declared to possess normal color vision. Hess is the inventor of an apparatus that he terms a "pupilloscope," with which a physician observes the eye of the subject through a magnifying glass while colored and gray light is thrown alternately into the eye. The gray light is produced by two adjustable prisms of gray glass. If the light passes through the small ends of the prisms, it is light gray; if it passes through the thick ends, it is dark gray. A certain color is selected; for instance, green, and the prisms of green glass are adjusted until, in changing from green to gray, no movement of the pupil takes place. In this manner the degree of brightness for a given eye is determined. As the findings with respect to brightness are for the eyes of color-blind persons quite different from those secured in the examination of normal eyes, color blindness can be discovered at once in a purely objective manner. In this connection, it is interesting to note that Hess examined with his pupilloscope the aforementioned locomotive engineer, and in a few hours discovered red-green blindness. As slow reaction of the pupil of the eye is one of the first symptoms of spinal paralysis, the pupilloscope is indispensable for the early diagnosis of this disease. This ingenious apparatus should therefore be found in every modern eye clinic.

It may be well to mention the results of a few more of Hess' researches on light and color vision. He has discovered that birds are blind to blue because they have yellow granules in the retina; that numerous invertebrate animals, because of the fluorescence of their eyes, can see the ultraviolet light that is invisible to the human eye; that it is possible for certain of the lower animals that have no eyes to perceive differences in brightness almost as well as the human eye. His comparative researches on accommodation are also worthy of mention. The achievements of Hess in the advancement of scientific knowledge in the field of color vision have also received definite recognition, for an international committee of award recently bestowed on him the Helmholtz gold medal, which is awarded every ten years for the most significant researches in the domain of optics.

Findings of School Physicians in Continuation Schools for Girls

In 1911, the first school physicians for continuation schools were appointed in Bremerhaven and in Schöneberg. In 1921, according to statistics, there were twenty-six school physicians engaged in continuation schools. A comparison of the average weight and height as found in 1918 and in 1921-1922 shows that last year there was a distinct average increase, not only as regards weight but also as regards height. The health of 7 per cent. of the pupils, however, was declared to be "unsatisfactory." The morbidity statistics covering 1,900 pupils revealed anemia in 23 per cent., curvature of the spinal column in 15.7 per cent. and heart defects in 1 per cent., to which may be added disturbances of heart action in 5 per cent. Refraction defects of the eyes, in most cases not corrected, were found in 14.9 per cent.

Care of Cripples in Prussia

Since legislation was enacted providing for the care of cripples, 20,000 cripples have been given treatment, and far-reaching, prophylactic measures for the prevention of crippling accidents and the elimination of the causes of crippling in general have been taken. Rural leagues have contributed generously to this cause according to their means, and the Prussian legislature has appropriated state funds which, to be sure, will not become available until 1924. Some difficulty is being experienced in the application of the law, for the reason that in every case it must be determined whether or not the cripple is in need of institutional care, and for the further reason that the persons or authorities on whom the burden of a cripple's maintenance and care falls may change frequently and repeatedly, depending on whether or not the cripple is in need of institutional care.

Marriages

WILLIAM C. KIRSTEN, Milwaukee, to Miss Viola Schoenbeck of West Bend, Wis., February 3.

EVARISTO BRUAL to Miss Felicidad Cordero, both of Bauan, Batangas, P. I., January 10.

WILLARD T. NICHOLS, Milwaukee, to Miss Grace Harrington of Seattle, February 17.

MAXIMILIAN KERN to Miss Elaine Frances Hoexter, both of Chicago, March 10.

JESUS AZCONA to Miss Josefina Quilez, both of Manila, P. I., recently.

Deaths

George Harwood, Dubuque, Iowa; University of Bombay, India (licensed, Iowa, 1886); for many years served with the British Army in India; formerly superintendent of the Ashton-under-Lyne, and Birkenhead hospitals, England; at one time a practitioner in Canada; also a druggist; aged 82; died, March 24, at the Finley Hospital, following a long illness.

George A. Fackler ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1881; emeritus professor of medicine, University of Cincinnati College of Medicine; president of the board of health; past president of the Ohio State Medical Association; on the staff of the Cincinnati General Hospital, where he died, March 26, aged 61, of erysipelas.

William Richard Campbell ⊕ Clinton, Mo.; Washington University Medical School, St. Louis, 1911; president of the Henry County Medical Society; county coroner; deputy state commissioner of health; aged 44; died, March 26, at the Johns Hopkins Hospital, Baltimore, following an operation for brain tumor.

Frank P. Strickler, Sr., Elizabethtown, Ky.; Medical Department University of Louisville, Louisville, 1887; member of the Kentucky State Medical Association; a practitioner in Elizabethtown for nearly a half a century; aged 67; died, March 17, of pulmonary edema, contributing cause, tumor of chest.

Emil Schwarz, New York; University of Vienna, Austria, 1905; member of the New York Pathological Society; formerly pathologist to the Woman's Hospital, New York, the Brooklyn Hospital, and the Carson C. Peck Memorial Hospital, Brooklyn; aged 41; died, March 29, of pneumonia.

Charles Samuel Morrow, Memphis, Tenn.; Memphis Hospital Medical College, 1899; member of the Tennessee State Medical Association; formerly clinical instructor of medicine at his alma mater; served in the M. C., U. S. Army, during the World War; aged 46; died, March 14.

Leroy S. Holcomb, Pennsville, Ohio; Medical College of Ohio, Cincinnati, 1868; member of the Ohio State Medical Association; formerly president of the Morgan County Medical Society; aged 83; died, January 18, of empyema of the gallbladder and carcinoma of the stomach.

Eugene E. Axtell ⊕ Marinette, Wis.; Chicago Homeopathic Medical College, Chicago, 1890; member of the Radiological Society of North America, and former president of the Marinette County Medical Society; aged 57; died, March 22, of angina pectoris.

Albertus C. Wolfe ⊕ Columbus, Ohio; Columbus Medical College, 1883; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staff of the Grant Hospital; aged 65; died, February 2, of bronchopneumonia.

George Frederick Koehler ⊕ Portland, Ore.; Medical Department of Columbia College, New York, 1889; assistant clinical professor of medicine at the University of Oregon Medical School, Portland; aged 55; died, March 11.

Paul Wegeforth ⊕ San Diego, Calif.; Johns Hopkins University Medical Department, Baltimore, 1912; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 36; died, March 30.

Benjamin F. Harding, Mansfield, Ohio; Fort Wayne College of Medicine, Fort Wayne, Ind., 1889; member of the Ohio State Medical Association; aged 61; died, March 23, at Sebring, Fla., of tuberculosis.

William Theodore Hope, Chattanooga, Tenn.; Bellevue Hospital Medical College, New York, 1873; formerly president of the board of health and city physician; aged 72; died, March 20, of paralysis.

Charles A. Van Velzer, Fort Scott, Kan.; Hahnemann Medical College and Hospital, Chicago, 1886; member of the Kansas Medical Society; aged 62; died suddenly, March 17, of chronic nephritis.

Leonard J. Somers, Rochester, N. Y.; Albany (N. Y.) Medical College, 1889; member of the city council; superintendent of the Monroe County Hospital; aged 57; died, March 11.

William Wallace Kimmell, Lebanon, Ore.; Medical College of Ohio, Cincinnati, 1881; for eight years member of the city council; aged 72; died, March 18, following a long illness.

Frank Kurtz Addy, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1903; aged 48; died, February 21, at Santa Barbara, Calif., of influenza and diabetes mellitus.

Larkin L. Harris, Cleburne, Texas; University of Arkansas Medical Department, Little Rock, 1893; member of the State Medical Association of Texas; aged 59; died, January 27.

James Lassiter Everett, Palmer, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1881; aged 71; died, March 21, at the Baptist Sanitarium, Dallas, of senility.

Oscar FitzMerton Gittens, Waterbury, Conn.; Middlesex College of Medicine and Surgery, Cambridge, Mass., 1921; aged 28; died, February 26, of influenza and pneumonia.

George Russell Fessenden, Ashfield, Mass.; Medical School of Harvard University, Boston, 1879; formerly member of the state legislature; aged 74; died, March 18.

David Joseph Chinn, Bettendorf, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1892; aged 62; died, March 31, following a long illness.

C. A. Steward, Grant, Okla.; Barnes Medical College, St. Louis, 1896; member of the Oklahoma State Medical Association; aged 61; died, January 6.

George Thomas Simpson, Breeding, Ky.; University of Louisville Medical Department, 1878; aged 71; died, March 20, following a long illness.

Charles A. Hunter ⊕ Reddington, Ind.; Physio-Medical College of Indiana, Indianapolis, 1886; aged 62; died, March 23, following a long illness.

Milton A. Trow, Chatfield, Minn.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; aged 70; died suddenly, March 17, of heart disease.

Albert C. Landes, Brooklyn, Iowa; Iowa College of Physicians and Surgeons, Des Moines, 1884; aged 69; died, April 2, following a long illness.

Alben Young ⊕ Chicago; Chicago Medical College, 1889; on the staff of the Ravenswood Hospital; aged 62; died, April 2, of heart disease.

James Anderson Gardner, Greensberg, Kan.; Cleveland Medical College, Cleveland, 1878; aged 67; died, March 11, of cerebral hemorrhage.

Thomas Wisner Sloan, Bellevue, Wash.; University of Louisville Medical Department, Louisville, Ky., 1877; aged 74; died, March 16.

Frank P. Poignee, St. Louis; Missouri Medical College, St. Louis, 1890; also a druggist; aged 56; died suddenly, March 17, of heart disease.

John Sunderlin Van Vechten ⊕ Chateaugay, N. Y.; University of Michigan Medical School, Ann Arbor, 1883; aged 67; died, March 27.

Alvin J. Roller, Bristol, Tenn.; College of Physicians and Surgeons, Baltimore, 1882; aged 64; died, March 27, of bronchopneumonia.

William Haines Lyford, Port Byron, Ill.; Rush Medical College, Chicago, 1859; also a druggist; aged 86; died, April 2, of senility.

Bonifacio Rosello y Basa, Manila, P. I.; University of St. Thomas Medical Department, Manila, 1880; aged 68; died, January 5.

James M. Conrad, Mexia, Texas; University of Tennessee College of Medicine, Memphis, 1885; aged 65; died suddenly, March 22.

Theodore Elliott Wannamaker, Jr., ⊕ Cheraw, S. C.; Jefferson Medical College of Philadelphia, 1906; aged 41; died, March 13.

Isaiah B. Gibbs, Sycamore, Ohio; Physio-Medical Institute, Cincinnati, 1871; aged 79; died, February 22, of arteriosclerosis.

Orville Forrest Rogers ⊕ Boston; Medical Department of Columbia College, New York, 1869; aged 78; died, March 23.

James Wesley Minner, Caney, Kan. (licensed, Kansas, 1904); aged 64; died, February 6, of cerebral hemorrhage.

Peter Yost, Pittston, Pa. (licensed, years of practice); aged 91; died, February 23, of influenza and pneumonia.

David B. Hand, Scranton, Pa.; New York University Medical College, New York, 1870; aged 75; died, April 1.

William B. Pickard, Nashville, Tenn. (licensed, Tennessee, 1889); aged 61; died, March 26.

Nicholas Stutsman, Sparks, Okla. (licensed, years of practice); aged 75; died, March 20.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

INCOMPATIBILITY OF MERCUROCHROME-220 SOLUBLE WITH LOCAL ANESTHETICS AND ALKALOIDS

L. E. Warren, Ph.C., B.S.

In THE JOURNAL, April 7, 1923, p. 1023, a letter was published from Dr. Charles E. Stolz, entitled "Caution in Use of Mercurochrome-220 Soluble" in which he reported an accident in treatment owing to an apparent precipitation of the drug by procain. Fortunately the results were not serious, but, in view of our rather meager knowledge of the chemical properties of mercurochrome-220 soluble, it seemed desirable to study its incompatibilities further with the view of preventing future mishaps. Accordingly experiments were undertaken with the view of verifying Dr. Stolz' observation with procain and also to determine whether other local anesthetics than procain were incompatible with mercurochrome-220 soluble. It is well known that many basic substances, such as alkaloids and local anesthetics, are precipitated by certain complex mercury salts; but Dr. Stolz appears to have been the first to observe an incompatibility between mercurochrome-220 soluble and a local anesthetic.

Chemically mercurochrome-220 soluble is the disodium salt of dibromo-oxymercuri-fluorescein. If treated with an acid the sodium combines with the acid radical and the bromomercuri-fluorescein complex is precipitated as an insoluble compound having acidic properties.

In these tests a small portion of a 2 per cent. aqueous solution of each of several local anesthetics was treated with a few drops of a 2 per cent. aqueous solution of mercurochrome-220 soluble. The strength of 2 per cent. for each substance was selected because this was assumed to represent a fair average of the concentration in which the several substances are employed in medicine. In cases of scant solubility of the anesthetic substance in water a few drops of diluted hydrochloric acid were added in order to render the material soluble.

The following substances gave precipitates: alypin, apothesin, benzocain, butyn, cocain hydrochlorid, B-eucain lactate, phenacain, procain, propaesin, quinin and urea hydrochlorid, tropacocain hydrochlorid and stovain.

The precipitate in each case was of a deep red color, was amorphous and did not become crystalline on standing. In some instances analysis of the dried precipitate showed that it contained all of the essential constituents of the dibromo-oxymercuri-fluorescein radical, viz., bromin, mercury and the dye substance, but that it did not contain sodium or the acid radical with which the basic substance was originally combined. Preliminary tests indicated that the precipitates were probably too soluble to be of value in the analytic separation of the local anesthetics from other substances but that they were sufficiently insoluble to render dangerous the concomitant prescribing of one of the local anesthetics and mercurochrome-220 soluble. The test was also applied to aqueous solutions of benzyl alcohol and saligenin, substances which have local anesthetic properties but which do not have basic properties. No precipitate was given with either substance.

As a matter of interest the test was applied to a salt of a number of vegetable alkaloids or their derivatives in aqueous solution. A red precipitate was given with each of the following substances: aconitin hydrochlorid, apomorphin hydrochlorid, atropin sulphate, brucin hydrochlorid, cephaelin hydrochlorid, cinchonidin sulphate, cinchonin sulphate, codein sulphate, diacetyl-morphin hydrochlorid, emetin hydrochlorid, ethyl hydrocuprein hydrochlorid, ethyl morphin hydrochlorid, gelsemin hydrochlorid, homatropin hydrochlorid, hydrastin hydrochlorid, morphin sulphate, narcein hydrochlorid, narcotin hydrochlorid, nicotin hydrochlorid, papaverin hydrochlorid, physostigmin sulphate, pilocarpin nitrate, quinidin sulphate, quinin hydrochlorid, sanguinarin hydrochlorid, scopolamin hydrobromid, solanin hydrochlorid, spartein sulphate, strychnin sulphate and thebain hydrochlorid.

As in the case of the local anesthetics the precipitates appeared to be too soluble for the reaction to be of much value in the analytic determinations of the alkaloids. A few basic substances did not give any precipitate with mercurochrome-220 soluble. These were caffein, colchicin hydrochlorid, coniin hydrochlorid, methyl atropin bromid, theobromin sodium salicylate and theophyllin sodium acetate.

Correspondence

DO ANIMALS TALK?

To the Editor:—The quotation in THE JOURNAL (March 17, p. 764), mentioning the white mountain goat as intelligent reminds me that the caretaker of a small herd at an amusement park called his dog to drive them from another dog that they were annoying. The herd ran as soon as they heard the name of the dog of which they were afraid, apparently indicating that they understood language.

Dogs to a high degree and, to a less degree, cats, horses, cattle, sheep, elephants and probably other animals associated with man understand a good many words. One of the best evidences of understanding on the part of animals is the failure to understand under different circumstances. For instance, sheep habituated to the call "Co'nan" do not respond to "Co'day," and vice versa. In Strasbourg, my wife called a dog *chien* without getting a response, but he responded immediately to *Hund*. In English, which is richer in pet names for animals, a dog may not respond to the word dog, but will to some familiar vocative. My dog, for instance, looks for another dog on hearing the word, probably for the same reason that most of us on hearing the word man called out would take it as referring to some one else. Even animals of comparatively low intelligence respond to words of command—in the language to which they have been trained. Just how much dogs understand of ordinary conversation is sub judice.

Recently a good many items have appeared with reference to imitation of human speech by dogs. While my own dog says "out" fairly distinctly when he wants to get out, it seems to me that all these reports are fallacious. Certain sounds emitted by dogs resemble words in one language or another, but it is improbable that they are really trying to pronounce words, even after learning that a certain sound gets them something. A recent assertion of a dog's begging for "jus' a crumb" is probably no more significant than the fact that a cat often goes about, saying "not now"; the difference is that the former happens to make sense, and the latter not.

Another example was the monkey that Professor Garner tried to teach to speak. He got it to say *feu* (French for fire) quite intelligently when a match was lighted. On being asked why he did not teach it the English word, he merely smiled. A diagram may be superfluous, but all there was to it was that the monkey enjoyed blowing out the flame.

It is a curious fact that the only "animals" that have been taught to speak at all fluently have been parrots and a few other birds whose speech organs are so much more different from the human organs than those of mammals. Very con-

tradictory statements are made as to whether parrots, magpies and blackbirds speak with any comprehension.

Professor Garner's study of the speech of animals really deserves more consideration than it has received. He was quite conservative, estimating the maximum vocabulary of monkeys at about thirty "words," a word in this sense being a definite cry, usually common to all members of a species, wherever found, and indicating some emotion, not a concept, as in the case of human language.

Unless better evidence is presented that parrots do use words understandingly and that the occasional utterance of such words as out, damn, come on, and jus' a crumb by more or less trained dogs is really limited to the expression of a definite idea, I think it may be said that the more intelligent lower animals have word perception to a considerable degree, but are absolutely lacking in word expression. It should also be questioned whether word perception is strictly so or whether there is simply an association of certain sounds (perhaps including several words) with certain ideas. The fact that dogs have a relatively large perceptive vocabulary of proper names as compared with common nouns, verbs or adjectives suggests that there is merely an association of a sound complex with some object or action. I knew one dog that recognized at least fifty persons by name—sometimes by one name each, sometimes by the various relationship terms that would be used in a family; but this dog was exceptionally intelligent, could remember at least two years, and apparently got the sense of conversation without reference to intonation.

A. L. Benedict, M.D., Buffalo.

SUPERIOR METHOD OF STAINING TUBERCLE BACILLI

To the Editor:—At the Kula Sanitarium, for some time, we have been using, as a routine, a method of staining tubercle bacilli which is eminently satisfactory and is superior to the usual Ziehl-Neelsen stain.

A smear of sputum is prepared and fixed in the usual manner. It is steamed for two full minutes with anilin gentian violet prepared according to the method of Weigert, as described by Stitt, boiling being avoided. The slide is rinsed with running water and covered with gram-iodin solution (Lugol) for two minutes. It is decolorized with acid alcohol (usual solution), washed in running water, and counterstained with 0.1 per cent. solution of pyronin for several seconds. Though we have found pyronin to be the best counterstain, any other may be used.

In the medical literature accessible to me I have not been able to find this method described and would appreciate greatly if you would let me know where I could find some similar procedure described.

Peter Mjedloff, M.D., Maui, Hawaii.

Prohibition in Turkey.—The *Wiener klinische Wochenschrift* relates that prohibition of alcohol, which has been in vogue in Asia Minor for some time, is to be enforced throughout the whole of Turkey on and after March 1, 1923. The regulations prohibit any kind of production, importation or sale, with penalty of 50 Turkish pounds per kilogram, and destruction of the liquor. Any infringement of the law or drunkenness entails a fine of from 50 to 200 pounds, or imprisonment for from six to twelve months. All vessels serving for production or consumption of alcohol must be made unusable, and all alcohol on hand must be sent out of the country. The consumption of alcohol for medical purposes is to be under strict supervision. At the same time, regulations for compulsory treatment of syphilis were drawn up and measures to prevent abuses at weddings.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ACETYLSALICYLIC ACID

To the Editor:—My daughter, a senior at our college for women, writes me that one of the students takes aspirin, I presume the 5 grain tablet, every one hour, two hours or three hours for headache, and this on the advice of her physician. I hold that aspirin (acetylsalicylic acid) is a coal-tar or synthetic preparation and not made from wintergreen, and is a heart depressant, either immediate or remote. In my practice I have often found damaged hearts, and the only history given is a quantity of aspirin used, usually 5 or 10 grains at a dose, generally for headache. When I prescribe it, I generally add strychnin sulphate, aromatic ammonia or sodium bicarbonate. What is the general belief of the profession in regard to this drug? I know many able men using it almost ad libitum, just as quinin or sodium bicarbonate, and with no protective drug.

M.D., South Carolina.

Answer.—The letter of our correspondent is typical of much of the general misinformation concerning acetylsalicylic acid. The manufacturer's claim to the contrary notwithstanding, it has been abundantly proved that synthetic salicylates are not more toxic than are those made from oil of wintergreen. The salicylates, including acetylsalicylic acid, are not markedly depressant to the heart, nor are they responsible for the heart damage the correspondent finds in users of aspirin. The association is probably accidental, as rheumatic patients who often have damaged hearts find salicylates useful for the relief of their aches and pains. Acetylsalicylic acid should not be prescribed in combination with alkalis. Alkalis decompose acetylsalicylic acid with formation of alkali salicylate, which causes greater gastric irritation than if the undecomposed acetylsalicylic acid were given.

The chief objection to the indiscriminate use of this or other analgesic for the relief of headache or other pain is that merely the symptom is relieved, without any effect on the underlying cause, which in the course of time might become aggravated by the neglect of more appropriate treatment.

AVOIDANCE OF ANAPHYLACTIC SHOCK AFTER SECOND IMMUNIZING DOSE OF ANTITOXIN

To the Editor:—If a patient is given an immunizing dose of antitoxin, what are the chances of his developing anaphylactic shock if a second dose of antitoxin is given twelve or fourteen days later intramuscularly? The general opinion is that all contacts should be immunized. Prophylactic doses, however, do not always do what they are expected to do. I would not hesitate to give antitoxin to a person with diphtheria, even if he had been given a dose two weeks before; but I do hesitate in giving an immunizing dose through fear that he may take the disease in spite of this treatment, and be placed in a dangerous condition when the use of antitoxin may later be urgently needed.

A. J. Pearce, M.D., South Heights, Pa.

Answer.—There is little danger of a severe reaction when the second dose of serum is given after an interval of from twelve to fourteen days. Practice varies as to the administration of immunizing doses of antitoxin to exposed persons. When conditions are such that exposed children cannot be closely watched for the first signs of diphtheria, immunization is advisable. When the exposed children can be carefully observed and given antitoxin at the onset of infection, the prophylactic dose may be omitted. By making intracutaneous tests with diphtheria toxin according to the Schick method, it is possible to avoid the administration of antitoxin to those who are already immune. This would be wise in instances in which many children are involved, as in schools and institutions.

PROOF OF PREGNANCY

To the Editor:—1. Can a physician say that a woman has been pregnant or not been pregnant by merely looking at the cervix? 2. Can a physician determine whether a woman has been pregnant if there is no laceration of the cervix or if the striae gravidarum are not present? 3. Can it be told that a woman has been pregnant and has had an abortion after three months? N. B. Salerni, M.D., Indianapolis.

Answer.—1. No.

2. No, except immediately after delivery.

3. No. The subject is fully discussed in various textbooks on legal medicine and on obstetrics.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.

IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Charles E. Prior, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

Rhode Island July Examination

Dr. Byron U. Richards, secretary, Rhode Island State Board of Health, reports the written and practical examination held at Providence, July 6-7, 1922. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Eleven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University	(1921)89,	(1922)	90.4
Tufts College Medical School	(1921) 83.9, 85.5, 86.7, 87.5, 89.5,		89.6
Cornell University		(1919)	85.5
Eclectic Medical Institute		(1904)	93.1
McGill University, Quebec		(1917)	86.5

New Jersey June Examination

Dr. Alexander MacAlister, secretary, New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 19-20, 1922. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 27 candidates examined, 23, including 4 osteopaths, passed, and 4 failed. Sixty-six candidates were licensed by reciprocity and 4 candidates received osteopathic licenses by reciprocity. Two candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University	(1920) 77.6,	(1921)	89.5
Northwestern University		(1919)	87.2
Johns Hopkins University	(1920) 85,	(1921)	83.8
University of Maryland		(1921)	87.4
Tufts College Medical School		(1921)	78.5
Cornell University		(1921)	86.8
Hahnemann Medical Coll. and Hosp of Philadelphia		(1921) 79.8,	87
Jefferson Medical College	(1917) 84.2,	(1921)	83
University of Pennsylvania	(1920) 85.8, 89.1,	(1921) 84.3, 84.8,	90
University of Catania, Italy		(1914)*	77
University of Naples, Italy		(1911)*	79
Osteopaths	80.3, 80.3, 81.5,		83.7

College	FAILED	Year Grad.	Per Cent.
Hahnemann Medical Coll. and Hosp. of Philadelphia		(1921)	72.3
University of Budapest, Hungary		(1914)*	66.2
University of Naples, Italy		(1916)*	67.6
University of Kharkov, Russia		(1905)*	68.8

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Yale University		(1902)	Connecticut
George Washington University		(1912)	Dist. Colum.
College of Medicine and Surgery, Chicago		(1911)	Tennessee
State University of Iowa College of Medicine		(1917)	Iowa
University of Louisville Medical Department		(1915)	Kentucky
Baltimore University		(1899) Maryland,	Pennsylvania
College of Phys. and Surg., Baltimore		(1910), (1911)	W. Virginia
Maryland Medical College		(1912) Pennsylvania, (1913)	Maryland
University of Maryland		(1911) Maryland, (1918) (1921) New York	Delaware
Tufts College Medical School		(1915)	New York
St. Louis College of Physicians and Surgeons		(1905)	Penna.
Washington University		(1913)	Missouri
Albany Medical College		(1920)	New York
Columbia University		(1903), (1911), (1912) (1917) Pennsylvania, (1919), (1920, 3) New York	New York
Cornell University		(1911), (1912), (1917), (1920, 2)	New York
Fordham University		(1915), (1921, 2)	New York
Long Island College Hospital		(1911), (1921)	New York
New York Homeo. Med. Coll. and Flower Hosp.		(1918)	Delaware
University and Bellevue Hospital Medical College		(1916), (1920, 2), (1921, 2)	New York
Medical College of Ohio		(1904)	New York
University of Oklahoma		(1915)	Oklahoma
Jefferson Medical College		(1896) Pennsylvania, (1903) (1908) Pennsylvania, (1919) North Carolina, (1920) Pennsylvania	Connecticut
Medico-Chirurgical College of Philadelphia		(1912) (1915) New York	Penna.
University of Pennsylvania		(1898) (1902), (1905), (1910), (1919) Pennsylvania	S. Carolina
University of Vermont		(1921)	Vermont
McGill University, Quebec		(1920)	New York
Queen's University, Ontario		(1902), (1918)	New York
Durham University, England		(1913)	Penna.
University of Budapest, Hungary		(1911)*	New York
University of Messina, Italy		(1905)*	Vermont
University of Naples, Italy		(1905)*	Penna.
University of Palermo, Italy		(1897)*	New York
Syrian Protestant College, Beirut		(1905)*	New York
Osteopaths		Missouri (3), Pennsylvania (1)	

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Harvard University		(1920)	N. B. M. Ex.
University of Pennsylvania		(1919)	N. B. M. Ex.

* Graduation not verified.

Book Notices

INJURY, RECOVERY AND DEATH, IN RELATION TO CONDUCTIVITY AND PERMEABILITY. By W. J. V. Osterhout, Professor of Botany. Cloth. Price, $2.50 net. Pp. 259, with 96 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

The publication of this series of monographs on experimental biology is a great credit to American scholarship, and, what is of more importance, a great stimulus to the progress of biologic science. Since the medical sciences are of necessity based on biology, the furtherance of these fundamental studies is of immediate importance to medicine. The present volume is one that is of particular interest to the pathologist, for the contributions of the author to our knowledge of cell vitality mark an important step toward illuminating the most fundamental of all mysteries—What changes accompany and determine cell death. These studies are based on the observation that any injury to cells is accompanied by changes in the electrical resistance of the cells, falling steadily until a level is reached which indicates that death is complete. This makes it possible to study loss of vitality in a quantitative way, and quantitative measurements are the desired goal of all thorough students of biologic processes. Such quantitative studies corroborate the views held by many physiologists since the days of Claude Bernard, that the death process is one which is always going on, even in a normal, actively growing cell. The death process is a normal part of living, producing no disturbance unless unduly accelerated by some agent which upsets the normal balance and causes such injury that the life process comes to a standstill. The demonstration by Osterhout that fundamental life processes obey the laws of chemical dynamics, and the introduction of methods permitting the quantitative study of these processes, mark a contribution of value as much to medicine as to the underlying biologic sciences.

CARRIERS IN INFECTIOUS DISEASES. A Manual on the Importance, Pathology, Diagnosis and Treatment of Human Carriers. By Henry J. Nichols, M.D., M.A., Instructor in Bacteriology, Parasitology and Preventive Medicine, Army Medical School, Washington, D. C. With a Section on Carriers in Veterinary Medicine. By R. A. Kelser, D.V.M., M.A., in charge, Veterinary Laboratory, Army Medical School, Washington, D. C. Cloth. Price, $3. Pp. 184, with 11 illustrations. Baltimore: Williams & Wilkins Company, 1922.

This little book presents the subject of infection carriers in a systematic and didactic manner, without many historical or bibliographic details, and with special reference to the practical needs of physicians, health officers and medical students. Part 1 deals with general considerations; Part 2 with special human diseases; Part 3 with the relations of phorology, a new word suggested by the senior author, to preventive medicine; and Part 4 with carriers in veterinary medicine, a welcome and useful expansion of the consideration of carriers. The use of the word "case" as synonymous with patient—"cases have also been called acute carriers," "the case, confined to bed"—in the first three parts will be criticized, of course. Pasteur and Sternberg independently discovered the pneumococcus in normal human sputum in 1881, not, as on page 87, in 1890. The names of certain bacteria seem to be chosen somewhat at random; *Bacillus aerogenes-capsulatus* is used for *B. welchii* (gas bacillus), and no mention seems to be made of the occurrence of either this bacillus

or the tetanus bacillus in the human intestine. Slips like these do not lessen the practical usefulness of the book, the teachings and recommendation of which are valid and wholesome. Its reading will broaden the understanding of the vast importance of carriers in the spread of infection, and help the physician in his responsible relations to their prevention and cure.

A TEXT-BOOK ON MINOR SURGERY. By John C. Vaughan, M.D., Director and Visiting Surgeon, Beckman Street Hospital, and Athel Campbell Burnham, M.D., in Charge of the Medical Department of Red Cross in Poland. Cloth. Price, $7.75. Pp. 627, with 459 illustrations. Philadelphia: Lea & Febiger, 1922.

The authors state that minor surgery has advanced very rapidly in the past decade. This is due, according to them, to the industrial clinic, workers' compensation insurance, the use of local anesthesia, and the realization of economic and deforming complications, resulting from poorly treated or neglected conditions. Consideration is given especially to fractures, dislocations, and injuries and inflammations of the extremities. Various parts of the body are taken up and considered separately, including tumors and deformities. There are separate chapters on conditions of the generative organs of the male and female, bandaging, local anesthesia, and surgical technic. Surgical dressing and operating rooms of their ambulatory clinic are described as being similar to those in the best equipped hospitals. Under these ideal conditions, they perform breast amputations, excepting a radical dissection, operations for epithelioma of the lip, thyroglossal sinus and patent urachus, and a large number of operative procedures on bones and joints. However, some of the operations described should not be done in any ambulatory clinic, for they are far from being minor in any surgical sense of the word. Numerous conditions described require the most experienced surgical judgment, combined with careful hospital care, to prevent deformities, an economic waste of time, and not infrequently a loss of life. On page 567, there is a serious error in the strength of a solution of procain, 5 grams to the ounce of water being mentioned instead of 5 grains. The book is well written, however, unusually well illustrated, and covers a field not extensively covered in the average book on general surgery. It is practical, and is evidently based on well-founded experience.

DIE PFLANZENALKALOIDE. Von Dr. Richard Wolffenstein, A. O. Professor an der Technischen Hochschule zu Berlin. Third edition. Cloth. Price, $4. Pp. 506. Berlin: Julius Springer, 1922.

This book treats of the theoretical chemistry of the alkaloids, and some attention is given to their pharmacologic properties. The treatment of the chemical constitution is not so complete or satisfactory as is given in other works, some of which are published in English and some in German. The discussion of the pharmacologic properties is too brief to be of much value to the physician, although doubtless it would serve a useful purpose to teachers of chemistry. Very little information is given which will be of value to analysts. It is unfortunate that an author should undertake to write a work on alkaloids which does not aim to give more information than has been given in previous books. In view of the excellent books already on the market which treat the subject more fully, this book cannot be recommended.

MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF RENAL DISEASE. By Hugh Maclean, M.D., D.Sc., Professor of Medicine, University of London. Cloth. Price, $2. Pp. 102, with 4 illustrations. Philadelphia: Lea & Febiger, 1922.

This monograph was especially designed to give information, in such form as to be usable by the general practitioner, on the renal function tests that have been developed during recent years. Little emphasis is laid on symptoms, although the author points out that clinical observation should precede the application of functional tests. An excellent chapter deals with the significance of albuminuria and casts. In accordance with current beliefs, the author finds the Ambard coefficient method of little clinical value. He is inclined to favor the diastatic test, and considers the phenolsulphonephthalein test difficult of application as it usually requires a colorimeter. For those especially interested in securing a brief presentation of the modern point of view in the handling of renal disease, this book may be especially recommended.

Miscellany

HEALTH PROBLEMS IN NEW YORK STATE

The committee appointed by the governor of the state of New York, Feb. 26, 1923, to consider certain health problems in that state has issued a report that deserves the most careful consideration, especially as it offers conclusions that do not always conform with those of the state department of health. Each of the several problems was studied by a subcommittee, and the conclusions and recommendations, here given in abstract, were adopted by the committee as a whole.

THE RURAL HEALTH PROBLEM

It is undoubtedly true that, in a certain small number of outlying rural communities in this state, there is a lack of physicians, particularly in the winter time; but it is doubtful in the extreme whether state subsidies would correct the situation in those communities. The number of physicians in a given county is governed by the laws of economics; and any decrease in this number is generally explained by lessened population, lessened morbidity and mortality, and the individual physician's ability to care for a greater number of patients than formerly, owing to the automobile, the telephone and the increased number of good roads. It is evident that the disproportion between the number of physicians in rural centers now and in the past is not so great as a superficial survey of the statistics would seem to indicate. Certainly there is no indication for the adoption of a state subsidy program.

There is another aspect to the rural health problem in the question of hospital, nursing and laboratory facilities in country communities. There is no question that, for the benefit of public health, it is absolutely essential that these facilities exist in number and position to be promptly available in every instance when needed. In the interest of public health, therefore, the state department of health should inaugurate an extensive educational campaign to urge local county authorities to meet their own needs. Experience teaches that local control and local support produce the best results in this field. Should isolated instances be found in which, for one reason or another, this is not possible, then, and only then, should subsidy and central control be considered.

MEDICAL RESEARCH

The methods employed in medical research have encountered a great deal of active opposition from a small, but aggressive, minority within the state. Despite the fact that investigation in the great scientific institutions of the day has resulted in benefits of untold value to the human race, this small group has consistently sought to hamper scientific research by restrictive legislation of various kinds.

It is the opinion of the committee that the laws surrounding the conduct of laboratories for research and investigation are adequate, from the point of view of humanitarianism as well as of regulation, and there is no need for any modification of, or addition to, the existing statutes.

MEDICAL EDUCATION

During the last twenty years, the science of medicine has made tremendous progress in America, and today we lead the world in medical research and in the prevention and cure of disease. This has been accomplished by adopting and maintaining high standards of medical education and practice. Despite these high requirements, there are sufficient physicians in the United States, though in many parts of the country the distribution is not satisfactory. In order that progress in medical science may be continued, it is vital that our educational standards be rigidly maintained.

The committee therefore recommends that: (1) the present educational requirements as they relate to the practice of the healing art be maintained; (2) the present laws being necessary and satisfactory to enforce a high standard of service, they be in no way modified; (3) no exceptions, exemptions or provisions in any respect invalidating the present laws be enacted. The medical profession is not

opposed to the practice of the healing art by any school, cult or method—even though in opposition to its own teachings—provided these would-be practitioners have the same preliminary training as the doctors of medicine.

THE MEDICAL PRACTICE ACT

Whatever our public health laws are to be, they must be enforced against all who violate them, not only because of the direct benefits to the public health, but also because of the broader aspect of the situation in connection with respect for the law generally. Even if cults are to be licensed—and to this, under proper regulation, we are not opposed—the public, for whose protection the laws are enacted, is entitled to know that only such individuals as are qualified under the law by education and training shall be entrusted with their health and lives, and that all others, whoever they may be and whatever theories they may hold, may not prey on their credulity and ignorance of the healing art.

It is submitted that the principal reason behind the apparent lack of efficient and effective enforcement of the medical practice act lies in the fact that there is no state organization whose function it is to enforce the act. The medical societies are rendered impotent because of the suspicion of selfish interest which is attached to their enforcement activities, and the state does not act.

With these facts in mind, the committee recommends the enactment of a bill providing that the entire matter of enforcement be placed in the control of the attorney-general's office, to be directly in charge of a deputy attorney-general appointed for the purpose.

THE NARCOTIC DRUG PROBLEM

No question has come before the committee of more importance, or has received more serious study, than that of narcotic drug addiction and its control. Thorough investigation established the fact that the ambulatory treatment of drug addicts is worse than useless. Not only does it fail to cure addiction, but, in many cases, it is an impetus to its continuation.

Contrary to popular belief, the majority of narcotic habitués are criminals, with criminal records in the courts. In fact, narcoticism is so involved with criminality that to relax police vigilance over the one is to enhance the other. All drug addicts should, therefore, undergo institutional confinement, the criminal addict in penal institutions and the non-criminal addict in state-licensed and supervised public or private institutions. It is the sense of the committee that the criminal addict was a criminal prior to his addiction, or was arrested in some criminal act. When a criminal addict is confined in a penal institution, he should be placed under medical treatment.

PNEUMOTHORAX

Hygienic Laboratory Bulletin 132, issued by the U. S. Public Health Service, contains the report of a study by Barlow and Thompson. They investigated the causes of irregularities in the physical signs and clinical course of tuberculosis, and the discrepancies between these and the roentgen-ray appearances, and found that the most common cause of the irregularities mentioned is the presence of air in small pockets caused by the irregular pleural adhesions that are almost invariably present. The small pneumothoraces cause certain changes in the physical signs, and permit collapse of the most severe lesions. They modify the clinical course of the disease, giving rise to local pain, discomfort, and to various reflex symptoms, by causing tension on the pleura.

These areas are difficult to recognize in roentgenograms except when stereoscopic plates are used. The smaller ones tend to fill with fluid before death, and, even if present, are difficult to demonstrate at necropsy. This demonstration has been made in a number of cases, however, both by Barlow and Thompson and by other pathologists.

The first series of cases studied number 1,000, and from the other series mentioned in the study of special symptoms, it is evident that the authors must have studied several thousand cases. Some of the studies of symptoms, such as dilatation of the pupils, the study of the blood pressure, the chapters on premanifest tuberculosis and reflex symptoms from the diaphragmatic pleura would, in themselves, be sufficient for special research articles. While it does not appear that any changes are made in the usual diagnosis and treatment of tuberculosis by this study, it is evident that the work clears up many things that have heretofore been puzzling. It should make the diagnosis of tuberculosis more certain in many doubtful cases, and be of value in guiding the treatment; it will help determine which of the quiescent and apparently arrested cases are most likely to relapse after the patient has been permitted to return to ordinary life.

There is a tendency for diseased lung to collapse as far as permitted by the elastic tension within the thorax. This observation led Barlow and his collaborators to apply the principal of "selective collapse" in artificial pneumothorax. They found that air introduced into the free pleural cavity became localized at the site of the lesions. If a partial artificial pneumothorax is maintained within the chest, it has the same effect in improving the clinical symptoms and modifying the course of the disease as is sometimes produced by a spontaneous small pneumothorax. The application of this method was first described by Morgan in April, 1917, but the studies carried out at New Haven seem to have brought out more clearly the need for unremitting attention in its use.

Medicolegal

Requirements—Liability for Malpractice—Evidence

(Berkholz v. Benepe (Minn.), 190 N. W. R. 800)

The Supreme Court of Minnesota says that a surgeon is not to be held negligent simply because results are bad. A plaintiff in a malpractice case must show that the poor result was due to negligent or unskilful treatment. The law requires a physician or surgeon to exercise only the care and professional skill usually exercised by the ordinary member of his profession in good standing. He is to be judged as to treatment only by the standard of the medical school to which he belongs. Ordinarily, the question whether the treatment was negligent cannot be determined by a jury of laymen without the aid of the opinion of medical experts. The surgeon is not responsible for the consequences of an honest mistake or error of judgment in his diagnosis or treatment when there is doubt as to what should be done in accordance with recognized authority and current good practice.

The plaintiff fractured both bones of his right leg a few inches above the ankle. He was taken to a hospital, and his employer called the defendant to attend him. Immediately, a cast was placed on the leg by the defendant, who attended the plaintiff for about two months, when the last cast was removed. Then, and at a previous time when the leg was bared, the plaintiff called the defendant's attention to a lump at the place of fracture, but was assured that it would disappear within two years. The plaintiff was not satisfied, and complained to his employer, who sent him to another physician. The latter advised an immediate operation, by breaking and resetting the fractures. This was done, and in about six months thereafter there was a serviceable leg. The evidence indicated that the fracture of the tibia was oblique. Good surgery required care in so setting and holding the bone that the broken ends would be likely to remain in apposition. Negligence in respect thereto was charged against the defendant, particularly in that he took no roentgenograms to aid in the diagnosis of the fracture or in ascertaining its condition during the curative process; he did not make use of a fracture box; the casts put on did not extend above the knee, and he did not use extension weights.

The plaintiff recovered a verdict against the defendant for $3,500, which by the plaintiff's consent was reduced to $1,800, as the alternative of having a new trial granted. Still, the verdict as reduced was assailed as excessive; but the supreme court does not think that it was, and affirms a judgment for

that amount. The defendant testified that a fracture of this sort ought to be cured in about eight or ten weeks. The plaintiff because of the defendant's negligence was incapacitated for an additional period of six months. It was true that his hospital and doctor's bills were paid, and the damages for loss of time were in a measure lessened to him because of the benefits of the workmen's compensation act; but the benefits so received did not go to mitigate or reduce the damages for additional lost time properly attributed to the defendant's negligence. The benefits derived under the compensation act can well be placed, at least as to wrongdoers, subsequent to the injury, in the same class as insurance carried by the injured party, which has been held not to mitigate the damages for which the wrongdoer is liable. But the loss of wages and the pain and suffering during the additional period required for a recovery because of the defendant's failure to use proper care and skill was considerable, and the supreme court is unable to say that the verdict as reduced was excessive.

There is in Minnesota no statute limiting medical experts to persons licensed to practice in the state. In the absence of such statute, it would seem clear that a graduate from any reputable school of medicine and surgery may qualify as an expert. The extent of his practice or want of practice affects merely the weight of his testimony.

Diagnosis May Be Established by Acts and Conduct

(People v. Parish (Calif.), 210 Pac. R. 633)

The District Court of Appeal of California, Second District, Division 2, says that the defendant, who was convicted of practicing a mode of treating the sick and afflicted without a license, urged, as a ground for reversal, that the evidence failed to disclose any diagnosis of disease by him, and that one who does not diagnose does not practice medicine, within the meaning of the medical practice act of California of 1913. He was entirely correct as to this proposition of law (*People* v. *Jordan*, 172 Cal. 399, 156 Pac. 451). He stressed the point that he at no time made representations to those seeking treatment as to the nature of their various ailments, or that he would cure them. This fact was offered to show an entire lack of diagnosis. But diagnosis may be established by acts and conduct as well as by any representations that might be made to a patient. The Jordan case has decided that it is impossible to dissociate diagnosis from the practice of the art of healing by any physical, medical, mechanical, hygienic or surgical means. There was evidence in this case that the defendant used physical means in adjusting the vertebrae of witnesses. Hence, under the Jordan decision, the jury might lawfully have drawn the inference that the defendant made a diagnosis in connection with the treatment of one witness. However, the judgment of conviction must be reversed on account of the giving of an instruction which, in effect, assumed that the defendant had tried to convince the jury that he had attempted to secure a license, and had been discriminated against, when there was nothing in the record to show that he had ever attempted to secure a license to practice chiropractic or any other system of healing, or that his counsel had ever attempted to suggest that such a license could not be procured, or that the board of medical examiners had ever discriminated against him.

Acute Case of Pellagra Not a Chronic Disease—Privileged Communications

(National Benevolent Society v. Barker (Ark.), 244 S. W. R. 720)

The Supreme Court of Arkansas, in affirming a judgment in favor of Mrs. Barker, the plaintiff, for the full amount of a certificate issued by the defendant society insuring the life of her daughter, says that, under the provisions of the certificate and by-laws of the society, the society was liable for only 10 per cent. of the face value of the certificate if the insured died of a chronic disease. There was evidence tending to show that she died from the effects of an acute case of pellagra. An acute disease, according to Webster, is one "attended with symptoms of some degree of severity and coming speedily to a crisis—opposed to chronic; and a chronic disease is one "continuing for a long time; lingering, habitual." Under this definition, an acute case of pellagra would not come within the liability exemption clause in the policy and by-laws of the society.

In the course of the trial, the court permitted the plaintiff to show the cause of the insured's death by a physician who was called to see her in the month in which she died, but refused to permit the defendant to prove the cause of her death by her general attending physician in her last illness. The evidence of the latter physician was excluded because the information elicited was information acquired by him while attending the insured in a professional character. Such information is a matter of privilege under the Arkansas statute, and cannot be introduced in evidence without the consent of the patient or the patient's representative. It was urged by the defendant that the plaintiff waived the right to object to the tesimony of his physician relative to the condition of the insured because she herself introduced the testimony of the other physician concerning the insured's condition. This court has decided otherwise.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.

American Association for Thoracic Surgery, Chicago, May 28-29. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City.

American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.

American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.

American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.

American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.

American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.

American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia.

American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.

American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.

Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.

Hawaii, Medical Society of, Honolulu, April 28-30. Dr. W. K. Chang, Honolulu, Secretary.

Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.

Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maine Medical Association, Houlton, June 5-7. Dr. B. I. Bryant, 265 Hammond Street, Bangor, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.

Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.

Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.

North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.

Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.

Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.

South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.

Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.

Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, 1923, **25**, No. 3

*Value of Basal Metabolism in Diagnosis and Treatment of Cretinism. F. B. Talbot and M. E. Moriarity, Boston.—p. 185.
*Bacteriology of Urine in Acute Nephritis in Children. L. W. Hill, E. F. Hunt and E. W. Brown, Boston.—p. 198.
*Intraperitoneal Transfusion with Citrated Blood. A Clinical Study. D. M. Siperstein, Minneapolis.—p. 202.
Polycystic Disease of Kidneys. Report of Case in Infant. A. Tow, New York.—p. 222.
*Lead Poisoning in Infancy. L. E. Holt, Jr., Baltimore.—p. 229.
*Types of Organism Found in Series of Tuberculous Children. J. K. Gordon and E. W. Brown.—p. 234.
Calcium Absorption in Children on Diet Low in Fat. L. E. Holt and H. L. Fales, New York.—p. 247.

Value of Basal Metabolism in Diagnosis and Treatment of Cretinism.—Talbot and Moriarty show, first, that determinations of the basal metabolism make possible an early diagnosis of cretinism, before the usual clinical symptoms appear; second, the correct standard to use in childhood in determining whether a subject is suffering from hypothyroidism or not, and third, that determinations of the basal metabolism are of distinct value in indicating the amount of thyroid which may be given with maximum efficiency. The basal metabolism findings in a series of ten cretins are given, and it is shown that the basal metabolism and physical development of a cretin before treatment are considerably lower than they should be, illustrating the importance of the thyroid gland as a growth promoting factor. The metabolism of the untreated and treated cretins is plotted for comparison with the normal, showing the heat production for each square meter of body surface, total calories referred to weight, and total calories with reference to age. In the majority of cases studied, the most marked clinical improvement was not obtained until enough thyroid had been given to raise the metabolism to the expected metabolism for the age. Since the purpose of treatment in cretins is to bring them up to the average normal for the age, it seems wise to give sufficient thyroid to bring the metabolism to the expected total metabolism for the age. The evidence to date is that this level must be reached before the best therapeutic results can be obtained.

Bacteriology of Urine in Acute Nephritis in Children.—Twenty-one cases were studied by Hill, Hunt and Brown. In every instance the disease was in the acute stage, that is, the urine showed large amounts of blood, in almost all cases macroscopically. Cultures of the urine were obtained from three days to a month after the onset of the disease, and in about 50 per cent. of the cases, within a week after the onset. In sixteen cases, the urine was sterile. In two cases, *Staphylococcus albus* was found (probably a contamination), a diphtheroid bacillus in one case (unaccounted for), and colon bacilli in two cases. The cases which showed colon bacilli had high leukocyte counts (17,800 and 29,000), with a good deal of pus in the urine, as well as blood and casts, due probably to a complicating pyelitis. These results are said to indicate that in most cases of acute nephritis in children, after the disease has once been established, bacteria are not demonstrable in the urine, and there are probably none in the kidney. There is no fever, no elevation of the leukocyte count; in short, there is probably no bacterial infection of the kidney present during the course of the disease. However, these results do not rule out the possibility of bacterial infection of the kidney at the very onset of the disease, and this is a very strong possibility. The other possibility is that not bacteria, but soluble toxins absorbed from the infected focus (tonsils, cervical glands, etc.) produce the injury to the glomeruli.

Intraperitoneal Transfusion with Citrated Blood.—Siperstein resorted to the use of this method in cases of secondary anemia, congenital syphilis, dehydration, decomposition, and hemolytic anemia, hemoglobinuria. Among the five cases reported, favorable results were obtained in three. The intraperitoneal transfusion of citrated blood is simple to apply, practical and efficient. The intra-abdominal route should, if possible, not be the method of choice in emergency cases. When the anterior fontanel is closed, and surgical exposure of a vein is difficult, this new avenue of approach is suggested.

Lead Poisoning in Infancy.—Holt reports the case of a child, aged 8 months, which presented symptoms of lead poisoning—not very characteristic or pathognomonic—in which the source of the lead was a proprietary "diachylon compound" ointment (the chief constituent was lead acetate) which the mother had been using for a mild eczema of one of her breasts. The ointment had been applied continuously, except when the child was actually nursing. It was then wiped off, to be reapplied immediately afterward.

Types of Organism Found in Series of Tuberculous Children.—In a total of thirty cases of tuberculosis in children under the age of 12 years, examined by Gordon and Brown, the bovine organism was identified in ten instances. There was a greater actual incidence of bovine infection in the children under 5 years of age, although the number of bovine cases in patients between the ages of 5 and 12 years was relatively greater. Moreover, in the infants under 1 year of age, the bovine organism was identified only in a single instance. Twenty-two of the total number of cases were known to be fatal. Of these, four were of the bovine type. Permission for necropsy was obtained in twelve of the fatal cases. Of this number, the cases in which the point of origin of infection was found in the alimentary tract proved to be, without exception, bovine in type. The human bacillus was recovered from all those cases in which the point of origin, at necropsy, was in the respiratory tract. In five cases out of the total number, the history indicated that the children were exclusively breast fed. The reliability of this statement on the part of the parents may be regarded as doubtful, for although four of this number showed a human type of infection, the bovine organism was recovered in one instance. In seven cases of the total number a definite history of either familial tuberculosis or contact with tuberculous persons was obtained. Six of these proved to be cases of infection with the human and one with the bovine organism. In the latter instance, the patient had been infected by a younger brother who had previously died of generalized tuberculosis.

Annals of Clinical Medicine, Baltimore

January, 1923, **1**, No. 4

*Elective Localization of Streptococcus-Pneumococcus Group as Factor in Production of Disease. E. C. Rosenow, Rochester, Minn.—p. 211.
Disseminated Sclerosis. J. Loudon, Toronto.—p. 231.
Radiographic Diagnosis of Tuberculosis Pulmonalis. A. N. Sinclair, Honolulu, H. I.—p. 240.
*Incidence of Goiter in College Students (Women). R. P. Guilder, Chicago.—p. 248.
Chemistry and Pharmacologic Action of Thyroxin. E. C. Kendall, Rochester, Minn.—p. 256.
Clinical Features of Thyroid Disease. W. A. Plummer, Rochester, Minn.—p. 259.
*Larynx in Diseases of Thyroid. G. B. New, Rochester, Minn.—p. 262.
End Result of Surgery of Thyroid. J. J. Pemberton, Rochester, Minn. —p. 266.
*Heart in Thyroid Disease. F. A. Willius, Rochester, Minn.—p. 269.
Clinical Value of Pathologist. W. C. MacCarty, Rochester, Minn.—p. 270.

Elective Localization of Streptococcus-Pneumococcus Group as Disease Factor.—Rosenow is convinced that in the light of the results of experiments with animals and the results obtained by numerous clinicians by the removal of foci of infection, there can be no doubt of the importance of the specific localizing power of bacteria and of foci of infection in the causation of many diseases.

Incidence of Goiter in College Students.—Examination of 609 women students at the University of Illinois revealed an enlarged thyroid in 276 instances (45.3 per cent.). The condition occurred with the greatest frequency in the youngest students, the highest percentage being 66.6 at 16 years of age. Of the 276 students showing an enlarged thyroid, 199 had spent their childhood in Illinois. The distribution of these 199 cases by the county shows that 55 per cent. of the children who had spent their childhood in Cook County showed an enlargement of the gland, and that the number of counties in which no students had shown enlargement was much

greater in the southwestern portion of the state than in the region nearer Lake Michigan.

Larynx in Diseases of Thyroid.—A mistaken idea with regard to patients with goiter, New says, is that if the voice is normal, the cords are not paralyzed. A patient's voice may be virtually normal and yet both recurrent laryngeal nerves be completely paralyzed. Hence the importance of a preoperative examination of the larynx in diseases of the thyroid cannot be overestimated as a protection to the physician and patient. The number of cases of serious paralysis of the laryngeal nerve after thyroidectomy is small, and in these cases the cords are in the so-called bilateral abductor position. The theories as to the cause of the bilateral abductor position of the cords are varied. The most common explanation is that the abductor fibers of the recurrent laryngeal nerve have been injured at operation or by secondary scarring and that the adductor fibers bring the cords to the middle line position. It would seem probable that this position of the cords following thyroidectomy is due to the action of the muscles of the larynx which are supplied by the superior laryngeal nerve. The cricothyroids, the external tensors, abduct the cords and the arytenoids adduct them; the resulting position would produce in these patients a voice characteristic of that following injury to the recurrent laryngeal nerve. Experimentally, New has been unable as yet to prove this, but clinically it seems to be the true explanation.

Heart in Thyroid Disease.—At the time of initial examination at the Mayo Clinic, auricular fibrillation is found in 7 per cent. of patients with exophthalmic goiter and in 9 per cent. of patients with hyperfunctioning adenoma. These percentages are doubled while the patient is under observation, that is, during the preoperative, operative and postoperative periods. New states that auricular fibrillation may occur as a permanent, intermittent, or paroxysmal disorder.

Annals of Medical History, New York

December, 1922, **4**, No. 4

"Liber De Medicinis Espertis" Attributed to Galen. E. Wickersheimer, Strasburg, France.—p. 323.
Medicine and Humanities. C. L. Dana, New York.—p. 328.
William Heberden, M.D., F.R.S. P. B. Davidson, Boston.—p. 336.
Christopher Widmer. M. Charlton, Montreal.—p. 346.
Sixteenth Century Latin Poem on Diseases of Nurslings: "Paedotrophia," by Scevole De Sainte-Marthe. C. G. Cumston, Geneva, Switzerland.—p. 351.
Guy Patin and Medical Profession in Paris in Seventeenth Century. F. R. Packard, Philadelphia (concluded).—p. 357.

Archives of Dermatology and Syphilology, Chicago

March, 1923, **7**, No. 3

Certain Dermatoses of Monkeys and an Ape. Pemphigus, Scabies, Sebaceous Cyst, Local Subcutaneous Edema, Benign Superficial Blastomycotic Dermatosis and Tinea Capitis and Circinata. F. D. Weidman, Philadelphia.—p. 289.
*Granuloma Inguinale. I. M. Gage, New Orleans.—p. 303.
Case of Dermatomyositis. H. Joachim, Brooklyn.—p. 326.
*Pathogenesis of Mercurial Stomatitis. Review of Literature on Mercury Poisoning. D. H. Bessesen, Minneapolis.—p. 332.
Concerning Specificity of Cholesterinized Antigens in Serologic Diagnosis of Syphilis. R. A. Kilduffe, Pittsburgh.—p. 363.
Calcification of Skin, with Unusual Findings. R. R. Ducasse, Cincinnati.—p. 373.
Institutional Epidemics of Bullous Impetigo Contagiosa in Infants. F. C. Knowles and H. G. Munson, Philadelphia.—p. 376.
Histopathology of Cutaneous Tests. Second Communication. A. Strickler and E. J. Asnis, Philadelphia.—p. 379.

Granuloma Inguinale.—Gage states that granuloma inguinale occurs in the United States, being endemic in some states, especially in the extreme Southern states. It is endemic in Louisiana. The cause is probably the organism described by Donovan, possibly a protozoon. The disease presents definite clinical symptoms which extend over long periods. The symptoms vary somewhat in different persons, for the most part, showing a typical granuloma with a serosanguineous discharge. The pathologic picture is that of a sclerosing granuloma. Tartar emetic administered intravenously seems to be specific, although when the lesions are accessible to surgical excision, Gage says this procedure, combined with tartar emetic, will considerably shorten the healing time.

Mercurial Stomatitis.—The nine principal theories of the action of mercury on the body are summarized briefly by Bessesen. The essential literature on the pathology of mercury poisoning is analyzed under the system of organs affected, in order to see whether the known facts indicate any general underlying effects which might be involved in local lesions, such as those that occur in the mouth. It is evident that there are distinct indications of blood and circulatory changes which must be taken into consideration in discussing any local lesion. The results of examining a large number of sections from tissue taken from cats and ferrets with mercury lesions are recorded. These results and their interpretations are fully in harmony with those deducted from an extensive review of the literature. Finally, in connection with the pathogenesis of mercurial stomatitis, Bessesen believes that the general systemic action is answerable for the lesions in the same degree as the local changes.

Boston Medical and Surgical Journal

March 8, 1923, **188**, No. 10

*New Operation for Correction of Retroflexion of Uterus. J. W. Keefe, Providence, R. I.—p. 299.
Carcinoma of Cervical Stump. Report of Eight Cases. L. Davis, Boston.—p. 304.
Compulsory Vaccination in Private Schools. S. B. Woodward, Worcester, Mass.—p. 309.
*Treatment of Pertussis by Roentgen Ray. H. I. Bowditch and R. D. Leonard, Boston.—p. 312.

March 15, 1923, **188**, No. 11

Progress in Study and Treatment of Cardiovascular Disease in 1922. Part I. P. D. White, Boston. (To be continued.)—p. 331.
*Leiomyoma of Stomach. Report of Case. E. L. Hunt, Worcester, Mass.—p. 349.
Esophageal Diverticula. Report of Case. F. H. Lahey, Boston.—p. 355.
Case of Diverticulum of Esophagus. L. C. Kingman, Providence, R. I.—p. 361.

New Operation for Correction of Retroflexion of Uterus.—This operation was described in The Journal, Oct. 21, 1922, p. 1452.

Treatment of Pertussis by Roentgen Ray.—A series of twenty-six cases of active pertussis were given roentgen-ray treatment by Bowditch and Leonard. The ages of the patients varied from 3 months to 40 years. The patients were in different stages of the disease, varying from one to ten weeks. Each patient received three or four applications of the roentgen ray at intervals of two or three days. The dosage was regulated according to the age of the patient and the total amount of roentgen ray given to any one patient was well under an erythema dose. There has resulted definite improvement in these patients which the authors state cannot be explained by mere accident. In a small percentage of these twenty-six cases after two or three applications of the roentgen ray covering a period of six days, the spasms and whoops entirely disappeared and the patients were clinically well, except for possibly a very slight cough. The bulk of the patients were "relieved." There was a gradual diminution in the number of spasms.

Leiomyoma of Stomach.—Hunt reviews the literature and adds one personal case in which the chief complaint was heartburn, hematemesis and bloody dejections. After roentgen-ray examination a diagnosis of duodenal ulcer was made. Operation was advised and accepted. A rounded, comparatively smooth, mass, the size of a lemon, was found above the pylorus extending under the liver. The first portion of the duodenum was indurated and apparently part of the mass. Pylorectomy, followed by a posterior isoperistaltic gastrojejunostomy, was carried out. The entire growth had somewhat the shape of a uterus though a little larger. It projected into the lumen of the duodenum by a rounded nodule, the central portion of which was ulcerated away so as to resemble an os uteri. In consistency it resembled the uterine myoma and on section it showed bands and whorls of parallel and interlacing striae. Microscopically, it consisted of bundles of spindle cells of rather uniform size, each having an elongated vesicular nucleus and acidophil protoplasm without visible intracellular substance. Eleven months after this operation, the patient was reexamined. Examination of the abdomen disclosed a rounded tumor in the epigastrium, about the size of a hen's egg and not adherent to the scar, evidently a recurrence. Operation was advised and rejected.

California State Journal of Medicine, San Francisco

February, 1923, **21**, No. 2

Hypertension. D. D. Comstock, Los Angeles.—p. 49.
Associated Syphilis and Tuberculosis, More Particularly as They Affect the Lungs. A. L. Brankamp, Banning.—p. 52.
*Bilateral Malignancy of Testes. C. O. Tanner, San Diego.—p. 55.
Glioma of Retina. Case Report. H. L. Gregory, Stockton.—p. 56.
Psychotic Sequelae of Epidemic Encephalitis. R. L. Richards, San Francisco.—p. 56.
Diagnosis and Surgical Treatment of Malignant Tumors of Kidney. W. E. Stevens, San Francisco.—p. 60.
Origin and Application of Pirquet Nem System of Child Feeding Under Hoover Relief Administration of Austria. H. M. Coulter, South Pasadena.—p. 62.
Present Status of Therapy in Pulmonary Tuberculosis. W. C. Voorsanger, San Francisco.—p. 65.
Indications for and Results of Anchoring Head of Colon. O. O. Witherbee, Los Angeles.—p. 69.
Physiologic Effects of Nitrous Oxid. N. C. Trew, Los Angeles.—p. 70.
Study of Basal Metabolic Rates in Fatigue States. R. Cummings, Los Angeles.—p. 77.

Bilateral Malignancy of the Testes.—Tanner records the case of a man, aged 45, who had a carcinoma of both testes. A double orchidectomy was done with removal of almost the entire scrotum. The patient died three months afterward with numerous metastases. These cases are said to be exceedingly rare. As a rule, the disease is limited to one testis.

Illinois Medical Journal, Oak Park

March, 1923, **43**, No. 3

Relations of Nose to Eye and Ear. B. F. Andrews, Chicago.—p. 195.
Surgical Reconstruction of Paralytic Upper Extremity. A. Steindler, Iowa City, Iowa.—p. 197.
Two Cases of Placenta Previa in Which Cesarean Section was Done. J. A. Fisher, Metropolis.—p. 199.
Ductless Glands in Relation to Certain Dermatoses. M. L. Ravitch, Chicago.—p. 201.
Treatment and Results in Fractures. J. M. Dodd, Ashland, Wis.—p. 203.
Effects of Roentgen Rays and Radium Rays in Malignancy. H. Swanberg, Quincy.—p. 205.
Symptoms and Treatment of Deviations of Nasal Septum. E. E. Edmonson, Mt. Vernon.—p. 208.
Neoplasms of Larynx. C. M. Robertson, Chicago.—p. 210.
Injection Treatment of Hemorrhoids. W. A. Hinckle, Peoria.—p. 217.
Glaucoma Surgery. M. Goldenburg, Chicago.—p. 219.
Splitting the Cord in Indirect Inguinal Hernias. C. B. Ripley, Galesburg.—p. 223.
Diet During Pregnancy. E. Cary, Chicago.—p. 228.
Nitrous Oxid and Oxygen in Obstetrics. A. E. Rives, East St. Louis.—p. 230.
Case of Paget's Disease Involving the Ears, Nose and Mouth. G. W. Boot, Chicago.—p. 235.
Basic Principles of Deep Roentgen-Ray Therapy. L. S. Goin, Peoria.—p. 237.
Tuberculin as Therapeutic Agent in Certain Forms of Keratitis. W. G. Reeder, Chicago.—p. 241.
Tapeworm Segments Discharged Through Fecal Fistula Following Operation for Appendicitis and Calculous Suppurative Cholecystitis. A. P. Heineck, Chicago.—p. 245.

Iowa State Medical Society Journal, Des Moines

March, 1923, **13**, No. 3

Facing the New Day in Medicine. A. P. Stoner, Des Moines.—p. 79.
*Occlusion of Central Retinal Artery. F. F. Agnew, Independence.—p. 83.
Market Milk from Medical Standpoint. F. G. Murray, Cedar Rapids.—p. 87.
Diagnostic Surveys by Diagnostic Commissions for Asylum Populations. C. A. L. Reed, Cincinnati.—p. 94.
Aids to Diagnosis in Medicine. H. E. Tuley, Louisville.—p. 97.
Actinomycosis: Diagnosis and Treatment. P. A. White, Davenport.—p. 105.

Occlusion of Central Retinal Artery.—Agnew's patient was 58 years of age. He first noticed a blur in his right eye, which after a few minutes developed into total blindness of the eye. Ophthalmoscopic examination showed a collapsed temporal branch of the superior retinal artery, the point of obstruction being about one disk diameter from the origin of this branch. The obstruction was complete and the remainder of the artery appeared as a glistening white streak. Approximately one fourth of the total area of the retina, including the macular field, was blanched in the center, fusing into a pale pink as it approached the portion normally supplied with blood. The character of the obstructing object was not determined. Treatment was immediately begun with massage of the eyeball, cathartics, heat and iodids. Progress was fair and at the end of a month he was able to read coarse print with his correction. When last seen, his condition had not improved. More and further treatment was considered useless. In a second similar case treatment was of no avail.

Johns Hopkins Hospital Bulletin, Baltimore

February, 1923, **34**, No. 384

*Existence of More Than Four Iso-agglutinin Groups in Human Blood. C. G. Guthrie and J. G. Huck, Baltimore.—p. 37.
Blood Pressures in Unanesthetized Dog. A. C. Kolls and J. R. Cash, Baltimore.—p. 49.
*Iso-agglutination in New-Born Infants and Their Mothers. Possible Relationship Between Interagglutination and Toxemias of Pregnancy. I. McQuarrie, Baltimore.—p. 51.
Periodic Variations in Spontaneous Contractions of Uterine Muscle, in Relation to Oestrous Cycle and Early Pregnancy. J. D. Keye, Baltimore.—p. 60.
Preparation of Nucleotides from Yeast Nucleic Acid. W. Jones and M. E. Perkins, Baltimore.—p. 63.
*Effect of Antiseptics on Bacterial Flora of Upper Air Passages. A. L. Bloomfield, Baltimore.—p. 65.
Hypoglycemia in Exophthalmic Goiter. E. F. Holman, Baltimore.—p. 69.

Existence of More Than Four Iso-Agglutinin Groups in Human Blood.—Guthrie and Huck report the case of a patient whose blood serum behaved like that of Group I and her red cells like those of Group III. These unusual agglutination reactions are interpreted as being indicative of a new or fifth iso-agglutinin group. Another blood with unusual reactions, apparently belongs to a sixth iso-agglutinin group. Details of all work done are given and full discussion is promised in a later publication.

Iso-Agglutination in New-Born Infants and Their Mothers.—The iso-agglutination reactions of 180 women, 54 white and 126 black, and those of their new-born infants have been studied by McQuarrie. The infants' blood group was apparently completely established in twenty of the cases, and partially established in more than one half of the cases. The red blood corpuscles of the new-born infants possessed receptors twice as frequently as the corresponding serums contained agglutinins. The mother's serum agglutinated her own infant's red blood cells in 23.3 per cent. of the cases studied, whereas the infant's serum agglutinated the mother's red blood cells in but 2.7 per cent. In 28.8 per cent. of the cases infant and mother apparently belonged to the same iso-agglutination group, while in 46.6 per cent. there was no evidence of iso-agglutinins in the serum and no receptors in the red blood cells of the infant. The distribution of the colored patients in the four iso-agglutination groups was odd, in that there were none in Group I and more in Group III than in Group II. It was found that more than 70 per cent. of the cases of toxemia (all forms included) occurred in the small group in which there was interagglutination between maternal and fetal blood. Toxemia occurred 16.5 times more frequently when the maternal and fetal bloods were demonstrated to be incompatible than when they were in the same iso-agglutination groups. The data submitted are believed to be very suggestive of the existence of some relationship between the incompatibility of maternal and fetal blood, on the one hand, and the development of eclampsia or pre-eclamptic toxemia on the other.

Effect of Antiseptics on Bacterial Flora of Upper Air Passages.—Certain antiseptic drugs representative of those used in rhinologic practice were studied by Bloomfield. They included potassium permanganate, silver preparations, mercurochrome 220, and another mercurial germicide. The experiments showed that while it was possible in some cases to modify the bacterial flora of the upper respiratory tract by intensive treatments, no essential or permanent alteration could be produced. It is obvious that the bacteria actually multiplying are very firmly lodged in the tissues and are not growing free on the surface or in the mouth secretions. It seems unlikely, therefore, that chemicals applied to the mucous surfaces could effect sterilization without destroying the superficial layers of epithelium at the same time. Mercurochrome penetrates to such an extent that the treated membrane shows a distinct red color even after twenty-four hours. None the less the flora remains essentially unaffected.

Hypoglycemia in Exophthalmic Goiter.—Holman has found that the marked hyperglycemia occurring immediately after

operations on the thyroid corresponds to the period of most active metabolism and the greatest mobilization of the available carbohydrate. This is followed by an abrupt fall in blood sugar content, corresponding to the exhaustion of the supply. In cases reacting favorably, there is, then, a rise in blood sugar, indicating probably a gradual disappearance and elimination of the active thyroid secretion. The rationale of the administration of glucose solutions intravenously is suggested by these studies. A definite plan of intravenous injections of glucose will need to be evolved, controlled by and dependent on successive blood sugar determinations. A weaker solution, from 5 to 10 per cent. in strength, administered in quantities of from 300 to 600 c.c. would probably be preferable to the 20 per cent. solution. Holman asserts that these findings also emphasize the importance of a high carbohydrate and high caloric diet in the preoperative treatment of exophthalmic goiter, and of the administration of 5 per cent. glucose solution per rectum in postoperative care. The administration of large quantities of fluid by infusion, by mouth, and by rectum, undoubtedly favors the elimination of the active thyroid secretion and is, therefore, also an important factor in reducing the severity of postoperative reaction.

Journal of Experimental Medicine, Baltimore

February, 1923, **37**, No. 2

*Influenza-Like Bacilli Isolated from Cats. T. M. Rivers and S. Bayne-Jones, Baltimore.—p. 131.
Studies on Endothelial Reactions. VII. Changes in Distribution of Colloidal Carbon Noted in Lungs of Rabbits Following Splenectomy. N. C. Foot, Boston.—p. 139.
Source of Agglutinins in Milk of Cows. T. Smith, M. L. Orcutt and R. B. Little, New York.—p. 153.
Chlorid Retention in Experimental Hydronephrosis. N. M. Keith, Baltimore and D. S. Pulford, Jr., Rochester, Minn.—p. 175.
*Blood Destruction During Exercise. III. Exercise as Bone Marrow Stimulus. G. O. Broun, New York.—p. 187.
*Id. IV. Development of Equilibrium Between Blood Destruction and Regeneration After a Period of Training. G. O. Broun, New York.—p. 207.
Cytologic Study of Nature of Rickettsia in Rocky Mountain Spotted Fever. F. M. Nicholson, New York.—p. 221.
Microbic Virulence and Host Susceptibility in Mouse Typhoid Infection. L. T. Webster, New York.—p. 231.
Manner of Spread of Mouse Typhoid Infection. L. T. Webster, New York.—p. 269.
Bacterial Hypersusceptibility. II. H. Zinsser and J. T. Parker, New York.—p. 275.

Influenza-Like Bacilli Isolated from Cats.—Six strains of gram-negative nonmotile bacilli isolated from cats are described by Rivers and Jones. They do not grow on ordinary mediums. They do grow, however, on a medium to which an autoclave-liable substance has been added as an accessory growth factor. These bacilli are similar to *Bacillus para-influenzae* isolated from man. One strain of a gram-negative nonmotile bacillus more exacting in its food requirements than *B. influenzae* was found and for convenience has been placed for the present in the para-influenza group.

Exercise Stimulates Hematopoietic Tissue.—The fact is emphasized by Broun that exercise must be an important factor in the maintenance of an efficient hematopoietic tissue. A definite increase in the percentage of reticulocytes occurs after exercise in animals previously kept to a sedentary life. Concomitant changes in the hemoglobin percentage, plasma-cell ratio, and red count offer evidence in addition to that already reported by the author of the occurrence of an increase in blood destruction under such circumstances. Replacement by transfusion of blood destroyed during exercise prevents the reticulated cell reaction. Animals rendered plethoric and then exercised show no increase in reticulated cells while the plethora persists.

Blood Destruction During Exercise.—When a dog kept for a long time under sedentary conditions is exercised continuously for several weeks, Broun says, a decrease in cell volume occurs in the first or second week of exercise, but usually by the end of the third week the loss has been made up. Apparently by this time the hematopoietic tissues have adapted themselves to the increased demands made on them by the hastened rate of destruction. There is, furthermore, some anatomic evidence that such is the case.

Journal of Laboratory and Clinical Medicine, St. Louis

February, 1923, **8**, No. 5

*New Experiments with Vaughan's Crude Soluble Poison. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 289.
Organic, Protein and Colloidal Silver Compounds; Their Antiseptic Efficiency and Silver-Ion Content as Basis for Their Classification. J. D. Pilcher and T. Sollmann, Cleveland.—p. 301.
D'Herelle's Phenomenon, Adaptation of Bacteriophage Antagonistic to Bacillus Dysenteriae and Other Bacilli to Various Cocci. Development of Polyvalent Bacteriolysant. E. B. McKinley, Ann Arbor, Mich.—p. 311.
*Biological Assay of Pituitary Extract. E. E. Nelson, Ann Arbor, Mich.—p. 318.
*New Method for Determination of Calcium, Magnesium, Potassium and Sodium in Human Blood. A. Mirkin and S. J. Druskin, New York.—p. 334.
*Modification of Folin-Wu Blood Sugar Method. S. Morgulis, A. C. Edwards and E. A. Leggett, Omaha.—p. 339.
Plea for Standardized Method of Reporting Wassermann Tests. R. A. Kilduffe, Pittsburgh.—p. 341.
Blood Counts with Oxalated Blood Compared with Ordinary Counts. A. G. Foord, Chicago.—p. 343.
Loss of Sugar in Oxalated Blood. D. E. Birchard, Los Angeles, Calif.—p. 346.

New Experiments with Vaughan's Crude Soluble Poison.—The observations made by Underhill and Kapsinow lead them to the view that the substance or substances included in the term "Vaughan's crude soluble poison" are products formed presumably by progressive hydrolytic change rather than that the protein molecule is split into a toxic portion and a nontoxic residue. On such an hypothesis may be explained the varying toxicity of different samples of Vaughan's crude soluble poison, and the observation that by altering environmental conditions changes in toxicity of various fractions may be obtained. It is, therefore, quite probable that Vaughan's crude soluble poison cannot be regarded as a chemical entity but must rather be looked on as a mixture of substances varying according to the conditions leading to its formation.

Biologic Assay of Pituitary Extract.—It is shown by Nelson that potassium chlorid and histamin are not suitable substances for the standardization of pituitary extract. Since no other material which is yet available has an action qualitatively similar to that of pituitary extract, it is felt that a preparation of the gland itself should be used as a standard. Because of the nonidentity of the oxytocic and pressor substances in the pituitary gland, the pressor method should not be employed in the assay of a drug which has its chief use for its oxytocic action.

New Method for Determination of Calcium, Magnesium, Potassium and Sodium in Human Blood.—The method worked out by Mirkin and Druskin is as follows: Calcium and magnesium are precipitated and weighed as stearates (more correctly as a mixture of stearates and palmitates). The latter are then dissolved in hundredth normal sulphuric acid, the precipitated stearic acid is filtered off and the excess of the sulphuric acid titrated with hundredth normal sodium hydroxid. The total amount of the stearates and of stearic acid contained in both being known, the respective amounts of calcium and megnesium can be calculated.

Modification of Folin-Wu Blood Sugar Method.—Morgulis, Edwards and Leggett use the uric acid reagent made according to Benedict's directions and add 8 c.c. of concentrated hydrochloric acid for 100 c.c. of the arsenophosphotungstate reagent. The results by their modified procedure agreed with those obtained on the same material by the Folin-Wu method.

Kentucky Medical Journal, Bowling Green

February, 1923, **21**, No. 2

Bronchopneumonia. J. H. Pritchett, Louisville.—p. 85.
Diagnosis and Treatment of Acute Lobar Pneumonia. F. W. Fleischaker, Louisville.—p. 87.
Complications of Pneumonia. W. V. Neel, Henderson.—p. 89.
Intermittent Postoperative Biliary Obstruction. Case Report. L. K. Baldauf, Louisville.—p. 96.
Cystitis. W. Z. Jackson, Arlington.—p. 97.
Acute Delirium Following Cataract Operation. Case Report. A. O. Pfingst, Louisville.—p. 99.
Multiple Osteo-enchondroma: Case Report. I. A. Arnold, Louisville.—p. 99.
Surgical Consideration of Empyema. J. W. Price, Jr., Louisville.—p. 100.
Corrective Rhinoplasty. G. Aud, Louisville.—p. 105.

Laryngoscope, St. Louis

February, 1923, **33**, No. 2

War Surgery of Larynx; Work at Cape May. G. Berry, Worcester, Mass.—p. 85.
Mucocele of Left Frontal Sinus. H. Smith, New York.—p. 108.
Case of Pachydermia Laryngis. H. Smith, New York.—p. 110.
Removal of Laryngeal Papillomata with Simple Technic. R. McKinney, Memphis.—p. 111.
Treatment of Severe Systemic Infections of Otitic Origin. E. B. Dench, New York.—p. 113.
Methods of Mental Reconstruction of Deafened. H. M. Hays, New York.—p. 117.
Internal Phases of Otitic Inflammations. H. Brooks, New York.—p. 126.
Mastoiditis Associated with Acute Nephritis. C. M. Sautter, New York.—p. 131.
Case of Round Cell Sarcoma and Case of Adenocarcinoma of Paranasal Sinuses. M. F. Butler, Philadelphia.—p. 135.
Treatment of Ozena by Operation. L. E. Wolfson, Boston.—p. 139.
Transfusion of Blood from Immunized Donors. L. J. Unger, New York.—p. 145.
Important Points on La Force and Beck-Shenk Instruments. S. Cohen, Philadelphia.—p. 149.
Pulmonary Abscess; Study of Ninety Cases. B. F. Glowacki, St. Louis.—p. 153.
New Nasal Suction-Irrigation Apparatus. J. M. Lore, New York.—p. 157.

Minnesota Medicine, St. Paul

February, 1923, **6**, No. 2

Recent Advances in Physiology of Alimentary Tract. A. J. Carlson, Chicago.—p. 71.
Medical Men and Institutions of Petrograd in 1917 and 1922. M. Zlatovski, Duluh.—p. 74.
Review of 153 Cases of Bladder Stone Removed by Lithotrity. J. L. Crenshaw, Rochester, Minn.—p. 77.
Bronchoscopic Extraction of Foreign Bodies from Air and Food Passages; Report of Twenty-Five Cases. K. A. Phelps, Minneapolis.—p. 80.
Bilateral Induced Pneumothorax. E. K. Geer, St. Paul.—p. 86.
Status Thymicolymphaticus in Infancy. C. O. Kohlbry, Duluth.—p. 89.
Study of Tonsil Question with Preliminary Report of Roentgen Ray and Radium Therapy in Treatment of Pathologic Tonsils. L. A. Lane, Minneapolis.—p. 97.
Essentials in Treatment of Peritonitis. D. K. Bacon, St. Paul.—p. 104.
Diagnosis of Cancer of Uterus. O. C. Melson, Rochester, Minn.—p. 110.

Missouri State Medical Association Journal, St. Louis

February, 1923, **20**, No. 2

Factor of Obesity in Surgical Operations. W. C. G. Kirchner, St. Louis.—p. 49.
Epidermomycosis. W. Frick, Kansas City, Mo.—p. 55.
Recent Advances in Dietetic Treatment of Diabetes Mellitus. F. Neuhoff, St. Louis.—p. 57.
Toxic Thyroid. M. P. Overholser, Harrisonville.—p. 59.
Lessons from Seven Prostatectomies. W. F. Grinstead, Cairo, Ill.—p. 63.
Hospital Standardization from Standpoint of Hospital Superintendent. L. H. Burlingham, St. Louis.—p. 64.
Problems in Rural Health Service and State Medicine. F. G. Nifong, Columbia, Mo.—p. 66.

New York Medical Journal and Medical Record

March 7, 1923, **118**, No. 5

Clinical Errors in Diagnosis of Acute Contagious Diseases. H. R. Litchfield and L. H. Dembo, New York.—p. 257.
*Rapid Cure of Cystitis in Children. J. C. Hirst, Philadelphia.—p. 263.
Acute Mastoiditis with Facial Paralysis and Remittent Meningitis. A. Roth, Brooklyn.—p. 265.
Value of Percussion in Early Diagnosis of Lobar Pneumonia in Children. J. Popper, New York.—p. 266.
Typical Quinsy in an Infant. F. W. Graef, New York.—p. 267.
Roentgen-Ray Studies of Cardiac Diseases in Children. W. M. Hartshorn and C. W. Perkins, New York.—p. 268.
Myocarditis in Children. J. Epstein, New York.—p. 273.
Diagnostic Points in Diphtheria. A. I. Blau, New York.—p. 275.
Spasmophilia. S. A. Blauner, New York.—p. 276.
Theory and Practice of Artificial Infant Feeding. S. Horwitt, New York.—p. 278.
Infant Feeding. A. E. Mucklow, Brooklyn.—p. 283.
Artificial Feeding of Infants. P. S. Potter, Syracuse, N. Y.—p. 287.
Practical Consideration of Pirquet Feeding Method. Simplified for Children Up to One Year of Age. H. Apfel, Brooklyn.—p. 290.
Febrile Conditions in Children. H. Goldstein, New York.—p. 293.
*Comparative Chemical and Clinical Study of Boiled Butter and Cream in Infant Feeding. H. Lowenburg, Philadelphia.—p. 295.
Blood Transfusion in Malnutrition and Infantile Atrophy. J. D. Leebron, Philadelphia.—p. 298.

Rapid Cure of Cystitis in Children.—The treatment employed by Hirst consists in the injection into the bladder of 5 c.c. of a 10 per cent. solution of silvol or neosilvol, to be retained, if possible. The retention of the solution seems to be of secondary importance, however. In most cases the solution will be retained from fifteen minutes to several hours. The younger the child the more likely the shorter retention. The tenesmus promptly ceases, the frequency of urination diminishes or disappears, and the child is immediately comfortable and quiet. If the symptoms recur or the urine does not promptly clear, the injection can be repeated. Hirst has rarely found this necessary in the acute cases.

Boiled Butter in Infant Feeding.—Lowenburg reports his experience with the simple addition of boiled butter, instead of cream, to ordinary skim milk dilutions containing nothing more than skim milk, water, sugar and salt, with or without the addition of starch in the form of a cereal decoction or of a previously indeterminate amount of boiled and baked brown pulverized flour ball containing or not a small amount of extract of pancreatin and sodium bicarbonate. The addition of flour ball is mentioned to call attention to the fact that it is an old remedy of extreme usefulness and corresponds, in a sense, to the browned flour used in the butter-flour mixture of Czerny and Kleinschmidt and antedates this procedure by probably a century or more. The reason why it is possible to feed the large amount of fat as represented in the butter-flour mixture and not feed the same amount as represented by cream or top milk added to a formula which also contained starch, has not been stated definitely. The matter appeared to be of sufficient importance to Lowenburg to merit investigation, and the problem was first attacked clinically and later confirmed by chemical study. It was found that volatile fatty acids exist in butter in even less stable combination than they do in cream. Boiling butter five minutes slowly will drive off more than 50 per cent. of these acids. Boiling butter two minutes is sufficient for clinical purposes; however, from three to four minutes would probably be a safe average. Sweet butter contains less volatile fatty acids than does salted butter. Boiled butter appears to be a more acceptable addition to milk formulas than does cream. The presence of flour or other forms of starch, though acceptable, to ensure an even distribution of the fat, are not necessary essentials to the digestibility of boiled butter; especially they do not have to be present in equal amounts. Vomiting and diarrhea are neither inaugurated nor made worse by the addition of boiled butter; on the contrary, they often cease after the addition of this substance. Constipation has been the rule and the reaction of the stool has been found to be feebly or markedly alkaline. All infants free of parenteral disturbances, to whom this substance has been fed, have experienced a uniform gain in weight, averaging from 1 ounce to nearly 2 ounces per diem.

Nebraska State Medical Journal, Norfolk

February, 1923, **8**, No. 2

Preliminary Report of Results and Conclusions from One Year's Experience in High Voltage Roentgen-Ray Therapy. R. L. Smith, Lincoln, Neb.—p. 41.
Nonspecific Parenteral Therapy. C. H. Bastron, Lincoln.—p. 43.
Relationship Between Sinus Infection and Lower Respiratory Tract Infection, with Special Reference to Apical Signs in Lung. G. W. Covey, Lincoln.—p. 47.
*New Method of Treatment for Chronic Infections Involving Bone. H. W. Orr, Lincoln.—p. 50.
Cases Illustrating Acute Treatment of Diabetes Mellitus. M. J. Breuer, Lincoln.—p. 52.
Catheterization of Duodenum. C. Emerson, Lincoln.—p. 58.
Fulguration in Treatment of Affections of Lower Genito-Urinary Tract. A. D. Munger, Lincoln.—p. 62.
Modern Therapeutic and Diagnostic Measures. C. C. Johnson, Lincoln.—p. 65.
Modern Scope of Orthopedic Surgery. J. E. M. Thomson, Lincoln.—p. 67.

New Method of Treatment for Chronic Infections Involving Bone.—The fundamental basis of the treatment which Orr proposes is founded on the principle of rest, and this applies to the wound and the wound surfaces as well as to the larger anatomic parts involved in the injury. He insists that at the time of injury, at the time of primary and secondary treatment, and throughout the entire course of the period of disability, there must be first, restoration of the injured parts to normal relationship; and second, immobilization and protection in correct position until complete healing has occurred. This may be accomplished either by plaster or by suitable splints. If the wound is infected, it must be drained. While draining, it must be dressed in such a way that it is not daily or twice daily reinfected. In operating for osteomyelitis of any kind or degree, Orr attempts to remove all infected

tissue, usually by "saucerizing" both soft tissue and bone. The wound is cleaned up as thoroughly as possible, and the saucer-like opening of both soft tissues and bone is gently packed with sterile petrolatum and gauze. The whole area is then covered with dry sterile gauze and the entire limb or part is encased in a well fitting cast of sufficient extent to immobilize completely the infected part. Casts are not split and no windows are cut. If there is no indication, on account of a rise of temperature, for a change in dressing, this dressing is left in place for from ten days to two or three weeks. Occasionally, on account of temperature or odor, the dressings must be changed earlier. One of the principal points in the treatment is infrequent dressing, that is, rest to the wound. The changing of dressings must be done with the same precautions as were employed at the time of the original operation. The wound is cleansed, dried, painted with iodin, a sterile petrolatum pack put on, and the whole is bandaged into place without in any way seriously disturbing the part or the wound. It should be left at each dressing in much the same condition as at the time of the original operation and first dressing. By this plan drainage is as free as may be required. Orr asserts that it is possible to treat such conditions in this way with much better results than formerly and without danger.

New York State Journal of Medicine

February, 1923, **23**, No. 2

*Functional Tests of the Circulation and Their Significance. W. W. Herrick, New York.—p. 53.
*Causation of Symptoms in Cases Simulating Chronic Appendicitis. H. L. Prince, Rochester.—p. 59.
*Intestinal Obstruction Following Unrecognized Cases of Appendicitis. A. M. Dickinson, Albany.—p. 61.
Intestinal Obstruction; Its Early Recognition and Treatment. L. M. Kahn, New York.—p. 64.
Should Gastro-Enterostomy be Performed in the Presence of Ruptured Duodenal Ulcer. D. Guthrie, Sayre, Pa.—p. 66.
Functional Gastric Tests. A. H. Aaron, H. C. Schneider and E. C. Beck, Buffalo.—p. 69.
General Management of Heart Conditions Among Children. M. G. Levy, Buffalo.—p. 71.
The Physician in Court. G. W. Whiteside, New York.—p. 73.

Functional Tests of Circulation and Their Significance.—The development and practical value of the various means proposed for the estimation of circulatory function or efficiency are discussed by Herrick and the practical question propounded is: What will serve the practitioner as a rapid and fairly accurate test of circulatory efficiency? In addition to a developed clinical judgment and the information derivable from the ordinary history and physical examination, the simple exercise test will serve. The observation of the acceleration of the pulse on a definite amount of exercise and the time required for a return to the previous resting rate will satisfy ordinary clinical requirements. Should a higher degree of precision be desired, Schneider's system of rating is recommended. The special student may go further and adopt any or all of the more elaborate methods mentioned. The more factors he takes into account, the better. Always, however, he strives for the unattainable—an exact and thoroughly reliable test of circulatory efficiency.

Causation of Symptoms in Cases Simulating Chronic Appendicitis.—Whenever a patient complains of chronic pain in the right lower quadrant that is tender on examination, Prince says the appendix should be the last thing to consider, not the first; unless there is a history of colicky midline pain, the appendix is only a possible suspect. Indigestion, flatulence, constipation, etc., may be due to anything from cribbing to enteroptosis; from poor habits to bodily fatigue; from organic pathology to mental pathology, and until these fields have been surveyed, operations on the appendix should not be considered.

Intestinal Obstruction Following Unrecognized Cases of Appendicitis.—In the beginning, Dickinson's patient had an attack of appendicitis which was diagnosed as bladder trouble, from which he largely recovered, but with an appendix ready to light up with the slightest provocation. The last illness was caused by a recurrent attack of inflammation of the appendix, which, due to its damaged condition, allowed the infection to spread to the peritoneal cavity with the formation of pus. Nature in her attempt to wall off this infection caused adhesions to form which were soft and vascular at first, but with a diminished blood supply they became tense and contracted, and so shut off the lumen of the bowel. The patient died in a state of shock.

Northwest Medicine, Seattle

February, 1923, **22**, No. 2

Psychanalysis, Freudian and Otherwise—A Plea for Rational and Workable Methods. H. W. Wright, San Francisco.—p. 45.
Facts and Fallacies About Psychotherapy. G. E. Price, Spokane, Wash.—p. 49.
Focal Infection from Internist's Point of View. A. H. Rowe, Oakland, Calif.—p. 51.
Focal Infection. A. D. Dunn, Omaha.—p. 57.
Pain in and Referred from Sacro-iliac Joint. S. G. Brooks, Anacortes, Wash.—p. 60.
Cooperation or Competition with Country Doctor. Lesson from Experience. H. E. Rich, Vernal, Utah.—p. 64.

Oklahoma State Medical Association Journal, Muskogee

February, 1923, **17**, No. 2

Suprapubic Prostatectomy. V. M. Gore, Clinton.—p. 29.
Prostatectomy in Old. W. J. Wallace, Oklahoma City.—p. 31.
Status Lymphaticus. J. W. Nieweg, Duncan.—p. 34.
Urticaria. A. L. Stocks, Muskogee.—p. 36.
Cooperation of Nurse in Prevention of Diseases in Infancy and Early Childhood. C. V. Rice, Muskogee.—p. 38.
Diphtheria. C. W. Fisk, Kingfisher.—p. 40.
Angina Pectoris. D. D. Paulus, Oklahoma City.—p. 43.
Plastic Repair of Sectioned Tendo Achillis. M. E. Stout, Oklahoma City.—p. 44.

South Carolina Medical Association Journal, Greenville

February, 1923, **19**, No. 2

Prostatic Surgery. W. R. Barron, Columbia.—p. 395.
Medical Nomenclature, Desirability of Uniformity and Suggestion of a Plan of Achievement. W. F. R. Phillips, Charleston.—p. 397.
Blood Chemical Analysis in Diagnosis and Treatment. F. B. Johnson, Charleston.—p. 402.
Pyelitis of Pregnancy. N. B. Edgerton, Columbia.—p. 406.

Virginia Medical Monthly, Richmond

February, 1923, **49**, No. 11

Ocular Examinations in Their Relation to General Medical and Surgical Investigation. G. E. de Schweinitz, Philadelphia.—p. 625.
Diagnosis of Brain Tumor. B. R. Tucker, Richmond.—p. 628.
Importance of Ophthalmology and Otology in Location of Intracranial Growths. J. Dunn, Richmond.—p. 633.
Visual Disturbances in Brain Tumors. E. Hill, Richmond.—p. 636.
Roentgen-Ray Examinations in Cases of Brain Tumor. D. D. Talley, Jr., Richmond.—p. 639.
Treatment of Tumor of Brain C. C. Coleman, Richmond.—p 641.
Difficulties Encountered in Diagnosis of Tuberculosis in Children. R. C. Carnal, Rochester, N. Y.—p. 644.
Pneumonoconiosis: Report of Two Cases. A. L. Gray and J. L. Tabb, Richmond.—p. 647.
Case of Typhoid Fever with Perforation. R. M. Wiley, Salem.—p. 649.
*Splenectomy in Treatment of Splenic Anemia. E. J. Horgan, Washington, D. C.—p. 652.
Management of Urologic Cases. J. F. Geisinger, Richmond.—p. 656.
*Relation Between Syphilis and Diabetes Mellitus. J. H. Smith, Richmond.—p. 662.
Obstetric Statistics. M. P. Rucker, Richmond.—p. 665.
The Neglaeted Latent Faculty. W. J. Jones, Crozet.—p. 670.
Wail of the Young. S. Harnsberger, Warrenton.—p. 672.

Splenectomy in Splenic Anemia.—Horgan's patient, a male, aged 26, gave a history of having suffered for seventeen years, his illness progressively becoming worse. At the age of 20 he had a gastro-intestinal hemorrhage and another five years later. A surgeon made a diagnosis of gastric ulcer for which he did a gastro-enterostomy. Jan. 25, 1921, his abdomen was tapped on account of ascites, 12 quarts of fluid being withdrawn. Forty-five subsequent tappings were done. The total amount of fluid removed was 127 gallons. Examination revealed an hypertrophied spleen almost filling the left side of the abdomen. Cytologic study of the blood showed 2,500,000 red cells, and 7,700 white cells. The hemoglobin was 51 per cent. A diagnosis of splenic anemia was made and splenectomy advised. A markedly enlarged spleen was removed. The patient gained 50 pounds in weight, and there has been a steady improvement in the condition of his blood.

Syphilis and Diabetes Mellitus.—In a series of seventy-nine cases of diabetes Smith found clear evidence of syphilis in only two cases, both with heart lesions, probably also syphilitic.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 3, 1923, **1**, No. 3244

Fundamental Conceptions of Biology. J. S. Haldane.—p. 359.
*Late Results of Meningeal Hemorrhage of Newly Born. H. C. Cameron and A. A. Osman.—p. 363.
*Modification of Gastric Function by Means of Drugs. T. I. Bennett. —.p. 366.
Treatment of Kala-Azar by "Bayer 205." W. Yorke.—p. 370.
*Treatment of Ankylostomiasis with Betanaphthol and Thymol. H. G. Phippen.—p. 371.
Splint for Median Paralysis. W. Mercer.—p. 371.
Relation of Sciatica to Sacro-Iliac Joint: Treatment by Diathermy. J. Cowan.—p. 372.
Portal Pyemia Secondary to Umbilical Infection. G. B. White.—p. 373.
*Excision of Fibula in Amputations Below Knee Joint. C. Noon.—p. 373.
*Bronchiectasis with Unusual Complications. I. J. Davies.—p. 374.

Meningeal Hemorrhage of Newly Born.—The etiologic relationship of prenatal cerebral hemorrhage to cerebral diplegia or paraplegia is discussed by Cameron and Osman. They state that among cases of infantile diplegia or paraplegia it is possible to recognize a group in which the defect is confined to the sensorimotor cortical areas. Probably all cases in this group are due to birth injury, although all cases of birth injury may not belong to the group. Since education at first proceeds almost entirely by sensorimotor paths there is in early childhood a deceptive appearance of gross mental defect. In later childhood progress may be rapid and recovery almost complete. The difficulty is overcome by the remarkable persistence in effort which is characteristic of most of these children. Even when voluntary movements remain stiff and awkward the child may be a quick learner by eye and ear. Incoordination may remain though character and intelligence may be on a high plane.

Modification of Gastric Function by Drugs.—Bennett agrees with other observers that atropin diminishes gastric secretion. The hypodermic injection of 1/100 grain of atropin sulphate produces a very definite effect. Oral administration of atropin or belladonna produces the most marked effects. Pilocarpin increases gastric secretion. Sodium bicarbonate tends to excite the gastric mucosa to increased secretion, and this effect more than counterbalances the neutralizing effect of the salt. Other salts, particularly magnesium oxid and bismuth oxycarbonate, have far less stimulating effect, and the former, weight for weight, possesses greater neutralizing power. The rational method of employment of these salts in cases of hyperacidity is to administer them at such periods after meals as will lead to their neutralizing effect coming into play without there being the possibility of producing any marked effect on the actual gastric cells. In gastric therapy, sodium bicarbonate finds its greatest usefulness in those rather rare cases in which there is an excess of mucus secretion with low or absent hydrocloric acid. Atropin also delays gastric emptying; pilocarpin increases the rapidity of emptying. As to strychnin, Bennett says that in order to produce any beneficial effect on gastric atony very small doses of strychnin must be employed.

Treatment of Ancylostomiasis with Betanaphthol and Thymol.—Good results are reported by Phippen as accruing from his method of treatment of ancylostomiasis. He proceeds as follows: In the evening a powder containing calomel, 5 grains, and sodium bicarbonate, 10 grains, is given. This is followed at 7 a. m. with sodium sulphate, 3 drams, in 3 ounces of water. At 8 a. m. a mixture is given containing: betanaphthol, ½ dram; thymol, ½ dram; mucilage, q. s., and water to 1 ounce. At 10 a. m. the betanaphthol and thymol mixture is repeated, and the patient is kept in bed until about 4 p. m., not allowing him to have any food or liquid; after that time he is allowed a fluid diet only for the remainder of the day. Those desiring to leave hospital may do so, to report again in seven days for further treatment; but on the day after leaving hospital they send a specimen of feces for microscopic examination for the ova of ancylostoma. This is done after each treatment until the stool is free of these parasites. In no case were more than eight treatments required.

Excision of Fibula in Amputations Below Knee Joint.—In a considerable number of cases of amputation below the knee joint the presence of the fibula appears to cause considerable difficulty in fitting and wearing a satisfactory artificial limb. It is in these cases especially, in which atrophy has been excessive and in which pressure on the prominent head of the fibula causes pain, that Noon urges removal of the bone; in fact, he thinks it is an advantage to perform it in all cases in which the stump will not measure more than 4 inches.

Bronchiectasis with Unusual Complications.—In one of Davies' cases the accessory nasal sinuses became infected, requiring operation for empyema of the antra of Highmore. The fetid pus from the pulmonary cavities was often expelled in quantity and projected suddenly with much force into the mouth and nose, and infection of the accessory sinuses arose in this way. In a second case cited, the complications which chiefly deserve notice were a chronic glossitis, and a persistent severe albuminuria from chronic nephritis, both of which were probably of toxic origin from chronic infection.

Edinburgh Medical Journal

February, 1923, **30**, No. 2

Psychotherapy in General Practice. E. Bramwell.—p. 37.
*Fatal Case of Empyema Due to Anaerobic Infection. J. P. Leckie.—p. 60.
*Punctured Wound of Rectum and Bladder. W. M'D. Selby.—p. 68.

Fatal Case of Empyema.—The infection in Leckie's case was communicated directly from the pleura to the lung; and this infection attacked, in the first instance, not the air cells but the interstitial tissue of the lung. All the indications pointed to the conclusion that the disease was due, in this instance, to infection from extensive injury to the guns, which permitted direct absorption of the bacteria into the blood stream. The nature of the infecting gram-positive fusiform bacilli could not be determined.

Punctured Wound of Rectum and Bladder.—Selby's patient inadvertently sat on the tines of a pitchfork and one tine penetrated his perineum, 1 inch to the right of the anus; the other point grazed the point of his penis. He was given antitetanic serum; otherwise nothing was done. The fork missed the rectum and narrowly missed the urethra. The man was walking about four days after receipt of the injury.

Indian Journal of Medicine, Calcutta

December, 1922, **3**, No. 4

Diabetes. J. P. Bose.—p. 252.
Dermatitis Blastomycetica Simulating Leprosy. J. C. Mukherji.—p. 263.
Colon Bacillus Infection. T. Sur.—p. 268.
Treatment of Compound Fractures. J. K. Banerji.—p. 276.
Seasonal Variations in Surgical Sepsis. K. K. Chatterji.—p. 280.
How Long Can a Fetus be Alive After Prolapse of the Hand? R. S. Tembe.—p. 282.
New Parasitic Ciliate Protozoon. (Anoplophrya cylindrica). E. Ghosh. —p. 283.

Lancet, London

March 3, 1923, **1**, No. 5192

Therapeutic Inoculation. L. Colebrook, E. J. Storer and A. E. Wright. (To be concluded.)—p. 417.
*Treatment of Menorrhagia by Radium. G. Blacker.—p. 421.
*Anesthetic Action of Pure Ether. H. H. Dale, C. F. Hadfield and H. King.—p. 424.
*Chronic Septic Splenomegaly. G. Ward.—p. 429.
Attacks of Arrested Respiration in the New-Born. G. F. Still.—p. 431.
Treatment of Chronic Intestinal Stasis by Colloidal Kaolin. A. C. Jordan.—p. 432.
Gonorrhea in Women Treated with Contramine Pessaries. G. W. Rundle.—p. 434.
Fracture of Head of Tibula. A. W. Lemarchand.—p. 434.
Case of "Infectious Mononucleosis." P. D. H. Chapman.—p. 434.

Treatment of Menorrhagia by Radium.—The results obtained by those who have employed radium in the treatment of hemorrhage from the uterus, Blacker says, show that it is a valuable and efficient method of controlling excessive hemorrhage at the menopause; that it can be employed safely for the same purpose in small uncomplicated fibroid tumors of the uterus, and that by its means excessive menorrhagia in young women, which resists ordinary methods of treatment, can be brought under control.

Anesthetic Action of Pure Ether.—Observations made by Dale, Hadfield and King give no support to the statement that pure ether is devoid of anesthetic action, and that the

activity in this direction of ordinary ether is due to impurities. On the contrary, so far as the anesthetic action of ether is affected by purification, it is in their experience improved by the removal of impurities, which irritate the respiratory mucosa and cause excessive secretion, but no other change. The purest ether is the best as an anesthetic.

Chronic Septic Splenomegaly.—Ward concludes that the underlying pathologic process is the same in all chronic splenomegalies of septic origin, and that the recognition of this origin will remove a large number of cases from the groups of idiopathic splenic anemia and Banti's disease. It also will greatly assist treatment.

Medical Journal of Australia, Sydney

Jan. 27, 1923, **1**, No. 4

Origin, Causation and Treatment of Rodent Ulcer. N. Paul.—p. 85.
Early Signs of Disease. W. Pern.—p. 90.
Diurnal Variations of Diastatic Content of Normal Urine. G. Cameron.—p. 91.
Napoleon I. C. MacLaurin.—p. 95.
Extensive Bronchiolectasis in a Young Child. D. L. Barlow.—p. 99.

Feb. 3, 1923, **1**, No. 5

Aims and Ideals of Antenatal Work. A. M. Wilson.—p. 113.
Antenatal Care. R. W. Chambers.—p. 115.
Antenatal Notes. R. Fowler.—p. 117.
Use of Digitalis in Heart Failure. H. Ritchie.—p. 119.

Feb. 10, 1923, **1**, No. 6

Psychic Aspect of Stammering: Its Basis, with Corrective Measures. T. G. Leary.—p. 141.
*Nervous Mechanism of Functional Disorders of Digestion, with Special Reference to Hypertonic and Hypotonic Dyspepsia and Nervous Colitis. C. B. Blackburn.—p. 145.
*Auricular Fibrillation; Death After Administration of Quinidin Sulphate. C. T. De Crespigny.—p. 150.
*Case of Primary Multiple Tuberculoma of Liver with Degenerated Hydatid Cyst. C. T. De Crespigny and J. B. Cleland.—p. 151.
Three Cases of Headache of Intranasal Origin. W. Sangster.—p. 152.
*Two Unusual Cases of Abdominal Cancer. J. B. Dawson.—p. 153.
Apparently Undescribed Form of Ligneous Edema of Neck. R. Pulleine.—p. 153.

Treatment of Functional Disorders of Digestion.—In treating these cases Blackburn gives first consideration to the nervous side, eliminating worry, overwork, etc. Very thin, miserable, underfed patients are ordered to begin with rest in bed and massage. Diet requires careful attention, as most patients suffer from malnutrition. A liberal, plain, mixed diet, containing fresh butter, eggs, vegetables and fruit, is ordered. When there is a morning diarrhea, a low level lavage, with 1¾ to 2¼ liters (3 or 4 pints) of plain saline solution immediately on rising, or after the first evacuation, will often clear the bowel and restore a regular single evacuation. Drug treatment should aim mainly at improving the nerve tone. Astringents and intestinal antiseptics have, in Blackburn's opinion, a very limited sphere of usefulness.

Auricular Fibrillation: Death After Administration of Quinidin Sulphate.—On admission, de Crespigny gave his patient, male, aged 38, tincture of digitalis in doses of 1.8 mils every six hours for twenty-four hours and then 1.2 mils every six hours. Twelve days later quinidin sulphate was given three times a day in doses of 0.2 gm. for two days and thereafter in doses of 0.4 gm. every four hours. Three days later the pulse rate was 100 and quite regular. Examination of the heart revealed a systolic bruit at the apex. The same day, at 4:30 p. m., there was a sudden onset of coma with clonic spasms, but no evidence of paresis. The right pupil was fully dilated. The man died at 9 p. m. The postmortem examination failed to disclose any anatomic or pathologic condition which could account for the sudden death.

Primary Multiple Tuberculoma of Liver with Degenerated Hydatid Cyst.—de Crespigny and Cleland believe that in this case the hydatid disease of the liver may have lessened the protective influence of the cells of the liver against tuberculosis, with the result that an accidental introduction of tubercle bacilli, perhaps by the alimentary canal, led to their establishment in the liver. Primary tuberculosis of the liver is a very rare occurrence. No old tuberculous lesions were met with in other parts, though especially searched for.

Ring Carcinoma of Small Intestine: Carcinoma of Prolapsed Stomach.—Dawson relates the case of a woman, aged 62, who presented all the usual signs of partial and increasing intestinal obstruction. The clinical picture seemed to fit the diagnosis of carcinoma of the large intestine. Abdominal palpation under the anesthetic revealed a palpable tumor situated 7.5 cm. to the right of the umbilicus, a small, hard lump anchored posteriorly. Exploration showed this to be a ring carcinoma of the small intestine. The second patient, female, aged 64, had an intense desire for food, followed by severe nausea when confronted with it. She also complained of rapid loss of weight and progressive weakness. A mass the size of an orange was clearly visible in the midline, just above the umbilicus. The mass was unusually mobile; there was no part of the abdomen to which it could not be pushed, but it was not possible to place it in the pelvic basin. The primary diagnosis was carcinoma of a prolapsed transverse colon. The lump proved to be a cancer of a prolapsed stomach.

Journal of Oriental Medicine, Dairen, Manchuria

February, 1923, **1**, No. 1

Formation of "Crusta Phlogistica" on Venous Blood. J. Murakami.—p. 3.
*Position of Heart in Acute Pericarditis with Effusion. G. Totani, S. Okada and Y. Shima.—p. 11.
Constitution of "Tien-shien-tszu." M. Nakao.—p. 19.
*Problem of Child Welfare in Manchuria. T. Suzuki.—p. 23.
*Tuberculosis Among Japanese in Manchuria. H. Yanagihara.—p. 29.
Influence of Sun and Color Stain Solutions on Hemolytic Action of Red Blood Corpuscles Taken from Goats. H. Yanagihara and H. Hirata.—p. 31.
Case of "Situs Inversus Viscerum Totalis." J. Murakami and H. Nishida.—p. 33.
Differential Diagnosis of Exudates and Transudates by Means of Permanganate Reduction Strength. K. Ikeda.—p. 34.
*Study of Presence of Acetone-Body in Urine of Measles Patient. Nagahara.—p. 35.
Treatment of Dysentery with Bakteriophage. T. Suzuki, K. Tokuye and K. Hatai.—p. 36.

Rotation of Heart in Acute Pericarditis.—A case of pericarditis with effusion is reported by Totani, Okada and Shima, in which a conspicuous deviation was noted in the electrocardiograms during the progress of the disease which suggested that rotation of the heart around its own axis occurred, accompanied by displacement. The importance of electrocardiographic studies in cases of pericarditis is discussed.

Infant Mortality in Manchuria.—The infant mortality in Manchuria (averaged for a period of two years), according to Suzuki, was 134—, lower than in the large cities of Japan proper. The highest mortality rate was for infants under 1 year of age. The second highest period was from the ages of 3 to 5. The third highest period was in the third decade. The five most important children's diseases in Manchuria are: pneumonia, enteritis, beriberi, meningitis and tuberculosis. Premature births occur frequently. In 1918 there were 1,690 births and eighty-three stillbirths.

Tuberculosis of Skin Among Japanese.—Of 9,421 Japanese in Manchuria who had tuberculosis, Yanagihara found only eighteen (0.19 per cent.) with tuberculosis of the skin. In Japan proper, this disease is far more common, ranging as high as 0.76 per cent. Yanagihara ascribes the less frequent occurrence of skin tuberculosis among the Japanese to: the Japanese are rich in skin pigment; their habits of living and clothing make it easier to take sun baths; the Japanese custom of taking hot baths frequently; the diet, consisting largely of vegetables instead of meat.

Acetone in Urine in Measles.—Of the twenty-five children who had measles, fifteen showed the presence of acetone in the urine. It was first visible on the third day of the disease, and was present in considerable amount from the fifth to the eighth day. After the eleventh day it gradually lessened in amount, and by the thirteenth day it had disappeared altogether. The appearance of the acetone was coincident with the appearance of the Koplik spots, and was very heavy during the eruption period.

South African Medical Record, Cape Town

Feb. 10, 1923, **21**, No. 3

Widal versus Complement Fixation. A. Pijper (to be continued).—p. 51.

Annales des Maladies Vénériennes, Paris

December, 1922, **17**, No. 12

*Fatal Case of Late Jaundice Due to Neo-Arsphenamin. J. Golay.—p. 881.
*Absorption of Bismuth Preparations. Levy-Bing et al.—p. 887.
*Mycosic Chancre Simulating Syphilitic Chancre. Mouradian.—p. 899.
Fordyce's Disease Limited to Vulva. R. Barthélemy.—p. 901.

Fatal Case of Jaundice Due to Arsphenamin Derivative.—Golay publishes the history of a patient who died from yellow atrophy of the liver two months after the last injection of an arsphenamin derivative and ten days after the last injection of salicylate of mercury. The Wassermann reaction was negative. He attributes this fatal outcome to the toxic influence of arsphenamin on the liver and refutes the theory of syphilitic origin of such disturbances of the liver.

Radiographic Research on the Absorption of Bismuth Preparations.—Levy-Bing, Belgodère and Auclair publish roentgenograms of the results of 100 intramuscular injections of 15 cg. of bismuth hydroxid.

Mycosic Chancre Simulating Syphilitic Chancre.—The patient had a negative Wassermann reaction and recovered promptly after treatment with iodids.

January, 1923, **18**, No. 1

*Syphilis of the Sympathetic Nervous System. A. Lévy-Franckel and E. Juster.—p. 1.
Elimination of Arsenicals by the Urine. Lévy-Bing and Férond.—p. 24.
Gummatous Osteitis in Infant. H. Haxthausen.—p. 59.

Syphilis of the Sympathetic Nervous System.—Lévy-Franckel and Juster review pathologic conditions due to affections of the sympathetic nervous system or endocrine glands, and emphasize the importance of considering the possible syphilitic etiology in these diseases. It is important in diabetes, exophthalmic goiter, prurigo, Raynaud's and Addison's diseases, acanthosis nigricans, though tuberculosis is the much more frequent cause in Addison's disease, and cancer in acanthosis. Arrhythmia may also be due to syphilis.

Gynécologie et Obstétrique, Paris

December, 1922, **6**, No. 6

*Treatment of Uterine Fibromas. J. B. Kouwer.—p. 385.
*Ovarian Cysts and Pregnancy. J. Szymanowicz.—p. 405.
*Partial Hysterectomy. H. Hartmann.—p. 420.

Radiotherapy and Surgical Treatment of Uterine Fibromas.—Kouwer recommends restricting the treatment with roentgen rays to an extremely small number of uterine fibromas. He finds that more than half do not need any treatment at all. For the rest, laparotomy is the method of choice. He reviews his failures and finds that only in two patients who died, would roentgenotherapy have been indicated. He believes that the dangers from operation should be rated lower than the dangers from roentgen and radium treatment, to which he makes three objections: 1. The roentgen rays castrate the patient unnecessarily. It would be a mistake to believe that the ovary is important only in young persons. Even after the fiftieth year there may be very severe ovariprival symptoms after castration. Among 134 laparotomies performed by Kouwer, he was able to save both ovaries in 107 women. His second objection to radiotherapy is that it sacrifices the uterus also, while operation may allow gestation in suitable cases. The third objection is that radiotherapy is hazardous in a condition in which the exact diagnosis cannot be made without an operation. Radiologists do not treat submucous or polypous fibroids. Yet the diagnosis of this condition was impossible before operation in 24 out of 45 of Kouwer's cases. The same uterus may contain different sorts of fibroids. Sarcomatous or carcinomatous changes of the tumor (another admitted contraindication for radiotherapy) usually cannot be clinically recognized. Diagnostic curettage in a uterine cavity which is deformed by fibromyomatous masses, cannot reach the whole inner surface, but can injure the tumor and cause necrosis or infection. He gives statistics on unexpected circumstances found in his 493 operations, and publishes 13 failures of radiotherapy performed by competent radiologists. He protests energetically against the "innocence and efficiency" of radiotherapy of fibroids. His opinion on the treatment of climacteric menorrhagia is the same. His treatment of this condition consists in energetic curettage, which is also indicated for diagnostic purposes, and hot (at least 50 C.) vaginal irrigations for several months. He has not seen any cases which would have required hysterectomy or castration with roentgen rays.

Ovarian Cysts and Pregnancy.—Szymanowicz publishes thirty-five cases of ovarian cysts in pregnancy. Only 8.6 per cent. of the operations were followed by a miscarriage. He operates immediately after the diagnosis is made. The only exceptions are cysts of corpus luteum with hydatidiform mole, because they disappear, and bilateral ovarian cysts in women who insist on having children.

Fundus Uteri Hysterectomy.—Hartmann describes in detail his technic for the operation recommended recently by Lecène and Gaudart d'Allaines. The operation consists in the ablation of the fundus uteri and both tubes, with conservation of at least a large fragment of an ovary. Menstruation continues in such cases; this is especially important in young nervous women.

Presse Médicale, Paris

Feb. 7, 1923, **31**, No. 11

*Epilepsy and General Paralysis. L. Marchand.—p. 121.
*Materia Medica of Pituitary Preparations. Choay.—p. 123.
*Intraspinal Anesthesia. R. Bloch and Hertz.—p. 125.

Feb. 10, 1923, **31**, No. 12

Epididymectomy in Genital Tuberculosis. Marion.—p. 129.
Rapid Serial Roentgenography in Diagnosis of Duodenal Ulcers. A. Carrié and Keller.—p. 130.
Splenectomy with Adherent Spleen. P. Lombard.—p. 132.
Wound of Heart with Thrombosis in Left Axillary Artery. G. L. Hartmann-Keppel.—p. 133.
The Abuses with New Remedies. L. Cheinisse.—p. 134.

Epilepsy and General Paralysis.—Marchand discusses the literature on syphilis in epileptics, epilepsy in syphilitics, and the connection between infantile paralysis and epilepsy with inherited syphilis. It is often difficult to distinguish true epileptic seizures from the convulsions which may usher in general paresis. The term syphilitic epilepsy should be reserved for cases in which the seizures form the dominant symptom of the specific infection. In certain cases the epilepsy subsides under specific treatment, but the seizures may return years afterward accompanying general paralysis. In one of his own cases the first seizures occurred at the age of 22, a few months after infection; no seizures were observed after the age of 28 for five years. Then they reappeared at 33, and two years later the clinical picture of general paralysis was complete. The history of the case, the course and the findings in the spinal fluid differentiate the affection sooner or later.

Pituitary Extracts.—Choay compares the pituitary from different animals, and different parts of the organ, and gives the preferable technic for obtaining extracts.

Intraspinal Anesthesia.—Bloch and Hertz cite further experiences of their own and of others which confirm, they say, the advantages of intraspinal injection of caffein in case of syncope from intraspinal injection of procain. It answered the purpose perfectly in eleven of the thirteen cases in which it was applied after failure of artificial respiration and subcutaneous injection of caffein. In the one fatal case the syncope occurred after hysterectomy as the table was lowered to the horizontal. Intraspinal injection of 0.1 gm. of caffein revived the patient, but only temporarily, and a second injection had no apparent effect. The others, all with extreme syncope, recovered after intraspinal injection of from 0.25 to 0.37 gm. In prophylaxis, they mix 0.15 gm. of the procain preparation with 0.12 gm. of caffein and 0.15 gm. of sodium benzoate (to dissolve the caffein).

Revue Médicale de la Suisse Romande, Geneva

December, 1922, **42**, No. 12

Traumatic Neuroses in the Insured as Observed by a Judge. P. Piccard.—p. 769. Cont'd.
*Serous Apoplexy Following Arsphenamin. R. Gonin.—p. 775.
Elementary Notions of Physical Chemistry. J. Perrier.—p. 791.
*The Cerebrospinal Fluid in Tuberculous Meningitis. G. Bickel.—p. 800.
*Caffeinism. R. Guillermin.—p. 808.
A New Fracture of the Calcaneum. H. Vulliet.—p. 815.

Serous Apoplexy Following Arsphenamin.—Gonin publishes two cases of serous apoplexy (hemorrhagic encephalitis) following administration of arsphenamin. He reviews the present knowledge of such mishaps during the treatment of

syphilis. This condition usually starts on the third day after the injection, with headaches and convulsions, which may be followed by coma and death within from twenty-four to forty-eight hours. The serous apoplexy is due to intolerance for the drug, and may occur even in the first stage of syphilis. Serous apoplexy follows more often the second or third injection, while the Herxheimer reaction is more likely to appear after the first. The apoplexy requires immediate administration of epinephrin (0.25 mg. intravenously, followed by injections of from 1 to 2 mg. intramuscularly), and a change of the drug. Herxheimer's reaction passes, if the antisyphilitic treatment is continued. It is impossible to predict serous apoplexy. The condition is often fatal, but there are no sequelae if the patient survives. Milian calls it a nitritoid crisis localized in the brain. The Germans call it hemorrhagic encephalitis.

The Evolution of the Cerebrospinal Fluid in a Case of Tuberculous Meningitis with Recovery.—Bickel publishes a series of eleven samples of very carefully examined cerebrospinal fluid taken from a case of bacteriologically confirmed tuberculous meningitis, which recovered. The early strong lymphocytosis changed into exclusive lymphocytosis on the hundred and sixth day. The number of cells diminished with the amelioration of the clinical state, but remained above normal. The amount of protein paralleled the cell count, while chlorids and sugar were low at the beginning and increased slowly. The permeability for nitrates was great at the beginning and diminished afterward. Many of these rare cases which recover from the first attack of tuberculous meningitis, die from another attack.

Caffeinism.—Guillermin reviews the different findings of untoward effects of coffee. He states that coffee prepared in the Turkish fashion does not cause insomnia, and keeps the aroma and the stimulating effects of the coffee. He attributes this to the loss of some noxious volatile substances originating in the roasting of the bean. Turkish coffee is prepared, he relates, by boiling the finely pulverized coffee in an open container. It is ground as fine as flour. It is boiled up three times and the boiling is interrupted.

Archivio Italiano di Chirurgia, Bologna

December, 1922, **6**, No. 5

Wounds of the Common Carotid. D. Calzavara.—p. 433.
*Asepsis in Gastro-Intestinal Operations. F. Cinquemani.—p. 445.
Retroperitoneal Hydatid Cyst. A. Caucci.—p. 481.
Supra-Umbilical Spinal Anesthesia. M. Fasano.—p. 507.
Improved Instruments for Resection of Stomach. G. Solaro.—p. 519.

Asepsis in Gastro-Intestinal Operations.—Cinquemani gives twenty-four illustrations of various devices and methods devised by Parlavecchio and his school at Palermo to insure asepsis in operations on the stomach and bowel. One of his principles is that the two clamps must be applied so close together that there is room between them only for the iodized bistoury to sever the bowel. Not a glimpse is obtained of the mucosa of the stumps. His enterostome is two clamps that fit and lock into one when the clamped stumps are brought together. The serosa is then drawn up and sutured over the double locked clamps. For side-to-side anastomosis, he takes up a fold in the two loops and sutures the serosa side to side, leaving the ends of the thread long, with a third thread in the center to draw up the sutured loops into a peak. This peak is then grasped with a clamp the blades of which are broad oval plates that compress the peak over a broad extent, and expel all the contents and blood from both loops. Then an elastic curved clamp, which fits close against the convex edge of the clamp plates, is applied below, and the side-to-side suture is completed above the narrow curving branches of this clamp. For exclusion of the pylorus, cotton tape, 1.5 cm. wide, is used. The ends are sutured, not tied, as a knot injures the tissues. The tape method has proved harmless and effectual in years of practice. For resection of the bowel, he draws the loop outside the peritoneum, and sutures the incision behind it, before he cuts the bowel with the end-to-end technic described above. In a recent case of extensive cancer requiring resection of part of the ileum, cecum and colon, there was suppuration in the preperitoneal space, with final recovery. If the loop had been inside the peritoneum, this complication would certainly have been fatal.

Riforma Medica, Naples

Jan. 8, 1923, **39**, No. 2

*Permeability of Meninges for Iodids. G. de Toni.—p. 25.
*Gastric Secretion in Cardiac Insufficiency M. Garofeano.—p. 27.
Colloidal Cancer of Vater's Papilla. A. Angeli.—p. 28.
Radical Treatment of Ingrowing Nails. D. Taddei.—p. 33.

Permeability of Meninges.—De Toni injected dogs with 0.05 to 0.1 gm. of potassium iodid per kilogram of body weight. The injections were made into the fourth ventricle or subcutaneously, and the resorption was tested by the conjunctival reaction to calomel. As Sicard has already demonstrated, there was no difference in the resorption by these different routes. In children the results were similar, both in the healthy and in those with tuberculous meningitis, the resorption being tested by the urine. Other drugs were also resorbed rapidly from the cerebrospinal fluid. To test the opposite mode of resorption—from blood into the cerebrospinal fluid—de Toni injected calomel into the fourth ventricle. After the subcutaneous injection of potassium iodid, mercurous iodid was found in the ventricle, thus establishing the permeability of the meninges.

Gastric Secretion in Cardiac Insufficiency.—Garofeano examined the gastric secretion in twelve cases of cardiac insufficiency. Free hydrochloric acid was diminished or absent, especially with mitral stenosis. The combined and total acidity was also diminished, and organic acids (in four cases, lactic acid) were present in all of the cases. Pepsin was diminished, and absent in two cases. He believes that the dyspepsia in heart disease is of the hypopeptic type, and with mitral disease is due to the venous stasis, the passive congestion affecting the stomach as well as other organs. With aortic affections, it is due to the inadequate blood supply.

Archivos Españoles de Pediatría, Madrid

December, 1922, **6**, No. 12

*Inherited Syphilis Aroused by Trauma. González J. Meneses.—p. 705.
Dyspepsia in Infants and Young Children. A. R. Lozano.—p. 710.

Latent Inherited Cerebral Syphilis Aroused by Trauma.—Meneses reports that epileptiform seizures developed for the first time twenty days after the boy had been knocked down by a bicycle. The typical seizure was followed by repeated jacksonian convulsions. The Wassermann reaction was positive, and stigmata of syphilis were unmistakable, although there had been no previous symptoms. After a decompression operation, the convulsions continued but only nine or ten occurred during the day instead of the twenty or thirty at first. Mercurial treatment was instituted and supplemented with neo-arsphenamin. There were no further convulsions after the first intravenous injection of the arsenical, and the child now aged 5, has developed apparently normally during the year since. Meneses adds that if specific treatment had been begun earlier, the operation on the skull might possibly have been avoided. The trauma had evidently reduced the defensive forces of the brain and allowed the spirochetes to bring on the acute hydrocephalus responsible for the convulsions. The rolandic region appeared entirely normal.

January, 1923, **7**, No. 1

*Atrophy of the Lower Jaw. V. Juaristi and D. Arraiza.—p. 5.
*Spastic Paralysis in Children. R. Duarte Salcedo.—p. 14.

Acquired Atrophy of the Lower Jaw.—Juaristi and Arraiza give several illustrations of four cases and cite others, all presenting malformation of the mandible in consequence of some infectious process or trauma. The atrophy may be due to long immobilization, or loss of substance, or it may be the result of injury of the sympathetic nervous system. They have witnessed it develop from this latter cause the same as when the cause acts on a long bone. They urge the necessity for prompt measures to correct any tendency to ankylosis, since otherwise speech and the teeth develop defectively, while atrophy may entail grave deformity.

Congenital Spastic Paralysis in Children.—Duarte Salcedo contends that infantile hemiplegia, Little's disease and other forms of spastic paralysis in children are not isolated affections but form a great syndrome of spastic paralysis from congenital encephalopathies. The clinical picture varies with the different regions involved, but the etiology, pathogenesis

and treatment have characters common to all. Inherited syphilis is responsible for about 95 per cent. of the cases; birth trauma for 4 per cent., and infections and intoxications for 1 per cent.

Repertorio, Bogota

October, 1922, **14**, No. 1

Bill Before Congress to Regulate Practice of Medicine in Colombia. L. F. Angel, J. I. Vernaza and M. J. Lucio.—p. 5.
Benzyl Benzoate in Treatment of Spastic Conditions. V. Peñuela Rodríguez.—p. 6.
*Espundia in Colombia. A. Peña Chabarría.—p. 10.

Espundia in Colombia.—Peña Chabarría states that none of the early medical writers mentioned espundia or Velez bubon, as he calls it, and it must be of comparatively modern importation. Camacho was the first South American to describe it, in 1889, but Mateus and Franco in 1893 described it more fully—all in Colombia. Its nature as a blastomycosis is now generally accepted but the intermediate host in Colombia seems to be *Rhodnius prolixus* and not *Conorhinus megistus*, as in Brazil. The disease has two phases, first the skin ulcerates and later the mucosa of nose, pharynx and throat develops ulcerations. The first stage lasts from six months to two years, as a rule, but the ulcers may persist for years, although seldom entailing much of a defect. He has encountered four cases of this blastomycosis among 148 patients with various skin ulcerations, in the last eight months. In the second stage, the ulcerations in the nose and throat are destructive; they rarely appear until the skin lesions are subsiding. An important differentiating point is that the lymph glands are not enlarged. The article is continued.

Revista del Instituto Bacteriológico, Buenos Aires

December, 1922, **3**, No. 2

Atypical Paratyphoid B Bacilli. A. Bachmann.—p. 3.
*Prophylaxis of Bubonic Plague. M. V. Carbonell.—p. 17.
*Oligodynamia. R. Wernicke and A. Sordelli.—p. 29.
Natural Reenforced Rabies Virus. R. Biglieri.—p. 57.
*The Kurloff Bodies. A. Senez.—p. 61.
Strongyloidosis of the Dog Kidney. G. Pacella and R. Esquivel.—p. 73.

Sterilization of Grain Bags.—Carbonell gives an illustrated description of a furnace and hot air chamber for sterilization of burlap grain sacks by superheated air. An electric ventilator forces the air through the sacks down to the bottom of the furnace and draws the air up through the furnace again, a constant circle. Thousands of bags can be sterilized rapidly in this way, supplemented by the usual formaldehyd and ammonia sterilization in the same hot air chamber.

Research on Oligodynamia.—This term was coined by Naegeli to express the toxic action exerted by certain metallic salts in extremely dilute solutions. The research here described shows that simple contact of the metal with the water—even for months—does not confer oligodynamic properties on it. But when the metal salt is dissolved in the water, it rapidly becomes strongly oligodynamic. Hence the oligodynamia observed with distilled water is due to the minute quantities of dissolved copper in it. And the dissolving of the copper is due to the gases present.

Kurloff Bodies.—Senez concludes from his extensive research that the Kurloff bodies in the mononuclear corpuscles of guinea-pigs are parasites, of the type of Prowazek's chlamydozoa. They are not found in the blood at birth but they appear the seventh day, even if the young are kept separate from the mother. Attempts at transmission never succeeded.

Revista de Medicina y Cirugía, Havana

Feb. 25, 1923, **28**, No. 4

*Indications for Tonsillectomy. Fernández Soto.—p. 127.
*Therapeutic Transfusion of Blood. A. Recio and A. Figueras.—p. 145.
Begun in No. 3, p. 85.

Indications and Contraindications to Tonsillectomy.—Fernández Soto relates that Celsus removed tonsils twenty centuries ago, but Farlow of Boston resuscitated the operation in the nineties. This communication is the result of his personal impressions from 204 cases long under supervision. He disapproves of removing the tonsils before the age of 6. The best and most durable results were in children between 7 and 12. Before this age he temporizes, merely removing obstructing adenoids, as the operative shock or anesthesia may prove fatal, with a tendency to the status lymphaticus, while the children are more apt to have acquired immunity to respiratory infections by the age of 7 or older. Chronic otitis and mastoiditis are rare in Cuba, so that postponing the tonsillectomy is less dangerous than farther north. One young man died from pulmonary tuberculosis which flared up a month after the tonsillectomy, although there had been no signs of an active process before. He ascribes this fatality to the general anesthesia. He now operates only in afebrile cases, and only under local anesthesia. He emphasizes the need for keeping patients in bed after tonsillectomy; two days for adults and five days for children. This gives a chance to feed the children properly. Otherwise they refrain from eating as it is painful, and they lose in weight.

Therapeutic Transfusion of Blood.—Recio and Figueras have organized a systematic service for blood transfusion in Cuba with classified donors at the army hospital. They describe the history of the procedure, the various methods in vogue, and the indications and contraindications. The Lindemann indirect method was selected as superior to others; the blood is not treated with any chemical. The donors belong to the army and are thus available at any hour. The remuneration has been fixed at $50. The amounts transfused have ranged from 100 to 1,000 c.c. during the six months the service has been in operation. The third and the fifth patients in the series of thirty-four died within three hours of the transfusion, both presenting the same picture of precordial distress, vomiting and drop in blood pressure. In all the other cases the outcome surpassed all anticipations. The details of twenty-seven cases are given in full. Aside from urticaria in four cases in which the amount of blood transfused was more than 500 c.c. no by-effects were observed.

Revista Médica del Uruguay, Montevideo

December, 1922, **25**, No. 12

Case of Essential Syphilitic Fever. J. Montes Pareja.—p. 853.
*Lumbar Puncture in Diabetes. C. Bordoni Posse.—p. 858.
Bismuth in Treatment of Inherited Syphilis. M. Ferreria.—p. 862.
*Sensory Disturbances with Cortical Lesions. A. Sarno.—p. 865.
Cure of Cicatricial Stenosis of Esophagus. Aquiles di Lorenzo.—p. 877.
Pneumococcus Peritonitis in Infant. P. E. Duprat.—p. 882.
Osteomyelitis with Multiple Foci. R. M. del Campo.—p. 888.
Serologic Tests of Cerebrospinal Fluid. A. Prunell.—p. 893.

Lumbar Puncture in Diabetic Acidosis.—Bordoni Posse adds another case to the few on record in which diabetes seemed to be favorably influenced by lumbar puncture. Lhermitte has reported subsidence of glycosuria and polyuria after lumbar puncture in two cases of diabetes. In Bordoni Posse's case there was intense acetonuria and diaceturia, and 6 liters of urine. After lumbar puncture, without change of diet, the glycosuria dropped from 360 to 5 gm. and the polyuria to 1 liter. The acetonuria persisted, but finally subsided after an oatmeal day. The man, aged 35, left the hospital free from glycosuria and polyuria and acetonuria. The diet contained 1,900 calories and 60 gm. of carbohydrates. The sugar content of the blood was 1.15. The author suggests that lumbar puncture relieves pressure on the central nerve centers which control the sugar content of the blood.

Sensory Disturbances from Cortical Lesions.—Sarno describes a personal case and mentions several from the literature which indicate a radicular distribution of sensory disturbances from injury of the cerebral cortex.

Archiv für Gynäkologie, Berlin

Jan. 27, 1923, **116**, No. 3

*The Capillary Circulation in Eclampsia. Hinselmann et al.—p. 443.
Relations Between Polycythemia and Hypercholesteremia in the Pregnant. R. Benda.—p. 506.
*Metabolism and Internal Secretion During Pregnancy. Knipping.—p. 520.
*Pregnancy Kidney Disease. Hinselmann et al.—p. 535.
Wassermann and Sachs-Georgi Reactions During Childbirth. Willenbücher.—p. 558.
*Action of Placenta Extracts: Placenta Optones. E. Puppel.—p. 571.
Teratoma of Umbilical Cord. P. Haendly.—p. 578.
*Immunization Against Streptococcus Infection. N. K. Louros.—p. 589.
Overlapping Placentas with Bichorial Twins. R. Meyer.—p. 599.

*Metastasis with Ovarian Cancers. A. Lessing.—p. 621.
Angiosarcomamyoma of the Uterus. R. Meyer.—p. 638.
*Nature of the Different Cells of Sex Glands. F. Scheunig.—p. 660.

The Capillary Circulation in Eclampsia.—Hinselmann and his co-workers give charts showing the fluctuations in the circulation through the capillaries in nineteen cases. They have records of six other cases and Nevermann has published eight others. There is thus a total of thirty-three cases of eclampsia systematically tested. The circulation in the capillaries was found abnormal in 90 per cent.; "a new fact," they say, "of the utmost importance." Intermittent spasm of the capillaries repeatedly arrested the blood stream completely, but even between these periods of complete stasis the blood stream in the capillaries was found exceptionally sluggish. Delivery is the most potent means at our command for influencing the capillary circulation. Venesection likewise aids, but no influence was manifest from the drugs and organ extracts tested to date. A tendency to capillary spasm was found in healthy pregnant women to an average stasis of 4.6 per cent.; in kidney disease, just before delivery, the stasis averaged 16 per cent. In severe eclampsia it averaged up to 100 per cent.; that is, the circulation in the capillaries was entirely arrested. The pregnancy induces the angiospasm. The angiospasm subsides after delivery, sometimes promptly, but usually slowly. Search for the reasons for this leads into an entirely new field. There is every reason to assume that the tendency to spasm—which we can inspect and record in the capillaries—affects the internal organs likewise. A skin-kidney-brain combination would explain much of the clinical picture in eclampsia. One of the charts in a severe case of pre-eclampsia shows in one eight-minute period that the stream was arrested sixty-three times, the stasis forming 42 per cent. of the total period.

The Internal Secretions During and After Pregnancy.—Knipping presents evidence to sustain the assumption that changes in the pituitary are responsible for the changes in the basal metabolism toward the close of pregnancy. The pituitary seems to be responsible also for the tendency to corpulence at the menopause. He thus exculpates the ovary and thyroid, and incriminates the anterior lobe of the pituitary, which opens up a prospect of more effectual treatment, especially in the corpulence or cachexia that develops in connection with a childbirth.

Pregnancy Kidney Disease.—Charts from six cases demonstrate the extremely abnormal condition of the capillary circulation in pregnancy kidney. The supply of blood to the tissues is thus intensively impaired. The disturbance in the circulation may persist for months afterward. The pregnancy kidney disease seems to obey in every respect the laws of acute kidney disease of any kind. Microscopic study of the capillary circulation seems to be giving an insight into some of these laws.

Experimental Research with Placenta Extracts.—Puppel asserts, on the basis of the research described, that placenta extract obtained by Abderhalden's method exerts a specific action indicating an internal secretion.

To Immunize Against Puerperal Infection.—Louros has been applying on a large scale at Athens preventive vaccine therapy of streptococcus infection, when the women could be treated a few days before delivery. He also applied vaccine treatment as a routine measure at delivery. The agglutinins in the blood seemed to indicate that the preferable method was the injection of 250 and 500 millions about the twentieth and the tenth day before delivery. There were no failures, he says, among the hundreds of women thus treated. He adds that Bumm is now trying at Berlin this active and simultaneous immunization against puerperal streptococcus sepsis.

Ovarian Cancer.—Lessing reports four cases of primary or secondary ovarian carcinoma. In one case the primary cancer was in the left ovary and there was metastasis in the other ovary, both tubes and the uterus.

Nature of Different Cells in Sex Glands.—Scheunig examined sections of testicles and ovaries from fetuses of 2 months to term, with special study of what Steinach calls F cells. Six colored plates of the findings from thirteen fetuses sustain his views, which do not harmonize with those of Steinach.

Archiv für klinische Chirurgie, Berlin

Jan. 27. 1923, **122**, No. 3

Case of Cystic Adamantinoma. H. Winter.—p. 567.
Bone Changes from Inadequate Diet. Seeliger.—p. 588.
*Fatality After Local Anesthesia. R. Eidens.—p. 603.
Idiopathic Cysts in Common Bile Duct. K. Zipf.—p. 615.
Phlegmons and Gangrene of Penis and Scrotum. Esau.—p. 635.
Subcutaneous Rupture of Rectus Muscle. K. Wohlgemuth.—p. 649.
Chronic Parotitis. K. Vogeler.—p. 655.
*Exophthalmic Goiter: Diagnosis and Prognosis. A. Troell.—p. 664.
*Postoperative Tetany. M. and K. Grasmann.—p. 699.
Hydronephrosis from Accessory Renal Vessels. C. Häbler.—p. 732.
*Resection of Choroid Plexus. C. Hinrichsmeyer.—p. 742.
*Transfusion of Blood to Arrest Hemorrhages. H. Stegemann.—p. 759.
Intestinal Injury Diagnosed from Track of Bullet. Büsing.—p. 782.

Fatalities with Local Anesthesia.—Eidens compares a personal fatal case of procain poisoning with a number of similar cases from the records. In all, the anesthetic had been injected into the neck region. In his case this was for removal of a cancer of the tongue in a man aged 62. Analysis of the data teaches that the dose of procain should be considerably smaller for blocking the nerves in the neck than elsewhere, as the balance between the vagus and sympathetic systems here is easily upset. The anesthetic is absorbed by the large nerves or reaches the nerves by getting into the blood. If collapse occurs, injection of 1 c.c. of 1:1,000 epinephrin solution directly into the heart might be tried as a last resort.

Exophthalmic Goiter.—Troell's report on sixty-two cases of exophthalmic goiter since 1919 has already been summarized (May 27, 1922, p. 1674), when published elsewhere. He reiterates that the anatomic changes in the thyroid are what determine the special symptoms in the different cases. In particular, the evidence indicates that not merely excessive, but perverted, functioning of the thyroid may be responsible for exophthalmic goiter. The resulting symptoms fall naturally into two groups. Each group is influenced by certain measures and not by others. The more toxic goiters are of the diffuse type; the blood pressure is high, the tolerance for carbohydrates low.

Postoperative Tetany.—Study of facts suggests that lack of care in avoiding the removal of the parathyroids is increasing the incidence of postoperative tetany. The upper parathyroids can almost always be left unmolested, by leaving intact the posterior branch of the superior thyroid artery. The authors denounce the practice of ligating all four arteries, and expatiate on the gravity of postoperative tetany. In Guleke's compilation of 160 cases, it proved fatal in 25 per cent. and incapacitated a further 17 per cent.

Resection of the Choroid Plexus.—In Hinrichsmeyer's case the hydrocephalus had induced spastic hemiplegia and finally progressive epilepsy. The patient was a boy, aged 10, and the hydrocephalus was ascribed to birth trauma. After two operations to divert the fluid it was secreted in enormous amounts. To arrest this, Hinrichsmeyer resected the choroid plexus on that side, and the production of fluid materially declined. The boy died in epileptic coma three weeks later. The right lateral ventricle had been transformed into an actual cyst.

Arrest of Hemorrhage by Transfusion of Blood.—Stegemann asserts that this is the surest and most rapidly acting means to arrest parenchymatous hemorrhage and hemorrhage from small vessels. Transfusion of blood supplies the lacking elements in the blood directly, and also stimulates indirectly their production. Its special field is in hemophilic bleeding and in anemia from excessive loss of blood. To arrest hemorrhage, small amounts, about 200 c.c., are all that is necessary.

Feb. 10, 1923, **122**, No. 4

*Gastric Ulcer with Goiter. Haberer.—p. 789.
*Draining the Common Bile Duct into the Duodenum. Haberer.—p. 796.
*Chronic Subphrenic Peritonitis. O. M. Chiari.—p. 804.
Abnormal Fat Deposits in Omentum. O. Maier.—p. 810.
*Intratracheal Thyroid Tumors. O. Maier.—p. 825.
Mechanism of Development of Retropharyngeal Goiter. O. Maier.—p. 836.
*Clinical Features of Goiter. H. Czermak.—p. 843.

*Influenza as Factor in Operative Complications. H. Czermak.—p. 916.
*Mechanism and Fate of Pseudarthrosis. S. Mitterstiller.—p. 939.

Gastric Ulcer with Goiter.—In Haberer's patient a diverticulum in the esophagus, a retrosternal goiter, and a bleeding gastric ulcer all required separate operations at the same time. He has witnessed this association of gastric ulcer or catarrh with a large goiter in other cases, and regards the interference with the circulation from the goiter as the main factor in the stomach disease.

Draining Common Bile Duct Into Duodenum.—Haberer refers to cases in which there is a possibility of calculi being left when the lower end of the bile duct is thick and the lumen small. Under these conditions he joins the common bile duct, side-to-side, with the upper duodenum, always with good results.

Chronic Subphrenic Peritonitis.—Chiari found the symptom that first attracted attention was a peritoneal friction sound. This sound lasted sometimes only a few hours or days and then disappeared, but returned at the slightest "cold." The intervals sometimes reached months. The sound can be heard at the costal arch from the median line to the axillary line and can be perceived with the hand laid flat on the wall. A history of pleurisy aids in the diagnosis. The pains in some cases resembled gallbladder colic and there was generally pain in the shoulder. The pains are aggravated by movements and deep breathing more than is the case with gallbladder and stomach affections. Treatment as for rheumatism is generally promptly effective. Adhesions between the liver and the diaphragm testify to the preceding inflammatory process. The infection is not virulent and the general health does not suffer much. The ordinary laparotomy incision does not reveal this inflammatory subphrenic peritonitis. It may thus have escaped detection in certain cases of supposed appendicitis in which nothing to explain the abdominal symptoms was discovered.

Intratracheal Tumors.—Maier compares two cases of intratracheal tumor at the Innsbruck surgical clinic with twenty-seven from the records. The intratracheal adenopapilloma and cystadenoma, originating in the thyroid in his personal cases, were successfully removed. Zimmermann's case warns that an intratracheal tumor should be looked for when the breathing is still defective after thyroidectomy.

Goiter.—Czermak devotes seventy-three pages to this study of the etiology, treatment and outcome of goiter. It is based on 2,005 cases in Haberer's surgical service at Innsbruck since 1912. Exophthalmic goiter was noted in 2.6 per cent. of 1,657 cases. All were apparently cured by operation.

Influenza and Surgery.—Czermak discusses influenza complicating a surgical affection, and surgical complications of influenza. It reduces the resisting powers to such an extent that postoperative sepsis is more liable. No operations that can be deferred should be attempted within four months of an attack of influenza. Haberer always inquires in regard to this when contemplating an operation.

Pseudarthrosis.—Thirty-six photomicrograms accompany Mitterstiller's seventy-page article on the conditions inducing pseudarthrosis, the microscopic findings, and the outcome. It is based on four cases.

Deutsches Archiv für klinische Medizin, Leipzig

December, 1922, **141**, No. 3-4

*Diseases Due to Strongyloides Intestinalis. E. Thomas.—p. 129.
*Epinephrin and White Corpuscles. F. O. Hess.—p. 151.
*Endocarditis Lenta. Lämpe.—p. 165.
*Silicic Acid in Treatment of Infectious Diseases. E. Thoma.—p. 175
Calcium in Cerebrospinal Fluid. H. Leicher.—p. 196.
Liver Function Tests. R. Stahl.—p. 204.
Wilson's Disease. J. Löwy.—p. 213.
"Metabolism of Infants." Edelstein and Langstein.—p. 219.
Reply. S. Lauter.—p. 223.
Physiology of the Thymus. H. W. Knipping.—p. 224.
Urobilinogen Determination. W. Hueck and T. Brehme.—p. 233.
Blood Stream in Capillaries. W. Parrisius and Winterlin.—p. 243.
Addition to "Corynebacterium Abortus Infectiosi Bang." M. Klimmer and H. Haupt.—p. 252.

Disease Due to Strongyloides Stercoralis.—Thomas reviews the literature on this parasite, *Anguillula intestinalis*, and publishes a case with recovery after thymol. The patient suffered from attacks of diarrhea, with blood, mucus and many larvae of anguillula in the feces. There was an increase in eosinophils in the blood and stools, and many Charcot-Leyden crystals in the feces.

Epinephrin and White Corpuscles.—Hess attributes the divergences in the literature to several causes. The time of taking the blood sample and the stage of the disease are important. In the beginning of typhoid the reaction is normal. During the high fever, the reaction is minimal, but it becomes very strong during the stage of remission. The most important factor was found by Csépai and Sanguinetti, who showed that the supposed lack of reaction (increased blood pressure) to epinephrin is chiefly due to diminished resorption in the subcutaneous tissue, although it does not explain all cases. The intravenous injection is disagreeable to the patient and the blood changes pass too quickly.

Endocarditis Lenta.—Lämpe reports his experience with nineteen cases of this disease. It seems that its character has changed in the last few years although the most important signs described by Schottmüller were present in most of them. A valvular defect (usually aortic), anemia, enlarged spleen, and remittent fever are the cardiac symptoms. Embolism occurs later. The first kidney signs of the disease are red corpuscles in the sediment, which must be examined even in the absence of albumin. The blood culture was very often negative, and in some cases hemolytic streptococci grew instead of the expected viridans. The disease lasts for months, and most of the patients die.

Silicic Aid in Treatment of Infectious Diseases.—Thoma injected a colloidal solution of silicic acid into rabbits. He found that it can prevent infection by human tubercle bacilli, but it did not show any therapeutic effects on animals previously infected. He had the impression that the infection spread rather more extensively in the treated animals. Similar negative results were obtained in several patients, with only one exception. Leukocytosis and fever follow the injection. He tried the preparation in a few cases of typhoid, a dysenteric polyarthritis, and an influenza bronchopneumonia, and believes that it had a favorable influence in these cases, due to the general action of colloids.

Jahrbuch für Kinderheilkunde, Berlin

December, 1922, **100**, No. 3-4

*Kidney Function Tests in Children. L. Mendel.—p. 123.
*Scurvy and Infections. Hamburger and Goldschmidt.—p. 210.
Whooping Cough in Infants. K. Gottlieb and B. Möller.—p. 222.
*Instability of Colloids in Infants' Serum. J. Duzár.—p. 237.
*Associated Tonsillitis. A. Orgler.—p. 243.

Kidney Function Tests in Children.—Mendel used the dilution and concentration tests, and determination of hydremia, blood chlorids and nonprotein nitrogen in healthy and nephritic children. He complains of the complications brought into the valuation of the tests by simultaneous affections of the tissues. He found, in healthy children, brief hydremia following the ingestion of fluids and preceding the diuresis.

Scurvy and Resistance to Infection.—Hamburger and Goldschmidt examined the serum of children and animals suffering from scurvy. They found that the serum had the same amount of normal amboceptor and complement, as the healthy controls.

Instability of Colloids in Infants' Serum as Modified by Age.—Duzár tested the serum of infants with dilute alcohol and noted the intensity of flocculation produced. The serum of the new-born is labile, though less than in adults; it increases in stability up to the second month. After this period the stability decreases. He agrees with Ruzicka's theory of the hysteresis of protoplasm, which explains the process of growing old as a function of decrease of the dispersity of colloids.

Associated Tonsillitis.—Orgler observed the tonsils in vaccinated children and found in some on the fifth and sixth day a swelling. In others little points appeared, while other children had a typical follicular tonsillitis on the seventh and tenth day after vaccination. He points to the possibility that tonsillitis in infectious diseases does not prove that the tonsils are the portal of infection.

Monatsschrift für Kinderheilkunde, Leipzig

December, 1922, **24**, No. 3

*Spontaneous Pneumothorax in Children. B. Schönfeldt.—p. 225.
*Syphilis in Third Generation. A. Kraus.—p. 236.
*Chemistry of Brain in Dystrophy. S. Ederer.—p. 244.
Xerophthalmia in Children. G. Genck.—p. 251.
Recent Works on Milk Hygiene and Dairies. Grimmer.—p. 257.
Recent Literature on Helminthiasis in Children. H. Brüning.—p. 331.

Spontaneous Pneumothorax in Children. — Schönfeldt observed four fatal cases of spontaneous pneumothorax and two of emphysema of the mediastinum and subcutaneous tissue in children suffering from influenzal pneumonia. One of the latter cases recovered. Two of the cases were caused by perforation of an abscess, one by rupture of an emphysematous bubble. The fatal case of mediastinal emphysema was due to perforation of a large bronchus in tuberculous tissue. Roentgen rays may furnish the only decisive diagnostic sign in some cases.

Syphilis in Third Generation.—Kraus describes a case of congenital syphilis in an infant whose mother had been also treated for syphilis shortly after her birth. The mother has Argyll Robertson pupils. The Wassermann reaction was positive in the infant, in the 23 year old mother, and in the grandmother, who had had several abortions preceding the birth of the mother. The father of the infant has no signs of syphilis, and responded negatively to the Wassermann test on two occasions.

Chemistry of Brain in Dystrophy. — Ederer found in the brains of dystrophic infants a decrease in unsaturated phosphatids to a third of the normal, and an increase in the saturated phosphatids, cerebrosids and sulphatids to twice the normal values.

Zeitschrift für Tuberkulose, Leipzig

January, 1923, **37**, No. 4

*Transient Tuberculous Phenomena in Children. E. Rüscher.—p. 241.
*Forms of Tuberculosis and the Age. K. Lydtin.—p. 260.
*Origin of Tuberculosis of Suprarenal Capsules. F. Schwarz.—p. 271.
Conc'n.

Passing Inflammatory Tuberculous Phenomena in Children. —Rüscher discusses different inflammatory conditions in tuberculous patients, and publishes some cases. The toxic etiology of these passing affections becomes more and more restricted in favor of tubercle bacilli. Tuberculids of the skin, phlyctenosis, purpura, some cases of arthritis, serous meningitis, and other exudative processes on serous membranes belong to this borderline between toxic and bacillary reactions.

Relation of Different Forms of Tuberculosis to the Age.—Lydtin examined in approximately 200 patients the relation of the age to the form of the tuberculosis. The percentage of proliferating, cirrhotic and exudative forms is the same in every age. The development of these forms is different. In young persons the tendency goes from a proliferating to an exudative form, while the exudative form in older people has temporary ameliorations of the cirrhosis and cavity types.

Origin of Tuberculosis of Suprarenal Capsules.—Schwarz examined in serial sections the suprarenal capsules from twenty cases of tuberculosis. In 83 per cent. of the cases of miliary tuberculosis, the suprarenals, especially the right, were affected. There was no difference between cortex and medulla. In sixty-five cases of chronic tuberculosis of suprarenals, hematogenous infection from a primary tuberculosis of the lungs was the cause.

Zentralblatt für Chirurgie, Leipzig

Feb. 10, 1923, **50**, No. 6

Cuff Method of Anastomosis After Stomach Resection. Goepel.—p. 201.
Kappis' Splanchnicus Anesthesia in Diagnosis. Kulenkampff.—p. 208.
An Artificial Knee Joint. C. ten Horn.—p. 213.
*Roentgen-Ray Examination of Subphrenic Abscess. J. Sommer.—p. 215.
*Operative Fixation of Floating Kidney. S. Kostlivy.—p. 217.
Incarcerated Hernia. E. Pólya.—p. 219.
What Causes a Ligature of Cystic Duct to Open? Hofmann.—p. 220.
Laceration of Carotid Artery from Blow in Face. Pólya.—p. 223.

Roentgen-Ray Examination of Subphrenic Abscess.—Sommer recalls that the air bubble over the abscess always rises to the highest point of the abscess cavity. The shifting of the position of the air bubble as the body is moved and twisted allows exact localization, and shows the most direct mode of access. If the abscess does not contain air, 30 c.c. of the fluid can be withdrawn and air injected.

Operative Fixation of Floating Kidney.—Kostlivy describes a method of fixation of the kidney that he has employed with good success in twenty-six cases. The use of a strip of fascia to suspend the floating kidney is not new, but other surgeons have sought to raise the lower pole. This throws the kidney into a position in which its equilibrium is easily disturbed; for instance, an extreme drop of the diaphragm, as in vomiting, may easily tip it forward, as Kostlivy observed in a case in which the Henschen method of fixation had been used. Therefore, he encircles the kidney with the strip of fascia at its smallest transverse diameter. The interval since operation in many of the cases is up to two years, and recent examinations show the kidney still firmly in place. The article has one illustration, which makes plain the technic.

Feb. 17, 1923, **50**, No. 7

The Milk-Sirup Enema. H. Küttner.—p. 249.
Technic of Rectum Amputation. H. Braun.—p. 250.
Hemorrhagic Erosions in Mucosa of Excluded Pylorus. Aoyama.—p. 252.
Physiologic Gastro-Enteropexy. C. Hammesfahr.—p. 254.
*Recognition of Benign Gastric Tumors. F. Erkes.—p. 256.
Suture of Opening in Broad-Based Hernias. C. Bayer.—p. 257.
*Construction of Artificial Vagina. N. Hortolomei.—p. 259.
*Open Treatment of Fracture of Heel-Bone. E. Becker.—p. 262.
*Parchment Paper for Drains. M. Madlener.—p. 264.
Action Current of Granulating Wounds. Melchior and Rahm.—p. 265.

The Recognition of Benign Gastric Tumors.—Erkes states that benign gastric tumors are rare. Tilger found in 3,500 necropsies only fourteen gastric tumors consisting of connective tissue and muscle. In his own case the correct diagnosis was established by a roentgenogram. The circular-shaped filling defect, with almost smooth edges, pointed to a benign tumor. The same observations were made by Dessecker and Konjetzny in their recent cases, in Dessecker's case a fibromyoma and in Konjetzny's case a fibroma. A carcinoma always shows irregular outlines in the roentgenogram. Transverse stomach resection, such as was employed in Dessecker's case, would seem scarcely necessary, as simple excision at the base of the pedicle, as was done in Konjetzny's case and with success in his own case, accomplishes the purpose in a simpler manner.

Construction of Artificial Vagina from the Small Intestine. —Hortolomei reports 4 cases in which he constructed an artificial vagina in accordance with the Mori-Baldwin procedure. In 3 cases the vagina so constructed functioned properly and was durable. In the fourth case death ensued from peritonitis. The records show a total of 55 cases in which this method was applied, with a mortality of 21.8 per cent. On the other hand, the Schubert procedure has been employed in 48 cases without a single death. The Schubert method (construction of the vagina from the large intestine) is comparatively free from danger, as the peritoneum is not opened, but the Mori-Baldwin procedure is easier technically.

Fracture of Os Calcis.—Becker discusses the best means of securing coaptation in comminuted or compression fractures of the os calcis. Casts, splints and bandages are not sufficient to keep even the coaptated fragments in place. He prescribes complete rest and applies an ice bag for from ten to fourteen days or until the effused blood has been mainly absorbed. Then, without expelling the blood from the operative area, about a thumb's width below the external malleolus he makes a horizontal incision a few centimeters in length. Through this incision an elevator is passed downward and pushed directly under the lower surface of the bone toward the inner margin of the foot. By lowering the handle of the elevator, the tip is felt under the skin just below the internal malleolus. After making a small horizontal incision, the elevator is pushed through and by energetic traction on the tip and handle, the fragments are reduced to place. One perceives at once that the traumatic flatfoot is disappearing under one's hand and that the normal arch is being perfectly restored. Mechanical fixation of the reduced fragments follows: While an assistant holds the elevator in position, the operator passes an electric drill postero-anteriorly through

the skin and bone of the calcaneum. The drill is left in the fractured bone, lest its withdrawal and the insertion of a nail or a screw disturb the relations of the fragments. The elevator is now removed, and a bandage is applied to maintain the arch of the foot. A roentgenogram will show whether the drill lies properly and whether the fragments are coapted in the manner desired. A projecting bone splinter may be removed after about six weeks, and then the drill is also removed. When the wound heals, the usual medicomechanical after-treatment is begun. Becker's results were good in every instance with this operative reduction of the bone fragments and fixation with a drill left in place until healing is complete.

Parchment Paper for Drains.—Madlener again calls attention to the value of parchment paper for drains. Parchment paper does not irritate the wound, does not imbibe moisture and does not exert as much pressure as a glass tube. The parchment is sterilized and used dry. It becomes soft from the action of the wound secretions, does not adhere to the surrounding tissues, and is easily removed without causing pain. As thousands of cases have shown, it functions well as a drain. Secretions drain along both the inner and the outer walls.

Zentralblatt für Gynäkologie, Leipzig

Feb. 3, 1923, **47**, No. 5

Lumbar Puncture in Treatment of Eclampsia. Heynemann.—p. 186.
Skin Affections of the Menopause. R. Bauer.—p. 188.
Primary Abdominal Pregnancy. L. Seeligmann.—p. 190.
Ovarian Pregnancy at Term. J. Jacub.—p. 193.
*Conservative Treatment of Pyosalpinx. E. Hönck.—p. 195.
My Experiences with the Kjelland Forceps. E. Meumann.—p. 197.
Treatment of Leukorrhea. A. Loeser.—p. 205.
"Rupture of Symphysis During Childbirth." Stiassny.—p. 207.

Conservative Treatment of Pyosalpinx by Abdominal Incision.—Hönck refers to Ehrlich's case in which gonorrhea had been acquired during pregnancy and had given rise to bilateral pyosalpinx. The pain became so severe that laparotomy was resorted to, and both tubes were found swollen to the size of the thumb and filled with pus. Without further intervention the abdomen was closed. The patient recovered, and the pregnancy progressed to term. Hönck gives three similar cases that he has observed. From his observations he would not hesitate in suitable cases to open the abdomen, as a conservative form of treatment of pyosalpinx. The operation itself, together with the manipulation of the diseased organs, evidently produces marked resorption processes, similar to those often observed in tuberculosis of the peritoneum. Many cases of pyosalpinx do not heal after months and even years of treatment, and continue to cause pain and discomfort. Heretofore a radical operation on such organs could not always be avoided, even in young persons. In the future, we may try breaking up some of the worst adhesions, avoiding the release of pus. To increase the reactive process, Hönck proposes, in the presence of indolent tumors, to apply artificial heliotherapy directly to the diseased organs. If proper care is taken, no damage will be done.

Feb. 10, 1923, **47**, No. 6

*Premature Births and Congenital Syphilis. E. Kehrer.—p. 226.
Rectovaginal Adenomyohyperplasia. Pincsohn.—p. 231.
Umbilicus Sign of Intraperitoneal Hemorrhage. Schmid.—p. 234.
Spontaneous Separation of Ovarian Cyst in Douglas' Pouch. Alex.—p. 236.
Death from Gas Embolism After Abortion. H. Naujoks.—p. 240.
Subcutaneous Emphysema During Childbirth. Mittweg.—p. 243.
Combined Interruption of Pregnancy and Sterilization. Doerfler.—p. 244.

Premature Births and Congenital Syphilis.—Kehrer gives the results of his studies on the frequency of syphilis in premature births; the influence of syphilitic mothers on the child; and the prognosis for children with congenital syphilis. He interprets his statistics—17,167 childbirths, including 1,541 premature—as showing that syphilis plays no considerable part as a direct cause of premature births, or, in any event, that it does not possess the importance which has hitherto been ascribed to it. However, he found that the prognosis for all children born of syphilitic mothers is bad: not only during intrauterine development but also as regards susceptibility to external influences after birth.

Feb. 17, 1923, **47**, No. 7

Pathology and Therapy of Posterior Parametritis. Bröse.—p. 258.
*Phlorizin Test in Diagnosis of Pregnancy. K. Burger.—p. 260.
Diffuse Hypertrophy of Mamma at Puberty. A. Heyn.—p. 263.
*Roentgen Irradiation in Epilepsy. M. Fraenkel.—p. 265.
*Plastic Closure of Hernial Opening. Hilgenreiner.—p. 268.
Sliding Hernia with Involvement of Tube. F. Seibold.—p. 270.
*Suture of Uterus in Cesarean Section. A. von Reding.—p. 272.
Operative Treatment of Uterine Hemorrhages. Pfeilsticker.—p. 275.

The Phlorizin Test in the Diagnosis of Pregnancy.—Burger applied the phlorizin test to 55 women, 28 of whom were pregnant and 27 were not. Of the 27 nonpregnant women five gave a positive reaction, or 18.5 per cent. Of the 28 pregnant women five gave a negative reaction. Pregnancy was in most cases less than three months advanced. Since the test when applied to pregnant women is positive in a large majority of cases, it may be regarded, when positive, as indicating, with a high degree of probability, a state of pregnancy.

Roentgen Irradiation in Epilepsy.—Fraenkel describes in detail a case of epilepsy in a woman aged 42, in which roentgen irradiation combined with arsenic medication effected a complete cure. He refers to Strauss' contention that epilepsy is not a brain disease as is frequently erroneously assumed, but is a constitutional disease, the essential character of which lies in a disturbance of the functioning of endocrine glands.

Plastic Closure of Hernial Opening by Means of the Uterus.—Hilgenreiner emphasizes the point that plastic closure of a hernial opening by means of the uterus should be applied only exceptionally; as when the usual radical operations do not suffice, or when this method is simpler than other methods.

Suture of the Uterus and Uterine Drainage in Cesarean Section.—Von Reding holds that even a single suture in the uterus is not indicated in all cases of cesarean section, but only in the "clean" cases in which no infection need be feared. In the contaminated cases, in which the wound must be regarded as infected or in which the possibility of a wound infection is present, he regards suturing of the uterus as contraindicated, because this is entirely opposed to the surgical principles of wound treatment. No experienced surgeon, he argues, would think of suturing an infected or even a suspicious looking wound, though it were only a superficial wound, since, in case of subsequent pus formation, the outflow of the pus would be obstructed and would lead to severe retention symptoms of a general and local nature. Retention of pus may lead either to general infection, or, more frequently, remains localized and an abscess forms. If the uterine wound is left open and an abscess develops, it can extend in the direction of the uterine cavity and thus find an outlet. Moreover, leaving the uterus wound open presents no essential disadvantages; in case no complications arise, a primary, though somewhat delayed, wound closure can be expected. Von Reding explains also his drainage method, with several stout catgut loops tied through the edges of the wound on each side. This holds the lips of the incision slightly apart.

Polska Gazeta Lekarska, Lwow

July 9, 1922, **1**, No. 28

Spondylitic Ankylosis of the Spine. L. Sobieszczanski.—p. 573.
Wassermann Reaction and Its Practical Use. F. Venulet.—p. 574.
*Treatment of Typhus Fever. J. Tomanowski.—p. 577.
Colloids and Non-specific Proteins in the Treatment of Skin and Venereal Diseases. W. Lukasiewicz.—p. 577. Conc'n No. 30.
Dentistry in Poland. A. Cieszynski.—p. 585. Conc'n No. 29.

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Hysteric Paralysis of Lower Extremities with Pseudo Symptoms of Mendel-Bechterev and Rossolino. A. Domaszkiewicz.—p. 589.
Mechanism of Pulse Acceleration in Different Pathologic States. W. Janowski.—p. 590.
Antisyphilitic Action of Bismuth. J. Merenlender.—p. 592. Cont'd.

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Auto-hemotherapy in Pruritic Skin Diseases. T. Dybowski.—p. 605.
Pathology of Lupus Erythematodes. L. Füllenbaum and D. Goldman.—p. 607.

Treatment of Typhus Fever by Method of Dr. A. Brenner.—Tomanowski reports thirty-four cases of typhus treated

with inhalation of oxidized turpentine, according to Brenner's technic. All patients recovered, while in a previous series of fifty-one patients, treated by ordinary methods, seven died. This is a death rate of 14 per cent. Tomanowski gives the following advantages of Brenner's method over others: 1. The patient sleeps better under the turpentine treatment. 2. Delirium and other nervous manifestations are much less than with other methods of treatment and the patient is quiet. 3. The inhalation of turpentine materially reduces the tendency to respiratory complications. 4. The patient eats better. 5. The ozonized turpentine given by inhalation refreshes the air in the wards.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 16, 1922, **2**, No. 25

*Syphilitic Disease of Cutaneous Vessels. S. Mendes da Costa.—p. 2695.
*Influence of Infectious Diseases on Heart and Vessels. J. Kuiper.—p. 2704.
*Rupture of the Aorta. W. M. de Vries.—p. 2713.
Cardiovascular Diseases and the Eyes. W. P. C. Zeeman.—p. 2741.
Accidental Heart Murmurs in Children. J. de Bruin.—p. 2757.
Fibrillation of Part of Heart. S. de Boer.—p. 2772.
Radiology of Disease in Heart and Aorta. N. Voorhoeve.—p. 2797.
*Vascular Disease in Women. A. H. van Rooy.—p. 2817.
Drugs and Baths in Cardiovascular Disease. E. Laqueur.—p. 2839.
*Hemangiomas. S. Mendes da Costa.—p. 2874.

Disease of the Cardiovascular System.—The ten long articles in this bulky number are the lectures delivered by the members of the medical faculty at Amsterdam in a postgraduate course on the heart and vessels. The topics in the three preceding years of this annual course were syphilis, tuberculosis and cancer.

Syphilitic Disease of the Vessels in the Skin.—Da Costa discusses the vascular changes in syphilids; also in syphilitic phlebitis and arteries, and in livedo racemosa.

Influence of Infectious Diseases on Heart and Vessels.—In the course of this review, Kuiper warns that we cannot place much reliance on digitalis in acute infectious diseases. Camphor, caffein and strychnin are better. Sleep may be of more value than drugs, and hence caffein had better not be given in the evening. Epinephrin dilates the coronary and contracts other arteries; consequently it helps to maintain a failing heart. With dyspnea from weakness of the heart, oxygen may give great relief, and in whooping cough may tide the patient past a danger point. He gives the oxygen at first for fifteen minutes and then for five in each fifteen minutes. In conclusion he warns the physician to oversee the first application of febrifuge baths in acute infectious diseases. They are liable to depress the heart more than is generally suspected.

Rupture of Aorta.—De Vries draws the clinical picture of rupture of the aorta as he observed it in 4 traumatic cases. In 5 others the rupture was spontaneous, and in 10 rupture of an aortic aneurysm occurred. Five cases were associated with carcinoma of the esophagus. These 24 cases were encountered in the course of 6,500 necropsies.

Pathology of the Vascular System in Women.—Van Rooy, for varices in the external genitals recommends compression in preference to incision. Clamping a varicose vein to arrest hemorrhage often entails rupture at another point. Embolism is the great danger from simple thrombophlebitis and phlegmasia alba. It is encountered in about 0.3 per cent. of the cases. The electric light bath is useful in treatment and does not require the moving of the leg. No active movements should be allowed until the temperature has been normal for two weeks, and the patient should not be allowed to leave the bed for a month at least. Some insist that 60 per cent. of these patients never regain the full use of the limb. Symptoms suggesting chronic salpingitis but with negative gross findings on palpation may be traceable to varicose enlargement of veins in the broad ligament. If the symptoms persist under palliative measures, an operation on the varicocele is advisable. Several illustrative cases are given. In van Rooy's four cases, years of treatment had been futile as the symptoms constantly returned, but cure was complete after operation in three cases. The fourth case was complicated by general asthenia and the cure is not so complete. In one of the cases a phlebolith had formed in the vein.

Hemangiomas.—Da Costa reviews ten kinds of hemangiomas in addition to the idiopathic telangiectasias.

Dec. 23, 1922, **2**, No. 26

*Excretion of Hippuric Acid. I. Snapper and A. Grunbaum.—p. 2910.
*Continuous Lumbar Drainage. J. F. W. S. v. N. Schuuren.—p. 2916.
*Eye Disturbance in Hysteria. F. S. Stibbe.—p. 2921.
*Card Library. W. Schuurmans Stekhoven.—p. 2926.
*Organs Without Local Nervous Apparatus. G. van Rijnberk.—p. 2930.

Cause of Delay in Excretion of Hippuric Acid with Contracted Kidney.—Snapper and Grunbaum found only traces or no hippuric acid in the blood in three normal subjects. With incipient kidney disease, from 10 to 25 mg. of hippuric acid was found in 250 c.c. of blood, and very little was excreted. The amount excreted was still less in four patients with severe renal insufficiency and the blood showed from 60 to 90 mg.

Continuous Lumbar Drainage.—Schuuren relates that a boy aged 5 seemed to be recovering from meningococcus meningitis by the thirteenth day. Marked benefit had followed lumbar puncture. Then severe symptoms flared up again and Schuuren arranged for continuous drainage of spinal fluid. The benefit was pronounced. The flow of fluid was easily regulated by raising or lowering the foot of the bed. No by-effects were observed during the two weeks of this drainage. Recovery was complete, except for deafness, by the end of a month from the first symptoms. The drainage was carried out with a loop of silver wire introduced through the cannula after withdrawal of the needle. The cannula was then removed. The antiserum could be injected at a higher interspace to avoid interfering with the drainage. None had been given in this case. Continuous wire drainage seems logical and effectual, and is certainly less strain than often repeated lumbar puncture.

Visual Disturbances in Hysteria.—Stibbe's patients were a young man and young woman, natives of Java. The visual disturbances were concentric contraction of the visual field, achromatopsia and dyschromatopsia, with diplopia in only one eye. The diplopia was not modified by instillation of atropin.

A Card Library.—Stekhoven describes a method for the separate alphabetical filing of each abstract. A library of contemporaneous periodical literature with the maximum of accessibility can be thus provided. He has organized a central cooperative exchange for foreign medical journals, and has now planned this card system to supplement it.

Organs Without Local Nervous Apparatus.—Van Rijnberk argues that organs which do not possess a local nervous apparatus all have one thing in common, their function is subordinate to a higher and more general function. The striped muscles, the sweat glands, the glands with a known internal secretion, the liver, the kidneys, the testicles and ovaries are all under strict nervous and chemical control to insure the best results for the organism as a whole. We can thus assume that the function of organs with an independent nervous system is more of local than of general importance.

Hygiea, Stockholm

Feb. 15, 1923, **85**, No. 3

*Origin of Vesicular Breathing Sounds. E. Törnell.—p. 65.
*Autoplastic and Heteroplastic Bone Grafts. A. Troell.—p. 79.

Mechanism of Vesicular Breath Sounds.—Törnell theorizes on the factors involved in vesicular breath sounds and heart murmurs. His experiments with rabbits were inconclusive.

Fate of Bone Grafts.—Troell gives eleven plates of the findings in thirteen cats after implanting a strip of the tibia close to the head or neck of the femur or else at some other point where conditions were favorable for the healing of the graft in place. The implant always died and was absorbed, but new bone formed in its place. However, as there were no functional demands on the new bone, this, too, was resorbed in time. The roentgenograms and photomicrograms show that the new bone finally formed, differs materially from normal bone, although macroscopically it seems normal. The process is entirely different with ivory implants.

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ETIOLOGIC STUDY OF A SERIES OF OPTIC NEUROPATHIES *

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During the past five years many articles have appeared, especially in the American literature, that attribute various types of the optic neuropathies to disease of the accessory nasal sinuses; and, notably, White [1] has reported a large number of such cases. In several papers, papilledema of a high degree has been ascribed to an infection of the posterior ethmoidal and sphenoidal sinuses. Visual disturbances, and even organic changes in the optic nerve, have been attributed to sinus disease in patients who have no discharge, polyps, local redness, or swelling of the mucous membrane around the orifices of the sinuses, or, indeed, any other of the usual manifestations of sinus disease. This has been a source of confusion to the laryngologist and internist, and particularly to the ophthalmologist, the neurologist and the neurologic surgeon.[2] Moreover, the emphasis that has been placed on sinus disease as an etiologic factor in optic neuropathies has given rise to the danger that an actual infection of the sinuses may unjustifiably be assumed to be the true cause of an optic neuropathy, and the actual, more deep seated cause, may be overlooked. We have observed several patients in whom this mistake has been made. Therefore, both to protect the patient from a series of unnecessary nasal operations, and to guard the diagnosis of an optic neuropathy secondary to sinus disease, the relation of the accessory nasal sinuses to disease of the optic nerve deserves the most careful study.

The anatomic studies of Onodi [3] and others have shown that the optic nerve, just anterior to the chiasm, is often separated from the posterior ethmoidal cells by the thinnest layer of bone or fibrous tissue. Onodi has also shown that the optic nerve may actually lie inside the sphenoidal sinus for a distance of a centimeter or more. It has also been known for some years that an infection of these sinuses may, in some persons, cause an inflammation of the portion of the optic nerve that lies in the bony canal and so give rise to visual disturbances. These visual disturbances usually consist of an impairment of the central vision, and are not associated with edema or other visible changes in the optic nerve. They appear to be due to a retrobulbar involvement of the papillomacular bundle. The term "retrobulbar neuritis" has usually been employed to describe such conditions.

Our purpose in this paper is to present our experience in the study of a group of eighty-six patients that presented various optic nerve changes, and to determine the possible relationship of any of these changes to disease of the accessory nasal sinuses.

SELECTION OF CASES

The eighty-six cases of optic neuropathy on which this report is based were in patients who presented themselves at the clinic primarily for visual disturbances, and who had no knowledge of the cause of their trouble. All patients referred to the eye department for consultation from other departments are excluded. Likewise, we have excluded all cases in which there was a history of trauma, and all those in which the optic nerve condition was due to a primary disease of the eye, such as glaucoma, and retinitis pigmentosa.

Each of the eighty-six patients included in this series was subjected, with the few exceptions specifically noted, to a complete diagnostic study as outlined below:

1. *Ophthalmologic.*—External examination of the eyes, including pupillary reactions, visual acuity and refraction; ophthalmoscopic examination, and visual fields. On the data thus obtained, a clinical diagnosis was made of one or the other of the following conditions: primary atrophy of the optic nerves; secondary atrophy of the optic nerves; atrophy of the papillomacular bundles; retrobulbar neuritis; papilloedema. (This group was subdivided, at the time of the ophthalmologic examination, if possible, or if not then, at the conclusion of the diagnostic study, into one of the two subdivisions, optic neuritis and choked disk.)[4]

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* From the Department of Surgery of the Johns Hopkins Hospital and University.

1. White, L. E.: The Diagnosis and Prognosis of Loss of Vision from Accessory Sinus Disease, J. A. M. A. **74**: 1510 (May 29) 1920.
2. Cushing, Harvey: Accessory Sinus Disease and Choked Disk, J. A. M. A. **75**: 236 (July 24) 1920.
3. Onodi, A.: Der Sehnerv and die Nebenhöhlen der Nase, Vienna, A. Holder, 1907.

4. Throughout this paper, these terms are used with the following meanings:

Primary atrophy: Atrophy involving the entire nerve, without the presence of visible, ophthalmoscopic, evidence of any preceding inflammation of the nerve.

Secondary atrophy: Any atrophy of the nerve in which there was present visible, ophthalmoscopic evidence of preceding inflammation; i. e., obscuration of the physiologic cup, blurring of the lamina cribrosa, or deposition of connective tissue in the cup or on the nerve head.

Atrophy of the papillomacular bundle: An atrophic process especially localized in the papillomacular bundle, giving the clinical picture of pallor of the temporal sector of the nerve, diminished central vision, and normal field outlines for form, but with central or paracentral scotomas for either form or color.

Retrobulbar neuritis: Diminished central vision, normal fundus and nerve head to ophthalmoscopic examination, normal field outlines for form, or concentric contraction, with the presence of central scotoma for either form or color.

Papillo-edema: A definite elevation of the nerve head. The subdivision of this group is based on which of the two etiologic factors—inflammation in the nerve or increased intracranial pressure—appears to be the predominating cause. Thus, when it was manifest that the papillo-edema was dependent on an inflammation in the nerve, the diagnosis of "optic neuritis" was made. Similarly, when it was manifest that the papilledema was primarily dependent on increased intracranial pressure, the diagnosis of "choked disk" was made. Until it appeared justifiable to make a diagnosis of either of these two conditions, the tentative diagnosis of papillo-edema was retained.

2. *Medical Examination.*—To include physical examination, usual laboratory procedures—Wassermann test, urine examination, and kidney function if indicated, and lateral stereoroentgenograms of the head.

3. *Neurologic Examination.*—To determine or exclude other neurologic conditions, and to include any especial neurologic diagnostic procedure that might be indicated.

4. *Laryngologic Examination.*—Complete, painstaking examination of the nose, throat, ears and accessory nasal sinuses, and to include a roentgenogram of the sinuses in all suspicious cases. The nose is always cocainized, and the orifices of the sinuses are carefully scrutinized with the aid of an electrically lighted nasopharyngoscope.

5. *Serology.*—Blood serum and spinal fluid Wassermann tests of all patients. Provocative arsphenamin and icebox incubation of Wassermann tests were included whenever indicated.

RESULTS

The composite results of this statistical study are shown in Table 1. Thirty-five optic neuropathies, approximately 40 per cent. of the eighty-six cases studied, were caused by syphilis. Eleven, or 12.7 per cent., were caused by sinus disease. Ten, or 11.6 per cent., were secondary to tumors of the cerebrum or optic nerve. Five, or 5.8 per cent. were caused by multiple sclerosis. Ten, or 11.6 per

TABLE 1.—*Results of Study*

	Total	Central Nervous System Syphilis	Sinusitis	Brain Tumor	Multiple Sclerosis	Toxic Amblyopia	Scattering	Unknown
Primary atrophies.....	35	25	0	0	1	4	0	5
Papillomacular atrophies....	24	4	5	1	4	5	1 (Friedreich's disease group)	3
Secondary atrophies.....	13	2	2	4	0	0	1 (Mongolian idiocy)	4
Optic neuritis..	5	3	0	0	0	1	1 (Encephalitis)	0
Choked disk...	4	0	0	4	0	0	0	0
Retrobulbar neuritis.....	5	1	4	1	0	0	0	0
Totals.....	86	35 40%	11 12.7%	10 11.6%	5 5.8%	10 11.6%	3 3.5%	12 13.8%

cent., belonged to the toxic amblyopia group. Three cases, 3.5 per cent., occurred in widely separated conditions: heredocerebellar ataxia (Friedreich's disease group), mongolian idiocy, and epidemic (lethargic) encephalitis. In twelve cases, 14 per cent., no definite diagnosis seemed justifiable.

If the series is viewed from the standpoint of the clinical ophthalmologist, the distribution is as follows: There were thirty-five cases of primary atrophy. Twenty-five of these were due to syphilis, one to multiple sclerosis, and four to the toxic amblyopia group; five were undetermined.

There were thirteen cases of secondary atrophy, thus distributed: Two were due to syphilis, two were due to sinus disease, four were secondary to brain tumor, one occurred in mongolian idiocy, and four were undetermined.

There were twenty-four cases of atrophy of the papillomacular bundle. Four of these were apparently due to syphilis, six to sinus disease, one to brain tumor, four to multiple sclerosis, five to the toxic amblyopia group, one to the Friedreich's disease group, and three were undetermined.

There were five cases of optic neuritis. Three occurred in syphilis, one in the toxic amblyopia group, and one in epidemic encephalitis.

Four cases of choked disk were observed. In each of these patients a brain tumor was demonstrated by an exploratory craniotomy.

Five cases of retrobulbar neuritis complete the series. One of these was due to syphilis, four to sinus disease, and in one the cause was a prechiasmal tumor of the left optic nerve.

A more careful analysis of the optic neuropathies occurring in the various etiologic diseases shows several interesting facts and subgroups that it is well to consider in somewhat greater detail.

SYPHILIS

Thirty-five, or 40 per cent. of the series of eighty-six optic neuropathies, were caused by syphilis. In all but one patient there was positive serologic evidence of the disease. The neuropathies reported here all occurred in acquired syphilis, without evidence of any associated keratitis. The predominating type of syphilitic lesion was primary optic atrophy. Twenty-five patients, or 73 per cent. of the syphilitic series, had this type of lesion. Positive Wassermann reactions were present in both the blood and the spinal fluid of sixteen of these patients. The blood serum Wassermann reaction was positive and the spinal fluid Wassermann reaction was negative in three patients, while the blood serum Wassermann reaction was negative and the spinal fluid Wassermann reaction was positive in five patients. One of these patients had negative Wassermann reactions in both the blood serum and the spinal fluid, but this patient gave a positive history, and the clinical picture was clearly that of a tabes dorsalis.

Four patients of the syphilitic group had an ophthalmologic picture that was clearly that of an atrophy of the papillomacular bundle with the changes described in the preceding footnote. These patients had positive Wassermann reactions in both the blood serum and the spinal fluid. All other special examinations were negative. One patient gave a history suggestive of an old basilar meningitis. In this patient a possibility is a bilateral involvement of the exposed tracts by the meningitic process, affecting the sensitive papillomacular bundle fibers, and so causing a descending atrophy. In the other three patients it is not so easy to visualize the process. The possibilities are that the picture observed is the end-process of either a retrobulbar involvement of the nerves, or of an optic neuritis which passed without leaving any ophthalmoscopic evidence of inflammation. However, as we have observed only one case of retrobulbar neuritis secondary to syphilis, this appears to be an infrequent syphilitic lesion.

The three cases of syphilitic optic neuritis were in no way remarkable. The same is true of the two cases of secondary atrophy encountered in this syphilitic series. They doubtless represented the end-stage of an old optic neuritis.

SINUS DISEASE

Eleven cases of optic neuropathy were observed which could be traced to disease of the accessory nasal sinuses. Four of these were in the acute stage, and seven in the atropic stage. The four patients in the acute stage all presented the same picture—that of a retrobulbar neuritis. The patients all had greatly diminished vision in the affected eye, clear media and normal fundi. Visual fields showed a disturbance in central vision with a central scotoma, varying in intensity from a relative color scotoma to an absolute scotoma for both form and color. Three of these

patients had a pyogenic infection of the ethmoidal sinuses, and two of these showed a complicating infection of the sphenoidal sinus. The fourth patient had nothing except polyps in the posterior ethmoidal cells, which were apparently in direct juxtaposition to the optic nerve. All of these four patients were operated on by Dr. S. J. Crowe. All four made a complete recovery, with a clearing up of the central scotomas and a restoration of vision to normal in the affected eyes.

Five of the patients in the atrophic stage had the ophthalmologic picture of a primary atrophy of the papillomacular bundle, without any visible evidence of preceding inflammation around the nerve head. One patient showed a generalized atrophy, especially marked in the papillomacular bundle area, with a definite blurring of the margins and a deposition of new connective tissue in the physiologic cup: the picture of secondary atrophy, especially marked in the papillomacular bundle. The last patient in this series showed an ordinary secondary atrophy of the optic nerve. This patient also had evidence of an old ethmoidal infection. There was a history of a former positive Wassermann reaction, but two Wassermann reactions in the Johns Hopkins Hospital were negative, and our only positive findings was the old ethmoiditis. For that reason this case is included in the group of neuropathies secondary to sinus infection.

TABLE 2.—*Observations in Four Cases*

No.	Ocular Picture	Condition to Which Attributed	Condition Found
1	Atrophy of the papillomacular bundle	Ethmoiditis	Central nervous system syphilis
2	Retrobulbar neuritis	Ethmoiditis	Central nervous system syphilis
3	Elevation of the disks of 5 diopters; no atrophy	Sphenoiditis	Tumor of right cerebrum
4	Elevation of the disks of 4 diopters; disks atrophic	Pansinusitis	Brain tumor of cerebellopontile angle

In one of these eleven cases, the laryngologic diagnosis was chronic sphenoiditis. The diagnosis in the remaining ten cases was ethmoiditis, complicated in two by a sphenoiditis; in two, by an infection of the antrums, and in two by a pansinusitis.

Our experience with optic neuropathies caused by sinus disease may be thus summarized: The cases in the acute stage have all been cases by retrobulbar neuritis showing normal fundi, without any elevation of the disk or changes around the nerve head. The operative result in all these cases was excellent. Of the cases in the atrophic stage, five, or 70 per cent., showed an ophthalmoscopic picture of primary papillomacular bundle atrophy, which may reasonably be interpreted as a descending atrophy, secondary to an old retrobulbar neuritis similar to that observed in our acute cases. The remaining two cases both showed some ophthalmoscopic evidence of preceding inflammation around the nerve head. It may justly be assumed that these two cases in the acute stage showed some elevation of the disk, or changes around it, although we have never observed this actual condition. All of our cases were secondary to disease of the posterior ethmoids or the sphenoids, ethmoidal disease predominating as the etiologic factor.

There were four cases, included in other groups, that are worthy of especial mention here. When these cases came to our attention, the optic neuropathy had already been diagnosed as secondary to sinus disease, and in all four, to a greater or lesser degree, there was some sinus disturbance. Study of these cases revealed other disorders which were apparently the true cause of the optic neuropathy. These cases are shown in Table 2.

BRAIN TUMOR

There were ten patients in whom brain tumors were responsible for the optic nerve disorder. Four patients had tumors of the cerebellopontile angle, and three of these showed an elevation of the nerve head of 4 diopters or more. The fourth patient showed advanced secondary atrophy, probably the result of an earlier elevation of the nerve head.

Two of the patients had hypophysial tumors, and, contrary to the usual observation, in both of these patients the atrophy was distinctly of the secondary type.

Two patients had tumors of the cerebrum. One, with a tumor of the floor of the third ventricle blocking the foramen of Monro, showed a choked disk. The second, with a tumor of the right temporal lobe, showed a secondary atrophy. This patient had already undergone decompression in the effort to preserve sight, before he came under observation.

One patient had a tumor of the floor of the fourth ventricle. The ocular picture was an atrophy of the papillomacular bundles, with a left sixth nerve palsy. The tumor was localized by injections of air into the lateral ventricles, and on operation was found to be a solitary tubercle.

The last case was one of a prechiasmal tumor of the left optic nerve, giving the clinical picture of a retrobulbar neuritis. This case has been reported in detail by Dandy.[5]

MULTIPLE SCLEROSIS

The five cases in which multiple sclerosis appeared to be the causative factor in the optic nerve disease were in no way remarkable. In four of these patients the picture was the common one of an atrophy especially localized in the papillomacular bundles, while in the remaining one the atrophy was generalized and of the primary type.

TOXIC AMBLYOPIA GROUP

There were ten cases in the toxic amblyopia group. In two of the patients the diagnosis of toxic amblyopia due to ethyl alcohol poisoning was made. The diagnosis was made on the history, supported by completely negative findings in the medical study.

The remaining eight cases were all due to methyl alcohol poisoning. In four of these patients, no spinal punctures and studies of the cerebrospinal fluid were made. In these patients the histories and pictures were so clear-cut that this procedure did not appear justified. Formic acid, the end-product of methyl alcohol, was found in the urine of one patient in the acute stage of poisoning. An interesting sociological observation is that only two of these cases can be classed as "guilty cases," occurring in chronic alcoholics.

Five of these patients, observed in the atrophic stages, showed the picture of atrophy of the papillomacular bundles. Four showed the picture of a primary atrophy, and one, seen in the acute stage, showed an optic neuritis.

MISCELLANEOUS CASES

The three cases occurring in this group are not especially noteworthy. One was a case of mongolian idiocy

5. Dandy, W. E.: Prechiasmal Intracranial Tumors of the Optic Nerves, Am. J. Ophth. 5: 169 (March) 1922.

in which the patient had been brought in for diagnosis. This patient showed a secondary atrophy of the optic nerves. The second case was one of bilateral atrophy of the optic nerves, involving especially the papillomacular bundles. This case was subsequently diagnosed as belonging to Friedreich's disease group of heredocerebellar ataxia. The third patient showed a low grade of papilledema, with normal vision and visual fields, and presented definitely a case of epidemic encephalitis.

UNDETERMINED CASES

There were twelve patients in whom, at the conclusion of the diagnostic study, a definite diagnosis appeared unwarranted. Five of these twelve patients showed a primary optic atrophy, four a secondary optic atrophy, and three an atrophy especially localized in the papillomacular bundles.

In three of these patients there was some reason to suspect syphilis. Two of these were cases of secondary atrophy, and one was a case of primary atrophy of the optic nerves. There was, however, in each of these patients, insufficient evidence to make the diagnosis even of a burnt-out syphilis.

In two patients, one with a primary atrophy and one with a papillomacular bundle atrophy, multiple sclerosis was suspected; but, again, the evidence was insufficient to make a diagnosis.

Three cases, one of primary atrophy, one of secondary atrophy, and one of atrophy of the papillomacular bundles, were undoubtedly cases of organic brain disease, but in each of these patients the picture was so confused that it was impossible to make a more accurate diagnosis, and the cases are therefore classed as undetermined.

In four patients, three with a primary atrophy, and one with a secondary atrophy, at the end of the diagnostic study, we were as much in the dark as we were at the beginning. In neither of these patients did it seem justifiable to advise air injections of the ventricles as an additional diagnostic procedure, and we were forced to discharge the patients with no diagnosis.

COMMENT

With the development of more accurate diagnostic procedures, it becomes increasingly easier to diagnose the etiologic factor in optic neuropathies. Thus, any comparison with earlier statistical reports is manifestly unfair. Yet it is of interest to compare the results of this study, shown in Table 1, with the earlier statistical study of Derby.[6] Excluding traumatic cases, Derby reported 108 cases of optic atrophy; 7.3 per cent. were due to syphilis, 10.3 per cent. to toxic amblyopia, 8.2 per cent. to multiple sclerosis, 1.7 per cent. to brain tumor, and 5.5 per cent. to brain disease; 8.2 per cent. were scattering, while 67 per cent. were undetermined. It would seem that it is in the diagnosis of syphilis, brain tumor and sinus disease that diagnosis has made its greatest advance.

In regard to the sinus phase of the question, the point that prompted this study, it seems clear to us that the type of optic nerve disturbance caused by sinus disease is generally a rather definite clinical entity. The picture we have constantly observed is that of a retrobulbar nerve disturbance: diminished vision, the defect being in the central field and manifest by a central scotoma of varying intensity, normal field outlines, and normal media and fundus. We have yet to observe any case of active, optic nerve disturbance secondary to sinus disease, which at the papilla showed any manifest, visible, ophthalmoscopic signs of inflammation or elevation of the disk. Yet we are not prepared to say that such findings may not occur. In our series there are two neuropathies observed in the atrophic stage, in which there must have been at one time visible inflammation or elevation of the nerve head, for the atrophies were distinctly secondary in type. The only etiologic factor that could be found to account for these pictures was evidence of an old chronic infection of the ethmoidal sinuses. Whether these infections were the true cause of the optic nerve disturbance, or whether some other cause was present at the time of the active lesion, cannot be said when the patients were seen only in the atrophic stage. But, certainly, any inflammation or elevation of the optic disk must be an exception, rather than the rule, in the disorders of the optic nerve caused by sinus disease.

There is one further point we should like to emphasize, and that concerns the nomenclature commonly in vogue to describe the various optic neuropathies. Throughout much of the literature, the terms "optic neuritis," "axial neuritis," "ascending" and "descending" neuritis, and "choked disk" are freely and confusingly used. The rather simple terminology used in this paper seems adequate to describe the various conditions. Concerning the terms "primary" and "secondary" atrophy, there will probably be very little difference of opinion. Likewise the term "retrobulbar" neuritis is usually used with the generally accepted meaning. The greatest confusion arises in the indiscriminate use of the terms "optic neuritis" and "choked disk." Elevation of the optic disk, or papilledema, can be caused by two widely different mechanisms. These mechanisms, respectively, are inflammation in the nerve itself, and increased intracranial pressure. Probably one condition is never present without the other being present in some degree. But in any given case of papilledema, either the inflammatory factor or the increased intracranial pressure factor is the predominating cause. If the term "optic neuritis" is reserved for the class of case in which actual inflammation in the optic nerve is the cause of the papillo-edema, and the term "choked disk" is reserved for the class in which increased intracranial pressure is the predominating etiologic factor, much confusion will be saved. If it is impossible to determine from the existing evidence which diagnosis is correct, no other diagnosis than papilledema is justified from the ophthalmologic picture. Such a system not only would greatly clarify the ophthalmologic terminology, but also would be a boon to the internist who is forced to deal with such conditions. There seems to be little excuse for the terms "axial neuritis" and "ascending" and "descending" neuritis. The condition can be described in less confusing terms, and in language more likely to be universally understood by both the ophthalmologist and the internist. Considerable sympathy must be felt for the internist who is forced to handle the present intricate and technical nomenclature, used frequently in such an indiscriminate manner.

SUMMARY

An analysis of eighty-six cases of various optic neuropathies has shown the following etiologic causes: syphilis, 40 per cent.; sinus disease, 12.7 per cent.; brain tumors, 11.6 per cent.; multiple sclerosis, 5.8 per cent.;

6. Derby, Haskett: Amaurosis (Atrophy of the Optic Nerve) and Its Treatment by the Subcutaneous Injection of Strychnia, Boston M. & S. J. **66**: 508, 1902.

toxic amblyopia group, 11.6 per cent.; scattering, 3.5 per cent.; undetermined, 14 per cent.

The acute cases observed secondary to sinus disease all gave the clinical picture of a retrobulbar neuritis, without ophthalmoscopic evidence of inflammation or elevation of the papilla.

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OPENING THE PERITONEUM IN OPERATIONS FOR EMPYEMA*

REPORT OF FOUR CASES

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In a study of a series of cases of empyema in which drainage had been performed at varying periods after the onset of the condition, and in which the cavities did not heal, it was determined that one of the commonest causes for failure to obtain a cure was that drainage had not been instituted at a dependent portion of the cavity.

In such cases a residuum of purulent exudate remains below the level of the drainage opening, no matter what position the patient assumes. This is particularly true of the empyema whose floor is formed by the diaphragm, which is the situation of most empyemas. An empyema cavity thus inadequately drained tends to be maintained not only because of the accumulated pus, but also because of the continuation of the infection of the pleura. The resultant cavity is therefore usually much larger than can be accounted for merely by the amount of exudate which collects at the bottom of the cavity below the level of the drainage opening. Acutely ill patients, in whom drainage has been performed through an opening improperly placed, may eventually recover, but the period of invalidism is greatly prolonged.

The establishment of dependent drainage of an empyema which has been improperly drained at a previous operation will be followed by a cure in the majority of cases. This is true even though the condition has been existent over a long period of time. Even an associated bronchial fistula will usually heal spontaneously as the empyema cavity drains, and becomes obliterated.

In very large chronic cavities it is often best to drain at two dependent points, so that there will be no stagnation of purulent exudate no matter what position the patient may assume. Particularly is this true if the cavity is irregular in shape and there is a recess which does not communicate freely with the main cavity.

Dakin's irrigation of a chronic cavity is undoubtedly of great value, but must be preceded by adequate drainage of the cavity.

The site of election for the establishment of drainage in either an acute or a chronic case should be not only in the lowest level of the cavity—just above the diaphragm in the great majority of instances—but in the posterior portion as well. An opening so placed allows of the most adequate drainage with the patient in either the dorsal position or the upright position following operation.

Accepting the principle of dependent drainage in empyema, one must realize that there is a certain risk in putting it into practice; namely, the danger of opening the peritoneum through or below the diaphragm. This operative mishap may occur because of the obliteration of the costophrenic gutter in the pleural cavity, or because the diaphragm has risen to a level which is higher than normal. In either case the operator resects a piece of rib which normally is over the pleural cavity, and finds out too late that the anatomic relations are disturbed.

Demonstration of pus by the aspirating needle should always be carried out immediately before the operation is begun. This is a fundamental principle, and there are few cases in which it may be ignored. It is not enough that pus has been obtained by some other physician or by oneself even a short time before the patient is brought to the operating room; aspiration of pus must be the preliminary step in the operation. This should be done in what is felt to be the lowest portion of the cavity. In passing the needle through the chest wall, one must take care to hold it at right angles to the wall. There is a tendency to insert the needle obliquely upward, and in this way one may pass the needle through the diaphragm into the empyema cavity without realizing it.

When pus has been found by aspiration, subperiosteal resection is made of a portion of the rib immediately below the needle. Before the pleura is incised through the rib bed, however, the needle must be reinserted to make sure that the rib resection has been made over the cavity and not over or below the diaphragm. If at the level of the diaphragm, then the incision may be made in the interspace at this point into the empyema. In case this will not give sufficient room for drainage, resection of the rib above should be done.

By following the procedure as outlined, one may institute drainage of an empyema cavity in its dependent portion without opening through or below the diaphragm. It is not intended to discuss in this paper the relative merits of open and closed drainage, the value of irrigations with surgical solution of chlorinated soda (Dakin's solution) or other questions pertinent to the treatment of acute or chronic empyema.

In the cases of empyema treated in the surgical service of the University Hospital, the peritoneum has been opened four times in the experience of three different surgeons. This surgical mishap is mentioned so infrequently in medical literature, and so little stress is placed on it in surgical textbooks, that these cases are briefly reported.

REPORT OF CASES

CASE 1.—A boy, aged 17 years, who entered the hospital, Dec. 6, 1919, had developed empyema as a complication of influenza, and was admitted to the surgical service about one month after the symptoms of empyema developed. Pus had been found by his physician on aspiration. He had a high fever and a leukocytosis of 18,000. Signs of fluid were present in the right pleural cavity. Under procain and nitrous oxid anesthesia, aspiration, performed in the fifth interspace in the anterior axillary line, found thick pus. One inch of the sixth rib was resected subperiosteally below the needle puncture. What seemed to be thick pleura was incised beneath this point and the diaphragm was cut into, opening the general peritoneal cavity and the empyema cavity at the same time. The patient coughed, and some of the pus entered the abdominal cavity. The incision was drained by two tubes, one into the empyema and one below the diaphragm. Symptoms referable to the pleural infection rapidly subsided. Drainage was ordinarily profuse from the tube in the empyema. No drainage came from the other. The patient complained of abdominal pain, tenderness over the lower abdomen, and distention, and the postoperative febrile reaction was greater and more continuous than usual. On the

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twenty-third day following operation, a tender bulging was found in the posterior wall of the rectum, an abscess in the culdesac. Under nitrous oxid anesthesia, an incision was made through the rectal wall, and a localized abscess containing several ounces of pus was drained. Cultures of this were sterile. The boy developed pneumonia following operation, and died on the eighth day.

The aspirating needle had passed just above the diaphragm, so that the rib resection was at the diaphragm level. If a needle had been again used before an opening was made into the rib bed, the relation of the diaphragm to the incision would have been noted and the opening into the empyema cavity would have been made above the diaphragm.

CASE 2.—A woman, aged 40, admitted, Feb. 4, 1919, presented symptoms of empyema of one week's standing. She had a high fever, and a leukocytosis of 23,000. There were signs of empyema on the right side. Aspiration by an internist in the eighth interspace in the level of the scapular angle had obtained pus. Under nitrous oxid-oxygen anesthesia, aspiration was made in the eighth interspace at the point at which pus had been observed in the morning, but none was found. Resection of a portion of the ninth rib was made in this line, and what seemed to be thick pleura exposed. It was pierced by a sharp pointed hemostat and proved to be diaphragm, for the abdominal cavity was opened, exposing the dome of the liver. The opening in the diaphragm was closed by catgut suture. The rib above was then resected, and the empyema cavity opened through thick pleura. A pneumococcus was grown from the pus. The patient had a regularly remittent fever to 102 F. for several days, with a gradual return to normal. She had a chill on the eighteenth day. The drainage tube was removed from the empyema cavity on the forty-seventh day, and the patient sent home apparently well on the fifty-fifth day. She returned in two weeks because of pain and tenderness under the costal border to the right of the epigastrium. A subdiaphragmatic abscess was drained anteriorly, after which the patient made an uneventful recovery.

In this case the needle was probably passed through the chest wall obliquely into the empyema cavity, and pus was found by the internist. The surgeon aspirated in exactly the same place at operation a short time later, and found no pus. Contrary to the principle laid down, needle exploration was not then repeated until pus was found. The peritoneal opening and subsequent infection might have been avoided if it had been, and certainly if the needle had been used before opening into what was erroneously taken to be pleura.

CASE 3.—A man, aged 42, developed streptococcic empyema on the left side following influenzal pneumonia. This was treated by three aspirations and injections of 2 per cent. dilution of liquor formaldehydi in glycerin, with a subsidence of the acute symptoms. Under nitrous oxid-chloroform anesthesia, three months after onset, aspiration in the eighth interspace in the posterior axillary line found pus. Subperiosteal resection was done of a portion of the ninth rib in this line. An opening was made through the pleura with a hemostat; this also opened the diaphragm. The opening in the peritoneum was sutured at once, and the empyema drained by tube. Recovery from the pleural infection was uneventful with no evidence of peritoneal involvement.

This case illustrates the point that demonstration of the empyema cavity by needle passed through the site of the resected rib should be carried out as an essential safeguard against injury to the diaphragm, when dependent drainage of a cavity is being sought.

CASE 4.—A man, aged 36, admitted, Nov. 7, 1920, had had pneumonia fourteen years before, followed by empyema of the left side, which was drained by rib resection. He wore a drainage tube until one year before admission, and then the wound healed. He entered the hospital because of malaise, pain in the chest and fever. Leukocytes numbered 13,000. Under ether anesthesia, aspiration, performed in four places posteriorly, was negative. Aspiration in the left anterior axillary line in the old scar obtained foul smelling pus. An incision was made over the rib just below, and a piece of rib resected. When an incision of what appeared to be pleura was made, the peritoneal cavity was entered, and omentum and a loop of bowel appeared. The diaphragm lay above the level of the opening. A tube was carried to the opening and surrounded by a strip of iodoform gauze, and the incision was closed to them. Aspiration in the second higher interspace found pus, and resection of the rib below was done and the pleura opened. A long, narrow cavity was found containing a 6 inch soft rubber drainage tube lying on the diaphragm. The cavity was drained by a tube which was long enough to extend a considerable distance away from the wound. The incision was closed snugly to the tube. Cultures from the pus yielded a variety of bacteria, including the staphylococcus and hemolytic streptococcus. There was uneventful recovery from the pleural infection in spite of the fact that there was a bronchial fistula communicating with the cavity. The latter became completely obliterated. There was no evidence of peritoneal infection.

This is another case in which the first aspiration was probably done with the needle pointing obliquely to pass through the diaphragm into the empyema. Also, the peritoneum would not have been opened if the aspirating needle had been used after rib resection but before incising what was taken to be the pleura.

CONCLUSIONS

Drainage should be obtained in the most dependent portion of an empyema, acute or chronic.

When the empyema rests on the diaphragm, there is a certain danger of opening the peritoneal cavity either through or below the diaphragm.

Localization of the pus by the aspirating needle at the beginning of the operation and again after resecting a rib before incising into the empyema will obviate the danger of opening the peritoneum.

THE WASSERMANN REACTION IN SCARLET FEVER PATIENTS

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The idea that the Wassermann reaction may be positive because of scarlet fever, independently of syphilis, is apparently current. Having had a desire to learn more as to the truth of such an idea, I have been prompted to make this investigation. The purpose of this report is briefly to summarize the literature bearing on this topic, and to give the results of my own investigations.

At a time when the Wassermann reaction was first beginning to attract attention—before the technic was well standardized, and when many observers were publishing many sorts of conclusions based on their faulty work—there appeared an article by Much and Eichelberg [1] to the effect that this reaction was positive in a large proportion of patients with scarlet fever. Appearing at the time it did, this article naturally made a more profound impression than it would have made if it had appeared later. The impression made by this and certain other confirmatory publications is still with us, though, I believe, it is erroneous. In the same and the succeeding year as the publication of Much and Eichelberg, there appeared at least thirteen papers bearing on the subject and all by German authors. These are summarized in Table 1. In the light of more recent experience it would not seem unlikely that many of these authors used antigens which were anticomplementary or otherwise defective, and faulty technic. It is more instructive to examine the work of the later writers, who have used a more modern and better standardized technic.

1. Much and Eichelberg: Die Komplementbindung mit wasserigen Luesextrakt bei nichtsyphilitischen Krankheiten, Med. Klin. 4: 671, 1908.

Noguchi,[2] using his acetone-insoluble lipoid antigen, found two weakly positive reactions in sixty-two cases of scarlet fever.

In 1911, Kolmer,[3] using as antigen alcoholic extract of liver, noted five positive reactions in 250 cases of scarlet fever. These were observed at single examinations ranging from the thirteenth to the fortieth day of the disease. Apparently none of the patients were reexamined at a later time. In the same material, using the Noguchi antigen, he found sixteen positive reactions. In none of the patients was there a history or sign of syphilis. However, he evidently considers the cases as syphilitic, and concludes that the Wassermann reaction in scarlet fever is uniformly negative.

TABLE 1.—*Early Reports of Wassermann Reaction in Scarlet Fever*

Authors	Antigen Used	No. of Cases	Positive		Comment
			Number	Percentage	
Much and Eichelberg: Med. Klin. 4 : 671, 1908	Watery extract of syphilitic liver	25	10	40	Antigen evidently defective
Seligmann and Klopstock: Berl. klin. Wchnschr. 45 : 1719, 1908	Alcoholic extract of normal human heart	30	16	53	Apparently suspect their own antigen
Halberstaedt, Müller and Reiche: Berl. klin. Wchnschr. 45 : 1917, 1908	Several from syphilitic liver	10	5	50	Weakly positive with one antigen, negative with another
Fraenkel and Much: München. med. Wchnschr. 55 : 2479, 1908	Alcoholic extract of syphilitic liver	12	5	42	
Bruck and Cohn: Berl. klin. Wchnschr. 45 : 2268, 1908	Alcoholic extract of syphilitic liver	28	8	28.5	
Fua and Koch: Wien. klin. Wchnschr. 22 : 522, 1909	Alcoholic extract of guinea-pig heart	57	14	24.5	
Haendel and Schultz: Ztschr. f. Immunitätsforsch., Orig. 1 : 91, 1908	Alcoholic extract of syphilitic liver	48	7	14.5	
Zeissler: Berl. klin. Wchnschr. 45 : 1887, 1909	Alcoholic extract of human heart	42	3	7	
Boas and Hauge: Berl. klin. Wchnschr. 45 : 1566, 1908	Alcoholic extract of normal human heart	61	3	5	Later reactions negative
Jochmann and Töpfer: München. med. Wchnschr. 55 : 1690, 1908	.....	33	1	3	Negative at later examinations
Hecht, Lateiner and Wilenko: Wien. klin. Wchnschr. 22 : 523, 1909	Alcoholic extract of guinea-pig heart	105	3	3	All reacting positively had nephritis
Meier: Med. Klin. 4 : 1383, 1908.....	Watery extract of syphilitic liver	52	1	2	Weakly positive
Schleissner: Wien. klin. Wchnschr. 21 : 1375, 1908	Alcoholic extract of guinea-pig heart	20	0	0	
Hoehne: Berl. klin. Wchnschr. 45 : 1717, 1908	Alcoholic extract of syphilitic liver	37	0	0	

Laederich and Bory [4] report a series of twenty cases, of which nineteen gave positive reactions with a cholesterolized antigen during the first four days of the disease. The reaction then became weak, and was always negative by the fifteenth day. The reaction with the less sensitive antigen was rarely positive, even during the first few days of the disease.

My report concerns a total of 110 cases, of which fifty-two were compiled from the records of the St. Louis Children's Hospital, and fifty-eight were observed by me during the course of this investigation. The Wassermann reactions were performed in the laboratory of the St. Louis Children's Hospital, along with the routine Wassermann tests of that institution. All were carried out with 0.1 c.c. of inactivated serum, with both the alcoholic and the cholesterolized antigens at incubator temperature.

In the compilation of the records of the St. Louis Children's Hospital, the records of all the scarlet fever patients that had been admitted to the hospital in recent years, on whom a Wassermann test had been made, were carefully reviewed. In addition to the fifty-two cases described, there were four cases of clearly defined syphilis, all of which gave positive reactions in both antigens at every examination. Of the fifty-two cases, forty-seven cases gave negative reactions. Five of these patients were examined twice, so that in all there were fifty-two tests, thus distributed according to the week of the disease: first week, twenty; second week, seventeen; third week, five; fourth week, four; fifth week, two; sixth week, one; seventh week, one, and not stated, two. Five patients gave positive reactions in their serum, but only with the cholesterolized antigen. On four of these patients, subsequent reactions were negative. These are summarized in Table 2.

Of the fifty-eight cases, that I studied, nineteen were observed in the contagious wards of the St. Louis Children's Hospital, and thirty-nine in the St. Louis Isolation Hospital. So far as possible, a Wassermann test was made weekly during the hospital stay, beginning with the febrile period during the first week. One patient under observation was not included in this report, as she was known to have had syphilis previously. Of the fifty-eight cases, fifty-three gave negative reactions at all observations. In these fifty-eight cases, 183 observations were made, thus distributed according to the week of disease: first week, thirty-seven; second week, forty-three; third week, forty-three; fourth week, thirty-one; fifth week, eighteen; sixth week, ten, and seventh week, one. Five patients gave positive reactions in their serum, but only with the cholesterolized antigen. All five gave negative reactions subsequently. The positive cases are summarized in Table 3.

TABLE 2.—*Wassermann Reactions in Five Cases of Scarlet Fever*

Patient	Week of the Disease			
	2	3	4	
W. E.	.....	C 2 plus	C 3 plus	Neg. 6/11/19 1/ 4/20
V. E.	C 4 plus	Negative	Negative	
M. B.	C 2 plus	Negative	Negative	
E. C.	C 2 plus	C 2 plus		
H. H.	.....	C 3 plus	Negative	

COMMENT

There were ten positive reactions observed in 110 cases of scarlet fever. They were positive only in the cholesterolized antigen, and then the positiveness was only transitory.

It must be admitted that a positive Wassermann reaction occurs as a result of scarlet fever; but such a

2. Noguchi, Hideyo: Serum Diagnosis of Syphilis, Philadelphia, 1911, p. 130.
3. Kolmer, J. A.: Complement Deviation in Scarlet Fever, with Comparative Studies of the Wassermann and Noguchi Systems, J. Exper. Med. 14: 235 (Sept.) 1911.
4. Laederich and Bory: Bull. et mém. Soc. méd. d. hôp. de Paris 43 : 504 (May 29) 1919.

statement whenever made, should have considerable qualifications. In the vast majority of instances of hereditary syphilis, whether latent or active, the Wassermann reaction is positive with the least delicate of antigens. It is seldom that one is called on to give serious consideration to a weakly positive Wassermann reaction in childhood. A strongly positive Wassermann reaction in scarlet fever, in my opinion, would be as good evidence as at any other time. I see no reason why scarlet fever should interfere with the diagnostic value of the Wassermann reaction in childhood. Should any difficulty arise as to the interpretation of a weakly positive reaction in an older person, it is not difficult to retest at a later time.

TABLE 3.—*Wassermann Reactions in Five Cases of Scarlet Fever*

Patient	Week of the Disease				
	1	2	3	4	5
M. S.	Negative	C 2 plus	Negative	Negative	
M. R.	C 3 plus	Negative	Negative	Negative	
F. P.	Negative	C 4 plus	Negative	Negative	
B. B.	C 4 plus	Negative	Negative	Negative	Negative
H. W.	C 2 plus	Negative			

A cholesterin 2 plus reading in childhood is not looked on in the pediatric department of the Washington University School of Medicine as of any significance in diagnosis, although it may be of some importance in treatment, as in the case of E. C. and two others. Such a reaction would be disregarded, whether scarlet fever is present or not.

PROTEIN SENSITIVITY IN CHILDREN WITH NEGATIVE CUTANEOUS REACTIONS

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The percentage of positive protein cutaneous tests in the eczema of infants and younger children has been variously estimated as between 40 and 65 per cent. of the cases.[1] The presumption has been that the remaining negative cases were not due to protein sensitivity. There are, however, a not insignificant number of the remaining cases negative to all proteins used which can clinically be demonstrated to have a protein as the underlying causative factor. Schloss mentions this phenomenon. He reports cases in which there is shown clinically a definite food idiosyncrasy in spite of negative cutaneous protein tests. He states that the ingestion of certain foods, very often cow's milk, results in a gastro-intestinal upset. The type of case I will discuss differs from Schloss' cases in that the reaction to the ingestion of the offending protein is cutaneous, in the form of eczema, rather than gastro-intestinal, as in his cases.

Many cases of eczema run an uninterrupted course from infancy, through early childhood, into adult life and are presumably due to the same etiologic factor. The incidence of positive protein tests, however, drops from a high percentage in children to a very low figure in the adult eczemas. The percentage of positive tests drops off sharply in the second and third years of life.

I have had an opportunity to follow some of these cases of eczema for periods of from two to three years. During this time the eczema in many of the children recurred at irregular intervals. These recurrences could usually be traced to a dietary indiscretion, and in most instances were promptly effaced by dietary adjustments.

While under observation, some of the children showed a positive test to one or more proteins during the early months of life. Under the influence of a proper diet and of the blood's natural tendency toward desensitization, the positive tests often became fainter, and finally disappeared.

This was the case even when the child remained sensitive to the given protein, as was shown by clinical tests, viz., ingestion of suitable amounts of the offending protein. It seems from such evidence that eczema may result from protein sensitivity, in a certain percentage of cases, in spite of a negative cutaneous test.

REPORT OF CASES

CASE 1.—B. C., a boy, aged 2 years, seen in February, 1920, with negative family history, had been breast fed for one year, and then given a suitable general diet. He had acute otitis media six months before I saw him, and a gastro-intestinal upset three months before. He vomited and had frequent loose movements for five days. Then followed very closely a scattered papular eruption on the skin. This eruption had persisted. His birth had been normal. There was a slight rosary. The throat, heart and lungs were normal. The abdomen was prominent and flabby. The extremities were normal. Scattered on the skin were papular lesions. There were two annular lesions on the left arm, scaling. Behind the ears were scaling moist lesions.

Protein cutaneous tests were positive to egg yolk, egg white and oat; negative to casein, lactalbumin, wheat, beef, wheat glutenin, wheat gliadin, wheat proteose, wheat globulin, wheat leukosin, almond, pork, rye, pea, lamb and orange. It will be noted that neither casein nor lactalbumin gave a positive test.

Following these tests, egg and oat were omitted from the diet. The eczema improved but did not entirely clear up, showing occasional exacerbations until ten months later, when the following occurred:

Four days preceding the attack to be described, the child had a birthday party. Milk had been limited in the child's diet, but the mother felt that junket would be a safe treat. The child ate three large saucerfuls of junket. The following day he had a poor appetite, slept poorly that night, and complained of general abdominal pain in the morning. He ate no breakfast, and vomited several times; still he complained of abdominal pains during the day.

Examination showed a rapid pulse, respirations of 40, and a normal temperature. Breathing was labored, with substernal and suprasternal retraction. Auscultation revealed many scattered musical râles with prolonged expiration. The skin showed scattered patches of eczema which, according to the mother, had become definitely worse since the party. Examination was otherwise negative.

All milk and milk products were eliminated from the child's diet. In three days this typical asthmatic attack subsided; the skin condition improved and finally cleared entirely.

Skin tests for casein and lactalbumin were again negative.

Two months later the mother started giving top milk, and a marked exacerbation of the eczema occurred. She was again instructed to omit milk.

Seven months later, the child had an attack of vomiting lasting for two days. This followed ingestion of milk used in corn bread.

Five months later, he had an attack of asthma, following the eating of milk chocolate.

1. Blackfan, K. D.: Am. J. M. Sc. **160**: 341 (Sept.) 1920. O'Keefe, E. S.: Boston M. & S. J. **183**: 569 (Nov. 11) 1920; A Dietary Consideration of Eczema in Younger Children, J. A. M. A. **78**: 483 (Feb 18) 1922. Schloss, O. M.: Allergy in Infants and Children, Am. J. Dis. Child. **19**: 433 (June) 1920. Sidlick, D. M., and Knowles, F. C.: Value of Cutaneous Sensitization Tests Employed in Eczema and Papular Urticaria of Childhood, Am. J. Dis. Child. **23**: 316 (April) 1922. Engman, M. F., and Wander, W. G.: Application of Cutaneous Sensitization to Diseases of Skin, Arch. Dermat. & Syph. **3**: 223 (April) 1921.

This child, however, gave negative tests to both milk proteins during these two years, in spite of repeated attacks of asthma and exacerbations of eczema following ingestion of milk proteins.

CASE 2.—A child, aged 9 months, receiving breast milk, with one bottle composed of 6 ounces of whole milk and 2 ounces of water, had had eczema since 4 months of age, the condition being worse when supplementary feeding was added.

The cutaneous test for casein was positive.

Supplementary feeding was changed to a formula of 3 per cent. fat, 6 per cent carbohydrate and 0.25 per cent. protein. Breast feeding was continued. The child remained on this feeding schedule for three months, during which time the skin improved very decidedly. A small patch persisted on the arm, and a recurrent patch near one ear. Both were about 1.5 cm. in diameter. Soups, cereals and crackers were added to the diet.

As the child approached the age of 1 year, more bottles of the foregoing formula were added without evident harm.

After six months on this low milk protein diet, the cutaneous test for casein was negative. Increase of the casein content of the formula at this time showed, however, that the child was still sensitive to casein, in spite of the negative cutaneous test.

COMMENT

In the three years' existence of the eczema clinic at this hospital, numerous similar instances have occurred in which protein sensitivity could be clinically demonstrated in spite of negative cutaneous tests.

Temporary desensitization will not account for the phenomenon described, since the protein tests were repeatedly negative rather than negative only during a time of possible antianaphylaxis.

A lack of skin sensitivity is suggested by Schloss in regard to his cases of allergy which showed gastric intestinal manifestations. Such a lack of skin sensitivity does not exist, however, in the type of cases under discussion, as shown by the frequent recurrences of eczema following ingestion of the offending protein.

The phenomenon does suggest the possibility of a threshold of skin sensitivity to protein. Such a threshold we may presume to be higher in some cases than in others. In the first case outlined, the threshold is too high for the cutaneous test to elicit a response. A response occurred only after larger doses of protein were brought to the skin. Such larger doses, we may presume, are brought through the natural circulatory channels after ingestion of a given protein—doses large enough to cross the heightened threshold of skin sensitivity. A response is elicited, and manifests itself clinically as an eczema.

The raising of this threshold as the patient gets older would explain the diminished frequency of eczema after the early years of life. It would also explain the infrequency of positive cutaneous tests in those older children and adults in whom eczema does occur.

Individual variation in the height of the threshold of stimulation in various organs might well explain why ingestion of egg albumin, for instance, may result in eczema in one child, while, in another, asthma results.

Variation of the threshold height among the different tissues in a given child would explain the occurrence, as in Case 1, of an eczema first with an asthma later when the protein stimulus is increased.

SUMMARY

In the eczema of infancy there exists a certain percentage of cases in which the patient can be clinically demonstrated to be sensitive to a given protein. These patients do not give any cutaneous response to the protein tests.

Variation of the height of the threshold of sensitivity in the various tissues of a given individual may be the factor which determines whether hay-fever, asthma or eczema will result from foreign proteins with which the tissues are brought in contact.

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THE RÔLE OF TRANSILLUMINATION IN DISEASES OF THE NASAL ACCESSORY SINUSES

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The majority of textbooks dealing with diseases of the nasal accessory sinuses affirm or concede that transillumination is a more or less valuable diagnostic agent in conditions affecting the maxillary and frontal sinuses. In practice, however, one is surprised to find how infrequently it is used, and with what skepticism its value is appraised. As a result, the diagnosis of maxillary sinusitis, which should be the easiest to diagnose of all the sinuses, is missed in an astonishingly large percentage of cases.

In a recent article, Billings [1] says: "Diagnosis is the most important factor in the practice of medicine. Until the diagnosis is made, treatment may be ineffectual and often is irrational." The importance—economic as well as physical—of making an early diagnosis in sinus disease is too obvious a fact to need embellishment. It is nevertheless true that an early diagnosis of sinus disease is seldom made by the general practitioner unless the patient is suffering with localized pain over the region of the sinus affected.

The average internist has neither the training nor the equipment to detect pus between the middle turbinate and the outer wall of the nose. He is therefore often surprised and not a little chagrined when he sees an ounce or more of foul pus washed out of an antrum of a patient he has been unsuccessfully treating for a "cold" for two or more weeks. The patient is likewise chagrined when informed that he must have daily irrigations for another ten days or two weeks, for this involves an economic as well as physical hardship.

In such cases the specialist is frequently asked by the general practitioner how he may suspect an antrum infection, since the patient does not complain of pain. This is best answered by again quoting from Billings:

> The general practitioner cannot be proficient in the more refined methods of examination which are necessary in the practice of the specialties of medicine and surgery. But he can and should be able to recognize the more common diseases of the eye, ear, pharynx, accessory nasal sinuses, locomotor apparatus, rectum and female pelvic organs with the simple available means at hand; furthermore, he should possess and use in routine practice . . . rectal, aural and vaginal specula, laryngeal mirrors, head mirror, . . . and an inexpensive electric light device, with storage battery, if this is needed, is now available for transillumination of the nasal accessory sinuses, jaws and other tissues. Daily use of these instruments will develop technical skill and make them valuable aids in diagnosis.

If the general practitioner who lacks the training essential for a proper nasal examination will disillusion himself of the erroneous idea that one cannot have sinusitis without pain, and if he will equip himself with a small portable transilluminator and use it as a routine in all cases in which the patient complains of a rhinitis,

1. Billings, Frank: The Resourceful General Practitioner of Modern Medicine, J. A. M. A. **80**: 519 (Feb. 24) 1923.

he will seldom fail to diagnose a sinus infection, especially if it is unilateral and involves one of the maxillary sinuses. It must not be inferred from the foregoing statement that transillumination is *the* diagnostic sign in sinusitis. It is not. There is no one diagnostic sign in sinusitis, not even roentgenograms. But transillumination is such a simple procedure, requiring no special training or skill in its employment, and it so very frequently gives a hint or suggestion, that its positive evidence always merits thorough investigation.

The indictment of the general practitioner in the case of sinusitis applies with almost equal force to too many specialists in rhinology. Some idea of how frequently the specialist fails to diagnose sinus involvement may be gained from a perusal of the reports of the nose and throat clinics in any large city. The statistics given in the accompanying table are taken from the reports of four large nose and throat clinics in New York City.

Diagnosis of Sinus Involvement in Four Clinics

Number of nose cases treated	3,190	Maxillary sinus cases	9
Number of nose cases treated (four consecutive years)	5,637	Antrum punctures	12
Number of nose and throat cases treated	1,051	Acute sinus cases	3
		Chronic sinus cases	14
Number of cases of rhinopharyngitis	1,175	No sinus cases noted.	
Total	11,053		38

Those who are familiar with prevalence of sinusitis throughout the country, not even excepting California, will realize that these figures signify only one thing, namely, failure to recognize sinus disease. What the cause of this failure is, it is idle to discuss. The method of remedying it, however, is very simple—to make transillumination a part of every routine examination of the nose. Nor is the failure confined to the clinics alone: it is seen almost daily in private practice. A recent case of mine illustrates what is by no means an infrequent occurrence:

Mrs. J. K., aged 53, had been troubled with nasal discharge and polypi since 15 years of age. She had had polypi, "bone and flesh" removed from the nose at least twenty times by five recognized specialists. During this period she had suffered constantly with asthma. Questioned concerning any treatment of the sinuses (before I had made any examination), she stated that nothing had been done to the sinuses except that a year before some roentgenograms were taken, and she was told that they showed nothing except some "granulations." Following the roentgenograms she had an intranasal operation on the left ethmoids. Examination of the nose revealed both nares very spacious and filled with pus. Both middle turbinates had been entirely removed, and a large portion of both inferior turbinates had likewise been sacrificed. There was edematous, polypoid tissue in the left middle meatus in the region of the left nasofrontal canal. Transillumination of the sinuses showed a right frontal sinus that illuminated fairly well, the left frontal sinus being considerably darker. Both antrums were very dark. Examination of roentgenograms confirmed the findings on transillumination; i. e., the right frontal sinus was only slightly cloudy; the left frontal sinus and both antrums very cloudy. Both naso-antral walls were cocainized beneath the inferior turbinates, and punctured and washed out. Nearly an ounce of broken down pus was washed out of both maxillary sinuses. The next day, the frontal sinuses were both irrigated; the return fluid was clear from the right frontal sinus, and contained a small amount of pus from the left side.

For thirty-eight years, this patient had been consulting recognized specialists from time to time; not one of the five had ever investigated the sinuses except the one who had some roentgenograms taken, and he had accepted the roentgenographer's report as a final diagnosis. It may be argued that the presence of polypi and discharge should have, in themselves, been sufficient indication of sinus involvement, and that transillumination was not essential. This brings us to the next important feature about transillumination—its value as an indicator of what sinuses may be involved. It is no unwarranted assumption to state that, in the case here reported, a diagnosis of ethmoiditis was made, for the treatment was directed solely to this region. Had transillumination been employed and the darkness of the antrums investigated, treatment of the latter would probably have avoided the sacrifice of both middle turbinates and the entire ethmoid labyrinths. The common error of directing treatment to the ethmoid cells, often to the extent of sacrificing them in toto, while allowing an antrum full of pus to remain neglected, is in large part traceable to failure regularly to employ or properly to interpret transillumination.

The criticism that transillumination is unreliable is based on the fallacious premise that occasionally an antrum will illuminate darkly, and on puncture will be found to contain no secretion. This does occur; but if one will consider transillumination as only one of the signs of sinusitis, and if he will correlate its evidence with the other physical signs and compare the transillumination with the roentgenographic evidence (not the report of the roentgenographer), he will seldom be misled. Better by far to puncture an antrum with negative results than to allow an antrum filled with pus to escape proper treatment. No harm results from a properly conducted diagnostic puncture, while irreparable damage is done by removing large amounts of nasal mucous membrane from the ethmoid region—tissue capable of returning to a normal state—leaving untouched a reservoir of pus in the maxillary sinus.

CONCLUSIONS

In order to appreciate the valuable aid obtained by transillumination in diseases of the maxillary and frontal sinuses, these points should be kept in mind:

1. It must be used as a routine part of every nasal examination.

2. Its evidence is not infallible, but must be correlated with the other signs of sinusitis—the history, the presence and location of pus in the nose, and the appearance of roentgenograms.

3. Positive findings always merit full investigation, even puncture and irrigation.

4. Negative evidence on transillumination does not rule out sinusitis in the presence of other positive signs.

5. Due allowance must be made for the degree of illumination to be expected in patients with thick bones as compared to fair skinned, thin walled patients. Patients who have had one or more previous attacks of sinusitis with a resultant thickening of the mucous membrane lining the sinus will often illuminate with varying degrees of darkness, even though no secretion is present in the sinus.

When used in this manner, the accumulated experience obtained by routine daily use will prove transillumination to be a most valuable aid (1) for the general practitioner untrained in nasal examination; (2) as an indication that something more than the ethmoid sinuses is involved; (3) as a check on the interpretation of roentgenograms, and (4) as an indication of the progress of treatment.

29 East Sixty-Fourth Street.

POSITIVE WASSERMANN TEST IN A FATAL CASE OF ESTIVO-AUTUMNAL MALARIA *

GUTHRIE McCONNELL, M.D.†

CLEVELAND

This case is reported because of the control of a positive Wassermann reaction by necropsy in a case of malaria, that clinically showed no evidence of syphilis. The earlier statements to the effect that a positive Wassermann reaction may occur in malaria, without syphilis, were based largely on clinical examinations.

REPORT OF CASE

History.—L. D., a white man, aged 48, well developed and well nourished, a structural iron worker, stated that he had had several attacks of gonorrhea, and that about twenty-five years before he had had a chancre for which he received intravenous therapy. Examination revealed a slight scar on the corona. In July, 1921, about three months before admission, he noticed that he did not seem as strong as usual and was unable to do the heavy work required. He was in New Orleans at the time, and remained there until about a week before admission, when he "beat" his way north to Cleveland. For three weeks he had noticed that he staggered slightly on walking, and he had been somewhat dizzy. He was somewhat amnesic.

Examination.—The pupils were small, irregular and reacted sluggishly to light, and also, though to a less degree, to accommodation. On account of his general condition, no Romberg test was made. The tendon reflexes were present and normal; the abdominal and cremasteric reflexes were absent. No other abnormalities were found.

The temperature on admission, Oct. 15, 1921, was 38 C. (100.4 F.) and rose to 40.8 C. (105.2 F.) at midnight. On the following days it would fall to 37.4 C. (99.3 F.) and then rise to 40.4 C. (104.7 F.). He became progressively worse, and developed icterus and delirium; death took place, October 19. Blood examinations showed an average of about 11,000 white cells, 3,500,000 red cells, and 75 per cent. hemoglobin. Many parasites were found in the red cells, but only three definite crescents were observed. The urine contained albumin, granular casts and a few leukocytes, but no red cells. There was no hemoglobinuria.

The spinal fluid was clear without increase in pressure; ten cells were present, all mononuclear; globulin tests were negative. The Wassermann reaction with blood taken during the febrile stage was four plus; no particular significance was attached to this, as it was thought it was due to the presence of malaria.

The clinical diagnosis was malignant tertian malaria.

Necropsy.—This was performed twenty-four hours after death. No abnormalities of the external genitalia were noticed. The heart weighed 450 gm.; the muscle was pale brown and very flabby. The aortic orifice measured 10 cm., and the aortic leaflets were distinctly and uniformly thickened, but there were no vegetations. The coronary cusps were slightly adherent at their attachments. Nothing abnormal was noted in the remaining orifices or leaflets. Immediately above the aortic orifice and extending, in diminishing degree, to the celiac axis, there was an extensive mesaortitis. The surface of the vessel was thrown into many fine longitudinal wrinkles, and scattered throughout were many circumscribed areas of a pearly gray, hyaline fibrosis. In addition, there were irregular, yellowish areas of atheroma, and in many places definite scars with a disappearance of the media. These scars were depressed, and stellate in shape. About 4 cm. above the aortic leaflets, on the anterior wall of the aorta, was a slightly bulging area about 1 cm. in diameter. This was composed of scar tissue and, when held to the light, was thin and translucent; it was apparently a beginning aneurysm. The spleen weighed 500 gm. Its capsule was light purple, and ruptured readily, allowing the semiliquid, dark red pulp to escape. Not the slightest differentiation could be made out. The organ seemed to be enlarged upward under the diaphragm rather than downward. The kidneys weighed 350 gm., and were slightly enlarged, pale and flabby. The capsule stripped easily and allowed the tissue to bulge. The cut surface was pale, the cortex was somewhat thickened, and striations were indistinct. The glomeruli were not apparent. In some places there was very little differentiation between pyramids and cortex. In the lower poles the pyramids were congested and striated. The pelves were normal. The liver weighed 2,000 gm., and presented evidences of an old hepatitis on the upper surface of the right lobe.

Microscopic Examination.—This was incomplete, but the principal features discovered were: The heart muscle fiber bundles were somewhat pushed apart by edema, and some areas showed definite increase of connective tissue around the individual fibers. Many of the fibers contained much granular, yellow pigment that extended outward from the opposite poles of the nuclei. There was also some fragmentation. The liver presented a dense lymphocytic infiltration around the portal vessels. The lobules were congested, particularly in the peripheral zone, and the sinusoids contained a large amount of almost black pigment granules. Some pigment was free, but most of it was within endothelial cells. Many of the liver cells also contained a large amount of a similar pigment. The spleen was so congested that normal relations were destroyed. The entire tissue was filled with a dark brown, almost black, granular pigment, which was both intracellular and extracellular. The pigmented cells had a large oval nucleus surrounded by a large amount of cytoplasm.

The aorta presented slight subintimal degeneration, but the chief changes were within the tunica media. There were many large areas of well advanced fibrosis containing many lymphocytes and some plasma cells. The round cell infiltration was particularly conspicuous along the course of the vasa vasorum. An extensive infiltration of similar nature was present in the adventitia.

The cerebral capillaries were congested and many of the red cells in these vessels contained a definite granule, or a small mass of minute granules, of an almost black pigment. Similar congestion and pigmentation of the red cells was observed in the vessels of the cerebellum.

Anatomic Diagnosis.—This was: edema of the brain, with intravascular pigmentation; anthracosis, edema and congestion of the lungs, with catarrhal bronchitis, and bronchopneumonia; cloudy swelling of the myocardium; insufficiency of the aortic orifice, syphilitic mesaortitis and beginning aneurysm of the aorta; slight cardiac hypertrophy and dilatation; chronic parenchymatous nephritis, with an acute exacerbation; acute splenic tumor; chronic perihepatitis; pigmentation of the liver, spleen and brain.

COMMENT

In this case there were no clinical findings indicative of syphilitic changes, in spite of the history of infection. The necropsy, however, disclosed very definite syphilitic lesions of the aorta, with involvement of the aortic leaflets. In general, experience at this hospital has been that when a necropsy has been performed on a body from a person who has given a positive blood Wassermann reaction, lesions have been discovered that were evidently syphilitic in nature. This case of malaria proved no exception to the rule.

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* Owing to lack of space, this article is abbreviated in THE JOURNAL by omission of a review of previous literature. The complete article appears in the author's reprints.

† Dr. McConnell died, January 5. Among his papers was a report of the case here recorded, which was prepared for publication by Dr. Howard T. Karsner and Dr. E. E. Ecker

Modern Science and Current Practice.—The findings of modern science have shaken the hold of the sources of medieval authority, but they have done little as yet to loosen our inveterate habit of relying on the more insidious authority of current practice and belief.—Robinson: The Mind in the Making.

AUTOSERUM TREATMENT OF PNEUMOCOCCUS MENINGITIS COMPLICATED BY SYPHILIS

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Intraspinal injection of autoserum has recently been used with considerable success in the treatment of pneumococcus meningitis;[1] but references in the literature[2] warn against its use in cases complicated by syphilis, for fear of spreading this disease to the meninges. This caution seems to be founded on premature judgment, for the patient with syphilis who develops a secondary meningitis may be safely and wisely so treated by combining the autoserum with arsphenamin in the form of modified Swift-Ellis treatment.

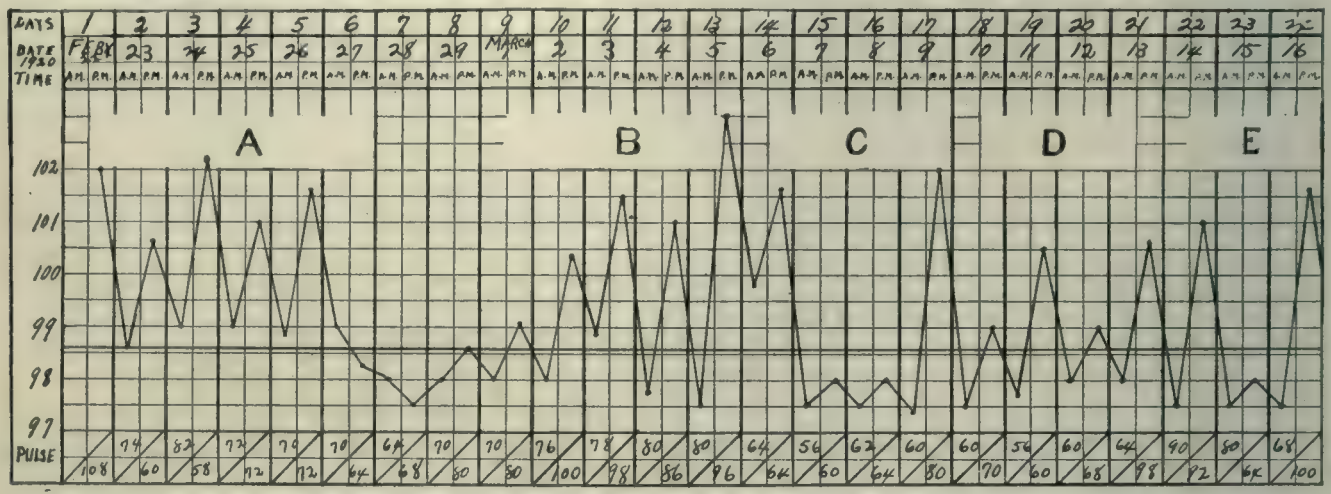
REPORT OF CASE

History.—G. H. S., an American farmer, aged 22, married, entered the hospital, Feb. 22, 1920, complaining of headache, vomiting and fever. Two weeks before, he had had influenza complicated by influenzal pneumonia, but for three or four days had been up and around the house. Twenty-four hours before admission, he began to ache all over, and had a severe headache, high fever, rigidity of the neck, nausea and vomiting. The condition progressed until he had become more or less unconscious and delirious. During this time, his entire family had had influenzal pneumonia; two children died, a third was seriously ill, and his wife was not expected to live. There was nothing significant in the previous history except syphilitic ulcer in 1915, for which he had been given one dose of arsphenamin and several doses of sodium cacodylate. The Wassermann test had never been made.

Physical Examination.—The patient was rather anemic and undernourished; he lay with the head retracted, the thighs flexed, and in a state of delirium. Every few minutes he would cry out and put his hands to his head, as though in pain. There was more or less constant muttering, with extreme restlessness and frequent attempts to get out of bed. The neck was extremely rigid; the pupils were small but equal; respiration was shallow, and the abdomen was of the scaphoid type, with no evidence of pathologic change in the chest or the abdomen. A scar on the penis near the frenum was observed. Koenig's sign was positive; the knee jerks were normal; the Babinski and Gordon-Oppenheim tests were negative, and ophthalmoscopic examination revealed double choked disks. Spinal puncture yielded 30 c.c. of a very cloudy fluid under greatly increased pressure.

Laboratory Examination. — The red blood cells were 4,070,000; white cells, 25,000; hemoglobin 70 per cent., and the blood Wassermann reaction positive (++++). The specific gravity of the urine was 1.034; the urine was acid in reaction, with a trace of albumin but no sugar, casts or pus. The spinal fluid cell count was 16,400, of which 96 per cent. were polymorphonuclears. No organisms were found in the direct smear, but a twenty-four hour culture yielded numerous small, moist colonies with a greenish halo about them. Smears revealed a lanceolate, encapsulated, gram-positive diplococcus identified as pneumococcus.

Clinical Course.—This divides itself into six periods. The period of treatment with polyvalent antipneumococcus serum includes the first five days. As a precautionary measure, 30 c.c. of meningitis serum was given intravenously on admission, and twelve hours later 30 c.c. intraspinally; but at the end of twenty-four hours a positive diagnosis of pneumococcus meningitis had been made, and thereafter polyvalent pneumococcus serum was given in the vein at twelve and twenty-four hour intervals, totaling 250 c.c. in four days. The spinal cell count rose, February 23, to 20,000 per cubic millimeter, but, February 27, it had dropped to 3,500, and



Temperature: *A*, severe, acute, meningeal symptoms—headache, vomiting, partial deafness and delirium; polyvalent antipneumococcus serum, autoserum intraspinally—phenomenal relief of symptoms; *D*, period of spinal irrigations with from 50 to 100 c.c. of physiologic sodium chlorid ventricle infection in which there was intermittent drainage, but ventricular puncture not done; *F*, period of arsphenaminized autoserum with no sequel except impaired hearing, slight in both ears; blood and spinal Wassermann reactions negative.

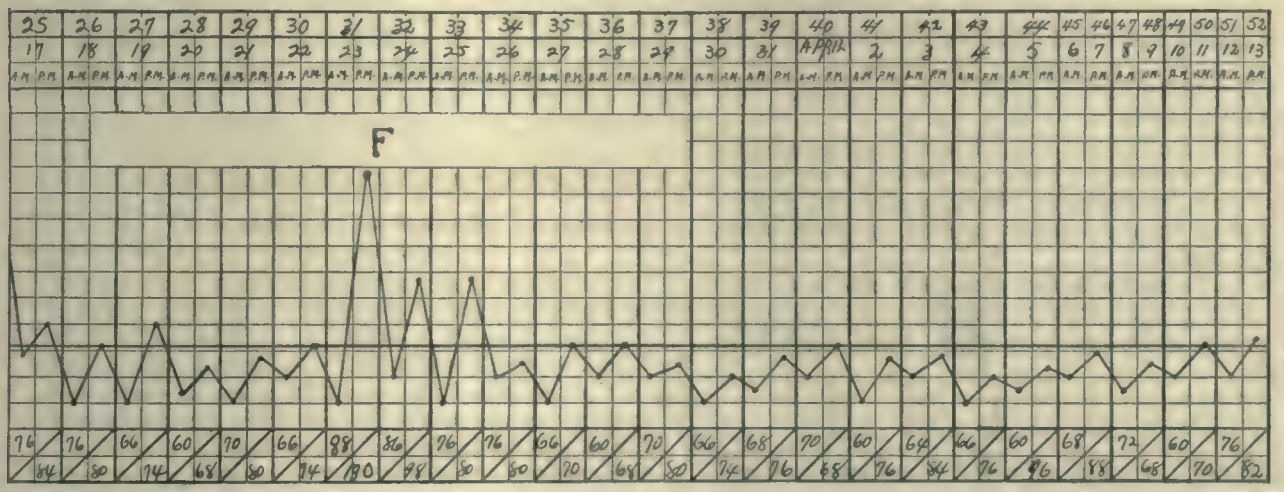
March 1, the period of urticaria began, and with it meningeal symptoms returned. For four days the temperature fluctuated, going as high as 103 F., and the spinal cell count ranged from 3,240 to 4,450. Owing to fear of anaphylactic shock, the use of antipneumococcus serum was not resumed, since desensitization in other cases had proved unsatisfactory and dangerous. Spinal punctures gave temporary relief, but the patient was becoming progressively worse, and seemed doomed. It was at this time, March 6, that autoserum treatment was instituted, and 20 c.c. of the patient's own blood serum injected intraspinally. The first dose caused the spinal cell count to jump from 7,612 to 24,600 in eight hours and the temperature to normal in twelve hours, where it remained for more than two days, at which time the spinal cell count had dropped to 650; and, again, it appeared as though the patient were recovering. He received four injections of autoserum at twenty-four hour intervals, but prior to the last, March 9, he had a second relapse with temperature rising to 103 F. and spinal cell count to 18,100. Smear of the spinal fluid at this time showed

1. Sanders, T. M.: Am. J. M. Sc. **159**: 246 (Feb.) 1920.
2. Goodman, A. L.: Arch. Pediat. **33**: 649 (Sept.) 1916.

many encapsulated, lanceolate, gram-positive diplococci, but the cultures were sterile. It was thought that there was a focus somewhere in the meninges or lateral ventricles which was draining intermittently and reinfecting the entire meninges, thus accounting for the apparent relapses.

For fear of spreading syphilis to the central nervous system, the autoserum treatment was discontinued, and from March 10 to 13 spinal irrigations were given at from twelve to twenty-four hour intervals with slight improvement, the cell count varying from 5,291 to 880, and the temperature from 101 to 99 F. March 12, blood examination showed 3,100,000 erythrocytes, 65 per cent. hemoglobin and 16,200 leukocytes; urinary findings were still negative, and the spinal cell count was 1,120. A fifth injection of autoserum was given, March 13, and the following day 0.2 gm. of arsphenamin given with the aim of instituting arsphenaminized autoserum; but an immediate chill with a severe reaction caused postponement of this procedure. It was noted, however, that the ensuing thirty-six hour period showed marked improvement, with normal temperature, and the spinal cell count dropped as low as 331. The urine remained negative. The patient then (March 16) had another temperature rise to 101.6 F., and spinal cell count to 2,992.

March 18, blood count showed 3,370,000 erythrocytes, 65 per cent. hemoglobin and 9,200 leukocytes; spinal cell count, 1,573; and spinal Wassermann reaction positive (+ + + +). The patient's condition was gradually growing worse in spite of intermittent periods of relief, and puncture of the lateral ventricles was seriously considered to institute drainage, but deferred in favor of continued autoserum treatment combined with arsphenamin. He was given 0.4 gm. of arsphenamin, and fifteen minutes afterward 120 c.c. of blood was drawn for use as arsphenaminized autoserum. This was given in 20 c.c. doses at intervals of forty-eight hours, and the patient showed the most marked improvement he had yet had. March 21, he was practically normal, with spinal cell count of 92; but March 23 he had his last relapse, the temperature rising to 102 F. and the spinal cell count to 6,952. March 24, 0.5 gm. of arsphenamin was given, and arsphenaminized autoserum on the two succeeding days. From this time on, the temperature remained normal, the condition gradually improved, and the spinal cell count dropped to 9, April 6, when the patient was sitting up and apparently out of danger.



250 c.c. in vein; *B*, period of urticaria—severe itching, photophobia, vomiting, headache, and return of deafness after period of relief; *C*, solution; *E*, period of intravenous arsphenamin plus spinal irrigations with physiologic sodium chlorid solution; patient thought to have lateral intraspinally; prompt relief of symptoms; two days after first treatment, he felt better than at any previous time; gradual return to normal.

COMMENT

Spinal irrigations with physiologic sodium chlorid solution were continued at intervals of from twelve to forty-eight hours throughout the course of the disease as a matter of safety to insure drainage.[3] The first dose of arsphenamin though small, caused quite a severe reaction, but exerted no depressing effect on any of the vital functions, and no increase of albumin or casts in the urine. The jump in the spinal cell count from 7,612 to 24,600 in eight hours following the first intraspinal injection of autoserum was considered a good sign, and was thought to be due to opsonins of the blood being applied in enormous quantities directly to the seat of infection.[4] Injection of the serum always caused more or less pain in the abdomen and legs, and occasionally slight increase of headache, but no severe or alarming symptoms.

Autoserum treatments begun on the fourteenth day of illness with untreated serum were discontinued after five doses, and arsphenamin was begun on the twenty-second day because of the patient's serious condition requiring it as a means of rendering the autoserum safe for intraspinal injection. These treatments were resumed after the second dose of arsphenamin on the twenty-sixth day of illness in the form of modified Swift-Ellis treatment, thus combining the antisyphilitic treatment of arsphenamin with the autoserum treatment for the meningitis, forming a combination of therapy which, in our judgment, resulted in the patient's recovery. Altogether, he received five doses of untreated autoserum, six doses of arsphenamin, and seven doses of arsphenaminized autoserum—three injections after the second dose of arsphenamin, two after the third, one after each of the fifth and sixth doses, and none following the first and fourth doses. He received a total of thirty-seven spinal punctures and irrigations, and was discharged on the fifty-second day of the disease, cured of his meningitis, and blood and spinal fluid Wassermann reactions negative. Dec. 12, 1921, the only sequel to be discovered was partial impairment of hearing; the blood Wassermann reaction was again positive (+ + + +); he had had no treatment since leaving the hospital, felt perfectly well, and refused spinal puncture.

Speculation as to the relative value of the various therapeutic procedures employed during the course of this case can result in no absolute dictum; but a comparison of the second half of the temperature chart with that of the first is rather convincing as to the

3. Farmachidis, C. B.: Gaz. d. osp. **40**: 988 (Nov. 13) 1919; abstr. J. A. M. A. **74**: 1132 (April 17) 1920.

4. Weaver, A. H., and Tunnicliff, Ruth: J. Infect. Dis. **9**: 130, 1911.

promptness and permanence of relief. Whether he developed an immunity to his infection regardless of the arsphenaminized autoserum treatment or by virtue of it cannot be stated with certainty; but the results obtained were sufficient to warrant its recommendation for use by others. Certainly, the arsphenamin directly combated a serious handicap under which the patient was laboring, and indirectly aided his fight against the pneumococcus infection and made the serum safe for intraspinal injection.

TECHNIC

Arsphenamin is given in the usual manner at a temperature of from 100 to 105 F., diluted in 200 c.c. of freshly distilled water. Fifteen minutes after the last of the solution has entered the vein, from 4 to 6 ounces (120 to 175 c.c.) of blood is drawn aseptically and allowed to stand a few hours in the icebox for the serum to separate. This is pipetted off in doses of from 12 to 20 c.c., and sealed. A mixture of more or less blood cells does not injure the serum for intraspinal use. At the time of spinal puncture, the fluid is warmed to body temperature and slowly injected with a Luer syringe after withdrawal of from 30 to 50 c.c. of spinal fluid. Following injection of the serum, the foot of the bed is elevated 12 inches for a period of four hours.

CONCLUSIONS

1. Intraspinal autoserum therapy is a rational procedure in cases of secondary meningitis, because it brings the antibodies of the blood in direct contact with the invading bacteria.

2. It is indicated in any case of prolonged meningitis in which the continued giving of stock serum would endanger from anaphylactic shock, and is safer than desensitization with continued use of antigens made from horse serum.

3. Syphilis is no contraindication for this treatment because, with proper precautions, it can be combined with arsphenamin in the form of modified Swift-Ellis treatment.

1028 Fifth Avenue.

MANAGEMENT OF THE FEMALE URINARY BLADDER AFTER OPERATION AND DURING PREGNANCY

A FURTHER STUDY OF RESIDUAL URINE IN ITS BEARING ON URINARY TRACT DISTURBANCES *

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CHICAGO

The normal bladder is highly resistant to infection. It also appears that those infections which do develop in the properly functioning healthy bladder quickly disappear unless maintained by kidney lesions.

A notable exception to these observations is found in the frequent occurrence of cystitis following pelvic operations. In search for an explanation of this complication, we discovered, eight years ago, that patients who are repeatedly catheterized after operation usually fail to regain immediately the power of complete evacuation. This discovery led to the suspicion that residual urine may be an important factor in the development of postoperative cystitis.

A second exception to the rule that the bladder is resistant to infection and tends to heal quickly is found in the occurrence of pyelitis during the course of pregnancy and in the puerperium. And here, again, I found that retention of several ounces of residual urine is frequently demonstrable. If a residue of urine after micturition is not evident at the time pus is discovered in the urine, the history usually reveals that it has been present during the earlier months of pregnancy.

As previously pointed out,[1] both in disease and in experimental work it has been found that if virulent bacteria enter the normal bladder, they tend to do no harm.[2] In view of this evidence of others, combined with corroborative personal experience, it seemed highly probable that the added complication of residual urine is the factor that accounts for many otherwise inexplicable urinary tract infections, notably postoperative infections and those complicating pregnancy. A study of residual urine in its bearing on urinary tract disturbances forms a basis for the present report.

PREVIOUS MANAGEMENT OF THE BLADDER

Previous to 1915, few infections resulted among patients who were not subjected to catheterization after operation, but suffering from distention was often so severe that we decided it was preferable to relieve with the catheter when necessary. The urine was drawn for relief of distress from distention, and catheterization was immediately discontinued on resumption of spontaneous urination. The result was comparative comfort to the patients, with an aftermath of urinary tract infection in many cases; the possibility of pyelitis was a source of anxiety in all catheterized patients.

PRESENT METHOD OF MANAGEMENT OF THE BLADDER

The cardinal principles underlying our present method of care of the bladder are two: (1) Catheterization is avoided if possible; (2) if the catheter has been employed, it is thereafter used once a day until the patient has regained the power of complete evacuation.

Despite our desire to dispense with the catheter, no patient is allowed to suffer from distention.

If the catheter has been required only once or twice, the patient is carefully watched for symptoms of retention or infection (frequency, distress, pyuria). Further treatment may not be indicated.

Whenever it has been necessary to draw the urine repeatedly, a catheter is thereafter passed once each day, immediately after urination, until residual urine disappears. In the performance of this test, a boiled rubber catheter is preferred, the parts are cleansed with weak mercuric chlorid solution, and a few cubic centimeters of ⅛ per cent. silver nitrate is instilled before withdrawal of the catheter.

Residual urine of less than one ounce is considered normal if free from pus; when pus is present, the test is repeated once daily for two or more days.

Hexamethylenamin is given in an amount just short of that which causes burning or, preferably, in a quantity sufficient to reveal formaldehyd in the urine. Acidity of the urine is maintained with benzoic acid or acid sodium phosphate.

MATERIAL STUDIED

It has been possible to study our present plan of treatment in the management of 1,595 female patients

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* Read before the Chicago Gynecological Society, March 16, 1923.
* From the Pathological Laboratory and Gynecological Service of St. Luke's Hospital.
* Previous work was described by the author in an article entitled "A Study of Bladder Function," Surg., Gynec. & Obst. **29**: 24 (July) 1919.

1. Curtis, A. H.: Stasis of Vesical Urine in Relation to Urinary Tract Infections, J. A. M. A. **66**: 1456 (May 6) 1916.
2. In typhoid fever, with bacilluria in more than 20 per cent., cystitis is rare. Mathers, in a series of twenty-five patients with pneumonia, demonstrated a pneumococcus bacteriuria in twelve; not one yielded clinical evidence of cystitis. Rovsing found that instillation of large quantities of virulent bacteria into the healthy bladder produces no change in the mucous membrane.

subjected to important surgical operations. The following have been excluded from consideration: operations of a minor surgical nature; operations involving the kidneys, ureters or vesical mucosa; urinary tract infections present at the time of admission to the hospital; carcinoma cases revealing mechanical interference with urinary tract function, and patients mentally incapacitated, intractable to treatment, or not available for follow-up study.

The catheter was not required in 66 per cent. of the total number of patients; in 11 per cent. it was employed once, in 5 per cent. twice, and in 17 per cent. the urine was drawn at least three times (Table 1).

TABLE 1.—*Management of the Bladder After 1,595 Important Abdominal and Pelvic Operations*

	Number of Catheterizations			
	None	One	Two	Several
Number of cases	1,051	187	88	269
Residual urine	8	12	24	173
Urinary tract infection:				
Treatment faulty	0	0	0	9
Treatment approved	0	0	0	3

Of 1,051 patients not subjected to catheterization for distention, several were tested for residual urine because of unusual frequency of urination or other symptoms suggesting retention. Residual urine was discovered in less than 1 per cent. of this group. None suffered from urinary tract infection.

No infection occurred among 187 patients catheterized but once for distention. Residual urine was detected in 6 per cent., but disappeared very promptly, usually within two days.

Eighty-eight patients, relieved by two catheterizations, showed residual urine thereafter in 27 per cent. Slight infection occurred a few times, but disappeared more or less promptly in all instances.

Patients Subjected to Repeated Catheterization.—Greatest interest centers in 269 patients who were catheterized many times. Residual urine was discovered in 64 per cent. The actual incidence of residual urine was greater than represented by this figure because 10 per cent. of this group were not subjected to the residual urine test.

Return of the power of complete evacuation of the bladder usually required at least four days, and seldom longer than eight days. The amount of residual urine almost always decreased stepwise from day to day. Slight vesical symptoms and moderate numbers of pus cells were commonly encountered for a few days, followed by a return to normal.

Twelve patients failed to progress favorably (Table 2). It is of interest to note that nine of these were not cared for in accordance with our plan of management; residual urine tests were entirely omitted, or were discontinued before the patients acquired the power of complete evacuation. Subsequent care resulted in ultimate recovery of all of these nine.

Three patients, given approved care, reacted unfavorably. One, operated on for relief of cystocele, was catheterized five times for retention. Residual urine thereafter decreased from 4 ounces (120 c. c.) to normal within five days. Much vesical distress led to another residual urine test one week later, with the result that 3 ounces (90 c. c.) were obtained; normal function again returned in three days. There was an associated infection with pyuria, which disappeared after two weeks. A second patient, subjected to vaginal hysterectomy and transposition operation, showed residual urine for six days subsequent to several catheterizations for retention. Vesical irritation led to another residual test two weeks later, at which time 3 ounces was obtained. Pus remained constantly present, and symptoms of pyelitis developed. Recovery occurred after an interval of many weeks. The third patient, operated on for prolapse and cystocele, gave a history but no evidence of preoperative urinary tract infection. The course in this patient was similar to that in the two preceding: repeated catherizations, and gradual disappearance of residual urine, followed by evidence of residual urine when subsequently tested because of vesical distress. Many months passed before relief was obtained. It is possible that slight infection still persists.

Should Catheterization be Avoided in all Cases?—Besley [3] believes that the catheter should never be resorted to for relief of retained urine. This plan worked well in military service in cases in which there was spinal cord injury; the patients suffered little pain, and serious infection was avoided. Clinical evidence led Besley to assert that kidney function is not disturbed as a result of allowing the bladder to become distended and overflow.

Cumming,[4] after study of twenty-nine cases in which there was spinal injury, advocated avoidance of catheterization as far as possible. He believes that urine left in the bladder causes little back-pressure injury of the kidney, yet admits a certain amount of permanent renal fibrosis. Of his series of twenty-nine patients, ten had infection of the urinary tract; two were operated on for kidney infection.

TABLE 2.—*Detail of All Patients (Twelve) Who Developed Notable Evidence of Urinary Tract Infection After Operation*

	Case Number	Catheterizations for Distention	Residual Urine Tests	Duration of Infection
Treatment faulty	101	8	None	Two months
	972	11	None	Three months
	201	8	None	Many weeks
	231	14	None	A few weeks
	241	3	None	A few weeks
	441	7	None	A few weeks
	633	3	None	Pyelitis; one month
	128	3	Four; discontinued with residual of 1½ ounces	One month
	641	3	Five; discontinued with residual of 4 ounces	Seen once four months later; vesical irritation; pus cells scattered
Treatment approved	563	5	Sixth test showed no residual; test one week later revealed 3 ounces	Probably pyelitis; fever, much pus, many bacteria; recovery complete in two weeks
	561	23	Sixth test no residual; thirteen days later test showed 3 ounces	Later fever, much pus, many bacteria; prompt permanent recovery
	666	5	Seventh test no residual; many ounces residual when tested after leaving hospital	Preoperative infection? Many months +

We must realize that catheterization of these spinal injury patients, when once begun, must be continued indefinitely; the trouble is not a temporary one with rapid return of normal function such as occurs after pelvic operations. Moreover, distention of the paralyzed bladder causes little distress, and the catheter is therefore not required for physical comfort.

In civil practice we encounter conditions less favorable to this plan. Patients suffer intensely with bladder

3. Besley, F. A.: A Plea for the Noncatheterization of the Urinary Bladder in Cases of Gunshot Wounds of the Spinal Column, J. A. M. A. **69**: 638 (Aug. 25) 1917.

4. Cumming, R. E.: Shell Fracture of the Spine and Changes in Kidney and Bladder Function, J. A. M. A. **78**: 335 (Feb. 4) 1922.

distention; this is notably true of women after pelvic operations. Also, from the point of view of subsequent distress which may follow vesical distention I am led to mention the case of a college team-mate, without history of venereal disease, who found himself under circumstances that induced him to withhold the urine for a great many hours. Even many years thereafter he suffered great discomfort whenever the bladder became moderately full.

Animal Experiments.—For the purpose of testing the harmfulness of retained urine, the bladders of twenty-two male rabbits were paralyzed by cutting the spinal cord. There resulted retention of urine analogous to that which occurs in soldiers consequent to gunshot injuries of the spine.

Vesical distention developed in all except one rabbit, which died at an early date. Infection was present in twelve of the twenty-two cases. Distention of the ureters was common. Nephritis, clumps of cellular infiltration in both cortex and medulla, and intense congestion with more or less hemorrhage of the kidneys, were frequent. Nine presented marked dilatation of the kidney tubules; of these, six cases revealed extensive destruction of kidney substance.

These experiments on animals indicate that failure to relieve the distended bladder is responsible for back-pressure destruction of kidney tissue, with more or less associated infection. The incidence of infection, it will be noted, is approximately that which occurred in Cumming's series of soldiers. I have little doubt that the "certain amount of renal fibrosis" which Cumming found clinically would have been expressed as "considerable destruction of kidney tissue" had he been given opportunity to make thorough anatomic examinations similar to those I was able to obtain in experimental animals.

PYELITIS OF PREGNANCY

Exclusive of those patients who give history of previous infection, it would appear that a frequent, if not the most frequent, cause of pyelitis of pregnancy is ascending infection from residual vesical urine. Many pyelitis patients give a history of having previously accustomed themselves to resist the demands of nature until they have developed the habit of voiding not more than once during every eight or ten hours. Others mention inability completely to empty the bladder after the onset of pregnancy; evacuation of a generous amount of urine may be followed by passage of several additional ounces a few minutes later. Such difficulty may be present during the early months of pregnancy and then disappear, but more often occurs after the uterus rises out of the pelvis. When pyelitis is fully developed and the damage has already been done, residual urine may have disappeared; but many of these patients continue to yield a considerable residue on passage of the catheter immediately after urination.

Again, it is of interest to note how often cystocele with retention is present in patients with pyelitis of pregnancy. Temporary cystocele may occur in a bladder that functions normally at other times, but succumbs to the added distortion and downward pressure of the enlarged uterus.

Although it may be venturesome to discredit years of experience which attribute pyelitis to pressure of the pregnant uterus on the ureter, it is strange, if this occurs, that fibroids seem never to have similar action. We must remember, also, that the ureter is tough and elastic. Moreover, passage of the ureteral catheter to the kidney reveals no obstruction in these cases. Theoretically, ascending infection from stagnant vesical urine would appear a more important etiologic factor than pressure on the ureter; this statement is not intended to minimize the possible importance of displacement of the kidney or kinking of the ureter near the kidney pelvis.

LABORATORY STUDY OF URINE

Urine from several hundreds of these patients has been examined in the fresh state, and cultures have been made aerobically and anaerobically.

After plastic operations, one must rely on the clinical symptoms or have recourse to the catheter for positive diagnosis of infection because postoperative discharge invariably mingles with the voided specimens to such an extent that the laboratory study is almost valueless.

Some increase in leukocytes is usual if there has been more than one catheterization. In fact, enough to warrant the diagnosis of pus is not uncommon.

Urine smears from once catheterized patients reveal scattered staphylococci and diphtheroid bacilli, with occasional clumps of small, gram-negative, vaginal bacilli. Cultures correspond.

Bacteriologic study of fresh specimens from repeatedly catheterized patients most often reveals motile bacilli of the colon type. Cultures contain some staphylococci and diphtheroid bacilli, with varying numbers of colonies of bacilli of the colon group roughly proportionate to the number of leukocytes present in the fresh specimen. Anaerobic growth, aside from occasional anaerobic streptococci, is not noteworthy.

Those patients with residual urine give the greatest number of leukocytes and bacteria. Immediately on the disappearance of residual urine, there is a gradual return to normal.

If patients are unable to void at all for many days, it has been noted that leukocytes and bacteria are more numerous in specimens from those catheterized infrequently than in those from patients whose bladders are emptied three times daily.

SUMMARY

A study devoted to postoperative care of the urinary bladder, with especial consideration of the part played by residual urine, has been made throughout the period of convalescence of 1,595 female patients subjected to serious operations.

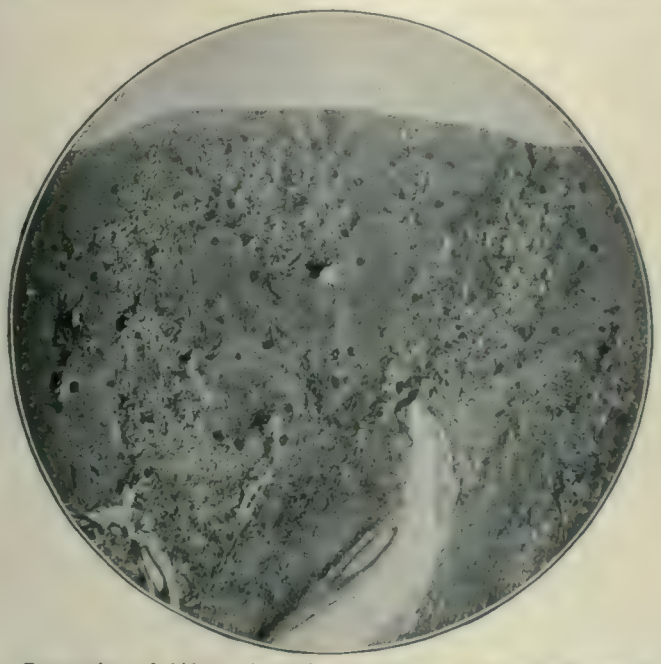
Use of the catheter has been avoided when possible, but no patient has been allowed to suffer from distention.

Residual urine has been present after the return of spontaneous micturition in more than 64 per cent. of all repeatedly catheterized patients. The most important principle in our treatment of such cases has been the daily passage of a catheter, immediately after urination, until residual urine is no longer present. Only three of those who were catheterized daily until the return of normal function developed urinary tract infection. These three subsequently showed residual urine after they were thought to have returned to normal, and it is believed that lack of treatment during this time accounts for the infection.

Laboratory study of urine from patients subjected to postoperative catheterization reveals that there may be temporary cystitis. This invariably—and usually very promptly—disappears if freedom from residual urine is maintained. Instillation of ⅛ per cent. silver nitrate and administration of urinary antiseptics by mouth are helpful adjuncts in the treatment.

Strict avoidance of the catheter after all operations, despite distress, would perhaps reveal equal freedom from infection; but this plan cannot be followed without much suffering to many patients. Moreover, animal experimentation indicates that if bladders are allowed to distend and overflow, considerable back-pressure destruction of kidney tissue results.

Clinical evidence indicates that residual urine occurs very often in pregnant women. The notable frequency



Destruction of kidney tissue in a rabbit, due to back-pressure of residual urine accumulated in a paralyzed bladder; slightly reduced from a photomicrograph with a magnification of 16 diameters.

with which it is present in those with pyelitis of pregnancy suggests that ascending infection from this source is of considerable importance.

CONCLUSIONS

1. Strict avoidance of the catheter after operation is not advocated. It is objectionable because many patients suffer intense pain from retention of urine, and because animal experimentation reveals that failure to relieve the distended bladder is accompanied by back-pressure destruction of kidney tissue.

2. After operation, patients who do not require catheterization for relief of distention quickly return to normal without urinary tract infection, even though some residual urine is present in more than 1 per cent. of such cases.

3. Patients who suffer from postoperative distention of the urinary bladder may be repeatedly catheterized without fear of infection, provided they are thereafter subjected to a daily test for residual urine until it is no longer present.

4. It is dangerous to cease abruptly the use of the catheter with the advent of spontaneous micturition, because there is usually a period of several days during which some urine is retained. Contamination of this residual urine is the chief cause of postoperative cystitis.

5. Watchfulness for residual urine in all pregnant women who show undue frequency, or who reveal pus in the urine, is an important precaution against pyelitis of pregnancy.

104 South Michigan Avenue

PULMONARY FIBROSIS

REPORT OF CASE *

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History.—A white woman, aged 52, widow, housewife, complained of blood-spitting, which began fifteen years before, and had continued at intervals of from one week to one month. The quantity of blood had varied from a teaspoonful to a cupful. The family history was unimportant. The father died at 55 of heart disease, the mother at 40 of pneumonia. Twice in early life there had been presumably an iritis of the left eye. The patient had had three children and two miscarriages. The menopause was passed at 48 years of age; the menstrual history before and since that time was entirely normal.

In May, 1918, symptoms simulating a pleurisy developed at the base of the right chest. There was fever and severe pain (the characteristic stitch in the side), made worse on deep breathing. There was neither cough nor expectoration. The physical signs were those of a moderate-sized effusion in the right chest, but no fluid was obtained after several attempts at paracentesis. The pain continued for several weeks. At no time was there cough or expectoration, nor was the patient's general health affected by the illness. Three months later a roentgenogram of the chest showed a consolidation of the base of the right lung (Fig. 1). Following this acute illness, the hemoptysis has continued, but the patient's health has remained fairly good, and she has actually gained some weight. There has been no cough or sputum, and no recurrence of the fever.

Physical Examination.—This patient consulted me for the first time, May 9, 1918, solely for the relief of blood-spitting. Her general appearance was good; she was well developed and well nourished; there was absence of dyspnea, cough and sputum; her weight was 150 pounds (68 kg.); height, 5 feet 4 inches (162.5 cm.); pulse, regular, and 100 to the minute; temperature, 98.8. The appetite was good. The

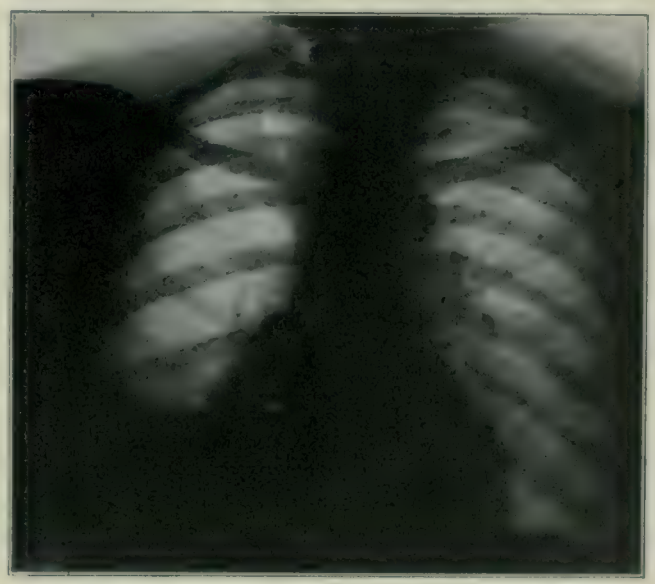


Fig. 1.—Chest three months after beginning of illness; fibrosis commencing at base of right lung, with left lung clear.

bowels were regular. She was not troubled with nausea, vomiting, gas, heartburn, pain or discombort after meals. She slept poorly. She often micturated too frequently, but did not have to rise at night.

The apex beat was in its normal position; no friction sound or thrill could be felt over the precordium; the heart did not seem to be enlarged to the left; the heart sounds were clear

* Read before the Southern Interurban Clinical Club, New Orleans, Jan. 12, 1923.

throughout; the blood pressure was: systolic, 180; diastolic, 120. Inspection of the chest showed an almost complete absence of expansion of the right side; there was no enlargement of the superficial veins of the neck, chest or arms; there was no evidence of retraction of the ribs or interspaces; inspection of the vertebral column in the thoracic region showed a compensatory curve toward the right side. There was a total absence of vocal fremitus and resonance over the greater part of the right chest. The right lung was flat to percussion from the clavicle to the base. A few very faint

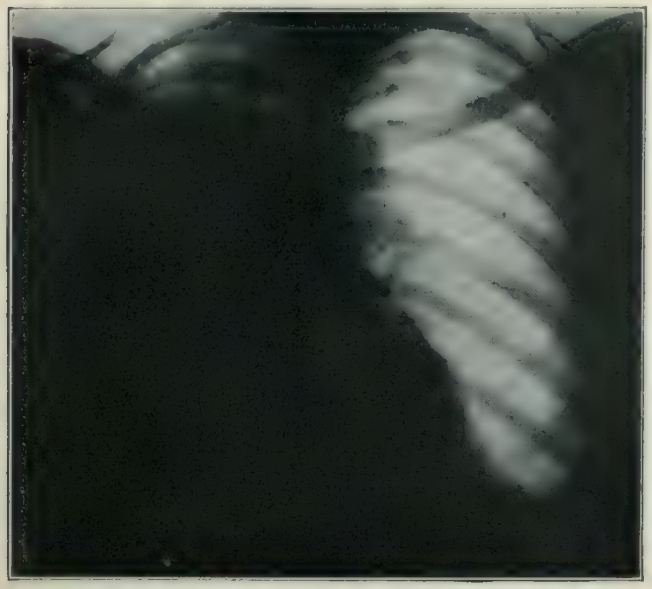


Fig. 2.—Chest four years after beginning of illness: extension of fibrosis involving entire right lung, with left lung clear.

and distant breath sounds could be heard only above the clavicle; no adventitious sounds were heard. The left lung was absolutely normal to inspection, palpation, percussion and auscultation. Puncture of the right pleural cavity with a large needle, in four different locations, failed to locate any effusion. The abdomen was slightly distended, but soft; no masses could be felt; there were no points of tenderness; the spleen could not be palpated; the skin of the abdomen, front and back, showed no effort at collateral circulation in the form of enlarged veins. The joints were normal. There was no edema of the body or limbs. The throat was normal; the paranasal sinuses were clear; the teeth showed pyorrhea, and caries in three molars; roentgen-ray examination showed abscesses at the roots of these teeth; the superficial lymph glands could not be palpated; the reflexes were active; the pupils were equal in size, regular in shape, and reacted normally to light and accommodation.

Examination of the blood revealed: hemoglobin, 85 (Dare); erythrocytes, 4,240,000; leukocytes, 7,200; differential count: polymorphonuclear neutrophils, 57 per cent.; transitionals, 2 per cent.; lymphocytes, 31 per cent.; large mononuclears, 2 per cent.; eosinophils, 6 per cent.; mast cells, 1 per cent. The Wassermann reaction of the blood serum was negative; the spinal fluid showed a negative Wassermann reaction, a cell count of 3 cells per cubic millimeter, a normal globulin content, and no sugar. The urine had a specific gravity of 1.024, was acid in reaction, showed a faint trace of albumin, no sugar, and microscopically, a few pus cells and an occasional hyaline cast. The stomach contents after a Mayo test meal showed a total acidity of 52, with free hydrochloric acid of 40; there was no occult blood, and no lactic or other organic acids.

Roentgen-ray examination of the chest (Fig. 2), by means of the fluoroscope and plates, showed the heart and aorta normal, the left lung entirely normal. The right lung, except for its extreme tip above the clavicle, was entirely airless. The consolidation of the lung was especially dense at the base, the process having apparently begun there, and extended upward. The thoracic spine showed a compensatory curve toward the affected side. In the absence of symptoms referable to the gastro-intestinal tract, it was not deemed necessary to make a roentgen-ray study.

COMMENT

The physical signs and the roentgen-ray evidence were in striking contrast to the woman's excellent appearance and physical condition. She came for advice solely on account of the blood-spitting, and aside from slight dyspnea, there was little discomfort. She was emphatic in her statement that she had had no fever or cough, and that she had raised no sputum except at the times of the pulmonary bleeding. The hemoptysis had no regular sequence, nor was it affected by the habits or conduct of the patient.

We have absolute evidence, as shown by the roentgen-ray examination, that this process has been present at least four and one-half years. This fact, considered in connection with the patient's uniformly good health, makes the diagnosis of a primary or secondary malignancy of the lung or pleura extremely doubtful. A review of the literature concerning the duration of life in cancer of the lung reveals some interesting statistics of the estimates made by Osler, Walsh, Lindsay and Lord, whose estimates were from six to eight months, from eight to ten months, from six months to one year, and from six months to two years, respectively. It seems that the time limit would surely rule out the most slowly growing sarcoma or carcinoma, and there would certainly be some evidence of cachexia during this length of time. The almost certain absence of any primary carcinoma in the breast, or gastro-intestinal tract, would exclude the possibility of a metastasis to the lung with the development of a secondary carcinoma. Then, too, it would be most unusual for a metastasis to be unilateral; in my experience, in 100 per cent. of the cases it has been bilateral.

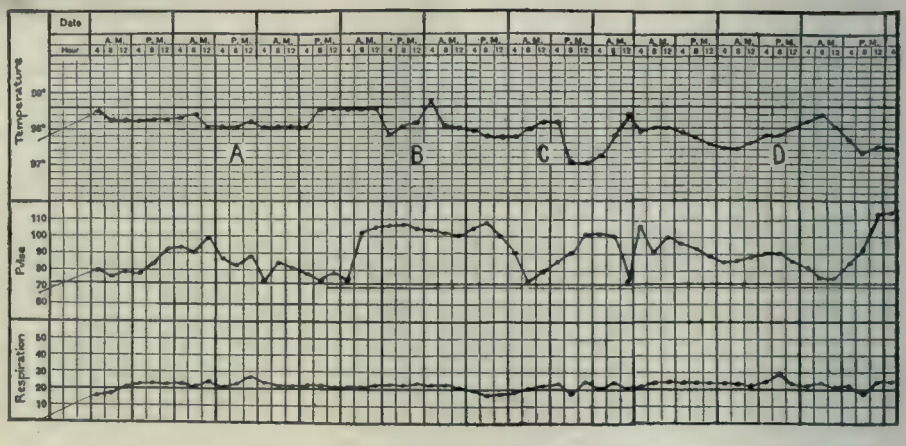


Fig. 3.—Temperature, pulse and respiration: normal curves during application of tuberculin test: *A*, 0.1 mg. of old tuberculin; *B*, 1 mg.; *C*, 5 mg.; *D*, 10 mg.

If malignancy does play any part in this case, it must be primary. Although it is possible for a primary carcinoma to begin at any point in the lung or pleura, it most often develops at the root of the lung, and finally

involves the whole lung. Usually there is a marked displacement of the heart and mediastinal tissue to the other side; and in from 12 to 14 per cent. of the cases there is an early formation of fluid, in many cases bloody, in the pleural cavity. Dyspnea is always a prominent symptom, and is progressive. Cough, fever and pain occur in most cases. Attention must also be called to the great frequency of enlargement of the superficial lymph glands. Considering the absence of these symptoms, together with the duration of life in cancer of the lung, it is most unlikely that it has anything to do with the cause of the physical signs in this case; hence it is dismissed without further consideration.

At this point reference should be made to benign tumors of the lung, and the possibility of the pathologic condition here described being due to a tumor of this character. Benign tumors of the lung occur with great rarity—cases of fibromas, teratomas and osteomas, and dermoid and hydatid cysts of the lung are reported, but much less frequently than malignant tumors. The chief characteristics of benign tumors are that they occur at the root or apex of the lung, are usually unilateral, are moderate in size, and they have clear and well-defined edges.

The previous history of this patient shows that she had several attacks of iritis, and two miscarriages. These symptoms being suggestive of syphilis, suspicion was immediately directed toward this disease. It is entirely possible for a tertiary syphilis to produce in the lungs pathologic changes and physical signs similar to those here described. These lesions are usually situated in the middle and lower parts of the lung, rarely involving the apex; it is possible for the process to become so extensive as to involve the entire lung. As a rule, both lungs are involved, as in tuberculosis. Early in the course of pulmonary syphilis, moderate-sized bronchiectases occur. The symptoms of pulmonary syphilis so closely resemble those of pulmonary tuberculosis that it is always necessary to be sure that the sputum does not contain tubercle bacilli. Cough, fever and sputum (as voluminous in character as in bronchiectasis) are present. While hemoptysis does occur, it is not so frequent as in tuberculosis. The history of syphilis, signs of the disease elsewhere—in the skin, glands, bones, throat, pupils and reflexes—a positive Wassermann reaction on the blood serum or spinal fluid, and finally (a most important feature in the diagnosis), marked improvement or active cure of the symptoms and physical signs under antisyphilitic treatment—all of these must be considered in making a diagnosis of pulmonary syphilis.

Referring back to the symptoms and physical examination of this patient, we note that there has never been cough, fever or expectoration commonly present in syphilis of the lungs. Despite the absence of these symptoms, or evidence of syphilis elsewhere in this patient, and the repeated negative Wassermann reactions on the blood serum and the spinal fluid, because of the suspicious previous history of iritis, etc., the patient was put on antisyphilitic treatment for a period of four months. During this time, saturated solution of potassium iodid was carried up to 100 drops three times a day, and mercury by inunctions and by mouth were continued several times to salivation.

This intensive treatment had no effect on the physical signs, the symptoms or the roentgen-ray appearance of the chest. Obviously, syphilis could not play a part in this case. The patient herself has always believed that she has pulmonary tuberculosis, because of the hemorrhages; at the same time, she was not wholly convinced, because she did not cough, expectorate or have fever. During the many years in which hemorrhages have occurred, there has been no loss of flesh, or any other constitutional effects that accompany pulmonary tuberculosis. In view of the very good physical condition of persons with fibroid phthisis, and the fact that cough is not so prominent as in ordinary types of tuberculosis, and that sputum is hard to obtain, every effort was made to collect a specimen for examination. Except for short intervals after the hemorrhages, none was ever obtainable; this was blood-streaked, but ten examinations have been made, and careful search for tubercle bacilli, spirochetes and other commoner organisms has failed to show them.

The physical signs in this case are entirely in keeping with those of fibroid tuberculosis, but it is difficult to believe that such a process could have so long been present without, at some time, manifesting itself in constitutional symptoms or, at least, an elevation of temperature.

On account of the chronicity of the hemoptysis, an opportune time for carrying out the subcutaneous

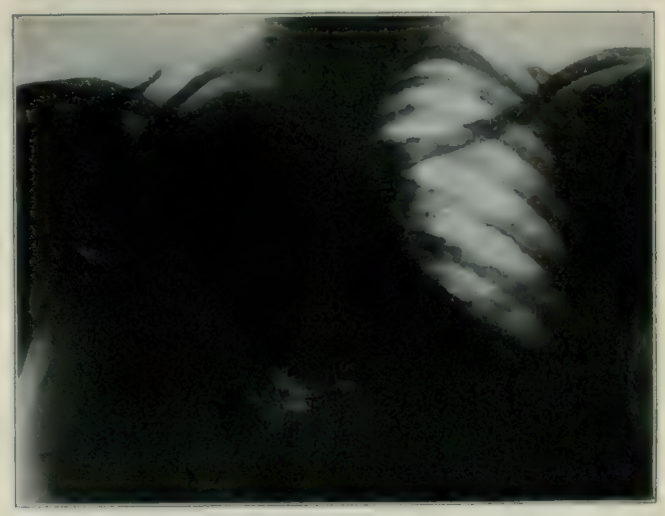


Fig. 4.—Chest after intensive antisyphilitic treatment and roentgen-ray treatment: no change in extensive fibrosis of right lung; left lung clear.

tuberculin test did not present itself until a few weeks ago. One week after a hemorrhage, the patient was put to bed for forty-eight hours; the temperature, the pulse and the respiratory rate were recorded at intervals of three hours; old tuberculin, freshly made up, was injected subcutaneously; in the beginning the dosage was 0.1 mg.; observations of the pulse and temperature were continued with special care after each injection (Fig. 3). The dosage was increased at the proper intervals until the final dose of 10 mg. was given without any sort of reaction, local, focal or constitutional.

If this case were really a fibroid tuberculosis produced by a tubercle bacillus of low virulence, with pathology of slow development, characterized by an unusual production of fibroid tissue, causing an almost pure sclerosis, with considerable thickening of the pleura, it is impossible to explain the negative reaction to 10 mg. of old tuberculin. Ordinarily, it is not necessary to resort to subcutaneous tuberculin tests in chronic cases of pulmonary tuberculosis, and in this case it seems that there should have been a marked reaction with one-half this final dose. The possibility of the condition being tuberculosis, in the face of these facts, is most unlikely.

Diffuse fibrosis, sclerosis or cirrhosis of the lungs developing as a sequel to bronchopneumonia or lobar pneumonia or pleurisy occurs with sufficient frequency to warrant consideration. In this case there was unquestionably a process, beginning most likely in the pleura, preceding the massive fibrosis. We have here some unknown, low-grade infective process which has spread from the pleura to the interstitial tissue, finally involving practically all of the parenchyma of the lung. It is not syphilitic or tuberculous, nor has it any evidences of malignancy.

Because of the peculiar physical signs, the flat note before percussion, the absence of breath-sounds, fremitus and resonance, the process must be quite extensive in the periphery and pleura. The hemoptysis, which is such a prominent symptom, is fully in keeping with the other cases of lung cirrhosis that have been reported.

There are two explanations: There is either an erosion of the blood vessels lining the walls, or traversing the lumen of the pulmonary cavities (brought about by bronchiectases), or there is a rupture of the varices in the bronchial wall. The latter explanation is probably correct, because there is no symptom or physical sign of bronchiectasis.

On account of the failure of medical measures in this case, roentgen-ray treatment according to the new deep therapy, for three hours in all, with a voltage of 200,000, was instituted. One month after treatment, the roentgenogram shows absolutely no change in the appearance of the lung (Fig. 4). However, there has been no recurrence of the bleeding for the last six weeks, and the patient has suffered no ill effects from the treatment. Should the hemorrhages recur, I shall be tempted to try roentgen-ray treatment again.

1109 Central Bank Building.

CHRONIC PURPURIC ERUPTION WITHOUT DEMONSTRABLE BLOOD CHANGES

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AND
FRED D. WEIDMAN, M.D.
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PHILADELPHIA

Much has been done in recent years to clarify our views regarding that interesting and rather unusual group of conditions formerly known as purpura. Hemophilia, scurvy and other diseases displaying a tendency to hemorrhage have been weeded out of the group; the coagulation phenomena have been the subject of much careful study, and yet purpura remains an ill-defined borderline condition between internal medicine and dermatology, about which considerable confusion still exists. The case here reported represents a rare if not unique disease, but is presented not so much on this account as because it throws some interesting sidelights on purpura as a whole.

REPORT OF CASE

History.—Mrs. K., a schoolteacher, aged 25, of Irish and Scotch ancestry, seen Oct. 30, 1922, complained chiefly of spots on the skin and burning of the lower extremities. There was no history of any similar condition or undue tendency toward bleeding, on either side of the family. The patient had been a perfectly normal girl until eight years previously, when, for no apparent cause except an unusually cold winter, she noticed some small purplish spots on the skin just above the shoe tops. Gradually, these spots spread, involving almost the entire body. They came out more profusely when the weather was cold or when the patient was excited, and during menstruation, which was scanty. The legs had always been affected more severely than other parts of the body, and in recent years a disagreeable burning sensation had developed in the lower extremities together with a thickening of the skin. "Alpine light treatment" had been administered by her physician, with some benefit. In the course of the exposures, she was burned several times with resultant blisters, which, she says, were of the usual character, and not hemorrhagic. At Christmas dinner in 1917, she ate heartily of turkey and other dishes, following which she became "swollen all over," and a great many fresh spots developed. She had never had any repetition of this attack, nor had she shown any other symptoms suggestive of allergy except that, when she scratched the skin, a white weltlike streak appeared. She used no drugs, always enjoyed excellent health, and gave no symptoms of any other nervous or organic disease.



Fig. 1.—Left lower extremity: The conspicuous markings of the thigh were dark red, and the ones on the leg, brown.

Examination.—Except for the skin lesions, which will be described later, the patient appeared to be a normal, robust young woman. The gums were red and slightly spongy, and bled easily, but her dentist stated that this was due to gingivitis. The thyroid was a trifle larger than the average, but there were no evidences of hyperthyroidism present, and the basal metabolism, as determined by Dr. Leon Jonas, was within normal limits. The blood pressure varied on two occasions between 98 and 106 systolic, the diastolic being 76. The venous pressure on the back of the hand as determined by the use of the capsule of Hooker was 10 cm. (water). Examination of the heart and lungs revealed nothing abnormal. No abdominal organs were palpable, though numerous attempts were made to palpate the liver and spleen. The reflexes generally were a little exaggerated; otherwise, the neurologic examination was negative. The ophthalmoscope did not reveal any fundus changes. The urine was normal in every respect and did not contain any red cells. On a meat-free diet, the feces gave a negative benzidin reaction for occult blood. Two blood Wassermann tests made at different times were negative. The blood urea nitrogen was 10 mg. per hundred cubic centimeters, and the blood sugar 0.098 per cent. Skin tests of forty-one common proteins, including turkey, were made by Dr. Richard Kern, with negative results. The skin capillaries of the dorsum of the finger adjacent to the cuticle were examined by the Lombard method, without revealing any unusual features.

The red blood cells numbered 4,150,000, with hemoglobin 89 per cent.; white blood cells, 5,400, with neutrophils, 60 per cent.; lymphocytes, 34; large mononuclear cells, 1; transitionals, 2; eosinophils, 2, and basophils, 1 per cent. The blood platelets were estimated on three different occasions, once when the weather was cold, and a fresh crop of spots was

appearing; once while the patient was menstruating, and once at a time when she was relatively free from fresh skin lesions. The counts varied between 286,400 and 257,000. A blood pressure cuff constricting the arm at a pressure slightly below 70 mm. of mercury in five minutes produced twenty-two new skin lesions in an area of 28 sq.cm. Fresh petechiae could also be produced by rubbing the skin of the arm. Forcible rubbing led to an exudation of clear serum. The area thus rubbed remained purplish for two months, and fresh lesions developed here more frequently than before. The bleeding time determined on both the ear and the finger was five minutes. Nothing abnormal was found in regard to the coagulation time, the amount of serum which separated or the character of the clot.

Description of Skin Changes.—The lower extremities were the most severely affected (Fig. 1), the lesions extending well upward over the hips and inguinal regions, and over the upper extremities upward almost to the shoulders. Save for a few scattered, freckle-like macules on the face and abdomen, the other parts of the body were free. Stroking the skin of the back resulted in the production of a red streak, with but the faintest trace of wheal development. Rectal and vaginal examination, by Dr. Charles A. Behney, failed to reveal any lesions, and, with the exception of a minute petechia on the upper lip, the other mucous membranes were free. The freshest lesions consisted of bright, non-elevated, red points not larger than a pinhead. The color could not be discharged by pressure. Examination under the lens showed that many were not merely punctate, but consisted of several minute, red points which were sometimes arranged in more or less wavy lines. This kind of lesion was sometimes isolated at the uppermost margins of the disease area, surrounded by normal skin, and sometimes superimposed on the older process farther down. The further change in such a lesion was evidenced by the freckle-like macules, which were recognized in their purest form in the more recently affected areas, and had coalesced farther down to produce a mottled or diffuse brown discoloration. The skin of the legs was definitely thickened, and there was also a little scaliness here. There was not a semblance of follicular involvement, achromia, atrophy or arrangement in rings or gyrate forms.

Histologic Examination.[1]—A fresh, bright red lesion at the uppermost border of the affected area of the arm was excised under local anesthesia, and sectioned and examined. Histologic changes were restricted to the corium, more particularly the subpapillary portions (Fig. 2). They were essentially those of an early acute inflammation, and were restricted to areas around the capillaries and arterioles. The acuteness of the process was evidenced by swelling and hyperplasia of the perivascular fibrous tissue and of the lining endothelial cells of the capillaries, and particularly by a definite infiltration of polymorphonuclears in addition to the lymphoid cells that were to be expected. Fibrin was not associated, nor was there demonstrable edema. Blood vessels were dilated, and some of the capillaries were thrombotic, with destruction of the endothelial walls, i. e., the process amounted to a thrombocapillaritis obliterans. Extravasations of red blood cells were scarce, and no micro-organisms were demonstrable by special stains (Giemsa, thionin).

COMMENT

From the standpoint of the hematologist, it is interesting to note that a positive tourniquet test for capillary permeability was present in this instance without a reduction of the blood platelets. From these tests alone, capillary disease should have been suspected; for a positive tourniquet test may be taken to indicate diminution of the platelets of the blood or vascular disease, or both. Since the former was absent, vascular disease should be present. That the histologic examination bore out what was previously predicted from the results of these two simple tests emphasizes the diagnostic importance of the platelet count and the tourniquet test in hemorrhagic conditions.

Another point of interest comes up in regard to the causative agent of the disease. The general well-being of the patient and the normal physical findings indicate the absence of generalized vascular disease; yet histologic examination disclosed definite acute inflammatory changes in the skin. These facts argue for the highly selective action of the causative agent, not unlike that of snake venom and other members of the group of endothelial toxins.

From the standpoint of diagnosis, our case most nearly resembled those described by Weiss,[2] and diagnosed by him as purpura annularis telangiectodes (Majocchi's disease). Ours departed somewhat from Weiss's cases in that the lesions showed no tendency to form into groups or patches, and in that, histologically, no edema within the corium, fragmentation of elastic fibers or thinning of the epidermis was present. Our case diverged even more from Majocchi's original descriptions, for none of the lesions were follicular or annular, nor was achromia present. The lesions did not occur in patches, but diffusely, and produced indura-

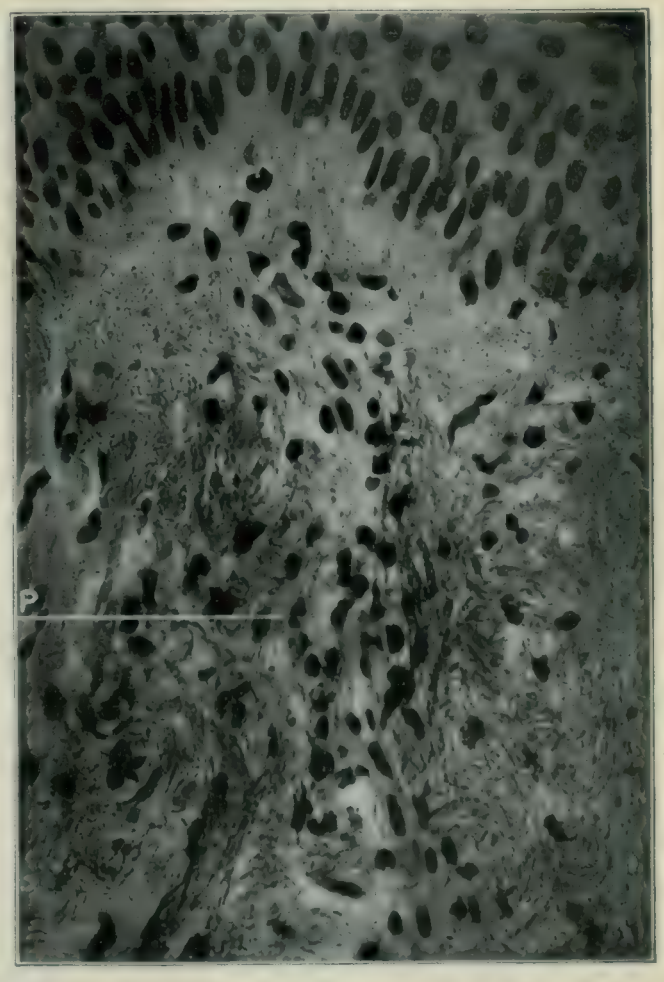


Fig. 2.—Acute telangiitis: Cross-section showing swollen capillary extending upward in one of the papillae, shown at top. The lining endothelial cells are swollen and hyperplastic, and some polymorphonuclears (*P*) are intermixed with the lymphocytes and swollen spindle cells which surround the capillary.

1. Histologic sections from this and one of Weiss' cases are filed at the Army Medical Museum, Washington, D. C. Filing diagnosis was: purpura, chronic.

2. Weiss, L.: Purpura Annularis Telangiectodes (Majocchi's Disease), Arch. Dermat. & Syph. **38**: 520 (May) 1920.

tion of the skin. Chronic idiopathic simple purpura also has points of resemblance, but permanent skin changes occur rarely in this disease.

If we were to follow the existing terminology, we might designate this condition as purpura telangiitosa, since it is a disease manifesting a purpuric eruption and having an inflammatory process of the capillaries as its chief pathologic finding; but as the subject of purpura is at present by no means free from confusion, the addition of another purpura to the already extensive list seems hardly calculated to clarify the situation. Moreover, in such heterogeneous groups as purpura, the tendency is to remove from the group those diseases which have a known cause or established pathology. Thus scurvy, hemophilia, pernicious anemia, nephritis, leukemia and other diseases attended with purpura are no longer called purpura. It is safe to predict that, as our knowledge of the cause and the pathology of hemorrhagic conditions increases, the double significance of the term purpura, which has heretofore been a source of confusion and a cloak for ignorance, will cease to exist. It is to be hoped that purpura will eventually come to indicate merely a symptom of this or that disease. "Idiopathic platelet deficiency" will very possibly supplant the time-honored but meaningless "purpura hemorrhagica," until, in turn, the cause of the platelet deficiency is discovered, when the "idiopathic" may be likewise dropped. Viewed in this light, our case falls into the group of primary inflammatory vascular diseases with purpura, the cause of the disease being as yet undetermined.

SUMMARY

In the case reported, the principal findings were long-standing cutaneous hemorrhages, a positive tourniquet test for capillary permeability, and a normal platelet count; while histologic sections of the skin showed acute telangiitis. The first three are sufficient to indicate the telangiitis which the latter proved. In the absence of general vascular disease, these changes pointed to the highly selective nature of the causative agent. The suggested diagnosis is: primary telangiitis with purpura.

Natural Selection and Survival of Fittest.—By a study of the age of onset of insanity of parents and offspring in more than 4,000 relatives who are at present or have been in the London asylums, a signal tendency of the offspring of insane parents to develop signs of insanity in adolescence was noted by W. F. Mott (*Brit. M. J.* **1**:407 [March 10] 1923). The average age of the parents is about seventeen years more than that of the offspring. This accords with Darwin's law of antedating or anticipation. Those individuals who suffered with dementia in adolescence would have little chance of surviving the struggle for existence among primitive people and savages. Among civilized people insanity leads to segregation, and thus prevents propagation. The regressive atrophy of the testes in males would also interfere with propagation. Again, females predisposed by hereditary tendency break down in adolescence under the stress of normal physiologic conditions, such as pregnancy, parturition, or lactation. These cases of so-called puerperal mania often terminate in dementia, and we find in them a regressive atrophy of the ovaries. Only about 10 per cent. of the primary female dementia patients in asylums are married women, and very few of these have had more than one or two children. It it were not for this natural process of preservation from breeding of such unsound members of a stock by bringing the disease on at an earlier age and in an incurable form, racial degeneracy and extinction would be inevitable in a civilization in which altruistic sentiment has interfered with the struggle for existence and survival of the mentally and physically fittest.

ASTHENOPIC REFLEX MANIFESTATIONS BETWEEN THE EYES AND TEETH*

W. W. KAHN, M.D.
DETROIT

Relief of eye strain and its manifestations through refraction is made impossible by diseases of the nose and its sinuses, and of the pharynx and, rarely, by more remote diseased organs. These diseases influence reflexly the functions of the eye. Such sources of malfunction, when unsuspected, keep the oculist uselessly trying for years to cure the asthenopia until, finally, the cause of these reflexes is discovered.

REPORT OF CASES

CASE 1.—Mrs. L. S., aged 44, was seen by me in 1916, because of eye trouble. She presented all the classical symptoms of eye strain: headaches, pain in the eyes, vertigo, car-sickness and asthenopia, as well as anorexia, indigestion and pollakiuria. She urinated every few minutes during the day and about twice during the night. She slept poorly, being frequently disturbed by nightmare. She had "rheumatic pains" all over the body, especially in the digital joints. She sighed and yawned excessively, had palpitation and tinnitus in both ears, and was constantly fatigued.

Glasses lessened the intensity of the symptoms, but did not eliminate them. All the symptoms were aggravated when she tried to use her eyes for close work. After many unsuccessful attempts to improve the glasses, eight months later, I administered atropin instillations for a period of five days. The rerefraction did not reveal any fault in the previous refraction. I sent the patient to a nose and throat specialist, who reported that the nose, throat and sinuses were in very good condition.

It then occurred to me that, as there was nothing else that could cause the eye strain to continue, the teeth might in some way be responsible for the reflex symptoms. There was a long upper bridge anchored to the two upper canines. There were no subjective symptoms in the teeth. Neither tapping nor hot and cold applications caused any pain. Her dentist, to whom I applied for advice, stated that the teeth were in excellent condition. My request to remove the bridge for experimental purpose was flatly refused. I then took her to another dentist who found nothing wrong with the canines. However, to please me, he drilled through the crowns and opened up the root canals. Gas of intolerable odor escaped from the openings. The two canines were removed, and the patient was supplied with a denture. She recovered promptly and completely.

This case occurred in 1916, when roentgen rays were only rarely used by dentists in their daily work. It illustrated the fact that bad teeth not only cause inflammations, ulcerations and other pathologic changes in the eyes, a fact long known and very widely discussed in the ophthalmic literature, but that they may also cause reflex eye strain symptoms without themselves giving any subjective discomfort.

After the recovery of this patient, I took up the case of another patient who had for years been the reminder of my fallibility in refraction.

CASE 2.—Mr. B. B., aged 25 years, whose eyes were refracted not less than ten times during the four years that he was under my care, did not improve. The symptoms varied rapidly, frequently appearing in entirely new combinations. On one of his last visits he said that he had no headaches except after riding 5 or 6 miles on a street car. He suffered pain in the chest, back and knees, especially the right. In order to enjoy a good sleep, he never ate later than five hours before retiring, nor did he take a walk in the evening; otherwise his sleep would be fitful and disturbed by nightmare.

* Read before the Maimonides Medical Society, Detroit, Feb. 6, 1923.

He had no pain during working hours. The appetite, digestion and bowel movements were good except after walking. Walking made him so nervous that after a short walk he was unable to read a line. He consulted a noted surgeon, who had a roentgen-ray examination made and who then referred him to an equally noted diagnostician. He was told that there was "nothing wrong" with him. He then consulted another surgeon, who referred him to an orthopedist. He suspected the presence of flatfoot and recommended arch-supporters, which, however, gave him no relief. An elastic band worn around the right knee caused pain in the foot. Any drug caused a sleepless night. In short, the patient suffered from an outspoken case of neurasthenia. I sent him to two other oculists, hoping that they would find an error in my refraction, but he refused to wear the glasses prescribed by them, asserting that they only aggravated his troubles. The nose and throat had been examined carefully, but no pathologic condition was found.

After my experience in Case 1, I asked him about his teeth. His answer was that he had two upper molars, on the right and left, which caused pain after every effort to read. At times this was so severe that he was unable to chew his food. The dentist found apical abscesses at the root of these molars. After extraction of the two teeth, the patient fully recovered from the asthenopic and neurasthenic symptoms.

Then came in comparatively quick succession a number of cases.

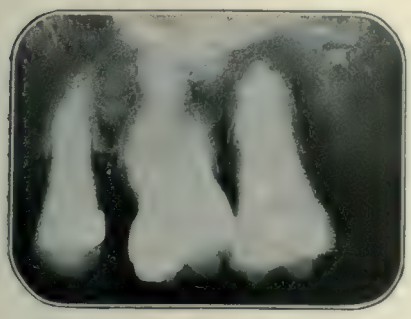


Fig. 1 (Case 4).—Pathologic area associated with the mesiodistal root of the upper left first molar.

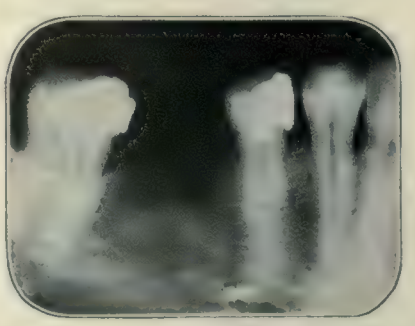


Fig. 2 (Case 4).—Lower right second bicuspid showing almost no attempt at root canal filling and a decided haziness about the root apex.

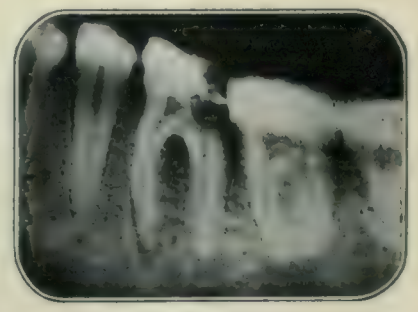


Fig. 3 (Case 5).—Pathologic areas at the apexes of the roots.

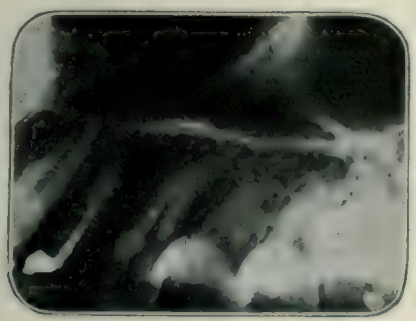


Fig. 4 (Case 6).—Devitalized upper left lateral incisor, containing imperfect root canal filling.

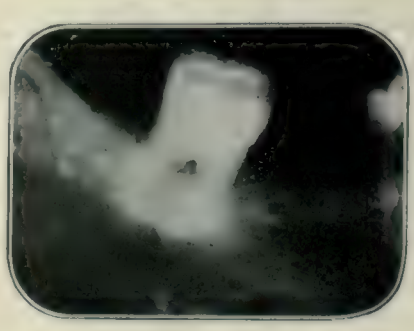


Fig. 5 (Case 7).—Lower right second molar, devitalized and with an imperfect root canal filling and an abscess associated with the mesial root.

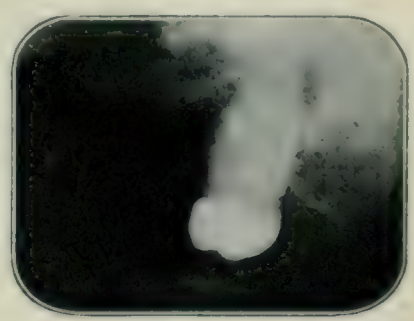


Fig. 6 (Case 8).—Extensive destruction of the upper left second molar.

CASE 3.—Mrs. M. K., aged 43, besides asthenopia, complained of violent headaches, severe vertigo, poor sleep and excessive sneezing for five years before she consulted me. I refracted her eyes, and, in the course of time, she recovered entirely, even from the attacks of sneezing.

Later she returned with a various assortment of complaints. I then advised her to have a roentgen-ray examination of the teeth and to have them properly taken care of. She did not heed my advice. Her condition improved and then became worse, causing both herself and me to be rather uncomfortable as a result of her frequent visits to my office. Finally, two and one-half years later, I decided to have nothing to do with her if she did not have her teeth attended to. She then saw her dentist, who had a roentgenographic examination made of the teeth. Two of them were found to be abscessed, and were consequently extracted.

The patient recovered immediately and today is in excellent health.

CASE 4.—Mrs. S. Y. H., aged 63, a year and a half before she consulted me, began to suffer from slight frontal headaches. She was entirely unable to endure car riding, had frequent and violent attacks of nausea and vomiting, and suffered from severe tinnitus in both ears. The hearing was good, although the right ear was slightly defective. She suffered also from constipation, increased frequency of micturition (once or twice at night), poor sleep and great fatigue. She was examined and treated in two different hospitals, roentgen-ray and refractive examinations being made, but without results. Two diagnosticians diagnosed her case as Ménière's disease. The treatment prescribed for her was liquor potassii arsenitis (Fowler's solution).

To eliminate any ocular influences, I prescribed atropin instillations for one week. The atropin stopped the vertigo, and diminished the tinnitus, but did not improve sleep. I changed the prescription of the bifocal lenses.

Two months later she reported that she no longer suffered from car-sickness, vertigo, nausea, vomiting or tinnitus. Sleep was improved, and she felt strong enough to do a great deal of her house work. She was also able to ride on a street car with perfect comfort.

A month and a half later, she complained of return of the old symptoms. I then prescribed atropin instillations for a week and a half; but they afforded little, if any, relief. Having assured myself that this time her eyes had nothing to do with the trouble, I advised that she consult her dentist concerning her teeth. The dentist reported that he was sure that there was nothing wrong with them. I then took her to a dental diagnostician, who reported thus:

"Mrs. H. was examined to ascertain the possibility of any foci of infection about the teeth. All teeth were tested with a galvanic current to determine their vitality, and all responded positively, with the exception of the upper left first

molar, the upper left central incisor, the lower left second bicuspid and the lower right second bicuspid.

"Roentgenograms were made of these nonvital teeth. The roentgenograms, in my opinion, disclose the following: The upper left central incisor, which is carrying a porcelain crown, shows no pathologic condition. The lower left second bicuspid likewise shows no pathologic condition.

"The upper left first molar (Fig. 1) shows a definite pathologic area associated with the apex of the mesiodistal root.

"The lower right second bicuspid shows practically no attempt made at root canal filling and a decided haziness about the root apex (Fig. 2).

"Conclusions and Recommendations: No interference is recommended with the upper central and lower left second bicuspid.

"The upper left first molar should be extracted; at the time of extraction, a culture might be made. At this time I would not recommend interference with the lower right second bicuspid until results have been observed in the extraction of the molar."

Her upper left molar was extracted and a culture taken. The laboratory reported thus: "The culture shows a few white staphylococci and very few slightly hemolytic streptococci."

As there was only temporary and slight improvement in the symptoms, the lower right second bicuspid was also extracted, a month later. After that the patient recovered rapidly. Today she is in perfect physical health.

CASE 5.—Miss S. F., aged 16 years, came to me for chronic blepharitis and temporal headache, both of seven years' duration. She also suffered from severe asthenopia and frequent vertiginous attacks. She wore no glasses. On refraction, she accepted very strong cross-cylinder lenses. She got along fairly well with them and was even able to work as a seamstress.

About a year later, the headaches and asthenopia returned. As instillations of homatropin did not reveal any change in the refraction, I used atropin instillations for some days. The atropin did not relieve the headaches. It also showed that the old glasses were still correct.

I sent her to a dentist, who had a roentgenogram made of her teeth. It showed that the pulp of the lower right first molar had been destroyed by invasions of dental caries. There were also pathologic areas associated with the apexes of the roots (Fig. 3).

After the extraction of the tooth, the patient recovered entirely from the headaches and asthenopia.

CASE 6.—Miss B. K., aged 15 years, had been under my care for five years. A year after the last refraction, she again complained of eye strain symptoms. I rerefracted her eyes after three days' atropinization. Since hardly any change in the glasses was necessary, it was apparent that the eye strain symptoms were not due to the need of new glasses. There were a number of fillings in the teeth. I referred her to her dentist, who had a roentgenogram made of the teeth, which showed that the upper left lateral incisor was devitalized, and contained an imperfect root filling (Fig. 4). The dentist sent the roentgenogram to me with the remark that it revealed "no marked apical disease."

In spite of this fact, he tried to cure the tooth by treatment, but without result. After the tooth was finally extracted, the patient recovered speedily.

CASE 7.—Mrs. H. F. R., aged 27, presented asthenopic symptoms for near and distant vision, temporal headaches, twitching of lids, constipation, excessive sweating of hands, tremor of hands and legs, numbness of fingers and toes and chronic blepharitis. After refraction she recovered quickly.

Ten weeks later she began to be bothered by photophobia and by the partial return of numbness and giddiness. Three weeks later all the symptoms had returned. A rerefraction gave no new findings. There was no heterophoria.

A roentgenogram was made of the lower right second molar, which was shown to be devitalized, with imperfect root fillings. Associated with the mesial root was an abscess (Fig. 5).

The patient was advised to have the tooth removed; but she decided to have her dentist try local treatment to determine whether it were not possible to save the tooth.

When the pulp chamber was opened and allowed to remain open, the eye trouble stopped, only to return when the pulp chamber was sealed again. After four weeks' treatment the tooth was extracted and all the eye symptoms ceased.

CASE 8.—Mrs. A. W., aged 46 years, came to Detroit every few years to have her eyes refracted. Lately she returned with the usual amount of eye strain symptoms. I put her on atropin instillations. Three days later, she complained that the atropin caused the headaches.



Fig. 7 (Case 8).—Pathologic areas at the apexes of the roots of the upper right first molar.

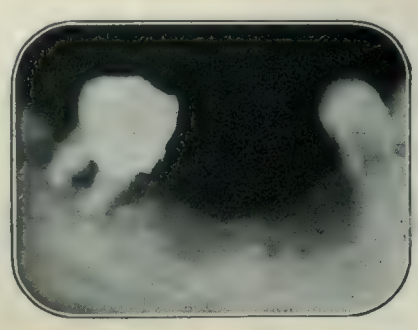


Fig. 8 (Case 8).—Extensive destruction of the supporting structures of the lower right third molar, with beginning absorption of the roots.



Fig. 9 (Case 9).—Impacted second bicuspid with extensive area of pressure necrosis.

Inspection showed a number of bad and suspicious teeth. All teeth were tested for vitality with a galvanic current; and they responded positively with the exception of the upper right first molar, the upper right second bicuspid (root) and the lower right third molar. Roentgenograms were taken of all the teeth. That of the upper left second molar showed an extensive area of destruction of the alveolar process, undoubtedly resulting from pyorrhea (Fig. 6). The roentgenogram of the upper right second bicuspid showed an area of rarefaction, at the apex. The roentgenogram of the upper right first molar showed that the canals were imperfectly filled, with the usual pathologic areas at the apexes of the roots (Fig. 7). The roentgenogram of the lower right third molar showed extensive destruction of the supporting structures surrounding the tooth. There was a beginning absorption of the roots of the tooth (Fig. 8).

The two molars were extracted, with immediate relief from headaches and the other eye strain symptoms. The refraction showed that there was no necessity for changing the glasses.

CASE 9.—Mr. C. C. H., aged 35, a prominent business man, came to me four years ago because of headaches, asthenopia for near and far vision, vertigo, indigestion, excessive sweating of the hands and body, tremor of the hands and legs, and flushing of both sides of the face, especially the left side, in connection with attacks of giddiness and blurred vision. The flushing of the face annoyed him more than the other symptoms. He also had a goiter.

He wore the glasses that I prescribed for six months and then he underwent an operation for the removal of the goiter.

Although he had no asthenopia and fewer headaches, all the other symptoms, tremor, flushing of the face, vertigo and indigestion, remained unimproved.

Two years later he returned for a reexamination. The rerefraction showed the necessity for hardly any change in his glasses. He returned again in two years. He wore the glasses that I prescribed, but without any benefit as far as his symptoms were concerned. As a matter of fact, he became worse and more nervous as time went on. He consulted a number of good physicians, who told him that he was physically perfect and that all he needed was a "mental rest." He finally broke down completely and went to a sanatorium.

A thorough examination by the sanatorium physicians failed to reveal any ailment. While resting in the sanatorium he felt considerably better, but when he returned to his business, his nervousness and his fatigue reappeared.

As a last resort, I suppose, he bethought himself of his old oculist and came to me with a request to be rerefracted. Since there were only a few asthenopic symptoms and his glasses and eyes felt rather comfortable; and since none of his physicians had found any physical defects, I concluded that there probably was some unsuspected trouble in the alveolar processes.

The patient stated that his teeth did not give him the least trouble and were perfectly sound, which was borne out by examination. Roentgenograms were made of the spaces where teeth had been extracted to rule out the possibility of remaining roots or of impactions. The roentgenogram of the left side of the lower jaw showed a second bicuspid impacted, with an extensive area of pressure necrosis (Fig. 9). The impacted tooth was removed under a general anesthetic. The patient recovered entirely. The flushing of the face disappeared. He is working again under full pressure without any ill results or undue fatigue.

REPORT OF CASES IN WHICH THE EYES AFFECTED THE TEETH

That the nerves which act as conductors in producing eye reflexes due to bad teeth may also act as agents in producing tooth and gum reflexes due to strained eyes was shown by Case 2, as well as by the four subjoined cases:

CASE 10.—Mr. J. Y., aged 26, consulted me in November, 1915, because of asthenopia, nonrefreshing sleep, indigestion and precordial pain. I refracted his eyes and ordered a pair of rather strong compound plus lenses. In a few weeks he returned and reported that whenever he put on his spectacles, they caused pain in the right eye, the pain spreading to the temple and to the teeth on the right side and also numbing the gums. A readjustment of the axis of the cylinder of the right lens speedily cured the toothache and the numbness of the gums.

CASE 11.—Mrs. W. R. D., aged 44, seen in June, 1916, suffered daily headaches most of her life, with shooting pains on the left side of the face and head. The headaches were always accompanied by toothache on the left side. Besides headaches, she had a great many other symptoms of eye strain.

After wearing the glasses prescribed for two months the patient reported only occasional slight headaches without toothache. She had consulted no dentist.

CASE 12.—Dr. L. B. C., aged 25, had suffered for many years from asthenopia due to an undiscovered cause. The refraction of his eyes had been checked so many times and with so much care that I am certain that the cause of the asthenopia was not in the eyes or in his glasses.

During his many years of eye strain, he suffered from almost all known symptoms of that condition. At one time he had toothache whenever his eyes felt bad. His teeth were roentgenographed by responsible men, and no pathologic conditions were found in the alveolar processes or in the teeth.

When the eye strain was relieved, the pain in the right or left upper molars would disappear. When he used his eyes too much, a sensation of numbness traveled down through the bridge of the nose and part of the face to the incisor teeth.

CASE 13.—Miss E. P., aged 19, stenographer, consulted me because of severe headache, asthenopia for close work and blind spells. Glasses relieved her considerably. A year later the symptoms returned. I prescribed atropin instillations for four days. She felt well while under the influence of the cycloplegic; but the new glasses failed to relieve the eye strain caused by close work. As she complained of annoying pain in the gums and teeth, I had her teeth examined by a dentist. No pathologic condition was found. The gums and teeth were in excellent condition.

After I had prescribed an additional pair of plus glasses for close work, she recovered perfectly, suffering no more pain in the gums or teeth.

LITERATURE

The literature of eye reflexes caused by bad teeth is rather meager. The first mention I found of the condition was by Schmidt-Rimpler [1] in 1868, who studied the accommodation of more than 100 toothache sufferers, in seventy-three of whom he found a decided decrease of accommodative ability. He explained it by the heightened intra-ocular pressure due to irritation of the secretory nerve apparatus, producing a condition somewhat analogous to the prodromal state of glaucoma. He also mentions different reflex motor disturbances of the eye caused by teeth.

That muscular spasms of the eye muscles can be caused by irritation of the dental ends of the trigeminus was thoroughly studied in the seventies by Terrier,[2] Métras,[3] Galezowski [4] and Schmidt-Rimpler.

It is interesting to note that Terrier described a case of deviation of the left eye of some months' standing cured by the extraction of a few carious teeth. He called the attention of his readers to the fact that they were not painful teeth: they had evidently nonvital pulps.

Then came a long silence which was finally broken in 1915 by Arthur D. Black [5] of Chicago.

In 1916, Fulkerson [6] reported a half dozen cases in which the symptoms of accommodative asthenopia were present and which were not permanently relieved until abnormal dental conditions had received proper treatment.

In 1918, Zentmayer [7] quoted Black in full, without further illustrating the occurrence of reflexes. He accepted Black's statements as authoritative.

In 1919, Murray [8] reported the case of a machinist, aged 50 who had headaches for three weeks preceding the dizziness which brought him to the oculist.

Roentgenograms made of the teeth showed three big abscesses at the apexes and one unerupted immediately beneath the abscesses. Both, unerupted tooth and abscessed teeth, were removed, and the patient's headaches and dizziness were completely and promptly relieved.

In 1920, Benedict [9] described the case of a woman, aged 22, who had spasms and twitching of the right lid which were relieved by the extraction of an impacted molar. He also described the case of a man,

1. Schmidt-Rimpler, H.: Ueber Akkomodationsbeschränkung bei Zahnleiden, Arch. f. Ophth. **14**: 107, 1868.
2. Terrier: Recueil d'opht., 1876, pp. 86-89.
3. Métras: Sehstörungen bei Zahnkrankheiten, cited by Nagel: Jahresb. f. Ophth. **4**: 217, 1873; Rapports pathologiques de l'œil et des dents par action réflexé, Thèse de Paris, 1873.
4. Galezowski: Jahresb. f. Ophth. **5**: 262, 1876.
5. Black, A. D.: Ocular Diseases Resulting from Dental Lesions, Ophth. Rec., 1915, pp. 610-622.
6. Fulkerson, C. B.: Roentgenographic Findings of Blind Dental Abscesses Causing Asthenopia, Tr. Am. Acad. Ophth., Oto-Laryngol. Sect., 1916, p. 196.
7. Zentmayer, William: Ocular Lesions the Result of Oral and Pharyngeal Diseases, Am. J. Ophth. **1**: 247 (April) 1918.
8. Murray, G. D.: Spasm of Accommodation with Disturbances of Ocular Movements of Dental Origin, Am. J. Ophth. **2**: 202 (March) 1919.
9. Benedict, W. L.: Value of Dental Examination in Treatment of Ocular Disorders, Am. J. Ophth. **3**: 860-865 (Dec.) 1920.

aged 64, in whom the left external rectus muscle was completely paralyzed. As a Wassermann and neurologic examination proved negative, a number of decayed and fractured teeth were removed. With the extraction of the last teeth the paralysis began to disappear, and entirely disappeared within three weeks.

In 1921, Sumner [10] said, "Infected teeth have usually caused a spasm, and where excessive spasm exists under drops, I inquired into the condition of the teeth."

In 1922, Deichler [11] described in detail the case histories and symptoms of two patients presenting muscular involvement of the eyes.

ETIOLOGY

The nerves that are principally involved in these reflexes are the three divisions of the trigeminal nerve, supplying in part the eye and the teeth. This common innervation makes it obvious that the irritation of one of the many branches of the trigeminal nerve may produce the most varied and unexpected reflex symptoms.

As far back as 1873, Métras divided the reflex actions of the eye caused by diseased teeth into three classes: (1) vasomotor disturbances (as nutritional and amaurotic disturbances); (2) sensibility disturbances (as nutritional and asthenopic); (3) motility disturbances (as cramps or paralysis in the extra-ocular, supra-orbital and palpebral muscles).

Black describes two groups of ocular disturbances: (1) "reflex neuroses presenting themselves as sensory, vasomotor or muscular disorders; (2) inflammations of the various tissues of the eye due to infection. The former are practically always due to irritation of a vital pulp of a tooth, although an occasional case may be due to an impacted tooth; the latter are practically always due to an infection involving the peridental membrane, either in the form of an alveolar abscess at the root apex, or a pus pocket along the side of the root."

Black's classification of the reflex neuroses is essentially the same as that of Métras. The only additional feature is his "live pulp theory," by which he tries to explain the pathologic processes bringing about the reflexes. Zentmayer repeats Black's live pulp theory.

Evidently, Black had an extensive experience with dental conditions without an equal opportunity to study eye manifestations, while Zentmayer, with his great knowledge of the eye, probably never took the trouble to study the roentgenograms of the cases he referred to the dentists.

Black took his cue from the common knowledge that toothache is frequently accompanied by reflex eye pain. From this daily experience, he deduced his theory that practically all eye reflexes are caused by irritated live pulps.

My roentgenograms show the fallacy of Black's theory. In no case did I find a live pulp; in all cases there were dead teeth with apical abscesses and diseased alveolar processes. As a matter of fact, the experience of other observers and myself reveals the existence of at least five classes of eye reflex conditions, differing in character according to the nerve fibers or nerve branches involved:

1. Nutritional and vasomotor disturbances reflexly caused by bad teeth, a class that is not dealt with in this paper.

2. Acute pain in the eyes caused by an acute irritation of the sensory fibers of the trigeminus, by an irritated live pulp, sensitive dentin or by an open cavity in the tooth.

3. Spasms or paralysis resulting from affection of the oculomotor apparatus and the supra-orbital and palpebral muscles by dead teeth and alveolar abscesses. The patients suffer no pain except from the ill effects of the incapacitated muscles.

4. Reflex eye strain caused by dead teeth or by alveolar abscesses irritating the nerves of the ciliary muscles, possibly in connection with irritation of the oculomotor nerves. The symptoms of this large class are indistinguishable from the eye strain symptoms from any other cause. The ill effects are those of the eye strain. The diagnosis can be made only by exclusion.

5. Neurasthenia caused by the irritation of the sympathetic ganglion connected with the trigeminus and the eye. In this group there are no eye reflexes except those caused by the neurasthenia. The diagnosis in this class can also be made only by exclusion. The exceptional Case 9 in which neurasthenia was produced by the irritation of the fifth nerve and the sympathetic ganglion by an impacted bicuspid belongs to this group of cases.

There may and, of course, frequently do occur cases in which a combination of the different groups of reflexes are produced by multiple irritation of the different nerve branches and nerve fibers involved in the innervation of the teeth and eyes.

The question whether all abscessed teeth ought to be removed or not has been debated for a great many years and is still debatable; but it is not debatable when headaches, vertigo, asthenopia, general fatigue, nervousness and the complex of neurasthenia incapacitate the patient and keep him continually in ill health, without the certainty being given that the infected teeth can be cured and sterilized. In such cases, there is only one answer to the question, namely, the removal of the focus of infection and restoration of the sufferers to good health in compensation for the loss of bad teeth.

CONCLUSIONS

The conclusions to be deduced from the foregoing study are:

1. The diagnosis can be made only by exclusion.
2. The teeth causing eye reflexes usually do not cause local pain and are, therefore, commonly overlooked as causative factors.
3. Toothache and numbness of the gums may be caused by eye strain as easily as eye strain may be caused by bad teeth.
4. The rationale of these phenomena is given by the common innervation.
5. There are at least four groups of reflexes manifested in the eye, of which only the least important is caused by live pulps and the three important ones by dead teeth and alveolar abscesses.
6. The irritation of the sympathetic nervous system by abnormal teeth may cause neurasthenia and possibly, in susceptible cases, even insanity.
7. The infected apexes and alveolar processes are, as a rule, not curable by local treatment, and extraction is the method of choice.

510 Fine Arts Building.

10. Sumner, Percy: Subnormal Accommodation, the Result of Focal Infection, Am. J. Ophth. 4: 356 (May) 1921.
11. Deichler, L. W.: Involvement of Ocular Muscles Due to Focal Infection of the Teeth, read in Philadelphia, February, 1922.

Is Your Community Fit?—Is your town an industrial center? Are the workers properly housed and fed? Have the working conditions been investigated so as to reduce to a minimum the health hazards of the industries? The prosperity of your community depends largely on maintaining the maximum output of your industries, and this in turn depends largely on the health of the workers.—*Pub. Health Rep.*, April 25, 1919.

ACUTE PANCREATITIS IN CHILDREN

REPORT OF CASE WITH CIRRHOSIS OF LIVER

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If one is to be guided correctly by the accounts of or, rather, the lack of accounts of pancreatitis in the leading textbooks on pediatrics; from personal communications from twelve eminent pediatricians of the United States and from several of our leading pathologists, none of whom admit having ever encountered a case, and from a rather careful survey of the literature, acute pancreatitis in children is a very rare condition. It seems expedient, therefore, that the present case be placed on record.

In 1889, Fitz read his memorable paper on acute pancreatitis before the New York Pathological Society, and classified acute pancreatitis as being either hemorrhagic, suppurative or gangrenous. In recent years, surgeons and pathologists have added a fourth type of acute pancreatitis: the acute nonsuppurative.

These cases of simple nonsuppurative pancreatitis are comparatively mild in nature. The patients recover, and such cases are rarely, if ever, seen at necropsy. It is in this group, no doubt, that the cases of acute pancreatitis belong which develop during the course of or as sequels of scarlet fever, diphtheria, mumps and other acute infections. That a simple acute pancreatitis does occasionally occur during the course of or following the conditions named above can hardly be denied. Goldie [1] reported five such cases in children between the ages of 5 and 9 years. His cases displayed a syndrome in which there were abdominal pain of sudden onset, and usually nausea and vomiting, with swelling and tenderness over the upper abdomen in the region of the pancreas, shortly followed by jaundice and clay-colored stools.

This extract from Sharp's [2] paper on the relationship and interchangeability of pancreatitis and parotitis is interesting in this connection:

> The writer based his remarks on a long-continued severe and widespread epidemic affecting patients aged from 17 months to 35 years. The temperature was never higher than 101 F. or 102.5 F., and the pulse rate was generally comparatively slow. In one family a girl began with a severe parotitis, which cleared up and showed no further sequel. A brother ten days later began with pancreatitis, and passed blood and fat in the stools. The condition was diagnosed as acute pancreatitis. The boy never showed signs of parotitis. A boy of 12, who was exposed to the infection, had great pain in the left hypochondrium and the epigastrium, with vomiting of great quantities of blood, although after the acute symptoms had passed away no tumor could be felt. This was thought to be another case of acute panacreatitis without the usual affection of the parotid.

Pratt [3] suggests that many cases giving a history of attacks of pain in the abdomen simulating gallstone colic are, in reality, mild attacks of acute pancreatitis. To substantiate this view, he cites the findings at operation in several cases that gave such a past history. At operation, a well defined pancreatitis was found, but there was no evidence of any disease of the gallbladder or bile ducts. To emphasize further the possible frequency of the simple nonsuppurative type of pancreatitis in children, I insert these lines from Ochsner.[4]

1. Goldie: Lancet **2**: 1295, 1912.
2. Sharp: Brit. M. J. **1**: 808 (April 4) 1908.
3. Pratt: Oxford Medicine **3**: 473.
4. Ochsner: Surgical Diagnosis and Treatment **2**: 427.

> We feel safe in saying that clinical observations point to the possibility that simple inflammation of the pancreas is not rare, occurs often in childhood, and, like chronic nephritis, is now recognized as a long-deferred sequel of scarlet fever in certain cases. Likewise, certain scleroses of the pancreas, first observed in recent years, will no doubt be ascribed to a process inaugurated by earlier infective pancreatitis.

I have been unable to find any reported cases of acute gangrenous or acute suppurative pancreatitis in children. No doubt, other cases have been reported; but the only other case of acute hemorrhagic pancreatitis in a child that I could find was reported by Phélip,[5] and, briefly, is as follows:

> B. C., a girl, aged 7 years, whose hereditary antecedents were negative, was suddenly taken with severe abdominal pains and alimentary vomiting, Aug. 6, 1919, at 11:30 o'clock. The pains were localized to the umbilicus. The vomiting persisted, and gradually became bilious; then there were several brownish vomitings, having the appearance of cooked blood, becoming greenish, August 9. A median, subumbilical laparotomy, August 10, disclosed an epigastric mass covered by the omentum. The tumor was situated in the transverse mesocolon, and occupied its thickness up to the point at which it is attached to the wall of the abdomen. The upper and lower surfaces of the transverse mesocolon were covered with yellowish patches. The gastrocolic ligament was incised. The posterior cavity of the omentum also contained yellowish granulations; the tumor extended to the posterior wall of the posterior cavity, forming a large, motionless, subpyloric mass. The transverse colon and the pylorus appeared to be healthy and independent of the mass. The abdomen was closed without drainage. The patient died, August 11. At necropsy, no lesion of peritonitis was found; milky-white patches were noted on the omentum and omental fringes. The epigastric tumor consisted of the very large and hard pancreas; at its surface, the peritoneum was covered with broad whitish patches. On section, the pancreas was enormously hard, and pinkish-white.
>
> Histologic examination revealed (1) fragments of perirenal fat; cytosteatonecrosis; (2) fragments of the pancreas; sclerosed pancreas. Certain lobes showed a marked degeneration of the acini, some of which were reduced to the state of a granular mass; there were all stages of necrosis.

ETIOLOGY OF ACUTE PANCREATITIS

So far as I know, almost all writers on the subject agree that acute pancreatitis is the result of the change of trypsinogen, an inert substance normally found in pancreatic juice, into trypsin, a proteolytic substance, before the pancreatic juice leaves the pancreas. Normally, trypsinogen is not converted into trypsin until it reaches the duodenum, where it is acted on by the enterkinase of the intestine. If trypsinogen then is converted into trypsin before it leaves the pancreas, there is nothing to prevent this active proteolytic substance from causing autodigestion of the pancreatic tissue. The severity of the pancreatitis that results, therefore, depends on the amount of trypsin liberated. Investigators have found many substances which, when introduced into the pancreatic duct, will, under given conditions, convert trypsinogen into trypsin. Among these are bile, gastric juice, duodenal juice, various salts, bacterial toxins and oils. There is little doubt that the bacterial toxin is the chief factor, in most cases. The pathologic condition which in the past has most often been associated with pancreatitis is cholecystitis, with or without gallstones. The frequency with which gallstones have been found in cases of acute pancreatitis, no doubt, has stimulated the view that "gallstones might lead to the production of acute pancreatic necrosis (1)

5. Phélip, J. A.: Deux cas de pancréatite, Arch. de méd. d. enf. **23**: 357 (June) 1920.

by facilitating the flow of infected bile into the pancreatic duct when they lodge in the diverticulum of Vater, and (2) by allowing entrance of intestinal contents, when they dilate the biliary orifice by their passage." Mann and Giordano's [6] recent studies on the bile factor in pancreatitis show rather conclusively that gallstones as a mechanical factor could not be expected to play a very important rôle in causing pancreatitis. If we assume that gallstones play a very important part in the etiology of pancreatitis, it is rather difficult to explain the fact that, while gallstones occur more frequently in women, pancreatitis occurs more frequently in men, and, as Deaver and Pfeiffer [7] have pointed out, 36 per cent. of chronic cases and 12 per cent. of acute cases show no demonstrable lesion of the biliary passages. Diseases of the stomach and duodenum occur more frequently in men than in women. Might not this be another factor to consider?

I believe that the most accepted view and the one that can be most widely applied is that which has been advocated by Maugert, Arnsberger, Deaver, Sweete and others: "The infection which activates the trypsinogen is carried to the pancreas by way of the lymphatics, the primary infection being in the gallbladder, the bile ducts, the liver, the duodenum or the stomach." Bartels and Franke have shown conclusively that there exists an intimate relationship between the lymphatics of the pancreas and the lymphatics of the duodenum, gallbladder and bile ducts. Surely, this theory seems most applicable in the case here reported, which shows no gallstones or any demonstrable lesion of the biliary passages, but does show a duodenitis:

REPORT OF CASE

A white girl, aged 4 years, American, was admitted to the Connemaugh Valley Memorial Hospital, Nov. 26, 1922, at 8:40 p. m., because of pain in the abdomen, vomiting and constipation. The family history was not important. The patient was a full-term, normally delivered child. She had been breast fed six months, and bottle fed four months. She was quite well until about the age of 3 years, when she contracted whooping cough, which affected her for five or six months. She never had mumps, scarlet fever or measles; no one in the neighborhood had had mumps. Friday, November 24, the child ate dinner consisting largely of cabbage, but went to bed Friday night apparently in normal health. Saturday, at 4 a. m., she complained of abdominal pain, and soon began vomiting. The vomitus contained food particles eaten the day before. A physician at 9 a. m. found the child very ill, but without much fever. He prescribed cathartics and something to ease the pain. In the interval between Saturday morning and Sunday evening the child became progressively worse: the abdomen became more distended and rigid, and vomiting continued. She did not have a bowel movement from the onset of the illness to the time that she was brought to the hospital. The patient had one bowel movement, consisting of a dark bluish, semiliquid material, just before she died. The stool was quite large.

The child was small and well nourished. There was an anxious expression on her face; she was restless and cyanotic, with cold extremities. The radial pulse was absent. The apex beat was scarcely audible. The heart was very rapid. The temperature was subnormal. The abdomen was greatly distended and tympanitic. There was very little muscular rigidity. No tumors were felt in the abdomen. There was general tenderness over the abdomen.

The patient died one hour after admission to the hospital. While in the hospital the temperature was subnormal, the pulse very weak and rapid, and respirations accelerated.

Necropsy was performed fourteen hours after death. Over the chest and back there was a light reddish discoloration of the skin; the areas of discoloration were patchy in character. The pupils were equal and dilated. The superficial lymph glands were not palpable. The abdomen was distended and tympanitic. There were no areas of discoloration over the abdomen. When the peritoneum was opened, a quantity of bloody exudate was noted, in the dependent portion of this cavity. The amount of fluid present was, approximately, from 150 to 200 c.c. There were several small, grayish yellow areas of necrosis in the omentum. These grayish yellow flecks were present along the appendices epiploicae of the large intestine, in the mesentery, and in that part of the parietal peritoneum in the neighborhood of the umbilicus. The average size of these grayish yellow flecks was approximately 5 mm. in diameter. The arch of the diaphragm on the right side extended to the fourth interspace, and on the left side to the fifth interspace. The large intestine was considerably distended, the small intestine only moderately distended. Along the superior surface of the transverse colon and adjacent omentum there was a diffuse area of hemorrhage. The greater part of the hemorrhage seemed to be confined to the subserous and retroperitoneal region.

The liver weighed 925 gm., and measured 20 by 14 by 7 cm. The capsule was thickened. The edges were rounded. The organ was light brownish yellow, and considerably paler than normal liver. The organ cut with a pronounced increase in resistance. The liver, in general, resembled a fatty liver, although the consistency was that of a cirrhotic liver. The gallbladder and ducts showed no gross changes. Thin, greenish yellow bile could be freely expressed into the duodenum by moderate pressure on the gallbladder.

The stomach was slightly dilated, mostly from the gas that was present; but there was also some mucus and watery fluid. The mucosa was reddened and slightly congested, but did not appear acutely inflamed.

The mucosa of the duodenum was only moderately congested, but was definitely swollen and edematous. There were numerous small elevations, the size of a pinhead, which grossly appeared to have an excoriated top. Aside from these small excoriations, there was no area which might suggest a duodenal ulcer.

The mucosa of the remainder of the intestinal tract was somewhat edematous and "weepy" in character, but presented nothing to suggest an enteritis. There was considerable redness of the transverse colon on the superior surface. This discoloration was the result of hemorrhage, the distribution of which would lead one to believe that the extravasated blood came not from one large vessel but from many small ones. It was along this area that fat necrosis was most conspicuous. When the omentum was separated from the colon, and the lesser peritoneal sac, which contained only a few cubic centimeters of blood-tinged fluid, was exposed, more hemorrhagic discoloration and fat necrosis were seen.

The pancreas was soft, swollen and edematous. It showed a considerable quantity of subcapsular hemorrhage, and areas of fat necrosis could be seen over the surface. On incision of the pancreas, small, hemorrhagic areas were noted in the substance of the gland; but the greater part of the hemorrhage was confined to the subcapsular region. The pancreas appeared to be very nearly a half larger in size than it should be. The anatomic relationship between the opening of the common bile duct and the pancreatic duct was about the same as exists between the openings of a double barrel shotgun. The boundaries of the ampulla of Vater were ill defined.

Sections of the pancreas showed extensive areas of necrosis in which the acini and the lobules were completely obliterated. Such necrotic areas gradually merged into areas in which the parenchyma had a more normal arrangement; even in such areas, however, the cells lining the acini were swollen and degenerated. Polymorphonuclear and mononuclear leukocytes infiltrated the entire gland tissue. At places, the walls of the blood vessels had undergone necrosis and permitted the escape of blood into the surrounding tissue. The main ducts showed extensive exfoliation of the epithelial lining, and necrosis of the duct walls was frequently noticed. Generalized edema of the pancreas was present.

6. Mann, F. C., Giordano, A. S.: The Bile Factor in Pancreatitis, Arch. Surg. 6: 1 (Jan.) 1923.
7. Deaver and Pfeiffer, in Ochsner: Surgical Diagnosis and Treatment 2: 427.

The liver showed a well developed cirrhosis in which the capsule was thickened, and the fibrous changes, which were pronounced, were largely limited to the interlobular tissue. Fibroblasts and round cells were present in the interlobular areas. The liver cells showed an abundance of small fat globules when stained by appropriate stains.

The gallbladder was normal.

The duodenum showed areas in which the epithelium was missing; but these areas were scarce. There was a pronounced edema and lymphocytic infiltration of the mucosa and submucosa.

The lymph nodes obtained from about the stomach and the head of the pancreas presented the picture of an acute adenitis.

The pathologic diagnosis was: acute hemorrhagic pancreatitis with fat necrosis; cirrhosis of the liver; acute catarrhal duodenitis; acute perigastric and peripancreatic adenitis; hemoperitoneum.

COMMENT

This case is believed to be unique in that (*a*) it is a case of acute hemorrhagic pancreatitis in a child; (*b*) there are no lesions of the gallbladder or biliary passages; (*c*) there is a well defined cirrhosis of the liver, and (*d*) there is a well defined acute duodenitis present.

DIETARY CONSIDERATIONS IN INFANTILE ECZEMA*

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In an eight-year clinical study of that type of infantile eczema involving the cheeks, I have come to the conclusion that the part played by diet is only secondary.

Reflecting every periodic wave of medical thought, observers have ascribed the etiology of eczema to infection, to vagotonia, to constitutional anomaly, and to allergy. During the last decade many pediatricians have followed the teachings of Adelbert Czerny, who offered in explanation an underlying constitutional background—the "exudative diathesis." This diathesis he believed to be greatly improved by withdrawal of fat from the diet. Hence the great emphasis placed by his followers on the effect of food therapy. Repeated observations, however, impugn the definiteness of this constitutional anomaly; and, again, the effect of fat withdrawal on the eczema is by no means as conclusive as was originally taught.

It was decided that a feasible method of reopening the question would be to follow for a number of months groups of new-born infants, and to record the characteristics of all those developing eczema. After a period of eight years I am by no means convinced of any deep underlying constitutional anomaly. Eczemas developed in the overweight and the underweight, in those with adenopathy and those without, in those with subcutaneous tissue flabby and those with it firm. A characteristic common to the vast majority, namely, blue eyes, blond hair, and skin of very delicate, fine texture in all but the involved parts, easily can be attributed to a simple deficiency of pigment. Even if it were proved definitely that fat withdrawal improves exudative diathesis, the scarcity of cases showing such a syndrome invalidates indiscriminate tampering with the diet.

Diet affects eczema apparently in two ways—but it must be emphasized that this influence is purely secondary: (*a*) by affecting the nutrition of the whole child, and (*b*) by affecting the amount of fluid in the tissues.

(*a*) No organ in the child's body is more sensitive to nutritional change than the skin. The well-nourished skin resulting from good general nutrition is better equipped than is the poorly nourished to combat pathologic change. Contrary to tradition, a large number of eczema patients are undernourished. Simply by an increase in the diet so as to improve the general nutrition and hence the nutrition of the skin, many severe cases progress to perfect recovery. No local treatment whatsoever is necessary. Increase rather than decrease of food may effect surprising cures.

(*b*) The influence of diet on body fluids is somewhat more complicated. Various food combinations, such as salt or salt and carbohydrate, cause a shift in the content of body water. Hence, if an eczema tends to be of the moist type, a diet rich in mineral matter and carbohydrate, by calling increased fluid to the tissues, will result in increased oozing of the eczema. A diet low in mineral and carbohydrate, by depleting the tissues of water, will result in a drying and apparent improvement of the eczema. But it must be emphasized that this phenomenon is a purely incidental reaction. It is in no way related to the primary eczema, but is simply an evidence of changing amounts of water in the body tissues.

No greater injustice can be done the little patient than that of failing to recognize the difference between the primary eczema and the secondary manifestations. Believing the oozing to be a feature of the primary eczema, physicians have restricted the diet in one way or another. The resulting improvement in the cheeks, however, does not signify a change in the real eczema, but rather the resulting dryness and pallor are the symptoms of grave malnutrition. As soon as the diet is increased to normal, the whole process recurs. It is probable that the benefits usually attributed to fat withdrawal belong entirely in this category of incidental reactions. Fat plays a part only if restricted to amounts insufficient to permit a gain in weight. The same apparent benefit would follow withdrawal of protein, mineral or carbohydrate—anything causing tissue starvation. Fat in amounts insufficient to cause a gain is harmless. Indeed, in an undernourished child because it improves general nutrition, fat in rather considerable amounts may work a cure.

If one considers weeping as a purely secondary development, a dietetic regimen different from the orthodox underfeeding becomes feasible. Though an increased diet, by making the tissues richer in body fluid, causes the eczema to appear temporarily worse, still a maintenance of this very same diet by improving the nutrition of the skin, eventually will enable it spontaneously to correct the difficulty. In addition, one has a healthy, happy baby. Here lies one of the secrets of the dietetic therapy of eczema. If medical men would be a bit more patient before drawing conclusions, they would learn that in an undernourished child many a diet which makes the eczema temporarily worse, bringing increased redness and weeping, will, if persisted in, cure the very same eczema by improving general nutrition. After the initial weeping, the baby gains in weight; and, with improved nutrition, the skin slowly heals.

Not every case comes under this category. Eczemas certainly appear in overfed, overweight children. Whether improvement following restriction of diet in such cases is due to a fundamental action on the eczema

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and not purely to the secondary influence described above is open to question.

It will be noted that nothing has been written concerning the etiology of primary eczema itself. I believe that this is purely a dermatologic problem. In many cases it can be traced to some type of irritant. Recently, the studies of Shannon, and those of O'Keefe, would ascribe the fundamental basis of the eczema to a hypersensitiveness to certain foods. If these observations remain unchallenged, unquestionably certain cases fall into such a group. Some doubt has been raised, however, by the recent contribution of Stuart.[1] Then, too, the eczema of infants spontaneously healing at the age of 6 months would be an old clinical type of anaphylaxis. I have seen many patients removed from the breast with absolutely no improvement. Grulee has reported the case of an eczematous child who reacted to a certain food with urticaria, proving in this one child, at any rate, that the mechanisms are not identical.

TREATMENT

Very little has been written of prophylactic treatment. Believing in the essentially dermatologic origin of eczema, I have attempted to bring the skin of the predisposed fair-haired, blue-eyed children to the best possible state of nutrition. True, irritants at times bring hyperemia and even papule formation to sensitive cheeks; but the application of a mild protecting salve of any sort—simple cold cream—is sufficient to prevent spreading of the process. If the diet is absolutely unchanged, findings soon disappear. They may reappear again at intervals, but rarely progress to the classical type illustrated in textbooks. If the skin of an infant is maintained in good nutrition from the time of birth, and at the same time protected from irritants, dread eczemas rarely appear.

The active dietetic treatment, from the standpoint of the pediatrician, is that which most rapidly brings the child to the best possible state of nutrition. No one particular diet helps; no one diet harms. The main consideration of the pediatrician is to place the welfare of the whole body above that of an individual organ. If he steadfastly adheres to this principle, local symptoms gradually disappear in proportion to improvement in the general condition. Indications for restriction of diet are only two. In an overfed baby with an oozing eczema, reduction of food intake is of value. In an infant whose eczema has become secondarily infected, a temporary reduction of diet, by depleting the tissues of fluid, dries the cheeks and leaves a field less fertile for bacterial growth. In these cases there is no particular reason for reducing one element of food. Restriction of quantity is all that is necessary.

104 South Michigan Avenue.

1. Stuart, H. C.: The Excretion of Foreign Protein in Human Milk, Am. J. Dis. Child. **25**: 135 (Feb.) 1923.

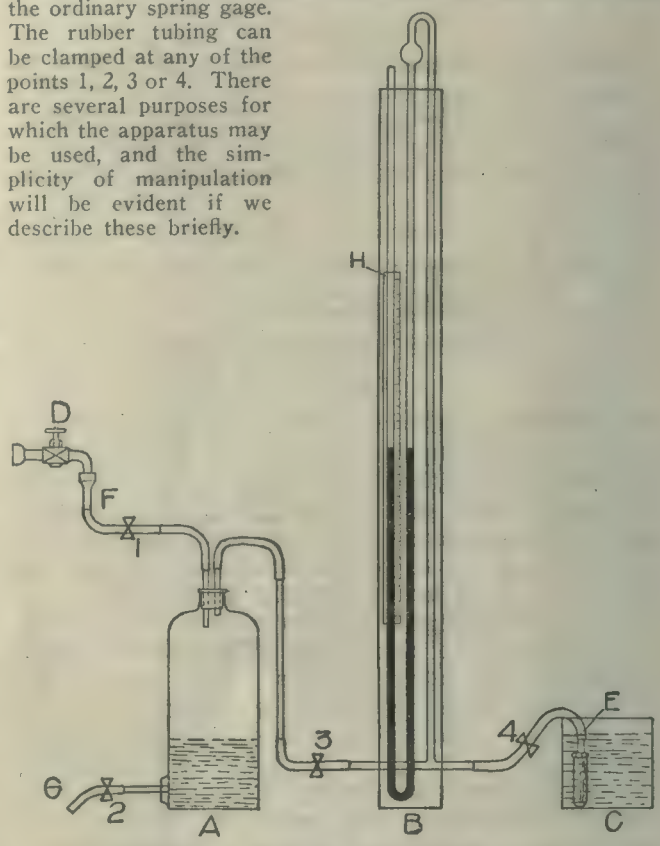
Public Health in Brazil.—Public health work in Brazil really began with the arrival of King John VI of Portugal in 1808, who promptly appointed a chief surgeon, a chief physician and a chief purveyor, charged with the duty of supervising the teaching and practice of medicine and surgery, the operation of hospitals and drug stores, the prevention of epidemic diseases and the sanitary protection of ports. Vaccination was introduced in 1804, and a board was organized in 1811, and reorganized in 1846, to take charge of the matter. A public health chemical laboratory was established in 1812. The first medical school was the surgical college at Bahia, followed in the same year (1808) by the Rio Medical School.

Clinical Notes, Suggestions, and New Instruments

A SIMPLE APPARATUS FOR TESTING AND WASHING FILTER CANDLES *

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The importance of testing filter candles by the air pressure method has been pointed out by Bulloch and Craw [1] and by Ferry.[2] The apparatus here described was designed to simplify the test, and to give greater control over the manipulations. It consists of a 4-liter aspirator bottle, *A*, and an S-open-end manometer, *B*, as shown in the illustration. The manometer is more accurate, cheaper, and more useful than the ordinary spring gage. The rubber tubing can be clamped at any of the points 1, 2, 3 or 4. There are several purposes for which the apparatus may be used, and the simplicity of manipulation will be evident if we describe these briefly.



Apparatus for testing and washing filter candles.

PURPOSES FOR WHICH APPARATUS MAY BE USED

1. *Testing the initial capillary pressure of a filter candle.* The candle, previously dried for about one hour at 100 C., is attached at *E*, the tubing clamped at 3, and the candle immersed in clean water in an open vessel, *C*. The pressure caused by the water soaking into the pores of the candle and displacing the contained air is recorded on the manometer, *B*, and can be read by moving the scale, *H*. One of our 8 by 1 inch Mandler filter candles gave a reading of 355 mm. of mercury, or about 7 pounds of air pressure per square inch.

2. *Testing the pressure at which a filter candle leaks air.* The candle is first soaked in water for twenty-four hours. It is attached at *G*, the tubing is closed at 4, and water is run into *A* from tap *D* until a pressure of not more than 500 mm. of mercury is recorded. The water from *A* forces out any air confined in the candle. The candle is removed, the pressure is lowered by running the water out at *G*, and

* From the Department of Bacteriology and Experimental Pathology, Stanford University.

1. Bulloch and Craw: On the Transmission of Air and Micro-Organisms Through Berkefeld Filters, J. Hyg. **9**: 35, 1909.

2. Ferry, N. S.: The Filterability of Bacillus Bronchisepticus: With An Argument for a Uniform Method of Filtration, J. Path. & Bacteriol. **19**: 488, 1915.

the candle is attached at *E*. The tubing is closed at 2, opened at 4, and the pressure slowly increased by filling the bottle *A*. The pressure at which air leakage takes place at the joint, at any point or points, or freely from the entire filter is recorded. After a free flow of air is passing through the filter, the clamp at 2 is slowly released, and the pressure very gradually lowered until air leaking has ceased. The point at which air starts through the filter as the pressure goes up, and that at which it ceases to flow with the lowering pressure, is usually different.

3. *Washing filters from within outward.* It is dangerous to attach a filter candle to the ordinary water faucet, as the pressure has often been found high enough to crack the candle. If the candle is attached at *G*, 4 closed, and the bottle *A* half filled with water, the pressure can be controlled at any desired point, and the candle thoroughly and safely washed.

4. *Testing a filter under a given vacuum.* A water or other filter pump is attached at *F*, and the filter flask or tube at *E*. It is useful to close 4 until the desired vacuum is obtained, and with 1 closed, 4 is opened and thus a steady and known negative pressure can be maintained. The vacuum can be broken slowly by opening 2, and allowing air to bubble through the water. It is unreliable to test filters with a fluctuating pressure.

COMMENT

We advocate this simple apparatus because it answers the purposes for which it was designed, and because it is highly desirable that filter candles should be tested by some standard method so that comparable results may be obtained by all workers.

The term "filter passer," to have any real meaning, must be better defined. A "tested filter candle" means very little unless we know certain facts. Among the facts necessary are: the pressure used; the equality or fluctuating of the pressure; the time the filtration takes; the name of the bacterium used for testing; the age of the culture of the bacterium; the culture medium or the suspending fluid used with content of electrolytes and reaction; any primary manipulation of the material, such as shaking with beads or paper filtration; the pressure under which the filter leaks air, and the treatment of the filter candle between the primary test and the test of the "filter passer."

It is true that this information is seldom given, and yet, we repeat, it is necessary before we can understand the meaning of the terms mentioned.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

CARBON TETRACHLORIDE MEDICINAL.—Carbonei tetrachloridum medicinale.—Tetrachlormethane.—CCl_4.

Actions and Uses.—Carbon tetrachloride has narcotic and anesthetic properties somewhat similar to those of chloroform. It has recently come into use as a vermifuge in the treatment of hookworm disease. It also removes some intestinal parasites other than the hookworm, such as *Oxyuris vermicularis, Ascaris lumbricoides* and *Trichocephalus dispar*, but it is less effective against these worms than some other drugs, such as oil of chenopodium. It is reported that usually about 95 per cent. of the hookworms are removed by the first dose of carbon tetrachloride and that occasionally all are removed. As a vermifuge it appears to be relatively safe, but serious symptoms and even death have been reported, especially in patients addicted to the use of alcohol. The best results are obtained by administration in water or milk or in gelatin capsules on an empty stomach, followed in 3 hours by a purgative dose of magnesium sulphate. The capsules may be prepared extemporaneously. A mild laxative is generally given to constipated patients on the day previous to treatment. To insure complete removal of the hookworms a test dose of oil of chenopodium, 3 Cc. (45 minims) may be given a week after the treatment with carbon tetrachloride. A second dose of carbon tetrachloride medicinal should not be given within three weeks. Alcohol should not be taken during treatment.

Dosage.—From 2 to 3 Cc. (30 to 45 minims). Children 0.13 Cc. (2 minims) for each year of age up to fifteen years. The dose of 3 Cc. should not be exceeded.

Carbon tetrachloride is a clear, colorless, mobile liquid, having a characteristic, ethereal odor somewhat like that of chloroform; almost tasteless. Carbon tetrachloride is almost insoluble in water and glycerine; miscible with alcohol, chloroform, petroleum benzin and benzene; also soluble in most of the fixed and volatile oils. Specific gravity not less than 1.588 at 25 C. Carbon tetrachloride is volatile at ordinary temperature, but is not inflammable. Medicinal carbon tetrachloride boils at from 76 to 77 C.

Shake 10 Cc. of carbon tetrachloride medicinal with 10 Cc. of water. The aqueous layer should be neutral to litmus paper and should not give an opalescence with silver nitrate solution (*chloride*). Shake 10 Cc. of carbon tetrachloride medicinal with 10 Cc. of water containing a few drops of potassium iodide solution. On standing for five minutes the lower layer should not be colored violet (*free chlorine*). Warm 10 Cc. of carbon tetrachloride medicinal with 10 Cc. of 25 per cent. potassium hydroxide solution. No yellow or brown color should develop (*aldehydes*). Mix 10 Cc. of carbon tetrachloride medicinal with 10 Cc. of sulphuric acid and shake occasionally for 5 minutes. Not more than a barely perceptible color should be present in either layer (*organic impurities*).

Evaporate 25 Cc. of carbon tetrachloride medicinal almost to dryness in a weighed dish on a steam bath. Allow the balance to evaporate spontaneously. The residue, if any, should be odorless. Dry the residue at 100 C. and weigh. The residue should not weigh more than 0.001 Gm. About 5 gm. of carbon tetrachloride medicinal are weighed, placed in a reflux apparatus with 20 Cc. of half-normal alcoholic potassium hydroxide and the mixture gently boiled for 30 minutes. The solution is diluted with 50 Cc. of water and 5 Cc. of 20 per cent. alcoholic potassium hydroxide solution, the mixture warmed on the steam bath until the carbon tetrachloride and alcohol have been removed and 50 Cc. of bromine water are added gradually to the alkaline solution. (An excess of bromine water must be used.) After warming for 15 minutes an excess of hydrochloric acid is added and the solution filtered. An excess of barium chloride solution is then added and the barium sulphate collected, heated and weighed in the usual way. The weight of barium sulphate obtained should correspond to not more than 0.1 per cent. of carbon disulphide.

Carbon Tetrachloride Medicinal-M. C. W.—A brand of Carbon tetrachloride medicinal-N. N. R.

Manufactured by Mallinckrodt Chemical Works, St. Louis. No U. S. patent or trademark.

Carbon Tetrachloride C. P.-P. W. R.—A brand of Carbon tetrachloride medicinal-N. N. R.

Powers-Weightman-Rosengarten Co., Philadelphia, distributor. No U. S. patent or trademark.

BORCHERDT'S MALT EXTRACT (PLAIN).—See N. N. R., 1923, p. 178).

Borcherdt's Malt, Cod Liver Oil and Iron Iodide: Each 100 Cc. contains ferrous iodide 0.88 Gm. (4 grains per fluidounce), cod liver oil, 25 Cc. and Borcherdt's malt extract (plain), 75 Cc.

SULPHARSPHENAMINE (See THE JOURNAL, March 31, 1923, p. 919).

Sulpharsphenamine-Squibb.—A brand of sulpharsphenamine-N. N. R.

Manufactured by E. R. Squibb & Sons, New York, under U. S. Patent 1024993 (April 30, 1912; expires, 1929) by license of the Chemical Foundation, Inc.

Sulpharsphenamine-Squibb, 0.1 Gm. Ampules.
Sulpharsphenamine-Squibb, 0.2 Gm. Ampules.
Sulpharsphenamine-Squibb, 0.3 Gm. Ampules.
Sulpharsphenamine-Squibb, 0.4 Gm. Ampules.
Sulpharsphenamine-Squibb, 0.5 Gm. Ampules.
Sulpharsphenamine-Squibb, 0.6 Gm. Ampules.

MODIFIED PNEUMOCOCCUS VACCINE.—A vaccine or "antigen" prepared by digesting a suspension of pneumococci of Types I, II, III and Group 4 at 37 C. until about 95 per cent. of the organisms have become gram-negative and the mixture is relatively nontoxic to guinea-pigs. It is believed that this method yields a vaccine with a greater protective power.

Actions and Uses.—There is some evidence that this vaccine is of value in the treatment of lobar pneumonia. It is not intended for prophylactic use.

Eli Lilly & Company, Indianapolis.

Pneumococcus Antigen-Lilly.—Marketed in 5 cubic centimeter vials, each cubic centimeter containing 20 billion partially autolyzed pneumococci.

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SATURDAY, APRIL 21, 1923

THE CAPILLARIES IN HEALTH AND IN DISEASE

The integration of parts into the unit organism is achieved in animals by energy transmitted through the nervous system and by substances transported through the blood; and clarification of the mechanism of these processes must yield notable results. Although the problem of nervous regulation has been vigorously attacked, the sister problem of the control and care of tissues and organs by means of the blood stream has long languished. Circulation of the blood has for its one end the carrying to and from tissues of various dissolved substances, and this exchange can occur only through the capillary bed. In these structures, then, must the essential physiology be sought. Now, 250 years after capillaries were first described, physiologists, notably Krogh,[1] are attacking the problem.

The capillaries were long regarded as passive endothelial filters with no muscle and therefore no independent contractility, being distended or collapsed as the inside pressure (modified by arteriole contractions) became greater or less than that outside. That capillaries do possess the ability to contract is now abundantly proved. The microscope shows that they not only become noticeably smaller when a high internal pressure is cut to 0, but will entirely disappear on electrical stimulation. Conversely, if a small venule is gently stroked with a hair, a capillary bud soon appears, and grows as the stroking is continued in front of it until the dilating capillary finally opens into an arteriole and a current of blood sweeps through. Such independence explains, for example, how the skin may be at once pale (little blood present, owing to contracted capillaries) and hot (rapid flow due to dilated arterioles), and affords the basis for the abnormal capillary shapes seen in renal disorders [2] and for the many "angioneurotic" skin diseases. Capillary contractility, when firmly established, was explained in terms of endothelial swelling until Krogh and Vimtrup rediscovered on the capillary endothelium, especially near the arterioles, fine branching muscle cells which tend to encircle the tube and are able by contraction to fold the endothelium and obliterate the lumen. These cells, which have been named Rouget cells for their discoverer (1873), bring the further study of the control of capillaries into the same category as other contractile tissues.

The Rouget cells receive fibers from the sympathetic, and are under its motor and tonic control, stimulation of the nerve leading to prompt capillary constriction, and section of it to a fairly permanent dilatation. Dilator influences, to the skin capillaries, at least, seem to travel along fibers in the posterior root, and may be concerned in the well known reflex erythema following painful stimulation of the skin (it is abolished by cocain or by injury to the nerves or cord of the region). Krogh points out also the significance of this reaction in herpes zoster. Direct mechanical stimulation will produce dilatation if weak and contraction if strong, a local chemical stimulus, as dilute iodin, only dilatation; the effects in each case spreading in proportion to the intensity of stimulus. These reactions are in varying degrees mediated by nerves, which Krogh suggests exist peripherally as a true network. The significance of such observations in the use of counterirritation is apparent at once. Heat and cold produce, respectively, relaxation and contraction of the capillaries as of the arterioles and venules, acting in part through the nerves to them. Ultraviolet light acts directly on the capillaries, and causes a slowly appearing and long persistent dilatation, inducing the well known erythema.

Many substances introduced into the blood stream have marked action on the capillaries. The dilator and paralytic effects, especially on the intestinal capillaries, of histamin and some heavy metal double salts, are well known. Urethane likewise produces extreme dilatation of the capillaries and stasis, without affecting the arterioles, as also do ether and chloroform to a lesser degree. This action accounts for their tendency to bring on shock, by synergizing other capillodilator influences and causing "exemia." The dilator influence of carbon dioxid or other acids is distinctly less than usually believed, and is not sufficient to account for the capillary dilatation in a functioning muscle; but oxygen deficiency, possibly through other metabolites than carbon dioxid, does lead to marked capillary dilatation. Epinephrin causes definite dilatation of certain capillaries, and has no action on many, and, in man, leads to constriction; though electric stimulation of the sympathetic in all these cases causes contraction.

In a beautiful series of experiments, Krogh has adduced evidence that the capillaries are normally kept tonically contracted by a substance present in the blood stream. If the blood flow through a frog's leg is stopped, capillaries of the web slowly dilate in the course of fifteen or twenty minutes from a diameter of 5 microns to one of 20 microns; when flow is again permitted, the capillaries become distinctly contracted

1. Krogh: The Anatomy and Physiology of Capillaries, New Haven, Yale University Press, 1922.
2. Nevermann: Zentralbl. f. Gynäk. **16**: 617, 1922.

in five minutes. This indication of a constrictor agent of hormone nature in the blood stream was further followed by perfusion experiments with defibrinated ox blood controlled with 3 per cent. gum, Ringer solution and ox corpuscles. In the controls, the capillaries began to dilate at once; with the ox serum present, the capillaries remained normal for hours. The active substance could be demonstrated in a dialysate of ox serum, and many of its properties determined. Extirpation of the entire hypophysis caused marked dilatation for weeks of the web capillaries, and a marked instability in response to stimuli; when only the glandular part (anterior lobe in mammals) is removed, this dilatation does not follow. Pituitary extract from the posterior lobe of cows, in dilutions which do not affect arteries at all, causes marked capillary contraction, and, when added to the Ringer perfusion fluids of the experiments mentioned in 1:1,000,000 concentration, was able to maintain the normal capillary tone as well as ox serum. The properties of pituitary extract also closely correspond to those of the dialyzed substance, so that Krogh believes that the pituitary hormone is the substance in blood which maintains capillary tone, and that it is present normally in concentrations of about one part in a hundred million or even less. If a similar control of human capillaries can be shown (and it is well to warn against hasty assumption), the therapeutic value of pituitary extracts in such conditions as shock is manifest. Epinephrin does not have a comparable action.

Krogh next addressed himself to the problem of exchange of substances through the capillary wall, and proved quantitatively that oxygen, carbon dioxid and probably all crystalloids pass through by purely physical processes, as by diffusion, whereas colloids are denied passage through the normal wall, and exert a definite osmotic pressure tending to cause absorption of water from tissue spaces into the lumen. The thinned endothelium of a dilated capillary, however, permits colloids also to pass, so that the entire blood plasma may go from the lumen to surrounding tissues as rapidly as fresh blood is pumped through the arteriole, causing edema of the tissues and leaving the cells packed in the lumen as a solid cast. This is the essential condition in histamin or other types of shock, and the same changes locally may produce wheals and blisters. The capillary pressure in man, as measured directly with a cannula in the capillary lumen and a water manometer, is normally lower than the osmotic pressure because the hydrostatic pressure of the column of venous blood, as in a pendent foot, is kept down by the pumping action of the muscles on the valved veins; in varicose conditions or when muscular action is avoided, the capillary pressure rises above the osmotic pressure, and a resulting edema is easily demonstrated. Such edema fluids are low in protein, while those formed through dilated capillaries are very rich in it.

This new physiology of the capillaries has already explained many cryptic conditions of health and disease, and has opened wide a realm in which further facts are being found. Krogh has indeed justified the statement that he who increases the accuracy of his measurements by one decimal place will open up a new world of human knowledge.

PANCREATIC SECRETION IN MAN

The demonstration of the possibility of a chemical stimulation of the pancreatic gland to secretion, independently of the participation of secretory nerves, is justly regarded as a remarkable modern contribution to the science of physiology. The classic experiments which the London investigators Bayliss and Starling reported twenty years ago showed in a striking way that secretory glands can be excited to activity through influences which reach them by humoral as well as by nervous channels. Through the action of dilute acid on the duodenal mucosa, a substance, secretin, is formed which can accelerate the flow of pancreatic juice even when all nervous connections with the secretory gland are severed. The English physiologists early reached the conclusion that such a mechanism is involved normally in the production of pancreatic secretion, and is responsible for the flow obtained when acids find their way into the small intestine. Normally, this occurs at frequent intervals when the acid contents of the stomach are discharged through the pylorus. This series of reactions has often been pointed out as an example of a mechanism which probably plays an important part in the correlation of the activities of many organs of the body. Starling,[1] indeed, has remarked that in the normal life of the higher animals, which must be considered as a continuous series of reactions to changes in the environment, ending only with death, those reactions which are carried out through the intermediation of the nervous system play such a preponderant part that we have almost forgotten the possibility of other means of coadaptation among the different organs of the body.

Starling has further pointed out that, whereas in the mouth, the reaction, which must be rapid, is entirely nervous, in the stomach there is a mixture of the nervous mechanism with the more primitive chemical mechanism. The nervous secretion preponderates in this viscus. When we come to the pancreas, he adds, the primitive chemical mechanism, namely, the formation of hormones and their circulation through the blood to the reactive tissue, suffices to account for the whole activity of the gland, and it is doubtful whether in this activity the nervous system plays any part whatsoever. Many writers have come to the conclusion, from the striking experiments on secretion and the undoubted promotion of pancreatic flow through the

1. Starling, E. H.: Recent Advances in the Physiology of Digestion, Chicago, W. T. Keener & Co., 1906.

presence of acid in the duodenum, that the latter is the usual, if not the exclusive, normal provocative of pancreatic activity during the digestive cycle. In other words, the presence of acid chyme in the intestine sets free secretin in the mucosa; and some of this finds its way into the circulation, and, in turn, makes the pancreas secrete. The consequences of such an arrangement are obvious. If the regulation of pancreatic secretion is largely dependent on the secretin factor, one might naturally assume that vigorous gastric digestion, with the resulting strongly acid chyme, must go far to insure a normal intestinal digestive performance.

So far as man is concerned, the recent studies of McClure [2] and his associates in Boston may lead to some hesitation in postulating the necessity of an acid factor in the promotion of pancreatic secretion during the digestive cycle. These investigators have studied the character of the duodenal contents withdrawn at frequent intervals through a sound after a variety of types of feeding in man. The reaction of the contents which gave evidence of the content of pancreatic juice through the character and quantity of the enzymes present was frequently measured with accuracy. The findings show that the presence of food in the human intestine in some way stimulated the activity of the external secretory function of the pancreas. They indicate that the principal factor in producing this stimulation was the absorption of the products of digestion rather than the acidity of the gastric chyme. Furthermore, in achylia gastrica and pernicious anemia no abnormalities in the activity of the external secretory function of the pancreas were demonstrable, as measured by the enzyme concentration of duodenal contents. These findings suggest that the presence of hydrochloric acid is not necessary in order to stimulate normal pancreatic secretory activity.

If these observations are substantiated, it must become clear that decrease or absence of typical pancreatic enzymes in the intestine need not be due to a lack of acid charged with initiating the production of secretin. Consequently, it seems likely that the estimation of the enzymatic activities of the duodenal contents may furnish a fairly satisfactory index of the external secretory functions of the pancreas. McClure and Jones have, in fact, found it to be much depressed in chronic pancreatitis. In their clinical studies, it was observed that acute pancreatic necrosis, cancer of the head of the pancreas, and lesions obstructing the pancreatic duct were accompanied by marked abnormalities in enzymatic activities of the duodenal contents. Obstructive lesions caused great diminution, while acute necrosis usually caused dissociation in enzymatic activities.

Other "by-products" of the Boston investigation are not without interest to the student of gastro-enterology. They showed that lipolytic activity of the duodenal contents was always, while proteolytic and amylolytic activities were almost always, greater after the ingestion of olive oil than after the ingestion of protein or carbohydrate food. From this it is inferred that olive oil was a more powerful stimulant to the activity of the external secretory function of the pancreas than were the other types of food. Water was a less potent stimulant of external pancreatic secretion than were food substances. After the appearance of food substances in the duodenum, there was a latent period before the flow of enzymes and bile began. The time coincident of the onset of the flow of bile and pancreatic juice suggests a common stimulant. This is in harmony with other current evidence. The fact that the fasting duodenal contents contained both enzymes and bile pigments need no longer surprise us. For the stomach, the existence of a more or less continuous secretion is now widely admitted. In the case of the human pancreas, also, Luckhardt, Stangl and Koch [3] of Chicago have demonstrated a continuous secretion amounting to 7 or 8 c.c. an hour, the total daily output mounting to nearly 900 c.c. At the height of digestion, this potent organ can produce in one hour an amount of pancreatic juice equivalent to its own weight.

ROCKY MOUNTAIN SPOTTED FEVER

The submarine emerges from the water, attacks and disappears; in the same way, spotted fever attacks from its base in the Rocky Mountains. It will no doubt appear as usual with the warm days of spring, attack man until the hot days of July, and then withdraw for a season. Such has been its history for many years. Mountain Indians attributed the danger of trips to certain valleys to evil spirits, and early settlers associated the disease with the melting snows.

Spotted fever probably existed in the Bitter Root Valley at least seventy-five years ago. While information concerning two cases in 1873 is probably authentic, the first written account [4] of the disease appeared in 1896. In 1902, McCullough [5] published the first account of the deadly type, citing ninety-two cases with a mortality of 75 per cent. In the same year, the Montana State Board of Health engaged Wilson and Chowning to conduct an investigation. In 1903, the federal government began an almost continuous series of investigations, extending to the present.

Until the brilliant work of Ricketts, Rocky Mountain spotted fever remained a mystery. Its origin was obscure. It was usually fatal in certain comparatively

2. McClure, C. W., and Wetmore, A. S.: Studies in Pancreatic Function: Enzyme Concentration of Duodenal Contents After the Ingestion of Pure Foodstuffs and Food Mixtures by Normal Men, Boston M. & S. J. **187**: 882 (Dec. 14) 1922. McClure, C. W., and Jones, C. M.: Studies in Pancreatic Function: The Enzyme Concentration of Duodenal Contents in Pathological Conditions Involving the Pancreas, Liver and Stomach, ibid., **187**: 909 (Dec. 21) 1922.

3. Luckhardt, A. B.; Stangl, F., and Koch, F. C.: Preliminary Report on the Daily Amount, Physical Properties and Rate of Secretion of Human Pancreatic Juice, Am. J. Physiol. **63**: 397 (Feb.) 1923.

4. Wood, W. W.: Spotted Fever as Reported from Idaho, Report of the Surgeon General of the Army to the Secretary of War, 1896.

5. McCullough, G. T.: Spotted Fever, M. Sentinel **10**: 7, 1902.

small areas, seldom fatal in others, and completely absent in closely adjacent regions. Ricketts [6] went to Montana in April, 1906, and promptly demonstrated that a wood tick (*Dermacentor venustus*) transmits the disease. He also proved that infective ticks exist in nature, and that the virus is transmitted by heredity to succeeding generations of ticks.

The tick concerned in the natural transmission of spotted fever exists in parts of Washington, Oregon, California, Idaho, Nevada, Utah, Montana, Wyoming, Colorado and New Mexico, in which states, except New Mexico, cases of spotted fever have undoubtedly originated.[7] Its distribution is therefore that of its carrier. It is not possible to determine with available records whether or not the disease is spreading over larger areas in these states. However, it appeared in 1915 in eastern Montana, where the disease certainly would have been recognized had it existed prior to that time. The total number of cases that occur annually cannot be accurately stated. Bishopp regarded 700 as a conservative estimate. The mortality rate varies greatly. In the Bitter Root Valley, it is probably greater than 70 per cent.; outside the Bitter Root Valley, it varies from 7.15 to 13 per cent.

The possibility of a widespread extension of the disease, or of a large epidemic, is remote, although several species of ticks, some of which occur over large areas in the eastern and southern portions of the United States, are capable of transmitting the disease. A hopeful feature is that only one species of tick in the Bitter Root Valley attacks man, and its attachment for hours is necessary to infect. Ricketts, in one instance, secured infection in one and three-fourths hours, but from ten to twenty hours' feeding was usually required. Most ticks that attach themselves to human beings are doubtless removed before infection occurs. Spencer and Parker [8] recently collected from the vegetation near Hamilton, Mont., more than 100 lots of ticks, many of which were taken from areas known to be infected, and inoculated the contents of from fifteen to twenty-five ticks from each lot into guinea-pigs, without spotted fever resulting once. When similar experiments were performed with ticks collected from a mountain goat, the disease was transmitted. These experiments have been repeated many times, indicating that before unfed infected ticks, that have hibernated, become infective, the virus must be reactivated by fresh mammalian blood. It is not known what change in the virus occurs as a result of the ingestion of blood, but its apparent necessity explains in part the comparatively small number of human cases of spotted fever.

Therapy, heretofore, has accomplished nothing in curing this disease. Ricketts and Gomez, however, using serum from guinea-pigs that had recovered, were able to prevent infection in normal guinea-pigs when the serum was administered shortly after infection. They were not able to increase the potency of this serum to be useful in human cases. Noguchi [9] has prepared a potent serum in the rabbit; 0.1 c.c. is sufficient to prevent infection in a guinea-pig weighing 500 gm. inoculated with one minimal lethal dose of virus. The serum is easily produced, and will probably remain active a year or longer at refrigerator temperature. In view of the comparative susceptibility of man and the guinea-pig, Noguchi recommends the early intravenous injection of about 0.2 c.c. of the serum per kilogram of body weight in every suspected human infection.

It has not been possible to rid the mountains of ticks, but to make their bites harmless may become simple.

6. Ricketts, H. T.: The Transmission of Rocky Mountain Spotted Fever by the Bite of the Wood Tick, J. A. M. A. **47**: 358 (Aug. 4) 1906; The Rôle of the Wood Tick in Rocky Mountain Spotted Fever, and the Susceptibility of Local Animals to This Disease, J. A. M. A. **49**: 24 (July 6) 1907.

7. Wolbach, S. B.: J. M. Res. **41**: 1 (Nov.) 1919.

8. Spencer, R. R., and Parker, R. R.: Pub. Health Rep. **38**: 333 (Feb. 23) 1923.

9. Noguchi, Hideyo: Immunity Studies of Rocky Mountain Spotted Fever: Usefulness of Immune Serum in Suppressing an Impending Infection, J. Exper. Med. **37**: 383 (March) 1923.

Current Comment

THE CONTROL OF TRACHOMA

Among the diseases that have come particularly into public notice within the last generation is included the contagious malady of the eyelids known as trachoma. Although this menace to the integrity of sight is an admittedly serious one, it is still known to many practitioners and more localities only as a name associated with the problems of preventable blindness. Attention has been focused on trachoma most prominently from the standpoint of public health by the consideration that is given to its possible occurrence in immigrants. Aliens have long been examined carefully at the seaboard ports for evidences of the infection; but trachoma is far more prevalent in the United States than is ordinarily supposed. It has been described for a number of inland localities cut off from frequent contact with the rest of the country; and the surprising incidence of the disease among American Indians has long been recognized by experts, so that it can scarcely be regarded as something characteristic of persons of foreign birth, although sometimes described as such. Ten years ago, surveys made in Minnesota, for example, had revealed a heavy trachoma infection among certain Indian bands in the state, and more or less widely scattered foci of infection among certain elements of the white population; this constituted a distinct menace to the visual health of the state. In one of these investigations, which may serve as an illustration of the work undertaken, only seventy-seven cases of trachoma were found on examination of 49,305 white persons (a ratio of 1:640) in comparison with 533 cases observed among 3,542 Indians (a ratio of 1:7). In another survey, in which eighteen counties of Minnesota were visited, only nine cases of active trachoma were found among more than 35,000

schoolchildren examined. A recent reinvestigation of conditions in the same state by government experts [1] confirms an earlier opinion that there is no unusual trachoma problem in Minnesota outside certain fairly well-defined districts. There is continued indication, nevertheless, that certain heavily infected Indian reservations are a threatening source of danger to the public health of the state. This is evidenced by the increased number of cases of trachoma observed in the course of the survey among the Indians attending the public schools contiguous to Indian reservations. Without attempting to magnify the growing rather than decreasing menace, the surgeons of the U. S. Public Health Service urge the importance of enforcing measures necessary for the control of trachoma among that portion of the Indian population of the state remaining under government guardianship; otherwise, owing to improved facilities for intercommunication, the elimination from the nonreservation population will be greatly complicated, if not impossible. Now that governmental guardianship of the Indian is largely relinquished in this country, public health authorities need all the more to bear in mind those hygienic problems that relate so preeminently to our native race.

ANTIVIVISECTIONIST SCIENCE

To the few physicians who troubled to hear the addresses of Dr. (save the mark) Walter R. Hadwen, when he lectured on antivivisection in this country, no comment is necessary as to his complete disqualification to speak on any scientific medical subject. For the vast majority who, of course, did not trouble to listen to the maunderings of this ancient spokesman for the antivivisection cause, the following quotation from the Starry Cross, published under the auspices of the American Antivivisection Society, will accurately define his knowledge. He was asked:

"What do you advise for one who has germs in the lungs —consumption? Please give some points on this question from one present who is worried about the dread disease."

Answer: "The germs—the tubercle bacilli—you have in your lungs are there for the purpose of splitting up the solid tuberculous matter in order to get rid of it. These germs are never found in the primary stages of the disease. They are not found in 50 per cent. of the ultimate states of the disease. They are found during the process of splitting up, and they are the best friends you can possible have. Don't you worry yourself one bit about getting rid of them. It is like people who drink this pasteurized milk which is certified to contain only a limited number of germs—you need not worry, drink your milk cold, and the more germs there are in it the better it will be for you. As to the question of tuberculosis, practically everybody suffers more or less from it at some time in their lives. I have seen the most extreme cases of tuberculosis, where they have vomited quarts of blood, where they have vomited quarts of sputum, and then have got well and had children afterwards. Never give up a case of tuberculosis, and don't worry yourself about germs."

This reply is typically Hadwennian. It would be funny if the subject were not so tragically serious. It was Goethe who said: "Nothing is more dangerous than active ignorance."

1. Clark, Talliaferro: The Trachoma Problem in the State of Minnesota, Pub. Health Rep. **38**: 383 (March 2) 1923.

Association News

THE SAN FRANCISCO SESSION

Hotels for the Annual Session

The following list of hotels with locations and prices is furnished by the Local Committee of Arrangements. Several hotels, as shown by the star, are already booked to capacity. All hotels are conveniently located except those in Oakland and Berkeley, which are about an hour from the Civic Auditorium.

The California Committee will be able to house all guests comfortably. In order that the most agreeable arrangements may be made, it is requested that from now on Fellows write directly to California Headquarters, 806 Balboa Building, for hotel reservations. Please give the date of expected arrival in all applications.

The lower prices quoted below refer to one person. The higher are for one to two persons in a room. Some hotels charge the same for one or two persons. All rooms have baths. Please make reservations early.

Leading Hotels of San Francisco (All European Plan)—Location and Rates

Name and Address	All Rooms with Bath
Alcazar, 326 O'Farrell	$ — $ 3.00
Alexander, 352 Geary St	2.50 — 4.00
Ambassador, Mason and Eddy	2.50 — 4.00
Antlers, 245 Powell St	3.50 — 5.50
Argonaut, 44 Fourth St	2.00 — 3.50
Baldwin, 321 Grant Ave	3.00
Bellevue, Geary and Taylor Sts	3.50 — 5.00
Beresford, 635 Sutter St	2.50 — 5.00
Cadillac, 380 Eddy St	2.00 — 2.50
Cartwright, 524 Sutter St	2.50 — 4.00
Cecil (American plan), 545 Post St	8.00 — 12.00
*Chancellor, 433 Powell St	2.50 — 4.00
Clark, 217 Eddy St	2.50 — 3.50
*Clift, Geary and Taylor Sts	8.00
Colonial, 650 Bush St	4.00 — 5.00
Columbia, 411 O'Farrell St	2.00 — 2.50
Court, 205 Bush St	3.00 — 4.00
Dalt, 34 Turk St	2.50 — 3.50
*Fairmont, California and Mason Sts	7.00 — 10.00
Federal, 1087 Market St	2.50 — 3.50
Fielding, 386 Geary St	2.50 — 3.50
Garfield, 354 O'Farrell St	2.00 — 3.50
Garland, 505 O'Farrell St	2.00 — 3.00
Grand, 57 Taylor St	2.00 — 3.00
Herald, Eddy and Jones Sts	2.00 — 3.50
Herbert's (men only), 151 Powell St	2.00 — 3.00
Kensington, 580 Geary St	2.00 — 3.00
Keystone, 54 Fourth St	2.50 — 3.50
King George, 334 Mason St	2.50 — 5.00
Lankershim, 55 Fifth St	3.50
Larne, 210 Ellis St	3.00 — 4.50
Manx, Powell and O'Farrell Sts	4.00 — 5.00
Maryland, 490 Geary St	2.00 — 3.50
Mentone, 387 Ellis St	2.50 — 3.00
Normandie, 1499 Sutter St	1.75 — 3.50
Paisley, 432 Geary St	2.00 — 3.00
*Palace, Market and Montgomery Sts	8.00 — 10.00
*Plaza, Post and Stockton Sts	5.00 — 6.00
*Ramona, 174 Ellis St	2.50 — 3.50
Regent, 562 Sutter St	2.00 — 3.50
Richelieu, Geary and Van Ness Ave	5.00
Robins, 711 Post St	2.00 — 2.50
Somerton, 440 Geary St	2.00 — 4.00
Spaulding, 240 O'Farrell St	2.50 — 5.00
Stanford, 250 Kearny St	1.00 — 2.00
State, 16 Turk St	1.50 — 2.00
*St. Francis, Union Square	4.00 — 10.00
*Stewart, 353 Geary St	3.50 — 7.00
Stratford, Powell and Geary Sts	6.00
Sutter, Sutter and Kearny Sts	4.00
Travelers, 255 O'Farrell St	2.00 — 3.50
Terminal, 60 Market St	2.50 — 4.00
Turpin, 17 Powell St	3.00 — 3.50
Victoria, Bush and Stockton Sts	2.50 — 4.00
Washington, Grant and Bush Sts	2.50 — 4.00
Wellington, 610 Geary St	2.50 — 4.00
*Whitcomb, Market and Civic Center	4.00 — 8.00
Wiltshire, 340 Stockton St	3.00 — 4.50
Worth, 641 Post St	2.00 — 2.50
Hotel Oakland, Oakland, Calif	3.00 — 10.00
Hotel Claremont, Berkeley, Calif	3.00 — 5.00
Hotel Whitecotton, Berkeley, Calif	3.00 — 5.00

* Booked to capacity.

Alumni and Fraternity Dinners and Entertainments

Dr. Thomas H. Kelly is chairman of the Subcommittee on Alumni and Fraternity Entertainments of the Local Committee of Arrangements at San Francisco. This committee is very anxious to cooperate in any way possible with fraternities and alumni organizations in providing whatever entertainment they desire. Dr. Kelly and the members of his committee will be glad to suggest possible entertainments in San Francisco, and cooperate in bringing them about or making local arrangements required by the organizations.

Officers of those organizations interested should write or telegraph Dr. Kelly at headquarters offices, 806 Balboa Building, San Francisco.

PRELIMINARY REPORT OF THE COMMITTEE ON DISTRICTING

INTRODUCTORY NOTE

The Committee on Districting the United States, appointed at the last annual session of the House of Delegates, publishes the following preliminary report at this time in order that the questions involved may be considered by all bodies and individuals interested, and that delegates may ascertain the views of their state societies before the next annual session.

It should be borne in mind that the report embodies the opinion of the committee at the present time, and that this opinion may be modified or entirely changed by further information that may be received before the report is submitted.

The committee requests all interested in the question, whether official or individual members of any of the societies involved, to express their views freely, on any or all of the points at issue, and to make further suggestions that may occur to them.

All communications should be addressed to:

ROCK SLEYSTER, M.D.,
Wauwatosa, Wis.

Preliminary Report of the Committee

To the Members of the House of Delegates of the American Medical Association:

At the last annual session, the President appointed your special committee to consider the division of our membership into several districts. The appointment was authorized by the House of Delegates following its recommendation by the Reference Committee on Reports of Officers, in response to the following suggestion contained in the address of the President, Dr. Work, to the House of Delegates:

> You will recall that the districting of the United States for the allocation of trustees has been twice before you. To the segregating of the United States into groups, in the interests of the Association and its members, I am wholly committed. Within recent years several medical societies have been organized designated by valleys, numbers of states or other distinguishing and limiting titles. The very formation of such medical associations is evidence of their necessity to physicians of localities and to their medical progress.
>
> Different sections of the United States have local disease problems requiring special discussion; of little interest to physicians of the United States as a whole, and, too, physicians need wider personal contact than is now possible from the annual meetings of the American Medical Association or its special societies.
>
> The long travel and time necessary for most of our membership to attend the annual meetings of the Association are prohibitive, and its great membership would otherwise make a general assembly impossible.
>
> I am convinced that in the interests of our membership the United States should be divided into several districts, as you may determine, and that each district, in addition to electing a trustee of the Association, should regard itself as an active section of it.
>
> The officers and organization of these subdivisions should, of course, be governed by uniformity, precisely as state societies now are. They could meet in midwinter for discussion of their local problems, together with suggestions and policies to be recommended to the American Medical Association at its annual meeting.
>
> The parent association could do the necessary printing and advertising, so that the expenses of organization usually incurred would be thus avoided. This is a time of decentralization rather than concentration of initiating officials; of expanding units rather than carrying dependencies and helpless in themselves. I continue to believe that each section should nominate to the House of Delegates its choice for a president-elect, such nomination to be suggestive, and not obligating.

The suggestion of districting the county is not a new one, and before taking up the results of the present study of the question, it will be fitting and illuminating to give a brief summary of previous opinions and reports on the subjects.

The Committee on Reorganization of the American Medical Association many years ago considered the advisability of creating semi-national branches or districts of the Association, about five in number, the annual meeting of these districts to be at a time decided on by the individual district but not within three months of the meeting of the American Medical Association.

This committee considered that the various small independent districts, like some of the tristate societies, were in general a detriment to medical organization. It also expressed the opinion that the formation of several districts might be desirable, if it could be arranged without conflicting with the work of the state associations.

The committee considered the plan worthy of future consideration, but not practicable at that time.

A Committee on Branch Associations recommended to the House of Delegates at the Atlantic City Session in 1904 that "permission be given for the creation of seven branches, at the discretion of the governing authorities of the state associations composing them, so arranged as to cover the entire country."

With this report, a form of constitution and by-laws for such branches was submitted which provided that "membership in the branch association shall be voluntary . . . but that no one shall be eligible who is not a member in good standing of his own county and state associations."

The committee further recommended that branches hold meetings in the fall, in conjunction with the annual meeting of one of the component state associations.

This report was referred to the Committee on Miscellaneous Business, which committee suggested some minor changes in names of the proposed districts, and in the plan of organization, and recommended the adoption of the report.

This report of the Committee on Miscellaneous Business was referred back to the Committee on Branch Associations with directions to report further at the next meeting.

In 1907, at the Atlantic City Session, the Committee on Branch Associations submitted its second report, which differed in no essential point from that previously presented.

This report was referred to the Committee on Reports of Officers, which recommended "that the report on branch associations be referred to the state association by the General Secretary, with an urgent request for an expression of their views, to be presented to this Association at the next annual meeting." This recommendation was adopted by the House of Delegates.

The Report on Branch Associations at the Chicago session in 1908 gave the results of bringing the matter to the attention of the state associations. All of the state secretaries were asked to bring the matter before the annual meetings of their associations, and to report the action of their state associations.

The result was: acknowledgement of receipt of letter by thirty-four state secretaries; two associations voted in favor of plan, seven against it, and twenty-five took no action.

From this time, 1908, till 1920, the question appears to have been given no attention.

In 1920, following a suggestion made by the Speaker, Dr. Work, the Committee on Reports of Officers stated that "his suggestion that it might be advisable to reduce the number of trustees to seven or five members and subdivide the United States into trustee districts, is worthy of serious consideration," and recommended "serious consideration by the House at the next annual session, and that the matter be at once referred to the Judicial Council, in order that it may report a concrete proposition at the next session."

This recommendation was adopted, and the Judicial Council was requested to report a concrete proposition or plan for reducing the number of trustees from nine to seven, and to subdivide the United States into seven Trustee Districts.

At the Boston Session in 1921, the Judicial Council presented such a plan, with the statement that it was "not as a recommendation from the Judicial Council, but in response to the action taken by the House of Delegates requesting the Judicial Council to submit a plan which will effect the change provided the House deem it advisable to do so."

This report of the Judicial Council was referred to the Committee on Constitution and By-Laws.

This committee reported that it "was not prepared to offer any definite recommendations on that part of the Judicial Council dealing with the change in number of the Board of Trustees and the formation of seven trustee districts. Your committee believes, however, that there is much to be said in favor of the plan and that it should receive careful consideration, throughout the year and at next year's session of the House."

The committee recommended "that this be referred back to the Judicial Council" which should be directed to "report back on the subject to the next House."

This brings the subject of districting down to the date of Dr. Work's recommendation of last year, quoted at the beginning of this report.

The only positive and definite statement that your committee has been able to extract from the history of the project of districting the United States is that of Dr. Work, made last year at St. Louis: "To the segregating of the United States into groups in the interests of the Association and its members, I am wholly committed."

The rest is a history of lack of definite opinions, postponement, indecision and passing the question back and forth from one committee to another.

The question has been once or more times before the Committees on Organization; on Branch Associations; on Miscellaneous Business; on Reports of Officers, and on Amendments to the Constitution and By-Laws, and before the Judicial Council and the state associations.

In 1908, two states were in favor of districting, seven against it; the rest noncommittal.

Some of the recommendations of the various committees which have considered it can easily be summarized in their own words as follows:

The plan "is worthy of future consideration."

We recommend that the committee "report further at the next meeting."

The plan "is worthy of serious consideration."

We recommend "serious consideration at the next annual session."

We recommend that the Committee "report a concrete proposition at its next annual session."

We are "not prepared to offer any definite recommendation."

The committee "believes there is much to be said in favor of the plan, and that it should receive careful consideration at the next annual session."

With this history before us, your committee has attempted to secure as wide expression of opinion on the question as possible, in the hope that it might break the precedent of indecision.

Your committee has endeavored to secure opinion on the plan from every state in the Union. The matter was brought up for discussion at the annual meeting of the state secretaries held in Chicago last November, and again at the conference of section secretaries and the Council on Scientific Assembly. In addition to this, letters have been addressed to the secretaries of all state medical societies and to other physicians in various parts of the United States who have shown an interest and familiarity with organization matters.

It develops that there is much misunderstanding regarding Dr. Work's proposal, and some division of opinion regarding it. Though the majority of the correspondence has indicated a disinclination to accept a proposal for the creation of new medical societies, the most active opposition seems to come from the South, and at an informal conference of presidents and secretaries of the state associations comprising the territory of the Southern Medical Association in conjunction with state health officers of the same states, the following resolutions were adopted after discussion of the subject:

WHEREAS, It has been suggested by Dr. Hubert Work, the recently retiring President of the American Medical Association, that the territory comprising the said American Medical Association be divided into districts composed of appropriately grouped state medical associations, and that regional medical societies be organized to cover, with the definite object of discussing such scientific problems as they may choose and which may be of regional importance of electing trustees of the American Medical Association and making recommendations for suitable material for President-Elect of the American Medical Association, and

WHEREAS, The matter is to be discussed by the conference of state secretaries to be held in Chicago, November 17 and 18, and

WHEREAS, It is believed that the formation of such regional societies in the manner recommended and for the purpose stated would be of no advantage to the Southern states; rather, it is believed that such procedure would be detrimental not only to the Southern states but to organized medicine in general, therefore be it

Resolved, That the presidents and secretaries of state medical associations, and the public health officials of the sixteen Southern states comprising the territory of the Southern Medical Association as at present organized, go on record as opposing such project, and be it further

Resolved, That copies of these resolutions be forwarded to the committee of the American Medical Association appointed to consider and report upon the proposal, and a copy referred to the conference of state secretaries above referred to and to other sectional medical organizations throughout the United States for the information of all concerned.

The correspondence brings out a variety of reasoning for and against the plan. Among the reasons advanced for the proposition may be mentioned the following:

1. The plan would allow of a more representative selection of trustees, providing such district associations elect or nominate a trustee.
2. It would allow of a closer union of the profession.
3. Many physicians who cannot afford to attend meetings of the A. M. A. held at a great distance could attend sectional meetings.
4. It would multiply opportunities to read papers.
5. It should bring present independent organizations into the general scheme of organization of the A. M. A.

Among reasons advanced against the plan we find the following:

1. It would detract from the A. M. A. meetings.
2. There is a danger in the plan of intensifying sectional feeling.
3. It would certainly detract from meetings of the various state medical societies.
4. We are at present overburdened with medical societies and physicians are unable to attend the meetings now held.
5. It would possibly encourage political manipulation.
6. It would incur the antagonism of present district societies.
7. All our efforts should be directed to the betterment of present societies and not the creation of new ones.
8. It would create too many new problems.
9. It might create rivalry among the states, the smaller ones in the group being overshadowed.
10. There are no common problems by virtue of regional location.
11. There would be a danger of its affecting the scientific assembly of both the state medical societies and the A. M. A.

SUMMARY

From the preceding account of the history and present expressions in regard to the different plans which have been proposed for the formation of district associations, it is perfectly evident that there has been and still is almost no definite opinion as to what object the formation of districts would fulfil, and there has been brought forward no concrete plan for the formation of districts.

In the review of the suggestions and projects three objectives are apparent:

1. Districting for the purpose of election of trustees, one trustee to be elected from each district. For this purpose not more than nine districts would be possible, for there seems to be no difference of opinion in regard to the wisdom of keeping the membership of the Board of Trustees within that number.

2. Districting for the purpose of business and administrative purposes, with the view that such district organizations would supplement the work both of the American Medical Association and of the state associations.

3. Districting for the purpose of scientific and clinical meetings.

DISCUSSION OF THE DIFFERENT PURPOSES OF PROPOSED DISTRICTING

If districting is to be done for the purpose of the election of trustees, it will be necessary to combine as far as possible geographic distribution of the several states with the numerical distribution of the American Medical Association membership.

This perhaps might be done satisfactorily for the election of trustees alone. Such districts would be entirely impossible in most parts of the country for business and administrative purposes, because of the large and widely scattered areas which would of necessity be included in some of the districts, and because of the widely different problems which would be presented by various parts of the same district.

The committee is of the opinion, which it believes is the opinion of the large majority of members of the Association, that the business and administrative problems can be better handled by the existing organization than by the proposed district associations.

Districts formed for the election of trustees would be still less possible for scientific and clinical meetings than for business and administrative purposes.

For satisfactory clinical and scientific district meetings, the area covered by a district must be small enough to permit of comparatively easy access to centers at which meetings might be held.

The committee believes that there is the feeling of a need for district scientific and clinical meetings in some parts of the country, as is shown by the existence of flourishing independent district organizations and by projects for the formation of similar organizations in other parts of the country.

The committee believes that some of the independent district associations now existing are well fulfilling the functions that a district association of the American Medical Association might be expected to fulfil. It also believes that

any attempt immediately to form district associations of the American Medical Association in these localities at the present time would meet strong opposition, and would be inadvisable.

As the purposes and aims of the independent district associations are largely the same as those of the American Medical Association it seems possible that it might be of advantage to both to unite or become closely affiliated.

RECOMMENDATIONS

1. The committee makes no recommendation in regard to districting for the purpose of election of trustees for two reasons:

First, because it feels that the districting for this purpose cannot at present be successfully combined with the other proposed purposes for district formation, but must be considered as a separate problem.

Second, because the Board of Trustees is to present a report on this problem which will bring the question in all its phases to the attention of the House of Delegates.

2. The committee recommends that the project for districting for business and administrative purposes be abandoned as impracticable, believing that energy directed in this direction can be expended to more advantage through perfecting the functioning of the existing parent and component organizations.

3. The committee recommends that no attempt be made to organize districts for scientific and clinical meetings, believing that for success, the feeling of need of such organizations, and the initiation of their formation, should come from the localities concerned.

The committee further recommends that the Board of Trustees take steps to ascertain from the existing district organizations whether it would not be possible and profitable to all concerned to become more closely affiliated.

The aims and membership of the American Medical Association and of the district associations now existing are practically the same, and there should be no conflicting interests. If it should appear that both organizations could be benefited by affiliation, there should be no difficulty in making mutually satisfactory arrangements.

4. We also recommend that the Board of Trustees take similar means to get in touch with the organizers of new district associations.

The committee feels that, if districting seems advisable, it is likely to succeed best by gradual development along these lines, without limitation of number or size of districts.

L. H. McKINNIE, Chairman,
JOHN E. LANE, ROCK SLEYSTER.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 1080)

WEDNESDAY, MARCH 7—MORNING

DR. VICTOR C. VAUGHAN, Chairman, Council on Health and Public Instruction, in the Chair

ORGANIZATION OF THE PUBLIC FOR COOPERATION WITH THE MEDICAL PROFESSION

Hygeia: A Journal of Individual and Community Health

DR. VICTOR C. VAUGHAN, Chicago, presented a brief statement of the scope and purpose of this journal.

The Medical Profession and the Laity

FROM THE STANDPOINT OF THE EDUCATOR

WILLIAM B. OWEN, President, National Education Association, Chicago: A joint committee on health problems in education was appointed about a decade ago made up of representatives of the American Medical Association and the National Education Association. It has published a number of fundamental and simple documents on health problems in the schools which have been distributed to the extent of hundreds of thousands, and they have been used by school people everywhere. Last year, after six years of cooperation in the publication of these documents on health, it seemed important that we should undertake a new project in education, making an attempt to put the committee's work on a new basis. We said to ourselves that the school people are now going to be very much interested in the problem of health. A few years ago a committee of the National Education Association had to deal with a number of fundamental aids we should attempt to achieve in secondary education, and public health was the first. A document called "Cardinal Principles in Secondary Education" was published by the United States Bureau of Education.

The development of the high school in America is of enormous import, and the speed with which it is developing almost takes one's breath away. About five years ago Chicago had 11,000 high school students, while today it has 50,000. We have had 8,000 new high school students added in one year. The growth in building and the cost of the whole plant are attracting the attention of the public; this means that opportunities for education in regard to health are very rapidly increasing. Ten years ago, and for a period of sixty years, the National Education Association had a membership of only 10,000 or 12,000. At present it has a membership of 120,000, and judging from its rapid growth, we shall soon have a membership of from 300,000 to 500,000. Two carefully organized committees have taken up the whole question of teaching, including the organization, the administration, and the methods of conducting our public schools. Last year our joint committee with the American Medical Association formulated a health program for the public schools from the kindergarten up through the high school. There is a great deal of medical knowledge and general scientific knowledge that is not in possession of the people in our schools. This committee, when it makes out its program, will be in a position to tell the people in the schools not only that it has been tested only by the best people in the medical and scientific professions, so far as facts or principles are concerned, but also that it has been subjected to the critique of competent people who know schools and children.

Dr. Thomas Wood, the chairman of the committee, has consulted with members of your profession and of ours. We have also a number of subordinate committees dealing with such things as physiology and nutrition, and the different aspects of health control. Dr. Wood has also been put in charge of child hygiene. We shall try in the schools to establish definite habits of health, with a checking system of some form to find out whether people really do what they are taught to do, and we shall not attempt to teach them at all what we cannot teach them to do.

FROM THE STANDPOINT OF THE HEALTH OFFICER

DR. W. S. RANKIN, Raleigh, N. C.: The health officer occupies a strategic position for observing the relation of the public and the profession. He stands midway between the two. If he has a normal binocular vision, he will observe the interests of the public and the profession as a single object. The health officer sees a field of unsupplied medical needs which is from three to five times as large as that which is supplied. He sees 2,750,000 women confined annually in the United States, and 750,000, or 30 per cent., of them, without medical attendance. He sees them inadequately attended during their puerperium, receiving on an average three or four visits whereas they should have ten or twelve, and as a result he sees unnumbered abortions, miscarriages, premature labors and other complications of pregnancy, and accidents of delivery with injuries and infections, with retarded and abnormal lying-in periods. In short, he sees countless women impaired for the functioning of motherhood, and for the efficient discharge of those domestic duties on which is dependent, to a large extent, the health of the infant and that of the family. From damaged motherhood how short the step to impaired infancy! The health officer sees, as a result of the neglect of motherhood, a large percentage of the 1,500,000 cases of diarrhea and enteritis which annually affect our 5,000,000 infant population; he sees early childhood with 700,000 cases annually of the common communicable diseases; he sees, closely related to impaired motherhood, and abnormal and diseased infancy, the great problem of malnutrition, involving, according to the lowest estimate,

2,000,000 or, according to the highest estimate, 4,000,000 public school children in this country. He sees the common defects of childhood, for which, according to Emerson, malnutrition is 80 per cent. responsible. The common defects involve 1,000,000 public school children who suffer from diseased tonsils and adenoids, 4,000,000 who have visual defects, and 15,000,000 who need dental treatment, all of them retarded and retarding the school machinery of this country.

The health officer observes 2,000,000 fresh cases of venereal disease occurring annually in adolescence, added to the tremendous carry-over of old cases and complications from previous years. He finds that these diseases and their complications are not receiving one-fifth the treatment they should have. Finally, he understands that when medicine has gained control, to a reasonably adequate degree, over the pathologic phases of life, then it will be time for the profession to begin to consider the yet larger opportunity for service—the opportunity that relates itself, not to the small percentage of the population that is obviously diseased, but to the larger percentage that is apparently well. To make the unfit fit is a worthy task, but to make the fit fitter is a larger and a higher achievement. The dentist, the pediatrician and the industrial hygienist are already pioneering in this new and larger field of medicine, the field of health promotion as contrasted with that of disease prevention.

The health officer sees a great opportunity in reducing the enormous existing surplus of disease, and he sees an even greater opportunity in the possibilities of health promotion. The solution of this great problem of disease and health calls for two things: (1) scientific knowledge and (2) social action. The medical profession is long on the one and short on the other.

The National Committee on Public Policy should nominate to the President of the Association the members of the Council on Health and Public Instruction, which the President in turn should nominate to the House of Delegates. The Council on Health and Public Instruction should be adequately provided in budget and personnel to assume the active executive work of the National Committee on Public Policy.

FROM THE STANDPOINT OF THE BOARD OF TRUSTEES OF THE AMERICAN MEDICAL ASSOCIATION

Dr. Frank Billings, Chicago: Organized medicine has done much to improve the relations of the medical profession to the public by the elevation of professional standards. There is no other profession which, of its own initiative, has attempted to benefit the public by elevating its own standards of education and practice as has the American Medical Association through its Council on Medical Education and Hospitals. Since the medical profession has lifted itself by its own boot straps to its present standard of medical education, we can trust the profession to correct the errors in medical teaching and improve it still more. The Council on Medical Education and Hospitals has lately considered also the professional advancement of graduate or postgraduate instruction. More will be done in this regard.

The American Medical Association is still further improving the status of the profession through the Council on Pharmacy and Chemistry by the investigation it has made of proprietary medicines, nostrums of various kinds, the advice it has given and the information it has furnished to the members of the medical profession, and the influence it has had on the Congress of the United States in the promotion and final adoption of the pure food bill—a matter of enormous benefit not only to the profession but also to the public.

As to health activities, through the Council on Health and Public Instruction the American Medical Association has undertaken a policy of cooperation with existing institutions. You have heard from President Owen of our relationship to their committees, particularly the committee of which Dr. Wood is chairman, regarding the survey and attempts made to improve the rural schools and rural school children, the federations of teachers of schools to improve the health conditions, etc.

At one time the Council on Health and Public Instruction had charge of federal legislation in the various states, the purpose being to prevent or arouse moral sense against the passage of laws which were inimical to the best interests of the public. I need only to call your attention to two bills to prevent animal experimentation which the so-called antivivisectionists have brought before Congress and various state legislatures, and through a subcommittee of the Council on Health and Public Instruction, of which Dr. Cannon is chairman, much work has been done to educate, not only the medical profession, but also the public, as to the perniciousness of these bills which, if passed, will prevent animal experimentation. We have established at headquarters a medicolegal and legislative bureau, with a director in charge, for the purpose of preventing the passage of such objectionable bills.

Few states have the proper kind of medical practice acts. Some of them are antiquated and do not meet the needs of modern conditions. Attempts were made to formulate medical practice acts that were not uniform in character in the various states with the hope that they would be enacted. This was attempted about fifteen years ago, but because of incomplete organization was not realized. There is hope now, with Dr. Woodward as director of this bureau, that something may be brought about by cooperation with the various legislative committees of the constituent state organizations. The main principle of such action would be that we should demand and make the legislators believe that all who take the responsibility of the care of the sick and injured should have the same educational requirements.

Dr. Vaughan has told you about *Hygeia*, a journal which will go to the public and members of the medical profession in the attempt to educate the public along scientific lines. It is going to be far reaching and helpful because through this medium we ought to make the members of the public acquainted with the causes and means of prevention of disease and rational methods of treatment.

Through the Council on Health and Public Instruction, the House of Delegates has approved taking up periodic health examinations, and a blank form has been prepared with the hope that societies will establish the opportunity for the people to go to them and through groups of physicians have periodic health examinations made, not gratuitously, excepting for the poor, as persons who are able to pay should pay for the fee charged.

Relation of Organized Women to the Medical Profession

Dr. Lenna L. Meanes, Des Moines, Iowa: University women, women from our crowded industrial centers, women from the rural districts, professional women, all reacted to the reproach carried in the recent revelations of America's low health status and, with practically one accord, started to remove the cause. They have been at work since about 1910, when the measuring and weighing of babies began and revealed the possibilities of developing, in spite of inherited tendencies, of family traits, of environment, etc., a tremendously stronger physical life for the children of America. Impetus was gained practically every year. The disgrace of our high infant mortality and the leveling blow of the results of the war draft examination have struck women keenly, for every individual woman knows that the responsibility of the health of her family largely rests on her. Nothing can get so quick a response from a normal woman as an intimation that a member of her family is below par physically because of remediable defects. She feels that she has been found asleep at the switch of her particular station, and loses no time in assembling wits and joining forces with others to redeem herself and the trust which she feels is particularly hers. This keen incentive has brought about the insistent demand these women are making of us as a medical profession today. The encouraging feature is that the demand is for intelligent cooperation backed by an enormous machinery which can render cooperation effective.

The representative women's clubs and leagues have a combined membership of ten million, in round numbers. Out of these clubs three have health committees with activities which always include some phase of child welfare, of adult health and of general community betterment along the lines of sanitation, protection from contagion, housing, etc. The General Federation of Women's Clubs, with a membership of 2,000,000, and the Women's Christian Temperance Union, with a membership of 650,000, have state and local committees working

under the national committee. The Council of Jewish Women, with a membership of 48,000, has sectional chairmen working under the national chairman in 204 cities of the United States. In addition to these three, the National Board of the Young Women's Christian Association has a bureau of social education, with subsidiary activities in local associations throughout the United States. These usually include a physician, a director of physical education and a well equipped gymnasium. The remaining leading organizations ally themselves with any constructive health work as they are appealed to, or as the demand arises from existing conditions.

If the organized women of America could speak with one voice to you today, they would say: "We are here, ready for cooperation with you for health." Now and then in the past some of these organizations may have presented programs which left us rather vague as to the aims to be accomplished. But those times are over. The present is recording a different story for them, particularly in regard to their health activities. Already they are working directly with other agencies, such as the National Playground Association, federal and state boards of health, home demonstration agents, and each of the volunteer health organizations.

The women are watching keenly our attitude on the side of constructive health building. If we are to have health, we must have the concerted organized medical profession, state and federal health agencies, national and state volunteer agencies, on the one side to furnish authoritative background, advice and machinery, while on the other are the women's organizations for creating public opinion, distributing educational propaganda, establishing contacts, etc. We shall also have to take into consideration in that relationship what we can do, what we are willing to do with regard to the emphasis placed on the positive phase of health in the programs these women are studying all over the country. The immediate concrete demand from them is for health examinations. That demand is bound to increase, as these programs develop, and to become more exacting in what that examination comprises. They are already able to detect the general difference between a good medical and a good health examination. They are also becoming aware that the physicians giving these examinations must have an adequate understanding of fundamental health habits, of the necessary factors that go to make up the proper home and working conditions, of the value of recreation, and of the necessity of community interests to round out one's well-being. The door of a new opportunity is opened to the medical profession. Already there are a few in many communities who can and do give good health examinations. Others must join the procession. We know perfectly well that one good pediatrician in a community forces others of the same line to do better work. People seek the best in the medical profession as in everything else. What is true of specialists in other lines will be true of those excelling in health examinations: they will serve to increase both number and quality of other physicians in the community.

Report of American Social Hygiene Association on Medical Researches in Venereal Diseases

DR. R. V. HOFFMAN, South Bend, Ind.: Medical research, cooperatively conducted, constitutes what may be regarded as the most widespread, intensive undertaking ever attempted by American medical institutions for improving the treatment of the sick. Certain of these researches have attained their maximum development, through their natural outgrowth. Some assistance and cooperation from without would aid others to extend their earlier investigations, along lines which had opened up promising leads. Congress failed to make appropriations for the completion of these researches, presumably owing to its postwar economic retrenchment policy. Recognizing the future worth of the more promising of those researches, the American Social Hygiene Association agreed to set aside jointly with the government a small sum of money to be used in "an attempt to evaluate the results developed from the scientific researches on venereal disease problems which are now being carried on in this country." It was inadvisable for the association to launch its program until after the close of the interdepartmental board's administration, June 30, 1922, as duplication of activities might have resulted otherwise. The field program of the association embraces the following activities: (1) visits to clinics and laboratories in which medical researches in the venereal diseases are being carried on, for the purpose of securing information as to results achieved; (2) development of an interlaboratory and clinic information service covering new and important facts that are relevant; (3) stimulation of new researches; (4) encouragement of clinical tests for the evaluation of laboratory discoveries, and (5) establishment of a more permanent scientific research program. Two representatives of the association are now engaged in visiting twenty-five research institutions. In addition to the researches begun under grants from the government, other prominent independently conducted venereal disease investigations are being studied. The reports of these surveys are to be presented to the association's advisory committee for medical research on the venereal diseases, for its consideration and recommendation.

DISCUSSION

DR. A. C. ABBOTT, Philadelphia: Never before have I seen the obligation of the medical profession to the question of public health more clearly indicated than has been indicated in the symposium this morning. Never before have I seen a more suggestive symposium on the subject than the one outlined in this program. Never before have I seen the chance for the medical profession assuming leadership more clearly than I saw it this morning. The president of the National Education Association has outlined a program of instruction, beginning with children in the lowest grade school and following along graded instruction in health up to the time they leave the high schools or normal schools, and I am glad to see that instruction is now going to be carried into the academic institutions for all freshmen in attendance at these institutions. Does any one for a moment think that this generation, when it comes on the scene, will not demand leadership of some kind, organization of some kind in this matter that comes so close to daily life, comfort and happiness? Ten million intelligent women in this country are waiting for some one to tell them what to do. If the medical profession does not embrace that opportunity, the layman is going to do it. The intelligent layman is taking great interest in this matter.

DR. WALTER B. CANNON, Boston: I have been impressed by the importance of one part of the name of this journal—"a journal of individual and community health." We have emphasized community health, and we have not emphasized as much as we might the question of individual health. After all, to a very large extent the question of community health comes down to a question of individual health. A professor in Harvard University, some years ago, thought it would be a good scheme if he had his own cow, a clean barn, sterile stools, sterile aprons, and various other arrangements so that his children might have pure milk. One of his children came in one day and asked the question: "Say, father, why is it just before Jim begins to milk he spits on his hands?" All sorts of provisions can be made, but if the individual is not well acquainted with the method he is using, he cannot give us what we are expecting to get. That is what we are confronted with in this work for community health. We have to educate the individual in order to promote the welfare of the community. I believe the publication of this journal is going to result in a greatly increased intelligence among our schoolchildren and among the women of the country so far as individual health is concerned. We have been training men for generations to take care of sick people. We like to do the things we have been trained to do. We prepare our students to take care of the sick, and to recognize sickness when it has developed, but we have not been training them to take care of the well and to see that the well keep well. As a medical profession we realize that a very large proportion of the population are not in first class condition; it is the duty of the medical profession to see that they are, and this program of positive health is one which the medical profession has to recognize and to help bring about. We

have not trained our students to see the first signs of disease. We teach students about cases in hospitals that are well developed, but they have not an opportunity to see the beginnings of disease. They have not been trained at all in the slight defects which make people below par. I want to commend to the whole profession the attitude which has been taken by the Women's Foundation of Health.

Dr. Haven Emerson, New York: We have prepared a form for the periodic health examination of adults as elaborated by various groups in New York and elsewhere, and they are following admirably the bulletin recently issued by the Surgeon-General of the Army. The conflict in this project, as with all other projects, has been that we were dealing with people variously educated. There is a want of balance between what the leaders think is the limit of possibility of physical examinations and the rank and file who say we have gone away beyond the practical possibilities. We have prepared a form of questions for the average housewife, the father of the family, and the worker of adult years. The questions include certain matters that are criticized as being social in their implication, but they were intentionally put in since it is important to know whether persons are happy in their work, whether they are well occupied, and whether they have reasonably congenial homes. These questions are as important as a knowledge of their bodily functions.

The proposed physical examination has been boiled down to what we believe is the minimum, at the same time keeping faith with the patient, because if we are going to allow ourselves as physicians to make as incomplete examinations as patients will stand for, we are not going to bring credit to the project or to the profession. The physical examination we propose is one which we believe any physician ought to be able to make with his own special senses without the aid of group diagnosticians or elaborate technical roentgen-ray aids or laboratory service. The form has been submitted to the committee and to the secretaries of state medical societies. They have made constructive suggestions for improvement, and within the next two weeks the final text will be in the hands of the members of the American Medical Association. It is hoped that this will focus attention on the proposition Dr. Rankin has put before you. If each county and state medical society believe in making such periodic examinations of all people with whom they come in contact as an annual job, we shall have to put into practice the principles which we have expressed here today, and I trust this will add to the respect of the laity for the capacity of physicians to make examinations of people in health, and when they have made these examinations know what advice to give them on such simple matters as lack of sleep, insufficient bowel movements, lack of relationship of rest and recreation to work. If physicians do not know how to give that advice when they make an examination, the laity will lose interest in it very shortly.

Dr. Milton Board, Louisville, Ky.: Venereal disease control rests on a tripod: education, treatment, law enforcement. Of the three, the most effective and most important is law enforcement. When we had a war in this country and military camps, we got somewhere. When the war was over and the camps were abolished, the records show that law enforcement was abated, and society has suffered in consequence. The seed sown during the war has not brought forth the fruit it might have done, owing to the fact that no organized arm of the government took up the work in an effective military manner as during the war. What is the result? I deny the right of existence of a commercial prostitute anywhere. We should go back to where we left off during the war, and educate our state boards of health along the line of rigid, unrelenting law enforcement.

Joseph F. Siler, M.D., Washington, D. C.: Although our work is confined to a restricted class of the population, the problems we have to meet are similar to those that have to be solved in civil practice. We in the army are trying to do something along the line of preventive medicine to advance the steps we are trying to take. One hundred years ago, the death rate in the army was between 20 and 30 per thousand per annum. Today it ranges around 5 per thousand per annum. This reduction in mortality has been accomplished by education and by improved methods of prevention referred to by Dr. Vaughan. Typhoid fever is practically nonexistent in the army today. The same is true of smallpox. After a war, normal conditions are disturbed and it takes years for them to return to normal. The venereal disease rate rose enormously during the Civil War and the Spanish-American War, and it took fifteen years to put it back on a prewar basis, or to normal. Since the war we have endeavored to place the responsibility for venereal disease very largely on the company commanders, so that our venereal disease rate now is 65 per thousand per annum instead of 150 per thousand per annum three years ago. In preventive medicine we have for many years resorted to education by lectures, practical demonstrations, etc., and this instruction is carried throughout the life of the officers. At West Point, definite hours of instruction are laid down for it. The same education applies to medical officers in our own medical training schools. About two years ago, the Surgeon-General directed me to emphasize the importance of periodic examinations so far as officers are concerned. Tests of physical efficiency were undertaken largely for the purpose of determining whether an officer was fit to perform his duties. These tests were preceded and followed by physical examinations.

(To be continued)

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

"M.D.," Instead of "Dr."—At meetings of the Placer, Riverside, and other county medical societies, resolutions were recently passed recommending to the state medical society that the letters, "M.D.," instead of the title "Dr.," be used on all their literature, cards, and signs, in order to distinguish between cultists and regular doctors of medicine.

Hospitals Accredited by the American Medical Association.—The French Hospital, and the Franklin Hospital, San Francisco, and the Fabiolo Hospital, Oakland, have been placed on the list of hospitals giving acceptable instruction to interns, by the Council on Medical Education and Hospitals of the American Medical Association.

DISTRICT OF COLUMBIA

Personal.—Dr. Walter W. King, surgeon, U. S. Public Health Service, Washington, has been directed to proceed to Hull, England, to attend the Congress of the Royal Sanitary Institute, July 30.——Dr. William J. French, Washington, has been chosen director of the first demonstration of the child health committee under the Commonwealth Fund appropriation, to be held in Fargo, N. D.

ILLINOIS

Venereal Disease and Divorce.—The Mason bill, which makes it possible for either husband or wife to obtain a divorce if the other is infected with venereal disease, was passed by the state senate, April 11, by a vote of 29 to 11.

Physician Sentenced.—According to reports, Dr. John Gore Massie, Belleville, was sentenced to serve from one to ten years in the Southern Illinois Penitentiary at Chester, April 5, for operating a confidence game in oil stock. Judge Crow denied Dr. Massie's motion for a new trial.

Physicians' Licenses to Be Revoked.—Hearings began April 13, before the medical committee of the department of registration and education, for the revocation of all physicians' and pharmacists' licenses illegally issued under the term of W. H. H. Miller, former director of the department. Miller was convicted, January 28, of selling physicians' and pharmacists' licenses, raising examination grades, and selling questions in advance of state examinations. It is believed that more than 100 physicians and druggists in Illinois will lose their licenses.

Radical Public Health Bills.—Three bills that would radically affect public health service in Illinois were introduced, March 8, in the lower branch of the general assembly. House Bill No. 306 requires a health official to cause an impartial investigation by a reputable sanitary engineer to be made of persons and places to be quarantined, the approval of the physician in charge being procured before the quarantine order is issued. House Bill No. 307 provides that any one professionally educated to be a physician shall be ineligible to be a health officer in the state or any of its political subdivisions. House Bill No. 308 provides that the quarantine regulations applicable to persons afflicted with smallpox shall apply to persons vaccinated against that disease. The three bills were referred to the committee on judiciary, given a hearing and reported back to the house with recommendation that they do not pass.

Chicago

Practitioner Sentenced.—Juan Frederick Derrick, colored, found guilty of practicing medicine without a license by Judge O'Connell, was sentenced to the house of correction for ten months and fined $100, it is reported.

Book Store Features Public Health Book Week.—A. C. McClurg and Company, Chicago, has announced the featuring of books on health for the public during the week April 23-28. Special days have been set apart for books about babies, children, diet, and books for schools. *Hygeia,* the journal of individual and community health, published by the American Medical Association, will be especially represented.

Control of Midwives Proposed.—At a meeting of the Chicago Women's Club and the Illinois Society for the Prevention of Blindness, April 2, a committee was appointed to propose an amendment to the new state medical practice act that would require all midwives to have at least one year of high school training; from six months to a year of special training in midwifery; registration at the city health department, and submission to inspection of their work at any time by the health department. Drs. Frank Cary, J. B. DeLee, Lena K. Sadler and Effa V. Davis comprise the committee.

INDIANA

Indian "Doctor" Fined.—It is reported that Frank DeKay, Kendallville, known as the Indian "doctor," pleaded guilty to practicing medicine without a license, March 17, and was fined $25 and costs.

Reception for Dr. Edenharter.—The Indianapolis Medical Society at its regular meeting, May 1, will give a reception to Dr. George F. Edenharter, Indianapolis, in honor of the completion of his thirtieth year as superintendent of the Central Indiana Hospital for the Insane.

Medical Society Wins Against Family Contract Practice.—As a result of representations made by the Tippecanoe County Medical Society, the Fraternal Order of Eagles has agreed to dispense with the services of a fraternal physician and to discontinue contract practice for the members of the order on Jan. 1, 1924. The medical society will recommend to the hospitals of the community that pending the discontinuance of such services and of contract practice the present fraternal physician be allowed such hospital privileges as are extended to members of the society.

LOUISIANA

Dr. Pothier to Latin America.—Dr. Oliver L. Pothier, New Orleans, has gone to Colombia, South America, for the Rockefeller Foundation to study an epidemic of fever which has recently appeared in Bucaramanga. Dr. Pothier is professor of pathology and bacteriology at Loyola Post-Graduate School of Medicine, New Orleans.

Dairymen Oppose Tuberculin Test.—According to a report from the superintendent of public health, open warfare is being waged between the New Orleans Board of Health and the Dairymen's Association. Many owners of large herds have refused to submit their cows for tuberculin testing, in defiance of the published order of the board. Fourteen dairies who submitted to the test were found to have fifty-three reactors and thirteen suspicious cases out of 346 cows tested.

Chaulmoogra Trees to Be Grown in Louisiana.—According to a statement by Major O. E. Denney, U. S. Public Health Service, in charge of the leper colony at Carville, large quantities of chaulmoogra (*Taraktogenos kurzii* King) trees will be planted in Louisiana in order to supply the world with chaulmoogra oil for the treatment of leprosy. Planting will be started this spring. Five patients have been paroled from Carville, as apparently cured, during the last year, following chaulmoogra oil treatment.

MICHIGAN

Wayne County Fights Chiropractors.—A telegram was sent by the Wayne County Medical Society to each member of the lower house of the legislature, April 2, asking him to vote against House Bill No. 77, which would license chiropractors and recognize chiropractic as a profession. The members of the society also decided to send out 3,000 postal cards asking friends to exert their influence against the bill.

MINNESOTA

Donation for Cancer Institute.—The sum of $250,000 has been donated to the University of Minnesota College of Medicine, Minneapolis, by Mrs. George C. Christian to establish a cancer institute.

MISSOURI

Physician's License Revoked.—The license of Dr. Leon Hurwitz, Joplin, was revoked for fifteen years by the state board of health, April 6. It is reported that he was charged with performing a criminal operation on a 17-year-old girl.

Dairy Licenses Revoked.—The board of public service, St. Louis, has revoked the license of thirteen dairies and denied a license to eleven others for failure to comply with the city ordinance requiring pasteurization of all milk. The attorney for the dairy men announced that he would test the validity of the ordinance by appealing to the courts.

Additional Physicians for Eleemosynary Institutions.—A bill was passed by the legislature authorizing the board of control to appoint a larger number of assistant physicians for the eleemosynary institutions than was allowed under the statutes. The new law has been signed by the governor. It provides for assistant physicians as follows: State Hospital No. 1, Fulton, five assistant physicians; State Hospital No. 2, St. Joseph, six; State Hospital No. 3, Nevada, five; State Hospital No. 4, Farmington, three; Colony for the Feebleminded, Marshall, two; State Sanatorium for Tuberculosis, Mount Vernon, two. The salaries remain the same, $1,800 a year.

NEW HAMPSHIRE

State Medical Meeting.—The annual meeting of the New Hampshire Medical Society, at Concord, has been changed from May 23-24 to May 22-23, it is announced by Dr. D. E. Sullivan, secretary of the society.

NEW YORK

Prenatal Consultations.—The division of maternity, infancy and child hygiene of the state department of health is arranging for a series of prenatal consultations in several cities in the northern part of the state to instruct prospective mothers how to care for their health. No patients under the care of physicians will be accepted without the physician's consent. The first consultation, to which all physicians are invited, will be held at Malone, May 1.

Academy of Sciences Announces Prize.—It has been announced by the academy that a prize of $250 will be offered at the annual meeting in December by Mr. A. C. Morrison, fellow of the academy, to be known as the A. C. Morrison Prize for 1923. The conditions are: 1. Membership in good standing of the New York Academy of Sciences or one of the affiliated societies. 2. Submitting of papers on or prior to November 13. The prize is offered for the most acceptable paper embodying the results of original research not previously published in a field of science covered by the academy or an affiliated society.

Amendments to Public Health Legislation.—There is a bill before the Senate to amend the public health law in relation to the qualification of midwives. It provides that all midwives must have an education equivalent to that qualifying a pupil to enter the second year in high school; it is also provided that in case of persons of foreign birth who have extended experience or in otherwise exceptional circumstances this requirement may be waived by the state commissioner of health.——Another bill before the legislature would abolish the state hospital development commission.

——A bill has been presented to amend the state income tax so as to exempt from the tax all expenses during the taxable year for medical, surgical or dental service.——The Assembly Codes Committee voted unanimously to kill the Cotillo-Leininger antivivisection bills.

New York City

Memorial Meeting.—The medical board of Mount Sinai Hospital will hold a memorial meeting, April 23, in appreciation of the work of the late Dr. Arpad G. Gerster.

Harvey Society Lecture.—Dr. Karel Frederick Wenckebach, professor of medicine, University of Vienna, will deliver the last Harvey Society Lecture of the 1922-1923 series at the New York Academy of Medicine, April 28, on the subject of "The Rhythms of the Heart."

Drive for Palestine Fund.—Dr. Chaim Weizmann was the guest of honor at a dinner given at the Park Palace on April 14 under the auspices of the Palestine Foundation Fund. This event opened the sectional drive for Harlem's quota of the $2,000,000 to be raised in this city.

Large Quantity of Morphin Seized.—Twelve hundred pounds of morphin, said to be the largest illicit consignment received in this country, was seized, April 6, in the New York Central Railroad yards, by the customs officials and railroad police. The drug, said to have a value of more than $1,000,000, was marked as a consignment of lamps for Montreal, Canada, and was landed from a Holland-America line ship.

Governor Wants Law to Curb Narcotics.—Governor Smith, April 11, asked the legislature for a statute, following in general the Harrison Narcotic Law, to curb the narcotic drug evil in New York. A bill carrying out the governor's plan was introduced. It would nullify the statute of privileged communication between a physician and a drug addict, and require all New York City physicians to report the name and address of drug addicts to the health department. In other parts of the state, this information would be filed by physicians with the state hospital commission once a month.

Personal.—Dr. Sigismund S. Goldwater, director of Mount Sinai Hospital, will represent the American Hospital Association at the celebration of the eight hundredth anniversary of St. Bartholomews' Hospital, London, and will also address the annual meeting of the British Hospitals Association at Sheffield, May 31-June 1.——Dr. Charles Wilson-Prevost, New York, has been appointed physician to the American Hospital in Paris.——Dr. Charles H. Young has been appointed superintendent of the Hospital of the Good Shepherd, Syracuse.

Citizens' Committee Calls Veteran Hospital Unfit.—In a report to Secretary Mellon, the Citizens' Committee takes issue with the findings of the White Committee on United States Veterans' Hospital No. 81, in the Bronx and proposes the abandonment of the institution for neuropsychiatric treatment. The report proposes the erection in Greater New York of a new institution for the care of veterans suffering from mental diseases and the utilization of the present building for general medical and surgical cases. The Citizens' Committee contends that Hospital No. 81 is not fireproof in the modern sense of the term, and suggests important changes and additions to bring the hospital up to the standard of ordinary hospitalization.

Outpatient Clinics Organize Section on Medicine.—The Associated Outpatient Clinics of the City of New York recently reorganized its Section on Medicine at a meeting held at the New York Academy of Medicine. Dr. Alexander Lambert presided at the meeting and fifty-one institutions maintaining medical clinics were represented. The section proposes to deal with such questions as the closer relation between medical service and the outpatient department, and in and out record systems, the difficulties between general medicine and the specialities, the improvement of laboratory service and the securing of adequate medical social service. The officers elected were: chairman, Dr. Leander H. Shearer; vice chairman, Dr. P. D. Barr; executive secretary, Dr. Michael M. Davis, Jr.

NORTH CAROLINA

John McTyeire Flowers' Lectures.—On account of illness, Dr. W. W. Keen, emeritus professor of surgery at the Jefferson Medical College, Philadelphia, was unable to deliver the Flowers' lectures at Trinity College, Durham, April 10, 11 and 12, as scheduled. These lectures have been postponed until May 2, 3 and 4, when Dr. Keen will lecture on the subjects noted in The Journal, March 31, p. 931.

OHIO

Fellowship for Hospital Interns.—At a meeting of trustees of the Toledo Hospital, April 11, a fellowship for interns was founded, and the time which they serve extended to two years. A bonus of $1,000 will be given for further study, either in the United States or Europe, to the intern who does the best scientific work for the hospital and writes the best thesis at the completion of his first year. This award will be made by the executive committee of the medical staff.

Poor Teeth and Working Permits.—Following medical examination of 4,500 public schoolchildren of Cleveland who applied for working permits, the teeth of practically all the children were found in poor condition. The Chamber of Commerce has appointed a committee on mouth hygiene to report dental needs among schoolchildren and to suggest a remedy for existing conditions. Cleveland has eight dental clinics taking care of about 19 per cent. of the first grade children. It is hoped eventually to have one dental clinic for every four schools.

OKLAHOMA

Physician Sentenced for Life.—Dr. Alonza B. C. Davis, Oklahoma City, charged with performing an illegal operation on a woman, who died, February 12, according to reports, was found guilty of murder and sentenced to life imprisonment, April 1.

Personal.—Dr. William B. Smith, Fairland, has been appointed health officer of Ottawa County to succeed Dr. J. T. Wharton, resigned.——Dr. Joseph J. Hardy, Poteau, has been appointed county superintendent of health of Leflore County.——Dr. Lewis M. Lett, Dustin, and Dr. Daniel Y. McCary, Holdenville, were elected president and secretary, respectively, of the Hughes County Medical Society at the annual meeting.

OREGON

Physician Pardoned.—According to reports, Dr. Andre A. Ausplund of Portland, who was convicted in 1915 of causing the death of a young woman on whom he performed an illegal operation and sentenced to serve from one to fifteen years in prison, has been granted a pardon. Dr. Ausplund began his sentence in the state prison, March 15, 1921.

PENNSYLVANIA

Mellon Lecture.—Dr. David Marine of the Montefiore Hospital, New York, will deliver the eighth Mellon lecture, entitled "The Importance of Our Knowledge of Thyroid Physiology in the Control of Thyroid Diseases," before an open meeting of the Society for Biological Research of the University of Pittsburgh Medical School, May 10.

Philadelphia

Laryngologic Society Elects Officers.—At the annual meeting of the Philadelphia Laryngological Society, Dr. George W. Mackenzie was elected president; Dr. William A. Hitschler, vice president; Dr. Arthur J. Wagers, treasurer, and Dr. Henry A. Laessle, secretary.

SOUTH DAKOTA

Hospital News.—The Kiwanis Club, of Redfield, has assumed the management of the local hospital owned and operated by Dr. Floyd M. Baldwin since 1917. Various other organizations in the city have pledged their support.

TENNESSEE

Medical Society Reorganized.—The Bristol Medical Society, which has been inactive for many years, was reorganized at a meeting held, April 2, with Dr. Nathan H. Reeve as president and Dr. Harry W. Bachman, secretary. A dinner was recently given in honor of Dr. Reeve to celebrate his seventy-fifth birthday and his fiftieth year of practice.

VIRGINIA

Chemical Laboratory to Be Established.—The Wise County Board of Supervisors has appropriated $2,000 to augment an equal sum from the Rockefeller Foundation and the state of Virginia for establishing a branch chemical laboratory in Norton.

WYOMING

State Health Officer Resigns.—Dr. Albert B. Tonkin, Cheyenne, state health officer, has resigned, and will resume practice at Riverton. Dr. Tonkin's successor has not yet been appointed.

PHILIPPINE ISLANDS

Public Health News.—Reorganization of the health service of the Philippine Islands is expected soon; according to proposed plans the director of health will have the rank of brigadier general.——Plans are under way for the amalgamation of the activities of the Philippine Health Service and the public welfare commission under the secretary of public instruction. The public welfare commission is at present under the jurisdiction of the Department of the Interior.

Personal.—Dr. Emilius C. Dudley, Chicago, gave a series of illustrated lectures before the faculty and student body of the University of the Philippines during the month of January in Manila. While in that city, Dr. Dudley held the rank of visiting professor of gynecology at the university. ——Dr. Victorio Magno y Gomez, health officer for Malasiqui and San Carlos, was seriously injured, recently, when the automobile in which was driving, overturned.——Prof. T. H. Pardo de Tavera of the University of the Philippines has been appointed director of the Philippine Library and Museum.

CANADA

Personal.—Dr. A. A. Anderson, Savannah La-Mar, has been appointed district medical officer of Frankfield, Jamaica, ——Dr. William T. B. Mitchell, assistant superintendent of Westminster Hospital and lecturer on mental hygiene in the faculty of public health, Western University, London, Ont., has been appointed chief psychiatrist for the Dominion Soldiers' Civil Reestablishment, at Ottawa.——Dr. George Armstrong, who recently resigned his position as professor of surgery and clinical surgery at McGill University Faculty of Medicine, Montreal, will retain his position as surgeon-in-chief of the Royal Victoria Hospital.——McGill University, Montreal, has conferred the honorary degree of doctor of laws on Sir William Taylor, regius professor of surgery, University of Dublin; Sir Berkeley Moynihan, and Sir Robert Jones.

GENERAL

American Association of Pathologists and Bacteriologists.—At the annual meeting of the association in Boston, March 30-31, the following officers were elected for the ensuing year: president, Dr. Theobald Smith, Princeton, N. J.; vice president, Dr. James Ewing, New York; treasurer, Dr. Frank B. Mallory, Boston, and secretary, Dr. Howard T. Karsner, Cleveland.

International Health Conference.—Seventy-two nations will send their leading educators and child health authorities to the International Health Education Conference, to be held at Oakland, Calif., June 28-July 6, under the auspices of the American Child Health Association. In addition to 1,000 invitations sent abroad, 2,000 will be dispatched to leading educators, nutrition experts, ministers of health and biologists in this country.

Memorial Hospital in Paris.—The new building of the American Hospital of Paris now being erected at Neuilly, to be known as "The American Memorial Hospital, 1914-1918," will be dedicated to the memory of the American dead in the World War. The building has been donated by Mrs. Robert Bacon, as a memorial to her husband, late ambassador to France. The cornerstone of the building will be laid in June.

Fund for Research.—The American Pharmaceutical Association has available a sum amounting to $400 which will be expended after Oct. 1, 1923, for the encouragement of research. Investigators desiring financial aid in their work should communicate before June 1 with H. V. Arny, chairman of the research committee, 115 West Sixty-Eighth Street, New York, giving their record and the particular line of work for which the grant is desired.

International Association of Medical Museums.—The American and Canadian Section of the International Association of Medical Museums held its sixteenth annual meeting in Boston, March 29. Dr. Frank B. Mallory, Boston, was elected president; Dr. Howard T. Karsner, Cleveland, first vice president; Dr. Harold E. Robertson, Rochester, Minn., second vice president; Major James F. Coupal, Washington, D. C., third vice president, and Dr. Maude E. S. Abbott, McGill University, Montreal, Canada, secretary-treasurer.

Tri-State Medical Association's Trip.—More than 300 physicians of the Tri-State District Medical Association (Iowa, Illinois, Wisconsin and Minnesota) left, April, 15 for Cleveland, where under the direction of Dr. George W. Crile and Dr. Charles F. Hoover of Western Reserve University, they will hold a clinic. Harvard University, Boston, will be the next stop on the clinic trip, then New Haven, Philadelphia, Baltimore and New York. A stop of several days in Washington, D. C., will complete the trip.

Liquor Ruling Overruled.—Judge McKenzie Moss, Assistant Secretary of the Treasury, announced this week that persons arriving in New York from abroad would not be permitted to bring a quart of intoxicating liquor ashore for medicinal purposes. The decision of Judge Moss overruled a recent ruling made by the collector of the Port of New York. It was pointed out by the Assistant Secretary of the Treasury that the regulation of September, 1919, permitting the importation of a small quantity of liquors and tobacco, had been amended, liquor being omitted.

Dr. William H. Welch Receives the Gold Headed Cane.—In 1919, the American Association of Pathologists and Bacteriologists presented to Dr. Harold C. Ernst, Boston, a gold headed cane, a token of appreciation of his services to the association and to medicine. Before his death, in 1922, Dr. Ernst conceived the idea of using the cane as a sign of approval of the work of those who represent the best traditions in medicine. The council of the association will, therefore, confer custodianship of this token from time to time, such custodianship to last throughout the recipient's lifetime. It was unanimously voted this year to confer the custody of the cane on Dr. William H. Welch of Baltimore, who has accepted the honor. Dr. Welch will prepare a manuscript on his experiences in medicine, to maintain the historical significance of the cane.

Wynn Mountain.—By recent decision of the United States Geographic Board, honor was paid to the late Dr. Frank B. Wynn in giving his name to a peak in Glacier National Park, the Interior Department has announced. Wynn Mountain stands at the mouth of Canyon Creek, up which one of the most popular trails from the Many Glacier region runs to Cracker Lake. Dr. Wynn, who lost his life in an accident while climbing Mount Siyeh in 1922, was a resident of Indianapolis, Ind., a physician, scientist, man of letters, poet, and one of America's great lovers of mountain climbing. In behalf of the Nature Study Club of Indiana, of which he was president, and with the consent of the Department of the Interior, he undertook several years ago to chart routes of ascent to the peaks in Glacier National Park. This work was to cover a period of years, and the findings were to be published for the guidance of visitors to the park. It was while engaged on this mission that Dr. Wynn lost his life.

Society News.—The annual meeting of the Southwestern Virginia Medical Association will be held in Christiansburg, Va., May 17-18.——The Association of Southern Railway Surgeons will hold its annual session in Charleston, S. C., May 22-24.——The American Association of Anesthetists and the Pacific Coast Association of Anesthetists will hold a joint meeting in San Francisco, June 22-26.——The Pacific Northwest Medical Association will meet in Seattle, June 19-21, under the presidency of Dr. Earl Else, Portland, Ore. ——The first annual meeting of the Western Society for the Study of Hay Fever, Asthma and Allergic Diseases will be held in San Francisco, June 25, under the presidency of Dr. Grant Selfridge, San Francisco.——The Hospital Association of Pennsylvania will hold its annual convention at the Hotel Adelphia, Philadelphia, April 26-27.——The fortieth annual meeting of the American Climatological and Clinical Association will be held at Niagara Falls, Canada, May 23-25, under the presidency of Dr. Charles W. Richardson, Washington, D. C.——The American Association of Immunologists held its annual convention in Boston, March 29, under the presidency of Dr. George W. McCoy.

LATIN AMERICA

Personal.—Dr. Miguel Jiménez López of Bogotá has been appointed chief of the state department, the *ministerio ejecutivo nacional*. The members of the Club Médico of Bogotá tendered him a banquet to celebrate his appointment and in appreciation of the fact that a physician had been chosen for the position.——The *Repertorio* of Bogotá mentions the return to that city of Dr. Tulio Forero Villaveces after a long absence in the United States and Europe.——Dr. Garfield de Almeida was the guest at a banquet recently given in honor of his appointment to the charge of the Hospital S. Francisco de Assis at Rio de Janeiro. The *Revista Medico-Cirurgica do Brasil* devotes a recent number to listing his numerous works published in the *Revista* and elsewhere. He was sent on a special mission to other countries early in

his career to study the system of public hospitals and charities, in the Latin countries in particular.——Dr. A. Gavião Gonzaga has been placed in charge of the flying squadron sent by the national public health service to Ceará in northern Brazil to help fight the epidemic of yellow fever now prevailing there. Dr. S. Barroso is in charge of the work in the Bahia district.

FOREIGN

The Physician's Income Tax. — The *Medizinische Klinik* reproduces some of the article with this title published in THE JOURNAL, Feb. 17, 1923, saying that the provisions of the tax and the deductions are about the same as in Germany. The only feature commented on as remarkable in the United States tax is that the office rent and maintenance are not deductible if the office is in the physician's own house or building.

Home for the Medical Societies of Copenhagen.—The physicians of Copenhagen have organized a stock company, which has purchased a building for a Domus Medica. It is planned to have the building reserved exclusively for the Copenhagen Medical Society on its weekly meeting day, but at other times it is to serve as a medical club, with possibly hotel arrangements. The Danish Medical Association is to contribute 5 crowns annually per member toward the maintenance of the building.

Osler Memorial Fund.—At the final meeting of the Oxford Osler Memorial Fund it was announced that £2,000 (approximately $10,000) had been received to date. It has been decided to place a bronze plaque in the university museum; to award a memorial medal every five years to a graduate of the University of Oxford who has made some distinguished contribution to medical science, and to form an Osler fund to assist teachers of the medical faculty to travel in the interest of medical research.

Endemic Goiter in Tasmania.—The annual report of the Department of Public Health of Tasmania for the year 1921-1922 contains the results of an investigation of goiter, which is endemic in many parts of Tasmania. The 644 cases reported throw considerable light on the subject. It was found the disease prevails along certain river valleys, and especially in the southern half of the island. Goiter in females were found to be eight times as numerous as in males. Of 2,581 schoolchildren examined, from 5 to 8 per cent. had simple parenchymatous goiter.

Teaching Schoolgirls the Care of Infants. — The *Presse médicale* of March 10 congratulates the country on the realization of the long cherished ideal to have the girls in school given systematic training in puericulture. The minister of public instruction and the minister of hygiene have issued a formal circular addressed to the prefects of France urging them to plan for imitating the work that has been under way for some time in eight public schools at Paris and in the province. The schoolgirls are taken one morning a week to an infant welfare station and are given practical object lessons. Credit is given the children for work in this line; it is done outside the regular class hours.

Deaths in Other Countries

Sir William Thorburn, emeritus professor of clinical medicine, University of Manchester; former Hunterian professor at the Royal College of Surgeons; in London, March 18, aged 61.——Dr. **G. C. Purvis,** government bacteriologist; at Grahamston, South Africa, of heart disease.——Dr. **John Irving,** surgeon to the Huddersfield Infirmary, England, March 9, aged 73.——Dr. **H. N. Eccles,** formerly roentgenologist with the British Army in India; at Hove, England.——Dr. **E. W. McQuaid,** lieutenant, Irish National Army; demonstrator of anatomy at the Royal College of Surgeons of Ireland; shot and killed by Republican regulars in Mayo, February 22, while attending the wounded.——Dr. **Antonio Dizon y Natividad,** at San Juan de Dios, January 17, of typhoid fever; aged 28.——Dr. **K. O. Olander,** an alienist of Stockholm, aged 50, physician in chief of the Katarina Hospital and of the municipal hospital for the insane. He was shot on the street by a former patient.——Dr. **Carlos Calleja,** professor of histology and anatomy at the University of Barcelona.——Dr. **Alfred Chatin** of Uriage, a dermatologist and syphilologist of note, victim of an accident during athletic exercise.——Dr. **Giol del Valle,** formerly professor of clinical medicine at the University of Madrid, stabbed himself in his grief over the recent death of his son.——Dr. **B. Morales Arjona,** professor emeritus of obstetrics and gynecology at the University of Valladolid.

Government Services

Veterans' Bureau News

The Federal Board of Hospitalization has authorized the Veterans' Bureau to take over the American Legion Memorial Hospital at Kerrville, Texas, under lease, June 1; to purchase the Hahnemann Hospital at Portland, Ore., for a maximum price of $175,000, and to reject all bids for the proposed hospital at Livermore, Calif.

The hospital at Kerrville, Texas, cost the state and the American Legion $1,800,000, and eventually will care for 480 patients. Plans are being made under which patients who are being treated in the temporary institution at Houston will be transferred to Kerrville.

The owners of the Hahnemann Hospital at Portland, Ore., are asking $300,000 for that property. The government holds a lease until 1925, and pays an annual rental of $25,000. In view of the amount which has been expended by the government for its enlargement and equipment, the board expressed the belief that $175,000 was a reasonable price and authorized its purchase at that figure if funds are available.

The Hospitalization Board has arranged to consolidate all Veterans' Bureau supplies in three large depots. One, for the Atlantic section, will be at Perryville, Md., where the bureau now maintains a supply station. Chicago will be the supply depot for the central section, as the bureau now has in that city a large fireproof building. A site for the Pacific coast section has not been chosen. The two supply stations at Long Island City, N. Y., and Chillicothe, Ohio, will be closed as soon as possible.

Dr. Harvey Cushing to Receive Medal

A citation for the award of a Distinguished Service Medal to Dr. Harvey Cushing of Boston has been approved by Secretary of War Weeks. The citation refers to Dr. Cushing as senior consultant of surgery of the American Expeditionary Forces and in direct charge of treatment of gunshot wounds of the First Army Hospital during the Meuse-Argonne offensive, and says: "He performed conspicuous and distinguished services to the government" and "His individual efforts in that capacity saved the lives of many severely wounded soldiers." The time of the award of the medal to Dr. Cushing has not been set.

Additions to Navy Medical Corps

The Surgeon General of the Navy announced this week that the following have been examined and have qualified for appointment as assistant surgeons with the rank of lieutenant (junior grade) in the Medical Corps of the Navy: Drs. Asa G. Churchill, St. Paul; William R. Manlove, Jr., Nashville, Tenn., and Frederick G. Merrill, Jr., Boston.

Changes in Navy Medical Corps

Capt. Ammen Farenholt, who has been directed to assume duty as medical officer of the twelfth naval district at San Francisco, will serve until the arrival of Rear Admiral George H. Barber, previously assigned to that station. Rear Admiral Barber will be relieved of command of the naval hospital, Canacao, P. I., in September. Commander Charles N. Fiske has been ordered to duty at Mare Island, and assigned to the *Nevada*. He will relieve Commander W. A. Angwin, who will go as executive to the naval hospital, San Diego, Calif. Commander F. E. Porter, from the naval training station, Great Lakes, Ill., will succeed Commander Fiske as executive of the Mare Island hospital.

Physicians Needed

Physicians are being sought to fill vacancies in the U. S. Veterans' Bureau and the U. S. Public Health Service at salaries ranging from $2,400 to $5,500 in the Fourth Civil Service District. In all positions in which the salary does not exceed $2,500 a year, a bonus of $20 a month will be paid.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 28, 1923.

Sir James Dewar

Sir James Dewar, F.R.S., known all over the world for his liquefaction of what used to be called the permanent gases, died recently. Born at Kincardine-on-Forth in 1842, he studied at Edinburgh University, where he was a pupil of, and later assistant to, Lord Playfair, professor of chemistry. In 1875, at the age of 33, he was appointed Jacksonian professor of natural experimental philosophy at Cambridge, and two years later he became Fullerian professor of chemistry at the Royal Institution. He held both posts until his death. His popular Friday evening lectures at the Royal Institution attracted not only the ordinary public but also scientific men, of whom one said they were sure to see Dewar do something which "no one else would have thought of doing." It was there that he carried out his researches on the liquefaction of gases and the properties of matter approaching the absolute zero, which have rendered him famous. Attracted by the work of Caillete and Pictet in that sphere, he showed the former's apparatus for the first time in this country, in 1878. In 1884, he obtained oxygen in the liquid state and then turned his attention to the more difficult problem of liquefying hydrogen. A condition of success was the discovery of a means of preventing the influx of heat into the cooled gases, and this he found in his vacuum bulbs. The principle on which they depend was afterward applied in the now familiar vacuum flask.

In 1886, he exhibited oxygen in the solid state, and by 1891 he proved that liquid oxygen and liquid ozone are attracted by the magnet. He obtained a degree of cold sufficient to liquefy hydrogen by utilizing an observation made by Lord Kelvin and Joule that a gas forced under pressure through a porous plug falls in temperature owing to internal work being done by its molecules. But the carrying out of this principle required extraordinary constructive ingenuity. Pressures of tons to the square inch had to be provided for, and an accuracy of fitting far beyond that of ordinary engineering, allowance being made at the same time for the contraction of material cooled nearly 300 degrees C. below normal temperatures. The finished machine, of which a duplicate was sent to the St. Louis exposition, weighed 2 tons and contained thousands of yards of pipe. With this apparatus, he succeeded in collecting liquid hydrogen in an open vessel in 1898, and in the following year obtained the element in the solid state, thus completing the conquest of all the gases known to Faraday. Helium then remained the only known gas that resisted liquefaction. Dewar did much work on the problem, and was able to forecast the methods by which it could be solved; but ill health and other circumstances prevented him from completing the work, and it was Onnes of Leyden who succeeded. Employed as refrigerating agents, liquid air and liquid hydrogen constitute a potent weapon of physical research, making possible the study of substances under entirely novel conditions as to temperature.

Besides many determinations of the physical constants themselves, Dewar's researches included electrical conductivity, thermo-electric powers, magnetic properties, and dielectric constants of metals and other substances at low temperatures, the effects of extreme cold on phosphorescence, chemical and photographic action, the strength of materials, color and the life of seeds and bacteria. On the discovery of radium, he collaborated with Curie in investigating its behavior at low temperatures, and reached the remarkable conclusion that its power of emitting heat is unimpaired, if not intensified, by extreme cold. He was one of the first to measure directly the rate of production of radium from helium. In the early years of the war, studies on the diffusion of gases led him to examine soap and other films of great tenuity. In investigations that he was conducting up to a few weeks before his death, he produced large soap films and bubbles which lasted for months, the secret of their longevity lying in their being blown with perfectly pure air and pure materials. Honors were showered on him from all over the world, including the first award of the Hodgkin gold medal of the Smithsonian Institution in 1899. He married in 1871. He had no children.

The Memorial to Osler

A final meeting of the subscribers to the Oxford Osler Memorial Fund was held at the University Museum, Sir Herbert Warren, president of Magdalen College, chairman of the executive committee, presiding. The chairman explained that the memorial was only one of several, the United States and Canada, in which Sir William had spent a large part of his life, having decided to establish memorials of their own. It was announced that the fund now amounted to $10,000. The following proposals were submitted on behalf of the executive committee: (1) the purchase of a bronze plaque of Sir William Osler, measuring 32 by 22 inches, a copy of that of Vernon of Paris, made for the Medical Faculty of Maryland, to be hung in the University Museum; (2) the establishment of a fund for the foundation of an Osler Memorial Medal in bronze, to be awarded every five years to a graduate of the University of Oxford who has made some distinguished contribution to medical science, learning or practice (this medal might be a reduced replica of the portrait plaque); (3) the remainder of the sum, together with any sums hereinafter added, to be called the "Osler Traveling Fund," for the propagation or acquisition of medical knowledge or for medical research, to be invested and the interest utilized to assist teachers of the Medical Faculty to travel for the purposes stated. It is estimated that the capital sum remaining for this purpose will be about £1,700 (about $8,000).

Sir Archibald Garrod, Osler's successor at Oxford, in introducing these proposals, stated that they had the entire approval of Lady Osler, as well as of other friends. They were unanimously adopted.

Cosmetics and Cancer

At the Institute of Hygiene, Sir George Lenthal Cheatle, a surgeon well known for his investigations on cancer, deprecated the use of soap, face powders, coloring matter, creams, bath salts and in fact everything that is scented, as conducive to cancer by irritation of the skin. He considered powders and soaps as especially dangerous, since they made their way into the glands of the skin and then set up trouble which might end in cancer. There was a great opportunity for some inventor who could discover a substitute for soap, for though personal cleanliness was essential, the perpetual application of soap should be discouraged. The smoke of cigarets he considered harmful to the skin, advising the use of long holders.

Sir William Thorburn

British surgery, the surgery of the spine in particular, has lost much by the death at the age of 61 of Sir William Thorburn, K.B.E., C.B., C.M.G., F.R.C.S., emeritus professor of clinical surgery at the University of Manchester. In 1886, he was appointed assistant surgeon to the Royal Infirmary, Manchester. Here he quickly made a reputation for the treat-

ment of injuries of the spine, accidents of frequent occurrence in the great manufacturing cities. The subject had previously received little attention except in connection with railway accidents. In 1890, Thorburn gained the Jacksonian prize at the Royal College of Surgeons for a masterly essay on "The Nature and Treatment of Injuries to the Spinal Column and the Consequences Arising Therefrom." Four years later, as Hunterian professor of pathology and surgery, he delivered at the College a course of lectures on these injuries. He chose the same subject for his Bradshaw lecture in December, 1922, when he summed up somewhat despondingly his experience of nearly half a century. Like many of the profession, he suffered severely by the war, losing his three sons. Broken in health and spirits, he retired from active work in Manchester. He had hardly settled to a life of leisure in London when the death of his wife further saddened him. He struggled bravely to continue his work, but he gradually lost strength.

PARIS

(From Our Regular Correspondent)

March 23, 1923.

In Opposition to Favoritism

A recent government decree provides that the minister of public instruction may grant a special dispensation exempting from examinations, or from parts of examinations, students who served in the army or navy for six consecutive years, and who were wounded, or decorated with the Legion of Honor, or who received the distinguished service medal or the *croix de guerre avec palmes*. This decree has raised a storm of protest. The assembly of the professors of the law faculty of the University of Paris has declared by a unanimous vote that the decree is incontestably illegal; for university titles and degrees can be granted only to persons who have earned them by passing the regular examinations and competitive tests. The Association corporative des étudiants en médecine (association of medical students) publishes likewise a protest against what it calls an abuse of power "which cannot fail to discourage industrious students and to discredit physicians in the eyes of the public."

A Pasteur Tag Day

The government, desirous of encouraging all movements connected with the commemoration of Pasteur and deeming it advantageous to offer all the elements of the population an opportunity to participate, has authorized a tag day in honor of Pasteur. It will not be the sole purpose of this manifestation to exalt the memory of one of the most eminent French scientists. Of equal importance will be the endeavor to awaken public opinion in support of a widespread movement in favor of the development of scientific laboratories and the improvement of the various material resources placed at the disposal of our men of science for the carrying out of their researches. A circular letter expressing this idea has been sent to the prefects by the minister of the interior. May 27 has been chosen for the tag day. The proceeds will be used for the benefit of scientific laboratories.

Privileges of the Physician with Respect to Choice of Treatment

The chief physician of an antituberculosis dispensary, who was relieved of his post by a decision of the administrative council, brought suit for damages against the council. The court, in judging of the action taken against the physician, held that the council was justified in its conduct by reason of the fact that the physician had failed to comply with the demand made on him by the administrative council not to use any other pharmaceutic specialty than the one the council had specially designated, and to refrain from prescribing any similar product not authorized by the Oeuvre de la tuberculose humaine (antituberculosis society). The court upheld the right of the administrative council to require the exclusive use of a given medicament, adding, in explanation, that, while it was true that in hospitals physicians who were the heads of services are entirely independent in the matter of the choice of treatment to be given patients, in dispensaries where the patients are all suffering from the same affection—tuberculosis—a different rule applies, and an identical medication may be required.

However, the Paris Court of Appeals reversed the decision of the lower court, summing up the matter of privilege in this pronouncement:

> Under no circumstances can the contention be upheld that a physician is under obligations to prescribe identically the same treatment for all the patients of a dispensary by reason of the fact that they are all tuberculous. Any attempt to take away from the practice of medicine all considerations of a personal and individual nature is opposed to the most firmly established principles of science. It contravenes the rights and obligations of the physician, to whom the acquisition of a medical diploma accords perfect liberty in the matter of prescriptions. Furthermore, it is the duty of a physician to institute such treatment as his professional knowledge dictates. This liberty is, in fact, the basis of his responsibility, and the practice of medicine cannot be conceived of without it.

Definition of the Illegal Practice of Medicine

The conception of the Court of Cassation (the supreme court of France) in regard to what constitutes the illegal practice of medicine has recently undergone a complete change. A man by the name of Béziat, a self-styled healer, with the aid of occult powers, who was prosecuted for the illegal practice of medicine, was acquitted by the correctional court of Villefranche-en-Rouergue on the ground that the healer believed that by passing his hands over the site of the affection he could communicate to the patient a peculiar external force (THE JOURNAL, April 15, 1922, p. 1141). The case was brought before the Toulouse Court of Appeals, and the healer was again acquitted, but the Court of Cassation has recently annulled the decree, basing its decision on the contention that the mere fact of taking part in the treatment of patients by any procedure whatsoever constitutes a violation of the law for any one who is not a doctor of medicine. This decision is especially interesting in view of the fact that, about fifteen years ago, the Court of Cassation ruled that for an "empiric," whatever the nature of the affection might be, merely to place his hand on the seat of pain, while addressing, at the same time, a mental invocation to a spirit, whose intervention he believed himself able to call forth, does not constitute an example of illegal practice of medicine. Such acts were not regarded as punishable, provided the "empiric" did not administer any remedy, write any prescription or give any therapeutic directions to patients.

The Landouzy Museum

M. Paul Strauss, minister of public health, presided recently at the ceremonies held in dedication of the Landouzy Museum. This museum, which is devoted to physiotherapy and especially to the study of mineral waters, was founded with the documents and books specially bequeathed for this purpose by the dean of the faculty, now deceased.

A Portrait of Hippolyte Larrey

M. Balland, formerly chief pharmacist of the army, has presented to the Institute of France, for its gallery of celebrities, an excellent portrait of Hippolyte Larrey, by Isabey. Baron Hippolyte Larrey, former member of the Academy of Sciences and of the Academy of Medicine; former professor of surgical pathology in Val-de-Grâce, where his statue stands; later, medical inspector of the army and consulting

surgeon to Emperor Napoleon III, was the son of Baron Dominique Larrey, the eminent army surgeon during the First Empire.

Commemoration of Pasteur in Uruguay

M. Saavedra, chargé d'affaires of Uruguay in France, recently presented to Dr. Roux, the director of the Pasteur Institute, a large bronze plaque sent by the National Council of Hygiene in Montevideo and destined to be hung in the crypt of the Institute in evidence of gratitude and in honor of the memory of Pasteur.

BUCHAREST

(From Our Regular Correspondent)

March 5, 1923.

Exanthematous Typhus in Roumania

The lay press has created some stir over an epidemic of exanthematous typhus in the eastern part of Roumania, adjacent to Russia. Sporadic cases occurred in Jassy, Craiova, Cluj, Arad, and Oradea-Mare; but, as the result of really energetic, precautionary measures, the spread of the disease was successfully prevented. The cases that did occur were all fatal. The incidence of the disease has been attributed to the influx of Ukrainians, Armenians and Jewish refugees from Russia. In the last fourteen days no fresh case was reported, notwithstanding which the lay papers have gone so far as to propose the expulsion of these immigrants. This harsh measure not only is inhuman but is unnecessary; the importance of the epidemic has been exaggerated, and now no immigrants can enter the country without having first been isolated for fourteen days; they are then kept under observation for a further period of seven days.

Reorganization of the Military Medical Service

For the great army that Roumania must maintain, because of the continuous unrest in neighboring countries, the number of army physicians must be increased; the present number is quite inadequate. In view of the fact that the size of the country, the population and the number of recruits have trebled, though the number of physicians is less than in prewar times, the minister of war has presented a bill to add 150. A project has also been presented to increase the proportion of officers of superior rank as well as the total number of physicians. The conditions from which the army surgical corps has suffered since the termination of the war is shown by the increasing number of resignations and requests for early retirement, as well as by a continuous diminution in the number of candidates for the special schools of Jassy. The acuteness of this crisis is shown by the fact that, in 1922, forty-seven military physicians resigned, and there were only thirty-eight nominations. This year a competitive examination at Jassy for thirty-six vacancies for students, who obligate themselves, after graduation, to serve six years in the army in exchange for free medical education with maintenance during the course, brought together only twenty-seven candidates. It is evident that an increase in the number of military physicians must be supplemented by better opportunities for promotion and better pay.

Food Adulterations

The government laboratory has issued a report for the year ending December 31, which contains some interesting information. With regard to the so-called "temperance" drinks, it may be noted that beverages of a nonalcoholic character are frequently sold as cider (here called lemonade, or apple juice) or sparkling lemonade, "nonalcoholic," or "not dutiable"; the state chemist says that these are mixtures of real lemon, apple or grape juice with solutions of sugar, and that they contain less than 2 per cent. of proof spirit. But, he adds: many samples of so-called nonalcoholic grape juice are entirely free from the juice of grapes, and are simply solutions of sugar that have been aerated, flavored and colored. The percentage of alcohol contained was determined in 210 samples of liquors. In 182, the alcohol exceeded the legal limit. "Liqueur candies" are apparently not such innocent sweetmeats as their name might imply. Of twenty-five samples tested, six contained proof spirit ranging from 5 to 8 per cent., and in one case the amount was 15 per cent. In order to ensure that only genuine tea shall come into the country, all consignments are examined at the port of entry, and doubtful samples are sent to the state laboratory. Of the total number of samples submitted, eighty-four, representing 9,210 kg., were condemned as containing sand or other foreign matter, and 2,418 kg. were reported unfit for human consumption. It is stated, however, that there was no evidence in any case of intentional adulteration, and that the quantity rejected, though large, is quite insignificant in relation to the total amount of tea imported. The report also contains interesting information as to the use of preservatives in food products. Boric acid, salicylic acid and hydrogen peroxid were found in several samples of cream and butter. The total number of samples examined in the course of last year was 29,416, an increase of 2,318 on those of 1919. Such activity is ample proof of the care that is taken to insure the purity of the food and drink consumed in the country.

BELGIUM

(From Our Regular Correspondent)

Feb. 23, 1923.

Playgrounds

The Belgian Red Cross has appointed a committee, of which Mlle. Goblet d'Alviella is chairman, with a view to establishing regulations with respect to the organization and management of playgrounds for persons of all ages. Within a short time, not only the children but also the adults of every commune will enjoy the advantages of properly organized playgrounds, which may be regarded as just as necessary as dispensaries, hospitals and other modern agencies of social hygiene and public health.

The Belgian Pediatric Society

The Association internationale de pédiatrie was to have met in Brussels in 1915. As the course of events prevented the holding of this meeting, the Association des pédiatres de langue française has taken the place of the former society. The new organization, which was founded in France and includes in its membership pediatricians of all countries except the central empires, held its last meeting at Paris, in July, 1922. It has been decided to hold the next assembly at Brussels, in September, 1923, under the chairmanship of Dr. Pechère, Dr. Delcourt serving as secretary. The questions on the program are: pneumococcus infections in childhood; diagnosis and treatment of intestinal obstruction, and treatment of abnormal children.

At the Paris meeting, after an address by M. Pechère in which he discussed the merits of the former Société belge de pédiatrie, it was unanimously decided to reorganize this society with Dr. Pechère as president and Dr. Delcourt as general secretary. Its membership will comprise physicians and surgeons who specialize in the diseases of children, orthopedists, physicians who specialize in the treatment of abnormal children, and all those who cooperate in or are interested in the campaign for the betterment of health conditions among children in general. The assembly also decided on the publication of articles in a bulletin, which will probably be included in the journal *La pathologie infantile*, which

will, in that case, be altered and enlarged. This question will be definitely settled later.

Artificial Heliotherapy

The various lamps producing ultraviolet rays give results in no wise comparable with the effects secured with Finsen light. The marvelous results obtained with Finsen light in the treatment of lupus are well known. However, until recently there was too high a percentage of rebellious cases (about 30 per cent.) in which the treatment was not effective, but of late the Danish school has succeeded in raising the percentage of lupus cures to 96 per cent., owing to the combination of the local treatment by light and the general treatment by the arc light. M. François also demonstrated to the Société belge de physiothérapie the results of natural heliotherapy. But in the Scandinavian countries, and with us as well, the number of days on which natural heliotherapy can be used is much restricted, and it would seem that the arc light is an excellent substitute. In Denmark, moreover, several surgeons have been using this method in place of natural heliotherapy, and are well pleased with the results. The author demonstrated the organization of the treatment in his institute at Antwerp. The excellent results secured by exposure to the arc light is shown by the extraordinary increase in the percentage of cures among lupus patients. What promises to be especially effective is a combination of natural and artificial heliotherapy. On the cloudy days when natural heliotherapy cannot be applied, artificial heliotherapy can be substituted, which permits a continuation of the treatment and obviates the fear of losing ground once gained.

Industrial Diseases

The medical service of the department of industry and labor has been making, for some time, a special study of the subject of industrial diseases, but the problem is of so vast a scope that, in order to reach a proper solution of the question, all the data that can be collected in the different factories must be brought together. It is with this in view that Dr. de Laet has lately presented to the Société de médecine légale a well documented report on this problem of pressing interest, which affects the whole economic and industrial life of the nation. He lays stress on certain factors that must be considered in Belgium in connection with industrial diseases. After discussing succinctly the tenor of the British Workmen's Compensation Act, according to which, since 1906, compensation for industrial diseases has been regulated, and outlining the principal features of the French law of 1919, the general purport of which is the same, he pointed out that the basis of these laws is the establishment of the list of presumptions of origin. On the more or less complete condition of these lists depends the degree of efficacy of these laws. One cannot understand the pathology of industrial diseases without studying it from the ground up, with all the necessary helps, and unless one examines thoroughly into all new, suspected and light cases. In order that these conditions may be realized, three things are needed: (1) The creation, in the sense of strict specialization, of a school of "factory medicine," in which special training can be given by our medical colleges as an accessory to the course in legal medicine, as has been frequently proposed; (2) the establishment of a number of clinics to which sick and injured workmen may be admitted and which are equipped with all the means of exploration necessary. These clinics would study, at the same time, the therapeutics especially applicable to the pathology of industry, and (3) legislation creating these organizations, regulating their function and management, and establishing, along with the list of presumptions of origin, the mode of determining compensations for sufferers from industrial diseases.

BERLIN

(From Our Regular Correspondent)

March 10, 1923.

Statistics of Venereal Disease, 1910-1921

From the statistical material published by the Allgemeine Ortskrankenkasse (health insurance society), Berlin, 1917, Löwenstein has figured out the absolute number of venereal patients, has classified them according to sex and disease, has considered them relatively, taking into account erroneous and obscure diagnoses, and, in computing the final results, has made statistical comparisons in order to determine what allowances are required for so-called double counts in annual and quarterly reports. For purposes of comparison, he takes statistics of the health insurance societies of Magdeburg and Frankfort-on-the-Main and of the association of health insurance physicians of Berlin; records of prostitutes in Stuttgart and Berlin; statistics of the German empire for 1919, the Landesversicherungsanstalt Hannover, and the navies of many states; also the results of prophylaxis in the American navy, all of which taken together give a fairly accurate survey of the period 1910 to 1921. On the basis of his computations, the writer has reached the following results: No statistics on the incidence of venereal diseases can, at present, be regarded as accurate and generally utilizable. The space of a year should be adopted as the basis for all statistical enumerations. In any enumeration, double counts or repetitions must be taken into consideration; otherwise, they constitute a serious source of error. This study estimates this source of error for 1917 at 17.9 per cent., an equivalent of 1,000,000 venereal patients above the actual incidence. It is, however, true that comparatively few of those insured in the health insurance societies consult a physician for a venereal disease more than once during the year, which furnishes proof of the indolence of the masses, and, at the same time, gives an explanation for the enormous spread of venereal diseases. Uncertain and tentative diagnoses have a great bearing upon statistical computations, and should be taken carefully into account; otherwise, the results will be distorted. Previous to 1917, venereal disease was on the decrease, but from 1917 to 1919 there was an increase. Since 1919 there has been little change either way. Among women there has been a marked increase, but here as well a distinction must be made between the absolute number involved and the relative increase. The age group 20-30 is the one most affected. From Löwenstein's study it becomes evident that it is not permissible to apply local statistics to whole provinces, and much less to the whole empire. Even locally, it is out of place to assume that essentially the same conditions obtain in a given three months that were found to exist in a previous quarter. The morbidity statistics of various navies prove that the institution of prophylactic measures among the crews of vessels is feasible and practicable, provided discreet instruction in prophylaxis is given.

Accidents Among Workmen in Public Utilities

According to a government survey of workmen in gas and electric plants and in water works, the health conditions among workmen tending furnaces and retorts are largely dependent on the mode of manufacture used in retorts and furnaces, which in the older plants were constructed much differently from the modern makes. In the latter the filling and the emptying are done by machinery. The physical labor involved is thus materially decreased, and fewer workmen are required to do the work. Whereas formerly the hours of work in the gas plants were often very long, now the Berlin gas plants require only six hours work a day of their furnace workers, with the exception of Saturday and Sunday, when eight hours are demanded. From the records of health insurance societies of manufacturing plants in the city

of Berlin, it appears that the incidence of sickness among workmen in gas plants, which in 1913 was 45.4 per cent. less than that of other members of the health insurance societies, in 1920 was 74.7 per cent. higher than that of other members. The usual explanation given for this is the fact that now the workmen in gas plants draw full pay during periods of sickness, and receive in addition the sick benefits from the health insurance societies, so that sickness means virtually an increase in income. Among the causes of illness, accidents, catarrhal affections of the respiratory passages and rheumatic affections play a big part.

Cataract in Glass Blowers

At the request of the medical inspector of factories, Wirth examined 158 glass-blowers of a large bottle-making plant. In the 40-60 age group he found 32.4 per cent., and in the 60 plus age group, 73.3 per cent., with signs of cataract. These figures are somewhat higher than those reported by other investigators, which is due to the fact that the examination was made with the pupil dilated. The posterior cortical cataract, which was found by English investigators in 50 per cent. of the glass-blowers affected with cataract, Wirth observed in only 25 per cent. It was noted that, in the glass works, protective panes of blue or gray glass covered all the work openings, but on examination of these panes it was found that they allowed the passage of all light rays, the blue panes almost without change, the gray panes merely with decreased intensity.

Effect of Cancer on the Appearance of the Hair

Professor Schridde, anatomist at the Dortmund institute for research on occupational accidents and diseases, has been making a systematic study of the peculiar appearance of the hair in patients with cancer of the stomach, a phenomenon to which clinicians have occasionally called attention. He found as a regular manifestation in such patients that a portion of the head hair or the hair of the bearded region presents a deep black shade; on inspecting the individual hairs he found that they were not glossy, like normal black hair, but completely lusterless. These so-called cancer hairs are, furthermore, harder and stiffer than ordinary hair; they are also coarser. If such a hair is laid on a white sheet of paper, it looks like a heavy stroke made with deep black drawing ink. The phenomenon is especially observable in the region of the temples, occasionally also in the eyebrows, but is not noticeable in the hair on the body that is not exposed to the daylight. This black pigmentation was conspicuously absent only in persons with red hair, which is possibly due to the fact that red hair is something of a pathologic type. A peculiar pigmentation of the skin of the face and hands is often associated with this change in the hair. At postmortem examinations, Schridde can always tell from the pigmentation of the hair and skin of a subject whether or not cancer is present.

Marriages

HAROLD STANLEY SUMERLIN, Lieutenant, M. C., U. S. Navy, Coronado, Calif., to Miss Mary Cushing Parr of Pasadena, March 8.

LESLIE ALLEN WILSON, Cameron, Mo., to Miss Frances Bumsted of River Forest, Ill., in March.

WILLIAM H. GEISTWEIT, JR., Denver, to Miss Gertrude Pearson of Chicago, recently.

CHARLES D. HARRINGTON to Mrs. Abbie M. Cargill, both of Minneapolis, in March.

WILLIAM NEILL, JR., to Miss Alice Lawrason Buckler, both of Baltimore, April 7.

HARRY H. EAST, Portland, Ore., to Miss Lottie Morrison of Omaha, March 10.

Deaths

Lawrence Bruce Robertson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1909; assistant professor of pathology and demonstrator in clinical surgery at his alma mater; served with the Canadian Army Medical Corps, in France; aged 37; died, February 24, at the Wellesley Hospital, of influenza and pneumonia.

Romuald Samuel Santoire, Brooklyn; Montreal School of Medicine and Surgery, Montreal, Que., Canada, 1869; Victoria University Faculty of Medicine, Kingston, Ont., 1869; member of the Brooklyn Pathological Society; Civil War veteran; formerly on the staff of St. Mary's Hospital; aged 78; died, March 27, of arteriosclerosis and pneumonia.

William H. H. Githens, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1866; member of the College of Physicians and Surgeons of Philadelphia; formerly president of the Obstetrical Society of Philadelphia; also a pharmacist; aged 82; died, March 24, following a long illness.

James Kivette Stockard, Greensboro, N. C.; University of Nashville Medical Department, Nashville, Tenn., 1894; served in the Spanish-American War and with the American Expeditionary Forces in France during the World War; aged 65; died, March 23, of cerebral hemorrhage.

Edgar B. Grier ⊕ Elizabeth, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1883; formerly president of the board of education; on the staff of the Elizabeth General Hospital and Dispensary; aged 65; died suddenly, April 2, of heart disease.

Harry Roswell Farris ⊕ Oxford, Me.; University of Vermont College of Medicine, Burlington, 1899; served in the M. C., U. S. Army, during the World War, with the rank of lieutenant-colonel; formerly city health officer; aged 49; died, March 23, of erysipelas.

Thomas Conant, Boston; Medical School of Harvard University, Boston, 1868; for twenty-one years a member of the school board and for more than half a century a practitioner in Gloucester, Mass.; Civil War veteran; aged 81; died, March 24, of senility.

Luther Pope Eberhardt, Elberton, Ga.; College of Physicians and Surgeons, Baltimore, 1892; member of the Medical Association of Georgia, and for many years secretary of the county medical society; aged 53; died, March 25, of chronic nephritis and pericarditis.

Frank W. Somers, Cleveland; Cleveland Medical College, 1892; formerly professor of materia medica at the Cleveland Homeopathic Medical College; at one time on the staff of the Cleveland City Hospital; aged 60; died recently, of carcinoma of the prostate.

Edwin Ruthven Meng, St. Louis; Missouri Medical College, St. Louis, 1876; member of the Missouri State Medical Association; formerly emeritus professor of pediatrics at Barnes Medical College, St. Louis; aged 74; died, March 26, of cerebral hemorrhage.

Francis Laban Town ⊕ colonel, U. S. Army, retired; Lancaster, N. H.; Dartmouth Medical School, Hanover, 1860; member of the State Medical Association of Texas; aged 86; died recently, at San Antonio, Texas, of cerebral hemorrhage.

Miles Bronson Titterington ⊕ St. Louis; St. Louis College of Physicians and Surgeons, 1896; member of the American Roentgen-Ray Society and the Radiological Society of North America; aged 53; died, March 26, following an appendectomy.

Frank Walden Wright, New Haven, Conn.; Bellevue Hospital Medical College, New York, 1880; member of the Connecticut State Medical Society; for thirty-four years city health officer of New Haven; aged 68; died suddenly, April 1.

George Washington Ford, Magnolia, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1889; member of the Kentucky State Medical Association; aged 65; died recently, of pneumonia.

Shirley Edward Cox, Nashville, Tenn.; Vanderbilt University Medical Department, Nashville, 1891; formerly member of the city council and for eight years county health officer; aged 57; died, March 25, of heart disease.

Michael Valentine Halter ⊕ West Park, Ohio; Cleveland College of Physicians and Surgeons, Medical Department

Ohio Wesleyan University, Cleveland, 1904; ordained a Catholic priest in 1915; aged 50; died, March 30.

Arthur Pedro Perry ⊕ Boston; Medical School of Harvard University, Boston, 1886; member of the New England Society of Dermatology and Syphilis; formerly on the staff of the Faulkner Hospital; aged 65; died, April 1.

Harry Vane Bailey, Pekin, Ill.; University of Nashville Medical Department, Nashville, Tenn., 1888; member of the Illinois State Medical Society; president of the Tazewell County Medical Society; aged 62; died, April 10.

Samuel S. Caruthers, Nashville, Tenn.; Meharry Medical College, 1902; professor of dermatology since 1904, and secretary of the faculty, at his alma mater; died, January 22, as the result of an automobile accident.

Frank D. Lydick, Paris, Ill.; University of Michigan Medical School, Ann Arbor, 1890; formerly president of the board of education, and of the board of health; aged 63; died suddenly, April 1, of angina pectoris.

Jonas Hobart Vaughan, Marshfield, Mass.; University of Vermont College of Medicine, Burlington, 1880; founder of the Whidden Memorial Hospital, Everett; aged 69; died, March 20, of chronic nephritis.

William John Galvin, Oswego, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1917; served in the M. C., U. S. Army, during the World War; aged 34; was drowned at sea, April 7.

Charles H. Rigg, Middletown, Mo.; American Medical College, St. Louis, 1878; St. Louis College of Physicians and Surgeons, St. Louis, 1888; aged 72; died, March 28, of cerebral hemorrhage.

Jacob Travers Krause, New York; Albany (N. Y.) Medical College, 1908; member of the Medical Society of the State of New York; aged 38; died, March 23, of peritonitis, following an operation.

Charles Pliny Smith, Watertown, S. D.; College of Physicians and Surgeons, Keokuk, Iowa, 1875; formerly on the staff of the Asbury Hospital, Minneapolis; aged 79; died in March, of senility.

Burrell Lue Arrington, Memphis, Tenn.; University of West Tennessee College of Medicine and Surgery, Memphis, 1913; aged 42; died, March 24, at Colorado Springs, Colo., of tuberculosis.

R. W. Maintz, Linn, Kan.; Missouri Medical College, St. Louis, 1889; member of the Kansas Medical Society; formerly a member of the state legislature; aged 59; died, April 2, of paralysis.

John Milton Williams, Orkney, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1907; aged 47; was shot and killed, February 22.

Samuel George White, Hodgeville, Sask., Canada; McGill University Faculty of Medicine, Montreal, Que., 1903; formerly a practitioner in North Dakota; aged 41; died recently.

Samuel Mitchell ⊕ Hornell, N. Y.; New York University Medical College, New York, 1879; on the staff of St. James' Mercy Hospital; aged 67; died, March 25, of heart disease.

George Miller Luckey, Vinton, Iowa; Rush Medical College, Chicago, 1901; member of the Iowa State Medical Society; aged 48; died, April 3, of cerebral hemorrhage.

William R. Greeson, Conway, Ark.; Vanderbilt University Medical Department, Nashville, Tenn., 1882; member of the Arkansas Medical Society; aged 73; died, March 28.

Eda Bergquest Selders, Chicago; National Medical University, Chicago, 1899; member of the Illinois State Medical Society; aged 58; died, April 5, of chronic nephritis.

Albert Kidder Page, Boston; Medical School of Harvard University, Boston, 1893; member of the Massachusetts Medical Society; aged 60; died, April 3, of pneumonia.

Ulysses Alvora Wright ⊕ Coatesville, Ind.; Northwestern University Medical School, Chicago, 1897; aged 57; died, March 4, of uremia, following bronchopneumonia.

Henry Shipman Drayton ⊕ Jersey City, N. J.; Eclectic Medical College of the City of New York, New York, 1877; also a lawyer; aged 82; died, April 8, of senility.

William McHarrie, Seattle; Chicago Homeopathic Medical College, Chicago, 1895; aged 56; died, March 27, at the Minor Hospital, while undergoing an operation.

Augustus Emil Kosby, Yuba City, Calif.; University of California Medical School, San Francisco, 1875; also a druggist; aged 76; died, March 28, of pneumonia.

Emerson E. Snow, Batavia, N. Y.; Jefferson Medical College of Philadelphia, 1874; formerly a medical missionary in Central Africa; aged 72; died recently.

Kate Lindsay ⊕ Boulder, Colo.; University of Michigan Medical School, Ann Arbor, 1876; on the staff of the Boulder Sanitarium; died, March 31, of senility.

William Barnaboo Tucker, Linden, Tenn.; University of Tennessee College of Medicine, Memphis, 1886; aged 70; died, March 27, of pneumonia and influenza.

Newton N. Brumback, Colorado Springs, Colo.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1883; aged 69; died, March 21.

Frank Allen Shemwell, Paducah, Ky.; University of Nashville Medical Department, Nashville, Tenn., 1885; aged 75; died, March 31, of pneumonia.

Antonio Fernando y Arriola, Cabanatuan, Nueva Ecija, P. I.; University of St. Thomas Medical Department, Manila, 1894; aged 57; died recently.

Wade Ben Willey, Dallas, Texas; Medical Department of Drake University, Des Moines, Iowa, 1898; aged 60; died, March 21, of acute bronchitis.

Mitchell M. King, Brevard, N. C.; Georgia Eclectic Medical College, Atlanta, 1881; aged 71; died suddenly, March 11, of heart disease.

John Andrew Horn, Burfordville, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1869; aged 89; died, March 20, of senility.

C. W. Taylor, Stokesdale, N. C. (licensed, years of practice); aged 75; died, March 11, of chronic nephritis and mitral regurgitation.

Robert Henry Cartmell, Jackson, Tenn.; Bellevue Hospital Medical College, New York, 1881; aged 66; died, March 27, of heart disease.

Charles Mallory Chambliss ⊕ Thornton, Wash.; Kansas City (Mo.) Medical College, 1883; aged 70; died, March 29, of heart disease.

William Frederick Jernigan, Port Arthur, Texas; Physio-Medical Institute, Cincinnati, 1881; aged 65; died, March 19, of endocarditis.

F. H. Bostock, Palisade, Neb. (licenced, years of practice); Civil War veteran; also a druggist; aged 102; died, March 17, of senility.

Calvin Charles Dibert, Bedford, Pa.; Columbus (Ohio) Medical College, 1884; aged 62; died, March 28, following a long illness.

David Lucas, Enfield, N. C.; Baltimore University School of Medicine, Baltimore, 1884; aged 77; died, January 11, of pneumonia.

Herbert L. Reed, Waupaca, Wis.; Hahnemann Medical College and Hospital, Chicago, 1880; died, March 27, of pneumonia.

Frederick Becker, Clermont, Iowa; Homeopathic Medical College of Missouri, St. Louis, 1875; aged 85; died, April 1, of senility.

Evans R. Whitley, Commerce, Texas; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1905; aged 53; died, March 26.

George Wilmer Yourtee, Burkittsville, Md.; University of Maryland School of Medicine, Baltimore, 1902; aged 45; died, April 1.

Benjamin Pyle, Kalamazoo, Mich.; University of Michigan Medical School, Ann Arbor, 1883; aged 64; died, March 30.

Thomas P. Shanahan, Chicago; Rush Medical College, Chicago, 1877; aged 71; died, April 8, of arteriosclerosis.

William W. Arnold ⊕ Colorado Springs, Colo. (licensed, Colorado, 1886); aged 79; died, March 30, of influenza.

James A. Lingenfelter, Loudonville, Ohio; Pulte Medical College, Cincinnati, 1885; aged 73; died, March 27.

James E. Poore, Sacramento, Calif.; Jenner Medical College, Chicago, 1898; aged 68; died, January 21.

Isaac Abrahams ⊕ Chicago; Chicago Hospital College of Medicine, 1918; aged 38; died, April 9.

The Propaganda for Reform

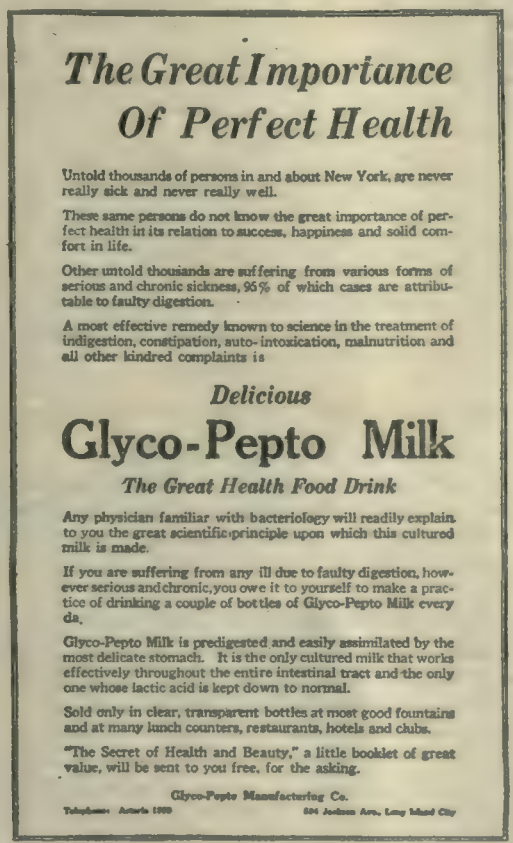
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

GLYCO-PEPTO MILK NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. PUCKNER, Secretary.

Glyco-Pepto Milk is a sour milk said to contain *Bacillus bulgaricus, Streptococcus lacticus* and *Glycobacter peptolyticus*. It is marketed by the Glyco-Pepto Manufacturing Co., Inc., Long Island City, N. Y., with the claim that its



The Great Importance Of Perfect Health

Untold thousands of persons in and about New York, are never really sick and never really well.

These same persons do not know the great importance of perfect health in its relation to success, happiness and solid comfort in life.

Other untold thousands are suffering from various forms of serious and chronic sickness, 95% of which cases are attributable to faulty digestion.

A most effective remedy known to science in the treatment of indigestion, constipation, auto-intoxication, malnutrition and all other kindred complaints is

Delicious

Glyco-Pepto Milk

The Great Health Food Drink

Any physician familiar with bacteriology will readily explain to you the great scientific principle upon which this cultured milk is made.

If you are suffering from any ill due to faulty digestion, however serious and chronic, you owe it to yourself to make a practice of drinking a couple of bottles of Glyco-Pepto Milk every da.

Glyco-Pepto Milk is predigested and easily assimilated by the most delicate stomach. It is the only cultured milk that works effectively throughout the entire intestinal tract and the only one whose lactic acid is kept down to normal.

Sold only in clear, transparent bottles at most good fountains and at many lunch counters, restaurants, hotels and clubs.

"The Secret of Health and Beauty," a little booklet of great value, will be sent to you free, for the asking.

Glyco-Pepto Manufacturing Co.

Telephone: Astoria 1000 804 Jackson Ave., Long Island City

A typical newspaper advertisement of "Glyco-Pepto Milk."

administration supplemented with a potato diet, through the presence of *Glycobacter peptolyticus*, permits the implantation of the Bulgarian bacillus in the lower intestine and thus brings about an almost complete disappearance of phenols and indol from the urine.

Glycobacter peptolyticus has some amylolytic action; in flask cultures, in the course of fourteen days, about 40 per cent. of the starch is converted into sugar. It has been claimed that the administration of this organism in man produces a similar effect. There is no evidence, however, to show how great the amylolytic action would be in a few hours either in a flask or in the intestines. The claim that *Glycobacter peptolyticus* converts the starch into sugar and thus permits the implantation of *Bacillus bulgaricus* in the large intestine rests on very indirect evidence, and is open to question.

The experimental work used as a basis is that of Metchnikoff and Wollman, published in 1912. In their publication these authors devote only a little more than one page of text to the work with *Glycobacter peptolyticus* in rats and in man. They state that the administration of this organism caused the phenols and indoxyl to disappear from the urine in some rats; in others the effect was less complete but, nevertheless, marked; in rare cases the effect was nil; further, that the most marked effect was observed with four persons who took potatoes with *Glycobacter*. The tabulated results obtained with rats and man are by no means so conclusive as the authors, in their optimism, believe. In two instances in which marked diminution is given, typographic errors are involved. The claims for the combination of *Glycobacter peptolyticus* with *Bacillus bulgaricus* are based on a single experiment of these authors with eleven rats. This experiment is of little value, since in the fifty-three days preceding the administration of mixed culture the phenols dropped from 0.037 to 0.011, and the indoxyl from 0.086 to 0.006 gm. per liter of urine. The subsequent drop on treatment with the mixed bacteria for five days, of phenol to 0.005 and of indoxyl to nondeterminable amounts may have been a continuation of the decline due to the diet. Yet the authors, although they noticed the marked decrease due to the diet, concluded that it was only after the administration of the bacteria that the almost complete disappearance of the phenols and indoxyl was obtained. Although ten years have elapsed since the preceding results of Metchnikoff and Wollman were published, the Glyco-Pepto Manufacturing Company has submitted no confirmatory evidence.

According to the manufacturers of Glyco-Pepto Milk, the therapeutic indications for this product are:

"As a disinfectant to the digestive tube and regulator of the stools."
"In enteritis, infant diarrhea, and chronic disturbances of the gastro-intestinal tract."
"In ulcerations of the stomach, in cutaneous diseases due to digestive troubles."
"After surgical interventions of the digestive tube, after accouchements, in tuberculosis, anaemia and general debility."

These claims appear to be based on the testimonials of Swiss physicians, who refer to the usefulness of the product as "agreeable food," "exquisite in flavor," "easily taken," etc. The preparation may be a pleasing beverage and light food, but there is no acceptable evidence for the many therapeutic claims that are made.

The Council declares Glyco-Pepto Milk inadmissible to New and Nonofficial Remedies.

Correspondence

COOPERATION BETWEEN HOSPITALS AND GENERAL PRACTITIONERS

To the Editor:—Recent comment on the relation of the hospital to the physician has interested me as a student of clinical administration, and I wonder whether a further excursion into the realm of medical idealism is not warranted by modern hospital practice. The growth of the "closed" general hospital has brought a regrettable estrangement between the private practitioner and the hospital. The reason is not far to seek. Opportunities for the stimulation of the scientific spirit are more numerous in hospital than in private practice. Cases in logical series are more readily observed and studied in the hospital. Necessary bedside visits have no financial aspect, and are continuous. The patient is removed from the diverting influences of friends and relatives, whose changeable tactics are the bane of the practitioner. The hospital has a better organization for study, with diagnostic, therapeutic, nursing and technical facilities close at hand. Perhaps this difference in opportunities is a clue to the reason for the existence of what might be considered a class problem in the profession.

The family physician constitutes the backbone of medical practice, as regards the poorer members of the community. The earlier stages of disease are seen by the practitioner, who refers his patient to the hospital if the condition requires

surgical intervention or is progressive and not subject to control with the limited facilities of the home. Poverty alone may be the cause, but more often it is a confession by the physician that he is unable to contribute further to the solution of his clinical problem. This is as it should be. Fairness to the patient demands that the physician obtain for him the counsel of men who work in a more favorable environment, who are better trained, and whose judgment is more mature. But when the practitioner refers his patient to the hospital, how much effort is made by those who are to help in the solution of the problem to learn from him what came before in the clinical course? Is it not reasonable to expect that the physician will know more about the previous history than, for example, a sick child's mother? To ignore the physician is to ignore an opportunity to get at the beginnings of disease. According to Sir James Mackenzie, "Medicine will make but halting progress while whole fields essential to the progress of medicine will remain unexplored, until the general practitioner takes his place as an investigator. . . . He has opportunities which no other worker possesses."

The practitioner is a neglected factor in the proper handling of the case by hospital authorities. Thoughtful physicians will bear witness to the disappointment of the family physician at the lack of cooperation by hospitals. He feels that he is always belittled for failing to make the diagnosis, despite his known limitations. The code of medical ethics seems to cover only the relations of individual physicians to one another and to the patient; it should be interpreted broadly to include the relations between the hospital and the practitioner. The movement, lately begun, to combine the hospital with its dispensary for making a continuous study of the patient might be broadened to include the outside practitioner.

In the absence of proper cooperation between these two classes in the medical profession, a situation arises which bodes no good for medical practice. A vicious circle is soon established. The practitioner, disregarded, misses the necessary stimulus to better effort, and is blamed for his unprogressive attitude toward those who depend on him for relief. Under such tutelage he is regarded as a weak brother, through no fault which his more fortunate confrères are unable to correct. In this respect, medical science confers its benefits on one class alone, and does not include those whom it is most intended to benefit. We are apt to forget that medical progress is a cooperative undertaking. The practitioner has seldom been encouraged to overcome a natural, and it might be more correct to say nurtural, tendency to inertia. The fault is not altogether his.

When a patient is referred by a physician to the hospital, it should be obligatory for the hospital (1) to inform him of the disposition of his patient; (2) to ascertain from him his version of the previous history; (3) to invite him to the wards for the purpose of acquainting him with the hospital findings; (4) to notify him of operation or necropsy, and (5) to notify him when his patient has been discharged. Progressive hospitals are now fulfilling most of these obligations, and have organized conferences, lectures and clinical demonstrations for the purpose of keeping the practitioner in touch with the more recent advances in medical science; but for the greater part the practitioner's story and opinion are still disregarded. The benefits that will accrue to the hospital as well as to the practitioner when the latter is not only permitted but encouraged to have his say as to the earlier stages of disease must be obvious.

The good will of the practitioner is no small asset to any hospital. With closer cooperation, the hospital may expect cases that have been better prepared, studied and recorded by the practitioner before admission. A policy of this sort would put the physician on his mettle, knowing, as he would, the scientific standards of the hospital that welcomes his story and opinion. It would point the way to better medicine, by improving the practitioner's methods of handling his patients and by giving him an opportunity to see the other type of medical practice in which the clinical picture is relatively clearer and more orderly. Hospitals have been known to overlook crucial signs, symptoms and laboratory findings in cases in which the family physician could have helped out. Without his statement, have we the right to regard the record of our case as complete?

My point is that in justice to the patient we should listen to the physician who saw him in the earlier stages of his disease; and, in justice to the physician, this courtesy should be reciprocated. It will spell better medicine when all clinical agencies cooperate to the limit. This must not be interpreted as a plea for the "open" hospital, in which outside physicians are free to treat and to assume full responsibility for cases. The training and experience of hospital staffs should be made freely available to the outsider, if the fundamental obligation of the hospital to teach medicine is to be fulfilled. May I hazard a guess that such a step in hospital policy will break down the spirit of distrust abroad in the world of private medical practice with regard to progressive hospital and dispensary ideas?

Broadly speaking, the conditions under which both the practitioner and the hospital undertake to be of service to the community should not alter their scientific responsibilities toward each other and toward the patient, and for the sake of the next sufferer in line it is our duty to make the clinical biography of the patient complete in every possible detail.

E. M. Bluestone, M.D., New York.

SIMPLEST METHOD OF BLOOD TRANSFUSION IN THE NEW-BORN

To the Editor:—In a recent article (Blood Transfusion by the Citrate Method in Hemorrhages of the New-Born, The Journal, March 10, 1923, p. 678), Falls recommends exposure of the jugular vein for the intravenous administration of the blood.

In an editorial on intraperitoneal blood transfusion (The Journal, March 31, 1923, p. 921), it is stated that Siperstein's method of intraperitoneal blood transfusion "will demand careful consideration in pediatric practice."

In a paper entitled "Blood Transfusion (Citrate Method) in Hemophilia Neonatorum" (*Am. J. Obst.* **77**:933 [June] 1918), I reported five cases in which blood transfusion was given to new-born infants, from 2 to 6 days old. In these cases the median cephalic vein was used. This vein is of fairly good size, even in the new-born. As stated in my paper, in using this method "it is unnecessary to expose the jugular vein or introduce the cannula into the longitudinal sinus." Since 1918 I have used this approach in a considerable number of cases, and I have never failed to administer the blood by this route.

Thus, there is no reason to inject the blood intraperitoneally, a method which is certainly not devoid of danger, especially in the new-born infant.

Richard Lewisohn, M.D., New York.

Eugenic Sterilization.—The matter of segregating, sterilizing, or otherwise rendering nonproductive the degenerate human strains in America is, in accordance with the spirit of our institutions, fundamentally a matter for each state to decide for itself. There is, however, a specialized field in which the federal government must cooperate with the several states, if the human breeding stock in our population is to be purged of its defective parenthood.—H. H. Laughlin, *Social Hygiene* **6**:530 (Oct.) 1920.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF SYPHILIS

To the Editor:—1. Are the accepted ideas on the treatment of syphilis so uncertain as to admit that: (*a*) "Salvarsan should not be given as a routine treatment of syphilis because it does not cure: mercury does" (DeCosta's Surgery). (*b*) "Combined intravenous treatment with arsenic and mercury is to be at once commended. Studies of a great number of cases have shown the advisability of combined treatment" (Manual of Military Urology for the American Expeditionary Forces). (*c*) "Mercury in any form administered in any manner whatsoever has no direct lethal effect on the spirochetes. . . . We prefer not to use arsenic until mercury has had sufficient time to be eliminated from the system. Mercury and arsenic are antagonistic in their action and should not be used together" (*Northwest Medicine*, March, 1923). 2. Is there any ground for the belief that a four plus Wassermann reaction simply means a good resisting power and shows a better prognosis than a negative Wassermann reaction in a known syphilitic?

C. E. EATON, M.D., Seattle.

ANSWER.—These questions raise some of the most pertinent points in antisyphilitic therapy; some are unsettled, and difficult to settle.

1. (*a*) The view that arsphenamin should not be given as a routine treatment for syphilis because it does not cure, while mercury does, is not the generally accepted opinion. The general view is that neither certainly cures in cases in which the disease has existed long enough to become well established as a systemic disease, that is, after the first few weeks of the chancre. But they both tend to cure, and both are valuable in treatment.

(*b*) That treatment with arsphenamin and mercury should be started as soon as the patient is seen is the view held by most syphilologists. When chancres are seen that are unmistakable, as shown by the demonstration of *Spirochaeta pallida*, it is the general opinion that these cases should be vigorously treated, and that there is a good chance of aborting the disease at this time. If early cases are not seen until the Wassermann reaction has become positive, there is a difference of opinion as to how treatment should be carried out. There are thoughtful syphilologists of large experience who believe that these early cases are better treated by mercury alone until the patient has had an opportunity to develop all of the immunity that he is capable of. Everything indicates that mercury does not interfere with his doing this, and that arsphenamin does. After the patient has had time to establish whatever resistance he is capable of, say three months after the Wassermann reaction has become positive, the same syphilologists would then treat with mercury and arsphenamin.

(*c*) The view that mercury has no lethal effect on the spirochete represents the radical position, and is probably not correct. That mercury and arsenic are antagonistic in their effect on spirochetes, we know no reason for believing. The only objection to administering arsphenamin and mercury together is the extra load that is thrown on the kidneys.

2. There might possibly be some ground for the belief that in early syphilis, when the patient is establishing his immunity, a four plus Wassermann reaction would be an evidence that this was going on in a favorable way. In later syphilis we can see no ground for this opinion. The Wassermann reaction is not a specific antibody-antigen reaction, and it is not, therefore, an index of the patient's production of antibodies. The commonly accepted view is that a definitely positive Wassermann reaction means the presence somewhere in the body of active syphilis.

It should be remembered that the advantages of the new treatment of syphilis, in which arsphenamin plays so large a part, are still being studied. The trend of the last few years has been in the direction of placing more reliance on mercury and using arsphenamin secondarily in the treatment of syphilis. It is possible that in the next generation the routine treatment of syphilis will be entirely rewritten.

NEPHRITIN — NEW AND NONOFFICIAL REMEDIES — THE PROPAGANDA FOR REFORM

To the Editor:—1. Can the Council on Pharmacy and Chemistry inform me whether there is any actual merit in the use of "Nephritin" (Reed and Carnrick) for the treatment of the nephritides? If so, in what does the merit lie? 2. Does the Council publish from time to time an alphabetically arranged list of these various trade-named remedies, setting forth the opinion of the Council as to the claims made? There are so many of these remedies (a few of which probably possess merit and warrant our use) that it certainly would be a blessing to be able to refer to the Council's pronouncement upon them. The situation is this: some agent comes in today making big claims for this or that trade-named article. It may be that THE JOURNAL has discussed this particular article some months back. I may not have seen this, or, if I had, have forgotten it. If we could refer to a compilation put out by the Council arranged alphabetically, we could more intelligently select the remedies we wish to use and could make short work of the bombastic claims of some of these agents.

JOHN A. DARROW, M.D., Erie, Pa.

ANSWER.—1. Nephritin was reported on by the Council on Pharmacy and Chemistry in 1907 ("Reed and Carnrick's Methods," THE JOURNAL, Oct. 5, 1907, p. 1198). The following is a summary of this report: The advertising claims for Nephritin are based on the theory that certain granules in the renal cells, called "grains of segregation" and claimed to have been observed microscopically, carry on the secretion of urinary constituents and that a deficiency of them is the cause of nephritis. While Renaut, who formulated the theory, recommended as a cure for nephritis the maceration of fresh kidneys in physiologic sodium chlorid solution, Reed and Carnrick urged objection to the maceration and explained that nephritin represents all the action of the maceration but is fifty times as potent. Nephritin is stated to be "the grains of segregation from the cortex of the pig's kidney, the renal connective tissue being eliminated." It appeared impossible that the microscopic structures claimed to be present in nephritin could be isolated as such from the connective tissues, and, on inquiry by the Council, no information on this point was to be had. Further, the firm presented no evidence for the claimed action of nephritin or for the claim that it was fifty times stronger than the maceration.

2. New and Nonofficial Remedies, 1923, lists and describes the medicinal preparations which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association, Jan. 1, 1923. This book contains, as addenda, references to proprietary and unofficial articles not described in N. N. R. In the addenda are given references to all published reports of the Council on products which have been examined and found inadmissible to New and Nonofficial Remedies. This book will be sent postpaid for $1.50. The Propaganda for Reform, Vols. 1 and 2, contains all the important reports of the Council on Pharmacy and Chemistry on proprietary remedies offered to the medical profession of the United States. In addition to the reports of the Council, the "Propaganda" contains the more important reports of the American Medical Association Chemical Laboratory on the analyses of proprietary medicines and articles published by THE JOURNAL on proprietary products and on proprietary medicines in general. Volume 1 of the "Propaganda" contains the matter which was published up to and including 1916. Volume 2 contains the material which was published covering the period from January, 1917, to April, 1922, inclusive. Volume 1 will be sent postpaid for $1, and Volume 2 for $2.

Better Milk, Better Health.—If the people of a community are well nourished they will be stronger and better able to fight off disease. Bringing about the observance of laws of sound nutrition should be one of the chief functions at the basis of public health administration. We must, therefore, have a clean, wholesome food supply to begin with. The consumption of more milk per capita is a starting point, for milk is our ideal food. But we must have safe milk before we can recommend its increased consumption. A city will not obtain a safe milk supply until steps are taken to systematize its control. This requires adequate funds, better milk laws, improved organization, and common sense administration.—L. C. Bulmer, *Nation's Health* **5**:131 (March) 1923.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.

GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.

IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MASSACHUSETTS: Boston, May 8-10. Sec., Dr. Charles E. Prior, State House, Boston.

MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

California June and July Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the oral and written examination held at San Francisco, June 26, and at Los Angeles, July 11-13, 1922. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 168 candidates who took the physicians' and surgeons' examination, 131, including 11 osteopaths, passed, and 37, including 19 osteopaths, failed. One hundred and six candidates were licensed by reciprocity, and 10 candidates received osteopathic licenses by reciprocity. Eight candidates were licensed on government credentials. Of the 29 candidates who took the drugless practitioners' examination, 14 passed and 15 failed. Of the 14 candidates who took the examination to practice midwifery, 10 passed and 4 failed. Three candidates received drugless certificates by reciprocity. One candidate received a license to practice chiropody by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists	(1922) 78.6, 79, 80.3, 80.3, 81.6, 84.5, 84.7, 85.1, 85.5, 85.9, 85.9, 86.4, 86.8, 87, 87, 87, 87.3, 91.2, 92.1		
College of Physicians and Surgeons, Los Angeles	(1922) 78.3, 78.9, 79.3, 79.5, 79.8, 80.5, 80.8, 81.1, 82.4, 83.4, 83.8, 89.1		
College of Physicians and Surgeons, San Francisco		(1922)	77.1
Stanford University	(1922) 75, 77.8, 80.4, 81.4, 81.5, 82.4, 84, 84.4, 84.8, 85.1, 85.4, 85.5, 85.8, 86.9, 87.3, 87.6, 88.1, 88.6, 89.6, 90.4, 93		
University of California	(1922) 75, 75.8, 76.1, 78.9, 79, 79.3, 79.9, 81.4, 82, 82.4, 82.5, 82.6, 83.1, 83.8, 83.9, 84.2, 84.5, 84.8, 85.3, 85.4, 85.8, 85.8, 85.8, 85.8, 86.1, 86.3, 86.4, 87.1, 87.2, 87.2, 87.4, 87.5, 87.6, 88, 88.8, 89.1, 89.4, 89.4, 89.6, 89.9		
Yale University		(1921)	83.9
Rush Medical College	(1917) 89.5, (1921) 83.1, 88.9, 91, (1922) 81, 81.6, 82.5, 84.3, 86.2		
University of Illinois		(1922) 81.3, 84.6, 84.8,	87.2
Johns Hopkins University		(1921)	84.4
St. Louis University School of Medicine		(1922)	80.3
Washington University		(1922) 85.5,	87.9
Eclectic Medical College		(1922)	79.3
University of Cincinnati		(1922)	85.6
University of Oregon		(1920)	83
University of Pennsylvania		(1921)	81.5
Woman's Medical College of Pennsylvania		(1921)	78.9
University of Texas		(1921)	83.3
Queen's University, Ontario		(1920)	78.5
University of Vienna, Austria		(1901)*	92.8
University of Tübingen, Germany		(1920)*	81.5
Osteopaths	75, 75, 77, 77, 77.2, 77.9, 79, 83.2, 83.8, 85.2,		86.5
	FAILED		
College of Physicians and Surgeons, Los Angeles	(1918) 72.2, (1920) 54.4, (1922) 71.2		
Stanford University		(1920)	71.7
Chicago College of Medicine and Surgery		(1914)	63.4
Hahnemann Medical College and Hospital, Chicago		(1892)	65
Rush Medical College		(1892)	65
Loyola University		(1910)	62.5
College of Physicians and Surgeons, Keokuk		(1890)	55
Grand Rapids Medical College		(1903)	19
Kansas City Homeopathic Medical College		(1900)	52
Marion-Sims College of Medicine		(1899)	53
St. Louis College of Physicians and Surgeons		(1888)	†
St. Louis University School of Medicine		(1921)	71.4
Jefferson Medical College		(1891)	71
University of Pennsylvania		(1878)	64
Western Pennsylvania Medical College		(1892)	50
Undergraduate			69.6
Osteopaths	55.2, 57.7, 61.2, 68.3, 68.5, 68.5, 68.5, 70.2, 70.5, 71.1, 71.3, 71.3, 71.5, 72.5, 72.5, 73, 73.2, 73.3, 73.5		

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles		(1921)	Wisconsin
George Washington University		(1905)	Montana
American College of Medicine and Surgery		(1904)	Illinois
Bennett College of Eclectic Medicine and Surgery		(1888)	Illinois
Bennett Medical College	(1909) Illinois, (1913) Washington, (1914) West Virginia		
Chicago College of Medicine and Surgery		(1908), (1915)	Illinois
Chicago Homeopathic Medical College		(1889)	Iowa
College of Physicians & Surgeons, Chicago	(1901) Iowa, (1902) Minnesota, (1907) Illinois		
Loyola University		(1917, 2)	Illinois
Northwestern University		(1909), (1910)	Illinois
Northwestern Univ. Woman's Medical School		(1893)	Indiana
Rush Medical College	(1889) Arizona, (1897), (1902), (1903, 2) Illinois, (1903) Indiana, (1911) Iowa, (1913) Illinois, (1914) Arizona		
University of Illinois		(1913) Texas, (1916)	Illinois
Central College of P. & S., Indianapolis		(1897)	Indiana
Indiana University		(1909)	S. Dakota
College of P. & S., Keokuk		(1890) Oregon, (1897)	Oklahoma
Keokuk Medical College		(1898)	Iowa
State Univ. of Iowa College of Medicine		(1906)	Montana
State Univ. of Iowa Coll. of Homeo. Medicine		(1910)	Oregon
Kansas Medical College, Topeka		(1902), (1912)	Kansas
University of Kansas		(1920)	Kansas
Kentucky School of Medicine		(1907)	Virginia
Louisville Medical College		(1896)	Missouri
University of Louisville Medical Department		(1915)	Arizona
Bowdoin Medical School		(1915)	Maine
Medical School of Maine		(1899)	Maine
Baltimore Medical College		(1903)	Washington
College of Physicians and Surgeons, Baltimore		(1910)	Montana
Johns Hopkins University		(1911)	Maryland
Maryland Medical College		(1904) West Virginia, (1909)	Illinois
Boston University		(1892)	Dist. Colum.
Detroit College of Medicine and Surgery		(1920)	Michigan
University of Michigan Medical School	(1900) Montana, (1902), (1904), (1915) Michigan		
Univ. of Mich. Homeo. Medical School		(1913)	Michigan
University of Minnesota		(1901) North Dakota, (1907)	Washington
Barnes Medical College		(1904	Missouri
Ensworth Medical College		(1903)	Missouri
Kansas City Medical College		(1905)	Kansas
Missouri Medical College	(1886) Minnesota, (1896) Missouri, (1898) Iowa		
National University of Arts and Sciences		(1912), (1914)	Missouri
St. Louis College of Physicians and Surgeons		(1904), (1919)	Missouri
St. Louis University School of Medicine		(1904)	Illinois
University Medical College of Kansas City		(1906)	Missouri
Creighton University		(1902) Iowa, (1905), (1910), (1917)	Nebraska
University of Nebraska		(1912)	Nebraska
Dartmouth Medical School		(1912)	Mass.
Albany Medical College		(1909)	New York
Bellevue Hospital Medical College		(1887)	Montana
Columbia University		(1916) Kansas, (1919) Alaska,	New York
Cornell University		(1900)	New York
Fordham University		(1917)	New York
Long Island College Hospital		(1905), (1907)	New York
Univ. and Bellevue Hospital Medical College		(1904	New York
Woman's Medical College of the New York Infirmary for Women and Children	(1897) New York		
Cleveland Pulte Medical College		(1912)	Ohio
Medical College of Ohio		(1886)	Ohio
Jefferson Medical College	(1888) Colorado, (1897), (1911) Utah, (1913) Pennsylvania		
Medico-Chirurgical College of Philadelphia		(1905)	Penna.
University of Pennsylvania		(1891)	Penna.
Woman's Medical College of Pennsylvania		(1908)	New Jersey
Medical College of the State of South Carolina		(1904)	S. Carolina
University of Tennessee		(1914)	Oklahoma
Vanderbilt University		(1916) New York, (1917	Tennessee
University of Vermont		(1884)	New York
University of Virginia		(1896)	S. Carolina
Milwaukee Medical College		(1900)	Wisconsin
University of Lille, France		(1887)*	Michigan
Aichi Prefecture Special Medical School, Japan		(1908)*	Nevada
Kyota Imperial University, Japan		(1910)*	Colorado
Osteopaths: Colorado (1), Connecticut (1), Iowa (1), Kansas (1), Michigan (1), Minnesota (1), Missouri (2), Nebraska (1), Wisconsin (1)			

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Chicago College of Medicine and Surgery		(1913)	U. S. Army
Tulane University		(1914)	U. S. Army
Harvard University	(1902) U. S. Navy	(1916)	U. S. Army
University of Michigan Medical School		(1903)	U. S. Army
Kansas City Medical College		(1898)	U. S. Army
Jefferson Medical College		(1901) U. S. Army, (1908)	U.S. Navy

* Graduation not verified.
† No grade given.

Arkansas November Examination

Dr. C. E. Laws, secretary, Arkansas Eclectic Board of Medical Examiners, reports the written examination held at Little Rock, Nov. 14, 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgia College of Eclectic Medicine and Surgery		(1909)	86.5
Kansas City College of Medicine and Surgery		(1921)	92.3
	FAILED		
Kansas City College of Medicine and Surgery		(1922)	67.6

Book Notices

A MANUAL OF CLINICAL LABORATORY METHODS. By Clyde Lottridge Cummer, Ph.B., M.D., Associate Professor of Clinical Pathology, School of Medicine, Western Reserve University. Cloth. Price, $5.50. Pp. 484, with 144 illustrations. Philadelphia: Lea & Febiger, 1922.

In offering this manual for the use of students and practitioners, the author states that the object is to present clinical laboratory methods in concise and accessible form. While devoted largely to a description of methods, the underlying principles, the indications for performing tests and the significance of the results are outlined. Accordingly, the plan adopted in most chapters has been to present (1) an outline of routine examinations; (2) a description of the simpler qualitative methods that are frequently employed; (3) a description of quantitative methods or those of intricate technic, and (4) a discussion of findings in various morbid conditions. When several methods are given, usually the preferred one is indicated. The book deals with the examination of the blood, the urine, the gastric and duodenal contents, the feces, the sputum and the body fluids and exudates, and outlines the various bacteriologic methods; an appendix describes the preparation of normal solutions and various stains, the equipment for laboratories, and the preparation of autogenous vaccines; it gives various tables, and includes a fairly complete bibliography of the larger works on clinical diagnosis, as well as of many of the more recent monographs dealing with special phases of the work. The subject-matter of the book has been well selected; the discussions are clear, concise and easily followed; the methods given for the various tests are the well established and accepted ones, and the author's recommendations as to the best test for any specific purpose are well considered. The many illustrations are adequate and satisfactory. While not as extensive and complete in scope as some of the other works on this subject, this book covers the field in a satisfactory manner, and should find wide use by practitioners and students as well as by teachers who wish to have a clear-cut and concise presentation of the subject for the routine work of their laboratories.

CLINICAL LABORATORY METHODS. By Russell Landram Haden, M.A., M.D., Associate Professor of Medicine, University of Kansas School of Medicine. Cloth. Price, $3.75. Pp. 294, with 74 illustrations. St. Louis: C. V. Mosby Company, 1923.

This book describes "a series of procedures which have been thoroughly tried out and found to give accurate results." The interpretation of results is not attempted. It is most complete and most useful on the chemical side. The chapter on serologic technic includes the Wassermann test, the agglutination test of typhoid bacilli, the typing of pneumococci, blood tests for transfusion, and that is all. Nothing whatever is said of meningococci, of true complement fixation, of cutaneous reactions, of the Shick test; the Jansky isoagglutinative grouping is not mentioned; the Widal reaction is defined erroneously as "a procedure by which the agglutinating power of a serum against any organism may be tested." The chapter on histologic technic is very brief, but includes more than a page on the staining of mitochondria, and the question arises, How often is the clinical laboratory called on to examine for mitochondria?

DIE FRIEDMANN-METHODE. Kritische beleuchtet unter Berücksichtigung der gesamten Friedmann-Literatur. Referat erstattet im Auftrag des staatlichen Ausschusses zur Prüfung des Friedmannschen Heil- und Schutzmittels gegen Tuberkulose. Von Sanitätsrat Dr. Victor Bock, Facharzt für Lungenkrankheiten in Berlin. Mit einem Vorwort von Geh. Rat Prof. Dr. F. Jessen-Davos. Paper. Pp. 157. Leipsic: S. Hirzel, 1922.

Those who witnessed the Friedmann fiasco here in 1910 will be surprised to learn that "through the Friedmann method the antituberculosis problem in its fundamentals has been solved," provided cases are submitted to its beneficent action early enough. Bock would frankly subject all early cases to the treatment, and would not be averse to vaccinating entire populations by way of prophylaxis. In accord with Jessen of Davos, who contributes a foreword to the book, he considers it the most active immunizing material at our command today. Its cheapness, which Bock stresses as one of its great advantages, will be vigorously contested, to be sure, by various disappointed sufferers on this side of the Atlantic; nor will there be universal agreement with the statement that "almost all authors who have made extended trial of the material recognize its brilliant therapeutic action, and only occasionally is its inactivity recorded." A good many dissenting votes have been cast, in Germany as well as here. Granting that the increasing literature on the Friedmann treatment warrants its being taken seriously, the fact remains that proof has not yet been forthcoming that injection of a bacillus, having in common with the tubercle bacillus little more than a tinctorial property and a qualitatively somewhat similar antigenic value in complement fixation tests, stimulates resistance to the invasion of the tubercle bacillus. The bulk of scientific, experimental evidence indicates that for immunity real infection with the bacillus is necessary. This the turtle bacillus does not achieve. The fundamental failure in statistical evidence, such as is here presented, is the lack of realization that 90 per cent. of all human tubercle infection becomes quiescent, or nearly so, without treatment. Patients who do well on the Friedmann treatment will improve in the same proportion without it, if proper hygienic measures are employed. At least Bock cites no control observations to prove the opposite. Many typographic errors occur in the text.

A HANDBOOK OF AURAL SURGERY FOR STUDENTS AND PRACTITIONERS. By William Wilson, M.D., B.Sc., Surgeon to St. John's Hospital for the Ear, Manchester. Cloth. Price, 15 shillings. Pp. 336, with 100 illustrations. Manchester: Sherratt & Hughes, 1922.

The surgical anatomy of the ear is treated with considerable detail, and is accompanied by many excellent sketches, diagrammatic and otherwise, illustrating the important facts. Next is a discussion of the physiology of the ear with a fairly complete discussion of the functional tests. More is told in this regard than is usually found in the large textbooks on otology. Various diseases, beginning with those of the skin of the external auditory meatus, and continuing with those of the various inflammatory affections of the external ear and then those of the middle and internal ear, are taken up. Considerable space and discussion are given to cholesteatoma and to the intracranial complications of inflammatory ear conditions. Malingering, deaf mutism, and toxic effects of drugs on the ear, together with artificial aids to hearing, are discussed in the last chapter. As an appendix, the author cites the essentials of a number of cases illustrating unusual instances of aural suppuration. These are interesting and informative. Of considerable assistance in finding the essential facts is the presence at the sides of each page of notes in bold type emphasizing the important points made in the respective paragraphs. Altogether, one may say that this book, though small, is a veritable compendium of information to those who have not the time or the occasion to consult the large works on otology.

THE ORIGIN AND EVOLUTION OF THE HUMAN DENTITION. By William K. Gregory, Ph.D., Associate Professor of Vertebrate Palæontology, Columbia University. Cloth. Price, $6.50. Pp. 548, with 353 illustrations. Baltimore: Williams & Wilkins Company, 1922.

The purpose of this book is to give a brief and concise review of the origin and evolution of the human dentition from the point of view of paleontology. Dr. Gregory follows the development of the teeth from their far-off beginning in the fishes, through their amphibian and reptilian descendants to the mammals. He shows, as Osborn has, that the supremacy of the mammals and their rapid domination in evolution was due to the fact that they possessed a tooth, derived from their reptilian ancestor, "that was capable of adaptive evolution." Dr. Gregory shows in a most interesting way the relation of the development of the denture to our knowledge of the evolution of the anthropoid apes and the ancestor of man. The arrangement of the material and the excellence and number of the illustrations greatly facilitate the study, to one not already well acquainted in the field. The work will be a classic, for it deals broadly and fundamentally with the subject, and is of the most scholarly and scientific character. The book has not only important practical value to every student of dentistry and orthodontia, but is of the

keenest interest to every student of evolution. Dr. Gregory has generously arranged that the proceeds from the sale of the book shall go to the endowment fund of the *Journal of Dental Research.*

THE BACTERIOPHAGE: ITS RÔLE IN IMMUNITY. By F. d'Herelle, Pasteur Institute. Authorized Translation by George H. Smith, Ph.D., Assistant Professor of Bacteriology and Pathology, Yale University School of Medicine. Cloth. Price, $4. Pp. 287, with 14 illustrations. Baltimore: Williams & Wilkins Company, 1922.

One of the most interesting discoveries in bacteriology during recent years is the "bacteriophage phenomenon," or the bacteria-dissolving power possessed by Berkefeld filtrates from the stools of dysentery and typhoid convalescents and from other sources. Although antedated by Twort's work, d'Herelle's publications first drew general attention to the phenomenon, and the zeal with which the latter worker has pursued the subject has made it peculiarly his own. His book on the bacteriophage, which appeared in October, 1921, has now been translated into English, and will undoubtedly stimulate American bacteriologists to further work in this field. The author maintains his view, enunciated in his first publication in 1917, that the lytic element obtained by him from dysentery stools is an ultramicroscopic living organism parasitic on bacteria. Since this view has not been generally accepted, the prevailing opinion regarding the bacteriophage as a bacteriolytic enzyme, it is of value to have in a readily accessible form the imposing volume of careful and ingenious experimentation on which d'Herelle bases his belief. The translation is clear and readable. "Diastase" is used as synonymous with "enzyme," and there are a few other Gallicisms; but, on the whole, the work of the translator is exceptionally well done. The book is well printed.

SYPHILIS OF THE INNOCENT. A Study of the Social Effects of Syphilis on the Family and the Community, with 152 Illustrative Cases. By Harry C. Solomon, B.S., M.D., Chief of Therapeutic Research, Boston Psychopathic Hospital, and Maida Herman Solomon, A.B., B.S., Research Social Worker, Boston Psychopathic Hospital. Cloth. Pp. 239. Washington: United States Interdepartmental Social Hygiene Board, 1922.

The term "innocent," as here used, applies to infections of a mate or offspring and to accidental extragenital inoculations. The work is based on the investigation of 555 families at the Boston Psychopathic Hospital, supplemented with an excellent selection of facts and figures from the literature. It is evidently designed for the use of persons interested in public welfare, and is written in language that will be intelligible to the public at large. The material is analyzed in a strikingly fair and impartial manner, with a welcome absence of exaggeration and sensationalism. This calm array of the facts in coldly scientific tabulations, with the brief exposition of illustrative cases, is far more impressive and educational than a more dramatic presentation. The issues are nowhere forced, and the authors cannot be accused of either undue pessimism or unfounded optimism. The deadly menace to innocent bystanders stands out in glaring relief, and the book should do much to further the cause of prevention and adequate treatment for which it was written. For the physician and student, it is full of useful suggestions and statistics of eminently practical kind. The material is well arranged, with copious and well chosen heads, and there is a good index.

ECTODERMOSES NEUROTROPES POLIOMYÉLITE ENCÉPHALITE HERPÈS. Étude Clinique, Epidémiologique, Histo-Pathologique et Expérimentale. Par C. Levaditi. Préface de E. Roux. Paper. Price, 24 francs. Pp. 269, with illustrations. Paris: Masson et Cie, 1922.

This is a monograph by one of the best known workers of the Pasteur Institute, whose name is familiar to laboratory workers on account of his discovery of a staining method for *Spirochaeta pallida.* The book sets forth clearly the epidemiologic, immunologic, bacteriologic, histologic and clinical differences and similarities between a group of diseases caused by a filtrable virus; namely, poliomyelitis, epidemic encephalitis, rabies and herpes. The author relates the experiments and sets forth the arguments on which are based his theory that ordinary herpes febrile (not herpes zoster) and encephalitis are caused by the same virus, the degree of virulence of which determines whether the victim is to suffer from the minor or the major ailment.

Medical Economics and Miscellany

IDAHO OSTEOPATHS MAY NOT PRACTICE SURGERY

The supreme court of Idaho, in the *State of Idaho* v. *Sawyer,* March 31, affirms a judgment holding the defendant, a licensed osteopath, guilty of practicing medicine and surgery, in that he made an incision into the abdomen of a human being and removed the appendix.

The New Standard Dictionary, said the court, defines osteopathy as follows:

> A system of treating disease without drugs, propounded by Dr. A. T. Still, 1874. It is based on the belief that disease is caused by some part of the human mechanism being out of proper adjustment, as in the case of misplaced bone, cartilage, or ligament, adhesions or contractions of muscle, etc., resulting in unnatural pressure on or obstruction to nerve, blood or lymph. Osteopathy . . . seeks to adjust correctly the misplaced parts by manipulation . . .

And Adjudged Words and Phrases defines osteopathy as:

> A method of treating diseases of the human body without the use of drugs, by means of manipulations applied to various nerve centers—chiefly those along the spine—with a view to inducing free circulation of the blood and lymph, and an equal distribution of the nerve forces. Special attention is given to the readjustment of any bones, muscles and ligaments not in the normal position.

The court concludes, therefore, that osteopathy is a system of treating diseases of the human body without drugs and by means of manipulation, and that "manipulation" certainly does not cover and include the practice of surgery in any form. The supreme court sustained a ruling of the trial court refusing to receive evidence on behalf of the osteopathic defendant to show that the standard and accredited colleges of osteopathy include medicine and surgery as part of their curriculums, that the science or practice of osteopathy contemplates and comprehends the practice of medicine and surgery, and that the colleges of osteopathy use the same textbooks on the practice of medicine and surgery that are used in the best recognized medical schools, and devote as much time to the subject as is consumed in the best "allopathic" colleges. The purpose of the proposed testimony, said the supreme court, was to show that graduates of recognized and accredited colleges of osteopathy now possess the requisite knowledge and skill to engage in the practice of medicine and surgery, but the only question before the court was whether the defendant possessed the statutory qualifications, and the evidence was therefore irrelevant.

CHIROPRACTOR LIABLE FOR CARE, SKILL AND KNOWLEDGE IN DIAGNOSIS

Chiropractic quibbling may not avail a chiropractor in Wisconsin, who through negligence, ignorance or unskilfulness fails to diagnose the disease from which his patient is suffering, according to a decision of the supreme court of Wisconsin, April 3, in the case of *Kuschler* v. *Volgmann;* and in diagnosing a case, a chiropractor must exercise the care and skill that is usually exercised by a recognized school of the medical profession. The fact that chiropractors abstain from the use of words like "diagnosis," "treatment" or "disease," said the court, is immaterial. What they hold themselves out to do and what they do is to treat disease, and the substitution of words like "analysis," "palpation" and "adjustment" does not change the nature of their act.

The plaintiff, suffering from nausea, nervousness and headache following a head injury, applied to the defendant, a chiropractor, in September, 1918, for relief and cure. The chiropractor, believing that the nervousness and headache were due to a derangement of the stomach, treated him accordingly. Treatment proved unavailing, and the chiropractor advised the plaintiff, in May, 1919, to go West, in the hope of relief. The plaintiff did so, but the headaches and dizziness, from which he continually suffered, became more severe, and finally he became at times blind. Sept. 10, 1919, the plaintiff presented himself for treatment at a hos-

pital in Chicago, and there his malady was immediately diagnosed as a brain tumor. An operation was done simply to relieve the intracranial pressure, for because of the long time the tumor had been allowed to grow, it was impossible to remove it.

The chiropractic defendant was charged with responsibility because of alleged negligence and want of understanding and skill. He demurred to the declaration, on the ground that one who treats the sick and injured is entitled to be judged according to the principles and methods employed by the school or sect to which he belongs, and he claimed that he had treated the plaintiff according to the methods used by chiropractors. The demurrer was sustained in the lower court. On appeal, the supreme court of Wisconsin said that had the complaint been grounded on neglect or unskilfulness in treatment only, the action of the trial court would have been correct. The complaint alleged, however, neglect or unskilfulness in diagnosis. While the duty of diagnosis is ordinarily assumed and performed by licensed physicians, it may be assumed by others, and the defendant having assumed to perform that duty was bound to exercise the care and skill in so doing that is usually exercised by a recognized school of the medical profession. The supreme court, therefore, overruled the demurrer and remanded the case to the trial court for further proceedings.

THE LIGHTING OF POST OFFICES

At the request of the Postmaster General, a survey on the lighting of post offices was made in the fall, winter and spring of 1921-1922 by the U. S. Public Health Service, to determine whether the prevailing illumination in post offices is sufficient for efficient performance of the work and the welfare of the employees, and what the intensity and type of illumination for post office work in general should be. An old and a comparatively new post office were selected for intensive study. Brief surveys were made also of a few other post offices; 4,786 persons were employed in the offices where the principal survey was made and where the working conditions were believed to be representative of post offices in generally below the state codes of lighting requirements, and eye specialist, who was assisted by a physicist, illuminating engineers, and other scientific assistants.

The illumination in the post offices studied was found to be low in intensity and unsatisfactory in quality. Glare was prominent, shadows numerous, and lights improperly spaced and improperly located. The actual mean illumination was generally below the state codes of lighting requirements, and generally lower than the mean illumination furnished employees doing similar work in private industries. It was concluded that the installation of proper illumination would result in a large pecuniary saving, and would conserve the eyesight of employees.

Among other things recommended, there should be installed, in the general workrooms and offices, systems of totally enclosing units of the diffusing or light-directing type, having a general intensity when first installed of 10 foot-candles everywhere on a horizontal working plane 45 inches above the floor. All local lighting should be done away with. The eyes of post office employees should be examined once a year, and any defects should be recorded. In work requiring fine eye discrimination, such as that in the directory division, only persons with normal eyesight, at least in one eye, with or without corrective lenses, should be employed.

In 1921, the total cost of illumination in a post office whose intensity was 3.6 foot-candles was $32,921. To have increased the light in this post office to 8 foot-candles would have cost, for the year, $72,490, an increase of about $39,500. But it was found that the better illumination would have increased the speed at which employees did their work at least 4.4 per cent. The pay of employees for that part of 1921 during which artificial light was used amounted to about $3,373,000, on which a saving of 4.4 per cent. would have been $148,400. Deducting from this saving of $148,400 the increased cost of $39,500 gives a net saving of $109,000 for this post office alone, or more than twice the increased cost of illumination.

Medicolegal

Dying Declarations in Prosecution for Attempting to Cause Miscarriage

(State v. Bricker (N. J.), 118 Atl. R. 747)

The Supreme Court of New Jersey, in affirming a judgment of conviction of the defendant of having attempted to cause the miscarriage of a pregnant woman, in consequence whereof she died, holds that when an indictment charges a defendant with such statutory misdemeanor, the dying declarations of the woman are legal evidence on trial of the case. The court says that in this case two statements were offered in evidence as dying declarations. Both were made by the woman while in bed in a hospital, suffering from septic peritonitis. Both were made when all about her thought that she was dying, although she was conscious and mentally alert. The first declaration was made thirty-four hours before death, and immediately before making it, she said that she was conscious of approaching death, and knew that she had "no chance of recovery." The second declaration was in writing, gathering up in narrative form the oral statements. It was read to her, and assented to and signed by her with a cross, three hours before death. In it, she said, "I am approaching death within a few hours and without any hope of recovery whatever." It is held that the trial judge was justified in finding that both declarations were made under a sense of impending death, and in admitting them in evidence. It is the state of mind and the sense of impending death at the time of making the declaration, and not the fact of quick succession of death after the declaration, that makes a dying declaration admissible in evidence.

Judgment Against One of Two Physicians Not Justified

(Drew v. Cregar et al (N. J.), 118 Atl. R. 844)

The Court of Errors and Appeals of New Jersey says that, in this action brought by the plaintiff as an administrator, the defendants were physicians called by him to attend his wife in childbirth. At the time of her confinement, Dr. Cregar was ill, and the other defendant, Dr. Pratt, was the physician actually in attendance. In the course of treatment, Dr. Pratt had to deal with an adherent placenta, which the jury may have found was due to the fact that the husband, shortly before the confinement of his wife, was affected with gonorrhea. The jury found in favor of Dr. Pratt, and against Dr. Cregar; and when the trial judge asked whether the finding was such that the negligence on which the verdict was based was that for which Dr. Cregar himself was responsible, in which Dr. Pratt did not participate, the foreman answered, "Yes." The finding therefore was that Dr. Cregar was not liable on the theory of responsibility for Dr. Pratt's negligence. The question, then, was whether the case was such that Dr. Cregar could be held for negligence, since the jury had negatived the liability of Dr. Pratt, so that Dr. Cregar could not be held on the theory of respondeat superior (let the superior answer).

The judge had charged that, if the jury was satisfied that it was Dr. Cregar's duty to advise the physician to whom he had turned over the case of the condition that existed: that the husband had gonorrhea and that there was a possibility of infection from it; and that if the jury was satisfied that this condition had a direct bearing on the woman's death, the jury might determine whether that was negligence on the part of Dr. Cregar as a physician, and whether he had exercised that care which a physician should in these circumstances. That warranted the jury in finding a verdict in favor of Dr. Pratt, and against Dr. Cregar alone. Without regard to whether the judge was otherwise warranted in charging on that point as he did, the court is of the opinion that under the pleadings he was not. The complaint was against both physicians, and averred that Dr. Cregar delegated Dr. Pratt as his agent to attend the plaintiff's wife and to deliver her of the child; that it was the duty of Dr. Cregar, by his agent and servant, Dr. Pratt, to carefully,

skilfully and in a proper manner treat and attend the plaintiff's wife and deliver the child; that the defendants did not remove the placenta within a proper time and in a skilful and proper manner, and that the body of the plaintiff's wife became infected thereby, her death following. Clearly, the complaint did not aver negligence on the part of Dr. Cregar alone and apart from Dr. Pratt; nor did it aver the negligence on which the trial court allowed the jury to find against Dr. Cregar for failure to perform his duty in advising Dr. Pratt of the condition that existed and the fact that the husband had gonorrhea. For very obvious reasons, the husband was not likely to desire the case to be tried on the theory that he was responsible for his wife's death; but Dr. Cregar was entitled to be apprised of the ground on which he was to be held, and entitled to have the issue tried limited to the issue made by the pleadings—the issue he was alone bound to defend. The jury, as the case was tried, held him liable on a ground outside the scope of the case.

Because, under the circumstances, it was erroneous to charge that the plaintiff might recover of Dr. Cregar for his own negligence, and acquit Dr. Pratt, the judgment rendered against Dr. Cregar is reversed.

Waiver of Privilege in Personal Injury Case

(Kraus v. Sobel (N. Y.), 196 N. Y. Supp. 845)

The Supreme Court of New York, Appellate Division, First Department, says that, in this action to recover damages for personal injuries, the plaintiff furnished a detailed description of his injuries in a bill of particulars; testified fully concerning his injuries and, so far as he was able, the treatment he had received; produced a roentgenogram taken at the hospital, and also called as an expert a physician who had made a physical examination of him and who testified very fully as to the condition in which he found the plaintiff. Thus, the plaintiff himself gave to the public the full details of his case. Subsequently, the defendant called the physician attached to the hospital to which the plaintiff was taken; but when the physician was interrogated concerning the case, the trial court sustained an objection on the ground that the physician could not disclose any information which he acquired in a professional capacity. Such a ruling was in line with earlier decisions; but the Court of Appeals in *Capron* v. *Douglass,* 193 N. Y. 11, 17, 85 N. E. 827, altered the rule of the earlier cases, and held that, when the plaintiff testifies to his injuries and their results, and it appears that he has been treated by a physician in regard to them, the physician may then be called by the defendant and examined as to any information acquired by him in the course of such consultation or treatment. When, therefore, "the patient tenders to the jury the issue as to his physical condition, it must in fairness and justice be held that he has himself waived the obligation of secrecy which would otherwise exist" (*Herthier* v. *Johns,* 233 N. Y. 370, 135 N. E. 603). It was therefore error to exclude the physician's testimony, and the judgment recovered by the plaintiff is reversed and a new trial ordered.

Cancer in Throat Attributed to Injury to Hand

(Vanderslice v. Young et al. (N. Y.), 197 N. Y. Supp. 9)

The Supreme Court of New York, Appellate Division, Third Department, was divided, three members to two, in deciding this appeal from an award made under the workmen's compensation law to Mrs. Vanderslice for the death of her husband. According to the dissenting opinion, the decedent had been employed opening oysters, and in the use of a knife therefor had developed a callous on the palm of one hand, on which there appeared a blister. The blister was about a week in developing, and broke, November 9, when the hand started to swell. He was attended by a physician who found an infection so deep that he went halfway through the hand in establishing drainage. The physician attended the man four times, as a result of which the drainage was lessened so much that he felt the patient could take care of himself. The man went back to work, December 11, but his hand remained very sore and weak. In March, he told a second physician that a red streak ran up his arm from his wrist to his armpit. His widow swore that she saw that streak. In May, this second physician found a small lump at the side of the man's neck, and the glands began to swell. July 26, the physician operated on the man's neck and evacuated 4 ounces of pus. An examination of the throat revealed a cancerous condition of the glands, a small cancer at the base of the tongue and another on the tonsil. Thereafter, the condition of the patient became worse; he had a succession of hemorrhages, and died, August 29. That physician and another one who treated the patient in his last illness connected the injury to the hand with the man's death; and the industrial commission found as a fact that, as the result of the irritation and inflammation caused by the infection produced by the injury, a cancer developed in the glands and spread to the tongue and tonsil; that death was the result of a hemorrhage caused by the cancer, but the proximate cause of death was the injury received, November 10. The decision of the court is stated in these few words: "Award affirmed on the ground that the proof made an issue of fact as to the cause of death, and the findings of the state industrial board on that issue in favor of claimant are conclusive; with costs in favor of the state industrial board."

Society Proceedings

COMING MEETINGS

American Association for Thoracic Surgery, Chicago, May 28-29. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.
American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
American Gastro-Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
Hawaii, Medical Society of, Honolulu, April 28-30. Dr. W. K. Chang, Honolulu, Secretary.
Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore, Secretary.
Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

February, 1923, **5**, No. 2

*Tumors of Breast. J. F. Erdmann, New York.—p. 116.
*Cervix a Focal Point of Infection. G. K. Dickinson, Jersey City, N. J. —p. 124.
Radium in Treatment of Uterine Hemorrhage of Nonmalignant Type. E. A. Weiss, Pittsburgh.—p. 128.
Present Status of Surgery in Treatment of Fibromyoma of Uterus. S. E. Tracy, Philadelphia.—p. 135.
Pathologic Reaction of Tissue Extract (Cytost) Liberated in Pregnancy. F. B. Turck, New York.—p. 139.
*Does Menstruation Influence Blood Concentration? M. Tyler and F. P. Underhill, New Haven, Conn.—p. 155.
*Spontaneous Rupture of Body of Uterus During Pregnancy. H. F. Kane, Washington, D. C.—p. 158.
Cause of Tubal Pregnancy and Tubal Twinning. L. B. Arey, Chicago. —p. 163.
Case of Labor Complicated by Ovarian Cyst and Smallpox; Operation; Spontaneous Delivery: Recovery. R. A. Bartholomew, Atlanta, Ga. —p. 168.
Service of Obstetric Clinic to Community. A. H. Morse, New Haven, Conn.—p. 170.
Management of Placenta in Abdominal Pregnancy; Case Report. W. A. Jewett, Brooklyn.—p. 176.
An Anal Shield. J. P. Greenhill, Chicago.—p. 182.
*Benzin and Iodin vs. Soap and Water Scrub in Preparation of Parturient Women for Delivery. F. C. Irving, Boston.—p. 184.

Tumors of Breast.—Erdmann emphasizes his belief that a growth in the remaining breast is as likely to be of primary origin as that in the breast first removed. At the present day it is not possible to state what is the influence of the roentgen ray and of radium, either as a preoperative or postoperative aid, but in view of many apparent reductions in size, etc., previous to operation in cases considered nonoperable, the use of the roentgen ray and of radium should be encouraged. Even in view of some of the glowing reports regarding nonrecurrence, postoperative treatment should be substituted for preoperative treatment, until some definite proof of its help or inefficiency has been established; too few years have passed for positive results to be shown. Further, in the presence of late metastases, the powerful currents of the present day should be given a thorough test to prove or disprove the efficiency of this method of treatment. The most thorough and painstaking wide removal, with remote glandular and fascial dissections, will tend more and more to increase the percentage of cures and extension of life. The radical operation is attended with so low a mortality as to promote a greater desire on the part of the consulting physician to demand operation.

Cervix a Focal Point of Infection.—Dickinson points out that those physicians who have made an intensive study of their patients for focal infection, who have removed teeth, tonsils, appendix, gallbladder and colon, have occasionally given relief by attention to the cervix. He cites an instance of what was a very evident case of such focal infection. Not realizing that there was any relation between the cervix and the patient's miserable condition, no particular study was made of the endometrium. The cervix was not hyperplastic; there was no laceration; the mucosa was not exuberant, nor of abnormal appearance; in short, there was no endocervicitis as ordinarily recognized. The stirring up of a local condition by curettage led to an active absorption and exacerbation of symptoms. Eventually this curettage led to complete recovery.

Does Menstruation Influence Blood Concentration?—Tyler and Underhill assert that present methods of hemoglobin estimation fail to show a constant variation in the hemoglobin which is characteristic of any one phase of the menstrual cycle. During some periods the hemoglobin rises slightly while during others it falls. The change cannot be related to any symptom, such as headache, with which a rise in hemoglobin has been associated by some authors. The fact that there is no change in hemoglobin content and therefor in blood concentration during menstruation is in accord with present knowledge of the physiology of this function.

Spontaneous Rupture of Body of Uterus During Pregnancy.—In the case reported by Kane the probable explanation of the rupture was that a mild infection followed a curettage done two years previously and resulted in chronic metritis. When six months pregnant, the patient took a motor trip of several hours. Afterward she experienced a sudden sharp pain in the right lower quadrant of the abdomen. She felt no fetal movements after this occurrence. She went into a state of shock. An intra-abdominal tumor reached to the umbilicus but could not be well mapped out on account of rigidity and tenderness. No fetal heart sounds or fetal movements could be found. On account of the site of the initial pain and maximum tenderness, the vomiting and the history of attacks of appendicitis, a diagnosis was made of appendiceal abscess with a dead fetus. A laparotomy was performed two and one-half hours after the patient was first seen. The abdominal cavity was full of blood and clots. The uterus was torn from the fundus to just above the internal os in the midline of the posterior wall. About one half of the placenta and 3 inches of cord extruded through the rent and the head of the fetus was just within the opening.

Benzin and Iodin Versus Soap and Water.—Fifty patients were prepared by the benzin and iodin method of Kankford and another series of fifty, alternating with them, were treated by the usual soap and water, bichlorid and alcohol technic described by Irving. Cultures were taken in all cases both before and after delivery and examined bacteriologically. Twenty-one of the patients prepared by the benzin and iodin method showed no growth before or after delivery as compared with twenty-two of those treated with the soap and water, bichlorid and alcohol technic. Consequently, both methods were equally ineffective in procuring an absolutely sterile field.

American Review of Tuberculosis, Baltimore

February, 1923, **6**, No. 12

Relapse in Pulmonary Tuberculosis. J. J. Waring, Denver.—p. 1057.
*Lymphocyte Index in Tuberculosis. G. B. Webb, G. B. Gilbert and J. A. Newman, Colorado Springs, Colo.—p. 1073.
Occurrence of Hemoptysis, Pleurisy, Râles, Tubercle Bacilli and Roentgen-Ray Findings in 1,000 Consecutive Cases Admitted to Trudeau Sanatorium. F. H. Heise and L. Brown, Trudeau, N. Y.—p. 1078.
*Intracutaneous Reaction of Tuberculous Persons to Glycerin Bouillon and Tuberculin. F. H. Heise and L. Brown, Trudeau.—p. 1084.
*Attempt to Differentiate Human and Bovine Tubercle Bacilli by Means of Anaphylactic Reaction. H. J. Corper and S. Simon, Denver.—p. 1087.
Experimental Study on Behavior of Extravasated Blood in Lungs. H. J. Corper, O. S. Kretschmer and M. B. Lurie, Denver.—p. 1100.
*Lack of Acid-Fastness of Tubercle Bacilli in Tissue Preserved in Liquor Formaldehyd. A. C. Starry and M. Goldberg, Denver.—p. 1114.
Heliotherapy for Tuberculosis at Hohenlychen (Berlin). W. Winterberg, San Francisco.—p. 1119.

Lymphocyte Index in Tuberculosis.—The findings made by Webb, Gilbert and Newman, in an examination of 2,000 successive counts on about 400 patients, seem to indicate that the lymphocytes, and not the endothelial leukocytes, are the important factors in measuring resistance to tuberculosis in human beings.

Intracutaneous Reaction of Tuberculous Persons to Glycerin Bouillon and Tuberculin.—Intracutaneous tests were made by Heise and Brown with tuberculin and glycerin bouillon to determine to what extent, if any, the inflammatory reaction to tuberculin in the skin was due to the glycerin bouillon content of the tuberculin. Two of twelve tuberculous guinea-pigs gave a positive reaction to 0.1 c.c. of 5 per cent. O. T. (old tuberculin). This shows that at times glycerin bouillon does give a positive skin reaction when given at the same time as tuberculin in some tuberculous guinea-pigs. In adult human beings approximately 5 per cent. of 443 persons reacted to glycerin bouillon. About one-fifth of these can be attributed to error. This leaves 4 per cent. who reacted to glycerin bouillon and tuberculin; weakening, to this extent, the value of the tuberculin skin test as a specific test. On the other hand, a hypersensitive patient may react to glycerin bouillon during a reaction produced by tuberculin.

Attempt to Differentiate Human and Bovine Tubercle Bacilli by Means of Anaphylactic Reaction.—The results

obtained by Corper and Simon indicate that the reaction of tuberculous guinea-pigs (infected by subcutaneous injection) to a second (intraperitoneal) injection of from 0.001 to 1.0 gm. living tubercle bacilli, given from twenty-two to twenty-nine days after the primary (infecting) injection, did not produce symptoms which were not obtained by similar intraperitoneal injection of tubercle bacilli in normal animals, or which were not obtained with large amounts (0.5 gm.) of living *Staphylococcus aureus* injected intraperitoneally into (non-sensitized) normal guinea-pigs. In no case was a typical acute anaphylactic reaction noted, such as is characteristic of the phenomenon when soluble proteins are used. In the larger doses (1.0 gm.), living tubercle bacilli given intraperitoneally were found to be profoundly toxic, producing an acute and early death of the animal. A correlation was noted between the toxicity of living tubercle bacilli injected intraperitoneally into tuberculous guinea-pigs at the time of injection. There was noted no difference in this respect between guinea-pigs infected with one strain and given the subsequent intraperitoneal injection with the same strain of bacilli, human or bovine, or any other one of the five strains tested. The virulence of the strain used for the second injection also played no part in this. Dead human (avirulent and virulent) and bovine (virulent) tubercle bacilli, injected into guinea-pigs subcutaneously, in amounts of from 1 to 100 mg., do not act as antigens for the anaphylactic reaction to a second injection of living or dead human (Gluckson) tubercle bacilli, injected intraperitoneally in amounts of from 0.1 to 1 gm. twenty-five days later, even though distinct local tubercles produced by the dead bacilli exist at the time of the second injection. Likewise, a second intraperitoneal injection of full strength old tuberculin, in amounts of from 2 to 5 c.c., produces no appreciable general anaphylactic reaction in guinea-pigs given a primary subcutaneous injection of dead human or bovine tubercle bacilli twenty-five days previously. However, guinea-pigs given an intraperitoneal injection of old tuberculin, in amounts of from 1 to 5 c.c. twenty-five days prior to a second intraperitoneal injection of from 2 to 5 c.c. of tuberculin, died within one to two days after the second injection, although definite acute anaphylactic symptoms were not seen, the intraperitoneal injection of this amount of tuberculin acting in itself as a distinct peritoneal irritant.

Lack of Acid-Fastness of Tubercle Bacilli in Tissues Preserved in Liquor Formaldehydi.—Starry and Goldberg found that tuberculous tissues preserved in solution of formaldehyd are not suitable for staining the tubercle bacilli contained therein by means of carbolfuchsin, unless the formaldehyd has been completely removed, preferably by chemical means, and the penetration of reagents aided by complete removal of the paraffin from the section before staining. Ammonia water has proved satisfactory for removing the formaldehyd from the fixed tissues. A method, based on these studies, is given in detail for staining tubercle bacilli in formaldehyd-fixed tissues which seems to reveal the bacilli more diffusely and more intensely stained than in tissues fixed in alcohol or mercuric chlorid. Lysis of human or bovine tubercle bacilli in vitro, free or in tissues, discernible by staining methods, still remains to be satisfactorily demonstrated.

Boston Medical and Surgical Journal

March 22, 1923, **188**, No. 12

Symptoms and Treatment of Central Vascular Syphilis. W. P. Anderton, New York.—p. 377.
*Myeloma of Vertebrae. R. B. Osgood, Boston.—p. 380.
*Myositis Ossificans Traumatica. D. Carleton, Springfield, Mass.—p. 387.
Intestinal Obstruction by Gallstones. C. R. Abbott, Clinton, Mass., and E. L. Hunt, Worcester, Mass.—p. 390.
*Chronic Arterio-Mesenteric Obstruction of Duodenum. H. C. Tinkham, Burlington, Vt.—p. 397.

Myeloma of Vertebrae.—Osgood points out that multiple myeloma may so closely simulate tuberculous caries of the spine that even surgeons seeing many cases of the latter, more common, disease may fail to recognize the more malignant condition. Neither the history nor physical examination in the early stages is characteristic of the process. The absence of Bence-Jones protein in the urine does not exclude it. In doubtful cases roentgenograms of the skull, the pelvis, and the long bones may reveal the nature of the disease, even when those of the vertebrae are inconclusive. No treatment has thus far surely influenced the course of this fatal multiple tumor growth. Radium and high voltage roentgen rays are, therefore, worthy of trial. The symptoms arising from myeloma of the spine are lessened and may be held in abeyance temporarily by recumbency and immobilization. If the disease is not too extensive at the seat of spontaneous fractures, the fragments may unite if completely fixed.

Myositis Ossificans Traumatica.—Carleton favors the belief that the chief etiologic factor in the production of the disease is a latent diathesis in the individual that is excited into action by violent traumatism.

Chronic Arteriomesenteric Obstruction.—Fourteen cases of this condition have come to Tinkham's notice during the past three years; eleven were recognized only when operating for other chronic diseases of the abdominal or pelvic viscera; two were suspected before operation, and one was demonstrated by the roentgen ray. This case complicated a cancer of the stomach, the stomach being held high up by adhesions. Posterior gastro-enterostomy was done in three cases, and duodenojejunostomy in two cases. The other patients, except one, have improved following operations for appendicitis, cholecystitis or disease of the female pelvic viscera, supplemented by medical treatment and special exercises. There has been no mortality following operations. Tinkham concludes that chronic arteriomesenteric obstruction of the duodenum is not a rare condition. It is more than probable that it is present in every case of enteroptosis. It is a frequent complication of chronic disease of the abdominal viscera. It may be an important factor in acute dilatation of the stomach. It probably is a factor in cases of chronic dilatation of the stomach where disease of the pylorus is absent. In analyzing symptoms of disease of the abdominal viscera which are referred to the epigastrium, chronic obstruction of the third portion of the duodenum should be considered. This is especially important if enteroptosis is present. Medical treatment to improve the general health, together with special exercises to improve the tone of the abdominal muscles, will improve this condition in the majority of cases. Operation is indicated only when the condition does not improve with medical treatment. Duodenojejunostomy seems to be the logical operation.

Journal of Biological Chemistry, Baltimore

February, 1923, **55**, No. 2

Conphaseolin. A New Globulin from Navy Bean, Phaseolus Vulgaris. H. C. Waterman, C. O. Johns and D. B. Jones, Washington, D. C.—p. 93.
Rate of Urea Excretion. V. The Effect of Changes in Blood Urea Concentration on Rate of Urea Excretion. T. Addis and D. R. Drury, San Francisco.—p. 105.
Id. VI. Effect of Very High Blood Urea Concentrations on Rate of Urea Excretion. D. R. Drury, San Francisco.—p. 113.
*Supplementary Protein Value of Peanut Flour. W. H. Eddy and R. S. Eckman, New York.—p. 119.
Accurate Method of Determining Small Amounts of Ethyl Ether in Air, Blood and Other Fluids, Together with a Determination of Coefficient of Distribution of Ether Between Air and Blood at Various Temperatures. H. W. Haggard, New Haven, Conn.—p. 131.
Protein Efficiency of Combinations of Cornmeal and Certain Other Feedingstuffs, Notably Rice Bran. L. A. Maynard, F. M. Fronda and T. C. Chen, Ithaca, N. Y.—p. 145.
Inorganic Phosphorus of Serum and Plasma of Ninety-One Normal Adults as Determined by Bell and Doisy Method. E. Tolstoi, Clifton Springs, New York.—p. 157.
Effect of Eck's Fistula on Pancreatic Diabetes in Dogs. B. M. Hendrix and J. E. Sweet, Philadelphia.—p. 161.
*Selective Action of Kidney as Regards the Excretion of Inorganic Salts. W. Denis, New Orleans.—p. 171.
*Inorganic Constituents of Blood Serum in Nephritis. W. Denis and S. Hobson, New Orleans.—p. 183.
Hydrolysis of Amides in Animal Body. Comparative Stability of Surface Active Homologs in Relation to Mechanism of Enzyme Action. C. H. Fiske, Boston.—p. 191.
Epiglucosamine. P. A. Levene and G. M. Meyer, New York.—p. 221.
*Hydrogen Ion Concentration of Blood in Carcinoma. I. From Colorimeter Determination of Blood Dialysate. W. H. Chambers, St. Louis.—p. 229.
*Id. II. From Carbon Dioxid-Bicarbonate Ratio. W. H. Chambers and R. E. Kleinschmidt, St. Louis.—p. 257.
Carbohydrate Metabolism. I. Some Comparisons of Blood Sugar Concentrations in Venous Blood and in Finger Blood. G. L. Foster, Berkeley, Calif.—p. 291.
*Id. II. Interpretation of Blood Sugar Phenomena Following Ingestion of Glucose. G. L. Foster, Berkeley, Calif.—p. 303.

*Immediate Effect of Heavy Exercise (Stair-Running) on Same Phases of Circulation and Respiration in Normal Individuals. I. Oxygen and Carbon Dioxid Content of Blood Drawn from Cubital Vein Before and After Exercise. C. Lundsgaard and E. Möller, Copenhagen, Denmark.—p. 315.

Supplementary Protein Value of Peanut Flour.—When the protein supplementing power of peanut flour is compared with that of muscle protein by feeding rations so constituted as to contain only about 10 per cent. of protein, from 6 to 7 per cent. of this protein being contributed by wheat flour and the rest by peanut flour or meat residue, respectively, and when these rations are further supplemented with 3 per cent. of butter fat, 4 per cent. salts, and brought to nearly equal caloric value per gram, Eddy and Eckman assert that the peanut flour proves slightly superior to the meat as a growth producer and markedly superior for promoting reproduction.

Selective Action of Kidney as Regards Excretion of Inorganic Salts.—Experiments made by Denis on dogs and rabbits to which magnesium sulphate, sodium sulphate, magnesium chlorid, sodium chlorid, and sodium phosphate were administered by the intestine and by intravenous injection, and the subsequent excretion of these salts followed by means of blood analysis, indicate a selective retention on the part of the kidney for the sulphate ion which in one case was found to accumulate in the serum to a value of 3,200 per cent. of its initial concentration.

Inorganic Constituents of Blood Serum in Nephritis.—A study made by Denis and Hobson of the inorganic constituents of the blood serum in twenty-two cases of nephritis and cardiorenal disease showed a marked increase over normal of the sodium and chlorin in only four cases; the inorganic phosphate fraction was increased in ten cases; while the inorganic sulphates were determined in only seventeen cases, eleven of which showed increased values. Magnesium and potassium remained more or less constant, while calcium was found to be decreased in five cases.

Hydrogen Ion Concentration of Blood in Carcinoma.—The hydrogen ion concentration of the dialysate from the venous blood of forty-five cases of carcinoma studied by Chambers, averaged p_H 7.45 at 20 C. This is distinctly more alkaline than that of the normal subjects which averaged p_H 7.31. The pathologic cases other than carcinoma gave slightly more alkaline results than the normals, averaging p_H 7.36 at 20 C. No association of anemia with this increase in alkalinity in the venous blood dialysate in cancer was established. In general, the degree of alkalinity corresponded to the size and extent of the tumor growth. Small tumors without metastases showed little or no increase above the normal zone.

Hydrogen Ion Concentration of Blood in Carcinoma from Carbon Dioxid-Bicarbonate Ratio.—The carbon dioxid content and the carbon dioxid tension were determined in the venous blood from normal individuals, from patients with carcinoma, and from miscellaneous pathologic cases other than carcinoma. The venous carbon dioxid tensions were read from the carbon dioxid absorption curves which were plotted at the venous oxygen tension, or from those plotted from fully oxygenated blood with a correction for venous oxygen unsaturation. The hydrogen ion concentration of the blood was calculated from the carbon dioxid bicarbonate ratio. The average reaction of twelve determinations on normal bloods was p_H 7.29, of eight determinations on diseases other than carcinoma it was p_H 7.33, and of twenty-three determinations on carcinoma patients it was p_H 7.34. It is concluded that these results furnish no evidence of an actual decrease in hydrogen ion concentration of the blood in carcinoma which can be related primarily to the cancer. The alkalosis of the dialysate in carcinoma cases compared to normal blood is explained by Donnan's theory as being due to an increase in nondiffusible anions in the plasma.

Blood Sugar After Ingestion of Glucose.—Curves of blood sugar concentration after the ingestion of glucose and of galactose are contrasted by Foster. After the ingestion of galactose the curve rises continuously for nearly three hours and reaches much higher levels than the glucose curve which, as is well known, rises sharply for only a short time (usually less than one-half hour) and then rapidly falls to normal or below. It is concluded that the chief factor in preventing excessive hyperglycemia after the ingestion of glucose is glycogen formation and that the mechanism concerned in glycogen synthesis is stimulated to greater activity by the hyperglycemia which ensues after the ingestion of glucose. Such a conclusion is essentially the same as the one previously expressed by McLean and de Wesselow. It appears to be further strengthened by experiments with repeated doses of glucose wherein it was found that a second dose of glucose taken soon after the hyperglycemia had subsided had little or no effect on the concentration of sugar in the blood. This fact Foster interprets as meaning that the first dose of glucose stimulates the glycogenic mechanism to such activity that the organism is then able to deal with any amount of glucose without becoming hyperglycemic. Evidence is adduced to support the theory that the frequently observed periods of hypoglycemia following the ingestion of glucose are due to an "overactivity" of the glycogen-forming mechanism.

Immediate Effect of Stair Running on Circulation and Respiration in Normal Persons.—The oxygen and carbon dioxid contents of blood from a cubital vein were determined by Lundsgaard and Möller in a series of normal persons at rest and within one minute after heavy exercise. The exercise consisted of running up and down a flight of stairs five times. The muscles of the arms were not used. In sixteen subjects the oxygen of the venous blood showed a decrease far outside the variations found during rest. In one subject, the figures for the oxygen content during rest and after exercise showed no difference. The carbon dioxid content showed only small variations. In some instances a decrease, in others a small increase was found. Different possible explanations of these observations are discussed briefly as an introduction to additional investigations.

Journal of Comparative Psychology, Baltimore

February, 1923, **3**, No. 1

Experiment Testing Ability of Cat to Make Delayed Response and to Maintain Given Response Toward a Varying Stimulus. E. A. Cowan, Wichita, Kan.—p. 1.
Weight Discrimination as Measure of Technical Skill in Piano Playing. O. Ortmann.—p. 11.
Audition in Reptiles. R. Kuroda, Niigata, Japan.—p. 27.
Effects of Cigar and Cigaret Smoking on Certain Psychologic and Physiologic Functions. R. L. Bates, Baltimore.—p. 37.
Reactions of Alligator Mississippiensis. A. M. Reese, Morgantown, W. Va.—p. 51.
Reactions of Animals to Changes in Physical Environment. I. Animal and Earthquake. H. von Hentig, Munich.—p. 61.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

February, 1923, **21**, No. 1

*Pharmacology of Cadmium and Zinc with Particular Reference to Emesis. E. W. Schwartze and C. L. Alsberg, Washington, D. C.—p. 1.
*Carbon Monoxid Content of Tobacco Smoke and Its Absorption on Inhalation. J. P. Baumberger, San Francisco.—p. 23.
*Nicotin Content of Tobacco Smoke. J. P. Baumberger, San Francisco.—p. 35.
Amount of Smoke Produced from Tobacco and Its Absorption in Smoking as Determined by Electrical Precipitation. J. P. Baumberger, San Francisco.—p. 47.
Chronic Intoxication by Small Quantities of Cadmium Chlorid in Diet. C. O. Johns, A. J. Finks and C. L. Alsberg, Washington, D. C.—p. 59.
Action of Furfural. H. McGuigan, Chicago.—p. 65.

Pharmacology of Cadmium and Zinc.—Schwartze and Alsberg state that in the case of animals that vomit, such as cats, the chief effect of the oral administration of cadmium and zinc salts is emesis, which is dependent on the concentration in which these substances are present in the gastric contents. This local effect varies with the character of the food, being more powerful when the metals are administered in diets of liquids than when administered in those of raw hashed, lean meat. The consumption of an average-sized meal of raw hashed meat containing from 350 to 400 parts per million of cadmium or 3,000 parts per million of zinc is almost always followed by emesis. Cadmium calculated as the metal is eight to nine times more effective as an emetic than zinc.

Carbon Monoxid Content of Tobacco Smoke and Its Absorption on Inhalation.—The method used by Baumberger was the oxidation of carbon monoxid to carbon dioxid by iodin pentoxid as described by Weisman, the liberated iodin being determined. His studies showed that the amount of carbon monoxid produced in smoking is increased by strong suction. Cigarets yield an average of 8.3 c.c. carbon monoxid per gram tobacco smoked, i. e., 0.97 per cent., carbon monoxid by weight. In inhaling tobacco smoke about 61 per cent. of the carbon monoxid is absorbed. Theoretically, a maximum saturation with carbon monoxid of 22 per cent. of the hemoglobin of a smoker may occur. This degree of saturation cannot be withstood over an hour without disagreeable symptoms. Baumberger thinks that it is extremely unlikely that the carbon monoxid of tobacco smoke is injurious to any but the most inveterate inhalers.

Nicotin Content of Tobacco Smoke.—The nicotin content of tobacco smoke was determined by Baumberger by Chapin's method, with the modifications of Rasmussen without pyridin interference. The average nicotin content of the smoke in per cent. weight of tobacco was found to be 0.573 per cent. for cigarets. Of the nicotin in the tobacco from 14 to 33 per cent. appears in the smoke puffed. The maximum amount of nicotin retained in the body is calculated as 36 mg. per hour in inhaling and 27.5 mg. per hour in puffing. This dose of nicotin Baumberger thinks would require a high tolerance on the part of the subject in order to escape disagreeable symptoms, and would account for the illness of the novice as a result of smoking. In most cases, however, a large per cent. of this nicotin is expectorated before being absorbed, therefore, the usual dose of nicotin may be very much less than the amount calculated above.

Journal of Radiology, Omaha

February, 1923, **4**, No. 2

Sinus Disease and Lung Infections. K. Dunham and J. H. Skavlem, Cincinnati.—p. 37.
Can Medical and Dental Professions Agree on Any Standardized Treatment of Focus of Infection? B. C. Darling, New York.—p. 39.
Radium in Sarcoma. W. H. B. Aikins, Toronto.—p. 44.
Bone Tumors: Sarcoma, Periosteal Group, Sclerosing Type, Osteogenic, Methods of Diagnosis and Treatment. J. C. Bloodgood, Baltimore. —p. 46.
Roentgen-Rays and Roentgen-Ray Apparatus: An Elementary Course. J. K. Robertson, Kingston, Canada.—p. 51.

Journal of Urology, Baltimore

February, 1923, **9**, No. 2

*Acquired Stricture of Male Ureter. R. H. Herbst and A. Thompson, Chicago.—p. 91.
*Conservative Renal Surgery Associated with Ureteral Stricture Work. G. L. Hunner, Baltimore.—p. 97.
*Accidental Bilateral Occlusion of Ureters. L. Herman, Philadelphia. —p. 151.
Two Cases of Kinks of Ureter. J. D. Barney, Boston.—p. 181.

Acquired Stricture of Male Ureter.—Herbst and Thompson emphasize that early relief of obstruction caused by stricture of the ureter is essential to preserve the function of the kidney. In the early inflammatory type in which the condition in the ureter is merely a reflection of the infection in the seminal vesicle, treatment directed to the infected vesicle and prostate will sometimes be followed by subsidence of the occlusion in the ureter. The renal symptoms may entirely disappear following routine massage, vasotomy or vesiculotomy. In the indurated type gradual dilatation with ureteral bougies is indicated. The hard fibrous type which fails to respond to dilatation and which is limited to the mural portion of the ureter may be cut by introducing a hook-shaped knife into the lumen and incising the involved area by the withdrawal of the knife. Strictures extending beyond the mural part of the ureter and which do not respond to dilatation should be excised and the end of the ureter reimplanted into the bladder. In strictures of long standing complicated by far advanced hydronephrosis or pyonephrosis, nephrectomy may be indicated.

Conservative Renal Surgery Associated with Ureteral Stricture.—Hunner is of the opinion that the recognition of ureteral stricture as one of the most common of all intra-abdominal or intrapelvic lesions will probably bear its chief fruit in the field of conservation by doing away with a vast number of abdominal and pelvic operations now being performed annually in the effort to relieve the symptoms, often vague and indefinite, associated with some form of this condition. Such recognition will also save much misguided medical effort. Examples are those patients, who, after years of general and special medical treatment for apparent migraine or other forms of sick headaches, have been relieved promptly by the restoration of free kidney drainage through the dilatation of ureteral strictures. Other patients suffering from chronic gastro-intestinal symptoms, such as nausea, vomiting, gas formation, diarrheal attacks, pressure on the rectum, and mucous colitis, who have failed to respond to medical and surgical treatment, have responded, some promptly, some after months of patient effort, but only after ureteral stricture has been found to be the basis of their symptoms and proper treatment was instituted. The orthopedist sees certain cases of apparent lumbosacral or sacro-iliac disease, of apparent hip joint dysfunction, or of apparent sciatica, in which all his efforts at relief are fruitless. In some of these cases the symptoms are due to ureteral stricture and relief is obtained after suitable treatment. The gynecologist is daily dealing with vague indefinite backaches, bearing down sensations in the pelvis, ovarian neuralgia, and pains through the hips. He should be particularly alert for stricture if these symptoms are accompanied by bladder disturbances, especially if they are of the intermittent focal infection type. The records of many of Hunner's ureteral stricture cases, involving a history of from one to nine abdominal operations in the effort to relieve the patient, but with the original symptoms still standing out prominently, and then relieved after dilatation of the strictures, he thinks is sufficient evidence that the general surgeon can well afford to keep ureteral stricture in mind in his daily diagnostic routine.

Accidental Bilateral Occlusion of Ureters.—Herman cites a case in which both ureters were ligated accidentally during the performance of a hysterectomy. This was a difficult operation on account of extremely dense and widespread adhesions, so that the uterus was amputated higher than usual (subtotal hysterectomy). The immediate postoperative course was uneventful, except for the fact that no urine was voided; and after ten hours it was determined by catheter that the bladder was empty. Further catheterizations were equally nonproductive, and forty-eight hours after operation, a second operation was performed on the findings of a cystoscopy and a ureteroscopy which disclosed that each ureter was obstructed to catheters at a point 2 inches from the bladder. The ureters had been ligated, apparently, in attempts either to control bleeding from the ovarian artery, to control bleeding from an ascending branch of the uterine artery, or from accidental ligation of the latter in the effort to close the opening in the broad ligament. One ligature was removed from the left ureter and two from the right. The patient made a complete recovery. The literature is reviewed.

Missouri State Medical Association Journal, St. Louis

March, 1923, **20**, No. 3

*Use of Chicken Blood in Treatment of Pneumonias in Children. H. C. Berger and J. G. Montgomery, Kansas City.—p. 81.
Factors of Safety in Operation for Cataract. J. Green, Jr., St. Louis. —p. 83.
*Metastatic Infarcts of Liver. E. C. Robichaux, Excelsior Springs.—p. 88.
Surgical Treatment of Carcinoma of Lower Lip. W. E. Leighton, St. Louis.—p. 90.
Control of Diphtheria in Missouri. P. G. Hurford, St. Louis.—p. 95.
Abscess of Brain. W. Nelson, St. Louis.—p. 97.
Possible Risk in Manipulation of Diseased Stomach. G. B. Lemmon, Springfield.—p. 100.
*Intussusception with Left-Sided Mass. E. D. Twyman, Kansas City. —p. 100.

Transfusion of Chicken Blood in Treatment of Pneumonias in Children.—Having learned that chickens have a high immunity to the pneumococcus, and finding on experimentation that chicken blood could be given to laboratory animals in large amounts, intramuscularly or intradermally, with very little, if any, reaction and no apparently objectionable results, Berger and Montgomery transfused whole chicken's blood into children, ill with pneumonia. As much blood as possible

is withdrawn from the jugular vein and it is then injected into the patient as rapidly as possible, intramuscularly or intradermally, with constant massage. Absorption is rapid and there is no reaction. This process is repeated, using new chickens, until the desired amount of blood is injected, from 300 to 500 c.c. The cases in which the chicken blood was given showed a variation from those in which no injection was made in temperature, pulse, respiration, general condition, roentgen-ray and physical findings. The general condition of these patients reflected the greatest improvement. The extremely ill, highly toxic, cyanotic child was in a few hours transformed into a child that did not seem to be severely ill. The temperature and pulse might remain high, but the child was unembarrassed and free from dyspnea.

Metastatic Infarcts of Liver.—Robichaux records the case of a man, aged 40, who for two months had suffered from lumbago and sciatica. Two years before he had been operated on radically for carcinoma of the right testicle. Under treatment the patient improved for nearly two weeks. Suddenly his abdomen became bloated and there was unlocalized pain in the lower abdomen. His condition rapidly became worse and suggested a ruptured appendix or an infected gallbladder. Fever, pain and leukocytosis were accompanied by a sudden increase in the size of the liver, and nodules were palpable on its anterior surface. Within a week all these symptoms abated and then, within twenty-four hours, grew worse again. Involuntary evacuation occurred, slightly tinged with blood, the only stool of this character. Decided pains in the limbs, particularly the left, with edema of that leg, preceded death by a few hours. The necropsy disclosed a metastatic carcinoma of the liver. Special mention is made of the accuracy with which the daily white blood counts corresponded with the physical condition of the patient.

Extreme Case of Intussusception.—Twyman cites an extreme case of intussusception of the ileum into the cecum, cecum into the ascending colon, ascending colon into the transverse colon, transverse colon into the descending colon. The mass occupied the left hypochondriac region, extended downward, and was easily palpable before the operation. The patient was only 1 year old. Recovery followed operative reduction. There was a complete cecum mobile condition, even the ascending colon having a mesentery.

New York State Journal of Medicine

March, 1923, **23**, No. 3

Recent Progress in Communicable Diseases of Childhood. C. Herrman, New York.—p. 93.
*Clinical Studies in Functional Disturbances. II. Recognition and Treatment of Hypothyroidism. J. A. P. Millet and B. D. Bowen, Buffalo.—p. 94.
*Value of Cystoscopic Examination in Hematuria. A. M. Crance, Geneva.—p. 104.
Life History of Double Uterus. J. O. Polak, Brooklyn.—p. 107.
Treatment of Certain Conditions of Cervix Uteri. G. Gibson, Brooklyn.—p. 109.
Nitrous Oxid-Oxygen. Its Value as General Anesthetic in Genito-Urinary Surgery. J. J. Buettner, Syracuse.—p. 112.
Treatment of Cutaneous Anthrax; Prophylaxis. J. C. Regan, Brooklyn.—p. 113.
Is the Present Trend in Nursing Education Giving Us Satisfactory Nurses? T. Wright, Buffalo.—p. 118.

Recognition and Treatment of Hypothyroidism.—A study is presented by Millet and Bowen of eighteen cases showing either (*a*) myxedema, (*b*) clinical hypothyroidism, or (*c*) certain symptoms suggestive of hypothyroidism, together with a decreased basal metabolic rate and clinical improvement under thyroid therapy. The thesis is put forward that it is very difficult to classify cases falling in this third group, and to distinguish the true hypothyroid case from the case with a decreased basal metabolic rate for which hypothyroidism is not primarily responsible. Some observations are recorded as to the behavior of patients in these three groups under the different forms of thyroid therapy. It is the authors' belief that the most satisfactory type of thyroid therapy is the intravenous administration of thyroxin, controlled, where possible, by repeated estimations of the basal metabolic rate: that, further, both thyroxin and desiccated thyroid are uncertainly absorbed when taken by mouth, although either will, in most instances, bring about the desired therapeutic effect; and, finally, that for general oral administration a good preparation of desiccated thyroid is as good as, or better than thyroxin.

Value of Cystoscopic Examination in Hematuria.—Hematuria is a warning signal of pathology in the genito-urinary tract. Inasmuch as the mildest case of bleeding may prove to be one with a most serious lesion, Crance says, it is essential that practically all of the these patients be examined by the methods which modern urology offers.

Ohio State Medical Journal, Columbus

March, 1923, **19**, No. 3

Brain Injuries Without Skull Fractures. D. H. Morgan, Akron.—p. 157.
Abdominal Drainage. E. J. McCormick, Toledo.—p. 163.
Blood Chemistry in the Diagnosis, Prognosis and Treatment of Nephritis. C. S. Mundy, Toledo.—p. 167.
*Secondary (Acquired) Megacolon. Report of Case. R. R. Rogers, Warren.—p. 172.
Early Activation of Muscles in Infantile Paralysis. H. O. Feiss, Cleveland.—p. 177.
Pellagra. L. de M. Blocker, Cincinnati.—p. 180.
Relation of Laboratory to Health Department and to Community. R. G. Perkins, Cleveland.—p. 183.
Are State Hospitals Preferable to State Asylums? H. S. MacAyeal, Akron.—p. 187.
Use of Morphin in Obstetrics. F. Hendrickson and A. R. Vonderahe, Cincinnati.—p. 189.

Secondary Megacolon.—Rogers' patient was a full term infant weighing 9 pounds, and apparently normal in every way except for the condition of the anus. When he was about twenty-four hours old the mother noted that his bowels did not move, and on investigation she found that the baby's anus seemed to be closed. The family physician discovered an anal opening which was just large enough to admit a small steel probe. He dilated this opening with the tip of an infant syringe. This operation produced some bleeding, but was followed by the passage of considerable meconium. After this the baby began having small flat stools. The movements were accompanied by a great deal of grunting and straining, and frequently abdominal massage was necessary to accomplish them. The child was breast fed and gained weight regularly, but for the first month its bowels were moved only with considerable difficulty. The movements were soft, semiformed and small, but even this type of fecal matter caused a great deal of straining and pain and the use of suppositories and enemata was painful and caused hemorrhage. At 9 months cereal feedings were begun, and shortly thereafter small amounts of bread and butter, baked potato, carrots and prunes were added to the diet. Immediately the trouble with the bowels became greatly aggravated. The stools occurred less and less frequently, were formed when they did occur, and were accomplished only by great straining and by screams of pain. By the use of abdominal massage and castor oil a stool was obtained about every third day until the child was a year old, but had frequent vomiting attacks and at times the vomitus had a fecal odor. With less frequent stools the baby's abdomen became more distended. The anal region was bisected by a thick, fibrous raphe which was continuous with the raphe of the scrotum. It was impossible to stretch this raphe enough to insert even the little finger into the rectum. The raphe was divided and removed and as good a sphincter as possible was constructed. The patient made a good recovery but the intestinal condition became worse. Roentgen-ray examination showed a dilated sigmoid. Operation disclosed an early Hirschsprung's disease or megacolon. The enlargement started immediately above the internal sphincter, and the diameter of the intestine was that of a small orange. This tapered up throughout the length of the colon to the hepatic flexure.

Philippine Journal of Science, Manila

February, 1923, **22**, No. 2

*Natural Immunity to Infection and Resistance to Disease, as Exhibited by the Oriental, with Special Reference to Siamese. R. W. Mendelson, Bangkok, Siam.—p. 115.
*Metabolism in China. B. E. Read and S. Y. Wang, Peking, China.—p. 127.
New Genus and Species of Fly Reared from Hoof of Carabao. J. M. Aldrich, Washington, D. C.—p. 141.

Foot Maggot, Booponus Intonsus Aldrich; New Myiasis Producing Fly. H. E. Woodworth and J. B. Ashcraft, Manila.—p. 143.
New Philippine Stenocranus (Delphacide, Homoptera). F. Muir, Honolulu.—p. 157.
Genus Myndus in Malay Islands (Homoptera). F. Muir, Honolulu.—p. 161.
Two Collections of Fulgoroidea from Sumatra. F. Muir, Honolulu.—p. 171.
Lycopodiaceae Borneenses. W. Herter, Berlin, Germany.—p. 179.
Merrillosphaera Africana at Manila. W. R. Shaw, Manila.—p. 185.

Resistance of Siamese to Disease.—Mendelson states that specific immunity to typhoid infection can be demonstrated in 15.5 per cent. of the Siamese people. This is in the nature of a racial immunity, acquired as the result of using, for many generations, an infected water and food supply. Although resistance to certain diseases, such as cholera and plague, cannot be demonstrated by specific blood reactions, it is present in the form of a marked resistance to germ infections as a whole, that is, "general infection immunity." The nervous system of orientals is much more resistant to the effects of germ infection than is the nervous system of occidentals. The natural immunity to infection and resistance to disease, as exhibited by the oriental, is of real value to the health officer working in the East under present conditions.

Metabolism of Chinese.—Analysis of the chemical constituents of urines excreted by various classes of Chinese people taking different diets has yielded results which Read and Wang believe makes it necessary for clinicians working in the Orient to adjust their analytic standards accordingly.

Tennessee State Medical Association Journal, Nashville

February, 1923, **15**, No. 10

Council of State Medical Associations. O. West, Chicago.—p. 433.
Treatment of Glaucoma. E. C. Ellett, Memphis.—p. 437.
Head Injuries. T. G. Pollard, Nashville.—p. 442.
Economic Aspect of Salpingitis Based on Two Hundred and Fifty-Seven Cases. J. M. Maury, Memphis.—p. 443.
Endoscopy. H. Wood, Nashville.—p. 446.
Incidence of Tabes Dorsalis. C. C. Turner, Memphis.—p. 453.
Dendritic Keratitis. J. B. Stanford, Memphis.—p. 455.
Treatment of Auricular Fibrillation. N. S. Stern, Memphis.—p. 457.

Virginia Medical Monthly, Richmond

March, 1923, **49**, No. 12

Importance of Early Diagnosis of Acute Abdominal Pain. J. D. Rogers, Washington, D. C.—p. 693.
Pediatric Practicalities. S. Wilson, Lynchburg.—p. 696.
Use of Dry Milk in Infant Feeding. W. B. McIlwaine, Petersburg.—p. 700.
*Exanthem Occurring in Infants, with Unusual Symptomatology. C. E. Conrad, Harrisonburg.—p. 705.
Balancing the Ration in Severe Diabetes. A. G. Brown, Jr., Richmond.—p. 706.
Value of Basal Metabolism Studies in Thyroid Disease. J. H. Smith, Richmond.—p. 708.
Delayed Union in Noninfected Wounds Above Umbilicus. A. S. Brinkley, Richmond.—p. 711.
Kidney Abscess and Pyonephrosis. Review of Cases. J. H. Neff, University.—p. 715.
Prostatectomy, with Special Reference to Perineal Route. J. S. Horsley, Richmond.—p. 718.
Prostatectomy. R. C. Bryan, Richmond.—p. 721.
*Multiple Myeloma; Report of Case. J. L. Rawls, Norfolk.—p. 723.
Unusual Case of Mastoiditis. Operation and Recovery. T. E. Hughes, Richmond.—p. 726.
Electrocardiography in Diagnosis of Cardiac Conditions. F. C. Rinker, Norfolk.—p. 727.
Papillary Cystadenoma of Ovary. J. W. Gibbon, Charlotte, N. C.—p. 729.
Time and Mortality in Appendicitis. J. E. Rawls, Suffolk.—p. 734.

Exanthem Occurring in Infants, with Unusual Symptomatology.—Conrad has seen two cases of a disease in infants, with high fever (104 F.), loss of appetite and fretfulness, but without physical signs. From twelve to twenty-four hours after the fever subsides there appears a macular and maculopapular eruption. After the febrile stage, the infant is comfortable and happy, and does not appear to be sick during the period of the rash. With this there is a leukopenia, with lymphocytosis. This condition has been termed by Zahorsky "roseola infantum." Veeder and Hempleman suggested the term "exanthem subitum."

Multiple Myeloma: Report of Case.—In Rawl's case only one bone, the femur, showed evidence of myeloma at the time of death.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

February, 1923, **27**, No. 9

Radiation of True Pelvis with Help of Drainage Tubes. F. Daels.—p. 257.
Pulmonary Vessels and Lymphatics. W. Overend.—p. 268.
Radiography in Its Relation to Miners' Phthisis on Witwatersrand. W. Steuart.—p. 277.

China Medical Journal, Shanghai

February, 1923, **37**, No. 2

Dysentery in Shanghai. C. N. Davis.—p. 107.
Mechanism of Regulation of H-Ion Concentration of Blood. E. W. H. Cruickshank.—p. 116.
*Spindle Cell Sarcoma of Neck; Congenital Papilloma of Buttock. A. I. Ludlow.—p. 145.
Bronchial Spirochetosis. L. S. Huizenga.—p. 153.
*Tartar Emetic in Schistosomiasis Japonica. W. E. Libby.—p. 158.

Congenital Papilloma of Buttock.—The papilloma of the buttock in Ludlow's case measured 40 cm. in length, 35 cm. in breadth, and was elevated from 4 to 12 cm. above the surrounding surface. It weighed 3,000 gm.

Tartar Emetic in Schistosomiasis Japonica.—Eight cases of *Schistosomiasis japonica* infestation are reported by Libby in which tartar emetic was used. One patient died on the fourteenth day after having received a total of 12⅝ grains (0.85 gm.) of the drug. Libby regards it as a case of poisoning from the cumulative effects of the tartar emetic. Clinically, the picture was one of uremic toxemia on which was superimposed jaundice.

Glasgow Medical Journal

February, 1923, **99**, No. 2

Present-Day Treatment of Fractures. J. W. Dowden and others.—p. 81.

Indian Journal of Medical Research, Calcutta

January, 1923, **10**, No. 3

Ligaturing of One Renal-Portal Vein in Living Frog (Gurwitsch). W. N. F. Woodland.—p. 595.
Bacteriologic and Laboratory Technic. W. F. Harvey.—p. 613.
*Diagnosis of Hookworm Infection. K. S. Mhasker.—p. 665.
Salivary Glands and Sucking Apparatus of Cimex Rotundatus. J. W. Cornwall.—p. 687.
*Tubercle Bacilli in Culture; Properties of an Endolipase. R. Row.—p. 692.
Structure and Development of Female Genital Organs and Hypopygium of Mosquito. S. R. Christophers.—p. 698.
Herpetomonas Ctenocephali, Fantham; Life History and Reactions to Different Environments. H. E. Shortt.—p. 721.
Increase of Dose as Method of Making Use of Old Vaccine. W. F. Harvey and K. R. K. Iyengar.—p. 739.
Some Indian Species of Genus Phlebotomus. Part I. Phlebotomus Annandalei. J. A. Sinton.—p. 742.
*Smallpox Vaccination in Java. W. F. Harvey and S. R. Christophers.—p. 754.
Malaria Research and Preventive Measures Against Malaria in Federated Malay States and in Dutch East Indies. S. R. Christophers and W. F. Harvey.—p. 759.
Revision of Culicine Mosquitoes of India. Part I. P. J. Barraud.—p. 772.
Transmission of Plague by Fleas of Genus Xenopsylla. L. F. Hirst.—p. 789.
Correlation Between Humidity and Intensity of Hookworm Infection in Southern India. K. S. Mhaskar.—p. 821.
Pseudotracheal Teeth in "Eye-Fly" (Siphunculina Funicola, De Meijere). R. S. White.—p. 825.
Descriptive Terminology of Male Genitalic Character of Mosquitoes. S. R. Christophers and P. J. Barraud.—p. 827.
Iron Hematoxylin Staining. H. E. Shortt.—p. 836.
Reduction of Amino-Acids Into Simpler Natural Bases (Amines) by Bacillus Dysenteriae (Shiga). H. W. Acton, R. N. Chopra and T. C. Boyd.—p. 837.
Fallacy in Use of Benian's "Relief" Stain Associated with Growth of Micro-Organisms in Two Per Cent. Aqueous Solution of Congo Red. R. H. Malone.—p. 847.
*Results of Some Experiments in Treatment of Malaria with Alkalis Combined with Quinin. J. A. Sinton.—p. 850.
Lathyrism. A. Howard, J. L. Simonsen and L. A. P. Anderson.—p. 857.

Diagnosis of Hookworm Infection.—Mhaskar asserts that diagnosis based on the presence of hookworm ova in the stools is definite. The method is simple, rapid and practicable, and the results obtained are highly accurate.

Tubercle Bacillus Endolipase.—The object of Row's study was to ascertain if, in a mass of tubercle bacilli grown on solid mediums rich in fatty material, any fat splitting ferment could be demonstrated, what changes would be produced in the tubercle bacillus itself, which, as is well known, is not appreciably altered by contact with all sorts of reagents, fat solvents and even age. It appears that this resistant property, which is also demonstrable by the character of acid fastness, is the more marked in oldish cultures when the fatty or waxy material of the tubercle bacilli becomes more differentiated and complex. This, Row believes, is the reason why it has been possible to demonstrate tubercle bacilli in the lesions found and described in some of the Egyptian mummies.

Smallpox Vaccination in Java.—Harvey and Christophers are convinced that Nijland of Java, operating in a tropical climate, has been able to surmount the difficulties attendant on vaccine lymph production under high temperature conditions. The yields which he has been able to obtain from buffaloes render the production of lymph in sufficient quantity and at low cost an easy matter. The principle underlying Nijland's method is that no vaccinifer shall be inoculated with lymph derived from the same species of animal. Under these conditions degeneration does not take place. Three species of vaccinifers are used, the rabbit, to provide lymph for inoculation of the cow-calf, and the cow-calf, to provide stock lymph for inoculation of buffaloes. The buffaloes thus provide the lymph which is used by the vaccinators in the field. This lymph can be issued by ordinary post, can be sent far afield, and without loss of potency. It is diluted at the time of use by the vaccinator and this diluted lymph preserves its potency for two or three days.

Treatment of Malaria with Alkali Combined with Quinin.—A few years ago Cowie and Calhoun, and later Abrami and Senevet, advanced the theory that the malarial paroxysm was of the nature of an "anaphylactoid" phenomenon, from the similarity of the paroxysm to that seen in "protein shock." On this hypothesis and because of many other factors of similarity between these two phenomena, it seemed to Sinton that if the symptoms of the latter are influenced by the intravenous injection of alkali, that those of the former might also be so influenced. Two patients with benign tertian malaria were treated in this way with beneficial effects on the symptoms and in one case morphologic changes in the parasites occurred rather resembling those produced by quinin treatment. The mixtures used were as follows: A: sodium bicarbonate, 60 grains; sodium citrate, 40 grains; water, 1 ounce. Q: quinin sulphate, 10 grains; dilute sulphuric acid, 10 minims; magnesium sulphate, 60 grains; water, 1 ounce. In future it is proposed to use citric instead of sulphuric acid, as the former is a much weaker acid and the citrates formed become carbonates on absorption into the blood. All patients were given 1 ounce of magnesium sulphate before the commencement of treatment. In the morning they were given 1 ounce of A at 7:30 a. m., repeated at 9:30 and 11 a. m. About fifteen minutes after this last dose 1 ounce of Q was given. At 6 p. m. 1 ounce of A was given, followed by 1 ounce of Q. For the next three days 1 ounce of A was given thrice daily (7:30 a. m., 11:30 a. m. and 6 p. m.), followed in each case by 1 ounce of Q. This completed the treatment.

Irish Journal of Medical Science, Dublin

February, 1923, **5**, No. 12

Some Renal Efficiency Tests. G. E. Nesbitt.—p. 533.
*Case of Large Cervical Myoma. B. Solomons.—p. 543.
Congenital Cardiac Anomaly. Abnormal Opening Between Aorta and Pulmonary Artery. T. G. Moorhead and E. C. Smith.—p. 545.
Case of Precocious Sexual Development. W. G. Harvey.—p. 550.

Large Cervical Myoma.—Solomons removed a fibromyoma springing from the anterior cervical wall which weighed 15 ounces. Microscopically it was a simple fibromyoma with hyaline degeneration. The cervix revealed an unhealed discharging wound.

Congenital Cardiac Anomaly.—In the case reported by Moorhead and Smith an abnormal opening existed just above the sigmoid valves, establishing a communication between the anterior wall of the aorta and the pulmonary artery at this point. The patient, a man, aged 48, was suffering from symptoms of advanced cardiac failure. He became easily tired and short of breath. The heart was considerably enlarged, the impulse extending into the sixth space, about an inch outside the nipple. The impulse was fairly forcible, and there was no thrill. On auscultation a double murmur exactly resembling that of aortic regurgitation was audible, the only special point noted being that it could only be heard to the left of the sternum. The systolic portion of this murmur was conducted upward to the root of the neck, and the diastolic portion down to the cardiac apex. In addition, a mitral systolic murmur, conducted into the axilla, was clearly audible. The pulse, 76 per minute, was of a typical collapsing character. The blood pressure was 160/40. No Duroziez sign was detected nor was capillary pulsation noted. The Wassermann test was negative. The patient died five weeks after admission to hospital. The necropsy report is given.

Precocious Sexual Development.—Harvey reports the case of a girl, aged 2½ years, who had a history of regular menstrual periods for nine months. She was a small, thin child, of apparently normal mental development for her age, but having well developed breasts, a tense and swollen abdomen, a coarse growth of dark hair on the pubes, and external genitalia of a markedly adult type. The abdominal swelling was due to a large tumor in the left side involving the kidney and suprarenal, and extending across the abdomen. The child died five weeks after Harvey first saw her. She did not seem to have pain, and her only symptom was a persistent craving for fluid. The thymus was practically nonexistent, and the left ovary was cystic, while the right kidney showed hypertrophy. Other organs appeared to be normal. The tumor was a very cellular and vascular sarcoma.

Indian Medical Gazette, Calcutta

February, 1923, **58**, No. 2

*Two Family Outbreaks of Epidemic Dropsy Type of Beriberi. J. W. D. Megaw and R. N. Banerji.—p. 49.
Season of Onset of Kala-Azar. T. C. McCombie Young.—p. 52.
Filariasis. S. K. Roy.—p. 56.
First Six Months' Work of Radium Institute at Ranch. T. C. Vaughan.—p. 58.
Scheme of Medical Inspection of Scholars in Secondary Schools. A. Hamid.—p. 62.
Merits of Ayurvedic System of Medicine. A. Roy.—p. 66.
Expulsive Hemorrhage After Cataract Extraction. S. K. Ganguly.—p. 70.
Rate of Growth of Vesical Calculi. R. F. A. Macgregor.—p. 71.
Treatment of Chronic Gonorrhea. A. P. Pillay.—p. 71.

Two Family Outbreaks of Epidemic Dropsy Type of Beriberi.—The twelve cases reported by Megaw and Banerji occurred in a highly cultured and well to do Bengali family consisting of thirteen members belonging to three generations; the ages varied from 8 to 80. The first cases began to occur early in November, 1919, and by the beginning of January, 1920, twelve members of the family had been affected to a greater or less extent, the victims being attacked one by one at varying intervals. The most striking manifestations of the disease were: gastro-intestinal symptoms which occurred in ten out of twelve. There was diarrhea in eight and dysentery in one. There was tenderness in the epigastric region, in three cases followed by considerable vomiting. There was slight nausea or vomiting in seven others. There was swelling of the feet and legs of varying severity and duration in all the cases. Fever of an irregular type occurred in eight cases. The temperature was seldom higher than 101 F. and in the milder cases the fever was slight and of brief duration. A systolic bruit, best heard over the pulmonary area was detected in ten of the cases, and in four of these there were definite signs of dilatation of the heart accompanied by dyspnea. There was reduplication of the pulmonary second sound in two cases. The knee jerks were exaggerated in ten cases, and were entirely lost in two cases. There was tenderness of the calf muscles in three cases: in one of these it was very pronounced and this case ended fatally. In one case the gait was like that of locomotor ataxy. A striking feature of the disease was a tendency to hemorrhages of which the following were noted: (*a*) Petechial skin hemorrhages in three; (*b*) bleeding piles in two; (*c*) epistaxis in four; (*d*) hematemesis in three; (*e*) hemoptysis in three; (*f*) hemorrhagic retinitis in four.

Annales de Médecine, Paris

January, 1923, **13**, No. 1

*Bulbar Hemisyndrome. Marinesco and Draganesco.—p. 1.
*Amino-Acids in Blood. J. Desqueyroux.—p. 20.
*Infection of Adults with Tuberculosis. Cain and Hillemand.—p. 39.
Cerebrospinal Regions for Injections. H. C. Salomon.—p. 57.
*Psychic Factor in Motor Function of Stomach. Daniélopolu and Carniol.—p. 63.
*Acidity of Urine and Albuminuria. A. Hanns.—p. 71.

Bulbar Hemisyndrome.—Marinesco and Draganesco report the clinical and anatomic findings in a case of thrombosis of the right vertebral artery, which had caused softening of the middle layer of the medulla oblongata. They discuss the literature on Avellis' syndrome (paralysis of one vocal cord and half of the soft palate with hemiplegia of the other side) and especially on the question of the cardiac nucleus of the pneumogastric nerve.

Amino-Acids in Blood.—Desqueyroux determined the amount of amino-acids and other nitrogen compounds in the blood of forty patients and three healthy subjects. In the latter he found between 4.9 and 6.1 mg. in 100 c.c. of blood three hours after a light breakfast. This level is rarely lower in disease, but is elevated more frequently (up to 9.37 mg.). The higher amounts were found in diabetes, azotemic nephritis, insufficiency of the heart and pneumonia. The figures were irregular with pathologic conditions in the liver.

Primary Infection of Adult with Tuberculosis.—Cain and Hillemand report a case of tuberculosis which can be considered as an infection acquired in adult age. They give the pathologic characteristics of these cases, and a short review especially on the fulminating tuberculosis of natives in the colonies, not protected by previous infections.

Psychic Factor in Motility of Stomach.—Daniélopolu and Carniol demonstrated in 1922 that the psychic influence is distinct not only in the secreting function of the stomach but also in its motor functioning. The stomach started to contract about five minutes after another person ate a small meal in the presence of the subject tested. The contractions were less in a patient with atony of the stomach; they started later, and stopped earlier after the end of the visual meal. Intravenous injections of physostigmin sulphate (0.5 mg.) caused at first an inhibition, later an exaggeration of the contractions. Intravenous injection of 0.05 to 0.1 mg. of atropin sulphate increased the contractions, which stopped after another injection of 0.25 to 0.5 mg. After an injection of 0.5 mg. of atropin sulphate the stomach did not react even to a strong insufflation.

Acidity of Urine and Albuminuria.—Hanns reports two cases of nephritis with a distinct parallelism between the concentration of albumin and the acidity of the urine. This relation is merely accidental and due to the fact, that both the concentration of albumin and the acidity of the urine depend on the amount of urine excreted.

Archives Franco-Belges de Chirurgie, Brussels

January, 1923, **26**, No. 1

*Transfusion of Blood. A. Hustin.—p. 1.
*Grafts of Bones Kept in Alcohol. L. Christophe.—p. 13.
*Osteosynthesis for Recent Fracture. A. Lambotte.—p. 57.
*Injections of Hemolyzed Own Blood. M. Descarpentries.—p. 63.
Experimental Rickets. R. Simon and E. Allenbach.—p. 70.
Malformation of Acetabulum. Van Neck.—p. 80.
Immediate Paraplegia After Albee Inlay Graft. J. Moreau.—p. 85.
Osteitis of Spine Probably of Typhoid Origin. G. Lemoine.—p. 88.

Transfusion of Blood.—Hustin uses a glass cannula shaped like an ampule, 3 cm. long, with two arms for the rubber tubes. The citrate solution thus blends with the blood as it emerges from the vein, and the mixture passes on through the other tube to the receptacle below. He warns that whatever the strength of the citrate solution it must be isotonic, and the most harmless method of insuring this is to add glucose solution to bring it to the required isotonic figure. The transfused blood is liable to induce anaphylaxis as a foreign protein. This cannot be foreseen by tests for hemolysis and agglutination, but it can be warded off by a preliminary injection according to Besredka's method.

Bone Grafting and Bone Regeneration.—Christophe restored clinically normal function to the knee of a soldier after the patella had been shattered by a war wound. Four months later a patella from another soldier was implanted, and the functional results were perfect. The foreign patella had been kept in alcohol for three days. Experimental research with grafts kept in alcohol are described, and further clinical experiences. All justify the assumption that a bone placed at once in alcohol, and used soon, offers ideal material for grafts. It can be fitted exactly to the defect, and allows exercise of the parts at once, thus averting atrophy of muscles. The dead bone is not resorbed so rapidly as living bone, but otherwise the chemical process is identical: Either the graft is tolerated and heals in place, or it is resorbed and new bone formed from its elements and the precipitated preosseous gel.

Interval Before Osteosynthesis for Recent Fractures.—Lambotte advises waiting for one or two weeks or longer after fracture of a long bone. Healing is retarded a little, but the ultimate outcome is far better. In his hundreds of cases of fracture of both bones in the leg, healing was complete within a month in cases thus treated. By waiting a week or two the periosteum becomes thick and congested, and bears handling as the plate or metal band is applied. Of course if a sharp fragment of bone threatens gangrene or a nerve is injured, the intervention must be hastened.

Injections of Laked Own Blood.—Descarpentries has a very favorable impression of the effect of reinjecting subcutaneously the patient's own blood in surgical cases, phlegmons, etc. He draws 10 c.c. of blood for the purpose. It seemed to bring a turn for the better in torpid cases, prevent postoperative complications, localize suppuration, and promote healing.

Archives des Maladies de l'App. Digestif, Paris

1923, **13**, No. 1

*Diffuse Angiomas of Rectum. R. Bensaude and E. Antoine.—p. 1.
*Pyloric Cancer in a Syphilitic. F. Curtis and H. Surmont.—p. 24.
*Reactions in Echinococcus Disease. Cottin and M. Saloz.—p. 44.
*Blood in Stomach and Feces. L. Meunier.—p. 60.

Diffuse Cavernous Angiomas of Rectum.—Bensaude and Antoine report two cases of this rare disease. One of them was very favorably influenced by an artificial anus in the transverse colon; the other died without operation.

Pyloric Cancer in a Syphilitic.—Curtis and Surmont describe a case of adenocarcinoma of the pylorus in a syphilitic. Antisyphilitic treatment improved the condition of the patient for a short time and the operation came too late. No syphilitic changes in the stomach were found at the necropsy.

Biologic Reactions in Echinococcus Disease.—Cottin and Saloz publish one case of carcinoma of the liver in an individual in good general condition. The precipitin reaction and Weinberg's reaction for echinococcus were positive. On the other hand, these reactions were negative in a case of echinococcus cyst of the liver. There was no eosinophilia in the latter case.

Distinction Between Fresh and Digested Blood in Stomach and Feces.—Meunier uses extraction by water for hemoglobin, and extraction by a weak solution of ammonia for hematin, and makes the phenolphthalein test for peroxydases with the extracts. Fresh blood is soluble in water, while the hematin from digested blood needs ammonia to dissolve it.

Archives des Maladies du Cœur, Paris

January, 1923, **16**, No. 1

*Antagonism between Epinephrin and Cinchona. A. Clerc and C. Pezzi.—p. 1.
*Situs Inversus with Congenital Heart Block. P. Meyer.—p. 16.
Pathologic Significance of Abnormally Shaped Leukocytes. J. Sabrazès.—p. 41.

Antagonism Between Epinephrin and the Alkaloids of Cinchona.—Clerc and Pezzi extended their former studies on the antagonism between epinephrin and quinin on quinidin, cinchonin and cinchonidin in which they found a similar action to quinin: They all paralyze the bulbar center of the pneumogastric nerve, while epinephrin excites it. The acceleration of the heart action caused by small amounts of

these drugs is due to excitation of the accelerators, not to paralysis of the pneumogastric, which requires larger doses.

Situs Inversus with Malformation of the Heart and Congenital Heart Block.—Meyer publishes a case of complete situs inversus with stenosis of the pulmonary valve and an opening in the interventricular septum (clinical diagnosis). Electrocardiographic tracings of the complete block, which was present, are reproduced.

Archives de Médecine des Enfants, Paris

January, 1923, **26**, No. 1

*Vaccination Against Diphtheria. P. Rohmer.—p. 1.
Training of Speech in Children with Cleft Palate. L. and C. Ruppe. —p. 19.
*Infantile Paralysis from Pain. J. Comby.—p. 36.
Present Status of Banti's Disease in Children. J. Comby.—p. 39.

Antidiphtheria Vaccination.—Rohmer reports the history and technic of Behring's method, and speaks favorably about Schick's test except for the difficulties in distinguishing between true and pseudoreactions, and its lack of differentiation of individual sensibility, especially in small children. The future task is to determine the necessary minimum dosage, as well as the number of injections, which would give the desired results.

Paralysis in Infants Due to Pain.—The paralysis of one upper extremity of Comby's 12 month old patient, was due to a subluxation of the head of the radius.

Bulletin Médical, Paris

Feb. 24, 1923, **37**, No. 9

*Diagnosis of Pott's Disease. C. Roederer.—p. 229.
*Orthopedic Treatment of Pott's Disease. Nové-Josserand.—p. 236.
Surgical Treatment of Pott's Disease. Delchef.—p. 241.

Pott's Disease.—These two numbers of the *Bulletin* are devoted to tuberculosis of the spine. Roederer says that what we call the beginning is in reality not the actual onset; when symptoms attract attention to the lesion it is already well established. The clinical picture and the course differ materially in children and adults, and in individuals in each group. It may simulate any and every spinal cord affection and lesion of the spine, and the majority of chronic affections of the viscera. "With a large abscess almost anywhere in an adult, the origin of which is not clear, examine the spine." He had two patients in his charge recently whose Pott's disease had been mistaken by others for a perirenal abscess and an operation had been performed. The pain is persistent or returns always at the same spot; it is relieved by reclining and aggravated by walking, by jarring, and by the effort of sitting up. It is generally bilateral, and spreads downward as a rule. In a child, scoliosis should not be considered until after vertebral caries has been definitely excluded. In dubious cases, by having the child lie flat on its stomach for several hours the contracture with Pott's disease usually subsides, and with it the tendency to scoliosis. Children with incipient scoliosis, taking gymnastic treatment, should be reexamined every month as if they were being seen for the first time. He has seen several children with nonrigid tuberculous caries who were being given gymnastic treatment from a blunder in diagnosis; in one such case the course of the Pott's disease proved exceptionally severe. Every child that limps, that tires from standing, should be suspected of tuberculous caries, even when the disquieting phenomena have apparently subsided. The general health, recent tuberculosis-breeding diseases, the family antecedents, and the glands in axillae, neck and groin should be taken into account.

Orthopedic Treatment of Pott's Disease.—Nové-Josserand insists on the wisdom of beginning treatment in every case of tuberculous osteitis of the spine as if it were of the gravest type, enforcing bed rest. By the end of two or three months we can assume a mild form of the disease if the general condition keeps good, if the pain has yielded to the rest, the spine keeps flexible, the reclining patient can sit up without help, and radioscopy shows no serious lesions. In these conditions we can allow the adolescent or adult patient to be up and about with a plaster jacket, under attentive surveillance. With growing children, bed rest is indispensable. The younger the child, the greater the need for relieving the spine from weight bearing, and the longer the bed rest must be enforced. After recovery, strict supervision is necessary. At least a year of bed rest is required. Then very gradually certain movements are allowed while still reclining, then creeping exercises, watching to see that they do no harm.

March 3, 1923, **37**, No. 10

*Diagnosis of Pott's Disease in Adults. J. A. Barré.—p. 255.
*Congenital Scoliosis Versus Pott's Disease. A. Mouchet.—p. 256.
Pott's Disease in the Army. Duguet.—p. 256.
Radiologic Diagnosis of Incipient Pott's Disease. Mahar.—p. 258.
Idem. Colanéri.—p. 260.
*Lesions Simulating Pott's Disease. M. Bufnoir.—p. 262.

Early Diagnosis of Pott's Disease in Adults.—Barré calls attention to the pyramidal symptoms (Babinski sign, exaggerated tendon reflexes) which he has found accompanying pains ascribed at first to sciatica or intercostal or other neuralgia, but which proved to be the earliest manifestations of insidious tuberculous osteitis of the spine. The roentgen-ray findings and the dissociation of albumin and cells in the spinal fluid offer confirmatory evidence of Pott's disease, even in a comparatively early stage. Also tenderness over the spinal nerve roots corresponding to neuralgia in remote regions.

Congenital Scoliosis Versus Pott's Disease.—Mouchet relates that a missing half of one vertebra is liable to induce a small hump in the spine, but it is not tender, not reducible and not strictly median, and there is rotation of the adjoining vertebrae. When the hump is larger, median, tender, and there is no rotation and the spine is rigid, tuberculous osteitis should be suspected, even in young infants.

Lesions Simulating Pott's Disease.—Bufnoir reports five cases of infectious processes in the intervertebral disks and prevertebral ligament which improved under heliotherapy. There were kyphosis and pains in a certain segment of the spine; the intensity of the paroxysmal pains and the irregularity of the course, the intermissions and exacerbations, differentiated the affection from Pott's disease. A plaster jacket is scarcely needed for this chronic vertebral arthritis; bed rest does not reduce the pain. In his cases, heliotherapy and spa treatment proved effectual.

Journal de Chirurgie, Paris

January, 1923, **21**, No. 1

*Polycystic Disease of Liver. Costantini and Duboucher.—p. 1.
*Removal of Submaxillary Glands. P. Truffert.—p. 26.

Polycystic Disease of the Liver.—Costantini and Duboucher devote six pages to the tabulated details of 47 cases of cysts in the liver; 5 were treated by puncture alone, with only one recovery; 13 were treated by incision and drainage or the lips of the cyst were sutured to the skin. There were only three deaths in this group. In 11 cases the unilocular cyst was treated by complete resection of the cyst, with recovery of all but one much debilitated patient. In 6 cases a polycystic mass in the liver was removed by a wedge resection, with recovery of 5 patients. In 5 other cases of polycystic disease of the liver all the patients recovered but 2 who had in addition polycystic disease of the kidneys. Two other patients were treated by exploratory laparotomy alone, and both died; a third recovered after the cyst had been sutured to the duodenum. In the total 47 cases the kidneys were diseased in 5. The fluctuation in a bile cyst differentiates it from a hydatid cyst. Puncture is dangerous. Removal of the entire pocket is the only treatment to avoid recurrence and insure rapid healing. When the walls of the cyst cannot be detached, the edges must be sutured to the skin after resecting as much as possible. Diffuse polycystic disease of the liver seems beyond the resources of surgery, but it may be possible to open some of the larger cysts that cause the most discomfort.

Removal of Submaxillary Glands.—Five large illustrations show the various steps of an operation which allows the complete removal of the submaxillary and lymphatic glands, thus clearing out the entire submaxillary space. This operation is required even when the tumor in the tongue or throat has been treated with radium or roentgen rays, as these have no action on the adenopathy.

Journal d'Urologie, Paris

January, 1923, **14**, No. 1

*Postoperative Pelvic Cellulitis. Legueu and Rochet.—p. 1.
*Anorectal Gonorrhea. Lévy-Weissmann.—p. 13.
*Cystic Lymphosarcoma of the Scrotum. Oudard.—p. 33.

Local Suppuration After Operations on the Bladder.—Legueu and Rochet comment on the defective mechanical conditions for drainage after suprapubic incision. There is liable to be infiltration of urine back of the pubis and insidious abscess formation. They have had three instances of this in more than a thousand suprapubic prostatectomies. Treatment consists in introducing a drainage tube through the perineum, as they describe in detail. This usually saves the situation even when the perivesical or pelvic cellulitis is far advanced. The suppuration may make itself manifest far from the bladder, but no treatment is effectual that does not provide ample gravity drainage for the original focus in the bladder or bed of the prostate.

Gonococcus Infection of Anus and Rectum.—Weissmann remarks that rectal gonorrhea often runs an insidious course and escapes detection, but it usually entails the same kind of lesions as in gonorrheal urethritis, and is equally liable to become chronic. Aside from microscopic discovery of the gonococcus, there are no pathognomonic signs, but rectoscopy aids in the diagnosis by exclusion. The patient should not be allowed to become constipated; it is better to keep the stools soft and frequent, with castor oil or petrolatum. He warns against cleansing enemas, as they are liable to spread infection upward. For the same reason, the two-way nozzle should not be introduced deep into the rectum. A weak solution of potassium permanganate, as hot as can be borne, should be used for the irrigation once or twice a day. Delbet supplements this by injecting 200 gm. of bismuth suspension, to be retained, as a dressing for the walls. A speculum with large openings allows examination, and cauterization with 10 per cent. nitrate of all ulcerations; the speculum *grillagé* is better for this purpose than the rectoscope. In absolutely rebellious cases it may be necessary to divert the feces by an artificial anus or to resect a segment of the rectum. In conclusion he mentions Carnot's recent case in which rebellious bleeding polypous vegetations subsided after daily irrigation of the rectum with boiled water followed by injection above the vegetations of a gelose mucilage with 20 per cent. magnesium chlorid.

Lymphosarcoma of the Scrotum.—Oudard's patient was a young man who had had for two years a tumor of the scrotum. It proved to be a lymphosarcoma, and rapidly recurred after resection. Under four exposures to roentgen rays the recurrence subsided completely within three months. The malignant tumor had developed in the tissues of ectodermal origin, apart from the vaginalis and cord.

Lyon Chirurgical

September-October, 1922, **19**, No. 5

*Ileus from Congenital Malformations. E. Dahl-Iversen.—p. 497. Conc'n No. 6, p. 685.
*Rupture of Bladder. L. Plisson.—p. 535.
*Nerve Grafting. A. Policard and R. Leriche.—p. 544.
*Neuromas in Pathology of Limbs and Viscera. R. Leriche.—p. 550.

Ileus as Consequence of Congenital Malformation of the Intestines.—Dahl-Iversen reviews the experiences in Denmark with ileus from congenital stenosis or atresia of the bowel, a total of thirty-six cases, including 12 never before published. Children are usually 4 or 7 months old before invagination is liable to occur. With congenital stenosis of the pylorus there is no bile in the vomit, and it is never fecaloid. The disturbances occur later, not until the second or fourth week of life, while congenital ileus becomes manifest the second or third day as a rule. He knows of only three cases on record in which the infants developed normally after an operation to correct the abnormal conditions in the bowel. His personal experience comprises one instance of recovery after operative treatment of congenital ileus from this cause in the new-born. In a certain proportion of the cases the congenital malformation does not cause disturbance until late in life. There may be vague symptoms of dyspepsia, with occasional acute exacerbations evidently due to a tendency to volvulus. This may correct itself spontaneously again and again, until finally it becomes irremediable without an operation. The mechanism is the same as in the new-born. Radioscopy may prove misleading unless the conditions are studied from various angles, allowing intervals between the examinations. In one case the eighth plate, of the ten made, was the only one that revealed the true condition. In conclusion the long clinical history is related of a man aged 58 who had had a habit of vomiting bile every morning since childhood, with occasional acute attacks of pains and jaundice which were interpreted as gallstone colic with chronic enteritis; but necropsy explained the symptoms by transient obstruction of the bowel from kinking of the movable duodenum, or recurring partial volvulus, a consequence of the common mesentery.

Traumatic Rupture of Both Bladder and Urethra.—Plisson relates that the contusion had dislocated the pubes and torn the neck of the bladder and the lining of the urethra. The rupture of the urethra was overlooked at the first operation; this should have been sutured first, and the bladder merely drained. If neither laceration can be sutured, then diversion of the urine through the perineum, supplemented by suprapubic drainage, is the proper procedure. He reconstructed the urethra over a long drainage tube, about the caliber of a No. 18 catheter, the upper end extending from the opening into the bladder. The tube was pulled back and forth every day, and the gap left by resection of the cicatricial fibrous block soon healed and clinically normal conditions were restored.

Fate of Transplanted Nerves.—Policard and Leriche describe the findings in a leg amputated more than two years after a grafting operation on the sciatic nerve with a nerve from a calf. The nerve elements had grown into the implant from below, but the upper end was blocked with fibrous tissue.

Cicatricial Neuromas.—Leriche suggests the possibility that cicatricial neuromas of the minute branches of nerves may have some share in the pathology of the limbs and viscera. Just as such neuromas may be responsible for serious disturbance in amputation stumps, so they may entail internal disturbances. He urges research in this line.

November-December, 1922, **19**, No. 6

*Cancer of the Breast. L. Tixier.—p. 673.
*Phlebitis of Longitudinal Sinus. A. Rivière and R. Bertoin.—p. 679.

Cancer of the Breast.—Tixier reports 38 per cent. apparently cured of 211 patients with cancer of the breast given operative treatment between 1902 and 1914; fifty-seven are still living after more than six years. Fully 45 per cent. succumbed to recurrence during the first two years after the operation. He makes the extirpation as early and as extensive as possible.

Thrombophlebitis of the Head.—The protracted fatal obliterating process in the woman aged 32 was remarkable for the involvement of nearly all the venous sinuses of the head and the internal jugular veins. The woman died nearly six months after the first symptoms. A mastoid operation had been done on each side in turn.

Médecine, Paris

January, 1923, **4**, No. 4

Ophthalmology in 1922. A. Cantonnet.—p. 243.
*Senile Cataract. Lagrange.—p. 247.
Progressive Decrease of Trachoma in Montpellier. H. Truc.—p. 253.
*Writing for the Blind Which Can be Read by the Seeing.—p. 254.
*Furuncle of the Face and Orbital Thrombophlebitis. Gallemaerts.—p. 255.
*Enucleation in Panophthalmia. Rollet and Bussy.—p. 259.
*Surgical Treatment of Entropion. A. Cange.—p. 261.
Ophthalmic Migraine. F. Terrien.—p. 265.
*Palpation in Ophthalmology. H. Frenkel.—p. 267.
*Ocular Accidents in Spinal Anesthesia. A. Monthus.—p. 273.
*Ocular Syndrome of Botulism. De Saint-Martin.—p. 274.
*Ocular Autoserotherapy. P. Jeandelize and P. Bretagne.—p. 278.
Otorhinolaryngology in 1922. L. Baldenweck.—p. 282.
*Cure of Pseudo-Adenoids. Trétrop.—p. 289.
*Labyrinth Deafness Due to Arteriosclerosis. E. Escat.—p. 290.
*Latent Mastoiditis. L. Reverchon.—p. 296.
*Solitary Polyps of Nasal Fossa. H. Caboche.—p. 301.
*Abscess of Nasal Septum. G. Canuyt.—p. 307.
*Modern Treatment of Hay-Fever. M. Jacod.—p. 308.
*Migraine Following Sinus Disease. G. Dutheillet de Lamothe.—p. 314.
*Cough of Rhinopharyngeal Origin. A. Bloch.—p. 318.

Method of Choice in Treatment of Senile Cataract.—Lagrange has had excellent results with waiting till the cataract is really mature—although not overripe. He makes an intracapsular extraction, tears off part of the capsule, performs an iridectomy, and uses a conjunctival flap, with prophylactic vaccines and antipneumococcus serum as adjuvants. He does not believe that his results would be better if he used the method advocated by Barraquer (aspiration of the lens). The greater acuity of vision claimed by the followers of this method is hardly appreciated by the patients, who are quite satisfied with 5/10 vision. The dangers and possible accidents of the method of vacuum extraction in the capsule must not be underestimated.

Writing for the Blind with Usual Characters.—Dr. Cantonnet and Canon Nouet propose a new method of printing for the blind. Points in relief are kept, but instead of Braille's figures, the points are arranged in the shape of ordinary letters. The system has been accepted by the French authorities interested in ameliorating the condition of the blind, as was chronicled in the News department recently.

Furuncle of the Face and Orbital Thrombophlebitis.—Gallemaerts describes the dangers of thrombophlebitis progressing from the branches of the facial vein through the superior ophthalmic to the sinus cavernosus. Therefore every furuncle of the face should be treated early and radically by the galvanocautery.

Enucleation in Panophthalmia.—Rollet and Bussy consider enucleation by far the best method in panophthalmia. It is surprisingly benign. All the accidents are just as possible with excochleation.

Surgical Treatment of Entropion.—Cange considers Panas' operation as the only one which should be used by practitioners.

Palpation in Ophthalmology.—Frenkel finds that the practioner does not use palpation sufficiently and systematically in diseases of the eye. If the patient gives the impression of being sleepy (false ptosis), think of trachoma, which is found by turning back the upper lid. The subtarsal groove is a favored seat for small foreign bodies. Larger bodies can be found after rolling the lid around an object (after local anesthesia). Palpation of the lacrimal sac should become a reflex action of the physician. Every unilateral conjunctivitis, which lasts for more than fourteen days, is a dacryocystitis, as well as every conjunctivitis of the new-born, which lasts a month without attacking the cornea. Dacryocystitis is the fourth causal agent of blindness, especially in working people in whom it leads to ulcers with hypopyon. One finds in every ophthalmologic clinic glaucomatous patients who lost their sight because the physician had omitted to test the tension of the eye.

Ocular Accidents in Spinal Anesthesia.—Monthus deals with paresis of the abducens (rarely trochlearis) which occurs sometimes after spinal anesthesia made correctly. The paralysis usually disappears quickly, but it may sometimes persist.

Ocular Syndrome of Botulism.—De Saint-Martin mentions the usual ocular signs of botulism (more or less complete external and internal ophthalmoplegia), which should at once lead to the diagnosis, especially when connected with other ocular signs. He found in eight cases retinal congestion, amblyopia, and a very narrow field of vision.

Ocular Autoserotherapy.—Bretagne recommends Rohmer's method which consists in several injections of 1 c.c. of the exudate obtained from a blister. The injections may be repeated after forty-eight hours, and they are given alternately under the upper and lower conjunctiva of the bulbus. The indications for it are ulcers of the cornea, especially with hypopyon, postoperative infections, contraction of iris in rheumatic and gonorrheal iritis, and gonorrheal conjunctivitis. Other methods of treatment should also be used.

Cure of Pseudo-Adenoids.—Trétrop deals with "pseudo-adenoids." These unfortunate patients are curetted and resected repeatedly for a supposed hypertrophy of adenoids which does not exist. The insufficient permeability is due in these cases to a malformation of the maxillary bones. The incisor teeth are driven forward or backward. The treatment consists in an apparatus which spreads the two sides apart. In children under 10 years, good results are obtained in about six months. The most favorable age is 5 years.

Labyrinth Deafness Due to Arteriosclerosis.—Escat has pointed out that the labyrinth has its "intermittent claudication." Most cases of Menière's syndrome and of chronic labyrinth deafness appearing after the age of 40 are due to local arteriosclerotic disturbances. The only treatment is that of arteriosclerosis.

Latent Mastoiditis.—Reverchon finds it parodoxic to deal with symptoms of a latent affection. Yet we should think of latent mastoiditis if healing does not make rapid progress after paracentesis of the tympanic membrane, and especially when the pus comes at intervals. Sebileau pointed out also a particular psychic condition of these patients: they do not feel well, have a vague feeling of heaviness in the head, slight insomnia, no appetite, and incapacity for work. The disease is dangerous if not treated, and therefore a suspicion warrants surgical exploration.

Solitary Polyps of Nasal Fossa and Latent Sinusitis.—Caboche states that a solitary polyp of the middle fossa is a probable sign of an affection of the sinus, even if the meatus appears clean. It recurs if the sinusitis remains untreated. Yet the patients are usually satisfied with the immediate effect of the removal of the polyp.

Abscess of Nasal Septum.—Canuyt emphasizes that the diagnosis and incision should be made early, because the affection destroys the cartilage and causes severe deformity.

Modern Treatment of Hay-Fever.—Jacod reviews the pollen theory and the results of specific treatment.

Migraine Following Nonsuppurative Affections of the Sinus.—Dutheillet de Lamothe traces a number of supposed migraines to affections of the sinuses. Sphenoidal affections cause an occipital headache, while the posterior ethmoidal produce a diffuse pain.

Cough of Rhinopharyngeal Origin.—Bloch emphasizes the rhinopharyngeal causes of coughing. This "pseudotuberculosis" is due to adenoids, rhinitis or nasal malformations.

Nourrisson, Paris

January, 1923, **11**, No. 1

*Breast Milk as Factor in Eczema in Infants. A. B. Marfan and Turquety.—p. 1.
*Lab-Ferment in the Fetus. G. de Toni and M. Montavani.—p. 10.
*Diphtheria in Infants. M. Chevalley.—p. 33.
American Methods of Milk Modification. R. Caruette.—p. 46.

Eczema in Infants.—Marfan and Turquety observed a wet-nurse whose milk caused eczema in three nurslings. The milk contained from 4.1 to 7.8 per cent. of fat. When the fat content returned to the normal proportion, the child she was suckling at the time remained healthy.

Lab-Ferment in the Fetus.—De Toni and Montavani found lab-ferment in the stomach of human fetuses as early as between the third and fourth month of development. In certain fetuses the lab-ferment was lacking or its action was minimal even in farther advanced development. In most of the cases its action seemed to be comparatively specific against human milk.

Diphtheria in Newly Born and Other Infants.—Chevalley calls attention to the possibility of diphtheria when an infant has rhinitis or ulcerating cutaneous lesions at the navel or behind the ear. Such affections are comparatively harmless. The rhinitis of inherited syphilis seems to be a favorite point of attack for the diphtheria bacillus. Inoculation of animals seems to be the only means to exclude pseudo-diphtheria bacilli.

Presse Médicale, Paris

Jan. 17, 1923, **31**, No. 5

Pasteur and General Biology. C. Delezenne.—p. 45.
*Diathermy in Affections of Gallbladder. J. J. Rouzaud and J. Aimard.—p. 47.
*Insufficiency of the Hip Joints. J. Gourdon.—p. 48.
Pancreatic Hormone and Diabetes. P. Pagniez.—p. 50.

Diathermy in Affections of the Gallbladder.—Rouzaud and Aimard had further good results in the majority of 200 more cases treated by diathermy. It is the method of choice in subacute cholecystitis without or with formation of gallstones.

Insufficient Hip Joints.—Gourdon points out that congenital deformities of hip joints are comparatively frequent. In children and even old persons, they are the cause of disturbances, which resemble coxitis. Early fatigue in walking and attacks of pain, especially if the weight of the body increases (pregnancy) or if the profession requires much walking, are the usual signs. Rest and daily exercises with forced abduction of the thighs lead to formation of a better acetabulum, and give excellent results in children in a few months.

Schweizerische medizinische Wochenschrift, Basel

Jan. 25, 1923, **53**, No. 4

*Migraine. A. Schlesinger.—p. 77.
Climate of Switzerland. H. Hunziker.—p. 81.
*Urohemolytic Coefficient in Malignant Tumors. C. Bortolotti.—p. 83.
Treatment of Deformities of Lips. P. Cattani.—p. 85.
Macroscopic Anatomy of Heart. P. Schweizer and M. Ujiie.—p. 89. Cont'd.
Morbid Conditions in the Feet. F. Brandenburg.—p. 91.

Migraine.—Schlesinger uses pills of iron and calcium glycerophosphate and a laxative tea in the treatment. He calls the attack a "depurative crisis."

Urine-Hemolysis Coefficient in Malignant Tumors.—Bortolotti found that Amati's urohemolytic coefficient is of no value for the diagnosis of malignant tumors.

Pediatria, Naples

Jan. 15, 1923, **31**, No. 2

*Antimony Intolerance in Leishmaniasis. I. Nasso and M. Mallardi.—p. 57.
*Histology of the Liver in Infancy. A. F. Canelli.—p. 68.
Universal Hydrops of Fetus. R. Pollitzer.—p. 80.
Turricephalia. Giuseppe Foresti.—p. 90.

Antimony Resistance of Parasites and Intolerance of Patients in Treatment of Leishmaniasis.—Nasso and Mallardi found sometimes a primary or secondary resistance of the parasites against the antimony tartrate used in treatment. The secondary resistance may be due to too small doses or to irregular intervals in treatment. Some patients cannot stand larger doses. In all of these cases the treatment has to be adapted to the conditions. For resistant parasites, the doses have to be large (5 to 7 cg.) and the pauses longer in order to insure the elimination of the drug. With secondary resistance combined with intolerance of the patient, the treatment must be arrested for several weeks and started again with smaller doses. In primary intolerance, small doses have to be used every two or three days. With these methods no child needs to die from leishmaniasis.

Histology of the Liver in Infancy.—Canelli has found in the liver and other organs a fibrillar system around the vessels which has an elective affinity for ammoniacal silver salts. It develops in the second half of the first year of extra-uterine life. This system shows a different reaction in disease.

Chirurgia degli Organi di Movimento, Bologna

January, 1923, **7**, No. 1

*Anomalies in Shape of Fifth Lumbar Vertebra. G. Benassi.—p. 1.
*Diagnosis of Pott's Disease in the Elderly. M. Salaghi.—p. 57.
*Juvenile Arthritis Deformans. De Raffele.—p. 65.
*Voluntary Control with Amputation Stump. G. D'Agata.—p. 104.

Malformation of Fifth Lumbar Vertebra.—In concluding a long study of the true and false sacralization of this vertebra, Benassi remarks that the more numerous our methods of investigation the greater the probable error from inaccurate or misconstrued findings.

Tuberculosis of the Spine in the Elderly.—Salaghi's experience testifies that Pott's disease is very liable to escape discovery when it develops at an advanced age. The persistent pains in the lumbar region or above are usually ascribed to rheumatism or gout. He describes a case in a woman, aged 70, who was relieved of pain by a plaster cast. As a rule there is no deformity of the spine in these elderly cases.

Juvenile Arthritis Deformans.—De Raffele gives nine photomicrographs from two typical cases in girls, aged 11 and 14. Tuberculin tests were negative. In one case improvement was realized under general and physical measures, and for three years the clinical cure seemed complete. Then the symptoms returned and the lesion was resected, with an apparently complete and permanent cure.

Cineplastic Amputation.—The forearm of the young woman had been amputated on account of a tuberculous process. The stump was slit up to utilize the muscular energy as the arm is twisted back and forth. The results have exceeded anticipations. Putti calls this the "forceps method" as the forked end of the stump grasps articles like the jaws of forceps. The muscular force is sufficient to move the fingers of an artificial hand in many such cases. The article is illustrated.

Archivos Latino-Amer. de Pediatría, Buenos Aires

January, 1923, **17**, No. 1

*Anemia in Infants. M. Acuña and A. Casaubón.—p. 1.
*Orbital Abscess. J. de Salterain and J. C. Munyo.—p. 22.
Tuberculosis of the Conjunctiva. J. de Salterain.—p. 26.
Pneumonia in Two Infants. W. Piaggio Garzón.—p. 32.
*Hydatid Cysts in the Lungs. E. Portu Pereyra.—p. 38.
*Jaundice from Fright. J. Rosenburg.—p. 48.
Pyelitis in Infant. Recovery after Autogenous Vaccine Treatment. V. Zerbino.—p. 53.
Chronic Eczema. Recovery After Vaccine Treatment. Piriz Aréchaga.—p. 59.

Anemia in Infants.—Acuña and Casaubón describe the clinical aspect of anemias of the chlorotic type, of the grave type with splenomegaly, and the pernicious hypoplastic or aplastic type, reporting examples of each. Inherited syphilis and an over-long exclusively or predominantly milk diet—even of breast milk—are the most frequent causes of anemia in infants. The region should always be considered and an inquiry made in regard to endemic malaria, hookworm and leishmaniasis. Whatever the measures addressed to the causal agent, the food should be varied and rich in iron, with organotherapy, arsenic, iron, hygiene, and transfusion of blood in the grave cases. Transitional forms are frequent. Roentgen-ray exposures of the enlarged spleen in a personal case failed to modify the size of the spleen. The leukocytes dropped to 4,500, but the normoblasts declined likewise, hence they consider roentgenotherapy a two-edged weapon to be wielded cautiously. They give a list of foods, rich in iron: peas with 6.6 mg.; apples, 13.2 mg.; beef, 16.6 mg.; egg yolk, 17.1 mg., and spinach, 35.9 mg. in 100 gm. of dried substance.

Maxillary Sinusitis and Abscess in the Orbit.—The girl aged 8 had complained for a week of swelling of the cheek and eyelids, and two carious teeth were extracted on the assumption of sinusitis in the antrum of Highmore. A phlegmon in the orbit was recognized five days later, was evacuated at once by an incision in the mucosa of the gum and lip at the canine fossa, and the periosteum was scraped up to the phlegmon. The Caldwell Luc technic was then applied and a drainage tube left in the site of the phlegmon. Recovery was uneventful and vision was not impaired. The prompt and radical intervention had warded off danger. This should be the rule at the slightest suspicion of extension to the orbit of a process in the maxillary sinus. The pneumococcus was found in the pus in this case, a vaccine was used, and the mouth was disinfected with 1 per cent. phenol solution.

Hydatid Cyst of the Lung.—In only one of the seven cases described in children between 11 and 14 was it necessary to call in the surgeon. In six cases the cyst evacuated its contents through a bronchus, and the symptoms subsided. The interval between the vomica and complete recovery ranged from twenty days to two months. One of the children had been sent to a sanatorium for the tuberculous; the hydatid cyst was not recognized until the vomica, and the child contracted tuberculosis from the environment. In the operative case there was a second hydatid cyst in the liver.

Jaundice from Emotional Stress.—The girl aged 9 had barely escaped being run over, but was apparently uninjured. The next day there was intense jaundice, and slight fever, with clay-colored stools, while the urine was dark. The liver and spleen were enlarged, but conditions gradually

returned to clinically normal in eleven days, except that the jaundice was still perceptible to a slight extent. Rosenburg states that he knows of only twelve cases on record of jaundice from a fright, and believes that this is the first instance to be published in Latin America.

Revista Médica del Uruguay, Montevideo

January, 1923, **26**, No. 1

*Bullet in Pericardium. P. Barcia and J. Montes Pareja.—p. 1.
Postdiphtheric Paralysis of Deltoids. S. García Pinto.—p. 4.
Multiple Tardy Bone Lesions from Inherited Syphilis. Alice Armand Ugón.—p. 9.
*Thrombophlebitis of Lateral Sinus. J. C. Munyo.—p. 14.
*Syphilitic Necrosis of Skull. Aquiles di Lorenzo.—p. 19.
*Primary Syphilis Refractory to Arsenicals. J. May.—p. 26.

Bullet in Pericardium.—The man now aged 42 has had no appreciable disturbances from the pistol bullet in his heart for twenty-two years. It seems to be lodged in the anterior wall of the left auricle.

Thrombophlebitis of Lateral Sinus.—Munyo's success in the three cases reported should encourage operative treatment of all cases of the kind diagnosed before irreparable lesions have occurred. One of the cases is described in detail. The girl aged 14 had had a low-grade recurring otitis from infancy. The jugular vein was ligated low down before the tough thrombus was extracted from the lateral sinus. The wall of the sinus was rinsed with surgical solution of chlorinated sodium, and the incision was tamponed.

Syphilitic Necrosis of the Skull.—The woman died at the age of 40 from the effects of cranial osteitis of ten years standing. The syphilitic nature of the lesions had not been suspected until too late.

Syphilis Refractory to Arsenicals.—May describes secondary lesions in a man notwithstanding vigorous neoarsphenamin treatment soon after infection; the Wassermann test was negative. He cites a number of other cases in which treatment with arsenicals failed to prevent return of secondary lesions.

Beiträge zur klinischen Chirurgie, Tübingen

1923, **128**, No. 1

*Pathology of Secretion of Bile. Gundermann.—p. 1.
*Salt Content of Bile. L. Kröck.—p. 18.
*Endocrine Factor in Electric Excitability. O. Specht.—p. 25.
*Regional Anesthesia for Abdominal Operations. F. v. d. Hütten.—p. 54.
*Comparison of Salt and Sugar Solutions. E. Düttmann.—p. 68.
Perineal Ectopia of Testes. Gundermann.—p. 75.
*The Kidneys with Hypertrophied Prostate. G. Düttmann.—p. 79.
*Mesenteric Arterioduodenal Occlusion. A. Braun.—p. 103.
Primary Phlegmons of the Intestine. A. Braun.—p. 142.
Operative Treatment of Gumma in the Liver. E. Monse.—p. 148.
Amputation Stumps in the Young. W. Vermeil.—p. 159.
*Traumatic Injury of Semilunar Bone. E. Saupe.—p. 187.
*Protection of the Parathyroids. F. de Quervain.—p. 197.
*Bile Peritonitis without Perforation. H. Burckhardt.—p. 209.

Pathology of Secretion of Bile.—For two years Gundermann has made a practice of collecting the bile after operations on the common duct. The patients were kept in bed, and the changes in the bile secretion were studied for eight days. In nine of the thirteen cases the bile thus collected averaged about 250 c.c. a day; in two others the average was 500 c.c., and one patient excreted more bile than urine. The amount was more than the intake of fluid. The salt content of the bile was remarkably constant. Bile secretion does not seem to be influenced by intake of fluid. In his total thirty-one cases requiring an operation on the common bile duct, there was only one instance of abnormally profuse secretion of bile, a true polycholia.

Salt Content of Bile.—Kröck in twenty cases found that the salt content was remarkably constant, regardless of the intake of salt in the food.

Influence of Endocrine Glands on Spastic Conditions and Electric Excitability.—Specht gives fourteen pages of tabulated data of extensive experiments on guinea-pigs to determine whether removal of one or several endocrine glands would modify spastic conditions. The experiments were numerous and diverse, but the findings were constantly negative. They do not sustain in any way Brüning's recent suggestion that removal of the suprarenals might favorably affect epilepsy.

Regional Anesthesia for Abdominal Operations.—Hütten reports seventy-three operations under paravertebral or parasacral anesthesia. The nerves and rami communicantes are blocked as they emerge from the intervertebral foramens. For the kidneys, this seems the preferable method of anesthesia, but for other abdominal operations it has several drawbacks. He saw nothing to confirm the alleged dangers of the technic, and Siegel came to the same conclusion from his experience in 2,000 cases. Hütten says that Braun's parasacral anesthesia is harmless, simple and certain, and is superior to all other methods of anesthesia for organs innervated by nerves that can be blocked by injection through the sacral foramens. This includes the prostate, bladder and rectum. Hütten gives a table to show the special nerves blocked for the various operations. In the seven kidney cases the forty-five minute operation was done with only 1.5 gm. of procain, and the anesthesia was perfect. The nerves blocked were the sixth to the twelfth dorsal and first and second lumbar. The anesthesia was perfect also in the eight cases of rectal cancer. The operation lasted up to 150 minutes, but only 2.5 gm. of procain was used. The nerves blocked were the tenth to twelfth dorsal, the first to the third lumbar and the first to the fifth sacral. The after-effects of the anesthesia are extraordinarily mild.

Superiority of Sugar Over Salt Solutions for Infusion.—Düttmann reports tests with isotonic salt and sugar solutions given by subcutaneous infusion in twenty cases and compares the results. The water was not eliminated so rapidly with sugar solution as with salt, but it stimulated metabolism more effectually. This was manifest in the increased elimination of urates and phosphates in the urine, and excellent elimination of sodium chlorid. Sugar is also useful for nourishment, and tends to ward off acidosis.

Tests of Kidney Function with Hypertrophied Prostate.—In four of eleven patients with hypertrophied prostate, the tests revealed pronounced insufficiency of the kidneys, and one succumbed to uremia after the prostatectomy. Düttmann ascribes the kidney changes mainly to mechanical injury from retention of urine in the bladder. The resulting disturbance may be in the nature of stasis polyuria, the kidneys being unable to secrete concentrated urine. The blood becomes thicker, and symptoms of dehydratation appear. The derangement is functional, as all the symptoms soon subside after suprapubic incision of the bladder. In this class of cases, with polyuria and not much nonprotein nitrogen, the operation should always be done at two sittings. When the nonprotein nitrogen in the blood is much above normal, whether or not there is stasis polyuria, the kidneys are organically diseased, and the blood pressure is generally high. Any attempt to remove the prostate is dangerous under these conditions. A simple fistula into the bladder, if the outflow of urine is much impeded, is preferable to other intervention.

Acute Dilatation of the Stomach.—Braun explains that acute dilatation of the stomach can occur as a primary affection, and arteriomesenteric occlusion of the duodenum may likewise occur as a primary, independent clinical picture. Either may occur and be followed by the other. Prognosis is favorable if the condition is recognized promptly and the cause treated (position, emptying the stomach, removal of hampering factors). A rapidly progressive course renders the prognosis extremely grave if the true condition is not recognized. If improvement does not follow at once, operative treatment should not be deferred too long. The great danger is that no one thinks of acute dilatation of the stomach, and hunts for other causes. Perforation peritonitis is the usual diagnostic blunder. The stomach tube clears up the diagnosis and is important in treatment. If there is a history of acute dilatation of the stomach in the past, extreme caution is indispensable in giving an anesthetic. The rapid distension of the abdomen, dulness, splashing sound, and typical vomiting render the diagnosis easy if the possibility is borne in mind. There is no vomiting at first as the stomach is paralyzed, but it finally becomes so distended that pressure forces the contents upward, and small amounts are repeatedly vomited.

Traumatic Nutritional Disturbance in the Semilunar Bone.—Saupe reports a case in a young woman and compares it

with seventy-six on record. The prognosis is favorable when treatment is applied early, but not otherwise.

Protection of the Parathyroids.—De Quervain emphasizes the necessity for special care in regions where tetany is common; also in operations for recurrence of goiter. He has never had an instance of pronounced tetany after any of his 2,203 operations for goiter in the last twelve years. In only three cases were there slight functional disturbances suggesting possible parathyroid injury. He gives a few rules which he always observes and to which he ascribes his success.

Bile Peritonitis.—Burckhardt declares that no authentic cases of "bile peritonitis without perforation" are on record. The perforation may have been overlooked or may have healed. An effusion from the biliary apparatus may be somewhat tinted, but this is not bile.

Deutsche Zeitschrift für Chirurgie, Leipzig

December, 1922, **176**, No. 5-6

*Aneurysm of Renal Artery. K. Vogeler.—p. 297.
*Goiter Statistics. M. Stoss.—p. 325.
*So-Called Aseptic Renal Pyurias. W. Peters.—p. 342.
Lymph Glands in the Cheek at the Commissure. Seifert.—p. 354.
*Pathology of the Thymus. II. E. Bircher.—p. 362.
*Appendix in Hernia on Left Side. K. H. Erb.—p. 379.
*Operative Treatment of Excessively Large Hernia. Denk.—p. 399.
Sarcoma of Spermatic Cord. M. Mettenleiter.—p. 402.
Unusual Chronic Invaginations. O. Hagedorn.—p. 407.

Aneurysm of the Renal Artery.—Vogeler gives details of a case personally observed and of twenty-eight others he has compiled from the literature of 200 years. The correct diagnosis was made during life in only five of the cases. The tumor developing slowly after a slight trauma and the blood in the urine are the main elements for diagnosis. In the seven operative cases, the kidney usually had to be removed with the aneurysm, and the patients were all saved but one. In this case, in isolating the tumor the artery ruptured, and fatal hemorrhage ensued. Orth succeeded in suturing the tear in the renal artery and thus saved the kidney.

Statistics of Goiter.—Stoss analyzes 606 operative cases of goiter at Munich. In men the goiter seems to be more of an ordinary tumor type, and the disturbances are mainly mechanical, while in women the goiter seems to be more closely connected with the endocrine system, and thyrotoxic disturbances predominate.

Aseptic Renal Pyuria.—Peters relates that in fifteen cases no bacteria could be found to explain the renal pyuria, and conservative treatment was applied in ten. In the others the kidney was removed and in every instance recent or old inflammatory lesions were found, amply explaining the pyuria and justifying the nephrectomy even in the absence of tuberculosis.

The Thymus in Surgical Infections.—Bircher's experience in Switzerland has confirmed the importance of operative reduction of the thymus to break up the vicious circle of the thymic-lymphatic status. The hospital records showed this thymic-lymphatic status in 75 to 80 per cent. of the thirty-five deaths in 276 cases of tetanus, diphtheria, appendicitis, and acute infectious cholecystitis. He contends that, with the mechanical factors, endocrine factors are involved in cases of "thymus death." He has operated on the thymus in ten cases. The portions resected measured up to 10 cm. and weighed up to 45 gm. The benefit on the general condition thereafter was beyond question. The medulla always showed marked hyperplasia. He does not approve of roentgen treatment of persistent thymus or of the thyroid, regarding it as treatment in the dark, without possibility of correct dosage, while the treatment affects the whole of the thymus and thymiprival idiocy is liable to follow. He has seen a case in which the growth was completely and permanently arrested three years after roentgen exposures of the thymus. In another case the exposures aggravated the symptoms so that the thymus had to be resected after all. At the operation it is easy to resect the abnormal and leave the normal portions.

Appendix in Hernia on Left Side.—Erb states that situs inversus was not discovered in any of the 50 cases he has compiled in which the vermiform appendix was included in the left hernia. He adds a case personally observed to the list. The hernia was of the femoral type in only 5 of the cases. In 5 the hernia was congenital; in 14 it was of long standing. In one case the hernia had existed from birth to the age of 41.

Large Irreducible Hernia.—Denk commends resection of the irreducible portion of the intestine, and reports a case that illustrates the advantages. The portion of the bowel resected measured 265 cm. Numerous lipomas in the omentum and mesentery had impeded reduction. The patient was a man aged 57, and recovery was smooth.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 10, 1923, **1**, No. 6

*Therapeutic Abortions. J. A. van Dongen.—p. 538.
*Pseudohemophilia. F. van der Zande.—p. 544.
*Epilepsy with Dementia Praecox. A. Endtz.—p. 554.
Accessory Coronary Artery. H. Feriz.—p. 567.
*Rupture of Varicose Vein in Vagina. H. Veen.—p. 571.
Prolapse of Umbilical Cord. J. Krull.—p. 572.

Therapeutic Abortion.—Van Dongen relates that in six of his 2,000 curettements the procedure was undertaken as an emergency measure to save the woman's life, although the pregnant uterus itself was intact. There was always a consultation between the family physician, an experienced obstetrician and the specialist in the affection responsible for the grave condition. He never emptied the uterus on account of uncontrollable vomiting alone, or chronic kidney disease, but pregnancy pyelitis compelled this in one case not seen until too late for ordinary measures. Irrigation of the kidney pelvis is difficult in advanced pregnancy, and is less certain in its effects than abortion. In one case of rapidly progressing pulmonary tuberculosis with anemia, in a primipara in the third month of pregnancy, arrest of the pregnancy brought a turn for the better, and the disease has been stationary since. In another case a specialist advised interruption of the pregnancy on account of the severity of an affection of the maxillary sinus which had returned at each of the woman's five pregnancies, with other sinus and brain complications in the last. The interval since the last menstruation was only six weeks, and the sinusitis healed after the abortion. Progressive pulmonary tuberculosis, or threatening heart disease were the indications in the other cases, the grave condition continuing after the abortion, but the patients survived for nearly a year or to date.

Inherited Hemorrhagic Blood Platelet Insufficiency.—Glanzmann noted a family tendency to repeated epistaxis and other hemorrhages in his 8 cases of hemorrhagic purpura. There was a history of 4 instances of Werlhof's disease in one family, 2 in the second and 2 in the third generation. Six of the 12 members of the second generation presented a hemorrhagic diathesis, and 2 females and one male in the third generation. This thrombasthenia explains the hemorrhagic diathesis in women which has raised the question whether hemophilia can occur in women. The two conditions differ decidedly. In hemophilia there is bradythrombia, in contrast to the tachythrombia of Glanzmann's thrombasthenia. Van der Zande describes a family which seems to belong to this type although no instances of actual hemorrhagic purpura are known in the five generations, with 8 bleeders, men and women. The number of blood platelets is normal or above normal, but they are abnormal in shape, and coagulation does not occur normally. Zande suggests the term pseudohemophilia for this type of bleeders, as he does not think it has been proved that the blood platelets alone are to be incriminated, and this term suggests the familial and hereditary tendency.

Epilepsy Associated with Schizophrenia.—In one of the two cases reported the epilepsy was accompanied by catatonia and schizophrenia. In the second case paranoid dementia praecox was prominent. Both women had been mentally backward. He assumes a congenital tendency to schizophrenia, with an acquired genuine epilepsy.

Hemorrhage from Varices in the Vagina.—The danger from this cause is mainly that no one thinks of the possibility of a ruptured varicose vein as responsible for sudden profuse genital hemorrhage during pregnancy.

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THE REVISION OF THE MEDICAL CURRICULUM *

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In the last few years there has been among medical educators much discussion of the necessity or, at least, the desirability of revising the medical curriculum. During the last year I have made this matter the subject of a special study, and shall present the result briefly.

The problem of this special research was: What should the medical student be taught? What must the medical student know in order to qualify as a practitioner of medicine? I undertook to find out, first, what the medical student is being taught in our better medical schools today. This I attempted to do, first, by visiting various laboratory and clinical departments and inspecting the work done in these departments; and, secondly, by reading and reviewing (I found this both interesting and instructive) some recent generally employed textbooks on each subject, such as Macleod's "Biochemistry and Physiology" applied to medicine, Cunningham's "Anatomy," Starling's "Physiology," Jordan's and Zinsser's books on bacteriology, MacCallum's "Pathology," Kaufman's "Special Pathology," Cushny's "Pharmacology," Osler's "Medicine," Williams' "Obstetrics," Rosenau's "Hygiene and Public Health," and Lexer's "General Surgery" and the "Handbuch der practischen Chirurgie."

I interviewed the heads of the various departments and asked them what they thought (*a*) of the present curriculum of their own departments, and (*b*) of the curriculum as a whole, and obtained from them their views as to changes which they deemed advisable.

The questions were asked and answered with the understanding that there were two fixed conditions: first, that the purpose of the medical course was to train practitioners of medicine, and, second, that the present seven years of technical training (two premedical and four in the medical school, and the hospital intern year) were not to be increased. I attempted to obtain from the chief of each laboratory department his views, since it was impossible to cover completely his science in the course given to a medical student as to:

(*a*) What portion of his subject should be taught.

(*b*) In what part of the curriculum his subject should be presented.

(*c*) What prerequisite should be required, and his opinion of the instruction given to the medical students before they came to his department.

(*d*) What, if any, subjects in the first and second years in the medical school could be pushed back into the premedical years.

(*e*) The advisability of introducing the patient, "clinical problems," into the freshman and sophomore years of medicine, and, if in his opinion this should be done, his views as to how it should be done, whether by the clinical departments, the laboratory departments, or by both.

(*f*) If the laboratory subjects should be continued in some way throughout the third and fourth years, and if so in what way.

(*g*) The advisability of better cooperation between the various departments: (1) between the laboratory departments; (2) between the clinical departments, and (3) between the laboratory groups and the clinical groups.

I interviewed the heads of the clinical departments in much the same way: First, What portion of his subject should be taught, and how? I especially emphasized the questions:

(*a*) What portions of the laboratory subjects, anatomy, physiology, pathology and pharmacology, do you think the medical students should be taught?

(*b*) What is your opinion of the way these subjects are being taught at present, etc.?

(*c*) Do you think it advisable to introduce the medical student to the clinic in his first and second years, and if so, how should this be done?

(*d*) In the third and fourth years, largely clinical work, should the laboratory sciences of anatomy, physiology, pathology and pharmacology be continued in some way in the medical course, and, if so, in what way?

(*e*) What suggestions have you as to better coordination and team work between departments?

(*f*) In what way should the clinical departments be organized in the undergraduate medical course? Under three heads, medicine, surgery and obstetrics, with the specialty subtopics under these main departments, such a scheme in detail would be:

General medicine	Neurology Pediatrics Dermatology Hygiene and Public Health
General surgery	Orthopedic Oral Rectal Genito-urinary Ear, nose and throat Eye
Obstetrics	Including gynecology

or should each of these specialties be a separate department?

FIELD COVERED IN ACTUAL PRACTICE

In order to obtain a knowledge of what portions of the sciences of anatomy, physiology, pathology and bacteriology, pharmacology, medicine, surgery and obstetrics are actually used in the practice of medicine, I made a study of the work done in a well equipped hospital of

* Read at the Congress on Medical Education, Licensure, Public Health and Hospitals, Chicago, March 5, 1923.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several case reports. The complete article will appear in the author's reprints.

more than 400 beds. This is a teaching hospital in which a fair amount of research is being done, but in which the primary object (with which nothing is allowed to interfere) is to give to the patient the best care and the benefits of modern science. In analyzing the work done in this hospital, I asked myself the question, "What portions of these daughter sciences of medicine do I employ in my own work?" and I answered it by studying some of the cases which were under my care.

CASE 1.—In an old depressed fracture of the skull with epilepsy and paralysis of some of the muscles of the right forearm and hand, with resulting deformity and complete loss of function of the hand in which we did an arthrodesis of the wrist joint and transplanted the flexor carpi ulnaris into the extensor tendons, the special studies involved were anatomy and physiology: the anatomy and function of the motor area of the brain, especially the arm center and the anatomy of the wrist joint and the muscles and nerves of the forearm.

CASE 2.—In a case of resection of the stomach for carcinoma by the Billroth II method, the sciences employed were: (*a*) physiology, in the chemical analysis of the gastric contents and the examination of blood, blood pressure and urine; (*b*) physics, in the use of the roentgen ray, demonstrating the filling defect in the stomach; (*c*) pharmacology, in the use of morphin for pain; nitrous oxid and ether for anesthesia, and alcohol and mercuric chlorid to prepare field of operation; (*d*) anatomy, in making the abdominal incision and in the technic of the stomach resection; (*e*) pathology, in the recognition of the mass as a carcinoma from the gross appearance of the primary lesion, character of the involvement of the lymphatic glands, and the microscopic study of the specimen.

CASE 3.—A young man had a carbuncle on the back of his neck, and secondary hematogenous infection of the soft tissues of his foot and thigh. Here were involved: (*a*) pathology and bacteriology; the organisms in the carbuncle and in the foot were *Staphylococcus aureus,* and examination of the blood for bacteria was negative; (*b*) physiology; he did not have diabetes, but increased sugar content in the blood—170; (*c*) anatomy, in the technic of the operation.

CASE 4.—In a case in which there was a tumor of the spinal cord with pressure on the cord and resulting paralysis, the tumor was removed, followed by relief and recurrence. The tumor was malignant. Here the sciences of anatomy, physiology and pathology were especially employed.

CASE 5.—A boy, aged 4, had exstrophy of the bladder. Sonenburg's operation of removing the bladder mucosa, and transplanting the ureters to the dorsum of the penis was performed, and the raw surface was closed with skin and superficial fascia flaps. Here a knowledge of embryology was important and interesting.

CASE 7.—A girl of 18, with marked exophthalmic goiter, presented a typical picture. The basal metabolism was +75. She had unfortunately been given for a short time iodin treatment. Ligation of both superior thyroid arteries, and six weeks later removal of four-fifths of the thyroid gland were performed. Here, were involved physiology in the basal metabolism test; pharmacology in regard to the iodin treatment; pathology of the specimen removed, and anatomy in the technic of ligating the superior thyroid arteries and removal of the thyroid.

CASE 8.—In a case in which the patient had a huge carbuncle of the back of the neck, and diabetes, urine examination showed a large amount of sugar, etc.; blood examination was negative for bacteria; pus showed *Staphylococcus aureus.* The patient was given insulin, improved, and became sugar free, but died in a few days. Postmortem examination showed multiple abscesses in the lungs, kidneys, etc. This case illustrated the importance of applied physiology, bacteriology, pathology and pharmacology.

CASE 9.—A man, aged 40, admitted on the medical side, had abdominal actinomycosis, which was mistaken first for kidney lesion and infected hypernephroma. Examination was performed by the cystoscopist in the surgical department. There was a mass in the right lower quadrant of the abdomen extending into the flank and kidney region. A perinephritic abscess was opened and drained under ether; a large amount of pus and degenerated granulation tissue was removed. The clinical diagnosis at the time of operation was "actinomycosis," on account of the clinical picture and especially the wooden infiltration of the abdominal wall. The laboratory report on the tissue was probable hypernephroma. Roentgen-ray treatment was given some weeks later. The surgeon again reviewed the case and again made a clinical diagnosis of actinomycosis, curetted the sinus, examined the granulation tissue removed, and found *Actinomyces.* The patient was put on mixed treatment of copper and potassium iodid, with copper sulphate irrigation and roentgen ray, with marked improvement. This illustrates: applied anatomy in the technic of the operation; applied pathology in examining the tissue; applied bacteriology in finding *Actinomyces;* applied pharmacology in using copper and potassium iodid; applied physics in the roentgen-ray treatment.

CASE 10.—A man, aged 60, with cirrhosis of the liver and an enlarged spleen, had had syphilis and was addicted to the use of alcohol; since prohibition he had been drinking extract of ginger with 82 per cent. alcoholic content. This illustrates: applied bacteriology in the Wassermann reaction; applied anatomy in the physical examination of the patient; applied physiology in examination of the blood, blood pressure, urine, etc., and applied pharmacology in treatment with mercury and iodid.

CASE 11.—There were three cases of ascites in my service at the time I made these studies:

A girl, aged 14, underwent exploratory laparotomy under local anesthesia, which showed malignant papilloma of the ovary, with extensive peritoneal implantations.

A woman, aged 40, presented a mass in the region of the gallbladder. The leukocyte count was 25,000; hemoglobin, 50 per cent. There was great loss of strength and weight; there were great pain in the back, and fluid in the abdomen. My clinical diagnosis was carcinoma. The attending physician and the husband were very urgent for an operation. Operation under gas-oxygen disclosed the peritoneum filled with milky peritoneal fluid chylous ascites, and an inoperable carcinoma of the liver, bile tracts and probably the pancreas and thoracic duct.

A woman, aged 50, ill many months, seen by many physicians, had suffered great loss of weight and strength; she was in pain; the temperature ranged from 100 to 102.5 F.; the leukocyte count from 55,000 to 60,000; the hemoglobin was 42 per cent.; there was fluid in the abdominal cavity. Clinical methods were exhausted without arriving at a diagnosis. Exploratory laparatomy revealed several pints of clear, yellowish peritoneal fluid. The abdominal viscera were carefully examined with the entire hand within the cavity. At first nothing was found; after long search a carcinoma of the left lobe of the liver was found.

All these cases of ascites illustrate the application of laboratory branches to clinical work.

CASE 12.—A man, aged 25, presented a clinical picture of renal colic on the right side. The urine showed red blood cells and pus. Roentgen-ray examination showed multiple kidney stone. A pyelogram showed dilated pelvis and calices. Catheterization of the ureters showed two functioning kidneys. The right kidney showed blood and pus in the urine; the urine from the left kidney was normal. There were no tubercle bacilli in either kidney. The phenolsulphonephthalein test disclosed the right kidney one-third normal, the left kidney normal. Blood chemistry was normal. The diagnosis was: stones in a greatly damaged right kidney; normal left kidney. Surgical therapy consisted of removing the right kidney under ether. The proper handling of this case shows the application of anatomy, physiology, pathology, pharmacology and physics.

CASE 25.—A man, aged 68, was ill six or eight months; there was blood from the rectum, and blood from the bladder. Later there was great bladder irritation. There was a sharp rise of temperature, and evidences appeared of ascending pyelitis, and then fecal matter from the bladder and urine

from the rectum. Proctoscopic and cystoscopic examination disclosed a mass between the bladder and the rectum just above the prostate. Fecal matter was seen pouring into the bladder. There was no opening from the bladder into the rectum on proctoscopic examination. The bladder was filled with sodium bromid and a roentgenogram was taken to determine what part of the intestinal tract communicated with the bladder. A colostomy was done under local anesthesia to exclude feces from the urinary tract and save the patient from immediate danger of death from hydronephrosis. The distal end of the bowel was completely separated from the proximal by dissecting off and invaginating the mucosa into the distal loop.

There were two cases that were interesting from the standpoint that an immediate diagnosis was made from the clinical picture and the physical examination without any laboratory findings, and immediate operation done:

One of my medical students was taken with a sudden pain while in the classroom. The instructor giving the course brought him at once into the Presbyterian Hospital, which building is connected with the college building. The student, aged about 25, was evidently suffering intense pain in the abdomen, especially in the upper portion, and the abdominal muscles were intensely rigid: what might be described as a boardlike rigidity. He had been treated for duodenal ulcer several years ago, before he entered the army; these symptoms had disappeared during his army life. We made the clinical diagnosis of perforating duodenal ulcer, sent him at once to the operating room, and found a very small perforation in the anterior wall of the duodenum, which was closed with two purse-string sutures.

A man, aged 60, was taken with a violent pain in the right lower quadrant of the abdomen. I saw him at his own home. The attending physician had made the diagnosis of an acute appendicitis with probable gangrene and perforation. The man was very ill, with a very rigid abdomen, especially in the right lower quadrant, and definite tenderness over the ordinary position of the appendix. Nothing was done in the way of laboratory tests except examination of the urine, which was negative, and a leukocyte count, which was 19,000; the temperature was 101 and the pulse rate 108. He was sent at once to the hospital by ambulance. Operation showed a ruptured gangrenous appendix, and the appendix was surrounded with two or three drams of very foul-smelling pus.

I cite these two cases particularly to show the great importance of the gross clinical picture and the necessity often of such immediate action based on these clinical findings as to exclude an exhaustive study of laboratory means of diagnosis.

These cases were in the service of a hospital surgeon. We want to remember, however, that without exception they were first in the hands of general practitioners, and they represent, therefore, some of the problems which confront the practitioner of medicine.

If we analyze in this hospital the general clinical work, the history taking, the physical examinations, the clinical laboratory work, the roentgen-ray laboratory work and the special work in basal metabolism in blood chemistry, in special bacteriologic examinations, Wassermann examinations, etc., in infant feeding, etc., and the technic employed in the sciences of diagnosis and therapeutics, and if we analyze each department as I have analyzed my own department, we can form an accurate estimate of what portions of the various sciences that go to make up the science and art of medicine are used in actual practice.

OPINIONS OF MEN IN GENERAL PRACTICE

In order to obtain a conception of the work which the general practitioner does in private practice, I obtained the evidence from several well-trained men, practicing in communities of from three to five thousand inhabitants, and also from men doing general practice in Chicago. I asked them what classes of cases they were taking care of without the assistance of consultants and specialists, what proportion of their cases were sent to a specialist, what laboratory work they were doing themselves, and what arrangements they made for laboratory work in general. These general practitioners are doing all sorts of medical work: obstetrics; infantile disease; general medicine, such as pneumonia, typhoid fever (fortunately now rare), kidney and gallstone colic, nephritis, and various lesions of the gastro-intestinal tract; injuries in general; fractures; dislocations; hernias; the ordinary ear, nose and throat work, including by some of them the removal of tonsils; the ordinary skin diseases; neurologic cases that develop in their work; insurance examinations; testifying in medical legal cases, such as personal damage cases; testifying in regard to the insanity of individuals; general preventive medicine involved in handling infectious diseases in a community, such as diphtheria, measles and scarlet fever; venereal diseases; heart lesions, and the ordinary minor eye conditions, such as foreign bodies, conjunctivitis and iritis. In their practice they themselves use the simple laboratory methods, such as urine examinations, blood examinations, especially hemoglobin, the leukocyte count and the differential white cell count, and examinations of sputum, feces and stomach contents. They make the blood pressure examinations. A considerable proportion of them do their own roentgen-ray work. There are certain laboratory tests which, as a rule, they do not do. They send their Wassermann examinations, Widal tests and pathologic specimens from operative work to some commercial laboratory. They send their specimens from the infected throats in suspected diphtheria cases to the state laboratory for examination and report. Most of them do minor surgery and many of them do emergency surgery, such as operations for acute appendicitis and strangulated hernia.

The consensus among these men seemed to be that they took care of about 97 per cent. of the patients who came to them, in the sense that they took complete charge of the case, and they referred about 3 per cent. of their cases to specialists. My conception before I investigated this matter thoroughly was that the general practitioner probably referred from 10 to 15 per cent. of his cases to specialists. After discussing the matter with well informed general practitioners, as I have done, I am convinced that in a large general practice, the practitioner sees so many slight ailments that the percentage of cases which requires the services of a specialist is probably well under 5. The well qualified general practitioner can take good care of 95 per cent. of the patients in his community.

I have gained from this investigation a wholesome respect for the practitioner in general practice who prepares himself so that he can take care of all classes of medical cases. His task is a much more difficult one than the task of mastering a narrow specialty, and he has a much broader conception of disease, a conception which enables him to be often of more service than a specialist.

The patient, as a rule, does not know just what is the matter with him. He does not know what specialist to consult, and the normal plan of handling the sick people in a community is for the patient to go to a competent general practitioner. From the evidence of my

investigation in from 95 to 97 per cent. of the cases, the well trained general practitioner is the best man to handle his case, and in the other 3 or 5 per cent. the general practitioner is better qualified than any one else to determine in a general way what the condition is and to select the specialist required for the particular lesion from which the patient suffers. The specific purpose of the undergraduate medical course is to train these general practitioners properly. The general practitioner must have on his desk, and within ready reach at all times, and must use them in his everyday work, his textbooks on anatomy, physiology, pharmacology and pathology, his textbooks on medicine, obstetrics and surgery, and some small textbooks especially written for the general practitioners on specialties of the eye, ear, nose and throat, and dermatology; also a good book on hygiene and public health. The general practitioner who will study his cases with the aid of such textbooks will be doing the best possible kind of postgraduate work. Nothing that the American Medical Association could do in the way of postgraduate medical education would be so important as a propaganda urging all members of the Association to do just that sort of postgraduate work in their own practice, the work that can be done by their own brains, with their own books and on their own patients.

OPINIONS OF STUDENTS

After obtaining this evidence from the medical teachers, I sought the opinions of the medical students, and was fortunate in obtaining the opinion of 600 medical students who were completing their clinical work. I present a composite of their views:

1. The work of the first two years is too theoretical; much of it is intended primarily for research. There is too much note-book work and too little reference to clinical application.

2. Anatomy receives much criticism. There is too little lecture work and demonstration, too little individual teaching, too much instruction by student assistants and very little clinical application.

3. The work in biochemistry is considered too theoretical. It requires time far out of proportion to its importance. It could be made to include subjects given in laboratory diagnosis. There is much criticism of this department.

4. Pharmacology is unsatisfactory in that its practical application is not made clear to the student.

5. Physiology does not have enough practical application pointed out and emphasized. There is too much frog work, too little human physiology.

6. Pathology, on the whole, receives more favorable criticism than any other department in the first two years. Pathology and bacteriology are taught from the point of view of their application to medicine, and the students recognize this fact.

The work of the third and fourth years received the following criticisms:

1. In therapeutics, better courses in prescription writing should be given. More discussion on therapeutics should be given in the clinics. The definite line of treatment should be given as each case is presented, and more definite instruction on such therapeutic agents as the roentgen ray and radium. The clinical value of such tests as basal metabolism and electrocardiograph should be made clearer.

2. In medicine, better courses in laboratory diagnosis are urged. The value of the small teaching clinic is recognized. Better instruction in physical diagnosis is needed. More systematic instruction should be given in the large teaching clinics.

3. In surgery, the courses on surgical pathology and the principles of surgery are favorably criticized, on the whole. It is urged that these subjects be taught with ample pathologic material, both gross and microscopic, and that the clinical application be shown by the introduction of patients illustrating the various conditions discussed. The value of the large teaching clinic is recognized, and the criticism made of operating in these large teaching clinics. They feel that little operating should be done in these clinics. The great value of dispensary work and of the small section hospital clinic and the ward walks is recognized. The courses on dog surgery and of surgical anatomy and operative surgery on the cadaver are favorably criticized.

4. In obstetrics, the chief criticism is that the student sees too little pathologic obstetrics. The outside obstetric cases attended by the student under intern and obstetric assistant instruction are appreciated by the student and criticized favorably.

5. The instruction in the specialties, eye, ear, nose and throat, and dermatology, pediatrics and neurology, receives fairly general favorable cliticism.

I have also obtained from a number of interns and senior students their opinions of the fifth hospital or intern year. They all regard it as absolutely essential, and more than 90 per cent. prefer a mixed to a single service.

As I have carried on this investigation, I have been much impressed by the excellent work that is being done in our American medical school. There is, however, a general feeling that the medical curriculum should be revised in order to secure better cooperation, better team work; and there is a very general willingness to bring this about.

A SPECIFIC PLAN

What we lack is a specific plan. On the basis of this study I venture to submit the following specific plan:

1. There are certain portions of the subjects of anatomy, physiology, pathology and pharmacology which are essential in actual practice and which are used every day in clinical work and which must be mastered.

2. The sum total of this knowledge now actually required is enormous, and is sufficient to crowd the time that can be allotted to the medical curriculum.

3. The essential portions of the daughter sciences should be taught so as to make clear their application to clinical work. This necessitates a radical change in the curriculum, the introduction of the patient and the clinic at the very beginning of the medical course.

It is the function of the departments of anatomy, physiology, surgery, medicine, etc., to make physicians: not to make anatomists and physiologists, orthopedic surgeons and neurologists. The making of anatomists, physiologists, orthopedic surgeons and neurologists is, to be sure, a part of the work of a medical school, but it belongs to graduate work. Such preparation is individual and special, and the undergraduate medical curriculum must not be burdened with it or handicapped by it. This means that the time has come when we must make a sharp line of division between undergraduate and graduate medicine. In revising the undergraduate curriculum, we must drop those portions of the sciences that have no clinical application in the hands of the general practitioner. As an illustration, a large part of the formidable subjects of biochemistry and intricate neurology should be eliminated. These subjects should be taught, but in a simpler, clearer way.

There should be introduced into the first year a joint laboratory and clinical conference. This conference should be given once or twice a week, and at this conference should be demonstrated clinical cases and pathologic material representing big general problems, such as diabetes, toxic goiter, jaundice, ascites, syphilis, tuberculosis and leukemia, and such subjects as wound repair, wound infections, aseptic technic, burns, frac-

ture, hemorrhage, shock, osteomyelitis, anesthesia, tumors and congenital malformations; and the use the clinician makes of anatomy, physiology, pathology and pharmacology in handling these problems should be demonstrated. At the same time, the laboratory teachers should have access to this clinical material so that they can demonstrate examinations of blood, urine, blood pressure, basal metabolism, etc., and the laboratory side of the same clinical problems. In this way, the student would learn how these sciences are applied in clinical work, and the laboratory men and clinicians could work together on the same problems.

In the work of the clinical years, provision for continuing the work of the laboratory years should be made. Each clinical department should see that this is done as thoroughly as possible. The department of medicine might make special effort to continue the work of physiology, pharmacology and pathology, and the department of surgery especially the work of anatomy and pathology. Each clinical department should have its own clinical laboratory and have full control of its clinical laboratory work. For purposes of convenience, it may be better organization to have a single roentgen-ray laboratory, a single laboratory for such work as blood chemistry and the Wassermann test, and a single laboratory for basal metabolism.

Pathology should be continued into the clinical years as a well organized department in charge of the postmortem work and general pathologic laboratories and museum, and the professor of pathology should act as a consultant to the clinical departments in important problems in pathology. There should be the best possible cooperation between the department of pathology and the clinical departments, and this depends largely on the personal equation of the men involved. If the department of pathology should seek to appropriate to itself all pathologic laboratory work, it would be fatal to the full development of the clinical departments, and it would be better to drop the department entirely out of the clinical years and appoint a hospital pathologist who would work under the joint direction of the clinical departments. This is true because the patient, his tissue and secretions and everything that goes with him must remain in the control of the clinician.

Whatever revision of the medical curriculum is made, there must be no conflict of authority and there must be good team work. The laboratory departments must remain supreme in their work, and the clinical departments must remain in absolute control of the hospital and the clinic. There is plenty of field for research for both groups and for all departments. Each department, both laboratory and clinical, must be actively engaged in research. The creation of a special research department in a medical school is a serious error which would sterilize the school and should not be considered.

In regard to the organization of the clinical work, the best plan for the undergraduate school is that of three departments:

Medicine, including subdepartments of pediatrics, neurology, dermatology, and hygiene and public health.

Surgery, including subdepartments of orthopedics, urology, oral surgery, eye, and ear, nose and throat.

Obstetrics, including gynecology.

Such a plan of organization is especially valuable in securing the well rounded curriculum that is so needed by the medical practitioner. The specialists and specialties find their special independent field and an ample field in the graduate school. What must the medical student know in order to qualify as a practitioner of medicine? That is our problem. If a number of our better schools made this the subject of a special investigation, we could then from such a joint study revise the curriculum on better and sounder lines.

MEDICAL EDUCATION, PAST AND PRESENT

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There has been a rapid transition in medical education during the last twenty years. During this period, the number of medical schools has been reduced one half. In 1904 there were enrolled in our medical schools 28,142 students, while in 1922 there were 16,140. The increased cost of medical education and the years, unproductive financially, to be spent in internships and assistants' positions will tend to restrict students to the wealthier classes. The constantly increasing number of specialists has caused a diminution in the ranks of those who practice among the great and vitally important group of citizens living in rural districts. Inevitably, these citizens will succeed in demanding, through the legislatures, that they have physicians that come from medical schools and that are well trained, or failing in this, they must accept those that come from some source with inferior equipment. While it would not be fair to say that the advance in medical education is alone responsible for the inadequate number of physicians in rural districts, the fact remains that demands for physicians are so insistent that already, in some states, legislators are seriously threatening a revision of our state laws and, unless something is done, our present standard will be seriously disturbed, if not abrogated altogether. Although the demand for physicians is constantly more insistent, high standards and increased costs are not entirely responsible for this condition. Richly endowed schools are limiting the number of students and turning away many thoroughly prepared men who have met every entrance requirement.

The medical profession has never failed to meet emergencies when they arise. Today, as has been shown, two glaring crises confront it. One is that we are not furnishing physicians who are willing to practice in the places where they are most needed; the other is that our system of education is training men in such a way that they could not practice efficiently in these places if they desired to do so. This is not only a menace to the people; it also threatens the system on which the blame falls.

HISTORICAL REVIEW

It is not pertinent to discuss medical education prior to the Civil War. In that period, medical schools were rare and the study of medicine under preceptors was the custom. In such a system, numerous defects are easily recognized.

Subsequent to the Civil War, medical schools began to multiply, and in less than half a century, there were more schools in the United States than in the rest of the world. This multiplication resulted from three factors: 1. The profession as a whole was poorly organized and had no data regarding the number and quality of its members, and no supervision over, or interest in, the numerous schools. 2. The states had not interested themselves in the enactment of laws

regulating the practice of medicine or of the schools that taught medicine. 3. The business of conducting a medical school proved so successful financially that the chairs had become valuable; reputations of professors were heralded abroad among the people by the students, and referred work came almost exclusively to those who taught. There were no preliminary requirements worthy of the name. One of the most emphatic lessons taught was that all surgical cases, and many of the others, should be referred to the professor. Consequently, there grew up, even in the smaller cities, two groups of physicians definitely separated and thoroughly despising each other: those that taught and those that did not teach. The teachers were successful, possibly some times boastful and supercilious. Those who did not teach could only look with jealous eyes on the "school men." There was no chance to get into the faculty of the school of that day. The only hope for ambitious outs was to organize a new school. This was promptly done: Tennessee had ten schools. The curriculums of the schools were poorly arranged, in most instances. In many, the subjects were poorly taught. The specialties were for the most part touched on very superficially.

Some schools, however, maintained standards in keeping with the demands of the times. Among those honestly trying to give the students a square deal were numerous schools in which the specialists laid the burden of stress on such phases of their work as the students who entered general practice would be called on to do. What was taught was intended to prepare the students to become general practitioners.

In spite of the flagrant faults and glaring inefficiencies of these schools of a former day, many of the leading men in the profession today graduated from them. Although their inadequacies must be decried, it would be well to look back and inquire whether or not they had aught of good.

STANDARDIZATION OF MEDICAL SCHOOLS

It was the consensus of opinion of the leaders in the profession, and the unanimous verdict of the legislatures of the states of this Union, that these old schools were not as good as they should be. Asepsis, bacteriology, abdominal surgery and the specialties were coming into prominence, and the profession and the public were being impressed with the idea that the future physician must be trained more widely and more thoroughly, and that expensive equipment and better trained teachers must be had. This impression gained its chief, if not its first, impetus toward realization in the work undertaken by the American Medical Association, in the investigation of conditions existing in medical schools, and, subsequently, in the standardization of these schools.

When the wisdom of the recommendations made by the American Medical Association was recognized, various state legislatures began to enact laws governing the practice of medicine. Those schools that realized the gravity of the situation began to consider how they could meet the new requirements. Numerous schools were discontinued, either by voluntary closure or because they could not enroll students to enable them to meet expenses, for students were not willing to receive degrees from a school whose graduates were barred from practice in a number of states. Other schools combined their resources to gain in strength of faculties and in numbers of students. Many prospective students were not eligible because of insufficient preliminary training, meager as the requirements were in the early days of this period. This tendency to increase the preliminary requirements has continued until now the Class A schools demand at least two years of college work, and a demand for a preliminary degree in academic work is probably not far in the future. The course of instruction was systematized; the term increased; the number of years of training leading to the degree of Doctor of Medicine was raised from two to four. An enormous amount of equipment had to be purchased; new buildings became necessary; all-time teachers were demanded for all laboratories; clinical facilities had to be obtained, either through securing control of hospitals already in existence, or through building, owning and operating hospitals. In other words, medical schools were rapidly converted from an asset to a liability, and the financial value of chairs dwindled to nothing—to less than nothing. The expense of operation of schools soon came to be far in excess of any revenue that might be gained from fees paid by students. The old dispensation had fulfilled its mission and passed away. The only hope for continuation of medical schools lay in endowment. This is one of the reasons why only those associated with, or which were an integral part of, great universities have been able to weather the storm and to maintain rank as first-class schools. It has been necessary to increase tuition charges, and still the call for more money rises as a perpetual cry from the boards of trust who must provide for meeting the ever-increasing expense.

All of this was brought about with splendid purposes in mind; but, in some way, the education of today seems to unfit men for the real practice of medicine at the bedside.

DEFECTS IN THE NEW SYSTEM OF TEACHING MEDICINE

That this revised, improved method of teaching medicine is not devoid of defects is apparent to all who have devoted much time to study of the problems involved. One objection is that it overworks the student and gives him an enormous amount of instruction which he cannot learn to use to advantage in so short a time—this in spite of, possibly also because of, greater clinical facilities. Another defect is that each teacher has felt and has tried to impress on his pupils the great importance of his own particular subject. Specialties, therefore, have been emphasized out of all proportion to their merit, and the student has been robbed of time and mental effort that could have been employed more profitably. It may be worth while at this juncture to call attention to the fact that the transactions of the last meeting of the Association of American Medical Colleges suggest reducing the amount of time devoted to the specialties to a minimum.

There has sometimes arisen a feeling among laboratory men that the clinical men were inferior in their training, and that teaching would be more competent if clinical professors would come into closer contact with laboratories. Recently, clinicians have reversed this sentiment, and they feel that laboratories would serve students and the public better if laboratory teachers knew something of patients and of disease as it actually exists in the living subject.

A FURTHER REVISION OF THE TEACHING SYSTEM

A plan of further revision of our teaching system has been recommended, whereby the teaching faculty shall be constituted of men who are to devote their whole time to medical teaching and to research work. This

plan, its authors believe, will prove ideal. It proposes virtually to establish a profession of medical pedagogy. This idea did not originate in the medical profession, but in the mind of a layman. The profession has not taken kindly to the idea. Yet, in all fairness, they should either accept it or show cause why it should be rejected. A layman might actually know more about this matter than a physician. On the face of it, that sounds unreasonable. Physicians have taught all the physicians the world has produced; practicing physicians have taught physicians to practice. If, as physicians, we do not believe that men who have never practiced medicine and who never intend to practice can teach the medical student as well as men who have practiced and are practicing can teach him, we should be able candidly to present good reasons for such belief.

THE PURPOSE AND FUNCTION OF A MEDICAL SCHOOL

Before presenting reasons for the conviction that is firmly entertained that the scheme providing for full-time teachers of medicine is impracticable, it is required that the purpose and function of the medical school be defined.

1. The only excuse for the existence of medical schools, hospitals or physicians is that there are the sick who wish to become well, and the well who wish to be protected against disease. The physician is the man who is employed and paid to accomplish the cure. The hospital offers him opportunity to perform his work skilfully and promptly.

2. The function of the medical school is to prepare physicians to cure the sick.

3. The volume of medical literature is so enormous that the student would be lost unless he had some one competent to guide him in its use. It has been the opinion, right or wrong, of the able and wise men in medicine that they could guide best who have been long, laboriously, earnestly and successfully engaged in the work of healing the sick. Thousands of theories, some of them wilder than the ravings of maniacs, have been fabricated. Who has proved them useless or wrong? The physician at the bedside.

4. The faculties of medical schools of the past have felt that there is an art in the practice of medicine, that circumstances arise in which tact and discretion different from and higher than that demanded in the ordinary walks of life—peculiar discretion and tact—are necessary, and that the student could acquire these best from men who had developed them to the highest degree; that successful clinicians could probably better transmit a modicum of their necessity and their significance than could some one groping from a musty library or a laboratory.

Thus, men go to medical schools to study, to learn lessons, clinical and didactic, to acquaint themselves as far as possible with the present state of advancement in medical knowledge, and with the methods of applying this knowledge in the practice of the healing art among the people. And the people are crying, whole communities, whole counties, for men to come to them with this skill.

5. Is not he who has responsibly healed the sick the best teacher to those on whom his mantle is to fall? Does he not have a sympathy that no other man could acquire? Does he not know from his experience with people and life and death a thousand things that were never written and that cannot be written? Has he not a sense of responsibility builded on his relationship with his patients, in homes as well as in hospitals? Other things being equal, which is the better teacher—one who has succeeded, or one who has not tried? Which the better teacher—one who has gone out and achieved success by hard work and the exercise of sound judgment and skilful practice, or one who has hesitated and trembled and finally has remained cloistered within the walls of the school or hospital because he fears to go? Does appointment to professional position make great clinicians and renowned surgeons? No evidence has been adduced thus far that it does.

6. It is the purpose—or should be—of the medical school to train general practitioners and to reduce the time devoted to special studies to a minimum so that the student may devote a maximum of time to the subjects embraced by the term "general practice." If any man would specialize, he should be required to spend sufficient time after graduation in acquiring proficiency in the chosen line of work. This cannot be done during his undergraduate years without neglect of the broad foundation in general medicine, without which no man can hope to become a truly great specialist.

To the average physician's mind, the word specialties suggests a group of lines of work in rather narrow fields of practice. Lately, a new and important specialty has arisen—medical research. Of them all, fewest men are capable of undertaking this. It is the most comprehensive, the deepest specialty, and it requires a much broader foundation than any of the others, as well as a sane head and a sound judgment. If the other specialties are to be omitted or given in limited degree to the undergraduate, because he has neither the time nor the foundation to grasp them, what shall be done about training him for research? He knows nothing; yet he is expected to discover something new.

OBJECTIONS TO THE EMPLOYMENT OF FULL-TIME TEACHERS

The objections to the employment of full-time men in medical schools to teach the practical branches are so numerous that it is difficult to reckon them.

1. First class, able men cannot be secured, at present, to occupy the chairs in any reasonably large number of schools on the salaries which the universities can pay them.

2. Certain intellectual traits are seldom associated in the same individual. Great teachers are rare; great research workers are still more rare. By the laws of chance, the two would almost never be found in the same individual. They are psychologic incompatibilities. To be a research worker worthy of the name is to be an inventor. It requires the ability to seize on an idea or suspicion and never to release it, never to dismiss it from the mind, until the last detail is finished, in a year or two, or in ten, or until it has proved a definitely unfruitful lead. That is real research work, and should be encouraged and fostered whenever a man with that kind of bent can be found. But such a man should not be put in the classroom. If he *can* teach, it would distract his mind from his research, and such men are geniuses and should be given rein and left to their own inclinations. If the real research worker should undertake to teach, he would either overload the student with the details and the spirit of his research, or, by lack of devotion of sufficient time to other subjects of his department, would fail to keep abreast the times. The student would be overloaded with this specialty and would fail to obtain the amount of valuable instruction required to equip him for practice,

which has already been shown to be prejudicial to the welfare of the student and to the public he is to serve.

3. There is no place in the actual practice of medicine for sustained medical research. It is condemned by law, and, according to all moral standards, a reprehensible practice. No man employs a physician to advance science at his expense and risk. No man would knowingly tolerate it. If a student is taught to do research work on his patients in the university hospital and is complimented on something great or small in connection with it, he might become convinced that that was a proper or permissible course—convinced, in a word, that the patient is only a sort of advanced laboratory animal. Could he then reasonably be expected to disgorge his mind of all these impressions and become an honest servant of his patrons on graduation? Would he not feel justified in trying out his new ideas on them?

4. For the foundation for this objection to full-time clinical teaching, it is necessary to appeal to the experience of every practicing physician. Has he not acquired anything during his years of practice that he did not have at the beginning? Would he not have been worth more to his patients had he known what he has learned twenty or thirty years sooner? Could he not, by contact with medical students, be of service to them by giving them something of this practical side of the work? Has not the desire to build and maintain and increase his practice caused him to search for the valuable, practical things, as contrasted with the theoretical? Has not his feeling of responsibility been increased by the fact that embarrassment invariably follows failure to accomplish the cure of his patients? Have not need and pride and ambition and fear of just criticisms and competition been the great stimuli that have forced him up and onward? Would these factors have affected the same good results if he had not been personally responsible for his success or failure? Is any normal man immune to the influence of these elements of success?

Suppose that the full-time professors and research workers conduct a hospital in which they treat patients and do research work for the education of medical students and for the advancement of science, and suppose the same professors have never been in private practice; is it not reasonable to imagine that this great thing which has been handed down from practitioner to practitioner and on which the good faith and responsibility of our profession rests will be lost to the men who go out from such a school? But suppose this hospital and the associated school take private patients. If the physician who treats them receives pay for treating them, he is not a full-time man. If he receives no pay for treating them, he still fails to secure the personal relationship between himself and his patient which a private practitioner experiences. If, however, he treats them and the hospital receives pay for his services and he receives only his salary, this teacher not only renders himself unworthy to teach because he sells his services for less than it is worth (otherwise the hospital would not have him), but he also becomes a menace to the fundamental principles of American institutions. Such practice is definitely socialistic, and such derelict usage cannot fail to impress the students who work under this regimen long enough to receive a degree.

5. Not only this, but such a man can and will, in the name of science and humanity, undermine and destroy the practice of competent, honorable, ethical men practicing in the community of the university and in adjacent communities. This is not imagination: it is history. The profession has grown into a dignified body, and, as a consequence of the deliberation of the wise fathers, has established and lived by a code of ethics. It has at times dealt harshly with members guilty of even minor offenses. A prominent clause in this code forbids the physician to advertise; and another forbids him, in any open, secret or underhand way, to rob his neighbor of his practice. These are the two peaks in the principles of medical ethics that loom high.

6. There is a possibility of injustice to the profession in that full-time teachers, with exclusive hospital facilities, may give service free to those able to pay, thus creating mendicants and paupers, to the great detriment of the individual, and an injustice to physicians who must sustain offices and other legitimate expenses. The advertisement of the position in the great university and hospitals, intentional or not, gives a great advantage. In fact, these places will in time, when thoroughly understood, be filled by men belonging to the research type who have had little or no experience in the practice of medicine or surgery, who are interested in the refinements of modern research in its application to their branch of activity, which of necessity develops a scientific attitude toward the patient rather than a humanitarian attitude, and which every experienced practitioner feels toward the life and comfort of those entrusted to his care. However ethical and high grade he may be, he has a great advantage through the advertisement that his position gives him; and the hospital and university place him in a position in which he gives service for less than his skill warrants. Sooner or later he will realize the injustice he is a party to, and will feel that he occupies a rather unenviable position in the profession. He takes no pay, and what fees are paid go to the hospital or university he serves. This is unfair and will sooner or later bring about a feeling of resentment in those who are the sufferers from this system. It is apparent that the patient will not receive the benefit of the real art of medicine, which means so much in the management of the sick.

7. The live, active, intelligent clinician is the man above all who knows where the weak places in medicine are. He knows the real problems, and, if allowed to work jointly in the schools, can be of untold service in directing the attention of research workers to fruitful fields.

8. The objection raised against clinicians as teachers is more valid when applied to research work, for the latter is a more time-consuming occupation than the former,. less diversified, and offering much greater temptation to bias.

This new idea of full-time teachers in the practical departments of medical schools did not originate in the profession. It is the child of the brain of a man who never studied medicine, never practiced medicine and who doubtless has no inclination to do so; the child of one who, therefore, cannot realize fully what it means to be a physician; what the difference between a physician and a banker or a teacher is; who does not know the feeling of responsibility that every good physician knows. Now, this fond father brings this strange child and leaves it on the doorstep of the profession with the assurance that it is a fine child, and with the insistence that the profession adopt the child and make it sole heir to the throne of the empire which their fathers and they themselves have builded.

ANALYSIS OF METHODS OF MODERN MEDICAL EDUCATION *

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The dilemma which confronts us today in any consideration of medical education is two horned. On the one hand we have the vast and ever-increasing fund of information that must be given to the student, and on the other, the shortness of the allotted time in which to give it to him. Methods of teaching must be found that are best suited to the majority of students, and that will serve to prepare them for the practice of medicine or for a life of research. What should be taught must also be decided. The good and the bad in past and present medical education must be remembered in order to solve this problem. Present methods have failed to deal adequately with the difficulties of the situation, and, if they are persisted in, the purposes of the medical school will be increasingly defeated.

The day of the morphologic ultramechanical impress on medicine, inculcated by the continuous study of dead tissues, has passed. The life-giving conceptions which the study of physical chemistry has given to all chemistry must be developed in advancing medicine. Medicine must thus vitalize its anatomy, its physiology and its pathology.

The medical schools as never before must develop the scientific spirit in research and in their teaching. The scientific spirit is that which influences a man to seek evidence and to seek it whole heartedly and dispassionately, whether it proves him right or wrong. No effort in science is wasted except the insincere effort. No medical school can reach the heights in education and continue on such a plane without this development in its ideals.

IMPORTANCE OF "PREMEDICAL EDUCATION"

In this consideration of medical education, no analysis has been made of the most important and difficult problem of "premedical" [1] education partly because it is impossible to do it justice and treat it as a subheading of the topic under consideration. Ideally, the student should learn of the relationship of the fundamentals of knowledge at as early an age as possible. His understanding of the interrelations of philosophy, ethics, biology and physical chemistry should be so thoroughly cultivated as to become of the nature of an essence, not a veneer. And this knowledge of the sciences must rest on a foundation of history and of the classics. Such students would solve many of the problems of medical education and make a suitable complement for able instructors.

The reorganization of medical education may be considered under five main subjects: (1) teachers; (2) students; (3) the subject matter included in a medical course; (4) methods of teaching and of study, and (5) the chief aims in medical education and the present hindrances to their attainment.

TEACHERS

A teacher is one who interests students in learning so that they endeavor to acquire knowledge for its intrinsic value. The fundamental difficulty lies with the teachers themselves. Boas [2] says: Intelligence does not come from the acquisition of facts; intelligence is insensitive to a mere fact; it reacts only to ideas. . . . The issue is the education, not of the student, but of the teacher."

Good teachers must not only be intelligent: they must understand and sympathize with the student's outlook, be able to keep alive the student's interests. A good teacher feels that he learns from his own students through an intimate association with their ideas. It is only through a constant revaluation of his own methods in the light of student opinion and by comparison with his colleagues that he can hope to grow. Who, indeed, can teach ably year after year, isolated from all ideas and criticism except his own?

The effect on the students of the personality and attainments of able men is well recognized. Their undefinable influence may be profoundly felt throughout an entire school; it may be as inspiring and dynamic as that of a Pasteur. Until schools make every effort to select for teachers men of stimulative personality, most teaching institutions will continue to be crowded with "good hearted," acquiescent individuals.

Continuance of Poor Teachers.—Much blame must be laid at the door of those who appoint the inferior teachers. Possibly their appointment may be excused, but the policy common to so many medical schools, of allowing them to remain year after year, cannot be forgiven.

Student Advice.—One of the main reasons for the continuance of poor teachers and poor methods in the medical schools is that student opinion is looked down on. The bitterest criticism by students at once changes into the most helpful advice as soon as they realize that they are listened to without prejudice and with sympathy. In a successful business, because success is dependent on output, complaints and advice of consumers are never ignored. Dickenson Miller has pointed out that "each professor knows only his own classroom, and the dean knows all the professors but not all their classrooms, while the students alone have a survey over the entire curriculum and see all the classrooms."

"Student advice" does not in any way refer to the partisan, back-stairs gossip of student cliques, telling the teacher only what they think he wishes to hear. By student advice is meant the general student opinion of the methods of the individual teachers, who hold their interest, who aid them to think, and under whom they gain related knowledge.

When the private quiz system was in vogue, some quiz masters continued to teach year after year, for they were the ones from whom the students learned. The mediocre and poor teachers discontinued their quiz within a few years. With roll-calls and compulsory attendance at college quizzes, this effective and silent criticism has been lost, and the teacher who is not teaching has found a sinecure in those medical schools in which the student's spoken opinion is not regarded. In universities in which the courses are all electives, the useless teacher is automatically eliminated. The docent system in vogue in German universities recognizes the value of student opinion to such an extent that the man who desires to teach after he has qualified as a docent is simply given a room to teach in. If the students come to hear him and take his courses, he is considered a successful teacher, and it is from the successful docents that the professors are chosen.

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1. "Premedical" courses are given in many colleges. They attempt through physics, chemistry and biology to remedy the dogma of authority of school and kindergarten. Until the teachings of primary schools develop the thinking powers, an introductory medical course should supplement earlier education by attempting to develop the students' minds in seeking the truth.

2. Boas, George: What Do Teachers Know?

THE STUDENTS

Professor N. B. Pillsbury has drawn our attention to the fact that "one of the chief functions of education is selection." Education does not make stupid people intelligent, it merely aids in selecting the intelligent and develops their potentialities.

Though the average ability of the students entering a medical school remains about the same year after year, there are striking mental and physical differences among these "selected" men. Their perceptive power varies greatly; some learn best by their eyes, a few by their ears. No two of them have the same affective response to any situation. This response differs greatly even in a single individual from day to day. A good teacher is aware of these potentialities in individual students. He makes use of as many "affects" as possible to teach, to stimulate and interest them. He finds those most nearly attuned to his own emotional response the ones most helped by his personality.

The student's early education—their surroundings, whether sons of doctor, lawyer, soldier or sailor, have all produced an effect. A way must be found to help those who have not had previous opportunities to acquire something of the outlook which comes from a scientific and an intelligently critical atmosphere. If the school hopes to raise its standard, some system of selecting those desirable must be employed other than using high school and college "marks." In fact, if possible, the aptness of students for medicine and their general honesty of purpose should be determined before they are accepted. Methods which inspect the students —those about to enter and those already enrolled—from every angle, mental, moral and physical, will help in selecting the best to practice medicine.

SUBJECTS TO BE TAUGHT

Too much is forced into the schedule today. That there should be an extensive reduction in the number of required hours will readily be granted; but the manner in which this should be done is still undecided. The long standing lack of sympathy between the pure scientist and the pure clinician, each seeking to overemphasize one side of medicine, is a difficult complication.

The brunt of this lack of sympathy has fallen on the student, and it is for him that the two must be brought together. Medicine must make all developments of pure science eventually of practical use. The pure scientists must be asked for the answers to the problems of life. Therefore, for a medical school to do the most for its students, these links in knowledge must be continually fitted into the chain of education. The students who wish to go into pure science are entitled to every opportunity in the medical school. At the same time, the community has every right to expect that medical schools shall always provide the best for those who are to become practitioners of medicine.

It is evident that subjects of great importance to modern medicine have as yet found no place in our curriculum. There is a continuous up and down in the estimated value of methods of diagnosis and of therapeutics. Scientific knowledge concerning the relation of mental to bodily disease, and the methods of understanding and dealing with the resulting complexities, have been ignored almost to exclusion in many departments. Psychology has too intimate a relation to the science of healing to permit a first class medical school to exclude it.

In many schools, biology has been approached purely structurally. The angle worm and the frog have been dissected. The ameba and the paramecium have been drawn. It has not effectively developed the basic conceptions of life and its interrelatedness. The tissues have been treated as if dead; or, if alive, separated from the dynoplasm [3] of the animal. Biology should tell of the interrelation of the living cell with its environment, of heredity and of the energetics of living tissues, and act as a direct introduction to bacteriology, to histology, to embryology, and particularly to medicine and surgery.

In any schedule flaws and omissions can be found. Yet "touching on" so many subjects has led to much of the superficial study of the present day. The thing to be learned is how to evaluate knowledge. Such evaluation can best be reached by concentration and by correlated study in all their ramifications of a few subjects which best lend themselves to provide a background of medical knowledge.

Elective courses through which the students may fit themselves more fully for one or another phase of medical work play at present practically no part in many curriculums, so that only through the required courses does either pure scientist or clinician meet the students.

METHODS OF TEACHING AND OF STUDY

The greatest faults are those of commission; too much is being taught, and the material taught is uncoordinated. The different methods by which students have been prepared to become fit to practice medicine may be condensed into four general groups:

Group 1, in which the student attends passively, is constantly guided, dependent on the experience of others; A, the lecture; B, assigned textbook study; C, laboratory demonstration and clinical presentation of cases.

Group 2, in which the student both listens and talks: the quiz, conference and discussion.

Group 3, in which the student observes, reports and discusses: experiments and cases in the dissecting room, laboratory and clinic.

Group 4, in which the student takes the entire responsibility: student experimentation and investigation, either in the laboratory or in the study of cases in hospital or dispensary.

GROUP 1.—In which the student attends passively, is constantly guided, dependent on the experience of others. A. *Lecture System.*—Under this method of teaching, the relation between student and teacher is at its thinnest. The teacher cannot really know what effect his words are having on the students individually. Some lecturers almost expect the students to take stenographic reports of their lectures, and many attempt to do so, swallowing undigested the material handed out to them. The mental strain of madly writing down what they hear hour after hour, and of attempting to think at the same time, is bitterly fatiguing. If the lecturer is good, there is a constant sense of disturbance due to the fact that there is no outlet for the stimulus he creates. To those who do not take notes, the lecture, as one professor of biology remarked, "is a method by which the student is enabled to lean back perfectly at leisure and observe the personal peculiarities of the lecturer. Moreover, it is a kind of a sedative, an opiate to all parties, by which in the presence of a thin substitute for education, they are able to forget the aching need of the reality." In lectures, as one college professor has put it, "the ears do most of the work, using only one of the senses. In order

3. Dynoplasm: a term to suggest the inseparability of the energy manifestations of the living tissues; the inseparability of physicochemical actions and of substance.—H. A. Murray.

to fix a subject in a student's mind, he must experience the things talked about."

Aside from these real faults of the method, it is the one almost invariably used by the poorest teachers. The students speak of most lecturers as purveying cut and dried or "canned" knowledge, in that they follow some favorite or personally written textbook. The lecturer often uses the same notes year after year, unaware of their weaknesses. This could not happen so often if the students could be persuaded to ask questions during the hour, or could remember what to ask about at the end, and if there were real opportunity to do so. But questions are rarely asked, and the lecturer rarely comprehends his audience; he unconsciously presents blocks of knowledge, the relationship of which is not evident to the student. Small gaps or defects in the presentation of a subject are stimulating to the student who attempts to fill them in by mental effort and thus is led to think and to reason. But if the breaks are too great or too numerous, no amount of mental effort will make the student able to keep up with the train of thought, and he will eventually cease to supply the gaps between the bits of new information and the familiar knowledge given.

A plea for the lecture system is that much time is saved for a busy man, who may talk to a large class; but this is a poor argument in the eyes of the students, unless the lecturer gives more than can be found in a textbook. The lecture, however, is a simple and valuable means of leading the student safely through a new and difficult process of thought. A good lecturer can do this better than any book, and at far less expenditure of time and waste of effort on the part of the student; but he must be an unusual teacher, one who can think more rapidly than his students, and who can feel intensely whether or not the latter are following his argument. He must state conflicting ideas without prejudice, and explain the process of reasoning by which he has arrived at his own opinions. The man who comes fresh from his personal activities, whether from the clinic or the laboratory, and talks vividly of his work, gives much more than mere facts, in that he instils enthusiasm. The value of such a man as a teacher and inspirer can scarcely be overestimated. His stimulation leaves the student in a sensitized frame of mind.

Good lectures, if few and scattered, are useful, but good lecturers are rare. Further, if many good lectures were used, their composite effect would still be fatiguing; collectively, they would defeat just what makes any single lecture a success.

The fact that there is frequently no textbook arrangement which fits the curriculum of a school makes it impossible to abolish the lecture system completely, without loss of its correlating tendency.

Whatever the value of a single lecture, a long series of scheduled lectures in a day is educationally unsound. The students say that by the third hour they have fallen into a sort of daze, and that by 5 o'clock they are mentally paralyzed, utterly unfitted for the evening's work.

B. *Textbooks.*—These are invaluable, if several opinions on subjects are made available and if the student is fully aware that usually each book represents merely the opinion of one man. Too often assigned reading is from those books alone which agree with a teacher's opinion. Students frequently complain in that if they do not recite according to the assigned text, their statements are held as wrong even though they follow other authority. The teacher who assigns so many pages per lesson and asks in recitation for an unassimilated return of the material, lays his qualifications as a teacher open to serious doubts. Unfortunately, such use of books tends to fix even more firmly in students' minds the fallacy that the printed word must be true.

Even books that record only those observations which the writer regards as facts must not be thought of as authoritative. If the student reads opposed statements, made in all honesty by two or more "authorities," the experience is convincing that all books must be handled with mental care and read without prejudice.

C. *Laboratory Demonstration and Clinical Presentation of Cases.*—These should be distinguished from laboratory and clinical work, in which the specimens, cases and experiments are handled directly by the students. A series of specimens or cases is lectured on and exhibited; the students are passive listeners, and even those in the front rows can see but little, rarely anything that they are not told to see. Here, again the students' powers of critical observation of the facts presented are but little developed.

The method may have some uses, however; for instance, in the presentation of some difficult experiment, the technic of which requires so much time or is so difficult that the student is incapable of doing it himself; or in the exhibition of some exceedingly rare and seldom seen clinical case, such as anthrax or leprosy. Quite aside from what the student may learn of the clinical case presented is the inspiration which he will often acquire from watching an instructor who is an adept in the art of extracting all the essential facts about a patient, while at the same time gaining his complete confidence.

GROUP 2, in which the student both listens and talks. —*The quiz conference and discussion.* These may be regrouped either under an autocratically dogmatic procedure or a Socratic procedure. The dogmatic method suits many teachers, since they can more readily follow one textbook, and pleases some students, who then receive blocks of knowledge as facts which can be readily pigeon-holed in mind and note book, to be turned in at examination time. With the Socratic method, the teacher is under more of a strain; he must be mentally alive, continually matching his wits against the students'. By their example, teachers in this way help the students to think and to weigh evidence, and thus to build up for themselves coordinated knowledge.

The dogmatic procedure does not train the student to think; it teaches him only to remember. The objections to it are practically the same as the objections to the didactic, dogmatic lecture already discussed.

The Socratic method, in which the teacher and the students, by questions and answers, proceed from one bit of knowledge to another, because there are definite connecting links, can be used only by teachers thoroughly familiar with their own and interrelated subjects. The students are continually oriented as they proceed. This method forces the teacher to be aware of the students' mental equipment and progress.

In the quiz and conference, the student need not sit passively awaiting his turn, and, having recited, sink into a safe and sleepy neutrality; he can take a large part in the constructive work—how great a part is dependent especially on the ability of the teacher, but also on the development of the student.

The essence of merit in the quiz conference method is that coordination of subjects can be assured. This coordination in knowledge tends to develop an aware-

ness of what is important or unimportant in each subject. Thus, the student's burden is trimmed with discrimination as he proceeds.

GROUP 3, in which the student observes, reports and discusses specimens, experiments and cases with which he has come into direct contact in the laboratory and clinic.—By this method, the students are forced not only to think, but also to see for themselves. That they are desperately in need of such development is evident each time we hear them say, "I do not know what I am expected to see," or, on the other hand, when they see or hear what they are told to, even if it is not present: they can always feel a spleen.

The good teacher who understands the possibilities in coordination of topics usually also appreciates the differences in students' powers of observation and mental development. Under the method of individual study, he has opportunity to lead each, step by step, to observe and to understand what he sees. If students are first shown complicated specimens or cases, they become confused and acquire less knowledge than when they begin with simpler ones. Their studies must always be related with one another and with bits of knowledge already possessed. The success of this method for many students is dependent on the ability of the teachers, since the present day premedical development has not been such as to make students able to stand on their own feet.

On the other hand, this method is intensely stimulating to those well equipped, able to observe and learn without constant help. It is also an important aid in the selection of the most desirable students. The students who memorize facts and do well through their accuracy in presenting them, who are able to graduate at the top of their class through marks thus received, do not always shine when acquiring knowledge by personal observation and when they are forced to think for themselves. This is no criticism of any student with a good memory: only of those whose memories alone commend them. Such students are not of the type who advance general knowledge or who make good physicians; they should be recognized and taught to think, not encouraged by good marks to a false sense of their superiority. Individual observation forces each man to use his own senses, not accepting the evidence of another; reporting such observations requires of him an accuracy that he is willing to defend; interpreting them requires of him judgment and use of bits of knowledge previously acquired; and discussing them gives him an opportunity to defend his position and become aware of the degree of validity of his judgments.

GROUP 4, in which the student takes the entire responsibility: student experimentation and investigation.—*Independent study.* This is comparable to the "honors" system prevalent in English universities, wherein the student is free to study in his own way and is himself the judge of the time when he feels fitted to present himself for his examinations. Aside from the general basic knowledge required to pursue the course he has chosen, he is free to follow up the subjects that interest him most; always with the help and guidance of a tutor, who, though he is usually an instructor or research worker in one branch of science, must have his knowledge so well correlated that he will be able to guide the student in all branches. Examinations under this system come, not as a lock to close forever any part of the student's mind deemed by the professor to be sufficiently crammed, but as a key to give the student a further understanding of the relationship between the masses of knowledge he has accumulated throughout the years.

This method of independent study may not be practical for the average medical student of today, but is it not worth while to give to the better men a special chance to develop, even if they are an extremely small minority? Since this method tends to develop the resourcefulness of the capable student, it at least can be combined in many ways with a didactic scheme. With sufficient free time granted in the schedule, a student may study and experiment for himself under the heads of any of the main laboratory courses. Paternalism does not tend toward individual development: there is failure to throw the student on his own resources in not forcing him to think. A method which permits students to work independently and does not so carefully guard them that errors may not occur in experiments and observations tends to force each student to formulate his own conclusions. Thus, in spite of much poor teaching, the intelligent students will educate themselves, learning to weigh evidence and, through experience, acquire judgment.

DEVELOPMENT OF THE STUDENT

What is it that a school through all these methods of teaching seeks to develop in the student? Whether he is to become a pure scientist or a practitioner, in order to accomplish most for himself and others, must he not, as a student, acquire a truly scientific habit of mind? He will then in practice make use of available knowledge without prejudice. From the aspect of pure science, the value of this attitude is generally acknowledged; but from the standpoint of the community, this attitude for the clinician is even more important. For is it not through the practitioner that practical application is made of the discoveries in science? In fact, is it not probable that much of the lack of sympathy between the laboratory worker and the clinician has been engendered by the failure of the clinician so often to make full application of science in his practice and by the failure of the laboratory worker to develop a truly scientific spirit in future practitioners while they are students?

INCULCATION OF SCHOLARSHIP

The inculcation of a high degree of scholarship and an insistent craving for knowledge as something ideal is also most desirable. If those who have been taught at the College of Physicians and Surgeons, New York, in the dissecting room at any period during the last thirty years, will analyze that experience, they will see that Dr. George S. Huntington's impress on them to do well with honesty of purpose was of much more value than the knowledge of anatomy they acquired.

ENCYCLOPEDIC TEACHING

Have not medical schools fallen into the error of feeling that they must pack into the students' minds great masses of facts, more or less useless, but which must be found in that encyclopedia of medical information, the completely educated student? Why attempt the impossible? Must he not "practice" medicine during the rest of his life before his education can be completed? If the teacher of long ago realized this when he adopted the word "practice," how can it be hoped that all knowledge of medicine can be imparted at the present time in four years?

Should not medical education rather aim to have students able to judge what is important and what is unimportant, or at least to give them an opportunity to

undergo experience and to practice their judgment? They are then better qualified to be on the lookout for evidence, and to evaluate it as they find it. No teacher can lay down rules for discovering the important or unimportant, while the general teachers of anatomy, of bacteriology, of chemistry, of histology and of pathology must treat all fields as of equal importance.

Until there is a close coordination of the needs of many specialists, unimportant details will still seem to the student to be of equal value with the most important.

RELATEDNESS

Should not medical education particularly aim to link for the future practitioner of medicine all specialties so that their relatedness may be ever before him? Students are lost in the maze of seemingly contradictory statements of specialists. What the gynecologist teaches seems to contradict the teachings of the urologist, and the obstetrician disagrees with both, simply because each does not know of the needs of the other. Cooperation and interdepartmental sympathy with the necessities of specialists would not only save time in the study of medicine, but would give the students this much needed interlinking of the parts to form an orderly whole.

Relatedness is essential for comparison, and it is on comparisons that knowledge is built. It is necessary that topics and subjects be overlapped. Therefore, no topic can ever be regarded as finished: the practice of medicine is continuous and so is its study.

NONMEDICAL HEADS OF DEPARTMENTS

For the sake of such relatedness, the heads of all departments must be intimately acquainted with the needs of medicine. Medical experience alone can give this acquaintance. In choosing heads of departments, the search again is for men preeminently interested in the education of the medical student, and it is the exception for a man without a medical degree to have had such experience that his perspective will enable him to see his own subject in a coordinated relation with medicine as a whole.

DEPARTMENTAL BARRIERS

Interdepartmental partitions which are the inheritance of tradition and custom are distinct barriers to coordination. The terms physiology, pathology, medicine and surgery suggest that they are subjects apart, while in reality physiology and pathology shade by insensible gradients into each other and again into medicine and surgery. All of these rigid departmental partitions are imaginary. The present custom of departmental education in medicine tends to separate teachers both by a physical living apart, and by mental discord, because of different tenets and purposes. When the old line subjects—anatomy, physiology and pathology—were taught by a single practitioner, the students did not suffer from such discord.

THE BLOCK SYSTEM

From time to time, courses have been altered by the introduction of the so-called block system, whereby subjects are attached and finished in rotation. This is bad for two reasons: 1. What is learned by study of only a few minutes a day, carried through the years, results in the acquirement of more actual knowledge than that acquired by a continuous application over a short period of time. 2. The block system is not adapted to the material which is taught. It treats knowledge as if it could be divided into bricks, each one to be finished and packed away, a box when filled with such bricks to constitute a medical education. Knowledge of a topic, on the contrary, is no such solid matter, but is interdependent and vanishes if not kept alive through its increment. This block method obviously defeats all aims at correlation and orientation of students.

Students who are "fed facts" because they are "not capable of discrimination," as undergraduates, are not trained to judge wisely and with discrimination when they enter on their independent medical lives. Physiology can never be acquired to the full by assigning 800 hours of a schedule in the first year "to get it out of the way," as one man put it. Rather to be fully assimilated must physiologic thought and physiologic investigations continue throughout the four years, interwoven with medicine and surgery. Must not the "fundamental scientific subjects" be carried into the later years? Thus the student will be able to pick with more readiness the essentials from the nonessentials in his pure science courses. To be able to do this to the full, no subject can be regarded as finished, as in the block system.

FALLACY OF THE MARKING SYSTEM

Is not our real aim for the student to have him continue as a student during his lifetime? Circumstances which militate against this development are therefore objectionable because students are led to feel that in acquiring an A or B, day by day, their paper record as it grows in the hands of the quiz master is tantamount to a personal acquisition of knowledge. Hence the development of memory rather than of thought gains for a man the reputation of a real student. Further, the marking system forces students, too intelligent not to see the fallacy of the procedure, into at least a pragmatic acceptance of it. Again and again the most serious and well meaning will cut the classes and clinics in which they might be gaining valuable interests in order to cram a superficial, temporary memorization of facts necessary to attain "a good mark" in an announced test. Nor are they to be blamed; if the others set a standard for memorization, they feel they must follow, to get the "good mark" which in so many cases is used as the basis for the judgment of a man's worth—as though it were anything but the poorest reflection of his true capabilities.

The passing mark of 75 per cent.—C, used in many colleges—is another vicious influence, especially when there are many marked tests throughout the year. It tends to make the student feel he need make but three quarters of effort, only clean three quarters of a table, or at amputation cut through but three quarters of the tissues, especially since such marks are obviously inadequate, representing in no way the instructor's thoughtful estimate of the student's work or ability. Similarly, the mark tends to stimulate some students to obtain surreptitiously from notes or neighbors facts for the written test or recitation. Would it not be of greater aid both to student and to teacher to use a shifting scale? Work would then be either "satisfactory" or "unsatisfactory," according to the teacher's estimate of the student's ability.

Like the marking system, the formal examination which calls for an assembly of concrete facts is particularly to be deplored. The student who has the greatest amount of mental surface tension, and who can balance the largest number of facts on the end of his pencil, is the victor in such a contest, regardless of his ability or inability to understand or make use of these facts.

COMPETITION AS A STIMULUS FOR STUDY

Nearly all teaching methods employ a goad of some form; and the one which tends to maintain the student's self respect is the best. It is foolish to blind one's eyes to the fact that, since the world was young, man has striven and succeeded in competition, and he has become weak and vegetative without such a stimulus. Where the annual practical examination in anatomy is in vogue, all students aspire to enter the group of those who make no mistakes. Such a distinction comes only to those who make no mistake in competition with themselves and anatomy. This method serves as a healthy goad to the acquirement of a knowledge of the subject. The exercise of this stimulus can be produced in all subjects, not alone in anatomy.

PRACTICE OF MEDICINE

Having considered teachers, students, methods of teaching and of study, it is necessary to formulate what medical education is expected to give. The epoch of a morphologic, ultramechanical aspect of the living animal as a conception and basis for study is apparently passing. The substratum may be regarded as structural, but the correlation of functional activities must be regarded as the essence of life in an individual. Further, the biologist is insistent that derangement of functions brings about related functional changes and, progressively, alteration of structure. The progressive summation of functions and equilibration of structure constitutes the living individual. Students, however, are still led to think in mechanical terms and fail to realize that individual patients are not at all "closed systems." They are aware of the patient's environment, but have not a full conception of the interrelatedness and intrarelatedness of all energy phases even to the *n*th dimension. To make plain this concept of dynoplasm, coordination must be sought; the interdependence of all "normal" and "pathologic" conditions must be stressed that no graduate of a medical school shall go out with his knowledge walled off by interdepartmental barriers.

In essence, all are seeking what M. Louis so forcefully expressed to his pupils nearly a hundred years ago:

> Such and such have been my observations. You can observe as well as I. If you will study the art of observation, and if you will come to it with an honest mind and be faithful in noting all which you discover, and not merely the things which are interesting at the moment, or those which support a favorite dogma. I state to you the laws of nature as they appear to me; if true, your observations will confirm them; if not true they will refute them; I shall be content if only the truth be ascertained.

Think how far the capable student could travel on the road to a good medical education in the allotted four years, if all the teachers of "departments" should together frame a carefully thought out course, topic by topic. Up to the present, the various departments in many schools, without a due recognition of one another's responsibilities in the teaching of medicine as a whole, have devised a system which fills the student's time completely. Is there any valid reason why this should continue? And yet it has continued and does continue, and every year the ruts are worn deeper and the vision of the future is more and more obscured by the piled up walls of habit.

Many things that have been said in the preceding pages are but platitudes and repetitions to those who are interested in medical education; but until in some way these foundation stones of education cease to be used as roofing and are put where they can be of real value—not in books or even in the minds of educators, but in the practice and curriculum of schools—clinical lecturers will continue to think they are showing a skin mole to a whole class, when it is so small they can hardly see it themselves. Instructors will continue to lay down the law of dogma, and wonder what is the trouble when interns fail to cope with emergencies not laid down in the books. And we shall continue to write articles on medical education.

CONCLUSIONS

Only the best instructors should be chosen, because on them depends the selection of students and to a large degree their development and education. The surest way to have many good instructors available is continuously to develop them from those possessing the greatest apparent potentialities.

Teachers who do not continuously prove of value should not be allowed to remain in a school.

The method maintained should aim for the selection and maintenance of good teachers and laboratory workers, for under them any method of education is successful.

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DISPOSITION OF URETERS IN CERTAIN ABNORMAL CONDITIONS OF THE URINARY BLADDER*

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In the majority of cases, the condition for the relief of which transplantation of the ureters is indicated is a congenital anomaly known as exstrophy of the bladder; this condition is not progressive, and regarding its causation no information which will affect the condition itself may be expected to be developed. It is estimated that exstrophy of the bladder occurs once in every 30,000 to 50,000 births. If this is a correct estimate, there must be about 2,000 cases of exstrophy in the United States. With one or two exceptions, no single surgeon has had more than a very limited series of cases, so that when the occasional case comes to him he has no basis of judgment as to the best mode of procedure. It follows that in many cases only a plastic operation is performed which closes the external defect but does not relieve the chief source of distress, and nothing remains for the unfortunate patient but the continual use of some device for holding the constantly dribbling urine. Even with the utmost efforts to maintain cleanliness, however, these patients can scarcely ever be free from the pervasive odor of urine, and they are practically forced into a life of self-abhorrent isolation. Moreover, none of these devices are effective at night. All of my own patients, at least, have stated that at night they were obliged to wrap themselves in rubber sheets. It is difficult to imagine a more uncomfortable existence. In addition, the appliance itself may prove an added menace for, as in one of my own cases, the constant irritation of the already excoriated surface produced an epithelioma.

It would appear fitting, therefore, to discuss the management of these cases with a view to standardizing a technic which will effectively and permanently remove

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the most distressing symptom. Moreover, since this congenital condition has no relation to any method of prevention, the necessity of establishing a standardized operative technic becomes even more urgent.

Much has been written regarding the developmental factors which give rise to exstrophy, but that information does not aid us in correcting the deformity or relieving the chief cause of distress—the constant dribbling of urine. While other deformities are often associated with this anomaly, these patients, as a rule, are not mentally defective, and if given the opportunity would progress intellectually with other children of their own age; but, as they cannot be sent to school, they are deprived of the educational advantages that other children receive.

CHOICE OF SITE

The preliminary queries which must be answered in considering a standardized technic are these: 1. What is the safest and most efficient site to which to transplant the ureters? 2. At how early an age may correction of the condition be undertaken? In answering the first question, one must consider the utmost possible control of the urine and the minimum danger of ascending infection to the kidneys. It will be noted that, contrary to the judgment of most writers, I have placed the danger of ascending infection as second in importance; with the ureters in their exposed site in the exstrophied bladder. the danger of ascending infection could hardly be increased, whatever the site selected for their transplantation.

Moreover, there has been no case as yet of damaging infection in any of my own cases. Nor can I agree with Peterson that the prevention of ascending renal infection is dependent on the transplantation of the vesical flap with the ureteral orifices—that is, by Maydl's operation. The extensive experimental work of Baird, Scott and Spencer [1] also seems to justify our assumption that the danger of an ascending postoperative renal infection is in no wise an expected sequence of transplantation of the ureters. Of particular interest in this connection are experiments by Draper and Braasch [2] in which they produced an intensive infection in the bladder, but "were never able to show that there was any infection whatsoever of the kidneys in these animals, and many of them lived for a number of months. Moreover, hydronephrosis did not occur; the real factor in reflux prevention being the physiologic activity of the ureters, rather than the mechanical action of the valve." Since in transplantation to any site we have no reason to believe that the normal physiologic activity of the ureters themselves has been impaired, these findings would stand, whatever the site of their termination.

There are certain other conditions besides exstrophy of the bladder for which transplantation of the ureters to some site outside the bladder is indicated, such as other malformations, either congenital or acquired, in which the bladder no longer acts as a reservoir for the urine, or in which the presence of the urine causes intolerable irritation; and also injuries as the result of which the vesical sphincter has been permanently damaged so that it no longer functions and in which repeated attempts at plastic repair have failed. Neoplasms of the bladder involving the ureteral orifices may also require this operation. However, in such cases a simple form of transplantation in situ as previously described by me may be adopted.[3] In any of these conditions, the urgency of operative relief is sufficiently indicated by the intolerable incontinence which makes the patient a burden to himself and an offense to others.

The prime problem, as I have indicated above, is the choice of a site to which to transplant the ureters. In making this choice, various authors in the past have considered the openings of aberrant ureters or have made their choice in accordance with embryologic and evolutional considerations. As for the extravesical openings of aberrant ureters, little is to be gained by their consideration. The fact that aberrant ureters may open in the urethra, the vagina, the vestibule of the vagina, Gärtner's ducts, the uterus, the seminal vesicle, the vas deferens or ductus ejaculatorius, the rectum or the intestines, with the exception of the last two sites named, does not offer any suggestion of possible value. Embryologic and evolutional considerations, however, seem to be of more value.

As was noted by Simon,[4] who, as far as I know, was the first to consider a direct union between the rectum and the ureter, the fact that in the embryo the cloaca serves as a common reservoir for intestinal and urinary excretion, and that this is the case also with birds and with certain of the lower mammals, appears to indicate that the bladder was developed, as it were, as an after-thought, not from the point of view of safety, but for the greater efficiency of the highly developed organism. There is no fundamental reason why urine and feces should not be collected in a common reservoir. Moreover, as I shall show later, the normal mode of exit of the ureters can more readily be approximated in the intestines than in any other of the sites that have been proposed.

Nevertheless, a review of the literature shows that practically every possible site has been used for transplantation—the urethra, the vagina, the loin, the groin, as well as the colon and the rectum. Transplantation to the loin, in particular, has had its latest and most ardent advocate in Bottomley,[5] who believes that by this method danger of infection is minimized and that, with the wearing of a properly fitted urinal, the patient is relieved from undue discomfort to himself and annoyance to others. Watson [6] advocates a direct connection between the pelvis of the kidney and the skin of the loin by means of rubber tubing, in the belief that the danger of infection is thus minimized. By far the greater number of authors, however, have advocated some method of transplantation to the intestinal wall. As far as I have been able to discover, the first diversion of the stream of urine to the intestines was made by Lloyd [7] in 1851. By means of a skein of silk used as a seton, he endeavored to conduct the urine from the bladder to the rectum. Simon, who has usually been credited with the first ureteral transplantation, did not perform a true transplantation, but made a ureterorectal fistula.

1. Baird, J. S.; Scott, R. L., and Spencer, R. D.: Studies on the Transplantation of the Ureters into the Intestines, Surg., Gynec. & Obst. **24**: 482-484 (April) 1917.
2. Draper and Braasch, in discussion on Furniss, H. D.: Postoperative Renal Infection, J. A. M. A. **61**: 957-961 (Sept. 20) 1913.
3. Lower, W. E.: Disposition of the Ureter in Surgical Conditions of the Bladder, J. A. M. A. **75**: 711-713 (Sept. 11) 1920.
4. Simon, J.: Ectopia Vesicae: Absence of the Anterior Walls of the Bladder and Pubic Abdominal Parietes; Operation for the Directing of the Orifices of the Ureters into the Rectum; Temporary Success; Subsequent Death; Autopsy, Lancet **2**: 568-570, 1852.
5. Bottomley, J. T.: Operative Treatment of Exstrophy of the Bladder by Transplantation of the Ureters into the Loin, J. A. M. A. **49**: 141-144 (July 13) 1907.
6. Watson, F. S., and Cunningham, J. H.: Genito-Urinary Diseases **1**: 445, 1908.
7. Lloyd: Ectopia Vesicae (Absence of the Anterior Walls of the Bladder); Operation; Subsequent Death, Lancet **2**: 370-372, 1851.

It is interesting to note that Roux,[8] in 1853, proposed "that the ureters be sunk in the rectum, and that the exstrophied bladder be covered by skin through plastic operations. . . . Roux was led to believe that these operations were anatomical possibilities from a study of cases where the ureters opened into the rectum, and from the numerous instances on record where, after the removal of the vesical stone and the establishment of vesicorectal fistulas, the patients were still able to control their liquid evacuations. He refrained from putting these ideas into practice because of his uncertainty as to the relations of the peritoneum and rectum in exstrophy of the bladder." [9]

As far as I have been able to discover, the first true transplantation was done by Smith,[10] in 1878, who performed a bilateral ureterocolonic anastomosis in two stages by the extraperitoneal route. From then until 1891, no cases seem to have been reported; but since Küster's report in that year, the literature has been fairly rich in reports of transplantations into the rectum or colon by various methods.

Extensive reports from the literature have been made by Peterson [9] and Buchanan,[11] while perhaps the largest single series is that reported by C. H. Mayo [12] in 1919. Peterson compiled thirty-three ureterointestinal implantations, among which sixteen were double implantations—six for cancer of the bladder; one for tuberculosis of the bladder; seven for exstrophy; and two for cancer of the uterus, extension from which had involved the ureteral orifices. In this total series of thirty-three operations, the primary mortality was 33 per cent. Later deaths from pyelonephritis are noted in six cases with two deaths from uremia. Peterson compiled also thirty-six cases of ureterotrigonal-intestinal anastomosis, among which thirty-two were for exstrophy, with an operative mortality of 14 per cent. Among these, two patients died of pyelonephritis, four and fifteen months after the operation. The not unduly forbidding percentage of deaths in the second series, and the rare occurrence of pyelonephritis make one wonder why the value of intestinal implantation was so greatly questioned. A mortality of 14 per cent. after operations for a condition which in itself limits the length of life, and in any case makes life a continual burden throughout its duration, does not seem to be one which should have warranted any question of the fundamental value of the procedure. As C. H. Mayo has stated, "statistics show that 50 per cent. of all persons thus afflicted are dead by their tenth year, and 66.67 per cent. are dead by their twentieth year." Buchanan compiled from the literature 131 cases of intestinal implantation of the intact ureters with part of the bladder wall, with an operative mortality of 25 per cent. Among the ninety-nine surviving patients, eleven were reported to have died subsequently of ascending renal infection. Although this is a comparatively high percentage—11.2 per cent.—nevertheless, as Buchanan himself states, there is no way of ascertaining whether or not the kidney infection may not have existed at the time of operation; nor was the condition of the transplanted ureters themselves known, a point which is considered important by many investigators. Buchanan does not give any statistics regarding continence, but Peterson states in connection with the second series of thirty-six cases that sphincteric control was mentioned in the reports of twenty-nine, the average frequency of evacuations being from two to four hours. In the Mayo Clinic series of twenty-six cases referred to above, twenty-two of the operations were reported as successful.

Researches by various investigators have shown that the transplantation of the ureters to the duodenum is accompanied by symptoms of uremia with a fatal termination. If one ureter is transplanted to the duodenum, the remaining kidney seems to be able to take care of the uremic toxins—death occurring promptly, however, when the second ureter is transplanted, or when the kidney in the nontransplanted side is removed. It appears to me that the result of transplantation to the duodenum can hardly be used as a basis of argument as to effects of transplantation to the rectum. It has been shown that absorption from the intestine decreases progressively within the large intestine, until within the lower colon and rectum it is practically nil. If absorption from the rectum were sufficient between evacuations to produce uremia, it would also be sufficient to produce a chronic toxemia from the products of intestinal digestion.

As a result of an experimental study in 1909 in which normal sterile urine was allowed to leak directly into the peritoneal cavity, Barney [13] concluded "that the abdomen may bear without damage, and even in some cases without severe reaction, the effusion of a certain amount of sterile urine, and that it is able to guard itself quite promptly and efficiently against this effusion by the formation of adhesions. . . . It is in those cases where this prompt occlusion does not occur, seen oftenest in dogs, or where the urine is septic from the start, that a general peritonitis sets in." He concluded that the cause of death in these animals was primary sepsis, even though uremia played its part. On the other hand, Cecil and Cummings,[14] in 1918, called attention to the possibility of deleterious remote effects of absorption of urine from the colon, drawing their conclusions from their observations in a case of traumatic unilateral uretero-intestinal anastomosis. It is to reduce to the minimum the danger of urinary absorption that I advocate the retention of a rectal tube immediately after operation until normal periods of evacuation are established. Later, when the longest periods of retention last over night—that is, not more than seven or eight hours—the danger of uremia from absorption would appear to be a remote possibility. Blood chemistry tests in a number of cases of my own have been made during the last few weeks, and in no instance has any abnormal urea content been noted.

Of special interest in this connection is Keen's [15] case, "in which for thirty-five years a woman defecated and urinated, and for eleven years menstruated, by the rectum." He reports that "no ascending renal, vesical or uterine infection occurred at any time, nor did the

8. Roux, Jules: Exstrophie de la vessie: autoplastie pour masquer la difformité et créer un reservoir capable de retenir l'urine pendant un certain temps; insuccès; establissement definitif d'un canal cutané propre à maintenir en place un reservoir en caoutchouc vulcanisé, Union méd. **7**: 114-115, 1853.

9. Peterson, Reuben: Anastomosis of the Ureters with the Intestine: A Historical and Experimental Research, J. A. M. A. **36**: 444-445 (Feb. 16); 506-507 (Feb. 23); 569-573 (March 2); 632-635 (March 9); 735-738 (March 16); 808-815 (March 23), 1901.

10. Smith, P.: An Account of an Unsuccessful Attempt to Treat Extroversion of the Bladder by a New Operation, St. Bartholomew's Hosp. Rep. **5**: 29-35, 1879.

11. Buchanan, J. J.: Remote Results of Implantation of the Ureters into the Bowel for Exstrophy, Surg., Gynec. & Obst. **8**: 146-155, 1909.

12. Mayo, C. H.: Exstrophy of the Bladder, Contributions to Medical and Biological Research, Dedicated to Sir William Osler **2**: 1095-1110, 1919.

13. Barney, J. D.: Intraperitoneal Division of One Ureter: A Clinical and Experimental Study, Tr. Am. Urol. A. **3**: 262-288, 1909.

14. Cecil, A. B., and Cummings, R. S.: The Remote Effects of Absorption of Urine from the Colon: A Case of Traumatic Unilateral Uretero-Intestinal Anastomosis, J. Urol. **2**: 469-479 (Dec.) 1918.

15. Keen, W. W.: A Case in Which for Thirty-Five Years a Woman Defecated and Urinated and for Eleven Years Menstruated by the Rectum, Surg., Gynec. & Obst. **69**: 606-608, 1919.

mucous membrane of the rectum at any time resent the constant presence of the urine or the periodical presence of the menstrual blood."

As for the danger of ascending infection, that this danger exists cannot be denied; but I do not believe that it is greater in the case of the transplanted ureter than in the case of the exposed ureter in the exstrophied bladder. I believe, moreover, that within the rectum with its natural defenses it must be less than when the ureters are transplanted to the skin, where they meet with no such natural defense.

Steinke,[16] Sweet and Stewart,[17] Wislocki and O'Conor,[18] Satani,[19] Sampson [20] and others have made extensive studies of the possibilities of reflux of urine from the bladder to the kidney, and have apparently established the fact that the direct waves of peristaltic activity are determined by the metabolic gradient—the metabolism being increased at a point of infection. It would follow that, if a point of infection is near the terminal of the ureter, a reflux peristaltic action might carry bladder or rectal bacteria to the kidneys; but this argument does not seem to me to be pertinent for the reason that I have stated above. Such a reverse peristalsis would also carry toxic substances from the exposed ureters in the exstrophied bladder.

AGE

The second of the queries noted in the beginning of this paper, regarding the age at which transplantation of the ureter should be undertaken, cannot be answered with certainty. My judgment is, however, that operation should be deferred until the child has reached the age when he can be trained to control the anal sphincter, and that the operation should be done as soon after that age is reached as possible in order that the control of the anal sphincter for urine as well as for feces may be acquired more easily and more completely, and that the child may mingle with his fellows and begin his schooling at the normal age.

It is not necessary to review these various methods, in particular that of Maydl, which was for many years the method of choice until Coffey's [21] investigations, whereby he developed a method of implantation closely analogous to the normal route of the ureters through the bladder wall. Coffey's method was the result of a research to determine a procedure whereby the portion of the pancreas remaining after its head had been removed might efficiently deliver pancreatic juice through a new opening in the intestine. This study became a study in hydrostatics, or, as Coffey himself calls it, *static intra-intestinal pressure*. The principle of the operation, as summarized by him, consists of "submucous implantation of the duct for the purpose of reversing the course of *static intra-intestinal pressure* and bringing it to bear on the site of the duct. . . . The essential mechanical principle necessary to uniformly successful implantation of the ureter is that *the ureter shall be made to run immediately under the loose mucous membrane for a distance, before entering the lumen of the intestine.*"

Stiles' application of Witzel's tubularizing principle and Martin's muscularizing method should also be noted as efficient modes of implantation. My own belief is that some technic which insures the application of the principle proposed by Coffey should be adopted. The following special points, however, may be mentioned here. Preliminary to operation, the function of the kidneys, as for any operation on the ureters or bladder, is checked up by blood chemistry and by the use of dyes. For two days before the operation the bowels are cleared out, a rectal douche being given on the day of the operation. Of particular importance is the placing of the patient in the Trendelenburg position, which brings the abdominal viscera well out of the pelvis, according to the method of Guthrie, who advocates that the patient be put in the Trendelenburg position before the anesthetic is given so that the suction of the diaphragm will help to pull the intestines out of the pelvis. All the abdominal viscera are held out of the pelvis by sufficient packing with gauze. Formerly, I clamped off the bowel as suggested by Coffey; but, if the bowels have been thoroughly cleaned out preoperatively, this is not necessary, and more recently I have not used the intestinal clamp.

The interval between the transplantations, of course, varies with the individual patient; but, in general, two weeks is required for the wound to heal solidly and in order to make sure that the kidney on the transplanted side is functioning. The extraperitoneal route, in my opinion, should be avoided. My own greater success has come from operation by the intraperitoneal route. There is a physiologic reason why the danger of infection is increased in extraperitoneal operations, for, as Crile has suggested, the extraperitoneal space is weak or lacking in defenses against infection. In these defenses, the intraperitoneal area is among the most richly supplied of any in the body. Operation by the intraperitoneal method should therefore minimize the danger of infection. Since I have adopted the present method of operation by the intraperitoneal route, I have had no case of infection.

As stated above, another important point, in my estimation, is the use of a rectal tube until the rectum shall become adjusted to the presence of urine, and the employment of saline rectal douches. Danger of urinary absorption is thus reduced to a minimum.

My own personal series of bilateral transplantation of the ureters into the large intestine includes sixteen cases: three for carcinoma of the bladder, and thirteen for exstrophy. In addition to these, I have made one transplantation into the loins.

The age of these patients has varied from 4 months to 54 years. The patients have been presented or have presented themselves for the outstanding disability noted above; namely, constant irritation of the parts, penetrating odor of urine and resultant isolation. Ten of these operations have been performed by the method described above, the operation being performed in two stages in five cases, and in three stages in four cases. In the tenth case the patient died after the first ureter had been transplanted. In this case, on account of a greatly dilated ureter, it was impossible to make a good transplantation, and leakage occurred.

I have never had any series of cases in which the patients themselves have reported so happily as is the case with these. From frail, unhappy, morbid individuals, these patients are transformed into happy, optimistic,

16. Steinke, C. R.: Transplantation of the Ureters into the Gastro-Intestinal Tract. Univ. Pennsylvania M. Bull. **22**: 110-121, 1910.
17. Sweet, J. E., and Stewart, L. F.: The Ascending Infection of the Kidneys, Surg., Gynec. & Obst. **18**: 460-469, 1914.
18. Wislocki, G. B., and O'Conor, V. J.: Experimental Observations upon the Ureters, with Special Reference to Peristalsis and Anti-Peristalsis, Bull. Johns Hopkins Hosp. **31**: 197-202 (June) 1920.
19. Satani, Y.: Experimental Studies on the Ureter, Am. J. Physiol. **49**: 474-495 (Aug.) 1919.
20. Sampson, J. A.: Ascending Renal Infection, with Special Reference to the Reflux of Urine from the Bladder into the Ureters as an Etiological Factor in Its Causation and Maintenance, Bull. Johns Hopkins Hosp. **19**: 334-352, 1903.
21. Coffey, R. C.: Transplantation of the Ureters into the Large Intestine in the Absence of a Functionating Urinary Bladder, Surg., Gynec. & Obst. **32**: 383-391 (May) 1921.

social beings, who are able to go about their business. It should be emphasized not only that the immediate recovery is of prime importance in such cases as these, but also that the economic saving is of inestimable value in the end-results.

One patient, a bank teller, is regularly at work; he has sphincteric control for from three to four hours during the day, and has complete control throughout the night. He has gained in weight, and states that he "feels fine and was never so comfortable or happy."

Another patient, one of the rare cases of epispadias in a woman, was a wan, unhappy, shrinking person when she first presented herself. Now, more than a year since her operation, she has sphincteric control for eight hours; scarcely ever gets up at night; has gained in weight, and is exuberantly happy.

Although the sphincteric control has varied, in no instance in this series has it failed completely, in nearly every case the control being possible for from three to four hours.

SUMMARY

Transplantation of the ureters is an operation urgently indicated in the presence of certain malformations of the bladder, either congenital or acquired. The choice of site should be one to which the transplantation can be made with the minimum of immediate operative mortality and a maximum of ultimate comfort to the patient. Based on my own personal series is my belief that the submucous implantation of the ureters in the sigmoid or rectum by the technic first proposed by Coffey most nearly fulfils the foregoing requirements. In any case, agreement regarding the most efficient method of treating the class of patients on whom this operation is required is needed in order that the technic may be standardized. The basis of judgment for the final selection of such a standardized technic should be its ability to give to the patient the utmost possible diminution of his misery and the best possible economic status.

ALOPECIA AND POLIOSIS OF THE EYELIDS

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A married woman, aged 37, a brunette, consulted me, Dec. 27, 1922, on account of a falling out of the eyelashes from the left upper lid. This process had not been accompanied by any inflammatory condition of the lid itself or by any loss of hair elsewhere on the body; its duration had been rather rapid, all the lashes disappearing in about four months, with the exception of those growing from the nasal quadrant, which remained several weeks longer than the rest. The patient's physician, Dr. Morris Flexner of Louisville, Ky., attributed the condition to a general asthenia following a miscarriage, three or four months preceding the loss of lashes. An examination of the blood made at the time showed hemoglobin, 85 per cent.; red blood cells, 4,040,000; leukocytes, 11,200; polymorphonuclear neutrophils, 87 per cent.; eosinophils, 3 per cent., and lymphocytes, 10 per cent. Urine examination and the Wassermann test were negative.

Before consulting me, she had been under the care of Dr. E. T. Corson of this city, who had prescribed a salve and applied electricity to the affected lid, with some beneficial effect.

Examination showed a complete alopecia of the left upper lid, with a normal supply of lashes elsewhere, and with unaffected brows or hair of the head. The eyes and adnexa were also of normal appearance, with the exception of a slight widening of the left palpebral fissure, this being occasioned by a slight retraction of the lower lid. There was no scarring along the margin of the affected lid, and no other evidence of a previous inflammatory condition of that structure.

The patient was directed to rub a stimulating salve of ammoniated mercury along the margin of the lid once daily, and was referred to her family physician for proper general treatment with iron and strychnin. A message received from her a few days ago was to the effect that she saw evidence of the return of the lashes.

ALOPECIA OF THE EYELASHES

Cases similar to the foregoing, illustrative of the condition designated as alopecia of the eyelashes, by which is understood the partial or entire absence of the cilia due to conditions other than local inflammations of the lid, are rare. Loss of the lashes from local disease of the lids is, as is well known, extremely common, and will not come under the scope of the present communication, as I shall confine myself to an analysis of causes arising elsewhere than in the lids themselves.

Regarding the genesis of alopecia, it may be noted that the literature contains quite a few instances of congenital origin, some of which show the influence of heredity. Michel[1] refers to cases reported by Pincus of a father and son: The former had few cilia and no mustache; the son, little hair on the head, and scanty brows, but well developed cilia. Four brothers and sisters between 8 and 22 years of age were cited by Baer, with scanty cilia and brows perfectly bald. Cases such as these are to be regarded as due to retarded development, and are frequently associated with other anomalies of the eyelids.

Dermatologists record the condition as occurring in leprosy, leukoderma, pityriasis and seborrhea. In Steindorff's case of vitiligo and traumatic poliosis, the whitening of the skin of the left side of the forehead and of the hair of the scalp, eyelids, eyebrows and lashes of the left side followed a blow. The hairs of the scalp recovered their natural brown, but the eyelids, eyebrows and lashes remained white. Syphilis is a frequent cause of alopecia, gumma of the lid depriving that structure of its lashes in a complete and characteristic manner, while the cilia may fall out without previous inflammatory symptoms, in association with the loss of hair in other parts of the body which is so frequently observed in constitutional syphilis. Thus, in 136 cases of syphilis observed in the early stages, Wilbrand and Stähli found a loss of cilia alone in 5.1 per cent.; of the brow alone in 8.8 per cent., and a simultaneous disappearance of cilia and brows in 33.3 per cent.

Alopecia has been observed in connection with chronic arsenic poisoning, either as a local condition or accompanying the loss of hair in other parts of the body.

In a case of fatal hemiatrophy, Berger[2] reported falling out of the cilia simultaneous with that of the eyebrows and hair of the head.

Scarlet fever has been known to cause loss of lashes. An interesting case is recorded by J. T. Shoemaker,[3] following an attack of measles at 6 years of age. Nearly all the hair of the scalp fell out, most of which came in later; the eyebrows and eyelashes were entirely absent; a few axillary and pubic hairs developed. At the age of 18, some fuzzy hairs of a lanugo type grew on the face. At about 23 years of age, the patient became entirely bald, and has remained so. The hair

1. Michel, in Graefe-Saemisch Handbuch, Ed. 2, **5**: 287.
2. Berger: Deutsch Arch. f. klin. Med. **21**: 432.
3. Shoemaker: Ophthalmic Year Book **13**: 294.

of the face and other parts of the body was also lost. The Wassermann test was negative. The patient married and had three children, the first of which was prematurely born; the other two were normal, with the usual development of hair; this was also true of the patient's parents. The man himself appeared perfectly healthy. In conjunction with this case, Shoemaker discussed the functions of the ductless glands with reference to various trophic conditions, and came to the conclusion that his patient had some form of dysendocrinism due to a diminished secretion of the endocrine glands (pituitary body, pineal glands, thyroid, parathyroid, thymus, suprarenals, pancreas and testis), but was unable to state what particular glands were affected, though, judging from the part which the thyroid and the gonads (testis) seem to play in the growth of hair, he thought it probable that these may have been the ones at fault.

Alopecia of the lids, in connection with disturbances in the thyroid gland, has occurred in the practice of a number of observers. Most interesting of these is a report by Yeo [4] of a case of exophthalmic goiter in a young woman in whom the hairs of the eyebrow and eyelids fell out coincidently with the protrusion of the eyeballs. The symptoms manifested themselves in this order: first, the projection of the left eye and enlargement of the right lobe of the thyroid, with the shedding of the hairs of the left eyebrow and eyelashes; then the slighter enlargement of the left lobe of the thyroid with the slighter but simultaneous projection of the right eyeball, and shedding of the hairs of the right eyebrow and eyelids.

In a young girl with exophthalmic goiter, observed by Wilbrand and Saenger,[5] not a hair of the lashes or brow remained, giving the patient a most unpleasant expression. Von Molliere and Choostek saw similar cases.

Alopecia neurotica is the name given to loss of cilia through so-called "nervous influences." Michel has found this of rare occurrence, and usually associated with change in color of the eyelashes. He asserts that the process is in all probability that of a trophoneurosis, especially when the loss of cilia is unilateral. The case that I reported is probably of this origin, doubtless associated with some obscure nutritional change, emanating from disordered glandular function.

Of not uncommon occurrence is so-called hysterical alopecia of the eyelids. Twenty years ago, Gifford [6] cited the cases of two girls, aged 10 years, who had acquired the practice of pulling out the lashes. Since then, this author writes that he has probably seen a dozen additional cases of this trouble. In some of these the habit extended to pulling out nearly all the eyebrows as well as the eyelashes. In fact, from a condition with an hysterical element, or at least an element reveling in the excitement and alarm caused by the patient's environment, Gifford points out that the practice gets to be a more or less permanently fixed habit, which it is difficult or impossible for the patient to get rid of even when he (or more generally she) actually wants to stop.

The same author suggests that a better name for the condition might be trichomania or trichotillomania or something of that sort, a term used by dermatologists for cases in which, sometimes, the habit extends to pulling out a good deal of the hair of the head.

4. Yeo: Brit. M. J., No. 12, 1877.
5. Wilbrand and Saenger: Die Neurologie des Auges.
6. Gifford: Ophth. Rec. **10**, No. 1

Revaton saw discoloration and falling out of the hair of the head and of the right brow and cilia after a head injury which caused blindness of the right eye. Velardi's [7] case, that of a boy, aged 16, in whom all the cilia of the left upper lid and the right lower lid fell out two days before the occurrence of a severe headache and a slight attack of fever, is also of interest. No disease of the lid margin or parasitic disease of the rest of the hairy parts was present. Heavy doses of quinin relieved the headache, and the cilia grew in again completely after several months.

In a case of double trigeminus affection and bilateral keratitis neuroparalytica reported by Sachsalber [8] there arose symmetrically, corresponding to the region of supply of the first branch of the fifth nerve, alopecia areata and catarrh of both sides of the throat and nose. Wilbrand and Saenger think this case and others present strong evidence of trophic qualities in the fifth nerve.

Schüle [9] graphically describes the manner in which the insane occasionally pull out the eyelashes, and even at times rub sand into the conjunctiva. In concluding this part of the paper, I may quote from Lawrence's standard textbook, written a century ago:

> I saw a young lady in whom the lashes of one upper eyelid had dropped out without previous inflammation or any other ascertainable change in the part. My opinion was that they would not be reproduced; but I recommended the trial of a stimulating ointment, and the ung. hydrarg. nitrat. in a dilute form was consequently employed. After the lapse of some months the hairs again appeared, and were ultimately restored, of natural size, color and number.

POLIOSIS OF THE LIDS

Closely allied to alopecia, or falling out of the lashes, is that of loss of color, graying and whitening of the lashes—poliosis of the lids, so called. As an instance of this condition, which is not nearly so rarely encountered as the former, I may cite this case:

> Mrs. H. W. T., aged 42, consulted me in March, 1920, for glasses to correct presbyopia. In the examination, it was noted that the hair of the right eyebrow was entirely white, and the lashes of the corresponding side similarly affected except for one or two in the lower lid which had retained their original color (dark brown). The hair of the head was dark, with the exception of a white patch in the right temple. This blanching process had been accomplished during the three months preceding, and was of unknown origin, the health of the patient having been fairly good. There had been no history of accident or nervous shock. Dr. Schamberg was consulted, who, finding a low blood pressure and other evidences of a poor circulation and chronic constipation, placed the patient on a strict regimen as regards diet, etc., and suitable cardiac tonics. No improvement being manifest within a short time, the patient discontinued all treatment, and the condition has remained unchanged.

As with alopecia of the lid, partial or total lack of pigmentation of the cilia may be congenital. Streatfield [10] reported such a case confined to the cilia of one lid. Wilde saw one brow totally white, the other half white and half normal, congenital; Michel, a congenital light coloration of the cilia of both left eyelids, with hair of a light coloration of the front of the head, especially of both temporal regions. In another of his patients, a child aged 8 years, a partial discoloration of otherwise normal cilia, with a whitish discoloration of the points of the cilia, with a sharp line of demarcation from the brown of the hair pigment, dated from birth.

7. Velardi, in Nagel's Jahresbericht für Ophthalmologie **12**: 438.
8. Sachsalber: Wien. klin. Wchnschr., 1893, No. 36.
9. Schüle: Allg. Ztschr. f. Psychiat. **39**: 1.
10. Streatfield: Lancet, July, 1882.

The color of the hair is due mainly to the varying amount of pigment granules and diffuse pigment present in the cortex or body of the hair and the medullary portion. The presence of air, usually as thick vesicles, is also doubtless an important factor, especially in light brown, white or gray hair. Stelwagon says it is presumably owing to a rapid evolution of air vesicles that sudden graying of the hair is produced. Under ordinary circumstances, in graying of the hair, the scalp hairs are usually the first to become gray; later the bearded parts share in the blanching, although in some instances the bearded parts suffer first. Still later and usually slight and long deferred, the eyebrows, and finally the other general surface hairs, may undergo depigmentation. Although occurring much more rarely than one would be led to believe by the more or less frequent accounts in general literature of the hair being made white over night by grief or shock, there are well authenticated instances in medical literature of such occurrences. Stelwagon [11] speaks of a man who, within a week after an accident, lost all the hair from his scalp and later from the brows and eyelashes. The same author goes on to say:

> Instances following injuries to the scalp are also reported by Schütz, and extensive development—universal alopecia—has been observed after severe fright by Boisser and Bidon. Malcolm Morris mentions a case in which total alopecia occurred in a woman within forty-eight hours of receiving news of the death of her son. Other examples have been referred to by Duhring, Crocker, Duckworth, Steppe and many others. Indeed, the clinical proof that fright, shock, accidents, great anxiety and mental worry, etc., are the causative factors in many cases is overwhelming. Jacquet's belief, that it may be due to peripheral irritation from defective teeth, has not received much support; nevertheless, it is not impossible that such reflex irritation as from this source as well as from defective vision, nasopharyngeal disorders, etc., may be influential in some cases.

Stelwagon says that the question of heredity in the extensive or generalized examples has received no attention, though he himself had observed two instances in which the family history disclosed a similar condition in a member of a preceding generation. In these two were involved three patients, all males, two of whom were brothers. The alopecia, beginning as an ordinary case of alopecia areata, in all about the age of 3 or 4 years, rapidly spread and involved the entire scalp, eyebrows and eyelashes, and the down on some other parts. Inquiry elicited the fact that in both instances a grand-uncle had had the same misfortune, likewise developing it early in life.

A century ago, Demours, in his Traité des maladies des yeux, stated that the eyelashes, like the hair of the head, can become rapidly white after prolonged psychic excitement, and he cited the case of a pregnant woman in whom the cilia of the right eye became white after a great fright, a miscarriage occurring eleven days later.

Von Roose [12] reports a case of a youth, aged 17 years, who received a fright in the night, and the next morning the eyelashes on the right side were white.

An acquired whitish coloration of the cilia may result at times from the inflammation of the margin of the lids accompanying certain skin affections, such as vitiligo, and also in progressive facial hemiatrophy.

Wilbrand and Saenger saw discoloration of the cilia affecting the upper lid of one eye alone, in a young man who suffered from repeated attacks of migraine, while, in an epileptic observed by Räuber, there was periodic recurring change in the color of the hair of the head, the eyebrows and cilia remaining unchanged.

Bock [13] reported a number of cases in which the changes in the color of the cilia came on after affections of the fifth nerve, after hemicrania, and especially in association with sympathetic ophthalmia and painful affections of the eyeball.

In this connection, it will be of interest to recount the narrative of an example of local blanching of the eyelashes, cited by Jonathan Hutchinson: [14]

> A very neurotic woman, aged 29, fair, with reddish auburn hair, was brought to me with hysteria, bordering very closely upon insanity. Her appearance was striking, owing to the lashes on the inner half of the upper lid of the right eye being quite white—strikingly so. The whiteness began in one lash only in the center, and from that spread inward to the nose. This occurred ten years ago on a voyage from Australia. There were no gray hairs in the head, but latterly some have shown in the inner quarter of the right eyebrow. She has had no blow or injury, or inflammation about the eye; no illness, and no neuralgia or headache; but there is a mark of a leech-bite close to the outer canthus of the right eye, which she thinks was put on after a severe attack of measles which she believes caused her at that time some temporary blindness (at the age of 5). Her health has always been good. Her mother died of phthisis two years after giving birth to her.
>
> I have seen several cases of local bleaching of the eyelashes, more or less similar to one recorded above. Mr. Warren Tay has shown me at least one such case. I possess a good portrait illustrating this condition in a man who had suffered from a very peculiar form of destructive iritis. He had lost both eyes, and in both upper eyelids, placed quite symmetrically, there were tufts of white eyelashes. His eyebrows and the rest of his eyelashes remained of their natural brown tint. There can be little or no doubt that these changes are brought about from lesions of the nervous system, and in that relation they are of great interest.

Vogt,[15] who has contributed the most comprehensive paper on poliosis of the eyelid, was able to trace a connection, the nature of which was, however, unknown, between this condition and some form of iridocyclitis, especially that due to sympathetic disease, in 39 per cent. of all cases in the literature. Schencke observed gray cilia in both the exciting and the sympathizing eye; Jacobi,[16] Nettleship,[17] Bock and Tay [18] in the sympathizing eye. Reich [19] noted that the cilia became white on the side of the operated eye two or three weeks after a painful cataract operation; Bach, discoloration of the cilia after eye injuries.

Fuchs [20] has thus epitomized his experience:

> In severe cases of iridocyclitis (especially of sympathetic origin) blanching of the cilia of the lids of the affected eye is sometimes observed.

Poliosis of the lids can apparently be spontaneous and without known cause: thus, Hirschberg [21] saw partial whiteness of the cilia in a healthy girl, aged 14 years, with healthy eyes. The right palpebral fissure was somewhat smaller than the other (sympathetic nerve). The lids were normally sensitive. The white cilia occupied the middle third of the upper lid. In the lower lid, white bundles alternated with black. The

11. Stelwagon: Text-Book on Dermatology.
12. Von Roose: Ann. d'oculi. **122**: 314.
13. Bock: Klin. Monatsbl. f. Augenh. **28**: 484.
14. Hutchinson: Arch. Surg. **4**: 357, 1892.
15. Vogt: Klin. Monatsbl. f. Augenh. **44**: 228.
16. Jacobi: Klin. Monatsbl. f. Augenh., 1874, p. 367.
17. Nettleship: Tr. Ophth. Soc. U. K., 1884, p. 76.
18. Tay: Tr. Ophth. Soc. U. K., **12**: 29.
19. Reich: Arch. d'Ophth. **1**: 307.
20. Fuchs: Text-Book on Ophthalmology.
21. Hirschberg: Centralbl. f. Augenh., January, 1888, p. 15.

discoloration of the cilia was increasing. Rindfleisch [22] and Ponti have reported somewhat similar cases.

An instance of the central part of the lashes of the right upper lid of a healthy brown-haired girl, aged 18 years, becoming white in a week's time has been cited by de Schweinitz. No cause could be found. Both eyes were myopic.

CONCLUSION

Attention may be drawn to the length of time concerned in the process. In Rossi's case the discoloration came on over night, in Schenkel's,[23] in three days, and in de Schweinitz's, in one week. In the cases of Hirschberg, Reich, Rindfleisch, Ponti, Herzog and Michel, the period varied from between five and fifteen days to several months.

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OPERATIVE TREATMENT OF CERTAIN FRACTURES OF LONG BONES *

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It is generally conceded that the "closed," or nonoperative, method of dealing with certain fractures is so unsatisfactory and uncertain that in selected cases "open" or operative reduction is justifiable. To avoid operating in that class of case in which closed reduction is impossible, resort is frequently made to skeletal traction by use of the tongs (calipers), a transfixion nail, or a metal band (stirrup).

This procedure of skeletal traction is, strictly speaking, an "open" or operative method; but, because the procedure is relatively simple, requiring a small incision, it is finding increasing favor and is properly regarded as an intermediate method between "closed" and "open" reduction. For the purpose of selecting a type of treatment in my own services we have for some time divided all fractures into two general "types," either of which may be simple (closed) or compound (open). Type 1 is that group in which the fragments are overlapped, malalined or disconnected by an amount equal to at least their own diameter. Type 2 is that group in which the fragments, while perhaps separated, are neither overlapped, wholly disconnected, nor grossly malalined. In Type 1, treatment is based on the necessity for reduction (setting) and retention (splinting). In Type 2, retention (splinting) is alone required. Obviously, operative reduction in Type 2 is almost never required, but in Type 1 there are many cases in which "closed" or nonoperative reduction is impossible, and hence this class falls into the "open," or operative reduction group. That group in which "closed" reduction is impossible or improbable is termed by me the "irreducibles," and in these the choice of treatment is as between "open" reduction and skeletal traction.

EXTERNAL AND INTERNAL TRACTION METHODS

The essential object in the treatment of a Type 1 (overlapping) fracture is to convert it into a Type 2 (nonoverlapping) fracture, just as the object in treating a compound (open) fracture is to convert it into a simple (closed) fracture. In the last analysis, all bony displacements are corrected by traction, and our manipulation may be (1) manual, (2) mechanical or (3) operative.

1. Manual traction is the accepted method applicable to many fractures.

2. Mechanical traction is applied by means of (*a*) the fracture table, or by (*b*) straps fastened to the parts, and these in turn are suspended in apparatus and attached to weights.

Experience shows that reduction once attained on the table may not always be retained, because deformity often recurs as soon as the splintage (usually a plaster-of-Paris cast) loosens. Likewise, the necessary hiding of the part in such a dressing is not without danger (pressure on the soft parts; circulatory embarrassment), and there is no opportunity of mobilizing joints; massage and motion are impossible, and thus splintage of this sort prevents attention to the associated pathologic conditions of most fractures, namely, myotenosynovitis, arthrosynovitis hematoma, ecchymosis, blebs and neural or vascular damage. Hence this method is less employed than formerly.

Traction and suspension in fractures of the upper extremity means bed treatment for a class of case in which ambulatory treatment is usually indicated, or at least is provided.

In the lower extremity, my own preference is for skeletal traction rather than for traction by straps, because I have been unable to attain reduction satisfactorily or uniformly by straps except in minor grade Type 1 cases or in compound fractures. The vogue for strap traction found greatest impetus in military fractures, and in these the treatment is excellent and very satisfactory. However, it is well known that muscle resistance is relatively inactive in a compound fracture (especially if debrided) and very active in a simple fracture.

Strap traction and suspension is an admirable method in selected cases in which supervision in the hospital or home can be constant and intelligent; but in the average hospital or home, this method has not been as universally satisfactory as we had hoped. For example, in overlapping fracture of the lower end of the femur or tibia it has often failed in my hands, and it has been virtually abandoned except in certain selected simple, and in some compound, fractures. In passing, we must not forget that this method is the Buck's extension method with modifications.

These preceding (1) manual, and (2) mechanical traction methods may be termed "external traction" methods. The "internal traction" method will now be described.

3. Operative traction is applied by means of (*a*) skeletal traction or (*b*) direct traction. In skeletal traction, the tongs, nail or stirrup are used. These appliances are most useful for fractures of the tibia or femur. Direct traction is applied by cutting down on the fracture site and prying apart ("jimmying") the bone fragments. If they are notched (dovetailed), they will probably remain alined if brought together and jammed; if not, then they are deliberately notched. The bone ends may also be held by chromic or kangaroo tendon passed through holes or bound around the fragments. Some surgeons use a metal plate or clamp on the fragments. Wire, screws, steeples and a variety of metallic devices have also been used.

Bone inserts are usually reserved for later cases, or for definite nonunion or bony loss of substance. For

22. Rindfleisch: Klin. Monatsbl. f. Augenh. **40**: 53.
23. Schenkel: Arch. f. Dermat. u. Syph. **5**: 137.

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* From the Department of Traumatic Surgery, New York Post-Graduate Medical School and Hospital.

very good reasons, the use of buried metallic substances in fracture treatment is now very much restricted, and shortly will be employed about as often as is silver wire in the repair of a hernia or a cervix.

COMMENT

The preceding survey briefly reviews the accepted methods in fracture treatment, and it is safe to say that no part of general surgery is today receiving greater attention than fracture surgery, an important part of traumatic surgery.

The deficiencies of skeletal traction in certain cases of fracture of the leg focused our attention on the possibilities of "open" or operative correction in this location. For a long time it has been our custom to operate on Type 1 (overlapped) fractures of the forearm, because by any other method we were never certain of attaining reduction. In the lower tibia nonunion was very frequent in my own cases, and presumably other surgeons were also having similar difficulty, so that it soon became evident that nonunion in the lower third of the tibia was more common than in all other parts of the body combined. Next in order in nonunion was the radius, next the ulna, and next the humerus.

In this nonunion group at operation it was demonstrated that nonunion usually meant noncoaptation of fragments because soft parts (muscle, fascia, tendon, aponeurosis) or bony spicules intervened. Virtually, then, a spontaneous arthroplasty occurred when soft parts intervened, and nonunion was a sequel despite relatively accurate coaptation of fragments. For example, the periosteal and fascial coverings of the lower tibia are relatively thick, so that a fringe of torn soft parts frequently overlaps the fragments after the manner of a fractured patella. Under these conditions, not only is it difficult by external methods to engage or notch the bone ends one with the other, but even if they are notched, the interposed soft parts act as would soft parts deliberately interposed to prevent union. This failure by the "closed" reduction occurs so regularly in fracture of the shaft of the ulna or radius (or both) that direct exposure of the fragments is now our method of choice. Since Sept. 15, 1922, eleven cases of this sort have been thus treated, and the success attained directed attention to such an extent that "open" reduction was used in certain fractures of the leg also.

When the fragments of a broken forearm or leg are exposed to direct inspection at operation, it is often surprising to note the extent of the damage, and the wonder is that satisfactory union is so often attained by the "closed" method. The contiguous muscles are torn, and bony fragments are often covered by or pushed into muscular, fascial or periosteal bundles. Many bony spicules, some not seen in the roentgenograms, are frequently found, and some of these may be quite denuded of periosteum and may even be jammed crosswise into the medullary cavity. The hematoma about the bone ends is often extensive, and this, of course, is greatest in an area normally quite vascular.

Now the objection to "open" reduction is that in the majority of cases it is not needed, especially if skeletal traction is used. The other objection is the danger of postoperative infection. A third objection is that based on the necessity of providing some means to *retain* reduction even after the operation enables us to *obtain* it. To meet this objection, Lane in 1894 sponsored metal plating, and thereupon fracture treatment entered on a new epoch, bringing broken bones into the operative class, and thus attracting a group of surgeons until then mainly concerned with and skilled in other fields of surgery.

This was a good thing for fracture surgery because, among other benefits, it definitely and very dramatically demonstrated that the reduction of the fracture, even by operation and plating, was in reality only the initial stage of treatment, and that often the determining factor was after-care, if maximum function was to be attained. This after-care phase of traumatic surgery is unattractive to some surgeons who, by precept and practice, naturally enough look on the operation as the principal, and in many cases, the only treatment of importance. Another deterrent was the realization that traumatic cases regularly show a higher rate of postoperative infection than nontraumatic or pathologic cases, herniotomy not excepted.

This tendency toward easier infection is dependent on several elements, in my opinion. The first is that traumatized tissue is less resistant than nontraumatized tissue. The second is that, in fractures particularly, blood and serum has been thrown out, muscle has been macerated, and in effect the operation is performed in a culture medium of bouillon, an autogenous culture, made up of the patient's own blood, serum and macerated muscle. If into this is introduced infection from the skin coccus which lodges in the skin of every patient, it is not surprising that pus is formed under circumstances in which every surgical precaution has been taken to prevent this very thing. A third reason is that, in my opinion, many patients are virtual carriers of infection, and that from an infected focus organisms migrate to the traumatized area and find in the autogenous culture medium described above a most suitable incubating habitat. Skilled surgeons soon found that bone plating was a hazardous procedure even when practiced with that grade of hyperasepsis advised by so dexterous a surgeon as Lane. Hence the method has been less and less employed, and, indeed, the introduction of nonabsorbable buried material in any form of surgery is now regarded as a very exceptional requirement.

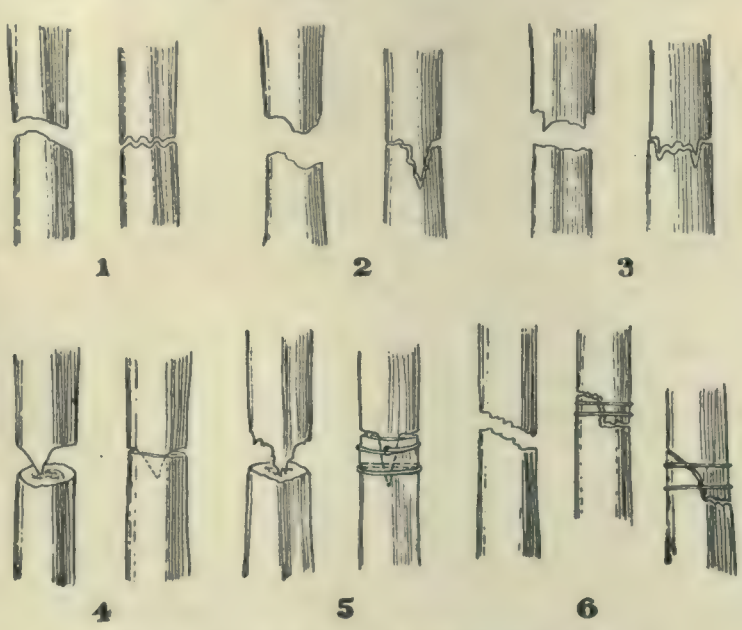
The lessons learned from this plating epoch in fracture treatment have been extremely valuable, and among other things we learned that a fracture is a lacerated wound of bone and, like any other laceration, would heal best when the edges were promptly and accurately brought together and held thus by some means that would neither constrict nor yet permit too great latitude of motion. Accurate coaptation of severed bone edges brings about primary union just as in severed soft part edges; the reverse means secondary union. In the one case we obtain a minimum, and in the other a maximum of scarring, whether we call this "scarring" callus or granulation tissue. However, despite relatively perfect coaptation of fragments, we are often confronted with nonunion, and this occurs notably, as stated, in very important bones, namely, the tibia, radius, ulna or humerus. Joint fractures, however, neck or femur excepted, heal with great regularity, and it is very rare, for example, to see nonunion in a Colles' or Pott's fracture. The reason is probably the greater blood supply of joints and the lessened opportunity for the interposition of soft or hard parts.

It is, of course, well known that a cabinet-maker's type of coaptation is not necessary to bring about a functionally satisfactory result; but it is equally well

known that, the more accurate the coaptation, the earlier and more certain the repair. More and more we are appreciating that nonunion usually begins as malunion, in that imperfect reduction has prevented bridging of the gap by the form of granulation tissue that we call callus. The next factor in nonunion is imperfect splinting, too tight or too loose, for a splint is to severed bone what a suture is to severed skin. Experience shows that many fractures cannot be disengaged from surrounding soft parts even by adequate and prolonged traction, and it is to this class that "open" reduction is applied. This group, as stated, is in the forearm mainly, and to a lesser extent in the leg and arm.

I am not partisan to unrestricted "open" reduction in long bones, except for the forearm, because in this location skeletal traction is inapplicable. In the femur and tibia, skeletal traction is applicable and is usually efficient. In the humerus, manual reduction is usually possible; if not, traction and suspension may be used if the patient will remain abed; if not, "open" reduction can be employed here also.

As related in the preceding, "open" reduction is of no great value unless it can be maintained, and heretofore for this we have been forced to rely on plating, wiring, screws or other metallic or nonabsorbable sutures. Intramedullary tubes were advised some years ago, and Elsberg and others used aluminum for this purpose. Magnesium tubing has been employed with the same object. After reasonable trial, both of these have been discarded.



Various methods of "notching" and "steepling" fractures.

It has long been known that, when fragments are jagged, dovetailed, spikelike or otherwise serrated or notched they are readily impacted one into the other. Conversely, it is also known that smooth transverse or smooth oblique fragments are difficult to coapt. This principle of "notching" has been employed in the series of cases herein reported, and success by this procedure has been so gratifying that in future many recent and old cases previously subjected to nonoperative reduction will be managed by this method.

The time to operate is within the first thirty-six hours, if possible, the earlier the better if there are none of the usual operative contraindications.

THE STEPS IN THE PROCEDURE

1. Incision. This adequately exposes the underlying bone, and is planned to conserve the soft parts, especially the neural, vascular and tendinous structures. The parts have previously been shaved and covered for twenty-four hours in an iodin solution dressing.

2. Extrusion. The bone is extruded by markedly bending the limb or by the use of suitable bone forceps, elevators or skids. Special bone-holding forceps of the Lambotte type are very useful, as is the bone skid device of the late John B. Murphy.

3. Excision. All débris is removed from the bone ends, especially overhanging periosteum, fascia and muscle. The medulla is demonstrated to be patulous. The surrounding soft parts are rendered free of blood clots, frayed soft parts or loose or denuded bony spicules.

4. Notching. The fragments are tested to determine whether, when apposed, they remain of themselves in position. If not, they are deliberately notched by a rongeur, chisel, saw or the "bone notcher," thus: (*a*) serrated edges (Fig. 1); (*b*) irregular edges (Fig. 3); (*c*) steeple edges (Figs. 2, 4 and 5); (*d*) oblique edges (Fig. 6); (*e*) shaped edges (Fig. 6). In any of these, holes may be bored and kangaroo or chromic sutures passed for greater security. Jamming the fragments will materially aid in holding them. The type shown in Figures 2, 4 and 5 affords great firmness in that lateral motion is prevented by the "steeple" passing into the medulla of one fragment; usually the upper fragment is pushed into the lower. The "steeple" should project one-quarter inch or more. If the edges are not straight in the long axis, it usually makes little difference because the overlapping is the essential fault to correct. Shortening is to some extent caused by this procedure, but in most instances this will amount to but little. In the smooth transverse varieties, a bone segment 2 inches long can be taken from one fragment, placed in the medulla of each fragment (virtually a medullary plug), and held there by chromic or kangaroo tendon.

5. Hemostasis. This should be complete, and every effort should be made to leave no clots or blood pools, which are virtually culture mediums.

6. Suture. Catgut, interrupted, is employed for the muscle and fascial layers, special effort being made to cover the fracture line by untorn soft parts. Skin sutures of interrupted nonabsorbable material are used, silk, cotton, linen, silkworm or horsehair.

7. Drainage. Rubber tissue, rubber band or pipe cleaner is used if the parts have been much macerated or there is free bleeding. Drains are taken out in from twenty-four to forty-eight hours. No drainage is employed if the contrary obtains.

8. Dressings. These are of gauze wet in some mild antiseptic (as iodin-saline, which consists of tincture of iodin, 1 dram, to saline solution, 1 pint). This is used to prevent skin infection from the ever present skin cocci.

9. Splintage. Two-piece molded plaster-of-Paris splints are used, including the distal and proximal joints.

10. After-treatment. Passive motion to contiguous joints is used after the first few days, the principle of "guarding" the fracture, while so doing, being employed; that is, encircling the fracture site by a firm grasp and thus "guarding" against motion of the fragments. "Guarded" active motion begins when passive motion causes no reaction in terms of persistent pain, heat, redness or swelling: in other words, when no "hot box" develops on motion of the joint. Massage is taken up when the stitches are removed, usually after the seventh day. When "firm" union is obtained, one half of the splint is removed. I call "firm" union that stage in which healing has progressed enough to give a "lead pipe consistency" to the union. When "solid" union is obtained, the remaining half of the splint is removed. I call "solid" union that stage in which healing has reached the "iron pipe consistency." In the lower extremity, "walking calipers" are used after the plaster is removed, and thus the patient is more promptly permitted to walk with all the attendant advantages of becoming ambulatory instead of nonambulatory.

The foregoing plan of early but safe activation of the parts makes the later use of physiotherapy less necessary. Physiotherapy should rarely become a terminal necessity in fracture treatment; on the contrary, it should usually begin shortly after the bone has been set. Open reduction should so set or impinge the fragments that our attention thereafter can be directed to the pathologic changes associated with every fracture; namely, myotenosynovitis, arthrosynovitis, and vascular and neural damage. To forget or neglect these associated lesions is just as reprehensible as to forget or neglect the concomitant lesions of a ruptured appendix after appendectomy. By a laparotomy we may save life by removing a source of peritonitis; but we restore function only if we prevent adhesions or postoperative hernia.

ADVANTAGES OF THIS FORM OF TREATMENT

(*a*) More accurate coaptation means firmer, earlier union in more exact alinement; in other words, we have produced that grade of correction we call "anatomic reduction" as opposed to "surgical reduction."

(*b*) With the assurance that definite coaptation has been obtained, there is less danger of interposition of soft or hard parts which would prevent or impede union.

(*c*) Primary neural or vascular damage is more readily discovered and corrected; secondary neural or vascular damage from pressure or callus inclusion is very unlikely.

(*d*) Fractures of this carefully selected type are made problems in general surgery, thus attracting to this important field the grade of surgeons who have done so much in other branches of surgery. This will inevitably make fracture treatment much more exact and more progressive, to the end that the patient and the profession will equally benefit.

(*e*) This selected form of fracture treatment should eventually supplant the use of nonabsorbable internal splints in that its development will make unnecessary the use of plates, screws, nails or wires in a group of cases in which metallic material is even now too frequently employed.

DISADVANTAGES

(*a*) Fractures are put into the operative class with the attendant risks of anesthesia and infection. This cannot be denied, and the only answer is that we should develop a technic that will make this procedure as safe as the modern laparotomy. In my opinion, many fractures of long bones are major surgery problems and should be so regarded.

(*b*) The method is needlessly severe and dangerous, since good results have heretofore been obtained by simpler methods. As stated, this method should be reserved for a selected group of cases in which prior experience indicates that nonoperative treatment frequently leads to failure, as denoted by nonunion, deformity or disability. I do not subscribe to the view that the older surgeons obtained better results than are now obtained, but do concede that they made better use of their special senses for diagnosis than we do. They lacked the checking up afforded by the roentgen rays as to the actual result of setting, and I am quite sure that they had a group of patients more willing than ours by their own efforts to overcome disability incident to injury. Also, they did not encounter the same types of fracture because the industrial and transportation situation of even twenty-five years ago was vastly different. The greatest single cause of injury today is the automobile; and when the coming generations reach the flying stage, they will probably say that we also did not know what a real fracture was.

(*c*) It is inapplicable for general use. That is true to the same degree that every special process is not adapted to general application.

(*d*) It produces shortening. This is usually slight and of no importance.

INDICATIONS

The method is particularly adapted to recent displaced or old malunited fractures of the shaft of the radius, ulna, tibia and humerus, in the order named. The femur is not included because skeletal traction is here so effective. Joint fractures are usually amenable to closed correction, perhaps excepting those of the elbow and some at the shoulder and ankle.

In children up to 16 years of age, open correction is less often needed; however, many forearm cases, even in young children, are operative problems from the onset.

In the aged, those of poor physique, the diabetic, the arteriosclerotic—these are the bad risks for any surgical procedure, and operation is often as much contraindicated for a fracture as for a hernia. Under such circumstances we shall probably continue to resort to "truss" treatment, for that is exactly what our fracture therapy now is in too many cases.

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Hospital and Dispensary Personnel.—The purpose of a hospital or dispensary is to meet the need of physically or mentally defective individuals whatever may be the contributing or underlying cause of such defects. Beginning with the chief executive down through the various departments wherever the medical situation dominates there is definitely required a medical or nursing personnel. In the cause of effective and economic service, such personnel should be relieved as far as possible of the nonmedical features of the case through the service of other workers skilled in such features, not less also in the cause of economic efficiency should the medical workers be expected to have such knowledge of the nonmedical aspects of the case as to understand the importance of their relation and furthermore to deal with such aspects where the body of the work will not justify the two specialists.—A. W. Goodrich, *Hospital Social Service* **7**:169 (March) 1923.

AN ANALYSIS OF SOME CASES OF TUBERCLES IN THE TONSIL

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Tuberculosis of the tonsils and adenoids occupies an anomalous position in oral surgery, as this lesion is not recognizable clinically, and is seldom even suspected until the tissues have been sectioned by the pathologist.

There are two conditions in which the tonsils are frequently found to be tuberculous: 1. In advanced pulmonary tuberculosis, the tonsils will show tubercles in the majority of cases. 2. In tuberculous cervical adenitis, the tonsils will show this infection in approximately one half of the persons examined.

Ulcerative lesions of the mouth and throat as seen in the terminal states of pulmonary tuberculosis may involve the tonsils, but the process is seldom limited to these structures. These cases have an entirely different significance, and are, therefore, not included in this analysis.

Perhaps the most comprehensive early work in this country on tuberculosis of the tonsils was done by G. B. Wood,[1] who has added contributions to the subject from time to time. Reports on large series of tonsillectomies in which the tissues were examined for tubercles were made by Weller,[2] from the University Hospital, Ann Arbor, Mich., and another by Crowe, Watkins and Rotholz,[3] from the Johns Hopkins Hospital. Levy [4] has written on the tuberculous tonsil as a clinical entity. The literature on all phases of this subject is liberally quoted in the reports just mentioned.

This analysis is based on 400 consecutive tonsillectomies in Glockner Hospital, Colorado Springs, in which the tissues were sectioned and examined microscopically. The series covers a period from June, 1921, to December, 1922. These cases have all been in private practice. The patients are all living, and are under the continuous observation of myself and my associates. On this account they may allow of more advantageous study than larger series of patients observed under less favorable conditions. The pathologist reported seventeen of these patients, or 4.25 per cent., as showing tuberculosis of the faucial or pharyngeal tonsils, in various combinations. A careful review of the histories of the seventeen cases shows no characteristics, such as size, color or appearance, which might serve to identify the tonsils as tuberculous before they reached the microscope. These cases will be considered mainly from the point of view of the clinical significance of removal of a tuberculous tonsil.

A classification which naturally suggests itself and is commonly used divides the cases into primary and secondary infections. Such a division is more or less arbitrary and is not susceptible of proof for the given case, but nevertheless it has considerable value. Open pulmonary tuberculosis accounts for practically all of the secondary tuberculous infections of the tonsils. Sixty per cent. of the positive cases in this series gave a history of pulmonary tuberculosis. This high proportion is accounted for by the large number of lung cases under treatment in Colorado. That these tonsillar lesions are secondary to the pulmonary disease is clearly indicated by the fact that in 70 per cent. of them, both tonsils were involved. Twenty-five persons were known to have pulmonary tuberculosis, and of these, ten, or 40 per cent., were found to have tubercles in the tonsils. This is in accord with the usual findings. The proportion increases in advanced pulmonary tuberculosis, until the percentage at postmortems averages 70 or more.

Primary tuberculosis of the tonsils may be taken to include all cases in which there is no suspicion of pulmonary disease. This stand is purely arbitrary, and ignores, among other possibilities, hematogenous infections including miliary tuberculosis; but such cases must be few in number. Probably the most tangible problem in primary tonsillar tuberculosis is concerned with its relationship to the cervical glands.

It is generally believed that, in Colorado, tuberculous cervical adenitis is relatively infrequent. Certainly, this condition does not figure very largely in this series.

Of three cases of definite tuberculous cervical adenitis, two presented tuberculous tonsils or adenoids. In the cases reported from Johns Hopkins Hospital in which the glands were definitely infected and the tonsils were removed and sectioned, 50 per cent. of the tonsils were found to be tuberculous. An analysis of all tuberculous tonsils showed the cervical glands to be also involved in 50 per cent.

Five of our seventeen positive cases, approximately 30 per cent., gave no history or evidence of tuberculosis elsewhere. This is a little more than 1 per cent. of the total of 400 tonsillectomies. The importance of this group as presenting a possible portal of entry for pulmonary lesions must be left to the internists.

The adenoid is rather largely represented in these primary cases, and the reason is fairly obvious since the pharyngeal tonsil is not removed very frequently during the age period when pulmonary tuberculosis commonly becomes manifest. The total number of adenoids sectioned was small (167 cases) in comparison with the number of tonsils (390 cases). The percentage found to be tuberculous was: adenoids, 1.8 per cent.; tonsils, 3.6 per cent.

It is not surprising that the tonsils should so frequently become infected with the tubercle bacillus, situated as they are in the common portal of entry to the respiratory and gastro-intestinal tracts. The remarkable thing is that the tonsil resists so well the usual destructive action of this process. Since the tonsil is commonly infected, yet seldom presents clinical evidence of the disease, it must be inferred that the ultimate tendency of the local lesion is toward recovery. The pathologists have noted that hyaline and fibrous scars are common in the tonsils, and these may well represent an extinct infection.

I have been unable to discover any difference in the behavior, after tonsillectomy, of the cases which had presented tubercles and of those which had shown no such lesion. Cases presenting tubercles in the tonsil did not respond better than those in which there was no such infection. This was equally true whether the patient was suffering from pulmonary tuberculosis or from cervical adenitis. Twenty-five persons in this series gave a history of pulmonary tuberculosis; of these, 44 per cent. were found to have tuberculous tonsils and 56 per cent. were apparently free. No difference is apparent in studying these two groups. If this

1. Wood, G. B.: Significance of Tuberculous Deposits in Tonsils, J. A. M. A. **44**: 1425 (May 6) 1905.
2. Weller, C. V.: Incidence and Histopathology of Tuberculosis of the Tonsils, Arch. Int. Med. **27**: 631 (June) 1921.
3. Crowe, S. J.; Watkins, S. S., and Rotholz, A. S.: Relation of Tonsillar and Nasopharyngeal Infections to General Systemic Disorders, Bull. Johns Hopkins Hosp. **28**: 1 (Jan.) 1917.
4. Levy, Robert: The Tuberculous Tonsil, J. A. M. A. **55**: 1520 (Oct. 29) 1910.

is true, tubercles in the tonsils are neither clinically recognizable nor clinically important; and, until our knowledge of this subject is more definite, I believe that, for all practical purposes, we can dismiss this type of infection of the tonsils from our minds, as a pathologic curiosity. This does not imply any doubt in my mind as to the value of tonsillectomy in tuberculous cervical adenitis, or when indicated in properly selected cases of pulmonary tuberculosis; but I feel that the presence or absence of tubercles in the tonsils, on microscopic section, is immaterial.

Table 1.—*Pulmonary Tuberculosis and Tuberculous Tonsils*

Case	Pulmonary Lesion Before Operation: Activity	Pulmonary Lesion Before Operation: Extent	Faucial Tonsils Affected	Indication for Operation	Lung Condition at Present
1	Inactive	Moderately advanced	Both	Frequent tonsillitis; fever	Improved
2	Inactive	Incipient	Both	Large tonsils; sore throat	Improved
3	Active	Advanced	Both	Frequent tonsillitis, causing relapses	Improved
4	Inactive	Moderately advanced	One	Fever unaccounted for by lung condition	Improved
5	Active	Moderately advanced	Both	Frequent colds; sore throat	Unimproved
6	Active	Advanced	Both	Tonsillitis; cryptic débris odor	Improved
7	Inactive	Incipient	Both	Hypertrophic tonsils; tuberculous otitis	Improved
8	Inactive	Incipient	One	High blood pressure	Improved
9	Active	Moderately advanced	Both	Bronchial asthma	Improved
10	Active	Moderately advanced	One	Arthritis-fever relapses	Improvement very slow
11	Active	Moderately advanced	Both	Caseous cryptic débris; irritation; cough	Cough improved; patient walking 16 blocks a day

Only positive cases have been reported, all suspects being eliminated. In cervical adenitis, the glands have been classed as tuberculous only when the diagnosis has been made pathologically.

In 400 consecutive cases in which operation was performed for removal of tonsils or adenoids, tubercles were found pathologically in both tonsils, ten times, in one tonsil, four times and in the adenoid, three times; or in 4.25 per cent. of all cases.

Of these seventeen cases in which tubercles were found, there was a positive history of tuberculosis in twelve, or 70.6 per cent: pulmonary tuberculosis in ten (of both tonsils in seven, of one in three); and pulmonary tuberculosis and tuberculous otitis in one (both tonsils).

Of these seventeen cases, no history or diagnosis of tuberculosis could be made in five (29.4 per cent.). Both tonsils were tuberculous in one case; one tonsil was tuberculous in one case, and the adenoid in three cases.

Tuberculosis of tonsils and adenoids, excluding cases of persons with a tuberculosis history, was found in five cases in 400, or in 1.25 per cent.

Tonsillectomies were performed in twenty-seven persons with known tuberculosis. Pulmonary tuberculosis was present in twenty-four; pulmonary tuberculosis and tuberculous otitis, in one; pulmonary tuberculosis and tuberculous cervical adenitis, in one, and tuberculous cervical adenitis, in one.

Of these twenty-seven tuberculosis was present by pathologic test in twelve, or 44.4 per cent: pulmonary tuberculosis in ten, two tonsils being affected in seven, one tonsil, in three; pulmonary tuberculosis and tuberculosis otitis, in both tonsils, in one, and tuberculous cervical adenitis, in both tonsils, in one.

Dr. Charles T. Ryder, who did the pathologic work in all of these cases states that:

"The pathologic diagnosis of tuberculosis was made only when typical tubercles, consisting of large mononuclear cells, usually accompanied by giant cells, were found in sections. Our routine is to examine one longitudinal section from the middle of each tonsil or adenoid. Very large tonsils are sometimes cut transversely. In some suspicious cases, many sections have been cut from different planes of the tonsil, but as yet tubercles have not been found in these when they were wanting in the first routine section.

"The tubercles found were single, or confluent in small groups with slight caseation at the center. They have usually been found just beneath the epithelium of surface and crypts, and deeper in the lymphoid tissue. In some instances, they have been limited to the region of one crypt with its branches, but more often they have been diffuse. Their distribution does not enable us to draw positive conclusions as to the route of infection.

"No example of ulcerative tuberculosis has been encountered in this series, nor have any large areas of caseation or tuberculous infiltration. In no case has it been possible to make the diagnosis of tuberculosis of tonsils or adenoids in the gross.

"It is not unusual in examining sections of tonsils to find small rounded areas of scar tissue which greatly resemble healed tubercles. These are always noted with interest, but the diagnosis of tuberculosis is never made unless typical tubercles of active type are found also.

"Foreign body giant cells have not been a source of confusion in this series. In a case not included in the series, a number of single giant cells were found beneath the epithelium of a gland or crypt in the adenoid. The diagnosis in this case remained in doubt. Stratified epithelium cut tangent to the end of a tonsil crypt is sometimes momentarily puzzling, but need never lead to a false positive diagnosis.

Table 2.—*Primary Tuberculosis of Tonsils and Adenoid*

Case	Age, Yrs.	General Health and Nutrition	Indication for Operation	Tonsil or Adenoid	Present Condition
1	5	Very delicate; undernourished	Tonsillitis; otitis media	Adenoid	Slight improvement
2	8	Fair; nervous and irritable	Mouth breathing; enlarged anterior cervical glands	Adenoid	Marked improvement
3	9	Good	Tonsillitis; enlarged anterior and posterior cervical glands	Adenoid	Improvement; heliotherapy employed
4	28	Fair; has heart lesion and arthritis	Arthritis; purpura	Both tonsils	Slow improvement
5	41	Fair; nervous	Headaches; tinnitus; vertigo	One tonsil	Improvement

"This work has been done in the routine of a hospital laboratory, and it has not been practical to stain and examine for tubercle bacilli, which are usually rare and hard to find in miliary lesions of lymphoid tissue.

"Nontuberculous lesions encountered in this series involve: hyperplasia of germinal areas and of tonsil or adenoid as a whole; serous and seropurulent exudation, with lymphocytes predominating; accumulation in the crypts of such exudate and of hyaline desquamated epithelium and rounded clumps of bacteria, which seem

to consist chiefly of leptothrix, though they have not been thoroughly studied; obstruction of crypts by the plica; formation of retention cysts, sometimes containing cholesterin crystals or calcified concretions; fibrosis, and development of cartilaginous areas in capsule and trabeculae; infiltration and erosion of the epithelial surface, or chronic inflammatory infiltration of deeper parts especially in areas partly fibrosed. No tonsil examined has failed to show some of these features of deviation from the ideal normal, and it is doubtful that any actual tonsil would fail to show them."

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THE COMMON SOURCES OF ERROR IN LUNG EXAMINATIONS

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There is a very large group of persons in which a positive diagnosis of pulmonary tuberculosis has been made erroneously on insufficient and inconclusive evidence. Some of these diagnoses have been based on suggestive histories and suspicious symptoms, others on physical signs which are entirely normal, with or without supportive evidence in history or symptoms. Physicians are prone to confirm a diagnosis of tuberculosis, faulty or not, in any patient who has previously been declared tuberculous, perhaps through doubt of their own diagnostic ability, perhaps through fear of erring on the wrong side, perhaps, when former physical findings are corroborated, on the mistaken assumption that a once manifest tuberculosis must forever after leave signs evident on physical examination. In any case, these mistaken diagnoses are almost invariably supported by descriptions of nonexistent or misinterpreted physical signs.

It goes without saying that the earliest possible diagnosis is highly desirable; but, on the other hand, it is inexcusable to put the stigma of tuberculosis on any patient without clear and sufficient grounds therefor. Such a diagnosis *is* a stigma, and a very definite one. Patients with suggestive histories and symptoms may be regarded as suspects and kept under observation with such therapeutic measures as are indicated but undamaged by a premature diagnosis of tuberculosis with all that it implies as regards his future life, social status, employment, earning capacity, residence, etc.

The possibilities of damage to the individual by hasty diagnosis on uncertain grounds are immense: the possibilities of damage by reasonable delay are insignificant. The acute case will quickly make itself known beyond any doubt. A delay in diagnosis of a few weeks in the slow, chronic case will not affect the outcome.

Much of the literature of the early recognition of tuberculosis has tended to make the error of ill-advised diagnosis more common. The detection of early tuberculosis is often so described as to impress the student that it is possible only to a favored few with a superrefinement of diagnostic acumen. The effect of this has been to spur the examiner to an uncritical acceptance of symptoms, to put him in an attitude of receptiveness to vague and doubtful physical findings, sometimes to discover even gross physical signs when they do not exist. The often encountered positive diagnosis of pulmonary tuberculosis unsupported by physical signs, unsustained by roentgenograms and unconfirmed by the laboratory is to be deprecated. More frequent are mistaken diagnoses based on symptoms and histories along with deductions made from physical signs elicited in normal chests.

The existence of this considerable number of persons who bear the burden of mistaken diagnosis of tuberculosis has been recognized as a military problem by several of the greater nations engaged in the World War. In a recent study of tuberculosis epidemiology in the war, Bushnell [1] makes this impressive statement with regard to the United States Army: "The total number of admissions to tuberculosis hospitals in the United States up to Jan. 1, 1920, is 18,713. In these the diagnosis was not confirmed in 4,305." The problem is as much a civil as a military one.

Accurate and critical physical examination is a primary essential in the diagnosis of pulmonary tuberculosis. It is not my aim in this paper to discuss what should constitute the standards of diagnosis or the possible mistakes due to sins of omission on the part of the examiner. My purpose here is to consider the mistakes due mainly to misinterpretation of physical signs in the normal chest.

FREMITUS

The statement of Fishberg [2] that palpation of vocal fremitus is of little diagnostic value in any stage of phthisis is undoubtedly correct, gross changes within the chest, pneumonia, pleural effusion and pneumothorax, of course, excepted. Fremitus must be mentioned here, however, since many examiners seem to lay some weight on it. Textbooks generally state that fremitus is normally increased over the right upper lobe; it is usually increased throughout the right lung. The intensity of fremitus is so variable that, unless greatly increased or absent in a given area, it means but little. This is especially true in regard to increase over the area of normal accentuation.

PERCUSSION

The dissimilarity in the anatomic relations of the pulmonary apexes described by Fetterolf and Norris [3] accounts for the difference in the character of the percussion note on the two sides. The shorter and higher pitched note of the right apex is the principal source of error in percussion signs. That this is a normal finding cannot be too strongly emphasized. Kroenig's isthmus may be narrowed, or there may be a definite apical dulness on one or both sides without alteration in the structure of the underlying lung. Minute changes in the percussion note in symmetrical areas, of the variety sometimes described as "slight possible," are misleading and of no diagnostic value. The personal experience of Cornet [4] is significant. "Two very renowned and experienced physicians exhibited the same patient on the same day, the one in the morning, for dulness of the right apex, the other in the afternoon, for dulness over the left apex!" Contraction of the sternomastoid muscle and tension on the tissues of the neck when the patient turns his head toward the opposite side, a common trick, produces a deceptive dulness

1. Bushnell, G. E.: Tuberculosis Epidemiology in the World War, Mil. Surgeon. **51**: 5 (Nov.) 1922.
2. Fishberg, Maurice: Pulmonary Tuberculosis, Ed. 3,. Philadelphia, Lea and Febiger, 1922, p. 312.
3. Fetterolf, G., and Norris, G. W.: The Anatomical Explanation of the Relatively Less Resonant, Higher Pitched, Vesiculotympanitic Percussion Note Normally Found at the Right Pulmonary Apex, Am. J. M. Sc. **143**: 5 (May) 1912.
4. Cornet, G.: Tuberculosis, etc., in Nothnagel's Practice, American edition, Philadelphia, W. B. Saunders Company, 1905, p. 425.

above the clavicles. It may be stated that impairment of resonance over an apex without retraction, without alteration in the breath sounds or without râles cannot justify a diagnosis of increased pulmonary density.

AUSCULTATION

There is, unfortunately, no common terminology nor a fast standard in use for the description of breath sounds. What one examiner regards as bronchial breathing is to anoher bronchovesicular. For the purposes of this paper, bronchial breathing is defined as that type of respiratory sound in which inspiration is roughened and expiration prolonged and equal or higher in pitch than inspiration. Bronchovesicular breathing is defined as the type in which the prolonged expiration is lower in pitch than inspiration. These terms are satisfactory for the description of abnormal breath sounds, and leave little margin for error. They may be modified as necessary by qualifying adjectives: distant, diminished, cavernous, amphoric, etc. Such terms as "altered," "modified" and "impure" are hardly descriptive when applied to breath sounds.

There are two main sources of mistake in the interpretation of breath sounds: (1) the normally present bronchovesicular breathing on the right side down to the second rib and third dorsal spine; (2) noisy respiration. The bronchovesicular breathing of the interscapular area does not seem to give rise to confusion. It is remarkable how often a report of examination reads about as follows: "Fremitus increased over right upper lobe. Shorter percussion note to second rib and spine of scapula. Roughened inspiration and prolonged expiration to second rib and spine of scapula." From these signs a diagnosis is made of fibrosis of the right upper lobe. The findings are those of a normal chest.

Auscultatory signs in the lungs cannot be intelligently interpreted unless the examiner first sees to it that the patient is breathing properly. When the average individual is directed to breathe, the mere focusing of his attention on his respiration almost always results in noisy respiratory sounds which are impossible of evaluation. Forcible noisy respiration produces bronchovesicular breathing throughout the chest. Over the area of normal intensification, the right upper lobe, and even throughout thin-walled chests, the sounds may be definitely bronchial in character. As in the case of dulness in a supraclavicular space, a similar area of bronchial breathing, unaccompanied by other physical signs, does not justify a diagnosis of increased density of the subjacent lung.

RÂLES

The terms in common use for the description of râles are variously employed by different physicians. Confusion is most evident in the case of moist and dry râles; that is, what one examiner describes as moist are to another dry. An excellent classification and one which does not permit variation in description is that of Seiffert and Müller.[5] This schema classifies râles as moist and dry. Moist râles are discontinuous or interrupted sounds, a series of clicks. A dry râle is a continuous sound. It is a sound produced by stenosis, whether by partial obstruction by mucus or by turgescence of the bronchial mucosa. Under this head fall what are described as squeaking, piping, sibilant and sonorous râles. Moist râles are subdivided into crepitant, fine, medium and large; dry râles into fine, medium and large. The terms consonating and metallic are used as required. This classification seems sufficient, and the introduction of more descriptive terms is of doubtful advantage and productive of confusion.

No lung examination is complete without auscultation after cough, a fact recognized by the patients themselves. Turban described a consumptive who had been the subject of many examinations and who judged the ability of his examiner by whether or not he was required to breathe and cough during the examination. This patient now has many followers, and they are on safe ground. But latent, or, better, provoked râles, may not be produced by cough if the procedure is not correctly carried out, especially if few in number and in a limited area. The cough must occur at the end of expiration. This will be apparent on consideration of what, I believe, is the correct explanation of the somewhat disputed mechanism of the production of provoked râles. The explanation of Bray[6] is not adequate: the older idea, somewhat modified, of the separation of moist surfaces and breaking of fluid films is preferable. Bray believes that the râles occur with cough which, by the sudden increase of pressure first separates the walls of alveoli and bronchioles and then, their patency established, puts into vibration the fluid therein. Provoked râles do often, but by no means always, occur at the end of the expulsive effort as the lung recoils, but they also occur in large numbers at the beginning of the following inspiration.

The movements of and the pressure conditions within the lung as judged by the fluctuations of the diaphragm may be studied under the fluoroscope. With cough, as the glottis is opened, the diaphragm ascends sharply, and as suddenly descends as the abdominal pressure is released. The recoil of the lung with descent of the diaphragm is timed with the end of the expulsive effort of the cough, but while air is still being expelled from the mouth. The tracheobronchial air column is evidently under sufficient pressure to pass in both directions, both out of the mouth and downward into collapsed bronchioles when the lung is permitted to expand on release of the pressure within the abdomen. It is with the recoil of the lung that the first provoked râles occur: the later ones are definitely inspiratory. The production of fine moist, that is, bronchiolar râles in this way is best explained by the accompanying diagram, which represents a condition often seen in large sections of lung in inflammatory diseases when the knife has traversed a bronchiole for some distance in its long axis.[7] It is manifest from the foregoing that, unless bronchioles are well flattened by expiration and cough fluid, particles may not completely occlude the lumen, and no râles will be produced when the bronchiole again widens.

Of the adventitious sounds which may simulate râles, only passing mention is called for by muscle sounds, scapular grating, noises produced by swallowing, or crepitations due to insecure application of the stethoscope or its contact with hair. None of these should prove a source of error by confusion with râles. The sounds which notably simulate râles are those of cartilaginous origin and marginal sounds. The former, which Ewart[8] has termed "audible motor crackles,"

5. Seiffert and Müller: Taschenbuch der medizinisch-klinischen Diagnostik, Ed. 15, Wiesbaden, J. F. Bergman, 1912, p. 31.

6. Bray, H. A.: The Latent Râle in the Diagnosis of Incipient Tuberculosis, J. A. M. A. **66**: 11 (March 11) 1916.

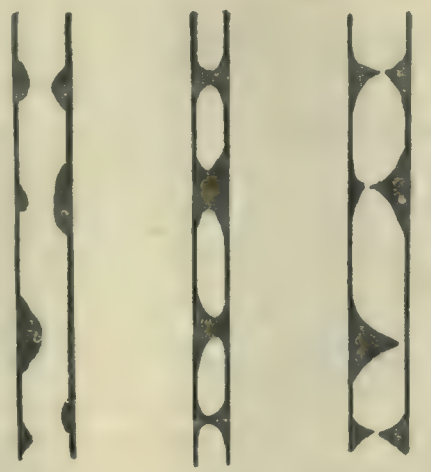
7. A photomicrograph illustrating this condition may be found in Edens, E.: Lehrbuch der Percussion und Auskultation, Berlin, Julius Springer, 1920, p. 152.

8. Ewart, William: On Perez's Sign, Brit. M. J. **1**: 2675 (April 6) 1912.

are encountered with great frequency. The statistics of King[9] to their occurrence, in 4 per cent. of patients examined, are very low. My own impressions are more in accord with the studies of Hawes,[10] who found them in 22 per cent. of persons observed.

Joint sounds have one common characteristic, namely, that they rarely occur at the end of cough but later in the inspiratory phase. Over the front of the chest they originate in the sternoclavicular joints, the junctions of the pieces of the sternum, the sternochondral and costochondral junctions. They are heard above the clavicle, and, lower down, mainly between the sternum and nipple line. It is not a difficult matter to differentiate them from râles. They have a more marked snapping, clicking quality than râles, they are conducted along the bony structures, they may be followed up to their point of origin, where they become loud and consonating and they may be made to disappear by securing partial immobility of the structures in which they originate if the patient is made to draw his shoulders forward or backward and if they are forcibly held in that position during auscultation.

The questions for the examiner to decide in following up these clicks to their point of production are whether they occur at the same point in inspiration, whether their number continues the same, and whether they increase in intensity to their place of origin. I have found no mention in the literature of joint sounds heard posteriorly. In the back, crepitations are heard near the spine down to the lower interscapular area. These sounds originate in the intervertebral or costovertebral articulations. At a little distance from the spine, muffled by conduction through soft tissues, they may exquisitely simulate fine, moist râles except in the general characteristic mentioned above, that they occur later in inspiration. These vertebral noises are instantly recognized as such if the stethoscope is applied to the adjacent spine.



A, bronchiole with fluid masses clinging to walls; no râles present; *B*, bronchiole narrowed by expiration and cough; fluid masses now completely obstruct lumen; *C*, bronchiole widened with the elastic recoil of the lung or on inspiration; the clicks occur as the fluid films break or are detached from the wall by the air current.

Though clicking noises at the bases of the lungs have been described in all sorts of intrathoracic disease, most writers on physical diagnosis have learned to pay little attention to them, usually ascribing them to marginal atalectasis. Bushnell[11] has shown that these sounds are due to the separation of the moist surfaces of the diaphragmatic and mural pleura as the diaphragm peels from the chest wall with the descent of the lung margin. Thus, they accompany the descending sulcus of Litten's phenomenon. Marginal sounds are still mistaken for râles with some frequency, and a diagnosis of tuberculosis thereby made by the unwary, in spite of the fact that their location, without other findings, should not suggest tuberculosis. They do, in fact, markedly simulate moist râles, and, in some vigorous breathers, occur in showers and with a consonating quality.

The differentiation of râles and marginal sounds is readily made. The patient is directed forcibly to exhale and cough, but without following the cough by inspiration. With the breath now held in forced expiration, the lung border is rapidly determined by percussion and is marked. It will be found on subsequent cough and inspiration that marginal sounds are not found above the marked line, and that, from above downward, they are heard at a progressively later stage of inspiration. Furthermore, they do not occur with the cough but with the following inspiration. The same sounds are occasionally heard along the left border of the heart with the downward and inward movement of the lingula on inspiration.

NONTUBERCULOUS INFECTIONS

Mention must be made of the chronic nontuberculous infections occurring at the base of one or both lungs, usually posteriorly, which are so often erroneously assumed to be tuberculous. They are a frequent cause of chronic cough and mucopurulent expectoration, sometimes blood streaked. Rarely they may be the source of a profuse hemoptysis, perhaps when complicated with bronchiectasis or when syphilitic in origin. Impairment of the patient's general health is, as a rule, trifling. On physical examination, these infections present the signs of a more or less extensive bronchitis with or without evidence of insufficient ventilation of that portion of the lung, or of some increase in pulmonary density. In the absence of signs of involvement of the upper lobes and without sputum containing tubercle bacilli, a diagnosis of tuberculosis in these cases cannot be made.

SUMMARY

1. The considerable number of erroneous diagnoses of pulmonary tuberculosis are almost always based on or supported by descriptions of nonexistent or misinterpreted physical signs.

2. Any single sign of increased pulmonary density, especially at the apexes, unaccompanied by other evidence, must be regarded as insufficient and conclusions therefrom withheld. This applies equally to alterations in fremitus, percussion changes, and abnormal breath sounds.

3. The misleading differences in the physical signs of the two sides must be kept in mind.

4. Vigilance on the part of the examiner to recognize factitious accentuations of breath sounds, extrapulmonary noises of cartilaginous origin and marginal sounds is essential to correct diagnosis.

5. The elicitation of provoked râles requires a considerable reduction of pulmonary volume by expiration followed by cough.

6. Basal bronchitis without upper lobe involvement must be proved tuberculous by the laboratory before such diagnosis can be made.

610 Martin Building.

9. King, J. T., Jr.: Auscultation of the Pulmonary Apices in Young Men, Mil. Surgeon **42**: 1 (Jan.) 1918; abstr. J. A. M. A. **70**: 7 (Feb. 16) 1918.

10. Hawes, J. B.: Extrapulmonary and Other Sounds Which May Lead to Errors in the Diagnosis of Pulmonary Tuberculosis, Boston M. & S. J. **170**: 25 (June 18) 1914.

11. Bushnell, G. E.: Some Extrapulmonary Sounds Which Simulate Râles, M. Rec. **81**: 3 (Jan. 20) 1912; Marginal Sounds in the Diagnosis of Pulmonary Tuberculosis, ibid. **82**: 55 (Dec. 21) 1912.

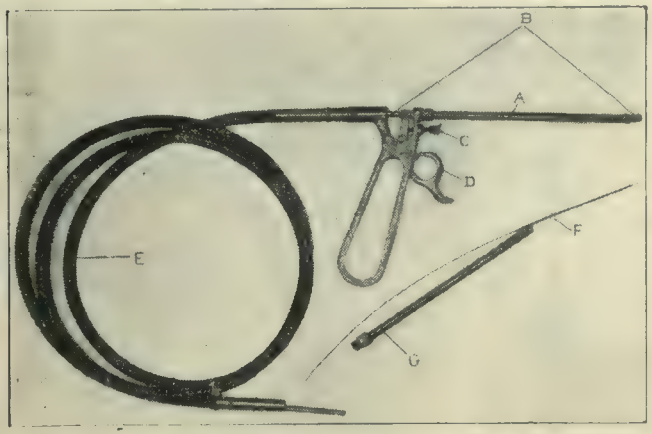
Clinical Notes, Suggestions, and New Instruments

NASAL DRILL FOR REMOVAL OF SEPTAL SPUR *

HUGH H. YOUNG, M.D., BALTIMORE

About a year ago it was necessary to have my sphenoid and ethmoidal cells opened and drained. In order to obtain a good view of these cells, it was necessary to remove a large eburnated mass of bone, which had resulted from a fracture many years ago. After the mucous membrane had been stripped back, the bone was removed, first with chisels and then with bone forceps.

While I lay there undergoing this procedure, the idea struck me (or perhaps was "hammered into my brain") that a rapidly revolving drill, so designed as to be accurately used in the nasal cavities, would be a far more gentle and rapid method of removing bone. Accordingly, during my convalescence in the hospital I made drawings of such an instrument, and summoned the chief mechanic of the Brady Institute and had him construct the instrument shown in the accompanying illustration.



Nasal drill for removal of septal spur: *A*, outer tube; *B*, drill; *C*, set-screw to regulate the exact penetration of the drill; *D*, trigger that advances the drill point; *E*, flexible cable; *F*, whalebone bougie that is first introduced through the natural orifice into the sphenoidal sinus; *G*, tube that replaces tube *A* when sphenoid is to be opened.

As will be seen here, it consists principally of a drill about one-fourth inch in diameter, which revolves by means of a flexible cord connected with an electric motor. This drill revolves within a tube, by means of which it is connected with the handle, and a trigger action, which carries it back and forth at will. The distal end of the tubular shaft contains four small, sharp, toothlike projections, which are intended to penetrate into the bone at the site of attack and hold the instrument steady while the drilling is in progress. The action of the drill can be regulated by means of a set-screw, so that a depth of boring, varying from 0 to one-half inch, can be secured. It is also possible to have drills of different sizes to connect with the same instrument, as they are easily detached from the handle and shaft.

Experiments with bones outside the body showed that the drill would penetrate even very hard bones with great speed, and that the work could be accurately done and the desired depth assured.

The trigger action is arranged so as to allow the operator to hold the instrument with a firm grip. The thumb of the operating hand is provided with a special receptacle so as to add to the accuracy of the manipulation.

With the idea of utilizing the same instrument for opening the sphenoid, a second tubular shaft has been provided. This tube carries a small collar and eyelet, to be threaded on a whalebone filiform, which has previously been inserted into the sphenoidal foramen, and thus lead the instrument to the exact spot at which the opening is to be made. Here, again, the set-screw makes it possible to determine exactly the depth of boring, and accuracy is thus assured.

I wish to apologize for thus seeming to invade another specialty; but, as Dr. Crowe has been good enough to use this instrument in several cases and pronounces it of value, and as he also refuses to report it himself, I am prompted to give this brief description.

* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

NOTE BY DR. S. J. CROWE, BALTIMORE

The instrument devised by Dr. Young is very ingenious, and greatly facilitates the removal of the large septal spurs and deflections arising from the *lower* portion of the septum. The bone in this location is often very hard, and its removal necessitates the use of a hammer and chisel.

I have used this revolving drill in every suitable case during the last year, and always with success. The mucous membrane overlying the spur is elevated, and the drill is placed on the bone. By firm pressure, the small, sharp projections on the end of the tube will penetrate the bone sufficiently to hold the drill in place after the power is turned on. It is possible to thus bore two or three parallel channels through a spur, after which the intervening bone can be easily and painlessly removed, with ordinary nasal rongeurs.

It is rarely necessary to elevate the mucous membrane on both sides of the spur, and often it is not necessary to cocainize both sides of the nose. The drill is operated by a foot switch, and is started only after it has been placed in position. By means of the small, sharp projections, it can be held in place with accuracy. The rapidly revolving drill is pushed out of the tube by pressure on the trigger, and it will penetrate the hardest bone without vibration or pain.

This instrument is well balanced and small enough to allow its introduction into the nose under direct vision.

I have not used this instrument for opening the sphenoidal sinus, because I am afraid that fragments of bone or other débris might be introduced into the sinus cavity; but mechanically it is possible with this drill safely and rapidly to open the sphenoidal sinuses or the antrums with the minimum of discomfort and time.

THE DETERMINATION OF PHENOLSULPHONEPHTHALEIN EXCRETION IN THE PRESENCE OF HEMATURIA *

EDWARD G. WATERS, PH.B., M.D., BROOKLYN

The importance of the phenolsulphonephthalein test for kidney function, and its relative simplicity of performance, are now well appreciated by all whose work includes diagnosis of the various nephropathies. More recent work [1] indicating that lowered excretion of phenolsulphonephthalein is practically always the first evidence of renal damage, functional or organic, only enhances its value to the clinician. It is obvious, therefore, that any factor which may inhibit successful use of the test in the presence of certain of the various nephropathies offers a serious handicap. One of the most frequent and objectionable hindrances to the satisfactory use of the dye is the presence of blood in the urine. Another is a urine of high color.[2]

Burwell and Jones [3] recently offered a method for rendering the urine free from blood and bile. Previously there had been no successful method for removing the blood pigment without altering the phenolsulphonephthalein reading, or in some other way preventing accurate determinations.

* From the Brooklyn Hospital.

1. Tardo, A.: The Phenolsulphonephthalein Test in Urinary Surgery, J. d'urol. **13**: 167 (March) 1922; Phenolsulphonephthalein in Urinary Surgery, ibid. **12**: 393 (Dec.) 1921. MacNider, W. de B.: Study of Renal Function and the Associated Disturbance in the Acid Base Equilibrium of the Blood in Certain Experimental and Naturally Acquired Nephropathies, with Citation of Previous Papers, Arch. Int. Med. **26**: 1 (July) 1920. Lichty, J., and Bradshaw, W.: The Clinical Interpretation of the Phthalein Test and Ambard Coefficient in Certain Disturbances of Kidney Function, Pennsylvania M. J. **25**: 838 (Sept.) 1922. Rowntree, L. G.: Renal Function Tests, Northwest Med. **21**: 220 (July) 1922.

2. Christian, H. A.: Oxford Medicine **3**: 637.

3. Burwell, C. S., and Jones, C. M.: The Removal of Bile and Blood from the Urine in Performing the Phenolsulphonephthalein Test of Kidney Function, J. A. M. A. **77**: 462 (Aug. 6) 1921.

The method suggested by Rowntree and Geraghty,[4] employing lead acetate, while clearing the urine of bile, did not remove hemoglobin from solution.

The desirability of simple methods for clearing urine of blood is apparent. The method here described is of value because it clears the specimen of the last trace of blood-coloring matter. It leaves a clear, benzidin-negative specimen, which shows no absorption bands for hemoglobin in the spectroscope, and in which the phenolsulphonephthalein percentage is not altered.

The method rests on the action of magnesium chlorid on an alkaline solution of hemoglobin.[5] When magnesium chlorid is added to an alkaline solution of hemoglobin, the hematin split off is carried down out of solution with the precipitate of magnesium hydroxid formed, and the filtered solution is clear. The necessary reagents are two: (1) a concentrated solution of sodium hydroxid, and (2) a half-saturated solution of magnesium chlorid. The latter is conveniently made by dissolving magnesium chlorid crystals in water, or by dissolving magnesium hydroxid in hydrochloric acid.

The steps in the procedure to determine the phenolsulphonephthalein output in cases presenting hematuria, then, are as follows:

One cubic centimeter (60 mg.) of phenolsulphonephthalein solution is injected into the lumbar muscles or into the deltoid, in the usual manner, and the time is noted. Ten minutes is allowed for absorption and distribution, the bladder is emptied, and the urine is collected at the end of one hour and of two hours. The excretion of the first hour is then put into a beaker, and from 10 to 15 c.c. of concentrated sodium hydroxid solution is added, and the solution heated. Alkaline oxyhemoglobin forms, and hematin is split off, giving the solution a dark brown color, if the amount of blood present is appreciable. When the solution in the beaker is warm, 10 c.c. of magnesium chlorid solution is added, the mixture being rapidly stirred, and the contents of the beaker are heated almost to boiling. The contents of the beaker are then poured into a 1,000 c.c. measuring vessel, and diluted up to the mark with tap water. A sufficient amount is then filtered and read against a known standard, or with the convenient standards of the Hynson-Westcott set. As no unusual dilutions have been made, the reading is direct, and the percentage read corresponds to the percentage of phenolsulphonephthalein in the specimen cleared.

It will be noted that the filtrate is clear of bacterial clouding, sediments, proteins and hematin, and that the amount and color of the dye are unaltered. As an added refinement, we divide the specimen, retaining half should the portion used be destroyed in any way. Obviously, when half the specimen is used, the dilution is only to 500 c.c.

Despite the evident simplicity of the method described, there are some possible sources of error. If an insufficient amount of sodium hydroxid is used, the filtrate is brown, owing to the hematin still in solution. If the solution is tested with litmus paper after the magnesium chlorid has been added and still found alkaline, no difficulty of this sort will be encountered. Of course, when the solution is not alkaline, the color of the dye will not appear. It will seldom be necessary to add more than 10 c.c. of the magnesium chlorid solution. If very large amounts of blood are present, it will be necessary to increase the amounts of the reagents used; but the quantities given above have been sufficient in practically all of the hospital cases presenting hematuria.

Extensive studies made to determine the effect of the "clearing" method on the amount of phenolsulphonephthalein present have shown conclusively that there is no appreciable loss of the dye. The following mixtures were treated with the methods described above:

1. Normal urine plus varying percentages of blood gave clear urine.

2. Distilled water plus varying percentages of blood gave clear water.

3. Normal urine plus varying percentages of blood and phenolsulphonephthalein gave clear solutions showing the dye present in the same percentages as in controls.

4. Distilled water treated as was the urine in the preceding paragraph gave similar results.

5. Normal urine and distilled water, containing the dye in varying percentages, showed no loss or change in color of the dye.

In addition to the foregoing artificial mixtures, a large series of tests was conducted on persons without hematuria. The specimens were divided, one portion was used as a control, and to the other was added blood, the amount varying to make the percentage of blood in the specimen range from 0.1 to 30 per cent. in the cases tried. The readings checked accurately. In those instances in which a low excretion was expected, a lower dilution was made, the "concentration" of the dye thus giving more accurate and easily read results.

SUMMARY

This simple modified test is of value because it is quickly and easily done with simple reagents, employs no dilutions requiring complicated figuring, and is of proved accuracy and efficiency. It has been applied clinically in cases in which there was persistent hematuria, and has been found satisfactory.

De Kalb Avenue and Raymond Street.

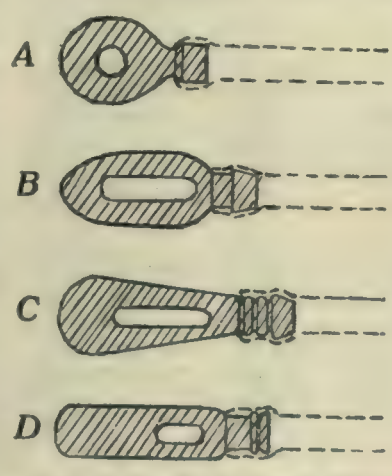
4. Rowntree, L. G., and Geraghty, J. T.: An Experimental and Clinical Study of the Functional Activity of the Kidneys by Means of Phenolsulphonephthalein, J. Pharmacol. & Exper. Therap. **1**: 579-661, 1910.

5. Mathews: Physiological Chemistry, 1916, p. 504.

A NEW TIP FOR GASTRODUODENAL TUBES*

EDWARD HOLLANDER, M.D., NEW YORK

The tip here illustrated is constructed to fulfil what I believe are the theoretical mechanical requirements of an ideal tip for gastric and duodenal tubes. In practice, because of its narrow diameter combined with proper weight, it has been found superior to the tips that are in popular use. Its construction is based on the following principles of gastroduodenal intubation and drainage:



Types of properly fenestrated gastroduodenal tips: *A*, ball-shaped tip (Palefski); *B*, olive-shaped tip (Rehfuss); *C*, pear-shaped tip (Lyon); *D*, author's narrow, cylindric tip.

1. The diameter of the tip should be as small as possible. This is determined by the caliber of the rubber tubing. No. 8 French tubing is considered most practicable for gastroduodenal work. When such tubing is stretched over the shank of a duodenal tip to secure the latter in place, its outer diameter becomes 6 mm., which should be the diameter of the tip. The advantages of a narrow tip are obvious. It can pass into the duodenum through moderate degrees of pylorospasm more readily than a wider tip. It can be swallowed and withdrawn more easily. Especially in withdrawing the tube, in many patients, the average tip is caught tightly at the level of the glottis, causing anxiety to both patient and physician. This has never occurred with the narrow tip.

2. The weight of the tip should be sufficient to carry the tube down the esophagus and maintain the tip in a dependent position in the stomach. Making its distal half a solid lead-filled shell brings its weight up to 4.5 gm. (70 grains), which is sufficient to fulfil these conditions. In the fasting state, the walls of the antrum are collapsed, obliterating that portion of the gastric cavity. Therefore, in duodenal intuba-

* From the Medical Department, Mount Sinai Hospital.

tion, while the weight of the tip should keep it in a dependent position, its progress through the pylorus will depend chiefly on peristaltic action. Entrance of the tip into the duodenum is facilitated by three steps: (*a*) The placing of the patient in the right Sims position brings the duodenum to a position lower than that of the stomach; (*b*) the drinking of half a glass of water, after the tip has passed the cardia, stimulates the peristalsis of the stomach; (*c*) swallowing the last ten inches of the tube slowly over a period of half an hour allows the tip to advance slowly with the peristalsis without coiling of the tube in the stomach.

3. The lumen of the tip and the width of the fenestrations should equal the bore of the rubber tubing.

4. The drainage chamber of the tip should be ample to provide for continuous drainage through the tube. This is accomplished by making four elongated fenestrations equal to one-third the length of the tip.

5. The tip should be held securely by the rubber tubing without being fastened with thread. If two sharp elevated rings are placed at the proximal end of the shank, the tip is "hugged" tightly and can be removed only by the use of much greater force than that used in withdrawing the tube from the duodenum.

A point worth emphasizing in duodenal intubation is the importance of the proper quality of the rubber tubing. A tube that is too soft, or that is aged and inelastic tends to coil and does not follow the curvature of the stomach as it is slowly introduced. As a simple and practical test for the proper quality of the tubing, I have found that when any two inches of its length is turned end to end it should not "kink" in the middle but should maintain a uniform diameter throughout the loop.

71 East Ninety-Sixth Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

NEO-SILVOL.—Colloidal silver iodide compound.—A compound of silver iodide with a soluble gelatin base containing 18 to 22 per cent. of silver iodide in colloidal form.

Actions and Uses.—Neo-Silvol, even in concentrated solutions, causes neither irritation of mucous membranes nor coagulation of albumin. It does not stain the skin.

It is claimed that neo-silvol in laboratory tests for germicidal value has been found as effective as phenol in its action on bacteria.

Neo-silvol is intended for the prophylaxis against, and treatment of infections of accessible mucous membranes and is claimed to be indicated in infections of the genito-urinary tract and of the eye, ear, nose and throat.

Dosage.—In the treatment of acute inflammations of the mucous membranes solutions of neo-silvol as strong as 50 per cent. may be used. In inflammatory infections of the ear, nose and throat, 5 to 40 per cent. solutions are used; for irrigating sinuses 2 to 5 per cent.; for inflammatory conditions of the eye and conjunctival infections in strength of 10 to 40 per cent.; in acute anterior urethritis, as an abortive measure, 20 per cent.; for posterior urethritis or in the routine treatment of anterior urethritis, 10 per cent.; in the genito-urinary tract of the female, from 10 to 50 per cent.

Solutions of neo-silvol are prepared by adding the substance to the required amount of water and agitating the mixture until solution occurs.

Manufactured by Parke, Davis and Co., Detroit, Mich. U. S. patent and trademark applied for.

Capsules Neo-silvol, 6 grains.

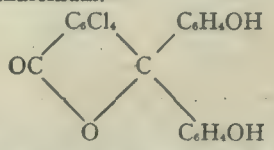
Neo-silvol is prepared by heating freshly precipitated silver oxide with gelatin (which has been previously dissolved in a dilute alkaline solution) until the silver oxide has been reduced to metallic silver in a colloidal state of subdivision. The solution is treated with iodine, which combines with the silver. The liquid is then evaporated to dryness in vacuo. The finished product contains from 1 to 3 per cent. of combined iodine in excess of that required for combination with the silver.

Neo-silvol occurs as pale yellow granules. In concentration up to 50 per cent. neo-silvol forms with water almost colorless, milky or opalescent solutions (colloidal suspensions). Neo-silvol is insoluble in fixed oils, but slowly soluble in glycerine. Solutions of neo-silvol are not precipitated in the cold by strong acids or sodium chloride.

If a solution of neo-silvol is treated with a solution of potassium hydroxide no precipitate of silver iodide is formed; if this solution is boiled for a few minutes, it darkens gradually, but no precipitate is formed unless it is allowed to stand for some time. If a solution of neo-silvol is treated with dilute hydrochloric acid silver iodide is not precipitated; if this mixture is now boiled, the silver iodide is gradually precipitated. Dilute solutions of neo-silvol do not discolor in sunlight (absence of silver chloride and silver bromide).

Transfer about 1 Gm. of neo-silvol, accurately weighed to an 8 ounce Erlenmeyer flask containing 100 Cc. water and heat on steam bath until "solution" is effected. Add. 5 Cc. of hydrochloric acid and boil gently over a flame for ten or fifteen minutes; cool; when sufficiently cool to handle, filter through a tared Gooch crucible containing a fairly thick pad of asbestos. Wash thoroughly with water acidulated with hydrochloric acid (0.3 per cent. hydrochloric acid). Dry at 100 C. and weigh as silver iodide. (The weight found is equivalent to 18 to 22 per cent. of silver iodide.)

PHENOLTETRACHLORPHTHALEIN-H. W. & D.—Phenoltetrachlorphthaleinum.—



A dibasic dye formed by the condensation of phenol and tetrachlorphthalic acid or its anhydride. It differs from phenolphthalein in that four hydrogen atoms have been replaced by four chlorine atoms.

Actions and Uses.—Phenoltetrachlorphthalein has been used for the determination of the functional activity of the liver. It can be used, *in form of the sodium salt,* intravenously; it cannot be given subcutaneously or intramuscularly. It has been proposed that the excretion can be determined by any one of these methods:

1. The excretion of the drug in the stool: Rowntree, Hurwitz and Bloomfield (*Bull. Johns Hopkins Hosp.* **24**:327, 1913); Whipple, Puchtol and Clark (*Bull. Johns Hopkins Hosp.* **24**:343, 1913); Rowntree, Marshall and Chesney (*Proc. Am. A. Phys. & Surg.,* 1914; THE JOURNAL, Oct. 31, 1914, p. 1533).

2. The excretion of the drug in the duodenum by means of a duodenal tube: Aaron, Beck and Schneider (THE JOURNAL, Nov. 19, 1921, p. 1631).

3. Its disappearance from the blood stream: S. M. Rosenthal (*J. Pharmacol. & Exper. Therap.* **19**:385 [June] 1922); H. H. Rosenfield and E. F. Schneiders (THE JOURNAL, March 17, 1923, p. 743).

Dosage.—From 0.05 to 0.4 Gm. administered in the form of the disodium salt. The solution must not be exposed unduly long, as the salt is sensitive to the action of the carbon dioxide of the atmosphere.

Manufactured by Hynson, Westcott & Dunning, Baltimore, Maryland. No U. S. patent or trademark.

Ampules Phenoltetraphlorphthalein-H. W. & D. Each ampule contains more than 2 Cc. of a solution of disodium phenoltetrachlorphthalein, each cubic centimeter representing 0.05 Gm. of phenoltetrachlorphthalein-H. W. & D.

Phenoltetrachlorphthalein-H. W. & D. is a pink powder; odorless; permanent in the air. It is practically insoluble in water; very soluble in acetone; soluble in alcohol, ether and glacial acetic acid; slightly soluble in chloroform, benzene and carbon disulphide. It dissolves in solutions of the alkalies and carbonates to form solutions which are deep purple when concentrated, but which change to violet-red on dilution, and in very dilute solutions assume a bluish tint (*distinction from phenolphthalein*).

Phenoltetrachlorphthalein does not melt when heated to 300 C. It does not respond to the U. S. P. test for heavy metals as described under phenolphthalein.

Dry about 1 Gm. of phenoltetrachlorphthalein-H. W. and D., accurately weighed, to constant weight at 115 C. The loss is not more than 0.5 per cent. To about 5 Gm. of the substance, accurately weighed, add 25 Cc. of normal sodium hydroxide solution, heat to about 70 C. and stir. Dilute with warm water to about 75 Cc., filter through a tared Gooch crucible, dry to constant weight at 115 C. and weigh. The weight of the insoluble matter (*tetrachlorfluorane*) does not exceed 0.2 per cent. Incinerate about 2 Gm. of the substance, accurately weighed. The ash does not exceed 0.15 per cent.

Hospital a Health Exponent.—The hospital as an exponent of health should provide for its entire personnel sanitary surroundings, adequate and suitable diet, and a properly proportioned daily life from the standpoint of occupation, intellectual development, recreation and rest.—A. W. Goodrich, *Hospital Social Service* **7**:173 (March) 1923.

STATE BOARD STATISTICS FOR 1922

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1220 to 1227 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1922. All state licensing boards sent in reports, and the figures have been carefully verified.

Tables A and B, when read from left to right, show for each medical college named (*a*) the number of graduates appearing for examination in each state, (*b*) whether they passed or failed, (*c*) the total number examined during the year, (*d*) the number who passed, (*e*) the number who failed, (*f*) the percentage of failures, and (*g*) the number of states in which graduates of that school appeared for examination. Read from above downward, they give the results by states, showing (*h*) the number registered and rejected from each college, (*i*) the total numbers examined, registered and rejected, and (*j*) the percentage of rejections. The majority of graduates take the license examination in the state in which the college is located, as shown by the dark diagonal zone of figures passing from the upper left to the lower right corner of each table. These tables are worthy of careful study, since important deductions are possible. The marginal numbers will enable one to follow readily the line for any college.

Graduates of All Years Examined in 1922

Table A shows the results for all candidates who took examinations in 1922, regardless of the years in which they graduated. This shows that altogether 3,993 candidates were examined last year, as compared with 4,807 in 1921, 4,787 in 1920, 4,736 in 1919, and 3,637 in 1918. This year shows a decrease of 814 since last year, but an increase of 356 over 1918. Since 1906 and until 1919 there was a steady decrease in the totals examined owing chiefly to (*a*) the increasing number registered through reciprocity, and (*b*) the general diminution in the number of medical colleges, students and graduates. The marked decrease in 1918 was due to the enlistments for military medical service, while the decrease in 1922 was due to the small number, 2,529—the war class—who graduated in that year. Of those examined in 1922, 12.3 per cent. failed, as compared with 12.4 in 1921, 15.3 in 1920, 14.3 in 1919, and 13.3 in 1918.

There were 70 medical colleges in the United States granting degrees in 1922 which had graduates examined, as compared with 75 in 1921, 78 in 1920, 79 in 1919, and 80 in 1918. There has been a decrease of 83 since 1905, when graduates from 153 medical colleges were examined. The statistics covering schools which have ceased to exist are included in the line for "miscellaneous colleges."

Graduates of Canadian medical schools were examined in 22 states. The largest number, 37, were examined in New York, the next largest number being 7 examined in Michigan. The figures for each college are given separately in order to show the number of candidates coming from each, and to show the successes of their graduates at the examinations. Altogether, 82 candidates from Canadian colleges were examined, of whom 9, or 11.0 per cent., failed.

Foreign graduates were examined in 30 states, the total examined being 186, and of this number 76, or 40.9 per cent., failed. In 1918 45, in 1919 67, in 1920 86, and in 1921 178 foreign graduates were examined. There has been a steady increase of foreigners licensed since 1918. The largest number of foreigners examined in any state in 1922 was 63 in New York, where 29, or 46 per cent., failed.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, the reader must keep in mind (*a*) the number of graduates examined; (*b*) the number of states in which a school's graduates have been examined; (*c*) the character of the board making the examination and the methods employed. Some boards refuse to examine graduates of inferior medical colleges, while others (see Table H) not only examine graduates of all medical colleges but also admit osteopaths to the physicians' and surgeons' examination. Some boards hold careful examinations which include practical laboratory and clinical tests or they mark the papers more severely, while others, especially partisan boards, are very lenient. It is particularly important, in forming conclusions based on these statistics to note for each college the states in which its graduates are not admitted to examination—information set forth with these statistics in Table D. A state board which admits to its examinations graduates of low-grade medical schools would be expected to have a higher percentage of failures.

Undergraduates and Osteopaths Examined as Physicians During 1922

For the last four years the few undergraduates examined have been accidental instances due evidently to imperfect credentials. In 1906, there were 703 undergraduates examined, and 342 were licensed. Colorado is now the only state which will knowingly admit nongraduates to its examinations, but only seven have been licensed in that state in sixteen years. The door has been closed, therefore, against the admission to practice of those whose medical training is known to be incomplete. At present, however, several boards register as physicians and surgeons, by examination or by reciprocity, graduates of osteopathic colleges—no one of which compares favorably with the lowest grade Class C medical college. In one of these states—Texas [1]—the board refuses to admit graduates of Class C medical schools to its examinations but nevertheless continues to examine graduates of osteopathic colleges which, in fact, are nothing more than very low-grade medical schools.

Recent Graduates Examined During 1922

Table B gives the results for graduates of 1918 to 1922, inclusive, examined during 1922. This table is important, since it deals with recent graduates, and is, therefore, the fairest basis for comparison between colleges. Of all candidates examined in 1922, 3,285, or 82.3 per cent., were recent graduates, and of this number 7.3 per cent. failed, as compared with 12.3 per cent. for all candidates.

Old Practitioners Examined During 1922

Table C in so arranged as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1917 and previous years (third column), and for graduates of 1922 (fourth column). Of the graduates of 1917 and previous years—"old practitioners"—563 were examined, and of this number 188, or 33.4 per cent., failed, as compared with 7.3 per cent. of failures for recent graduates. The total number of these candidates is diminishing [2] as state licensing boards extend the provision for reciprocity, or for the endorsement, without further examination of licenses granted by other states where a physician's qualifications are otherwise satisfactory. As a rule, the states which have limited or no reciprocal relations with other states (Connecticut, Massachusetts, New York, Oregon and Rhode Island, see Table G) examined the largest number of old practitioners.

Graduates of 1922 Examined During 1922

Table C also gives the results for the graduates of 1922 who were examined during the year by the state boards, and shows that 2,138, or 53.5 per cent., of all candidates examined

(CONTINUED ON PAGE 1227)

1. See Table D on pages 1226 and 1227.
2. See Table 2 on p. 1230.

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 Dist. Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		22 Minnesota		Marginal Number
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ARKANSAS																																												
1	University of Arkansas Medical Department					1	0											0	1																											1
	CALIFORNIA																																											
2	College of Medical Evangelists							21	0																																	1	0	2
3	Stanford University School of Medicine							27	1																																			3
4	University of California Medical School							41	0																																			4
	COLORADO																																										
5	University of Colorado School of Medicine									14	0																															1	0	5
	CONNECTICUT																																										
6	Yale University School of Medicine							1	0			9	1																							6	0			4	0			6
	DISTRICT OF COLUMBIA																																										
7	Georgetown University School of Medicine			1	0											16	0																							2	0			0	1	7
8	George Washington University Medical School											1	0			15	0					1	0	1	0																	1	0			8
9	Howard University School of Medicine															12	5	1	0					2	1													0	2	1	0					9
	GEORGIA																																											
10	Emory University School of Medicine	8	0															10	0	45	0			3	1																					10
11	University of Georgia Medical Department																	5	4	18	0																			1	0					11
	ILLINOIS																																											
12	Chicago Medical School																							10	15																	1	0			12
13	Hahnemann Medical College			0	1			1	1			2	0											12	0																					13
14	Loyola University School of Medicine							0	1													2	0	19	4																	1	0			14
15	Northwestern University Medical School			1	0			1	0									0	1			1	0	69	2			3	0	1	0	1	0							2	0	2	0	15
16	Rush Medical College (University of Chicago)							23	1			1	0					3	1			1	0	98	6	1	0	2	0	2	0									1	0	2	0	1	0	16
17	University of Illinois College of Medicine							4	0									1	0					46	1	1	0													1	0	1	0	1	0	17
	INDIANA																																											
18	Indiana University School of Medicine																	1	0							31	0																			18
	IOWA																																											
19	State University of Iowa College of Medicine																							2	0			37	0											2	0					19
	KANSAS																																											
20	University of Kansas School of Medicine																															18	0							1	0					20
	KENTUCKY																																												
21	University of Louisville Medical Department							0	1															1	0									22	0											21
	LOUISIANA																																												
22	Tulane University of Louisiana School of Medicine	11	0	2	0	3	0					1	0					6	0					1	0											46	0									22
	MARYLAND																																											
23	Johns Hopkins University Medical Department							5	0			4	1	1	0	1	0	2	0																			1	0	41	0	7	0	5	0	2	0	23
24	Univ. of Md. School of Med. and Coll. of P. & S.											3	0	1	0	1	0	3	0			1	0													1	0	27	0	2	1					24
	MASSACHUSETTS																																											
25	Boston University School of Medicine																																			3	0			19	0			1	0	25
26	College of Physicians and Surgeons, Boston											0	1			1	1							0	1									1	0					3	7					26
27	Harvard University Medical School					1	0	1	0			6	0			1	0	2	1	1	0	1	0	3	0			2	0	1	0					4	0			39	0	2	0	3	0	27
28	Middlesex College of Medicine and Surgery.—N.											13	1																											27	15					28
29	Tufts College Medical School											7	0																	1	0					8	0			64	2			1	0	29
	MICHIGAN																																												
30	Detroit College of Medicine and Surgery							0	1																																	20	1			30
31	University of Michigan Medical School			1	0			1	0									1	0	1	0			0	1															3	0	65	0			31
	MINNESOTA																																												
32	University of Minnesota Medical School							2	0							0	1					2	0					1	0															79	0	32
	MISSOURI																																												
33	Kansas City College of Medicine and Surgery.—N.					15	1			0	2	2	1																																	33
34	Kansas City University of Phys. and Surgs.—N.									2	8	2	0																					2	1					2	2					34
35	St. Louis College of Physicians and Surgeons							0	1	1	8	8	2											0	1									1	0					5	12					35
36	St. Louis University School of Medicine							2	1															1	0											1	0			1	0					36
37	Washington University School of Medicine							2	0	1	0													1	0					2	0									1	1			1	0	37
	NEBRASKA																																												
38	Creighton University College of Medicine																					1	0	2	0					1	0													38
39	University of Nebraska College of Medicine							1	0															0	1																					39
	NEW YORK																																											
40	Albany Medical College																																												40
41	Columbia University College of Phys. and Surgs.	1	0									6	0					1	0																					6	0					41
42	Cornell University Medical College											1	0							1	0																									42
43	Long Island College Hospital											1	0					0	1																											43
44	New York Homeo. Med. Coll. & Flower Hosp.—H.																																										1	0	44
45	Syracuse University College of Medicine																							2	1																	1	0			45
46	University and Bellevue Hospital Medical College							1	0							1	0											1	0											3	0					46
47	University of Buffalo Medical Department											1	0					1	0																											47
	OHIO																																													
48	Eclectic Medical College.—E.					2	0	1	0	1	0	1	0							1	0											4	0									2	1			48
49	Ohio State University College of Medicine																	1	0	1	0																			1	0					49
50	University of Cincinnati College of Medicine							3	1															2	0																			1	0	50
51	Western Reserve University School of Medicine																																													51
	OKLAHOMA																																													
52	University of Oklahoma School of Medicine																	1	0																											52
	OREGON																																													
53	University of Oregon Medical School							1	0																																					53
	PENNSYLVANIA																																													
54	Hahnemann Medical College and Hospital.—H.			0	1									2	0																									3	0					54
55	Jefferson Medical College	2	0	1	0			1	2			4	6	3	0			1	0	2	0									1	0					1	0			2	0			1	0	55
56	Temple University School of Medicine											1	0	5	0																							1	0	1	0					56
57	University of Pennsylvania School of Medicine							4	1			1	2	3	0			2	0							1	0															1	0	3	0	57
58	University of Pittsburgh School of Medicine																																													58
59	Woman's Medical College of Pennsylvania							1	0			1	0																											3	0			1	0	59
	SOUTH CAROLINA																																												
60	Medical College of the State of South Carolina																	2	0	1	0																									60
	TENNESSEE																																												
61	Meharry Medical College	3	0																	1	1			3	12					0	4	1	2	1	3									61
62	University of Tennessee College of Medicine	1	0			1	0											1	0															2	0									62
63	University of West Tennessee Medical Department									1	6																													0	1					63
64	Vanderbilt University School of Medicine	1	0			1	0					1	0																															64
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

| Marginal Number | 23 Mississippi | | 24 Missouri | | 25 Montana | | 26 Nebraska | | 27 Nevada | | 28 New Hampshire | | 29 New Jersey | | 30 New Mexico | | 31 New York | | 32 North Carolina | | 33 North Dakota | | 34 Ohio | | 35 Oklahoma | | 36 Oregon | | 37 Pennsylvania | | 38 Rhode Island | | 39 South Carolina | | 40 South Dakota | | 41 Tennessee | | 42 Texas | | 43 Utah | | 44 Vermont | | 45 Virginia | | 46 Washington | | 47 West Virginia | | 48 Wisconsin | | 49 Wyoming | | 50 U. S. Territories and Possessions | | Totals | Examined—Passed | Examined—Failed | Percentage of Failures | No. States Exam. in | Marginal Number |
|---|---|---

TABLE A—PHYSICIANS EXAMINED BY

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F	22 Minnesota P	22 Minnesota F	Marginal Number
	TEXAS																																													
65	Baylor University College of Medicine																																	1	0											65
66	University of Texas School of Medicine			1	0			1	0																																					66
	VERMONT																																													
67	University of Vermont College of Medicine											5	3			1	0																							6	0					67
	VIRGINIA																																												
68	Medical College of Virginia											2	0											1	1															0	1					68
69	University of Virginia Department of Medicine															1	0			1	0													1	0			1	0							69
	WISCONSIN																																												
70	Marquette University School of Medicine																							1	1																					70
	CANADA																																													
71	Dalhousie University Faculty of Medicine																																													71
72	Laval University Faculty of Medicine																																							0	1					72
73	McGill University Faculty of Medicine							2	0															0	1											2	0	1	0	2	1			1	0	73
74	Queen's University Faculty of Medicine							1	0	1	0																																			74
75	University of Alberta Faculty of Medicine																																													75
76	University of Manitoba Faculty of Medicine							1	0																			1	0													1	0			76
77	University of Montreal Medical Faculty																																			1	0									77
78	University of Toronto Faculty of Medicine							1	0	1	0							1	0																					5	0	3	0	78
79	Western University Medical School																																							1	0					79
80	Foreign Colleges							8	4	2	0	1	3	1	0			1	1					3	9	1	1	2	0			1	0	2	0			3	0	8	4	3	2	2	0	80
81	Miscellaneous Medical Colleges	4	1			6	0	17	17	0	3	4	1	1	0	4	0	9	11			1	0	3	9					1	1	3	1	1	1	2	0			8	3	7	0	0	1	81
82	Undergraduates and Osteopaths							32	34	8	7	25	10																											13	6					82
83	Totals by States	32		9		31		275		66		140		17		61		77		69		11		354		96		49		33		41		59		28		77		300		123		110		83
84	Totals — Examined — Passed	31		7		30		208		32		114		17		54		56		68		11		286		35		49		28		37		55		28		74		244		119		107		84
85	Totals — Examined — Failed	1		2		1		67		34		26		0		7		21		1		0		68		1		0		5		4		4		0		3		56		4		3		85
86	Percentage of Failures	3.1		22.2		3.2		24.4		51.5		18.6		0.0		11.5		27.3		1.4		0.0		16.4		2.8		0.0		15.2		9.8		6.8		0.0		3.9		18.7		3.3		2.7		86
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

TABLE B—GRADUATES OF 1918 TO 1922, INCLUSIVE,

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F	22 Minnesota P	22 Minnesota F	Marginal Number
	ARKANSAS																																													
1	University of Arkansas Medical Department																																													1
	CALIFORNIA																																													
2	College of Medical Evangelists							21	0																																			1	0	2
3	Stanford University School of Medicine							27	1																																					3
4	University of California Medical School							41	0																																					4
	COLORADO																																													
5	University of Colorado School of Medicine									14	0																																			5
	CONNECTICUT																																													
6	Yale University School of Medicine							1	0			8	0																									6	0			2	0					6
	DISTRICT OF COLUMBIA																																												
7	Georgetown University School of Medicine															16	0																									2	0					7
8	George Washington University Medical School															14	0							1	0																					8
9	Howard University School of Medicine															12	5	1	0					2	0															0	2					9
	GEORGIA																																												
10	Emory University School of Medicine	8	0															7	0	45	0			2	1																					10
11	University of Georgia Medical Department																	2	0	13	0																					1	0			11
	ILLINOIS																																												
12	Chicago Medical School																							10	13																	1	0			12
13	Hahnemann Medical College			0	1			1	0			1	0											12	0																					13
14	Loyola University School of Medicine																					1	0	19	2																	1	0			14
15	Northwestern University Medical School			1	0			1	0													1	0	69	2			3	0	1	0	1	0							2	0	2	0	15
16	Rush Medical College (University of Chicago)							22	0									1	0					98	5	1	0	1	0	2	0									1	0	2	0	1	0	16
17	University of Illinois College of Medicine							4	0															46	1	1	0															1	0	1	0	17
	INDIANA																																													
18	Indiana University School of Medicine																									30	0																			18
	IOWA																																													
19	State University of Iowa College of Medicine																							2	0			37	0																	19
	KANSAS																																												
20	University of Kansas School of Medicine																													18	0															20
	KENTUCKY																																												
21	University of Louisville Medical Department																							1	0							21	0													21
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

| Marginal Number | 23 Mississippi | | 24 Missouri | | 25 Montana | | 26 Nebraska | | 27 Nevada | | 28 New Hampshire | | 29 New Jersey | | 30 New Mexico | | 31 New York | | 32 North Carolina | | 33 North Dakota | | 34 Ohio | | 35 Oklahoma | | 36 Oregon | | 37 Pennsylvania | | 38 Rhode Island | | 39 South Carolina | | 40 South Dakota | | 41 Tennessee | | 42 Texas | | 43 Utah | | 44 Vermont | | 45 Virginia | | 46 Washington | | 47 West Virginia | | 48 Wisconsin | | 49 Wyoming | | 50 U. S. Territories and Possessions | | Totals | Examined—Passed | Examined—Failed | Percentage of Failures | No. States Exam. in | Marginal Number |
|---|---|---

Marginal Number	NAME OF COLLEGE	1 Alabama P	F	2 Arizona P	F	3 Arkansas P	F	4 California P	F	5 Colorado P	F	6 Connecticut P	F	7 Delaware P	F	8 Dist. Columbia P	F	9 Florida P	F	10 Georgia P	F	11 Idaho P	F	12 Illinois P	F	13 Indiana P	F	14 Iowa P	F	15 Kansas P	F	16 Kentucky P	F	17 Louisiana P	F	18 Maine P	F	19 Maryland P	F	20 Massachusetts P	F	21 Michigan P	F	22 Minnesota P	F	Marginal Number
	LOUISIANA																																													
22	Tulane University of Louisiana School of Medicine	11	0	2	0	3	0					1	0					5	0															46	0											22
	MARYLAND																																													
23	Johns Hopkins University Medical Department							5	0			2	1	1	0	1	0																			41	0	5	0	4	0	2	0	23
24	Univ. of Md. School of Med. and Coll. of P. & S.											3	0	1	0	1	0	2	0			1	0													25	0	2	1					24
	MASSACHUSETTS																																												
25	Boston University School of Medicine																																			3	0			19	0			1	0	25
26	College of Physicians and Surgeons, Boston															1	1															1	0					2	3					26
27	Harvard University Medical School					1	0	1	0			5	0			1	0	1	0	1	0	1	0	2	0			2	0							3	0			38	0	2	0	3	0	27
28	Middlesex College of Medicine and Surgery.—N.											13	1																											27	15					28
29	Tufts College Medical School											5	0																			1	0			8	0			64	1			1	0	29
	MICHIGAN																																												
30	Detroit College of Medicine and Surgery																																									20	1			30
31	University of Michigan Medical School			1	0													1	0	1	0																			2	0	65	0			31
	MINNESOTA																																												
32	University of Minnesota Medical School							2	0							0	1					2	0					1	0															78	0	32
	MISSOURI																																												
33	Kansas City College of Medicine and Surgery.—N.					14	1			0	2	2	1																																33
34	Kansas City University of Phys. and Surgs.—N.									2	8	2	0																			2	1							2	2				34
35	St. Louis College of Physicians and Surgeons									1	8	8	2											0	1							1	0							5	12				35
36	St. Louis University School of Medicine							2	1															1	0									1	0										36
37	Washington University School of Medicine							2	0	1	0													1	0					2	0													1	0	37
	NEBRASKA																																												
38	Creighton University College of Medicine																							2	0					1	0														38
39	University of Nebraska College of Medicine							1	0																																				39
	NEW YORK																																												
40	Albany Medical College																																												40
41	Columbia University College of Phys. and Surgs.											4	0																											5	0				41
42	Cornell University Medical College											1	0								1	0																						42
43	Long Island College Hospital											1	0																																43
44	New York Homeo. Med. Coll. & Flower Hosp.—H.																																									1	0	44
45	Syracuse University College of Medicine																							2	1																	1	0	45
46	University and Bellevue Hospital Medical College							1	0							1	0											1	0											2	0				46
47	University of Buffalo Medical Department											1	0					1	0																										47
	OHIO																																												
48	Eclectic Medical College.—E.					2	0	1	0			1	0								1	0										4	0									2	1		48
49	Ohio State University College of Medicine																	1	0	1	0																			1	0				49
50	University of Cincinnati College of Medicine							3	1															2	0																			1	0	50
51	Western Reserve University School of Medicine																																												51
	OKLAHOMA																																												
52	University of Oklahoma School of Medicine																																												52
	OREGON																																												
53	University of Oregon Medical School							1	0																																				53
	PENNSYLVANIA																																												
54	Hahnemann Medical College and Hospital.—H.			0	1									2	0																							2	0					54
55	Jefferson Medical College	2	0					1	0			4	0	3	0					2	0									1	0					1	0			1	0			55
56	Temple University School of Medicine											1	0	5	0																							1	0	1	0			56
57	University of Pennsylvania School of Medicine							4	0			1	1	3	0			2	0																							1	0	1	0	57
58	University of Pittsburgh School of Medicine																																												58
59	Woman's Medical College of Pennsylvania							1	0			1	0																											1	0			1	0	59
	SOUTH CAROLINA																																												
60	Medical College of the State of South Carolina																				1	0																								60
	TENNESSEE																																												
61	Meharry Medical College	3	0																		1	0		0	3					0	4	1	2	1	1								61
62	University of Tennessee College of Medicine	1	0			1	0																											2	0									62
63	University of West Tennessee Medical Department									1	6																																		63
64	Vanderbilt University School of Medicine	1	0																																										64
	TEXAS																																												
65	Baylor University College of Medicine																																												65
66	University of Texas School of Medicine			1	0			1	0																																				66
	VERMONT																																												
67	University of Vermont College of Medicine											5	2			1	0																							6	0				67
	VIRGINIA																																												
68	Medical College of Virginia											1	0											1	1																				68
69	University of Virginia Department of Medicine															1	0			1	0											1	0					1	0					69
	WISCONSIN																																												
70	Marquette University School of Medicine																							0	1																				70
	CANADA																																												
71	Dalhousie University Faculty of Medicine																																												71
72	Laval University Faculty of Medicine																																												72
73	McGill University Faculty of Medicine							2	0															0	1											2	0	1	0	2	1				73
74	Queen's University Faculty of Medicine							1	0	1	0																																		74
75	University of Alberta Faculty of Medicine																																													75
76	University of Manitoba Faculty of Medicine																													1	0											1	0		76
77	University of Montreal Medical Faculty																																			1	0									77
78	University of Toronto Faculty of Medicine																																									1	0	1	0	78
79	Western University Medical School																																									1	0			79
80	Foreign Colleges							3	2	2	0	1	2	1	0									2	3	0	1	2	0									1	0	0	2	2	1	1	0	80
81	Miscellaneous Medical Colleges							17	4			1	0	1	0	2	0																			0	1			2	1	7	0			81
82	Undergraduates and Osteopaths																																													82
83	Totals by States	2		7		22		176		46		83		17		58		24		68		6		310		33		48		30		36		51		24		72		234		115		99		83
84	Totals — Examined — Passed	26		5		21		167		22		73		17		51		24		68		6		275		32		48		26		32		50		24		70		196		112		99		84
85	Totals — Examined — Failed	0		2		1		9		24		10		0		7		0		0		0		35		1		0		4		4		1		0		2		38		3		0		85
86	Percentage of Failures	0.0		28.6		4.5		5.1		52.2		12.0		0.0		12.0		0.0		0.0		0.0		11.3		3.0		0.0		13.3		11.1		2.0		0.0		2.8		16.2		2.6		0.0		86
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

| Marginal Number | 23 Mississippi | | 24 Missouri | | 25 Montana | | 26 Nebraska | | 27 Nevada | | 28 New Hampshire | | 29 New Jersey | | 30 New Mexico | | 31 New York | | 32 North Carolina | | 33 North Dakota | | 34 Ohio | | 35 Oklahoma | | 36 Oregon | | 37 Pennsylvania | | 38 Rhode Island | | 39 South Carolina | | 40 South Dakota | | 41 Tennessee | | 42 Texas | | 43 Utah | | 44 Vermont | | 45 Virginia | | 46 Washington | | 47 West Virginia | | 48 Wisconsin | | 49 Wyoming | | 50 U. S. Territories and Possessions | | Totals | Examined—Passed | Examined—Failed | Percentage of Failures | No. States Exam. in | Marginal Number |
|---|---|---

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1918-1922					Graduates of 1917 and Previous					Graduates of 1922					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
	ARKANSAS																					
1	University of Arkansas Medical Department	2	1	1	50.0	2	0	0	0	0.0	0	2	1	1	50.0	2	0	0	0	0.0	0	1
	CALIFORNIA																					
2	College of Medical Evangelists	23	23	0	0.0	3	23	23	0	0.0	3	0	0	0	0.0	0	23	23	0	0.0	3	2
3	Stanford University School of Medicine	30	28	2	6.7	3	29	28	1	3.4	2	1	0	1	100.0	1	27	27	0	0.0	2	3
4	University of California Medical School	41	41	0	0.0	1	41	41	0	0.0	1	0	0	0	0.0	0	39	39	0	0.0	1	4
	COLORADO																					
5	University of Colorado School of Medicine	17	16	1	5.9	4	16	15	1	6.3	3	1	1	0	0.0	1	16	15	1	6.3	3	5
	CONNECTICUT																					
6	Yale University School of Medicine	30	28	2	6.7	7	24	24	0	0.0	7	6	4	2	33.3	3	16	16	0	0.0	4	6
	DISTRICT OF COLUMBIA																					
7	Georgetown University School of Medicine	28	26	2	7.1	6	24	24	0	0.0	4	4	2	2	50.0	3	14	14	0	0.0	3	7
8	George Washington University Medical School	27	26	1	3.7	9	19	19	0	0.0	4	8	7	1	12.5	6	13	13	0	0.0	2	8
9	Howard University School of Medicine	44	33	11	25.0	14	40	31	9	22.5	12	4	2	2	50.0	4	5	5	0	0.0	3	9
	GEORGIA																					
10	Emory University School of Medicine	76	74	2	2.6	8	71	69	2	2.8	7	5	5	0	0.0	3	63	62	1	1.6	6	10
11	University of Georgia Medical Department	24	20	4	16.7	4	16	16	0	0.0	3	8	4	4	50.0	2	13	13	0	0.0	0	11
	ILLINOIS																					
12	Chicago Medical School	30	13	17	56.7	5	28	13	15	53.6	5	2	0	2	100.0	1	23	10	13	36.5	3	12
13	Hahnemann Medical College	22	18	4	18.2	8	17	16	1	5.9	6	5	2	3	60.0	5	13	13	0	0.0	4	13
14	Loyola University School of Medicine	36	28	8	22.2	10	29	25	4	13.8	7	7	3	4	57.1	5	21	20	1	4.8	3	14
15	Northwestern University Medical School	110	105	5	4.5	19	106	102	4	3.8	17	4	3	1	25.0	3	97	94	3	3.1	12	15
16	Rush Medical College (University of Chicago)	172	163	9	5.2	24	160	155	5	3.1	21	12	8	4	33.3	9	134	129	5	3.7	14	16
17	University of Illinois College of Medicine	61	60	1	1.6	10	55	54	1	1.8	6	6	6	0	0.0	5	55	54	1	1.8	6	17
	INDIANA																					
18	Indiana University School of Medicine	34	34	0	0.0	4	32	32	0	0.0	3	2	2	0	0.0	2	30	30	0	0.0	1	18
	IOWA																					
19	State University of Iowa College of Medicine	48	48	0	0.0	7	43	43	0	0.0	4	5	5	0	0.0	4	40	40	0	0.0	3	19
	KANSAS																					
20	University of Kansas School of Medicine	23	23	0	0.0	3	22	22	0	0.0	2	1	1	0	0.0	1	22	22	0	0.0	3	20
	KENTUCKY																					
21	University of Louisville Medical Department	30	29	1	3.3	8	26	26	0	0.0	5	4	3	1	25.0	4	23	23	0	0.0	3	21
	LOUISIANA																					
22	Tulane University of Louisiana School of Medicine	93	91	2	2.1	14	90	89	1	1.1	13	3	2	1	33.3	3	64	63	1	1.6	9	22
	MARYLAND																					
23	Johns Hopkins University Medical Department	104	101	3	2.9	17	88	86	2	2.3	14	16	15	1	6.3	7	46	45	1	23.9	6	23
24	Univ. of Md. School of Med. and Coll. of P. & S	79	77	2	2.5	17	74	72	2	2.7	16	5	5	0	0.0	4	52	52	0	0.0	10	24
	MASSACHUSETTS																					
25	Boston University School of Medicine	32	32	0	0.0	6	32	32	0	0.0	6	0	0	0	0.0	0	25	25	0	0.0	3	25
26	College of Physicians and Surgeons, Boston	17	6	11	64.7	6	8	4	4	50.0	3	9	2	7	77.8	4	1	1	0	0.0	1	26
27	Harvard University Medical School	113	112	1	0.9	28	102	102	0	0.0	28	11	10	1	9.1	7	55	55	0	0.0	13	27
28	Middlesex College of Medicine and Surgery.—N.	56	40	16	28.6	2	56	40	16	28.6	2	0	0	0	0.0	0	27	20	7	25.9	2	28
29	Tufts College Medical School	115	110	5	4.3	11	107	104	3	2.8	11	8	6	2	25.0	5	67	66	1	1.5	4	29
	MICHIGAN																					
30	Detroit College of Medicine and Surgery	25	23	2	8.0	4	23	22	1	4.4	2	2	1	1	50.0	2	21	20	1	4.8	1	30
31	University of Michigan Medical School	87	85	2	2.3	11	83	82	1	1.2	8	4	3	1	25.0	4	68	68	0	0.0	4	31
	MINNESOTA																					
32	University of Minnesota Medical School	86	85	1	1.2	6	85	84	1	1.2	6	1	1	0	0.0	1	76	76	0	0.0	3	32
	MISSOURI																					
33	Kansas City College of Medicine and Surgery.—N.	27	21	6	22.2	7	25	20	5	20.0	7	2	1	1	50.0	2	18	16	2	11.1	3	33
34	Kansas City University of Phys. and Surgs.—N.	24	12	12	50.0	7	24	12	12	50.0	7	0	0	0	0.0	0	11	5	6	36.3	3	34
35	St. Louis College of Physicians and Surgeons	62	24	38	61.3	13	57	24	33	22.8	11	5	0	5	100.0	3	28	14	14	50.0	7	35
36	St. Louis University School of Medicine	51	50	1	2.0	10	46	45	1	2.2	9	5	5	0	0.0	3	36	36	0	0.0	7	36
37	Washington University School of Medicine	57	56	1	1.8	13	52	52	0	0.0	10	5	4	1	20.0	4	36	36	0	0.0	5	37
	NEBRASKA																					
38	Creighton University College of Medicine	33	32	1	3.0	10	31	30	1	3.2	8	2	2	0	0.0	2	22	22	0	0.0	3	38
39	University of Nebraska College of Medicine	23	22	1	4.4	6	22	22	0	0.0	5	1	0	1	100.0	1	18	18	0	0.0	1	39
	NEW YORK																					
40	Albany Medical College	12	12	0	0.0	1	12	12	0	0.0	1	0	0	0	0.0	0	12	12	0	0.0	1	40
41	Columbia University College of Phys. and Surgs.	95	94	1	1.1	9	85	84	1	1.2	6	10	10	0	0.0	7	54	53	1	1.9	1	41
42	Cornell University Medical College	48	48	0	0.0	9	46	46	0	0.0	7	2	2	0	0.0	2	31	31	0	0.0	2	42
43	Long Island College Hospital	49	48	1	2.0	5	46	46	0	0.0	2	3	2	1	33.3	3	43	43	0	0.0	2	43
44	New York Homeo. Med. Coll. & Flower Hosp.—H	27	23	4	14.3	2	22	20	2	9.1	2	5	3	2	40.0	2	18	17	1	5.6	1	44
45	Syracuse University College of Medicine	44	41	3	6.8	6	42	39	3	7.1	5	2	2	0	0.0	2	32	30	2	6.2	1	45
46	University and Bellevue Hospital Medical College	95	95	0	0.0	12	90	90	0	0.0	9	5	5	0	0.0	5	79	79	0	0.0	5	46
47	University of Buffalo Medical Department	27	25	2	7.5	4	27	25	2	7.5	4	0	0	0	0.0	0	20	19	1	5.0	1	47
	OHIO																					
48	Eclectic Medical College.—E.	48	42	6	12.5	11	44	38	6	13.6	9	4	4	0	0.0	4	42	37	5	11.9	9	48
49	Ohio State University College of Medicine	37	37	0	0.0	7	37	37	0	0.0	7	0	0	0	0.0	0	32	32	0	0.0	2	49
50	University of Cincinnati College of Medicine	59	58	1	1.7	7	59	58	1	1.7	7	0	0	0	0.0	0	46	46	0	0.0	3	50
51	Western Reserve University School of Medicine	27	27	0	0.0	3	27	27	0	0.0	3	0	0	0	0.0	0	25	25	0	0.0	1	51
	OKLAHOMA																					
52	University of Oklahoma School of Medicine	11	11	0	0.0	4	9	9	0	0.0	2	2	2	0	0.0	2	2	2	0	0.0	1	52
	OREGON																					
53	University of Oregon Medical School	14	10	4	28.6	3	14	10	4	28.6	3	0	0	0	0.0	0	14	13	1	7.2	2	53
	PENNSYLVANIA																					
54	Hahnemann Medical College and Hospital.—H.	54	43	11	20.4	6	52	41	11	21.1	6	2	2	0	0.0	2	1	1	0	0.0	1	54
55	Jefferson Medical College	139	133	6	4.3	26	130	127	3	2.3	24	9	6	3	33.3	7	34	33	1	8.8	14	55
56	Temple University School of Medicine	34	32	2	5.9	6	34	32	2	5.9	6	0	0	0	0.0	0	2	2	0	0.0	1	56
57	University of Pennsylvania School of Medicine	126	121	5	4.0	20	114	112	2	1.8	18	12	9	3	25.0	7	16	16	0	0.0	8	57
58	University of Pittsburgh School of Medicine	47	47	0	0.0	2	47	47	0	0.0	2	0	0	0	0.0	0	17	17	0	0.0	3	58
59	Woman's Medical College of Pennsylvania	20	19	1	5.0	10	17	16	1	5.9	9	3	3	0	0.0	2	6	6	0	0.0	1	59
	SOUTH CAROLINA																					
60	Medical College of the State of South Carolina	18	18	0	0.0	5	15	15	0	0.0	3	3	3	0	0.0	2	21	19	2	9.5	3	60
	TENNESSEE																					
61	Meharry Medical College	78	49	29	37.2	15	57	42	15	26.3	12	21	7	14	66.7	7	32	31	1	15.6	7	61
62	University of Tennessee College of Medicine	23	21	2	8.7	9	19	18	1	5.3	7	4	3	1	25.0	2	13	13	0	0.0	5	62
63	University of West Tennessee Medical Department	9	2	7	77.8	3	8	2	6	75.0	2	1	0	1	100.0	1	2	0	2	100.0	1	63
64	Vanderbilt University School of Medicine	22	22	0	0.0	7	18	18	0	0.0	4	4	4	0	0.0	4	13	13	0	0.0	1	64
	TEXAS																					
65	Baylor University College of Medicine	27	26	1	3.6	4	24	23	1	4.2	3	3	3	0	0.0	2	22	22	0	0.0	2	65
66	University of Texas School of Medicine	50	50	0	0.0	6	48	48	0	0.0	5	2	2	0	0.0	1	41	41	0	0.0	1	66

H = Homeopathic; E = Eclectic; N = Nondescript.

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1918–1922					Graduates of 1917 and Previous					Graduates of 1922					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
	VERMONT																					
67	University of Vermont College of Medicine	44	40	4	9.1	8	40	37	3	7.5	7	4	3	1	25.0	4	18	18	0	0.0	4	67
	VIRGINIA																					
68	Medical College of Virginia	42	39	3	7.1	10	37	35	2	5.4	8	5	4	1	20.0	5	26	26	0	0.0	3	68
69	University of Virginia Department of Medicine	24	24	0	0.0	9	23	23	0	0.0	9	1	1	0	0.0	1	10	10	0	0.0	3	69
	WISCONSIN																					
70	Marquette University School of Medicine	24	22	2	8.3	2	22	20	2	9.1	2	2	2	0	0.0	2	20	19	1	5.0	1	70
	CANADA																					
71	Dalhousie University Faculty of Medicine	2	2	0	0.0	2	1	1	0	0.0	1	1	1	0	0.0	1	0	0	0	0.0	0	71
72	Laval University Faculty of Medicine	1	0	1	100.0	1	0	0	0	0.0	0	1	0	1	100.0	1	0	0	0	0.0	0	72
73	McGill University Faculty of Medicine	32	27	5	15.6	12	23	18	5	21.8	9	9	9	0	0.0	5	4	4	0	0.0	3	73
74	Queen's University Faculty of Medicine	16	16	0	0.0	6	10	10	0	0.0	3	6	6	0	0.0	3	1	1	0	0.0	1	74
75	University of Alberta Faculty of Medicine	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	75
76	University of Manitoba Faculty of Medicine	3	3	0	0.0	3	2	2	0	0.0	2	1	1	0	0.0	1	0	0	0	0.0	0	76
77	University of Montreal Medical Faculty	1	1	0	0.0	1	1	1	0	0.0	1	0	0	0	0.0	0	0	0	0	0.0	0	77
78	University of Toronto Faculty of Medicine	24	21	3	12.5	9	11	9	2	18.2	4	13	12	1	7.7	8	0	0	0	0.0	0	78
79	Western University Medical School	3	3	0	0.0	3	1	1	0	0.0	1	2	2	0	0.0	2	0	0	0	0.0	0	79
80	Foreign Colleges	186	110	76	40.9	30	80	49	31	38.7	23	106	61	45	42.5	23	1	1	0	0.0	1	80
81	Miscellaneous Medical Colleges	214	140	74	34.1	38	65	55	10	15.4	13	149	85	64	43.0	36	30	29	1	3.3	5	81
82	Undergraduates and Osteopaths	145	83	62	42.8	10	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	82
83	Totals by States	3993	.....	.....	.....	.....	3285	.....	.....	.....	.....	563	.....	.....	.....	.....	2138	.....	.....	.....	.....	83
84	Totals — Examined — Passed	.....	3501	.....	.....	.....	.....	3043	.....	.....	.....	.....	375	.....	.....	.....	.....	2061	.....	.....	.....	84
85	Totals — Examined — Failed	.....	.....	492	.....	.....	.....	.....	242	.....	.....	.....	.....	188	.....	.....	.....	.....	77	.....	.....	85
86	Percentage of Failures	.....	.....	.....	12.3	.....	.....	.....	.....	7.3	.....	.....	.....	.....	33.4	.....	.....	.....	.....	3.1	.....	86

H = Homeopathic; E = Eclectic; N = Nondescript.

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during the year, graduated in 1922, including 5 who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 2,529 students last year; therefore, 84.5 per cent. of all graduated in 1922 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which accounts for some of the remaining 14.7 per cent. Of the 1922 graduates examined, 77, or 3.1 per cent., failed, as compared with 3.7 per cent. in 1921, 7.2 per cent. in 1920, 4.2 per cent. in 1919, and 5.5 per cent. in 1918.

Nonrecognition of Medical Colleges

Table D shows for each college, from official reports, the states in which its diplomas are not given unqualified recognition. Nonrecognition is expressed by different terms in different states. Some boards list colleges as "not in good standing"; some give them as "not reputable"; in New York full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group 1 having full recognition. This table also shows the latest rating given to each college by the Council on Medical Education and Hospitals.

From the point of view of the prospective student who may be selecting a medical college, the facts in Table D are of extreme importance. There are 61, or 75.3 per cent. of all medical colleges which have complete recognition in all states. There are 7 others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining 13 colleges, he will find on graduation that his diploma is not recognized in from 9 to 47 states.

Without the information published in Table D, these state board statistics would be not only incomplete—they would be actually misleading. For example, 56 graduates of the Middlesex College of Medicine and Surgery were examined in 1922. Of these 40 passed and 16, or 28.6 per cent., failed. Note, however, that all these candidates were examined in *two* states, while graduates of this school are reported as not admitted to the examinations for licensure in 46 states!

During the ten years this table has been published, the percentages of fully recognized colleges were, respectively, 29.0, 32.3, 43.7, 65.6, 57.3, 61.3, 67.8, 71.6 and 75.3. This indicates an improvement in the medical colleges. Of the 50 states—counting in Alaska and the District of Columbia—47 state licensing boards, to some extent at least, are now utilizing their legal power to refuse recognition to medical colleges which do not meet the requirements in the respective states. In the other three states, however, either the boards do not have the authority to enforce reasonable standards, or they are not exercising it. In Connecticut the regular and homeopathic boards do not recognize low grade colleges but the eclectic board has evidently assumed the right to recognize any and all colleges not recognized by the other boards.

Arizona reports four colleges not recognized, Wyoming reports three, and Nevada reports one, while Massachusetts and the District of Columbia do not report any as not in good standing. It is evident that if the graduates of low standard medical colleges are not eligible for license in the majority of states, they will flock to these few which still grant liberal recognition. The following states, therefore—Arizona, Connecticut, Massachusetts, Nevada, Wyoming and the District of Columbia—will remain the dumping grounds for the output of low grade medical colleges until the licensing boards obtain and exercise the needed authority to bar them.

It is reported that no examinations were held during the year by the Arkansas Homeopathic Board. There are now only two remaining homeopathic colleges in the United States and none in or near Arkansas.

Table 1.—*Recognition of Medical Colleges (Based on Table D)*

	No. of Colleges
Recognized by all state boards	61
Not recognized by 1 or 2 state boards	7
Not recognized by 9 to 17 state boards	6
Not recognized by 44 to 47 state boards	7
Total	81

The Arkansas eclectic board still examines the graduates of the Kansas City College of Medicine and Surgery, a nominally eclectic affair which is not recognized in 44 other states. This board, however, is not authorized nor does it pretend to examine other than graduates of eclectic colleges. In Connecticut, however, during 1922 the eclectic board of medical examiners licensed by examination 55 applicants, only 8 of whom are found to be graduates of eclectic colleges. Of the 47 other applicants examined, only 2 were graduates of medical schools which are recognized, one each by the regular and homeopathic boards of medical examiners. It is interesting to note, also, that of these regular applicants 11

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TABLE D—RECOGNITION OF MEDICAL COLLEGES

This table, based on official reports, shows in what states diplomas granted by certain medical colleges are not recognized as an acceptable qualification for the license to practice medicine.

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears

| Marginal Number | COLLEGE | Classification by Council on Medical Education † | 1 Alabama | 2 Alaska | 3 Arizona | 4 Arkansas | 5 California | 6 Colorado | 7 Connecticut | 8 Delaware | 9 Dist. of Columbia | 10 Florida | 11 Georgia | 12 Idaho | 13 Illinois | 14 Indiana | 15 Iowa | 16 Kansas | 17 Kentucky | 18 Louisiana | 19 Maine | 20 Maryland | 21 Massachusetts | 22 Michigan | 23 Minnesota | 24 Mississippi | 25 Missouri | 26 Montana | 27 Nebraska | 28 Nevada | 29 New Hampshire | 30 New Jersey | 31 New Mexico | 32 New York | 33 North Carolina | 34 North Dakota | 35 Ohio | 36 Oklahoma | 37 Oregon | 38 Pennsylvania | 39 Rhode Island | 40 South Carolina | 41 South Dakota | 42 Tennessee | 43 Texas | 44 Utah | 45 Vermont | 46 Virginia | 47 Washington | 48 West Virginia | 49 Wisconsin | 50 Wyoming | Reported Non-Recognition by State Licensing Boards: No. of State Boards reporting full recognition | No. of State Boards reporting college not recognized | Percentage of State Boards reporting full recognition | Marginal Number |
|---|---|---

| | | |

(CONTINUED ON PAGE 1227)

claimed graduation from the St. Louis College of Physicians and Surgeons, a regular college not recognized by 47 states. It appears, therefore, that graduates who are not eligible to take the Connecticut regular medical board's examination need only apply to the eclectic board and be accepted! Furthermore, the list of those registered contains the names of 18 for whom we have no evidence that they graduated from any bona fide medical school!

STUDY OF TOTALS AND PERCENTAGES

A study of totals and percentages (see Table 2) as compared with previous years is of interest. The number examined in 1922 was 814 less than in 1920, the decrease being due to the small "war class"—2,529—which graduated in 1922. It is the smallest number examined since 1918. The fluctuations indicate similar fluctuations in the numbers of graduates in the various years. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables G, H, I, J, K and L. By all methods—examination, reciprocity under exemption, etc., 5,497 physicians were licensed during 1922, 851 less than in 1921, 1,060 less than in 1920, and 1,087 less than in 1919, but 1,312 more than in 1918, and 2,368 less than in 1906, when 7,865 physicians were licensed.

STUDY OF LARGER COLLEGES

Table E is also based on the three large tables, and gives the results of state board examinations as they affect the twenty-two larger medical colleges. Although these colleges represent 31.4 per cent. of the seventy medical colleges in the United States having graduates examined in 1922, they furnished 58.4 per cent. of all candidates for license coming from medical schools of the United States. The table shows also that the graduating of large classes by a medical college does not prove excellence of teaching, since four of these have high failure percentages.

TABLE 2.—*Results for This and Previous Years*

Year	All Candidates Examined				Recent Graduates		Older Graduates		Nondescript		Registered without Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	.....	.....	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	.....	.....	1362	5423
1918	3637	3154	483	13.3	2984	9.3	479	30.5	.....	.....	1031	4185
1919	4736	4060	676	14.3	3904	10.5	766	30.8	66	47.0	2521	6584
1920	4787	4053	734	15.3	3984	11.5	738	33.2	65	50.8	2504	6557
1921	4807	4211	596	12.4	4046	7.8	673	37.3	88	33.0	2137	6348
1922	3993	3501	492	12.3	3285	7.4	563	33.3	83	49.7	1996	5497

TOTALS EXAMINED IN FIVE YEARS

Table F shows the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of THE JOURNAL (Aug. 19, 1922, p. 637, Table 11) shows—what would be expected—that the states having the several largest numbers of medical graduates examined the largest number of physicians. New York leads, having examined 3,951 candidates in five years, followed by Illinois with 2,228. Altogether, 21,960 physicians were examined by state boards in five years, an average of 4,392 each year.

TABLE E.—*Colleges Having Fifty or More Examined*

COLLEGES	Graduates of All Years					Graduates of 1918–1922					Graduates of 1917 and Previous					Graduates of 1922					Marginal No., Table A
	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	
Rush Medical College	172	163	9	5.2	24	160	155	5	3.1	21	12	8	4	33.3	9	134	129	5	3.7	14	16
Jefferson Medical College	139	133	6	4.3	26	130	127	3	2.3	24	9	6	3	33.3	7	34	33	1	8.8	14	55
University of Pennsylvania School of Medicine	126	121	5	4.0	20	114	112	2	1.8	18	12	9	3	25.0	7	16	16	0	0.0	8	57
Tufts College Medical School	115	110	5	4.3	11	107	104	3	2.8	11	8	6	2	25.0	5	67	66	1	1.5	4	29
Harvard University Medical School	113	112	1	0.9	28	102	102	0	0.0	28	11	10	1	9.1	7	55	55	0	0.0	13	27
Northwestern University Medical School	110	105	5	4.5	19	106	102	4	3.8	17	4	3	1	25.0	3	97	94	3	3.1	12	15
Johns Hopkins University Medical Department	104	101	3	2.9	17	88	86	2	2.3	14	16	15	1	6.3	7	46	45	1	23.9	6	23
Columbia University College of Phys. and Surgs.	95	94	1	1.1	9	85	84	1	1.2	6	10	10	0	0.0	7	54	53	1	1.9	1	41
University and Bellevue Hosp. Med. College	95	95	0	0.0	12	90	90	0	0.0	9	5	5	0	0.0	5	79	79	0	0.0	5	46
Tulane University School of Medicine	93	91	2	2.1	14	90	89	1	1.1	13	3	2	1	33,3	3	64	63	1	1.6	9	22
University of Michigan Medical School	87	85	2	2.3	11	83	82	1	1.2	8	4	3	1	25.0	4	68	68	0	0.0	4	31
University of Minnesota Medical School	86	85	1	1.2	6	85	84	1	1.2	6	1	1	0	0.0	1	76	76	0	0.0	3	32
Univ. of Md. School of Med. and Coll. of P. & S.	79	77	2	2.5	17	74	72	2	2.7	16	5	5	0	0.0	4	52	52	0	0.0	10	24
Meharry Medical College	78	49	29	37.2	15	57	42	15	26.3	12	21	7	14	66.7	7	32	31	1	15.6	7	61
Emory University Medical College	76	74	2	2.6	8	71	69	2	2.8	7	5	5	0	0.0	3	63	62	1	1.6	6	10
St. Louis College of Physicians and Surgeons	62	24	38	61.3	13	57	24	33	22.8	11	5	0	5	100.0	3	28	14	14	50.0	7	35
University of Illinois College of Medicine	61	60	1	1.6	10	55	54	1	1.8	6	6	6	0	0.0	5	55	54	1	1.8	6	17
University of Cincinnati College of Medicine	59	58	1	1.7	7	59	58	1	1.7	7	0	0	0	0.0	0	46	46	0	0.0	3	50
Washington University Medical School	57	56	1	1.8	13	52	52	0	0.0	10	5	4	1	20.0	4	36	36	0	0.0	5	37
Middlesex College of Medicine and Surgery	56	40	16	28.6	2	56	40	16	28.6	2	0	0	0	0.0	0	27	20	7	25.9	2	28
Hahnemann Med. Coll. and Hosp., Philadelphia	54	43	11	20.4	6	52	41	11	21.1	6	2	2	0	0.0	2	1	1	0	0.0	1	54
St. Louis University School of Medicine	51	50	1	2.0	10	46	45	1	2.2	9	5	5	0	0.0	3	36	36	0	0.0	7	36
Totals	1968	1826	142	7.2	....	1819	1714	105	5.8	....	149	112	37	24.8	....	1166	1130	37	3.2		

This table is interesting, since it gives data relating to the 22 medical colleges having over fifty graduates examined arranged according to the number. This allows of comparison between colleges having classes of nearly equal size. Rush Medical College had the largest number of graduates examined last year. The position was held by Jefferson Medical College from 1919 to 1921; by the Chicago College of Medicine and Surgery from 1913 to 1918, inclusive, by the University of Illinois College of Medicine in 1912. The higher places from the standpoint of the numbers examined, however, do not always mean the higher rank from the standpoint of scholarship as evidenced by the percentages of failures. The four highest failure percentages are for St. Louis College of Physicians and Surgeons, 61.3; Meharry Medical College, 37.2; Middlesex College of Medicine and Surgery, 28.6, and Hahnemann Medical College and Hospital of Philadelphia, 20.4.

Of the 7 colleges having 100 or more examined, all this year have failure percentages of less than 10. Of the 15 colleges having between 50 and 100 graduates examined, eleven had failure percentages of less than 10, and four had over 20 per cent.

The average percentage of failures for these larger colleges for graduates of 1917 and previous years was 24.8; for graduates of 1918 to 1922, inclusive (recent graduates), 7.2; for graduates of 1922, 3.2, and for graduates of all years, 7.2. Of the 3,366 graduates of the 70 colleges in the United States which had graduates examined by the state boards in 1922, these larger colleges (31.4 per cent. of all schools having graduates) furnished 1,968, or 58.4 per cent., of the graduates examined.

TOTAL REGISTRATION IN 1922

The tables thus far described have referred only to the results of examinations and to those registered on that basis. Table G, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether 5,497 physicians were registered by all methods during 1922, as compared with 6,348 in 1921, 6,557 in 1920, 6,584 in 1919, and 4,185 in 1918. The total registered in 1918—4,185—was the lowest number registered in any year since the publication of these statistics was begun, owing undoubtedly to the war. In 1919 the total increased by 2,399 and was the largest number since 1912. There has been a steady decrease each year since 1919. There has likewise been a decrease in reciprocal registrations since 1919.

Over 100 were registered by all methods in fourteen states; over 200 in eight; and over 300 in four, the largest numbers being 748 in New York; 630 in California; 335 in Illinois, and 313 in Pennsylvania. Of those licensed in California, 422, or 67 per cent., were registered by the endorsement of licenses granted in other states. Several boards examined and licensed osteopaths as physicians and surgeons. California registered 48; Massachusetts licensed 13; Colorado, 8, and Texas, 5. Altogether 74 osteopaths—graduates of colleges decidedly inferior to the lowest grade medical schools—were licensed as physicians and surgeons.

TABLE F.—*Physicians Examined by State Boards 1918 to 1922, Inclusive*

STATES	1918		1919		1920		1921		1922		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	20	0	23	12	34	2	37	3	31	1	172	145	27	15.7
Arizona	33	8	48	5	33	14	6	10	7	2	166	127	39	23.5
Arkansas	68	4	70	7	48	28	46	6	30	1	308	262	46	14.9
California	203	71	109	56	150	34	184	56	208	67	1,138	854	284	24.9
Colorado	44	10	57	16	56	46	44	16	32	34	355	233	122	34.4
Connecticut	39	14	94	24	97	26	145	27	114	26	606	489	117	19.3
Delaware	10	1	19	1	6	3	8	0	17	0	65	60	5	7.7
Dist. of Columbia	37	4	51	6	61	5	42	11	54	7	278	245	33	11.9
Florida	21	8	64	17	72	18	50	24	56	21	351	263	88	25.1
Georgia	48	2	60	5	70	6	68	0	68	1	328	314	14	4.2
Idaho	16	0	31	0	27	2	14	0	11	0	101	99	2	2.0
Illinois	367	57	475	96	404	66	348	61	286	68	2,228	1,880	348	15.6
Indiana	43	6	34	0	64	0	65	0	35	1	248	241	7	2.8
Iowa	50	1	78	4	76	2	61	0	49	0	321	314	7	2.2
Kansas	20	0	32	3	32	2	46	1	28	5	169	158	11	6.5
Kentucky	40	1	31	7	30	4	54	5	37	4	214	192	22	10.3
Louisiana	50	6	80	6	81	2	74	7	55	4	365	340	25	6.8
Maine	27	3	43	3	24	1	35	2	28	0	166	157	9	5.4
Maryland	54	5	145	11	107	11	123	7	74	3	540	503	37	6.9
Massachusetts	228	18	305	41	217	60	225	93	244	56	1,496	1,219	277	18.4
Michigan	97	4	52	0	161	2	176	2	119	4	617	605	12	1.9
Minnesota	68	0	98	0	90	4	120	1	107	3	491	483	8	1.6
Mississippi	12	0	18	3	30	1	15	2	27	2	110	102	8	1.8
Missouri	143	21	136	1	117	5	132	12	107	16	690	635	55	8.0
Montana	20	7	26	12	25	3	17	2	11	2	125	99	26	20.8
Nebraska	44	1	102	5	27	0	76	3	42	0	300	291	9	3.0
Nevada	5	1	13	0	14	2	3	1	13	1	53	48	5	9.4
New Hampshire	4	2	5	0	6	1	4	1	12	0	35	31	4	11.4
New Jersey	16	1	61	1	38	1	26	3	25	10	182	166	16	8.8
New Mexico	2	0	2	0	3	0	1	0	0	0	8	8	0	0.0
New York	456	117	627	189	703	246	806	128	599	80	3,951	3,191	760	19.2
North Carolina	49	3	59	9	70	3	51	4	37	8	293	266	27	9.2
North Dakota	6	3	6	4	13	3	6	5	6	2	54	37	17	31.5
Ohio	142	6	156	8	179	5	207	14	183	6	906	867	39	4.3
Oklahoma	24	0	34	0	14	0	38	1	20	2	133	130	3	2.3
Oregon	35	7	39	3	61	19	31	12	23	7	237	189	48	20.3
Pennsylvania	168	22	213	28	288	41	303	34	265	18	1,380	1,237	143	10.4
Rhode Island	13	4	20	5	25	5	27	1	27	0	127	112	15	11.8
South Carolina	17	12	45	14	33	8	28	2	24	1	184	147	37	20.1
South Dakota	14	0	20	1	38	2	19	1	19	1	114	110	4	3.5
Tennessee	103	19	96	7	82	0	102	0	66	1	475	448	27	5.7
Texas	82	2	89	3	103	0	77	1	77	0	434	428	6	1.4
Utah	10	1	29	0	18	1	17	1	11	3	91	85	6	6.6
Vermont	24	0	22	0	18	0	31	0	19	0	114	114	0	0.0
Virginia	50	6	65	12	55	4	61	4	55	0	312	286	26	8.3
Washington	50	7	63	10	24	5	20	7	6	6	207	172	35	16.9
West Virginia	16	4	35	15	41	10	37	11	42	9	220	171	49	22.3
Wisconsin	34	2	34	0	46	1	50	6	60	3	245	233	12	5.3
Wyoming	22	2	19	8	9	0	4	1	8	3	76	62	14	18.4
U. S. Territories and Possessions	1	0	27	18	33	21	42	7	28	4	181	131	50	27.6
Totals	3,637		4,736		4,787		4,807		3,993		21,960			
Registered	3,154		4,060		4,053		4,211		3,501		18,979			
Rejected	483		676		734		596		492		2,981			
Per Cent. Rejected	13.2		14.3		15.4		12.4		12.3		13.5			

This table gives the number of physicians who passed and failed in the examinations in each state during the last five years. The last four columns give the totals and the percentage rejected by each state.

Four states registered over 1,000 candidates by examination in the last five years, these being New York, Illinois, Pennsylvania and Massachusetts. Altogether 21,960 physicians were registered by examination in the five years with an average of 4,392 each year.

The five states having the highest percentages of failures in the five years were Colorado, 34.4; North Dakota, 31.5; Florida, 25.1; California, 24.9, and Arizona, 23.5. California and Colorado admit osteopaths to their examinations for physicians and surgeons and would be expected to have high percentages rejected. On the other hand, in many states, boards refuse to recognize low-grade colleges (see Table D) and thereby eliminate many inferior candidates prior to the examination, as a result, the percentages of failures at examinations in these states are lower than otherwise they would be. For example, Ohio rejected only 4 per cent. of those who took its examinations, but refused to admit graduates of eight inferior medical colleges to its examinations. The lowest failure percentages were in New Mexico, 0.0; Texas, 1.4; Minnesota, 1.6; Mississippi, 1.8; Michigan, 1.9.

TABLE G.—*Registration by State Boards During the Year 1922*

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1918-1922	Graduates, 1917 and Previous	Nongraduates and graduates of Nondescript Colleges			
Alabama	26	5	....	12	....	43
Arizona	5	2	....	30	....	37
Arkansas	21	9	....	36	....	66
California	167	9	32	422	....	630
Colorado	22	2	8	87	....	119
Connecticut	73	16	25	30	6	150
Delaware	17	0	....	5	....	22
District of Columbia	51	3	....	15	....	69
Florida	24	32	....	0	....	56
Georgia	68	0	....	16	....	84
Idaho	6	5	....	11	....	22
Illinois	275	11	....	49	....	335
Indiana	32	3	....	34	....	69
Iowa	48	1	....	21	....	70
Kansas	26	2	....	58	....	86
Kentucky	32	5	....	31	1	69
Louisiana	50	5	....	9	....	64
Maine	24	4	....	6	....	34
Maryland	70	4	....	19	....	93
Massachusetts	196	35	13	0	....	244
Michigan	112	7	....	83	....	202
Minnesota	99	8	....	93	....	200
Mississippi	24	2	1	16	....	43
Missouri	93	13	1	23	....	130
Montana	7	4	....	0	....	11
Nebraska	40	2	....	20	....	62
Nevada	8	1	....	11	....	24
New Hampshire	6	6	....	0	....	12
New Jersey	21	4	....	112	....	137
New Mexico	0	0	....	2	39	41
New York	538	61	....	143	6	748
North Carolina	37	0	....	29	....	66
North Dakota	4	2	....	8	....	14
Ohio	171	12	....	78	....	261
Oklahoma	16	4	....	58	....	78
Oregon	16	7	....	24	....	47
Pennsylvania	239	26	....	48	....	313
Rhode Island	20	7	....	0	....	27
South Carolina	18	6	....	6	....	30
South Dakota	13	6	....	3	....	22
Tennessee	58	7	....	0	....	65
Texas	71	4	2	101	....	178
Utah	11	0	....	16	....	27
Vermont	18	1	....	2	....	21
Virginia	52	3	....	25	....	80
Washington	5	1	....	53	....	59
West Virginia	40	2	....	40	....	82
Wisconsin	50	9	1	50	....	110
Wyoming	4	4	....	9	....	17
U. S. Terr. and Poss.	19	9	....	0	....	28
Totals	3043	375	83	1944	52	5497

This table shows the total number registered during 1922 in each state by examination, by reciprocity, and by the endorsement of credentials. The first three columns show those registered by examination, including recent graduates, older practitioners and nongraduates or graduates of nondescript colleges—including also osteopaths who were granted licenses as physicians and surgeons. The fourth column shows the number licensed by the endorsement of licenses issued by other states (reciprocity) and of certificates of the National Board of Medical Examiners. The fifth column shows those licensed under various exemption clauses in the practice acts, such as because of high professional standing or (in New Mexico) by the endorsement of diplomas of recognized medical schools. California licensed as physicians 32 out of 66 graduates of osteopathic colleges who took the examination, and Colorado so licensed 7 out of 12 osteopaths.

The last column shows the total number of physicians registered by all methods in each state during 1922. Four states registered over 300 each, these being in New York, 748; California, 630; Illinois, 335, and Pennsylvania, 313. Twenty states registered less than fifty physicians each. The total registration by all methods was 5,497, a decrease of 851 below the total registration in 1921.

TABLE H.—*Registration by State Boards for Five Years*

STATE	1918	1919	1920	1921	1922	Totals
Alabama	26	55	54	51	43	229
Arizona	33	48	33	6	37	157
Arkansas	81	130	97	97	66	471
California	342	445	651	581	630	2,649
Colorado	97	141	138	123	119	618
Connecticut	46	107	108	164	150	575
Delaware	24	28	7	14	22	95
District of Columbia	41	66	77	57	69	310
Florida	21	64	72	50	56	263
Georgia	72	111	114	86	84	467
Idaho	31	49	41	33	22	176
Illinois	392	568	482	399	335	2,176
Indiana	58	65	158	102	69	452
Iowa	79	149	132	126	70	556
Kansas	56	89	96	99	86	426
Kentucky	54	68	51	94	69	336
Louisiana	57	98	93	85	64	397
Maine	32	51	30	41	34	188
Maryland	73	179	164	160	93	669
Massachusetts	228	305	217	225	244	1,219
Michigan	145	182	287	248	202	1,064
Minnesota	97	179	174	215	200	865
Mississippi	15	46	47	34	43	185
Missouri	186	232	177	165	130	890
Montana	20	26	26	19	11	102
Nebraska	77	167	75	111	62	492
Nevada	16	22	31	6	24	99
New Hampshire	7	18	21	18	12	76
New Jersey	101	263	171	164	137	836
New Mexico	33	50	46	38	41	208
New York	496	711	779	879	748	3,613
North Carolina	67	82	114	101	66	430
North Dakota	11	18	28	14	14	85
Ohio	175	285	311	326	261	1,358
Oklahoma	73	116	71	108	78	446
Oregon	35	39	65	31	47	217
Pennsylvania	172	269	316	334	313	1,404
Rhode Island	13	20	25	27	27	112
South Carolina	17	45	41	40	30	173
South Dakota	14	20	49	24	22	129
Tennessee	114	123	83	102	65	487
Texas	149	275	271	195	178	1,068
Utah	23	54	32	29	27	165
Vermont	25	24	20	34	21	124
Virginia	78	127	85	82	80	452
Washington	59	105	127	158	59	508
West Virginia	41	76	95	74	82	368
Wisconsin	54	148	106	119	110	537
Wyoming	28	19	34	18	17	116
U. S. Possessions	1	27	35	42	28	133
Totals	4,185	6,584	6,557	6,348	5,497	29,171

This table shows the totals registered in each state during the last five years. Increases over 1921 are noteworthy in California and Massachusetts—states where liberal licensure standards are in effect. Marked decreases are noteworthy in several states. Totals also are given for the entire five years. Eight states registered over a thousand physicians, the largest number being New York with 3,613, followed by California with 2,649, Illinois with 2,176, Pennsylvania with 1,404 and Ohio with 1,358. The lowest number registered during the five years was in New Hampshire, where only 76 physicians were registered, followed by North Dakota with 85 and Delaware with 95.

For the five years there were registered altogether 29,171 physicians with an average of 5,834 each year.

TABLE I.—*Character of Physicians Licensed in 1922*

Marginal Number	STATE	By Examination					By Reciprocity or Credentials					Totals Registered from Medical Colleges in Class				Grand Totals	Marginal Number
		Medical Colleges in Class				Totals	Medical Colleges in Class				Totals						
		A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.		
1	Alabama	24	6	0	1	31	4	2	0	6	12	28	8	0	7	43	1
2	Arizona	6	0	0	1	7	10	2	1	17	30	16	2	1	18	37	2
3	Arkansas	7	6	17	0	30	17	9	1	9	36	24	15	18	9	66	3
4	California	127	38	34	9	208	222	36	29	135	422	349	74	63	144	630	4
5	Colorado	17	1	12	2	32	45	7	2	33	87	62	8	14	35	119	5
6	Connecticut	57	2	51	4	114	7	4	28	2	36	64	6	74	6	150	6
7	Delaware	11	2	3	1	17	5	0	0	0	5	16	2	3	1	22	7
8	District of Columbia	53	0	1	0	54	6	0	3	6	15	59	0	4	6	69	8
9	Florida	42	3	1	10	56	0	0	0	0	0	42	3	1	10	56	9
10	Georgia	66	2	0	0	68	9	1	0	6	16	75	3	0	6	84	10
11	Idaho	7	3	0	1	11	8	0	1	2	11	15	3	1	3	22	11
12	Illinois	255	17	10	4	286	33	6	0	10	49	288	28	10	14	335	12
13	Indiana	34	0	0	1	35	19	4	0	11	34	53	4	0	12	69	13
14	Iowa	45	1	0	3	49	19	1	0	1	21	64	2	0	4	70	14
15	Kansas	26	0	0	2	28	30	10	4	14	58	56	10	4	16	86	15
16	Kentucky	24	6	4	3	37	20	5	0	7	32	44	11	4	10	69	16
17	Louisiana	48	3	[illegible]	[illegible]	55	6	0	0	3	9	54	3	2	5	64	17
18	Maine	27	0	0	1	28	2	0	1	3	6	29	0	1	4	34	18
19	Maryland	69	1	1	3	74	12	1	0	6	19	81	2	1	9	93	19
20	Massachusetts	178	2	51	13	244	0	0	0	0	0	178	2	51	13	244	20
21	Michigan	112	4	0	3	119	49	3	3	28	83	161	7	3	31	202	21
22	Minnesota	102	2	0	3	107	76	4	0	13	93	178	[illegible]	0	16	200	22
23	Mississippi	18	6	3	0	27	7	2	0	7	16	25	8	3	7	43	23
24	Missouri	92	3	7	5	107	17	1	0	5	23	109	4	7	10	130	24
25	Montana	10	0	0	1	11	0	0	0	0	0	10	0	0	1	11	25
26	Nebraska	40	0	0	2	42	12	5	0	3	20	52	5	0	5	62	26
27	Nevada	2	0	5	6	13	3	3	0	5	11	5	3	5	11	24	27
28	New Hampshire	8	1	1	2	12	0	0	0	0	0	8	1	1	2	12	28
29	New Jersey	21	1	0	3	25	78	4	5	25	112	99	5	5	28	137	29
30	New Mexico	0	0	0	0	0	15	5	0	21	41	15	5	0	21	41	30
31	New York	537	40	3	19	599	93	13	2	41	149	630	53	5	60	748	31
32	North Carolina	37	0	0	0	37	15	4	0	10	29	52	4	[illegible]	10	66	32
33	North Dakota	4	0	0	2	6	6	0	0	2	8	10	[illegible]	0	4	14	33
34	Ohio	136	38	0	9	183	52	8	1	17	78	188	46	1	26	261	34
35	Oklahoma	10	5	2	3	20	22	10	4	22	58	32	15	6	25	78	35
36	Oregon	18	1	0	4	23	10	0	1	13	24	28	1	1	17	47	36
37	Pennsylvania	223	22	5	15	265	38	0	0	10	48	261	22	5	25	313	37
38	Rhode Island	22	0	0	5	27	0	0	0	0	0	22	0	0	5	27	38
39	South Carolina	20	1	0	3	24	4	1	0	1	6	24	2	0	4	30	39
40	South Dakota	13	2	0	4	19	2	0	0	1	3	15	2	[illegible]	5	22	40
41	Tennessee	35	26	2	2	65	0	0	0	0	0	35	26	2	2	65	41
42	Texas	67	4	2	4	77	41	18	6	36	101	108	22	8	40	178	42
43	Utah	11	0	0	0	11	13	1	0	2	16	24	1	0	2	27	43
44	Vermont	19	0	0	0	19	2	0	0	0	2	21	0	0	0	21	44
45	Virginia	53	0	1	1	55	17	4	1	3	25	70	4	2	4	80	45
46	Washington	6	0	0	0	6	32	7	0	14	53	38	7	0	14	59	46
47	West Virginia	37	1	3	1	42	29	4	1	6	40	66	5	4	7	82	47
48	Wisconsin	49	2	1	8	60	39	3	0	8	50	88	5	1	16	110	48
49	Wyoming	1	0	3	4	8	4	3	2	0	9	5	3	5	4	17	49
50	U.S. Territories and Possessions	23	1	0	4	28	0	0	0	0	0	23	1	0	4	28	50
	Totals	2,849	253	225	174	3,501	1,150	191	91	564	1,996	3,999	444	316	738	5,497	

Of the 18 Class C graduates licensed in Arkansas, 1 was registered by the Regular Board and 17 were registered by the Eclectic Board. The Arkansas Homeopathic Board reported no candidates licensed either by examination or by reciprocity.

Of the 63 graduates of Class C colleges licensed in California, 48 were graduates of osteopathic colleges—institutions not generally recognized as medical colleges by state licensing boards. In Colorado 8 graduates of osteopathic colleges were registered.

Of the 150 physicians licensed in Connecticut, the Regular Board registered 62 Class A and 4 miscellaneous graduates and the Homeopathic Board registered 1 Class A, 1 Class B, and 2 miscellaneous graduates, while the Eclectic Board registered 1 Class A, 4 Class B, and 75 Class C graduates.

Illinois harbors the Chicago Medical School, a Class C medical college; Massachusetts has two Class C colleges, the College of Physicians and Surgeons and the Middlesex College of Medicine and Surgery, and does not have authority to refuse recognition to low grade institutions. This accounts for the larger numbers of Class C graduates licensed in these states.

Texas does not recognize Class C medical colleges, but, nevertheless, accepts graduates of osteopathic schools which are, in fact, medical schools of a still lower grade.

Eight states accepted Class C graduates through reciprocity where they did not license any by examination. On the whole 225 Class C graduates were licensed by examination, and 91 through reciprocity, a total of 316.

TOTAL REGISTRATION IN FIVE YEARS

Table H permits the reader to compare the registrations in each state for the last five years. In 1918 there was a decrease of 1,238 below 1917—due undoubtedly to the war. There was an increase of 2,399 in 1919 and slight decreases in 1920 and 1921. The decrease in 1922 was 851.

The registrations in different states are interesting. In 1918, regardless of the general decrease in other states, Massachusetts had an increase. This increase was continued in 1919 and, during the three succeeding years had increases in spite of the general decrease. Since Massachusetts does not have reciprocal relations with other states, this increase is evidently due to the board's lack of authority to refuse recognition to low-grade medical colleges and to the fact that the board cannot insist on reasonable standards of preliminary and professional education. In California and Texas the large registrations were apparently due to the generous provisions for reciprocity and for the licensing of osteopaths. In 1920 California had 651 registrations, including 501 (76.9 per cent.) who were registered by reciprocity. In 1921 and 1922 this state still retained second place in the number of registrations.

During the last five years, New York registered 3,613, followed by California with 2,649; Illinois with 2,176; Pennsylvania with 1,404, and Ohio with 1,358. The four lowest registrations are New Hampshire with 76, North Dakota with 85, Delaware with 95, and Nevada with 99.

MEDICAL TRAINING OF APPLICANTS LICENSED IN 1922

Table I is of special interest, since it shows for each state the numbers of candidates coming from medical schools rated in classes A, B and C, thereby indicating the character of the medical training of the candidates licensed during 1922. Of the 5,497 candidates registered, 3,501 were licensed by examination and 1,996 by reciprocity or on presentation of acceptable credentials. Those who graduated prior to 1907, when the first classification of medical colleges was completed by the Council on Medical Education, are included among those graduating from "Miscellaneous Colleges." Among the graduates of Class C schools are included 74 graduates of osteopathic colleges who were licensed as physicians in California, Colorado, Massachusetts and Texas.

As will be noted, the largest number of Class C graduates were licensed in Connecticut, 74; followed by California with 63; Illinois with 45, and Massachusetts with 51. All but one of the Class C graduates registered in Arkansas were licensed by the Eclectic Board, and in Connecticut all of the Class C graduates were registered by the Eclectic Board. It is noteworthy also that of the 74 registered by the Eclectic Board, 30 were graduates of regular medical schools, and 18 were

TABLE J.—*Qualifications of Physicians Licensed by State Medical Boards in Six Years*

Mar. No.	STATE	Graduates of Class A Medical Schools							Graduates of Class B Medical Schools							Graduates of Class C Medical Schools							Grads. of Misc. Colleges 6 Yrs.	Total Registrations 6 Yrs.	Mar. No.
		1917	1918	1919	1920	1921	1922	Total	1917	1918	1919	1920	1921	1922	Total	1917	1918	1919	1920	1921	1922	Total			
1	Alabama	41	18	37	39	37	28	200	3	5	13	10	7	8	46	0	0	0	3	1	0	4	27	277	1
2	Arizona	23	11	13	21	4	16	88	3	4	10	3	0	2	22	0	1	2	0	0	1	4	75	189	2
3	Arkansas	27	12	31	36	47	24	177	34	32	34	16	9	15	140	26	26	33	26	21	18	150[1]	115	582	3
4	California	114	67	154	265	235	349	1,184	97	69	69	69	85	74	463	88	116	20	61	47	63	405[2]	1,037	2,589	4
5	Colorado	50	30	56	57	54	62	309	11	7	13	7	9	8	55	1	24	33	33	25	14	120[3]	234	818	5
6	Connecticut	61	37	89	93	69	64	413	9	4	7	4	7	6	27	5	1	2	1	66	74	149[4]	60	559	6
7	Delaware	12	13	21	3	10	16	75	3	4	6	3	1	2	19	0	2	0	1	2	3	8	10	112	7
8	Dist. Columbia	23	37	55	66	45	59	285	4	1	2	4	0	0	11	2	0	2	1	1	4	10	37	343	8
9	Florida	30	3	31	33	28	42	167	4	2	5	5	5	3	24	0	0	3	3	1	1	8	108	307	9
10	Georgia	91	46	80	76	72	75	440	19	11	18	25	6	3	82	0	1	1	1	2	0	5	62	589	10
11	Idaho	15	11	25	31	12	15	109	2	1	5	2	5	3	18	1	2	2	0	0	1	6	68	201	11
12	Illinois	191	199	376	370	320	288	1,744	273	161	129	54	21	23	661	40	11	38	33	45	10	177[5]	114	2,696	12
13	Indiana	50	45	41	103	81	53	373	13	7	10	27	10	4	71	0	0	2	2	0	0	4	83	531	13
14	Iowa	60	48	104	103	97	64	476	20	13	19	15	15	2	84	1	5	4	2	6	0	18	69	647	14
15	Kansas	31	29	53	62	71	56	302	4	9	17	10	7	10	57	4	4	6	2	4	4	24	109	493	15
16	Kentucky	50	26	40	35	63	44	258	23	18	11	8	10	11	81	0	5	4	3	5	4	21	52	412	16
17	Louisiana	44	45	81	82	74	54	380	5	4	9	6	3	3	30	0	0	1	0	1	2	4	34	448	17
18	Maine	34	24	39	23	32	29	181	1	1	1	0	2	0	5	1	0	0	0	0	1	2	42	230	18
19	Maryland	85	57	154	130	140	81	647	4	3	11	3	10	2	33	2	2	4	3	4	1	16	73	769	19
20	Massachusetts	202	188	243	184	153	178	1,148	6	8	14	9	4	2	43	6	9	19	19	42	51	146[5]	100	1,438	20
21	Michigan	150	118	122	215	195	161	961	18	3	19	24	26	7	97	1	1	0	1	2	3	8	196	1,262	21
22	Minnesota	86	82	140	146	190	178	812	3	5	16	14	7	6	51	0	0	1	1	0	0	2	90	968	22
23	Mississippi	17	12	32	34	27	25	147	9	0	6	4	4	8	31	1	0	1	1	0	3	6	38	222	23
24	Missouri	101	85	159	127	136	109	717	27	26	25	32	14	4	128	61	52	11	5	5	7	141[6]	110	1,096	24
25	Montana	28	7	15	18	14	10	92	7	4	5	2	0	0	18	0	0	1	1	0	0	2	33	145	25
26	Nebraska	62	55	119	44	82	52	414	7	7	22	17	12	5	70	8	0	7	2	5	0	22	85	591	26
27	Nevada	8	3	7	10	1	5	34	2	3	2	2	0	3	12	2	0	5	6	0	5	18	60	123	27
28	New Hampshire	12	3	14	17	10	8	64	0	0	0	0	1	1	2	0	1	1	0	1	1	4	24	94	28
29	New Jersey	82	63	187	111	113	99	645	13	6	22	11	15	5	72	1	1	0	7	1	5	15	226	958	29
30	New Mexico	28	10	17	14	20	15	104	4	4	11	7	3	5	34	1	0	1	0	0	0	2	135	275	30
31	New York	530	417	600	675	758	630	3,610	57	44	66	55	73	53	348	17	7	3	0	1	5	33	257	4,248	31
32	North Carolina	55	46	67	91	76	52	387	19	6	5	12	5	4	51	1	1	1	2	1	0	6	72	516	32
22	North Dakota	16	3	11	23	10	10	73	4	1	4	3	0	0	12	0	0	0	0	0	0	0	24	109	33
34	Ohio	170	120	194	228	189	188	1,089	43	33	51	44	84	46	301	1	1	1	0	3	1	7	205	1,603	34
35	Oklahoma	35	10	28	35	50	32	190	52	26	45	13	10	15	161	0	5	5	5	26	6	53	184	588	35
36	Oregon	23	18	27	41	19	28	156	2	4	0	6	1	1	14	4	0	2	3	2	1	12	72	254	36
37	Pennsylvania	224	157	239	289	289	261	1,459	24	7	18	16	16	22	103	0	0	1	1	14	5	21	79	1,662	37
38	Rhode Island	19	10	14	20	15	22	100	0	1	2	1	1	0	5	0	1	1	1	1	0	4	25	134	38
38	South Carolina	31	16	42	36	31	24	180	3	0	3	1	2	2	11	0	0	0	1	3	0	4	15	210	39
40	South Dakota	21	9	8	33	17	15	103	2	2	2	3	2	2	13	0	1	1	2	1	0	5	32	154	40
41	Tennessee	95	40	69	54	69	35	362	63	58	25	24	30	26	226	6	14	23	2	0	2	47	19	654	41
42	Texas	101	71	156	159	116	108	711	38	30	38	16	18	22	162	5	21	16	28	34	8	112[7]	259	1,244	42
43	Utah	15	14	35	24	21	24	133	3	2	6	0	1	1	13	0	1	3	2	4	0	10	29	185	43
44	Vermont	11	24	20	20	29	21	125	1	0	2	0	0	0	3	0	0	0	0	0	0	0	9	137	44
45	Virginia	72	54	102	70	75	70	443	4	7	8	7	2	4	32	1	3	0	1	2	2	9	50	534	45
46	Washington	35	26	49	60	73	38	281	8	9	13	8	19	7	64	1	10	9	3	2	0	25	195	565	46
47	West Virginia	52	15	47	71	48	66	299	14	13	15	10	8	5	65	1	0	1	3	1	4	10	78	452	47
48	Wisconsin	44	27	97	78	87	88	421	17	9	21	13	12	5	77	0	0	2	1	9	1	13	77	604	48
49	Wyoming	11	2	12	17	10	5	57	5	8	11	6	1	3	34	2	12	5	1	1	5	26	42	143	49
50	U. S. Territories and Possessions	1	0	16	25	31	23	93	1	0	6	0	2	1	10	0	0	0	1	2	0	3	26	135	50
	Totals	3,369	2,456	4,368	4,597	4,445	3,999	23,234	988	682	872	631	585	444	4,202	297	342	278	275	394	316	1,902	5,256	34,594	

1. Of the 150 graduates of low grade colleges licensed in Arkansas during the last five years, 147 were licensed by the eclectic board of medical examiners and only 2 by the regular board.

2. During the five years, 342 graduates of low grade colleges were licensed in California, including 248 osteopaths who were licensed as physicians.

3. Of the 106 Class C graduates licensed in Colorado, 73 were osteopaths who were licensed with the same privileges as physicians.

4. During the last two years the Connecticut eclectic board has registered 145 graduates of Class C colleges, or those for whom no evidence of their having graduated anywhere has been received.

5. Illinois and Massachusetts are the homes of Class C medical colleges, which accounts for the large number of Class C graduates licensed each year.

6. Although Missouri has three Class C medical colleges in the state, it is noteworthy that the numbers licensed have decidedly decreased since 1918.

7. Of the 112 graduates of low grade institutions licensed in Texas during the five years, only 14 were licensed by examination, while 98 were licensed by reciprocity. Of those licensed, 45 were osteopaths who were licensed with full privileges as physicians.

TABLE K.—*Physicians Registered Through Reciprocity by State Examining Boards During 1922*

Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
	Total Regis. by Recip. Ex. State	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U.S.A., U.S.N., etc	Nat. Bd. Med. Ex.	U.S. Territories	Foreign
Alabama	12									3						3					2	1																					3											
Arizona	30	1			1	1			2				1	1	2			1				1			3							2						1		1							1					4
Arkansas	36	1							1		2		2	1		1	1	1					1	6	5		1									2					7	4										
California	422		10	3		9	2		3		3	4	53	10	21	11	2	2	3	4	7	15	12		21	8	16	5		5		24		7	15	5	20	16		3	5	7	6	8	2	1	28	4	9	1	28		4	
Colorado	87	1		2	1								16	1	4	5	2	1		1	3	3	1	2	15		5				1	6		1	2	2		1				3	1		1		1	2	2	1		
Connecticut	30			13							2		1		1					1	1											5	1					1					2		1	1						
Delaware	5																			1			1														2															1	
Dist. of Col.	15															1				2			1	1	2					1							1				2	1		2		1						
Georgia	16	1							1									1		3	1	1								2			1									2			2						
Idaho	11				1								1													4									2								2		1						
Illinois	49													2	3	1	1	1		3		2		1	14		2			1		1		1	4			4				1		1			4	1	1			
Indiana	34			1	1				1		1		8				6		1	1		2	1									2			4							3			2						
Iowa	21						1						3						1			3			4		4								2	1						1							1		
Kansas	58	1		1		1		1			1		14	1	3		1	1		2				1	14		6						1	1	3							2	1				1		1		
Kentucky	31							1					3	3	1					2	1		2	1								1			3							12										1
Louisiana	8	1			1						1													3																		1	2									
Maine	6	1																											3							1								1						
Maryland	19				1			1	2				1		1			1					1		1					2		1	1		2						1			1		2				
Michigan	83		1	1		1	1	1		3			21	4	4		2	2	1	5	4		2		7		2					6		2	5	1		1				1	1	1	1			1			
Minnesota	93				4				4				18	3	12			3	1	5		6			5		4			1				3	5		4			3		1		1			1		6		
Mississippi	16	2		2							1						1	4			1		1							1					1							2										
Missouri	23	1				1					1		7	4	1	3	2							2													1															
Nebraska	20												7		2	2				1		2							1													1	2				2					
Nevada	11				4							1	1						1			1			1												1						1									
New Jersey	112						2	4	1		1		1		1		1			6		2			1							56	2		1		20		1		2	1		4			3			2		
New Mexico	2															1																											1									
New York	143	2			7		5	4	3		2		18	5			2		2	2	13	6	2		5		1		1	4					12		1	13	4			2		2	3	15	1		3				3
No. Carolina	29										5			1							1	1								1		1			1	1		1	1	9		1			4				1			
No. Dakota	8												1	1								1	5																													
Ohio	78	2		1	1	1			2				9	2		1	5			4		13		2	8		2					8						10					2		1	2	2				
Oklahoma	58			11	1				1		2		1	2	2	4	2	1			1		1		7		5			1		1					1				6	3	1		1		1	1		1		
Oregon	24				2							2	5		2	1						1	1				4							1				1				1			3						
Penns'vania	48					1			3		1			1	2					3	7		5							1	5		2	1		1			5						3		1		3	3		
So. Carolina	8	1									2							2		1																															
So. Dakota	3																						2																									1				
Texas	101	1	1	7	1	1					1		14		1	6	5	10		2	4	1	1	2	6		1			1	1	4			2	9	1	2		1		9		1		1		2				2
Utah	16				1								2												3							3			1			1							1			4			
Vermont	2																		1																										1						
Virginia	25	1						1	1				1					1		5												1	2		3	1		2		2		2				2				
Washington	53	1			1							3	12		2	3	1			1			1			11	3							2	3		2	1				1				1			2	2	
W. Virginia	40	1				1				2			1	2			2	1		5		1			1				1		1			3			5		2			1		9					1	
Wisconsin	50			1									22			1	1						3	4	2						2				1												13			
Wyoming	9												2										1				1		1														1	1	1			1				
Totals	1944	19	12	43	28	15	11	12	27	1	34	10	246	44	65	41	40	33	14	64	38	70	40	24	126	23	57	5	7	25	3	127	8	18	70	27	26	90	6	24	9	75	34	17	13	46	37	24	27	4	52	15	1	10
Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

This table shows the number of physicians registered by each state through reciprocity during 1922. Read from left to right, it shows the total number of physicians registered through reciprocity in the state named and the number of such candidates coming from each of the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named in the corresponding lines, and at the bottom the total number of candidates leaving the state to go elsewhere. For example, read from left to right the table shows that North Dakota registered 8 candidates through reciprocity in 1922 and that of these candidates 1 each came from Illinois, Indiana and Michigan, and 5 from Minnesota. Read from above downward the table shows that 18 physicians went from North Dakota, and of these 7 went to California, 1 each went to Colorado, Illinois, Kansas, and Oregon, 2 each to Michigan and Washington, and 3 to Minnesota. The line at the bottom shows in what states physicians who registered through reciprocity obtained their original licenses. The total number licensed by reciprocity was 1,944, or 246 less than in 1921. This total includes 20 osteopaths, 16 in California, 1 in Colorado, and 3 in Texas, who were granted full privileges as physicians and surgeons.

TABLE L.—*Reciprocal Registration in Five Years (Showing What States Issued Original Licenses)*

STATE	Physicians Going from States Named During					Totals
	1918	1919	1920	1921	1922	
Alabama	12	27	32	31	19	121
Arizona	4	7	6	8	12	37
Arkansas	24	72	58	33	43	230
California	5	14	23	23	28	93
Colorado	10	22	13	18	15	78
Connecticut	2	12	9	10	11	44
Delaware	11	8	6	10	12	47
District of Columbia	14	30	37	20	27	128
Florida	2	2	3	4	1	12
Georgia	10	38	47	40	34	169
Idaho	0	7	11	14	10	42
Illinois	125	325	367	304	246	1367
Indiana	30	57	52	50	44	233
Iowa	40	71	88	81	65	345
Kansas	28	75	65	54	41	263
Kentucky	31	71	68	56	40	266
Louisiana	5	36	43	40	33	157
Maine	8	18	16	26	14	82
Maryland	25	61	62	63	64	275
Massachusetts	10	36	59	31	28	174
Michigan	24	69	58	70	70	291
Minnesota	20	27	66	47	40	200
Mississippi	11	48	17	24	24	124
Missouri	65	144	143	158	126	636
Montana	1	8	17	41	23	90
Nebraska	36	60	71	48	57	272
Nevada	7	8	9	5	5	34
New Hampshire	4	24	5	10	7	50
New Jersey	15	30	27	15	25	112
New Mexico	6	9	3	3	3	24
New York	74	197	163	135	127	696
North Carolina	16	24	15	21	8	84
North Dakota	4	17	25	15	18	79
Ohio	27	73	98	58	70	326
Oklahoma	28	53	26	27	27	161
Oregon	7	15	18	6	26	72
Pennsylvania	57	113	123	92	90	475
Rhode Island	1	4	1	3	6	15
South Carolina	4	5	11	10	24	54
South Dakota	6	3	15	11	9	44
Tennessee	34	124	102	91	75	426
Texas	23	38	33	43	34	171
Utah	6	17	22	21	17	83
Vermont	7	25	18	11	13	74
Virginia	36	61	59	52	46	254
Washington	12	21	23	27	37	120
West Virginia	16	41	41	18	24	140
Wisconsin	13	51	35	30	27	156
Wyoming	4	6	7	8	4	29
Army, Navy, P. H. Service	10	130	108	61	52	361
National Board of Medical Examiners	1	19	18	23	15	76
U. S. Territories and Possessions	1	4	8	2	8	23
Foreign and Misc.	0	2	8	8	10	28
Totals	972	2459	2458	2110	1944	9943

This table shows that 9,943 candidates were registered through reciprocity during the last five years. In 1918 there was a marked decrease due largely to the war. In 1919 there was an increase of 1,487 due to a large migration of physicians following the return from military service, and in 1920 this large number was continued. In 1921, there was a reduction of 349, and in 1922 there was a further reduction of 166. It will be noted that 130 were registered in 1919 on the basis of military service, the numbers since being 108 in 1920, 61 in 1921, and 52 in 1922. A study of the totals for the different states shows that of the 9,943 registered during the five years, 1,367 obtained their original licenses in Illinois. New York could easily lead Illinois but reciprocal relations have been established with only nine other states where Illinois has such relations with twenty-nine.

registered for whom it is doubtful whether they graduated anywhere.

California registered 74 Class B graduates, the largest number, followed by New York with 53, and Ohio with 46. Only Class A graduates were registered either by examination or by reciprocity in Montana, North Dakota, Rhode Island and Vermont.

Source of Candidates Registered in Six Years

Of the 5,497 physicians registered by all methods in 1922, 3,999, or 72.8 per cent., graduated from Class A medical colleges; 444, or 8.1 per cent., from Class B medical colleges; 316, or 5.7 per cent., from Class C medical colleges, and 738, or 13.4 per cent., graduated prior to 1907, when the first classification of medical colleges was prepared or came from foreign medical colleges. By comparing these figures with the results for the previous five years as shown in Table 3, it is noteworthy that the percentages from Class B and Class C colleges are steadily decreasing and that the percentage of graduates of Class A colleges are increasing notwithstanding the fact that in a few states osteopaths are being licensed as physicians and surgeons.

Table 3.—*Source of Physicians Licensed in Six Years*

Year	Medical Colleges in						Miscellaneous and Foreign		Total
	Class A		Class B		Class C				
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	
1917	3,369	62.1	988	18.2	297	4.3	769	14.4	5,423
1918	2,456	58.7	682	16.3	342	8.2	705	16.8	4,185
1919	4,368	66.4	872	13.2	278	4.2	1,066	16.2	6,584
1920	4,597	70.2	631	9.6	275	4.2	1,054	16.0	6,557
1921	4,445	70.0	585	9.2	394	6.2	924	14.6	6,348
1922	3,999	72.8	444	8.1	316	5.7	738	13.4	5,497
Totals	23,234	64.3	4,202	12.1	1,902	5.5	5,256	15.2	34,594

Training of Physicians Registered in Six Years

Table J is added this year and shows the character of the training of physicians registered during the last 6 years. It is noteworthy that of the 34,549 physicians registered in the six years, 23,234, or 64.3 per cent., were graduates of Class A medical schools, 4,202, or 12.1 per cent., were graduates of Class B schools, and 1,902, or 5.5 per cent., were graduates of Class C schools. Graduates of foreign medical schools and others who graduated prior to 1907 from schools which have not always since been rated in Class A have been grouped under "Miscellaneous Graduates," and during the six years there were 5,256 of these graduates registered.

It is noteworthy that the largest number of candidates who graduated from Class C schools or osteopathic colleges was 405 in California, the next highest numbers being 177 in Illinois, 150 in Arkansas, 149 in Connecticut, 146 in Massachusetts, 141 in Missouri, and 112 in Texas.

Registration by Reciprocity

Table K gives those registered without examination on presentation of satisfactory credentials, which included a license issued by some other state or by the National Board of Medical Examiners. Some state boards—Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina, as examples—accept a physician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. Had not reciprocal relations been established by the forty states shown in this Table, 1,944 physicians—many of whom had been in practice for ten or more years—would have been compelled to undergo the ordeal of a second trying examination.

Table L shows in what states were granted the original licenses of those who were registered elsewhere under the reciprocity provision during the last five years. Of the 9,943 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 1,367 who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois,[3] only 696 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-nine states, while New York has relations with only nine.

Improved Standards of Licensure

Table M shows the states which have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine

Table M.—*State Requirements of Preliminary Education*

There are now forty-two states (counting Alaska Ter.) which have adopted requirements of preliminary education in addition to a standard four-year high school education. Of this number 38 now require the two year standard. These states, the number of college years required and the time the higher requirements became or become effective are as follows:

State Examining Board of	One Year of College Work		Two Years of College Work	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates
Alabama	.....	....	1915-16	1919
Alaska	1914-15	1918	1918-19	1922
Arizona	1914-15	1918	1918-19	1922
Arkansas [1]	1915-16	1919	1918-19	1922
California	1915-16	1919	.....	....
Colorado	1908-09	1912	1910-11	1914
Connecticut	1911-12	1915	.....	....
Delaware*	.....	....	.....	....
District of Columbia†	.....	....	.....	....
Florida	1914-15	1918	1918-19	1922
Georgia	.....	....	1918-19	1922
Idaho	.....	....	1915-16	1919
Illinois	1915-16	1919	1918-19	1922
Indiana	1910-11	1914	1911-12	1915
Iowa	.....	....	1911-12	1915
Kansas	1910-11	1914	1918-19	1922
Kentucky	1914-15	1918	1918-19	1922
Louisiana	1915-16	1919	1918-19	1922
Maine	1915-16	1919	1916-17	1920
Maryland	1914-15	1918	1918-19	1922
Massachusetts†	.....	....	.....	....
Michigan	1914-15	1918	1918-19	1922
Minnesota	.....	....	1908-09	1912
Mississippi	1915-16	1919	1919-20	1923
Missouri*	.....	....	.....	....
Montana	1914-15	1918	1918-19	1922
Nebraska*	.....	....	.....	....
Nevada*	.....	....	.....	....
New Hampshire	1914-15	1918	1915-16	1919
New Jersey	1915-16	1919	1917-18	1921
New Mexico	1914-15	1918	1918-19	1922
New York	1917-18	1921	1918-19	1922
North Carolina	1914-15	1918	1918-19	1922
North Dakota	.....	....	1908-09	1912
Ohio*	.....	....	.....	....
Oklahoma	1914-15	1918	1917-18	1921
Oregon	.....	....	1920-21	1924
Pennsylvania	1914-15	1918	.....	....
Rhode Island	1914-15	1918	1918-19	1922
South Carolina	.....	....	1918-19	1922
South Dakota	1908-09	1912	1911-12	1915
Tennessee	1916-17	1920	1918-19	1922
Texas	1914-15	1918	.....	....
Utah	1913-14	1917	1922-23	1926
Vermont	1913-14	1917	1918-19	1922
Virginia	1914-15	1918	1917-18	1921
Washington	1914-15	1918	1918-19	1922
West Virginia	1917-18	1921	1920-21	1924
Wisconsin	.....	....	1915-16	1919
Wyoming†	.....	....	.....	....

* Require a four-year high school education or its equivalent.
† No fixed standard.
1. The higher standards in Arkansas are evidently not enforced by the sectarian licensing boards of that state.

in those states. The first and third columns show, respectively, when the one year and the two years of premedical college work affects students matriculating in medical colleges, and the second and fourth columns give the years in and after which all applicants for licenses are affected by the increased requirements. This table shows the rapidity with which requirements of preliminary education have been

3. J. A. M. A. 79: 637 (Aug. 19) 1922, Table 11.

advanced by state boards since 1908, prior to which no state was requiring more than a four year high school education. As will be noted, there are now forty-two states which have adopted the higher standard, and thirty-eight of these require as a minimum two years of premedical college work. It is understood that in every instance the one or two years of collegiate work must have included courses in physics, chemistry and biology. As shown in the footnotes, in the District of Columbia, Massachusetts and Wyoming no standards of preliminary education have been fixed.

In Table N the advance in standards of licensure is shown for all states since 1904. The most marked increase is in regard to the requirement of collegiate work in forty-two states—referred to in Table L. An equally great increase is

TABLE N.—*Advances in State License Requirements in Seventeen Years*

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1922	Increase	
Preliminary Education—				
Any requirement	20	47	27	3[1]
A standard four-year high school education or higher	10	47	37	3[1]
One year or more of college work	0	42	42	8[2]
Two years of college work as a minimum	0	38	38	12[2]
That all applicants be graduates of a medical college	36	49	13	1[3]
That all applicants undergo an examination for license	45	50	5	0
Requirements of practical tests in the license examinations	1	13	12	37
Hospital intern year required	0	10[4]	10	40
Full authority by board to refuse recognition to low-grade colleges	14	47	33	3[5]
Boards refusing to recognize low-grade colleges	5	47[6]	42	3[7]
Reciprocal relations with other states	27	44	17	6[8]
Single boards of medical examiners	36	45	9	5[9]

1. District of Columbia, Massachusetts and Wyoming.
2. See Table M.
3. Colorado.
4. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; Rhode Island, 1917; North Dakota, 1918; Washington, 1919; Illinois and Michigan, 1922; Iowa, 1923, and Texas, 1924.
5. District of Columbia, Massachusetts and Wyoming.
6. In two states, Arkansas and Connecticut, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges and have enforced higher standards of preliminary education.
7. The states named in Footnote 5.
8. Alaska, Arizona, Connecticut (regular board), Florida, Massachusetts, Rhode Island. To this list should be added the outlying territories of Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
9. Multiple boards still remain in Arkansas, Connecticut, District of Columbia, Louisiana and Maryland.

in the number of states—now forty-seven—which are refusing to recognize low-grade medical colleges. Although, as shown in the third column, marked improvements have been made in state requirements for licensure, nevertheless, as indicated by the last column, there is still room for further improvement. The greatest needs are for a wider adoption of the requirement of the hospital intern year, the standard of two years of premedical college work, and—a matter of more vital importance—a more general and larger use of practical tests in the examinations. The states in which the boards are making really effective use of such examinations are Illinois, Massachusetts, Minnesota, North Dakota, Ohio and South Dakota. They are being followed to a certain extent in a few other states.

IN CONCLUSION

In the publication of these statistics, the endeavor has been to present the facts, a knowledge of which is always beneficial. We reiterate our acknowledgments to the state licensing boards for their ready cooperation and the complete reports which have been furnished. We believe the information here published will be of service not only to the medical colleges and the state boards, but also to the public.

National Board of Medical Examiners

The National Board of Medical Examiners, which was organized in 1915, consists of nineteen members, including the Surgeon-Generals of the Army, Navy and Public Health Service, and one other representative of each of those services, three representatives of the state medical licensing boards and six members appointed at large. Up to Dec. 31, 1921, eleven examinations have been held as follows:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33.3
Oct., 1917	Chicago	28	22	6	21.5
Jan., 1918	New York	20	18	2	10.0
Apr., 1918	Ft. Riley, Ft. Oglethorpe	23	18	5	26.1
Dec., 1918	Chicago, New York	16	15	1	6.3
June, 1919	Philadelphia	52	51	1	1.9
Feb., 1920	Chicago, St. Louis	48	36	12	25.0
May, 1920	Philadelphia	60	46	14	23.3
Feb., 1921	Rochester, Minn.	16	11	5	31.3
June, 1921	Boston	40	37	3	7.5
	Totals	325	268	57	14.4

Following completion of the examinations shown in the above table, those who were passed were granted the board's certificate. Since Jan. 1, 1922, however, the examinations have been divided in three parts as follows:

Part I, a written examination in the six fundamental medical sciences: Anatomy, including histology and embryology; physiology, physiologic chemistry; general pathology; bacteriology; materia medica and pharmacology. Part II, a written examination in: Medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene, and medical jurisprudence. Part III, a practical examination in each of the following four subjects: (*a*) Clinical medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; (*b*) clinical surgery, including applied anatomy, surgical pathology, operative surgery and the surgical specialties of the diseases of the eye, ear, nose and throat; (*c*) obstetrics and gynecology; (*d*) public health, including sanitary bacteriology and the communicable diseases.

Parts I and II are written examinations held in any Class A medical school and Part III is entirely practical and clinical and given by subsidiary boards in Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St. Louis, Chicago, Washington, D. C., and Nashville. The fee is $25 each for the first and second parts and $50 for the third.

Three examinations in Parts I and II have been held as follows:

PART I

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1922	87	80	..	7	8.0
June, 1922	141	88	31	22	15.6
September, 1922	160	95	27	38	23.8
Totals	388	263	58	67	17.3

PART II

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1922	21	18	..	3	14.3
June, 1922	61	51	..	10	16.4
September, 1922	27	21	..	6	22.2
Totals	109	90	..	19	17.4

The examinations in Part III, which were entirely clinical and practical, were held in several of fifteen subsidiary centers in different parts of the country. The results of the examinations were as follows:

PART III

Examinations of	Total Examined	Passed	Failed	Percentage Failed
1922	28	28	0	0.0

Of the 388 who took the examination in Part I, 58 are listed as incomplete. These are the candidates who took examinations in all but one of the subjects included in Part I. These are listed as incomplete until they have taken an examination also in the remaining subject. They, therefore, are not counted among either those who passed or those who failed.

Forty-one medical schools were represented in Parts I, II and III of the examinations in 1922 and the results were as follows:

College	Total Examined	Passed	Failed	Percentage Failed
Boston University School of Medicine	4	4	0	0.0
Columbia Univ. Coll. of P. and S.	3	3	0	0.0
Cornell University Medical College	7	7	0	0.0
Creighton University Coll. of Med.	4	1	3	75.0
Harvard University Medical School	44	40	4	9.1
Howard University School of Medicine	8	0	3	100.0
Indiana University School of Medicine	1	1	0	0.0
Jefferson Medical College	1	1	0	0.0
Johns Hopkins University Med. Dept.	60	46	14	23.3
Long Island College Hospital	1	0	1	100.0
Loyola University School of Medicine	1	1	0	0.0
Medical College of South Carolina	1	0	1	100.0
Medical College of Virginia	3	2	1	33.3
Rush Medical College	19	16	3	15.8
St. Louis University School of Med.	1	1	0	0.0
Stanford University School of Medicine	2	2	0	0.0
State University of Iowa Coll. of Med.	7	5	2	28.6
Syracuse University College of Medicine	6	5	1	16.7
Tufts College Medical School	7	5	2	28.6
University and Bellevue Hosp. M. Coll.	3	2	1	33.3
Univ. of Buffalo Medical Department	6	2	4	66.7
Univ. of California Medical School	1	1	0	0.0
Univ. of Colorado School of Medicine	5	2	3	60.0
Univ. of Illinois College of Medicine	4	3	1	25.0
Univ. of Kansas School of Medicine	2	0	2	100.0
Univ. of Louisville Medical Department	2	2	0	0.0
Univ. of Michigan Medical School	3	3	0	0.0
Univ. of Minnesota Medical School	4	4	0	0.0
Univ. of Nebraska College of Medicine	10	5	5	50.0
Univ. of Oklahoma School of Medicine	1	0	1	100.0
Univ. of Oregon Medical School	15	11	4	26.7
Univ. of Pennsylvania School of Med.	47	38	9	19.1
Univ. of Pittsburgh School of Medicine	7	5	2	28.6
Univ. of Tennessee College of Medicine	4	0	4	100.0
Univ. of Texas School of Medicine	3	1	2	66.7
Univ. of Vermont College of Medicine	1	0	1	100.0
Univ. of Virginia Dept. of Medicine	3	3	0	0.0
University of Zurich	2	1	1	50.0
Washington Univ. School of Medicine	15	13	2	13.3
Woman's Med. Coll. of Pennsylvania	36	27	9	25.0
Yale University School of Medicine	5	5	0	0.0
Totals	354	268	86	24.3

Holders of certificates from the National Board of Medical Examiners are registered without further examination in the following twenty-three states:

Alabama	Idaho	Nebraska	Rhode Island
Arizona	Iowa	New Hampshire	South Carolina
Colorado	Kentucky	New Jersey	Texas
Delaware	Maryland	North Carolina	Vermont
Florida	Massachusetts	North Dakota	Virginia
Georgia	Minnesota	Pennsylvania	

A holder of the National Board certificate is eligible for the regular medical corps of the United States Army and the United States Navy without further professional examination if a review of his examination papers by the boards of examiners of those services is satisfactory. In 1920, a recommendation was adopted by the Triple Qualification Board of Scotland providing that holders of the National Board certificate be admitted to its final examination, and in January, 1921, similar action was taken by the Conjoint Examining Board of England.

Hospital Intern Year

Eleven medical colleges have adopted the requirement of a fifth year to be spent by the student as an intern in an approved hospital or in other acceptable clinical work before the M.D. degree will be granted. These colleges and the years when the requirement became effective for matriculants and graduates are as follows:

	Affects Matriculants	Affects Graduates
University of Minnesota Medical School	1910-11	1915
Stanford University School of Medicine	1914-15	1919
Rush Medical College (University of Chicago)	1914-15	1919
University of California Medical School	1914-15	1919
Marquette University School of Medicine	1915-16	1920
Northwestern University Medical School	1915-16	1920
University of Illinois College of Medicine	1917-18	1922
Loyola University School of Medicine	1917-18	1922
Detroit College of Medicine and Surgery	1919-20	1924
College of Medical Evangelists	1922-23	1927

The hospital intern year has been adopted as an essential qualification for the license to practice in ten states, becoming effective in different years, as follows:

State Board of	Affects Student Matriculants	Affects All Applicants
Pennsylvania	1909-10	1914
New Jersey	1911-12	1916
Alaska	1912-13	1917
Rhode Island	1913-14	1917
North Dakota	1913-14	1918
Washington	1914-15	1919
Illinois	1917-18	1922
Michigan	1917-18	1922
Iowa	1918-19	1923
Texas	1919-20	1924

Recognition of Government Examination

The examination given under federal authority, which should be generally recognized by all state licensing boards as a qualification for license to practice medicine, is that given to medical officers of the United States Army, Navy, and Public Health Service. In fact, retired officers from the services mentioned are now eligible to receive licenses without further examination in

Alabama	Illinois	Utah
Arizona	North Carolina	Virginia
California	Pennsylvania*	Wisconsin
Colorado	Porto Rico	

*Army and Navy only.

Proportion of Physicians to Population

State	Population (1920)	Physicians* (1922)	People to Each Physician
Alabama	2,348,174	2,313—	1,015
Arizona	333,903	372—	897
Arkansas	1,752,204	2,303—	760
California	3,426,861	7,549+	454
Colorado	939,629	1,882+	499
Connecticut	1,380,631	1,727—	799
Delaware	223,003	265+	842
District of Columbia	437,571	1,924+	227
Florida	968,470	1,348+	718
Georgia	2,895,832	3,274—	885
Idaho	431,866	452—	966
Illinois	6,485,280	10,716+	605
Indiana	2,930,390	4,353—	673
Iowa	2,404,021	3,490—	689
Kansas	1,769,257	2,49 —	709
Kentucky	2,416,630	3,15?—	766
Louisiana	1,798,509	2,058+	874
Maine	768,014	1,067—	718
Maryland	1,449,661	2,349—	616
Massachusetts	3,852,356	5,977+	645
Michigan	3,668,412	4,653+	788
Minnesota	2,387,125	2,774+	860
Mississippi	1,790,618	1,792+	999
Missouri	3,404,055	5,827—	584
Montana	548,889	568—	966
Nebraska	1,296,372	1,913—	678
Nevada	77,407	140—	553
New Hampshire	443,083	615—	720
New Jersey	3,155,900	3,362+	939
New Mexico	360,350	399—	903
New York	10,384,829	16,857+	616
North Carolina	2,559,123	2,228—	1,149
North Dakota	645,680	517—	1,248
Ohio	5,759,394	8,086—	712
Oklahoma	2,028,283	2,600—	779
Oregon	783,389	1,158+	677
Pennsylvania	8,720,017	11,241—	775
Rhode Island	604,397	754—	801
South Carolina	1,683,724	1,368—	1,231
South Dakota	636,547	630—	1,010
Tennessee	2,337,885	3,228—	724
Texas	4,663,228	6,094—	765
Utah	449,396	497+	904
Vermont	352,428	556—	634
Virginia	2,309,187	2,503—	918
Washington	1,356,621	1,756—	772
West Virginia	1,463,701	1,751—	836
Wisconsin	2,632,067	2,772+	950
Wyoming	194,402	263—	739
Totals	105,708,771	145,966+	724

* The plus and minus signs indicate, respectively, an increase or a decreased in the number of physicians in the state since 1920.

Special Article

THE STATUS OF INSULIN

In November, 1920, while reading an article by Barron, on the relation of the islands of Langerhans to diabetes, F. G. Banting, then assistant in physiology of Western University, London, Ontario, conceived the idea of preparing an active extract of the islet tissue. Barron had called attention to the fact that degenerative changes occur in the acini of the pancreas following ligation of the ducts, and it occurred to Banting that therefore, after sufficient time had elapsed, the pancreas could be removed and the islet extract elaborated. It had been known that total removal of the pancreas in dogs results in severe and violent diabetes. However, attempts at feeding pancreatic tissue had been without beneficial results, and injections of various extracts of pancreatic tissue, although securing a reduction in sugar, had been followed by symptoms which did not warrant their use in the treatment of diabetes. In fact, a complete review of the available literature warranted Banting in formulating an opinion (1) that the secretion produced by the acinous tissue of the pancreas is in no way connected with carbohydrate utilization; (2) that all injections of whole gland extract have been futile as a therapeutic measure, and (3) that the islands of Langerhans are essential in the control of carbohydrate metabolism. It seemed clear, therefore, that the relation of the pancreas to carbohydrate metabolism was dependent on some process controlled by the islet tissue, and Macleod suggested two possible mechanisms whereby this control might be exerted: (1) The blood might be modified while passing through the islet tissue, and (2) the islets might produce an internal secretion.

THE FIRST EXPERIMENT

In May, 1921, the feasibility of the experiment having been recognized by Prof. J. J. R. Macleod, work was begun under the latter's direction in the Physiological Laboratory of the University of Toronto. Under suitable anesthesia, dogs were depancreatized by appropriate surgical methods. Other dogs had been operated on and the pancreatic ducts ligated. After suitable time, the latter dogs were given a lethal dose of chloroform, the degenerated pancreas swiftly removed and then an extract prepared. This extract was injected intravenously into depancreatized animals. As a result, it was shown that intravenous injections of such a solution invariably exercised a reducing influence on the percentage of sugar in the blood and the amount of sugar excreted in the urine. The extent and duration of the reduction varied directly with the amount of the extract injected, and the presence of the extract enabled the diabetic animal to retain a greater percentage of injected sugar than it would otherwise. At that time it was the opinion of Drs. Banting and Best that boiling of the extract made it impossible for it to have an effect on the reduction of blood sugar, and that preparation of the extract in neutral saline solution with retention under cold storage conditions would permit the extract to remain active for seven days. This, in brief, is an account of the first experiments on the production of insulin. This account does not, however, give any indication of the scientific methods employed, of the thoroughly accurate check on the work through the use of suitable controls, or of the great significance of the final result. Furthermore, it says but little of the many years of research by hundreds of physiologists all over the world who contributed their mite to the knowledge of this subject and who trembled repeatedly on the threshold of the final discovery without carrying their experiments to the logical conclusion. It remained for Banting, as the result of an accidental observation made while casually reading an article outside the field to which he devoted himself, to see the final step.

The experiments first carried out by Banting and Best justified the conclusion that some constituent of the pancreas destroys the active principle of the internal secretion of the gland when extracts are made of the whole gland substance by the usual methods. It therefore became apparent that some method of inhibiting this destruction must be secured in a method for preparing the active extract, and for producing it on a larger and more satisfactory scale. Previous experiments by other investigators gave ground for the belief that the pancreas of the fetus furnishes to the mother an internal secretion which is necessary for the metabolism of sugar. This suggested to the Canadian investigators that fetal pancreas might prove a source of an extract rich in internal secretion, and yet free from the destructive enzymes of pancreatic juice. Experiments were therefore performed utilizing extracts of fetal calf pancreas, and the results of these experiments showed that neutral saline extracts prepared from the pancreas of the bovine fetus at about the fifth month, when injected intravenously and subcutaneously in depancreatized dogs, markedly reduce the percentage of blood sugar and the daily urinary excretion of sugar. With such injections, a depancreatized dog lived for seventy days. It had previously been shown by Allen that completely diabetic dogs did not live more than fourteen days.

PREPARATION OF THE PURIFIED EXTRACT

In view of the results thus far achieved, the assistance of J. B. Collip of the Department of Pathological Chemistry in the University of Toronto was secured, to take up the problem of isolating the active principle, and with his collaboration an extract was prepared from the whole gland, sterile and highly potent, which was suitable for administration subcutaneously to human beings. With the assistance of Drs. W. R. Campbell and A. A. Fletcher of the Department of Medicine in the University of Toronto, its use was undertaken on patients with diabetes in the wards of the Toronto General Hospital between December, 1921, and March, 1922. The effects of the preparations were observed in seven cases of diabetes mellitus, and it was shown that the results observed in animals could be paralleled in man. Following the injection of the extract, there is a rise in the respiratory quotient indicating carbohydrate utilization, and also a return to the normal blood sugar level. Furthermore, the patients reported a complete relief from the subjective symptoms of the disease. The results warranted the conclusion that in these extracts "we have a therapeutic measure of unquestionable value in the treatment of certain phases of the

disease in man." However, it was also found that, without careful control, severe toxic reactions may be encountered, and the authors warn that this will undoubtedly be a factor in the evaluation of the ultimate therapeutic utility of the method. In the meantime, Professor Collip had shown that an active extract could be prepared from the pancreas of the full-grown ox by using alcohol as an extracting medium so as to circumvent the destructive action of trypsin, as was previously shown by E. L. Scott. The fact that the extracts first studied seemed to cause a certain degree of irritation and involved the use of pancreas of special character and available only in small amounts caused Dr. Collip to elaborate a method for preparation of the extract from adult pancreas by fractional precipitation with alcohol. Briefly stated, it was as follows:

The best method for separating the active principle from protein, salts and lipoids was found to be the following: Equal volumes of fresh minced pancreas and 95 per cent. alcohol were allowed to stand for several hours with occasional shaking, and then filtered. To the filtrate was added 2 volumes of 95 per cent. alcohol. After allowing several hours for precipitation of most of the protein, filtration was repeated, and this filtrate was evaporated to small volume in vacuo at a temperature of from 10 to 30 C. An aqueous extract was thus obtained, which was washed twice with ether in a separatory funnel to remove lipoids, and then further distilled in vacuo to a pasty consistency. Addition of 80 per cent. alcohol and centrifugation then resulted in the formation of four layers, namely, a bottom layer of salt crystals, above it a saturated aqueous solution of salt, above this a flocculent layer of protein, and on top a clear layer of alcohol containing the entire active principle in solution. This top layer was pipetted off, and delivered into several volumes of 95 per cent. or (preferably) absolute alcohol. Several hours were then allowed for the active principle to precipitate out. It was then dissolved in distilled water, concentrated by vacuum distillation, filtered through porcelain, tested for sterility, and delivered to the clinic. Such extracts, practically free from proteins, salts and alcohol-soluble substances, could be made isotonic and injected subcutaneously without local reactions.

During the preparation it is necessary to keep the acidity of the fluid correctly adjusted.

DOSAGE AND ASSAY

It now remained to devise a method for securing accurate dosage, and it was determined that the effect of an extract might be measured by its results when injected into rabbits. Large doses of insulin cause hyperexcitability, followed by coma, rapid breathing, sluggish reflexes and dilated pupils. The effects, on the whole, resemble those of strychnin poisoning. Slight stimuli, even shaking of the floor, caused violent convulsions lasting one or two minutes, and death finally resulted from respiratory failure. Coincident with the appearance of these symptoms is a lowering of the blood sugar. After a large number of these experiments, it was found satisfactory to consider as one unit the amount of insulin which, on subcutaneous injection, can lower the percentage of blood sugar to 0.045 within four hours in a rabbit, weighing about 2 kg., from which food has been withheld for from sixteen to twenty-four hours. Recently prepared solutions are concentrated so that a small volume may contain a sufficient number of units. As pointed out by Macleod, the reason why 0.045 was chosen as a percentage to which the sugar should become lowered is that at this level, almost without fail, the animal develops highly characteristic symptoms. As indicated later this method of assay is not wholly satisfactory and efforts to arrive at still more accurate standards are being continued.

In the meantime, the investigators continued to study the effects of the extract on the chemistry of the blood and the urine in the establishing of a number of important points. It was shown that in the presence of insulin the power to metabolize carbohydrates is restored. When insulin is given, the acetone bodies entirely disappear from the urine, and remain absent so long as the administration is maintained. It is shown that insulin, possibly because of its primary influence on carbohydrate metabolism, also effects the metabolism of fat.

It has been known that a number of procedures will produce hyperglycemia and glycosuria, among them puncture of the floor of the fourth ventricle of the medulla, subcutaneous injections of epinephrin, and the various forms of asphyxia, including ether anesthesia. It was then shown that in rabbits previously fed abundantly with carbohydrates so as to insure a high percentage of glycogen in the liver, none of these experimental procedures would cause more than a slight increase in the blood sugar in animals previously injected with insulin. The importance of the remedy in surgical operations under ether anesthesia in diabetes can therefore be estimated.

As pointed out by Macleod, the therapeutic effects of insulin in diabetes mellitus in man were definitely forecast by animal experimentation in each instance. After all of these effects had been determined in the laboratory, the drug was administered in hospital wards. Had administration been permitted unguided by the results of these observations on rabbits, it seems almost certain that sooner or later an overdose would have been given, causing convulsions, and there would have been no indication as to what remedy should be used. But the experiments on rabbits showed clearly that these serious symptoms may be immediately antidoted by injection of glucose. Furthermore, in several patients in whom these symptoms have appeared, injection of glucose has immediately and permanently removed them. Finally, Jan. 6, 1923, Drs. Banting, Campbell and Fletcher published in the *British Medical Journal* the results of the administration of the drug in fifty cases. The most striking results have been seen in children and young adults, and it is stated that all the patients were benefited by the treatment. On the first and second days of treatment, if sufficient insulin is given, the urine becomes sugar free, and on the second or third day, ketone free. The patient becomes conscious of increasing strength before the end of the first week. Hunger is replaced by appetite, thirst is lessened, edema disappears in about ten days, and considerable amount of physical vigor is restored. The weight frequently increases, and this can be brought about by supplying food in excess of the caloric requirements and with it an increased amount of insulin. One patient, aged 16, who had lost 40 pounds (18 kg.) during three years of diabetes, gained 35 pounds (16 kg.) in less than four months.

THE DISTRIBUTION OF INSULIN

As pointed out in THE JOURNAL Jan. 6, 1923, the discoverers of insulin have assigned their rights in the product to a committee of the University of Toronto,

and patents have been applied for in Canada, the United States, Great Britain and other countries. The committee has decided to expand the production of the drug by collaborating with some firm regularly engaged in the manufacture of organ extracts. A firm was secured which undertook, under an agreement with the university, to manufacture the product. By this agreement, the university contracted not to issue licenses to other firms in the United States until the lapse of a period during which the large scale method could be carried out so as to yield the output of a preparation of standard and uniform potency, both when assayed by the rabbit test and when tested therapeutically on diabetic patients. The firm agreed "to distribute a sufficient number of free samples of their preparation to various physicians specializing in the treatment of diabetes in properly controlled clinics." This collaboration has been in effect for several months, and the American manufacturer has submitted his product to the Council on Pharmacy and Chemistry, which will, no doubt, issue a report within the near future. A product is also in course of submission from the Canadian manufacturer who cooperates with the Toronto insulin committee.

SOURCE OF INSULIN

One of the problems that is giving most concern to the investigators has been the provision at a reasonable price of a considerable quantity of the extract. The entire animal kingdom has been investigated, and particular attention has been given by Macleod to the proportion of potent insulin products from the pancreas of certain fishes. These fishes have been particularly investigated, because in them the islet tissues are separated fairly definitely from the remainder of the pancreas. These experiments are continuing, but it is not possible as yet to state definitely whether or not this will constitute an important source of the product.

MODE OF ACTION OF INSULIN

Other investigations have been concerned largely with the mechanism by which insulin produces its satisfactory results. Thus, Forrest, Smith and Winter have shown that insulin and liver extract in vitro cause an alteration of the rotary powers of glucose and fructose without a corresponding alteration of the copper-reducing power. They state that "a possible explanation of the action of insulin is that it causes a shifting of the equilibrium in the direction of increased γ-glucose formation, which is stored or utilized, and that the increased utilization of sugar by the diabetic after the injection of insulin may be put down to the increased formation of this type of glucose." Their experiments seemed to show that a continual supply of insulin is necessary for the working of some enzymatic body which is responsible for lowering the blood sugar, for the blood sugar invariably rose between insulin injections.

Carrying out the experiments on rabbits still further, McCormick, Macleod, Noble and O'Brien have shown that there is an immediate decline in blood sugar during the half hour following an injection of insulin, but a variability both in the time of onset and in the rate of recovery which afterward occurs. The rate of the initial fall is independent of the nutritional condition of the animal. After from thirty to ninety minutes, the blood sugar rises more rapidly in glycogen-rich animals than in those glycogen free. Within wide limits the dose of insulin has no constant influence on the rate of the fall. These observers have been unable to find that insulin has any influence on the rate of glycolysis in sterile, incubated defibrinated or oxalate blood, or in mixtures of blood and expressed muscle juice. They have elaborated the view that sugar must disappear from the blood because it passes into the tissues, that insulin no doubt also passes out of the blood into the tissues, and that when it enters the tissue cells it sets up in them some process that leads to the immediate disappearance of sugar as such, so that a "vacuum" for sugar is created in the cell, and sugar is withdrawn from the blood more rapidly than the supply can be replenished. "It is possible," the authors say, "that the first step in this process is the formation of some compound between sugar and insulin, and that this may occur in part in the blood itself; but it is unlikely that such an intravascular process is any essential step in the disappearance in blood sugar." In view of the fact that the blood sugar rises much more rapidly in glycogen-rich animals than in those which are glycogen-free after the initial fall after the injection of insulin, the authors consider that it is impossible to make a precise physiologic assay of insulin by determining the percentage of blood sugar at varying periods following its injection. The approximate assay may best be arrived at by measuring the blood sugar from ninety minutes to three hours following the injection in animals from which food has been withheld for twenty-four hours. When considerable doses of insulin are given, the typical toxic symptoms may not appear until the percentage of sugar has fallen considerably below the level of 0.045, at which they most frequently occur with weaker doses. It is therefore the final conclusion that the occurrence of these typical convulsions can not be depended on as an exclusive method of physiologic assay.

CLINICAL USE OF INSULIN

From the fifty cases originally studied by Banting and his collaborators, and from a large number of cases studied by the investigators in various American diabetic clinics, a number of facts relating to the clinical administration of insulin have been determined. In view of the great potency of the remedy for harm when improperly used, it is wise to begin at once to emphasize these facts and to impress them repeatedly on physicians in order that permanent harm may not result. The picture of a successful result has already been given. Such a result is secured when a correct dosage is administered to a patient who, at the same time, is receiving a properly selected diet. Early in the work, preparations of insulin contained certain amounts of protein and split protein products. The natural result was a toxic reaction in a certain number of cases. The present products are practically protein free, so that with the exception of urticarial eruptions in one or two sensitive patients such reactions were not observed among the fifty patients first studied. However, the fall in blood sugar, as has been mentioned, may produce a characteristic train of symptoms when the blood sugar falls to 0.07 per cent. Under the influence of insulin, the patient becomes promptly aware of this. He may first complain of hunger or, most often, of a sense of weakness or fatigue; and, especially if it is his first reaction, he is conscious of some anxiety or of what he calls nervousness, or he

may even show signs of a definite neurosis, with a loss of emotional control, such as crying spells. Almost constantly present is a feeling of tremulousness; but actual tremor is rarely seen. The patient may also have some incoordination of finer movements. Vasomotor phenomena, such as pallor or flushing, a sense of heat, of chilliness or a profuse sweat are common. Should the hypoglycemia increase and the lowering of the blood sugar come to 0.05 per cent., there is an acute distress or mental disturbance, such as confusion and disorientation. Finally, a blood sugar of 0.032 in one patient resulted in a state of coma with hypotonia and loss of the deep reflexes. Several of the patients suffered difficulties of articulation when the blood sugar reached the lower levels mentioned.

Fortunately, these serious symptoms may be relieved by the immediate administration of food. From 50 to 100 c.c. of orange juice has an almost immediate effect in clearing up the symptoms. A better result is obtained with from 5 to 25 gm. of glucose given with orange or lemon juice. "When a patient is unconscious," says Banting, "1 c.c. of epinephrin (1 : 1,000 solution) should be given intramuscularly followed by glucose by mouth, and if the patient is not well enough in a few minutes to swallow glucose, it may be given subcutaneously or intravenously." Special nursing precautions should be adopted for detection of reactions when insulin treatment is first started, when a new preparation is given and when insulin is administered late in the day, as the reaction may occur during sleep. The patients soon recognize the state of a reaction, and may be able to avert the symptoms of their own accord.

In view of the fact that the insulin effect on the blood sugar is not exerted immediately after subcutaneous injection, it is customary to space the injections so that their effect occurs during the period of assimilation of carbohydrates. This means that the insulin is injected at, or shortly before, the meal. But instances occur, possibly due to delayed or too rapid absorption of sugar into the blood stream, or the use of diets containing too much carbohydrate in which glycosuria may occur or which a reaction may follow. To Banting, this emphasizes the necessity for observing diabetic patients for a short time in the hospital under insulin before returning them to their homes for general treatment.

In establishing the insulin treatment, it is advisable to begin with a moderate dose, gradually increasing it until the desired effect is obtained. The amount of insulin used will depend not only on the carbohydrate tolerance of the patient but also on the height and fixity of the blood sugar level. At present the authors believe that the best results are secured by aiming at maintaining a normal blood sugar level. This is accomplished by injecting insulin in relation to a meal at which a certain amount of carbohydrates is given. As the patients improve, the amount of carbohydrate is increased, and at the same time the amount of insulin is increased.

The most important uses of the product are unquestionably in juvenile diabetics, in whom the mortality previous to the introduction of insulin was almost 100 per cent., diabetics who are undergoing surgical operations, and diabetics with coincident infections, such as tuberculosis, gangrene or syphilis. Many diabetics at the present time are able to exist comfortably and satisfactorily with a well selected diet. On the other hand, many diabetics are not thus amenable to treatment. In the latter group of patients, under the proper administration of insulin glycosuria was abolished and ketones disappeared from the urine and the blood, the blood sugar was markedly reduced and maintained at normal levels, the alkali reserve and alveolar carbon dioxid of patients in acidosis and coma returned to normal, the respiratory quotient showed evidence of increased utilization of carbohydrates, and the cardinal symptoms were relieved with marked clinical improvement. In diabetic coma, insulin may be characterized as a specific.

CONCLUSION

It appears, then, that as a result of a vast amount of research on diabetes mellitus, and still earlier on the physiology and pathology of the pancreas, researches by numerous investigators all over the world, conducted largely on experimental animals, as well as with human beings, there has finally been evolved from the pancreas a principle which has a specific effect on the carbohydrate metabolism of the body. The effects of this extract have been thoroughly studied, and its limitations rather clearly defined. A method of assay is being perfected so that it appears likely that the product will shortly be made generally available to the medical profession. Improperly used, results may occur of such seriousness as to interfere greatly with establishing the true worth of the product. To secure proper results, a knowledge of scientific dietetics is necessary, and carefully controlled laboratory observations are important. Physicians who plan to use the rem must inform themselves fully of its potency, the toms of danger, the proper methods of administr the proper methods of antidoting unfavorable effe and the correct manner of evaluating results. If the precautions are observed, there seems to be no reaso why any well trained physician should not be able to use the remedy satisfactorily.

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SATURDAY, APRIL 28, 1923

STATISTICS OF THE STATE BOARD EXAMINATIONS

This week, for the twentieth consecutive year, The Journal publishes statistics based on official reports of examinations conducted by state medical boards, and of registrations by reciprocity and other methods. During these twenty years the work has received increasing support and cooperation from the secretaries of state licensing boards, who have furnished reports of their examinations. The reports have been checked with alumnus lists furnished by the deans of medical colleges, and by this cross-checking, errors have been corrected and the state boards have been notified. Thus, statistics are made accurate and reliable and state records have been corrected. We express our acknowledgments for the cooperation of the officers of state licensing boards and medical colleges, which made possible the publication of these statistics.

These statistics are of great importance as they relate to medical education and to medical licensure. For each state they show the number and qualifications of physicians admitted to examinations; the character of the colleges from which they graduated; the numbers registered and rejected, and the percentages. The material is so arranged that the facts regarding any one college or state can be compared with other colleges or states. The statistics show that in some states people are well protected against illiterate and incompetent physicians, while in others, in varying degrees, the opposite situation prevails.

CONNECTICUT AND ARKANSAS

Two glaring instances in which the people are not protected are found in Connecticut and Arkansas. In these states, although reasonably high standards are enforced by the regular medical boards, an open door for those with inferior qualifications is provided by separate boards of eclectic medical examiners. In Connecticut last year the eclectic board licensed seventy-nine physicians, thirty-nine of whom graduated from low-grade medical colleges, and for eighteen no data are found in the official files of medical colleges to show that they graduated anywhere. The eclectic board not only examined the graduates of eclectic schools, but evidently admitted all others who applied, the Connecticut law to the contrary notwithstanding. Of the seventy-nine licensed, thirty-one were graduates who supposedly should have applied to the regular medical board. This group included eleven who graduated from the St. Louis College of Physicians and Surgeons, four from the Kansas City University of Physicians and Surgeons, and one from the College of Physicians and Surgeons of Boston, all of which are nominally regular medical schools and are reported as not recognized by the Connecticut (Regular) Medical Board and by the licensing boards of forty-five other states.

In Arkansas, out of eighteen candidates licensed by the eclectic board, seventeen were graduates of low-grade medical schools. Fourteen of these were from the Kansas City College of Medicine and Surgery, a nominally eclectic institution, reported not recognized by the licensing boards of forty-two states. It is high time Connecticut and Arkansas abolished these eclectic boards, which are making them a literal dumping ground for graduates of inferior medical schools.

THE LICENSING OF OSTEOPATHS

During the last six years, a few boards have admitted osteopaths to their examinations, and have licensed many of them as "physicians and surgeons." The objection to this is not that these candidates are osteopaths but that they are not required to present educational qualifications equal to those demanded of physicians. Inspection shows that osteopathic colleges lack properly equipped laboratories; they lack expert, well trained instructors in the fundamental medical sciences; they seriously lack clinical facilities, and in the instruction the osteopathic idea is so emphasized that the many other valuable therapeutic measures are neglected. Despite these serious deficiencies in instruction, seventy-four osteopaths were licensed last year as physicians—forty-eight in California, thirteen in Massachusetts, eight in Colorado, and five in Texas.

QUALIFICATIONS OF PHYSICIANS LICENSED

Special attention is called to Table J,[1] which shows the classification of the medical colleges from which the physicians licensed in each state were graduated during the last six years. A review of this table shows that California licensed 405 graduates of low-grade medical colleges, the largest number licensed in any state during the six years. The next largest numbers licensed were 177 in Illinois, 150 in Arkansas, 149 in Connecticut, 146 in Massachusetts, 141 in Missouri, and 120 in Colorado. In Missouri, the number of such graduates licensed during the last four years greatly diminished, and, fortunately, the word "reputable" has recently been restored to the medical practice act[2] so that these small numbers may be still further reduced.

1. Page 1233.
2. Medical Licensure in Missouri, Current Comment, J. A. M. A. 80: 923 (March 31) 1923.

An encouraging fact shown in this table is that of the 29,338 physicians licensed whose qualifications were obtained in classified colleges, 23,234, or 79.2 per cent., were from Class A medical schools, while only 4,202, or 16.7 per cent., were from Class B schools, and 1,902, or 4.1 per cent., were from Class C schools. What is still more encouraging is that the percentage of those rated in Class A colleges is increasing each year, while the percentages of those from Class B and Class C colleges are decreasing.

EFFECTS OF PUBLICITY

The effectiveness of publicity in medical licensure may be noted in Table N. Higher standards of preliminary education have been adopted; all states but Colorado require that applicants must have graduated from a medical school; all states now require an examination of all applicants; forty-seven states have obtained and are using the authority to refuse recognition of low-grade medical colleges; forty-four states have established reciprocal relations with other states; ten states require a hospital internship as an essential for the license, and all but two states—Arkansas and Connecticut—have abolished their separate boards of eclectic medical examiners or have limited their authority—and the facts just presented show how important it is that these two states take similar action.

On medical education the effect of these statistics has been even more pronounced. The publicity regarding the failures of graduates at state licensing examinations and with respect to the nonrecognition of various colleges (Table D) has impelled medical schools to improve greatly their facilities for teaching. Such improvements are evidenced by the larger number of colleges which are now recognized in all states as compared to five years ago. Also, as shown in Table A, of the seventy-nine colleges in the United States and Canada that had graduates examined, fifty-nine, or 74.7 per cent., had less than 10 per cent. of failures.

Briefly, to each medical school these statistics show what improvements are essential if its graduates are to succeed in state board examinations; what state boards are requiring as a minimum of preliminary education, and in what states the boards are refusing to examine its graduates. To each state board these statistics show the qualifications of the physicians licensed as compared with those licensed in other states, and the further improvements which are needed in its educational standards and methods of examination. Owing to political conditions and other factors, standards in certain states fluctuate considerably; but, on the whole, there has been decided progress. Continuous publicity has led to a general improvement and a greater uniformity in the methods of examination; there has been a lessened confusion in the licensing of physicians throughout the country, and correspondingly better safeguards for the public against the licensing of those who are incompetent.

HIGH FAT DIETS IN DIABETES MELLITUS

In considering the progress made by the medical profession in the treatment of diabetes mellitus up to the present time, two factors appear of major significance: (1) the discovery that the disease is definitely related to the pancreas and the islands of Langerhans within the pancreas, and (2) the fact that the disease may be controlled through proper adjustment of the diet. Of these two factors, until the recent discovery by Banting, the dietetic control has been the more important. Even with the use of "insulin," however, diet adjustment is a matter of major consideration. As pointed out by Newburgh and Marsh,[1] it was customary at first to use a liberal protein fat diet in the treatment of diabetes mellitus. In 1914, Allen introduced the principle of undernutrition with the object of relieving the strain on the pancreas and of stopping the progress of the disease. Following the leadership of Joslin, who based his regimen on the experimental work of Allen, Woodyatt and others, it has been customary to begin the treatment with a period of fasting, following which the diet is built up, protein, fat and carbohydrate being added within the limits of the patient's tolerance. It has been usual to limit greatly the amount of fat, and it is Newburgh's contention that such limitation frequently results in undernutrition. During the last two years, Drs. Newburgh and Marsh have used diets containing larger amounts of fat than are customary in the practice of most clinicians, and they now publish a final statement which seems to go far toward establishing the soundness of the principles they advocate.

In the system of control which Newburgh and Marsh have adopted in 190 patients, whose records are now analyzed, the preliminary fasts or gradation of diets are discarded and the patients are served with the high fat diet from the day of their entrance into the hospital. After the patient is desugarized, his diet is increased by steps until he is receiving 0.67 gm. of protein and from 30 to 40 calories per kilogram of body weight. In no case is the daily carbohydrate allowance greater than 35 gm., and it is argued that the high fat diet throws into the metabolism much less glucose in proportion to its caloric content than do other types of diet. Furthermore, the records of the cases reported by Newburgh and Marsh indicate that a low protein, low carbohydrate, high fat regimen has produced and maintained in their patients an aglycosuric state; that its use has not been attended by acidosis and, in fact, caused its disappearance when present (short of coma) at the beginning of treatment; that it maintained nitrogen balance; that it did not cause a hyperlipoidemia; that it supplied sufficient energy and, finally, that it permitted activity compatible with earning a livelihood without being attended by downward progress in uncomplicated cases.

1. Newburgh, L. H., and Marsh, P. L.: Use of a High Fat Diet in the Treatment of Diabetes Mellitus: First Paper, Arch. Int. Med. **26**: 647 (Nov.) 1920; Second Paper, Blood Sugar, Ibid. **27**: 699 (May) 1921; Third Paper, Further Observations on the Use of a High Fat Diet in the Treatment of Diabetes Mellitus, ibid. **31**: 455 (April) 1923.

As the authors of this new contribution to the study of the metabolism in diabetes are themselves careful to indicate, statistics as applied to the control of diabetes deal with so many variables that are difficult to control that one must be extremely guarded in drawing conclusions from the results in any series of cases. These variables concern such factors as indiscretions in diet, of which diabetics may be guilty when not under direct control; complications, such as coincident infections, surgical operations and coma; efficiency of the treatment before the patient undertakes a new regimen; duration of the disease; social status and mental habits of the patient, and, finally, variability in individual physicians. With these variables in mind, critical observers hesitate to make any positive assertions as to the importance or the value of the principles which the authors recommend on the basis of their study. However, since Newburgh and Marsh have taken these factors particularly into account in drawing their conclusions, their results merit careful consideration. Even with the introduction into general use of the new pancreatic extract elaborated by the Toronto investigators, the problem of metabolism in this disease will perhaps require as extended and careful attention as has been given heretofore.[2]

EDUCATION OF THE NEGRO PHYSICIAN

In planning for the protection and promotion of the health of the negro population of the United States, the entire country has a deep concern. Statistics show the excessive morbidity and mortality that handicaps the negro race in this country; they prove, further, that no inconsiderable part of the excess is due to diseases communicable without respect to race, and justify the inference that no small part is due to lack of knowledge and to inadequate medical and surgical care. In outlining plans for negro health betterment, no factor is of greater importance than the part the negro himself will play, and particularly the part that will be played by the negro physician.

When the negro physician enters the home of his colored patient or meets him in the dispensary or the hospital ward, he greets him as one of his own people, adapts himself to the needs of the situation, and carries to his patient, and to the home, lessons of sanitation and health that he can enforce to a degree hardly practicable otherwise. That is, he does so if he has been properly trained and has been imbued with a conception of the responsibility of his mission to his race and to the community; not otherwise. To train colored physicians adequately and in sufficient numbers is, therefore, an important part of the service our medical schools owe to the public, and a task demanding the serious consideration of our medical educators.

Among the eighty-one medical schools in the United States, only two in Class A are devoted entirely to the training of colored students. Both of these schools are striving hard to keep pace with the advances of medical education. Both are handicapped by lack of financial support. One, because of lack of such support and because of its unwillingness to accept students in excess of the number that can be properly taught with its limited laboratory facilities and teaching staff, has restricted its classes to fifty students. In consequence, it is turning from its doors applicants fully qualified, according to accepted standards, for the study of medicine. The latest figures available show only 379 students in attendance at these two schools, and the last graduating class of both together numbered but fifty. White physicians will continue for an indefinite time to treat colored patients; but the inadequacy of an annual output of only fifty colored physicians is apparent when it is borne in mind that our colored population exceeds ten million. In the development of educational facilities for the training of colored physicians there is, therefore, a field that may well be cultivated by those prepared to give financial aid to medical education.

[2] The Status of Insulin, Special Article, this issue, p. 1238.

Current Comment

NEW YORK GOVERNOR ADOPTS RATIONAL PLAN FOR HEALTH CONTROL

Governor Smith of New York recently set a commendable example in his approach to the health problems of his administration. Recognizing that disease is not a respecter of persons and that the prevention of disease and the promotion of health are not party issues, he sought counsel where it could best be obtained, and called into conference representatives of the state medical society. Personally, and through the state health commissioner and others, he submitted to the conference four of his most important health problems—control of narcotic drugs and addicts, medical service for sparsely settled rural districts, enforcement of the medical practice act, and promotion of medical research. Open discussion was followed by the appointment of a committee to draw up a statement of the conclusions agreed on, and to formulate plans to carry them into effect. After consideration of the findings and plans submitted, the governor sent to the legislature a message covering the two most urgent matters, narcotic drug control and medical service for sparsely settled districts, with recommendations for appropriate legislation. Certainly, added weight is given to the measures proposed by the governor, because of the method by which they were formulated, and the burden of the legislature is lightened by the reduction and simplification of the controversial questions, resulting from the same cause. These circumstances should go far toward bringing favorable action on the governor's recommendations. But whether they are or are not favorably acted on by the legislature, the governor is to be commended for the course he has pursued. The state medical society is entitled to credit for the part it played in the development of the situation and for its generous acceptance of the responsibility placed on it

by the governor. The transfer of the scene of activities from the executive to the legislative chamber, however, imposes on the society new responsibilities, and on the wisdom with which it steers its course will depend very largely whether future governors of New York and the governors of other states adopt the policy so ably laid down by Governor Smith.

WHAT LOS ANGELES THINKS OF THE ABRAMS CULT

In the *Bulletin* of the Los Angeles County Medical Association, published April 5, 1923, there appeared this item:

The following resolution was adopted at the meeting of the Board of Councilors held March 12, 1923: "It shall be the sense of the Council that Abrams' method of diagnosis is a fraud. Any physician practicing this method is ineligible to membership. If a member, he shall immediately cease this method of practice or charges of unethical conduct shall be preferred against him."

If more medical societies would take this action, the activities of those now exploiting the Abrams nonsense [1]—diagnosing syphilis in healthy persons and professing to cure cancer by means of the "Oscilloclast"—would be confined to those "drugless healers" and "advertising specialists" who already form so large a part of Abrams' disciples.

THE NATIONAL BOARD OF MEDICAL EXAMINERS

With the state board statistics published this week appear also statistics [2] showing the results of examinations held by the National Board of Medical Examiners. During the first six years of its existence, the National Board held eleven examinations. Each was held in a large city, and those wishing to take the examination, unless they happened to live in that particular city, were required to travel long distances in order to take the examination. As a consequence, only 325 candidates were examined and 268 certificates issued—an average of forty-five each year. At the beginning of the board's activities, in an editorial comment,[3] THE JOURNAL urged the adoption of an arrangement whereby the examinations could be held simultaneously in different cities, so that candidates would not need to spend so much time and money to take them. During 1921, therefore, the plan was adopted whereby the examination was divided into three parts, or three examinations, one at the end of the second year, one at the end of the fourth year and one after the graduate has completed his internship. An arrangement was made also whereby the first two examinations could be taken in any Class A medical school, and the third examination, which is entirely clinical and practical in its nature, could be taken in any one of fifteen large cities distributed in various parts of the country. The new plan has been a great success, as shown by the fact that in the first year 412 candidates were examined, eighty-seven more than were examined in all six previous years. It is interesting to note that the examinations held by the National Board are now widely recognized by state licensing boards. As noted in the statistics, holders of the certificate are now eligible for registration without further examination in twenty-three states, and it is only a matter of time when the certificate will be recognized by all state boards. It is already being regarded as an evidence of excellent qualifications both in this country and abroad. The certificate, therefore, even now, has a value far greater than the money and time required by the student to take the examination.

1. A reprint of the Abrams vagaries will be sent on receipt of four cents in stamps.
2. See page 1236.
3. National Board of Medical Examiners, Current Comment, J. A. M. A. 66:745 (March 4) 1916.

Association News

THE SAN FRANCISCO SESSION

Alpha Kappa Kappa Banquet

The Alpha Kappa Kappa fraternity has arranged for a banquet to be held on the evening of June 28. All members attending the annual session are strongly urged to communicate with the chairman of the banquet committee at 100 Judah Street, San Francisco. Sigma chapter's new home at this address will be open to all members, and opportunity will be afforded them to register as soon as they arrive. Dr. Louis W. Achenbach is secretary of the chapter.

Bring Your Blue Fellowship Card

Registration will be made much easier for Fellows and for the Registration Bureau at San Francisco if each Fellow will bring his Fellowship card for 1923, and present it when registering. Complete instructions about registration will appear in the San Francisco Number of THE JOURNAL, to be issued during the month of May. All Fellows who have been reported to the American Medical Association for enrolment as members of constituent state medical associations and who have paid their Fellowship dues have had 1923 blue Fellowship pocket cards sent them.

Meeting of the Medical Veterans of the World War

There will be a meeting of the Medical Veterans of the World War at 2:30 p. m., Tuesday, June 26, at the Civic Auditorium in San Francisco. Lieut.-Col. Bertram F. Alden, San Francisco, is the chairman of the local committee of arrangements of this organization, and Dr. Arthur T. McCormack of Louisville, Ky., is president of the Medical Veterans.

Invitation to Members of Section on Ophthalmology and Section on Laryngology, Otology and Rhinology

Members of the Section on Ophthalmology and of the Section on Laryngology, Otology and Rhinology are extended a most cordial invitation to stop off at Omaha, on their way to San Francisco to attend the annual session of the American Medical Association, to play golf. Dr. Clarence Rubendall, Brandeis Theater Building, Omaha, will advise those interested concerning arrangements that have been made for their convenience.

Golf and Country Club Entertainment

An attractive program, including two tournaments, has been arranged for golf enthusiasts. Through the activities of Dr. James Eaves, chairman of the Committee on Golf and Country Clubs, the cooperation of all golf and country clubs throughout California has been obtained. Fellows visiting San Francisco during the session will receive any desired information relative to golf by communicating with the chairman or any member of the golf committee at headquarters or at the Civic Auditorium.

Tournaments are arranged for Fellows of the American Medical Golfing Association, and also a tournament for Fellows not members of this organization at the San Francisco Golf and Country Club and at the Lakeside Golf and

Country Club, respectively, Monday, June 25. Other tournaments will also take place during the week of the session, in and around San Francisco and various parts of the state. All Fellows, and particularly those members of the American Medical Golf Association who desire to take part in the tournament, are requested to communicate with the chairman, Dr. Eaves, 808 Balboa Building, San Francisco, as soon as possible.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Concluded from page 1154)

PUBLIC HEALTH

MARCH 7—AFTERNOON

Report of Conference on "The Education of Sanitarians and the Future of Public Health in the United States"

DR. HUGH S. CUMMING, Washington, D. C.: There is a dearth of persons properly qualified to fill the various positions in public health activity, ranging from state and city health officers to county medical officers, inspectors and public health nurses. There are many important public health positions now filled by untrained or incompetent persons, and by men trained in the expensive school of experience. The importance of the conservation both of the life and of the healthfulness of the individual is more fully appreciated now by all classes of people in this country than ever before. This general interest is realized by the professional politician and by professional uplifters and agitators, and it is realized also by that not inconsiderable number of selfish, sordid interests that thrive on ignorance and necessity, especially in the rural regions of our country. The medical profession has been backward in realizing the significance of this movement, and when it has proved evident in part to them they have too often developed a defense reaction, manifested in various degrees from open antagonism to indifference toward public health movements.

Early in 1922, I issued a call for a conference on "The Education of Sanitarians and the Future of Public Health in the United States." This conference was held in Washington, March 14 and 15. For the first time, presidents of universities and deans of medical schools came together with leaders in the field of public health to discuss this important subject of common interest.

The addresses of the conference and subsequent studies have revealed in a striking manner the present dearth of health officers, and the lack of training on the part of many now holding positions in public health work. Although there are approximately 10,000 public health workers of various kinds now engaged on a full-time basis by official health organizations, there will be required, according to John A. Ferrell, a force of approximately 30,000 within the next twenty years, in addition to those needed by private health agencies. Furthermore, while there are now 11,000 public health nurses in all types of health work, there is need, according to the recent report of the Committee for the Study of Nursing Education, for approximately 50,000 to serve the present population of the United States. Public health work has become differentiated into many more kinds of occupations than physicians or even sanitarians generally realize. There are various types of administrative work in rural, municipal, state and federal agencies, and in dispensaries, industrial health service and school health work; there are sanitary engineering; public health laboratory work (including bacteriology, entomology and chemistry); vital statistics; dispensary medical practice; dispensary dentistry; psychiatry and psychology, physical training, public health nursing and hospital social work; nutrition work; inspection work; popular health education; public health law, and research. One or more of these occupations are now to be found in the fields of general public health, tuberculosis work, social hygiene, mental hygiene, cardiac disease work and child hygiene.

Partially as a result of this attitude, there were graduated from nine universities with various kinds of public health degrees only 106 persons in 1921, of whom only twenty-one were doctors of public health, although the number of graduates from medical schools the same year was approximately 3,200.

Report of Activities Carried On by the Public Health Service Subsequent to the March, 1922, Conference on the Education of Sanitarians

DR. W. F. DRAPER, Washington, D. C.: From the various medical schools and universities, considerable information has been obtained regarding facilities offered for the education of sanitarians. It appears that there are at least eleven well established schools and departments of hygiene and public health in the universities of the United States, and other universities offer a large number of public health courses. While the University of Chicago has no separately organized school of public health, it offers approximately thirty-five courses in public health subjects. A new interest has been manifested during the last twelve months in the development of public health courses.

Considerable data have been collected from city and state departments of health and from other sources regarding the problem of salaries and tenure. The tenure situation needs to be corrected. Too frequently, well qualified health officers are displaced wholly for political reasons. On the other hand, it is believed that the salary problem is a more fundamental one. When higher salaries are paid and full-time health officers with proper training are employed, they should be able so to win the support of the people that heads of municipalities and states will have neither the desire nor the temerity to request their resignations. Special efforts must be made to establish higher standards of training in the employment of city and state health officers, and to bring about the payment of higher salaries so that well trained persons may be attracted to these positions. In an effort to win the support of mayors, governors, members of city councils and state legislatures and similar persons to the establishment of such standards, the service is planning to distribute among these officials a booklet setting forth the importance of well organized public health work. A preliminary draft of this publication has already been prepared.

As a result of communications with a few universities and colleges in the eastern part of the country, the service has found that there is a demand for lectures on the subject of public health work as a life career, and, consequently, a schedule of addresses is now being arranged for approximately fifteen universities and colleges in New England, New York and New Jersey. Preliminary steps have been taken to establish a clearing house for schools of public health and health departments.

On the recommendation of a subcommittee which met last July at Columbia University, and on the endorsement of the Advisory Committee, the Public Health Service is about to print and distribute among universities and colleges a report recommending the incorporation in the college curriculum of public health courses for all students. It is recommended that a one or two semester course in personal and community hygiene of approximately three hours be required of all first year students. The report recognizes that the selection of courses by those students planning to enter public health work as physicians or sanitary engineers will be determined by the requirements of schools of medicine, public health and engineering, but it also takes cognizance of the fact that an increasing number of students are entering public health work without a medical or engineering degree.

The Recruiting of Sanitarians for the Future Service of the State

DR. C. E. A. WINSLOW, New Haven, Conn.: The recruitment of leaders of sound training and high natural capacity is the crux of the public health movement of the present day, and the discussion of this problem, which has been stimulated during the past year by General Cumming and his associates of the Public Health Service, is fraught with

the deepest importance for the future of the movement which we have at heart.

The demand for qualified sanitarians is increasing year by year, and for the moment at least this demand is far in excess of the supply. We hear much about meager remuneration and insecurity of tenure. Yet from my experience of nearly twenty-five years in the training of public health workers I can quote the conclusion of the psalmist that in this field "I have not seen the righteous forsaken nor his seed begging bread." When a health officer with proper qualifications loses his position, it is nine times out of ten as a result of temperamental characteristics which disqualify him for the successful execution of his task; and for every man who is hampered by political pressure there are a dozen other openings crying out for his expert direction.

The recruitment of the best type of young medical graduates as the leaders of the public health movement of the future is a primary essential for the success of our cause.

The first essential factor in this problem is the question of the place and the content of a course in public health in the undergraduate medical curriculum. It was clear to us from the beginning that the second year was no place for such a course unless the subject was to be regarded as an accidental and unimportant offshoot from bacteriology. For some time we placed the course in the third year; but we found that here it came into serious conflict with the clinical work of the students, just admitted to the wards of the hospital, naturally and properly preoccupied with the fascinating problems of disease in the individual human body. We have now transferred our course to the first half of the fourth year, where it is allowed ninety hours of lectures, discussion and field work. By the fourth year the student has sufficient medical knowledge to realize what the modern public health campaign really may mean; and our effort is to include in the course a summary and a synopsis of the broader community applications of all that he has learned during his preceding three years, and to bring them into proper relation to the movement as a whole.

The Steps Already Taken in the Standardization of Public Health Training

DR. A. J. MCLAUGHLIN, New York: Annually, for several years, the Council on Medical Education and Hospitals of the American Medical Association has presented partial data on the institutions giving courses leading to public health degrees. The first real effort at standardization of these degrees was made at a conference held at Yale University early in 1919.

The next step was the appointment of a committee of sixteen in November, 1919, by the American Public Health Association on the Standardization of Public Health Training.

Of the many degrees which have been offered, the Certificate of Public Health (C.P.H.) has been given to the largest number of students. The next largest number of students have received the Bachelor of Science degree in Hygiene or Public Health. The C.P.H. and the Master's degree are given by several schools on the completion of one or two years of special study following either graduation in medicine or graduation from a college or a university. The course is never completed in less than one year for either medical or college graduates, and the latter usually require at least two years unless their undergraduate preparation in bacteriology, anatomy, histology, embryology, physics and chemistry has been unusually complete. The Bachelor's degree in Public Health is given by several schools which have the facilities for placing a broad fundamental public health training in the curriculum of regular four year courses. It would be undesirable completely to regulate or standardize the courses of study for these or any other degrees in a relatively young and rapidly growing profession like public health. It is desirable and important that the student may secure a proper perspective for public health work, and in the interest of unity and perspective it is in many ways desirable that certain fundamental lecture courses should be continued throughout the year. Laboratory courses may profitably be given intensively, but to turn over the students to one specialist after another in rapid succession would result in giving them solid blocks of highly specialized information which they could adapt to their own professional work only with great difficulty.

The number of graduates obtaining the Doctor of Public Health degree is increasing. In the majority of schools, but not in all, graduation in medicine is a prerequisite. In no case is the Dr.P.H. degree offered to a candidate who has not either the medical degree or the Bachelor's degree, and in no case is it possible to secure the Dr.P.H. degree with less than seven years of study following high school graduation. The Doctor of Science and Doctor of Philosophy degrees in Public Health are given on the same basis as in other fields.

DISCUSSION

DR. RAY LYMAN WILBUR, Stanford University, Calif.: In the curriculum committee of the Association of American Medical Colleges we have been making a steady endeavor to increase the number of hours that can be used for public health training and for training in hygiene. The courses in medical schools on public health and hygiene have, speaking in a broad way, been given by some one whom they wanted to give an easy and agreeable job. As I become associated more and more with educational institutions, I have become "course shy." Courses, courses—it seems to me, I live in an atmosphere of courses, and I am thoroughly tired and sick! When a man tells me he has given the same courses for twenty years, I say, "For goodness sake, why does not the Lord get busy!" When I talk of introducing more time into the curriculum for hygiene and public health, I fear it may take the form of some lecture courses that will be given in a stereotyped form year after year without any vitalizing effect. These courses can be given in a live way. We are training students so that they learn by doing, not by hearing, and public health instruction in a medical school must be organized on that basis. Students must go out and do the work. In the standardization of public health courses do not forget that we are trying to get over the standardization of medical courses. Give the individual institution and the individual man a chance to develop in their own way as much as you can, and also keep character and personality in the subject because, if you do, it will develop leadership just as it should in medical education.

DR. JOHN SUNDWALL, Ann Arbor, Mich.: At the University of Michigan we are attempting to stimulate interest in and to recruit workers for the public health field. In addition to the required courses in hygiene and public health in the schools of medicine, dentistry and pharmacy, all entering freshmen are required to take six lectures on the fundamentals of health promotion and disease prevention. At the conclusion of these lectures, the students are made acquainted with and urged to elect later a course included in the regular college curriculum. About 200 college students elect this course each year. Besides the aims, interests and activities of public health agencies, official and voluntary, the students' attention is called to the opportunities for those trained for public health work. In this way, all students are made acquainted with the machinery of public health, through the medium of the six required lectures. More than 500 students, annually, by means of the elective courses in the college or the required courses in medicine, dentistry and pharmacy, are made familiar with the opportunities that public health in the future will have to offer as careers. We are only in the second year of this attempt to stimulate interest in public health as a profession, and there is already abundant evidence that our efforts are bearing fruit. Public health directors should be trained in those larger universities where there are schools of medicine, engineering and education, in association with the college and the graduate school. At the University of Michigan, two programs of study are offered in the graduate school: one of one year's duration leading to the degree of Master of Science in Public Health; the other of two years' extent leading to the degree of Doctor of Public Health. The demand for trained workers in various fields of public health is even now much greater than the supply. We know of no profession which offers better opportunities to college women. The demand for trained workers in these fields will be second only to that of the teaching

profession. Programs of study in the college leading toward public health work will contribute largely to this demand on the part of college women. Vital statisticians, laboratorians, sanitary inspectors, school health supervisors, public health educationalists and medicosocial workers are among the special positions in health work that should appeal to college women and for which special training courses are being arranged at the University of Michigan. The first two years of a four year program of study leading to public health work will be based on a liberal education. Psychology, biology, sociology and chemistry should be included in these first two years. The second two years will include subjects of cultural value and, in addition, special courses bearing directly on public health specialties. It will be proposed that the degree of Bachelor of Science in Hygiene be given on the satisfactory completion of these programs of study. The nurse's relationship to public health is proving to be similar to that of the physician. It is not possible, nor is it desirable, that a physician should be at the head of all public health activities, although for certain phases of the work, the physician's services are indispensable. This situation is true also for the nurse, whose services in certain fields are indispensable. As the pioneer of public health, the public health nurse is rendering invaluable service. Her untiring labors in the counties and rural districts deserve the highest commendation. They are serving well in capacities of school and industrial nursing.

Dr. Edwin O. Jordan, Chicago: Two assumptions underlie largely a discussion of public health education. The first and most fundamental question is, Are we getting the right type of man in the work? I agree with Dr. Winslow that we should not lay too much emphasis on the financial aspects of the matter. The first consideration of the poet, the artist, the man of science is not the financial rewards; oftentimes he is working at a great financial sacrifice. Hundreds of public health workers are carrying on their work at great personal and financial sacrifice. That is the type of man we should watch for; and what General Cumming is doing in trying to interest and select the right type of man is fundamental. The right man may be trusted to work out his own education if given reasonable opportunity. First of all, we must have the man. The second assumption is that the fundamental education is what it should be. We are loading up students not only in medical courses but also in our fundamental instruction in secondary schools and colleges, with the result that spontaneity of the student is often entirely smothered by a plethora of courses, as Dr. Wilbur has pointed out. The public health official ought to be allowed to keep his mind elastic, ready to receive new impressions, to act on new information, and to abandon outworn creeds. Having got the right type of man, we should not smother him entirely in our fundamental requirements.

The Education of the Partially Trained Sanitarian Now Employed

Dr. Frederick W. Sears, Syracuse, N. Y.: This article will appear in full in The Journal.

DISCUSSION

Dr. Ray Lyman Wilbur, Stanford University, Calif.: The great danger of the health officer is to have large authority and too little information. Partially trained sanitarians are in that danger a good deal of the time. The plan suggested by Dr. Sears seems to be the practical and right one—to teach these men something they want to know. At the same time, if you can develop their social sense, they may become satisfactory health officers in their communities.

Dr. W. S. Rankin, Raleigh, N. C.: I have been impressed by what has been said with respect to the personal and educational qualifications of men entering public health. Public health work in this country has reached a place at which it is not so much a matter of money as it is of getting the right sort of people to engage in public health work. In some places they are limiting the requests for appropriation by the available supply of personnel; therefore the question of personnel is of great importance. From my experience of fourteen years in employing health officers and nurses, personal qualifications are most important. I have seen many men promoted in the country on account of their personal qualifications. I do not recall a single person demoted who had the right qualifications.

Dr. Haven Emerson, New York: In the main, except in the federal Public Health Service and in the army and navy, accident and opportunity have been the chief factors in the selection of the present personnel of health departments and private health agencies. This situation has resulted from the astonishing rapidity with which public demand and private interest in health service have followed the interpretation of preventive medicine to the public, and because more of the educational institutions of the country did not realize the public needs until after popular interest had resulted in a tremendous expansion in the appropriations, the authority, the personnel and functions of health service. Since 1907, the number of public health nurses has increased from 119 to 12,000, and well organized courses for nurses in the theory and practice of disease control and health development have been in operation for many years. As long as there is so much uncertainty in the permanence of tenure and such inadequacy in the financial returns, it will be largely a waste of time and effort to erect great educational structures primarily for the training of men and women for professional careers in preventive medicine I would put under three professional groupings the hospital administrator, the public health nurse and the industrial hygienist, reasonably well paid in return for the time spent in acquiring an education. Beyond that, we have the other groups: health officers, medical school inspectors, and assistants in the field of public health administration; sanitary inspectors and engineers, vital statistics, preventable disease control, laboratories, foods, and practical instruction in child hygiene and education. These are the fundamental bureaus which are now employing assistants in public health. Before the end of the present year, at the College of Physicians and Surgeons of Columbia University, one half of the fourth year class will begin an elective course of eight weeks in the practice of preventive medicine, with half a day spent in such subjects as public health, medical school inspection, examination of schoolchildren, psychiatric work, psychiatric examination in schools and prenatal supervsion.

Dr. Oliver W. H. Mitchell, Syracuse, N. Y.: We cannot all do as much as some large universities are doing unless we have the facilities and the money to work with. That situation was what confronted us in central New York. The health council of the state fixed certain requirements for health officers, and we felt we should cooperate in every possible way, to train these men along the lines laid down. We instituted a short course for women and men, some of them already occupying positions as health officers. With this course we did very well as compared with the regular course in public health; nevertheless, there is still need for such instruction, and it is up to many institutions, like Syracuse, or perhaps institutions not having as many facilities as Syracuse, to offer such help to the men in the field. As far as medical students are concerned, we have felt it unwise to teach them hygiene without practical demonstrations, so we keep the teaching of hygiene in the medical school closely tied up with what is going on in the city.

Dr. Arthur T. McCormack, Louisville, Ky.: We have had some public health expositions that have been of tremendous educational value to both sanitarians and physicians. In Louisville, 110,000 people came to see the public health exposition, which was so conducted that 12,000 different people took part in either the exhibits or the program. Demonstrations were made of modern public health machinery, and each man who was put on a demonstration had the chance to find out what people thought of his method of education. It was extremely interesting also to college professors, university men, and representatives of commercial activities, who offered for sale things that promote people's health and happiness. It has been of great value in these expositions that several hundred physicians took part in the exposition and learned to talk to people regarding the common problems in public health.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Tropical Disease Clinic for American Medical Association.—The medical staff of the Navy Hospital, Balboa Park, will give a clinic on tropical diseases for the Fellows of the American Medical Association, July 3.

Bill to Protect the Public.—A bill making it unlawful for any person who professes to treat the sick to use the words, letters, or title of doctor, or physician and surgeon, on doors, windows, signs, and other places unless such letters or titles are accompanied by the degree on which his title is based, with the name of the school that conferred it, has passed the senate and assembly.

CONNECTICUT

Yale University School of Nursing.—President Angell announced, April 24, the establishment at Yale University, New Haven, of the first university undergraduate school of nursing in the United States, the funds for which will be provided by the Rockefeller Foundation. The school will have its own dean, its own faculty, buildings and budget, and will not be dependent on medical schools and hospitals. The Yale school will break away from the apprenticeship system of nurse training and will attempt to develop an educational program closely related to and dependent on the practical work; in focusing attention on the educational training of the student, many routine tasks which contribute little to this training will be eliminated and the period of preparation thus shortened. About twenty-eight months will be required for the course. A high school course or its equivalent will be required for admission. The most significant feature of the school will be the character of the training. All factors will be presented which contribute to the diagnosis, care and treatment of disease, and which relate to the conservation of health. Patients will not be considered as hospital "cases" only, but such factors as heredity, environment, child development, psychology, economics, sociology, industry and public health will be presented in their bearing on each problem studied. Properly to develop such conception of disease, the new school will embrace field work and community nursing as part of the basic training.

DELAWARE

Physicians Protest Treatment by Legislators.—Physicians of the Newcastle County Medical Society are reported as indignant at the treatment accorded the legislative committee of the society by the temperance committee of the Delaware House of Representatives. The legislative committee requested a hearing on a pending bill permitting the distribution of alcoholic preparations for medicinal use under certain restrictions, but its request was refused under conditions that seemed to reflect on the dignity of the society and of the committee.

DISTRICT OF COLUMBIA

Lectures on Anthropology.—Dr. Ales Hrdlicka, Washington, is giving a course of lectures on anthropology, with special reference to Czechoslovakia, at the Prague Medical Faculty. Dr. Hrdlicka was born in Bohemia.

GEORGIA

Hospital News.—Plans have been completed for the erection of the Albert Steiner Memorial Hospital at Atlanta at a cost of about $300,000. This institution, which will be operated in conjunction with the Grady Memorial Hospital, will be for the free treatment of cancer. It will be maintained largely from income from the Steiner estate. Radium valued at $75,000 will be provided for the institution.——Plans for the proposed half million dollar State Tuberculosis Sanatorium at Alto have been published. They include administration buildings, two infirmaries, a power plant, and laundry. The legislature will be asked to appropriate $250,000 for the buildings, the counties to pay the remainder.

ILLINOIS

Personal.—Dr. James T. Jenkins, Carthage, was recently elected president of the Hancock County Medical Society.—Dr. John A. Wheeler, former state senator from the Springfield district, has been appointed superintendent of the Lincoln State School and Colony to succeed the late Dr. Samuel A. Graham, of Clinton.

Hospital News.—The new $300,000 Victory Memorial Hospital, Waukegan, will be dedicated, Memorial Day, May 30, and opened to patients a few days later.——The cornerstone of the new building for the Palmer Tuberculosis Sanatorium, Springfield, will be laid in June on the tenth anniversary of the establishment of the institution.

Physicians Fined.—It is reported that Drs. John R. Thompson and John F. Shrader of Bridgeport, and Arthur R. Lindsay of Pinkstaff, pleaded guilty recently to violating the vital statistics law which requires registration of births within ten days, and were fined the minimum fine of $5 and costs. The complaints were filed by a special agent of the department of public health.

Tuberculosis Sanatorium Survey.—The state department of public health has recently completed a survey of the eleven county tuberculosis sanatoriums in operation in Illinois. There is a maximum capacity of 400 beds; the average number of patients cared for was 331; the average cost of maintenance each month for all the sanatoriums is $25,300, or slightly more than $76 a month for each patient. The survey showed that four sanatoriums hold diagnostic clinics; eight conduct dispensary service, and seven conduct, in some measure, county tuberculosis and public health work. The lowest appropriation for any of the sanatoriums for 1923 is $10,000, but a contract with the U. S. government to care for tuberculous ex-service men makes the total amount available in that instance nearly $30,000. Nine sanatoriums have appropriations ranging from $25,000 to $40,800 for maintenance; another has an $18,000 budget.

County Hearing Boards.—Plans for establishing a hearing board for every county in the state have been worked out by the state department of public health. The purpose of the boards is to give physicians, local registrars, midwives and others who are charged with violations of the vital statistics or other laws and regulations, an opportunity to state their cases to show cause why they should not be prosecuted in the courts. It is planned to request court action in only those instances in which circumstances indicate wilful and repeated violations, the aim of the hearing boards being to stimulate friendly cooperation through education. According to plans, the boards will consist of the local state's attorney, the local health officer and the district health superintendent, or a member of the state department of public health from Springfield. Such a board recently heard in Carroll County the case of the Lanark health officer charged with failing to quarantine and report cases of communicable diseases. Another sat in Lee County, where a physician was charged with failure to report smallpox. In both instances, the charges were dismissed on promises to observe the laws in the future.

Chicago

Joint Medical Meeting.—The Chicago Ophthalmological Society held a joint clinical meeting with the Chicago Oto-Laryngological Society, April 16-17. Dr. William L. Benedict of Rochester, Minn., read a paper on "Serous Tenonitis."

Personal.—Dr. Albert H. Andrews has been elected professor of otolaryngology of the Chicago Eye, Ear, Nose and Throat College.—Dr. Daniel N. Eisendrath gave a Mayo Foundation lecture at the Mayo Clinic, Rochester, Minn., April 26, on "The Clinical Importance of Renal and Ureteral Anomalies."——Dr. Carl Beck, Chicago, spoke on "Surgical Diagnosis," before the Elgin Physicians' Club, April 9.

Professions Hold Legislative Conference.—A dinner was held at the Hotel Morrison, April 23, at which nine hundred leaders of the medical, dental and pharmaceutical professions of Chicago and down state, together with members of the state legislature, outlined plans to push legislation to protect their professions and the public. They urged an amendment to the law which would transfer the appointment of examining boards from the director of the department of registration and education to the governor; that the examiners be appointed for terms of five years and that licenses be signed by the president and secretary of the board as well as by the director.——This conference was the result of the recent conviction of W. H. Miller, director of the department of registration and education, for irregularities in licensing men not qualified.

INDIANA

Illegal Practitioner Arrested. — Minnie L. Priepke, a mechanotherapy practitioner of Goshen, according to reports, was arrested on a charge of practicing medicine without a license on complaint of the secretary of the state board of medical registration and examination, April 13.

Personal.—Dr. William F. King has been appointed state health commissioner for a regular term of four years. Dr. King was first appointed to this position in August for the unexpired term of Dr. John N. Hurty, who resigned.——Dr. Carleton B. McCulloch, Indianapolis, will go to Europe as representative of the American Legion, to invite certain distinguished guests to the American Legion national convention in San Francisco, October 15-20, it was announced, March 19.——Dr. Frederick G. Banting of the University of Toronto, Canada, addressed the Indianapolis Medical Society, April 10, on diabetes and insulin. Dr. Banting stated, it is reported, there are now 3,000 patients under treatment with insulin.

IOWA

Measles Epidemic.—Seventeen new cases of measles in the epidemic at Waterloo were reported, April 9. This was the largest number reported in any one day, although the disease had been prevalent for two weeks. All parts of the city are affected, but the cases seem mild.

Personal.—Dr. Benjamin Courshon has been appointed city physician of Sioux City to succeed Dr. Max A. Helfgott, who resigned.——Dr. H. Hauneder of Vienna arrived in the United States from Austria, March 6, and will locate in New Hampton.——Dr. A. C. Conaway of Marshalltown was elected mayor of that city recently.——Drs. Raleigh A. Buckmaster, Dunkerton, and James R. Thompson, Waterloo, were elected president and secretary, respectively, of the Blackhawk County Medical Society at the annual meeting, April 4.

KANSAS

State Medical Meeting.—The fifty-seventh annual meeting of the Kansas Medical Society will be held at Kansas City, May 2-4, under the presidency of Dr. Middleton L. Perry, Topeka. Drs. William A. Pusey, George J. Musgrave, and T. Howard Plank, all of Chicago, will be the principal visiting speakers.

KENTUCKY

Health Survey.—L. K. Hospins of the U. S. Public Health Service and F. C. Dugan, sanitary engineer of the state board of health, will make a health survey in northern Kentucky to determine the cause of the prevalence of typhoid in Covington and adjacent territory.

MAINE

University News.—The governor has signed the bill appropriating $895,000 for the University of Maine for each of the fiscal years ending in 1924 and 1925. Of this amount, $170,000 will be expended for an arts and science building.

MARYLAND

Permanent Health Exhibit Planned. — Activities of the Maryland Department of Health in combating disease will be shown in a permanent exhibit to be placed in the Smithsonian Institute, Washington. Dr. John S. Fulton, director of health, and Dr. John Collinson, assistant chief of the bureau of communicable diseases, are arranging the material.

Hospital News.—The West Baltimore Medical Association has purchased the property formerly used as the Hebrew Orphan Asylum. After improvements have been made, the new hospital will accommodate 140 patients. All except contagious diseases will be treated. The hospital which will be nonsectarian, will be formally opened in the fall.——A special medical meeting in which the Maryland Psychiatric Society and the Washington Psychiatric Society participated, was held at the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, April 18, to celebrate the tenth anniversary of the opening of the clinic.

MASSACHUSETTS

Exchange Professorships.—Sir Harold Jalland Stiles, professor of surgery at the University of Edinburgh, and former president of the Association of Surgeons of Great Britain and Ireland, arrived in New York, April 6. He will occupy the chair of Dr. Harvey Cushing of Harvard University, Boston, for one week; then spend a week at Johns Hopkins University, Baltimore. Last year Dr. Cushing acted for two weeks as director of the surgical unit at St. Bartholomew's Hospital, London.

MICHIGAN

Bill for Homeopathic School Killed in Committee.—The Senate State Affairs Committee voted, April 10, not to report out Senator Whiteley's resolution directing the regents of the University of Michigan to reestablish the Homeopathic College apart from the regular medical school, with which it was merged two years ago.

Society News.—Dr. Frederick C. Warnshuis, Grand Rapids, presented a paper on "Our Present Attitude to Gallbladder Disease," before the Kent County Medical Society, April 11. ——At the annual election of officers for the medical section of the Wayne County Medical Society in Detroit, April 9, Dr. Robert C. Moehlig was elected chairman, and Dr. George P. McNaughton, secretary, for the ensuing year.

Bill to Regulate Fees.—If a bill recently introduced in the legislature is enacted, the state of Michigan will be divided into districts, and the maximum charge that may be made under any oral or implied agreement for hospital and medical services by any physician or hospital within each district will be fixed by law. If a physician charges more than the amount stated in the proposed law, his license may be revoked.

MINNESOTA

The Cancer Institute.—Further details of the gift of $250,000 for a cancer institute in connection with the University of Minnesota General Hospital (The Journal, April 21, p. 1155) have been received. The donation was made by the Citizens Aid Society of Minneapolis, established in 1916 by the late George H. Christian; $200,000 will be expended in the construction of a suitable building; and the remainder, on radium and roentgen-ray equipment. The institute will have a capacity of fifty beds and will operate on a self-supporting basis. Construction work will start at once.

Physiologists Meet at Rochester.—In order to correlate further the teaching of physiology and its clinical application, physiologists from nearby medical schools met at the Mayo Foundation, Rochester, April 9-11. The following were present: Dr. Frank C. Becht, Northwestern University; Prof. Charles W. Greene, University of Missouri; Prof. August E. Guenther, University of Nebraska; Dr. Don. R. Joseph, St. Louis University; Dr. Arno B. Luckhardt, University of Chicago; Drs. Elias P. Lyon, George E. Fahr, and Prof. Jesse F. McClendon, University of Minnesota; Dr. John T. McClintock, University of Iowa; Dr. James F. McDonald, Creighton University; Prof. W. J. Meek, University of Wisconsin, and Prof. Percy F. Swindle, Marquette University.

MISSOURI

Medical Society to Aid Cripples.—The St. Louis Medical Society recently passed a resolution to repeat last year's survey in order to ascertain how many crippled children in and about St. Louis are not receiving corrective treatment because of the inability of their parents to pay, and to renew its offer to provide free medical, surgical, hospital or appliance treatment for those children. Last year the society received the names of crippled children from seven states outside Missouri. The committee on public health and instruction of the medical society inquires into the cases reported and the parents of the children are notified to present them at a three-day clinic at the medical society's offices in St. Louis.

MONTANA

Volunteers for Spotted Fever Serum.—It is reported that nine Japanese of Missoula responded to a call for volunteers for trying out the immune serum recently produced by Dr. Hideyo Noguchi for the treatment of Rocky Mountain Spotted Fever (The Journal, April 21, 1923, p. 1146). A second injection of serum was administered, April 12.

NEVADA

Hospital News.—It is planned to erect a new ward for the Nevada Hospital for Mental Diseases, Reno, at a cost of approximately $40,000.——Dr. Claude H. Church, Tonopah, has been appointed medical director and superintendent of

the Ross Sanatorium, Ross, Marin County, Calif.——A new eighteen bed hospital will be erected in Central City at a cost of $35,000.

NEW JERSEY

Chiropractor Fined.—The state board of medical examiners reports that Roy H. Langley, chiropractor, of Bound Brook, was fined $200 and costs, following conviction on the charge of practicing medicine without a license.

NEW YORK

Women's State Medical Society Meeting.—The Women's Medical Society of New York State will hold its eighteenth annual convention in New York City, May 21, just preceding the meeting of the Medical Society of the State of New York.

Hospital News.—An addition will be erected to the Niagara Falls Memorial Hospital at a cost of $250,000.——The South Side Hospital, Babylon, will move into its new $300,000 building, May 31.——The cornerstone of the new $500,000 wing of the Jewish Hospital, Brooklyn, to be known as the Abraham Memorial, was laid, March 24. The hospital has taken title to sixteen lots adjoining the new wing; these will be transformed into a playground and recreation park.

New York City

Roentgen-Ray Society Organized.—The Manhattan Roentgen-Ray Society was organized, March 28. The following officers were elected: Dr. Charles Gottlieb, president; Drs. Jose S. Smul and Harry Reinstein, vice presidents; Dr. Louis Greenwald, secretary; Dr. Lessof, treasurer; Dr. Michael Spinrad, historian; Drs. Max Beegel, Benjamin Goldstein, Tobias Weinberg, Samuel Gellert and Jacob Abowitz, executive committee.

Auditorium for Hospital.—An auditorium for free lectures on hygiene, sanitation and the prevention of disease, will be part of the equipment of the new Beth Israel Hospital, at Sixteenth Street and Livingston Place. For this purpose the Federation for the Support of Jewish Philanthropies has increased the budget allowance for this hospital by $15,000. The new building will have six floors of private rooms for adult patients and a children's ward containing 104 separate glass-walled compartments.

Floating Hospital Begins Treating Tuberculous Children.—Bellevue Hospital has begun the treatment of fifty schoolchildren on a boat in the East River off Twenty-Eighth Street. Physicians from the hospital and two teachers from the public schools have been detailed to the craft. The children report at 9 o'clock in the morning and receive breakfast and dinner on board. A roentgen-ray department and a surgical dressing room have been provided. It is intended to establish a nursery, and a department for tuberculous men and women on board. Dr. James Alexander Miller is director of the work.

Course in Child Conservation.—Child conservation will be stressed at the Columbia University Summer Session. Under the direction of Dr. Haven Emerson, instruction in the principles and practice of medical inspection of schools and schoolchildren will be provided for physicians daily for six weeks from 10 a. m. to 12 noon, at the School of Medicine. Public health and standards of living will be discussed in a sociologic course directed by Professor Chaddock, the emphasis being placed on measures to promote infant and child welfare, to improve the health of schoolchildren and to protect, at all stages of their industrial life, the workers in industries. Prof. W. H. Woglom will direct a course in cancer research at the Crocker Laboratory, 1445 Amsterdam Avenue.

OHIO

Chiropractor Convicted.—J. H. Cramblett, chiropractor of Newark, recently convicted on a charge of practicing medicine without a license, was committed to the county jail, April 6, in lieu of paying a fine of $25 and costs, it is reported.

Discharge of Patients Defended.—In a report recently submitted to the state welfare director by the acting superintendent of the Dayton State Hospital, the actions of superintendents of the various state hospitals for the insane, in discharging patients who have been cured, was defended. The report stated that if the officers of state institutions were compelled to refrain from discharging all patients who have threatened homicide or suicide during an attack of mental trouble, double the number of state hospitals would be needed.

Cornerstone of Medical School Laid.—The cornerstone of the new Western Reserve University Medical School, Cleveland, was laid on the site of the new "health" group on Euclid Avenue, April 18, by Dr. Carl A. Hamann, dean of the school of medicine. Prof. William T. Corlett, London, England, and James D. Williamson, acting president of the university, gave addresses. The school of medicine, which will be a four-story building, is expected to be ready for occupancy, Feb. 1, 1924. It is the gift of Samuel Mather, who donated for this purpose $2,500,000.

"Mentally Defective" Defined.—A bill recently introduced in the general assembly authorizes boards of education to arrange for special school classes for mentally defective and feebleminded children and children with speech defects, and to report their names annually. These boards would enter into an agreement with the Bureau of Special Education, Miami University, or any state supported teachers' college, to examine and classify the children, and would empower the director of education to contract with these colleges to inspect and supervise the equipment, appointments and instructional forces of all special classes. These classes would be formed in districts in which ten or more mentally defective children reside; twenty or more border-line and delinquent children, or fifty or more children with speech defects. Expenses would be met from the state school equalization fund. For the first time, the *Ohio State Medical Journal* states, a legislative proposal attempts to define what constitutes a mentally defective child:

> Children of school age who are subject to a serious and permanent condition of arrested brain development and of defective intelligence dating from birth or from early life, by reason of which even the highest grades of those thus affected are rarely able to do satisfactory all-round third grade work, and rarely reach an intelligence development beyond 9 years, and rarely acquire sufficient judgment and competency to lead an independent existence in society or to manage for themselves or their affairs, without the need of external guidance, supervision or support, and who ordinarily constitute less than 1 per cent. of the pupils enrolled in the elementary grades.

OREGON

Personal.—Dr. and Mrs. Horace P. Belknap, Prineville, who recently celebrated their thirty-fifth wedding anniversary, have three sons, Drs. Horace P. Belknap, Nampa, Idaho, and Leland V. and Wilford Belknap, of Portland, practicing physicians. A fourth son, Hobart, is a junior medical student in the University of Oregon.——The French Medaille d'Honneur des Epidémies has been awarded to Dr. Frank R. Mount of Oregon City, for services in France during the World War.

PENNSYLVANIA

The Bedford Lectures.—The Pittsburgh College of Physicians held its annual dinner, at which the second Bedford lecture was given, April 26. Dr. Sydney R. Miller, Baltimore, spoke on "The Future of Our Profession." Dr. Hunter H. Turner presided.

Allegheny County Medical Society.—At the annual meeting and banquet of this society at Pittsburgh, April 10, Dr. Ernest W. Willetts was elected president; Dr. Evan W. Meredith, first vice president; Dr. William H. Mayer, secretary, and Dr. Elmer E. Wible, treasurer. Dr. Charles H. Miner, state health officer, stated that it was hoped at the next legislative session to pass a measure reorganizing the health administration of third class cities, so the law will require boards of health to employ physicians as health officers. Dr. Lawrence Litchfield and Dr. Howard C. Frontz, president and president-elect, respectively, of the state medical society, gave addresses.

Philadelphia

Research Institute Opens.—The formal opening of the laboratories of the Research Institute of Cutaneous Medicine was held, April 26, with Dr. David Riesman presiding. Dr. Udo J. Wile of the University of Michigan gave the opening address. Dr. Jay Frank Schamberg is director of the institute.

John Scott Medal Awards.—The John Scott Medal Awards were presented at a special meeting of the American Philosophical Society, April 10, as follows: Dr. C. Eijkman of the University of Utrecht, for research on dietary diseases; Arthur Louis Day, Ph.D., Carnegie Institution, Washington, D. C., for research on optical glass; Sir Joseph Thomson, master of Trinity College, Cambridge, for research on the physics of the electron, and Francis William Aston, F.R.S., of Trinity College, Cambridge, for his development of the mass-spectrograph. Dr. Hobart A. Hare represented the board. These awards are made annually by the city of Philadelphia, from the income of the John Scott fund, on recom-

mendation of a committee of five, consisting of representatives from the National Academy of Science, the American Philosophical Society, and the University of Pennsylvania.

RHODE ISLAND

Medical Meetings.—At the annual banquet and meeting of the Pawtucket Medical Association, March 15, Dr. Frank E. Peckham, Providence, president of the Rhode Island Medical Association, was the principal speaker. The following officers were elected: president, Dr. Stanley Sprague; vice president, Dr. Edward Duffee, and secretary, Dr. George E. Rönne.——Dr. Donald A. Farnum of the Boston Psychopathic Hospital spoke on "Mental Hygiene and Adolescence" before the Rhode Island Mental Hygiene Association and the Rhode Island Congress of Mothers, at Providence, March 22.

TENNESSEE

Personal.—Dr. James H. McCall, Huntingdon, has been appointed instructor in the medical department of the University of Tennessee, Memphis.——Dr. W. S. Quinland, head of the department of pathology, Meharry Medical College, Nashville, has been elected a member of the American Association of Pathologists and Bacteriologists.

State Medical Meeting.—At the ninetieth annual meeting of the Tennessee State Medical Association, held in Nashville, April 10-12, under the presidency of Dr. Holland M. Tigert, Nashville, the following officers were elected for the ensuing year: president, Dr. Hampton L. Fancher, Chattanooga; treasurer, Dr. J. Owsley Manier, Nashville, and secretary, Dr. Joseph F. Gallagher, Nashville. Knoxville was selected for the next annual meeting.

TEXAS

Child Guidance Clinic.—More than 300 persons attended the first reception to the public, held by the Dallas Child Guidance Clinic, April 5. This is the third of eight demonstration clinics to be established in various parts of the country by the Commonwealth Fund of New York in cooperation with the National Committee for Mental Hygiene for the study of juvenile delinquency. The Commonwealth Fund bears the expense for the first six months, following which the service will be continued under local direction.

UTAH

Limitation of Medical Fees.—A new schedule of medical and surgical fees, and rules governing them, was promulgated by the Utah State Industrial Commission to take effect April 1. The schedule presents the maximum fees that are ordinarily allowed by the commission, but on satisfactory evidence of extraordinary difficulties the commission may allow higher fees. Regardless of the maximum established by the regulations, all fees are to be limited to the prevailing charges in the community where the service is being performed, for similar treatment of injured persons of like standards of living. One of the rules relating to fees to be paid for operations provides that if the case terminates fatally within seven days after the operation, only one-half of the fee will be allowed.

WEST VIRGINIA

Personal.—Dr. George E. Mills, Hopemount, has been appointed resident physician of the Irene Byron Tuberculosis Sanatorium at Fort Wayne, Ind., to succeed Dr. Doster Buckner, who will resign, May 1, to resume private practice.

WYOMING

New State Health Officer.—Dr. George M. Anderson, Casper, has been appointed state health officer and secretary of the Wyoming State Board of Health to suceed Dr. Albert B. Tonkin of Cheyenne who resigned recently.

CANADA

Personal.—Dr. Frederick G. Banting, Toronto, will be appointed to a chair in medicine at the University of Toronto if plans of the university and the provincial government materialize. An annual allowance of $10,000 accompanies the appointment, $6,000 being for salary, and the remainder for supplies, assistants, and other expenses.

Public Health News.—The epidemic of typhoid fever which has been spreading over northern Ontario during the past few weeks has reached a critical point. To date 750 have been reported, with twenty-four deaths. New cases are being reported at the rate of five a day. The cause of the outbreak, polluted water, at Cochrane, Ont., where the majority of cases have occurred, has been eliminated, and a rapid decrease in the number of cases is expected. At present there are fifty graduate nurses from Toronto in Cochrane, and also a number of nonresident physicians. The town of Cobalt, Ont., recently made a grant of $1,000 to be spent in combating the epidemic in Cochrane.——An outbreak of smallpox has been reported from North Sydney, N. S., thirty cases being recorded. The spread of the disease is said to be due to the lack of proper medical supplies, the district being isolated.——Application has been made to the Ontario Medical Association by about 260 Ontario physicians for admittance to the insulin clinics in the Toronto (Ont.) General Hospital. These physicians will be given, in groups of twenty, two days of observation and instruction. It is thought that one of the results of this plan will be that diabetic patients will not be obliged to remain for as lengthy periods at the Toronto General Hospital. The local practitioners will be enabled to administer insulin after leaving the hospital.

GENERAL

Swindler Apprehended.—F. S. Miller, whose plan to obtain money from leading surgeons in several cities was noted in The Journal, Feb. 24, 1923, p. 563, was taken into custody in Dubois, Pa., on a charge of forgery. He obtained $250 from the Braddock National Bank. Miller operated, it is said, in York and Braddock, Pa.; South Bend, Mishawaka and Huntington, Ind.; Louisville, Ky.; Alliance, Ohio, and other places.

Northern Tri-State Medical Association.—The fifteenth anniversary of the Tri-State Medical Association (Michigan, Indiana and Ohio) was held in Cleveland, April 10-11, under the presidency of Dr. G. M. Livingston, Detroit. The following officers were elected for the ensuing year: president, Dr. Harry F. Mitchell, South Bend, Ind.; vice president, Dr. C. W. Waggoner, Toledo, Ohio; treasurer, Dr. A. Joseph Weitz, Montpelier, Ohio, and secretary, Dr. Charles W. Haywood, Elkhart, Ind.

Epidemic Encephalitis.—A total of 575 cases of epidemic (lethargic) encephalitis was reported to the U. S. Public Health Service during the first three months of 1923. The disease was most prevalent in the week ending, March 3, when sixty-nine cases were reported. The total for the week of March 31 was thirty-seven. Public health officials said these figures were not exact since physicians in many cases have confused epidemic encephalitis with meningitis and other diseases. One case recently reported proved to be coma due to a mastoid infection.

FOREIGN

Plague in India.—According to reports, plague is prevalent in nearly all the provinces of British India. For the week ending March 24, 9,000 new cases were reported with 8,000 deaths. The death rate is especially heavy in the central provinces, the United Provinces, Bombay Presidency, the Punjab, and Delhi.

Campaign Against Syphilis in Belgium.—The propaganda against syphilis in Belgium has assumed the proportions of a crusade. The king and queen head a list of subscriptions for funds for carrying out propaganda and establishing laboratories all over the country. The fund started two years ago now amounts to 400,000 francs. During the war, it is said, syphilis assumed alarming proportions in Belgium, but a diminution in the amount of syphilis can already be noted.

Hospitals for the Slightly Sick.—The *Deutsche medizinische Wochenschrift* reports that the new arrangement of hospitals for persons that are not seriously ill is proving extremely satisfactory. A number of sanatoriums are being converted into these *leichtkrankenhäuser*, the maintenance of which is much less expensive than the general hospitals. Some are arranged for men, some for women and some for children. The arrangement relieves the general hospitals and the institutions for children. The Blankenburg sanatorium has been transformed to an institution for children with chronic affections.

Medical News from Siam.—Dr. M. E. Barnes, director for Siam for the International Health Board of the Rockefeller Foundation, writes that 332,076 treatments were given in the antihookworm campaigns recently conducted by the Interna-

tional Health Board and the Siamese Red Cross Society.——At a conference of Red Cross Societies, recently held in Bangkok, Siam, delegates were present from the British, American, Japanese, Chinese, French, Philippines, Dutch East Indies and Siamese Red Cross societies, the League of Nations, the International Committee of Red Cross Societies, the British Colonial Office, the Rockefeller Foundation, the China Council of Health Education and the Department of Public Health of Siam. A health exhibition of two weeks' duration followed the conference.——The Rockefeller Foundation is providing the following fellowships for candidates from Siam: public health, one physician studying at Johns Hopkins School of Hygiene and Public Health, Baltimore; nursing, one candidate in Peking Union Medical College School of Nursing; leprosy, one physician studying in the Philippines.——A recent survey showed that there are approximately 8,000 cases of leprosy in the kingdom of Siam. The infirmary conducted in Chiengmai by Dr. J. W. McKean, now receives a subsidy from the government, and another leprosarium, under construction near Bangkok, will be opened in April, under the auspices of the Siamese Red Cross Society.——The Siam Medical Association, enrolling 300 physicians, held its second annual session in January.——The following American physicians working in Siam have received decorations from the Siamese government for special services rendered: Ira Ayer, adviser to the department of public health; R. W. Mendelson, medical officer of health, Bangkok, and M. E. Barnes.

Deaths in Other Countries

Dr. **J. Llewellyn Rees** of Pontardawe, March 4, aged 58.——Dr. **H. W. McCaully Hayes** of Madras, recently.

Government Services

Public Health Service Extends Radio Activities

Since March 15, the number of radio stations cooperating with the U. S. Public Health Service has trebled. There is now scarcely a section of the country that is not within range of at least one broadcasting station which releases health bulletins furnished by the federal service. During the first six months of its existence it is estimated that this service reached 27,000,000 people in the United States alone. There are more than 2,000,000 radio receiving sets within range of stations releasing these health bulletins. The Public Health Service has the distinction of being the first government agency in the world to inaugurate an education-by-radio service.

Hospitals Authorized

Pursuant to instructions of the Secretary of War the organization of General Hospital No. 27, organized reserves (School of Medicine, University of Pittsburgh Unit, Pittsburgh), and of Veterinary Station Hospital No. 2 (Seventh Corps Area Unit), has been authorized.

Hospital Train Authorized

Pursuant to instructions of the Secretary of War, the organization of a hospital train, to be known as Hospital Train No. 4 (Alabama State Unit), has been authorized.

U. S. Public Health Service News

Dr. Boyd R. Sayers, surgeon, U. S. Public Health Service, has been directed to proceed to Melbourne, Australia, to attend the meeting of the Pan-Pacific Scientific Congress to be held in Melbourne in August. He will then proceed to Johannesburg, South Africa, to study phthisis problems on the Rand, returning via London, England, for conference with experts in London and at the British mine rescue stations.——Dr. Louis L. Williams, Jr., surgeon, U. S. Public Health Service, has been directed to proceed, about May 1, to Rome, Italy, and other points in that country, for duty in connection with field investigations of malaria.——Dr. Dana E. Robinson, surgeon, U. S. Public Health Service, has been relieved from duty at the Immigration Station, Philadelphia, and assigned to the Quarantine Station, San Juan, Porto Rico.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 2, 1923.

Criminal Responsibility

As shown in previous letters the question of criminal responsibility is in a very unsatisfactory state and is constantly giving rise to difficulties in the administration of the law. Three months ago, a committee appointed by the Medico-Psychological Association, consisting of leading psychiatrists, particularly those experienced in prison service, began work on the question of responsibility of criminals. It has issued an important report, which has been sent to a committee of judges appointed by the lord chancellor to consider whether any change should be made in the law relating to criminal trials when the plea of insanity is raised. The committee has unanimously concluded that: 1. The criteria of responsibility expressed in the rules in M'Naghten's case should be abrogated, and the responsibility should be left as a question of fact to be determined by the jury. 2. In every trial in which the prisoner's mental condition is at issue, the judge should direct the jury to answer the questions (*a*) Did the prisoner commit the act alleged? (*b*) If he did, was he at the time insane? (*c*) If he was insane, has it been proved that his crime was unrelated to his mental disorder? 3. When a prisoner is found unfit to plead, the trial, on the facts, should be allowed to proceed. 4. The verdict "guilty but insane" should rank as a conviction for purposes of appeal. 5. A panel of experts should be appointed, any of whom can be called to give evidence when insanity is raised as a defense.

The M'Naghten rules are declared not wrong in holding that irresponsibility was only an inference that might or might not be drawn from insanity. Where they erred was in attempting to define precisely the conditions under which the inference was legitimate. They identified responsibility with knowing and reasoning; whereas, any physician with experience of the insane must know many persons as to whose insanity (and irresponsibility) there could be no possible doubt, who had realized the nature and quality of their act, had known that it was contrary to law, human and divine, and had shown remarkable cleverness in carrying out their object. Since 1843 (when the M'Naghten rules were propounded), there has been a definite change in the medical view as to what constituted insanity. Unsoundness of mind is no longer regarded as in essence a disorder of the intellectual faculties. The modern view is that it is something much more profoundly related to the whole organism—a morbid change in the emotional and instinctive activities with or without intellectual derangement. Long before a patient manifests delusions or other signs of obvious insanity, he may suffer from purely subjective symptoms. These are now recognized to be no less valid and of no less importance than the more manifest signs of the fully developed disorder, which may take the form of delusions, mania, melancholia or dementia. The law should be so framed as to allow the medical witness to make it clear that the facts observed by himself, supplemented by other evidence before the court, formed in his mind a coherent picture of mental disorder; and he should be in a position to state that the prisoner's act was symptomatic of such a condition, or at least consistent with it. His evidence should enable the jury to find that, even if there should be no logical connection between the mental derangement and the crime, it was reasonable to conclude that both formed part of the mental unsoundness.

and it was important that the evidence be placed before the jury as fully as possible.

The Rockefeller Gift

Presiding at the annual meeting of the Corporation of University College Hospital, Sir Ernest Hatch referred to the munificent gift of the Rockefeller Foundation of $6,000,000 for a scheme of extension, in order to provide additional clinical material for educational purposes. In view of the international character of this gift and the importance of its object—to improve medical education in the capital of the country—the king and queen will lay the foundation stones of the new hospital buildings presented by the Rockefeller Foundation, at the end of May.

William Pearson

Though some other countries may have surpassed this in the size or in the organization of their industries, probably there is none which can compare with it in the production of highly skilled craftsmen. One such was William Pearson, formerly prosector of the museum of the Royal College of Surgeons, who has passed away at the age of 83 years. He worked there for almost fifty-eight years, and made preparations which are known all over the world for their unique excellence. He was the third in the line of grandfather, father, and son who served the museum for 153 years. As a boy of 15, he entered the institution as an attendant. He served in turn under the conservators Owen, Quekett, Flower, Stewart and Keith, under thirty-three presidents, respected by all not only for his skill but also for his character. His great success was due not only to high manual dexterity but to a thorough knowledge of anatomy, human and comparative, which he acquired in his work. He was indeed an artist.

Abolition of Cocain

In a letter to the *Times*, Prof. W. W. Bayliss and Dr. C. W. Saleeby state that the abolition of the use of cocain by international action is the only effective means of ending the evils to which the drug gives rise, and that this is now feasible without detriment to surgery. All methods of control have failed everywhere. So long as the drug is manufactured, it will be misused. According to leading dental surgeons, cocain is no longer needed in dentistry, completely effective substitutes, such as procain, being available. A new synthetic substitute known as butyn has also been widely tested with good results. Like procain, it has no action on the central nervous system. International action should therefore be taken to end the present manufacture of cocain in Germany and Switzerland, and the cultivation of the coca plant in Peru, Java and Bolivia. The best instrument for such action, given an instructed and active public opinion in the various countries concerned, is the Opium Committee of the League of Nations. Though neither the United States nor Germany is as yet a member of the league, both countries are represented on the Opium Committee.

Lord Byron's Lameness

Perhaps the two persons in the modern world whose lives have attracted the greatest interest are Napoleon and Lord Byron, and this is not the only link connecting these great men, for the poet in some of his best known verses described the downfall of Waterloo and was, as he tells us, dubbed "the grand Napoleon of the realms of rhyme." At the Royal Society of Medicine, Dr. H. C. Cameron delivered a most interesting address on Byron's lameness, showing that it was not due to clubfoot, as is commonly supposed. By the kindness of Mr. John Murray, the present head of the firm which published Byron's works, he exhibited two surgical boots worn by Byron when a boy. They were both made for the right foot. They showed that this foot was long and slender, and in no way resembled a clubfoot. The lasts on which his shoes were made are in the Nottingham Museum; they show feet which were symmetrical and well formed.

In 1858, Trelawny published "Recollections of the Last Days of Shelley and Byron." He had been a friend and companion of Byron, who wrote of him that he could not tell the truth to save his life. After Byron's death, he examined his feet and described them as clubbed and his legs withered to the knee. But when, in his eighty-sixth year, he republished the book, he replaced that description by this: It was caused by the contraction of the back sinews, which physicians call the Achilles tendon, which prevented his heels touching on the ground and compelled him to walk on the fore part of his feet; except for this, his feet were perfect. Dr. Cameron thought that the first description was what the public expected and wanted to hear, but that as Trelawney drew near death he did not like to go down to his grave with the lie unwithdrawn. Dr. Cameron concluded that Byron's lameness was due to Little's disease. This is borne out by Trelawney's description: "To hide his lameness, he always entered a room quickly, running rather than walking. In the streets he moved with a peculiar sliding gait—with the gait of a person walking on the balls and toes of the feet." Finally, sufferers from Little's disease are prone to convulsive seizures like those of epilepsy, and Byron toward the close of his life had such attacks.

Reform of Mental Treatment

At the annual meeting of the Mental After-Care Association, the lord chancellor, Lord Cave, said that few things were more pathetic than the position of one who had suffered from a mental disease, had been cured, and was sent out into the world without relatives or friends. The position of those who needed mental treatment, or who were recovering from mental affliction, had been engaging the special attention of the government. Better machinery for the mental treatment of those cases which were still of a doubtful character and which might be easily curable was required before resort was had to the machinery of the law. Proposals would shortly be made under which treatment could be given without certification.

Treatment of Venereal Diseases

The Public Health Committee of the London County Council announces that the new cases dealt with at the clinics last year numbered 17,762, as compared with 19,368 in 1921, and 24,454 in 1920, while the total number of attendances was 527,635, as against 496,209 in the previous year. The committee is of opinion that the decrease by 1,379 in the number of new cases of syphilis may be attributed in no small measure to the work of the clinics. The steady and great increase in the number of attendances is regarded as striking. It shows an increased disposition of the patients to continue attendance for the treatment which they are advised is necessary.

The Panel System

As shown in previous letters, there is considerable friction between the friendly societies and the panel physicians. The insurance act has turned out very different from what was anticipated. In a statement to the *Times*, Sir Kingsley Wood, a representative of the societies, has put forward their case. The fact that they have been called on to make further contributions from their funds has created a new situation. At the end of the year, the agreement with the physicians comes under review and the societies naturally have a considerable interest in the revised terms. The medical profession has indicated that it will not meet the societies to discuss terms; it will confer only with the government. The minister of health has stated that he will not conclude any agreement

without consulting the societies. The circumstances appear to call for a conference between officers of the health ministry and representatives of the panel physicians and of the societies. Sir Kingsley Wood holds that, while the majority of physicians are carrying out their duties in the spirit of the regulations, there is much complaint as regards some of them. In too many cases, a panel patient is treated differently from a private one, although the medical regulations contemplate no distinction. Cases constantly arise in which the panel patient is unable to get in touch with physicians, especially in the case of those who provide "lock-up surgeries" (offices). There are also complaints of inadequate waiting-room accommodations.

The question of provision for surgical operations is bound up with the hospital question. To a large extent, the hospitals are solving the problem on their own account. A large number of persons now contribute to the hospitals, and many of them become paying patients. The exact position of the hospitals under the insurance act remains to be determined. There was not much possibility that the medical profession would go back to the condition obtaining before passage of the act, when the societies made their own arrangements with the physicians. Improvement of the panel service was the best course.

PARIS

(From Our Regular Correspondent)

March 30, 1923.

The Milk Consumed in Paris

The veterinary inspection service of Paris and the department of the Seine has just published a report on the milk consumed in Paris. The first point worthy of note is the frequency of tuberculosis in milch cows. Of 15,637 milch cows subjected to the tuberculin test in recent years, 5,375, or 34.35 per cent., gave a positive reaction. The percentage of tuberculous cows varies considerably from year to year, but no frank tendency toward a decrease can be noted as yet.

The bacterial count in the milk examined gives startling results. In fifty-nine specimens examined, the bacterial count resulted as follows: Forty-two, or 75 per cent., contained more than 10,000 bacteria per cubic centimeter; thirty-five, or 62 per cent., contained 50,000 bacteria per cubic centimeter; twenty-nine, or 52 per cent., 100,000 bacteria per cubic centimeter; twelve, or 21 per cent., 500,000 bacteria, and four, or 7 per cent., contained more than one million bacteria per cubic centimeter. If we recall that hygienists regard as bad, or impotable, water that contains more than 10,000 bacteria per cubic centimeter, it will be observed that 75 per cent. of the milk examined came under this head.

M. Chrétien, chief of the milk inspecting service, has endeavored to evaluate not only the number of bacteria but also the apparent cleanliness of the milk inspected. The impurities are estimated by a special filtration procedure, and the specimens are divided into four categories: clean milk, fairly clean milk, dirty milk and very dirty milk, this classification being made on a somewhat arbitrary basis, as far as any fixed standard is concerned. Out of 111 specimens so examined, ten, or 9 per cent., were found clean; twenty-seven, or 24.32 per cent., fairly clean; forty-six, or 41.44 per cent., dirty, and twenty-eight, or 25.22 per cent., very dirty.

The Fight Against Tuberculosis

The annual general meeting of the Comité national de défense contre la tuberculose, at the head of which is M. Léon Bourgeois, was just held under the chairmanship of M. Paul Strauss, minister of hygiene, public charity and social welfare. Prof. Léon Bernard traced, in an address, the history of the antituberculosis movement in France, which controls at present 420 dispensaries, located in seventy-three different departments. The American Red Cross and the Rockefeller Foundation have, in recent years, given this movement most active and generous aid. The Comité national has decided, with the aid of educational propaganda, to undertake the creation of new dispensaries and the recruiting of visiting social welfare workers, who are the chief reliance of organizations of this character. I will mention, in this connection, that the minister of public health had been authorized by the council of ministers (the French cabinet) to present to the chamber of deputies proposed legislation providing for the rendering of state aid to preventoriums for the purpose of checking the spread of tuberculosis among children under 16 years of age.

The Law Against Abortion

A law modifying Article 317 of the Penal Code, with a view to increasing the penalties against abortion, has recently been promulgated. The new law imposes the following penalties:

1. Whoever shall be found guilty of causing abortion, or endeavoring to cause abortion, in a pregnant woman, shall be amenable to imprisonment for from one to five years, and to the payment of a fine of from 500 to 10,000 francs.

2. Any woman who shall have brought about abortion in herself shall be punishable by imprisonment for from six months to two years, and by the payment of a fine of from 100 to 2,000 francs.

3. Physicians, public health officers, midwives, dental surgeons, pharmacists; likewise students or pharmaceutical employees, herbalists or dealers in surgical supplies and instruments, who shall have pointed out, recommended or practiced means of abortion shall suffer the penalties imposed in Section 1. Furthermore, the court may, at its discretion, suspend temporarily or deprive permanently any such offenders of the right to practice their calling or profession.

The Colonial Laboratories

The Comité de propagande de l'institut colonial français, of which M. René Besnard, senator and former minister for the colonies, is the chairman, has, at the suggestion of M. Georges Barthélémy, member of the chamber of deputies, and of Dr. Nattan-Larrier, professor at the Collège de France, called the attention of the minister for the colonies and the head of public instruction to the precarious situation of the colonial laboratories, and, more particularly, of the laboratories for microbiology and colonial hygiene, and has expressed the hope that, if funds and subscriptions are collected in aid of the laboratories of France, a portion of such funds may be reserved for the colonial laboratories.

Defense of Wine as a Beverage

Those who, as Dr. Linossier characterized this class recently, "have been reared from childhood with the false idea that wine is a generator of energy and strength quite indispensable to manual laborers and mental workers alike" (THE JOURNAL, Feb. 17, 1923, p. 490), cannot rest content merely to crack their little jokes on the subject of prohibition in the United States. Dr. C. Chauveau, senator from Côte-d'Or, a department well known for its wines, has therefore felt constrained to publish two articles in defense of wine as a beverage, to which he has affixed the title, Pro Vino. In the *Concours médical*, Dr. J. Noir endorses Chauveau's pleading and expresses himself thus: "At a time like this, when the United States of America is rigorously closing its borders to all fermented beverages, including the good wines of France, we are justified in taking up the defense of wine." In presenting his defense, he invoked the antiquity of wine as a beverage—the place it has held in both legendary and religious history—the cult of Dionysus, etc. His arguments have all about as little force as the affirmation of Dr. J. Guyot, who states that he is "profoundly convinced that the wines of France are the primary cause for the liberty-loving nature, the generosity and the moral worth of the French people."

Now for the "therapeutic" argument. Noir even feels called upon to employ a word taken from the Greek to

designate the therapeutic use of wine: *oinotherapy*. Fortunately, he disclaims any intention of making of oinotherapy any general therapeutic system, with which to cure all forms of disease. But, he adds, in view of the fact that the physicians in bath resorts famous for their mineral springs have succeeded in making a veritable science out of hydrology, why shouldn't the practitioners of regions famous for their viniculture do as much for oinotherapy? Verily, all things are provable from analogy.

Scottish Students in Paris

Sixty-one Scottish students, forty-six men and fifteen women, have recently come to Paris to pursue courses in obstetrics. They were welcomed at the Faculté de médecine by Dean Roger, together with three professors of clinical obstetrics—Couvelaire, Brindeau and Jeannin. The day following, the medical section of the general association of students organized a reception in honor of the Scottish contingent. At this reception, the dean of the medical faculty presided, aided by the aforementioned professors of clinical obstetrics; likewise the heads of the clinic, and the interns and externs of the obstetric services. The dean, in his welcoming address, expressed his satisfaction at having received from the University of Edinburgh the title of doctor *honoris causa*. He gave word also to his appreciation of the warm welcome the students of the University of Edinburgh accorded last July to the visiting French professors and students.

Another Victim of Roentgen Rays

Dr. Soret, a roentgenologist in Havre, aged 69, was one of the first to use roentgen rays. In May, 1914, he had to undergo an operation on the left hand, and recently he suffered the amputation of the right index finger.

Death of Dr. Toubin

Dr. Toubin, the oldest physician in France, has just died at Salins-du-Jura, at the age of 97.

BUDAPEST

(From Our Regular Correspondent)

March 20, 1923.

Compulsory Vaccination in Hungary

The supreme court of justice of Hungary last month handed down a decision in a case that had been appealed from the Budapest court respecting a ship's officer on a Danubian steamer, who refused to be vaccinated, when coming from a Roumanian port during an outbreak of smallpox. The refusal was based on the ground that the operation, compulsorily enforced, was an infringement of personal liberty. The supreme court denied the appeal and affirmed the judgment of the lower court. The judge in giving the decision said that society based on the rule that each one was a law unto himself would soon be confronted with anarchy. Real liberty could not exist under the operation of a principle that recognizes the right of each individual to use his own will in respect to his person or property, regardless of the injury that may be done to others. It is the acknowledged power of a local community to protect itself against an epidemic threatening the safety of all, and to exercise that right in particular circumstances and in reference to particular persons.

Annual Report on the Health of the City of Budapest

The statistical bureau has just issued a report for the year 1922. The population of the city is 1,113,468, a density of 39.07 per acre. The birth rate was 21.42, and the death rate 18.04. About one in every four deaths was of a child under 1 year, or 125 for each thousand births. The zymotic death rate was 1.14 per thousand. The birth rate affords little reason for gratification; it has been heavily falling since 1901, when it was 28.89 per thousand, and at present it is lower than in any of the large cities of central Europe. To compensate for this, the low annual death rate constitutes a record in the annals of the city. The age distribution of the deaths was much the same as in former years. On the whole, the city has been comparatively free from serious zymotic diseases, but whooping cough and diphtheria have been more prevalent and attended with a greater mortality than in the previous year or two. Deaths from tuberculosis show a slight but definite decline. Deaths from cancer remain fairly stationary. During the last six years, the number of cases was 2,143, of which 57 per cent. occurred in women. More than a third of all deaths from cancer occurred from cancer of the esophagus, stomach, intestine or rectum. Cancer of the liver accounted for 213 deaths; of the breast, 189, and of the face and neck, 218. Of the last two mentioned, women predominated in the former in the ratio of 186 to 3, men in the latter in the ratio of 167 to 51.

Bilateral Herpes Zoster

Dr. Konrad, at a medical meeting in Szolno, exhibited a boy, aged 11, seen, February 17, who five days previously had had an eruption of herpes on his face, preceded by some neuralgia. The patches of herpes covered the submaxillary regions on both sides; the auricles were red, and a few herpetic vesicles were present along the margins of the right pinna and tragus. There was slight enlargement of the lymphatic glands beneath the chin. Exceptions to the unilateral distribution of herpes zoster are distinctly rare. The peculiarity of this case was its abundant distribution over symmetrical parts of the two sides of the face. About the ears there was definite inflammatory reaction. No lesions were seen on the buccal mucous membrane.

Menstrual Jaundice

Dr. Konrad also related a history of a case of menstrual jaundice. A healthy woman, aged 43, shortly before the commencement of a menstrual period regularly became jaundiced. Dr. Konrad discussed the connection between menstruation and jaundice, and pointed out that latent gallstone trouble would react with an attack during menstruation; in the case presented there was no evidence of gallstones. Senator, in explanation of his cases, assumed a hyperemia of the liver causing pressure on the bile ducts, with consequent stasis of bile. Others who had encountered such cases thought it was a functional disturbance of the liver cells. Dr. Konrad concluded that, in his case, the jaundice was caused by reflex contraction of the bile ducts.

BERLIN

(From Our Regular Correspondent)

March 17, 1923.

Study of the Brains of Eminent Scientists, Musicians, Statesmen and Scholars

Professor Maurer, the anatomist, of Jena, has described in an interesting article the brains of eminent men and women. Maurer, by reason of previous investigations, is especially well qualified for such researches. In a former letter I gave an account of his researches on the brain of Haeckel, which he described in the *Deutsche medizinische Wochenschrift*. Maurer emphasizes that the first point to which importance attaches in the appreciation of the brains of great geniuses is weight, and, for this reason, many data have been published on brain weights, and some surprise and disappointment has, at times, been felt over the results—quite unwarrantedly, it would seem. Centers that serve bodily functions, if they are strongly developed, may help to produce a heavy brain, though the intellectual centers may be poorly developed. On the other hand, alongside highly developed

intellectual centers there may be poorly developed centers for the bodily functions, which will explain why the brain of an eminent man may not have the weight that would naturally be expected. A heavy brain may be the result of hyperdevelopment of the neuroglia. Next after the weight, the most important consideration is the surface of the brain. It is a generally accepted hypothesis that in men of exceptional intelligence the surface of the hemispheres of the cerebrum has more numerous convolutions and deeper furrows between them than are found in ordinary brains. For intellectual work, these considerations are of importance: (1) the whole frontal lobe of the cerebrum; (2) the marginal and angular gyri of the parietal lobe; (3) to a certain extent, the upper portion of the temporal convolution, and (4) the precuneus on the inner surface of the cerebrum. According to recent investigations, the precuneus plays a part in the formation of space concepts.

Eminent men may be divided into two groups, which must be taken into consideration in the appreciation of their brains: (1) geniuses who, in addition to their special gifts, possess remarkable all-round ability, and (2) persons with quite one-sided gifts. In Group 2 may be classed famous musicians who, from their youth, have devoted themselves entirely to music; also many mathematicians belong to this group. The brains of these persons with one-sided gifts present, however, a special interest. The average weight of the brain in the male of the 30 to 40 age group is about 1,375 gm.; that of the female, of the same age group, is about 1,245 gm. Of the brains of eminent men of former times only the weight is known, and the data on even this point are not incontestable. The weight of Cromwell's brain is given as 2,233 gm., and that of Byron's brain as 1,807 gm., but Rudolf Wagner, one of the most versatile investigators on the brain, declares that these figures are too high; he likewise questions the reputed weight of the brain of Cuvier, which is given as 1,861 gm. Other reported brain weights are: Gauss, 1,492 gm. (age at death, 78); Liebig, 1,352 gm. (age 70); Bunsen, 1,295 gm. (age 88); Menzel, 1,298 gm. (age 89); Mommsen, 1,425 gm. (age 86); Helmholtz, 1,420 gm. (age 73). In recent decades, the brains of many eminent men have been examined. David von Hansemann examined the brains of Helmholtz, Mommsen, Menzel and Bunsen. Gustav Retzius examined the brains of a considerable number of distinguished Swedes of widely different callings; among others, that of the woman mathematician Sonja Kowalewska. In the brains of all the men mentioned, the convolutions of the frontal lobe were significantly well marked. But also certain other portions of the brain were well developed; for example, in the brain of Gauss the anterior portion of the lower frontal gyrus was highly developed, and in Helmholtz' brain, the precuneus. In the brain of Gambetta, the gyrus of Broca, the speech center in the inferior frontal gyrus, is said to have undergone a double development. In the brains of mathematicians, attention is called to the fact that the lateral portions of the frontal lobe show an especially marked furrowing. This was the case in the brains of Gylden and of Sonja Kowalewska (who, in other respects, had a typical female brain, with quite ordinary fissures). Researches on the brains of many famous musicians have been made, and according to the interesting study by Dr. Klose, who examined the brain of the eminent pianist Sokeland, who died at an early age, certain portions of the brain of musicians are highly developed; namely, the superior temporal gyrus, the inferior parietal lobule (the supramarginal gyrus) and the anterior and posterior central gyri. All these data seem to have little value when we learn that the brains of many men who have never become distinguished may present just as highly developed a structure as the brains of men who have been eminent. However, if the results of scientific researches are viewed rightly, their value will be understood and appreciated. "If one were to present to me the brain of an unknown person with the request that I state what the possessor accomplished in his lifetime, I would reject the inquiry as presumptuous. If, however, I take up the examination of the brain of a person whose career is familiar to me, I shall know to what regions of the brain, on the basis of previous experiences, I must pay particular attention, and I am sure not to be disappointed. I have gained this conviction from my study of the brains of Ernst Haeckel, Ernst Abbe and Ernst Stahl." Modern science has pointed out new avenues of approach that seem destined to prove significant for the examination of the brains of outstanding leaders. Through the researches of Brodman, we have learned that the finer structure of the cerebral cortex varies in the different regions of the cerebrum. For this reason, an estimation of the special significance of various portions of the brain, on the basis of anatomic facts, is quite possible. Brodman has prepared a brain chart, on which are designated many different characteristic divisions, some of which are sharply differentiated and some of which overlap each other, to a certain extent. Unfortunately, these new criteria cannot be applied to the brains that have been examined in the past; but, in the future, these microscopic researches are sure to acquire great significance along with the microscopic findings.

Personal

Professor Salkowski, for many years director of the chemical laboratory of the Pathologic Institute in Berlin, died, March 10, at the age of 78. His service in the institute extends back to the time when Virchow was the director. The numerous valuable researches of Salkowski were mainly in the fields of physiologic and pathologic chemistry, but they deal also, in part, with pharmacology and hygiene. We are indebted to him especially for excellent treatises on the effects of putrefying proteins. One of his first articles was on leukemia. His treatises on the formation of sugar in yeast are also noteworthy. He has written also on autodigestion of organs and the quantitative distribution of oxidative ferment in the organs, the demonstration of peptone in the urine, the estimation of oxalic acid in the urine; peptotoxin, casein, etc. He discovered also the pentoses in the urine. Through his findings of phylosterin in vegetable fats, Salkowski established a new method for the discovery of the frequent adulteration of animal fats with vegetable fats. Two of his compendiums have had a wide sale: "Die Lehre vom Harn" (urology) and "Parktikum der physiologischen und pathologischen Chemie."

Geheimer Medizinal-Rat Scheube died recently in Greiz at the age of 71. He served for a long period as medical commissioner in the principality of Reuss. From 1877 to 1881 he was professor in the Kyoto (Japan) Medical College. He was privatdozent for internal medicine in Leipzig from 1883 to 1885. He was thoroughly familiar with tropical diseases by reason of his travels in the tropical countries of Asia. He was the author of the work, "Die Krankheiten der warmen Länder," which has passed through several editions.

Marriages

WILLIAM HARVEY WHITMORE, lieutenant, M. C., U. S. Navy, Lynchburg, Va., to Miss Harriet Weiss Angeny of Philadelphia, April 5, at Pensacola, Fla.

LAUREN HOLMES GOLDSMITH, Atlanta, Ga., to Miss Margaret Mason Rowe of Athens, April 9.

ROY DECK to Miss Mabel Rice, both of Lancaster, Pa., February 6, at Oak Lane.

Deaths

Justin Edwards Emerson ⊕ Newark, N. Y.; Medical School of Harvard University, Boston, 1868; formerly clinical professor of neurology at the Detroit College of Medicine, Detroit; member of the Michigan State Medical Society; the Detroit Society of Neurology and Psychiatry, the American Medico-Psychological Association and the American Psychiatric Association; fellow and past president of the American Academy of Medicine; at one time assistant physician to the Michigan Insane Asylum, Kalamazoo, consulting neurologist to the Children's Free and Harper hospitals, Detroit, and attending physician to St. Joseph's Retreat, Dearborn, Mich.; aged 82; died, April 8, at Clifton Springs.

Thomas Warloe, Chicago; Rush Medical College, Chicago, 1891; member of the Illinois State Medical Society; attending obstetrician to the Norwegian-American Hospital, attending physician to the Norwegian Lutheran-Bethesda Home and consulting physician to the Norwegian Old People's Home; aged 56; died, April 18, of heart disease.

Thomas Milton Fleming, Mount Pleasant, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1891; member of the State Medical Association of Texas; past president of the Titus County Medical Society; president of the State National Bank; aged 55; died, April 4, of cerebral hemorrhage.

William Winston Snead, Grays Knob, Ky.; University of Virginia Department of Medicine, Charlottesville, 1906; member of the Kentucky State Medical Association; aged 44; died, March 21, at the Norton Infirmary, Louisville, of pneumonia, following an operation on the gallbladder.

Hubert Perry Butts, Los Angeles; Medical Department University of Louisville, Louisville, Ky., 1895; formerly a practitioner in Indiana and Kentucky; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 49; died, April 8, of cerebral hemorrhage.

Erving Melville Howard, Camden, N. J.; Hahnemann Medical College of Philadelphia, 1877; emeritus professor of materia medica at his alma mater; founder, and formerly on the staff, of the West Jersey Homeopathic Hospital; aged 75; died, April 13, following a long illness.

Harry Gilbert Fleming ⊕ Anderson, Ind.; Medical College of Indiana, Indianapolis, 1905; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 44; died, April 6, of a fractured skull, the result of an automobile accident.

Emil Charles Luks, New York; Philadelphia University of Medicine and Surgery, Philadelphia, 1868; University of Vermont College of Medicine, Burlington, 1885; also a druggist; formerly coroner of Schuylkill (Pa.) County; aged 91; died, April 4, of senility.

Augustus Koenig, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1894; member of the Medical Society of the State of Pennsylvania; formerly lecturer and instructor at his alma mater; aged 52; died, April 4.

John Franklin Uren, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1890; Victoria University Medical Department, Toronto, 1890; on the staff of St. Michael's Hospital; aged 60; died, March 1, of influenza.

Dwight Satterlee, Los Angeles; Berkshire Medical College, Pittsfield, Mass., 1862; also a druggist; Civil War veteran; formerly division surgeon for the Chicago and Northwestern Railroad; aged 86; died, March 21, of senility.

Robert Wilson Forrest, Toronto, Ont., Canada; University of Nashville Medical Department, Nashville, Tenn., 1865; University of Toronto Faculty of Medicine, Toronto, 1872; aged 83; died, February 23, of senility.

James P. Way ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1887; surgeon to the Chicago and Eastern Illinois, and the Baltimore and Ohio railroads; aged 60; died, April 21, of myocarditis.

Clifford Nathan Thomas Barnett, Deatsville, Ala.; Medical Department of the University of Alabama, Tuscaloosa, 1905; member of the Medical Association of the State of Alabama; aged 46; died, April 2.

Alexander Blake Ford, Oshawa, Ont., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1897; aged 52; died, March 2, at the Toronto General Hospital, Toronto, of septicemia.

Albert S. Bower, Los Angeles; Jefferson Medical College of Philadelphia, 1882; formerly a practitioner in Salt Lake City; aged 67; died, March 31, of acute nephritis and septicemia.

Joseph B. MacNaughton, Waupaca, Wis.; University of Glasgow, Scotland, 1883; also a druggist; formerly health officer and city physician; aged 66; died, April 3, of pneumonia.

Mann W. McGown, Hemphill, Texas; Gate City Medical College, Texarkana, 1904; member of the State Medical Association of Texas; aged 45; was shot and killed, April 6.

Benjamin J. McConnell, Winnipeg, Manit., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1881; provincial coroner for Manitoba; aged 61; died, February 14.

Tillman E. McMurtry, Chicago; Rush Medical College, Chicago, 1899; member of the Illinois State Medical Society; aged 55; died, April 22, of tuberculosis of the kidney.

James Robert Black, Marked Tree, Ark.; Memphis Hospital Medical College, Memphis, Tenn., 1893; also a druggist; aged 64; died suddenly, March 30, of heart disease.

Daniel Henry Jenkins, Scranton, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1893; aged 60; died, March 8, of acute dilatation of the heart.

Charles Lovett Randall, Dansville, Mich.; Long Island College Hospital, Brooklyn, 1864; Civil War veteran; aged 82; died, March 29, of cerebral hemorrhage.

Calvin Suverill Case, Kenilworth, Ill.; University of Michigan Medical School, Ann Arbor, 1884; also a dentist; aged 76; died, April 16, following an operation.

Stanton Emmett Deeley, Mount Vernon, Ohio; Cleveland University of Medicine and Surgery, Cleveland, 1896; aged 49; died, February 21, of heart disease.

Jacob Margulis, New York; Columbia University College of Physicians and Surgeons, New York, 1900; aged 49; died, February 25, of edema of the lungs.

William T. Greenwood, St. Catharines, Ont., Canada, McGill University Faculty of Medicine, Montreal, Que., 1904; aged 41; died, February 25.

Granville M. Walker, Chicago (licensed, Illinois, 1878); Civil War veteran; aged 85; died, April 9, of skull fracture, when he fell from a window.

George N. Hutcheson, Arlington, Texas; Cincinnati College of Medicine and Surgery, 1874; aged 76; died, March 31, following a long illness.

Birckner H. Pasley, Decatur, Ill.; Starling Medical College, Columbus, Ohio, 1865; Civil War veteran; aged 84; died, April 4, of senility.

Joseph L. Dorris, Banklick, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1894; aged 65; died, April 8, of diabetes mellitus.

Alexander Smith Truman, Chicago; University of Michigan Medical School, Ann Arbor, 1872; aged 80; died, April 6, of chronic nephritis.

Charles Walden Thompson, Clinton, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1893; aged 58; died, February 18.

Richard J. Wilson, Salem, Ind.; Miami Medical College, Cincinnati, 1874; president of the Citizens' State Bank; aged 76; died, April 10.

Marcus U. Nix, Atlanta, Ga.; University of Georgia Medical Department, August, 1892; aged 66; died, February 1, of heart disease.

Mandren M. Bailey ⊕ Loveland, Colo.; Denver College of Medicine, Denver, 1884; aged 68; died, March 10, of pneumonia.

Carl Layfield Oatman, Collinsville, Ill.; Barnes Medical College, St. Louis, 1896; aged 45; died, April 3, of chronic nephritis.

Charles Austin Allen, Clayton, Ind. (licensed, years of practice); Civil War veteran; aged 81; died in April, of senility.

Charles Chittick ⊕ Frankfort, Ind.; Medical College of Ohio, Cincinnati, 1876; aged 74; died, April 7, of heart disease.

David R. Summy, Columbus, Ohio; Jefferson Medical College of Philadelphia, 1883; aged 69; died, February 18.

William T. George, Mantee, Miss. (licensed, Mississippi, 1889); aged 62; died in March, of heart disease.

Joseph Amsel, Milwaukee; University of Warsaw, Poland, 1867; aged 76; died suddenly, March 29.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

HERRADORA SPECIALTIES NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

Early in 1922 the Scientific Chemical Co., New York (Marcus Aurelio Herradora, M.D., President) requested the Council to consider its intravenous preparations. The firm sent the proof of a proposed booklet which contained extravagant claims for intravenous therapy in general and for the Herradora specialties in particular, and also a typewritten manuscript, "Digitalis Compound (Herradora) for Intravenous Use," with a request that anything therein which conflicted with the rules of the Council be brought to its attention. The firm also sent specimens of the following preparations:

Herradora's Arsenic Compound for Intravenous Use, Nos. 1 to 6.
Herradora's Arsenic and Hypophosphites for Intravenous Use.
Herradora's Arsenic and Iron Compound for Intravenous Use.
Herradora's Calcium Compound for Intravenous Use.
Herradora's Calcium-Sodium-Glycerophosphate Compound for Intravenous Use.
Herradora's Chlorids Compound for Intravenous Use.
Herradora's Chlorids with Iron Compound for Intravenous Use.
Herradora's Creosote Compound for Intravenous Use, Nos. 1 and 2.
Herradora's Digitalin Compound.
Herradora's Glycerophosphate-Iron and Nickel Compound for Intravenous Use.
Herradora's Guaiacol Compound for Intravenous Use.
Herradora's Iodids Compounds for Intravenous Use.
Herradora's Hexamethylenamine and Guaiacol Compound for Intravenous Use.
Herradora's Iron, Manganese and Nickel Compound for Intravenous Use.
Herradora's Mercury Compound for Intravenous Use.
Herradora's Quinine Compound for Intravenous Use, Nos. 1 and 2.
Herradora's Sodium Iodid for Intravenous Use.
Herradora's Sodium Iodid-Salicylate-Guaiacol Compound for Intravenous Use.

These, in addition to the names of the preparations and the "formulas," bore—with a few exceptions—the following ambiguous and questionable statement:

"Special aseptic, sterilized and antiseptic bland mutual dissolvent to make 20 Cc. Drugs herein contained have been modified perfecting their purity to regulate toxicity, thus insuring safe and higher efficiency."

The proposed advertising was apparently written by one whose knowledge of therapeutics was a mixture of the latest enthusiasm for intravenous therapy and the most archaic pharmacologic tenets. Its style was bombastic and pseudo-scientific. The material abounded in unwarranted and unsubstantiated statements in favor of intravenous administration of drugs and for the use of complex mixtures of drugs. The preparations bore, in many cases, a striking resemblance to "intravenous" preparations which had been previously reported on unfavorably. In view of this fact and the firm's statement that it desired to remove any claims objectionable to the Council, the objections to the advertising were pointed out in a general way, and the firm was supplied with reports of the Council dealing with similar preparations.[1] Since some of the products contained hypophosphites and glycerophosphates,[2] Council reports which set forth the lack of evidence for the therapeutic use of these were also sent.

In September, the firm sent a revision of parts of the booklet and of the whole manuscript on "Digitalis Compound (Herradora) for Intravenous Use." This revision was not satisfactory. As before, this advertising made claims for intravenous medication that are fundamentally opposed to modern therapeutic teachings. The tenor of the entire matter was to discredit the oral administration of drugs and to substitute intravenous medication as a routine. The fundamental objections to it with specific illustrations of unwarranted statements were a second time brought to the attention of the firm. Since then the firm has not supplied the Council with any evidence to indicate that a genuine effort is being made to remove the objections.

On the other hand, the Council learned that the firm was making efforts to secure the use of its preparations by physicians and in hospitals. On December 20, 1922, a physician received advertising from the firm which was almost a verbatim copy of parts of the booklet originally submitted. This advertising is evidently a reprint with minor changes which do not alter the original meaning.

SOME RECENT CLAIMS

The following, quoted from the present advertising circular "Syphilis, Its Treatment" illustrates the character of the claims advanced for the Herradora specialties:

"The arsenic compound presented here has been completely dimethylized, readily diffusible, while its organic structure is still retained. As such it may be described as a harmonized chemical medium between the plain cacodylate and dioxi-diamino type of arsenicals. It is prepared in six ascending strengths which will be hereafter described. It has been prepared for the treatment of syphilis or any other *trypanosome disease* where the maximum dose of arsenic is required. These arsenic compounds which I have prepared are regarded as superior to any other form of organic arsenic for the treatment of syphilis now in use."

According to the label on the specimens sent to the Council, Herradora's Arsenic Compound for Intravenous Use, No. 1 contains: "Arsenic-Organic Compound, Equivalent to Sodium Dimethylarsenate (As 1½ grains) 5 grains; Mercuric Iodid, 1/18 grain; Arsenic Iodid, 1/8 grain." The other forms, Nos. 2 to 6 inclusive, are claimed to contain the same amounts of mercuric iodid and of arsenic iodid but progressively increasing amounts of the "arsenic-organic compound; equivalent to sodium dimethylarsenate," the arsenic element of which, according to the formulas, varies from 30 per cent. to 34.84 per cent. So far as the statements go, the character and the composition of the "arsenic-organic compound" are not declared and the preparations may be regarded as secret in composition. The language of the advertising, however (particularly the claimed freedom from untoward effects), the amount of drug in a dose, and the chemical behavior of the solutions strongly suggest that in Herradora's Arsenic Compounds we have another sodium cacodylate preparation patterned after Venarsen,[3] on which the Council reported in 1915 and which has been a pattern[4] for similar products put out by firms specializing in intravenous therapy.

If the "arsenic-organic compound" in Herradora's Arsenic Compound *is* sodium cacodylate (sodium dimethylarsenate), then the claims for its efficacy are unacceptable, for sodium cacodylate has been found without effect on experimental trypanosomiasis and inefficient in the treatment of syphilis.[5] If the "arsenic-organic compound" *is not* sodium cacodylate then the claims are unacceptable because they are made for a compound of secret composition for which there is no evidence of therapeutic worth other than the assertions of the manufacturer. In any case, it is irrational to administer an organic arsenic compound in combination with mercuric iodid and an inorganic arsenic compound. It should be mentioned in passing, that while the preparation is claimed to contain arsenic iodid, this compound (AsI_5) does not exist, and arsenous iodid (AsI_3) is decomposed in aqueous solution into arsenous acid and hence arsenic iodid is probably not contained in the solution.

1. Venarsen, Report Council Pharm. & Chem., J. A. M. A. **64**: 1780 (May 22) 1915; Venosal, Report Council Pharm. & Chem., J. A. M. A. **70**: 48 (Jan. 5) 1918; Some of Loeser's Intravenous Solutions, Report Council Pharm. & Chem., J. A. M. A. **76**: 1120 (April 16) 1921.

2. The Therapeutic Value of Glycerophosphates, Report Council Pharm. & Chem., J. A. M. A. **67**: 1033 (Sept. 30) 1916; The Hypophosphite Fallacy, Report Council Pharm. & Chem., J. A. M. A. **67**: 760 (Sept. 2) 1916.

3. Venarsen, Report Council Pharm. & Chem., J. A. M. A. **64**: 1780 (May 22) 1915.

4. "Arsenoven S. S." and "Arseno-Meth-Hyd," Report Council Pharm. & Chem., J. A. M. A., **73**: 353 (Aug. 2) 1919.

5. Cole, H. N.: A Study of Sodium Cacodylate in the Treatment of Syphilis, J. A. M. A. **67**: 2012 (Dec. 30) 1916; Sodium Cacodylate in the Treatment of Syphilis, Correspondence, J. A. M. A. **68**: 390 (Feb. 3) 1917; Sodium Cacodylate in the Treatment of Syphilis, Correspondence, J. A. M. A. **68**: 566 (Feb. 17) 1917; Pharmacology of Arsenicals, Current Comment, J. A. M. A. **76**: 595 (Feb. 26) 1921; Mon-Arsone Not Admitted to N. N. R., Report Council Pharm. & Chem., J. A. M. A. **76**: 1781 (June 18) 1921.

INADMISSIBLE TO N. N. R.

The Herradora Intravenous Specialties of the Scientific Chemical Co. are inadmissible to New and Nonofficial Remedies for the following reasons:

1. The therapeutic claims advanced for them are unwarranted and exaggerated, and there is no evidence to warrant the intravenous administration of them.

2. With one exception ("Herradora's Sodium Iodid for Intravenous Use") the preparations are mixtures of drugs, the administration of which is not in the interest of sound therapy, particularly when these preparations are intended for intravenous use.

3. Herradora's Sodium Iodid for Intravenous Use is marketed with unwarranted therapeutic claims, such as:

"As prepared sterile by me, the sodium iodid molecule has been subjected to a process which renders it easier for the iodin atom to free itself in the tissues much more rapidly than in ordinary sodium iodid."

In reporting on Venodine,[6] a sodium iodid preparation, the Council held that, since iodids are easily absorbed from the mucous membrane of the gastro-intestinal tract and are usually well tolerated by the stomach, there is no reason for resorting to intravenous administration. This view the Council subsequently reiterated.[7]

4. With the exception of Herradora's Sodium Iodid, Calcium Compound, and Iodids Compound, all of the Herradora specialties are claimed to contain ingredients, the identity and the uniformity of which are not insured by their inclusion in the U. S. Pharmacopeia, National Formulary, or by their admission to New and Nonofficial Remedies. Were the Herradora preparations which contain such unstandardized constituents acceptable otherwise, it would be necessary that these constituents be examined as to their composition, as to the methods employed to insure their identity and uniformity and to determine that these constituents were of therapeutic worth. The following are the unacceptable constituents which are contained in one or more of the Herradora mixtures: "Arsenic-Organic Compound" (if the Scientific Chemical Co. admitted that this is sodium cacodylate, then the firm would be required to substantiate the highly improbable claims of superiority), Ferric Dimethylarsenate,[8] "Arsenic-Mercuric-Organic Compound," Lithium Chlorid, "Guaiacol-Glyceryl Ester," "Digitalin" (the term is without meaning unless it is specified whether "German," "French" or "True" is used), Convallamarin,[9] Adonidin, Nickel Bromid, Lithium Benzoate, Manganese Citrate, Manganese Glycerophosphate, Sodium Lactate and "Mercuric-Organic Compound."

The facts presented in the preceding report were sent the Scientific Chemical Co. In reply the company assured the Council that its "literature and compounds" were being changed "to conform to Handbook of Therapy American Medical Association" and requested further postponement of the consideration of its products.

FUNDAMENTALLY IRRATIONAL

The preparations of the Scientific Chemical Co. are fundamentally irrational and by no effort could they be made eligible for admission to New and Nonofficial Remedies. The Council, however, wished to give the company every opportunity to bring the preparations into conformity so far as possible with the rules that govern the Council in the consideration of articles, and for this reason the Council has postponed definite action for nearly a year.

Advertising matter mailed to a physician in February, 1923, illustrates the methods followed by the Scientific Chemical Co. in the exploitation of its preparations. One of these circulars, entitled "Influenza and Pneumonia, Its Treatment" begins with a number of trite sayings, thus predisposing the reader to agree with its author. Then follows a rather bold statement that the author is not in accord with the manner in which the diseases are often treated and he proceeds to give details of the treatment of influenza and of pneumonia. The discussion contains much that is misleading if not definitely false. Thus the author speaks of coal-tar antipyretics being more or less hemolytic. It is true that they are capable of producing hemolysis when used in excessive doses but they are not dangerous when used properly.

It would be profitless to follow the maze of polypharmacy expounded in this circular through all of its ramifications. It suffices to illustrate the absurdity of the advice offered by stating that its author recommends a succession of twelve substances or mixtures containing a total of thirty-nine drugs in the treatment of influenza! A like number (including repetitions) are recommended for the treatment of pneumonia. Some of the preparations recommended contain no less than six different drugs, the combined action of which no human being can possibly foresee.

Not only does the circular recommend an extraordinary number of substances to be administered intravenously in these conditions, but it recommends many that, though once popular, have been shown to be devoid of any therapeutic value in the treatment of any disease. An example of this is found in the recommendation of hypophosphites as represented by "Arsenic-Hypophosphite Compound."

Another circular is entitled "The Treatment of Arteriosclerosis and High Blood Pressure" with the subtitle "Arteriosclerotic Serum (Herradora) for Intramuscular Use." This begins with a discussion of the cause of arteriosclerosis followed by the recommendation that the condition be treated by the usual measures including restricted diet, by purgation and then with the "Herradora Serum." The latter is sometimes referred to as a solution and sometimes as a serum. It is admitted to be nothing more than a solution of the iodid, sulphate, phosphate and carbonate of sodium.

A perusal of the "literature" issued by the Scientific Chemical Co. leads to the belief that the firm is much more interested in persuading the unthinking to use its specialties than it is in scientific therapy. It is an affront to rational therapy to have these mixtures which are reminiscent of the old days of polypharmacy exploited in the treatment of such serious diseases as pneumonia and influenza. Medicine continues to have its disappointments with whatever therapeutic measures are followed in the treatment of pneumonia, which is one of the most baffling of diseases, but there is no possibility of progress while following such crude and unscientific measures as those advocated by the Scientific Chemical Company.

The Council is convinced that the propaganda contained in the advertising matter issued by the Scientific Chemical Co. is detrimental to the rational practice of medicine and the public welfare. Therefore it has authorized publication of this report.

6. Articles Refused Recognition (Venodine; Standard Radium Solution for Intravenous Use), Report Council Pharm. & Chem., J. A. M. A., **64**: 2155 (June 26) 1915.

7. Some of Loeser's Intravenous Solutions, Report Council Pharm. & Chem., J. A. M. A. **76**: 1120 (April 16) 1921.

8. Ferric Cacodylate Omitted from from New and Nonofficial Remedies, 1920, p. 62.

9. Marvin, H. N., and White, Paul D.: Clinical Studies of Drugs of the "Digitalis Series," J. A. M. A. **77**: 1865 (Dec. 10) 1921.

Correspondence

"ORIENTAL SORE (CUTANEOUS LEISHMANIASIS) IN THE UNITED STATES"

To the Editor:—The illustrations in Dr. Lambert's paper on Oriental Sore (The Journal, April 7, p. 986) show very well the location of the lesions on the back of the elbow and ankle in certain types of the sore. Curiously, these are the favorite sites of the bites of *Stegomyia fasciatus* (*Aedes argenteus*), and it is not unlikely that *Stegomyia* may under certain circumstances impart this infection when infected with a flagellate of this class (*Herpetomonas*). The diagnosis of dermal leishmaniasis in America is usually confined to communities in which laboratories for diagnosis are available and routine examinations with the microscope practiced. No doubt this infection will be encountered in the warmer southern tier of states when it is thoroughly searched for.

The nature of the lesion—its specific character—has been overlooked because of its polymorphous appearance. Aleppo button is perhaps the classical type, but lesions spreading

like lupus, or exfoliative in appearance, are seen. Small ulcerating papules are less common than the large, solitary, circular ulcer. Lesions like yaws and ringworm are seen in the South American forms. Smears from all doubtful skin lesions, and when involving the nose, of the nasal septum as well, should be stained with a polychrome blue and eosin stain (Hastings, Wright or Leishman). Parasites are very sparse and often degenerated in the granulomatous area in the floor of the ulcer. The margin of the ulcer usually contains more endothelial cells invaded with the protozoon.

It should not be forgotten that the type of the disease common in South America and that likely to be encountered in Americans and others returning from the interior of Brazil is not self-limited, but recurs in the form of a serious and sometimes fatal ulceration of the nasopharynx and larynx which may appear years after the occurrence of the primary ulcer or lesions on the skin.

SAMUEL T. DARLING, M.D., Leesburg, Ga.

"CAUTION IN USE OF MERCUROCHROME-220 SOLUBLE"

To the Editor: — The communication of Dr. Stolz (THE JOURNAL, April 7) seems to call for comment. The salts of organic bases generally exhibit an acid reaction in solution because of a greater or less degree of hydrolysis. It might, therefore, be expected that those salts, when brought into contact with the sodium salt of a comparatively weak organic acid, such as the soluble form of mercurochrome, would act like any other acid and precipitate the dye. I mixed equal volumes of 5 per cent. procain (a hydrochlorid of an organic base) and 2 per cent. mercurochrome-220 soluble. A red precipitate, which soon became gummy, was formed at once, and practically all the dye was thrown out of solution, as indicated by the faint color of the supernatant liquid. Precipitation of mercurochrome was also brought about by cocain hydrochlorid and codein sulphate. As it was thought possible that mercurochrome might be acting as an alkaloid precipitant, another experiment was made with a saturated solution of codein base, this being chosen because it is fairly soluble in water. In this case there was no reaction with 2 per cent. mercurochrome solution, thus showing the essential part played by the acid part of the alkaloid salt.

Dr. Stolz's note of caution is, indeed, timely, and will doubtless be the means of preventing repetitions of his unpleasant experience by other physicians. However, the case described should place emphasis on the incompatibility of mercurochrome solutions with solutions of alkaloid salts, such as those of procain and cocain, and it should be clearly borne in mind that the precipitation of mercurochrome is *not* a thing that may occur fortuitously, but may with certainty be avoided by refraining from using simultaneously drugs of an acid character. Boric acid is an exception; it is so feebly acid that a saturated solution does not precipitate mercurochrome.

Silver nitrate and zinc sulphate, both of which are used in the genito-urinary tract, produce precipitate with mercurochrome. They may be alternated with the dye, but should not be used concurrently with it. In general, salts of heavy metals will precipitate mercurochrome.

It is suggested that when it is desired to use a local anesthetic with mercurochrome-220 soluble, a 2 per cent. solution of benzyl alcohol be employed. This has been found to be compatible with the dye.

EDWIN C. WHITE, PH.D., Baltimore.

[The incompatibility of mercurochrome—220 soluble with local anesthetics was the subject of a report from the A. M. A. Chemical Laboratory in THE JOURNAL, April 14, 1923, p. 1091.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BILIRUBIN ESTIMATION TEST

To the Editor:—Please give the details of the bilirubin colorimetric estimation test of Meulengracht, referred to in the *Archives of Dermatology and Syphilology*, April, 1923, p. 496.

G. H. J. PEARSON, M.D., Ottawa, Canada.

ANSWER.—From a brachial vein, about 3 c.c. of blood is collected in a small test tube, into which have been placed 2 drops of a 3 per cent. sodium oxalate solution to prevent coagulation. The test tube is shaken gently a few times and let stand for twenty-four hours. If the estimation is desired at once, the centrifuge may be used. After standing, 0.5 c.c. of the plasma is transferred with a pipet to a test tube graduated to 0.5 c.c., and the transferred plasma is diluted with physiologic sodium chlorid solution until its color is identical to that of the standard solution. The height of the diluted plasma, as shown on the graduated test tube, gives the bilirubin index. If the index is greater than 15, as is true in deep jaundice, the plasma must first be diluted and the index then found, multiplied by the degree of dilution. The standard solution is made of 0.05 part of potassium bichromate, 500 parts of distilled water, and 2 drops of sulphuric acid. It has the color of a pure bilirubin solution, and is stable.

It is most important in performing this test that no hemolysis occur. Venous blood, therefore, not capillary, must be used. Meulengracht procures blood by means of the curved cannula of L. Nielson. Any substance that causes hemolysis, e. g., water, ether, alcohol or acid, must be entirely removed from the glassware used. The test tube for the standard solution and that for the plasma must be of the same quality of uncolored glass.

The strength of the standard solution is arbitrary. The standard solution is clear, while the plasma is opalescent, owing to blood platelets and fat. Although a slight opalescence is no hindrance to the test, it is best to collect the specimen of blood while the patient is fasting or before meals to avoid much fat.

In normal persons, the bilirubin index ranges from 1 to 5. Any index above 5 indicates a pathologic condition: from 5 to 10, a low grade jaundice not noticeable in the skin; from 30 to 50, a medium jaundice, and from 50 to 100, a marked jaundice.

This test is practical in doubtful cases of gallstones, and in hemolytic anemias. It is also useful to determine whether jaundice is growing lighter or deeper.

LETHAL DOSE OF PHENOBARBITAL (LUMINAL)

To the Editor:—What do you consider to be a lethal dose of luminal, the symptoms of poisoning, and treatment. A woman aged 60, took with suicidal intent about fifteen 1½ grain luminal tablets. When I saw her, about six hours later, I was unable to arouse her; the pulse was 114, the respiration 22 and the temperature 98.6; the reflexes were absent except for pain; there was no cyanosis. I saw her again twenty-four hours after she had taken the tablets; she was still comatose, but at times voluntarily moved both arms and both legs. The temperature was 98.6; pulse, 114, and respiration, 26; there was no cyanosis. The patient was gradually becoming unable to swallow even water. When I was called again thirty-six hours after the tablets were taken, she was cyanotic; the temperature was 99.6; pulse, 124, and respiration 30 and shallow; the lungs were full of coarse, mucous râles; the reflexes were absent even for pain stimulus. The patient never regained consciousness, and died about forty hours after taking the tablets. No necropsy was performed. For about four years she had been sick with headaches and general pain. The systolic blood pressure was 200; diastolic, 140. The urine was negative for albumin and casts. The patient had been blind since 13 years of age, so the pupils showed nothing.

C. L. WHITE, M.D., Pittsburg, Kan.

ANSWER.—The lethal dose of phenobarbital (luminal) in man is not known. In animals, the toxic and fatal doses are close together (New and Nonofficial Remedies, 1923, page 62). An article on phenobarbital poisoning by John Phillips appeared in THE JOURNAL, April 22, 1922, page 1199, wherein the symptoms were reported and the literature reviewed. The treatment of phenobarbital poisoning is essentially the same as that for chloral.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.

FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.

GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.

IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.

MASSACHUSETTS: Boston, May 8-10. Sec., Dr. Charles E. Prior, State House, Boston.

MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

SOME NEEDED REVISIONS IN MEDICAL LICENSURE IN ACCORDANCE WITH PRESENT DAY MEDICAL EDUCATION*

KENDRIC C. BABCOCK, PH.D.
Provost, University of Illinois
URBANA, ILL.

A layman's study of the abstracts of laws and state board rulings regulating the practice of medicine in the United States, as revised to March, 1922, leads straight to the conclusion that most of these laws and regulations have failed to take into account in any really adequate fashion the great changes in the scope and organization of schools of medicine of the present time. Iowa, for example, is operating under a practice act of 1886, amended last in 1909; Texas follows the schedule of the act of 1907; the requirements of the boards in California and Michigan bear evidence of having been formulated in the pre-Carnegie, or paleozoic, period of medical education. Certain other states, such as Massachusetts, Maine, Missouri, Nebraska and Idaho, have taken large cognizance of changed conditions, and have modified their regulations accordingly.

In the earlier period just mentioned, no real standardization of medical schools or medical education in this country had been attempted. Men sitting in this hall today will recall the amazement and alarm which they experienced as they considered the results of the first general investigations of medical education about 1906. Under the conditions existing up to that time, licensing bodies had no alternative to writing very detailed and exacting prescriptions for their would-be brethren who desired to come up for examination for admission to the profession of medicine. Between the Harvard Medical School and the office of Dr. Buchanan was a wide and varied stretch of country out of which almost any sort of man might emerge and ask for a license. Small wonder or regret that the boards, representing the better sentiment of the profession, elaborated specifications as to education, time to be spent, and subjects to be covered. Even with these specifications it was hard to sift out the grains of wheat from the chaff which the cheap, private, money-making medical schools thrust into the market place. But

> The old order changeth, yielding place to new,
> And God fulfils Himself in many ways
> Lest one good custom should corrupt the world.

* Read before the Annual Congress on Medical Licensure, Public Health and Hospitals, Chicago, March 5, 1923.

PROGRESS OF MEDICAL EDUCATION

The progress of medical education during the last fifteen years is the most outstanding single feature in the history of professional education in the United States. The raising of standards of admission to medical colleges to a well-enforced requirement of two years of sound college work including certain prescribed sciences has been definitely accomplished, and the organization and administration of the medical colleges and of the institutions offering premedical training have made adjustment to the new requirements without serious complaint. Within the medical colleges themselves the reorganization of methods of instruction, the elaboration of the curriculum, the introduction of full-time specially trained instructors for at least half of the curriculum, and the cooperative enforcement of sound standards through the Council on Medical Education and Hospitals of the American Medical Association have given the Class A medical schools a recognized status and an efficiency quite undreamed of at the beginning of the investigations which resulted in the great report on medical education published by the Carnegie Foundation for the Advancement of Teaching in 1910.

FAILURE OF MACHINERY OF LICENSURE TO KEEP PACE

With this progress in medical education, the machinery of licensure seems to a layman hardly to have kept pace. The scheme of prescribed state examinations for all applicants for licensure, except as modified by principles of reciprocity with other states, the National Board of Medical Examiners or similar bodies, is in full operation and is likely to continue. Quite possibly, some further elevation of the plane of these examinations may be achieved by cooperative measures, through the National Board, some regional boards, or some further evolution of the organization of the Council on Medical Education and Hospitals. The figures for the examinations of the National Board give vitality to this possibility. For the last year the number of those taking the National Board's examinations was 194 for Parts I and II and 870 candidates are registered for examination.

Recent sorry and disheartening experiences in Illinois, in which is one of the great productive centers of medical education, might well dictate a general review of the present system of prescribed examinations and licensure. But this is not the time or place to undertake such a review. The drifting, unsuccessful practitioner of uncertain antecedents, the man trained in schools outside the United States, the man who belongs to a new medical cult but who is willing to yield a minimum of understanding of medical science for the sake of a license—these may well be put through severe and exacting examinations, whatever happens to the men trained under conditions such as now exist in Johns Hopkins, Cornell, Rush, or Stanford.

HAMPERING RESTRICTIONS

The restrictions and detailed specifications fixed by many of the state boards at the present time for admission to the examination and to licensure unquestionably operate to hamper quite unnecessarily both applicants and medical schools. Regulations which were good in the era of expansive and irresponsible medical education may become positively harmful in a succeeding generation when medical education, "lock, stock and barrel," is built on a different plan and shaped up under a different sense of responsibility. The words of the Texas statute of 1907, "Such schools shall be considered reputable within the meaning of this act whose entrance requirements and course of instruction are as high as those adopted by the better class of medical schools of the United States," may be set over against the simple summary of the requirements of the Nebraska board: "The board recognizes only those medical colleges which are rated in Classes A

and B by the Council on Medical Education of the American Medical Association," and the similar statement for the state of Montana, "No applicant who graduated subsequent to July, 1917, will be admitted to the examination unless graduated from a medical school rated in Class A by the Council on Medical Education and Hospitals of the American Medical Association. All applicants who graduated from foreign medical schools subsequent to April 4, 1916, must have attended at least one full course of study in a medical school of the United States rated in Class A by the Council."

Another form of the holdover regulations, or restrictions, from the era of go-as-you-please is the prescription of varying minimum totals of hours for the medical course; for example, 3,600 hours in Colorado and Texas, 4,000 hours in Michigan and California, 4,180 in Iowa, and 4,480 in Pennsylvania, and, in the case of states like California and Iowa, a practically hard and fast distribution of these hours among the subjects in the medical curriculum—chemistry, 320 hours in California, 340 in Iowa, and 360 in Michigan, with some possible variation in the last state; pharmacology, 105 hours in California and sixty in Iowa; anatomy, histology, embryology, etc., 775 hours in California, 690 in Iowa, and 720 in Michigan. One practical difficulty that arises in medical schools that attempt to prepare students for a wide market, like those of Chicago, Philadelphia and New York, is the necessity for complying with the various requirements of the state boards by setting their number of hours in a given subject high enough to meet the highest demand of any state. A thoroughgoing and conscientious attempt to build up a curriculum on this principle would lead to the elimination of most of the opportunities which students might claim to make electives according to interest in subjects or according to enthusiasm for a great teacher or research worker.

In the same category of hampering restrictions are those which set up minimum standards of hours a week, weeks a year, and years for the completion of the curriculum. As illustrations: Pennsylvania requires that an acceptable medical college, recognized by its bureau of medical education and licensure, shall give "four courses of at least thirty-two weeks each of thirty-five hours per week of actual work in didactic and clinical study"; Georgia requires four courses amounting to at least 120 weeks, exclusive of holidays, of at least forty hours each week, attendance of at least 80 per cent. of each course, and a grade of 75 per cent. in all college examinations; Connecticut prescribes "four graded courses of instruction, the aggregate of which amounts to at least 104 weeks of at least thirty-six hours each; and at least forty-two months must have elapsed between the beginning of the student's first course of medical lectures and the date of his graduation"; Illinois requires that each term shall consist of not less than 1,020 hours of work, with a maximum of permissible absences of 20 per cent.; and in the case of Colorado the medical course must consist of a minimum term of four years in four separate years of nine months each, with a total of at least 3,600 hours. All these provisions hark back to the time when there was no general and acceptable agency for standardizing—which, by the way, does not mean, and ought not to mean, the enforcement of a rigid and cramping uniformity—and for publishing authoritatively the results of its standardization, for the benefit of the profession and of that vast and vitally interested public which the profession sets itself to serve.

RATING BY THE COUNCIL

The rating of the medical colleges of the country by the Council on Medical Education and Hospitals, though without statutory backing or authority of any sort, has been so thoroughly consistent, courageous, intelligent and considerate, so steadily cooperative with the universities and colleges with which the medical schools have been connected, on the one hand, and so wisely supported by the medical profession, on the other hand, that the judgments of the Council as expressed in its published classification of medical colleges, year by year, are accepted practically without question, save perhaps by those persons and institutions whose merits the Council failed to appraise according to expectations. Very largely through the work of the Council, and with the sure endorsement of an aroused public opinion, the medical school organized on a proprietary basis, and conducted for profit, died.

SOUNDNESS OF CLASS A SCHOOLS

In every way the tendency for medical schools to seek affiliation with, or absorption by, a strong and vigorous university, or for new schools of recent origin to appear as integral parts of an institution of recognized high standards, like the University of Rochester, has operated with unmeasured benefit to medical education. Great institutions whose faithfulness to sound educational standards may not for a moment be called into question, institutions like Cornell University, the University of Chicago, the University of Minnesota, and Stanford University, both institutions on private foundation and those supported by the states, stand sponsor in a wholly new way in the last twenty years for medical education. The confidence of the public, of great educational and philanthropic foundations, and of benevolent men of wealth, as evidenced by the great gifts to medical education during the period just mentioned, all bear convincing testimony to the soundness and progressiveness of the Class A medical schools as a whole, even though there remain differences of magnitude and considerable range between the strongest and the weakest of the probationers on the list. The standards of the universities and the ratings of the Council on Medical Education and Hospitals furnish a safe and tried reliance for anybody wishing to judge medical education. No other agencies than these, save perhaps the New York Regents, are even remotely considered in this connection. Not a single state board is in position to do anything comparable with what the Council has done, nor is it likely to be.

A school in Class A should be judged as a whole—organization, organic institutional relations, faculty, curriculum, equipment and hospital connections; it must also be judged by its output, year after year, its normal finished product, just as the great graduate schools and research organizations are judging the institutions from which their supplies of new men regularly come. When a school has thus attained to the distinction of Class A by the rating of the Council, it seems to a layman entirely clear that state boards must in the long run rely on its honesty, integrity, sound judgment and professional loyalty, and accept its product for immediate examination without questioning meticulously the processes by which its graduates have been guided to their degrees. The judgment of the medical college faculties as to the scientific attainments, the personal trustworthiness and the presumption of success on the part of candidates for degrees is no whit less professional, responsible and public-spirited than that of any board made up of busy practitioners, no matter how distinguished. It is probably within the prerogative of almost every board to approve or not to approve any particular school or all the schools of the Council's Class A or Classes A and B; but having so approved a school or group of schools, there ought to be no further question, and no detailed prescription, as to the exact proportions of the curriculum, or as to the year, whether of thirty or thirty-two weeks, whether it is divided into semesters, terms or quarters, and whether the total accomplishment was spread over fifty months or forty-two months, or thirty-

six months. Attainment on entering the examination is the thing to be assured. On the results of the examinations, year by year, examinations honestly and wisely conducted, perhaps by sections, like the New England states, or the Lake Michigan states, instead of six separate New England examining bodies, or four Midwest bodies, the school must stand or fall. It has more at stake than any board. It must find its faults or weaknesses or vagaries as a part of a greater institution, and take prompt measures to remedy them.

Injustice of Hampering Students by Detailed Requirements

The quality of the men and women who are now going into the medical colleges justifies such a proposal of freedom from detailed requirements by boards more perfectly than at any previous time. The process of sifting this mass of students to ascertain its adaptability to the severe discipline of the medical curriculum goes on two years before it gets into the medical hopper, and a good deal of elimination takes place. Not a medical college in Class A would go back to mere high school requirements for admission if it could. On the other hand, with better material to work on, with some momentum in scientific matters and some development of technic at the outset, the school may properly claim the right to work with considerable flexibility of program, with differentiation and even with some specialization of curriculum to meet the needs of groups of students here and there.

For a decade the medical colleges have found it safe to accept from the colleges throughout the country without examination hundreds of freshmen who have stalked into the medical curriculum and have carried their work successfully. These students have satisfied the minimum requirements in science, English and foreign languages, and the colleges have been trusted to make up the balance of the sixty hours with good stuff and not with mere easy fillers. The student, in similar fashion, may pass from the first two years of his medical curriculum in a two-year medical school into the second half of the four-year medical college curriculum, without too elaborate detailed requirements or extensive examinations.

Saving Time by a Flexible Curriculum

Much has been said during recent years of the urgent need to get men into their professional practice at an earlier age. These meetings have heard many addresses on this subject and on the rising cost to the student of his six or seven years of preparation for the practice of medicine after he has graduated from the high school. Scarcely one of these discussions has suggested such a modification of the old-fashioned calendar of the medical curriculum as would assure any saving of time or expense to the student. While colleges and universities have increased their utilization of their plants by adopting a four-quarter year, and while they have enabled many students who have superior ability, especially fine training, and a high enthusiasm for professional achievement, to move more rapidly through the curriculum as a whole, the medical colleges have stood pat for the old-fashioned seven, eight, nine months year. The present rigid prescription or time-lock set by state boards makes impossible the saving of any time by the most brilliant and capable of students. Four calendar years are four calendar years, and the most robust, determined and superbly prepared student may not march through his curriculum, if his destination is Connecticut, in less than forty-two months. He may have taken his physiologic chemistry, bacteriology, histology, embryology, and the like, under the finest masters in a great university in an extra year, an extra semester or in summer sessions, but he may not thereby shorten the sacred period of forty-two months.

It would be entirely feasible for certain medical colleges, perhaps not for all, so to organize their work by rotation and repetition, just as engineering schools and law schools organize their work, that students might finish the prescribed medical curriculum exclusive of the internship in three, three and one-fourth or three and one-half years. While this probably would not be done by the average student or by many students in every institution, the number capable of such saving, and in justice entitled to make it, would undoubtedly be considerable and worth while, and likely to increase. This would result in saving money for the student as well as time; it would thus reduce the handicap of the strong, capable, but necessarily self-supporting student, the young man who comes up through his high school and premedical curriculum by his own efforts, in contrast with his more fortunate fellow student whose family is able without hardship to provide him with a full medical education. The difference of $1,000 in the debt which a student would incur in getting his professional education is not infrequently a determining factor, and the medical profession just now needs to look to the matter of supply of raw material of the right sort.

Freedom and Responsibility of Colleges Under the New Conditions

Until state boards relax the present outgrown, unnecessary and harmful prescriptions as to the details discussed, the medical colleges and the medical students must follow in the lock-step to their common disadvantage. Freedom and responsibility, under the new conditions in medical education, belong to the medical colleges far more vitally and permanently than to the mere examining boards of forty-eight states. Progress and professional spirit in the coming generations of doctors of medicine depend on the full exercise of these two functions by the medical colleges, almost wholly apart from detailed prescriptions by state statute, regulation or board. Cooperation among the states, the medical school and the Council is more active and cordial than ever before. The present roll of Class A medical colleges shows about 40 per cent. to be vital organs of state governments, and as such they are even more responsible to the state than are the state boards of examiners. The regulations of the boards in twenty-three states now give official sanction to the ratings of the Council. But so long as any considerable number of states insist on continuance of the old order of specifications, restrictions and minute regulations of what belongs properly to college administration, there will be a lowered efficiency in the colleges, and a handicapping of some of the most promising students.

Connecticut July Examination

Dr. Edwin C. M. Hall, secretary, Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, July 11, 1922. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. One candidate took the examination and passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	Passed	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital of Chicago		(1922)	84

College	Licensed by Reciprocity	Year Grad.	Reciprocity with
N. Y. Homeo. Med. Coll. and Flower Hosp.	(1882)*	(1921)	New York

* Licensed on diploma.

Connecticut November Examination

Dr. Edwin C. M. Hall, secretary, Connecticut Homeopathic Medical Examining Board, reports that one candidate, a graduate of the Hahnemann Medical College and Hospital of Chicago in 1898, received a license by reciprocity with the state of Illinois at the meeting held at New Haven, Nov. 14, 1922.

Book Notices

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES EMBRACING THE ENTIRE RANGE OF SCIENTIFIC AND PRACTICAL MEDICINE AND ALLIED SCIENCE. By Various Writers. Fourth edition edited by Thomas Lathrop Stedman, A.M., M.D. Complete in eight volumes. Cloth. Price, $10 per volume (in sets only). New York: William Wood & Co., 1923.

To call this vast accumulation of medical data and information a handbook is in the nature of an anomaly. Within its eight stately volumes are included nearly 4,000 articles, contributed by 445 contributors. There are more than 5,000 small illustrations and some sixty-four full page illustrations in photogravure and in colors. The aim of the work is obviously encyclopedic, and it is probably unique among such works.

The third edition was completed in 1917. Because of the rapid progress in the medical sciences brought about by the war as well as by the extensive researches now being made in many parts of the world, textbooks and reference works pass quickly out of date; constant revisions are necessary if they are to depict accurately the present status of the subjects of which they treat. Because of the great scope of this exceedingly useful reference work, a complete resetting and reprinting would be prohibitive. The changes that have been made, therefore, have been inserted into space made by cutting and condensing material in the third edition, and by adding greatly to the last volume.

Among the new subjects that have been included in the fourth edition are articles on asthma, war neurosis, gunshot wounds, the Schick test, epidemic (lethargic) encephalitis, tularemia, light therapy, basal metabolism and the treatment of wounds. New minor articles deal with new drugs, including barbital, butyn, benzyl benzoate, and nonspecific proteins, and with such new tests as the Sachs-Georgi reaction, the sigma reaction and the colloidal gold reaction. There are, moveover, biographic sketches of Dr. Albert H. Buck, editor of the first two editions of this work, and Drs. Abraham Jacobi, Theodore Janeway, George M. Gould, Sir William Osler and Stephen Smith. The publisher calls special attention to the fact that the materia medica articles have been revised to conform with the latest editions of the pharmacopeia and national formulary. In articles on climatology, the 1920 statistics have been incorporated.

The effort to keep this extensive work up to date is praiseworthy, particularly as it has involved considerable editorial ingenuity to maintain the alphabetical arrangement, and not to make the appendix unduly burdensome as a cross index and reference. As it is, this appendix serves to some extent as a measure of the progress made in the period it covers. Of course, the recent work on ethylene and insulin has been too rapid a development to permit its inclusion in this series.

The list of collaborators includes men who are known for authoritative dicta on the subjects about which they write. For the practitioner far removed from the usual sources of medical reference, for the physician who wishes to be able to consult promptly a reliable general statement on almost any subject in general medical science, and for the literary research worker who wishes a well selected beginning list of references, this encyclopedia is especially commendable.

L'INFECTION BACILLAIRE ET LA TUBERCULOSE CHEZ L'HOMME ET CHEZ LES ANIMAUX. Processus d'infection et de Défense Étude Biologique et Expérimentale. Par A. Calmette. Second edition. Paper. Price, 50 francs net. Pp. 644, with 56 illustrations. Paris: Masson et Cie, 1922.

The second edition differs little from the first. A chapter has been added on chemotherapy, and recent contributions in other fields are briefly described, such as the auto-urine reaction of Wildbolz. For the benefit of those who have not read the first edition, it may be said that this is a high-grade, comprehensive treatment of the nature of tuberculosis, as seen by one who is essentially an investigator and a laboratory man, and one who is particularly interested in the problems of resistance to the infection. Several well written chapters are given to the natural means of defense within the body, and the last quarter of the book is devoted entirely to the subject of immunity. Calmette's own researches in the field of experimental immunization are too well known to require comment. It is worthy of note that he does not stress them in this book to the exclusion of other important investigations. It is to be regretted that a number of important American contributions to this field in recent years fail to receive notice. There are chapters on the mode of action of tuberculin, including an interesting catalogue of tuberculins. A concise statistical study of racial susceptibility to tuberculosis is presented. The new chapter on chemotherapy takes up rather briefly the various groups of chemicals which have been investigated as to their therapeutic action. While Calmette feels that the results are to date virtually negative, he believes that there is no reason for discouragement, for several suggestive leads have been obtained. Particularly the results with iodin warrant the continuation of this line of investigation. Good colored plates are included, and the press work is excellent. The value of the book as a good reference monograph is distinctly impaired, however, by the absence of an index.

MENTAL DEFICIENCY (AMENTIA). By A. F. Tredgold, M.D., M.R.C.P., F.R.S.Ed., Lecturer on Mental Deficiency at London University. Fourth edition. Cloth. Price, $6. Pp. 564, with illustrations. New York: William Wood & Co., 1922.

The fourth edition of this well and favorably known textbook fully maintains the high standards of its predecessors. The changes that have been made are quite extensive, and serve to bring the text fully up to date. The chapters on defective delinquency have been entirely rewritten, and there is an excellent discussion of the advantages of the British Mental Deficiency Act of 1913. The author has also included his schematic outline of mental evolution, which should be found of considerable value in analyzing cases that come under observation. The chapters dealing with clinical examinations and mental tests have also been rewritten with admirable clearness. The subject of mental deficiency is rapidly coming to take the prominent place it deserves in social health problems, and there is great need for conservative and authoritative information. These are nowhere so well presented as in this book. Dr. Tredgold's style is clear and concise, the volume is well printed and admirably illustrated, and the book can be heartily recommended for all who are interested. It cannot be equaled, at least in English, for the use of medical students and practitioners.

THYROID AND THYMUS. By André Crotti, M.D., F.A.C.S., LL.D. Second edition. Half morocco. Price, $15. Pp. 774, with 144 illustrations Philadelphia: Lea & Febiger, 1922.

The first edition of Dr. Crotti's opus appeared in 1918. In the author's preface, it is stated that the second edition consists of a complete revision of the material in the first edition, including practically a rewriting of many chapters. Mrs. Crotti is given credit for writing the chapter on the etiology of simple goiter. The book represents an accumulation of a vast amount of literature on the thyroid, beautifully illustrated, but selected rather indiscriminately and without special critical elimination. One of the most valuable sections of the work is the accumulation of statistical material regarding the distribution of goiter throughout the world. As was pointed out in our previous review, the publishers seem to have gone to undue expense in order to issue a beautiful volume. The book is printed on large sheets of enameled stock; it is profusely illustrated and bound in three-quarters red morocco leather with a red cover. It has a gold leaf top and contains even a red silk ribbon for marking the pages. These are certainly unusual features for a scientific volume.

THE ANATOMY OF THE FEMALE PELVIS, DESCRIPTIVE AND APPLIED. By F. A. Maguire, D.S.O., M.B., Ch.M., Honorary Assistant Gynaecological Surgeon, Royal Prince Alfred Hospital. Paper. Price, 6 shillings. Pp. 115, with 4 illustrations. Sydney: Angus & Robertson, Ltd., 1922.

Thirty-three pages of this pocket manual are devoted to applied anatomy and the technic of physical examination. It is evidently intended to be used in preparation for examination rather than in connection with any thorough study of anatomy.

Medicolegal

Killing Child to Save Suffering—Motives—Petit Mal Defense—Mental Age Theory

(State v. Ehlers (N. J.), 119 Atl. R. 15)

The Court of Errors and Appeals of New Jersey, in affirming a judgment of conviction of murder in the first degree of the defendant, a laborer, 28 years old, for killing his son, aged 6 or 7 years, holds that proof of motive is not essential to support a conviction of murder in the first degree. If the killing is wilful and the result of premeditation and deliberation, it is murder in the first degree, no matter what the defendant's motive may have been, or if he had no motive (used in the sense of self-serving reason) whatsoever. A man, unless not sufficiently sane to know the quality and nature of the act, or that it is wrong, who kills his child to save it from anticipated future suffering and unhappiness, is guilty of murder in the first degree, if the killing is wilful, premeditated and deliberate, although actuated only by motives of pure, even if mistaken, love and kindness.

When, in answer to clear, direct and uncontradicted proof of a wilful, premeditated, deliberate killing, the defense of an epileptic seizure of the petit mal type at the time of the crime, is set up, and the other evidence thereof is of so unconvincing a character as to have little, if any, weight, the mere absence of proof of motive will not suffice to justify a setting aside, as against the weight of the evidence, of a jury's verdict of murder in the first degree. Here the species of alleged epilepsy from which the defendant's expert thought he was suffering was the convenient kind which exhibits no outward telltale symptoms, such as fits or convulsions which accompany the grand mal type, and involves only a temporary secret loss of memory and will power responsibility for a few seconds or a few moments. But the expert said there must be absolute loss of memory during this time, whether short or long, else there is no epilepsy. This being so, there was an absolute explosion of the epilepsy theory, because, according to witnesses, the defendant did remember, only three hours after the shooting, all the details which took place while he was claimed to have been suffering from petit mal.

Expert testimony that an adult defendant in a trial for murder is of the mental age of 12 years, coupled with the further testimony by the same expert that 12 years was the average mental age of our American soldiers in the World War, and that the mental age theory "does not amount to shucks" so far as adults are concerned, the court views as tending to demonstrate that the mental age theory of the medical experts is, at least as applied to adults, based on so arbitrary and unnatural a scale of years as a standard as to be misleading to a layman, and useless, if not actually harmful. In other words, this expert clearly demonstrated, as he frankly admitted, what has been the observation of practically all our judges, that the so-called mental age theory of the experts, at least as applied to adults, is based on so arbitrary and unnatural a scale of ages as to be utterly misleading to a layman and practically useless, if not actually harmful, in the administration of justice by trial by jury.

The Real Question When Defense Is Insanity

(Thomas v. Commonwealth (Ky.), 245 S. W. R. 164)

The Court of Appeals of Kentucky, in affirming a judgment of conviction of murder, says that it must be borne in mind that, to excuse homicide on the ground of insanity, the evidence must be such as to establish the fact that the accused was without sufficient reason at the time to know what he was doing, or to know right from wrong; or that as a result of mental disease he did not, at the time of the homicide, have sufficient power of will to control his actions, and was moved by an insane impulse which he could not resist. The real question in a trial in which the defense is insanity is not whether the mind is unsound, but whether it is unsound to the extent of being unable to determine right from wrong; or whether, if able to determine right from wrong, the accused was unable to resist the impulse to commit the act. If such were not the test, with the many opinions which may be indulged with regard to the soundness or unsoundness of mind, the punishment of criminals would be rendered almost an impossibility. Usually, in a case in which there is no other hope of escape from the enormity of a crime, insanity is put forward as a forlorn hope, and many persons indulge the conclusion that, because a crime is committed from a motive which they may regard as insufficient to justify such an action, the action of the party arises from mental diseases. Insanity is not, however, proved by evidence that the slayer entertained no ill will that was known of by other; by the enormity of the crime; by the barbarous manner in which it was committed, or by the fact that there was no apparent provocation. Testimony that one is of a violent, overbearing and quarrelsome disposition when drunk cannot be said to be evidence of such unsoundness of mind as will excuse crime.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.
American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York.
Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Concord, May 22-23. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Surgery, Chicago

March, 1923, **6**, No. 2

*Benign and Malignant Growths of Nasopharynx and Their Treatment with Radium. S. J. Crowe, J. W. Baylor, Baltimore.—p. 429.
Studies in Exhaustion: IV. Physical Trauma. G. W. Crile, Cleveland.—p. 489.
*Etiology of Urinary Lithiasis: Experimental Study. L. D. Keyser, Rochester, Minn.—p. 525.
*Nature of Cranial Hyperostosis Overlying Endothelioma of Meninges. D. B. Phemister, Chicago.—p. 554.
*Osteoma of Skull. C. W. Rand, Los Angeles.—p. 573.
Alterations in Currents and Absorption of Cerebrospinal Fluid Following Salt Administration. F. E. B. Foley, St. Paul.—p. 587.
Relation Between Oblique Inguinal Hernia and Workmen's Compensation Laws. J. M. Wainwright, Scranton, Pa.—p. 605.
Pathogenic Ptosis of Right Colon. E. P. Quain, Bismarck, N. D.—p. 638.
*Carcinoma of Appendix. A. S. Jackson, Rochester, Minn.—p. 653.

Radium Therapy of Growths of Nasopharynx.—In none of the forty-nine cases of carcinoma of the nasopharynx reported by Crowe and Baylor has a cure been effected; but, in many cases, the symptoms have been ameliorated. In some instances, the rapid decrease in size of the primary growth leads the authors to believe that the unfavorable outcome is due to the fact that these patients do not apply for treatment until metastases have occurred. It is important for the medical profession to know that tumors in the posterior part of the nose and in the nasopharynx are not uncommon, and that the earliest symptoms may be referable to the ear, the eye, the glands of the neck or to the area of distribution of some branch of the trigeminal nerve.

Etiology of Urinary Lithiasis.—The commoner theories of calculus formation are discussed by Keyser on the basis, in most instances, of experimental results. He studied the effect on the crystalline content of the urine of: a high calcium diet; forced administration of oxalic acid and its derivatives; administration of butyl oxalate; placing an organic nucleus in the renal pelvis of the rabbit; the formation of oxamid calculi; anatomic or mechanical factors in the production of oxamid calculi; the introduction of inflammatory exudates into the urinary stream by means of experimental renal infection: the influence of such exudates on the deposition of calcium oxalate and the production of small concretions by such methods; the production of a minute concrement by means of trauma and infection. The difficulty with which calcium salts, oxalates, urates, and other normal crystalline deposits of the urine are increased to any appreciable degree by various methods of administration is pointed out. The only marked increase in visible crystals has been attained by feeding oxamid, a material foreign to the urine of animals. From this it would seem that an exogenous or dietary increase in crystalline materials does not produce a corresponding pathologic increase of these materials in the urine. On this basis, oxalurias, phosphaturias, xanthinurias, cystinurias, and excessive uric acid output must be more of endogenous than of exogenous origin. Some defect of metabolism is at work by which the colloidal content or the hydrogen ion concentration of the urine is altered, rather than a defect of diet. Of the four methods by which artificial concretions have been obtained, only feeding with oxamid gave consistent results. There were features in connection with the other experiments which pointed to the action of an abnormal precipitation mechanism. Oxamid, a crystalloid foreign to the urinary tract, on being excreted, meets no mechanism to keep its crystals separate as morphologic entities. It is precipitated with the colloidal material of normal urine in such a way that fusion of crystals and concrement formation ensue. Mechanical factors are effective, at least, in the case of oxamid, in promoting retention of crystals and growth of the stones; but they are not essential to the process. This work suggests the possible existence of a protective mechanism against stone formation: a natural defense against excessive concentration of urinary crystalloids; protective colloids; precipitation of crystals as isolated units; the form and activity of the urinary tract. Keyser says that there seems to be no other reasonable explanation than that the formation of calculi is due to disturbance of the normal colloidal mechanism of the urine, either in holding water insoluble materials in solution or in precipitating crystals as isolated entities. This disturbance may be due to quantitative or qualitative change in the colloids normally present, or to the entrance of abnormal colloids into the urine, either from the blood stream or as products of local disease in the kidney. The latter origin seems most likely. The fact that pus and exudates of bacterial origin, aside from nephritis, are the most common known sources of pathologic colloidal material in the urine, makes it seem likely that these constitute the factors by which the normal urinary precipitation mechanism is most frequently upset. There is also a possibility that calculi are occasionally due to non-infectious colloidal changes. In stasis, surface duplication, organic nuclei, and diverticula are seen conditions which do not cause stone but which, if the cause of stone is present will greatly favor its growth. This has been demonstrated to be the rôle of mechanical factors in the case of oxamid, and all clinical evidence supports such a view for calculi in human beings. Certain physical, climatic, geographic or physiologic differences, however at times lower the resistance to stone forming infections.

Nature of Cranial Hyperostoses Overlying Endothelioma of Meninges.—Phemister asserts that the hyperostosis which develops over a considerable proportion of meningeal endotheliomas results from penetration of the dura and direct invasion of the skull by the tumor. The tumor permeates the skull, rarefies slightly the inner and outer tables and stimulates new bone formation, usually from both the internal and external surfaces. Tumor cells are found in varying numbers throughout the cancellous spaces of the hyperostosis. The new bone is not tumorous in nature, and is merely ossified stroma of the invading endothelioma. Its spongy or radiating arrangement is similar to that which is seen in the ossification occurring in other types of tumor regardless of whether primary or secondary in bone and whether the new bone itself is of tumorous or nontumorous nature.

Osteoma of Skull.—Two cases are presented by Rand as being representative of types of hyperostosis of the skull. The first case was accompanied by an underlying endothelioma which filled and grew from both sides of the longitudinal sinus. The second case was a simple osteoma of the skull not associated with any true intracranial growth.

Carcinoma of Appendix.—Sixty-four cases are analyzed by Jackson. Operation resulted in cure of the malignant condition in 100 per cent. of the thirty-seven patients (out of sixty-four) traced. In only five of a series of twenty-four cases was a positive surgical diagnosis of carcinoma made, although the lesion was suspected in four other cases. In the whole series of sixty-four cases, one specimen was diagnosed colloid carcinoma; the remaining cases may be classified in the so-called spheroidal group. Adenocarcinoma was not found. The influence of chronic appendicitis as a factor in the production of carcinoma is evident from the appearance of the lumen and the number of twists and kinks in the region of the tumor. Jackson urges that the appendix should be examined carefully in every laparotomy, when possible, and should be removed if any abnormality is present. A preoperative diagnosis of carcinoma of the appendix is impossible because of the absence of distinguishing clinical signs. Obliterated appendixes should be examined carefully for signs of malignancy.

Boston Medical and Surgical Journal

March 29, 1923, **188**, No. 13

Thrombo-Angiitis Obliterans. H. C. Bean, Boston.—p. 427.
Relation of Urologist to Cancer. J. D. Barney, Boston.—p. 431.
*Indications from Experience of Framingham Tuberculosis Treatment. D. B. Armstrong, Framingham, Mass.—p. 433.
Complications Occurring in Gonorrheal Urethritis. A. H. Crosbie, Boston.—p. 435.

Results of Framingham Tuberculosis Experiment.—The more important results of the work done at Framingham, as given by Armstrong, are: (1) The ratio of known active

tuberculosis cases to tuberculosis deaths was increased during the first year of the demonstration from three to one to nine to one, thereby indicating that in many of our communities from one half to two thirds of the active cases are undetected and not under medical control. (2) The cooperation given by the local physicians increased the average annual number of tuberculosis cases reported from 13 to 39 during the first three years of the demonstration. (3) The increased effectiveness of the medical machinery, especially through the aid of the consultation service, increased the percentage of early cases discovered from 45 to 83 per cent. in the first three or four years of the demonstration. (4) Through the increased popularization of adequate treatment facilities, the percentage of cases being sent away to hospitals or sanatoriums for shorter or longer periods, increased during the first three years from 15 per cent. to 42 per cent. (5) As to the effect on mortality, the results to date have been very encouraging. The tuberculosis death rate for 1921, the fifth year of the demonstration, represented a reduction as compared with the predemonstration decade average, of 67 per cent. (the figures being corrected for residence and certification errors). This improvement is to be compared with a percentage of improvement of 18 per cent. for similar towns in Massachusetts. Further, if the last three years of the demonstration (1919-1921) are averaged and compared with the preceding decade, the Framingham improvement is 46 per cent. as compared with 3 per cent. for the comparative so-called "control" towns. (6) Finally, as to cost: Framingham was spending approximately 40 cents per capita per year for health work at the time of the demonstration's initiation. By the gradual assumption of additional expense, the community, either through public or private funds, is now carrying a health expenditure of about $2.30.

Endocrinology, Los Angeles

January, 1923, 7, No. 1

*New Experimental Data on Question of Seat of Endocrine Function of Testicle. A. Lipschutz, Esthonia.—p. 1.
*Selective Tuberculous Involvement of Endocrine Glands. T. H. Coffen, Portland, Ore.—p. 19.
*Endocrine Therapy in Mental Deficiency. H. W. Potter, Thiells, N. Y.—p. 25.
Experimental Investigation of Value of Various Commercial Ovarian Extracts. S. H. Geist and W. Harris, New York.—p. 41.
*Relation of Onset of Menstruation to Environment. W. Lintz and H. Markow, New York.—p. 57.
Regeneration and Transplantation of Thyroid. M. M. Hoskins, Little Rock, Ark.—p. 61.
Effect of Ablation of Superior Cervical Sympathetic Ganglia on Continuance of Life. M. L. Montgomery, Berkeley, Calif.—p. 74.
Epinephrin Content of Commercial Suprarenal "Cortex" Preparations. E. J. Baumann, New York.—p. 81.
*Case of Raynaud's Disease, Recovered. J. C. Klecan, Portland, Ore.—p. 84.

Seat of Endocrine Function of Testicle.—Lipschutz presents a review of the experiments performed by himself and his co-workers on the interstitial cells of the mammalian testis. Various data are adduced which have not been published previously. It is held that a normal condition of hormonic activity of the testis of mammals is not possible without fully developed interstitial cells. A testis with spermatozoa, but with underdeveloped interstitial cells, cannot perform its normal endocrine function. Completion of spermatogenesis is not necessary for the performance of the endocrine function. Normal endocrine function is possible even when no other generative cells than the cells of Sertoli and spermatogonia are present in the tubules. The hypertrophy of the remaining testis in unilateral castration is not compensatory since small testicular fragments do not hypertrophy and, furthermore, the sex characters can be developed normally when a fragment of only about 1 per cent. is present in the body. The increase of the generative tissue in the testis after unilateral castration has nothing to do with the endocrine function of the testis. It is highly probable that the interstitial cells are producers of sexual hormones; it may be that in extra-uterine life they receive some impulse from the developing generative cells, like the granulosa and the theca interna of the ovary.

Selective Tuberculous Involvement of Endocrine Glands.—The case reported by Coffen is unique in that there was a clinical history of disturbed function of the thyroid, pancreas, suprarenals and probably the hypophysis. Necropsy showed caseous tuberculosis limited to all the endocrine glands. The following points stand out: In a man of large frame (suggesting gigantism) and with marked hirsutism, a tuberculous hypophysis was found. Peculiar bronzing of the hands and wrists and the pigmentation of the buccal mucosa, suggesting Addison's disease, was associated with caseous tuberculosis of the suprarenals. Glycosuria was definitely present more than three years before death; caseous tuberculosis of the pancreas was found at necropsy. A colloid goiter was removed six years before death; caseous tuberculosis of the remaining portions of the thyroid was found at necropsy. A hydrocele operation had been performed ten years before death. Necropsy showed caseous tuberculosis of the right epididymis and prostate.

Endocrine Therapy in Mental Deficiency.—The cases chosen by Potter for glandular treatment belonged to three endocrinopathic groups, namely, the status thymicolymphaticus, the hypothyroid, and the dyspituitary. Immediately before instituting treatment, these patients were examined for height, weight, blood pressure and blood sugar content. Their intelligence was measured by the Terman scale. Symptoms referable to glandular disturbance were observed. Desiccated thyroid and whole gland pituitary substance were given by mouth. Of fifty-two patients, fifteen showed definite improvement. This improvement consisted of an increase of from four to nineteen months as determined by the Terman scale over what could have been predicted considering their rate of progress prior to instituting glandular therapy. The aggregate net gain made by these fifteen patients amounted to 126 months, or an average of 8.4 months for each patient. Close correlation was found between the mental and physical improvement. In every case but one, an improvement in the general physical condition, blood pressure, blood sugar content, or net increase in height and weight was found. Potter warns against drawing hard and fast conclusions. In closing he says: "Let it suffice to say, for those who may be inclined to apply this report too generally, that endocrinology may at some time in the future explain the origin and offer a promise of a certain amount of improvement in only a selected small percentage of our mental defectives. Finally, to regard endocrine therapy as a panacea for mental deficiency would curtail what legitimate use it may subserve."

Relation of Onset of Menstruation to Environment.—The data presented by Lintz and Markow show that, regardless of the size of the town or city, the environment, economic status and occupation, the average age at onset of menstruation remains approximately the same—13½ years.

Recovery from Raynaud's Disease.—In February, 1921, Klecan's patient began to experience an itching pain in both hands. In June both hands became hyperemic—dark purple. In August, the left third finger broke down and later the right thumb. He came under Klecan's care in September, 1921. Both hands were then markedly hyperemic, the fingers almost black purple. The third left finger and right thumb were necrotic (dry necrosis). No distinct demarcation line was present. The Wassermann test was negative. Later a demarcation line became pronounced. Intense pain persisted. At this time Klecan decided to administer anterior pituitary substance. He gave 2 grains (0.12 gm.), three times daily. In a few days the pain decreased to such an extent that the patient remained without morphin for days at a time. The patient gained in appetite and craved bread particularly; one-fourth grain (0.015 gm.) of desiccated thyroid was added during the fourth week. All the fingers revived. The right thumb proved to be necrotic only as far as the soft parts were concerned and healed completely during the fifth week in the hospital. Necrosis of the third left finger involved the bone. The patient left the hospital after two months, having gained 20 pounds in weight. He was free from pain. In January, 1922, his condition, with the exception of the third left finger, was perfect. In March, 1922, the third left finger also healed, being shorter by about one third of the terminal phalanx. At the present time the patient is in perfect physical condition, has a constant weight, is working actively and enjoying life generally.

Indiana State Medical Association Journal, Ft. Wayne

March, 1923, **16**, No. 3

In Memoriam of Dr. Albert Carl Kimberlin and Dr. Frank Barbour Wynn. W. N. Wishard, Indianapolis.—p. 75.
Cataract Extraction and Complications. W. F. Hughes, Indianapolis.—p. 79.
Reconstruction of Perineal Genito-Urinary Childbirth Injuries. F. C. Walker, Indianapolis.—p. 84.
Essentials in Diagnosis and Treatment of Pulmonary Tuberculosis. J. H. Stygall, Indianapolis.—p. 89.
Diseases and Injuries of Hip Joint. G. D. Marshall, Kokomo.—p. 92.
*Sugar in Cerebrospinal Fluid. Preliminary Report on Quantitative Estimation of Sugar in Cerebrospinal Fluid: Referable Especially to Epilepsy. C. D. Humes, Indianapolis.—p. 94.
Administration of Neo-Arsphenamin Without Presence of Third Party. F. W. Cregor and F. M. Gastineau, Indianapolis.—p. 95.

Sugar in Cerebrospinal Fluid in Epilepsy.—Humes has noted that there was an absence of Fehling's reduction in the nonconvalescent state of epilepsy. This suggests to him the possibility that the cerebrospinal fluid has a physiologic as well as a mechanical function. The following questions are under investigation now: If the cerebrospinal fluid is to be considered a filtrate, why is there not a more consistent relation between the quantity of sugar in the blood and spinal fluid? Is there a distinct cerebral metabolism? If normal cerebrospinal fluid carries glucose as a natural constituent, what is the significance of its persistent absence in the nonconvulsive stage of epilepsy? What is the quantitative relation between sugar in spinal fluid and blood in health? A further report is promised.

Johns Hopkins Hospital Bulletin, Baltimore

March, 1923, **34**, No. 385

*Studies of Diabetes Mellitus. I. Respiratory Exchange Following Ingestion of Glucose, Glycerol, Calcium Hexose Phosphate and Calcium Glycerophosphate. W. S. McCann and R. R. Hannon, Baltimore.—p. 73.
Existence of More Than Four Isoagglutinin Groups in Human Blood. Part II. C. G. Guthrie and J. G. Huck, Baltimore.—p. 80. (To be concluded.)
*Influence of Pregnancy in Syphilis. I. Course of Syphilitic Infection in Pregnant Women. J. E. Moore, Baltimore.—p. 89.
Spinal Arachnoid Granulations with Especial Reference to Cerebrospinal Fluid. R. Elman, Baltimore.—p. 99.
*Blood Chemistry in Allergy. R. H. Major, Kansas City, Kan.—p. 104.

Effects of Glucose Ingestion on Respiratory Exchange of Diabetic Subjects.—In a study of the effects of glucose ingestion on the respiratory exchange of diabetic subjects, two types of response were encountered by McCann and Hannon. In the first type of subject, ingestion of glucose resulted in a diminished rate of carbohydrate oxidation. These subjects all improved greatly under treatment, with the development of good carbohydrate tolerance and improved ability to oxidize glucose. A second type of patient, with severe diabetes, was encountered in whom the ingestion of glucose produced a rise of respiratory quotients at a rate similar to that of normal subjects. These subjects were not responsive to treatment with a maintenance diet, low in protein, and balanced as regards ketogenic and antiketogenic factors. The changes in respiratory quotients of diabetic subjects who ingested glycerol were parallel to those produced by the ingestion of glucose in the same subjects. In normal subjects there was no parallelism between the effects of glycerol and glucose. The specific dynamic action of glycerol was negligible in all but one experiment. In this one case an increase in total metabolism of 20 per cent. was observed coincidently with a decrease in respiratory quotient. The differences in the effects of glucose ingestion on the respiratory exchange of patients with severe diabetes mellitus, the authors believe, supports the concept that there are different types of the disease corresponding to faults in different mechanisms. In subjects with impaired ability to oxidize glucose, hexose phosphate entered more readily into oxidation than did glucose alone.

Influence of Pregnancy in Syphilis.—The clinical data supplied by a study of 178 pregnant women with positive blood Wassermann reactions and twenty-two nonpregnant mothers of syphilitic children, Moore says, support the belief that, in all probability, neither Colles' law nor the theory of the paternal transmission of syphilis directly to the fetus are valid. In only 21.5 per cent. of the total 200 cases were all evidences of syphilis (except a positive blood Wassermann) lacking. This study also demonstrated that the factor of pregnancy may cause striking deviations from the usual course of syphilitic infection. If impregnation and infection approximately coincide, or if infection occurs during the course of pregnancy, the patient may develop the usual early manifestations of syphilis which are, however, much milder than if she is infected independently of pregnancy. Of those pregnant patients in whom the probable date of infection could be compared with the type of lesions present, approximately one half behaved toward infection in this manner. A slightly larger proportion of women, if infected with syphilis at about the time of impregnation, fail to develop any of the usual early lesions of syphilis. Under these circumstances, Moore says, it is fair to assume that pregnancy is the factor which suppresses the lesions of the disease. The protection against the early lesions of syphilis afforded by pregnancy may persist over a long period of years, and possibly for a lifetime. Spontaneous cure of syphilis seems, in a few instances, to have been the ultimate result. In those women of this series who developed late syphilis, the viscera, and particularly the cardiovascular apparatus, were especially prone to involvement; whereas tertiary lesions of the skin or bones and neurosyphilis, either clinical or asymptomatic, were rare. In 10 per cent. of the pregnant women with secondary syphilis, the Wassermann reaction was negative. In the women with latent syphilis, it was prone to vacillate markedly without treatment; and in a number of cases, a negative or positive reaction during pregnancy spontaneously changed to the reverse after delivery. The factors possibly responsible for this condition are briefly considered. The nature of the mechanism by which pregnancy causes these alterations in the course of syphilitic infection is unknown. Various possibilities are mentioned.

Blood Chemistry in Allergy.—Horse serum was administered by Major to rabbits to produce an allergic state. Repeated injections produced marked changes from the normal blood chemistry. These changes were more marked when the animal was on a deficiency diet. The blood nonprotein nitrogen, urea and creatinin were increased; the blood chlorids were usually diminished. Urinary studies show that there is usually a diminution in the nitrogen and chlorid excretion and an increase in creatinin on the day following anaphylactic shock. There is evidence that these changes are due both to a renal and an extrarenal factor.

Journal of General Physiology, Baltimore

March, 1923, **5**, No. 4

Circus Movements of Limulus and Tropism Theory. W. H. Cole, Lake Forest, Ill.—p. 417.
Behavior of Chlorids in Cell Sap of Nitella. M. Irwin, Cambridge.—p. 427.
New Viscometer. P. L. du Noüy, New York.—p. 429.
*Rate of Decline of Milk Secretion with Advance of Period of Lactation. S. Brody, A. C. Ragsdale and C. W. Turner, Columbia, Mo.—p. 441.
Rate of Growth of Dairy Cow. II. Growth in Weight After Age of Two Years. S. Brody, A. C. Ragsdale and C. W. Turner, Columbia, Mo.—p. 445.
Reaction of Nereis Virens to Unilateral Tension of Its Musculature. A. R. Moore, New Brunswick, N. Y.—p. 451.
Selective Absorption of Potassium by Animal Cells. III. Effect of Hydrogen Ion Concentration on Retention of Potassium. R. E. Stanton, Providence, R. I.—p. 461.
Comparative Studies on Respiration. XXIV. Effects of Chloroform on Respiration of Dead and of Living Tissue. G. B. Ray, Cambridge, Mass.—p. 469.
Stability of Suspensions of Solid Particles of Proteins and Protective Action of Colloids. J. Loeb, New York.—p. 479.
Membrane Potentials and Cataphoretic Potentials of Proteins. J. Loeb, New York.—p. 505.

Rate of Decline of Milk Secretion During Lactation.—It is shown by Brody, Ragsdale and Turner, that the course of decline of milk secretion with the advance of the period of lactation may be expressed by the equation of a monomolecular chemical reaction; that is, the percentage decline of milk secretion with the advance of the stage of lactation is constant. This substantiates the idea that milk secretion is limited by a chemical reaction, and, in general, brings lactation into the class of processes the speed of which is determined by the concentration of a limiting substance.

Journal of Metabolic Research, Morristown, N. J.

September, 1922, **2**, No. 3

*Arthritis: Blood Gases and Blood Flow. R. Pemberton, B. M. Hendrix and C. Y. Crouter, Philadelphia.—p. 301.
*Influence of Glands with Internal Secretion on Respiratory Exchange: VII. Possible Influence of Suprarenal Involution in Newly Born Infants on Heat Production. D. Marine, B. H. Lowe and A. Cipra, New York.—p. 329.
*Effect of Splenectomy on Respiratory Exchange in Rabbits. D. Marine and E. J. Baumann, New York.—p. 341.
*Animal Experiments on Certain Phases of Lyon-Meltzer Method of Biliary Drainage. J. Friedenwald, J. W. Martindale and F. X. Kearney, Baltimore.—p. 349.
*Vitamin Potency of Cod Liver Oils. III. Potency of Pollock Liver Oil—Early Summer Oils. A. D. Holmes, Boston.—p. 361.
*Quantitative and Qualitative Changes in Islands of Langerhans in Diabetes Mellitus. M. J. Conroy, New Haven, Conn.—p. 367.
*Effects of Insulin on Diabetic Dogs. S. W. Bliss, Morristown, N. J. —p. 385.

Arthritis: Blood Gases and Blood Flow.—Observations have been conducted by Pemberton, Hendrix and Crouter on seventy-seven arthritics and about forty other cases representing apparent health and various types of disease. The methods of analysis employed consisted chiefly in the study of the oxygen content and capacity of the venous blood; the carbon dioxid content; the dissociation curves for oxygen and carbon dioxid; the sugar tolerance; and the rate of blood flow in the hands. These were utilized in connection with fasting, resting subjects and also in connection with the influence of food, exercise, external heat, drugs and other factors. The high incidence of a lowered sugar tolerance in cases of arthritis at large, especially in the more active stage as already described is corroborated. Observations on the blood gases during the condition of such a test and after making brief preliminary use of the tourniquet show that there tends to be a rise in the percentage saturation of the blood for oxygen, if the tolerance for glucose is lowered. The average under these conditions of all percentage saturation points in the thirteen arthritics with a low sugar tolerance was 78.37 per cent.; of the eight arthritics with normal sugar tolerance, 64.06 per cent.; and for the three normal persons with a normal sugar tolerance, 41.81 per cent. Under the conditions of the experiment, the average percentage saturation for the group of seventy-seven fasting arthritics at all stages of the disease, including advanced convalescence, was higher than it was for twelve fasting normals, in the ratio of from 53.68 to 41.71 per cent. In some arthritics the saturation figures reached very high values. The range was from 26 to 97 per cent. for arthritics and from 27 to 51 per cent. for normals. The interpretation made of these findings is that the percentage of oxygen in the peripheral venous blood of fasting arthritics, under the conditions described, is on the average slightly higher and may be very much higher than in fasting normals. The tentative conclusion is advanced that it tends to return to normal with convalescence or recovery in some cases. Attempts to correlate a high percentage saturation of oxygen in the venous blood of the arthritic, with changes in the rate of blood flow have not yet substantiated such a relation.

Influence of Glands with Internal Secretion on Respiratory Exchange.—The Haldane open circuit apparatus was used by Marine, Lowe and Cipra for accurately measuring the respiratory exchange in newly born infants. The average daily heat production for a given normal baby was found to remain fairly constant from the second to the eighth day of life. During the second week of life there is a rise in heat production associated often with the other signs of increased tissue activity. It is suggested that the rise in heat production beginning in the second week of life may be related in some way to the normal destruction of the reticular and fascicular layers of the suprarenal cortex which also begins at this time.

Effect of Splenectomy on Respiratory Exchange.—Rabbits were used by Marine and Baumann in this experimental study. Uncomplicated splenectomy caused a significant rise in heat production in four of fourteen rabbits. The authors do not feel justified at present in assuming the presence of an antagonistic action of the thyroid and spleen.

Animal Experiments with Lyon-Meltzer Method.—Friedenwald, Martindale and Kearney tried to estimate quantitatively the flow of bile (and duodenal contents from a given sector of the duodenum) when stimulated by magnesium sulphate. An anterior gastro-enterostomy was performed on a large dog. A small rubber tube was inserted into the duodenum directly opposite the ampulla of Vater. The intestine was then tied off on each side as close as possible to the tube, leaving a closed pouch of intestine about 2½ inches long. The duodenal contents were then collected at hourly intervals. It was found that magnesium sulphate quantitatively increases the flow of bile when applied locally to the duodenal mucous membrane near the gallbladder opening. The bile flow is produced not by a central action but definitely by a local mechanism. The total intestinal secretion is increased either by central or local action following the instillation of magnesium sulphate, a curve which the bile flow itself does not follow. Contraction of the gallbladder, although carefully watched for, was never noted.

Vitamin Potency of Pollock Liver Oil.—It appears from the data presented by Holmes that the potency of pollock liver oil is slightly greater than that of cod liver oil obtained from codfish of similar physical condition.

Changes in Islands of Langerhans in Diabetes Mellitus.—A thorough study was made by Conroy of all parts of the pancreas in twelve cases of diabetes and twelve controls of similar age, and a less thorough study of ninety-five routine necropsies on nondiabetics. In the diabetic group enumeration of the islands in sections from serial blocks of tissue through the entire organ showed a reduction of about 150 per cent. in the amount of insular tissue. In every case of diabetes there were more or less qualitative changes in the islands, chiefly hyalinization and fibrosis, the latter lesion being quite widespread in some cases. Hyalinization of the islands was seen in only two cases of the nondiabetic group, and in these it was not so marked as in the majority of the diabetic cases. Definite hydropic degeneration of the islands was observed in only one of the diabetic cases and in none of the controls. Changes involving the acinous tissue, particularly interacinous and interlobular fibrosis were seen in both series but were more marked in the diabetic cases. From this study it is concluded that both quantitative and qualitative changes are operative in leading to a functional insufficiency of the insular tissue as manifested by clinical diabetes.

Effects of Insulin on Diabetic Dogs.—The report of Banting and Best concerning the effect of pancreatic extract on totally depancreatized dogs is confirmed by Bliss. Also the observations on the occurrence and symptoms of hypoglycemic collapse following overdosage of insulin, and the susceptibility of depancreatized dogs to this condition. Heavy glycosuria and hyperglycemia were abolished in a partially depancreatized dog by 5 units of insulin. A partially depancreatized dog dying of diabetic coma was not saved by the injection of 16 units of insulin, though the blood sugar was reduced nearly to normal, the acetone nearly disappeared, and no chemical reason for death was apparent. The plasma bicarbonate fell progressively to death and was entirely independent of the acetone values, the insulin injections, and the blood sugar changes. Traces of glycogen were found almost equally in the liver, heart and skeletal muscle at necropsy. It is assumed that the insulin treatment fails in advanced coma because unknown secondary changes prove fatal in spite of the clearing up of the primary diabetic disorder.

Kansas Medical Society Journal, Topeka

March, 1923, **23**, No. 3

Use of Bone Plates and Nails in Treatment of Fractures of Femur and Joint Fractures. E. E. Morrison, Great Bend.—p. 57.
Usual and Unusual Cases of Angina Pectoris. J. A. Buchanan, Pueblo, Colo.—p. 59.
Antigenic Differences of Bacillus Typhosus and Their Relation to Widal Test and Vaccination. C. M. Downs, Lawrence.—p. 63.
Some Aspects of Endocrinology. C. I. Reed, Lawrence.—p. 65.
Raw Serum Wassermann in Small Laboratory. W. E. Burns, Chanute. —p. 67.

New Jersey Medical Society Journal, Orange

March, 1923, **20**, No. 3

Modern Views on Blood Pressure. F. A. Faught, Philadelphia.—p. 73.
Chest Surgery. R. H. Dieffenbach, Newark.—p. 80.

Contemporary Aspects of Medical Ethics. E. J. Marsh, Paterson.—p. 86.
The Feebleminded. E. R. Johnstone, Vineland.—p. 89.
Secondary Low Blood Pressure of an Insidious Type. L. F. Bishop, New York.—p. 93.
Acute Pulmonary Tuberculosis. D. Delfino, Somerville.—p. 94.

Rhode Island Medical Journal, Providence

March, 1923, **6**, No. 3

Twelve Cases of Postoperative Abscess of Lung and Two Cases of Postoperative Pneumonia. H. L. Barnes, Wallum Lake.—p. 35.
Radium Therapy in Cancer, at Institute of Radium, Paris. M. W. Thewlis, Providence.—p. 39.

Southern Medical Journal, Birmingham, Ala.

March, 1923, **16**, No. 3

Medicine. M. L. Graves, Galveston, Texas.—p. 151.
Riddle of Uremia. D. Riesman, Philadelphia.—p. 160.
*Diet in Chronic Nephritis. J. S. McLester, Birmingham.—p. 167.
*Relation of Acidosis to Nitrogen Retention in Experimental Nephritis. D. VanderHoof and C. C. Haskell, Richmond.—p. 170.
Atrophic Conditions Contrasted with Muscular Wasting from Emaciation. B. R. Tucker, Richmond.—p. 176.
Program of Rural Health Work. W. F. Draper, Washington, D. C.—p. 181.
Ten Minutes with Vital Statistics. J. H. Florence, Austin, Texas.—p. 186.
*Experimental Intraperitoneal Division of One Ureter. W. C. Jones, Birmingham, Ala.—p. 188.
Synergistic Analgesia. G. T. Tyler, Jr., Greenville, S. C.—p. 199.
Uterus in Malposition. F. Reder, St. Louis.—p. 202.
Comparative Study of Neisserian Infections in Male and Female Urethra. H. W. McKay and L. C. Todd, Charlotte, N. C.—p. 209.
So-Called Railway Spine. F. W. Carruthers, Little Rock, Ark.—p. 216.
Eye Lesions of Nasal Origin. J. D. Heitger, Louisville.—p. 218.
Technic of Radical Mastoid. F. E. Hasty, Nashville.—p. 227.

Diet in Chronic Nephritis.—To secure maximum nutritive efficiency, McLester says the digestive organs should be protected against abuse. The food should be simple. Pies and other pastries, fried food, all complex, highly seasoned "made dishes," should be interdicted. It is advisable that constipation be prevented and for this reason the diet should include always a sufficient amount of honey, fruits, vegetables, bran and other laxative foods. It seems best to advise a moderate fluid intake of from three to five pints daily, the amount depending somewhat on the climate and the resulting loss of fluid through the skin.

Relation of Acidosis to Nitrogen Retention in Experimental Nephritis.—Van der Hoof and Haskell feel that it cannot be too strongly stressed that alkali administration in supposed cases of acidosis should be resorted to only when it has been definitely shown that there is reduction of reserve alkali of the plasma even then, oral or rectal administration should be preferred to injection of the solution intravenously.

Experimental Division of One Ureter.—Forty animals were used by Jones in his experimental work. The mortality was 75 per cent. It is evident, therefore, that complete division of the ureter is an exceedingly grave occurrence, but not necessarily fatal. As compared with ureteral obstruction, it is decidedly more serious. The added danger from an opened ureter is due mostly to the toxemia from absorption of decomposed urine from the tissues outside the urinary tract. The most striking feature of these experiments as well as those of other investigators, is the activity of the tissues in the vicinity of the severed ureter in preventing the spread of the escaping urine. In some instances the reaction is so prompt that the ureteral opening is sealed at once. More frequently a urinary sac is formed by adhesions between the intestine, omentum, bladder and body wall. This urinary cavity may contract and be obliterated or may remain unchanged indefinitely, or may increase in size; also secondary sacs may develop from the original sac. Limiting adhesions occurred in all but one of the animals. The amount of infection in the peritoneum (21 per cent.), retroperitoneal tissues (13 per cent.) and abdominal wound (15 per cent.) was surprisingly small. The effects of this operation on the kidney and the ureter are the same as those of complete ureteral obstruction if the animal lives long enough, except that the results develop more slowly in the former; also in ureteral division there is the added feature, in about 50 per cent. of the animals, of the formation of a urinary cavity at the point of division of the ureter. During the first two or three months after complete severing of a ureter it gradually dilates and the kidney suffers cystic enlargement. After three or four months, dilatation still continues in more than half the number of animals, while about 44 per cent. of the specimens show more or less marked general renal atrophy (decrease in size) on the operated side.

Tennessee State Medical Association Journal, Nashville

March, 1923, **15**, No. 11

Surgical Control of Exophthalmic Goiter. B. I. Harrison, Knoxville.—p. 473.
Art and Science of Diagnosis. R. L. Motley, Dyersburg.—p. 476.
Common Diseases of Thyroid. J. B. Haskins, Chattanooga.—p. 481.
Treatment of Compound Fractures of Tibia; Report of Three Cases. W. F. Clary, Memphis.—p. 484.
Desensitization After Previous Injections of Serums (Antitoxins, Etc.). J. H. Litterer, Nashville.—p. 485.
Case of Nonpurulent Sinusitis Associated with Chorioretinitis. C. D. Blassingame, Memphis.—p. 493.

Texas State Journal of Medicine, Fort Worth

February, 1923, **13**, No. 10

Determination of Cardiac Efficiency. D. W. Carter, Jr., Dallas.—p. 498.
Determination of Kidney Efficiency. K. M. Lynch, Dallas.—p. 501.
Cardiovascular-Renal Disease: Clinical Considerations. R. B. McBride, Dallas.—p. 505.
Cardiovascular-Renal Disease. J. E. Daniel, Wichita Falls.—p. 507.
Effect of Arsphenamin Treatment in Cardiovascular Syphilis in Negroes. M. D. Levy, Houston.—p. 509.
Early Diagnosis of Diabetes. H. J. John, Cleveland, Ohio.—p. 512.
Dietary Treatment of Diabetes. W. E. Nesbit, San Antonio.—p. 516.
Renal Glycosuria; Report of Case. C. T. Stone, Galveston.—p. 518.
Parasitism of Fat. K. H. Beall, Fort Worth.—p. 520.

March, 1923, **18**, No. 11

Value of Abdominal Measurements in Recognizing the Size and Maturity of Fetus. C. R. Hannah, Dallas.—p. 543.
*Interstitial Pregnancy. T. C. Gilbert, Dallas.—p. 546.
Cesarean Section. H. H. Ogilvie, San Antonio.—p. 548.
Nitrous Oxid in Obstetrics. J. R. Worley, Dallas.—p. 551.
Spinal Anesthesia in Gynecology. W. R. Cooke, Galveston.—p. 554.

Interstitial Pregnancy.—Gilbert records the case of a woman, aged 26, who became aware of a second pregnancy ten months after the birth of her first child. The fetus was expelled, at the end of the fourth month. For three months previously the patient had experienced fulness and distress in the right ovarian region, with more or less pain from time to time, these symptoms gradually increasing in intensity. Gradually, a "cake" appeared in the right flank. The patient had some cramps in the abdomen and marked diarrhea, accompanied by fainting when she attempted to sit up in bed. She showed marked anemia and an unusually dark, muddy and mottled skin, symptoms no doubt, due to an intraperitoneal hemorrhage. About two months later, she felt the tension in her side relax, and the "cake," suddenly went down and there was an escape, according to her estimation, of from a quart to one-half gallon of water. Bimanual examination revealed a large, fixed, boggy uterus, slightly smaller than a four-months' pregnancy. There was a definite tumor mass extending upward and to the right. It was firm in consistency, but did not give the impression of a fibroid. Interstitial pregnancy was diagnosed but the expectant course was pursued. The amount of blood lost was only moderate. The patient experienced intermittent pains, resembling those of labor, and two days later a four-months' fetus was expelled through the uterus. The placenta and membranes, however, did not follow after six hours. The cord was traced to the right cornu, where it was thought it could be felt leaving the uterine cavity, thus confirming the diagnosis of interstitial pregnancy. Notwithstanding this fact, it was decided to temporize still further, and the uterus was packed with iodoform gauze, with the hope that the placenta and membranes would come away upon the removal of the gauze. The gauze was removed after twenty-four hours, without results. The next day the patient became pale, weak and faint, experiencing at the same time some pain. Within a short time her condition became worse, marked pallor, air hunger and shock rapidly supervening. A supravaginal hysterectomy was done, and a large amount of blood was removed from the abdomen. The patient never regained consciousness and died of shock. The gravid tumor had attached itself to the pelvic wall, just to the right of the bladder. The membranes and placenta were definitely within the extra-uterine sac; the cord extended into the uterus.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

December, 1922, **45**, Parts 3 and 4

*Two Cases of Syringomyelia and Syringobulbia, Observed Clinically Over Many Years, and Examined Pathologically. J. Taylor, J. G. Greenfield and J. P. Martin.—p. 323.
Study of Cerebral Fiber Systems by Means of New Modification of Anatomic Methods. Lateral Wall of Thalamus and Sagittal Portion of Its Cerebral Fiber System. J. Rosett.—p. 357.
*New Conception of Elements of Sensation. J. S. B. Stopford.—p. 386.
Toxic Polyneuritis. W. Harris.—p. 415.
Muscle Tonus. De Boer's Experiment on Frog. J. W. Langelaan.—p. 434.
Central Connections of Vestibular Nuclei with Corpus Striatum, and Their Significance for Ocular Movements and for Locomotion. L. J. J. Muskens.—p. 455.

Syringomyelia and Syringobulbia.—Two cases of syringomyelia and syringobulbia are reported by Taylor, Greenfield and Martin. They were unusual because of the long periods during which it was possible to observe them carefully. They also have a special interest because of the striking manner in which the clinical course differed in the two cases. In the first patient the condition underwent no change of consequence during the long period of twenty-four years in which one of the authors had him under almost continuous observation; in the second case, which was under observation for nineteen years, there was, on the contrary, a slow but steady deterioration in physical condition with gradual spread of muscular weakness and sensory change, the result no doubt of corresponding changes in the condition of the spinal cord. The morbid changes in the spinal cords, details of which are given, explain to some extent this difference.

New Conception of Elements of Sensation.—In concluding his discussion of this subject, Stopford stresses the following points: It seems clear that no nerve of sufficient size to be of clinical importance, or to be selected for experimental work on sensation, is distributed exclusively to the skin. Consequently, after section of any nerve trunk, even in the distal part of a limb, there is bound to be some disturbance of so-called deep sensibility, and it seems quite impracticable to divide sensation into superficial and deep. The various forms of sensation included under the division of deep sensibility may be dissociated. Observations on the recovery of deep sensibility demonstrate several striking and significant features. What has been regarded as deep sensibility ought to have been subdivided, just as cutaneous sensation has been divided, into an epicritic and a protopathic type. Results of clinical observation suggest that, at the periphery, both in cutaneous and deep tissues, there are cortical and thalamic aspects of sensation.

British Medical Journal, London

March 10, 1923, **1**, No. 3245

Psychology and Medicine. F. W. Mott.—p. 403.
*Outlook of Nephritis in Children. H. T. Ashby.—p. 408.
Ionic Medication. D. Campbell.—p. 409.
*Rheumatoid Arthritis Treated Intravenously with Colon Bacillus Vaccine. R. J. Perkins and G. B. White.—p. 411.
Foreign Bodies in Air and Food Passages. Report of Five Cases. C. A. S. Ridout.—p. 413.
"Lung Splinting" in Treatment of Pulmonary Tuberculosis. S. H. Stewart.—p. 414.

Outlook of Nephritis in Children.—The occurrence of nephritis after scarlet fever, Ashby says, varies in different epidemics, but it may be estimated at about 10 per cent. The outlook is usually good, and it is rare for the nephritis to become chronic. The amount of albumin in the urine does not seem to alter the outlook, for a patient with a large amount may get quite well while one with only a small amount may do badly. The worst cases are those which have remained untreated for some days and those in which there is suppression of urine, as uremia is liable to occur. The preventive treatment consists in great care during the two and three weeks after the onset of the scarlet fever, especially as regards catching cold. In cases of acute nephritis, the outlook is mostly bad. They run a course of, perhaps, from three months to two years, but complete restoration to health does not often occur. The child may get fairly well, but he is liable to further attacks which damage the kidneys still more, till he grows waterlogged and dies. Toward the end very little urine is passed, and dyspnea becomes a marked feature, so that the patient has to be propped up in bed. Uremic convulsions are also common.

Rheumatoid Arthritis Treated with Colon Bacillus Vaccine.—Frequently, the focus of infection in rheumatoid arthritis is difficult to locate, and, it was in these cases that the protein shock method by the intravenous use of *Bacillus coli* vaccine was employed by Perkins and White. This particular vaccine was used because it is convenient to administer, and the material for its preparation is always easily obtainable. The vaccine was given intravenously in doses varying from 50 to 200 millions for a first dose; the patient was admitted to hospital for twenty-four hours, as it was considered that the reaction was too severe for him safely to remain an outpatient while it was in progress. The initial dose should be as large as possible. The reaction usually consisted of a rise of temperature a few hours after the injection, the temperature varying from 100 to 103 F., and frequently accompanied by a rigor. Nausea and vomiting may also occur. The duration of the reaction varies from twelve hours to two days. If any improvement as a result of the treatment is to take place, it does so rapidly, as a rule, within two days. Cases with severe reaction showed the best results.

March 17, 1923, **1**, No. 3246

Man's Posture: Its Evolution and Disorders. A. Keith.—p. 451.
*Nature of Arteriosclerosis. G. Evans.—p. 454.
Trephination of Living Human Skull in Prehistoric Times. T. W. Parry.—p. 457.
Value of Laboratory Tests in Diseases of Liver and Pancreas. W. L. Brown.—p. 461.
*Use of Radium in Treatment of Disease. D. Turner.—p. 464.
*Sudden Death from Anaphylactic Shock. F. W. Sumner.—p. 465.
Amputation at Shoulder. F. R. Parakh.—p. 467.

Nature of Arteriosclerosis.—The main feature of diffuse hyperplastic sclerosis, as described by Evans, is a thickening of the intima, accompanied sometimes by hypertrophy of the media. The intimal changes are the essential lesion. Activity of the endothelial cells is largely responsible for the intimal thickening. In this thickening the process of degeneration plays a secondary part; it is only certainly present in the terminal arterioles of the kidney and the smallest vessels of the other organs. The characteristic feature of the lesion is intense tissue activity, the antithesis of a process of decay.

Indications for Use of Radium in Treatment of Disease.—Of malignant affections: rodent ulcers, epithelioma, lymphosarcoma, spindle cell sarcoma, malignant disease of the cervix, sarcoma of the nasal passages; and of nonmalignant affections: exophthalmic goiter, early keloids and certain nevi are, in Turner's experience, very amenable to radium treatment. They might be termed first class subjects, because, under favorable conditions, they admit of actual cure. Under second class subjects—meaning thereby conditions which may be ameliorated but in which cure can rarely be expected—might be placed carcinoma, lymphadenoma, and splenomedullary leukemia. In the treatment of exophthalmic goiter and of nevi in children by radiation, Turner asserts that radium has the following advantages as compared with the rays: (1) Absolutely constant emission of rays, and, therefore, exact dosage possible. (2) Greater penetration of its rays, so that the deeper parts are reached. (3) Saving of time, as the radiation is maintained night and day until the necessary dose has been administered. (4) No noisy, exciting apparatus, so that the treatment can be applied at the bedside without in any way alarming or disturbing the patient.

Sudden Death from Anaphylactic Shock Following Injection of Diphtheria Antitoxin.—In the case cited by Sumner, anaphylaxis followed injection of a prophylactic dose of 1,000 units of antitoxin. The girl had had no previous injection of any sort. None of the ten other girls had any anaphylactic symptoms, nor had the diphtheria patient, who was given a large curative dose. Death occurred within five minutes after the injection. Subsequent investigation disclosed the likelihood of a condition of "status lymphaticus" with probable enlargement of the tonsils, and adenoids, and a persistent thymus.

Calcutta Medical Journal

December, 1922, **17**, No. 6

Complications After Some Cataract Operations. S. K. Ganguly.—p. 249.
Eclampsia. S. K. Gupta.—p. 262.
Case of Persistent Thymus. A. Chakraverti.—p. 280.
Leprosy. Early Lesions and Development and Incidence of Leprosy in Children of Lepers. D. Banerji.—p. 282.

Lancet, London

March 10, 1923, **1**, No. 5193

*Therapeutic Inoculation. Part III. L. Colebrook, E. J. Storer and A. E. Wright.—p. 473.
*Artificial Pneumothorax: Its Application to Cases Other Than Those of Pulmonary Tuberculosis. J. J. Perkins and L. S. T. Burrell.—p. 478.
*Fatal Case of Prerenal Toxemia. Showing Clinical Signs of Chronic Parenchymatous Nephritis. W. N. Goldschmidt.—p. 480.
*Effect of Histamin on Human Gastric Secretion. A. R. Matheson and S. E. Ammon.—p. 482.
*Fatal Case of Acute Intestinal Obstruction, Resulting from Traumatic Diaphragmatic Hernia. B. H. Slater and C. Mackenzie.—p. 484.
Operative Treatment of Septic Meningitis. H. L. Martyn.—p. 485.
*Suppurative Arthritis Simulating Acute Appendicitis. J. A. Berry.—p. 486.

Therapeutic Inoculation.—In concluding this series of articles, Wright and his associates emphasize two points. The first has reference to the question of the therapeutic prospects opened up. Experiments have brought into prominence the fact that, in immunization, quantitative considerations dominate the situation. When it is desired to evoke immunizing response in the blood one must employ one particular range of doses. And when it is desired to ascertain what has been achieved, one must again employ one particular range of doses. In the experiments incorporated in this paper the increased antibacterial power engendered runs, as calculation shows, generally into the killing of several additional hundreds or exceptionally several additional thousands of staphylococci per cubic centimeter. These figures give upper and lower limits. Within that range there is much useful therapeutic work to be accomplished. But just as there is an assaying dose of living microbes which no immunized blood can contend against, so there must be a definite limit to the volume of infection which intravenous inoculation of vaccines, or immunotransfusion can cope with. And in computing that volume of infection one must take into reckoning not only the microbes actually circulating in the blood, but the total bacterial population in the internal organs, which may run into indefinite millions. The second point made is that in every code of principles there are tenets based only on inference as well as tenets based on direct experiment. But in every succeeding code those elements which rest on inference grow less and less, and those which rest directly on fact—those which are established by laboratory methods—grow more and more. So that in the end, in every science, enduring principles will be reached.

Artificial Pneumothorax for Nontuberculosis Cases.—Perkins and Burrell cite cases to show that artificial pneumothorax may be of value in cases of abscess of the lung, bronchiectasis, hemoptysis of unknown origin, and recurrent pleural effusion. In abscess of the lung, the success of artificial pneumothorax evidently depends on the presence or absence of adhesions. When these are absent artificial pneumothorax is sufficient to effect a cure and render a severer operation unnecessary. Considering the uncertainty of discovering the abscess cavity it is certainly to be preferred to drainage. When the abscess is superficial, the presence of adhesions may lead, under pneumothorax, to its intrapleural rupture necessitating drainage of the pleura. If the adhesions are widespread they may stand in the way of complete collapse and prevent success, necessitating thoracoplasty. But even so, the authors advocate artificial pneumothorax as a routine procedure on the ground that it may be sufficient in itself and, when not, that the symptoms are relieved and the general condition of the patient improved, enabling him better to face the severer operation. Success in bronchiectasis, as in abscess of the lung, depends on adhesions. In the cases of recurrent hemoptysis and chronic effusion success was striking.

Fatal Case of Prerenal Toxemia.—Goldschmidt relates the case of a man who died from an illness the symptoms of which were typically those which have been attributed to "chronic parenchymatous nephritis"; but his kidneys were found at the postmortem examination to be normal macroscopically, and virtually normal microscopically. The heart was very small and in a condition of brown atrophy—always looked on as a secondary phenomenon, not as a primary morbus cordis—but the heart actually showed considerably more evidence of disease than the kidneys. Incidentally, there were no signs of renal inefficiency during the earlier and greater part of the illness, except oliguria, albuminuria and diminished excretion of chlorids. It is of great importance to note that, although toward the end of the illness the kidneys were only slightly, or possibly not at all, damaged, the blood urea rose, so that an abnormally large amount of urea may be present in the blood with slight or no changes in the kidneys. It, therefore, seems as if this man's illness was due to some prerenal poison which caused exudation into the tissues, and incidentally damaged some of the tubules of the right kidney; but the latter had recovered by the time the man died.

Effect of Histamin on Human Gastric Secretion.—Matheson and Ammon state that histamin in small doses given subcutaneously excites in man a flow of gastric juice. The peptic activity increases after the injection and reaches its maximum, usually in from five to fifteen minutes. Both total and free hydrochloric acid increase in amounts attaining the maximum shortly after the pepsin maximum is registered. The secretory rate follows a similar course, and usually attains its maximum last of all. It seems possible to the authors that histamin may be employed as a means of investigating the state of gastric secretory function and, perhaps, as a therapeutic agent.

Fatal Case of Acute Intestinal Obstruction.—The patient whose case is reported by Slater and Mackenzie suffered a war wound of the diaphragm in 1917, that did not heal. His perfect health and perfect digestion for three years after receiving the wound suggests that up to 1921 no abdominal viscus herniated through the hole. Operation for acute intestinal obstruction in 1921 showed that only a small portion of the transverse colon was obstructed, but empyema resulted from infection from the obstructed part of the colon. The probable result of the empyema was to enlarge the hole in the diaphragm. The man was readmitted to hospital in 1922, with a provisional diagnosis of ptomaine poisoning. Death occurred suddenly four days later. The necropsy disclosed that the cardiac end of the stomach and the transverse colon had herniated through the hole, and were adherent to the posterior wall of the thorax. The lower lobe of the left lung was collapsed and universally adherent. The small intestines were slightly distended and congested. All other organs appeared to be healthy.

Suppurative Arthritis Simulating Acute Appendicitis.—In Berry's case a suppurative arthritis of the eleventh right costovertebral joint simulated acute appendicitis.

Medical Journal of Australia, Sydney

1: 169-196 (Feb. 17) 1923

Puerperal Sepsis. T. W. Lipscomb.—p. 169.
Some Relations of Climate, Weather and Fat Covering to Metabolism. C. E. Corlette.—p. 172.
Vesicovaginal Fistula. G. Armstrong.—p. 182.

1: 197-220 (Feb. 24) 1923

Case of Peri-Arteritis Nodosa. J. B. Cleland.—p. 197.
Interim Report on Results of Deep Roentgen-Ray Treatment. H. Flecker.—p. 201.
Gynecologic Experiences in Southern Manchuria. A. N. Krakowsky.—p. 204.
Vitamins. S. Harrison.—p. 206.

Medical Journal of South Africa, Johannesburg

18: 163-186 (Feb.) 1923

Hospital Control. R. P. Mackenzie.—p. 164.
Postpartum Hemorrhage. A. Abelheim.—p. 167.
Estimation of Malnutrition in Children. C. L. Leipoldt.—p. 170.
Uterine Displacements. O. J. Currie.—p. 175.

South African Medical Record, Cape Town

21: 73-96 (Feb. 24) 1923

Widal versus Complement Fixation. A. Pijper.—p. 74.
Treatment and Prevention of Malaria. H. A. Spencer.—p. 84.

Gynécologie et Obstétrique, Paris

January, 1923, **7**, No. 1

*Action of Roentgen Rays on the Oöcytes. A. Lacassagne and H. Coutard.—p. 1.
Cysts of the Labia Minora. H. Mondor and P. Huet.—p. 26.
Conservative Treatment of Inversion of Uterus. Miginiac.—p. 37.
*Pulse in Retroplacental Hemorrhage. Levant and L. Portes.—p. 43.
*"Uteroplacental Apoplexy." L. Portes.—p. 56.

Influence of Irradiation of Ovary on Subsequent Fecundation and Pregnancies.—Lacassagne and Coutard irradiated the ovaries of rabbits and studied the after-effects. They found that even a single and weak irradiation influences the subsequent faculty of procreation very unfavorably. These results are important with regard to the treatment of young women for hemorrhages. It is impossible to stop them without hurting the procreative function.

The Pulse in Retroplacental Hemorrhage.—Levant and Portes found that the pulse with retroplacental hemorrhages is not always very rapid. Other factors (toxemia) influence the rhythm and the frequency of the pulse, so that no direct conclusions are possible as to the part played by the hemorrhage. Yet this does not change the indications for treatment which should consist in the evacuation of the uterus.

Uteroplacental Hemorrhage.—Portes deals with the etiology and treatment of this condition, when the hemorrhage is not only behind the placenta but also in the wall of the uterus. He believes in the toxemic origin. It is theoretically impossible to differentiate this condition from a simple retroplacental hemorrhage. Yet in practice we diagnose it if such symptoms are accompanied by very pronounced toxemia, a shock, or tetanus of the uterus. The treatment of choice is abdominal cesarean section with extirpation of the uterus, except where the lesions are very small or when the uterus contracts normally after evacuation.

Revue Médicale de la Suisse Romande, Geneva

January, 1923, **43**, No. 1

*Sequelae of Epidemic Encephalitis. F. Naville.—p. 1.
*Multiple Sclerosis and Its Etiology. E. Long.—p. 27.
*Semeiology of Heart Disease in Children. E. Thomas.—p. 37.
Transmission to Auricle of Mitral Murmur. M. Roch.—p. 44.
Post Partum Paralytic Ileus. Picot and Francken.—p. 46.
Traumatic Phlebitis. N. Betchov.—p. 48.

Epidemic Encephalitis.—Naville estimates that there must have been from 150 to 200 cases of encephalitis at Geneva during the epidemic of 1918 to 1921, and 43 of the patients are known to have probably permanent sequelae. He encountered also 11 others with a history of encephalitis elsewhere, a total of 54 cases. His conclusions harmonize with those of others who have reported that from 15 to 20 per cent. die during the acute phase, and complete recovery follows in only 30 to 40 per cent. of the well defined cases. Whenever parkinsonian symptoms are observed outside of the first stage of the disease, it is almost certain to entail disability. Notwithstanding the great diversity in the clinical picture of the disease at first, there is a great sameness in the sequelae. They are either of the parkinsonian type, with contracture, or there is a psychomotor and mental inertia, without contracture. This latter type is twice as common as the parkinsonian form, and the outlook for recovery is graver. In children, the prognosis of the mental disturbances cannot be determined as yet. In 5 children the sequelae were of the parkinsonian type; in 4 others, of the insomnia-excitement type. Naville reiterates that the sequelae of epidemic encephalitis are absolutely pathognomonic. They form new clinical pictures not known before.

Multiple Sclerosis.—This article is an introduction to the collective inquiry in regard to multiple sclerosis, which is now under way in Switzerland as mentioned recently in the News department. Long comments on the meager results from treatment, even with sodium cacodylate in large doses, while arsphenamin has proved even more disappointing.

The Heart in Children.—Thomas analyzes the 8 cases of organic heart disease he discovered in a medical inspection of 747 boys and 757 girls. He found functional murmurs in 4 per cent. of the girls but in none of the boys. The nonorganic murmurs usually subsided under the oculocardiac reflex, but this did not modify the organic murmurs. The latter persisted in 3 of the children; they became exaggerated in 2, and attenuated in 3, but never disappeared entirely. The nonorganic murmurs disappeared in 18 cases; became attenuated in 8, and dubious in one case. They persisted in only one of the total 28 cases.

Archivio Italiano di Chirurgia, Bologna

January, 1923, **6**, No. 6

*Hernia of the Bladder in Children. C. Oliva.—p. 533.
*Ligation of Plantar Arch. G. B. Macaggi.—p. 565.
*Cancer Secondary to Lymphogranuloma. V. Ferrero.—p. 577.
*Lipoma of the Intestine. C. Vaccari.—p. 589.
*Cancer of Rectum and Prostate. G. D'Agata.—p. 602.
*Purulent Pericarditis in Child. C. Gamberini.—p. 619.
Transactions of 1922 Italian Surgical Congress.—p. 637.
Idem Orthopedic Congress.—p. 706.
Idem Urologic Congress.—p. 715.

Hernia of the Bladder in Children.—Oliva gives the details of sixteen cases of hernia in children under 12 with the bladder included in the hernial sac, published by Pott in 1790 and others since. The hernia in these cases was inguinal. He then describes two cases in his own practice in a girl of 10 and a boy of 8. The hernia was of the femoral type. All the eighteen children recovered after the operation. In all but two of the cases the hernia was on the right side, and the patients were all boys but one. He warns that when a toughness of the tissues or a lipoma is found deep in the hernia, the possibility of involvement of the bladder should be borne in mind, especially when traction on the hernial sac induces a desire to urinate.

Ligation of the Plantar Arch.—Macaggi describes, with illustrations, the simple technic for ligation of the arch formed by the external plantar artery and the dorsalis pedis through the second interosseous space, reaching it through the dorsum of the foot. He has previously described a similar technic for ligating the palmar arch through the dorsum of the hand, in the second and third interosseous spaces.

Multiple Blastoma of the Lymph Glands.—The retrospective diagnosis in the case reported by Ferrero was that the malignant disease had developed from lymphogranuloma, and had spread to involve a large part of the lymphatic system. The patient was a man aged 32 whose brother is said to have died from sarcoma of the lymph glands. Sarcomatous tissue was evident at various points in Ferrero's case.

Lipoma of the Intestine.—Vaccari adds one more case to the total of sixty-nine he has compiled from the literature. In his case there was both a subserous and a submucous lipoma.

Cancer of Rectum Involving Tuberculous Prostate.—D'Agata describes the technic with which he resected the rectum and removed the prostate and the seminal vesicles. The prostate and vesicles showed advanced tuberculous lesions evidently preceding the encroachment of the adenocarcinoma in the rectum. The man aged 57 is now, nearly a year later, in good health; the anus is continent.

Pericardiotomy for Purulen Pericarditis. — Gamberini relates the case of a boy aged 7 brought to the hospital with high fever, general cyanosis, extreme dyspnea and tachycardia. Puncture in the precordial area released pus but this did not give much relief. Then the pericardium was incised, and 300 c.c. of pus escaped. The main symptoms subsided, but the fever persisted. Sixteen days later the sternum was resected and the multiple purulent foci in the pericardium were cleared out and drained both from front and back. Fistulas and fever persisted for five or six months and the child was wasted to a skeleton, but then all symptoms disappeared and he is now, four years later, in florid health.

Revista Española de Medicina y Cirugía, Barcelona

January, 1923, **6**, No. 55

*Surgical Treatment of Cholecystitis. E. Ribas Ribas.—p. 1.
*Complications of Chronic Mastoiditis. J. Vila de Abadal.—p. 18.

Surgical Treatment of Cholecystitis.—Ribas advised operative treatment in 56 of his 64 cases of gallbladder disease in the last two years, but only 41 consented. Colic in the liver region signifies migration of gallstones, but liver colic can occur in the absence of calculi, as a reaction from the gall-

bladder. On the other hand, cholecystitis may develop without liver colic. Incipient gallbladder disease may induce a set of vague symptoms, predominantly gastric. As the general health soon suffers, tuberculosis may be suspected. Ribas declares that no one should die in consequence of cholelithiasis, but the death rate is still high as the disturbances are not traced to the gallbladder until irreparable damage has been done. To wait for complications is to invite disaster. In 2 of his cases, gastric hemorrhage, and in one case intestinal hemorrhage, were cured by removal of the gallbladder. In one woman, aged 35, the pains and hemorrhages had persisted after gastro-enterostomy, but were cured by cholecystectomy. Ribas reiterates that jaundice is not a symptom of gallstone disease; it represents a complication. When it appears, there is danger. In 4 of his cases the gallbladder was of the "strawberry" type. The pains were severe although there were no gallstones, adhesions or distension. He gives colored plates of the findings in this group. In his 2 cases of gallstone obstruction of the common bile duct, the emaciation had progressed so rapidly that the operation had been deferred at first on the assumption of malignant disease. In 5 cases of typical liver colic, the operation failed to reveal either gallstones or cholecystitis. The stagnation of the bile had distended the gallbladder and entailed obstruction of the cystic duct. Complete cure was realized after removal of the gallbladder. His experience with 200 gallstone cholecystitis cases has confirmed the wisdom of reducing the intoxication, flushing the organism with water and giving tonics and stimulants to get the patient into a better condition before operating.

Frequency of Intracranial Complications of Chronic Mastoiditis.—Vila de Abadal summarizes the details of nineteen cases of chronic suppurative otitis in the last two years in which intracranial complications developed. In three other cases the clinical picture seemed to indicate intracranial complications, but the course revealed that the disturbances were due to influenza with neuralgia in the skull, ears and teeth, with pulmonary and pleural complications. All recovered.

Archiv für Verdauungs-Krankheiten, Berlin

January, 1923, **30**, No. 5-6

*Anacidity. E. Schütz.—p. 233.
*Sounds in the Stomach. G. Ganter.—p. 251.
*Hyperacidity and Duodenal Ulcer. I. Boas.—p. 257.
*Peptic Ulcer and Exclusion of the Pylorus. Haberer.—p. 275.
Pathology of Vegetative Nervous System in Severe Colitis. F. Kleeblatt.—p. 287.
*Excretion of Dyes Through the Stomach. R. Finkelstein.—p. 299.
*Idem Through the Pancreas. Giichiro.—p. 302.
Carcinomatous Duodenal Ulcer. L. Disqué Jun.—p. 306.
*Total Chlorin of Gastric Juice. H. Wiener.—p. 309.

Gastric Anacidity.—Schütz comments on the uncertainties as to the etiology of anacidity. He does not consider it an early sign of carcinoma.

Origin and Treatment of Noises in the Stomach.—Ganter's case of aerophagia presented at times a spastic hour-glass shape of the stomach. The play of the diaphragm during abdominal breathing pressed the air through the narrow space and caused loud sounds. They did not occur when the patient changed the type of breathing from abdominal to thoracic. By this simple means the annoying borborygmus was abolished.

Subjective Disturbances from Hyperacidity and Parapyloric Ulcer.—Boas declares that the finding of an ulcer scar cannot be regarded as proof that the ulcer was the cause of the pains; only florid ulcers testify to this. Gastralgic hyperacidity and the clinical picture of parapyloric ulcer present much the same set of symptoms, but they can usually be differentiated by the following signs: The gastralgic form of hyperacidity does not influence the whole organism unfavorably, even when it persists for years. The character and duration of the pains do not change with simple hyperacidity, while with an ulcer the attacks grow longer and longer until the pain is almost continuous. The night pains are especially constant. Elimination of coffee, tobacco, salts, spices and condiments, and restricting the diet to milk and vegetables arrest the pains with hyperacidity, but not in cases of ulcer. The importance of distinguishing between a duodenal ulcer and a gastric ulcer near the pylorus is largely overestimated.

Peptic Jejunal Ulcer and Exclusion of the Pylorus.—Haberer reiterates his opinion that exclusion of all the pyloric glands does not prevent peptic ulceration in the jejunum. This may occur after any and every method of exclusion of the pylorus.

Excretion of Dyes Through the Stomach.—Finkelstein tested gastric excretion with various dyes on dogs with a Pawlow fistula. Of the eight dyes tested, neutral red was the only one that was excreted in the stomach. Phenoltetrachlorphthalein did not appear. The excretion of the neutral red became evident twenty-five minutes after a subcutaneous injection of 50 mg. of the stain. The other dyes did not appear in the stomach contents even when the stomach had been irritated by hypertonic solutions.

Excretion of Dyes Through the Pancreas.—Giichiro tested the pancreatic excretion of dyes in a dog with a permanent fistula of the lower pancreatic duct (Pawlow's method). Nine dyes were thus tested, but methylene blue was the only one that appeared in the pancreatic juice, and this only in traces. The excretion began in about forty minutes and persisted for 150 minutes.

Total Chlorin of the Gastric Contents as Aid in Differential Diagnosis.—Wiener examined the gastric juice from thirty-three patients in the usual way and also determined the total chlorin content. His data confirm Reissner's findings that a high chlorin content (0.34 to 0.58 per cent. in six cancer cases) with low acidity testifies to malignant disease and against simple achylia (0.03 to 0.14 per cent. in eight simple achylia cases). This high chlorin content is not due to neutralization of excreted hydrochloric acid by products of the cancer, as some authors have suggested. In simple achylia, ingested hydrochloric acid is neutralized in exactly the same way.

Deutsche Zeitschrift für Chirurgie, Leipzig

January, 1923, **177**, No. 1-2

*Surgery of Gastric and Duodenal Ulcers. T. Beer.—p. 1.
*Testicle Grafting. H. Burckhardt and F. C. Hilgenberg.—p. 43.
*Treatment of Old Empyema. Esau.—p. 55.
*Treatment of Injuries of Male Urethra. M. Jastram.—p. 70.
*Ischemic Contracture of Muscles. R. Göbell.—p. 106.
*Early Diagnosis of Acute Pancreatitis. E. Glass.—p. 123.
Recklinghausen's Disease Involving the Bladder. Steden.—p. 137.

Surgery of Gastric and Duodenal Ulcers and Their Complications.—Beer reviews the ultimate outcome in a large proportion of 146 cases given operative treatment from 1912 to 1920. He concludes from study of the six cases of postoperative peptic ulcer in the jejunum, that the location of the ulcer in the duodenum is the essential factor. The irritation from the duodenal ulcer left in the organism stimulates excessive secretion in the stomach. In the cases of so-called cicatricial stenosis of the pylorus, some ulcerative process in the duodenum was probably the primary lesion. This was probably the case in three of his postoperative peptic ulcer cases, and in the other three there had been a frank duodenal ulcer. Radical resection of the duodenal ulcer is prophylaxis against peptic ulcer. His extensive research on the "gastric channel" that is, the short cut from cardia to pylorus, failed to confirm this as the main route of transport. Hence there is no reason for assuming that lesions predisposing to ulcer develop particularly in this region. The narrower portions of the stomach, such as the isthmus and pylorus, are the predisposed regions, and removal of them is treatment of the cause.

Experimental Testis Grafting.—The work was done on rats at the surgical clinic at Marburg. The results were very variable, but the paucity of results on the whole was striking. In the entire eight series of experiments nearly the whole of the testis graft was destroyed. The only practical conclusion the authors draw is that homoplastic transplantation of testes can be safely attempted in man, but the results are those to which we were accustomed before the Steinach era. In case of total castration on account of tuberculosis, it might be advisable to transplant elsewhere in the body apparently healthy portions of the removed testes. But even under these conditions, functional success is by no means certain.

Treatment of Old Empyema.—Esau clears out the cavity and lines it with a skin-muscle flap from near by, after resection of ribs. He asserts that an empyema fistula should never be left to heal spontaneously.

Treatment of Injury of Male Urethra.—Jastram gives details of twenty-one severe cases and principles for treatment. He advises cautious introduction of a soft catheter at once, leaving it for a retention catheter if infection is not present. With severe infection cystostomy should precede this. The retention catheter should be used after external urethrotomy, preferably with an arrangement for aspiration.

Ischemic Contracture of Muscles.—Göbell advocates free transplantation of muscle in treatment of ischemic contracture. His eighteen illustrations show the technic and the excellent results realized in the three cases described.

Early Diagnosis of Acute Pancreatitis.—Glass here reports his third case of acute hemorrhagic pancreatitis with fat tissue necrosis and recovery after drainage of the pancreas and small pelvis, without slitting the pancreas capsule. He ascribes his success to early diagnosis. It was based on the important symptom of persistent pain in the upper abdomen, increasing in intensity every fifteen minutes or less but never subsiding completely. The right upper rectus was taut, and a transverse, tender, tumor-like resistance could be felt above the umbilicus, corresponding to the site of the pancreas.

Klinische Wochenschrift, Berlin

Jan. 22, 1923, **2**, No. 4

*Profession, Standard of Living and Nutrition. O. Kestner.—p. 150.
Distribution of Roentgen Rays in the Depths. H. Holfelder.—p. 154.
*Anesthesia by Acetylene. Gauss and Wieland.—p. 158. Conc'n.
*Misleading Shape of Stomach in Roentgenoscopy. A. Dienstfertig.—p. 162.
Spasmophilia. P. Reyher.—p. 163. Conc'n No. 5.
*Thyroid and Erythropoiesis. Unverricht.—p. 166.
*Clinical Significance of Experiments on Testes. H. F. O. Haberland.—p. 167.
Formation of Gallstones. W. Bauermeister.—p. 168.
"Glucose Infusions in Heart Disease." Büdingen.—p. 169. Reply. Klewitz.—p. 170.
*Xanthydrol Test for Urea in Kidney. K. Walter.—p. 170.
Blood Concentration After Roentgen Rays. F. Klewitz.—p. 171.
Protein Treatment in Ophthalmology. R. Cords.—p. 171.
*Predisposition to Disease in Schoolchildren. A. Lewandowski.—p. 174.
The Optic Sense of Plants. E. G. Pringsheim.—p. 175.

Profession, Standard of Living and Nutrition.—Kestner reviews the quantitative and qualitative side of the nutrition.

Anesthesia by Acetylene.—Gauss and Wieland report excellent results with the use of acetylene for narcosis. Its action resembles the action of nitrous oxid, which inhibits processes depending on oxygen. They say that acetylene has the same properties, and the further advantage of possibility of a prolonged anesthesia if oxygen is added. The breathing and circulation are not interfered with; the return to consciousness is rapid.

The Outline of the Stomach in Roentgenography.—Dienstfertig emphasizes the necessity of examining the patient from several different directions.

The Thyroid and the Production of Erythrocytes.—Unverricht observed cases of severe simple anemia (chiefly in tuberculous patients) in which arsenic was without therapeutic action. These patients also presented signs of hypothyroidism (dry rough skin, slow psychic action, etc.). The condition improved under thyroid treatment so that arsenic then became effective.

Clinical Significance of Experiments on Testes.—Haberland reports on fifty-six testis grafts in animals. He failed with different methods to obtain a permanent survival of transplanted testes, even when they had been taken from the same animal, and believes that the favorable results reported in men are due to suggestion.

Xanthydrol Reaction in Microchemical Tests for Urea in Kidneys.—Walter injected the kidneys from the aorta with a solution of xanthydrol in glacial acetic acid. The crystals of dixanthylurea were found lodged not only in the lumen of the tubules, but also in the cells of the glomeruli and tubules.

Influence of War on Predisposition to Disease in Schoolchildren.—Lewandowski shows that schoolchildren born during the war (1915 and 1916) suffer much less from infectious diseases than their predecessors.

Jan. 29, 1923, **2**, No. 5

Extra-Pyramidal Motor System. F. H. Lewy.—p. 189.
*Slow Cholangeitis. F. E. R. Loewenhardt.—p. 192.
*Experiments on Eosinophilia. E. Liebreich.—p. 194.
*Spasmophilia. P. Reyher.—p. 198. Conc'n.
*Calcium Retention and Calcification of Vessels. Rabl.—p. 202.
*Kidney Function Test with Thiosulphate. W. Nyiri.—p. 204.
*Changes of Bacilli in Gases. F. H. Lorentz.—p. 206.
"Liver Function Test." H. Wörner.—p. 208.
"Intravenous Needle Electrodes for Electrocardiography." H. Sachs.—p. 209.
*Physical Chemistry of Phagocytosis. R. Höber and Kanai.—p. 209.
*Determination of Uric Acid in Blood Serum. K. Harpuder.—p. 209.
Experimental Research on Changes in Digestion After Operations on Stomach and Intestines. Enderlen et al.—p. 210.
Tuberculosis of Portio Vaginalis. W. Vogel.—p. 211.
Exanthem After Phenobarbital Treatment. R. Herrmann.—p. 212.
Undernutrition in Treatment of Diabetes. S. Isaac.—p. 212.
Milk Hygiene. E. Friedberger.—p. 215.
Metabolism of Cholesterol and Its Clinical Import. Gross.—p. 217.

Slow Cholangeitis.—Loewenhardt separates infectious cholangeitis from the large group of slow septicemias. The history of the patients points usually to a previous hematogenous infection. The disease starts without severe general symptoms. The patient feels weak; has sometimes intestinal trouble; the skin and scleras are subicteric; the fever is remittent or intermittent, and chills occur frequently. The liver is swollen, and a soft enlargement of the spleen is an important sign. The bacteria practically always can be cultivated from the blood, if the attempt is repeated often enough. The treatment consists in drainage of the common bile duct.

Experiments on Eosinophilia.—Liebreich observed an extreme accumulation of eosinophils in one phase of blood coagulation. He gives details of his difficult technic. Charcot-Leyden crystals appear also among the cells. He recalls the fact that the homologous granules are crystalloid in some species, and believes there is a relation of the granule substance to fibrin.

Spasmophilia.—Reyher contends that a disease exists in Germany which is identical with beriberi in infants and the spasmophilic dyspepsia described by Japanese authors. He explains it as a food disorder inducing a tendency to convulsions, and considers it as the basis of so-called spasmophilia. He does not regard the increased mechanical and electric irritability of the nerves as an essential part of the syndrome, but attributes this symptom to loss or lack of calcium (usually due to rachitis). He believes that the hemorrhages in the parathyroids, found sometimes in this condition, are only a manifestation of a general tendency to hemorrhage, similar to the petechiae found in beriberi. Large amounts of vitamin B influence the condition favorably in a short time. He calls it *spasmogene Nährschaden*.

Calcium Retention, Calcification of Vessels, and Function of Kidneys.—Rabl added phosphoric acid to the food of white mice for two days, alternating with alkaline phosphates and some sodium acetate, keeping this up for two or three weeks. The food contained in addition considerable calcium. All the animals showed extensive calcification in the kidneys, heart and stomach. Half of them had similar changes in the lungs and large arteries. The liver, spleen, pancreas and intestine were intact. Animals which received the phosphoric acid alone, had calcification only in the heart and lungs. He concludes, therefore, that the important factors in the genesis of "calcium gout" are changes in the acid and alkali equilibrium during a simultaneous, large calcium intake (by mouth or from the bones). The typical experimental "calcium metastasis" in toxic (sublimate) nephritis could be explained by the lowered ability of such kidneys to maintain the acid-alkali equilibrium. The calcification of the arteries shows that it need not be localized in degenerated parts of arteries. Some renal phosphate calculi may be due to similar conditions.

Kidney Function Test with Thiosulphate.—Nyiri found that a healthy kidney excreted within two or three hours 30 to 40 per cent. of 10 c.c. of a 10 per cent. solution (1 gm. of substance) of sodium thiosulphate injected intravenously. In diseases of the kidneys he found between 0 and 23 per cent.

Changes of Bacilli in Gases.—Lorentz found that oxygen increases the production of toxin by diphtheria bacilli, and inhibits their growth. Carbon dioxid acts in the opposite way. It seems that it increases also the number of positive results of diagnostic cultures.

Physical Chemistry of Phagocytosis.—Höber and Kanai consider the opsonic phenomena more or less as the action of globulins. An increase in the amounts of globulins represents promotion of phagocytosis.

Quantitative Determination of Uric Acid in Blood Serum.—Harpuder's method aims to avoid the errors due to adsorption of uric acid to the blood proteins.

Medizinische Klinik, Berlin

Jan. 21, 1923, **19**, No. 3

*Hemorrhagic Diatheses. P. Morawitz.—p. 71.
Metabolism and Dermatology. E. Pulay.—p. 77.
*Toxic Exanthems and Prognosis of Syphilis. G. Stümpke.—p. 80.
*Extracardiac Murmurs. A. Arnstein.—p. 81.
*Malaria in Berlin. E. Schiff.—p. 84.
*Blood Grouping. K. Meyer and H. Ziskoven.—p. 87.
Disease of Bladder. E. Portner.—p. 89.
Survey of Progress in Roentgen-Ray Diagnosis. L. Freund.—p. 91.

Hemorrhagic Diatheses.—Morawitz emphasizes the need to gather more exactly examined material for the future. The history of the case is very important for the diagnosis of scurvy, in addition to the bleeding gums and the lack of any characteristic changes in the morphology and chemistry of the blood. The curative action of the antiscorbutic diet confirms the diagnosis. The characteristic symptom in hemophilia is the protracted time of coagulation of the blood. The elements of the blood, especially the blood platelets, are normal. The cases with lack of fibrinogen should not be confounded with the pure pathologic entity of hemophilia. The typical heredity is an aid to diagnosis, though there are other hereditary instances of hemorrhagic diatheses with a low number of blood platelets. Critical study reveals that of 300 hemophilic families on which reports have been published, hemophilia is certain in only about forty. The term Werlhof's disease should be reserved for purpuras with abnormally small numbers of blood platelets. While the hemorrhages are restricted to the extremities in a simple purpura, these patients bleed also from the mouth, intestines and kidneys. The critical number of blood platelets seems to be 30,000. Yet the changes in the endothelial cells of the capillaries are also important. It is possible that the spleen has an influence on them, since splenectomy is followed only by a passing increase in blood platelets, but the tendency to hemorrhage may be definitely arrested. Other cases with thrombopenia do not bleed. In all conditions with low numbers of platelets the blood clot does not retract. The simple (or rheumatic) purpura gives the impression of an infectious disease. These hemorrhages are complicated with erythemas, urticaria and transient edemas which, together with the pains in the joints, resemble the symptoms of serum sickness. Actual hemorrhagic nephritis may occur, while there is only a simple bleeding from the kidneys in the thrombopenia purpura. The hemorrhages in infectious diseases do not fit well into the present general outline.

Toxic Exanthems and Prognosis of Syphilis.—Stümpke found recurrence of symptoms of syphilis in seven cases out of eleven that presented an arsphenamin dermatitis. It is, therefore, prognostically not favorable, as was assumed at one time.

Extracardiac Murmurs, Especially from Lung Vessels.—Arnstein publishes a case of a murmur due to a small aneurysm of a branch of the pulmonary artery in bronchiectasia. The patient had a subphrenic abscess, which had perforated a bronchus.

Tropical Malaria in Berlin.—Schiff reports four further cases of tropical malaria. Three of them were probably, one certainly, infected in Berlin. Two of them were syphilitics being treated with arsphenamin.

Blood Grouping.—Meyer and Ziskoven review the question of blood grouping and its practical importance in blood transfusions and transplantations of skin. Since Eden found changes in the iso-agglutinins after different drugs (quinin, calcium lactate, antipyrin, arsenic, ether, chloroform and roentgen rays) they tested this action on twenty-three cases. They did not find any changes, and believe that Eden's findings were due to a mistake with sedimentation of corpuscles.

Jan. 28, 1923, **19**, No. 4

Dementia Praecox. H. Berger.—p. 101.
*Antistreptococcus Serums. F. Meyer and K. Joseph.—p. 103.
Metabolism and Dermatology. E. Pulay.—p. 108. Cont'n.
*Paravertebral Dulness from Enlarged Auricle. A. Leimdörfer.—p. 111.
Severe Case of Botulinus Poisoning. W. Seidelmann.—p. 113.
*Hemophilia and Pituitary Extract. H. Neumann.—p. 115.
Specific Gravity of Small Amounts of Urine. A. Jolles.—p. 115.
Official Estimation of Disability. Wulsten.—p. 116.
*Fight Against Tuberculosis. F. Jessen.—p. 117.
Cheaper Prescriptions. R. Kayser.—p. 120.
Diseases of Bladder. E. Portner.—p. 121.
Present Conceptions of Pain in Muscles and Nerves. K. Singer.—p. 123.

Streptococcus Infection and Antistreptococcus Serums.—Meyer and Joseph confirm five serologically different groups of streptococci. It is evident that a general specific action cannot be expected from univalent serums. The serums have to be repeatedly tested with new strains. Some streptococci produce hemotoxins, which however cannot be kept for more than three days. These toxins are identical in all groups. They do not kill the animal immediately, but cause severe anemia and death within a few weeks. In spite of many difficulties, they were able to produce serums which act not only against the cocci, but also against these toxins. These serums have a curative effect in animals. Colloidal solutions diminish the activity of the toxins.

Paravertebral Dulness from Enlarged Auricle.—Leimdörfer has been studying paravertebral dulness due to enlargement of the left auricle in forty patients. The dulness is marked, especially in decompensated mitral stenosis, and may cover the left interscapular area from the fifth to the ninth thoracic vertebrae. Enlarged lymphatic glands cause usually bilateral areas of dulness and other symptoms. Dilatation and aneurysm of the aorta also have to be excluded.

Hemophilia and Pituitary Extracts.—Neumann reports a case of probable hemophilia. The bleeding from the nose stopped after one local and one subcutaneous application of pituitary extract.

Fight Against Tuberculosis.—Jessen sees in the early diagnosis and treatment of children the safest way to fight tuberculosis. The physician should not wait to make a diagnosis until he finds bacilli. A slight blepharitis, enlarged cervical or peribronchial glands, atrophy of the trapezius, even flushing of one half of the face, or one dilated pupil are signs of beginning tuberculosis if the rectal temperature exceeds 37.2 C. at noon (typical maximum in tuberculosis). Changes of acidity in the gastric juice may be due to pressure from enlarged bronchial glands on the pneumogastric nerve. Lack of progress in school, apparent laziness, may be manifestations of tuberculous intoxication. The paralytic thorax is a sign of tuberculosis, not of a predisposition to it.

Monatsschrift für Geb. und Gynäkologie, Berlin

October, 1922, **60**. G. Winter Festschrift

*Treatment of Placenta Praevia. M. Hofmeier.—p. 3.
*Cervical Implantation of Placenta. Zangemeister and Schilling.—p. 15.
*Practical Importance of Fever at Childbirth. M. Henkel.—p. 58.
The Outlook for Combating Infection. Hammerschlag.—p. 80.
*Bladder Impeding Delivery. E. Sachs.—p. 88.
*Diagnostic Import of Varices in Bladder. P. Rosenstein.—p. 106.
*Pregnancy Pyelitis. B. Rosinski.—p. 116.
*Operative Treatment of Urinary Fistulas. E. Schroeder.—p. 124.
*Cancer of Sigmoid Flexure. Schütze.—p. 130.
*Ventrifixation of the Uterus. H. Fuchs.—p. 133.
The Vagitus Question. C. U. von Klein.—p. 154.
*Experimental Roentgen Injury of Ovaries. F. Unterberger.—p. 164.
*Nonencapsulated Peritonitis in Parturients. W. Benthin.—p. 171.
Genital Tuberculosis. K. Riediger.—p. 225.
*Kidney Findings in Pregnancy. K. Fink.—p. 229.
Internal Examination by Midwives. C. Abernetty.—p. 243.
*Diagnosis of Twin Pregnancy. W. Offermann.—p. 259.
*Intraperitoneal Injections of Ether. H. Naujoks.—p. 265.
Jaundice in the New-Born. Lepehne.—p. 277.
Otitis Media in Pregnancy. A. Blohmke.—p. 291.
Calcified Myoma in Uterus. T. Cohn.—p. 308.
Operative Treatment for Cancer of Uterine Cervix. Gaydoul and Schmitt.—p. 317.

Fetal Movements as for Respiration. W. Walz.—p. 331.
Etiology of Congenital Atresia of Small Intestine. Hennig.—p. 342.
Treatment of General Puerperal Infection. E. Henrard.—p. 347.
*Provocative Procedures in Gonorrhea. E. Müller and C. Richter. —p. 355.
Early Diagnosis of Congenital Heart Defects. H. Wüsthoff.—p. 365.
Works of Prof. G. Winter.—p. 376.

Placenta Praevia.—Hofmeier relates that he has had one case of placenta praevia in each 79 obstetric cases in the last ten years. The death rate was 7.5 per cent. in the total 218 cases. Cesarean section was done in 14, with 21.4 per cent. mortality; embolism in the third week was responsible for one death, and preceding hemorrhages for another. The third fatality might have been averted if supravaginal amputation had followed at once. This should be the routine procedure when the placenta is embedded in the lower segment of the uterus. Generally, the primary embedding is above this segment, and the placenta merely extends down into the lower passage. The danger of fatal hemorrhage with placenta praevia is not so great as usually assumed.

Cervical Implantation of Placenta.—When the placenta develops partially or entirely in the cervix, the vaginal portion of the uterus, or at least one lip of the portio, appears swollen, or one wall of the cervix feels as if it contained a tumor. In multiparas the portio seems abnormally short and varicose veins may be visible. Even a placenta entirely in the cervix does not always present as placenta praevia. The head was sometimes found movable high above the pelvis. The mishaps with cervical placenta have generally been due to the fact that it was not recognized in time. If the bleeding continues, Zangemeister and Schilling advise removing the uterus without delay, as also when infection is suspected. The numerous manipulations usually entail infection.

Practical Import of Fever at Childbirth.—Henkel summarizes his experience in the warning that fever is not an indication to hasten delivery but rather a contraindication. If delivery is hastened, there is need for extra caution to avoid lacerations or contusions.

Bladder Impeding Delivery.—Sachs discusses displacement of the bladder between the uterine ligaments, a lateral cystocele. This must not be mistaken for a cystic tumor. The bladder in this position is also liable to injury in vaginal operations.

Varices in the Bladder.—Rosenstein describes a case in which constipation from a stricture of the anus had caused a puzzling clinical picture and such congestion in the pelvic vessels that varices in the bladder were nearly mistaken for metastases of an intestinal cancer that had been successfully removed. After the stricture had been corrected, the varices in the bladder disappeared. He reports a number of other instances of misleading varices in the bladder.

Pregnancy Pyelitis.—Rosinski's experience demonstrates that women who have had pregnancy pyelitis must be kept under supervision until kidney functioning has returned completely to normal. Evacuation of the uterus is more effective in the severer cases even than nephrotomy. The kidney has been known to recuperate, he adds, after evacuation of 17 liters of contents.

Urinary Fistulas.—Schroeder gives details of nineteen operative cases of vesicovaginal fistulas. He utilized the uterus in closing the gap in six instances.

Cancer of Sigmoid Flexure.—The cancer and stenosis had simulated a tumor in the adnexa in the case reported by Schütze. The woman, aged 38, recovered completely after resection of the intestine with primary suture.

Ventrifixation of the Uterus.—In Fuchs' series of 218 vesicoventrifixations, 37 women subsequently had a total of 47 pregnancies. Delivery was normal and spontaneous in 24; in 4 the placenta had to be detached by hand, and there was transverse presentation in 2. Abortion occurred in 5 cases—about the usual average. Fuchs remarks that even if the fixation was responsible for these anomalies—which is scarcely probable—they are too few to discredit ventrifixation.

Experimental Roentgen Injury of Ovaries.—Unterberger exposed the ovaries of butterflies to the roentgen rays, and noted a decidedly deleterious action on the offspring. They were all abnormally small, and differed in other ways from the standard. He warns of the danger of even mild roentgen irradiation of the ovaries in girls and young women.

Diffuse Peritonitis in Gynecologic and Obstetric Cases.—Benthin presents arguments in favor of local ether treatment, and urges early diagnosis by puncture. The routine procedure, he states, should be simple incision and drainage, without irrigation or mechanical removal of pus or adhesions. With peritonitis from abortion, he insists that no attempt should be made to remove the relics of the ovum; they will be spontaneously expelled. After-treatment is extremely important and includes regulating the fluid intake, the breathing, the heart action, and peristalsis. He gives details of twenty-six cases in which 50 or 100 gm. of ether was injected in prophylaxis. The results indicate, he says, that this is the best method of treatment known to date. The main thing is early diagnosis.

Pregnancy Kidney.—Fink explains that pregnancy albuminuria is merely the expression of instability and irritability of the epithelium. When there is no rise in blood pressure and no edema, it is harmless, and does not require treatment. With pregnancy nephropathy, there is a tendency to stagnation of water throughout the tissues. The kidney parenchyma merely shares in this. Treatment must aim to reduce the retention of water by rest and reduction of the intake of water and salt. If the blood pressure rises, eclampsia may occur. Acute nephritis may develop in the pregnant and require the same treatment as in other conditions. Chronic nephritis may make interruption of the pregnancy necessary if the symptoms become alarming.

Diagnosis of Twin Pregnancy.—Offermann regards difference in the distinctness with which the fetal heart sounds are perceived as a sure sign of twin pregnancy. The heart sounds seem to spread from a single center, but they are like two clocks beating together; one will lag behind the other at times, like the hoof beats of two galloping horses. He calls this the *differenzunreinheit* sign. Another sign is the presence of the umbilical cord murmur at two different points when the heart sounds are heard. The umbilical cord murmur seems to have its origin in the heart.

Experimental Intraperitoneal Injection of Ether.—Naujoks experimented on rabbits. The findings confirm the beneficial action of ether in peritonitis, although it is impossible to apply the findings in these small animals directly to man.

Provocative Procedures in Gonorrhea.—Müller and Richter describe experiences with intravenous injection of glucose solution. It should be supplemented by local measures. This combination proved most effective.

Wiener klinische Wochenschrift, Vienna

Jan. 25, 1923, **36**, No. 4

*Treatment of Sterility in Women. E. Graff.—p. 61.
"Causal" and Teleologic Views in Pathology. R. Meyer.—p. 64.
Determination of the Amount of Blood in Man. I. Piticariu.—p. 68.
Instrument for Lavage of the Bladder. M. Oppenheim.—p. 69.
Treatment of Tuberculosis. J. B. Andreatti.—p. 69. Conc'n.
*Alcohol and School. H. Reichel.—p. 72.
Rokitansky and Scientific Societies. M. Zeissl.—p. 74.

Treatment of Sterility in Women.—Graff prefers examining the sperm from the vagina to the usual condom method. Primary sterility is usually associated with hypoplastic conditions in the sex organs. The only manifestation of this may be irregular menstruation. All surgical measures are useless in these cases. Retroflexion and retroversion of the uterus may be the cause of sterility, though their influence is largely overestimated. Inflammatory conditions in the sex organs must be treated. Gonorrhea is a frequent cause. Rubin's test for permeability of the tubes is very useful. No operation for sterility should be performed without this test. He believes there is an immunity against sperm, and does not consider dyspareunia a cause of sterility.

Alcohol and School.—Reichel deals with the difficulties of antialcohol education. It is not sufficient to teach abstinence; the teacher must show that life is improved by it. The hygienic, economic and moral evils of alcohol should be explained.

Zeitschrift für urologische Chirurgie, Berlin

Feb. 17, 1923, **12**, No. 1-2

*The Accessory Sex Glands. D. Ohmori.—p. 1.
*The Ejaculatory Duct After Prostatectomy. R. Lichtenstern.—p. 32.
*The Technic for Nephrotomy. E. Hagenbach.—p. 40.
Plastic Operations on the Urethra. I. Deutsch.—p. 47.
Hydronephrosis from Developmental Anomalies. W. Tinnemeyer.—p. 50.

Mutual Relations Between Prostate and Seminal Vesicles.—Ohmori analyzes the microscopic and macroscopic findings at necropsy of thirty-three persons succumbing to a variety of diseases. The prostate was found normal in only 21.22 per cent. and the seminal vesicles in only 33.34 per cent. while in 69.6 per cent. of all cases, there never had been any symptoms attracting attention to the accessory sex glands. The prostate after the age of 40 is thus abnormal more frequently than hitherto supposed.

The Ejaculatory Duct After Prostatectomy.—Lichtenstern reports the results of anatomic and clinical research on the behavior of the ejaculatory duct after suprapubic prostatectomy.

Technic of Nephrotomy.—Hagenbach brings the lips of the incision in the kidney together by long suture threads passed directly through the kidney from side to side, tied over a solid support on each side. He uses three such mattress sutures of catgut; the solid supports on each side of the kidney are fat from the kidney or fragments of muscle. This method has been applied in nine cases and there has been no tendency to hemorrhage. The article is illustrated.

Zentralblatt für Chirurgie, Leipzig

Feb. 24, 1923, **50**, No. 8

*Duodenal Ulcer in Relation to Icterus. H. Zoepffel.—p. 297.
Effusion of Chyle into Peritoneal Cavity. G. Golm.—p. 300.
Injuries of Intestinal Wall Caused Presumably by Ascaris Lumbricoides. K. Anrassy and K. Himmelreicher.—p. 302.
Incarcerated Hernia of Intersigmoid Fossa. F. Erkes.—p. 306.
Ossification Disturbances of the Calcaneum. A. Blencke.—p. 308.
Periarterial Sympathectomy in Arteriosclerotic Gangrene. H. Matheis.—p. 309.
Static Coxa Vara. G. Riedel.—p. 312.

Duodenal Ulcer in Relation to Inflammation and Icterus.—Leaving out of consideration the cases in which a gallstone affection coincides with a duodenal ulcer, the appearance of jaundice caused directly by a duodenal ulcer is very rare. The origin of the jaundice is, of course, clear in cases in which an ulcer is located directly at the site of Vater's papilla, or when dense adhesions arising from an ulcer compress the lumen of the common bile duct. In such cases, however, the jaundice will usually be permanent. It is the cases of transient jaundice associated with duodenal ulcer that are obscure. Zoepffel cites three cases in point, from which he concludes that occasionally there occur acute, inflammatory manifestations in chronic peptic ulcers of the stomach and duodenum, which, owing to their seat near the common bile duct may obstruct and cause stagnation of bile and hence jaundice, through blocking of Vater's papilla by edematous swelling. Sometimes, though not necessarily, this is attended by a secondary cholangitis. In many cases, therefore, the duodenal ulcer must be held directly responsible for the bile stasis. Those cases in which adhesions apparently have existed for some time, but in which icterus appears only occasionally, prove that the jaundice was not caused by them but by temporary blocking of the common bile duct from an acute exacerbation of the chronic ulcer.

Zentralblatt für innere Medizin, Leipzig

Jan. 20, 1923, **44**, No. 3

*Treatment of Chronic Constipation. G. Rosenfeld.—p. 34.

Treatment of Chronic Constipation.—Rosenfeld believes that every chronic constipation is due to a spastic condition in the intestines. His treatment consists of foods, such as oat meal, chocolate, etc. This diet improved the constipation even in a patient who was suffering from a carcinoma of the sigmoid flexure. The foods are of the constipating type.

Jan. 27, 1923, **44**, No. 4

*Heredity in Dupuytren's Contracture. J. Löwy.—p. 81.

Heredity in Dupuytren's Contracture.—Löwy has traced this in four generations. Occupation may have an influence on the form of the contracture, and the patient be able to continue his work in spite of the deformity.

Casopis Lekaruv Ceskych, Prague

Jan. 20, 1923, **62**, No. 3

Louis Pasteur. J. Hlava.—p. 53. Idem. K. Weigner.—p. 58.
*"Spontaneous Generation of Microbes." Andrjevski and Vanicek.—p. 60.
*Biochemical Properties of Colon Bacilli. Pirc I.—p. 60.
*Adenoma in Sheep's Lungs Due to Parasites. V. Hofman.—p. 65.

A New Alleged Proof of Spontaneous Generation of Microbes.—Andrjevski and Vanicek found that Sakharoff's alleged "globules colloïdes" are artefacts, and that his alleged proof of spontaneous generation of bacilli is due to lack of asepsis in his research.

Biochemical Properties of Colon Bacilli and Their Relation to Specific Antigenic Reactions.—Pirc finds that the chemical actions of the colon bacillus (fermentation of milk sugar, gas formation from glucose and reduction of neutral red) are more important than its antigenic properties. Attempts to differentiate colon bacilli from other similar micro-organisms by means of agglutination and complement fixation did not give satisfactory results.

Adenoma in Sheep's Lung Due to Parasites.—Hofman surveys the significance of parasites for the formation of tumors, and publishes a description and pictures of an adenoma from the lung of a sheep, which was apparently due to infection by strongyloides.

Jan. 27, 1923, **62**, No. 4

*Persistent Fistular Voice. M. Seemann.—p. 81.
Two Cases of Neurosyphilis. A. Mazacová.—p. 88.
*Three Severe Cases of Inguinal Hernia. Polák.—p. 90.
*Tubercle of Optic Disk and Choroid. J. Janku.—p. 93. Conc'n.

Persistent Fistular Voice.—Seemann publishes the histories of three patients, who retained after puberty the high pitched fistular voice. In all he found marked hypoplasia of the posterior part of the upper opening of the larynx, especially of the aryepiglottic bands. The constitutional factor was demonstrated by the coincidence of the affection in two brothers. Phonetic exercises taught the patients in a few weeks to use the deep pectoral voice.

Three Severe Cases of Inguinal Hernia.—Polák publishes three cases of inguinal hernias with complications. He emphasizes the predominance of the right side in similar conditions, due to the later descent of the right testis.

Tubercle of Optic Disk and Choroid.—Janku completes a study of tubercles of the fundus of the eye, and publishes ten colored illustrations. The chronic affection is comparatively mild but recurs easily, even after specific treatment.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 17, 1923, **1**, No. 7

*Radiotherapy of Ocular Tuberculosis. C. A. Krull.—p. 630.
*Myoclonic Reflexes as Basis for Epileptic Myoclonus. L. J. J. Muskens.—p. 642.
*Tracheal Cannula from Physiologic Standpoint. P. J. Mink.—p. 650.
*Serodiagnosis of Syphilis. J. van der Hoeden.—p. 655.
*Present Status of Insulin in Treatment of Diabetes. A. Grevenstuk.—p. 665.

Radiotherapy of Ocular Tuberculosis.—Krull asserts that clinical experience has apparently established that the roentgen and radium rays, applied near or to the eye itself, in proper doses, do not injure the eye. Axenfeld has published cases of sarcoma or epithelioma of the interior of the eye which retrogressed under roentgen-ray treatment without serious injury to the choroid or retina, except that cataract developed later. But the cataract was easily removed when the proper time came. Krull gives details of 30 cases of tuberculous processes in the eyes with systematic roentgen-ray treatment at the Amsterdam University eye clinic. In 50 per cent. the effect was favorable, although recurrence of the tuberculous affection was not uncommon. In 2 other cases the progressive disease seemed to have its course slowed; in 5 other cases the effect of the treatment was dubious, and in 8 others no modification was apparent. No injurious by-effects were evident in any instance. The benefit was striking in one case of blepharospasm and tuberculous conjunctivitis of the eyelid, but suggestion may have contributed to the prompt effect. Superficial tuberculous proc-

esses in the choroid responded very favorably to irradiation, as also 4 of the 28 cases of tuberculous iritis. In one case a very superficial necrosis of the cornea followed the exposures, but it soon healed. Radiotherapy seems to be most promising in tuberculous keratoscleritis, indolent tubercle of the iris, and cyclochoroiditis when the affection is stationary or progressing. With 2 or 3 Holzknecht units, repeated at three week intervals, no injury has ever been observed, while the results were often encouraging. The age of Krull's patients ranged from 12 to 57.

Myoclonic Reflexes in Relation to Epilepsy.—Muskens here presents his second report on research with cats. It has demonstrated that we can induce in these animals, by toxic influence, myoclonic and regional spasms which apparently resemble in every respect similar epileptic myoclonic and regional convulsions in man. He used camphor bromid and absinthe for the purpose, and states that we have by this means a simple and easy method for physiologic research on epilepsy. Certain lesions of the central nervous system modified the reaction.

Tracheal Cannula from the Physiologic Aspect.—Mink remarks that when the tracheal cannula is only for temporary use, the physiologic aspect need scarcely be considered. But when it is to be worn a long time, this is very important, and he explains why the usual custom of using as wide a cannula as possible impairs the breathing capacity. In normal conditions, he says, the intratracheal pressure averages 25 mm. of water, but in mouth-breathers, the pressure is only 15 mm. This is one of the reasons why mouth-breathing is so deleterious. A broad tracheal cannula transforms conditions to the mouth-breathing type, a pressure of only 15 mm. or below. There is a kind of valve action in the nose as air enters, and a similar valve action at the vocal cords during expiration. Something of the kind should be provided for intratracheal respiration when it is to be long continued.

Serodiagnosis of Syphilis.—This communication from the central laboratory of the public health service at Utrecht reports the parallel application of three or four serodiagnostic tests to 1,800 serums. The Meinicke turbidity reaction with cholesterol proved more sensitive than any of the others, and seemed to be specific in higher degree. The tenacity with which it persisted under treatment was remarkable. The technic is simple, convenient and often does not take more than an hour. The response is particularly clear as both turbidity and flocculation are involved.

Treatment of Diabetes with Pancreas Extract.—In concluding this long account of the research on insulin and its results, Grevenstuk states that the islands of Langerhans, and not the acini of the pancreas are responsible for the disturbance in sugar metabolism.

Feb. 24, 1923, **1**, No. 8

*Writing Medical Articles. G. van Rijnberk.—p. 742. Conc'n No. 10.
*Prophylaxis of Puerperal Fever. K. de Snoo.—p. 746.
*Nose, Throat and Ears in the Tuberculous. Siemens.—p. 764.
Oat Flakes and Oatmeal in Diabetic Diet. N. Keulemans.—p. 769.
Calcified Hydatid Cyst in Liver. S. J. van Wijhe and E. Hammer.—p. 771.
Case of Epidemic Encephalitis. P. Tak.—p. 773.
Trichlorethylene in Treatment of Trigeminal Neuralgia. E. Laqueur.—p. 775.

Writing Medical Articles.—Van Rijnberk is editor of the *Tijdschrift,* and he says, among other things, that every communication deserves publication which presents a new idea or a new fact or a fact new to the country or race. Dividing the value of the contents of the article by its length, gives the specific gravity of the article. "Too often," he exclaims, "the quotient proves to be less than 1." In the clinical history, he advises striking out every particular which the writer did not make use of himself in his diagnosis, treatment or prognosis. He pleads further that bibliographic references should be given by titles. In conclusion he ventures the statement that what is needed is a better comprehension of the facts already known, instead of piling up more. He says we are being crushed and suffocated with dry single facts. "What a blessing it would be if all the journals of the world would agree not to publish any new facts for ten years, and devote their pages to collective reviews and monographs on the facts already known."

Prophylaxis of Puerperal Fever.—De Snoo is director of the national midwifery college in the Netherlands, and he presents an array of arguments to show that puerperal infection has other origins than those generally accepted, and that the chief danger is from other parturients with puerperal fever. It seems as if a special strain of cocci is developed by passage through other parturients. Women with chronic gonorrhea would theoretically seem to be peculiarly exposed to danger of secondary infection yet he has had no death from puerperal fever in 5,000 obstetric cases in which the shape of the pelvis and the presentation was normal or nearly so, and delivery proceeded spontaneously; and yet many of them had chronic gonorrhea and chronic suppuration from other causes. The danger from these is thus comparatively negligible. Autoinfection from bacteria already present, lurking possibly for years in the genitalia, certainly can occur, but it is exceptional. His tables show that the proportion of cases with fever after internal examination was twice as large when the interval between the internal examination and delivery had been from two to six days (33.3 per cent.) than when the interval had been shorter. Only 6 of the 827 cases with interval of less than twelve hours were pathologic. In 91 cases of placenta praevia, the same influence of the interval was apparent. The only 2 deaths were in women who had been examined internally from two to six days before delivery, and the pathologic cases were far more numerous than in the other group. The only reason why certain careless obstetricians in private practice are liable to have a good record is because their patients are not exposed to contagion from other parturients as they would be in institutions.

Ear, Nose and Throat Affections in the Tuberculous.—Siemens gives a table of data from 1,457 tuberculous inmates of a sanatorium, including 552 men, 667 women and 238 children. Fully 20 per cent. had some existing affection or anomaly in nose, throat or ear; 7 per cent. chronic otitis media.

Acta Chirurgica Scandinavica, Stockholm

1922. Supplement I

*The Elimination of Ether. K. Gramén.—pp. 1-146.

Ether in Blood, Milk, Urine and Breath After Ether Anesthesia.—The first supplement to the *Acta Chirurgica Scandinavica,* 1922, is devoted to Gramén's extensive research in this line and on the acidosis which follows general anesthesia. He worked out a special method for determining the percentage of ether in 1 c.c. of body fluids and in the breath, and tabulates the findings from 700 tests. The child born after the mother has been given ether may show the effect of it. This should be borne in mind in treating the new-born. His experiments further confirmed the decidedly favorable effects of refraining from purgation and reducing the intake of food preliminary to the operation, while at the same time supplying fluids in abundance and warding off anesthesia acidosis by giving glucose and bicarbonate. The vomit after ether anesthesia indicates that there is achylia. The kidneys may show acute damage from the ether; in one fatal case it amounted to intense nephrosis. This may be the explanation of certain tardy fatalities after general anesthesia.

Hospitalstidende, Copenhagen

Feb. 14, 1923, **66**, No. 7

*Transmission of Multiple Sclerosis to Guinea-Pigs. V. Jensen and G. E. Schrøder.—p. 133.
Electrocoagulation for Lupus in Nose and Throat. Vibede.—p. 140.

Experimental Multiple Sclerosis.—Jensen and Schrøder injected nine rabbits and twenty guinea-pigs with blood and spinal fluid from seven patients with multiple sclerosis. The results were constantly negative, except in one case in which spirochetes were found in the spinal cord. Of the six animals injected with these spirochetes, one developed paralysis, and the brain and spinal cord showed lesions resembling those of multiple sclerosis, but no spirochetes could be found in the animal. This one instance confirms the assumption of an infectious etiology, or, at least, that what we call multiple sclerosis may not always have the same origin.

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MYOSITIS OSSIFICANS *

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Cases of circumscribed myositis ossificans have been reported with increasing frequency during the last few years. It is probable that the condition is more common than even the large number of reported cases would indicate, for when ossification is not extensive and not in such a position that the motion of a joint is limited or a definite disability occurs, a physician is not consulted. The circumscribed form of myositis ossificans is of special interest to the surgeon because of its association with dislocations and fractures; because of the difficulties sometimes encountered in making a differential diagnosis, and because of the relation of periosteal stripping and displacement to heterologous bone formation.

Three forms of circumscribed myositis are recognized:

1. The traumatic:—
   (*a*) Occupational myositis ossifications due as a rule to repeated injuries.
   (*b*) Myositis ossificans due to repeated injuries not sustained in pursuit of an occupation.
   (*c*) Myositis ossificans due to a single severe injury.
2. The nontraumatic form, in which even single or repeated injuries can be excluded.
3. The neurotic form, usually associated with arthropathies or fractures occurring in tabes, dementia or syringomyelia.

Circumscribed myositis ossificans developing in clean incised abdominal wounds forms an interesting study. In some of these cases, there is no possibility of periosteal injury or displacement, and therefore the bone must have formed as the result of metaplasia of connective tissue cells. In an article published by Küttner in 1910, dealing with circumscribed ossifying myositis, but five cases are recorded in which the lesion developed in a wound caused by a sharp instrument producing a clean incised or punctured wound. Most of the cases develop after a severe injury caused by blunt force in which considerable laceration of muscle fibers associated with hematoma formation occurs.

Bender reports a case in which bone developed in the biceps brachii following a punctured wound from a darning needle; Schwarz, one in which bone developed in the glutei muscles after they were cut with glass, particles of which were found imbedded in the bone. Werner has described an ossifying process in the biceps brachii after a punctured wound. Cranwell has described two cases in which bone developed in muscles following incised wounds. In one of these, the patient was whittling, when the knife slipped and pierced the inner part of the thigh, passing through the adductor muscles. Considerable hemorrhage occurred, but the wound healed rapidly. After some months, a piece of bone of considerable size developed in the adductor muscles. This was removed later. The second case, reported by Cranwell, occurred in a man, aged 22. Three months before he was operated on, he sustained a stab wound of the left thigh, with considerable hemorrhage. The wound suppurated, and healed slowly. Soon a painful mass developed along the track of the stab wound. This mass, which proved to be bone, was later removed. It was attached to the femur by a broad base. These cases indicate that circumscribed myositis may, but rarely does, occur after clean incised wounds.

MYOSITIS OSSIFICANS IN THE ABDOMINAL WALL

I have observed two cases in which bone developed in incisions of the abdominal wall:

CASE 1.—A man, aged 27, for over a year before he was admitted to the hospital, had experienced from time to time an aching pain in the epigastrium. This pain usually developed early in the evening and lasted half an hour or somewhat longer. At times, the pain would come on at 1 or 2 o'clock in the morning and last two or three hours. Nausea was not associated with the pain and no vomiting had occurred. At first, bismuth relieved the pain. A few weeks before the patient entered the hospital, the pains were experienced during the day. Of late, the pain and distress had been almost continuous but had varied in intensity. The distress could be controlled to a considerable degree by a liquid diet. During the year, the patient had had several attacks of acute arthritis.

The general examination was negative except as regards the heart. The apex beat was in the seventh intercostal space, two finger breadths external to the nipple line. The impulse was heaving. A loud diastolic murmur was heard over the base, which was transmitted to the apex. The patient had aortic regurgitation, but compensation was good.

A test meal revealed no food retention. The total acidity was 95, free hydrochloric acid, 50. Occult blood had been found in the stool from time to time. June 1, 1917, a diagnosis of duodenal ulcer having been made, a posterior no-loop gastro-enterostomy was performed, the pylorus being temporarily occluded by plication with two silk sutures. The postoperative course was uncomplicated, no vomiting or distress being noted. There was some fever, the temperature reaching 102 F. on the third day. It subsided quickly and did not recur. During this rise in temperature, there was no inflammatory reaction in the incision. The fever was thought to be due to bronchitis, never severe, from which the patient suffered at this time.

The patient left the hospital thirteen days after the operation, much relieved, the pain and distress following the taking of food having completely disappeared. After his return home a cough developed which bothered him considerably.

* Read before the Western Surgical Association, Dec. 8, 1922.

Three weeks after the operation, he noticed some tenderness in the scar, so marked that he could not wear a belt without considerable distress.

Seven weeks after the operation, a definite mass measuring a finger's breadth or more in width could be felt the entire length of the scar. This mass was of the consistency of bone, and in the roentgen ray cast a definite shadow. This mass was not removed, and naturally the criticism may be made that we cannot consider it as bone without a histologic examination; but it had all the characteristics of bone on physical examination. The patient was finally lost sight of, and the final outcome cannot be given. The mass was decreasing in size.

Case 2.—*Myositis ossificans developing in the muscles of the lower abdomen following a suprapubic prostatectomy.* A man, aged 70, admitted to Dr. Bevan's service, Aug. 18, 1914, had had bladder trouble for four years, and complained of frequent and painful urination associated with retention. During the preceding April, the trouble had become aggravated, urination being extremely difficult, with only a few



Fig. 1 (Case 1).—Appearance of bone developing in a clean incised wound of the abdomen. A gastro-enterostomy was performed for duodenal ulcer.

drops voided at a time. Soon after admission to the hospital, a suprapubic prostatectomy was performed. The suprapubic wound healed within a month without complications. Shortly after the wound healed, the patient noticed a mass which was not painful and gradually increased in size. The patient was well, but was troubled from time to time by painful urination. A cystoscopic examination, Aug. 29, 1915, revealed two small stones in the bladder and no projection into the cavity of the anterior bladder wall. The mass described above was apparently in the abdominal wall and did not involve the bladder.

Sept. 2, 1915, this mass, which proved to be bone to which was attached degenerating fat and muscle, was removed. Ossification had occurred in the tissues of the abdominal wall following healing of the suprapubic wound.

Cases of myositis ossificans developing in abdominal wounds have been reported by Rubesch, Röpke, Hannes, Legene, Sabjaknia, Capelle, Jones, Coenen-Wollenburg, Benelli, Merendorf and Strassberg. In seven of the eleven cases reported, an operation was performed for gastric ulcer, two of which had perforated. Some of the incisions were closed with silk and some with catgut, and the wounds in most cases, one excepted, healed by first intention.

In a case observed by Jones, a man, aged 30, was operated on for a right inguinal hernia, which had developed, apparently, as the result of jumping. The wound healed by primary intention, the patient remaining in bed sixteen days. Five months after the operation, a mass developed under the scar, which was painful and not attached. Eleven months after this mass was first noted, it was removed. On histologic examination, it proved to be bone.

Jones believes that at the first operation the pubic bone was injured by the needle; that a few osteoblasts were carried into the soft tissues, and that these found a good culture medium, perhaps in a blood clot, giving rise to bone formation in the hernial scar.

These cases of myositis ossificans occurring in clean incised wounds of the abdomen are of unusual interest, because they would seem to indicate that bone can form as the result of metaplasia of connective tissues containing no osteogenic elements. It is stated by some that in these cases there is always the possibility of periosteal injury associated with displacement of periosteal strips or osteoblasts, but in both of the cases observed by me such injury could be definitely excluded. In the myositis developing after a gastro-enterostomy, a linea transversa was incised. This is the remains of a rib that at one time extended toward the median line, but we do not know whether or not the lineae transversae contain osteogenic elements. The effect of acid secretion on fascia and muscle and its relation to bone formation is raised by the second case in which bone developed in the suprapubic wound. It has been frequently demonstrated by Phemister and Strauss that free facial transplants used to repair defects in the urinary bladder and stomach or in the ureter become transformed into bone, a metaplasia of connective tissue occurring. Bone probably formed in the suprapubic wound as the result of the action of acid urine on fascia. It is surprising that the greater number of cases of myositis ossificans in abdominal wounds have developed after gastro-enterostomies or stomach resections, and the relation of acid secretion to bone-forming myositis is naturally suggested. It is difficult, however, to see how any great amount of gastric juice could come in contact with such a wound during the performance of gastro-enterostomy.

Although the factors concerned in the development of myositis ossificans in clean incised abdominal wounds cannot be determined, such cases do indicate that bone can be formed as the result of the metaplasia of connective tissues, no osteogenic tissue being present.

Strauss' statistics dealing with 127 cases of traumatic myositis ossificans show the following anatomic distribution: sixty-four of these occurred in the flexor muscles of the upper arm, the brachialis anticus being the one most frequently affected; forty-three occurred in the quadriceps femoris; thirteen, in the adductor muscles of the thigh; two, in the gluteal muscles; one, in the muscles of the ball of the thumb, and one in the temporal muscle.

MYOSITIS OSSIFICANS FOLLOWING POSTERIOR DISLOCATIONS OF THE ELBOW

Myositis ossificans following injuries about the elbow develops most frequently after posterior dislocations.

Case 3.—F. W., a man, aged 36, admitted to the Presbyterian Hospital, May 16, 1910, had had a fall, Sept. 10, 1909,

after which he was mentally deranged, until the middle of the subsequent December. During this time, he complained of pain in the right arm. No definite history of the way in which he was injured could be elicited because of his mental state. When he became mentally clear, it was discovered that he could not bring his hand to his mouth or flex the forearm fully. The elbow caused no especial pain, but was

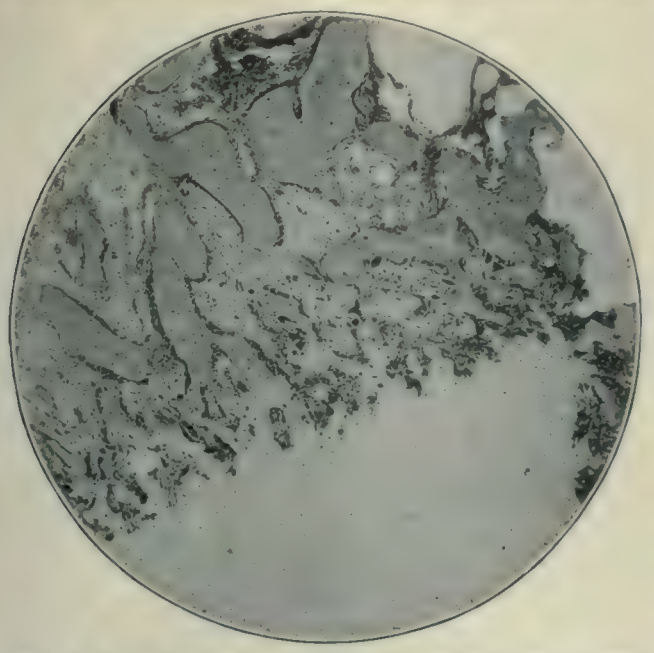


Fig. 2 (Case 2).—Section of bone which developed in suprapubic wound following suprapubic prostatectomy. The relation of acid secretions and excretions to bone formation in fascia and muscle must be taken into consideration in this case.

stiff. The right forearm could not be flexed beyond an angle of 120 degrees. A roentgen-ray examination made at this time revealed a shadow anterior to the elbow joint and the lower third of the humerus that was suggestive of myositis ossificans. An operation was performed, May 16, 1910. An incision was made between the brachioradialis and the brachialis anticus. The musculospiral nerve was exposed and retracted. The fibers of the brachialis were separated, and a bony mass, which was rather closely related to the humerus, was removed from its substance.

CASE 4.—W. B., a man, aged 28, admitted to the Presbyterian Hospital, April 28, 1913, had fallen 20 feet, May 26, 1912, and sustained a fracture of the head of the right radius. According to his statement, he was operated on, May 28, at which time three pieces of bone were removed. A plaster-of-Paris cast was applied, and was worn for three weeks. Splints were then worn for two weeks. After the splints were removed, massage and osteopathic treatment were employed twice a week until the patient entered the hospital. During March, a month before he entered the hospital, an anesthetic was administered three times and attempts were made to break up the adhesions. Impairment of motion at the elbow became more marked at each attempt.

A roentgen-ray examination made when the patient entered the hospital revealed a shadow in the brachialis anticus muscle; one in the olecranon fossa, and one over the olecranon process. A hard mass of the consistency of bone could be felt in the antecubital fossa.

An operation was performed, April 28, 1913. One incision was made in the right antecubital fossa and another posteriorly over the olecranon process. The capsule of the joint was exposed, and the bone and exostoses were removed.

CASE 5.—M. H., a girl, aged 12, admitted to the Presbyterian Hospital, April 3, 1910, had fallen and struck on the left elbow, three months before. A physician who was called said that the elbow had been dislocated. After some manipulation, the dislocation was reduced, and a sling, which was worn for one week, was applied. The patient did not regain full use of the elbow, and after six weeks she visited the Central Free Dispensary, complaining of inability to flex or extend the forearm. In addition to the dislocation, this patient had sustained, as the roentgen-ray examination revealed, a fracture of the coronoid process. An operation was performed, April 14. An incision was made between the brachioradialis and the biceps tendon. The musculospiral nerve was exposed and retracted. The fibers of the brachialis anticus were separated, and a mass the size of a walnut was removed from its substance.

CASE 6.—W. Q., a man, aged 26, admitted to the Presbyterian Hospital, March 8, 1915, for observation, had sustained an injury to the elbow, some weeks before, which, from the description, was probably a posterior dislocation of both bones. The dislocation had been reduced, but subsequently considerable limitation of motion was noted at the elbow-joint. After the accident occurred, considerable discoloration of the skin about the elbow was noted.

Examination disclosed that the motions at the left elbow joint were considerably limited. The bony relations of the joint were normal. A mass could be felt in the upper part of the antecubital fossa. This mass was hard, apparently fixed, and seemed to be surrounded by indurated tissue. A roentgen-ray examination revealed a definite mass. This was apparently not attached to the bone, although there was a small shadow more deeply situated which resembled somewhat a pedicle and might connect the larger shadow with the shaft of the bone. This patient was not operated on, as he was apparently improving. He has moved, so that the later history of the case cannot be given.

Myositis ossificans has been observed after dislocations of the clavicle, shoulder and elbow. Strauss has observed myositis ossificans of the subclavian muscle after a supra-acromial dislocation of the clavicle; Regnier, ossification of the subscapular muscle after dislocation of the shoulder. This lesion is much more frequently observed after dislocation of both bones of the forearm backward than with any other type of dislocation. The localization of the process is quite

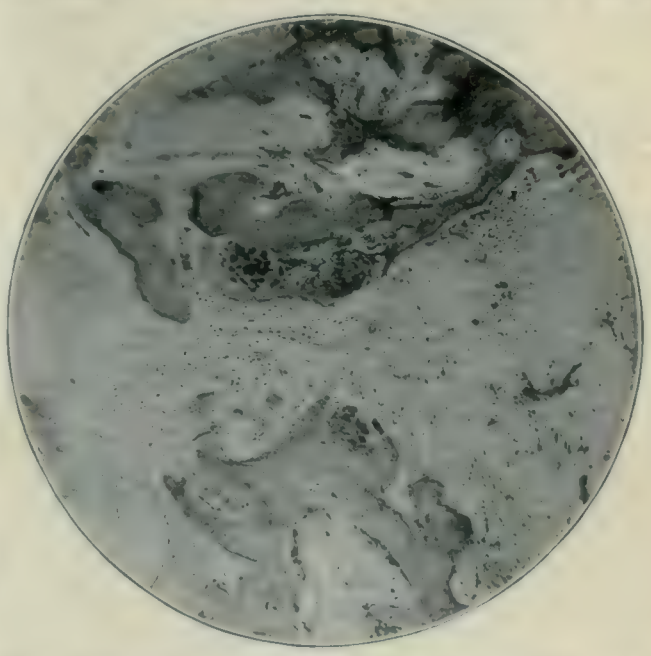


Fig. 3.—Section of bone found in the brachialis anticus following an injury of the elbow.

constant when occurring after dislocation backward of both bones of the forearm. There can be scarcely a doubt that, if more intensive studies were made of other dislocations, myositis ossificans would be more frequently found. The process is so situated after posterior dislocations of the elbow that it causes considerable disability, seriously interfering with flexion

and extension of the forearm. These cases are, therefore, more carefully studied, attention being directed early to the joint, with the view of determining the cause of the disability.

It is interesting to note that ossifying myositis occurring after this injury develops almost exclusively in those cases in which an early and satisfactory reduction has been made. It has been stated that it does not



Fig. 4.—Shadow in brachialis anticus which followed an injury to the elbow.

occur in old, unreduced dislocations. This statement is, however, apparently incorrect, for Frangenheim mentions two cases of old dislocations in which, when an open reduction was attempted, bone was found in the brachialis anticus.

Periosteal stripping with displacement undoubtedly plays an important rôle in the development of this parosteal callus or ossifying myositis. The formation of bone in definite positions is noted with a certain degree of regularity after posterior dislocations of both bones of the forearm. In the majority of cases, the bone is not formed in sufficient amounts to cause disability and is, therefore, not recognized. Sudeck found in experiments performed on cadavers that, in the backward dislocations, injury of the capsule associated with periosteal stripping is rather constant. Stripping of periosteum usually occurs at four points, over the internal and external condyles, over the posterior surface of the humerus above the olecranon fossa, and above the supratrochlear fossa.

After such an injury, there develops with some regularity, on one or more of these areas, callus which varies in size and relation to the humerus, depending on the amount of periosteum stripped and the accuracy with which it is replaced when the dislocation is reduced. After reduction, the callus developing over the external and internal condyles is not usually large and is not much out of position, for the stripped periosteum is not widely displaced. Neither is the subtricipital callus as a rule large. Usually, it does not extend far from the shaft. In most cases, the anterior parosteal callus is not large, and frequently it is closely applied to the shaft of the humerus at the upper limit of the elbow joint or lower down, near the ulna. The stripped periosteum may, however, be considerably displaced anteriorly into the ruptured and infiltrated fibers of the brachialis, and when the growth process instituted by the trauma continues, a lesion causing marked disability seriously interfering with the motions of the elbow joint develops. The development of the lesion in this position gives rise to marked disability and roentgen-ray findings such as have been described in the cases cited above.

Bone often develops rapidly in muscle the seat of ossifying myositis. The shadow cast in roentgen-ray examination varies according to the age of the process. In from three to four weeks, in cases of myositis ossificans following posterior dislocations of the elbow, the shadow occupies the space in front of the proximal part of the elbow joint and extends down through the soft parts toward and near to the bone. The shadow may be indistinct and diffused. This shadow gradually becomes denser and smaller, and on the average attains a greater density after six weeks; but the density and form which are final are not attained until some weeks later. The shadow may apparently change its position, for as a rule, in the early cases, the shadow may be found in the brachialis anticus at the upper part of the joint, and as the shadow increases in density and assumes its definite form, it may take a position more distalward.

The shadow in the early stages is not homogeneous, for lighter and darker areas are found. Machol has spoken of the shadow as resembling a dotted veil. As ossification occurs, lines varying in width form which, passing transversely and obliquely, bound and separate the darker areas. As the density of the shadow increases, definite connection with the bone may be seen, the density of this connecting shadow usually corresponding with that of the soft parts. The bony trabeculae which may be seen in the later stages when the shadow has reached its definitive density correspond, as a rule, to the direction of the muscle fibers.



Fig. 5.—Appearance of bone developing in the brachialis anticus following posterior dislocation of the elbow. This shadow has gradually increased in density and decreased in size. There is some evidence of periosteal stripping in this case, for the deeper shadow which is apparently part of the more superficial one is attached to the bone.

In some of the cases, the shadow remains stationary, but usually there occurs a still further reduction in the size of the shadow with the passage of time. It seems, so to speak, as if the shadow were gradually com-

pressed. The long time required for the final changes to occur in the shadow and the slowness with which its definitive form and density are attained are in marked contrast to the rapidity with which the shadow forms. In the majority of cases, the shadow in the



Fig. 6 (Case 7).—Myositis ossificans of crureus muscle of left thigh, with no history of trauma or infection. Periosteal change is peculiar and difficult of explanation. It may be due to pull of muscle fibers. Myositis ossificans is liable to develop in those positions in which the muscle has wide origin or insertion, periosteal injury in these cases being due to incoordinate muscular contraction. Recovery in this case occurred after extirpation of involved muscle.

muscle seems to be separated from the shaft of the bone. This does not necessarily mean that there is no connection between the mass in the muscle and the shaft of the bone; for the bony process connecting the two may be so porous that no definite and clear shadow permitting of the interpretation of such connection is present.

The symptoms associated with such an injury consist usually of considerable discoloration in the skin about the elbow and in the gradual development of an indurated and painful swelling over the anterior surface of the elbow, which gradually becomes harder as the swelling decreases in size with the conversion of the densely infiltrated muscle into bone.

In some cases of myositis ossificans, considerable difficulties are encountered in making a differential diagnosis and the etiologic factor is difficult to determine. These difficulties were encountered in the following case:

CASE 7.—J. P., aged 18, admitted to the Presbyterian Hospital, July 19, 1922, some nine months before admission had noticed a swelling on the anterior surface of the left thigh just above the junction of the middle and upper thirds. At the beginning, some spontaneous pain was noted. This lasted about two months, and gradually subsided. For the last few months, the pain had been almost negligible and had not been a prominent symptom. The mass in the thigh had grown larger, but the growth had been very slow. Three months before admission, the patient began to have difficulty in flexing the thigh. This difficulty has become more and more pronounced, until at present flexion of the thigh is markedly limited.

Repeated attempts were made to elicit a history of trauma, but the patient denied that any trauma had been sustained. There was no history of any inflammatory trouble of any kind and no history of any febrile disease.

The physical examination revealed a hard fusiform mass measuring 3½ inches (9 cm.) in length and 1 inch (2.5 cm.) in width on the anterior surface of the left thigh at the junction of the middle and upper thirds, just internal to the medial border of the rectus muscle. This mass was tender, somewhat irregular in outline, and fixed, appearing to be attached to the bone. The lower extremity of the mass seemed, however, to be movable from side to side. The muscles could be moved over it. They were somewhat atrophied. The thigh could not be flexed to more than 20 degrees; flexion of the knee was limited to about 35 degrees.

A roentgen-ray examination revealed a definite roughening on the outer side of the femur. This roughening resembled somewhat a well accentuated muscle attachment, being, however, very pronounced. There were no medullary changes and no destruction of the cortex. Some small irregular shadows, one of which was very well marked, were seen. These were apparently in the soft tissues and did not seem to be attached to the diaphysis or connected with it in any way.

A definite diagnosis was not made at this time. The increase in size of the mass, its apparent attachment to the bone and the roentgen-ray findings, led me to suspect a sarcoma of bone. I must admit, however, that the roentgen-ray findings would hardly justify such a diagnosis.

An operation was performed, July 21. An incision was made over the mass parallel to the long axis of the thigh. As the medial border of the rectus was retracted outward, it was found that the mass was in the substance of the crureus muscle. This mass contained several islands of bone scattered among degenerated muscle fibers which were infiltrated with old degenerating blood and calcium salts. A probable diagnosis of myositis ossificans involving the crureus muscle was made. The etiology in this case could not be determined; nor the

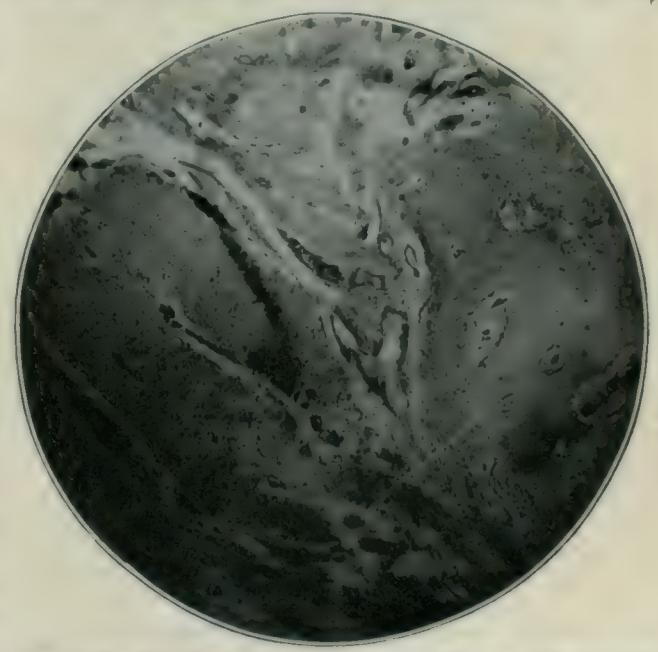


Fig. 7 (Case 7).—Section of tissue removed. Cartilage and bone were distributed throughout the upper part of the crureus muscle, which was infiltrated with blood and undergoing degeneration.

relation of the process to the periosteal change on the outer side of the femur. The process in the crureus muscle seemed to have no definite anatomic relation to the change in the femur.

The histologic changes found in the tissues removed were those of myositis ossificans.

This case is interesting in that no history of trauma could be elicited. Some slight trauma could be easily overlooked and forgotten. No history of any infectious process or febrile disease could be elicited.

Some cases of myositis ossificans are undoubtedly secondary to some infectious process in the muscle, a degenerating myositis being followed by calcification and bone formation. In the cases reported by Salman and Peiser, fixation of the hip in flexion, adduction and outward rotation occurred without injury or known cause. Salman found extensive degeneration of the iliopsoas muscle with bone formation in his patient, aged 13, while Peiser found an extensive tumor-like formation of bone in his case. Some infectious



Fig. 8 (Case 8).—Myositis ossificans following a blow on the thigh during a football game. Injury occurred Nov. 25, 1922; roentgenogram taken Jan. 25, 1923. No change in periosteum is noted. The shadow is not continuous with the periosteum at each extremity and there is no involvement of periosteum beyond the shadow. (Roentgenogram furnished by Donald Macrae, Jr., Council Bluffs, Iowa.)

processes seem to have played a rôle in the cases described by DeWitt, Itzerott and Roskowski. In Itzerott's case, bone developed in the glossy edematous brachialis anticus, some fever and pain accompanying the process. In Roskowski's case, extensive ossification occurred in the flexor and extensor muscles of the forearm after a severe phlegmon.

Although no history of trauma could be elicited in the case cited above, I do not believe that one is justified in placing it in the nontraumatic group of myositis ossificans, for no history suggesting an infectious process leading to a degenerating myositis could be elicited. It is possible that the periosteal change in this case was due to muscular contraction. Muscles with broad origins are not infrequently the seat of myositis ossificans, the periosteal stripping in these cases being due to incoordinated muscular contractions. The history of an injury cannot be elicited in such cases.

CASE 8.—A youth, aged 19, was injured, Nov. 25, 1922, while playing football. He received a heavy blow on the outer side of the left thigh, which, according to his statement, was delivered by another player's fist. He finished the game, although the thigh was tender and caused him considerable pain. He played another game of football five days later. The pain became so much worse after this game that he was sent to the school infirmary by the physician. He remained in bed four days. He then got up and went about, feeling no pain or discomfort. After a few days, he experienced pain in the thigh again when walking, and limped considerably. During the Christmas vacation, he walked but little. The physician whom he consulted advised that arnica be rubbed on the thigh. When school opened after the holidays, he tried to play basketball, but was unable to do so because of the pain caused by running. January 20, 1923, a roentgenogram (Fig. 8) revealed a shadow suggestive of myositis ossificans. This diagnosis was later verified by operation. I am indebted to Dr. Donald Macrae, Jr., of Council Bluffs, Iowa, for the history of this case and the roentgenogram.

MYOSITIS OSSIFICANS OF THE TENSOR FASCIAE FEMORIS

CASE 9.—J. R., aged 33, a Russian, admitted to the Presbyterian Hospital, Jan. 4, 1914, complained of a swelling on the anterior and lateral aspect of the left thigh about 2 inches (5 cm.) below the anterior superior spine of the ilium, which, according to the patient's statement, had been there about five weeks. He stated that the mass was of about the same size when first noticed and had not changed any recently.

Nothing could be elicited which had any bearing on the development of this mass. The patient had pneumonia two years before admission to the hospital, but recovered without any complications.

Physical examination revealed a hard mass on the anterolateral aspect of the upper part of the left thigh. This mass measured about 2 inches (5 cm.) in diameter and was situated about 2 inches below the anterior superior spine of the ilium. It had the consistency of cartilage, and was irregular in outline, freely movable and not attached to the skin.

January 5, this mass was removed through a 4-inch incision from the substance of the tensor fasciae femoris. A small mass the size of a peanut, not attached to the main mass, was later removed through the upper part of the incision. These masses on examination proved to be bone developing in degenerating and infiltrated muscles.

Myositis ossificans must be differentiated from a number of different lesions such as hematoma in muscle and muscle callus, an interstitial syphilitic process involving muscle, different forms of tumors of muscles, exostoses and separation with displacement anteriorly of the articular cartilage of the capitellum, in this type of fracture, which is rare.

It is especially important to differentiate between malignant growths of bone and myositis ossificans; for in some instances the benign process of myositis ossificans has been regarded as a malignant growth, and amputations have been performed. The periosteal sarcoma is the only bone tumor that could be confused with myositis ossificans; for the central giant cell sarcoma is so characteristic and so different from myositis ossificans in roentgen-ray appearance that no question should arise concerning the differential diagnosis of these lesions.

It may be difficult to differentiate between a periosteal sarcoma and myositis ossificans clinically, for a history of trauma may be elicited in each; both occur

in young people, and the consistency may be the same. In some cases, the differential diagnosis cannot be made by the history and physical findings. The roentgen-ray findings are usually however, so typical that a differential diagnosis can be made. In periosteal sarcoma, the cortex of bone is usually eroded or irregular, and the stalactite processes that are formed in the osteogenic periosteal sarcomas are laid down more or less at right angles to the shaft. The fusiform extension of both ends of the shadow onto the shaft is also indicative of a sarcoma. The shadow in myositis ossificans has a peculiar appearance, being laid down in lines which may be parallel to the shaft and crossed by other shadows at more or less of a right angle. The characteristics of this shadow are beautifully shown in a specimen prepared and studied by Phemister. This specimen illustrates the character of the shadow of myositis ossificans. The process has apparently extended along the septums between the different muscle bundles.

The differential diagnosis can usually be made on the history and the roentgen-ray findings, but if there is any doubt a histologic examination of the tissue should be made. Amputation should not be considered in any case in which there is any doubt as to the diagnosis, until a histologic examination has been made.

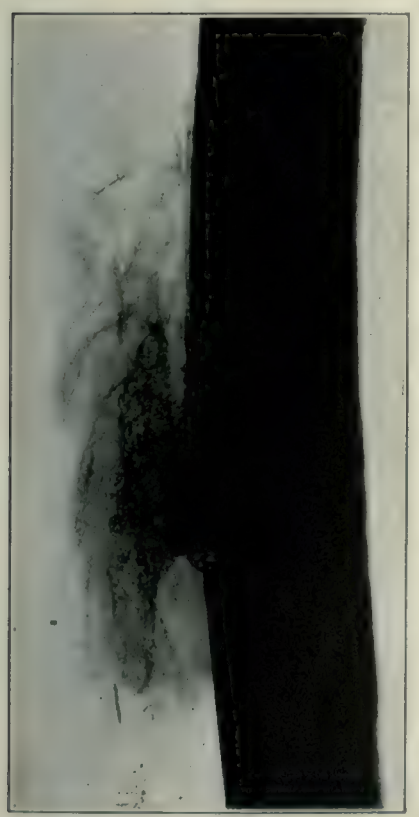


Fig. 9 (Case studied by Dr. D. B. Phemister).—Characteristics of the shadow in myositis ossificans. The shadow at either extremity is separated from rather than continuous with the periosteum, and is parallel with the shaft of the bone. In osteogenic sarcoma, the stalactite processes are usually at right angles to the shaft of the bone. The shadow has the peculiar dotted veil appearance referred to in the text, which is characteristic of myositis ossificans and should enable one to differentiate between this process and osteogenic periosteal sarcoma.

The rate and subsidence of growth are of importance in differential diagnosis. Myositis ossificans attains its maximum size early and remains stationary for some time, or diminishes in size; while the osteogenic sarcomas which offer the greatest difficulties in differential diagnosis have a progressive, rapid growth, without any tendency to remain stationary.

The tendency of myositis ossificans is to recede after attaining its maximum size. Therefore, manipulative movements to increase the range of motion when myositis ossificans is present, for example after posterior dislocations of the elbow, should not be made until the process has subsided; for the injury to the tissues will merely increase the extent of the process. As the bone tends to diminish in size or disappear, there may be no necessity of removing it. If it causes disability, it should not be removed until its definitive form and density have been approximately reached.

In the etiology of myositis ossificans, different factors play a rôle. No one theory will explain all cases. Myositis ossificans developing in the abdominall wall in clean incised wounds, where there is no possibility of any injury to periosteum or bone, is due to the metaplasia of connective tissue. Fascia and muscle in contact with acid secretions become converted into bone. It is striking how many cases of myositis ossificans in the abdominal wall have followed operations on the stomach, either a gastro-enterostomy or resection.



Fig. 10.—Transverse section of specimen, the roentgenogram of which is reproduced in Figure 9, showing ossification of the trabeculae in the muscles of the thigh; the relation of this process to the shaft of the femur, and no periosteal stripping.

Myositis ossificans developing after dislocations is apparently due to periosteal stripping and displacement. The ossifying myositis occurring in fractures associated with considerable movement of the fragments, such as the pathologic fractures occurring in tabes, demonstrate better than any other lesion the rôle played by periosteal stripping and displacement in myositis ossificans.

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HEMOPERITONEUM FROM RUPTURED CORPUS LUTEUM *

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It is now a well established fact that hemorrhage occurs more frequently from the ovary than from any other abdominal organ. In 1845, Scanzoni reported a case of fatal hemorrhage from the ovary at menstruation in a girl of 18, and the condition was referred to by earlier writers as apoplexy of the ovary.

Novak [1] has described fully the types of ovarian hematomas, and has shown their relation to the graafian follicle. The forms of ovarian hematoma he divided into (1) follicular (graafian follicle and atretic follicle); (2) corpus luteum, and (3) stromal hematomas.

Authors in the past have not seen fit to distinguish carefully between follicular and corpus luteum hemorrhages. Thus Moore, the most recent, has included both kinds in his table, compiling the cases reported in the literature, while he reported a case belonging to Class 2.

Those seen at operation generally belong to Group 1, and it has been more common to see those in Group 2 in

* From the Surgical Service of Mount Sinai Hospital.

1. Novak, Emil: The Corpus Luteum: Its Life Cycle and Its Rôle in Menstrual Disorders, J. A. M. A. **67**: 1285 (Oct. 28) 1916; Hematoma of the Ovary, Including Corpus Luteum Cysts, Bull. Johns Hopkins Hosp. **28**: 349 (Nov.) 1917; Abdominal Hemorrhage of Ovarian Origin, J. A. M. A. **68**: 1160 (April 21) 1917.

the form of ruptured lutein cysts than ruptured corpus luteum, as the case reported below.

Sampson [2] has directed attention to another form of hemorrhage in the ovary which produces a cyst with quite a different clinical picture. These cysts are related to adenomas of endometrial type. When operated on, the content of these cysts is found to be a chocolate colored fluid, the result of old hemorrhage,

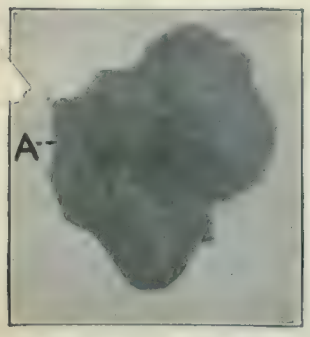


Fig. 1.—Ovary: *A*, point of hemorrhage.

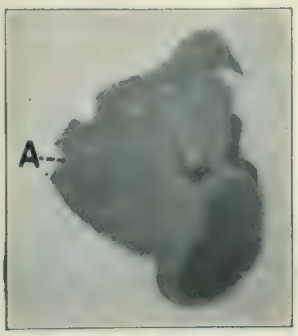


Fig. 2.—Ovary sectioned: *A*, corpus luteum and point of rupture.

although occasionally there is also some recent red blood in them. Sampson speculates as to their origin, saying that "they may have been endometrial cysts at the start; or they may have resulted from . . . a hematoma in a graafian or atretic follicle; or possibly an abnormal corpus luteum developed." Clinically, the cases are of chronic nature.

It is of some interest to speculate as to the cause of these hemorrhages. Meyer and Ruge [3] divided the life history of the corpus luteum into four stages: (1) the stage of hyperemia and proliferation occurring between the eighth and twelfth day after menstruation; (2) vascularization between the fourteenth and sixteenth day; (3) florescence, between the seventeenth and twenty-eighth day; (4) regression for eight days following menstruation. Novak leads us to believe that bleeding may occur during the stage of vascularization (or hyperemia) when the vessels in the theca become large and more numerous and form a line between the granulosa and the theca. From this wreath of vessels spring new capillaries which supply the granulosa cells till they become lutein cells. After this the vessels become less conspicuous, but the thecal vessels remain until well into the period of retrogression. The discharge of the ovum occurs without loss of blood, and the cavity of the follicle immediately thereafter contains no blood. But bleeding usually occurs in the hyperemic stage of the corpus luteum, and undoubtedly from the vessels described above. There is no sharp line of demarcation between a physiologic and a pathologic hemorrhage. The hemorrhage may be excessive and thus form a cyst. It may exceed the strength of the cyst wall and rupture into the substance of the ovary, and thus form a stromal hemorrhage, or it may rupture through the free wall of the cyst and cause a dangerous or even fatal hemoperitoneum; or, as in the case reported here, the corpus luteum vessels rupture directly into the peritoneal cavity without forming any cyst.

2. Sampson, J. A.: Perforating Hemorrhagic Cysts of the Ovary, Arch. Surg. **3**: 245 (Sept.) 1921.

3. Meyer and Ruge: Ueber Corpus Luteum-Bildung und Menstruation in ihrer zeitlichen Zusammengehörigkeit, Zentralbl. f. Gynäk. **27**: 50, 1913.

Smith reported his case before a meeting of gynecologists, and in the discussion that followed it was evident that many surgeons had encountered similar cases but had not reported them. The result is that today the investigator believes it is a rare condition because of the few cases in the literature and the brief mention of it in the gynecologies, whereas follicular or corpus luteum hemorrhage should really be considered not uncommon.

It is with this in mind that I report this case.

REPORT OF CASE

History.—A married woman, aged 30, was admitted to Mount Sinai Hospital, November 14, complaining of severe pain in the abdomen. Her health had always been good. She had had three children and no miscarriages. The menses had been regular every four weeks, the flow being from three to five days, of moderate amount, and always accompanied by pain in the lower abdomen and back and by frequency of urination. The last period began, Nov. 1, 1922, lasted three days, and was normal. November 14, she was awakened at 5:30 a. m. with excruciating pain in the lower left abdomen. She ate some breakfast, and although not feeling well went to work and remained until 3 p. m. During this time she was nauseated, but did not vomit. When she returned home she went to bed. The pain increased. She had been very constipated, and had had a small bowel movement in the morning. She now took a cathartic. The pain became generalized over the whole abdomen. On admission to the hospital, she complained that she could not get her breath if she lay flat, and that she had severe pain in her back.

Examination.—The patient lay in a half sitting position, holding her abdomen, complaining of severe pain there and in her back. She was dyspneic and had a marked pallor. The abdomen was rigid and tender everywhere. No masses could be felt. There was definite shifting dulness in the flanks. The vagina was too tender to allow an examination. The temperature was 100; pulse, 100; respiration, 28. The urine was normal. The leukocytes numbered 10,000. The



Fig. 3.—Corpus luteum, magnified about 5 diameters; the central blood clot, by shrinking, causes infolding of lutein cells; *A*, hemorrhage; *B*, corpus albicans.

rest of the examination was negative. There was no blue discoloration about the umbilicus as described by Cullen in cases of hemoperitoneum.

Operation.—Left salpingo-oophorectomy was performed under nitrous oxid anesthesia. The duration was forty minutes. A right rectus incision was employed. A dark mass in the abdominal cavity was seen through the peritoneum. The peritoneum was opened, followed by a flow of dark blood and clots, amounting to about 1 liter. The patient was put

in the Trendelenburg position. The uterus and adnexa were delivered. The right tube and ovary were normal. Active bleeding was found to come from a rough spot on the left ovary. The left tube and ovary were removed. Closure was performed in the usual manner.

Pathologic Examination.—The fallopian tube was normal throughout. The ovary measured 4 by 3 by 3 cm. (Fig. 1). It was of normal consistency and its surface was free from adhesions and inflammation. At one spot was a small, everted, rough surface 6 mm. in diameter, from which the blood was seen spurting at operation. On section through this spot (Fig. 2) a corpus luteum was bisected. The corpus luteum was regular in outline except at the point of rupture. The rest of the ovary was normal.

Microscopic examination showed a fresh corpus luteum with much extravasation of blood into the space outlined by the decidua-like lutein cells. These were arranged in an

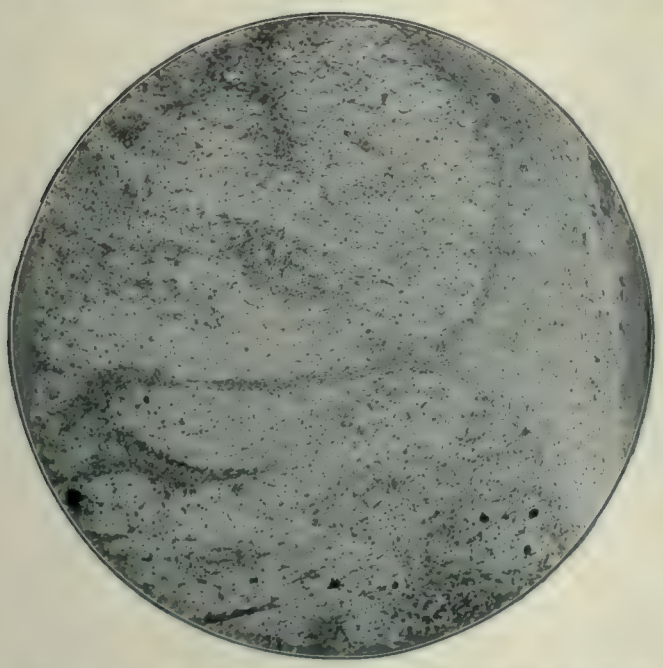


Fig. 4.—Low power: at right, clot undergoing organization; at left, lutein cells with congested capillaries and hemorrhage.

irregular, wavelike band, forming an ellipse, and between them and the hemorrhage, organization of the clot was going on. Among the lutein cells and out into the surrounding stromal cells of the ovary was considerable hemorrhage. The blood could be traced from the center of the corpus luteum to the surface of the ovary. The vessels between the lutein cells and the theca interna were markedly congested. Congested capillaries were numerous. The rest of the ovary was normal, showing no cysts and no inflammation. It will be readily seen from Figure 3 that this corpus luteum is in the second stage as shown by W. Blair Bell.[4] Figure 4, a high power view of a part of the same section, shows well the lutein cells, the vascularity, hemorrhage and beginning organization of the central clot.

Course.—Except for stimulation required on the third day after operation, the patient's convalescence was uneventful. November 17, the hemoglobin was 40 per cent.; erythrocytes, 2,930,000; leukocytes, 11,200. December 2, the hemoglobin was 60 per cent.; erythrocytes, 3,370,000. The wound healed by first intention, and the patient was discharged from the hospital, December 3. When seen, March 2, 1923, she was well; she had had two menstrual periods since the operation.

COMMENT

As in all similar cases reported, the diagnosis was not made preoperatively. On account of the extreme pallor and abdominal signs, a ruptured ectopic pregnancy was first considered. This was rejected because of the menstrual history, although it is well known that these sometimes occur without the patient's missing a period. Therefore, considering the abdominal signs with free fluid, the low fever and low white count and pallor, the diagnosis of fulminating peritonitis with the patient in shock was made.

It is interesting to note that this hemorrhage occurred thirteen days after the last menstruation, or in the stage of hyperemia of the corpus luteum. There is nothing characteristic about this lesion that will allow of differentiation from appendicitis and ruptured ectopic pregnancies. And yet, given such a case of severe shock, pallor and extreme abdominal rigidity and severe pain in the back without having missed a menstruation, a ruptured follicular cyst or corpus luteum must be thought of. Fortunately, the indication is the same: operation without delay.

At the operation it was thought that the hemorrhage was due to a ruptured ovarian pregnancy, and therefore the whole ovary was removed. But had it been recognized, at that time, that the hemorrhage was from a ruptured corpus luteum, it might have been unwise to resect the ovary and to leave part of this apparently healthy ovary, because of the experience of Gordon Taylor, who did a right salpingo-oophorectomy for hemorrhage from a ruptured lutein cyst, and eighteen months later had to remove the left ovary for the same cause. Thus there may be something distinctly pathologic in the structure of such ovaries.

1020 Huron Road.

4. Bell, W. B.: Principles of Gynecology, Ed. 3, 1920, p. 57.

DEPRESSION OF CARDIAC CONDUCTIVITY DURING QUINIDIN THERAPY

SUDDEN ATTACK OF UNCONSCIOUSNESS AND AURICULOVENTRICULAR DISSOCIATION *

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PHILADELPHIA

Serious accidents during the course of treatment with quinidin, such as sudden collapse, unconsciousness and even death, although not common, have occurred often enough to be considered important, especially since the use of quinidin is becoming more widespread. Little is known with respect to the cause of these accidents; most of them have been attributed to such conditions as embolism of the brain, sudden respiratory paralysis, or some profound disturbance in cardiac mechanism.

The disturbances in cardiac mechanism under suspicion are paroxysmal ventricular tachycardia, ventricular fibrillation, failure of stimulus production, and heart block. Of these, paroxysmal ventricular tachycardia has been recorded electrocardiographically by a number of observers, and ventricular fibrillation at least once.[1] The literature thus far affords some suggestive evidence, but, so far as I am aware, no clear proof that either failure in stimulus production or complete heart block has resulted from therapeutic doses of quinidin. The case here reported shows clearly the occurrence of heart block during the administration of quinidin, and also a sudden attack of unconsciousness

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1. Kerr and Bender: Paroxysmal Ventricular Fibrillation with Cardiac Recovery in a Case of Auricular Fibrillation and Complete Heart Block While Under Quinidine Sulphate Therapy, Heart **9**: 269 (Dec. 27) 1922.

which, judging from the clinical phenomena, appeared to be due to difficulty in the assumption of automaticity below the level of the block.

REPORT OF CASE

C. B., a white man, aged 36, was admitted to the Medical Division of the University Hospital, Jan. 10, 1922, in a state of extreme cardiac failure. A history was obtained of three attacks of chorea between the ages of 13 and 15, and ever since that time breathlessness and palpitation on exertion. However, he had lived a normal life, taken part in sports except the most strenuous ones, and worked in an electrical shop, where he sometimes had to life heavy weights. He had continued his work until eighteen days before admission, when he was forced to stop on account of breathlessness, which had begun to trouble him seriously about two months before. In spite of medical treatment, he had continued to grow worse, and for a few days before admission had been almost continuously gasping for breath.

On examination, he was observed to be very restless, extremely orthopneic, and cyanotic. There were present marked cardiac enlargement, definite signs of mitral stenosis and regurgitation, auricular fibrillation with a ventricular rate of approximately 160, and a large pulse deficit. There were numerous moist râles in the lungs, enlargement of the liver, and edema of the legs up to the knees.

The blood count showed a slight leukocytosis of 13,000, but was otherwise normal. The Wassermann reaction was negative. The urine contained a cloud of albumin and a few casts, and the specific gravity was 1.025.

As emergency measures shortly after admission, 180 c.c. of blood was removed by venesection; 0.25 mg. of strophanthin was injected intravenously, and 0.065 gm. of digitan and 0.011 gm. of morphin sulphate hypodermically. Within a few hours he felt comparatively comfortable, although he was still somewhat orthopneic. The medicinal treatment during the next two weeks consisted of digitan, 0.1 gm., three times a day, for ten days, and twice a day for four days. By this time (January 24) the evidences of passive congestion had cleared up, the ventricular rate ranged between 70 and 80, and the pulse deficit was abolished. The patient felt quite comfortable, and was able to walk about the ward without becoming breathless.

It was then decided to attempt the restoration of normal rhythm by quinidin. After two preliminary doses of 0.2 gm. of quinidin sulphate, he received 0.4 gm. twice a day for two days and then three times a day for two days. The treatment was unsuccessful and was discontinued for three days. February 3, quinidin was again given but in the larger dosage of 0.6 gm. three times a day. On the morning of February 5, it was observed that the ventricular rate had slowed to 60, but the action was still quite irregular. In the afternoon, there was a seizure which was observed by the intern in the ward, who thus described it:

"At 5:30 p. m., just before supper, the patient had a sudden attack of unconsciousness lasting about ten minutes. The eyes were fixed and the head thrown from side to side. He then gradually became conscious of his surroundings, at first talking at random, but in about one half to three quarters of an hour, he was himself again. During the attack, the pulse was weak and could not be counted, and the heart was beating very slowly and irregularly. Two hours after the attack, the heart action was regular and slow. Transitory numbness of arms and headache were complained of. There were no paralyses."

The next morning, the ventricular rhythm was still perfectly regular and the patient felt comfortable. It was thought that normal rhythm had been restored until an electrocardiogram was taken, which showed regular ventricular rhythm with a rate of 60, but the auricles were found to be fibrillating. The following day (February 7), the mechanism was the same but the ventricular rate had slowed to 48. February 8, the dominant ventricular rate was 34, but was interrupted by occasional ventricular extrasystoles. The hypodermic injection of 2 mg. of atropin sulphate exerted no appreciable effect on the ventricular action. The slow rate was not accompanied by any subjective symptoms; in fact, the patient stated that he was feeling better every day. February 9, total arrhythmia returned, but the ventricular rate still remained under 35. It gradually increased, and by February 12 ranged between 60 and 70. On that date the patient left the hospital to return to the care of his family physician.

COMMENT

In this case, the interpretation of the electrocardiograms (shown in the accompanying tracing) offer no especial difficulty. The occurrence of regular ventricular action during auricular fibrillation has been regarded as evidencing complete dissociation between auricles and ventricles. The soundness of this view has recently been demonstrated by Lewis,[2] who treated a patient exhibiting such a cardiac mechanism with quinidin. The auricular action was restored to normal, whereupon dissociation between auricles and ventricles was apparent.

Our case presents two points of clinical interest. These are (1) the rôle of quinidin in the production of complete dissociation, and (2) the cause of the sudden attack of unconsciousness.

It has been shown by a number of experimenters that quinidin exerts a depressant action on auriculoventricular conduction. Lewis, Drury, Wedd and Iliescu[3] have demonstrated that it also causes paresis of vagus action; hence its effect in depressing conduction is due to direct effect on the muscle itself. Schott,[4] by giving very large doses to guinea-pigs, was able to bring about extraordinarily high grade incomplete block but not complete dissociation. His failure to produce the latter he attributed to depression of stimulus production by the drug below the level of the block, preventing the assumption of idioventricular rhythm. On the other hand, Boden and Neukirch,[5] under highly artificial experimental conditions, were able to produce ventricular autonomy.

Many clinical workers have noted that immediately after the restoration of normal rhythm by quinidin, auriculoventricular conduction time is slightly prolonged, but within a day or two returns to normal. A clear-cut instance of this delay in conduction was also noted in a case with preexisting delay in conduction reported from this clinic.[6] The patient had auricular fibrillation with a ventricular rate ranging between 60 and 80, while no drugs were being taken. Immediately after the restoration of normal rhythm by quinidin, the P-R interval was 0.32 second, but within a few days dropped to 0.23 second. Numerous tracings made afterward, over a period of many months, exhibited P-R intervals never exceeding 0.26 second.

Two cases have been reported by Hewlett and Sweeney,[7] in which, under combined treatment with digitalis and quinidin, complete dissociation developed. In one of these, attacks of the nature of Stokes-Adams' syndrome are stated to have occurred. These observers are of the opinion that quinidin played a part in the production of the block. De Massary[8] has reported a

2. Lewis, Thomas: Actions of Atropine and Quinidine in Fibrillation of the Auricles, Am. J. M. Sc. **164**: 1 (July) 1922.

3. Lewis, Drury, Wedd and Iliescu: Observations on the Action of Certain Drugs on Fibrillation of the Auricles, Heart **9**: 207 (April 30) 1922.

4. Schott, E.: Zur Frage der Chinidin Therapie., Deutsch. Arch. f. klin. Med. **134**: 208 (Nov. 23) 1920.

5. Boden, E., and Neukirch, P.: Klinische und experimentelle Beobachtungen über die Herzwirkung des Chinidins, Deutsch. Arch. f. klin. Med. **136**: 181 (June 7) 1921.

6. Wolferth, C. C.: Observations on the Treatment of Auricular Fibrillation by Quinidin Sulphate (Figure 4, Case 6), Am. J. M. Sc. **162**: 812 (Dec.) 1921.

7. Hewlett, A. W., and Sweeney, J. P.: Quinidin Treatment of Auricular Fibrillation, J. A. M. A. **77**: 1793 (Dec. 3) 1921.

8. De Massary: Discussion on paper of Lian, C., and Robin, V.: Traitement de l'rythmie complète par le sulfate de quinidin, Bull. et mém. Soc. méd. d. hôp. de Paris **46**: 23 (Jan. 13) 1922.

case in which, under the influence of quinidin, the rhythm changed from a rapid, irregular action to a regular bradycardia. During the latter there were a number of "epileptiform crises," but when it disappeared and rapid arrhythmia recurred, there were no more seizures. In the discussion of this case, it was suggested that the regular bradycardia was the result of complete dissociation, and the so-called epileptiform seizures were, in reality, Stokes-Adams attacks.

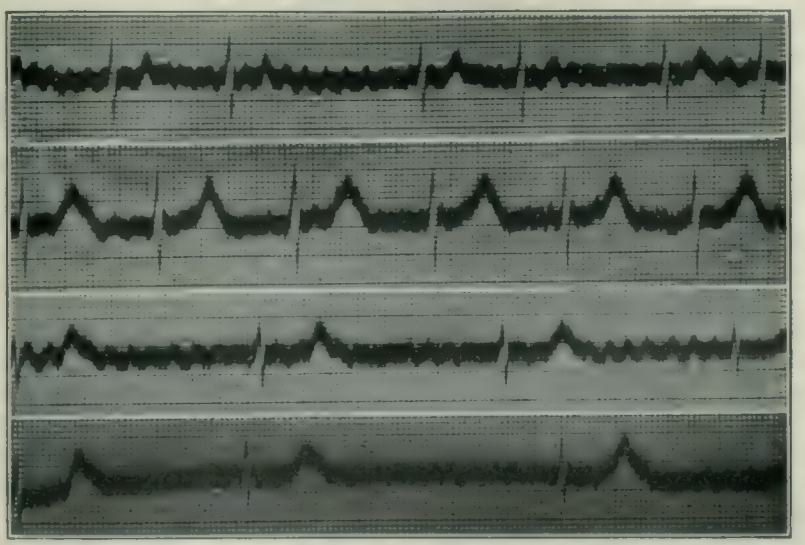
In the oft-quoted case of Haass [9] in which sudden cardiac arrest and syncope occurred, followed by the resumption of cardiac activity with presumably normal mechanism, the suggestion has been made by other writers that heart block may have occurred. The case was reported with insufficient data to permit of a definite conclusion. The clinical manifestations could be satisfactorily accounted for simply by delay in the resumption of function by the pacemaker, following the interruption of fibrillation.

In our case, it is necessary to consider, as possible factors in the production of block, (1) preexisting defect in conduction due to disease in the auriculoventricular bundle, and (2) the effect of the digitalis which had been taken prior to quinidin. The former is rendered unlikely by the fact that, on admission, the ventricular rate during auricular fibrillation was 160, which is pretty good evidence that auriculoventricular conduction must have been little, if at all, impaired. with regard to the effect of digitalis, it is to be noted that the complete dissociation did not occur until twelve days after digitalis had been discontinued. Moreover, during the height of digitalis action, no unusual degree of auriculoventricular block was exhibited, the ventricular rate varying between 60 and 80. On the other hand, the block occurred at a time when approximately the maximum concentration of quinidin in the body must have been reached, 5.4 gm. having been taken within a period of fifty-six hours. The conclusion appears justified that the dissociation was due principally to quinidin, and that while the effect of digitalis as a contributing factor cannot be excluded entirely, its rôle must have been a minor one. It would appear that auriculoventricular conduction in this case was peculiarly vulnerable to quinidin, being affected far out of proportion to what usually occurs.

Another unusual effect of quinidin on the heart muscle was manifested by the marked prolongation of the ventricular complexes of the electrocardiographic curves. At the height of digitalis effect when the ventricular rate was 74, the duration of the ventricular complex in Lead II was 0.36 second; but after the development of complete dissociation with a ventricular rate of 60, the duration of the ventricular complex lengthened out to 0.56 second. This increase is far more than could be accounted for by the comparatively slight change in rate. We have frequently observed moderate prolongation under the influence of quinidin, but never such an extreme degree.

It is of interest that atropin in dosage as high as 2 mg. subcutaneously exhibited no obvious effect on the block. This may be explained on the basis of the demonstration by Lewis and his co-workers that quinidin causes a paresis of the vagus and depresses conduction by acting directly on the muscle of the conducting tissue, a state of affairs that would tend to nullify the effect of atropin.

In regard to the cause of the sudden attack of unconsciousness, there is no adequate explanation except the peculiar action of the heart at that time. The slow, irregular ventricular action might have been due either to high grade incomplete heart block, similar to that obtained by Schott in guinea-pigs, or to difficulty in the assumption of ventricular rhythm after the development of complete dissociation. The differentiation from the clinical point of view is academic, and in either event would depend on depression of stimulus production below the level of the block. In the case of dissociation caused by digitalis, it is well known that the dissociation may develop, and not rarely does so, without causing serious symptoms. The scanty evidence available at present suggests that the assumption of ventricular rhythm under the influence of quinidin is more difficult than in the case of digitalis. If this proves to be correct, it would follow that quinidin heart block is more dangerous than digitalis block.



All tracings are Lead II: top tracing, made Jan. 25, 1922, after treatment with digitalis, but before quinidin; second tracing, February 6, persistence of auricular fibrillation, but complete dissociation with regular ventricular rhythm, rate 60; third tracing, February 8, mechanism same as preceding, but ventricular rate 34; fourth tracing, February 9, first stage of recovery from dissociation.

SUMMARY

In the case of auricular fibrillation reported, auriculoventricular dissociation developed without change in the auricular mechanism following the administration of quinidin. There was no evidence of preexisting defect in conduction. The use of digitalis had been discontinued twelve days before the development of dissociation, but may have been a minor factor in its causation, the major factor undoubtedly being quinidin. It is suggested that the patient's conduction system was peculiarly susceptible to quinidin. There was a sudden transient attack of unconsciousness about the time of the onset of dissociation, accompanied by very slow ventricular action and weak pulse. The evidence indicated that the attack was caused by difficulty in stimulus production below the level of the block.

1704 Pine Street.

9. Haass: Ueber die Chinidin Therapie der unregelmässigen Herztätigkeit, Berl. klin. Wchnschr. **58**: 540 (May 23) 1921.

A CLINICAL AND ROENTGEN-RAY STUDY OF TUBERCULOUS BRONCHO-ADENOPATHY *

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AND
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With the realization that tuberculosis commonly has its inception during the earlier years of life, physicians, so long concerned chiefly with the diagnosis and treatment of tuberculosis in adults, are now focusing their attention to a greater degree on the manifestations of this disease in childhood, and particularly on that form known as tuberculous tracheobronchial adenopathy. During the last few years, studies looking toward an earlier diagnosis of childhood tuberculosis have resulted in the accumulation of such a mass of data that we have thought it wise to attempt an evaluation of the various signs, symptoms and tests which have a bearing on the diagnosis of this condition.

The data which relate to the diagnosis of childhood tuberculosis comprise: (1) a history of exposure to infection; (2) the Pirquet skin test; (3) symptoms; (4) physical signs, and (5) roentgen-ray findings.

EXPOSURE TO INFECTION

Although it may appear heretical to say so, we feel that the importance of a history of exposure has been overestimated; for a definite history of exposure does not give us as much information as does a positive Pirquet test, which indicates infection with the tubercle bacillus but not necessarily tuberculosis in a clinical sense. In the presence of symptoms, however, and with the absence of other infections which might account for such symptoms, the knowledge of exposure and of possible infection with the tubercle bacillus constitutes one link in the diagnostic chain; but it must

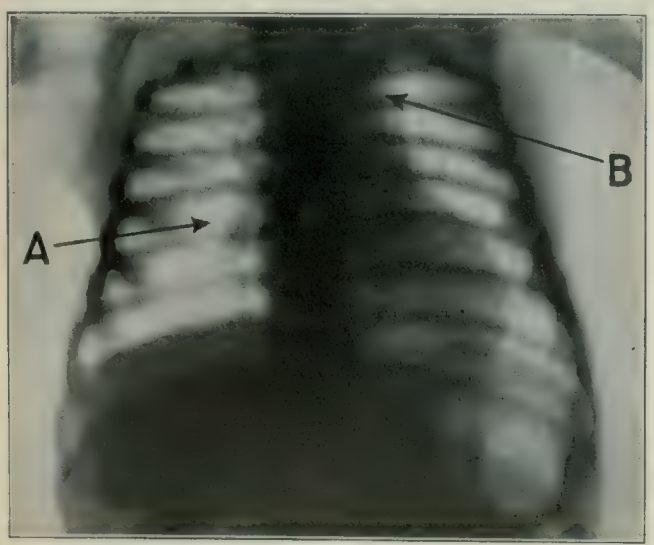


Fig. 1.—Lungs of child, nine days after birth: *A*, small hilum shadow; *B*, thymus.

be remembered that a negative history of exposure does not by any means exclude the possibility of tuberculous infection. It seems that a history of exposure might be of more value if recent; unfortunately, however, it is but seldom that one can ascertain at what period of life exposure resulted in infection. In this respect, the report of Hess (1912) is unique. A group of eight orphan asylum children between 2 and 3 years of age, giving a negative Pirquet test when admitted to the institution, were attended for six weeks by a woman

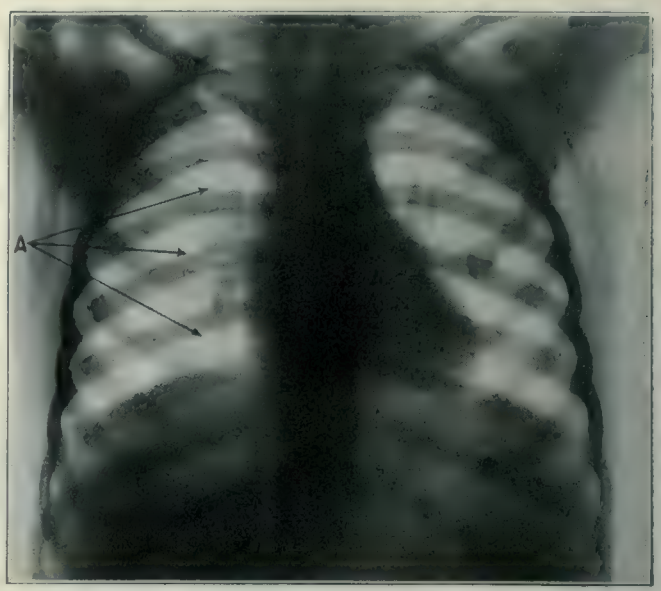


Fig. 2.—Normal chest: *A*, hilum.

who was found to have tuberculosis. In the course of a few months' time, all of these children gave a positive reaction to the test; other sources of infection having been excluded, it was possible in this instance to fix both the source and, approximately, the date of infection.

PIRQUET REACTION

A positive reaction to the skin test indicates infection with the tubercle bacillus, but, as just stated, does not necessarily point to this infection as the cause of symptoms. With increasing age, the proportion of children giving a positive reaction likewise increases; according to Veeder and Johnston, whose figures are somewhat lower than those of most observers, 1.5 per cent. give a positive reaction during the first year of life, 5 per cent. during the second year, and 20 per cent. between the ages of 2 and 4, with a gradual rise to 40 per cent. in the years between 12 and 14. A positive reaction assumes greater importance as a disease indicator, the more recently the infection has been acquired, and therefore, in a general way, is of more significance, the younger the child. A negative reaction implies—with the well-known limitations of the test—absence of infection; the test is, therefore, of the greatest value in excluding tuberculosis, and should be employed in every case.

SYMPTOMS

The symptoms of bronchial node tuberculosis are less characteristic than those of adult pulmonary tuberculosis; cough is less common, hemoptysis is rare, while fever and rapid pulse are associated with so many of the ailments of childhood that too much stress should not be laid on them. Of far greater importance are a loss of weight (or a failure to gain weight over a period of several months), and a ready fatigability, especially when both of these symptoms are present. Strongly suggestive, but in no sense diagnostic of tuberculous adenopathy, they should always lead to a

* Read before the staff of U. S. P. H. S. Hospital 60, Oteen, N. C., Feb. 15, 1923.

thorough study of the case for confirmatory evidence of tuberculosis.

PHYSICAL SIGNS

Much has been written of the physical signs of tracheobronchial adenopathy, and much will have to be rewritten; for until we have established a norm for the signs in a child's chest—or, rather, until we have learned to recognize what constitutes the range of normal variability, it is very hazardous to label this or that sign abnormal and indicative of disease. This applies to the attempt to elicit parasternal or interscapular dulness, as well as to ascribe a pathologic import to slight differences in the character of the breathing. The value of the hilum dimple, of Eustace-Smith's, and of d'Espine's signs is, at best, questionable.

ROENTGEN-RAY FINDINGS

The lack of more definite physical signs has led us to look to the roentgen ray for tangible evidence of adenopathy; and, while the roentgen ray often yields

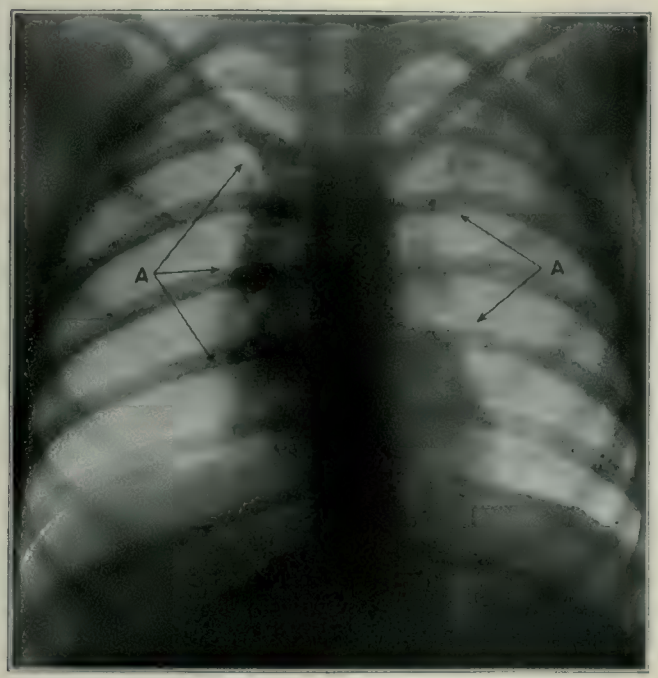


Fig. 3.—*A, A,* tuberculous adenopathy without calcification.

valuable information and should be employed whenever tuberculosis is suspected, we feel that a note of warning should be sounded against relying on this to the exclusion of other methods of examination. In the roentgen-ray consideration of children's lungs, we need, first of all, to establish a norm; but as what is normal at birth is very different from what is seen in the lungs of a healthy child at puberty, it is plain that we are dealing with variables. As a result of the study of children's lungs which we have undertaken during the past year, through the courtesy of Dr. O. L. Miller of the North Carolina Children's Hospital, Gastonia, N. C., we have formed the following impressions:

1. The chest should be symmetrical, the trachea in the midline, bifurcating in front of the body of the fourth dorsal vertebra or a little lower. The domes of the diaphragm are smooth; the right diaphragm is in front of the eighth interspace, and the left slightly lower. The mediastinal shadow shows the heart to be more nearly transverse than in the adult, and in the very young (Fig. 1) the thymus shadow is sometimes recognized about the aortic arch when no symptoms of enlarged thymus exist. The hilum, or root, shadow is located in the inner zone, and extends upward to about the fifth rib posteriorly, and downward till it crosses four ribs and intervening rib spaces (Fig. 2); its width and density vary widely in health. The lung fields

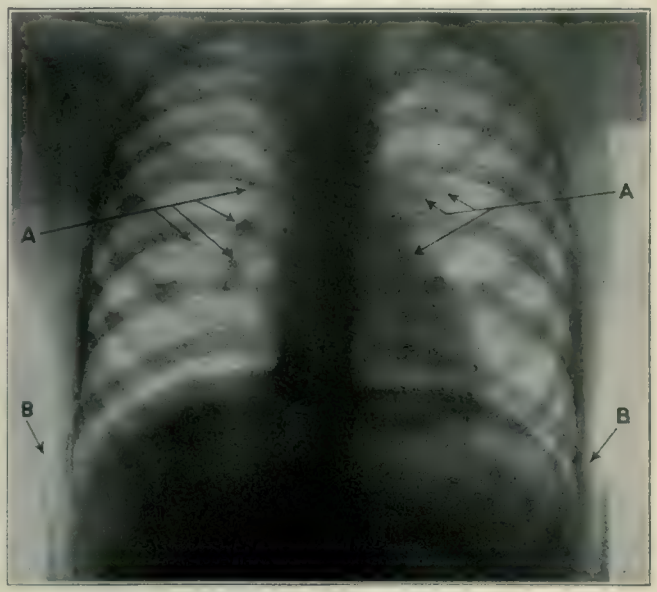


Fig. 4.—Tuberculous adenopathy: *A, A,* small, calcified nodes; *B, B,* plaster-of-Paris cast for tuberculous hip.

show no markings in the outer zone, and, in the very young, none in the middle zone.

2. At birth, lung markings, i. e., trunk shadows, are absent, and the hilum shadow is small.

3. As the child gets older, dust inhalations and infections make for more distinct shadows. The hilum shadow is produced by lymph nodes, thick-walled

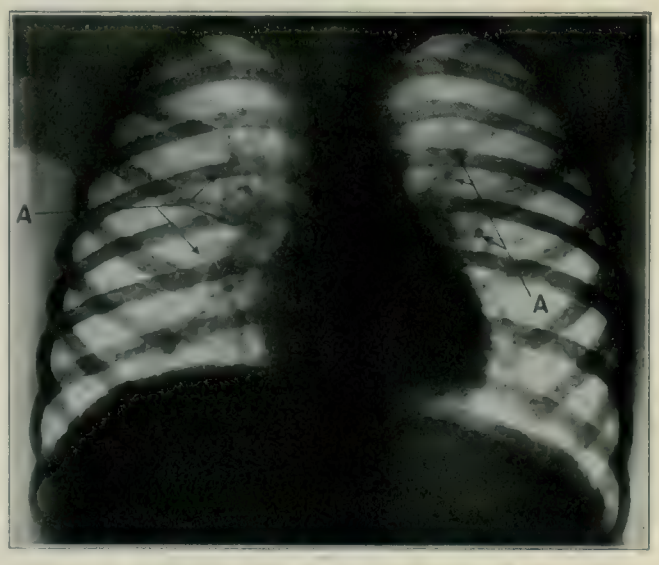


Fig. 5.—Nontuberculous adenopathy: *A, A,* calcified nodes.

bronchial tubes, blood-filled vessels and connective tissue binding them together, and it is to be noted that these shadows increase in density and area, whether a history of infections is obtainable or not.

4. Lymphadenopathy becomes apparent after the common diseases of childhood, especially those which involve the respiratory tract, such as whooping-cough

and measles, but it must be remembered that the lymphoid tissues in children are peculiarly prone to react to other infections, notably chronic appendicitis, and diseased teeth and tonsils. At this point let us urge against the tendency to read tuberculosis into films showing large hilum shadows unless these other causes can be excluded.

5. There is a group presenting, as its salient feature, marked hypertrophy of the tracheobronchial lymph nodes (Fig. 3), and another group in which the same hypertrophy is associated with calcification of the nodes (Fig. 4). All of the first group gave a positive Pirquet reaction and had known tuberculous foci elsewhere in the body. Those with calcified nodes occurred in cases in which tuberculous bone lesions were present, with the exception of one case of osteomyelitis which gave a negative Pirquet reaction (Fig. 5). If the roentgenogram had been relied on exclusively, some faulty deductions might have been made, for all of these children were in good health so far as their chests were concerned.

We have been struck with the fact that all cases in which bone lesions existed showed marked calcification of hilar lymph nodes, and we submit the question: Does calcification of these nodes necessarily indicate the presence of tuberculous processes?

THE VAGINAL PESSARY

ITS INDICATIONS AND LIMITATIONS *

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BALTIMORE

Gynecology has become so predominantly a surgical specialty that one rather hesitates to undertake even a very much qualified defense of such a nonsurgical implement as the pessary. The present-day indifference to this once popular instrument emphasizes the ephemeral nature of most of the fads which, epidemic-like, sweep over the profession at intervals. The abandonment of the pessary treatment of certain uterine displacements is a natural result of the remarkable development of gynecologic operative procedures. It is probably true, however, that the pendulum has swung too far, and that the present day gynecologic surgeon, in view of the pessary's conceded shortcomings, has shut his eyes to the fact that this instrument fills a real need in a certain selected group of cases. The young gynecologist of today frequently has no conception of what the pessary is meant to do, and he is apt to be even irritated at the suggestion that such an implement should be accorded at least a modest position in his armamentarium.

The history of the vaginal pessary is a most interesting one, establishing points of contact with many of the earlier giants of gynecologic history, for there were few of these who did not write on this subject. Many of them devised new types and modifications of pessaries. I shall not attempt a review of these various developments in a paper which I wish to be primarily "practical."

INDICATIONS

The two most important indications for the use of the vaginal pessary are prolapse and retrodisplacement of the uterus, in certain cases only and under certain conditions only. There are few gynecologists now who use pessaries for the treatment of anteversion of the uterus, although some still employ the Gehrung pessary in the treatment of cystocele and anterior vaginal prolapse. This plan of treatment has never attained a great vogue, although it would seem to be the best form of palliative treatment in cases in which operation is out of the question.

Of the retrodisplacements amenable to pessary treatment, it may be said that retroversions offer a far more hopeful field than the backward flexions. With the latter the fundus is apt to be large and heavy, so that it falls backward over the posterior arm of the pessary. It is obvious that there can be very little leverage exerted on such a top-heavy uterus by the pessary, although it is conceivable that the latter, by taking in vaginal slack, may cause a certain amount of elevation.

Prolapse and retrodisplacement of the uterus often go hand in hand. It is comparatively uncommon to see extreme degrees of either one of these malpositions without some degree of the other. With regard to prolapse, it may be said that, in general, the results of modern operative methods are so excellent and their dangers so slight that, in the absence of some definite contraindication, surgery is the treatment of choice, especially since the symptoms of the patient are usually sufficiently distressing to call for some form of relief. With regard to both retroversion and retroflexion, the profession is becoming more and more conservative. The mere demonstration of such a malposition should not be considered, per se, an indication for operation, as was the practice at one time with many gynecologists. Frequently, such displacements are associated with no symptoms whatsoever. On the other hand, there may be troublesome symptoms definitely traceable to the malposition of the uterus. This has been well brought out in the recent excellent study of Lynch.[1]

Puerperal Retrodisplacements.—These furnish one of the most frequent and most important indications for the employment of the pessary. The routine performance of postpartum examination of the pelvic organs is instructive in many ways, but in none more than in the light it throws on the incidence of postpartum displacements. This has been abundantly shown in a statistical way by Lynch and other investigators. Lynch, for example, found posterior displacements at some time during the first year following confinement in 41.1 per cent. of the 1,230 cases studied from this standpoint. Every woman should be examined within about four weeks after confinement. If, as often happens, retrodisplacement is found, the uterus should be restored to normal position and a pessary inserted.

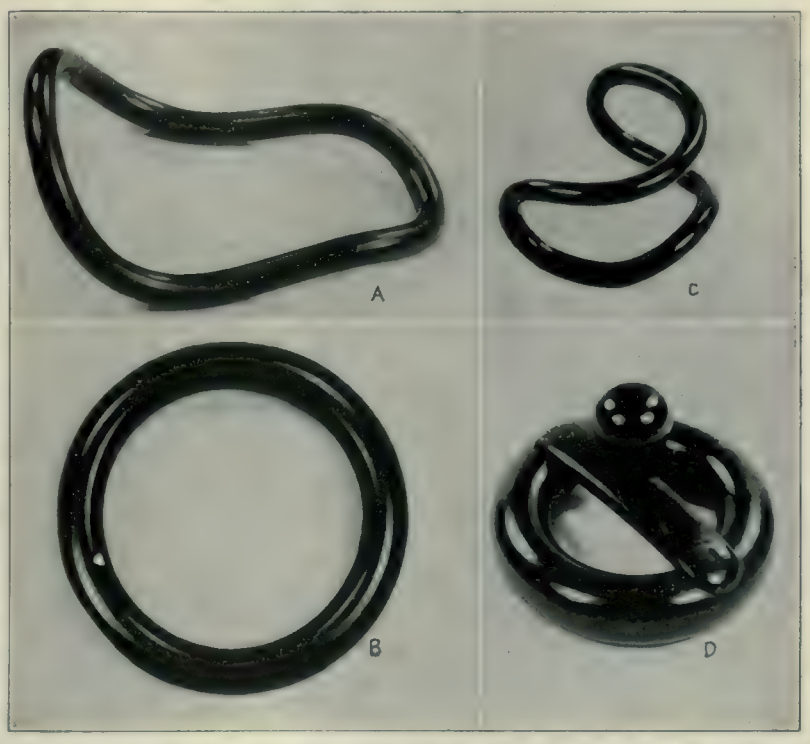
In a very large proportion of the cases, the wearing of the pessary for a short time, usually only a few weeks, is all that is necessary, and there is no tendency to a recurrence of the retrodisplacement. It is true, of course, that the mere bimanual replacement of the uterus, even without the pessary, may suffice in certain cases, but not in all. The importance of this indication is difficult to overestimate, and the failure to make careful postpartum examinations is therefore a very culpable omission. Many a woman can thus be spared later troublesome symptoms and surgical correction of the displacement. I have time and again been impressed with the success and the permanence of thus

* From the Gynecological Department of Johns Hopkins Medical School.

1. Lynch, F. W.: Retroversion of the Uterus Following Delivery, Am. J. Obst. & Gynec. 4: 362-371 (Oct.) 1922.

early correcting these displacements, and have felt that this one indication alone should be sufficient incentive for every gynecologist and obstetrician to familiarize himself with the general subject of pessary treatment.

Retrodisplacement or Prolapse with Pregnancy.—This, to my mind, is also a most important indication for the use of the pessary. It is a well-known fact that neither retrodisplacement nor prolapse, even of the most exaggerated type, makes pregnancy impossible. I have seen a number of cases in which pregnancy occurred, even though the cervix protruded beyond the outlet. In one of these patients, the wife of a physician, arrangements had been made for the operative relief of the prolapse, when the occurrence of amenorrhea led me to defer the operation. A ring pessary was fitted and was worn for the first few months of pregancy, after which the uterus lifted itself well into the abdomen. Toward the end of pregnancy, at about the eighth month, the weight of the uterus again forced the cervix down, so that, when the patient was standing, it hung between the limbs. This resulted in enormous edema and congestion of the prolapsed cervix and vaginal walls, and the friction against the thighs caused erosion and bleeding from the cervix. It would have been useless to attempt pessary treatment at this stage, as the weight of the uterus and its contents would have made retention of the pessary impossible. The patient was instructed to spend as much time lying down as possible. When the cervix was much prolapsed and edematous, the foot of the bed was elevated, and soft, warm boric acid compresses were applied locally. In this way the patient was tided over to term. Within the last few weeks I have seen an almost identical case, with Dr. Jennie N. Browne of this city. Theoretically, there is much greater risk of sepsis in such cases than in the normal woman, but all the patients that I have observed with this association of conditions passed through their labors quite uneventfully. In these cases, labor consists of practically only the first and third stages, the second stage being virtually skipped.



Types of pessary: *A*, the Albert Smith pessary, especially valuable in the treatment of retrodisplacements; the Hodge instrument is a modification of this, having a concave posterior arm and a somewhat broader anterior arm; *B*, the ordinary ring pessary of hard rubber, employed especially in cases of prolapse; *C*, the Gehrung pessary for the treatment of cystocele; *D*, the Menge pessary; into the crossbar is screwed a conical stem or rudder, which fits into the vagina and keeps the pessary from turning on edge.

Far more frequent is the association of pregnancy and retrodisplacement. The latter commonly, though not invariably, antedates the pregnancy. If the retrodisplacement is of the type of retroversion, and if it is not extreme, simple manual reposition may be possible and may be all that is necessary. For that matter, in many of these cases, the gradual increase in the size of the pregnant uterus will lift it above the pelvic brim and thus permit of a normal continuance of the pregnancy. If, on the other hand, the displacement is more pronounced, and especially if there is a flexion, there is much danger of incarceration of the fundus in the hollow of the sacrum, with probable abortion. In cases of this type the bimanual replacement of the uterus, whenever possible, followed by the insertion of a properly fitted Hodge-Smith pessary, is often of the greatest service. Almost always the pessary can be removed at the end of three or three and a half months, by which time the uterus has lifted itself above the promontory.

Prolapse in Old Women.—It is, of course, difficult to fix any arbitrary upper age limit to the performance of operations for the correction of uterine prolapse. There are women of 70 or even more who are vigorous, well preserved and active, and in whom operation is justifiable for the relief of the distressing symptoms of complete prolapse of the uterus, especially when combined with large cystocele. The indication is particularly strong when there is extensive ulceration of the everted and thickened mucosa covering the cervix or vagina, so that the danger of malignancy becomes a real one.

On the other hand, there are patients, considerably younger, in whom the operation would seem to present more danger than is justified by the symptoms complained of by the patient. In the case of an old woman who has had complete prolapse for many years, it is often good judgment to let her finish out her life without operation. It is in such cases as this that a pessary serves a valuable palliative purpose. The type best suited for complete prolapse is unquestionably some form of ring pessary, made of hard rubber. A rather large ring is usually necessary, although the size must, of course, be adapted to the individual case. The pessary distends the redundant vaginal vault, taking in all slack, and forming a hammock in which the cervix hangs, at a much higher level than without the pessary. Soft rubber pessaries are often used for this indication in the belief that they cause less irritation than the hard rubber variety. Their employment, however, should be strongly condemned. They become foul very quickly, causing a troublesome and offensive discharge, and entailing greater risk of ulceration than the hard rubber

variety. A small pessary is of no use in a case of marked prolapse, and such a pessary is often lost by the patient.

It goes without saying that the results are much better when the perineal laceration or relaxation is of moderate extent than in those cases in which the entire perineal floor is gone. In extreme cases of the latter type, with large cystocele and rectocele, it is almost impossible for the patient to retain any form of vaginal pessary. In fitting the implement, a size should be selected which is sufficiently large to cause some difficulty and perhaps slight pain in passing it through the outlet. Once the latter is passed, there is abundant room in the greatly distended vaginal canal. The time-honored caution, that the pessary be loose enough to permit the index finger to sweep around between the pessary and the vaginal wall, is a wise one. This is especially true in the case of old women, in whom the mucosa is thin and pasty, so that the slightest undue pressure causes ulceration. For this reason it is doubly important to advise frequent examinations, so that the gynecologist can assure himself that there is no ulceration and that the pessary is not burying itself in the tissues. Cleansing douches are also of importance in these cases.

Prolapse or Retrodisplacement in Patients with Serious Systemic Disease.—From time to time, one encounters cases of prolapse or retrodisplacement which are causing troublesome symptoms, but in which operation is contraindicated by some serious general condition, such as chronic valvular disease of the heart, pulmonary tuberculosis, or advanced renal disease. The contraindication here, of course, applies primarily to the anesthetic, and only secondarily to the operation itself. It may be urged that the difficulty of the anesthetic may be obviated by resorting to local or spinal anesthesia. On the other hand, I feel that when the condition of the heart, lungs or kidneys is sufficiently grave to contraindicate general anesthesia, the operation is rarely justified, and it is better to treat the patient palliatively with a pessary.

As a Temporary Measure When Operation is Deferred for Social or Economic Reasons.—There are many cases in which, on purely physical grounds, operation is indicated clearly enough, but in which the patient simply cannot or will not submit to radical measures. For example, a woman with even a complete prolapse will often defer its correction if she is burdened with the care of a newly born infant. This is especially true when the symptoms are not very troublesome. In other cases, financial considerations may cause postponement of the operation, in still others domestic factors, and so on. When operation is thus postponed, it is usually wise, as a temporary measure, to advise the wearing of a properly fitted pessary until the necessary operative procedure can be carried out. In this way a woman can often be given a fair amount of comfort, and the extent of the later operation perhaps somewhat minimized.

As a Test to Determine the Pathologic Importance of Retrodisplacements.—The mere fact that a retrodisplacement is found in a patient who complains of pelvic symptoms of one sort or another does not justify one in linking these together as cause and effect, especially if the displacement is of the simple, uncomplicated variety so often found in women without symptoms. The pessary is often an aid in determining the rôle of the uterine displacement in the production of the symptoms. If the latter are relieved by restoring the uterus to its normal position and retaining it by means of the pessary, the assumption would seem justified that the malposition of the uterus is the cause of the symptoms, and the advisability of its operative correction would therefore arise for consideration.

CONTRAINDICATIONS

There are three chief contraindications to the employment of pessaries in the treatment of retrodisplacements: (1) the inability to replace the uterus to at least approximately its normal position before inserting the pessary; (2) the existence of a marked degree of perineal relaxation, and (3) the existence of chronic pelvic inflammatory disease.

1. In connection with the first of these, it should be remembered that the function of the pessary is not to force a displaced uterus into position, but to retain in position a uterus which has been replaced by some other means. This is a fact which many gynecologists fail to recognize, and I have repeatedly seen pessaries inserted without the slightest preliminary effort at replacing the uterus. The results under such circumstances are reasonably sure to be unsatisfactory, as will be emphasized below.

2. The importance of the factor of perineal relaxation is obvious when one studies the mode of action of the pessary. The instrument takes its foothold, so to speak, from the perineal muscles, on which its elevating action, in a large measure, depends. If this muscular floor is lacking, it is evident that there will be very little lifting power to the pessary. Furthermore, in cases of marked relaxation, especially with cystocele or rectocele, there is always the difficulty, perhaps impossibility, of retaining the pessary at all.

3. Retrodisplacement associated with fixation of the uterus is an absolute contraindication to the use of pessaries. A uterus so fixed cannot, of course, be replaced by bimanual examination, and it is not only useless, but distinctly harmful, to insert a pessary under such conditions. Furthermore, the discomfort and pain produced would almost surely prevent the wearing of the pessary. The treatment of retrodisplacements complicated by pelvic inflammatory disease should be along surgical lines.

REPLACEMENT OF THE UTERUS

One of the most important of all rules in connection with the use of pessaries is that, before the insertion of a pessary, the uterus should first be restored to an approximately normal position. In other words, as I have already emphasized, the purpose of the pessary is not to force a displaced uterus into its proper position, but merely to keep the organ in place, once it has been restored by some other means. Many physicians, and not a few gynecologists, do not realize the importance of this fact, ignorance of which, in my experience, is the reason for many of the unsatisfactory results reported from the use of pessaries. Almost always the uterus, when not adherent, can be restored by simple bimanual manipulation. The fundus is gently pushed upward by pressure with the finger in the posterior fornix, and then the finger is passed to the front of the cervix, pushing the latter backward. The fundus can thus ordinarily be swung upward and toward the front. The replacement is completed by engaging the external hand behind the fundus through the abdominal wall, while the backward pressure of the internal hand on the cervix is maintained.

Occasionally it is necessary to place the patient in the knee-chest posture. This procedure is of great value, for it allows the uterus to fall forward by its own weight into its normal position. If necessary, this forward movement may be facilitated by gentle pressure on the fundus from behind. The deepening of the vagina which a good knee-chest posture entails may make it impossible to use the finger for this purpose, in which case good use may be made of a sponge on long vaginal dressing forceps or a sponge holder. Some authors recommend traction on the cervix by tenaculum forceps, combined with upward and forward pressure on the fundus through either the vagina or the rectum. My experience has been that this maneuver is rarely necessary with nonadherent uteri, and that it might be risky in those which are adherent. In the older days the uterine repositor—a long, jointed finger-like instrument which was introduced into the uterine cavity for the purpose of elevating the organ—was quite generally employed. The dangers of this implement are obvious, and it has been very properly abandoned. The same statement applies to the employment of the uterine sound to force the uterus into anterior position.

TYPES OF PESSARY FOR ORDINARY USE

The hard rubber pessary is infinitely preferable to the soft rubber variety, which still has a rather wide vogue. The latter soon becomes foul, and often causes profuse leukorrhea. Although the number of pessaries which have been devised is legion, I believe that two or three varieties will fulfil practically all the really logical indications for pessary treatment. The two types which I find sufficient for practically all needs are the ring pessary and the Hodge-Smith pessaries. The familiar Hodge pessary, a modification of the Albert Smith type, is especially useful in the treatment of retrodisplacements, within the limitations which have been discussed above. The ring pessary is, generally speaking, the type to be preferred in the management of prolapsus of the uterus. Occasionally, when the outlet is large and when the simple ring pessary tends to stand on edge, as it were, the Menge modification is of distinct value, for it possesses a stem attachment which holds the pessary more or less at right angles to the long angle of the vagina.

THE FITTING AND INSERTION OF THE PESSARY

The cardinal point in connection with the fitting and insertion of the pessary is that the pessary be adapted to the needs of the individual case. Merely to insert a "store" pessary in a case of retrodisplacement is just as logical as to inflict on one a hat selected at random, and without regard to the size and shape of one's head. The pessary should fit snugly, but not tightly. The time-honored rule that it be possible to pass the index finger easily between the pessary and the vaginal wall is a safe one to follow. The length should be such that the lower pole is just concealed within the outlet. This can be easily measured by means of the index finger, the tip of which is passed up into the vaginal vault. The width is also easy to estimate, exact measurement ordinarily not being necessary. The length of the shorter posterior, as compared to the longer anterior arm of the pessary is dependent on the depth of the posterior fornix and the amount of elevation of the uterus which is desired. The distal tip of the instrument should be given a slight bend away from the urethra in order to avoid any discomfort which might result from pressure on the latter. The shaping of the pessary is readily accomplished by first boiling it, thus making it soft and easily flexible. It is then quickly molded into the shape desired, after which it is made to "set" by immersion for a moment or two in cold water. This method I find much more satisfactory than that employed by some gynecologists of softening the pessary by passing it through a Bunsen flame, after first thoroughly greasing it.

The insertion of the pessary is simple enough. The perineum is drawn back by one or two fingers of the left hand, acting as a speculum or retractor. The pessary, held at its narrow anterior end, is then introduced obliquely into the vagina, and pushed up as far as possible toward the vault. When the finger of the left hand is passed up into the vagina, the posterior rim will almost always be found to lie just in front of the cervix, instead of just behind it, as it should. The finger is therefore used to press it behind the cervix and to drive it home into the posterior vaginal fornix, where it belongs. In other words, the cervix lies within the lumen of the pessary. The finger is then swept about the latter to make sure that it is not making undue pressure. Care should be taken also that the lower end of the pessary does not protrude beyond the introitus. It is often a good plan to confirm the fit of the pessary by having the patient stand while the finger is kept within the vagina.

THE MECHANISM OF THE PESSARY

It is safe to say that comparatively few practitioners are familiar with the mode of action of the vaginal pessary. Many have only a vague idea that in some mysterious way it pushes a displaced uterus upward. As a matter of fact, it is just this which the pessary is not meant to do, as has already been emphasized. Its function is to keep the fundus in forward position, once it has been mechanically replaced. How is this effect accomplished? Not by direct pressure on the fundus, but rather by pulling back the cervix toward the hollow of the sacrum. This action, in turn, is produced by the posterior short arm of the pessary, which fits snugly into the posterior fornix, and tends to deepen it, much as it would be deepened by one's pushing the index finger into it as deeply as possible. By this pushing of the fornix wall upward and backward, the cervix is indirectly drawn in the same direction, and the fundus is thrown correspondingly toward the front. Combined with this action there is, of course, a certain amount of distention of the vagina, so that "slack" is taken in and a certain amount of elevation is thus secured.

In the case of the ring pessary, the latter factor is much more important than the leverage action described above. It is for this reason that, in the treatment of marked prolapse, the effort is made to take in as much slack as possible by using comparatively large ring pessaries, which thus produce a hammock-like support of the uterus. Such a pessary derives much of its support from the pubic rami, which also aid very materially in retaining it within the vagina.

PRECAUTIONS AND DANGERS DURING WEARING OF PESSARY

During the wearing of the pessary, the woman is instructed to use douches once or twice daily, depending on the amount of discharge. For this purpose, boric acid or borax is perhaps as satisfactory as any

other substance, although weak mercuric chlorid solution, permanganate, compound solution of cresol or other drugs may also be used. An examination should be made within a few days of the insertion of the pessary, to make sure that the uterus is being satisfactorily retained. After this the pessary may be allowed to remain for periods of about six weeks. At these intervals the pessary is removed, cleansed and reinserted. I am also in the habit of advising these pessary patients to assume the knee-chest position once or twice daily, if only for a few minutes at a time. This posture allows the uterus to swing forward into good anterior position, thus permitting the pessary to secure a fresh grip, as it were. This simple measure accomplishes practically as much as would a visit to the gynecologist, restoring the uterus as satisfactorily in most cases as would bimanual manipulation.

In the event of there being evidence of vaginal irritation or ulceration, which is usually manifested by a blood-tinged discharge, the pessary should be kept out for periods of from a few days to perhaps two weeks or so. Vaginal ulceration is almost never seen with a properly fitting Hodge-Smith pessary in cases of retrodisplacement, but it is not rare in old women in whom a rather large ring pessary has been employed for the retention of a marked prolapse of the uterus. With proper supervision of this sort I have never seen any disagreeable after-results from the use of pessaries.

It is well known that numerous accidents have been reported following the improper use of pessaries. I have myself had occasion several times to cut out from the vaginal wall pessaries, introduced by others, which have literally eaten out a groove for themselves, and have thus become almost completely buried. Pessaries have thus been allowed to remain for incredible periods of time without being removed, in one instance, as long as forty years.[2] Indeed, Piwniczka[3] has described an instrument which he calls a pessariotome, resembling a bone forceps, and which is designed to remove incarcerated pessaries. Instances are reported also in which the pessary has ulcerated through into the abdomen, and has later been recovered by laparotomy.

All these cases, however, are merely illustrations of gross neglect on the part of either patient or physician, and are not to be construed as evidence against the value and safety of pessaries when properly fitted and properly supervised. The cases in which pessaries should be employed are usually those in which operation would be attended with considerable danger. This gives great force to the statement of Bantock,[4] who, writing in 1905, said, "I am not aware that there is on record a single case in which a woman has lost her life through the use, or even the abuse, of a vaginal pessary."

26 East Preston Street.

2. "Veritas": Pessary Retained for Forty Years, Boston M. & S. J. **140**: 175, 1899.
3. Piwniczka, H.: Ein Instrument zur Entfernung inkarzerierter Pessarien, Centralbl. f. Gynäk. **27**: 1302-1304, 1903.
4. Bantock, G. G.: In Defense of the Pessary, J. Obst. & Gynec. Brit. Emp. **7**: 17-29, 1905.

Location of Detention Hospitals.—A board of health cannot establish and maintain a detention hospital for the treatment of communicable diseases in a thickly settled residential district. This is the decision in a case decided by the supreme court of Michigan. Suit was brought to restrain the maintenance of a detention hospital in a residential district by the board of health of the city of Lansing.—*Pub. Health Rep.* **34**:1791 (Aug. 8) 1919.

THE MECHANISM OF NATURAL AND ACQUIRED STREPTOCOCCUS IMMUNITY

PRELIMINARY NOTE *

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In two recent communications,[1] one of us (F. P. G.) gave evidence for the belief that infections with a given strain of hemolytic streptococcus in different areas of the body may be more efficiently prevented by previous immunization of that particular area rather than other parts of the body. Evidence in favor of this local form of immunity continues to accumulate and will later be presented in detail. Incidental to this line of investigation, a very convincing demonstration of the constant association of "tissue macrophages" or clasmatocytes (Ranvier) with protection of a given area against the streptococcus whether natural or acquired has been obtained.

Metchnikoff originally described his "macrophages," or large mononuclear phagocytes of the blood and tissues, in connection with experimental streptococcus erysipelas in the rabbit, but the ultimate conclusion to be drawn from his lifelong and marvelously documented cellular theory of immunity is that the preponderating rôle in disposing of acute bacterial infectious agents is taken by the polymorphonuclear leukocytes. The mononuclear macrophages have seemed occupied largely in the disposal of animal cells, dead polymorphonuclears and protozoa, and, in addition, of the bacteria of certain chronic infections, such as tuberculosis. As we have recently pointed out, however, observations since the original work of Metchnikoff continue to associate macrophages with streptococcus infections and local tissue resistance to the streptococcus. (MacCallum, Cecil, Hopkins and Parker, Levaditi.)

The exact nature of the cells involved in a purposeful response to streptococcus invasion has been confused by their designation as "endothelial," particularly in infections which have involved the serous cavities. Several authors, particularly Durham, Wallgren, Noetzel, Buxton and Torrey, and Kanai, have indicated that recovery from experimental streptococcus peritonitis is due, at least in part, to "endothelial" phagocytosis. Histologists are now throwing great light on the "cell stems" of embryonic and adult tissue by means of vital stains (Sabin). The clasmatocytes of Ranvier in particular have been differentiated from fibroblasts (Evans and Scott), and from the serosal cells lining the peritoneal cavity (Cunningham) by the acid azo dyes and by neutral red. The clasmatocytes possess a vacuolar "segregation apparatus" which enables them to retain these dyes in a characteristic manner. In addition, they have been shown to be the most resistant of body cells (Lewis and McCoy), and are endowed with more marked phagocytic properties than is endothelium.

As Cunningham and we have shown, the only cells present in normal peritoneal and pleural fluids are "clasmatocytes," derived in all probability from subjacent

* This work was begun in the University of California and continued at the Hygienic Laboratory, U. S. Public Health Service, Washington, D. C., through the courtesy of the Surgeon General.

1. Gay, F. P., and Rhodes, Bernice: Experimental Erysipelas, Studies in Streptococcus Infection and Immunity, J. Infect. Dis. **31**: 101-115 (Aug.) 1922. Gay, F. P.: On Local and General Immunity, J. Immunol. **8**, No. 1 (Jan.) 1923.

connective tissue and omentum, and not serosal or endothelial cells, as usually stated. Following the injection of a fatal dose of the streptococcus in the pleura of a normal rabbit, the polymorphononuclear leukocytes rise from a negligible percentage to more than 90 in twenty-four hours, the clasmatocytes fall from an average of 85 per cent. to 15 per cent., the bacteria steadily increase, invasion of the pericardium and other pleura follows and the animal dies in from three to seven days. In an actively immunized animal, the clasmatocyte count remains high, and at twenty-four hours (the critical phase) averages 74 per cent. At this time, the bacteria have decreased markedly in number or, in the majority of instances, the cavity has become sterile. In a similar manner, other conditions of successful resistance to streptococcus pleurisy are constantly associated with a peristently high clasmatocyte count; the use of a sublethal dose of bacteria, and preparation of the cavity by plain broth or by streptococcus immune serum. Other conditions of lack of protection, preparation by normal rabbit serum and the use of filtrates of pleural exudates from fatally infected animals (aggressins?), are all followed by a drop in the clasmatocytes and a rise in the polymorphonuclear cells.

We have no definite information from our work as yet on the origin of these clasmatocytes which appear so rapidly and apparently effectively in the serous cavities, as to whether they are derived from adult endothelium (Mallory et al.) or from the blood. A cursory survey of our histologic material indicates that information on this point will be available. This much is known: these clasmatocytes are ubiquitous, they are rapidly mobilized and they are phagocytic and most resistant. Our observations indicate that a definite category of cells present outside the blood stream, the "clasmatocytes" or "tissue macrophages," is associated with natural and acquired resistance to an acute infectious agent, the streptococcus.

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AGE INCIDENCE OF GASTRIC CANCER

WITH SPECIAL REFERENCE TO CANCER IN THE YOUNG *

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It has been generally accepted as a fact by practitioners that cancer is confined within the limits of a minimum and maximum age, reaching the apex of frequency during the sixth decade of life. So common has this belief become that the phrase "cancer age" has gained a ready currency not only among physicians but among laymen as well. Like most other generalities, this concept of cancer is only partly true, and, so far as its practical import in diagnosis is concerned, must be regarded as a dangerous half-truth. Cabot [1] writes: "We are accustomed to say that when a patient past forty years begins to have dyspepsia out of a clear sky—that is, without any obvious cause or any previous habit—cancer is the most probable diagnosis; but when saying this we must remember that the cancer age is also the arteriosclerotic age, and, therefore, the time for nephritis and uremia. Furthermore, the cancer age is also the gallstone age and the age for angina pectoris." He cites as an illustration the case of a woman of 29 years, who, after one operation for a fibroid of the right ovary and another for a cyst of the left ovary, became rapidly emaciated, with a weight loss of 56 pounds (25 kg.) in six months and accompanying evidence of a mass in the epigastrium, gastric stasis, visible peristalsis and roentgen-ray indication of pyloric obstruction. The patient was operated on again, and a tumor was found at the pylorus. "The case is worth remembering," the writer concludes, "as a proof that gastric cancer may occur at twenty-nine." To which may be added that no age is immune, and that a diagnosis relying to any degree on the tenet of "cancer age" may lead to a fatal issue. The case here reported will serve as an illustration:

F. K., a man, aged 31, an awning maker, came under my observation in the gastro-intestinal department of the Vanderbilt Clinic, Nov. 25, 1922. He was married, and had one child living and well. The family history and previous personal history were negative. He stated that he had previously enjoyed good health and had never suffered from stomach disorders. Though he estimated his illness to be of four weeks' duration, close interrogation elicited a much longer period, dating back to early in the spring of 1922. His chief complaints were nausea, postprandial discomfort and vomiting on several occasions, the vomitus consisting of the food ingested. During this period he did not suffer any pain.

His appetite was fair for food he liked, but otherwise deficient, with a pronounced dislike for meat. His habitus was of the sthenic type; his height, 5 feet, 9 inches (175 cm.), and weight, 162 pounds (74 kg.). He gave his maximum weight as 185 pounds (84 kg.). The pulmonary and cardiovascular systems were normal. The abdomen presented tenderness in the midepigastrium, but no rigidity or mass; the liver edge was not palpable, and the spleen was not enlarged. The pupils responded to light and accommodation. The knee-jerks were equal and active. The fasting contents consisted of 30 c.c. of congo-negative fluid, with a fair amount of macroscopic blood, the appearance of which favored the conclusion that it was not traumatic. Microscopic examination revealed pus cells, many to the field. Ewald's single test meal method showed 30 c.c., poorly chymified, mucus much increased, separated into two layers, the upper layer containing the food, the lower, clear fluid. Free hydrochloric acid was 0; combined hydrochloric acid, 0; total acid, 4; pepsin and rennet, 0. The Wassermann test reported from the skin department was negative.

A roentgenographic examination of the gastro-intestinal tract revealed a filling defect of a part of the pars media and entire pars pylorica. The pylorus was gaping, as was evidenced by immediate gastric emptying. The six hour plate showed a small fragment of barium at the proximal portion of the filling defect. The colonic tract showed cecal stasis, a spastic colon and a tendency to dyschezia.

Dr. Howard Lilienthal, who operated on the patient at the Mount Sinai Hospital, reported that examination under anesthesia failed to disclose any mass or abdominal resistance. A transverse incision was made about an inch above the umbilicus, dividing the right rectus and passing more than half way through the left. Immediately a large, succulent, nodular mass was found occupying the greater part of the posterior wall of the stomach. The pyloric region, as well as the omentum, was filled with nodules. The falciform ligament contained a number of tumor masses. A specimen was removed from the gastrocolic omentum, and the wound was closed, as the case was considered absolutely inoperable and no free part of the stomach was available for even an anterior gastrostomy; besides which, the patient did not vomit, but food passed quickly through the stomach.

Dr. Lilienthal remarked that cancer of the stomach will be diagnosed early in proportion to the obstruction it causes to the passage of food. A carcinoma of the cardia as well as of the pylorus, therefore, will be much more likely to be discovered early than one of the body of the stomach. With

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1. Cabot: Differential Diagnosis 2: 265.

a small cancer of the stomach, the surgeon has a good opportunity to achieve a radical cure. In the case of this patient, the cardia and the pylorus were free, but the lesser curvature and almost the whole of the posterior wall of the stomach formed one stiff mass of carcinoma, thick and nonpliable. The omentum from which the specimen was removed was also infiltrated, and there were numerous secondary deposits on the liver and the gastrohepatic omentum. It is a question whether an operation would have saved this patient at any time since a diagnosis was possible.

Dr. Mandelbaum reported that microscopic examination of the nodule removed from the omentum showed a metastatic colloid carcinoma. Excluding sarcoma, this is, say Smithies and Ochsner, the least frequent type of gastric cancer.

COMMENT

The salient points which will be discussed, are: (1) the age of the patient—one year after the third decade of life; that is, not within the limits of the so-called "cancer age," which begins, approximately, at 40; (2) a history of good health till the spring of 1922; (3) the absence of pain; (4) the mass, nonpalpable, though involving the greater portion of the stomach; (5) a picture of true achylia gastrica, and (6) a positive hemolysis.

There is a very sound basis in the voluminous evidence at our disposal for the conclusion that gastric cancer is found mostly during the ages from about 40 to 60, and exhibits a most marked tendency to avoid the extremes of age. Aaron [2] cites Lebert's figures on this matter: under 30 years, 1 per cent.; from 30 to 40 years, 17.6 per cent.; from 40 to 60 years, 60.7 per cent.; from 60 to 70 years, 16.3 per cent., and above 70 years, 4.4 per cent. Osler,[3] in an analysis of 150 cases, finds six between 20 and 30 years, of whom the youngest is 22; from 30 to 40 years, seventeen; from 40 to 50 years, thirty-eight; from 50 to 60 years, forty-nine; from 60 to 70 years, thirty-six, and from 70 to 80 years, four. It is of interest to note that the maximum liability in both sets of figures lies between 40 and 60 years of age. Lynch [4] states that "cancer may occur at any age, but usually after 50. In some 800 cases I have seen, 1 per cent. occurred at 21 years, 2.5 per cent. under 30, and 7.5 per cent. between 30 and 35 years of age," thus indicating a plotted curve similar to those of the foregoing authorities. Smithies and Ochsner [5] found that out of 921 cases of gastric cancer the percentage of those under 30 was 2.17, with a minimum age of 18 years, and an average age of 27.2 years. Ewing [6] asserts that "while the disease is distinctly one of advanced age, the rather frequent occurrence between 30 and 40 and between 20 and 30 years is noteworthy." Osler and McCrae [7] make an interesting division of the first three decades into two periods, one to the twentieth year and the other from the twenty-first to the thirtieth. They hold that "cases occurring during the first period are clinical and pathological curiosities. Those of the latter period are of more interest, since, though a small fraction of the total cases, they comprise a fairly constant percentage and show fairly uniform symptoms." It will be seen that all of the authorities that have been cited are in substantial accord as to the relative infrequency of gastric cancer at both extremes of age. A mortality table furnished by Dr. Guilfoy of the New York Board of Health, summarizing deaths from all cancers for the five years from 1917 to 1921, inclusive, presents a very similar picture of age incidence. Out of 25,836 reported deaths, only 446, or 1.7 per cent., were under 25; 4,070, or 15 per cent., were between 25 and 44; 13,981, or 54 per cent., between 45 and 64, and 7,339, or 27 per cent., over 65. Furthermore, it seems evident that the conclusion we must draw from all these statistical tables is that if the term "cancer age" is to have any use in diagnosis, then it should be only of tentative import, and may be applied to include, but never to exclude.

The second point to invite our attention is the characteristic invasion of this malady: insidious, beginning with loss of appetite, reluctance toward meat, nausea, progressive weakness, and lastly and most emphatically, the fact that this apparently vague and nondescript type of symptoms most generally occurs in an individual who has not previously suffered from gastric disorders. However, anomalies in the course of cancer must always be thought of. Cabot,[8] relating the case of a patient who had an epigastric mass for five years, yet lost only 10 or 12 pounds, and these in the last two years, concludes: "We have no right to say that cancer of the stomach cannot exist for five years and produce such a tumor as is here described. This patient was operated on and a mass found of hard, fused glands, which were situated in the omentum and greater curvature infiltrated with neoplastic tissue."

The patient in my case did not complain of pain. We know that the pain symptom is what most often induces the patient to seek medical aid, yet this weighty signal is frequently lacking. Barker,[9] citing parenthetically the figure of 13 per cent. given by Osler and McCrae, asserts that pain may be absent throughout the history of a cancer, except in cancer of the cardia, in ulcus carcinomatosum, or after perigastric adhesions have developed. Anorexia with weight loss, and freedom from pain may be the only symptoms staring the physician in the face and demanding investigation.

A tumor could not be palpated in this case, despite the relaxed posture of the patient and the complete absence of tension. This was perhaps due, in a measure, to the fact that the patient was of the sthenic type, wherein the stomach is generally high in position and therefore not readily accessible to palpation. Such a situation invites an error in diagnosis, as it may permit a tumor to grow without betraying its presence until discovered by a more comprehensive clinical investigation—and then it is usually too late. It is thus evident that failure to discern by touch should not lessen the need for a more exhaustive study.

As the presence of the cancer was obscured by freedom from pain and by the failure to palpate the tumor, the absence of both a gastric residue and hydrochloric acid suggested quite plausibly a tentative diagnosis of a nonmalignant achylia gastrica. This diagnosis will not hold when due attention is given to the subdued symptomatology; and, of course, it was quickly upset by a roentgenographic study. Achylia is associated with a wide range of maladies, and with signs and symptoms conducive to diagnostic embarrassment. The case suggests that when achylia is revealed in the course of an examination, the roentgenologist, as his part of the investigation, should roentgenograph the oral cavity for periapical abscesses; the lungs for tuberculosis; the cardiovascular system for a specific aortitis, and last and of grave importance, the stomach for malignancy

2. Aaron: Disorders of the Digestive Organs, p. 479.
3. Osler: Practice of Medicine, Ed. 4, p. 487.
4. Lynch: Personal communication to the author.
5. Smithies and Ochsner: Cancer of the Stomach, 1916, p. 374.
6. Ewing: Neoplastic Diseases, 1919, p. 605.
7. Osler and McCrae: Cancer of the Stomach, 1900, p. 16.
8. Cabot: Differential Diagnosis 2: 101.
9. Barker: Monographic Medicine 3: 526.

or syphilis or both, concomitantly. Ewing observes that "carcinoma of the lesser curvature usually arises in cases with established achylia." It is perhaps pertinent to add that a knowledge of the clinical findings and status of the stomach chemistry will assist the roentgenologist to interpret his conclusions more accurately and in consonance with them.

In this case, more as a matter of professional routine, before proceeding with the operation, it was desired to determine whether syphilis was to any degree responsible for the patient's condition. It is cited by Stokes and Brown [10] that, in a study of 200 syphilitic patients, 87 per cent. were found to have rated "stomach trouble" as their chief complaint. They have, moreover, found that "the routine roentgen-ray examination of syphilitics who complain of stomach trouble does not yield a large percentage of positive results." A serologic study was made in this case which returned negative findings. This conclusion substantiates the physical examination, which showed active knee-jerks and the absence of an Argyll Robertson pupil. A conventional approach to a history of syphilis was met with a denial by the patient. Moreover, the degree of structural pathology revealed by the roentgen ray as involving both the operable and borderline zones of the stomach was of sufficient weight to establish beyond doubt a diagnosis of malignancy. In this connection I do not wish to imply that a negative hemolysis would have deferred the operation, for I unqualifiedly agree with the writers I have last cited when they say, "We do not believe that there is any excuse for subjecting a patient who may have an operable malignant lesion to the delays of treatment for syphilis before operation."

From the operative and histopathologic findings, the fate of this case is virtually sealed, though there is a faint glimmer of hope in the roentgen-ray therapy now being applied to this patient. It is now recognized that, beginning at the pylorus, where a cancer is the most fecund, and extending toward the cardia, operability is inversely proportionate to the upward invasion of the growth. Death from colloid carcinoma, according to Parham,[11] is "often delayed, but the eventual mortality is greater than in other types of carcinoma. However," the writer concludes, "many patients with colloid carcinoma respond remarkably well to treatment by roentgen ray and radium."

This case is one instance among unfortunately too many others wherein the cancer stealthily progressed to almost certain fatality without an effort being made for its arrest until too late. In cancer, time is the ravaging agent, not age. The time lost from the patient to the physician and from the physician to the hospital is an evil we must combat.

CONCLUSIONS

1. Occupation, family traits, habits, mode of living, onset of complaint, in short, that fine network of circumstance with which cancer is usually associated, has a greater significance than age.

2. When the patient is of an age not within what might be termed the frequency period—the so-called "cancer age"—I believe physicians have manifested a very human failing by their reluctance to ascribe the patient's condition to so horrible a disease as cancer, and naturally cast about for a milder malady.

3. Symptoms warranting a diagnosis of chronic gastritis, particularly in patients who claimed the enjoyment of good health prior to the onset, favor a suspicion of cancer.

4. When a diagnosis of carcinoma ventriculi is established in a case in which there is no palpable mass, it is not safe to assume from the absence of such a mass that the disease is in an early stage, for a large growth that has well metastasized may exist without producing a palpable tumor.

5. It is the prediagnostic phase of cancer that we must endeavor to detect—a phase often disregarded because of the absence of impressive signs or symptoms, as when neither the cardiac nor the pyloric orifice is involved, when there is no hesitation in food entrance and no obstruction to food exit. A suggestive symptomatology, no matter how faint the indication, calls for a searching inquiry.

6. Finally, let us remember that the easier it is to diagnose a cancer, the harder it is to operate on it.

544 West One Hundred and Fiftieth Street.

10. Stokes, J. H., and Brown, P. W.: Two Hundred Syphilitic Patients Whose Chief Complaint was "Stomach Trouble," Am. J. M. Sc. **164**: 867 (Dec.) 1922.

11. Parham, D.: Colloid Carcinoma, Ann. Surg. **77**: 90 (Jan.) 1923.

TREATMENT OF SEASONAL HAY-FEVER, AND SOME POSSIBLE CAUSES OF FAILURE *

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Noon and Freeman, in 1911, published from Wright's laboratory in London the first reports of the successful treatment of hay-fever by active immunization.[1] In this country, Koessler,[2] in 1910, and Clowes [3] in 1913, first attempted the preventive treatment of the American or autumnal form of hay-fever. Thirteen years have scarcely elapsed since the first hope for relief has been given to the vast army of hay-fever patients. In fact, so recent is the innovation that not all the limitations or imperfections have been brought to light. Accordingly, some members of the profession have fallen victims to skepticism, whereas the sufferers from hay-fever have fallen prey to the numerous "cures" which are heralded in the lay press and journals.

It is my purpose to record the results of an inquiry into the present status of the preventive treatment of seasonal hay-fever, and to disclose the possible causes of failure of such treatment.

It is obvious that an accurate diagnosis is the first prerequisite to successful treatment. In determining the pollen to which the patient is sensitized, the cutaneous test, first performed by Blackley,[4] is employed. A series of superficial scratches is made on the anterior aspect of the forearm, and to each abrasion a small amount of pollen is applied. A drop of tenth normal sodium hydroxid solution is added to assist in the solution of the pollen protein. Within half an hour, a characteristic wheal appears at the site of the abrasion on which the offending pollen has been placed. A

* Read before the Medical Society of the District of Columbia, March 14, 1923.

* From the Clinics of Applied Immunology, Woman's Welfare Association and the Central Dispensary and Emergency Hospital.

1. Noon: Prophylactic Vaccination Against Hay Fever, Lancet **1**: 1572, 1911.

2. Koessler: The Specific Treatment of Hay Fever (Pollen Disease), in Forchheimer's Therapeusis of Internal Diseases, **5**: 671, 1914.

3. Clowes: A Preliminary Communication on the Treatment of Autumnal Hay Fever by Vaccination with an Aqueous Extract of the Pollen of the Ragweed, Proc. Soc. Exper. Biol. & Med. **10**: 70, 1913.

4. Blackley: Hay Fever: Its Causes, Treatment and Effective Prevention, Ed. 2, London, 1880.

zone of redness surrounds the wheal, and there may be more or less itching of the adjacent skin. A positive skin reaction indicates that the patient is sensitized to that particular pollen which produces the wheal. The pollens to which the patient is not sensitized will cause no such cutaneous reaction.

GROUP REACTION

The later studies of Koessler, Goodale, Scheppegrell, Cooke and Vander Veer, and Walker have laid emphasis on the occurrence of "group reaction" in cutaneous testing. These observers have found that patients subject to June colds react to the pollens of *Gramineae*, and that patients suffering from the autumnal form react to the pollens of the large family of *Compositae*. For example, Cooke and Vander Veer [5] tested twenty cases of early hay-fever with the pollen protein of six of the most common grasses. With few exceptions, all the pollens yielded positive skin tests. Walker [6] tested his cases of autumnal hay-fever with the pollen of the ragweed, and also with the pollens of four other representatives of *Compositae*—goldenrod, daisy, golden glow and sunflower. He obtained positive results in from 21 to 50 per cent. of his cases.

The significance of group reaction in routine testing should be borne in mind. It indicates that the pollens of closely allied families of plants have in common a characteristic structural arrangement of the protein molecule. It is the latter which gives rise to the positive skin reaction. The formation of an urticarial wheal, indicative of a positive reaction, is due to an effusion of serum within the superficial layers of epithelial cells. It is the tissue response provoked by the presence of an irritant. The skin, in common with the blood and other tissues, it is believed, contains a specific proteolytic ferment which liberates from the protein molecule of the pollen a poisonous end-product. This product acts as the irritant in sensitive persons.

Our findings proved confirmatory of previous studies. Some of our patients, sensitized to the pollen of the short ragweed, were tested with the pollens of four other representatives of the *Compositae* group, with these results: Seven gave positive skin tests to the pollen of the giant ragweed and to the pollen of cosmos. Sixteen positive and two negative reactions were obtained with the pollen of tithonia. Forty-eight positive and ten negative reactions were obtained with the pollen of the wormwood. Thus, of a total of ninety tests, seventy-eight, or 86 per cent., proved positive. The positive cutaneous tests obtained with the pollen of tithonia—an insect-pollinated plant of South America to which our ragweed patients may never be exposed—furnish a striking example of group reaction.

In addition, tests were made in our fifty-seven autumnal cases of hay-fever with various wind-borne pollens which had been collected during the course of a hay-fever survey of the district. Four hundred and forty-two tests were performed with pollens other than those of the *Compositae* family. Of this total, 127, or 28.7 per cent., of the tests were positive. The pollens which gave the positive reactions represented twenty-one genera of plants, belonging to ten families. These included the grasses, trees and weeds. I have regarded these reactions with pollens which do not apparently give rise to seasonal disturbances as evidence of secondary or accessory sensitizations. Their significance has been discussed in another paper.[7] It seems, therefore, that multiple sensitization is the rule and not the exception. Moreover, the multiplicity of these skin reactions by no means invalidates the conception of specificity.

Scheppegrell,[8] for purposes of simplicity, divided the hay-fever pollens into four groups:

1. *Ambrosiaceae*, comprising the ragweed, *Gaertneria*, *Ivas* and *Xanthium*.
2. *Gramineae*.
3. *Artemisia*, comprising the hay-fever plants of the Pacific and Rocky Mountain states.
4. *Chenopodiaceae*, including the amaranths and *Rumex*.

He expressed the belief that a pollen extract made from any member of a group would be applicable to other members of the same group.

Watson and Kibler [9] are not in accord with Scheppegrell's views. They write:

> It has been stated by two or three investigators, particularly by Scheppegrell and by Goodale, that a patient sensitized to any grass may be desensitized by an extract made from any other member of the grass family and particularly timothy; also that a patient sensitized to any member of the *Compositae* may be desensitized by any other member of the same family. Scheppegrell has gone even further and grouped all *Rumex* (*Polygonaceae*), chenopods and amaranths together, asserting that they are so closely related that any member of the three groups may be used to desensitize against any other member of the same three groups. It is our opinion that further study and observation will prove that these statements are incorrect. Our skin tests and study have already convinced us of this, and we believe that the continued promulgation of these ideas, which many men accept as true, simply tends to confuse the subject and retard results.

In view of this conflict of opinion, this statement by Walker is by no means surprising: "There would seem to be as many different pollens causing hay-fever and as many different ways of treating hay-fever as there have been investigators."

DETERMINATION OF CAUSE

There are, nevertheless, safe and sane principles which help to determine the pollen responsible for the seasonal symptoms. The principle that symptoms of hay-fever are coincident with the blooming of wind-pollinated plants is fundamental.[10] This excludes from consideration the insect-pollinated plants, such as the goldenrod, golden glow, sunflower, daisy, rose and dandelion, and all the common fruit trees. These plants are peculiarly adapted for pollination through the agency of insects. Their blooms are conspicuous and brightly colored, and they are provided with honey glands. Their pollen grains, large in size, are surrounded with a sticky capsule. Very seldom, indeed, are they floating in the air in sufficient numbers to provoke an attack of hay-fever. A sensitive person may, however, suffer from transitory symptoms on sniffing a bouquet.

The fallacy that roses and goldenrod are causes of hay-fever still has a stronghold on the imagination of the laity and of part of the profession. It has been pointed out that the pollen of the goldenrod may give a positive skin reaction in some persons who are victims of

5. Cooke, R. A., and Vander Veer, A., Jr.: Human Sensitization, J. Immunol. **1**: 201 (June) 1916.
6. Walker, I. C.: Frequent Causes and the Treatment of Seasonal Hay-Fever, Arch. Int. Med. **28**: 71-118 (July) 1921.
7. Bernton, H. S.: The Significance of Multiple Cutaneous Reactions Observed in Hay Fever Subjects, to be published.
8. Scheppegrell, William: The Classification of Hay-Fever Pollens from a Biological Standpoint, Boston M. & S. J. **177**: 42 (July 12) 1917.
9. Watson, S. H., and Kibler, C. S.: Etiology of Hay-Fever in Arizona and the Southwest, J. A. M. A. **78**: 719-722 (March 11) 1922.
10. Hall, H. M.: Hay-Fever Plants in California, Pub. Health Rep **37**: 803-822 (April 7) 1922.

autumnal hay-fever. This is an expression of group reaction, the group in this instance being *Compositae*. The use, nevertheless, of an extract of goldenrod, singly or combined with that of the ragweed, is as unnecessary as it is unwarranted. It has no greater justification than the employment of an extract of *Tithonia* would have in the prevention of fall hay-fever.

Equal in importance to the appreciation of wind-pollinated plants as the cause of hay-fever is the date of the onset of symptoms and their duration. There is a remarkable regularity with which symptoms make their appearance. One patient limits her hay-fever season from Memorial Day to Independence Day. The vast majority of patients look forward with misgiving

TABLE 1.—*Pollens That Reacted Positively*

Name of Tree	Family Number	Date of Pollination
Black walnut	36	May 3
Hickory	36	May 3
Ironwood	37	April 15
Hazelnut	37	February 22
Alder	37	February 22
Black birch	37	April 15
Beechnut	38	May 2
Chestnut	38	June 15
Scarlet oak	38	April 15

to August 15 or August 20, which marks the advent of distress until the first frost. Blackley has well characterized the hay-fever season as the "annual torment." Field studies indicate that the onset of symptoms is coincident with the pollination of the plant to which the patient is sensitive.

In the eastern United States, the ragweeds, both the short and the giant, are chiefly responsible for the autumnal hay-fever which is by far the most prevalent type. In the New England states, the giant ragweed is rarely encountered. Accordingly, the diagnosis is much simplified. In a botanical survey of Rhode Island, I have not encountered a single specimen of the giant ragweed. In the Western states, the wormwoods play the important rôle.

The summer type of hay-fever, incorrectly called "rose fever," runs its course from May to the middle of July, and is coincident with the pollination of the grasses. In this connection, it may not be amiss to quote from Scheppegrell:[11]

> There are several thousand varieties of grasses, but our experience has shown that when the subject is sensitive to the pollen of one variety, he reacts to all the varieties tested, although to a different degree. This is an important factor in pollen therapy, as, otherwise, the large number of grasses that are usually found, even in the same locality, would make the question of developing an active immunity to hay-fever a hopeless proposition.

Cooke and Vander Veer[5] write, moreover:

> On the whole, we can say that an individual reacting to one [grass] reacts to all, which bespeaks a biological identity of the proteins derived from the pollens of the *Gramineae*. A further proof of this identity that can be mentioned is the fact that immunizing injections with the pollen of one grass gives clinical relief of symptoms in those cases that have reacted to all and have from time to time been purposely exposed to that form of grass to which they were not specifically immunized.

The pollen extract of timothy is extensively employed in preventive treatment, and forms, as it were, a blanket prescription for the summer type of hay-fever. I join Watson and Kibler in dissent from the views quoted above. The application of the general principle enunciated does not always hold for a given case. To illustrate, one patient in our series reacted to the pollen of rye and failed to react to the pollens of timothy, June grass, wild oats, orchard grass, meadow grass and red top. Moreover, of twenty-three patients reacting to one or more pollens of the grasses, only one reacted positively to corn pollen, the remaining twenty-two reacting negatively. Corn is biologically classed as a grass. Nevertheless, the phenomenon of group reaction was not observed.

Local field studies enable the immunologist to determine not only the flowering dates of various grasses, but also their degree of prevalence. These findings must be correlated with the patient's symptoms. The diagnosis of the offending plant may well be based on such studies; and it may be confirmed by cutaneous testing with the varying dilutions of protein extract, derived from the pollen of the grasses under suspicion.

A similar procedure may be followed in spring hay-fever, which is coincident with the pollination of the trees. The season of this early type of hay-fever begins in March and ends in June. The following case history will serve to illustrate the points emphasized as essential to correct diagnosis:

> A student, aged 17, had been a hay-fever victim for seven years. The duration of symptoms extended from the middle of April to the end of May. He was tested on two occasions with a total number of twenty-two pollens, eleven of which yielded positive skin reactions. These included pollens of nine trees and two grasses. The list presented in Table 1 embodies the family number and dates of pollination of the trees, the pollens of which reacted positively.
>
> The pollens which gave negative cutaneous reactions were obtained from the trees listed in Table 2.
>
> The family numbers are those adopted by Hitchcock and Standley,[12] who have arranged and numbered the plants consecutively according to generic relationship. It is noteworthy that members of Families 36, 37 and 38, all closely allied, have given positive skin reactions. This is a striking example of group reaction. The families of trees numbered 34, 40, 82, 97 and 124 have given negative reactions.
>
> Symptoms of hay-fever in the patient under consideration were well marked about April 15. The ironwood, black

TABLE 2.—*Pollens That Gave Negative Cutaneous Reactions*

Name of Tree	Family Number	Date of Pollination
Crack willow	34	April 15
White poplar	34	March 20
Mock orange	40	May 18
Paper mulberry	40	May 1
White mulberry	40	May 1
Honey locust	82	May 8
Box elder	97	April 8
White ash	124	April 9

birch and scarlet oak, the positive reactors, were advanced in pollination on that day, as was the crack willow in the group of negative reactors. The survey of the District of Columbia revealed the fact that the number of ironwoods and black birches was small and that these specimens were found chiefly in the parks. The oaks, however, are numerous, and are used extensively for lining the city streets. The use of an extract of oak pollen would have been warranted in treatment. Unfortunately, when the patient first came under notice, no pollen extracts were available for testing with varying dilutions to determine the pollen to which he was most sensitive. I am happy to report that these extracts have since then been prepared.

The pollens of timothy and June grass, also, gave positive reactions in the patient. These are examples of secondary

11. Scheppegrell, William: Spring Hay-Fever, Its Cause, Prevention and Treatment, New York M. J. **109**: 793 (May 10) 1919.

12. Hitchcock and Standley: Contributions from the United States National Herbarium **21**, Flora of the District of Columbia and Vicinity, Washington, D. C., 1919.

or accessory sensitizations, in contradistinction to the primary sensitizing factors—the pollens of the trees. Massive doses of the former may, in my opinion, give rise to transitory symptoms. They may account for the "slight colds" of short duration to which hay-fever patients are subject out of their customary season. It is of interest in this connection to note that the dates of pollination of June grass and timothy were May 16 and June 11, respectively. By this time the hay-fever symptoms were on the decline.

It is to be emphasized that observations in the field are basic in importance, and that they must be correlated with the clinical picture. They make for accurate diagnoses, for intelligent and appropiate treatment, and for better therapeutic results.

TREATMENT

The chief aim in treatment is to bring the patient to a point of tolerating the toxic material which gains entry through the respiratory tract. Desensitization against the specific excitant assures the patient freedom from symptoms. The credit belongs to Noon and Freeman for devising the method of active immunization, which is the method in vogue at present. A series of subcutaneous injections with solutions of protein, prepared from the offending pollen, is administered at regular intervals with gradually increasing concentrations. The treatment, theoretically, should be preseasonal and terminate with the approach of the hay-fever season. It is evident that during the season the patient is inhaling the toxic material, thus rendering subcutaneous additions unnecessary. The statement, however, is made that seasonal treatment tends to diminish the severity of symptoms.

Various measures have been employed for the preparation of protein extract from pollen. Noon and Freeman [1] obtained a solution of protein by alternating and freezing and thawing the pollen in distilled water. After filtration, the aqueous extract was boiled for ten minutees in sealed tubes. Clowes [3] first precipitated the pollen with acetone, followed by extraction with distilled water. Lowdermilk [13] substituted physiologic sodium chlorid solution for distilled water. Clock,[14] however, recommended as an extractive a fluid consisting of 33⅓ per cent. saturated sodium chlorid and 66⅔ per cent. glycerol. Koessler [2] used an 8.5 per cent. solution of sodium chlorid, which he sometimes precipitated with ten times its volume of 95 per cent. alcohol. Goodale [15] soaked the grains in water for a few hours and added alcohol sufficient to make a dilution of from 13 to 15 per cent. by volume. Walker [6] preferred a 12 per cent. alcoholic saline solution. Rackemann [16] added to physiologic sodium chlorid solution a slight amount of alkali in the form of 1 per cent. normal sodium hydroxid. Coca [17] similarly employed an alkaline extracting medium consisting of sodium chlorid and sodium bicarbonate in such concentration that 10 c.c. of the final fluid equaled about 3 c.c. of tenth normal alkali.

The sterility of the extracts was effected by filtration through Berkefeld candles. The belief in general was held that the potency of the solutions was determined by the amount of nitrogen present. Phenol (carbolic acid), trikresol, alcohol and glycerol were the reagents employed, on which dependence was placed for preserving the potency of the extracts and for maintaining their sterility.

The results achieved in the prevention of hay-fever are encouraging. Noon and Freeman [18] reported, in 1914, complete relief in 30 per cent., and no improvement in 11 per cent. of their series of eighty-four vernal cases. Table 3 summarizes the results of several American investigators, which have been compiled from the literature. The attempt has been made, so far as it has been possible, to record only the cases of the autumnal type which had received preseasonal treatment. Exceptions to this rule are so indicated. Moreover, I have concerned myself in this study only with the percentage of those entirely relieved and those unimproved. The table indicates that of 2,684 patients receiving prophylactic treatment (with few exceptions), 12.8 per cent. have had complete relief and 16.5 per cent. have failed to receive any benefit. The remaining 70.7 per cent. enjoyed varying degrees of improvement. It is, indeed, reassuring that the results of the last few years excel those of previous years.

Table 3.—*Results of Preseasonal Treatment of Autumnal Hay-Fever*

Authors	Year	Number of Patients	Per Cent. in Whom Symptoms Were Entirely Relieved	Per Cent. in Whom Symptoms Were Unimproved
Koessler, in Forchheimer's Therapeusis **5**: 671, 1914.....	1914	36	11.1	22.2
Oppenheimer and Gottlieb: New York M. J. **101**: 229, 1915	1915	6	16.6	16.6
Strause and Frank: J. A. M. A. **76**: 712 (March 4) 1916.....	1916	241*	18.6	15.6
Rackemann: Boston M. & S. J. **182**: 295 (March 18) 1920....	1920	91	8.9	13.1
Walker: Arch. Int. Med. **28**: 71 (July) 1921	1921	202	22.0	6.5
Cooke and Vander Veer: J. Immunol. **1**: 201 (June) 1916; Health News, N. Y. State Dept. Healtu **16**: 204, 1921..	1912	5	0.0	40.0
	1913	50	4.0	16.0
	1914	90	2.0	20.0
	1915	189	20.0	5.0
	1916–1920	1,774	25.0	10.0

* Various types of hay-fever.

It is to be recalled that the results of preventive inoculation, quoted above, have been those achieved by investigators in this relatively new field of therapy, and that the pollen extracts employed by them have been products of their own laboratories. The profession at large has of necessity been dependent on the commercial products of manufacturers of biologic products. Because of the limited number of reagents utilized for accurate diagnosis, and because of the limited time available for the entailed study of hay-fever patients, the indiscriminate use of pollen extracts and the employment of shotgun preparations have followed, as a matter of course, and have been responsible for disappointments.[19] Undue emphasis has been placed on the rôle of insect-pollinated plants, and the administration of their pollen extracts in the prevention of hay-fever is not justified by scientific evidence. The significance of group reaction in cutaneous testing has been overlooked, and commercial literature has been unintentionally misleading.

The therapy of hay-fever is of such recent date that no standard method of extraction of pollen protein and no standard method of treatment has as yet been adopted. There is, in fact, no "United States standard

13. Lowdermilk, R. C.: Hay-Fever, J. A. M. A. **63**: 141 (July 11) 1914.
14. Clock, R. O.: Comparative Value of Methods of Preparing Pollen Antigen, J. Infect. Dis. **21**: 523 (Dec.) 1917.
15. Goodale: Pollen Therapy in Hay Fever, Boston M. & S. J. **173**: 42, 1915.
16. Rackemann, F. M.: The Specific Treatment of Hay-Fever, Boston M. & S. J. **182**: 295-301 (March 18) 1920.
17. Coca, A. F.: The Preparation of Fluidextracts and Solutions for Use in the Diagnosis and Treatment of the Allergies, with Notes on the Collection of Pollens, J. Immunol. **7**: 163-178 (March) 1922.
18. Freeman: Vaccination Against Hay Fever: Report of Results During the Last Three Years, Lancet **1**: 1178, 1914.
19. Scheppegrell, William: Successful Treatment of Hay-Fever and Causes of Failure, New York M. J. **116**: 196 (Aug. 16) 1922.

of potency." Reference has been previously made to the diverse opinions of authorities.

It accordingly seemed advisable to undertake a comparative study of the potency of commercial extracts on which the general profession had to rely. Since the autumnal type of hay-fever is the most prevalent, attention has been confined to the pollen extract of the short ragweed. Our control extract of short ragweed pollen was prepared, according to the method Walker, in a 12 per cent. alcoholic saline solution. Six dilutions were made from the stock solution, which contained 0.2 mg. of nitrogen per cubic centimeter. The dilutions, as shown in Table 4, ranged from 1 : 100 to 1 : 24,300. Six commercial extracts, designated by numbers 1 to 6 inclusive, were studied. Two dilutions were made from the highest concentration in which the extracts were marketed to approximate the dilutions of the control, the amount of nitrogen serving as a basis of computation. Thirty-nine patients with autumnal hay-fever were tested by Dr. Harrison and myself. Two dilutions of each of the commercial extracts, 1 to 5 inclusive, and six dilutions of the control extract were used. Sixteen of this series of patients were in addition tested with the two dilutions of commercial extract, numbered 6.

TECHNIC OF TESTS

Along the anterior aspect of one forearm, a drop of each dilution of the control extract was placed in succession at half-inch intervals, the highest dilution being uppermost. At the bend of the elbow, a drop of alcoholic saline solution was placed and used as a control. On the anterior aspect of the other forearm, two drops, one of each dilution of all the commercial preparations, was placed in succession at right angles to the long axis. The higher dilution was located on the internal aspect and the lower dilution on the external aspect of the arm, respectively. A superficial scratch was made through each drop with a needle, and the reaction was read at the end of half an hour. A wheal of 5 mm. or more was recorded as ++, and a wheal of 4 mm. or less was recorded as +, and an areola without wheal as ±.

TABLE 4.—*Number of Strongly Positive Cutaneous Reactions Obtained with Control and Commercial Extracts*

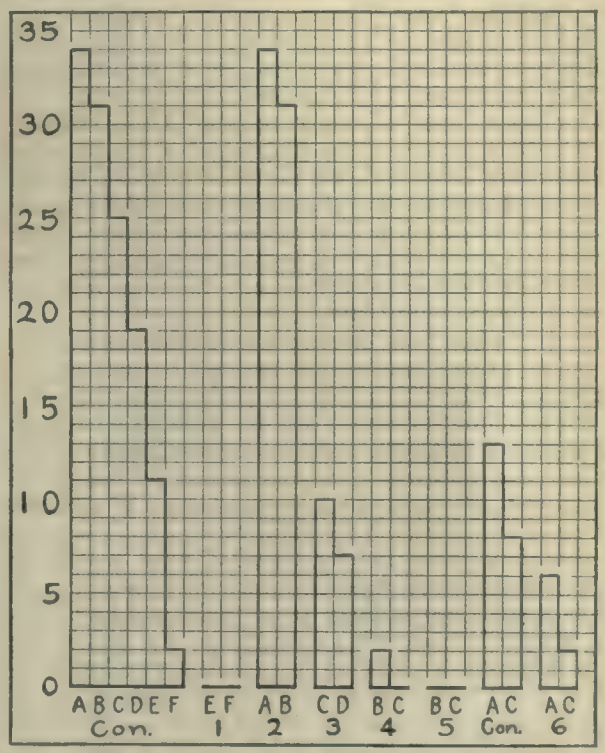
	A	B	C	D	E	F
Dilution	1:100	1:300	1:900	1:2700	1:8100	1:24300
Nitrogen, mg. per c.c.	0.2	0.066	0.022	0.0074	0.0025	0.00083
Control extract	34	31	25	19	11	2
Commercial extract 1	..	..	..	..	0	0
Commercial extract 2	34	31	..	..	..	..
Commercial extract 3	..	..	10	7	..	..
Commercial extract 4	..	2	0	..	..	..
Commercial extract 5	..	0	0	..	..	..
Control extract	13	..	8	..	..	..
Commercial extract 6	6	..	2	..	..	..

RESULTS OF TESTS

Of the thirty-nine patients submitted to the cutaneous testing, thirty-four gave a ++ reaction with the highest concentration of our ragweed extract. For purpose of brevity, only the ++ positive reactions are used in the table to serve as a basis of comparison. Table 4 indicates the number of strongly positive reactions obtained with the control extract and with each of the two dilutions of the commercial preparations.

The chart demonstrates the fact that Commercial Preparation 2 yielded reactions identical with the control in the two highest concentrations, that Preparations 6, 3 and 4 failed to give positive reactions in thirteen, twenty-seven and fifty-four tests, respectively, as compared with the control, and that Preparations 1 and 5 failed entirely to provoke skin reactions. If we accept the view that the intensity of the cutaneous reaction is determined by the protein content of the test solution, we are confronted with two possibilities—either the protein content of five of the commercial preparations has been misrepresented, or there has been a marked and rapid deterioration of the product.

Vander Veer [20] pursued a similar course of study and tested four of the best known commercial extracts. He used as a control the "Cornell preparation," prepared according to the method of Coca. He performed ophthalmic and intracutaneous tests with the preparations in eighteen hay-fever subjects. Not all the patients however, were tested with each dilution of the different preparations. He found that only the very sensitive patients gave any ophthalmic reaction with the commercial products. Moreover, he noted that the latter extracts did not approximate the strength of his control



Number of ++ reactors: *Con.*, control; 1, 2, 3, 4, 5, 6, preparations; *A, B, C, D, E, F,* dilutions.

preparation, which had 0.01 mg. of nitrogen per cubic centimeter, and that the activity of the most potent commercial extract equaled that of his preparation containing 0.005 mg. of nitrogen per cubic centimeter. Vander Veer's conclusion is noteworthy:

> As it has been our experience that even our most sensitive cases (with very few exceptions) require for therapeutic effect a maximum dose of pollen extract containing at least 0.025 to 0.05 mg. of nitrogen, while the less sensitive may need as high as 0.1 or 0.2 mg. of active pollen nitrogen, it is difficult to see how a good result can be expected with the use of these comparatively weak commercial preparations except in the very sensitive cases, which constitute a relatively small percentage of the total. To obtain a full measure of relief, stronger extracts should be used.

POLLEN EXTRACTS

It is clear from the foregoing studies that one criterion for the therapeutic efficiency of pollen extracts is the nitrogen content, based on chemical analysis. It

20. Vander Veer, A., Jr.: A Comparison of Various Pollen Extracts with Reference to the Question of Their Therapeutic Value in Hay-Fever, J. Immunol. 7: 113-118 (March) 1922.

is equally obvious that the nitrogen content is stable. The potency of extracts is, however, a variable factor, and preservatives, such as alcohol, trikresol and phenol, are added to prevent deterioration. Clock is deserving of much credit for calling attention to the fact that chemical analysis fails to demonstrate the antigenic qualities of pollen extracts. Such analysis reveals only the amount of pollen protein present in solution. Clock [21] has shown that a practical method of determining the antigenic properties of pollen extract is by means of the complement-fixation test. The amboceptor in this biologic test is the serum of rabbits which have been immunized by repeated injections, intravenous or intraperitoneal, with protein solution. He has, furthermore, devised a method of preparing a stable antigen, by the use of concentrated salt solution and glycerol.[22] Pollen extracts, prepared by his method, have remained for fourteen months without loss of complement binding capacity. With his glycerolated pollen antigen, Clock [23] obtained relief from symptoms in 84 per cent. of 1,578 cases.

Our experience is confirmatory of Clock's observations. In the preventive treatment of hay-fever last summer, we employed our ragweed extracts M and P prepared in alcoholic saline solution. Both extracts gave evidence, clinically, of possessing marked potency. Nevertheless, they showed loss of antigenic properties when tested by the complement fixation method in January, four months later.

Attention has been directed to the mode of extraction of pollen protein and to the manner of preserving its antigenic, and presumably its active, content. I am of the opinion, moreover, that the method of collecting ragweed pollen assumes an importance hitherto undescribed, and probably overlooked. In the fall of 1921, I employed the method recommended by Wodehouse,[24] for collecting the pollen of the ragweed. The catkins of the plant were removed and allowed to dry in a warm, well-lighted room, protected from dust. The bracts were then stripped from the stems and ground in a mortar. From this ground mass, the pollen grains were separated by floating in carbon tetrachlorid. The pollen dust, when filtered and dried, was of an olive drab. In the fall of 1922, I employed the method known to botanists as "bagging." Bags made of glazed paper were drawn over the plants and securely fastened. The pollen grains, as they were shed, remained within the bags, from which they were readily gathered. The pollen dust, secured in this manner, was of a bright golden yellow, similar to that of the pollen-laden anthers. The difference in color between the yields of pollen obtained by grinding and by "bagging" was most striking. It is noteworthy that the golden yellow of the mature grains is slightly bleached by carbon tetrachlorid.

The immaturity of part of the pollen yield obtained by the method of Wodehouse may account for the difference in color. It will be recalled that the blooms of the ragweed mature in succession. Consequently, when the catkins are dried and ground, the pollen consists of a mixture of mature and immature grains. In fact, in the process of removing the catkins from the plant, there is a substantial loss of the ethereal grains, owing to the manipulation. In the plant kingdom, color changes accompany the process of maturation, which also involves physicochemical transformation. Obviously, an extract prepared from the mature grains is likely to have more specific antigenic properties than one made from a mixture of mature and immature pollen grains. It must be borne in mind that it is only the mature pollen that reaches the mucous membranes of susceptible persons and excites symptoms of distress.

The interpretation which I have ventured to give is suggested by the following study: [25] Ragweed plants, collected, June 21, 1922, before the appearance of catkins, were dried and pulverized. Cutaneous tests with the plant powder were performed in twenty-three cases of autumnal hay-fever. The powder gave negative skin reactions in eighteen, and weakly positive in five cases. In no instance did the powdered plant provoke a skin reaction comparable with that produced by the ragweed pollen. The conclusion seems warranted that the peculiar property of the pollen grains which calls forth the specific proteolytic ferment in the causation of an urticarial wheal is not shared by the rest of the plant structure. The extreme degree of specificity is thus made evident. Therefore, in order to make desensitization complete, it is essential that the extracts be derived from the exciting agent—the mature pollen.

RESULTS OF PROPHYLAXIS

Reference has been made to the results of preventive treatment against autumnal hay-fever. An analysis of the statistics, dating from 1912, has indicated, as an average, complete relief in about 13 per cent., partial relief in 71 per cent., and failure in 16 per cent. of the cases treated. The outstanding feature is the constant failure of a certain percentage to secure any relief of symptoms. This fact has seemed worthy of an explanation. Our experience during the last year in the prophylactic treatment of fifty-six patients suffering from the fall type of hay-fever has thrown some light on the problem.

TABLE 5.—*Results of Preseasonal Treatment*

Symptoms	Patients		Average Age, Years	Average Duration, Years	Average Number of Injections	Average Percentage of Local Reactions Following Injections
	Number	Per Cent.				
Unimproved.....	6	10	42	13	16	32.6
Relieved, 25 per cent.	9	16	33	10	17	75.0
Relieved, 50 per cent.	9	16	37	17	16	89.0
Relieved, 75 per cent.	18	32	40	17	16	84.0
None or negligible....	14	25	40	20	16	84.4

Table 5 embodies the results. It shows that 25 per cent. of our patients have been relieved of symptoms, that 65 per cent. have been benefited from 25 to 75 per cent., and that 10 per cent. have been unimproved. Our extracts M and P were used successively in all cases. It is evident from Table 5 that age and the duration of the disease do not affect the outcome of treatment. Likewise, a detailed analysis indicates that the degree of sensitiveness, as determined by skin tests with varying dilutions of pollen protein, is no criterion as to the results of therapy. For example, a man, aged 59, whose disease was of three years' duration, showed skin sensitiveness to ragweed protein in a dilution of 1:100. Despite the short duration of the disease and the apparent lack of a high degree of sensitiveness, this patient was not benefited by fourteen injections. On the contrary, two women, aged 54 and 60 years, respectively, who had suffered all their lives

21. Clock, R. O.: Antipollen Serum for Standardization of Pollen Antigen, J. Infect. Dis. **22**: 80 (Jan.) 1918.
22. Clock, R. O.: A Stable Pollen Antigen, J. Infect. Dis. **21**: 387 (Oct.) 1917.
23. Clock, R. O.: Hay Fever and Its Treatment with Glycerolated Pollen Antigen, J. M. Soc. New Jersey **19**: 63 (March) 1922.
24. Wodehouse, R. P.: Preparation of Vegetable Food Proteins for Anaphylactic Tests, Boston M. & S. J. **175**: 195 (Aug. 10) 1916.
25. Bernton, H. S.: The Biological Aspects of Hay Fever, Rhode Island M. J., to be published.

from seasonal hay-fever, were entirely relieved of symptoms by treatment. The skin sensitiveness in both of these cases reached a dilution as high as 1 : 20,000.

Early in the course of our work, it became evident that some patients responded to the subcutaneous injection of pollen protein with a local reaction. This reaction consisted of swelling, redness or itching, or of a combination of these signs. At no time was the reaction severe enough to incapacitate a patient, or even give the patient any degree of discomfort. Other persons were unaffected in that there was no local response to the injection of foreign protein.

It is indeed, noteworthy, as shown in Table 5, that only 32 per cent. of the subcutaneous injections of ragweed protein have caused local reactions in those patients unimproved by treatment, whereas, 84 per cent. of injections have produced local response in those who have enjoyed freedom from symptoms. This observation is in accord with analogous experiences in the prophylaxis against other diseases. In vaccination against smallpox, typhoid fever and diphtheria, the local reactions that ensue are indicative of the marshaling of the antibodies of defense. The opinion is warranted that failure to elicit in patients a local response to subcutaneous injection of pollen protein is evidence of a refractory state of desensitization. This may be overcome by injections with higher concentrations. The indications are clear that each injection should be of such concentration as to yield a local reaction. No set rules can be applied. Due diligence and good judgment must be exercised, however, in the avoidance of constitutional reactions.

The foregoing opinions, suggested by our analysis, find confirmation in this case history:

A man, aged 38, had been a sufferer from autumnal hay-fever for thirty-four years. His knowledge of the disease was as extensive as his symptoms were severe. After having received four injections, he made mention of the local response provoked by our extract M in high dilution. He also volunteered the information that commercial extracts, with which he had been treated in previous years, failed to cause any local reaction, save toward the end of the prescribed course of treatment. During the hay-fever season, the administration of such commercial extracts in low dilution was followed by local reaction. The greater the local reaction, the greater was the clinical relief afforded by that injection.

TABLE 6.—*Concentration of Extract*

Concentration of Extracts Yielding Positive Cutaneous Reactions	Number of Patients	Concentration of Extracts Used in Treatment
1:100	1	1:500
1:2,700	1	1:100
	5	1:500
	2	1:5,000
1:8,100	2	1:500
	2	1:1,000
	1	1:5,000
1:24,300	3	1:500
	5	1:1,000
	8	1:5,000
	1	1:10,000

I base my opinion on the evidence submitted that a local reaction following subcutaneous injection of protein solution is an assurance of some clinical relief.

I cannot agree with the view expressed that the concentration of extract used in treatment shall not be capable of exciting a cutaneous reaction. Cutaneous reactions are too uncertain to serve as an absolute guide in treatment. In our comparative study of commercial extracts, thirty-one patients were tested at varying stages in their course of treatment. It will be recalled that six dilutions of our extract were used as controls. It is of interest to note, in Table 6, the concentration of extract with which treatment was being carried on, and the concentration of extract which yielded cutaneous reactions.

Thus, of thirty-one patients tested during treatment, twenty-six were receiving injections with concentrations much higher than those which yielded positive skin tests. No untoward effects were noted. Walker,[6] in discussing the influence of treatment on cutaneous sensitiveness, says:

In practically three fifths of the cases, the intensity of the skin test diminished 100 times, and in practically the remaining two fifths it was decreased at least twenty times; the larger the number of treatments given, the greater was the decrease in the intensity of the skin test.

We have found Walker's schedule of treatment very helpful, and have modified it to meet individual requirements.

The early investigators, Dunbar,[26] Noon and Freeman, have advocated the use of the ophthalmic test in establishing the sensitivity of the patient and in determining an initial nontoxic dose. Koessler, however, reports that "in a series of twenty patients, the effect of every injection was controlled by the ophthalmic reaction in the endeavor to use it as a constant guide in determining the subsequent dose to be given. This has been found unnecessary and misleading."

COMMENT

It is obvious, therefore, that no satisfactory method exists either for the classification of patients or for guidance in treatment. Herein is the opportunity offered for useful investigation.

Accurate diagnosis and the administration of potent extracts of pollen protein are the essentials in the prophylactic treatment against hay-fever. Nevertheless, there are contributory factors that may affect the outcome. The upper air passages of sensitive persons merit the attention of the specialist. Surgical measures should be employed to remove mechanical obstruction or to correct deformity.

The use of bacterial vaccines has from time to time been included in the treatment of hay-fever. Vaccine therapy in chronic disorders is based on the assumption that the bacteria responsible for the infection have become immune to the tissues of the host. As the result of retarded growth, little bacterial substance is liberated to stimulate the production of immune bodies. Therefore, vaccines supposedly supply the deficiency. It is difficult to reconcile this view with conditions which obtain in uncomplicated hay-fever. This disease, according to the preponderance of evidence, is an expression of protein intoxication. The rôle which bacteria play is seemingly unimportant. The paroxysms of sneezing and the constant rhinorrhea tend to dislodge the bacteria and wash away their toxins. Self-purification becomes the first stage of self-preservation.

Active immunization, despite its limitations, offers hay-fever victims more chance for cure and relief than any other therapeutic measure. Temporary removal to localities where the offending plant does not flourish is possible for a limited number of subjects. Those who are obliged to remain at home during the critical season may, nevertheless, derive comfort through the observance of simple hygienic measures. Wearing

26. Dunbar: The Present Status of Our Knowledge of Hay Fever, J. Hyg. 13: 105, 1913.

amber-colored glasses and driving in closed automobiles may make trips outdoors more inviting. Women will not hesitate to wear veils and combine fashion with comfort. Flowers and dusts of all kinds must be avoided. Bedroom windows, kept closed during the day, will prevent the ingress of pollen grains. During sleeping hours, a screen of muslin, saturated with water, may be placed in front of open windows to admit fresh air. Vigorous exercise outdoors, as tennis and baseball, should be avoided. With increase in the number and depth of respirations, a larger amount of pollen is inhaled, which aggravates symptoms. Frequent washing of the hair is advised as a means of removing the pollen grains which may have become enmeshed. Avoidance of sudden changes in temperature and of exposure to drafts is of especial importance. Exposure of the body in undressing or getting out of bed will cause a temporary cooling of the body surface and a consequent paroxysm of sneezing. For the same reason, sensitive persons should guard against exposure to electric fans.

The accomplishments of the past augur well for the future of prophylaxis against hay-fever.

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THE POTENCY OF SOME COMMON DIGITALIS AND STROPHANTHUS PREPARATIONS*

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It has frequently been emphasized that it makes little difference what type of digitalis preparation is used, as long as it is active and is given in dosage sufficient to produce its physiologic effects. Not very long ago the digitalis in general use was of low strength, and the results obtained from it clinically were naturally disappointing. Pratt,[1] in 1910, examined some of the common digitalis preparations of that time, and found them very weak. We knew that because of the large amount of work, both clinical and experimental, dealing with digitalis therapy that has appeared recently, greater attention has been given to the problem of supplying active digitalis preparations. We felt that it would be of some interest to make a survey at this time of some of the commoner types of digitalis preparations to determine their potency. We chose for this purpose particularly those preparations that are readily available to the majority of cardiac patients. We have made no effort, and it would be very difficult, in a work of this kind, to examine all the common preparations of digitalis.

Except for a few preparations obtained from the drug store in this hospital, all the samples tested were procured from pharmacists in different parts of Boston. An effort was made to get the drug that is commonly dispensed when a patient presents a prescription for digitalis. We tried to determine the age of the preparations obtained, and found this impossible, since in most cases the drug was dispensed from an undated bottle. We found that the druggists were buying their digitalis in small amounts, a practice we commend as it avoids the use of deteriorated drugs.

The method we employed was a modification of the cat method of Hatcher. Instead of the buret with small cannula in the vein, we made our injections with a tuberculin syringe graduated in 0.01 c.c., inserting the small needle directly into the exposed right saphenous vein of the anesthetized cat. One tenth of the estimated lethal dose of the preparation being tested was injected every six minutes. An electrocardiogram (Lead 2) was taken before any of the drug was given, and was repeated five minutes after each injection. The animal was constantly attached to the galvanometer, and a careful watch was kept for the earliest appearance of ventricular extrasystoles, since, following the suggestion of Levine,[2] these seem the best evidence of toxic action on the cat's heart. This method of injecting one tenth of the estimated lethal dose every six minutes, while subject to small error, is probably as accurate as the method of continuous injection.

In Table 1 the minimal toxic dose (M. T. D.) is the amount of the drug that had been injected when ventricular extrasystoles appeared. Earlier evidences of digitalis action, as slowing of the heart rate due to vagal stimulation, inversion of the T waves, delayed auriculoventricular conduction, and changes in the form of ventricular complex, appeared in most cases, but were inconstant in their occurrence and were deemed unsatisfactory as indexes of digitalis intoxication. The minimal lethal dose (M. L. D.) is the amount necessary to kill the animal. The minimal lethal dose per kilogram is the so-called cat unit. The percentage of the minimal lethal dose that is toxic is that portion of the actual lethal dose that was injected before ventricular extrasystoles appeared. The minimal lethal dose was figured in cubic centimeters, since all preparations were given in liquid form; it was also determined in terms of the powdered leaf (1 c.c. of the tincture equals 0.1 gm. of powdered leaf). Certain exceptions to this occur in the table. For testing the Digitora tablets, a maceration tincture was made according to U. S. P. directions of such strength that 1 c.c. equals 0.13 gm. of the Digitora tablets. Digalen is of such strength that 1 c.c. equals 0.3 mg. of amorphous digitoxin. We found this preparation quite weak, being only one third as strong as it should be if it contained 0.3 mg. of active digitoxin per cubic centimeter. Tincture of strophanthus, as will be seen from the table, is about fifty times more active than tincture of digitalis when given intravenously. That these tinctures are given in practically the same dose by mouth can only be explained by the fact that tincture of strophanthus is poorly absorbed from the digestive tract, or it may be partially destroyed before absorption. In the case of strophanthone, no mention is made by the manufacturers of the strength of this preparation in terms of crystalline strophanthin. We found the preparation quite weak, especially if used in the dosage suggested by the makers. In the other strophanthin preparations, 1 c.c. is equivalent to 1 mg. of the crystalline strophanthin. In Arnoud's Ouabaine, 1 c.c. equals 0.5 mg. of crystalline ouabain.

The mode of action of all preparations was essentially the same. The early electrocardiographic changes have already been mentioned; they were slowing of the heart rate, delayed P-R conduction, and inversion or

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1. Pratt, J. H.: The Importance of Determining the Potency of Digitalis Preparations, Boston M. & S. J. **163**: 279, 1910.

2. Levine, S. A.: The Action of Strophanthin on the Living Cat's Heart, J. Exper. Med. **29**: 485, 1919.

alteration of the T waves. The first evidence of toxic effect was the appearance in the majority of instances of occasional ventricular extrasystoles and sometimes of complete heart block, or definite changes in form of the ventricular complex. Following the extrasystoles which came from one or several foci, there occurred a ventricular tachycardia, during which there was a progressive increase in heart rate, and increasing impairment of intraventricular conduction. After this tachycardia a ventricular fibrillation occurred, and death ensued in a short time. The mechanism of death was always the same, the heart stopping before the respirations. Other changes noted in the cat during the injection were lip-licking (an early sign of nausea), retching and vomiting. Urine was voided in some cases, and a few times feces were expelled after the toxic dose had been exceeded. On postmortem examination, the hearts usually were found strongly contracted. From the fact that the results obtained were practically the same in all of our experiments, we feel that digitalis and strophanthus probably act in a similar way on the living cat's heart.

Although most of the preparations we tested were of recent make, being probably less than 6 months old, we examined two tinctures that we had had in the laboratory for some time. One of these, a tincture made by E. R. Squibb & Sons, was tested by Dr. Levine [3] in 1919. It was made in about June of that year. We tested it three and one-half years later, and found it as potent as it was then (Experiment 19). Another old tincture was made by Parke Davis & Co., dated January, 1921. Two years later we found the same potency that Dr. Levine found in 1921. Both these tinctures had been kept tightly corked in a refrigerator at about 6 C. There is apparently little or no deterioration of a properly kept tincture. The Boehringer's Strophanthin in ampules used was from an old lot, and probably represents some prewar stock, possibly as old as 1914. It was found to have only one thirtieth of the expected strength. Its present weakness is probably due to its age, being a result of deterioration of the strophanthin due to changes in the H-ion concentration, as pointed out by Levy and Cullen.[4]

Two fat-free tinctures were included in the preparations examined. There seems to be no advantage in their use. They had the same effect on the cats as regards the occurrence of retching and vomiting, and they are of no greater potency than the ordinary tinctures. The Digitora tablets we tested were made of very active leaf, and have a cat unit that corresponds to the expected standard. However, any good powdered leaf can be made up into pills by a pharmacist at less cost to the patient. Whereas most of the preparations were made by widely known pharmaceutical houses, we tried one tincture made by a local druggist from English leaves (Experiments 8 and 10). The tincture was slightly weaker than the expected standard.

We usually used two cats for each drug. If we found a lack of close agreement between the results obtained in two experiments, we repeated the work until we were satisfied with the results. In some cases we used as many as five cats before feeling sure we had determined the actual cat unit for the preparation we were testing.

As we were especially interested in the clinical application of these findings, it occurred to us that it might be of interest to determine accurately the number of drops in a cubic centimeter of the preparations examined. We knew from previously published investigations that the number of drops per cubic centimeter in a tincture was considerably greater than is generally recognized. We counted the drops in a cubic centi-

TABLE 1.—*Potency of Digitalis and Strophanthin*

Cat No.	Drug: Name	Drug: Maker	Cat Weight, Kg.	Toxic Dose M. T. D.	Lethal Dose M. L. D.	Per Cent. of M. L. D. That is Toxic	M. L. D. per Kg. in C.c.	M. L. D. per Kg. in Gm.	Margin of Safety M. L. D. — M. T. D. per Cent.
3	Tincture digitalis	E. R. Squibb & Sons, New York	2.1	0.63	1.26	50	0.6	0.06	50
7	Tincture digitalis	E. R. Squibb & Sons, New York	3.4	1.36	2.38	57	0.7	0.07	43
13	Tincture digitalis (fat free)	E. R. Squibb & Sons, New York	3.9	1.17	2.73	43	0.7	0.07	57
31	Tincture digitalis (fat free)	E. R. Squibb & Sons, New York	4.2	1.68	....	50*	0.8*	0.08*	..
19	Tincture digitalis (old)	E. R. Squibb & Sons, New York	2.5	1.25	2.25	56	0.9	0.09	44
1	Tincture digitalis	Parke Davis & Co., Detroit	4.5	1.8	4.5	40	1.0	0.1	60
9	Tincture digitalis	Parke Davis & Co., Detroit	2.4	1.2	2.64	45	1.2	0.12	55
33	Tincture digitalis (old)	Parke Davis & Co., Detroit	2.5	1.5	2.25	66	0.9	0.09	34
4	Tincture digitalis	John Wyeth & Bro., Philadelphia	2.0	1.2	2.4	50	1.2	0.12	50
14	Tincture digitalis	John Wyeth & Bro., Philadelphia	2.7	1.62	2.43	67	0.9	0.09	33
23	Digitol	H. K. Mulford & Co., Philadelphia	2.9	0.87	3.77	23	1.3	0.13	77
26	Digitol	H. K. Mulford & Co., Philadelphia	3.8	1.96	3.66	54	0.96	0.096	46
36	Tincture digitalis	Burroughs Wellcome Company	2.7	3.24	4.32	75	1.6	0.16	25
40	Tincture digitalis	Burroughs Wellcome Company	3.4	1.02	4.08	25	1.2	0.12	75
6	Tincture digitalis	Norwich Pharmacal Company	2.4	1.68	3.32	50	1.4	0.14	50
18	Tincture digitalis	Norwich Pharmacal Company	2.5	1.0	2.25	44	0.9	0.09	56
8	Tincture digitalis	Huntington Avenue Pharmacy	2.6	2.08	4.16	50	1.6	0.16	50
10	Tincture digitalis	Huntington Avenue Pharmacy	1.8	1.41	2.34	62	1.3	0.13	38
38	Digitora	Upjohn Company, Kalamazoo	2.8	1.4	2.24	62	0.8	0.104†	38
39	Digitora	Upjohn Company, Kalamazoo	3.6	2.16	3.24	67	0.9	0.117	33
25	Digalen	Hoffman LaRoche Chem. Wks., N. Y.	3.5	9.05	14.5	69	4.1	1.21	31
32	Digalen	Hoffman LaRoche Chem. Wks., N. Y.	2.0	4.6	6.0	77	3.0	0.9	23
29	Tincture strophanthus	Parke Davis & Co., Detroit	2.8	0.56	0.76	73	0.026	2.6§	27
34	Tincture strophanthus	Parke Davis & Co., Detroit	2.5	0.375	0.525	62	0.021	2.1	38
11	Strophanthin Boehringer	Merck & Co., New York	2.8	4.31	8.62*	..	3.07	3.07¶	..
24	Strophanthin Boehringer	Merck & Co., New York	3.0	4.5	7.8	58	2.6	2.6	42
16	Strophanthin	Merck & Co., New York	2.1	0.42	0.42	100	0.20	0.20¶	0
17	Strophanthin	Merck & Co., New York	3.0	0.45	0.57	79	0.19	0.19	21
21	Strophanthone	Parke Davis & Co., Detroit	3.9	0.24	1.67	21	0.42	....	79
22	Strophanthone	Parke Davis & Co., Detroit	3.9	1.09	1.4	78	0.36	....	22
12	Ouabaine	Nativelle, Paris	2.2	0.33	0.48	68	0.218	0.109#	32
41	Ouabaine	Nativelle, Paris	2.8	0.4	0.51	78	0.182	0.091	22

* Estimated from minimal toxic dose (M. T. D. = 50 per cent. of minimal lethal dose).
† Tincture made of such strength that 1 c.c. = 0.13 gm.
‡ Mg. of digitoxin.
§ Mg. of strophanthus leaf.
¶ Mg. of crystalline strophanthin.
Mg. of crystalline ouabain.

3. Levine, S. A., and Cunningham, T. D.: The Margin of Safety of Intravenous Digitalis in Cats, Arch. Int. Med. **26**: 293 (Sept.) 1920.

4. Levy, R. L., and Cullen, G. E.: Deterioration of Crystalline Strophanthin in Aqueous Solution: Its Relation to Hydrogen Ion Concentration, and a Method for Its Prevention, J. Exper. Med. **31**: 267 (March) 1920.

meter of the tinctures we had examined. In doing this we tried to imitate the conditions under which the patient measures out his medicine. We obtained droppers from a number of sources, and dropped the tincture in the usual way. Some variations were found in different droppers, probably due to small differences in the diameters of the tips. Considerable variation occurred, depending on the position of the dropper; when it was held vertically there were more drops per cubic centimeter than when it was held obliquely (at an angle of about 30 degrees with the horizontal). There was a noticeable difference in the number of drops per cubic centimeter, depending on the rate of flow; when the fluid was dropped in about fifteen seconds, there were fewer drops than when about forty seconds was consumed. In spite of the fact that drops and minims (16 minims in 1 cubic centimeter) are not synonymous, a good many physicians still prescribe tincture of digitalis in drop doses when they intend to give minims. For a tincture containing as many as 65 drops per cubic centimeter, this is obviously ridiculous. It would be much better if we could avoid all reference to drops in connection with digitalis administration. A valuable means of accomplishing this would be to have droppers

TABLE 2.—*Size of Drops and Use of Droppers*

	Number of Drops per C.c.		
	When Dropped in About 40 Seconds; Dropper Held		When Dropped in About 15 Seconds; Dropper Held
Preparation	Vertically	Obliquely	Vertically
Tincture of Digitalis:			
1. Squibb's	65	47	50
2. Squibb's fat free	57	43	40
3. Parke Davis & Co.	63	40	51
4. Wyeth's	54	40	46
5. Digitol, H. K. Mulford	51	38	38
6. Burroughs Wellcome Company	52	41	38
7. Norwich Pharmacal Company	54	41	35
8. Huntington Avenue Pharmacy	64	43	39
9. Digalen	38	26	31
Tincture of strophanthus	62	46	49
Tap water	26	17	24
95 per cent. alcohol	60	48	45

marked in 1 c.c. and 0.5 c.c. amounts. If these were available, physicians could prescribe digitalis in such doses, and patients would have an accurate and ready method of measuring the drug. In Table 2 we show the results obtained with the various preparations. The corresponding figures for tap water and 95 per cent. alcohol are included for comparison.

CONCLUSIONS

1. The potency of a group of the more common digitalis and strophanthus preparations has been examined by the cat method.

2. The results show that there has been considerable improvement in the strength of the digitalis that is available to the average patient. Tinctures, leaves in pill form, and some liquid preparations of digitalis and strophanthus in ampules were found to approximate fairly closely the expected standards; that is, the minimal lethal dose per kilogram (cat unit) is 1 c.c. of tincture of digitalis, 0.1 gm. of the powdered digitalis leaf, 0.1 mg. of crystalline strophanthin, and 0.3 mg. of digitoxin.

3. Too great emphasis cannot be placed on the importance of avoiding the use of drops in prescribing tincture of digitalis. A readily available means of measuring cubic centimeter and five-tenths cubic centimeter amounts would be of distinct value.

THE PROTECTION AND DEVELOPMENT OF HEALTH IN BOARDING SCHOOLS

HAVEN EMERSON, M.D.
NEW YORK

While I was responsible for the protection of the health of the student body (5,421) at Cornell University at Ithaca, N. Y., during the college year 1919-1920, these observations were made:

> Of the total number of days of student time possible for the entire student body, 1.6 per cent. of days were lost during the college year on account of sickness. The loss by the women students was 2.4 per cent. of their possible total days, the loss by the men being 1.5 per cent. Of the total cases of sickness recorded, numbering 8,329, 52 per cent. were due to sicknesses which fall properly within the designation of preventable diseases; that is, acute respiratory infections, acute infectious diseases, infections and communicable diseases of the skin, and disturbances due to errors of diet or in the use of foods. Of the total cases of sickness, 21 per cent. were due to respiratory affections, 7.7 per cent. due to other acute infections, 10 per cent. due to skin affections, 22 per cent. due to digestive disturbances, and 16.6 per cent. due to external causes.[1]

It is to be expected that the extent of sickness among boys in boarding schools similarly separated from large urban communities will exceed that found among the older group represented among college students, and this chiefly because the schoolboys have not the acquired or natural resistance or immunity to diseases due to respiratory tract infections which more mature persons have, and further because schoolboys cannot as safely as college men and women be released from what may be best described as maternal care and supervision in matters of clothing, food, exercise and rest.

The records of a privately endowed boys' boarding school of the highest type with a uniform enrolment of 400 boys between the ages of 12 and 18 were put at my disposal while I was studying health supervision at this school. From these it appeared that over a period of three years (1919-1922), an average of 3.55 per cent. of all possible days of school attendance were lost on account of sickness: 1919-1920, 4.26 per cent.; 1920-1921, 3.15 per cent., and 1921-1922, 3.24 per cent., and further, that of all the days lost, 74.5 per cent. were lost on account of infections acquired through the respiratory tract. Furthermore, there were a considerable number of days lost through indiscretions of diet and from slight indispositions, due mainly to fatigue from one cause or another and properly chargeable to the preventable group. In day schools, public or private, in cities the loss of days' attendance by schoolchildren amounts commonly to from 8 to 10 per cent. of all possible days because of sickness.

Attention to medical care during sickness naturally has preceded interest in disease prevention in schools as among children at home, but the steadily increasing appreciation of the value and practical application of our present knowledge of protective as well as curative medical services in private practice warrants at least a consistent trial of measures theoretically sound, and certainly more likely to be successful in a controlled school group in the country than among day pupils of city communities. The following program of inquiry and medical administration is offered in the hope that boarding schools for girls, as well as those for boys,

1. Emerson, Haven, and others: Education in Health at Cornell University, 1919-1920, Am. J. Pub. Health **11**: 309 (April) 1921.

will develop a more alert consciousness of the value of health of body while they advance in the realm of character development and training of the intelligence.

THE OBJECTIVES

The objectives to be attained by health supervision of a boarding school are:

(*a*) Normal physical growth, as shown by height and weight for age, and performance in standard noncompetitive physical tests, including posture.

(*b*) Normal mental growth, as indicated by intelligence tests, and psychic development and behavior, as shown by response to the usual social or community situations and reactions to school discipline and responsibilities.

(*c*) The nearest practicable approach to regular and constant attendance at required school duties, or, in other words, the lowest possible noneffective rate.

(*d*) Understanding and practice of the simple necessary habits of personal hygiene of body and mind, as observed in daily school routine and disclosed at individual conferences between the pupils and the school physician.

(*e*) Correction of such physical defects as interfere with the progress of physical or mental development, or are likely to increase the hazard of infection to others.

(*f*) Prevention of diseases or conditions known to be preventable, particularly the communicable diseases, digestive disturbances and errors of nutrition.

(*g*) Abbreviation of the course of sickness and necessary convalescent periods by early report of symptoms and prompt hospitalization.

ELEMENTS IN A SURVEY

While physical environment rarely adds materially to the liabilities of a child at boarding school, heredity and personal contacts and performance being the chief hazards of youth, certain features of the school setting and equipment should be studied to be assured that there are no neglects in this factor of health.

A study of school sanitation will deal with the physical features generally grouped under location, housing, water and food supplies and disposal of wastes.

Location may well include the consideration of convenience in control of contact between the pupils and the adjacent population groups under certain contingencies. Here also we may deal with topography, soil, drainage, climate, flora and fauna.

Housing includes observations of the facilities for sleeping, eating, study, indoor assembly, recreation and religious observances. Limitation of floor and air space, separation of beds, etc., are items of special importance. Ventilation, that is, the amount, movement, temperature, humidity and facilities for change of air by permitting flushing of rooms with air direct through open windows, requires attention.

The adequacy and sanitary safety of water and milk supplies are readily determined by direct observation and the use of simple laboratory tests.

Food supply comes within the scope of sanitary studies in the matter of quality, and facilities for storage.

Sewage disposal, removal of kitchen and household waste and the general cleanliness of buildings and grounds may require attention in the interest of health of the school community.

It is obvious from a study of the modern and well managed country boarding schools that the causes, direct or contributing, of preventable diseases in a school community are rarely to be sought among errors of physical environment; nor is it at all likely that improvements in the convenience or luxury of school plants can generally be relied on to reduce such sickness as commonly occurs each year among pupils or teachers.

Under the heading of hygiene are properly included all the personal elements contributing to healthy life. Only by observation of the activities of the school population from rising bell to bed time, and the period of sleep as well, can the assets and liabilities of the school regimen be reasonably measured.

Common errors consist in the opportunities for delay and exposure during bathing and dressing; lack of brief setting-up exercises before breakfast; interference with opportunities for regular bowel evacuation before or after breakfast; insufficient time for quiet eating; eating between meals; insufficient clothing outdoors in cold, windy and wet weather; excessive exercise and zeal in athletic competition for those underweight for height and age; the urging of rapidly growing children to keep up with the grade or groups when they need gentle restraint and freedom from pressure for a period, and lack of careful distinction among the pupils with fundamental differences in personality and in their mental and emotional capacities.

A PLAN FOR HEALTH PROTECTION

A plan for health protection would include:

(*a*) A complete health examination of each pupil on admission to school, including functional test of heart, examination of nose, throat, eyes and ears, and mental test. This to include record of communicable disease of each pupil, and the Schick test or record of negative test by a physician of the family.

(*b*) Monthly record of weight and height of all except those 10 per cent. or more underweight for height and age, whose record should be made and studied weekly. The chief resources for correction of errors discovered through study of such records will be found to be limitation of competitive athletics in the underweight group and the provision of extra rest, sufficient protection by clothing outdoors and the judicious selection of suitable supplementary diet. The occasional instance of the overweight child can be readily corrected by adjustment of physical expenditure and food intake.

(*c*) Quarterly conferences with the health physician, preferably personal and individual, to consider the success or failure of the pupil in understanding and applying the rules of healthy living, and the results. It is to be understood that this is merely the particular and personal application of instruction in hygiene required to fix the application of systematic class instruction in hygiene in the mind and daily practices of the individual pupil. An essential element and foundation for any program or service for health protection is the teaching of applied personal hygiene as a part of the school curriculum for each grade. This is to be built on the teaching of the biologic sciences. It may well be that the health physician of the school will be the teacher in the classrooms of the subject of hygiene as well as the health officer of the school community.

(*d*) Daily morning observation of every pupil by some competent person who knows how each one ought to look in health (as at the breakfast table), and reference to the health physician of any one showing evidence of cold, red eyes, sore throat, rash, constipation or lack of sleep.

(*e*) Daily inspection of the entire school by the health physician for two weeks after holidays, or of individuals after absence from school for over night at any time.

(*f*) Bed care at onset of any cold or cough, or acute febrile episode.

(*g*) Isolation, from contact with pupils, of any teachers, cooks or dining-room help with colds, coughs or fever, and inquiry as to past history of typhoid fever and chronic coughs and colds, and sore throats among all who come in contact in classrooms or food service with pupils.

(*h*) Insistence on practice of washing hands before eating and after use of the toilet.

(*i*) Functional examination of heart, and measurement of weight and height of any pupil on discharge from infirmary or home sick-care after any fever or infection.

(*j*) Records of height and weight, posture and incidence of sickness tabulated for comparison by age, grade or competitive group.

THE SCHOOL HEALTH PHYSICIAN

It is believed that the protection of health of pupils is an obligation assumed by the school when it accepts them for residence or school attendance. It requires quite as much, if not more, skill on the part of a physician to detect the early incidence of preventable causes or evidences of sickness as to diagnose and treat already declared serious illnesses. The resident or attending school physician who heads the medical services should be primarily responsible for the health protection and development of the pupils, and should know when to call experts in diagnosis and treatment if sickness demands care he feels he himself is not competent to give. The school health physician, like those engaged entirely in the practice of curative medicine, needs for his development the spur of competition and contact among physicians devoted to the same kind of service. This can best be provided through association among school physicians, preferably with the existing organization of physicians directing medical services in the universities and colleges of the country.

It is quite possible that schools providing adequately for diagnosis and treatment of sick pupils by their own or other physicians, on their own or other premises under hospital conditions, will in some instances require the addition to their staff on full or part time of a physician charged primarily with health protection and perhaps trained in the preventive features of pediatrics or, at least, well informed in control of respiratory tract infections, the disorders of nutrition and the problems of mental health of children. The school health physician should be a member of the school faculty and attend its meetings.

COMPETITION IN HEALTH

If the conditions and numbers of the school population permit, intrascholastic or even interscholastic competition in health might become a matter of vivid interest to the pupils and their teachers on some such basis as the following:

It is suggested that competition in health be instituted by dividing the school into two clubs as the basis of measuring these three factors:

(1) The group effective rate: that is, the percentage of possible days' attendance attained during the school year by each of the clubs.

(2) The percentage of each club membership which has attained normal weight and height development for the age of its respective members.

(3) The percentage of each club which has acquired the habit of correct posture, this to be based on observations of posture, joint motion and muscular control judged by the medical officer of the school.

To have succeeded in winning a cherished prize for scholarship or to have figured for a season as the best competitive athlete of the school will prove but temporary honors if, at the same time, the school leaders have not acquired such understanding of the rules of hygiene and of the requirements of normal growth and bodily function that they can make use of their excellences with confidence in continued health for their future.

For the interest and support of the school principals and the school health physicians, and for the sake of gradual improvement in sanitation and hygiene at boarding schools, it would be well to provide for an annual inspection of the school and its year's record of performance by a representative of a university medical school, who might serve as consultant in matters of policy and one of a group of referees in the interscholastic health competition proposed.

RESEARCH IN SCHOOL HEALTH

Whenever a controllable group of individuals comes under continuous hygienic and medical supervision, opportunities are constantly arising for contributing to the sum of human knowledge in the field of preventive medicine. A number of topics suggest themselves for study by school physicians, and it would appear that enough accurate observations have already been made to justify publication of the experience of several schools for the benefit of other similar school groups. It is suggested that valuable contributions from the experience of schools could be made: (*a*) to the subject of school hygiene in the field of height and weight standards for pupils of such race stocks as are represented in the school parentage; (*b*) in the incidence of tuberculous infection among the boys of the school by the simple Pirquet intradermal test; (*c*) by further annual analysis of the susceptibility to and immunity against diphtheria among the children entering the schools; (*d*) in the distribution of respiratory tract affections according to the age group and nutritional level of the boys, and (*e*) in the seasonal incidence of preventable sicknesses analyzed by weeks and the ages of the different school groups.

Until schools have received at least as careful modern scientific protective medical attention as was provided for enlisted men in military service, or health service of as thorough-going quality as is given to various custodial and other public institutions, we shall not know to what considerable extent we are failing to save our boarding school children from avoidable and often permanent damage now too often resulting from infection of the respiratory tract and interference with growth.

437 West Fifty-Ninth Street.

Communicable Diseases and Travel.—Uniform provisions governing the travel of persons suffering from contagious diseases are now in force over a large part of the United States. The U. S. Public Health Service, in a bulletin just issued, says that twenty states (Alabama, Florida, Georgia, Illinois, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, New Hampshire, North Dakota, South Carolina, Tennessee, Virginia, West Virginia, Washington and Wisconsin) have adopted the standard railway sanitary code approved by the conference of the state and provincial health authorities of North America, and later by the U. S. Public Health Service in conference with the health officers of the United States. The code looks to either the prevention of travel by infected persons or to taking measures to render such travel harmless; to the adoption of such general provisions as may render unlikely the transfer of infection to travelers by towels, drinking cups and other objects of general use, and to the control of food and water on trains so as to protect them from infected persons. Prevention of all travel by infected persons is impracticable. There are sometimes good reasons why infected persons should travel; for instance, it may be advisable to take home to its parents a child suffering from measles, both for its own sake and for the sake of children whom it is visiting. If no provision is made for such patients, they may travel secretly and without safeguards.

Clinical Notes, Suggestions, and New Instruments

A ROCKING-SHOE *

PATRICK P. GROSSO, M.D., CHICAGO
Past Assistant Surgeon (R.), U. S. Public Health Service

A rocking-shoe is a simple appliance that may be used successfully by the patient himself for mechanotherapy. It is suitable for cases in which there is a partial loss of function in the ankle or leg, resulting from various conditions that tend to weaken or to limit the ankle movements, such as foot drop, partial atrophy from disuse or nerve injury, partial ankylosis, contractures of tendons or muscles, stiffness following a sprain, contusion or dislocation, fractures into or about the ankle joint, or a recovering arthritis.



Rocking-shoe as seen from above, from below and from the side.

The rocking-shoe consists of a flat, rigid board, which is shaped like the sole of a shoe. Attached across the under surface, half way between the heel and the toe, is a cylindric piece of hard wood which acts as a fulcrum or rocker for plantar and dorsal flexion exercise. When the foot movements of inversion and eversion are required, the cylindric piece of wood should be of smaller gage and placed in a vertical position on the under surface of the sole, in order that the rocking motion may be side to side instead of to and fro. In order to adjust the rocking-shoe to the foot and to keep it from slipping, there is tacked around the heel of the wooden sole a leather or canvas counter with a strap and buckle that fastens about the ankle and that gives the apparatus the appearance of a slipper.

The patient is instructed in the use of the rocking-shoe. Graduated exercises are prescribed, the frequency and the time being increased daily. After a brief period, especially when the patient cooperates conscientiously, a marked improvement in functioning power results, much greater than is usually accomplished in an up-to-date physiotherapy department.

The advantageous features are that (1) on account of the simplicity of the rocking-shoe, it can be easily made without any elaborate tools or supplies; (2) the patient can use it without the aid of an assistant or masseur, and (3) it takes the place of complicated mechanical devices, and gives satisfactory results.

4141 Clarendon Avenue.

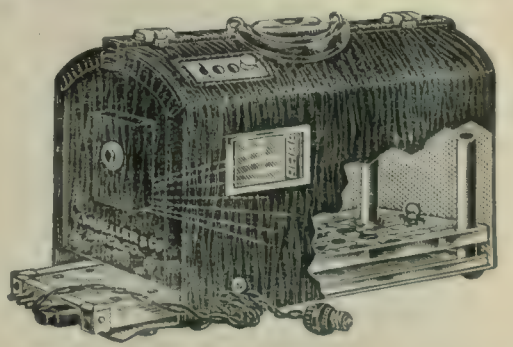
* From U. S. Marine Hospital No. 5.

HEATED BED FOR TRANSPORTATION OF PREMATURE INFANTS

JULIUS H. HESS, M.D., CHICAGO

This electrically heated bag is constructed to meet conditions encountered in the home and in transporting premature infants from distant points by train or automobile. It is designed as a part of the obstetric department equipment for general and special hospitals or other institutions likely to be called on for the temporary care of premature infants.

The hand bag is of leather and steel construction, 19½ inches long, 9½ inches wide and 15 inches deep. It is divided into two compartments, the lower containing electric heating units, and the upper the crib. It is ventilated through the top by means of an adjustable slide. Observation of the infant is made possible through a glass window in the front of the bag, and a thermometer is fastened on the inside at the window in such a position that it may be easily read from without. The bag is electrically lighted, the light being controlled by a push button on the end of the bag.



Heated bed for transportation of premature infants.

There are two heating units. The first is so constructed that it may be operated on any one of three voltages—110, for ordinary city lighting, 64 and 32, for railroad travel (the voltages used in train lighting). The second unit is designed for transportation by automobile, the plug being inserted into the lamp socket on the instrument board. To secure an equal distribution of heat throughout the bag, the false bottom is thoroughly perforated and a 1 inch tube is inserted at each corner of the false bottom and rises to the top of the bag The heat thus reaches the mattress from below, and at the same time the upper part of the bag is warmed by radiation The heating unit was designed by the Russell Electric Company.

Clothing and blankets used for dressing the infant during transportation should be made from heavy woolen materials.

Ordinance Requiring Health Certificates of Persons Working in Food Establishments Upheld.—In a habeas corpus proceeding the Court of Criminal Appeals of Texas has held valid an ordinance of the city of Dallas requiring of any person who works in a food establishment a health certificate showing that such person has been examined by a reputable physician and found free from any communicable disease. The ordinance made proprietors of food establishments subject to the medical examination, and the person who sought the writ of habeas corpus was the proprietor of a meat market who had been convicted for having worked in the establishment without having a health certificate.

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SATURDAY, MAY 5, 1923

THE INTRACARDIAC INJECTION OF EPINEPHRIN

The powerful pharmacologic effects of epinephrin have been a matter of interest to the medical profession since this active principle of the suprarenal gland was isolated by Abel, Takamine and Aldrich in the period from 1901 to 1903. Credit is given to Shäfer and Oliver for having first shown, in 1895, the power of the medullary substance of the suprarenal to raise the blood pressure. Recently, considerable publicity has been given to the power of the drug, when injected into the heart, to produce a response resulting in revivification when the heart has apparently ceased its action from certain causes. According to Bodon,[1] medical officer of the United States legation in Budapest, who recently has reviewed the development of this use of epinephrin, the drug seems to have been first recommended for this purpose by Winter in 1905, although Latzko stated that he had attempted intracardiac injection on a human being as early as 1904. In 1910, Läwen and Sievers of the Trendelenburg clinic reported extensive experiments on the use of intracardiac injections of both strophanthin and epinephrin in the hearts of animals which had been caused to stop beating by temporary ligation of the circulation in the aorta and pulmonary artery. When epinephrin was injected there was a contraction of the inner zone of the parietes of the heart, which resulted in a stronger systolic contraction and a rise of blood pressure even in cases in which the vessels of the greater circulation had been replaced by rigid tubes. In other experiments, epinephrin was injected in the left ventricle immediately after loosening of the ligature of the artery, and the results were satisfactory. In another group the investigators waited until they had convinced themselves that artificial respiration with oxygen and massage of the heart were quite useless before administering the drug. In this group the results were less satisfactory, but in many instances resulted in complete restoration of the heart action. In 1915, Gunn showed that a heart which has ceased to beat may often be revived by epinephrin, and Szubinsky applied the method in three cases on the battle field, giving from 30 to 40 c.c. of an 0.8 per cent. salt solution with digitalis, and from 10 to 15 drops of epinephrin divided into three doses. All three patients subsequently died of conditions which at necropsy were shown to be due to the war injuries they had suffered, but temporary improvement was observed in all three, in one case lasting ten hours, with a transitory return of consciousness.

In the following year, as reported by Bodon, Ruediger revived a woman who was moribund as a result of mitral regurgitation with stenosis, by giving her an intracardiac injection of strophanthin. As a result of his experiments on animals, Ruediger recommended that injections be made in the second left intercostal space close to the sternum, sometimes in the third intercostal space; but Dörner, in 1917, recommended the fourth left intercostal space close to the sternum. The latter reported that a patient, apparently dead for twenty minutes, revived for a transitory period. In a case reported by Volkmann in 1917, there was hardly any respiration, no patellar or corneal reflex, and no pulsation in the arteries, but occasional weak beats of the heart were heard. The intracardiac injection of 1 mg. of epinephrin diluted with 20 c.c. of physiologic sodium chlorid solution was given, and after the third injection sensation and consciousness returned, but the patient died two hours later.

In 1919, as reported by Bodon, van den Velden reported the results in forty-five cases treated during twelve years. He resorted to the method only when collapse was so far advanced that intravenous medication seemed impossible. He used the fourth or fifth intercostal space, two finger breadths from the left border of the sternum. At necropsy he found that the needle most frequently passed into the myocardium and not into the cavity. He used many stimulating drugs, including strophanthin, digitalis, camphorated oil, caffein and epinephrin. In one third of his cases the immediate results were astounding, and the best results occurred in cases due to disease of the heart. In no instance, however, did any of the patients live longer than eight hours.

Later, Hesse, Zuntz, Henschen and Heydloff used this method in a variety of cases with remarkable results in some instances, each of them reporting at least one case as a cure. The most remarkable case is that reported by Guthmann in 1921 as a part of a series of five cases from the clinic for women in Erlangen. Collapse occurred during an examination for extrauterine pregnancy. Camphor and epinephrin were injected intravenously; artificial respiration and drug stimulation of the heart were resorted to, but without result. After six minutes, an intracardiac injection was given, the heart at that time being absolutely

1. Bodon, Carl: The Intracardiac Injection of Adrenalin, Lancet 1: 586 (March 24) 1923.

quiescent. In ten seconds the heart sounds became perceptible, in two minutes the corneal reflex reappeared, and after eleven minutes the patient made her first respiratory movement. Four weeks later she was discharged from the clinic as well.

Bodon summarizes in his report more than ninety cases in which this method had been resorted to prior to the present year. Lasting results were obtained in twenty-four cases, including one case in Bodon's own practice which he reports in great detail. As a result of his study, he is convinced that it is not necessary or advisable to give more than 1 mg. of epinephrin or 1 c.c. of a 1 : 1,000 solution of the drug, in view of the possible danger of producing tetanic contraction of the muscle with systolic beating of the heart. The solution should be fresh and potent. The necessary instruments are a good syringe and a thin needle 8 cm. in length. The site of puncture should, of course, vary with the form and size of the chest and heart of the patient; but, in general, in order to reach the left ventricle, puncture should be made in the fourth or fifth intercostal space, one finger breadth inward from the left border of the relative heart dulness. As the needle arrives at the heart muscle, a slight pendulum movement is felt, and then a harder resistance as the muscle contracts from the irritation of the penetrating needle. When the needle arrives in the ventricle, blood appears. To reach the right ventricle, penetration is made in the right intercostal space on the upper rim of the fifth rib close to the sternal border. The needle passes in sagittally and is directed slightly inward. Bodon strongly recommends adherence to the fourth intercostal space on the left sternal border because the heart, lying in this region quite close to the walls of the chest, is technically easy to approach, and the dangerous areas are avoided with certainty. The chief effect to be obtained is the local stimulating action on the heart. The method is not to be used in hopeless cases, for instance, cachexia from cancer or tuberculosis, but its great value is in collapse resulting from embolism from the coronary artery, valvular trouble, toxic paralysis of the heart and similar conditions. Bodon says, "In every case where we know that the patient could have lived if some fatal state had not developed; in every case where we are induced to inject caffein, camphor or the like, it is our duty, whenever intravenous injections prove unsuccessful, and life is dwindling away, to have recourse to intracardiac injections of epinephrin." Bodon is careful, however, to indicate the limitations of the method, the psychology of its use, the necessity for explaining its limitations and value to the family of the patient, and the desirability that it be not resorted to until the patient is moribund, but not so late in that period as to be useless. Finally, he recommends that the method be made more widely known and that physicians learn it as a part of their training so that they may perform the procedure swiftly and satisfactorily.

It is the nature of man to be attracted by these methods, for they are sensational and striking. But essentially it must be remembered that the instances in which such restoration can be utilized are rare indeed. When death comes as the result of the wearing away of tissues; as the result of toxic action by overwhelming doses of either bacterial or metallic poisons, as the result of destruction of masses of vital organs, it would be cruel and futile to arouse false hopes by what could only be a sensational experiment. Epinephrin will cause contractions in a heart even after it has been removed many hours from the body in which it rested; but that is a far different matter than the restoration of life when that intangible thing known as the spirit has passed away. It is all a matter of the definition of the border between life and death. With a proper knowledge of human pathology, physicians may in rare instances find the procedure to be life saving rather than life restoring.

PHYSIOLOGIC ADJUSTMENTS ATTENDING MUSCULAR WORK

In order to secure an environment for the bodily tissues as nearly constant as is physiologically possible, profound and rapid adjustments are frequently necessary. Through changes in activity, new demands are promptly made for energy, on the one hand, and for withdrawal of products of metabolism, on the other. The process of absorption from the alimentary tract pours new material for distribution into the organism. Respiration also is regularly instituting alterations in the gaseous make-up of the circulating mediums. In the midst of this whirl of changes and exchanges, the cellular tissues might easily suffer serious deterioration if some device were not available whereby the internal environment tends to be kept fairly constant for each part of the body.

Every one interested in the human mechanism knows that muscular activity is attended by easily noted responses in certain of the physiologic functions. The pulse rate is quickened, respiration is augmented in one way or another, and heat tends to accumulate in the organism until it is promptly removed. Vasomotor changes occur so that more blood goes to the active contractile tissues and more to the skin when the temperature rises. In some cases at least, a more rapid beat of the heart appears to be an effort of compensation for fall of blood pressure due to dilatation of the blood vessels in certain parts.

Under conditions of work, the expenditure of energy and corresponding transformation of matter may readily be increased within a few hours of vigorous muscular activity to twice the calory exchange of the resting person. This may mean an additional metabolism involving 2,500 calories or more within the working period; for persons at hard work not infrequently have an energy transformation amounting to 6,000

calories a day. In order that the regulatory devices may be adequate under the great changes thus involved, efficient adjustments are essential. What they may actually mean, so far as the possibilities of aeration of the blood in the lungs are concerned, has been ascertained through direct measurement on man by Douglas and Haldane [1] at Oxford. During rest, from 5 to 8 liters (quarts) of blood passed through the lungs in different men, and during the hardest work the estimated flow was about 24 liters a minute. The blood output per heart beat in the man of average weight is about 120 c.c. (4 ounces); this frequently remains unchanged during even severe exertion. The outcome of such unique adjustments is unquestionably most favorable to the individual. The English investigators have further pointed out that various now available facts are consistent with the view that the rate of blood flow through different tissues is so regulated, as a rule, that the pressure of oxygen and the reaction, that is, the hydrogen ion concentration, remain approximately constant around the tissue elements in each tissue. When the physician prescribes physical exercise to a patient, he is calling the regulatory devices as well as the contractile cells into action, though he may fail to appreciate this. It is well for him to know the magnitude of the efforts which such exercise sometimes involves.

1. Douglas, C. G., and Haldane, J. S.: The Regulation of the General Circulation Rate in Man, J. Physiol. **56**: 69 (Feb.) 1922.

SUICIDE STATISTICS

It is generally accepted that the struggle to live is instinctive and inherent in all living things, and that the primordial urge to maintain life is the fundamental factor in determining evolution. Suicide is therefore one of the most puzzling of mysteries, for it seems to subvert the most primitive of all cravings. As it occurs only in man, there is reason to seek the explanation in that factor which seems almost peculiar to man: his mind. Many, indeed, see in suicide only the evidence of a mind diseased. But this explanation does not suffice. Mental disease introduces no new instincts; it merely exaggerates old tendencies by removing controls and inhibitions that would keep them in check. Other psychologists have gone to the opposite extreme and suggest that the number of suicides may even be a measure of the degree of national culture. The really essential element of mind that permits the choice of death instead of life is undoubtedly foresight and anticipation, occasionally the imaginings of insanity but more often the judgment of the actual facts.

A study of the statistics reveals glimpses of the numerous factors that enter into the formation of such judgments. The suicide rates for each hundred thousand of population for these last few years of kaleidoscopic changes are: five-year average, 1911 to 1915, 16.3; 1916, 14.2; 1917, 13.4; 1918, 12.2; 1919, 11.2, and 1920, 10.2. The figures from the United States Census Bureau for the registration area (approximately 82 per cent. of the total population) are not available for 1921 and 1922. But the Save a Life League reports the absolute numbers for those years in the whole country as over 20,000 and 13,530. These would mean a rate of about 20 and 13, respectively.

In a recent monograph, Weichbrodt [1] has analyzed European figures and discussed some interesting factors. He points out the increase in the proportion of women who commit suicide that has come simultaneously with their assumption of more active responsibility. In the United States the ratio of men to women suicides has changed from 3.3:1 in 1916, to 2.7:1 in 1920. Comparative studies of the suicide rates among Catholics, Protestants and Jews lead to the conclusion that devoutness, and not the particular form of faith, is the important element. Bratz,[2] presumably using the same figures, stresses the increasing tendency to individualism, with consequent loss of family and community ties, as an important contributing factor.

Recently there has been discussion of the supposedly greater frequency of suicide among physicians than among other professional classes. The figures compiled by The Journal from its records for the years 1916 to 1922 are: 39, 31, 39, 38, 32, 69 and 56. The approximate number of physicians during this period is from 158,000 to 160,000. Unfortunately, there are no figures available of other professions that would permit an actual comparison. But when it is realized that suicide is considerably more frequent among brain workers than among hand workers, there is little reason to assume that there is anything in the practice of medicine that conduces to suicide. The relation to employment already quoted suggests that it is lack of work and not overwork that most often leads to suicide. The rise in 1921 is entirely in accord with the general increase of suicide throughout the country.

1. Weichbrodt, R.: Der Selbstmord, Monatschr. f. Psychiat. u. Neurol., 1923, Supp. 22.
2. This article is abstracted in the Berlin Letter in this issue.

Evolution.—Among the resolutions adopted by the council of the American Association for the Advancement of Science at its recent meeting in Boston were the following which pertain to the question of evolution: (1) The council of the association affirms that, so far as the scientific evidences of the evolution of plants and animals and man are concerned, there is no ground whatever for the assertion that these evidences constitute a "mere guess." No scientific generalization is more strongly supported by thoroughly tested evidences than is that of organic evolution. (2) The council of the association affirms that the evidences in favor of the evolution of man are sufficient to convince every scientist of note in the world, and that these evidences are increasing in number and importance every year. (3) The council of the association also affirms that the theory of evolution is one of the most potent of the great influences for good that have thus far entered into human experience; it has promoted the progress of knowledge; it has fostered unprejudiced inquiry, and it has served as an invaluable aid in humanity's search for truth in many fields.

Current Comment

BORAX AS A FOOD PRESERVATIVE

A medical officer of a London suburb recently reported that some sponge-cake sold in a local bakery had been found to contain more than 35 grains of boric acid to each pound of cake. Investigation showed that the source of the boric acid was the liquid eggs (that is, egg-yolk and albumin, without the shells) shipped from China and reconstituted in England, used in the manufacture of the sponge-cake. The liquid-egg trade in England is said to amount to nearly $10,000,000 annually. Practically no liquid-egg yolk containing boric acid comes into the United States except such as is to be used for technical purposes, such as the tanning of leather. In such instances the federal authorities require the material to be so denatured that it cannot possibly be used for food purposes or the officials demand definite proof that it will be used only for technical purposes. Liquid egg containing boric acid is refused entry into the United States on the ground that it is adulterated within the meaning of the Food and Drugs Act. The case reported from London well illustrates what happens when the bars are let down to chemical preservatives.

TREND OF THE WASSERMANN TEST

When the Wassermann test was first introduced, positive reactions were reported to have occurred in tuberculosis, scarlet fever, malaria and various other diseases. Some writers reported more than 30 per cent. of positive reactions among tuberculous patients. It is well known today that such results were erroneous; syphilis and tuberculosis exist in the same person in many instances, but the doctrine that tuberculosis alone will cause a positive Wassermann reaction is no longer held by any serologist. There is now enough evidence, it seems, to discard scarlet fever also from the Wassermann list. Hecht, Lateiner and Wilenko examined 105 cases, obtaining one positive reaction; Kolmer, in 250 cases, reported only five positive reactions, and Browning and McKenzie examined thirty-seven cases and obtained no positive reactions. Recently in THE JOURNAL, Christensen [1] reported 110 cases of scarlet fever, in fifty-eight of which a Wassermann test was made in every stage of the disease. Of these, fifty-three were negative at all times; five were positive with cholesterolized antigen in the first or second week, and negative later. Malaria has occasionally been reported as producing a positive Wassermann reaction. Craig [2] observed five cases. Thompson states that he made similar observations. The report of McConnell's [3] case throws light on this question; his was a case of estivo-autumnal malaria with no clinical evidence of syphilis. The blood smear disclosed malaria parasites, and the Wassermann reaction was strongly positive. No significance was attached to the positive Wassermann reaction, which was attributed to the malaria infection. The patient died. Necropsy revealed definite syphilitic lesions in the aorta, and involvement of the aortic leaflets. Thus, a positive Wassermann reaction supposedly due to malaria was, in fact, due to syphilis. Among 4,000 persons suffering from diseases other than syphilis, Craig obtained only twelve positive Wassermann reactions. Of the twelve, syphilis could not be entirely excluded in three, and another gave a doubtful positive reaction. It cannot be said at this time that a positive Wassermann reaction is obtained only in syphilitic infection, but the trend of recent investigation is very strongly in that direction.

1. Christensen, G. E.: The Wassermann Reaction in Scarlet Fever Patients, J. A. M. A. **80**: 1119 (April 21) 1923.
2. Craig, C. F.: The Wassermann Test, Ed. 2, St. Louis, C. V. Mosby Company, 1921, p. 178.
3. McConnell, Guthrie: Positive Wassermann Test in a Fatal Case of Estivo-Autumnal Malaria, J. A. M. A. **80**: 1123 (April 21) 1923.

TWO MORE ELECTRONIC DIAGNOSES

Some one is always taking the joy out of life. A copy of the Albuquerque, N. M., *Morning Journal* for April 18 is before us. It contains an interesting "Tale of a Guinea-Pig," occupying the greater part of a page of the paper, and written by a committee of the Bernalillo County Medical Society. This society was desirous of protecting the public, of Albuquerque in particular, from exploitation by the disciples of Albert Abrams. Because of its fame as a health resort Albuquerque has proved a fertile field for these gentry. Among those doing "electronic" stunts in Albuquerque are, it seems, one F. E. MacCracken and one Henry M. Bowers, both osteopaths. In order to lend an air of verisimilitude to an otherwise bald and unconvincing tale, the committee of the Bernalillo County Medical Society had blood specimens sent to MacCracken and Bowers from another town in that state. The specimens were supposed to be, respectively, from a hypothetical "Miss Bell" and an equally fictitious "Mrs. Jones." Actually, the specimens of blood were from a guinea-pig. The Albuquerque *Morning Journal* reproduces a letter sent to "Miss Bell" signed F. E. MacCracken and one sent to "Mrs. Jones" from Bowers. Miss Bell was told that she had "lowered resistance" which had "effected [sic!] your digestive system, the Kidneys or Renal System and the Cerebro-Spinal or Central Nervous System." "Miss Bell" also had "Digestive Sarcoma Cardiac end of the stomach 6 ohms"; this "in later stages will be noticed by Orthodox Medicine as a Cancer. But at this stage you have only 6 ohms and is in the form of an ulcer." Also "Miss Bell" had a streptococcus infection of the left frontal sinus, of both antrums, of "the Gall Bladder and the Left Tube." Could one expect a more interesting diagnosis to be made from a drop of blood, taken from a male guinea-pig? "Mrs. Jones," according to Bowers, had a "tuberculous reaction" but this "does not amount to very much." Her great trouble, according to the diagnosis, was with her "digestive reaction" and "this together with the puss [sic!] reaction, which we call streptococcus and staphylococcus is the cause of the eczema." Here again it must be recorded that the specimen of blood from which this diagnosis was made was the same guinea-pig whose sanguineous fluid was furnished MacCracken. Both Bowers and MacCracken suggested treatment. MacCracken thought that it would require "at least eight or ten weeks" to clear up "Miss Bell's" case. Bowers was "quite sure that your case would yield very nicely to our method

of treatment." All of which points to the need of some new machine from the Abrams laboratory that will be sufficiently discriminating to prevent a reaction for pus tubes from the blood of male guinea-pigs.

Association News

THE SAN FRANCISCO SESSION

Hotels at San Francisco

A list of San Francisco hotels, together with rates to be charged, was printed in The Journal, April 21. It will be seen from an examination of this list that the prices of hotel accommodations will vary from $1 to $12 a day. There need be no fear, therefore, that abundant accommodations at prices to suit all persons will not be available at San Francisco. For a number of the most prominent hotels, the rates published in The Journal will apply whether one or two persons occupy a room. In other words, a room, the cost of which is stated as $8, will in certain hotels cost no more when occupied by two persons than when occupied by one.

Phi Beta Pi Fraternity Banquet

All members of the Phi Beta Pi Fraternity who attend the annual session are urged to make reservations for the dinner to be given by that fraternity at the "Plantation" at 7 o'clock, June 28. Dr. C. M. Johnson, 1344 Third Avenue, San Francisco, will be glad to receive applications for reservations.

Week End Trips After the Annual Session

Arrangements have been made for week end trips from San Francisco to Yosemite Valley and to Del Monte for parties who wish to visit these noted resorts. The trip to Yosemite Valley has been arranged as follows: Leaving San Francisco Saturday, June 30, at 11 p. m., and returning on Tuesday, July 3, at 10:05 p. m. The expenses, including Pullman berths, meals and lodging, will be included in the charge of $59. Special parties of six each can make arrangement for this trip by automobile at the same rate. Among the main points of interest to be visited are Artist Point, Inspiration Point, Signal Peak, Wawona, Mariposa Grove of Big Trees, Chinquapin, Bridal Veil Meadows, Mono Meadows, Ostrander Rock, Glazier Point and Overhanging Rock.

The trip to Del Monte will cost $30, and will be made by automobile. Parties for this trip must include at least six persons. Leaving San Francisco, June 30, at 10 a. m., the return to San Francisco will be at 6 p. m., July 2. Del Monte is one of California's largest and most popular resorts, consisting of a vast estate of approximately 18,000 acres, and is situated on the historic Monterey Peninsula. It is located 125 miles south of San Francisco. It is stated of Del Monte that it is the one place in America where one can do everything or nothing. Golf, polo, tennis, horseback riding, swimming, fishing, hunting, sailing, dancing, idling or working are all provided for. A special postsession golf tournament is being arranged for the morning of Sunday, July 1, and there may possibly be a polo game during the afternoon of that day.

Reservations for the Yosemite trip or for the Del Monte automobile trip must be made through the American Express Company, Market and Second streets, San Francisco.

Antituberculosis Measures in Holland.—The fight against tuberculosis is carried on in an efficient manner, especially at Amsterdam. A central dispensary, in charge of a full-time physician, is charged with the arrangement of all social measures in connection with the patients. He places the patients in sanatoriums or hospitals, according to the seriousness of their sickness. Therefore, he is constantly aware of the number of unoccupied beds in the tuberculosis department of the local hospitals and in the sanatoriums of the whole country.—J. L. C. Wortman, *Modern Hospital* **20**:154 (Feb.) 1923.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Hospital News.—The Druid City Hospital, Tuscaloosa, was opened, March 26.——The contract has been let for the erection of a new $75,000 hospital at Jasper.——The Salter Hospital, Eufaula, was opened, March 22.

Virginians Study Alabama Health Methods.—Three prospective officials of the Virginia State Department of Public Health have arrived in Montgomery to study public health methods and administration in Alabama.

State Medical Meeting.—At the fifty-sixth annual session of the Medical Association of the State of Alabama, in Mobile, April 17-20, the following officers were elected for the ensuing year: president, Dr. William W. Harper, Selma; vice presidents, Drs. James M. Watkins, Troy, and Elijah M. Harris, Russellville; secretary, Dr. Henry G. Perry, Montgomery, and treasurer, Dr. Jacob U. Ray, Woodstock.

ARIZONA

University President Inaugurated.—The inauguration of Cloyd H. Marvin as president of the University of Arizona, Tucson, occurred, April 23-24. Dr. George E. de Schweinitz, President of the American Medical Association, appointed Dr. Delamere F. Harbridge of Phoenix the official delegate to represent the Association at the inaugural ceremonies.

CONNECTICUT

Hartford County Medical Society.—At the one hundred and thirty-first annual meeting of the society in Hartford, April 3, Dr. Arthur S. Brackett, Bristol, was elected president, and Dr. Anthony W. Branon, Hartford, secretary-treasurer.

Sterling Chemical Laboratory Dedicated.—The Sterling Chemical Laboratory at Yale University, New Haven, was dedicated, April 4, in the presence of the American Chemical Society, the trustees under the will of John W. Sterling, and the authorities of Yale University. George Church, New York, acting for the Sterling trustees, presented the laboratory to Yale University, and President Angell accepted it. Following his address, Dr. Angell turned the building over to Edward C. Franklin, president of the American Chemical Society, who made a speech of greeting and thanks.

FLORIDA

Personal.—Dr. Harold M. Beardall, city physician of Orlando, has resigned. He will be succeeded by Dr. Sylvan McElroy.——Drs. P. E. Watts and A. H. Weathers were elected president and secretary, respectively, of the Jacksonville Medical Society at the recent annual meeting.

IDAHO

Supreme Court Upholds Physician.—*Northwest Medicine* states that the supreme court has decided in favor of Dr. Parley R. Nelson, Rexford, who was prosecuted for failure to pay a license tax for the practice of his profession. When the physician refused to pay the tax he was fined in the police court for violation of the ordinance. The district court of Madison County reversed this action and the city of Rexford appealed to the supreme court.

Legislative News.—The last legislature passed Senate Bill 129 which provides that no person can practice any system of treating the sick without a license to perform or prescribe such service. This bill was opposed by the osteopaths, whose main argument was that it would not allow them to use the Abrams treatment. The bill which passed by a vote of 58 to 4 will go into effect May 8.——House Bill 153, exempts physicians from the necessity of obtaining an optometrist's license. The existing law states that no one can fit or adapt lenses without first having secured an optometrist's certificate ——A bill that failed to pass by a vote of 21 to 20 provided for a law corresponding to the Harrison Narcotic Law. This bill permitted physicians only to prescribe or use narcotics. The present law is unenforceable, as it conflicts with the federal law.

ILLINOIS

Physician Fined.—It is reported that federal Judge English fined Dr. Ezra Hart, Harrisburg, $500 when he pleaded guilty, April 14, to the second offense of violating the Harrison Narcotic Law.

Rabid Animals in Saline County.—Reports reaching the state department of public health state that a large number of animals, including cattle, horses, sheep and dogs, in Saline County, have recently been bitten by rabid dogs, and that one child in Galatia was bitten. Investigations to date show that dogs generally are under quarantine in the affected area. The department of health is keeping in touch with the situation.

Antimosquito Campaign.—A permanent campaign for the eradication of malaria mosquitoes is underway in Belleville. The estimated cost of the first year's work, $3,500, has been provided. The expenses will be borne jointly by the local government, the local board of trade and the International Health Board. The state department of public health will furnish a sanitary engineer to supervise the work. This campaign is a direct result of the successful campaign at Carbondale last year, which is also on a permanent basis.

Chicago

"Herb Doctor" Fined.—It is reported that Stanley Gatkowski, self-styled herb doctor, was fined $100 and costs by Municipal Judge O'Connell, April 25, for practicing medicine without a license.

Research on Respiratory Diseases.—The Metropolitan Life Insurance Company has renewed its grant of $3,000 to the department of hygiene and bacteriology of the University of Chicago, for special investigations in respiratory diseases.

INDIANA

Practitioner Fined.—Reports state that Robert J. Clark, alias Smith, Marion, pleaded guilty to a charge of practicing medicine without a license and was fined $100 and $25 costs, in the superior court, April 17.

Physicians' Licenses Revoked.—The licenses held by Drs. George W. Thain and James W. Squires, both of Fort Wayne, were revoked, April 21, by the state board of medical registration and examination, it is reported. It was alleged that the former performed an illegal operation and that the latter violated the Harrison Narcotic Law.

IOWA

Hospital News.—The new building of Sacred Heart Hospital, LeMars, erected at a cost of $300,000, was dedicated, May 6.——The Virginia Gay Memorial Hospital opened its new building for inspection, March 20.——Ground was broken, April 8, for the new home of St. Luke's Hospital, Mason City. More than 2,000 persons attended the ceremonies.

Personal.—A gift of $520 in gold was presented to Dr. Alfred L. Brooks, by his patients and friends, on his fortieth anniversary in practice in Audubon County.——Dr. Sara E. Foulks, superintendent of the Davenport Hospital, has been granted leave of absence to serve in Greece with the American Women's Hospital Association.——W. D. Hayes has been appointed commissioner of public health and director of laboratories of Sioux City.

College Affiliation.—The affiliation of Coe College of Cedar Rapids with the Nurses' Training School of the State University of Iowa Hospital, for the purpose of organizing a five-year liberal arts nursing course, has been completed. Des Moines and Drake universities have already affiliated with the training school. Students may, after a certain amount of preparatory work in these universities, now enter the nurses' training school, and, after further training there receive a certificate of registered nurse and a degree from the affiliated school.

KANSAS

Course for Health Officers.—The twelfth annual session of the Kansas School for Health Officers was held in Topeka, April 23-28, under the auspices of the secretary of the state board of health. More than 400 health officers and nurses attended.

KENTUCKY

Woman Asks Injunction Against Health Department.—A suit has been filed praying that the board of health, Lexington, be enjoined from mailing notices to the petitioner, asking her to report at a clinic for treatment and threatening her with arrest in event of default. The petitioner alleges that she went to a clinic on the advice of a nurse, to be examined for trouble in her stomach and head, and that a blood test was made without her knowledge or consent, since which time the notices complained of have been sent. She denies that she had any venereal disease.

LOUISIANA

Hospitals Dedicated.—The Shrine Hospital for Crippled Children, Shreveport, erected at a cost of $300,000, was dedicated, April 21.——The John Dibert Memorial Building at the Eye, Ear, Nose and Throat Hospital, New Orleans, was formally opened to the public, March 15.

Louisiana State Medical Society.—The forty-fourth annual convention of the state medical society was held in New Orleans, April 10-12. Dr. Lester J. Williams, Baton Rouge, was elected president; Drs. Charles V. Unsworth, New Orleans, Marvin Capelle, Alexandria, and Foster M. Johns, New Orleans, vice presidents, and Dr. Paul T. Talbot, New Orleans, secretary-treasurer (reelected).

Illegal Practitioners.—Injunctions restraining four men from practicing medicine without a license were obtained by the state board of medical examiners, April 20, in the civil court of New Orleans. H. Goldberg was alleged to have attempted to treat chronic nephritis by prescribing his Vita Nos. 1, 2 and 3. The patient died. It is reported that Edward L. DeBrueys was charged with diagnosing a case as kidney trouble and charging the patient $100, and that Vincent A. Nichols was charged with attempting to cure by the "laying on of hands." G. M. Campbell was the fourth person said to be charged with illegal practice.

MAINE

Sheppard-Towner Law Vetoed.—Governor Baxter's veto of the Sheppard-Towner Law was sustained by an overwhelming vote of the legislature, March 28, according to reports.

MARYLAND

Herter Foundation Lectures.—The fifteenth course of the lectures on the Herter Memorial Foundation of Johns Hopkins University Medical Department, Baltimore, was given by Dr. Karel F. Wenckebach, professor of medicine, University of Vienna, Austria, May 3, 4 and 5, in the amphitheater of Johns Hopkins Hospital. His subject was "The Irregular Action of the Human Heart and Its Clinical Significance."

MASSACHUSETTS

New Dean for School of Medicine.—Dr. Alexander S. Begg, professor of anatomy at Boston University School of Medicine, has been appointed dean of the school to succeed Dr. John P. Sutherland, who resigned after twenty-six years of service.

Physicians Advise on Medical Career.—The last of a series of lectures on the various professions, given to Harvard University students, was delivered by Dr. William S. Thayer, physician-in-chief of Johns Hopkins Hospital, Baltimore, April 9. The following day individual conferences were given to students by Drs. Homer Gage, Worth Hale, Frederick C. Shattuck, Alfred Worcester and Walter B. Cannon.

MICHIGAN

Personal.—Prof. Walter B. Pillsbury, on leave of absence from the University of Michigan, has been delivering a series of eighteen lectures at Montpellier, France.——Dr. Max Ballin has resigned from the public welfare commission, Detroit.——Charles Freiburger, Detroit, for four years secretary of the board of health, has been appointed secretary to Mayor Doremus.

Hospital News.—Building "E" a large two winged brick structure of the Eloise Asylum, Detroit, was completely destroyed by fire, recently. Two unidentified women were burned to death. The building housed about 250 women, most of whom were bed patients.——The new municipal tuberculosis sanatorium, to be known as Sunshine Hospital, Grand Rapids, was opened, April 4.

County Associations Affiliate.—The Ionia County Medical Society gave a complimentary dinner at Belding, April 12, to the Montcalm County Medical Society. It was decided to consolidate the activities of the two societies. The following

officers were elected: Dr. Robert H. Haskell, president; Dr. John R. Hansen, vice president, and Dr. Fred A. Johnson, secretary-treasurer. The new society will be known as the Ionia-Montcalm Medical Society.

MINNESOTA

Personal.—Dr. I. George Wiltrout was recently elected mayor of Oslo.——Dr. Robert Guilmette, Argyle, has been awarded the British War Service Medal for services rendered with the Canadian Army Medical Corps.——Dr. David A. Stewart, director of the Manitoba Sanatorium for Consumptives, Ninette, Manitoba, Canada, gave an address on "Tuberculosis: The Intestinal Phase," before the Mayo Clinic, Rochester, April 18.——Dr. Julius R. Sturre, mayor of Watkins, has been elected president of the Meeker County Medical Society, and president of the city commercial club.

MISSOURI

Banquet for Past Presidents.—The Jackson County Medical Society gave the first annual dinner in honor of its past presidents, in Kansas City, April 14. Dr. Clarence B. Francisco, presided. Dr. Nathaniel Allison, dean of the Washington University Medical School, St. Louis, spoke on "Medical Problems." The prize of $100 offered to physicians of less than ten years' experience for the best paper on original research from September, 1921, to December, 1922, was awarded to Drs. Thomas G. Orr and Russell L. Haden.

Hospital News.—The additions to the Missouri State Sanatorium, Mount Vernon, will be dedicated with appropriate ceremonies on National Hospital Day, May 12.——A new hospital will be erected in Kansas City by the Baptist Hospital Association, it is announced, at a cost of $500,000. Plans have been completed for a new $500,000 maternity hospital at the Washington University School of Medicine. The hospital will be eight stories high and will eventually have a capacity of 250 beds. It will supplant the present St. Louis Maternity Hospital, which has only thirty-three beds, and will have an affiliation with the medical school, similar to that of the St. Louis Children's Hospital, the Shriners Hospital for Crippled Children and the Barnes Hospital.

NEBRASKA

Professor Frankl to Give Course of Lectures.—Arrangements have been made for Prof. Oscar Frankl to conduct in Omaha a course of lectures on gynecology and endocrinology similar to that given by him recently in other cities. The course will be given during the week May 12-18. Those interested may communicate with Dr. D. T. Quigley, Thirty-Fourth and Farnan Streets, Omaha.

NEW HAMPSHIRE

Personal.—Dr. Edgar O. Crossman, Manchester, has been appointed director of the U. S. Veterans' Bureau for the New England district.——Dr. Harry O. Chesley, Dover, and Dr. Thomas J. Dougherty, Somersworth, have been appointed county physicians for Strafford County.

State Accepts Sheppard-Towner Measure.—The Murdock bill, which would withdraw New Hampshire from cooperation with the federal child welfare bureau, under the provision of the Sheppard-Towner Law was killed by practically a unanimous vote, April 10, in the house of representatives. The principal speaker against the act based his opposition on a "growing tendency to build up a paternalistic government at Washington, D. C., through the distribution of federal aid."

NEW JERSEY

Chiropractor Fined.—The state board of medical examiners reports that Max Nagel, chiropractor, Jersey City, was fined $200 and costs, recently, following conviction on the charge of practicing medicine without a license.

NEW YORK

Physician Sentenced.—It is reported that Dr. Simeon B. Minden was sentenced from two and one half to ten years in Sing Sing Prison, in the Bronx County Court, April 25, following conviction on a charge of manslaughter. Dr. Minden was indicted, March 29, 1921, for performing an illegal operation. The patient died. In 1905, Dr. Minden was fined $500 for violation of the patent laws, and in 1907 was fined a like amount for violation of the Harrison Narcotic Law.

Infant and Maternity Welfare.—Eighteen leading specialists in obstetrics and children's diseases serve as a board of regional consultants of the division of maternity, infancy and child hygiene of the state department of health. Since their first meeting in September, 1922, the consultants have addressed twenty-seven medical societies to explain work planned in the various districts. A demonstration nursing service of from one to four months' duration has been conducted in six communities. Since November, the division has had two consulting field nurses who spend several days in each locality to assist in maternity activities. In order to train nurses to teach maternity hygiene, an extension course has been organized in which demonstrations in various parts of the state have been held; 320 nurses enrolled for this course. A breast-feeding campaign has been opened on Long Island in cooperation with the Brooklyn Pediatric Society in which every new mother is visited by her family physician or by a nurse.

New York City

Dinner to Dr. McGrath.—Dr. John J. McGrath, who was recently appointed chairman of the Board of Bellevue and the Allied Hospitals, was the guest of honor at dinner at the Hotel Commodore, April 19. Addresses were made by Dr. George D. Stewart, Judge Otto Rosalsky, and Judge Cornelius F. Collins.

Campaign for Hospital Building.—The cornerstone of the new building of the Hospital for Joint Diseases, will be laid, May 6. Through the sale of 2,800 bronze memorial tablets at $250 each, and other methods, it is expected $700,000 will be raised. The hospital will have 275 rooms of which seventy-five will be private.

Public Health Lectures.—During 1922, the Bureau of Public Health Education of the Department of Health supplied 3,711 lectures. These were delivered to 106,594 people in industrial establishments, labor union halls, churches and public school buildings; 500 lectures were delivered in native tongues, including Arabic, French, German, Russian, Yiddish, Greek, Italian, Lithuanian, Polish, Portugese, Spanish and Assyrian. There is such demand for lecturers able to speak foreign languages that the bureau maintains a staff of speakers. While the funds provided for this work, limit lectures to the City of New York, special arrangements can be made with the division of lectures for engagements outside the city.

Distribution of United Hospital Fund.—The annual distribution of the United Hospital Fund took place at City Hall on April 26, when $550,000 was allotted to fifty-six member hospitals of the fund. This was $25,000 more than was distributed last year. Institutions in New York received $474,976.58 and those in Brooklyn, $75,023.42. Of these amounts $233,928 was allotted to eighteen general hospitals, $97,642 to institutions caring for women and children, $68,069 to twelve special hospitals, and $75,336 to institutions for chronic and convalescent cases. Among the institutions receiving the larger contributions were the following: Mount Sinai, $37,366; St. Luke's, $32,036; Montefiore Home, $45,931; Orthopedic, $23,829; New York, $22,105; Lying-In, $21,291; Presbyterian, $21,908.

NORTH CAROLINA

Personal.—Dr. Amzi J. Ellington has resigned as county health officer of Wayne County, to become effective, June 1.——The governor has reappointed Drs. Joseph Howell Way, Waynesville, and Andrew J. Crowell, Charlotte, members of the state board of health for a six-year period.——Dr. David A. Stanton, High Point, has been appointed a member of the state board of health to fill the unexpired term of Dr. Fletcher R. Harris, Henderson, who resigned recently.

State Association News.—At the seventieth annual meeting of the Medical Society of the State of North Carolina, in Asheville, April 17-19, the following officers were elected for the ensuing year: president, Dr. Vance McGougan, Fayetteville; vice presidents, Drs. Joseph L. Spruill, Sanatorium, Eugene B. Glenn, Asheville, and David A. Garrison, Gastonia, and secretary-treasurer, Dr. Lewis B. McBrayer, Sanatorium, secretary-treasurer. Raleigh was chosen as the meeting place for the next annual convention.——Dr. Charles W. Armstrong, Salisbury, was elected president of the North Carolina Public Health Association to succeed Dr. Alexander C. Bulla, Winston-Salem, and Dr. Frank M. Register, Raleigh, was reelected secretary.——At the sixth annual meeting of the North Carolina Hospital Association in Asheville, Dr. Lester A. Crowell, Lincolnton, was elected president to succeed Dr. Eugene B. Glenn.

OHIO

Chiropractors Sentenced.—According to reports, R. A. Kauffmann, R. P. Lorey and J. W. Webb, chiropractors of Chillicothe, were found guilty of practicing medicine without a license, April 13, and fined $25 each, and costs. On their refusal to pay the fine, they were sentenced to serve two months in the county jail.

Public Health Officers Elect.—At the annual election of the Ohio Public Health Association, April 13, in Columbus, Dr. Clyde W. Kirkland, Bellaire, was elected president to succeed Dr. Clarence D. Selby, Toledo. Dr. Linsly R. Williams, head of the tuberculosis commission in France for the Rockefeller Foundation, New York, was the principal speaker. Dr. John E. Monger, state health officer, also gave an address.

Medical Science Building Under Construction.—The contract has been let for the construction of the medical science building, to be known as Hamilton Hall, at Ohio State University, Columbus. The medical school will be moved from its present downtown site to the campus proper and Hamilton Hall will be the first of the group of buildings to be devoted to the medical college. The medical science building will represent an expenditure of $270,000.

Hospital News.—The name of the Protestant Hospital, Columbus, has been officially changed to White Cross Hospital.——A prenatal clinic has been established at the Akron City Hospital, with the object of giving instruction and medical advice, covering general health conditions to prospective mothers who cannot pay for extended medical attendance. Hospitalization will be attempted in abnormal cases. This clinic will cooperate with practicing physicians in educating mothers to seek skilled medical aid.——Plans for a proposed $2,000,000 homeopathic hospital in East Cleveland collapsed, April 17, following the failure of the Cleveland Homeopathic Association and the East Cleveland Hospital Commission to agree on managerial policies.

PENNSYLVANIA

Hospital Association Conference.—The second annual conference of the Pennsylvania Hospital Association was held in Philadelphia, April 26-27. Daniel D. Test presided; Mayor Moore addressed the meeting. Elmer E. Mathews of the City Hospital, Wilkes Barre, was elected president; Dr. George M. Reese, State Hospital, Shamokin, treasurer, and John M. Smith, Hahnemann Hospital, Philadelphia, secretary.

Philadelphia

Elected to Jefferson Faculty.—The board of trustees of Jefferson Medical College, April 18, announced the election of Withrow Morse, Ph.D., of the University of West Virginia, Morgantown, to the chair of physiologic chemistry.

Fellows of the American College of Physicians.—Twenty-two Philadelphians were included in the 190 physicians admitted to fellowship in the American College of Physicians at the closing session, April 6, in Philadelphia. On account of the illness of Dr. James M. Anders, retiring president, his address was read by Dr. David Riesman.

RHODE ISLAND

Refuses Maternity Act.—The house of representatives, April 17, refused by roll call vote of 49 to 47, to pass the Peck bill, accepting the Sheppard Towner Law.

SOUTH CAROLINA

Free Typhoid Inoculation.—A typhoid inoculation clinic was opened by the Columbia Health Department, April 9. It will continue throughout the summer. Campers and vacationists are especially urged to become immunized against typhoid fever. More than 1,000 Columbians took advantage of the free service last year.

TENNESSEE

Rotary Society for Crippled Children.—Delegates from various rotary clubs met in Nashville, April 10, and organized the Tennessee Rotary Society for Crippled Children. The following other state societies have been formed: California, Illinois, Kentucky, Michigan, New Jersey, New York, Pennsylvania, West Virginia, and Ontario, Canada. Clinics for crippled children were held at the Vanderbilt Hospital, Nashville, through the courtesy of the state medical association. The crippled children movement in connection with Rotary was organized in 1919 in Ohio.

TEXAS

Hospital News.—The city commission has adopted the plans for the new $50,000 municipal hospital to be erected at Ennis.——Ground was broken in April for the new buildings for the Potter County Hospital, Amarillo, to be erected at a cost of $250,000.——The new $85,000 addition to the Central Texas Baptist Sanatorium, Waco, was formally opened to the public, March 29.

VIRGINIA

Chiropractors Fined.—According to reports, Bristow & Bristow, W. H. McChesney, and Fannie C. Bristow, chiropractors of Norfolk, were fined $25 and costs recently for practicing medicine without a license.

State Health Association Election.—At the annual meeting of the Virginia State Public Health Association in Richmond, April 17, Dr. Powhatan S. Scheneck was elected president; Dr. Roy K. Flannagan, first vice president; Dr. Charles Keister, second vice president, and Dr. Lonsdal J. Roper, secretary-treasurer.

WASHINGTON

Personal.—Dr. Wilfred Grenfell, of Labrador, gave an address at the annual banquet of the King County Medical Society, Seattle, March 24. —— Dr. David Livingstone addressed the Pierce County Medical Society at Tacoma, April 24, on the "Early History of Insanity in the Northwest."——Dr. Herbert E. Coe, Seattle, has been appointed director of the state department of child hygiene.

WISCONSIN

Physicians Refuse to Sign Death Certificate.—Every physician in Cadott refused to sign the death certificate of Sandford Richard, who died, April 4, while under the care of L. E. Laramy, local chiropractor. It was necessary for the coroner to perform a necropsy. Richard had died of hemorrhage of the lungs.

CANADA

Association News.—The summer school of the British Columbia Medical Association will be held in July this year immediately following the Annual Session of the American Medical Association in San Francisco. It is hoped that prominent physicians from the eastern and midwestern states who will be passing through Vancouver on their way to or from California, will visit the school.——The St. John (N. B.) Medical Society, which has been discontinued since the World War, was reorganized at a recent meeting.

University News.—A course in public health nursing will be established at Dalhousie University, Halifax, in cooperation with the provincial department of health, the Nova Scotia Red Cross, the Victorian Order of Nurses and the Massachusetts-Halifax Health Commission.——Pending the completion of the new health center under construction at Dalhousie University, the fifth year medical students have special clinics in certain city institutions.——All students entering McGill University, Montreal, to study medicine after September, 1923, will pursue a seven years' course, it is announced by the *Canadian Medical Association Journal*. The first two years will be spent in the arts faculty, where a revised course will be given with special attention to languages. The next four years will be spent as a student in the medical faculty, and the final year will be a year's hospital training.

GENERAL

American Child Health Association.—The Commonwealth Fund of New York has entered into an agreement with the American Child Health Association whereby $50,000 a year will be contributed to the association in order that it may be prepared to administer the Commonwealth Fund Demonstration Program under a committee representing both groups. The National Child Health Council has voted to turn its functions in the field of child health over to the new association, and, with the consent of the American Red Cross, to transfer to it the administration of the Richland County and Mansfield, Ohio, Child Health Demonstration. Another demonstration is being conducted at Fargo, S. D., and a third was recently opened in Dallas, Texas. The finance committee of the association has authorized six scholarships, two for teachers, two for nurses and two for physicians, to enable

them to take courses fitting them to conduct better health work for children. The official organ of the association is the *Mother and Child*. A bureau of research was organized, May 1, with Dr. George T. Palmer, of the Detroit Board of Health, as director.

Society News.—The American Society of Tropical Medicine will hold its regular annual meeting, June 25-26, at San Francisco.——The semi-annual meeting of the Medical Society of Virginia, Maryland and District of Columbia will be held at Sandy Spring, Md., May 16, under the presidency of Dr. William L. Lewis, Kensington, Md.——The twentieth annual meeting of the Society for Experimental Biology and Medicine was held in New York, April 18. Holmes C. Jackson, Ph.D., who has served as secretary-treasurer of the society for the past ten years, was elected president to succeed Dr. George B. Wallace; Dr. James W. Jobling was elected vice president and Victor C. Myers, Ph.D., secretary-treasurer. The society was founded by the late Dr. Samuel J. Meltzer in 1903, and now has branches on the Pacific Coast, in Minnesota, western New York and Peking, China.——The sixty-fifth annual meeting of the American Chemical Society was held in New Haven, Conn., April 2-7, in Woolsey Hall, Yale University. Welcoming addresses were given by Colonel Bingham, lieutenant governor, for the state; Mayor Fitzgerald, for the city, and President Angell, for the university.

Bequests and Donations.—The following bequests and donations have recently been announced:

Englewood (N. J.) Hospital, $600,000, the result of a drive for funds.

New Samaritan Hospital, Philadelphia, $327,255, the result of campaign for funds.

Western Reserve University School of Medicine, Cleveland, $500,000, toward a training school for nurses, by Mrs. Chester C. Bolton, of Cleveland, and $63,000, under the will of Dr. R. D. Reynolds, of Greensprings, Ohio.

Yale University, New Haven, Conn., $100,000, anonymously.

Beth Israel Hospital, New York, $100,000; subscribed by twenty diners at a recent banquet of directors and friends of the hospital. A private room will be named for each of the donors.

Harvard University, Boston, $100,000, for research in forestry, anonymously.

Northwestern University, Chicago, $100,000, to be used as a permanent endowment fund, the income to go annually to the professor who has made the "greatest contribution to learning in the humanities," anonymously.

Nathan Littauer Hospital, Gloversville, N. Y., $50,000, as a memorial to his father, by Lucius N. Littauer, founder of the institution.

Ashton Memorial Hospital, Pipestone, Minn., $50,000, for the erection of a hospital in his memory, by O. E. Ashton, of Pipestone.

Kingston Hospital, R. I., for the erection of a new hospital at South Kingston, $50,000, anonymously.

Druid City Hospital, Tuscaloosa, Ala., $25,000, following a drive for funds, and $10,000 for a nurses' home, donated by J. T. Horne.

Charity Hospital, New Orleans, $25,000, anonymously.

Jewish Hospital, Brooklyn, Abraham Memorial, $75,000 by the medical staff for a new laboratory, museum and auditorium; from Dr. Leon Louria, $20,000; Dr. William Linder, $10,000; William Meruk, $5,000, and Nathan Strauss, $1,000. Dr. Joshua Ronsheim will equip a ward at his own expense.

Henry W. Putnam Memorial Hospital, Bennington, Vt., $15,000; New York Polyclinic Hospital, $11,000, and the New York Skin and Cancer Hospital, $10,000, by the will of Elizabeth T. Robinson.

New York Association for Improving the Condition of the Poor, St. John's Guild, New York Eye and Ear Infirmary, each $10,000; New York Skin and Cancer Hospital, and the State Charities Aid Association, each $5,000, by the will of Miss Grace Wilkes.

Elliot City Hospital, Keene, N. H., as a memorial to their daughter, $10,000, by Mr. and Mrs. Grenville of New York.

Jewish Hospital, Cincinnati, $10,000, to equip one floor of the new building, by Mrs. Myer Oettinger, and $10,000 by Mrs. Ranschoff, in memory of her husband, Dr. Joseph Ranschoff of Cincinnati, to equip the surgery department.

Bridgeport (Conn.) Hospital, $10,000, by Margaret A. Mallett.

American Theatrical Hospital Association, $7,000, proceeds of the annual benefit held by stage stars in Chicago.

Hahnemann Medical College and Hospital, Philadelphia, and the Children's Seashore House, Atlantic City, N. J., $5,000, each, by the will of Frank W. Hall.

Mount Sinai Hospital, New York, $5,000, by the will of Herman L. Walter.

Broad Street Hospital, New York, $5,000, by Henry P. Goldschmidt.

Meharry Medical College, Nashville, Tenn., from a friend in Philadelphia, and from Dr. William J. Gunn, Tallahassee, Fla., $1,000 each.

New hospital for negroes, St. Petersburg, Fla., $941, from the winter visitors.

For a hospital at Camp Crosby, Ind., 126 acres of land, and funds for the erection of the institution, by E. V. Ball of Muncie, Ind.

Levering Hospital, Hannibal, Mo., 100 feet of land adjoining the hospital, by W. B. Pettibone of Hannibal.

Denver Sanatorium, Denver, a bed has been donated by the Jewish Antituberculosis Association of Boston.

Deaconess Hospital, Phoenix, Arizona, furniture for a room, by the Korrick Benevolent Society.

Madison County (Ill.) Medical Society, the proceeds of the sale of the residence of the late Dr. Langley A. Whitley of Godfrey.

Richmond, Ind., the Smith farm, consisting of more than 200 acres, as a site for a tuberculosis hospital, by Mr. David Esteb.

LATIN AMERICA

Cerebrospinal Meningitis in Mexico.—Cerebrospinal meningitis was reported at Oaxaca among members of the police department. There were twenty-three cases and thirteen deaths. The outbreak was controlled by closing the police station and transferring headquarters to a nearby town.

Personal.—Dr. Afranio do Amaral has been invited to address the Pathological Society of New York on "Anti-Ophidic Immunity." He is assistant at the Instituto de Butantan, the headquarters of production of snake poison antiserums in Brazil.——The *Folha Medica* of Rio de Janeiro mentions the approaching departure from Brazil of Dr. Lewis Wendel Hackett, who for six years has been in charge of the work of the Rockefeller Commission in its campaign against hookworm in Brazil. It pays high tribute to his personality, aside from his work, and to his initiative in founding an institute of hygiene, a visiting nurse service in Rio de Janeiro, and in getting twenty Brazilian physicians to take the public health course at Johns Hopkins University.——Prof. Juliano Moreira was the guest of honor at a special meeting of the Brazilian Sociedade de Neurologia, etc., on the completion of his twentieth year as director of the psychiatric clinic at Rio de Janeiro. He was also tendered a banquet.——Dr. Bert W. Caldwell of the International Health Board has resigned as a member of the Mexican-American Yellow Fever Commission. Dr. Emmett J. Vaughan has arrived from Guatemala to assume Dr. Caldwell's duties.——Dr. Tomas G. Perrín, recently appointed professor of pathology in the Army Medical School of Mexico, has been made a knight of the Spanish Order of Isabel La Católica by the king of Spain.——Dr. B. J. Gastélum has been appointed assistant secretary of education.

FOREIGN

Japanese Physicians Commemorate Pasteur Centenary.—In commemoration of the centenary of Pasteur, 108,000 francs were donated by Japanese medical scientists and others to the Pasteur Institute. A set of beautiful flower vases was also sent to Paris with the money.

Wireless Medical Advice.—Our exchanges announce that ships of every nationality on the sea may obtain medical advice on request from the two great hospitals in Stockholm. The Swedish government has approved a proposition to broadcast medical advice in the Swedish, English, German and French languages.

Chinese Students in Japan.—The Japanese government has planned to assist Chinese students in Japan should China carry out its proposed plan to cease giving financial aid to Chinese students in other countries. There are now 1,179 Chinese students at government schools supported by the Japanese government; of this number, 115 are medical students.

Italian Interuniversity Institute.—The authorities at Rome have organized an institution with this name to promote closer relations between the universities of Italy and other countries. The *Riforma medica* states that the new institute is organizing fellowships for foreigners wishing to do research work in Italy. Senator Gentile is in charge of the work. The headquarters are in the Palazzo Venezia, Rome.

Malaria Research Fellowships.—The Italian government will offer two fellowships, of 12,000 liras each, for research on malaria. Themes suggested for special study are the development of malaria in regions with few mosquitoes; the biology of mosquitoes; their range of flight; the incidence of malaria before the mosquito season; relations between malaria and domestic animals; and the water plants, which promote or check proliferation of mosquitoes.

Midwifery in the Dutch East Indies.—The *Nederlandsch Tijdschrift voor Geneeskunde* states that even if several thousand trained midwives could be supplied to the population of the interior of Dutch India, there would be no demand for their services. The old women of the villages render the necessary assistance. There are training schools for midwives connected with the lying-in hospitals at Semarang and Batavia, where girls are given practical training. The problem now is to educate the natives to accept their assistance.

Consumption of Alcohol in Sweden.—The law of 1916 regulating the sale of liquor and wine provides that each man above 25 years of age shall keep a record book in which his purchases of liquors and wines are noted by the seller, the amount allowed being fixed according to his social position and the size of his family, the maximum allowance being 4 liters a month. Sweden, with a population of six million

inhabitants, consumed 31.6 million liters of liquors in 1921; 37.8 millions in 1920; 14.4 millions in 1919, and 7.5 million liters in 1918. During the same years, the consumption of wines amounted to 2.8 millions in 1921; 4.1 millions in 1920, and 5.2 millions in 1919.

Arsphenamin in Japan.—A memorial has been presented to the home minister of Japan by four prominent pharmacologists in regard to the protection of the manufacture of arsphenamin. It is claimed that the German government takes advantage of cheap labor now available in that country and is able to undersell Japanese manufacturers. The government is requested to adopt the license system which prevails in other countries, so that the importation of arsphenamin may be checked to save the Japanese industry from extinction. On the other hand, a petition has been made by physicians of the Imperial Medical College to permit the importation of German arsphenamin under special license.

Personal.—Professor Hajek of Vienna has been delivering the Orsted series of lectures at Copenhagen on rhinolaryngologic topics. He spoke at a local medical society on the pathologic anatomic manifestations of congenital syphilis. ——Bleuler, professor of psychiatry at Zurich, completes twenty-five years of teaching this month, and his friends are planning to celebrate the occasion.——The street at Berlanga nearest to the birthplace of Dr. Barragán, the president of the Spanish Urologic Society, has been renamed in his honor.——Dr. Hoffmann, professor of physiology at Würzburg, has been invited to deliver a three-months course of lectures at the University of Santiago.——Professor Brauer of Hamburg has been invited by the medical faculties and local medical societies to lecture in Moscow, Odessa and six other Russian cities. He was recently elected corresponding member by the Italian Academy of Medicine at Rome.—— Among the new senators recently elected in Italy are two physicians, Professors Pestalozza and Baldo Rossi, of Rome and Milan.——A specially bound copy of the souvenir volume compiled in honor of Ramón y Cajal was recently presented to him with appropriate ceremonies. It forms two volumes and contains articles by his students and other admirers in a number of countries. This is only part of the tribute to Cajal that has been organized this year.——Dr. Henry Curwen, Kokstad, has been created a Companion of the Order of the British Empire for services to the government of Zanzibar.

Society News.—The Witwatersrand branches of the British Medical Association and the South African Medical Association have arranged a rapprochement which practically makes them one society. Every member of one will be an honorary member of the other, and the meetings will be held conjointly, the respective presidents taking the chair alternately.——The annual meeting of the Society for the Study of Inebriety was held in London, April 10. Dr. W. M. Feldman spoke on "Racial Aspects of Alcoholism."——The fifth International Congress of Historical Studies was held in Brussels, April 8-15.——The one hundred and fiftieth anniversary of the Medical Society of London, founded by Lettsom in 1773, was celebrated, May 3. Lord Dawson of Penn presided, and the Prince of Wales was the guest of honor. This is the oldest medical society in England.—— The seventh All-Russian Convention of Bacteriologists, Epidemiologists and Authorities on Sanitation will be held, May 22-28, in Moscow, it is announced by the Russian Health Department. To all delegates from foreign countries there will be assigned suitable quarters at the government's expense. Subjects to be discussed are: (1) immunity, serum-vaccine-chemical therapy, and diagnosis; (2) bacteriology and epidemiology of the most important contagious diseases in Russia; (3) disinfection and extermination of rats; (4) questions of organization. For particulars address the secretary of the Organization Bureau of the Bacteriological Convention, Petrovka 17, Moscow.——The *Presse médicale* announces that the First Congress on Tropical Medicine of West Africa is to convene at Loanda, July 16, on the invitation of the Portuguese government. The French, British and Belgian colonies are planning to send delegations, as well as Nigeria and the Transvaal, and the medical faculties of Portugal.

Deaths in Other Countries

Dr. **E. Reiss** of Frankfort-on-the Main, noted for research on refractometry of the blood and his monographs on internal medicine.——Dr. **M. Oeconomakis,** a neurologist of Athens. ——Dr. **E. Hahn,** a neurologist of Breslau, aged 65.——Dr. **P. J. Rubira** of Guayaquil, one of the founders of the Sociedad Médico-Quirúrgica.——Dr. **E. L. Brückner** who succumbed to typhus in the campaign against this disease on the eastern border of Germany.

Government Services

Hospital Train Organized

Pursuant to instructions of the Secretary of War the organization of Hospital Train No. 7, organized reserves (Oklahoma State Unit), has been authorized.

Veterans' Bureau Hospitals Opened

The U. S. Veterans' Bureau Hospital at Redwood City, Calif., was formally opened, April 7. In the neuropsychiatric unit there are twenty-two buildings.——U. S. Veterans' Bureau, Hospital No. 24, at Menlo Park, San Mateo, Calif., was opened for inspection, March 15. It will accommodate 500 patients.——The Veterans' Bureau Hospital, at St. Louis, was formally opened, April 8. The institution was erected at a cost of $1,250,000. The staff comprises twenty physicians, twelve consultants and thirty nurses.——Following a year's delay it was announced, April 12, that the government hospital for war veterans, at Excelsior Springs, Mo., will be rushed to completion and opened by September 1.——The war department announced, April 26, the dates for the opening of five neuropsychiatric hospitals which will accommodate 1,950 veterans. The hospital at Knoxville, Iowa, will be ready for occupancy, August 14; American Lake, Wash., October 10; Chillicothe, Ohio, December 15; Northampton, Mass., Feb. 9, 1924, and the hospital at Camp Custer, Mich., July 6, 1924.——The Veterans' Bureau will construct a 250 bed hospital at St. Cloud, Minn. Arrangements for the building of this hospital were made several months ago, but the actual work of construction has been delayed until the contract was signed this week.——A hospital for tuberculosis with a bed capacity of 750 will be available at Milwaukee, on June 1.

Head of Veterans' Bureau Issues Announcement on Training of Chiropractors

No more ex-service men undergoing rehabilitation will be permitted to take vocational training in chiropractic. Those who are taking this course under arrangements heretofore made by the Veterans' Bureau will be permitted to complete such course, but no new trainees for chiropractic will be permitted. Announcement to the above effect has been made by Gen. Frank T. Hines, director of the Veteran's Bureau. There are now 234 trainees of the Veterans' Bureau taking so-called chiropractic courses in various institutions. The government is of course required to perform these obligations, already contracted, but no new contracts will be made. The curb placed on chiropractic by General Hines is a part of his plan of placing the activities of the bureau on a more practical basis. The director feels that the list of occupations available for trainees is too large and ought to be reduced. What is wanted is that when veterans complete their various courses of vocational training, they shall be in immediate condition to earn their own living. In some states the practice of chiropractic is forbidden by law, and this obstacle results in a limitation of the field wherein the rehabilitated veteran might labor, and it is not regarded that an extension of this form of training will be of practical benefit to the veterans.

Appointments in Medical Corps

The Surgeon General of the Army has, under the present policy of the War Department, found it necessary to disapprove applications for reappointment of many former officers of the Medical Corps who are not eligible for appointment under regulations governing original entrance to the Corps. Former officers of the Medical Corps who are eligible in all requirements governing original appointments may be permitted to take examination for commission in the Medical Corps under the same conditions as applicants for original appointment. The effect of this policy will be to stabilize the medical personnel of the Army. When it becomes known that a resigned medical officer must qualify on the same basis, as to age and other requirements as an original applicant for a commission, it is probable medical officers will not resign as readily as they have in the past. An examination for appointments will be held on July 16-20, 1923 (THE JOURNAL, Feb. 17, 1923, p. 488).

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 9, 1923.

Public Health in India

In a joint letter to the *Times*, three authorities on tropical medicine—Sir Ronald Ross, Prof. W. J. Simpson and Dr. W. G. King—draw attention to the dangers of the reduction in sanitary service which the great political changes have brought about in India. During the decade 1910-1920, of the population subject to registration, amounting to 228,500,000, 3,500,000 perished from plague, nearly 4,000,000 from cholera and nearly 1,000,000 from smallpox—a yearly average of 800,000 deaths from preventable disease. In addition, 1,000,000 have died annually from malaria, which also is preventable. The general death rate, excluding the exceptional year of influenza prevalence, when the ghastly rate of 62.46 per thousand was recorded, in four years of the decade amounted to 30 per thousand, or within a fraction of that figure; in four years, this was considerably exceeded; the lowest rate, attained in but one year, was 28.72.

In contrast, England and Wales, which under former inferior sanitary conditions suffered severely from plague, cholera, and smallpox, had, in 1921, a general death rate of 12.9. In the census of 1891, the Indian male was credited with a mean expectation of life at birth of 24.59 years, in 1901 it had decreased to 23.63, and in 1911 to 22.59; while that of the Englishman, which was 40.17 in 1841, increased, under progressively improved sanitary conditions, to 44.07 by 1901, and to 51.50 by 1910-1912.

Criminal Responsibility

In a previous letter, the conclusions reached by a committee of the Medico-Psychological Association on the subject of criminal responsibility were given. The subject has also engaged the attention of the British Medical Association for some years, and in 1913 a special committee was appointed to consider the present state of the law. In due course it presented a report that has now been made the basis of memorandum of evidence, prepared under the authority of the council, for submission to a committee appointed by the lord chancellor to report on what changes, if any, are desirable in the law relating to criminal trials in which the plea of insanity is raised. The council cannot suggest any improvement on the present procedure in the case of a prisoner, under sentence of death, whose sanity is questioned, i. e., the appointment by the secretary of state of two physicians to examine the prisoner and inquire into the matter. The council holds that the following might be accepted as a fair definition of responsibility for crime. An act may be a crime although the mind of the doer is affected by disease or defective power, if such disease or defect does not prevent him (*a*) from knowing and appreciating the nature and quality of his act or the circumstances in which it is done; or (*b*) from knowing and appreciating that this act is wrong, or (*c*) from controlling his conduct unless the absence of the power of control is the direct and immediate consequence of his own default. But no act is a crime if the doer at the time is prevented either by defective mental power or by any disease affecting the mind from satisfying any of the conditions mentioned above. Every person found "guilty but insane" should have the same right of appeal as other convicts. Persons found "unfit to plead" and ordered to be detained should be entitled at any time for a retrial as to fitness to plead. Medical officers of prisons should have had experience in the diagnosis and treatment of disorders and defects of the mind. The special committee of the association is of the opinion that (1) when there is reason to believe that the accused suffers from mental defect or disease, machinery should be provided for his independent and impartial examination; (2) the present method by which medical evidence is presented by the prosecution and the defense is bewildering rather than helpful to both the judge and the jury; (3) a panel should be formed of physicians with expert knowledge of psychologic medicine, and questions of mental defect or disease should be referred to them. When the offense is punishable by death or a severe penalty, the examination should be made by not less than three members of the panel. The report of such an examination should be furnished to both prosecution and defense before the trial, and at the trial evidence should be given by the expert or experts and should be considered by the court in deciding the responsibility of the accused.

Suicide and Homicide in England as Compared with America

Official figures of suicides and homicides in this country and in America, recently published by the registrar-general, afford a remarkable contrast:

Rates of Suicide for Each Hundred Thousand of Population

	1912	1913	1914	1919	1920	1921
Ninety-five American cities.....	19.5	19.7	21.0	14.3	12.4	15.7
England and Wales.....	9.9	9.6	10.1	9.1	9.1	9.9

Rates of Homicide for Each Hundred Thousand of Population

	1912	1913	1914	1919	1920	1921
Twenty-eight American cities...	8.3	8.8	8.5	9.1	8.5	9.3
England and Wales.....	0.9	0.8	0.8	0.8	0.8	0.7

In America there has been an increase of homicide, but a decline of suicide; in this country homicide has declined and suicide has not increased. Our figures are extraordinarily low, revealing a steadiness and respect for law and order, a characteristic factor, as compared with America. However, we must take into account the facts that the American figures refer only to cities, while ours refer to the whole country, and also that city populations are more prone to acts of violence than country populations. How far the American figures are due to the adverse condition of having to assimilate foreign peoples is another question.

A New Light on Epidemiology

In a report to the Medical Research Council, Surgeon-Commander S. F. Dudley of the Royal Navy has thrown a new light on epidemiology. His observations were made at the Royal Naval School at Greenwich, where 1,000 boys of good physique reside under excellent sanitary conditions and constant medical supervision. In addition, there are 100 day boys who mix freely with the boarders at work and play and at some of the meals. The immunity condition of the school in regard to diphtheria was examined by means of the Schick intracutaneous test, which was found to be very reliable. The remarkable observation was made that while 300 cases of diphtheria or scarlet fever occurred in the course of the year, not a single case occurred among the day boys, who played, worked and ate with the boarders. Another curious fact was that in an outbreak of diphtheria, five cases occurred simultaneously in five different dormitories. It was considered improbable that one boy would infect five others, all in different dormitories, classes and messes, and yet not infect any in his own dormitory. The same phenomenon was observed a month later in the case of scarlet fever. It was found that while the boarders used a common stock of

pens, each day boy brought and used his individual pen. A penholder which had been sucked and bitten by a boy known to have diphtheria yielded a virulent culture of diphtheria bacilli. It was concluded that both epidemics started in this way. A boy who happened to harbor the virus in his mouth sucked his pen. After the lesson he threw the pen into the classroom box. Another class assembled, and one member picked up the infected penholder, which he also sucked. This explains the origin of the epidemics, but not their spread. Why did the day boys always escape? Dudley explains this by dormitory infection. He explains the greater possibility of infection in dormitories than outside by a principle which he terms the "velocity of infection." He argues that in many infectious diseases there is a certain minimal dose of the infective agent necessary to cause the disease, and that a smaller dose is destroyed by the defensive mechanism of the body. If a subject receives a number of subminimal doses, which, when totaled, exceed a minimal infective dose, it is reasonable to suppose that whether or not he contracts the disease must depend on the rapidity with which these fractional doses are received; that is, whether the rate at which the infective agents can be dealt with is greater than the rate at which they are received. During the day the immunity mechanisms were able to neutralize, as rapidly as they were received, the occasional dose of infection to which all were exposed. At night the conditions in the dormitories allowed continuous bombardment with infected droplets of saliva, so that the velocity at which the infection was received was greater than that at which it could be destroyed. This principle would also account for the development of immunity without symptoms, and explain other difficulties in practical epidemiology. During an epidemic of diphtheria, many boys increased their resistance without manifesting any symptoms and without even developing recognizable antitoxin in the blood. There therefore took place a coincident epidemic of immunization among those who never permitted a multiplication of the subinfective doses received. At the same time, there occurred an epidemic of contact carriers in the school. Dudley concludes that consideration of this "epidemic immunity" should remove the necessity of postulating unknown mysterious influences as factors in an epidemic constitution.

Future Warfare

At the Royal Society of Medicine, Col. J. F. C. Fuller, general staff officer (who is not a medical officer), in a highly idealistic sketch, introduced a discussion on some of the medical problems of future warfare. He declared that war was always more of a psychologic than a physic problem, and had wrongly been regarded as a competition in slaughtering. With the development of psychologic science it would be more truly envisaged as a struggle of mind against mind, or of genius against mental mediocrity, in which bloodshed and destruction would be reduced to a minimum. The element of destruction was not only not essential, but even disadvantageous to the victors; the obsession to kill would be gradually eradicated from the military mind. In the last war it was brains, not muscle, that decided the victory.

In the future, the decisive weapons would be ethical and economic, and only in a restricted sense, military. Ethical warfare would rely on highly organized propaganda to demolish the national will of the enemy and to discredit his cause. Economic warfare would attack the national will through the national stomach. Military warfare would take the form, chiefly, of gas attacks from the air on city populations. These would temporarily paralyze, but not destroy the community. By mustard gas, war could be waged without causing widespread death or mutilation. Aircraft on a large scale could be used to envelop a people with some vesicant chemical which would render them incapable of resistance. Indeed, the future war might take the form of anesthetizing the enemy. Colonel Fuller drew a picture of 500 aeroplanes putting London to sleep for forty-eight hours, and then landing enemy police, who, with the support of tanks, would control the situation until surrender and indemnity were forthcoming. This would be much more profitable to the enemy than wholesale destruction.

Future warfare would be astonishingly rapid. The target would be the civil population. On them, war would break with the terror of a mental earthquake. Success would depend on delivery of the psychologic knockout blow. It should be the work of the medical profession in peace to prepare the public nerve for the shock of psychologic attack. Civil physicians must also be prepared to cope with tens of thousands of gas cases, and every one must be instructed in self-protection against a gas attack.

Fatal Accident in the Administration of Chloroform

An inquest was held on a woman, aged 25, who died during the administration of chloroform in a hospital. The operation was a nasal one and special apparatus, which had been wrongly put together, was used. The result was that pure chloroform instead of chloroform vapor was sprayed into the patient's throat. The jury returned a verdict of death by misadventure.

PARIS

(From Our Regular Correspondent)

April 6, 1923.

The New Law Regarding Enlistment

Parliament has just passed a new law which makes the period of enlistment in the active military service eighteen months. The total duration of military service is twenty-eight years, which is divided into four different periods: active service, eighteen months; on the unattached list, two years; first reserve, sixteen and a half years; second reserve, eight years.

For the estimation of physical aptitude, a medical commission composed of three army physicians, one of whom shall be attached to the reserve and shall not be a resident of the arrondissement (the largest administrative division of a department), is charged with the preliminary examination of young men who make such request, before the council of revision, or exemption board, meets. The commission examines each man separately, after first inspecting his sanitary record, and notes his aptitude or inaptitude for the various branches of military service, in conformity with his morphologic characteristics and his professional capabilities. The commission may demand of the exemption board that doubtful candidates be given an expert medical examination and that they be sent for such examination to such specialists, military or civilian, as shall be agreed on by the minister, or that they be placed in a hospital for observation, without waiting to be first enrolled.

As for the exemption board, or the council of revision, as it is termed here, it is assisted by an army physician or, if a physician of the regular army is not available, by a physician of the reserve, and cannot take final action until it has received the opinion of a physician.

From the standpoint of physical aptitude, the council of revision divides the men who present themselves into four categories: (1) those who are found fit for military service; (2) those who, while suffering from some relatively slight ailment, are regarded as sufficiently strong for auxiliary services; (3) those who, possessing a weak physical constitution, are placed in the deferred class, subject to a second examination, and (4) those whose bad general constitution, together with certain weaknesses, establishes their functional

impotence, either partial or complete, and who are therefore exempted from all military service, whether armed or auxiliary.

Military Service as Affecting Medical Students

In times of peace, young men who make the request in the interest of their studies may be granted the privilege of postponing their enlistment, from year to year, up to the age of 25. Medical students perform their active service in the army medical corps. In the medical schools a special two-year advanced course for the benefit of prospective members of the army medical corps has been arranged for by the minister of war and the minister of public instruction. This course is optional.

Students of medicine who finish this special advanced course are required to serve, when later they enlist, only one year, six months as auxiliary physicians and six months as *médecins aides-majors de 2e classe de reserve,* having the relative rank of second lieutenant, if they are doctors of medicine or have been appointed, on the basis of competitive tests, hospital interns in a city where there is a medical school, and provided further they have sixteen courses to their credit, representing four years of study. If they have only twelve courses to their credit, representing three years of study, they must serve an entire year as auxiliary physicians. Students who do not take this special course must serve, at the end of their respite, eighteen months in a formation of nurses.

International Congress of Librarians

Under the auspices of the Association des bibliothécaires français et des sociétés bibliophiles, an international congress, which is composed of delegates from the various societies of librarians and bibliophiles in different countries, is being held at the Sorbonne. M. Louis Barthou, formerly chairman of the council of ministers, now president of the Commission supérieure des bibliothèques, has accepted the honorary chairmanship. The two previous congresses were held in 1900, at Paris, and in 1910, at Brussels. The third congress was to have been held in 1915, but it was postponed on account of the war. At the present congress, the bibliophiles are meeting with the librarians, for the first time. In connection with the congress, two special exhibits have been prepared. One exhibit contains old manuscripts and anything pertaining to the history of book making from the earliest period to 1870. The other exhibit comprises books published since 1870.

Criminal Abortion and Privileged Communication

M. J. Martin, member of the superior council of the Assistance publique (public charities) calls attention in the *Revue philanthropique* to the abnormal situation that is created by too broad an interpretation of the right of privileged communication in relation to criminal abortion. Let us suppose a death has occurred as the result of criminal abortion. If the person on whom the abortion was performed dies in her home, the physician delegated by the mayor's office to verify the death can, if the cause of death appears to him suspicious, notify the authorities and a necropsy will reveal the crime. But the case is quite different if death takes place at the hospital, for under these circumstances the attending physician is the one whose duty it is to make the confirmation of death, and he is certain not to notify the authorities, considering himself bound by the right of privileged communication. It is against the latter interpretation that Martin protests, and he quotes the text of the Penal Code which, while it makes it a misdemeanor to violate the right of privileged communication, allows an exception to be made in "cases in which the law would oblige physicians to become denouncers." Is not the law of 1892 an act in derogation of the right of privileged communication, since it requires a physician to report cases of epidemic disease that come under his observation? If legislators have, in the interest of public health, made the law less rigorous in its application, is it not in place to apply it less rigorously in the face of social interests of the greatest importance? Can we allow the right of privileged communication to be interpreted in such a manner as to render physicians accomplices in a crime as dangerous as abortion, which rages in France with particular intensity? The annual number of criminal abortions in France is estimated at 100,000, whereas the last criminal statistics published by the minister of justice show that the number of persons brought to trial in 1919 for abortion was only 301, while the number of persons receiving a sentence did not exceed 131.

Death of Dr. Gambini

The government reports the death of Dr. Gambini, a colonial physician, at Colbert, department of Constantine, from typhus contracted in the line of duty.

Classification of Children into Different Groups for the Purpose of Physical Training

At one of the recent meetings of the Société de médecine militaire française, Dr. Boigey presented an interesting communication on the best methods to be employed to prevent children and adolescents from being overexerted during physical training. Most of the accidents and untoward incidents observed in children and adolescents during or following their participation in physical exercises are due to the fact that physical directors sometimes require the same effort of subjects that have never been examined that they do of healthy persons; whereas narrow chests, defective heart action, impaired kidneys and weakened nervous systems may demand a more cautious attitude. Boigey reports a typical example: Recently, several groups of children, coming from different neighborhoods, were to assemble at a given point. They were told not to be content with arriving at the appointed hour but to strive, if possible, to be the first to reach the rendezvous. The groups were composed of children of various ages. The youngest were aged 7; the oldest were 14 or 15. The oldest in each group assumed command. The groups set out to reach the goal, the younger children following the older ones, the older children in each group urging the younger children to walk faster and not drop behind the squad, so that they might be the first to arrive. The spirit of emulation increased the energy of all members of the group tenfold. Everybody reached the rendezvous on time, but that evening, after returning home, many parents, worried over the condition of the children, called a physician, who found that the youngest were suffering from fever due to overexertion. In order to prevent a repetition of such occurrences, Boigey recommends the classification into groups, on a physiologic basis, of children and adolescents who are to engage in sport activities. This classification should be based not on the age but on the weight, chest expansion, height, muscular strength, the general physical build, psychomotor reactions, etc. The medical examination of the heart and the lungs, and the results of an inquiry into the previous pathologic history of the children should likewise be taken into account. Homogeneous groups should then be formed, composed of children or adolescents having approximately the same weight, vital capacity, height, speed and strength (as shown by a dynamometric test). Those who have an unfavorable pathologic history will be grouped together and will be subject to a special medical surveillance. Those who have never suffered from any serious illness will be placed in a group by themselves.

On the other hand, Boigey recommends that the code established by the directors of the international Olympic games

be left out of account in the training of children and adolescents, for the reason that this code was elaborated to control the contests of athletes with exceptionally strong constitutions and not to regulate the exercises and the games of adolescents from 14 to 16 years of age.

VIENNA

(From Our Regular Correspondent)

March 26, 1923.

Health Statistics for 1922

In 1922, conditions of public health continued to improve. The number of deaths was 30,068, of which 5,552 were due to tuberculosis. This compares favorably with 11,531 out of a total of 52,000 in 1918, but is slightly higher than in 1921, when the number of tuberculosis deaths was 5,265. Infant mortality is much lower than in former years; in 1910 the death rate, under the age of 1 year, was 165.66 per thousand; in 1921, 137.17; in 1922, 138.32. In 1922, the number of births was 29.982; in 1918 the figure was 29.216 per thousand of population. More persons reached the eightieth year than was the case twenty years ago, and the general conclusion to be drawn from these facts is that human life expectancy is improving. The percentage of cancer and circulatory diseases has remained fairly stationary, and influenza has again fallen to the prewar proportion. The age group 10 to 15 years has suffered most, no doubt as an after-effect of the starvation years from 1916 to 1919. Of 1,189 persons who attempted suicide, 440 were successful. These figures are higher than in any year since 1914. It is an unexplained fact that in war time the number of suicides has always been low; and also that in summer and spring (May to August) more persons kill themselves than in the gloomy periods of autumn or winter. The suicide age limits last year were: a girl of 10 years (death by hanging) and a woman of 82 (by poison). Mental instability must be regarded as the underlying cause in the majority of cases; trifling reasons were alleged by more than 70 per cent. of those who attempted suicide. Men preferred death by shooting or hanging; women resorted to poison, drowning or a leap from a top story.

Partial Strike in the Vienna Hospitals

Owing to differences between the managing board and nursing staff of a private hospital, the board dismissed all nurses and appointed a number of trained nuns to their posts. This has caused widespread disturbance in the relations between the nursing staffs and managing boards of all other Vienna hospitals, as the dismissed nurses appealed to their "union" for protection. The union (of hospital attendants) is trying to exert pressure on the government to compel reinstatement of discharged nurses by proclaiming a partial strike in all state and private hospitals. No cooking, washing or cleaning is done for the physicians or other workers, but the patients are looked after and get their meals, and operations are not interfered with. This method of sabotage, or passive resistance, is most insidious, as the innocent suffer more than the guilty; it demonstrates how political weapons can be used in a purely private dispute. As the government is at present composed of antisocialistic persons, and this strike is strictly a union method, the former is most reluctant to interfere and threatens to close some hospitals and concentrate the patients in larger institutions, unless the proper working of all hospitals is guaranteed.

Asymmetry of the Body

An interesting lecture on the asymmetry of the human skeleton and its consequences was given by Dr. Finkles at the regular meeting of the Biologic Society of Vienna. It is well known that, as a rule, the right hand and arm are stronger than the left, the left half of the skull is larger than the right, and differences exist between the two sides of the body in the ribs, hips and shoulders. The lower extremities also differ from one another; but, contrary to popular belief, the left leg is usually the stronger. In more than 60 per cent. of adults, the left leg is the longer, larger and heavier by 5 per cent. This corresponds with conditions in quadrupeds: the right fore and left hind leg act synchronously; the gait of men is based on the same principle. In right-handed people, the right half of the body is kept a little forward in walking. Therefore the human gait is prone to make men keep to, or, rather, to deviate toward, the right. Experiments with various individuals have shown the correctness of this rule. In foggy weather, or on dark nights, when orientation is impossible, a man rowing a boat goes round in circles to the left; in walking, he tours to the right. Animals—dogs or rabbits—when temporarily deprived of the use of eyes, ears and nose, always swim in circles and return to their starting point. Fishes, pigeons and swallows give similar results. It is a mistake to organize traffic in large cities to "keep to the left" as it requires unnecessary expenditure of energy.

The Results of Prostatic Operations

In a paper before the Medical Society of Vienna, Prof. F. Rubritius discussed the results of surgical treatment of hypertrophy of the prostate. His series included seventy-seven well controlled and well nursed private patients with reliable after-care. All came under care with an advanced state of infection and insufficiency of the kidney. He employed either cystotomy alone or two separate operations. The changes in the kidney were but little amenable to treatment, and produced either a (possibly reflex) polyuria or oliguria. Rubritius prefers the suprapubic (Peyer) method of operation, and considers the perineal method rarely necessary. Exact kidney function examination is essential. All "prostatic" patients are advised to submit to operation, especially if there is complete occlusion or hemorrhage. The only contraindications are severe diseases of the lungs and heart. Rubritius found that many patients can be made fit for radical operation by first establishing free drainage. Fifty-two patients were operated on in one sitting, and twenty-five in two. Of the first group, seven, of the second, three died. These deaths were not actually due to the operation, being caused by intercurrent disease (uremia, peritonitis, pneumonia). All the other patients that have been investigated (after three and one-half years) are doing well, except the carcinomas (three cases). It is essential that the patients be seen and operated on early, before infection and kidney trouble develop. In the worst cases, in which only palliative measures are admissible, a suprapubic bladder fistula is advisable. As in about 25 per cent. of the cases malignant masses are present in the prostatic tumors, it is most important to perform an early radical operation.

An Attempt to Quash "Professional Secrecy"

The Vienna Medical Council, the official representative board of practitioners of the city, recently was forced publicly to protest against an attempt by the highest judge of the republic to remove the safeguard of professional secrecy hitherto guaranteed to the physician by law, by an order issued to all medical corporations. The order stated that "for some time practitioners had failed to inform the court or the police of cases of attempted abortion coming to their professional knowledge. As deliberate abortion is a crime, professional men are required to give information of every case of suspected induced abortion, or of a suspicious death arising in their practice. Surgeons of hospitals, sanatoriums and nursing homes must inform the police, not only when they are convinced that an interference has taken place, but

also when they suspect it." The Austrian law actually says: All medical workers, including pharmacists, midwives and coroners, must give due information whenever they learn of a case of illness, injury, death or birth in which suspicion of foul play or violence by a third person is justified. The medical council points out that the demand of the court is in contravention of the law, which stipulates that the physician is bound to professional secrecy under penalty of law, and may not disclose any knowledge obtained in a professional way unless questioned by duly qualified authorities. The physician is not an investigator for the court, and the decision whether criminal play is suspected or not must be left to his discretion. If the order of the court were put into effect, every woman of child-bearing age suffering from hemorrhage might be suspected and could be denounced to the police—an impossible situation spelling ruin to the profession and disaster to public health, for no woman would consult a physician under such circumstances. Therefore, cancellation of this order is demanded by the council.

Births, Miscarriages and Decrease of Population

In an exhaustive review of the problem of voluntary birth control, Dr. Waldstein gives interesting figures on the number of births and miscarriages reported in the years 1860 to 1915. A drop in the absolute number of children born is evident. In Germany, in 1880, 153 children were born for each thousand women between the ages of 15 and 49; in 1890 the figures went down to 146, and in 1900 to 141. In each thousand married women, the figures were 205, 127 and 96, respectively. In Vienna, in 1880, there were 40 births and 28 deaths for each thousand inhabitants. In 1890, the figures were: 32 births and 29 deaths. Ten years later they were 31 and 20; in 1910, 22 and 16; and in 1919, 17 births and 14 deaths. Since then the ratio has been reversed. If miscarriages are considered, it is found that statistics extending over seventy years (commenced by Hegar and Bumm in Germany) show that at least 10 per cent. of all pregnancies before the war terminated in abortion. Since the war, the percentage has risen to nearly 20. It is an important question whether, at present, procreation takes place too seldom, or whether too many fertilized ovums perish, either by induced abortion or from natural causes. Dr. Waldstein has records of 1,217 women, of whom 506 were primiparas, 290 secundiparas, 132 tertiparas, up to two pregnant for the twelfth time, and six more than twelve times. These women together had 3,213 pregnancies with 18 per cent. of abortions and 2 per cent. of stillbirths. At the end of four years there were living 45.5 per cent. of the children; 34.5 per cent. died before the fourth year. This means that of 3,218 pregnancies only 1,451, or 45 per cent., resulted in viable children. In two other series taken from Berlin and one from Vienna, it was found that in 640 women over 50, there had been 4,060 pregnancies. This means that, during the twenty-five years of fecund life (from 20 to 45) each woman was pregnant every four years. Thus it appears that it is natural selection (miscarriage and infant mortality) that tends to keep down the number of individuals. In a series investigated by Hamburger comprising 1,042 women beyond the procreative age, who had had 7,261 pregnancies, it was found that, on an average, 18 per cent. of all pregnancies terminated prematurely (abortion) and only 50 per cent. of all children born alive reached puberty. In his series there were 2,300 women with more than ten, and 579 with more than fifteen conceptions. In Vienna, similar conditions prevail, and it may be stated that in the middle and working classes each woman has at least two pregnancies in order to bring up one child to the fifth year. The decrease in population is not due to lack of conception, but to dangers during the period of pregnancy and high infant mortality.

BERLIN

(From Our Regular Correspondent)

March 24, 1923.

Increased Incidence of Suicide

The increased incidence of suicide in the nineteenth century is explained by Bratz in the *Deutsche medizinische Wochenschrift* as due to the fact that the sense of oneness with the family and native land has become obscured. He maintains that the marked development of individualism has loosened man from his previous moorings, and his newly won freedom has borne him into dangerous channels that affect his spiritual and moral life, the final outcome of which has been an increase in suicide. The upward trend of the suicide curve is in inverse relation to the curve of natural deaths, which have decreased in about the same proportion as suicidal deaths have increased. Some countries—Germany, France, Denmark and Sweden—have a high suicide rate; others—England, Norway and Holland—have a low rate. These differences may be noted also among German and Swedish settlers in the United States, in contradistinction to Norwegians and Hollanders. As a rule, suicide is more frequent among immigrants than among their countrymen at home. In China and Japan suicide is common, while in India it is rare. The greatest number of suicides occur in May and June; the fewest, in December and January. As to religious faiths, suicide occurs least frequently among adherents of the Greek church. Roman Catholics and Protestants are next in order. Among the Jews, suicide has become much more frequent. Suicide is more common in cities than in rural districts. Whereas in the occident the incidence of suicide is greater among the men, in India, where widows are burned to death, the incidence is greater among the women. The suicide rate usually increases with age. At the age of puberty, the rate among females is almost as great as among males. Suicide is more frequent in the single or widowed than in the married; it is most frequent in divorced persons. The incidence is greater among persons who are childless than among parents. Various callings and professions show characteristic differences. The rate is low in farmers and laborers who work in the open air, but high among capitalists, soldiers, hotelkeepers and itinerant laborers (floaters). Small but steadily increasing possessions seem to afford strong protection against thoughts of suicide. In western Europe, psychic and emotional disturbances are the most frequent cause of suicide. Disease as a contributing factor seems, however, to be becoming more and more frequent. The most frequent forms of suicide are hanging, drowning, shooting and stabbing with a knife. Men resort commonly to hanging, to the revolver or the knife, whereas women take to the knife, poison or to throwing themselves down from a height. The principal causes of suicide are found to be: (1) lack of sense of unity with the family and the community; (2) financial reverses; (3) hereditary tendencies, and (4) condition of health.

The Carriage of the Human Body

In the recent Leyden Lecture of the Association for Internal Medicine, Professor Magnus reported his investigations into the location of spinal and cerebral centers that control muscle tension and maintain the erect posture of the body. Magnus showed a number of photographs of decerebrated animals—guinea-pigs, rabbits and cats. The animals were alive and could, after a fashion, sit up, stand or even walk, but there were great differences in their attitudes and movements, according as the brain had been removed a few millimeters higher or lower. For instance, an erect posture was not possible unless, in addition to the spinal cord, the medulla oblongata was preserved. Magnus showed a cat that stood with hyperextension of all four limbs. A push caused the animal to fall, but it still maintained while lying down the

overextended position of the legs characteristic of decerebration. When the position of the head is changed, the attitude of the body alters. This is caused by the interplay of two groups of reflexes; one group has its origin in the labyrinth of the internal ear, the significance of which for the equilibrium of the body is well known; the other group originates in the neck. In order to eliminate the neck reflexes, the neck, occiput and shoulder girdle were encased in a plaster cast. Under these conditions, the degree of extension of the muscles and the consequent position of the legs depend on the position of the head—whether it is in normal position, inclined to one side or thrown backward. When the labyrinths are removed by operation and the neck reflexes are tested, peculiar attitudes result. If the head is bent forward and downward, the fore legs collapse, while the hind legs are extended. If the head is bent upward and backward, the animal stands on its fore legs and sits on its hind legs. If the head is bent to one side, either both right legs or both left legs collapse. If the two groups of reflexes act together, they may accentuate or counteract one another. Observation of animals in the open; for instance, in the Zoological Gardens, reveals that these reflexes are operative in normal living animals.

When, in the experimental animals, a little more brain tissue is allowed to remain intact, new groups of reflexes are observed. Under these conditions, when the cat standing with legs overextended is given a push, it falls but gets up again at once. When the animal is held up loosely in the air, the head at once assumes its normal position owing to the reflexes of the labyrinth. If the labyrinths are removed, the head of the animal, when held up, remains in any position in which it is put. But when the animal is laid down on any surface, a cutaneous reflex is stimulated and the head assumes at once its normal position. If now a secondary stimulus is applied to the other side; for instance, by laying a board on the prostrate animal, the head no longer remains in a normal position. In guinea-pigs and rabbits it has been ascertained that there are four groups of attitude reflexes. In cats, dogs and apes, there are, in addition, optical attitude reflexes, which, however, disappear at once if the corresponding portions of the brain are removed.

In the space at our disposal it is possible to discuss only a portion of the speaker's experiments; Magnus gave further details of the methods he and his co-workers employed in investigating the anatomic location of the reflex centers concerned with certain attitudes. He also indicated the value of these experiments to anatomy, physiology and clinical medicine. Hitherto, researches on the brain have started with the cerebral cortex and have sought, by penetrating gradually deeper into the brain, to discover the locations of the various cerebral functions. Magnus has taken the opposite course. He first removes such a large portion of the brain that most of the functions are abolished. Then, in other animals of the same species, he successively removes a few millimeters less in order to discover what functions are thereby restored.

The Wassermann Test for Tuberculosis

The *Deutsche medizinische Wochenschrift* (**49**:303-334 [March 9] 1923) contains an article by August von Wassermann on the experimental bases for a specific serodiagnosis of active tuberculosis. Wassermann's recent researches have taken an entirely new direction, and he has departed from the view, which has heretofore been tenaciously held, that the antibodies in the blood serum of a person suffering from an infectious disease, so far as they are demonstrable at all, are qualitatively identical with those that appear in the blood of animals through artificial immunization with the causative agents of the diseases in question. It has been found possible to create a serodiagnostic test for tuberculosis which will permit a more exact differentiation of a tuberculosis serum from a syphilis serum than was possible with the antigen used in recent years by French investigators. For the dissolution of bacteria, Wassermann uses a tetralin preparation. (NOTE.—Tetralin is a naphthalene, with four molecules of water of hydration, which has an entirely neutral reaction.—ED.). On the basis of his results, he reaches the deduction that every person, whether child or adult, whose blood serum reacts positively to the tetralin-tuberculosis-lecithin antigen is suffering from active tuberculosis. In the very frequent cases in which the physician is in doubt, especially in children in whom tuberculosis may reasonably be expected to be present, the seroreaction may furnish decisive evidence. In regard to the significance of a negative result of this serum test, Wassermann is loath to express himself definitely as yet. The test for which he gives the directions is rather delicate, but it will in many cases give the physician a definite basis to work from. To the main question whether, by serodiagnosis, we may prove the existence of tuberculosis, that is, the presence of tuberculous tissue or only the existence of a tuberculous infection—the presence of tubercle bacilli—no definite reply could be given. That would have to be settled by clinical observations extending over a period of years.

To representatives of the Berlin press, Wassermann expressed himself thus concerning his test: "Although several French investigators, among whom I may mention more particularly Besredka and the school of Calmette, had done some valuable work in this field, it had not as yet been definitely established on what a serodiagnosis for active tuberculosis really depended, and consequently it had not been possible with sufficient certainty to differentiate between the serums of syphilis and tuberculosis. The researches that I have been conducting for some time in the Kaiser Wilhelm Institute for Experimental Therapy have developed a clear view of the subject. It is, therefore, now possible to make the biochemical composition of the reagent (Diagnostikum) specific, so that it gives a positive reaction only with the blood serum of tuberculous subjects; that is, in active tuberculosis. The procedure seems to me especially suitable for welfare centers dealing with children in whom tuberculosis is suspected (but, of course, also for adults), in order to establish whether, in a given case, a latent tuberculous infection has developed to the point that an active tuberculosis is present. The test for tuberculosis resembles the test for syphilis to the extent that in both cases the blood serum of the patient has a relation to certain fatlike substances or lipoids. But the relative proportions vary in the two diseases, and, in addition, it will be noted that the blood serum of tuberculous subjects needs for its reaction, besides the lipoids, certain other substances that are contained in the tubercle bacillus. Through the establishment and consideration of these facts, I have succeeded in modifying the two procedures in such a manner that a confusion of the two diseases in an examination of the blood can be prevented, which has heretofore proved impossible."

Marriages

HENRY W. HOAGLAND, San Diego, Calif., and Paris, France, to Mrs. Katherine M. Freeland of Los Angeles, recently.

ARTHUR TREW BLACHLY, Portland, Ore., to Miss Winifred May Hubbard of Fort Dodge, Iowa, April 20.

GEORGE M. BOTELER to Miss Cora Connett, both of St. Joseph, Mo., at New York, April 7.

EDWIN G. SCHWARZ to Miss Annette Lederman, both of Fort Worth, Texas, March 4.

THOMAS NEILL BARNETT to Miss Mary Gladys Reamy, both of Richmond, Va., March 28.

Deaths

George Lincoln Goodale, Cambridge, Mass.; Bowdoin Medical School, Portland, 1863; Medical School of Harvard University, Boston, 1863; curator of the botanical museum and professor of botany, at Harvard University, until his retirement as professor emeritus in 1909; member of the National Academy of Sciences, the American Society of Naturalists, the Association of American Anatomists, the American Physiological Society, and past president of the American Association for the Advancement of Science; aged 83; died, April 12.

Harry Edward Bradley, Milwaukee; New York University Medical College, New York, 1887; veteran of the Spanish-American War; also a druggist; member of the Milwaukee Neuro-Psychiatric Society; formerly on the staffs of the Northern Hospital for the Insane, Winnebago; the Milwaukee County Asylum for Mental Diseases, Wauwatosa, and the Johnston Emergency Hospital, Milwaukee; aged 61; died, April 5, of influenza and pneumonia.

Lee Simon Shoninger, New York; Medical School of Harvard University, Boston, 1904; member of the Medical Society of the State of New York and the Massachusetts Medical Society; formerly on the staffs of the Massachusetts General Hospital, Boston, and the Mount Sinai Hospital, New York; served in the M. C., U. S. Army, during the World War; aged 44; died, April 7.

Frank Hall Williams, Portsmouth, Ohio; Miami Medical College, Cincinnati, 1883; member of the Ohio State Medical Association; served in Palestine with the American Red Cross during the World War, and as chief medical officer of Beirut; appointed medical director with the Near East Relief in Armenia in 1919; aged 64; died, March 4, at Cincinnati, following a long illness.

John Prentice Rand, Worcester, Mass.; New York Homeopathic Medical College, New York, 1883; lecturer on the history of Medicine at the Boston University School of Medicine, Boston, 1906-1916; member of the National Tuberculosis Association, and past president of the Massachusetts Surgical and Gynecological Society; aged 66; died suddenly, April 16, of heart disease.

George Frederick Payne, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1892; founder, professor of pharmacy, and president of the Atlanta College of Pharmacy; state chemist of Georgia, 1890-1898; former president of the American Pharmaceutical Association; author of *Payne's Dictionary of Pharmacy;* aged 70; died, April 18.

Henry S. Summers, Westpoint, Neb.; Medical Department of Western Reserve University, Cleveland, 1882; member of the Nebraska State Medical Association; formerly superintendent of the Hospital for the Insane, Norfolk; aged 67; died, April 10, following a long illness.

Isaac C. Gable ⊕ York, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1877; past president of the Medical Society of the State of Pennsylvania; formerly member of the state board of health; aged 73; died, April 12, following a long illness.

Henry Arthur Mitchell ⊕ Elkton, Md.; University of Pennsylvania School of Medicine, Philadelphia, 1900; served in the M. C., U. S. Army, in France, during the World War; on the staff of the Union Hospital of Cecil County; aged 44; died suddenly, April 6.

Milton Jennea Longsworth, Lima, Ohio; University of Michigan Medical School, Ann Arbor, 1890; member of the Ohio State Medical Association; served in the M. C., U. S. Army, during the World War; aged 55; died, April 9, of rupture of the bladder.

Norman Lamont MacLachlan ⊕ Findlay, Ohio; University of Michigan Medical School, Ann Arbor, 1878; on the staff of the City Hospital; aged 68; died, April 8, of injuries sustained when the automobile in which he was driving was struck by a street car.

Strickey Alvin Conrad ⊕ Leetonia, Ohio; Ohio Medical University, Columbus, 1902; served in the M. C., U. S. Army, during the World War; aged 52; was killed, April 6, when the automobile in which he was driving was struck by a train.

James Douglas, Morristown, N. J.; New York University Medical College, New York, 1880; member of the Medical Society of New Jersey; on the staff of the Morristown Memorial Hospital; aged 79; died, April 14.

Walter Hans Schroeder, Farmington, Mo.; National University of Arts and Sciences Medical Department, St. Louis, 1916; member of the Missouri State Medical Association; aged 33; died, April 3.

Clifford Webster Stickney ⊕ Holden, Mass.; New York University Medical College, New York, 1881; on the staff of the Holden District Hospital; aged 67; died, April 9, of cerebral hemorrhage.

John Louis Ireland, Erie, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1893; formerly president of the board of health of Erie; aged 53; died suddenly, April 11, of heart disease.

William M. Bailey, Detroit; Western Homeopathic College, Cleveland, 1868; formerly professor of gynecology and rectal surgery at the Detroit Homeopathic Medical College; aged 77; died, April 9.

John Andrew Linebaugh, Berkeley, Calif.; Starling Medical College, Columbus, 1890; aged 59; died, April 10, at the Lane Hospital, San Francisco, of bronchopneumonia and paralysis agitans.

Enos K. Lefever, Carlisle, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1894; member of the Medical Society of the State of Pennsylvania; aged 55; died, March 27.

Edward Francis Duffy, Yonkers, N. Y.; Bellevue Hospital Medical College, New York, 1891; member of the Medical Society of the State of New York; aged 54; died, April 14.

Samuel Whitehall, Los Angeles; Eclectic Medical Institute, Cincinnati, 1868; University of Michigan Medical School, Ann Arbor, 1871; also a pharmacist; aged 75; died, April 6.

Clarence Wilbert O'Brien, Wyandotte, Mich.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1903; aged 45; died, February 15, of chronic nephritis.

Owen Kent Womack, Paris, Tenn.; Vanderbilt University Medical Department, Nashville, 1900; aged 50; died, March 31, of cardiac asthma and chronic nephritis.

Henry Gilbert Clippinger, Eau Claire, Mich.; Eclectic Medical College of Pennsylvania, Philadelphia, 1872; aged 79; died, March 29, of bronchopneumonia.

Herbert Rudolph Olson, Centerville, Iowa; State University of Iowa College of Medicine, Iowa City, 1919; aged 26; died, April 6, of pulmonary tuberculosis.

Harrie Eugene Smith ⊕ Mount Vernon, N. Y.; New York University Medical College, New York, 1883; formerly city health officer; aged 63; died, April 17.

William Jules Augustine Vogt, Iowa City, State University of Iowa College of Medicine, 1881; aged 69; died, April 10, of carcinoma of the sigmoid flexure.

Patrick William O'Brien, Peekskill, N. Y.; Bellevue Hospital Medical College, New York, 1886; aged 60; died, April 15, of carcinoma of the intestine.

J. Brummel Jones, Higginsville, Mo.; St. Louis Medical College, St. Louis, 1868; aged 81; died, April 9, of bronchopneumonia, following influenza.

John Nathan Baughman, Evansville, Ind.; University of Louisville Medical Department, Louisville, Ky., 1875; aged 70; died, April 15, of paralysis.

Levi C. Wells, Cambridge, Ohio; Hahnemann Medical College and Hospital, Chicago, 1878; aged 76; died, March 11, of cerebral hemorrhage.

Edward Frank Jones, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1898; aged 61; died, April 8, of lobar pneumonia.

Maurice J. Quille, Jr. ⊕ Chicago; American College of Medicine and Surgery, Chicago, 1905; aged 37; died, April 29, of septicemia.

Albert G. Pierce, Blytheville, Ark.; Tulane University of Louisiana School of Medicine, New Orleans, 1885; aged 63; died, April 5.

W. Buchanan Parsons, Missoula, Mont.; Bellevue Hospital Medical College, New York, 1870; aged 72; died, April 12, of paralysis.

Isaac W. Riggs, Pittsburgh; Western Reserve University School of Medicine, Cleveland, 1869; aged 76; died, April 9.

Sylvanus Jutkins Birch, Orange, Mass. (licensed, years of practice); aged 77; died suddenly, April 4, of senility.

Thomas T. K. Mitchell, Lawrenceville, Ga.; Medical College of Georgia, Augusta, 1857; aged 85; died, April 15.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

INTRAVENOUS THERAPY

Report of the Council on Pharmacy and Chemistry

For some years the Council has urged conservatism in the adoption of the intravenous method of administering drugs. It has been necessary to do this to offset the propaganda of proprietary firms that, for commercial purposes, feature the indiscriminate use of intravenous therapy. In order that the status of this form of drug administration might be presented to the profession and that it might be made clear under just what conditions the intravenous administration of drugs is warranted, the Council appointed a committee to study the subject and prepare a report for publication.

The report which follows was prepared by this committee and submitted to the Council. The Council has endorsed it and authorized its publication.

W. A. PUCKNER, Secretary.

The administration of drugs by the intravenous method is being extensively exploited by firms who are commercially interested in the sale of "intravenous specialties." Because of undue enthusiasm inculcated by advertising and publicity, and through lack of sound judgment, many physicians are employing it unwisely in conditions where this method of administration is not indicated. In addition to the broad general claims of superiority of intravenous injection over other methods of administration the following specific advantages are commonly urged in its favor.

1. That it affords precision of dosage.
2. That there is no irritation of the gastro-intestinal tract.
3. That the drug is not altered or destroyed in the gastro-intestinal tract.
4. That the drug enters the blood stream without loss of time.

There is a legitimate field for intravenous therapy. Nothing this Committee says on the subject in the report that follows is to be construed as a condemnation of the legitimate application of this method of administering drugs.

These alleged advantages in the routine administration of drugs are more apparent than real, and they will be considered in some detail, though not exhaustively.

1. PRECISION OF DOSAGE: An accurate definition of the word "dose" is necessary before proceeding to a discussion of the subject, because a number of meanings have been given to the word, and one must avoid confusing *precision in weighing and measuring* a drug, with *precision of dosage* of that substance. A physician administers a drug in order to induce a given effect. Obviously it is his desire to give the exact amount necessary to induce that effect—no more and no less. That amount is the dose of the substance for that patient, under the circumstances obtaining at that moment, and evidently it is not necessarily the exact dose of the drug for any other patient, or for that patient under other possible circumstances.

Since the physician never knows the exact dose of a drug until he has obtained the results sought, he chooses an amount arbitrarily, which he knows to be a fraction of the true therapeutic dose, and he administers this fraction repeatedly until the desired effects are obtained, that is, until the total therapeutic dose has been administered. This fraction, the weight or volume of which can be determined with precision, has come to be called "the dose" of the drug, and precision of weighing and measuring the fraction has come to be confused with precision of dosage.

The oral administration of a drug permits of the administration of as many fractions of the dose as the circumstances demand, and these vary with the susceptibility of the patient, the urgency of the case, and the dangers of overdosage. The intravenous injection of a drug, however, owing to the limitations inseparable from this mode of administration practically makes it imperative to give the whole of the calculated therapeutic dose at once, except in the few cases which demand almost constant attendance by the physician. If this calculated dose proves insufficient, the patient suffers for want of the drug; if it happens to be more than the true therapeutic dose the patient suffers the toxic effects proportional to error in the estimate, and the effects of overdosage are more severe following intravenous injection than after oral administration.

Drugs are absorbed from the gastro-intestinal tract at somewhat variable rates, but there is a fair degree of uniformity of absorption for a given drug. On the other hand, different individuals show greater differences in their reactions to a given drug, that is, greater tolerance or resistance. There is a greater probability that the intravenous dose will be too large or too small, than that the patient will show an essential departure from the rule with reference to absorption from the gastro-intestinal tract.

It is generally recognized, for example, that there is a greater danger in the intravenous injection of strophanthin than there is in the oral administration of digitalis, and a number of deaths have followed the intravenous injection of the exact "calculated dose" of strophanthin. One is justified in administering strophanthin intravenously only when the exigencies of the case demand prompt relief, even though it involves some risk.

A further analogy: Anesthesia is maintained conveniently by dropping choloroform on to a face mask and permitting the patient to inhale the vapor, though there is no constant ratio between the amounts used and those taken into the blood stream. In other words, the dose of chloroform—that is the amount required to maintain the desired depth of anesthesia—is administered in almost innumerable fractions, though the anesthetist does not know the percentage of any of these fractions that is absorbed. This fractional dosage by inhalation is strictly comparable to fractional dosage by oral administration when strychnin or another drug is used.

2. THAT THERE IS NO IRRITATION OF THE GASTRO-INTESTINAL TRACT: Many drugs cause disturbances of the gastro-intestinal tract which are carelessly termed "irritation" though the action may be due to a reflex from another organ. An example is the nausea and vomiting induced by digitalis bodies through their direct action on the heart. It is obvious that the intravenous injection of such drugs does not cause less disturbance of the gastro-intestinal tract than their oral administration. Much of the true irritation of the large intestine following the administration of metallic salts, such as those of mercury, is caused during their excretion, and this also is largely independent of their mode of administration. Drugs that are directly irritant to the gastro-intestinal tract are usually irritant to the veins, the heart, and to other organs with which they come in contact in greater concentration after intravenous injection than after oral administration, hence, there are even greater objections to the intravenous injection of irritant drugs than to their oral administration.

3. THAT INTRAVENOUS INJECTION PREVENTS ALTERATION OR DESTRUCTION OF THE DRUG IN THE GASTRO-INTESTINAL TRACT: Nearly all drugs which are used for their systemic effects are absorbed fairly rapidly from the gastro-intestinal tract, and with a little judgment the physician can choose a drug which is absorbed promptly. The liver is far more active in the destruction of most drugs than is the gastro-intestinal tract, and drugs reach the liver quite as readily when injected intravenously as they do when given by mouth. The liver seldom takes all of a drug out of the blood which passes through it once, but this is usually taken up in small increments and slowly destroyed. There are, it is true, drugs such as epinephrin and arsphenamine that are not suited for oral administration. This is no argument, however, for administering, say, sodium iodid, intravenously, simply because epinephrin is destroyed in the stomach.

4. DRUGS ACT MORE PROMPTLY AFTER INTRAVENOUS INJECTION: This advantage in extreme cases does not admit of

discussion, but it is obvious that it is not of the slightest importance in the treatment of chronic conditions, or with drugs such as mercurials, iron, and iodids, which induce their therapeutic effects slowly even when they are injected intravenously. It is a mere shibboleth as it is commonly used, which holds the attention of the unthinking through the frequency of its repetition.

This Committee would point out again that it has no desire to discredit the rational use of drugs by intravenous injection, but, on the contrary, it seeks to avoid the accidents and disappointments that must follow the abuse of a method which rightly employed may be a life-saving measure. With increasing knowledge of the technic of using drugs, with the development of pharmacology it seems probable that intravenous injections will be limited to even fewer classes of drugs than at present.

The Committee recommends that the Council (1) place itself on record as opposing the reckless and indiscriminate use of drugs by intravenous injection with its attendant dangers and increased needless expense to the patient, and, (2) recognize the legitimate life-saving nature of intravenous administration of drugs in extreme cases.

The Committee holds that the indiscriminate use of the intravenous method in cases in which it is not necessary is as reprehensible as it would be to jeopardize the life of the patient and subject him to the inconvenience and expense of an unnecessary major surgical operation.

Correspondence

INFORMATION DESIRED FROM TEACHERS OF PHYSICAL THERAPEUTICS

To the Editor:—This is offered in the hope of getting information on certain points from those who teach physical therapeutics, with the object of coming to some agreement as to what subjects shall be presented, the principles that shall govern, the clinical conditions for which they are best adapted, what forces, agencies, devices, instrumentalities, etc., shall be employed or recommended, and the methods of presentation.

I could wish for replies to include a description of organization of clinics, personnel, equipment, etc., and, in particular, how, on what basis, cooperation is obtained with other clinics.

I then propose to correlate and integrate the answers and to submit later a proposition to the end that we may get together in the best interests of clinical medicine. By such means we—all clinicians—should facilitate the emergence of a uniformity of aim and procedure.

J. Madison Taylor, M.D., Philadelphia.
Professor of Physical Therapeutics and Dietetics, Temple University Department of Medicine.

"THE CONTROL OF TRACHOMA"

To the Editor:—In the editorial comment, April 21, I was disappointed in finding no reference to the more recent conceptions of the etiology of trachoma, when the citation of the Minnesota investigation made it particularly apropos. These are, briefly, that, if trachoma is a disease entity, its spread may be better explained by an intermediary host than by interhuman contact (*Am. J. Ophth.*, September, 1922, p. 766), or that it is not a disease entity and may be developed from any infection (ibid., October, 1922, p. 799). Further study along these lines will have to be made before a decision can be reached, but the facts recorded, through observations for many years, are rather subversive of contagion in the ordinary sense; and the Minnesota returns add emphasis to this, unless the two races mingle there to a greater extent than in other states.

H. B. Young, M.D., Burlington, Iowa.

To the Editor:—In further reference to the prevalence of trachoma in the United States, I will say that I examined 7,000 troops at Camp MacArthur, Texas, in 1918, among whom I found fifty well developed cases of this disease. I might add that these men were from Missouri and Texas, and the probabilities are that the average is a little high, trachoma being prevalent in the Ozark region of Missouri.

Orlyn S. Phillips, M.D., Baker, Ore.

STATISTICS ON CANCER AT ALGIERS

To the Editor:—The government of Algeria recently published an interesting report of the mortality of the city of Algiers which includes some exceptionally valuable statistics on cancer. The report is the work of Dr. Lemaire and covers the period 1914-1921, inclusive. The cancer statistics are given in the accompanying table.

Mortality from Cancer in Algiers

	Rates per 100,000			
	European	Native	Total	Actual Deaths
1914	64.3	12.5	54.0	108
1915	57.5	15.0	57.0	114
1916	48.7	12.5	41.5	83
1917	54.3	5.0	45.1	89
1918	56.3	5.0	46.0	92
1919	55.6	7.5	46.0	92
1920	58.7	12.5	49.5	99
1921	66.7	6.2	42.2	87

I may add to the foregoing that the European population of Algiers is estimated at 147,986, while the native population is given as 47,669.

Frederick L. Hoffman, Newark, N. J.

"A SECOND INITIAL LESION IN SYPHILIS ONE YEAR AFTER THE FIRST"

To the Editor:—I have read with interest the report of Drs. W. C. and A. A. Nichols in The Journal, March 24, p. 843. It seems to me that this, while seemingly an authentic case of a second infection, is merely a recurrence of the first infection. The lesion that appeared in the mouth was a mucous patch, and was indurated because it was cauterized. Every observer knows how abundantly the spirochetes are found in the secondary lesions of the mouth. According to modern teachings, the entire treatment at the time of the appearance of the so-called "second chancre" was inadequate. It takes much more treatment with both arsphenamin and mercury to cure an infection such as is reported by the authors; at least this has been my experience.

B. C. Corbus, M.D., Chicago.

To the Editor:—In the case report by Drs. W. C. and A. A. Nichols, I take it, from the authors' conception of this case, that the patient, not having had sufficient treatment in the first year, developed the second initial lesion, because he still harbored the virus which had caused the first penile chancre. While multiple hard chancres, either in the same region or even in remote places, have been described—and I myself have seen such cases appear within a few weeks—it seems to me improbable that such an occurrence could take place an entire year afterward, when the infection had become generalized. I would be inclined to explain the second initial lesion as a so-called pseudo-ulcus durum, which can be explained by the fact that one of the mucous membrane

lesions, which had existed during the early secondary stage, became reinactivated by the aggression of a new attack of spirochetes, thereby assuming the hardness and clinical appearance of an ulcus durum.

ADOLPH ROSTENBERG, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIAGNOSIS OF RABIES

To the Editor:—A man, aged 25, who had been in good health, came to me for advice, February 16, stating that exactly three weeks previously a dog owned by him died; for one week previous to the death of the dog the patient had been bitten at least six different times by the dog; he had given the wounds no treatment of any kind. February 16, he became worried for fear the dog might have been rabid. I advised sending the head in for diagnosis, which was possible, for the weather had been severely cold during the three weeks. A diagnosis of rabies was made, and antirabic vaccine treatment was started, February 22, twenty-eight days after the death of the dog, or about thirty-four or thirty-five days from the time he was first bitten.

Treatment was completed, March 12, and the patient continued in good health until March 20, when he complained of a tingling sensation in his right hand and arm. May 21, this continued, and to the tingling sensation was added severe pain. He also on this date had a temperature of 101. No other physical findings could be made out. On the evening of March 22, the pupillary reflex of the right eye was absent and the pupil remained in contraction, though not pin-point. March 23, there was partial paralysis of the orbital muscles of the right eye, so that the movements of the ball could not be controlled accurately. Throughout this day a rapid and descending paralysis of the muscles of deglutition was evident; the right arm became partially paralyzed. The patient had lengthening attacks of extreme tachycardia, and died early on the 24th of paralysis of the cardiac center.

During the time of the active symptoms, my therapy consisted of the use of sedatives: mild sedatives at first, and finally morphin and chloroform. 1. Did I omit any therapeutic agent that would have been of benefit to the patient? 2. Is there an antitoxin or any other agent that I might have given intraspinally that would have been of benefit to him? I am asking these questions simply for my own information and for the benefit of my own knowledge. M.D., Idaho.

ANSWER.—1. In this case there seems to be no room for any doubt that the patient died of rabies. As the patient came under treatment thirty-four or thirty-five days after he was bitten by the dog, it is not at all surprising that the treatment failed.

2. It does not appear that there was anything omitted in this case that would have been of benefit. There is no antitoxin or other form of antiserum known which, given intraspinally or otherwise, would have had any effect on the course of the disease.

REMOVAL OF BILE FROM URINE

To the Editor:—In THE JOURNAL, Aug. 6, 1921, p. 462, Burwell and Jones stated that bile can be removed from the urine by mixing it with an equal volume of saturated alcoholic zinc acetate solution. We have had occasion to carry out the procedure on many bile-containing urines, but have never found that it effectively removes the bile pigments. Would you kindly make a statement to this effect.

M.D., New York.

ANSWER.—Burwell and Jones, in performing the phenolsulphonephthalein test of renal function, collect the urine as usual, two hours and ten minutes after the injection of phenolsulphonephthalein, and dilute the specimen to 500 c.c. To 20 c.c. of this diluted urine is added 20 c.c. of a saturated alcoholic solution of zinc acetate, which, they state, will precipitate out the bilirubin and hemoglobin, carrying down the red blood cells with the precipitate formed. The precipitation of bilirubin by zinc salts has been known for a long time, and the method has been frequently employed. In the filtrate from this precipitation there is no reaction for bile when the iodin test is applied, nor is there any reaction for blood pigments as shown by the spectroscopic test. While this iodin test is not very sensitive, indicating only one part of biliary pigment in 10,000 of urine, yet if the filtrate shows no reaction with this test it is certainly evidence that sufficient bile has been removed to prevent interference in the latter colorimetric tests of the phenolsulphonephthalein output, which was the point claimed by the authors.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.
DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.
FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.
IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
MASSACHUSETTS: Boston, May 8-10. Sec., Dr. Charles E. Prior, State House, Boston.
MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.
MISSISSIPPI: Jackson, June 19-20. Sec., Dr. W. S. Leathers, University.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.
NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.
TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg.
VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roancke.
WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.

REPORT OF COMMITTEE ON GRADUATE TRAINING IN OTOLARYNGOLOGY*

GEORGE E. SHAMBAUGH, M.D., SECRETARY

In a previous report on the minimum requirements essential in the preparation for special practice in otolaryngology (Graduate Training in Otolaryngology[1]), this committee recommended that a period of one full year be spent in securing a proper foundation for this work; that one half of this time be devoted to the study of the fundamental sciences in the laboratory of a university, and that the other half be devoted to the clinical study of cases, all of this work to be on the basis of real graduate training, in which the student does his work independently but under proper supervision, as distinguished from listening to didactic lectures or by attendance on clinics, watching others do the work. It was further stipulated that this first year's training be supplemented, so far as facilities exist, by serving as intern in hospitals devoted to the specialty or as resident in otolaryngology in a general hospital, and that when it is not feasible to secure such services, an additional six months be spent in a continuation of the first year's work or by serving as assistant in the practice of an established specialist. This additional six months may be spent by taking such special courses in otolaryngology as are offered in other medical centers, postgraduate schools, etc.

In order to avoid confusion regarding this minimum requirement and what should be contemplated in a fully

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1. A. M. A. Bull., Jan. 15, 1921.

rounded out preparation, we submit the following summary of a report from the Committee on Graduate Training appointed by the three special societies, the American Laryngological Association, the American Otological Society and the American Laryngological, Otological and Rhinological Society.

SUMMARY OF REPORT

1. We recommend that students preparing for the practice of otolaryngology be graduates of Class A medical schools and have completed a year's service as intern in an approved general hospital or its equivalent.

2. We recommend that, when possible, the preparation for special practice be started immediately after completion of this hospital year. We do not approve of specialization beginning during the undergraduate medical course, or in the intern year.

3. We recommend that the minimum training consist of eighteen months full-time work, the first year to be spent in one place. The last six months may be continued here or the work may be pursued in other approved centers. During the first year, one half of the time should be devoted to the clinical study of cases, the other half to the study of the fundamental sciences and to library work.

4. All of this work must be on the basis of genuine graduate instruction in which the student does his work individually under proper supervision.

5. The work in the fundamental sciences should be done in properly equipped laboratories, such as exist in all Class A medical schools. The clinical work must be done in a properly equipped and properly organized outpatient department of either a Class A school or a special hospital, the student serving as clinical assistant.

6. On the completion of the first year's fundamental training, the student is advised to secure so far as this is possible the position of intern in a special hospital, or of resident in otolaryngology in a general hospital.

7. For those students who are not able to secure suitable hospital positions after the completion of the first year's fundamental training, the remaining six months' work necessary to fill out the eighteen months' minimum requirement may be taken as continuation of the first year's work in the same institution or by taking special work in other centers. Others may devote the last six months serving as assistant in the practice of some established specialist. When the latter alternatives are followed, the work selected must meet the approval of the institution in which the first year's work has been taken.

8. We recommend that on the completion of the foregoing requirements the student be granted a suitable certificate seting forth that he has had the proper preparation for taking up the practice of the specialty. This certificate is to be granted by the institution in which the first year's work has been taken. We make no recommendation regarding the granting of higher degrees. We feel satisfied that such degrees will be granted as readily by the university to those students preparing for the practice of otolaryngology as to students in any other field, whenever the work pursued meets the requirements established for the granting of such degrees.

9. We recommend that the student in otolaryngology devote three years, if possible, to the study of his specialty.

The committee hopes to be able to assist the candidates in the following ways:

(*a*) Securing from the graduate departments of the universities a suitable degree to be conferred only on such candidates as have followed the course outlined above.

(*b*) By correspondence with the graduate departments of the universities with a view to securing a uniformity in the course of study to be pursued.

(*c*) By arranging with the hospitals referred to above to limit their appointments, as interns, to those candidates possessing qualifications as outlined in the preceding.

(*d*) By preparing a list of hospitals to which candidates may safely be recommended to apply for the position of intern.

(*e*) By securing reliable information as to the facilities offered by various centers, which they may place at the disposal of those who desire to perfect themselves still further in any department of otolaryngology, after the foregoing course has been concluded.

FACILITIES FOR SECURING SPECIAL TRAINING IN OTOLARYNGOLOGY

In the present report we are making a partial survey of the facilities existing in this country for securing special training in otolaryngology. Our aim has been to include in this statement only such facilities as would constitute a part of the requirement preparatory for special practice as stipulated in our previous report. It is the belief of the committee that the publication in THE JOURNAL of these data, supplemented from time to time as other data are received, will be of great assistance for those seeking proper preparation for special practice.

Facilities for graduate training in otolaryngology have developed along three lines: (1) by serving as assistant in the work of outpatient departments; (2) by serving as intern in special hospitals or as resident in otolaryngology in general hospitals; (3) by taking courses, didactic, clinical and operative, such as are offered for the most part in postgraduate schools. The most substantial progress in graduate training so far developed in this country has been in connection with hospital services. The shortcomings inherent in such preparation have been pointed out in our previous report. It is the belief of this committee that these hospital services should logically follow a year spent in such fundamental training as can best be secured by serving for a suitable period as assistant in a properly equipped and properly organized outpatient department. Hospital work in otolaryngology has to do almost exclusively with operative cases, and for the most part with the exceptional more serious complications. The student who relies mainly on hospital experience for his training is left more or less deficient in the more important and certainly most difficult part of such preparation, namely, in the training for making proper, routine examinations, in the diagnosis of cases, and especially in learning how to recognize the proper indications for surgical interference. Proficiency in operative technic, when not supplemented by this fundamental training in examination and diagnosis, is sure to lead to indiscriminate and unnecessary surgery. It is always more difficult to teach a student how to recognize the proper indications for operations than it is to teach him the technic of the operation.

Hospitals with Services for Interns or Residents in Otolaryngology

Institution	Address	Length of Service	Number of Places	Character of Service
Illinois:				
Cook County Hospital	Chicago	1 year	1	Resident
Illinois Charitable Eye and Ear Infirmary	Chicago	16 months	8	Interns
North Chicago Hospital	Chicago	2 years	4	Residents
Presbyterian Hospital	Chicago	1 year	1	Resident
Rush Medical College	Chicago	1 year	8	Externs (O.P.D.)
St. Luke's Hospital	Chicago	1 year	1	Resident
Iowa:				
State University of Iowa	Iowa City	2 years	8	Residents
Louisiana:				
Eye Ear, Nose and Throat Hospital	New Orleans	1 year	5	Interns
Massachusetts:				
Boston City Hospital	Boston	18 months	3	Interns
Massachusetts Eye and Ear Infirmary and Mass. General Hospital	Boston	20 months	5	Interns
Michigan:				
State Univ. of Michigan	Ann Arbor	4 years	4	Interns
Detroit Eye, Ear, Nose and Throat Hospital	Detroit	1 year	1	Intern
Harper Hospital	Detroit	1 and 2 yrs.	1	Resident
Minnesota:				
Mayo Clinic	Rochester	39 months	6	Residents
New York:				
Brooklyn Eye and Ear Hospital	Brooklyn	21 months	5	Interns
Methodist Episcopal Hosp.	Brooklyn	2 years	4	Interns
Bellevue Hospital	New York	1 year		Interns
Beth Israel Hospital	New York	6-18 mos.		Interns
Bronx Eye and Ear Hosp.	New York	1 year	1	Intern
Harlem Eye and Ear Hosp.	New York	18 months	2	Interns
Manhattan Eye, Ear and Throat Hospital	New York	18 months	6	Interns
Mount Sinai Hospital	New York	2 years	2	Interns
New York Eye and Ear Infirmary	New York	18 months	6	Interns
New York Post-Graduate Hospital	New York	2 years	5	Interns
New York Throat, Nose and Lung Hospital	New York	6 mos.-1 yr.	2	Interns
St. Luke's Hospital	New York	18 months	3	Interns
Ohio:				
Western Reserve Univ.	Cleveland	1 year	2	Residents (O.P.D.)
Canada:				
Montreal General Hosp.	Montreal	1 year	1	Resident
Royal Victoria Hospital	Montreal	2 years	2	Interns
Toronto General Hospital	Toronto	16 months	2	Residents

It is the belief of this committee that the most conspicuous defect in our facilities for providing proper training in otolaryngology will be met by a proper development of the educational function of the outpatient department. This development of the teaching function, when properly supervised, enhances as nothing can the character of the service rendered the patient. It has become generally recognized that in hospital work the best care of patients is usually found in those hospitals in which the teaching function has been fully developed. In exactly the same way the outpatient

department which is connected with an educational institution and in which the teaching function has been properly developed is capable of rendering the best service to the patient.

The material of the outpatient clinic is the ideal material for providing training in examination, history taking and diagnosis, so essential in the proper preparation for special practice. The reason this wealth of material has not been more generally utilized for teaching purposes is to be found in the more or less generally neglected state of outpatient clinics in this country. In order to make of the outpatient clinic the ideal training school for those preparing for special practice, something of the same care must be devoted to this department as is given to hospital work. This means, first of all, providing the outpatient clinic with a complete, and, as nearly as possible, ideal sanitary equipment in order that the work may be taken care of in the best possible manner. It means, moreover, the introduction in the outpatient clinic of a suitable corps of graduate students serving as clinical assistants. The service of these graduate students is as essential for the care of the outpatient as is that of interns in hospital work. Their work should, of course, be given the same supervision as does that of the intern in our best managed hospitals. Careful examinations and complete history taking is just as essential in the proper handling of the outpatient as it is in hospital work. The number of graduate students receiving this training in any institution will be determined exactly as is the number of interns in a hospital, that is, by the number which is essential to take proper care of the patients. The committee believes that the graduate students who receive appointments in the outpatient clinics should be expected to pay a suitable fee for this training.

There are already in this country a number of institutions in which the educational function of the outpatient department has been developed to the extent of providing a definite service for graduate students. In some, this work in the outpatient clinic is carried on in connection with regular intern or resident services. Positions of this sort are available, for example, at Ann Arbor, where services exist for four graduate assistants; at Iowa City, with places for eight; at Rochester, for six men; at Rush College, for eight men, and at Western Reserve in Cleveland, for two clinical assistants. It is our belief that with very little additional expense it would be possible for the majority of our Class A medical schools to provide a similar service each for a small corps of graduate students in otolaryngology. If but twenty-five of our leading Class A medical schools would provide services for an average of four men each year, the entire need for specialists in otolaryngology for this country would be provided for.

As regards the work offered to graduate students in the form of didactic lectures, clinics, operative courses, etc.: This has been developed particularly in the postgraduate schools. Some of this work is excellent, being given by competent men with experience as teachers. As already pointed out in our previous report, the logical field for such work is as review courses for men already established in special practice, and for those who have completed the one year in fundamental training outlined above. The objection frequently urged against the work of these postgraduate schools has been due to the practice of substituting this sort of work for that training which the student can acquire only by serving as clinical assistant where he is permitted to do the actual work himself. The facilities of postgraduate schools should be open freely for men completing their first year's work and who come to these institutions with the desire to select such short courses as they feel would round out their preparation. It is our belief that a sojourn of only a few weeks in several medical centers after the completion of the first year's work would have a distinctly broadening influence.

We present with this report such a list of hospital services for interns or residents in otolaryngology as we have been able to compile. We recommend that prospective graduate students in otolaryngology communicate direct with the Class A medical schools for information regarding facilities for serving as clinical assistants in outpatient departments. Information regarding the courses available in postgraduate schools may be obtained by communicating with such schools.

The committee strongly urges that the work of such interns receive careful direction, particularly as regards outside reading, and that these interns be encouraged to pursue, as part of their regular duties, the exhaustive study of interesting cases, combining this with a complete review of the literature relating to such conditions, and that a carefully prepared report of such work be submitted as a thesis on the completion of their service. The committee regards the preparation of such a thesis with the training in library work which it involves as essential in the proper preparation of every real specialist.

Medical Economics and Miscellany

NARCOTIC CONTROL IN THE STATE OF WASHINGTON

To prevent the abuse of narcotic drugs in the state of Washington, the legislature has enacted a law covering the production, manufacture and distribution of habit-forming drugs and providing for the control of the addict. In general, the law follows the lines of the Harrison Narcotic Law. It goes further, however, in that it covers alpha and beta eucain, cannabis americana and cannabis indica. No one but a physician regularly licensed to practice medicine and surgery may prescribe any narcotic drug. The patient's ailment must be stated on the prescription, and the person procuring the drug to be prescribed must place his signature and address on the back of the prescription. The dispenser must make a copy of the prescription and preserve it, except that the copy may be removed by any prosecuting attorney or peace officer, any representative of the department of licenses, or any deputy or inspector of the state department of agriculture, all of whom may inspect such records. A person violating the provisions of the law relating to the production, manufacture and distribution of narcotic drugs is guilty of a felony, and on conviction is to be punished by imprisonment in the state penitentiary for not less than one year nor more than ten years. If the person convicted is a pharmacist, dentist, physician or veterinarian, his certificate of registration is to be revoked, and he is ineligible for reregistration for a period of ten years from and after the date of the revocation.

Every person who habitually uses any narcotic drug is guilty of a gross misdemeanor. Any state, county and municipal health officer, or his authorized deputy who is a licensed physician, may, whenever in his judgment it is necessary to protect the public safety, health and morals, examine any person reasonably suspected of habitually using narcotic drugs, and require such persons as he reasonably suspects to be drug addicts to report for treatment to an approved physician and to continue treatment at their own expense, or to submit to treatment at public expense until cured. The state board of health is empowered to determine by general regulation that the quarantine or isolation of persons habitually using narcotic drugs is necessary; and if it so determines, the officers named above may then isolate or quarantine such persons. Any person so isolated or quarantined may within ten days thereafter appeal to the superior court of the county; but, pending appeal, he is to be held in quarantine, and the judgment of the superior court is final. Persons who have been cured may be paroled or discharged by the health officer. Any person believing himself cured may appeal to the health officer for discharge, and on adverse decision may appeal to the circuit court for release; but such appeal shall not lie until after the addict has been in quarantine for a period of at least six months. Licensed physicians treating narcotic addicts are required, on the beginning of treatment, to report the case to the health officer. The state board of health may establish quarantine stations and clinics for the detention and treatment of addicts, which may be in connec-

tion with any county or city jail, or any hospital or other public or private institution having, or which may be provided with, necessary detention, segregation, isolation clinical and hospital facilities as may be required and prescribed by the board.

STATE OF WASHINGTON YIELDS TO SHEPPARD-TOWNER MATERNITY LAW

The legislature of the state of Washington has accepted the terms and conditions of the Sheppard-Towner Maternity Law, and has created in the state department of health a division to be known as the division of child hygiene, through which the provisions of the law are to be administered. Ten thousand dollars has been appropriated from the treasury to meet the requirements of the federal act.

VALUE OF CHEESE IN THE DIET

In the making of cheese, the greatest part of the casein and fat is brought down in the curdling process, leaving behind in the whey the milk, sugar and albumin. Most of the mineral substances go into the cheese. The three most important constituents, viz., the calcium, phosphates and the iron, are lost only to a small extent. Since the cheese is rich in fat, fat soluble A, or the growth vitamin, is retained almost completely in the cheese. The vitamins B and C are also retained, but to a smaller extent, which has never been exactly determined. It is clear, therefore, that whatever is said about the nutritive value of milk is to a great extent also true of cheese, because the most important constituents are retained to a very remarkable degree. As a matter of fact, being the more concentrated food, cheese enhances several fold some of the benefits derived from a milk diet. The American diet is likely to be made up chiefly of the grains and meat products. Both of these foods are known to be deficient in calcium. Indeed, it may well be said that the deficiency in calcium is the big gap in the American diet today, and it is primarily in this connection that cheese becomes an essential factor, because cheese contains a combination of calcium and phosphorus in greater proportion than in any other food, organically combined with the casein in such a way as to make it readily available. Although bread and meat may be a balanced ration from the standpoint of supplying carbohydrates and protein, it is decidedly deficient and unbalanced from the standpoint of supplying the mineral constituents. The best way to stabilize this inequality is to increase the amount of cheese and milk consumed. Concerning the digestibility of cheese, a wrong conception has been prevalent. Cheese, being a food in which the protein is closely intermingled with fat, remains a little longer in the stomach than is the case with other foods, and gives a sensation of fulness and heartiness. In the intestine, cheese is digested very quickly. Cheese, ingested together with other foods, has a marked influence in increasing the digestibility of the entire meal. The English and Scandinavians, who use many times over the amount of cheese that we do, are not troubled with as much constipation as are Americans. The number of calories that cheese furnishes per pound is quite variable depending on the cheese in question. Hard American Cheddar cheese will furnish as much as 1,900 calories a pound. When compared with other foods, cheese yields a lesser number of calories to the pound than some of the grain products, but considerably more than lean beef, fish, etc. Cheese must necessarily be considered an important food in the diet from any one of the factors considered. It would, however, be of greater value in special cases, for instance, in growing children who are in great need of calcium, phosphorus and the growth-promoting vitamin A. Cheese is especially rich in all of these factors, and the intelligent mother should see that her growing boys and girls have at least 1 ounce of cheese a day, either in the raw form or, better still, combined with vegetables in a salad.—S. K. Robinson, *American Food Journal* **18**:117 (March) 1923.

Book Notices

Kirke's Handbook of Physiology. Revised and Rewritten by Charles Wilson Greene, A.M., Ph.D., Professor of Physiology and Pharmacology, University of Missouri. Tenth edition. Cloth. Price, $5. Pp. 820, with 524 illustrations. New York: William Wood & Co., 1922.

This revision of Kirke's handbook is in no way superior to the ninth. Practically none of the defects of the previous edition have been eliminated, although the author says that revisions and amplifications have been made throughout the text. Judging from the preface, the handbook is intended for use by medical students. It is entirely inadequate for the purpose. Too much space is given to histology and physiologic chemistry, which the student either knows or knows where to find. The clinical application of physiology is not stressed, and the student is liable to treat this all-important subject the way he treats premedical zoology—as something prescribed but of no value to him. The space given to the various topics is entirely out of proportion to their recognized importance or unimportance. No more than five or six references to the original literature are given in the entire book. On the whole, however, the chapters on the blood, circulation, respiration, secretion, digestion and excretion are fairly well written. The chapter on metabolism is poor. The importance of the beta-carbon in the oxidation of fats is not mentioned. All types of glycemia and glycosuria get half a page of text. In speaking of measuring the basal metabolic rate, the author says: "The rate of heat production and of heat loss must, of course, be in balance in an animal of constant temperature, as in man. For this reason the rate of metabolism varies not with the mass, as we would expect, but with the surface area." Who could resist an argument like this? Very little space is given to vitamins. Fat-soluble A gets only eight lines of text (rickets is not even mentioned), whereas six full pages are devoted to the histology of the teeth. The treatment of the physiology of the ductless glands is even worse. The author persists in maintaining that "the parathyroids are intimately associated with the thyroids in the construction of the thyroid compound"; and that (Stewart's work notwithstanding) the medulla of the suprarenals, and not the cortex, is essential for life. Nerve-muscle physiology is treated more adequately, but its application in practice, the reaction of degeneration, is dismissed in two lines, and the nature of the reaction is not stated. However, thirteen pages are given to the histology of muscle and of the nerve fiber. The physiology of the central nervous system is not treated in the light of the newer knowledge. Sherrington's work on the spinal reflexes is not described. The knee-jerk is mentioned, but its importance as a diagnostic sign is not emphasized. A good deal of histology and anatomy of the brain is given, but the whole subject of aphasia gets less than four lines. In vain one looks for such common terms as ataxia, Brown-Séquard's syndrome, reciprocal innervation or decerebrate rigidity. The chapter on the eye has not been changed at all. Color-blindness is described, but its practical importance is overlooked. The confusing terminology as regards ophthalmoscopy and retinoscopy is retained; and since the word diopter is not even mentioned, the advice that the student fit glasses for himself and at least two others must be given in a Pickwickian sense only.

Physiology for Dental Students. By A. G. Curzon-Miller, B.Sc., L.M.S.S.A., F.C.S. Cloth. Price, $3.75 net. Pp. 206, with 81 illustrations. New York: Longmans, Green & Co., 1922.

The author states that the importance of physiology cannot be overstated, but that the needs of the dental student are not so comprehensive as those of the medical student. This immediately opens a large question, and a review of this little book really involves a consideration of the whole problem of professional education. With new courses being added, and old ones either lengthened or intensified on account of new material, it is becoming a problem indeed to determine at what point to begin paring. Physiology is a complex subject, and a course put on a fully scientific basis would involve a technical consideration of the structure,

physics and chemistry of the body. There is no course in the curriculum that is so liable to overlapping as physiology, reaching on the one hand into the pure sciences, and on the other into the chemical side. This makes a course in physiology easily susceptible to abridgement, so that we may present a discussion of physiologic phenomena to those who have little more than the layman's scientific attainments. But the dental student, having had courses in anatomy, and in organic and physiologic chemistry which approximate the time that the medical student is allotted, and who in turn gives 60 per cent. of the equivalent time to physiology, needs no special textbook. The author has been obliged, for the sake of brevity, to make incomplete statements which, to the beginning student of physiology, amount to inaccuracies. In general, shortening a textbook or a course should be by elimination and not by condensation of the material presented. Speculative discussions have been intentionally omitted, and as a consequence many valuable statements, bald and undecorated, pass unseen. A simple statement is not impressive; the student must be informed of the essential facts and the reasons for our conclusions if he is to remember them. This work is so dogmatic that the laboratory could play no part in the presentation of a course from it. One of the functions that the laboratory performs for the future clinician is to place him in an investigative frame of mind, and to teach him the principles involved in valuable research, in order that he may think originally in his clinical practice, giving intelligent consideration to new problems as they arise. He should be informed as to the live issues and trend of development, or he will become a victim of dogmatism and tradition. Further, too much space has been given to histology, which is irrelevant to the material as presented, and it would have been better if the chapter on development had been left for presentation in the department of microscopic anatomy. Diagrams, such as those of the vomiting mechanism, regulation of the respiratory mechanism, cardio-inhibitory center and vasomotor center, require extended explanation for complete understanding.

GETTING READY TO BE A MOTHER. A Little Book of Information and Advice for the Young Woman Who is Looking Forward to Motherhood. By Carolyn Conant Van Blarcom, R.N., with an Introduction by J. Clifton Edgar, M.D., Consulting Obstetrician to Bellevue Hospital, and Frederick W. Rice, M.D., Associate Professor of Obstetrics, New York University and Bellevue Hospital. Cloth. Price, $1.50. Pp. 237, with 70 illustrations. New York: The MacMillan Company, 1922.

This is, on the whole, an exceptionally practical book. It covers completely the question of prenatal care and the care of the infant during the first few weeks. The book is fully illustrated, but it is open to the objection that some of the illustrations are technical, and will merely disturb the expectant mother without giving her any practical information. This refers particularly to the diagrams showing the position of the child in utero. Such diagrams have no real utility for the layman; neither have the microscopic and gross sections showing tissues involved in generation.

"SUGGESTION" AND COMMON SENSE. By Allan Bennett, M.D., M.R.C.P., Torbay Hospital, Torquay. Cloth. Price, $2.25, net. Pp. 105. New York: William Wood & Co., 1922.

Beginning with ridicule of modern psychotherapeutic doctrines as efforts to treat "a fragile and elusive figment (the unconscious) with a gross and mystifying materialism," the author endeavors to substitute for such magistral dogmatisms a concept of an "intellect" inherent in all living cells, even those of the segmenting mammalian ovum. What is gained by this method of description, and in what way it is less an "elusive figment," is not clear. Dr. Bennett then emphasizes the primeval antiquity of suggestion in medical practice (of all kinds and cults) and seems to regard practically all therapeutic effects as the outcome of this influence. He takes great credit to himself because, unlike some others, he is "convinced that my patient had only herself to thank for the cure." Dr. Bennett is evidently an enthusiast and probably gets results, but one may wonder whether environmental influences are not of equal importance, as factors in human reactions, with the beliefs and faiths he somehow acquires. This little book is interesting but, if followed, is liable to lead to medical nihilism.

Medicolegal

Hospital a Lawful Business but May Become a Nuisance

(Emrich v. Marcucilli (Ky.), 244 S. W. R. 865)

The Court of Appeals of Kentucky says that, strictly speaking, no lawful business or enterprise is ever a nuisance per se, or to be classed as in and of itself a nuisance, the true definition of a "nuisance per se" being one wholly forbidden by the law. But, that a hospital, which is a lawful business, may, on account of extraneous facts, become a nuisance to one within sufficient proximity thereto is everywhere recognized. Many authorities establish the fixed doctrine, without dissent from any court, that no business, however lawful, may be operated so near to the property of another as materially to interfere with the latter's enjoyment of his own; but the interference must be a substantial, as distinguished from a merely fanciful one. In this case, the defendant acquired an old residence and converted it into what he operated as a general and lying-in hospital. Plaintiff Marcucilli's residence at its nearest point was about 10 feet from the north side of the hospital, and at other places as far as 23 feet from the hospital. There were windows on the south side of his house and on the north side of the hospital. The plaintiff sought to have the operation of the hospital enjoined as a nuisance, and the defendant was perpetually enjoined from operating in his building a lying-in hospital, and enjoined from or suffering offensive odors to invade the plaintiff's dwelling from his hospital operated as a general one. In affirming that judgment, the court of appeals is of the opinion that, leaving out of the question the effect of such a business on the financial value of the plaintiff's property, the proof was sufficient to show there was such an unlawful interference by noises and odors with the plaintiff's comfortable enjoyment of his residence as to justify him in maintaining this proceeding, and the court did not err in restraining the defendant from operating a lying-in hospital in his building. There was no evidence that any objectionable noises or odors of the disturbing kind referred to were produced through the operation in the defendant's building of a general hospital, and because its consequential effects might be to reduce the value of the plaintiff's property was not sufficient in itself to create an abatable nuisance. Besides, the only evidence introduced on the reduced value of the plaintiff's premises was based on the operation of the defendant's property as a lying-in hospital, although it is possible that the mere operation of any character of hospital in proximity to the plaintiff's premises would have some depressing effect on value. The business, as has been seen, is a lawful one, and becomes a nuisance only when the manner of its operation is such as to produce the discomforts of which the law will take cognizance. If the operation of the defendant's hospital should at any time be conducted in such a manner as to produce them, or if he should convert it into a contagious hospital or treat therein patients with contagious diseases, and thereby render the habitation of the plaintiff's premises dangerous to the health of the occupants, it would then become such a nuisance as would entitle the plaintiff to a new application for relief.

Insufficient Evidence of Damages from Amputation

(Bush v. Chilcott (Mont.), 210 Pac. R. 907)

The Supreme Court of Montana, in reversing a judgment for $3,500 damages rendered against the defendant for alleged malpractice, does so on the ground that, viewing the evidence in the most favorable light possible for the plaintiff, the evidence was not sufficient to support a verdict for damages. The court says that the plaintiff was thrown from a cart, one wheel of which passed over his left leg, breaking both bones of the leg about 3 inches above the ankle. His team ran away, and he walked and crawled 7 miles to the nearest ranch. From there he was taken in an automobile to the defendant physician, arriving there eight or nine hours after the accident. Two weeks after the accident, he was taken to a hospital, where his leg was amputated about midway between the knee and the hip. It was alleged that

the part of the plaintiff's leg below the point at which the break occurred became infected with gangrene; that the defendant knew of that fact, but did nothing to prevent the spread of the infection and did not amputate the leg promptly so as to prevent the spread of the infection, and that because of such negligence the infection spread, and the plaintiff lost the additional portion of the leg, and was damaged thereby. The damage claimed was that which it was alleged resulted from the loss of the additional portion of the leg. The loss of the foot, together with a portion of the leg between the break and the knee was attributable to and a direct result of the injury resulting from the accident. No attempt was made in the complaint to hold the defendant liable for this loss. Assuming that the defendant was negligent in the manner charged, and that such negligence was the proximate cause of the loss of the additional portion of the limb, then, on proof thereof, the plaintiff was entitled to recover such damages as would compensate him for all the detriment proximately caused thereby. But all the evidence in the record which related to the damage alleged to have been suffered, except the fact of the amputation, was contained in the plaintiff's testimony to the effect that he had not been able to make a success of trapping, as he had before; he was slower in setting and tending his traps; he had to use an inferior trap because he could not use his foot to step on the springs, and he had to use a very gentle horse because he could not mount as he previously could; nor was he able to make himself useful in caring for sheep, as formerly. He testified further that it would take one fourth or more from what he used to make; that if he had lost only his foot, so that he would still have a knee-joint, he could earn more money than without the knee-joint. The evidence was not sufficient to support the verdict for damages, and for that reason the judgment recovered by the plaintiff is reversed, and a new trial granted to the defendant. While it is true that, in cases of this character, damages cannot be ascertained with mathematical certainty, yet a jury must have some competent evidence before it from which to arrive at its conclusions, and must not base its verdict on mere conjecture and speculation; and this rule is not altered by the fact that the ascertainment of the proper amount of damages is a matter of practical difficulty. In the testimony mentioned, the plaintiff compared his ability after the amputation, in the several respects stated, with his efficiency in like respects before the accident occurred, while a part of this difference was caused by the loss of the foot and part of the leg below the knee, which, admittedly, was the result of the unfortunate accident, and not in anywise occasioned by the alleged negligence of the defendant.

Competence of Insane Persons to Be Witnesses

(Lanier v. Bryan (N. C.), 114 S. E. R. 6)

The Supreme Court of North Carolina says that the tests that have usually been applied to determine the competence of a person offered as a witness are those of age, mental power, religious belief, and capacity to understand the nature and obligation of an oath. Particularly with reference to the first three of them the decisions have not been uniform. With respect to age it is now generally held that no precise minimum limit can be fixed, and that as to mentality the controlling factor is the strength of the witness' understanding, or the degree of his intelligence. In a number of American cases decided in the first half of the nineteenth century, it was held that idiots and insane persons were not competent to be witnesses; but subsequently the courts, "keeping pace with the progress of science" and the demands of a more enlightened period, relaxed the rigor of these decisions and modified the former strictness of the rule. Now the principle is generally recognized that a lunatic or a person affected with insanity is competent to be a witness if he has sufficient mind to understand the nature and obligation of an oath and correctly to receive and impart his impressions of the matters which he has seen or heard.

In this case, in which the plaintiff recovered a judgment for damages for seduction, the trial judge, after hearing the testimony of a physician who was an expert in mental diseases and who had treated the plaintiff in a training school, found therefrom that she was over 21 years old and had been adjudged to be of unsound mind; that she was an imbecile and had a mentality not in excess of that of a normal child of from 3 to 6 years; and that she was incapable of any sense of moral obligation or of understanding the nature of an oath. But immediately thereafter the plaintiff was examined as a witness, and after hearing her testimony and considering it in connection with other evidence, the judge entered of record a general order adjudging the plaintiff competent to testify, and thus practically reversed and nullified portions of his previous findings and brought the case within the general rule, freed from the exceptions. The supreme court finds no error entitling the defendant to a new trial.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.
American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
American Ophthalmological Society, Colorado Springs, June 19121. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.
Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Concord, May 22-23. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.
Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Arkansas Medical Society Journal, Little Rock

March, 1923, **19**, No. 10

Fractional Gastric Analysis. W. D. Rose, Little Rock.—p. 187.
Treatment of Psoriasis. E. A. Purdum, Hot Springs.—p. 192.
Ectopic Pregnancy. C. V. Scott, Little Rock.—p. 194.

American Journal of Medical Sciences, Philadelphia

165: 313-434 (March) 1923

Mechanism of Physical Signs, with Special Reference to Foreign Bodies in Bronchi. C. Jackson, Philadelphia.—p. 313.
*Nature of Complement Fixation Reaction in Syphilis in Relation to Standardization of Technic. J. A. Kolmer, Philadelphia.—p. 320.
*Production of Heart Murmurs. W. D. Reid, Boston.—p. 328.
*Value of Roentgen Ray in Cardiac Diagnosis. F. N. Wilson and E. F. Merrill, Ann Arbor, Mich.—p. 340.
*Sudden Death Following Thoracentesis. E. S. Du Bray, San Francisco.—p. 357.
*Diffuse Glomerulonephritis. H. Elwyn, New York.—p. 366.
*Graves' Syndrome and Involuntary Nervous System. L. Kessel, C. C. Lieb and H. T. Hyman, New York.—p. 384.
I. Thyroid Enlargement in Persons without Sympathomimetic Manifestations. L. Kessel and H. T. Hyman, New York.—p. 387.
*Significance of Sequence and Mode of Development of Symptoms as Aid to Diagnosis of Multiple Sclerosis in Early Stages. W. B. Cadwalader and J. W. McConnell, Philadelphia.—p. 398.
Traumatic Cerebral Edema. W. Sharpe, New York.—p. 405.
Prognosis in Cancer of Breast. H. C. Saltzstein, Detroit.—p. 424.
*Magnesium Sulphate as Sedative. P. G. Weston and M. Q. Howard, Warren, Pa.—p. 431.
Nephritis: Necropsy Reports and Recent Views. R. Floyd, New York.—p. 434.

Complement Fixation Reaction in Syphilis.—Kolmer favors standardization of the Wassermann test. He feels that his test meets all requirements. The first purpose should be to secure as good a technic as possible in the light of present knowledge. More unification of results in Wassermann tests in different laboratories means little or nothing unless the test is technically correct and as sensitive as is possible with practical specificity. Even under these conditions individual variation in the scientific attainments and accuracy of different serologists will ever be modifying factors, if the test aims to be a sensitive one; but Kolmer believes standardization is possible under these conditions.

Nature of Heart Murmurs.—In the hope of obtaining a better understanding of the nature of murmurs detected in the physical examination of the patient, Reid has studied the murmurs which may be produced in rubber tubes through which a stream of water is passing. He has also analyzed clinical records and necropsy reports. A murmur is most readily produced when conditions exist for the formation of a "veine fluide" or jet. Such conditions are: (*a*) stenosis or narrowing of the vessel; (*b*) sudden increase in the caliber of the tube. A certain velocity of the stream is necessary. Within certain limits the loudness or intensity of the murmur is proportional to the velocity of the stream. The murmur is propagated both up stream and down, but better in the latter direction. A second condition, easily giving rise to a murmur, is the culdesac against the current. A mere sharp edge or lip is sufficient to cause a murmur. The murmur produced by the culdesac against the current is less intense than that associated with the veine fluide, and it is better transmitted up stream than down stream. Roughness of the inner surface of a vessel appears not to cause a murmur, or if this be not literally true, then a murmur due to roughness of the vessel wall is very slight and in no sense comparable to the murmurs produced when a veine fluide or a culdesac against the stream are present. The conditions suitable for the formation of a veine fluide, a culdesac against the stream and roughness of the vessel wall may be and often are present together in the human heart. The quality of the murmur is influenced by the character of the vessel wall at the point of production. In their transmission, murmurs may be altered by the effect of resonance and of the reflection and refraction of sounds.

Value of Roentgen Ray in Cardiac Diagnosis.—While recognizing the usefulness of the roentgen ray in the diagnosis of cardiac disease, Wilson and Merrill warn against basing a diagnosis of cardiac enlargement on the roentgen-ray findings alone, particularly in cases in which no cause for such enlargement can be found. The exaggeration of the importance of the roentgen-ray examination of the heart, at the expense of other methods, is deplored.

Sudden Death Following Thoracocentesis.—Du Bray concludes that in his case the accident was caused by a combined physiologic-pathologic mechanism, namely, injury and congestion of the lung parenchyma plus acute pulmonary edema with secondary circulatory reflexes. Nothing was observed either in the clinical picture or in the necropsy findings to suggest that air embolism was a factor.

Diffuse Glomerulonephritis.—Volhard's theory of acute angiospastic renal ischemia as the starting point of diffuse glomerulonephritis, Elwyn thinks is the best explanation so far offered for the pathogenesis of this disease. The theory is also of value in treatment. At all times, when the functional reserve of the kidney is lessened or has entirely disappeared, either by acute ischemic or by chronic changes, treatment should be directed toward limiting the intake of those substances that in their normal quantities cannot be eliminated by the kidney which has become limited in its function. These substances are protein, food and water, and their reduction is always indicated when the blood shows an increase in the nitrogenous waste substances.

Hyperthyroidism and Nervous System.—The results of a study of fifty-five persons with thyroid enlargement are presented by Kessel and Hyman. None of the patients presented sympathomimetic manifestations or alterations in basal metabolism. The efficacy of iodids in reducing neck circumference is again demonstrated. The mechanism of the production of hyperplasia is through diminution in the iodin store. That hyperplasia of the thyroid gland indicated hypersecretion, the authors assert, is based on inferences which are not compatible with the available data. There was no evidence to support the theory of the toxicity of adenoma. The influence of nervous impulses on the secretion of the thyroid gland has not been demonstrated. The rôle of the thyroid in the production of clinical symptoms is held to be greatly overemphasized.

Diagnosis of Multiple Sclerosis.—Cadwalader and McConnell state that the sequence, mode of development, and the combination of signs are more important than the individual symptoms themselves. In addition, the occurrence of cerebral symptoms, most particularly scanning speech and nystagmus, either alone or after spinal symptoms have developed, or the reverse—spinal symptoms following the cerebral manifestations—is strongly indicative of the dissemination of the pathologic process. If there is a history of earlier remissions, or of a discontinuance of the process in the early stages, followed by a progressive course, the nature of the disease can be determined with considerable accuracy. With the exception of syphilis, no subacute or chronic disease other than multiple sclerosis presents this remittent picture so constantly.

Magnesium Sulphate as Sedative.—Weston and Howard record their experience with magnesium sulphate as a sedative. Pure, recrystallized magnesium sulphate, with its water of crystallization was made into a 50 per cent. solution with distilled water and sterilized. The solution (2 c.c.) was injected subcutaneously and intramuscularly more than a thousand times. No local pain or sloughing occurred when proper aseptic technic was used. In 82.7 per cent. of the cases the sedative action was prompt, the patient becoming quiet after fifteen or thirty minutes and sleeping from five to seven hours. In a few instances the patient became quiet but did not sleep. The effect persisted for from five to ten hours. The salt was found to be a very excellent substitute for morphin and hyoscin in many cases. It was found necessary to repeat the dose of 2 c.c. in 6 per cent. of the cases before sedation was obtained. In 11 per cent. of the cases no effect at all was noticed after the injection of three or more doses. The salt is quite harmless in the dose necessary to produce

sedative effect and can be given liberally when necessary. No opportunity has occurred for using the salt in preoperative or postoperative cases or in acute thyrotoxicosis.

American Journal of Ophthalmology, Chicago

6: 161-223 (March) 1923

Significance of Tuberculin Reaction and Other Problems in Ocular Tuberculosis. W. H. Luedde, St. Louis.—p. 161.
Corneal Deposits of Cholesterin and Lime Salts Dissolved by Alcohol. L. F. Love, Philadelphia.—p. 174.
Neurofibroma of Orbit. E. Stieren, Pittsburgh.—p. 176.
Malignant Lymphoma of Lacrimal Gland. L. M. Francis, Buffalo.—p. 182.
Tumors and Cysts Arising Near Apex of Orbit. W. L. Benedict, Rochester, Minn.—p. 183.
Intracapsular Cataract Extraction with Erisiphake. W. Zentmayer, Philadelphia.—p. 202.
Practical Points in Refraction. C. D. Westcott, Chicago.—p. 204.
Plea for More General Use of Cross Cylinder. W. H. Crisp, Denver.—p. 209.
Practical Side of Ophthalmometer. O. Orendorf, Canon City, Colo.—p. 215.
Three Cases of Asthenopia Treated by Psychotherapy. W. B. Lancaster, Boston.—p. 216.
Incubation Period of Trachoma. Contagiousness in Atrophic Stage. H. Gifford, Omaha.—p. 221.
Glioma Involving Orbit. C. J. Adams, Kokomo, Ind.—p. 222.
Forceps for Trial Cylinders without Handles. S. L. Olsho, Philadelphia.—p. 223.
Cataract Extraction in Man Suffering from Pernicious Anemia. J. B. Stanford, Memphis, Tenn.—p. 223.

American Journal of Public Health, Detroit

13: 163-210 (March) 1923

The Administration of Health Departments. A. W. Freeman, Baltimore.—p. 163.
Prevention of Pneumonia by Pneumococcus Vaccine. R. L. Cecil, New York.—p. 182.
Preventive Infant Feeding—Its Simplification. H. J. Gerstenberger, Cleveland.—p. 185.
Medical Examination of Food Handlers. C. V. Craster, Newark, N. J.—p. 196.
Attempt to Isolate Bacillus Typhosus or Bacillus Paratyphosus from Clotted Blood. R. Gilbert, Albany, N. Y.—p. 201.
Local Quarantine and Inoculation for Smallpox in American Colonies (1620-1775). E. C. Tandy, New York.—p. 203.
Lead in Drinking Water. C. D. Howard.—p. 207.
Typhoid Fever Epidemic Traced to Cheese. E. D. Rich.—p. 210.

Archives of Neurology and Psychiatry, Chicago

9: 283-358 (March) 1923

*Deep Sensibility of Face. L. E. Davis, Chicago.—p. 283.
*Afferent Impulses of Trigeminal Nerve. M. W. Gerard, Chicago.—p. 306.
*Hereditary and Nonhereditary Mental Defect. H. W. Potter and R. S. Viers, Thiells, N. Y.—p. 339.
*Case of Ambulatory Automatism. H. D. Singer, Chicago.—p. 347.
*Basal Metabolism in Mental Disease. K. M. Bowman and G. P. Grabfield, Boston.—p. 358.

Deep Sensibility of Face.—In studying the deep sensibility of the face, Davis attempted to establish two points: (1) Is pressure pain sensibility lost after division of the sensory root of the trigeminal nerve? (2) If this type of sensation is not lost, do the fibers which transmit pressure pain travel cephalad in the facial nerve? His conclusions are as follows: Pressure pain sensibility in the face is retained following trigeminal neurectomy or ganglionectomy, although all superficial cutaneous sensibility is lost. Afferent fibers which transmit pressure pain sensation from the face exist within the facial nerve trunk. The cells of origin of these afferent fibers exist within the geniculate ganglion, and their internal prolongations pass cephalad within the nervus intermedius. The facial nerve is, therefore, a mixed nerve in man, and contains a general visceral sensory component.

Afferent Impulses of Trigeminal Nerve.—Besides offering data on the anatomy of the central trigeminal structures in cat and man, the following physiologic observations are discussed by Gerard. Painful, and possibly thermal, stimuli in the trigeminal area produce conscious and reflex effects via the spinal fifth tract and nucleus only, while tactile stimuli produce effects via the main sensory fifth nucleus only (thirty-nine cases of occlusion of the posterior inferior cerebeliar artery, eight other human cases, and twenty-one cats with experimental lesions). Pain fibers from the cornea terminate just below the upper 7 millimeters of the spinal tract (cat). Pain fibers from adjacent regions descend further (human). The fields of tactile sensibility of the two trigeminal nerves supplying the nose do not overlap (cat). The adequate stimulus for the oculocardiac reflex is pain rather than pressure, and the reflex path includes the spinal fifth tract. The spinal fifth tract and nucleus are functionally related to the tract of Lissauer and the substantia gelatinosa, respectively. Deep pain sensation from the facial muscles is probably carried by the facial nerve. These results favor the view that impulses from more than one type of sensory stimulus may be transmitted by the same nerve fiber.

Hereditary and Nonhereditary Mental Defect.—Two groups, one comprising fifty patients with a history of feebleminded ancestors and the other composed of a like number of patients having an unimpaired heredity, were studied comparatively by Potter and Viers, with respect to etiology, intelligence, physical growth and physical defects and diseases. A history of possible etiologic significance other than heredity was found in eight patients belonging to the hereditary group and in thirty-one belonging to the nonhereditary group. The average intelligence quotient of the hereditary group, fifty-six, was fifteen points higher than that of the nonhereditary group, which was forty-one. In the former group there were no idiots; five were imbeciles, thirty-five were morons and ten were borderline types. In the latter group there were twelve idiots, twelve imbeciles, twenty-four morons and only two belonging to the borderline types. The whole number of the two respective groups showing physical defects and diseases did not differ materially, there being twenty-six cases among the hereditary group, and thirty among the nonhereditary group. One further salient feature is the fact that among 100 cases, in more than one half some physical disease or defect was present. Among this number were not included patients with minor defects of the eyes, ears, nose or throat. This study would tend to indicate that there are decided differences between hereditary types of mental deficiency and those cases which for want of a better term might be called sporadic.

Ambulatory Automatism.—The outstanding features of the personality of the patient whose case is cited by Singer were restless energy combined with a sensitive, timorous conventionality. Coupled with the associations of childhood, the former led to a craving for change and adventure which was held in check by the latter. The man joined the navy, developed tuberculosis and was discharged. Alcohol given in treatment was adopted as a substitute for his hopes and served for a time to allay the disappointment. With returning health this was discontinued, but a recurrence of the illness and its accompanying fears, a serious psychic shock, exhaustion and an accidental dose of whisky led to an effort to escape by a fugue with a blind return to excessive drinking. Following this first fugue that lasted a few days, subsequent difficulties were reacted to in the same manner. Numerous fugues occurred, one lasting two and one-half years. In these fugues he supported himself, drank heavily and twice married.

Basal Metabolism in Mental Disease.—In a series of fifty cases of mental disease only four showed increased basal metabolism. Three of these cases belonged to the manic-depressive group. The fourth case with a high reading was one of psychopathic personality without psychosis. The authors feel that this tendency toward a low basal metabolism in cases of mental disease is of importance and merits consideration in formulating theories as to etiology and treatment.

Florida Medical Association Journal, St. Augustine and Jacksonville

9: 129-135 (Feb.) 1923

Suppurative Arthritis Following Focal Infection. E. J. Melville, St. Petersburg.—p. 129.
Invisible Ingredient in Medicine and Surgery. R. R. Kime, Orlando.—p. 131.
Lipoids. H. Iscovesco, Paris, France.—p. 135.

Journal of Bacteriology, Baltimore

8: 103-173 (March) 1923

Influence of H Ion Concentration on Structure. I. B. Influenzæ. G. Reed and J. H. Orr, Kingston, Canada.—p. 103.
Variations in Hydrogen Sulphid Production by Bacteria. F. W. Tilley, Washington, D. C.—p. 115.

*Comparison of Ziehl-Neelsen and Schulte-Tigges Methods of Staining Tubercle Bacilli. H. L. Shoub, New York.—p. 121.
Physiologic Youth in Bacteria. J. M. Sherman and W. R. Albus, Washington, D. C.—p. 127.
Salt Action. VI. Stimulating and Inhibitive Effect of Certain Cations on Bacterial Growth. M. Hotchkiss, New Haven, Conn.—p. 141.
Bacteriophage of D'Herelle: Its Therapeutic Applications. A. Beckerich and P. Haudurov, Strasbourg, France.—p. 163.
Variation of Bacterium Coli. H. Bergstrand, Stockholm, Sweden.—p. 173.

Methods of Staining Tubercle Bacilli.—Shoub thinks that the Schulte-Tigges method of staining tubercle bacilli is not more difficult than the Ziehl-Neelsen method; it gives about 33 per cent. more positives; it exposes more than five times as many organisms; it does away with the use of alcohol.

Journal of Industrial Hygiene, Boston

4: 163-491 (March) 1923

Carbon Monoxid Asphyxia: Problem of Resuscitation. C. K. Drinker and W. B. Cannon, Boston.—p. 463.
Industrial Medicine in 1922. W. I. Clark, Jr., Worcester, Mass.—p. 474.
Ventilation of English Factories and Workshops in Hot Weather. T. C. Angus.—p. 479.
Influence of Benzol on Certain Aspects of Metabolism. F. P. Underhill and B. R. Harris, New Haven, Conn.—p. 491.

Journal of Laboratory and Clinical Medicine, St. Louis

8: 357-411 (March) 1923

Clinical and Laboratory Procedures in Pediatrics. A. Levinson, Chicago.—p. 357.
Mixed Tumors of Uterus. A. J. Petersen, Chicago.—p. 369.
Pseudospirochetes Derived from Red Blood Cells. E. W. Schultz, San Francisco.—p. 375.
*Pharmacology of Isopropyl Alcohol. Synopsis of Available Data. D. H. Grant, Elizabeth, N. J.—p. 382.
Pathogenicity of Streptococci from Diphtheria Throats for Mice. L. Brody and L. Arnold, Chicago.—p. 387.
Changes in Streptococci Flora of Throat During Diphtheria. L. Arnold, Chicago.—p. 389.
Deterioration of Procain Solutions. M. L. Bonar, Morgantown, W. Va.—p. 391.
Simplified Technic for Clinical Blood Chemistry. A. Mirkin and S. J. Druskin, New York.—p. 395.
Successful Method for Isolation of Diphtheria Bacilli from Mixed Cultures. A. I. van Saun and I. A. Graves, New Haven, Conn.—p. 406.
Note on Comments of Reznikoff on Use of Sodium Sulphate as Precipitant of "Pseudoglobulin." P. E. Howe, Princeton, N. J.—p. 408.
*Method for Determination of Hemoglobin. R. L. Haden, Kansas City, Mo.—p. 411.

Pharmacology of Isopropyl Alcohol.—Grant fails to see how any reasonable objection can be made to the use of isopropyl alcohol as a lotion or vehicle for external medication, nor as a constituent of compounds for oral and nasal medication, such as practically all mouth washes, gargles, dentifrices, etc., which do not involve the probability of swallowing more than a few cubic centimeters, at most, of the alcohol. The toxicity of isopropyl alcohol probably lies between one and two times that of ethyl alcohol. Isopropyl alcohol is not potable.

Determination of Hemoglobin.—The method described by Haden is an adaptation of the acid hematin method of Sahli to the Hellige colorimeter.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

21: 77-151 (March) 1923

Action of Certain Depressant Drugs on Sensory Threshold for Faradic Stimulation in Human Subjects and the Effect of Tobacco Smoking on This Action. W. Hale and G. P. Grabfield, Boston.—p. 77.
Biologic Significance of Lipoids. Action of Kephalin and Lecithin. W. S. Van Leeuwen and A. V. S. Györgyi.—p. 85.
Sensitivity of Different Nerve Endings to Atropin. V. E. Henderson, Toronto.—p. 99.
*Active Principles of Pituitary Gland. H. W. Dudley, London.—p. 103.
*Comparative Toxicity of Inorganic Lead Compounds and Metallic Lead for Pigeons. P. J. Hanzlik and E. Presho, San Francisco.—p. 123.
*Therapeutic Efficiency of Various Agents for Chronic Poisoning by Metallic Lead in Pigeons. P. J. Hanzlik and E. Presho, San Francisco.—p. 131.
Comparative Toxicity of Metallic Lead and Other Heavy Metals for Pigeons. P. J. Hanzlik and E. Presho, San Francisco.—p. 145.
Biologic Action of Potassium and Its Radioactivity. H. Zwaardemaker, Utrecht, Holland.—p. 151.

Active Principles of Pituitary Gland.—An attempt has been made by Dudley to effect a purification of the oxytocic principle of the posterior lobe of the pituitary gland. A crystalline picrate was obtained which had the characteristic actions of pituitary extracts on plain muscle and blood pressure. It had an activity of the same order as that of histamin. It was found to be the picrate of an inert substance merely contaminated with small amounts of the pituitary principles and was eventually identified as potassium creatinin picrate. Out of the mother liquor from the recrystallization of this potassium creatinin picrate a small alcohol soluble residue was obtained. This yielded an acetone insoluble *A* and an acetone soluble *R* fraction. *A* had an oxytocic activity equal to about twelve times that of histamin (reckoned as base), producing a definite contraction of the uterus in a dilution of 1 : 1,250,000,000. *A* also contained a pressor principle, displaying no preliminary depressor activity. It produced a strong rise of blood pressure in a dose of 0.01 mg. *R* had one-twentieth the oxytocic activity of *A*, and in doses of 0.5 mg., produced a strong depressor action followed by a moderate pressor action on the blood pressure. Evidence is put forward to show that the oxytocic and pressor principles of *A* are two separate chemical substances, and that the pressor principles of *A* and *R* are most probably also two distinct chemical entities. It is considered, therefore, that there is valid evidence for the presence of at least three different physiologically active principles in pituitary extracts. This view is in direct conflict wth that of Abel and Rouiller.

Toxicity of Inorganic Lead Compounds and Metallic Lead.—The following lead compounds: chlorid, iodid, sulphid, carbonate and acetate, administered in single, and continuous or daily doses, whose lead content was equivalent to and greater than the fatal dosage of metallic lead, Hanzlik and Presho found were less toxic than metallic lead for pigeons under similar conditions of experimentation.

Therapeutic Efficiency of Various Agents in Lead Poisoning.—The therapeutic efficiency of some agents in current use for the treatment of chronic lead poisoning was tested by Hanzlik and Presho in pigeons. Using sodium chlorid as control, the daily administration of sodium iodid in food and drinking water, and of magnesium sulphate and calcium sulphid in food, in doses corresponding to medium and large therapeutic doses, were found to be beneficial. This agrees generally with the clinical results obtained with these agents in the treatment of chronic lead poisoning in man. The beneficial effects of magnesium sulphate are due in part, at least, to its cathartic action. The beneficial therapeutic effects of all agents tested are attributed partly to the diminished solubility of the lead and, therefore, diminished absorption.

Michigan State Medical Society Journal, Grand Rapids

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Insulin. F. J. Banting, Toronto, Canada.—p. 113.
Advances in Radiation Therapy of Deep-Seated Tumors. R. H. Stevens, Detroit.—p. 124.
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Case of Granuloma Rubra Nasae. W. H. Gordon, Detroit.—p. 132.
Disturbance of Sleep. C. D. Camp, Ann Arbor, Mich.—p. 133.
Some Problems of Industrial Surgery. W. L. Finton, Jackson, Mich.—p. 138.
Indications for Cesarean Section; Study of 100 Cases. M. Burnell, Flint, Mich.—p. 140.
Toxemias of Pregnancy Including Pre-Eclampsia, Eclampsia and Nephritis. Indications for and Methods of Artificial Interruption of Pregnancy. R. Peterson, Ann Arbor, Mich.—p. 144.
Hyperemesis Gravidarum. J. N. Bell, Detroit.—p. 146.
Heart Disease and Pregnancy. F. N. Wilson and G. R. Herrmann, Ann Arbor, Mich.—p. 148.
Contracted Pelves and Other Serious Maternal Defects Requiring Artificial Termination of Pregnancy. H. H. Cummings, Ann Arbor, Mich.—p. 150.

Military Surgeon, Washington, D. C.

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Shall Sex Hygiene Be Taught in the Public Schools? L. A. Stone, Chicago.—p. 233.
Progress of Medical Science During World War. W. A. N. Dorland, Chicago.—p. 244.
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Prussian Field Hospitals in Eighteenth Century. G. M. Blech.—p. 273.
Elementary Chemical Study of Parathyroid Glands of Cattle. A. M. Hanson, Faribault, Minn.—p. 280.
Defense of Usual Method of Calculation of Annual Death Rates. A. G. Love.—p. 285.
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Airplane Deafness and Its Prevention. V. T. Scott.—p. 300.
Bathing and Delousing American Troops at Brest, France, Prior to Their Embarkation for United States. L. H. Dunn, Ovid, N. Y.—p. 302.

Nebraska State Medical Journal, Norfolk

8: 81-107 (March) 1923

Induction of Labor at Term. W. W. Arrasmith, Grand Island.—p. 81.
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Clinical Phases of Diabetes Mellitus. W. J. Raynor, Grand Island.—p. 93.
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Acute Appendicitis Complicating Pregnancy. A. W. Anderson, West Point.—p. 102.
Ruptured Tubal Pregnancy: A Case Record. C. F. Ulrich, Valentine.—p. 105.
Nontuberculous Inflammation of Cecum. Report of Case. F. G. Kolouch, Schuyler.—p. 106.
Primary Uterine Inertia in Twin Pregnancy Following Premature Rupture of Membranes. A. Townsend, Minatare.—p. 107.

Surgery, Gynecology and Obstetrics, Chicago

36: 303-421 (March) 1923

*Surgical End-Results in General with Case of Cavernous Hemangioma of Skull in Particular. H. Cushing, Boston.—p. 303.
*Embolectomy in Treatment of Circulatory Disturbances in Extremities. E. Key, Stockholm, Sweden.—p. 309.
John B. Murphy on Surgery of Joints. R. Bastianelli, Rome, Italy.—p. 317.
*Comparative Study of Two Series of Gallbladder Lesions. J. G. Clark, Philadelphia.—p. 323.
*Bile Duct Anomaly as Factor in Pathogenesis of Cholecystitis. M. G. Seelig, St. Louis.—p. 331.
*Liver Abscess. Report of One Hundred Operations. A. I. Ludlow, Seoul, Korea.—p. 336.
Rupture of Liver. Report of Case in Which Autotransfusion was Employed. C. S. White, Washington.—p. 343.
*Functional Liver Tests. Experimental Study. V. R. Deakin and E. A. Graham, St. Louis.—p. 348.
*Hydatid Cysts of Lungs and Pleura. R. Halahan, Buenos Aires.—p. 354.
*Acute Suppurative Pleurisy. Analysis of Ninety-Four Cases. C. H. Peck and H. W. Cave, New York.—p. 357.
*Hypophysial Duct Tumor in Child of Ten. T. H. Lanman and L. W. Smith, Boston.—p. 361.
*Lymphaticostomy in Peritonitis. W. A. Costain, Toronto, Canada.—p. 365.
Obstruction at Ureterovesical Valve. T. N. Hepburn, Hartford, Conn.—p. 368.
*Effect of Radium on Rabbit Ovaries. H. A. Weiss, Davenport, Ia.—p. 373.
*Conservatism in Treatment of "Essential" Uterine Hemorrhage. S. H. Geist, New York.—p. 383.
Morphologic Histology of Adenocarcinoma of Body of Uterus in Relation to Longevity. Study of 186 Cases. A. E. Mahle, Rochester, Minn.—p. 385.
*Lingual Goiter. F. H. Lahey, Boston.—p. 395.
Primary Osteomyelitis of Patella. Report of Case and Review of Literature. V. E. Chesky, Halstead, Kan.—p. 398.
*Two Embryologically Important Specimens of Tubal Twins. L. B. Arey, Chicago.—p. 407.
*New Technic for Closure of Abdomen. R. E. Pasman, Buenos Aires.—p. 416.
Identification of Common Bile Duct in Presence of Anomalous Condition of Biliary Passages. J. Homans, Boston.—p. 417.
Overhead Elevator. P. N. Jepson, Rochester, Minn.—p. 418.
Instrument to Facilitate Threading of Surgical Needles. F. S. Richardson, Minneapolis.—p. 419.
Simplified "Towel Clip." L. M. Stearns, Kearney, Neb.—p. 420.
"Two-Forceps Maneuver" for Persistent Occipitoposterior Presentation. S. Seides, New York.—p. 421.

Surgical End-Results: Taking Stock.—The value of taking stock of surgical end-results as a means of making a better diagnosis and, therefore, prescribing better treatment is emphasized by Cushing. In his opinion, there could be no better way of gaging the working conditions in a given hospital than by the character of a report it would submit on some such question as the results, immediate and remote, of the operations for cancer of the breast, covering a given decade. Such a report would reveal at a glance not only the quality of the operative work itself, but how carefully it was safeguarded—how correct were the diagnoses leading to the operation; how thorough the pathologic studies; how dependable were the hospital case records; how conscientious the hospital in its quest for information concerning the ultimate results. He suggests that in place of the futile lists of diseases and operations which encumber the annual publications of hospitals, the hospitals be requested to include each year a concise report on some particular clinical problem. In this way ample data for almost any required statistical study could be secured, and the process would lead to a very desirable regrouping of the institutions already on the acceptable list, into those which keep sufficiently reliable and complete records of their patients and those which do not. One particular case is cited in which the original diagnosis was melanotic sarcoma of the skull, probably metastatic. The case proved, from the evidence of time as well as from the evidence of subsequent histologic studies, to be a tumor of less malignant nature than had originally been supposed—a cavernous hemangioma—and emphasizes the fact that a diagnosis of bone sarcoma in cases which have long survived operation must be received with skepticism until the original records of the case have been scrutinized anew.

Embolectomy in Circulatory Disturbances in Extremities.—Key has had occasion to remove by arteriotomy an embolus that was producing circulatory disturbance in the extremities, ten times on nine patients (one had embolus in both legs). The operation was performed from two hours to four days after the earliest symptoms. Gangrene appeared after four of the operations. In the other cases, the result was good. Of the cases in which gangrene occurred, one patient was operated on four hours after the first symptoms appeared, two after fifteen and forty-three hours, respectively, and one patient not until the fourth day.

Cholecystectomy.—The outstanding points in favor of cholecystectomy according to Clark are: the postoperative convalescence is decidedly better, the percentage of cures is larger, the mortality is less, and surgical complications are in the minority. Against these advantages may be debited as a danger the fact that should serious symptoms arise in the cholecystectomized patient which demand a subsequent operation, the opportunity for surgical alleviation is endangered through the absence of the gallbladder. Such operations are more difficult and dangerous, for anatomic orientation is greatly obscured. However, the possibility of a subsequent operation is minimized by the superior results following the removal of the gallbladder when its mucous membrane or mural integrity had been seriously impaired.

Bile Duct Anomaly.—In Seelig's case the cystic duct, emerging from the gallbladder somewhat laterally (toward the left side), and then, kinking on itself very sharply, coursed upward along the left lateral wall of the gallbladder for about one inch and a half. The duct then turned to the left to empty in the common duct. As a matter of fact, the cystic duct, as such, was not recognizable, because it was seemingly incorporated in the gallbladder wall. Furthermore the posterior wall of the gallbladder was adherent to the common duct, so that when traction was put on the gallbladder the common duct pulled up exactly as would a normal cystic duct. Division of the cystic duct at its point of entrance into the common duct and mobilization of the gallbladder brought into view the common duct coursing behind the gallbladder and emerging from below its pelvis, in the position normally occupied by the cystic duct.

Liver Abscess.—Although Korea has a temperate climate, Ludlow says that both amebic dysentery and amebic liver abscess are common among Koreans. The incidence of liver abscess in Korean women is 8 per cent.—a larger percentage than that reported in other countries. The large single abscess of the right lobe of the liver predominates.

Functional Liver Tests.—Deakin and Graham conclude from their study that phenoltetrachlorphthalein is not a satisfactory substance to use in an hepatic functional test based on the quantitative estimation of its output in the bile.

Hydatid Cysts of Lungs and Pleura.—Halahan records two cases of hydatid of the pleura and three cases of hydatid of the lung. In two of the latter cases rupture occurred into a bronchus and in one case into the pleural cavity.

Acute Suppurative Pleurisy.—The average time from the onset of the illness to the day when the diagnosis of empyema was made in the ninety-four cases analyzed by Peck and Cave was 38.2 days. Sixty-nine cases were postpneumonic, eleven were postinfluenzal; three were secondary to lung abscess. In eleven cases the preexisting cause was undeter-

mined. Rib resection was employed in seventy-nine cases. Eighteen of the ninety-four patients died, a mortality of 19.1 per cent.

Case of Hypophysial Duct Tumor.—A case of hypophysial duct tumor in a child, aged 10, showing symptoms for slightly more than one year, is presented by Lanman and Smith. The importance of the vestigial reliquiae of the embryologic hypophysial duct is emphasized.

Lymphaticostomy in Peritonitis.—Experimentation has demonstrated to Costain that there is a fatal absorption through the thoracic duct in cases of suppurative peritonitis, disproving the occurrence of a fatal absorption through the subperitoneal capillaries or through the diaphragmatic lymphatics to the anterior mediastinal lymphatics and the right lymphatic duct. It showed, moreover, what is, perhaps, the most extraordinary fact of all, that when a fatal absorption is overcome, the peritoneal cavity is capable of looking after such a formidable structure as a necrotic appendix.

Effects of Radium on Rabbit Ovaries.—The experiments reported by Weis tend to prove that 600 milligram hours of radium have no ultimate detrimental effect on rabbit ovaries. From the clinical side of these observations Weis says that when radium is given intra-uterinely for menorrhagia, for example, the resulting amenorrhea is not due to the effect of the radium on the ovarian follicles, but to the effect on the endometrium which receives a severe burn from the radium. If the burn be extensive enough a permanent amenorrhea results; and if not so severe, the amenorrhea persists only a few months.

Treatment of Essential Uterine Hemorrhage.—In four cases with profuse atypical bleeding reported by Geist, the uterus was grossly normal but both ovaries were found to be diseased. By a partial resection of as much of the diseased areas as was consistent with the maintenance of function, the symptoms were relieved and a practically normal cycle was instituted.

Lingual Goiter.—With the point of origin of the thyroid in mind, the course of its descent and the knowledge that the thyroglossal tract often persists from the foramen cecum to the isthmus of the thyroid, Lahey says the development of masses of thyroid tissue at (1) the foramen cecum—lingual goiter; (2) within the root of the tongue—intralingual goiter; (3) in front of the larynx—prelaryngeal goiter; (4) in the normal location of the thyroid, and (5) as a retrosternal accessory goiter, is readily understood.

Tubal Twins.—The two specimens described by Arey present highly significant features. The first demonstrates for the first time the actual origin of homologous human twins from the same ovum. The second specimen bespeaks its single ovum origin about as strongly, for only yolk sac and stalk are present. Hence the yolk sac appears as a vestige unessential physiologically to growth or differentiation.

New Technic for Closure of Abdomen.—Pasman places sterile gauze over the protruding omentum and intestine to protect them from contamination. Then he places three or four isolated strong catgut sutures through all the layers of the abdomen except the skin, later starting the suture of the peritoneum alone with a continuous mattress suture which is left loose. The three or four isolated stitches are tied one after the other and the protecting gauze is slowly removed. By making traction slowly and firmly at the end of the mattress suture the edges of the peritoneal layer are brought into perfect approximation. The rest of the wound, which is no longer under such tension, is closed in the same manner, the closure of the serosa being finally easily accomplished.

West Virginia Medical Journal, Huntington

17: 358-382 (March) 1923

Acute Osteomyelitis. Plea for Early Recognition and Prompt Surgical Relief. F. L. Hupp, Wheeling.—p. 358.
Treatment of Acute Brain Injuries. Indications for Operation. C. C. Coleman, Richmond.—p. 366.
Certain Essentials Necessary for Better Results in Diagnosis, Treatment and Control of Pulmonary Tuberculosis in West Virginia. E. E. Clovis and G. E. Mills, Terra Alta.—p. 374.
"Group Practice." S. Leigh, Norfolk, Va.—p. 382.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 493-542 (March 24) 1923

*Tuberculin in Diagnosis and Treatment of Tuberculosis. R. Philip.—p. 493.
Cardiac Problems in Adolescent Life. G. A. Sutherland.—p. 496.
*Man's Posture: Its Evolution and Disorders. A. Keith.—p. 499.
Nature of Arteriosclerosis. G. Evans.—p. 502.
*Treatment of Puerperal Infections. B. P. Watson.—p. 505.
*Use of Quinidin in Auricular Fibrillation. F. R. Fraser.—p. 507.

Tuberculin in Diagnosis and Treatment of Tuberculosis.—For twelve years Philip has been making extensive observations on the effects of the exhibition of tuberculin by the percutaneous as opposed to the subcutaneous method. One of the first points to emerge in the course of these studies was that when tuberculin, in varying combinations, was rubbed firmly into the skin of a tuberculous patient, it was freely absorbed. Philip's therapeutic procedure is based on these facts. Tuberculin administered percutaneously by inunction is absorbed and exerts a specific influence on tuberculous processes wherever situated, analogous to those resulting from subcutaneous injection. The curative influence becomes speedily obvious. Assuming its therapeutic value, the method has numerous advantages over other methods of exhibition. Something may be said for the absence of pain or discomfort. The procedure is not an operation in the mind of the patient. This has significance in all cases, but especially in children—the dread of the recurring puncture is excluded. The local (skin) reaction, while generally definite enough, causes little, if any, discomfort. The cutaneous response seems to afford, in some degree, a gage of the susceptibility of the patient. In this way dosage may be regulated in respect of amount and frequency. The curative influence on superficial tuberculous foci (cutaneous, glandular, etc.) is commonly apparent within a few weeks and is, as a rule, continuous. Philip strongly advises the adoption of this line of treatment on the earliest indication of chronic glandular enlargement in children. By an arrest, at that stage the graver incidents due to involvement of viscera are anticipated and prevented. The exhibition of tuberculin by inunction has the advantage that in most cases it interferes little with the life and occupation of the patient. The actual amount of tuberculin applied to the skin in a straightforward case (using, say, 25 per cent. dilution) may be estimated as approximately 0.1 c.c. The ointment containing this is rubbed (worked) into the cleansed skin over an area of 1 or 2 square inches by means of a small sterilized glass rod. The inunction may be repeated—in the absence of contraindication—once weekly.

Man's Posture: Its Evolution and Disorders.—Keith's concluding remarks, which bear on the subject of scoliosis, are: In none of the orthograde forms is such a continuous and urgent demand made on the postural spinal mechanism as in man. In man only is the whole weight of the supra-sacral part of the body supported erect on the spine over long intervals. The demand on this neuromuscular postural mechanism is even greater in the sitting than in the standing posture, particularly if a person sits leaning forward in writing and reading. Sitting bolt upright is particularly exhausting, more especially for young people in whom growth of vertebrae and of spinal muscles is proceeding apace. The muscles which act on the short levers of the spine yield first, while the muscles which act on the long costal levers can still keep on. These exhausted short spinal muscles are rested by allowing the vertebrae to rotate until the articular processes begin to lock and the transverse processes rest on the necks of the long costal levers. Herein lies the beginning of lateral curvature or scoliosis. If the habit becomes fixed, then come the deformities of chest, vertebrae, and spine with which orthopedic surgeons are only too familiar. It is not correct, however, to say that spines are not perfectly adapted to the upright posture; it would be more accurate to say that human spines were not evolved to withstand the monotonous and trying postures entailed by modern education and by many modern industries.

Treatment of Puerperal Infections.—Watson makes it a rule never to curet the uterus or carry out any intra-uterine manipulation in a case of abortion if the patient has a rise of temperature, unless there is severe hemorrhage. If the abortion is incomplete and a mass is felt projecting through and blocking the cervical canal, this may be removed very gently, but more interference than that is unwise. After the temperature has been normal for some days, if there is still evidence, by the persistence of bleeding and the patulous condition of the cervix, that the abortion is incomplete, gentle curetting may be carried out. Even after waiting this time it is almost invariably found that the patient's temperature rises after the operation, and she not infrequently has a rigor, showing almost certainly that there has been a blood invasion. Fortunately, in most cases, this is only temporary.

Quinidin Sulphate in Auricular Fibrillation.—Fraser states that quinidin treatment will result in a stable, normal rhythm if the cause of the auricular fibrillation can be treated successfully or if it has ceased to be active. In his opinion, cases in which there are extensive structural changes in the heart are not suitable for quinidin treatment, especially if the response to digitalis is not good, as dangerous symptoms may result. In some cases at least the comfort and efficiency of the patient is greater when a normal rhythm results from quinidin treatment than when digitalis treatment alone is used. In the cases in which the results are satisfactory, larger doses than 10 grains of quinidin sulphate, at intervals of six hours, were not necessary, nor smaller initial doses than 5 grains, three times a day. If necessary to maintain normal rhythm, quinidin may be continued to be administered indefinitely in doses of at least 5 grains, three times a day, and it is probably advisable in all cases to continue it for some weeks after normal rhythm has resulted, though in gradually decreasing doses.

Journal of Obstetrics and Gynæcology of the British Empire, Manchester

29: 549-644, 1922

Cranial Stress in Fetus During Labor. Effects of Excessive Stress on Intracranial Contents. E. Holland.—p. 549.
*Intracranial Trauma in the Newborn. N. B. Capon.—p. 572.
Modern Scope and Technic of Myomectomy. V. Bonney.—p. 591.
*Indications and Results of Myomectomy. A. E. Giles.—p. 608.
*Chronic Endocervicitis and Its Treatment. J. W. Burns.—p. 619.
*Three Cases of Chorea Gravidarum. E. J. Maclean.—p. 630.
Hydrometra Associated with Absence of Vagina and Genital Tuberculosis. D. Dougal.—p. 634.
Fatal Case of Postpartum Eclampsia Associated with Accidental Hemorrhage. F. Ivens.—p. 637.
Five Specimens Illustrating Necrobiotic Changes in Fibroids Associated with Pregnancy. F. Ivens.—p. 639.
Case of Unilateral Hematokolpos, Hematometra and Hematosalpinx. C. E. Purslow.—p. 643.
Placenta Praevia in Double Uterus. Cesarean Section. Recovery. W. F. Nash.—p. 644.

Intracranial Birth Trauma.—Among twenty-eight neonatal deaths reviewed by Capon, signs and symptoms of intracranial birth trauma occurred in sixteen. Intracranial hemorrhage occurred in six cases; lacerations of the dura mater in seven cases. In seven of the sixteen cases of birth trauma, intracranial congestion was the only pathologic condition found within the fetal skull. In these cases there were no visceral hemorrhages. Of sixteen infants showing signs and symptoms of birth trauma, eight were prematurely born. Among fifty-two stillbirths, signs of intracranial birth trauma occurred in forty-one cases; intracranial hemorrhage in twenty-four; lacerations of the dura mater in thirty-one cases. Of forty-one stillborn fetuses showing evidence of intracranial trauma, twelve were prematurely born. In this series of eighty neonatal deaths and stillbirths the relative frequency of the different fetal presentations in cases showing signs of birth trauma differs very little from that obtaining in the uninjured specimens. Intracranial hemorrhage occurring during labor is more frequently diffuse than localized. This fact would appear to contraindicate surgical intervention except in rare and special cases.

Myomectomy Versus Hysterectomy.—Comparing the mortality of myomectomy and hysterectomy, Giles gives these figures: hysterectomy for fibroids: 987 cases, 17 deaths, mortality 1.72 per cent.; myomectomy: 167 cases, 3 deaths, mortality 1.8 per cent. The above figures represent all cases from 1897. The present day mortality is lower, and the figures from the end of 1910 to date are as follows: hysterectomy: 684 cases, 5 deaths, mortality 0.72 per cent.; myomectomy: 107 cases, 1 death, mortality 0.93 per cent.

Chronic Endocervicitis.—Burns insists that chronic endocervicitis should be recognized as a pathologic entity distinct from endometritis. That the condition is infective is proved by the fact that a positive culture can be obtained in 92 per cent. of cases. In 50 per cent. of cases, staphylococcus, either alone or in association with some other organism, is present. Applications of various drugs, douching, tamponage, etc., give only temporary relief because the antiseptics do not reach the infecting agent in the lumen of the glands. In Burns' experience, ionization will bring about a marked improvement in those cases in which erosion is not present. For those cases associated with erosion the only method which will bring about a cure is the removal of the lower two thirds of the cervical canal, including the erosion.

Chorea Gravidarum.—The cases described by Maclean conform to the type of ordinary or Sydenham's chorea as distinguished from Huntington's chorea. The incidence of the chorea occurred in one case in the early months, and in two cases in the later months of pregnancy. All the patients gave a history of antecedent chorea or rheumatism or both. Two of the cases were of mild type, one of rather severe type. Two of the patients were primigravidae, and one had given birth to three children. None of the patients had albuminuria or other evidence of pregnancy toxemia. None showed a tendency to spontaneous abortion or premature labor. In the severe case, in which abortion was induced, the relief of symptoms was practically immediate.

Kitasato Archives of Experimental Medicine, Tokyo

5: 1-108 (Nov.) 1922

*Biologic Study of Hemolytic Streptococci. K. Ando and N. Ito.
I. General Characteristics.—p. 1.
*II. Pathogenic and Nonpathogenic or Less Pathogenic, Hemolytic Streptococci.—p. 23.
*III. Meaning of Production of Hemolysin on the Pathogenicity.—p. 30.
*Meaning of Serum Globulin in Luetin Reaction. K. Taoka.—p. 44.
*Studies on Blood Component Necessary for Growth of Influenza Bacilli. M. Terada.—p. 62.
*Value of Plasmophagocytosis in Early Diagnosis of Typhoid. M. Ohtani.—p. 92.
*New Medium for Cultivation of Typhoid Group of Organisms in Blood. I. Otaki and C. Akimoto.—p. 101.

General Characteristics of Hemolytic Streptococci.—By means of the blood agar method (Brown's standard method) Ando and Ito have divided hemolytic streptococci into typical and atypical beta types. The typical beta type is pathogenic, while the atypical beta type is nonpathogenic or less pathogenic. The authors could not find any special relation between the morphology, the cultural characteristics on the heated blood agar, the pathogenicity and the classification.

Difference Between Typical and Atypical Types of Hemolytic Streptococci.—Ando believes that his experiment shows that there is a distinct difference in the behavior by animal passages between the typical and atypical types of hemolytic streptococci. Thus the virulence of the typical and the atypical beta types present no differences when they are examined soon after isolation or after storage for a certain period of time, but the examination of twelve strains of the atypical beta type after animal passage showed, with two exceptions, that there is no increase in virulence. On the other hand, the virulence of the typical beta type, without regard to the source of isolation, is markedly increased by animal passage. The atypical beta type was not found in an infected cavity. It has no, or very little, adaptability in contrast with the typical beta type (*a*) virulence, (*b*) by the mechanism of hemolysin production in serum free broth culture.

Meaning of Production of Hemolysin on Pathogenicity of Streptococci.—The ability to produce hemolysin, Ito says, differs markedly between the typical and atypical beta types of streptococci. He believes that these facts offer a firm basis for the conclusion that the typical beta type is pathogenic, while the atypical beta type is nonpathogenic.

Meaning of Serum Globulin in Luetin Reaction.—Experimental data have convinced Taoka that the test serum used both for the Wassermann reaction and the serum globulin reaction should be heated.

Blood Component Necessary for Growth of Influenza Bacilli.—The red blood cells are the blood component needed for the growth of the influenza bacillus, according to Terada. Fresh blood serum or plasma prevent growth. By heating these to 56 C. they are inactivated. Heating is also essential to liberate the growth promoting substance from the red blood cells. This substance is not a part of the hemoglobin. Heating whole blood to 70 C. for twenty minutes, or to 100 C. for a few minutes, destroys the growth preventing bodies in the serum and plasma and liberates the growth promoting substance from the red blood cells.

Value of Plasmophagocytosis in Early Diagnosis of Typhoid.—Ohtani is certain that plasmophagocytosis is an immune reaction. It invariably yields positive results in cases of typhoid and paratyphoid. It may be obtained early in the disease.

New Medium for Cultivation of Typhoid Group of Organisms in Blood.—Otaki and Akimoto have used successfully the following medium for culturing typhoid bacilli: meat extract, 10.0 gm.; peptone, 10.0 gm.; saponin, 1.0 gm.; sodium citrate (neutral), 20.0 gm.; water, 1,000 gm. To 5.0 c.c. of this medium 2.0 c.c. of normal or immunized rabbit blood taken by heart puncture is added. Then one platinum loopful of typhoid suspension containing 1.0 mg. of the cultures is reinoculated into Endo's medium. The number of the colonies is determined after twenty-four hours' incubation. As control, bile medium was used. It is asserted by the authors that the sodium citrate and saponin medium has the same value as the bile fluid medium. It has advantages of being cheaper and easily and simply made.

Lancet, London

March 17, 1923, **1**, No. 5194

Epithelial Tumors of Urinary Bladder. F. Kidd. (To be continued).—p. 523.
*Canned Foods in Relation to Health. W. G. Savage.—p. 527.
Traumatic Intracranial Aerocele. W. Wheeler.—p. 529.
*Surgery in Treatment of Pulmonary Tuberculosis. C. Riviere and W. H. C. Romanis.—p. 531.
Fatal Case of Syphilis of Mediastinum. H. F. Renton.—p. 534.
Roentgen-Ray Examination of Chest. B. Hudson and P. G. Sutton.—p. 535.

Canned Foods and Health.—Savage concludes that while canned foods have definite and special risks of their own, these risks are not large and, for the most part, can readily be guarded against. Compared with fresh foods, canned foods are undoubtedly safer, and popular prejudice against them is not justified. Certain improvements in manufacture, distribution, care and supervision are necessary, as has been pointed out, but these are not very considerable. No one who has studied the subject can be left in doubt as to the great value to the community of this method of preservation.

Surgery in Pulmonary Tuberculosis.—Experience has convinced Riviere and Romanis that chest operations, rapidly and skilfully carried out, under gas and oxygen anesthesia, are well tolerated by tuberculous patients, better than preconceived ideas would have suggested. For the majority of cases in which operative measures are needed for the collapse and immobilization of an adherent tuberculous lung, a well devised thoracoplasty seems to offer the best results. The operation is less severe, in skilful hands, than might be expected, and the conditions obtained are favorable for the arrest of pulmonary tuberculosis. Reactivation of the disease on the side of operation may be met by further resection of ribs, but an extension of disease in the functioning lung admits of no alleviation.

Archives Franco-Belges de Chirurgie, Brussels

February, 1923, **26**, No. 2

*Traumatic Dislocation of the Spine. A. Dhalluin.—p. 97.
*Syphilitic Disease of Long Bones. C. Dambrin and G. Miginiac.—p. 114.
*Thymectomy in Infants. A. Marique.—p. 127.
*Dissecting Osteochondritis of the Knee. J. Moreau.—p. 131.
Treatment of Traumatic Shock. G. Jeanneney.—p. 157.
Torsion of the Omentum. C. Lefebvre.—p. 176.
Homoplastic Graft in the Tibia. Vander Elst.—p. 181.

Traumatic Dislocation of the Spine.—In one of Dhalluin's three cases, the forward luxation of the fourth cervical vertebra, with quadriplegia, was a football accident. Seen sixteen hours later, attempts at reduction failed until the muscles were relaxed with chloroform. Then under traction on the head, the hands on chin and back of the neck, with counter traction to the shoulders, the head bent gently forward and then backward, the vertebra snapped into place. This was plainly heard, and a second roentgenogram, taken at once, confirmed the complete reduction. No benefit was apparent for two days but then micturition became spontaneous and the paralysis gradually subsided, although the gait was still slightly hesitating three months after the accident. In another case the lesions were extensive and proved fatal. In the third case the dislocation dorsad and laterad of the first dorsal vertebra had destroyed the cauda equina beyond repair. He emphasizes the necessity for trying to reduce the luxation of a cervical vertebra without delay. Done cautiously, there need be no fear of aggravating existing injury of the cord. It may be difficult to distinguish a luxation from a sprain or a fracture, but the indispensable roentgen rays will guide to proper treatment. The intense pain in the neck and the snapping sound at the moment of the trauma are generally recorded, and the victim falls inert, paralyzed, and sometimes unconscious.

Syphilis of the Long Bones.—A sarcoma had been diagnosed in one of the six cases described with illustrations; in another case the only symptom was a sharp pain in the bone which nothing could explain. In one child the syphilitic lesion in the bone was entirely latent. In one of the cases, spontaneous fracture of the ulna was the first sign of the lesion. "Syphilis should be suspected with every affection of every bone at all ages. Fournier used to say that syphilis loves the tibia, but this is perhaps because we are able to recognize the syphilitic nature of the affection more readily than elsewhere." Syphilis swells and thickens the bone all around. There is no actual curvature of the whole bone: the proliferating bone tissue is responsible for any curved aspect. Roentgenoscopy alone decides the exact nature.

Thymectomy in Infants.—Marique has resected the thymus in fifteen infants to relieve suffocation. One of the infants had sixteen attacks of suffocation in one night. Through a low tracheotomy incision, he incised the capsule and shelled out as much of the two lobes as possible. He did not ligate the pedicle nor close the capsule nor suture the aponeuroses. The lips of the incision were held together with clips for two days. As soon as the infant roused from the anesthetic, the parents were allowed to take it home. If the intervention is strictly on the median line, there is no loss of blood. Most of the infants were about 3 months old, and twelve of the fifteen were boys. Enough of the thymus is left to insure ample secretion, and he asserts that the operation, under chloroform, is so simple and easy that any surgeon can undertake it without fear of mishap.

Dissecting Osteochondritis of the Knee.—Moreau advocates removal of the loose body in the joint when the affection has reached this stage. Elimination of the focus of dissecting osteochondritis is almost always followed by subsidence of the disturbances in gait and the pains, even when they are of long standing. The joint resumes normal functioning, as in the boy, aged 15, whose case is described with illustrations and compared with others on record.

Encéphale, Paris

18: 1-72 (Jan.) 1923

*Mental Depression in Children. S. de Sanctis.—p. 1. Cont'd.
*Mediumic Insanity. A. Wimmer.—p. 8.
Etiologic Duality of Mania and Melancholia. P. Courbon.—p. 27.
*Improvement in Melancholia After Intercurrent Pleurisy. Usse.—p. 31.
Senile General Paresis. Riser and Gay.—p. 35.
Psychic Disturbances and Syphilis. H. et E. Biancani.—p. 40.

Dysthymic Children.—De Sanctis attributes dysthymic states (melancholia and mania) to disturbances of internal secretion and the vegetative nervous system.

Mediumic Insanity.—Wimmer publishes the histories of several cases of psychoses which occurred in spiritualism

addicts, and considers that such practices are pathogenic and not merely material accidentally available for symptoms.

Improvement After Intercurrent Infectious Disease in Case of Chronic Melancholia of Confusional Type.—Usse's patient recovered from the psychosis when serofibrinous pleurisy developed after three years in the asylum.

Journal de Chirurgie, Paris

February, 1923, **21**, No. 2

*Operative Correction of Luxation of Shoulder. L. Bazy.—p. 145.
*Ascaridiasis of Biliary Apparatus. G. L. Hartmann-Keppel.—p. 157.
*Surgical Treatment of Hydatid Cysts. M. Deniker.—p. 170.

Operative Reduction of Old Luxation of Shoulder.—Bazy's six illustrations show the various steps of the procedure for correcting inveterate antero-internal luxation of the head of the humerus. The incision must be long, with a right-angled extension at the top, like a T or inverted L, and the coracoid process must be temporarily resected and the subscapular muscle divided. Retraction of this muscle is the main obstacle to reduction of the luxation. The head is held in place by suturing the border of the subscapularis to the glenoid ligament and reattaching the muscle to the lesser tuberosity.

Ascarids in Liver and Bile Ducts.—Keppel found two female ascarids, 19 and 24 cm. long, when he opened an abscess in the left lobe of the liver in the young soldier in the army of the Orient, who recovered after evacuation of the abscess. The second patient was a girl, aged 14, with ascarid gastro-enteritis of long standing and epileptiform convulsions. Ascarid ova were found on opening the abscess in the liver. He discusses the literature on ascaridiasis of the biliary apparatus.

Surgical Treatment of Hydatid Cysts.—Deniker summarizes the communications on this subject at the Argentine medical congress, October, 1922, where it was the main topic for discussion. Most of the communications were summarized in these columns as they appeared in the Argentine medical journals.

Médecine, Paris

4: 325-400 (Feb.) 1923

French Neurology in 1922. M. Laignel-Lavastine.—p. 325.
*Cerebrospinal Fluid in Multiple Sclerosis. C. Achard and J. Thiers.—p. 330.
*Sexual Perversions and Hypergenitalism. H. Claude and Borrel.—p. 335.
*Humoral Reactions in General Paralysis. M. Klippel.—p. 339.
*Minor Pituitary Syndromes. Léopold-Lévi.—p. 342.
*Extracortical Regulatory and Psychic Centers. J. Camus.—p. 351.
*Babinski's Sign in Infantile Paralysis. A. Léri and G. Basch.—p. 358.
*The Sympathetic and Sensibility. A. Tournay.—p. 363.
New Conception of the Pyramidal Syndrome. J. A. Barré.—p. 366.
*Migraine and Anaphylaxis. P. Vallery-Radot.—p. 371.
*Near-Paranoiacs. G. Genil-Perrin.—p. 375.
Hebephrenia and Polymorphous Delirium. J. Vinchon.—p. 378.
*Treatment of Spastic Torticollis. R. Cruchet.—p. 387.
*Varicose Ulcers and Periarterial Sympathectomy. Robineau.—p. 390.
Treatment of Patients Suffering from Obsessions. P. Courbon.—p. 394.

Cerebrospinal Fluid in Multiple Sclerosis.—Achard and Thiers confirm the positive colloidal reactions in the cerebrospinal fluid of these patients, while the Wassermann reaction is usually negative. The demonstration of spirochetes may be a help in beginning atypical cases. As a rule, in multiple sclerosis, there is neither an increase in albumin nor in cells.

Sexual Perversions and Hypergenitalism.—Claude and Borrel quote some medicolegal cases of perversion to demonstrate their conviction that hypergenitalism is a frequent cause of unnatural sexual acts. This is not without importance with regard to the responsibility of these perverts.

Humoral Reactions in General Paralysis.—Klippel believes that the reactions in the serum and cerebrospinal fluid are only a very weak aid in the diagnosis of general paralysis, as he understands it. While he declares the clinical symptoms constant and characteristic, he does not find these qualities in the humoral reactions. To prove this, he reports a case, in which the Wassermann reaction, albumin content, number of cells, and the response to the benzoin test in the spinal fluid were normal. The patient was an illiterate alcoholic with loss of memory for recent facts. He denied syphilis. There was marked dysarthria, but the patient resented questions about it. The left knee-jerk was lively; Romberg's sign was negative; there were no disturbances of sensibility. The left pupil was dilated; both pupils reacted feebly to light (convergence not mentioned). He was demented or imbecile, had no hallucinations, and yet had a fixed idea to return and resume his trade of a bricklayer. Another important feature was that he ate with his hands, and drank milk directly from the bottle without using the glass. The necropsy showed a diffuse degenerative encephalitis with atrophy of the cortical cells and disseminated inflammatory foci. Klippel calls this a most typical, unmistakable case of general paralysis.

Minor Pituitary Syndromes.—Léopold-Lévi surveys the conditions which may be due to exaggerated or deficient functioning of the pituitary gland. They represent, in miniature, the great syndromes: acromegaly, gigantism, dwarfism, pituitary infantilism and the adiposogenital dystrophy, but they are often only transitory. The same subject may present several of them at the same time. He discusses the time of onset and gives a synopsis of these symptoms. Hereditary or acquired syphilis is an important etiologic factor.

Extracortical Regulating and Psychic Centers.—Camus defends his old opinion that psychic functions have extracortical regulating centers. This accounts, among other things, for the undeniable rhythms of psychic action. He quotes Ballet who considered the circular psychosis only as an enormous exaggeration of normal conditions. In his experimental work with Roussy on the centers at the base of the brain that cause diabetes insipidus, obesity, glycosuria and genital atrophy, he observed frequently marked excitation of the animals without signs of pain. The psychic changes in encephalitis point also to this extracortical localization.

Babinski's Sign in Infantile Paralysis.—Léri found Babinski's sign in about 50 per cent. of his cases of infantile paralysis. This is not surprising, if we consider that the predilection of the affection for the anterior horns of the cord is related to the distribution of the vessels. The sign is caused by spread of the process to the pyramidal tracts.

The Sympathetic and Sensibility.—Tournay reviews the old question whether the changes of sensibility after lesions of the sympathetic are of vascular origin, or are specific. In clinical cases there are attacks of pains which come in slow waves and are accompanied by changes in blood supply, secretion and local temperature. They occur almost exclusively after lesions of the median and sciatic nerve, which contain many sympathetic fibers and a special artery.

Migraine and Anaphylaxis.—Vallery-Radot believes that some migraines are anaphylactic phenomena. Cutireactions obtained by Ramirez were positive in three cases (egg white, chocolate, celery). Pagniez and Nast observed a hemoclastic crisis after ingestion of chocolate in a case in which ingestion of chocolate provoked migraine. Vallery-Radot and Pagniez have prescribed, since 1916, the use of 0.5 gm. of peptone before meals in similar conditions. Some migraines are favorably influenced, while the treatment is a complete failure in others. Other authors use subcutaneous injections of 1 c.c. of horse serum, repeated weekly, and other means of desensitization.

Near-Paranoiacs.—Genil-Perrin believes that the near-paranoiacs should be known not only to doctors, but to the whole public. Social inadaptability is the chief feature. Distrust, pride, and wrong judgment lead to delirium of interpretation. These persons are bores par excellence and not without danger to society.

Treatment of Spastic Torticollis.—Cruchet does not believe that the contractions are due to psychic causes. They should first be treated internally according to the principal cause (rheumatism, syphilis, tuberculosis). Diathermy, roentgen rays and electricity act favorably, and if this treatment fails radicular anesthesia of the corresponding cervical nerves is indicated. Injection with 60 or 70 per cent. alcohol may be tried.

Treatment of Varicose Ulcers by Periarterial Sympathectomy.—Robineau confirms the excellent results of the method, which however must sometimes be repeated because the healing process stops with the regeneration of the sympa-

thetic fibers. The immediate results are excellent—no matter where one cuts. The good results from previous methods of operation on varicose ulcers are probably also due to cutting sympathetic fibers. Nevertheless relapses occur. The ideal surgical treatment has not yet been found.

Brazil-Medico, Rio de Janeiro

1: 1-14 (Jan. 6) 1923

*The Taylor Efficiency System in Surgery. L. Ribeiro Filho.—p. 1.
*Pulsating Exophthalmos from Aneurysm. J. Santa Cecilia.—p. 4.
Enzootic Pneumonic Plague. A. Magalhães.—p. 6.
Medical Impressions of Dutch Guiana. H. C. de Souza Araujo.—p. 6.

Taylorism in Surgery.—Ribeiro relates that, when visiting the clinics of leading surgeons in Paris in 1918, he was surprised at the time wasted at operations from disregard of the principles of efficiency taught by Taylor in America and applied to surgery by R. Toupet in Paris. Ribeiro states that of those he saw, Gosset alone had systematized the work of assistants, nurses and himself; he took four minutes for a complete appendectomy.

Pulsating Exophthalmos.—The aneurysm in Santa Cecilia's case involved both the carotid artery and the cavernous sinus. A bullet had entered the ear and was removed from the nasal fossa. The aneurysm required operative relief two months later, and the right common carotid was ligated with catgut at two points. The pulsation in the eyeball ceased for a month but then returned, the catgut having evidently been absorbed. The carotid was then ligated with silk at three points. Vision declined at once after the first ligation but improved later. The exophthalmos has persisted; probably collateral circulation has developed. Ligation of the left carotid is now being considered. This is the eighth case of the kind published in Brazil, the second instance of return of the exophthalmos.

1: 69-80 (Feb. 10) 1923

*Avidity Test of Antitoxins. R. Kraus and Rocha Botelho.—p. 69.
Clinical Conception of Phobias. Areobaldo Lellis.—p. 72.
Triatoma Insect Hosts of Chagas' Disease. C. Pinto.—p. 73.
Two New Species of Triatoma. A. Neiva and C. Pinto.—p. 73.

Avidity Test of Antitoxins.—The research with scorpion and snake antitoxins reported confirms the existence of primary and secondary antitoxins. The primary (specific) antitoxin neutralizes the toxin at once; it has an immediate "avidity." The secondary, or partial antitoxins, require an hour's contact at 37 C. before neutralization is complete. The intensity of the avidity thus distinguishes the two classes. The antiscorpion serum was able to neutralize a fourfold fatal dose of snake poison (lachesis or cobra) but only after an hour's incubation.

1: 125-140 (March 10) 1923

*Syphilitic Encephalitis of Base. H. Roxo.—p. 125.
Operation for Pterygium. Abreu Fialho.—p. 129.

Syphilitic Encephalitis of the Base.—The man, aged 30, had been under treatment for symptoms suggesting a tumor at the base of the brain. They differed from the classic picture in certain respects, and the Wassermann reaction in the spinal fluid proved positive on one occasion, although consistently negative both in blood and fluid at other times. Recovery took place under antisyphilitic treatment and the case was retrospectively diagnosed as a gummatous inflammation in the meninges and brain, the gummatous infiltration spreading like a drop of oil, but the meningo-encephalitis finally yielding to treatment.

Repertorio de Medicina y Cirugía, Bogota

14: 43-83 (Nov.) 1922

*Lumbar Puncture in General Paralysis. M. Rueda.—p. 47.
Blastomycosis in Colombia. A. Peña Chavarria.—p. 52. Cont'n.
*Uremia in Psychopathies. G. Uribe M.—p. 71.

Lumbar Puncture in General Paralysis.—Rueda reports that in 9 patients with general paralysis notable improvement followed withdrawal of from 70 to 80 c.c. of cerebrospinal fluid; in 4 the benefit was equally prompt but not so marked; in 8 there was only slight improvement; in 11 no benefit was apparent, and 2 other patients died a few days after the intervention. In the cases with pronounced improvement the spinal fluid was under high pressure. The mental faculties seemed to return completely to normal, but in from six months to a year all cases developed dementia without gatism, although some had lost control of the sphincters when first seen.

Uremia in Mental Affections.—Uribe remarks that urea excretion in Colombia averages lower than in Europe. In hospital patients the urea content of the urine averaged only from 9.5 to 11.4 parts per thousand, and of the blood, below 0.35; any figure above this may be considered pathologic in Colombia. He tabulates the findings in thirty patients with various psychopathies; the urea content of the blood was always high in the severer cases and in the exacerbations of all forms. In one case of a confusional psychopathy with stupor, the blood contained 0.56 per thousand but as the patient improved, it dropped to 0.32. The melancholia cases always showed a tendency to azotemia.

Siglo Médico, Madrid

71: 73-94 (Jan. 27) 1923

*Present Conceptions of Neutropism. S. J. Tello.—p. 73. Cont'd.
*Pathogenesis of Cholelithiasis. C. Blanco Soler.—p. 77. Conc'n No. 3608, p. 108.

Neurotropism.—This is a review of international literature on this subject, with report of original work, the whole forming Tello's maiden address on entering the National Academy of Medicine, with a reply by Cajal. It is being published in short instalments.

Pathogenesis of Gallstones.—Blanco Soler regards pregnancy, insufficiency of the liver, endocrine derangement and constipation as the most important of the many causes that cooperate in producing cholelithiasis. Pregnancy favors production of gallstones by excessive cholesterin content in the blood, overwork by the liver, and endocrine disturbance. The last is nearly always of the type of hypothyroidism with changes in the ovaries. He asserts that chronic constipation is often connected with defective thyroid functioning, and is an important factor in gallstone production. Emotional stress is a factor at times in bringing on gallstone colic; he cites a number of convincing cases from his own experience in illustration. The tendency to gallstones belongs with the arthritis group, with sluggish metabolism and elimination; but Soler does not ascribe to stomach derangement the importance that some claim for it as a factor in cholelithiasis. Gastric secretion was normal in ten gallstone patients; there was hyperacidity in seven and hypacidity in six. Excessive thyroid functioning is rare with gallstones, but when this combination occurs it is exceptionally amenable to treatment.

71: 97-120 (Feb. 3) 1923

*Experiences with Strabismus Operations. M. Marín Amat.—p. 97.

Operative Treatment of Squint.—Marín Amat shortens the external rectus and tenotomizes the internal rectus in the divergent eye in concomitant strabismus. He also shortens the external rectus of the normal eye though less than in the divergent eye. The results have been perfect, he says, in the sixteen cases thus treated. The visual acuity has improved in all, in addition to the esthetic improvement. He claims credit to the Spanish school for the progress made by Blanco of Valencia in 1910 by treating squint by severing and shortening the muscle without resection. The superfluous portion is superposed and the normal attachment of the muscle is thus retained. The methods of Duverger and others and of Marín Amat himself are only modifications of this.

Archiv für Gynäkologie, Berlin

118: 1-228 (March 17) 1923

*Action of Roentgen Rays on Early Pregnancy. B. A. Archangelsky.—p. 1.
*Nonprotein Nitrogen in Parturients. K. Hellmuth.—p. 18.
*Cancer of Female Sex Organs. S. Peller.—p. 59.
Primary Placenta Isthmica. M. Walthard.—p. 101.
Structure of the Placenta. J. Wieloch.—p. 112.
*Treatment of Placenta Praevia. H. Gänssle.—p. 120.
Genesis of Tuberculosis of the Ovary. E. Wertheimer.—p. 136
*Aneurysm of Splenic Artery. K. Lundwall and A. Gödl.—p. 177.
The Breus' Mole Question. E. Kahn.—p. 185.
Corpus Luteum Hemorrhages. N. C. Louros.—p. 194.
Obstetric Inversion of Uterus. H. Küstner.—p. 203.
Chorio-Epithelioma: Two Cases. Fohr and Kratzeisen.—p. 210.
Lymphangioma of Fallopian Tube. H. A. Dietrich.—p. 224.

Action of Roentgen Rays on Early Pregnancy.—Archangelsky states that it seems to be established that the action of the roentgen rays is felt most intensely by tissues of the embryonal type, that is, the least differentiated tissues, and by young cells just formed from the fission of the mother cell, and further by tissues during the period of the most active cell segmentation. This explains the difference in the action of the rays according to the stage of the pregnancy in women and in animals. In seven women irradiated from eight to fourteen days after the date when menstruation should have occurred, the pregnancy was interrupted easily and menstruation reestablished. In three other women, conditions were the same, except that the pregnancy was of longer duration, up to thirty-five days. The irradiation did not arrest the pregnancy, and further measures were necessary to procure abortion.

Nonprotein Nitrogen in Parturients.—Hellmuth tabulates the metabolic findings in a number of healthy parturients and others with eclampsia or other pregnancy toxicosis. He declares that many of the reports in the literature in this line are based on defective technic or erroneous conclusions. The nonprotein nitrogen was not found materially above normal even at the height of eclampsia and pregnancy nephrosis, but the urea content of the blood was higher, both absolutely and relatively to the nonprotein nitrogen. Abnormally large proportions of urea in the blood seem to be the most sensitive indicator for kidney injury late in pregnancy and in childbed.

Cancer of Female Sex Organs in Relation to Pregnancy.—Peller comments on the increase in recent years of the cases of cancer in men, but ascribes this to the improved diagnosis of cancer of the digestive tract. His comparison of statistics from different countries fails to show any connection between deaths from cancer of the genital apparatus and the number of children borne. The ratio between cancer of the mamma and of the uterus does not seem to be dependent on the number of children. He reviews 2,700 cases of cancer in women and 1,600 in men at Vienna, and 406 women with myomas. Nothing was found to indicate any connection between abortion and cancer of the genital apparatus. But cancer in nulliparous women was less often located in the cervix. Even a single pregnancy was enough to upset this proportion between cancer of the cervix and elsewhere in the uterus. The proportion of unmarried women in the whole cancer material is less than corresponds to the proportion of the unmarried in the general population. He classifies the material in thirty-eight tables, and outlines a blank for collecting comparative data.

Treatment of Placenta Praevia.—Gänssle delivered ninety-three women with placenta praevia by the vaginal route, with 8.6 per cent. mortality: two succumbed to infection and one to embolism. The mortality in ninety-three others delivered by cesarean section was 6.4 per cent. This includes fifty-two with intraperitoneal cervical section with a mortality of 5.8 per cent. For infected cases and those with a nonviable child, vaginal delivery is preferred.

Aneurysm of Splenic Artery.—The aneurysm ruptured at the ninth month of pregnancy, with fatal hemorrhage.

Beiträge zur klinischen Chirurgie, Tübingen

1923, **128**, No. 2

*Means to Influence Secretion of Bile. O. Specht.—p. 249.
*Surgery of the Spleen. H. Herfarth.—p. 284.
*Cancer of Mouth and Throat. L. Heidrich.—p. 310.
Mechanical Processes in Concussion of Brain. F. Genewein.—p. 348.
Operation for Esophagus Diverticulum. W. Dürr.—p. 366.
Appendicitis and the Weather: No Connection. Forster.—p. 377.
*Surgery and Kidney Function Tests. W. Peters.—p. 395.
*Surgical Treatment of Acute Nephritis. M. Krabbel.—p. 425.
*Pyelography. I. Szabó.—p. 433.
*Closure of Artificial Anus. H. Knaus.—p. 441.
*The Ovary in a Hernia. A. Schönmeier.—p. 451.
Traumatic Slits in Transverse Mesocolon. E. Hesse.—p. 461.
Deformity of Sacrum with Atresia of Anus and Vagina. Lentz.—p. 471.
*Subphrenic Abscess. M. Baumann.—p. 477.
Embryology of Suprapatellar Bursa. J. Hohlbaum.—p. 481.
*Outcome of Arthrodesis by Cramer Method. W. Lasker.—p. 499.
*Pulmonary Embolism with Bismuth Paste. A. Leb.—p. 515.

Means to Influence Secretion of Bile.—In this first report of his research on dogs, Specht relates the results of intake of fluids and of extracts of endocrine glands, after discussing what has already been published by others on the influence of the circulation and nervous system on bile secretion. His tables show that the bile keeps remarkably constant in its composition, uninfluenced by fluids, organ extracts or salts, but intake of meat increases the output of bile.

Surgery of the Spleen.—Herfarth reports the ultimate outcome in more than 58 operations on the spleen for rupture, leukemia, Banti's disease, hemolytic jaundice, pernicious anemia or other indication. In one case the threatening intra-abdominal hemorrhage did not occur until the day after the contusion. Splenectomy in 3 of the 4 operative cases of Banti's disease was followed by recovery. He comments that splenectomy seems at present to be the most promising treatment for this disease. In the 7 operative cases of pernicious anemia, 57 per cent. seem to be cured for the time being. The proportion of cures would undoubtedly be larger if the surgeon were called in earlier, after failure of other measures, but before the hemoglobin goes below 20 per cent. The results were very good in his 2 cases of hemolytic jaundice.

Cancer in Mucosa of Mouth and Throat.—Heidrich reviews experiences with 155 cases of cancer of the tongue, 49 of the tonsils, 35 of the floor of the mouth, 15 of the cheek, and 12 of the palate, all given operative treatment. Recovery free from recurrence for more than three years to date is recorded in more than 17 per cent. in the first group, 11 in the second, 7.7 in the tonsil group, 33.4 per cent. in the cheek and 25 in the palate group. An exploratory excision early in every case of ulceration in the mouth should be followed by an early removal of the growth far into sound tissue. The experiences with radiotherapy are still too new for reliance to be placed on this treatment.

Tests of Functional Capacity of the Kidneys in Relation to Surgery.—Peters analyzes the functional findings as compared with the operative findings and the ultimate condition in all the operative kidney cases in the last ten years in Garré's service. He also gives the results of research along these lines in dogs. He emphasizes that we must not expect too much of these methods of investigation, but regard them as merely supplementing the clinical findings. The functional tests reveal a limitation of the functioning part of the kidney, but throw no light on its nature. He warns further that a diseased kidney may respond apparently normally to tests, while there may be transient disturbance, even complete loss of kidney functioning, in hysteria, acute nephroses, glaucoma of the kidney, and with calculi in kidney or ureter—probably from the ischemia of the kidney vessels of reflex origin.

Surgical Treatment of Acute Nephritis.—Krabbel has operated in three cases of eclampsia, as he describes, with prompt recovery; also in a case of kidney calculus with colic, and in two cases of abscesses in the kidney. In all these cases rapid recovery followed the intervention.

Pyelography.—Szabó concludes from his seventy cases of pyelography in 1921 that a 20 per cent. solution of potassium bromid can be regarded as harmless and effectual for pyelography. He applies the procedure more extensively than others, using it to aid differential diagnosis not only of kidney diseases but of other abdominal lesions.

Closing an Artificial Anus.—Knaus cuts the spur at a single sitting, by Hacker's technic, and extols the advantages of this over crushing it, especially for much debilitated patients. Four cases are compared with two others in which a different technic was applied.

Ovary in Hernia.—In a case described and in four similar ones on record the round ligament was responsible for the displacement of the adnexa. The mechanism is like that impeding descent of the testes. In another group of cases, fluctuations in intra-abdominal pressure or the weight of the ovary were the main factors.

Subphrenic Abscess.—Baumann states that in one of his three latest cases of this kind, the abscess had developed secondary to a gastric ulcer, and general sepsis proved fatal. This insidious septic course was evident also in the second case, following acute appendicitis. A fistula persisted for two years after operative evacuation of the space. In the third case the subphrenic abscess developed in connection

with traumatic rupture of the liver. In both the last mentioned cases there was diphtheritic infection of the wound.

Cramer's Operation for Arthrodesis.—Lasker concludes from his four patients reexamined more than three, nine, ten and eleven years after the operation that the Cramer method gives durable results. Both functionally and with radiography the outcome is satisfactory. He urges the use of a stout piece of bone as this takes longer to be absorbed, and gives greater strength to the joint at the time and later.

Pulmonary Embolism After Injection of Bismuth Paste.—The paste had been injected into a fistula left by an operation for goiter seven weeks before. About 10 c.c. of the 30 per cent. bismuth paste was injected into the fistula after it had been curetted. Cyanosis, shallow breathing, small rapid pulse and extreme depression followed almost at once. Roentgenoscopy showed very little of the bismuth left in the fistula while it could be seen scattered throughout the lungs, with a large deposit at the right main trunk of the pulmonary artery. Bilateral pleurisy developed but the bismuth shadows gradually cleared up and the temperature returned to normal the fifteenth day. The patient left the hospital in good subjective condition the thirty-eighth day. The bismuth paste had evidently been taken up by the veins left gaping by the curetting, and had been carried to the right heart and distributed thence through the lower lobes of the lung. As the lungs were normal, there was no infarction. The acute increase in pressure in the lesser circulation from the obstruction of the arteries was combated with digitalis every three hours and three injections daily of caffein.

Jahrbuch für Kinderheilkunde, Berlin

January, 1923, **100**, No. 5-6

*Vitamin in Fresh and Conserved Vegetables. R. Gralka.—p. 265.
*Pathogenesis of Acute Nutritional Disturbance in Infants. VI to IX. P. Hoffmann and S. Rosenbaum.—p. 281.
*Heart Function after Infectious Diseases. D. Lebedev.—p. 295.
*Differentiation of Tubercle Bacilli in Urine. D. Lebedev.—p. 312.
*Myxedema and Pituitary. A Roggen.—p. 317.
*Herpes Zoster and Varicella. Z. v. Barabás.—p. 331.

Comparison of Antiscorbutic Vitamin in Fresh and Conserved Vegetables.—Gralka found in experiments on guinea-pigs that only fresh vegetables prevent scurvy. Every attempt to preserve them failed. Drying seems to destroy the action entirely.

Action of Amino-Acids on the Stomach Function in Infants.—Hoffman and Rosenbaum found that tyrosin, asparagin and leucin have the same influence on gastric evacuation and secretion as protein solutions, when given in the same concentration. Cow's milk has a stronger combining power with hydrochloric acid, but this property bears no relation to its stimulating action on the gastric secretion. Infections retard and reduce gastric secretion.

Heart Function of Children After Infectious Diseases.—Lebedev found sometimes in children convalescing from infectious diseases that the arrhythmia persisted even with accelerated pulse rate, and it did not seem to depend on the respiration. He also found parasternal dulness between the second and third ribs after practically all of the infectious diseases. He attributes it to the lack of elasticity of the heart. After the stage of hyperemia of the skin in pneumonia and influenza, he observed that the white spot after pressure by a finger does not disappear as quickly as usual. He explains it by a paresis of the skin vessels.

Differentiation Between Tubercle Bacilli and Smegma Bacilli in the Urinary Sediment.—Lebedev recommends Spengler's method of counterstaining. Nikitin's solution, consisting of 2 parts of glacial acetic acid and 1 part of a 10 per cent. alcoholic solution of acetone, decolorizes smegma bacilli in three minutes, but leaves the tubercle bacilli stained for ten or fifteen minutes.

Myxedema and Pituitary.—Roggen did not find signs of constant changes of the pituitary in congenital or acquired deficiencies of the thyroid gland. Only if the loss of the functioning of the thyroid is gradual, are changes in the pituitary found with any frequency.

Relation Between Varicella and Herpes Zoster.—Barabás reports two cases of varicella with one of herpes zoster in the same family at the same time. In another family one child had herpes zoster eight months after an attack of varicella. In still another family a child had varicella nine months after herpes zoster.

Zeitschrift für Krebsforschung, Berlin

February, 1923, **19**, No. 5-6

*Blood Diseases in Relation to Tumors. H. Hirschfeld.—p. 269.
*Prevalence of Cancer at Jena. G. Bilz.—p. 282.
*Spontaneous Cancers in Wild Rats. M. Beatti.—p. 325.
Sarcomatosis of Domestic Hen. A. Ladwig.—p. 337.
*Organotherapy of Malignant Disease. D. Engel.—p. 339.
Production of Experimental Tar Cancers. L. Halberstaedter.—p. 381.
Histologic Research on Origin of Tar Cancers. E. Möller.—p. 393.

Blood Diseases and Tumors.—Hirschfeld accepts Orth's term hemoblastosis to designate generalized hyperplastic affections of the blood-producing apparatus. He attempts to classify them, and explains the whole field as lying between true tumors and hyperplastic systemic affections in general.

Cancer at Jena.—Bilz relates that between 1910 and 1920 42 per cent. of the 11,092 deaths at Jena were followed by necropsy. Cancer was found in 17.42 per cent. of all cadavers over the age of 20 in the first five years, and in 14.44 per cent. in the last five years. In 30 per cent. of the cancer cases the stomach was the seat of the malignant disease; the intestines in 16 per cent.; the female genitals in 13 per cent., and the esophagus in 10 per cent. The 700 cancer cases included only 257 women. The diagnosis of malignant disease had been made in 94.28 per cent. and correctly made in 80 per cent., while the cancer had not been correctly located in 10.91 per cent., and in 9.09 per cent. the actual tumor had been overlooked.

Spontaneous Cancers in Wild Rats.—Beatti reports from Buenos Aires some new instances of spontaneous tumors in wild rats. One rat had sarcomatosis of the abdomen with metastasis in the lung, a carcinoma of the mamma, and a cutaneous fibroma. Two others had epitheliomas in the liver or stomach evidently caused by a nematode, probably *Hepaticola hepatica.*

Treatment of Tumors with Endocrine Extracts.—Engel reiterates that in our research on cancer as a local affection we overlook the organism as a whole, and yet this is what determines whether malignant disease is to develop or not. He cites, for example, Rüder's report of a family in which all the seven boys developed epithelioma of the skin between the ages of 5 months and 10 years (the grandfather had had the same disease), while the five girls in the family escaped it. Hedinger found primary carcinoma of the liver at necropsy in two sisters. A connection between the predisposition to cancer, the constitution and the endocrine system seems to be beyond question when such happenings are considered. Especially if we regard them from the standpoint of Freund and Kaminer's assertions that the serum and organs of cancer subjects do not destroy carcinoma cells as do the serum and organs of the noncancerous. They demonstrated further that this faculty is twenty-one times more potent in the serum of infants than of adults, and they traced this to the thymus, the potency declining as the thymus retrogresses. Engel has been experimenting with the protein products of endocrine glands, Abderhalden's optones. He injected this fluid subcutaneously into mice at points remote from the experimental inoculations. His research thus throws light on the potency of the protein products of the different endocrine glands and on the influence of the different glands on tumor production and inhibition. The pituitary seems to promote tumor growth, while the thyroid, and above all the thymus, check it. The elements responsible for this action seem to be the protein products in far advanced retrograde metabolism. Testes and ovaries were found inert. Ovariectomy in inoperable cancer of the mamma is justified by the stimulation of the thymus that results.

Zeitschrift für Urologie, Leipzig

1923, **17**, No. 1

*Extirpation of Carcinomatous Bladder. V. Schmieden.—p. 1.
*The Milking Function of the Calices of the Kidney. Westenhöfer.—p. 5.
Clinical Aspect and Treatment of Nephroptosis. Fedoroff.—p. 7.
Pyelonephrolithotomy. Casper.—p. 20.

Foreign Body in Bladder. W. Hofmann.—p. 22.
Hematuria and Appendicitis. J. J. Stutzin.—p. 25.
Diagnostic Puncture of Testis. Posner.—p. 27.
Hemangioma of the Bladder. A. Hübner.—p. 29.
*Peritonitis in Bladder Disease. J. Bitschai.—p. 32.
Self-Inflicted Injury of Penis. Stutzin.—p. 37.
*Addison's Disease. H. Peiper.—p. 40.
Sickness and Death of Emperor Charles VII. E. Ebstein.—p. 50.
Relations Between Bladder and Kidneys. Armbruster.—p. 55.

Advanced Cancer of the Bladder.—Schmieden recommends the formation of an artificial anus and isolation of the rectum, in which he implants the ureters, to serve as a new bladder. He regards these measures as essential to ward off or cure ascending pyelitis after extensive extirpation of the bladder with advanced malignant disease. Of the two patients treated in this way, the man is still at work in the aniline dye establishment, working six hours a day. The interval since the operation is eighteen months. The woman died from pneumonia five months after the operation.

The Milking Calices of the Kidney.—Westenhöfer brings evidence that Haebler's work on the aspiration of urine from the parenchyma of the kidney by the milking action of the calices of the kidney was done on his suggestion. His priority is reluctantly admitted by Haebler and Ringleb in the society discussion on page 26.

Peritonitis with Bladder Disease.—Bitschai's patient with hypertrophied prostate died from peritonitis following cystitis, without perforation of the bladder walls.

Diagnosis and Operative Treatment of Addison's Disease.—Peiper recommends roentgen-ray examination of the kidney region after insufflation of oxygen into the bed of the kidney. He advocates removal when the suprarenal capsule is the seat of a unilateral tuberculous process.

Zentralblatt für Chirurgie, Leipzig

50: 329-376 (March 3) 1923

*Weight-Bearing Capacity of Amputation Stumps. Kölliker.—p. 330.
Splint in Pirogoff and Hallux Valgus Operation. D. Kulenkampff.—p. 331.
A Peculiar Affection of Costal Cartilages. Harttung.—p. 333.
Extrapleural and Extraperitoneal Access to Suprarenals Through the Diaphragm. A. Melnikoff.—p. 336.
Large Hepatic Cyst with Double Hepatic Ducts Cured by Operation. E. Elischer.—p. 341.
*Incision for Operations on Gallbladder. H. Simon.—p. 345.

Weight-Bearing Capacity of Amputation Stumps.—Kölliker reviews the weight-bearing capacity of the amputation stumps of the war. Of 104 thigh amputations, 2 presented good weight-bearing stumps, 4 were partially weight-bearing (that is, a prosthetic apparatus could be worn part of the time, but if worn continually, soreness resulted), 90 stumps were not weight-bearing, and 8 had never been tested for their weight-bearing capacity. Of 12 amputations by the Gritti method, 8 stumps were weight-bearing, 1 partially weight-bearing, 2 were not weight-bearing, and in one instance the weight-bearing capacity had never been tested. One amputation stump (Sabanejeff) was weight-bearing. In 69 amputations of the lower leg, there were 5 weight-bearing stumps, 3 partially weight-bearing and 61 not weight-bearing. The causes of the lack of weight-bearing capacity were: "bone scars" in 80 cases, soft part scars in 32 cases, neuromas in 18 cases, conical stumps in 14 cases, and in 19 cases there was a combination of causes. Kölliker admits that the results are far from pleasing, but thinks that if the methods of Bier, Bunge and Hirsch are used and there is more cooperation between the surgeon and the manufacturer of prosthetic apparatus, better results will be secured in the future.

Incision for Operations in Region of Gallbladder.—On the basis of his experience in twenty cholecystectomies, Simon recommends a simple median, longitudinal incision just above the umbilicus without division or incision of the rectus sheath. The results have been uniformly good. The avoidance of the division of the rectus has many advantages.

Polska Gazeta Lekarska, Lwow

1: 621-636 (July 30) 1922

*Retroflexion of the Uterus. W. Falgowski.—p. 621.
Auto-Hemotherapy in Pruritic Skin Diseases. T. Dybowski.—p. 623.
Cont'd.
Serotherapy of Influenza. H. Kadysz.—p. 626.
Typhus Fever. J. Grek.—p. 626.

Surgical Treatment of Retroflexion of Uterus.—Falgowski says that at the Fifth International Gynecologic Congress at Petrograd, Van der Velde enumerated 217 different methods (old and new) for the surgical treatment of retroflexion of the uterus. The reason for the existence of so many methods of meeting this condition, according to Falgowski, is that none can meet all requirements. Each case presents its own special indications that must be met. He considers the Alexander-Adams the best general method. Bad results, he says, come not from faulty technic of the method, but from the faulty conception of indications by the surgeon. As the next congress, which will be held in New York, will again discuss this question, Falgowski tries to help solve this question in the following way: First, he classifies the condition of retroflexion of the uterus into : (1) movable retroflexion without clinical symptoms; (2) retroflexion of a small, movable uterus with clinical symptoms, but with normal adnexa; (3) retroflexion of a heavy uterus, enlarged by inflammation (metritis); (4) retroflexion with adhesions to adnexa; (5) retroflexion with old tears of perineum and vagina (this also includes retroflexion with prolapse of the vagina); (6) retroflexion with anterior fixation of vaginal part of the uterus (faulty development). Each of the above types presents its own indications, which must be considered in treatment. Falgowski discusses each type separately, outlining what he considers the best method of treatment to meet all conditions.

Acta Medica Scandinavica, Stockholm

1922, **57,** Supplement No. 3

*Transactions of Scandinavian Internal Medicine Congress.—pp. 1-311.

Transactions of the Tenth Internal Medicine Congress of the Northland.—The leading addresses at this meeting at Helsingfors in June, 1921, have been summarized as they were published in the Scandinavian medical journals. This bulky volume contains all the others and the discussions. All articles are in English, French or German.

Norsk Magazin for Lægevidenskaben, Christiania

March, 1923, **84,** No. 3

*Development of Ophthalmology in Norway. S. Hagen.—p. 193.
*Hyperplastic Disease of Blood-Producing Apparatus. F. Harbitz.—p. 211.
*Scrap of Indelible Pencil as Foreign Body. P. Bull.—p. 221.
*Huge Kidney Tumor. P Bull.—p. 223.
Experiences with Epidemic Encephalitis at Vienna. Zeiner-Henriksen.—p. 229.
Present Status of Research on the Thyroid and Pituitary in Tadpoles. V. Magnus.—p. 244.

Ophthalmology in Norway.—Hagen gives a history of the pioneers in ophthalmology in Norway. It was Hjort who discarded the bandage for the eye after operations. This was in 1896, and at once, he said, infection vanished as if by magic.

Hyperplastic Disease in the Blood-Producing Organs.—Harbitz gives colored plates of the findings in two new-born infants with ascites and foci of incompletely developed blood corpuscles, representing a kind of myelo-erythroblastosis. The third case described was in a woman, aged 51, with multiple myelomas, actual erythromyeloblastomas. He suggests the possibility of a connection between these different processes.

Injury from Indelible Pencil.—Bull adds two more cases to the few on record in which the tip of an indelible pencil was broken off in the tissues (hand and heel in his cases). The anilin dyestuff used in the pencil has a toxic action, and this may keep up for weeks and months until the whole system is saturated with it. Although apparently a harmless lesion, he urges prompt excision of the tissues containing the pencil tip as the only means to ward off serious trouble.

Huge Kidney Tumor.—Bull relates that the woman, aged 39, had had blood in the urine at times for six years while the tumor in the right kidney was growing. It proved to be an atypical hypernephroma, and weighed 10.7 kg. (more than 23 pounds). She has been in florid health since its removal.

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THE MENTAL AND PHYSICAL HEALTH OF SCHOOLCHILDREN

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While knowledge of the subject of the mental and physical health of schoolchildren is steadily increasing, there is still much to be learned in these directions, particularly in the field of mental hygiene in the schools.

It is true that the great majority of children do reasonably well in the schools of today, both public and private, but the fact remains that a certain percentage get along indifferently, or not at all. Of this small group, some are physically below par, some acquire slowly, some are remarkably brilliant and some have the makings of genius in them. The remarks in the following pages apply particularly, though not exclusively, to the small group. Granting both the limitations and the potentialities of these children, special education has as yet failed to meet their entire needs. Education, medicine, mental hygiene and social hygiene should unite to solve the problem.

The observations discussed here are based on a physical and psychologic survey of 150 schoolchildren. These children were in a special school, a probationary school, and were there for observation because they had had difficulties in the class and had failed to make progress in their studies. The survey, therefore, was chiefly to determine the mental characteristics of these children, but a complete physical examination was made of each child and physical defects were recorded.

These children, in addition to being backward in their studies, were not getting along well with either the teachers or the other children. They were beginning to show traits of character which, if they persisted, would be detrimental to their future. The main problem in many instances was to determine the best means of finding out how certain limitations and handicaps were to be overcome or eliminated, in order to make these children successful, at first in the relatively simple relationships of school life and later in the world at large.

Children of this type are often spoken of as difficult or unusual. They are nervous and sensitive. Often they have unusual temperamental traits, and they do not have interests which are common to the majority of children. Their parents realize that some difficulty exists, but they are not sure just what it is. With some teachers, they may get along well; with others, not at all. Children presenting these difficulties exist in all families, whether rich or poor. They are met in city life and in country life, and the condition is not peculiar to the present generation.

Such children give rise to many speculations. One wishes to know whether these nervous states and minor troubles are the expression of some difficulty, inherent in the mental makeup of the child, or whether they are the result of bad management. One asks whether there is something unfavorable in the home or in the method of teaching, as applied to this particular boy, which results in failure. If the latter is the case, the condition cannot be considered inherent but is acquired, and can be corrected. One wishes to know their future. Is this condition a passing phase, or is character fixed in these ways if the difficulty continues? Could similar symptoms seen in adults have been recognized during childhood, and could these tendencies have been corrected in the beginning? One cannot answer all of these questions, but facts exist which contribute to the subject. Such questions do not pertain solely to teaching and school life. They have to do with public health, preventive medicine and community welfare.

EARLY DEVELOPMENT AND THE SCHOOL

After a child has reached the age of 4 or 5 years and goes to kindergarten, the way in which he gets on with other children, even during these early years, will depend very much on his previous development. This is apparent if one considers the early developmental period of a child's life, in physical, mental and social directions. From the physical standpoint, he goes through many stages. He learns muscular coordination of trunk and extremities, grasping things with his hands, holding up his head, creeping and walking. Sensation becomes acute and localized in the course of time. The faculty of speech develops through all its stages. During this period, the child not only cuts his teeth but also learns to eat, at first a simple, later a varied, diet. Then comes conscious sphincter control, and suitable habits of sleep. He gradually gains precision in movements and in the use of his extremities. Movements at first awkwardly performed are in time done skilfully. A steady gait develops; the child learns to dress himself; speech becomes clear, and, as finer movements of the hands become coordinate, he shows more precision at his games.

While this physical development is going on, he gradually develops in intelligence. He learns the names of things about the house, how they are put together and what they are used for. His vocabulary enlarges; he begins to understand a few abstract ideas, and he learns to read a little. During this period of purely physical development and of broadening the field of intelligence, he begins to learn something of his relations to other people. He cannot always have his own way when this inconveniences others. He learns patience and self-control. His games are modified in accordance with the way they may affect others.

The child, then, accomplishes much in the way of development before he has reached the age when he is to mingle much with other people; and if he fails in this respect it becomes evident. If muscular coordination is poor, he fails in games. If his speech develops badly and he stutters, he is handicapped. If he refuses certain foods, he may become ill-nourished, and have poor muscular development. If he is irritable, suffers from sleeplessness or cries easily, he becomes too dependent. If he is slow to learn, he falls behind and is regarded as stupid. If he has not learned the usual ways of give and take in play, he is often in trouble. He has to learn to obey, regardless of his own feelings. He learns all these things during an early period in life and before his nervous system has gained the stability which it possesses in later years.

All these may seem to be a formidable array of difficulties. Such things, however, are only a part of normal development, and with the great majority of children, these changes take place without either they themselves or their parents being in the least aware of them.

The success with which this early development in physical, mental and social spheres is accomplished is tested, in most cases, when the child enters school; for whether a school is large or small, public or private, his ability to get along with other children will be determined.

The school, especially the public school, is a test of the adaptability of the child. Most public schools, and some private schools, are made up of relatively large classes, from twenty-five to fifty pupils. The outstanding feature in the general administration of these classes is conformity to set standards. In the school, conformity to a routine is an integral part of the system. The child must arrive promptly; he must do things in conformity with others; he must respond accurately to directions in the classroom. Individual action on his part upsets the class and causes confusion. Studies are all outlined and the degree of advancement is regulated, month by month. The child should not be too slow in acquiring knowledge, and he cannot progress more rapidly than the others. In school advancement, he must conform to standards as established by the curriculum.

There are still other ways in which he must be in harmony with the others in the class. This conformity is not established by the school authorities but by the children. A boy must fit in with the group. He must be agreeable in games and share the interest of others. If he has any special failings in physical or mental ways, it will be found out. He must take his place as a leader or a follower and govern himself accordingly.

These are some of the features of any school system. Anyone familiar with this organization must be struck with its similarity to a military organization.

Some people advocate changing the school system since certain children fail under it. They feel it is too rigid and too inelastic. They suggest a system that will individualize. These changes will probably be gradually introduced into educational organizations, but at present most schools are formal in type. For the children under discussion this formality of education is far from satisfactory. They not only fail to acquire knowledge, but they also get out of sympathy with everything and fail to develop normally.

What arrangements can be made in the matter of special education of these children? To answer this question, we must find out more specifically the nature of their troubles in school.

At one time, it was thought that mental defect was the basis of most of the difficulty. Reports were made which showed that from 60 to 80 per cent. of the conduct disorders of children were attributable to mental defect. It is now known that this is not the case. Some difficult children are found to be defective, but by no means the majority. Some have pointed out that improper home environment, hardships, poverty and neglect are the causes of these conditions in children. This is doubtless true; but difficulties with children are found among the rich as well as the poor.

Some have called attention to physical disorders and malnutrition. It is true that some difficult children suffer from malnutrition; but some of them are perfect physical specimens.

In the spring of 1919, the public school authorities of New York invited the National Committee for Mental Hygiene to make an investigation of this subject. It was decided to conduct the study in one of the probationary schools of the city to which children were sent for observation. The survey dealt with various phases of the subject. The staff consisted of a physician, a psychologist and a social service worker; each child was made the subject of investigation from several standpoints: physical, psychologic and environmental. Such a survey cannot presume to answer all questions which arise as to adjustments of children, but an attempt is made to call attention to the most obvious difficulties. The particular conditions which will be discussed are: 1. Nervous instability in children. 2. Intelligence tests. 3. Physical defects. 4. Methods of examination and of treatment.

NERVOUS INSTABILITY IN CHILDREN

Nervous symptoms are much more common during childhood than is generally recognized. These symptoms appear in various ways. Children who are irritable, who sleep poorly, who learn slowly or who are oversensitive are often unstable nervously.

Nervousness is also common in adults. Many people, particularly in this country, suffer from minor neuroses. They appear perfectly well, and indeed they are not invalids, but they are not absolutely free from nervous symptoms. A knowledge of the minor neuroses is important in understanding the psychology of children. A child may be regarded as perverse, obstinate or incorrigible, when he is suffering from nervous symptoms and is liable to be sensitive and irritable.

What are the nervous symptoms of childhood? They are numerous, and they find expression in a great variety of ways. Perhaps one of the most common neuroses symptoms of childhood is overactivity. The minds of some children are teeming with ideas, and physically, too, they are overactive. They are overstimulated by such things as moving pictures or exciting stories, and they exhaust themselves nervously. Sometimes children of this type indulge in all sorts of romances and fabrications. A certain amount of this is normal during childhood, but extremes of it indicate an overactive brain. Disorders of sleep are expressions of instability. Nervous children have night terrors, play out their games in their sleep, and cry out. Sleep walking, which is particularly common in childhood, is but another symptom of this same general order.

These children are, of course, fretful, irritable and unduly sensitive. Their feelings are easily hurt and they cannot control their tempers. They are impatient and they are difficult both in school and at home. Disobedience follows attempts at discipline.

Other minor symptoms are seen. Among these may be mentioned tics, habit spasms, gestures, nodding of the head, blinking the eyes, grimacing, twitching of the mouth, tremors or twitching of the hands or of the legs and peculiarities of gait.

Sometimes the origin of these conditions is easily found. Occasionally, they are the result of suggestion or of imitation of another child. One frequently finds very simple causes for these conditions in children. Whether they will be subject to similar symptoms in later life is difficult to say; probably this depends to a considerable extent on their management.

Nervous states in children may be of psycholgic origin. Children often learn habits of invalidism from over-anxious mothers. Emotional scenes and shocks may make a profound impression on them, and, if repeated often enough, are lasting in their effects. I know a little boy, aged 6, who was extremely nervous for months following a sensational murder near his home. Family discord of any kind is conducive to nervous trouble in children.

As a factor causing mental instability during childhood, considerable emphasis has been placed on questions of sex even in very young children. It is true that one finds in children much curiosity and interest about sex; many children ruminate about the subject a great deal. It is probable that such interest and curiosity should be considered normal, unless it takes on some unusual manifestation. Children vary greatly in the amount and accuracy of their knowledge of sex. A few children have full knowledge and even sex experience before puberty. Some have very distorted knowledge. A few practice masturbation to excess. This is not the cause of a great number of neurotic states in children, despite statements which have been made to the contrary. However, when excess sex stimulation takes place before puberty, the condition is disturbing physiologically, and if this stimulation continues over a long period, the child may show evidence of nervous exhaustion, and develop psychoneurotic symptoms. While sex activity is harmful before puberty, its occurrence should not be regarded as a calamity, and hygienic rather than moral issues should be emphasized.

It is not difficult to see how these nervous symptoms, both those of the physical and those of the mental sphere, make for poor work in school. A sick child, or one who is half sick cannot conform to discipline. He is unduly sensitive and appears to be irritable and perverse. He is in no position to take his place in the class or enter into the life of the school.

Cameron [1] says somewhat optimistically, of these nervous types:

> A sensitive nervous organization is often the mark of intellectual possibilities above the average, and the children who are cast outside the ordinary mold, who are the most wayward, the most intractable, who react to trifling faults of management with the most striking symptoms of disturbance, are often those with the greatest potentialities for achievement and for good. The mother of the nervous child may often rightly take comfort in thought that her child is worth the extra trouble and the extra care which he demands, because he is sent into the world with a mechanism which, just because it is more powerful than the common run, is more difficult to master and takes longer to control and to apply for useful ends.

In this survey, nervous symptoms were found in a higher percentage than was expected (20 per cent. in the group). Epilepsy was found in four instances. The other cases showed various nervous symptoms. One boy of 10 years was in a constant state of anxiety and fear, and was always looking for some impending danger or disaster. This, of course, made it impossible for him to acquire knowledge. The condition was very similar to that which one sees in hyperthyroid states, although he had no symptoms of glandular disease.

Another boy suffered from malnutrition, and had had rickets in early life. He walked in his sleep, had night terrors and could not sit quietly in school. He came from a particularly bad home environment. He was of good intelligence and pleasant personality.

One child, aged 10, was very mischievous and overactive, and was constantly playing little tricks, joking, and could not be controlled in the regular classes. He was out on the street at night and was disobedient at home. His was a case of overactivity, resulting from too much excitement at home.

There were three boys who had somewhat similar nervous symptoms, apparently from very similar causes. All three had been subjected to undue sex stimulation before puberty, a full knowledge of sex being gained through association with older people. These boys suffered from sleeplessness and were nervous and inattentive at school. They were also delinquent, and had been involved in thieving on a number of occasions. Treatment in a special hospital would probably have benefited them greatly.

In several cases, stammering was associated with other nervous symptoms, such as sleep walking, night terrors and lack of emotional control.

The treatment of nervous conditions varies with the cause. Not infrequently a highly nervous state in children of many months' standing follows some acute physical illness, such as measles, scarlet fever, meningitis or whooping cough. This nervous state in children is comparable to neuroses seen in older people The treatment here is quite clear. The child should have more rest than he would otherwise take. For overactivity, baths of body temperature at night, of from twenty to forty minutes' duration, are useful. Food should be taken between meals. Improvement frequently folllows gain in weight. Forced feeding and a liberal amount of rest and fresh air in the country, without too much school work, generally restores these cases to normal health. Occasionally, such cases last six months or a year, and may continue much longer.

Some children become nervously unstable through undue fear of competition in school. A child who learns slowly and is in a class where the others learn rapidly is at a disadvantage, and he is likely to become distressed. One often sees many minor nervous complaints, such as stammering, blinking the eyes, quick temper and sleeplessness in situations of this kind. In these instances it may be necessary to change the school or change the class. These children cannot get along in a large group.

Environment is not infrequently the cause of nervousness in children. Sensitive children may become stimulated in a large household where there is much entertaining and a great deal of coming and going. They are fatigued; when night comes, they are restless, and talk in their sleep, and they are exhausted in the morning. What is true of the home is true of the neighborhood. Games, as well as books or entertainment, may be overstimulating. Worry at home on the part of either of the parents is often conducive to nervousness in young children.

1. Cameron, H. C.: The Nervous Child, New York, Oxford University Press, 1919.

In some cases, nervousness is due directly to ideas which sensitive children become distressed about. Matters of religion occasionally perplex children. At times oversensitive children feel that they are being unjustly disciplined at school. I have seen children become greatly distressed over a period of many months because, rightly or wrongly, they thought the teacher was not treating them fairly. In cases of this kind, it is highly desirable for the physician to talk over the matter alone with the child. Dr. William P. Healy of Boston has described these conditions in detail, and he clearly shows that marvelous improvement may result from even one frank interview.

INTELLIGENCE TESTS

A surprisingly large number of difficulties with school children arise from the fact that they are not graded properly in classes. In most schools, children are graded in classes according to their age, and not according to their degree of mental development or capacity to learn, which is quite a different thing. Some children are far above their age in mental development and some are far below. Thanks to the work of Alfred Binet of France, and his followers, notably Terman of this country, this degree of mental development can be established very definitely. By studying thousands of children, psychologic tests have been standardized, and they are reliable when properly performed and interpreted. They, of course, measure intelligence only, and not temperament, emotional control or character.

The Stanford revision of the Binet-Simon test has been scaled in such a way that not only are the number of years and months of mental advancement or retardation measured, but in addition the child is rated on the basis of what is known as his "intelligence quotient." This intelligence quotient, with 100 per cent. as the normal, is determined by dividing the mental age by the actual age. On the basis of the intelligence quotient, by tests of thousands of children, both normals and variants from the normal, these results have been established. Children obtaining a rating of from 90 to 110 are, in general, of normal intelligence; those with a rating over 110, ranging at times to 125 and 150 or higher, are rated as possessing superior intelligence; those between 80 and 90 possess normal intelligence, but are of dull mentality; those between 70 and 80 are rated as borderline; that is, it is difficult to state whether mental defect exists or not. Those rating below 70 are mentally defective, unless some unusual circumstance exists to explain the low rating.

In practice, these findings work out well. That is, children who are found to be defective by the tests are, as a rule, so considered in the school by teachers competent to judge. The test generally agrees with common observation, if those observations are carefully made.

As a result of tests, children have been classified psychologically according to their intelligence, thus: Mentally defective children, which term has long been in use; "dull" children; normal children, and those with superior intelligence.

Of the group first mentioned, the mentally defective children, many variants are seen. Some are model children who cause no trouble in class and are not delinquent, although they learn very slowly. Others are nervous and irritable, having nervous symptoms such as sleep walking, night terrors and habit spasms. Mental defect probably predisposes toward these symptoms. Defective boys are often below par physically. They have narrow chests, stooped shoulders, and other anomalies. At times, however, they are good physical specimens.

The second group mentioned, the dull boys, while not defective, make a poor showing in the class room. They are often lacking in initiative. They are slow in school problems and instead of getting 100 per cent. in the psychologic tests, their score is between 80 and 90. Although the teachers may make a persistent effort to carry them along, school subjects are distasteful to them because they learn so slowly. They often grow rebellious against discipline and the teacher believes that they are perverse and obstinate. These boys frequently play truant solely because they are not interested in school. This is the opening wedge for other misconduct. While dull in school work, they are almost up to average in other ways. They should not be kept at book work beyond the sixth or seventh grade. They should then be given manual education. These children contribute largely to the failures of adult life, and their inadequate early training is to a considerable extent responsible.

Just how these dull children turn out in after life is not known. Dr. H. H. Goddard, in "Human Efficiency and Levels of Intelligence," maintains that efficiency and success in life is largely dependent on intelligence, and failure is due to lack of it. One doubts if this is exactly the case. Many people with high intelligence do not succeed; while others with inferior intelligence, through their pleasing personality and adaptability in getting along with people, do relatively well. However this may be, the boys who cannot learn academic subjects beyond a certain grade should be put to something else.

Physical Defects Found in One Hundred and Twenty Schoolchildren *

	Cases		Cases
Malnutrition and nutritional disturbances	26	Defect of nervous system	5
Skeletal defect	20	Defective nasal breathing	19
Poor muscular development	21	Hypertrophied tonsils	69
Defective vision	52	Pulmonary diseases	0
Defective hearing	7	Cardiac diseases	2
		Defective teeth	65

* Some children had several defects.

Certain children are said to possess superior intelligence by psychologists because of their high rating in the tests, and because of their rapid progress in school. In certain schools, these children have been placed in separate classes and have advanced very rapidly indeed.

An enthusiast at a recent lecture predicted that these advanced children were destined to be the leaders of the world, because of their superior intelligence. Some of them may, and some may not. Teachers have pointed out that, while they are advanced in class work, a certain number of them have poor emotional control and are quite childish with other boys, and a number of them are not strong physically. They should, however, be given the training in school that they are best fitted for. Doubtless, intelligent children waste many hours because they are kept back by the duller ones.

Psychologic examinations have suggested the reclassification of children in schools. By these tests, they are classified according to mental age and the way in which they make progress in their studies. This is an excellent plan, and when it is adopted throughout the schools, as it doubtless will be, it will do away with much of the discontent, uneven progress and trouble with

discipline which exist at present. It will not solve all problems in the school, but the classification of children in grades according to their ability to acquire will be a wise procedure.

It should not be inferred that all cases in the above mentioned group with nutritional disturbances were below normal weight for their age. Some were normal in weight, even excessively fat. But they were pale, with pasty skin; the expression showed fatigue; the extremities were blue, and there were other evidences of faulty metabolism. Some were getting an unsatisfactory diet, consisting to a great extent of starchy foods, with lack of protein. An insufficient lunch or very little breakfast accounted for headaches and fatigue in a number of the younger children.

The skeletal defects were of various types; some postural, with or without spinal curvature. Some of the children had faulty chest development, others had imperfect results following operation for injuries or fractures of the extremities. Certain defects, while not incapacitating, contributed to ill health in various ways.

Twenty-one children had poor muscular development, not necessarily as a result of insufficient exercise, but associated with poor nutrition.

Routine examination by the oculist showed that fifty-two of the children had some type of visual defect, such as astigmatism, myopia or hyperopia of varying degrees of severity. In some cases, glasses were not indicated, as the defect was very slight. In others, glasses were needed but the children refused to wear them, as they thought them an evidence of weakness or ill health. A few cases of defective hearing were found, the result of a former otitis media.

Defective nasal breathing was found in nineteen cases. In some instances, this was a mild defect caused by a deviated septum.

There were sixty-nine cases of enlarged tonsils. Some of these children had had several attacks of tonsillitis, and removal of tonsils was therefore indicated. In many of the cases, the tonsils were only slightly enlarged, apparently causing no symptoms. Removal would not be recommended by most authorities in such cases. With a number of children, when enlarged tonsils were associated with difficulty in nasal breathing, there was restlessness at night, and night terrors, attributable to the interference of free passage of air.

These children had all been carefully examined for pulmonary disease some time previously, and no active cases of tuberculosis were found.

To what extent is the welfare of the mind influenced by the state of physical health and well being? If a child is in an unsatisfactory physical condition, he is likely to suffer correspondingly in mental spheres. However, some children with excellent physique, and without physical defects of any significance, are in a far from satisfactory mental condition. Again, a child may have a number of physical defects, but these may have no bearing on the psychologic problem he presents.

In interpreting disorders in children, it is well to have all these variations in mind. On the one hand, we should not have our attention focussed on upsetting psychologic factors, to the exclusion of the physical; on the other, we should not be ready to accept physical defects as the only factors in all cases. It should also be appreciated that a physical defect of relatively minor importance in an adult may cause more serious symptoms in a child. Thus, interference with nasal breathing in an adult is uncomfortable, and predisposes to colds and infections; it may not amount to more than this. But with the child, it interferes with play and with sleep, and renders him morose and irritable, and unable to apply himself to his lessons.

Poorly nourished children suffer in a particular way mentally. They are not necessarily retarded; indeed, they often appear to be overstimulated and overactive; but they are emotionally unstable and have nervous symptoms. With improved nutrition, these symptoms subside, and a change in temperament and disposition becomes evident.

Knowledge of the structural development of the body has advanced considerably in recent years, although it is still far from complete. We have always known of certain developmental disorders, as, for example, the underdevelopment which results from thyroid deficiency; but recent studies have carried us farther than this. We know now that the overfat boy is not fat because he has an enormous appetite or eats too many sweets, but because his glands of internal secretion or their nervous mechanisms are not functioning properly. We know that the growth of long bones is dependent on glandular activity, and that the development of sex organs and sex characteristics is controlled by glands of internal secretion.

The organs which preside over body structure are of importance in the development of the mind. Few definite facts are known of this influence, and there has been much speculation. We know that deficiency of thyroid gland not only influences body development, but also retards mental processes. Excess of this secretion accelerates mental processes and causes nervousness. Certain disorders of the pituitary gland are associated with mental dulness and retardation. Some have speculated much farther, and would associate most activities of the mind, such as emotions, temperaments, and conduct, with the glands of internal secretion. We are not in a position to make final statements about a physical basis for these qualities of the mind, and further investigations are necessary.

METHODS OF EXAMINATION

It may be of interest to review briefly the method of examining a child in these various directions.

It is well in the beginning to get a concise statement from the parents and teachers as to what, in their opinion, the difficulty is. They may state that the child is nervous and irritable, is fatigued easily, lacks concentration, has trouble with other children and is poor in his studies.

It is then necessary to get a history of the family. One learns in this way what the home environment is, and also what the other children are like. One inquires how the other children get along in school; whether the father and mother are healthy and strong, and whether there is much nervous instability or disease in the family. This gives a background which may be of value, or which may throw very little light on the situation.

Next, one obtains a full history of the child. The condition at birth and during early infancy, the age of walking and talking, illnesses, nutrition, and so on are inquired into. Then one obtains the school history, including school progress and promotions; facts as to how the child gets along with others in games, whether he is active or solitary, whether he requires much discipline or little; in other words, what his personality is like and what the teachers think of him.

Next, one inquires carefully into the nervous symptoms mentioned above, which, because of their importance, may be mentioned again: quick temper, irrita-

bility, nail biting, enuresis, sleep walking, night terrors, habit spasms, tics, blinking, stammering, fatigability, depression, undue sex knowledge and excitement. Then, inquiry is made as to the home environment and about any delinquency or misconduct which may have occurred.

On first seeing the child it is well to make the medical examination at once because children expect this from a doctor. In the course of this examination, one can learn by direct questions how the child gets along at school, how he likes his teacher and how he likes the other boys. It is often possible to gain his confidence and learn all about any difficulty both in the school and at home in this direct way. It is well to have the child alone, as children will seldom talk freely before two or three people. This frank talk may be the most important part of the examination.

When the psychologic tests are performed, the examination is complete. These tests, to be of value, must be made by some one who has had careful training in giving them. It is necessary for the examiner to be alone with the child and free from interruptions. The test generally requires from one to two hours. Experienced examiners know at once whether nervousness, shyness or other mental conditions interfere with the value of the test, and they report accordingly. Tests by amateurs are not only valueless, but also misleading.

The management of nervous children requires not only the medical measures mentioned above, but also a particular kind of education. These children are usually diffident, and they come in for a good deal of hazing of one kind or another from other children. The teacher may not have time for a child who does not learn easily, and these children drift from one school to another, thoroughly discouraged, the despair of teachers and parents. In many instances, one finds that the preparatory school, the college and even the profession has been decided on far in advance. The father is loath to give up these ambitions.

Parents must realize that, while plans must be changed, the change will make for gain rather than loss. The child is not a failure because he cannot travel along beaten paths. Nervous children are better away from home because parents are almost sure to urge them beyond their capacities. The selection of the right school is very important. A military school, in my experience, does not bring good results because firmer discipline increases rather than modifies the symptoms.

There are certain schools in which the principal or head master is able to make special teaching arrangements for some of these children. In such a school, these boys improve from the start. The head master realizes that discipline must be used moderately and judiciously; he realizes that class progress is not the most important thing, until mental stability is gained. In time, the nervous tension subsides; the worried look disappears from the boy's face; he begins to sleep at night; he is able to concentrate again, and so he is able to learn more easily. This may take many months, but success may be confidently expected.

I recall a boy in an excellent preparatory school who had been regarded a "dunce," as the mother said, for three or four years. He made no progress at all and was the despair of everyone. By examination, he was found to be a neurotic child. The psychologic tests showed that he was not a dull boy, and that his intelligence quotient was over 100, or average. He was taken from home; his nervous symptoms were treated, and at a special school, in the course of a few months, he made excellent progress.

Those children who have no nervous handicaps such as the foregoing, but are nevertheless slow in their studies and make a low record by psychologic tests, are in a somewhat different category. Here, again, although reluctantly, certain ambitions on the part of parents must be set aside. These children do not acquire very readily through books. They are generally manually minded, and they do not get further than the beginnings in high school, or perhaps not that far. As little boys, their minds are developed through manual education. This training, which consists of various forms of shop work, is not to make artisans of them. It is to develop the mind through the use of the hands.

After the age of 11 or 12, often earlier, in the case of these particular children, manual education should be introduced. They waste their time in regular classes, with no manual training. The need of this is being recognized more and more in the best schools. Children who do not learn academically should not squander their youth and waste their time with academic studies beyond the point where they can acquire. These educational handicaps explain why a number of boys fail when they should succeed. Fortunately, such handicaps are being overcome by special forms of education in many of the better schools of today.

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ANEURYSM OF THE THORACIC AORTA AS A CAUSE OF ACUTE ABDOMINAL PAIN

REPORT OF CASE *

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In the textbooks on medical and surgical diagnosis, recognition of acute surgical conditions in the abdomen is usually assumed to be easy. Difficulty is acknowledged only in the preoperative differentiation of grave accidents, such as perforated gastric ulcer, perforation of the gallbladder, acute pancreatitis and mesenteric thrombosis. But the fact that thoracic disease may produce symptoms of acute surgical conditions in the abdomen is inadequately discussed.

That pneumonia may simulate acute appendicitis has long been known, and more recently Fussell and Kay [1] have reported cases of pericarditis diagnosed as acute appendicitis. Cases of angina pectoris, with symptoms of pains in the epigastrium after eating, or on exertion, may resemble gastric ulcer or gallbladder colic, but the short duration of the pain and its relation to exertion rather than to the digestive cycle are usually sufficient to prevent diagnostic mistakes. That slow leakage from an aneurysm of the thoracic aorta may produce abdominal symptoms comparable in severity to acute pancreatitis is not indicated by a perusual of the books dealing with cardiovascular, mediastinal or abdominal disease.

With regard to the frequency of its occurrence, it is stated that [2] "Descending thoracic aneurysm is rarer than in the abdominal aorta. It was involved in only

* Read before the Medical Society of the District of Columbia, Jan. 17, 1923.

1. Fussell, M. H., and Kay, J. A.: Symptoms of Appendicitis in Acute Pericarditis, Am. J. M. Sc. **163**: 40 (Jan.) 1922.

2. Osler's Modern Medicine, Philadelphia, Lea & Febiger, 1907, p. 487.

three out of sixty-four cases of aneurysm of the aorta, among 2,200 autopsies at the Johns Hopkins hospital."

Lucke and Rea [3] report that "aneurysms were found in 2.2 per cent. of patients coming to autopsy. In only 4.3 per cent. of the cases was the clinical diagnosis of aneurysm made."

Harlow Brooks,[4] in performing necropsies, was struck with the frequency with which sudden deaths from cardiac diseases had been diagnosed as "acute indigestion." Among these, probably the most frequent lethal lesion was coronary thrombosis or embolism. He is one of the few to point out not only that cardiac disease sometimes gives abdominal symptoms, but also that acute or chronic aortitis, rupture of the aorta, or aortic aneurysm, and acute mediastinitis may simulate abdominal disease.

The literature for the last ten years records a number of cases of aneurysm of the descending thoracic aorta presenting acute grave abdominal symptoms, but even when an aneurysm is suspected and searched for, its presence may be very difficult of demonstration during life.

Lerena [5] reports such a case. There was nothing in the history to suggest aneurysm; tests for syphilis were negative; a roentgenogram gave no hint of the presence of an aneurysm. The postmortem examination demonstrated the existence of an atypical sacciform aneurysm of the thoracic aorta, with previous walling up of the vessel. The aneurysm was as large as a hen's egg and had a second smaller aneurysm which communicated with it by a narrow opening.

Du Bray [6] presents an excellent study of a case in which the symptoms and signs led to the clinical impression that the cause of death was "massive pulmonary hemorrhage into a bronchus, in a case of ulcerative pulmonary tuberculosis." In his case, the symptoms were of four years' duration, all thoracic in character. The aneurysm, 8 by 10 by 8 cm. in size, ruptured directly into a bronchus, not involving the mediastinum. The absence of involvement of the mediastinum explains why there were no abdominal symptoms. He reviews the literature, giving twenty-eight references. In 153 instances of rupture of an aneurysm of the descending thoracic aorta into various situations and viscera, not one is mentioned as rupturing into the mediastinum, and no mention is made of abdominal symptoms. Rupture into the left pluera is by far the most common accident.

A case resembling ulcer of the stomach is reported by Demetrescu: [7]

A man, aged 35 years, entered the clinic with pain in the abdomen, and hematemesis. He vomited food and had acid eruptions. When entering the hospital, hematemesis occurred, the patient vomiting 2 liters. The abdomen was sensitive to the slightest touch, tenderness being most accentuated in the epigastric region. The pulse was 126 and the temperature ranged from 38 to 39 C. (101.4 to 102.2 F.). Ulcer of the stomach was diagnosed, and the abdomen was opened. Nothing could be found in the stomach. The next day, hematemesis occurred, to the amount of 70 c.c. The pulse was very small and thready, and the mucous membranes were pale. In the afternoon, the patient lost 100 c.c. of blood, and he died the next day. At necropsy, the aorta was found enlarged and cartilaginous in aspect in its entire extent. Two thirds of the upper part of the descending aorta consisted of a large aneurysm. A fibrinous mass filled the aorta and esophagus. The mucosa of the esophagus was blackish at the point of the aneurysmal rupture. Nothing was found in the stomach, and the pylorus was free.

Age is of no practical diagnostic importance, for Morquio [8] reports the case of a child, 5 years old, who was admitted for typhoid fever. For four days, it had been vomiting, and had suffered epigastric pain and cardiac collapse. At necropsy, an aneurysm was found in the lower part of the descending thoracic aorta. The aneurysm was the size of a mandarin orange. It had ruptured through the diaphragm into the abdomen, there forming a coagulum. There was no history, no symptoms nor radiographic findings which would have suggested the existence of an aneurysm.

That the lesion may complicate an acute febrile disease in the young is illustrated by the case of Soprana and Piazza.[9]

A woman, aged 21 years, who entered the hospital complaining of articular pain, had, ten days previously, begun to complain of violent pain, especially in the upper extremities, the neck and the shoulder of the right side. The face was pale. The temperature was 38.4 C. (101 F.) the pulse, 100, strong and regular, and respiration, regular. There was a slight murmur at the apex of the heart. The patient was improving, when, on the tenth day, she suddenly felt severe constriction in the thorax; precordial and epigastric pain became continuous, especially at the top of the sternum; the temperature, which had been down, rose slightly; paroxysms of precordial and epigastric pains increased; the lips became blue, the face pale, and the temperature was 37 C. (98.6 F.) rising to 38.5 C. (101.3 F.) in the afternoon. Six days later, the patient died. A lesion was found on the convex surface of the aorta in its endopericardial portion. The anatomic pathologic diagnosis was acute articular rheumatism and acute rheumatic aortitis, with three small aneurysms, two of them ruptured, producing hemopericardium.

In the case reported by Dr. John D. Thomas,[10] the three main symptoms were continuous pain in the back and epigastrium, regurgitation of food and absolute constipation of one week's duration. At postmortem examination, "The thoracic aorta from the point where its descent began to just below the diaphragm was the seat of a large sacculated aneurysm, irregularly oval in shape, walls fairly thin, and contained postmortem clots; it had not ruptured."

Shore [11] reports a case of a man, aged 62, who, while presenting symptoms adequate for the diagnosis of thoracic aneurysm, also presented marked abdominal symptoms.

The patient was admitted to the hospital after midnight, complaining of severe precordial and epigastric pain, which followed urination performed a short time before. He had had shortness of breath for two years, and eight months previous to his present illness, he began to have slight pain, which came on an hour after eating and continued for about an hour. Lately, the pain had been worse and more nearly continuous, with exacerbations after eating. On examination, the temperature could not be registered. There was an anxious expression, pale skin, cold sweating and a little cyanosis. Breathing was rapid and shallow, and the pulse was 60, regular, full, sudden and of high tension. Rigidity of both rectus muscles and definite epigastric tenderness were

3. Lucke, Baldwin, and Rea, M. H.: Studies on Aneurysm, I, General Statistical Data on Aneurysm, J. A. M. A. **77**: 935 (Sept. 17) 1921.
4. Brooks, Harlow: Abdominal Symptoms and Signs of Thoracic Disease, Med. Rec. **100**: 1103 (Dec. 24) 1921.
5. Lerena, V. P.: Case of Aneurysm of the Thoracic Aorta Difficult of Diagnosis, Rev. med. Cub. **32**: 431 (June) 1921.
6. Du Bray, E. S.: Saccular Aneurysm of the Descending Thoracic Aorta, Am. J. Med. Sc. **161**: 407 (March) 1921.
7. Demetrescu, S.: Anevrism al aortei descendente rupt in esofag simulând un ulcer de stomac, Clujul Med. **1**: 729, 1920.
8. Morquio: Aneurisma de la aorta toracica descendente en un ninno de cinco anos., Rev. méd. d. Uruguay **20**: 555, 1917.
9. Soprana, F., and Piazza, C.: Aortite hematogène anevrismes multiples de l'aorte a début et évolution agus, rupture dans le péricarde de l'un d'eux au cours d'une crise unique de rhumatisme articulaire, Arch. de méd. expér. et d'anat. path. **27**: 55, 1916-1917.
10. Thomas, J. D.: Case of Aneurysm of the Thoracic Aorta with Paralysis of the Diaphragm and Hour-Glass Contraction of the Stomach, Washington M. Ann. **13**: 146, 1914.
11. Shore, T. H. G.: Case of Dissecting Aneurysm of the Thoracic Aorta, St. Bartholomew's Hosp J **21**: 44, 1913-14.

present. At postmortem examination, a small rupture of the intrapericardial portion of the aorta was found, with a dissecting aneurysm which involved the aorta more or less to its abdominal bifurcation.

In the case reported by Mackinlay and Weeks,[12] the condition closely resembled ruptured duodenal ulcer.

A man, aged 54 years, who had no previous symptoms, and who had been doing heavy muscular work without any inconvenience for two years, at 8:30, while in a public bar, was suddenly seized with acute pain in the pit of the stomach, which caused him to fall to the ground, to double up and to shout. The pain radiated around his right side and up below the shoulder. It made him catch his breath, but there was no shivering. He stated that he felt as though something were closing around the bottom of the esophagus. He tried to retch, but there was no vomiting during the whole illness. The pulse rate was 100, the volume very poor. Twenty-four hours later, there was marked dulness at the base of the right lung, with absence of breath sounds. There was pulsation in the epigastrium, but no murmur. Ruptured duodenal ulcer into the lesser sac was considered, but the evidence was not considered sufficient. At postmortem examination, an aneurysm the size of an orange, at the point where the aorta passes through the crura of the diaphragm, was found. It had eroded the eleventh dorsal vertebra to the depth of half an inch. There was a large perforation into the right pleural cavity. There was marked extravasation into the cellular tissue of the spine and into the abdominal cavity extraperitoneally.

In Sanders' case [13] there were no abdominal symptoms. An aneurysm the size of a coconut occurred in the middle of the descending aorta; the left lung was septic and deeply pressed on; the aneurysm, lying in the cup thus formed, was surrounded with pus. The vertebrae were slightly eroded.

Another case with rupture, without abdominal symptoms, is reported by Munkwitz and Jerman.[14]

For a short time before the onset of his last illness, the patient complained of some dyspnea on exertion and vagus pains in the chest and back. While at work leaning over a drawing table, he suddenly cried out with pain and fell to the floor unconscious. There were no abdominal symptoms. Two days later, there were signs of involvement of the right pleural space. The diagnosis was aneurysm of the arch of the aorta. Death occurred suddenly, ten days after onset, in a choking attack. At necropsy, the mediastinal space was found filled with blood. There was an aneurysm of the transverse portion of the aorta, the rupture occurring where the aorta begins its descent. There were two openings, one into the pleural cavity and one into the mediastinum.

REPORT OF AUTHOR'S CASE

History.—Mr. G. P. H., aged 61, married, who had had the lower left leg amputated as a result of an accident at the age of 21, had a few months prior to his present illness, while attending a banquet, suffered an attack of palpitation, followed by a cold sweat. A few days later, he had what he called "a slight cold and cough." There was no history of previous indigestion or attacks of any kind of pain. He used tobacco and alcohol moderately. Recently, he had applied himself very closely to office work. About 7 p. m., May 31, 1921, after eating a full dinner, he was seized with sudden pain, which he described as "feeling as if some one had struck a knife in his heart." The pain was constant and severe, and did not radiate. There was no nausea or vomiting. Dr. S. H. Greene, who saw him about 9 p. m., washed a large amount of undigested food from the stomach, and gave several enemas, which resulted in a good return of normal feces, but produced no amelioration of the symptoms.

Examination.—I saw the patient about 10:30 p. m. He was sitting up on a sofa, slightly doubled up, with the hand held over the epigastrium. The skin was pale and cold, and bathed in perspiration. The respirations were shallow and grunting, but not accelerated. The pulse was 75, hard, full and regular. The pupils were normal. No abnormal sounds were heard over the heart or lungs. The abdomen was hard, rigid and tender, the last condition being more marked in the epigastrium.

He was admitted to the hospital at 11:15 p. m. At that time, the blood pressure was 220 systolic, 110 diastolic; the pulse was still under 90. There was a leukocytosis, the cells numbering 29,000. The urine contained albumin and casts. Preparatory to operation, the patient was given morphin sulphate, one-sixth grain (0.1 gm.), and atropin sulphate, 1/150 grain (.004 gm.).

Diagnosis.—The provisional diagnosis was some acute condition in the upper abdomen. Perforated gastric ulcer was first thought of as being the most common cause of such symptoms, but a ruptured gallbladder or mesenteric thrombosis was considered as a possibility. Just before going into the operating room, I expressed an opinion in favor of hemorrhagic pancreatitis on account of the absence of previous digestive disturbance and the presence of marked vascular disease. When the patient was first seen and the hard pulse of high tension was noted, abdominal angina was considered, but the long duration—from 7 to 1 o'clock—six hours, and the leukocytosis of 29,000 seemed to point more definitely to a rupture of some viscus.

Operation.—At 12:30 a. m., Dr. C. S. White explored the abdomen under gas anesthesia, but found nothing abnormal.

Course and Outcome.—I still leaned toward a diagnosis of vascular lesion as to the cause of the symptoms. At 1:30, the patient was returned from the operating room in a condition of extreme shock. He did not regain consciousness for several hours. The pulse was about 130, and almost imperceptible. The respirations were irregular, at times being of the Cheyne-Stokes type. The skin was bathed in cold perspiration, and the extremities were cold. Tap water, by rectum, heart stimulants and external heat were employed, and reaction occurred slowly.

The next morning, there was no more complaint of pain than is usual after an abdominal operation. There was some hiccup and a little vomiting, but some fluid was retained.

The leukocyte count was: before operation, 29,000; June 1, 28,500; June 2, 24,000; June 3, 18,000; June 4, 19,000, and June 6, 25,400.

The renal function, at first deficient, became well established in twenty-four hours, and except for moderate restlessness and occasional attacks of hiccup, or irregular breathing, the patient seemed to be making a good recovery. This general condition continued with slight changes until June 6, when he died suddenly, at 10:15 a. m.

Necropsy Findings (Dr. Hunter).—When the chest was opened, a large dissecting aneurysm occupied the distal end of the arch of the aorta, with extensive hemorrhagic extravasations, apparently occurring at different periods; the first extravasation into the soft tissues of the mediastinal spaces exhibiting characteristics suggesting that it was of a few days' standing; the second, a rupture into the left pleural cavity, filled with blood and with considerable compression of the left lung. The aneurysm was somewhat cirsoid in character, disintegration of the wall of the aorta taking place, especially superolaterally, with marked dissection between the adventitia and medial coats all the way down to the aortic orifice of the diaphragm, along the anterior surface of the thoracic aorta.

The aneurysmal dilatation extended 1¼ inches (3.2 cm.) transversely along the arch of the aorta surrounding the roots of the left subclavian and common carotid. The left subclavian artery was enlarged and showed some aneurysmal dilatation at its base. Superior to the distal end of the arch, lying between the left subclavian artery and common carotid medially and the upper lobe of the left lung laterally, there was a large clot of blood, 1½ by 2¾ inches (3.8 by 7 cm.), where the extravasation had taken place into the proximal portion of the fibrous pericardium and the transverse sulcus.

12. Mackinlay, W. H., and Weeks, L. M.: Case of Ruptured Aneurysm of the Descending Aorta, Brit. M. J. **2**: 1623, 1913.
13. Sanders, Arthur: Aneurysm of the Descending Aorta, West London M. J. **21**: 127, 1916.
14. Munkwitz, F. H., and Jerman, Louis: Rupture of Aortic Aneurysm into the Right Pleural Cavity with Death Ten Days Later, Wisconsin M. J. **15**: 51, 1916-17.

Toward the inferolateral margin of this clot, there was a well defined opening in the pleura, from which the extensive bleeding into the pleural cavity took place. This blood in the pleural cavity was a very recent extravasation. Only moderate soft clots were formed, whereas the clotting in the mediastinal tissues was apparently of several days' duration, and the clots were quite firm and hard. Extending from this large clot, there was definite macroscopic evidence of extensive extravasation (which probably took place slowly) into the fibrous pericardium and its contained fat, down to the diaphragm. Laterally, this extravasation had extended into the tissues of the middle mediastinum, and backward, between the pleurae, into the posterior mediastinum.

Surrounding the pulmonary plexuses, trachea and esophagus, and in the proximal part of the posterior mediastinum, it had extended backward beneath the parietal pleura and the transverse ligaments, all the way out to the sympathetic trunk. Extravasations of blood had also occurred in the soft tissues of the superior mediastinum on the right side as well as on the left, and, to some extent, into the adventitial structures of the large vessels arising from the arch of the aorta.

With respect to the visceral pericardium, there was apparently no extravasation of blood underneath this structure below the transverse sulcus, except on the right side, where the extravasation had apparently spread across the fibrous pericardium as it covered the large vessels arising from the arch of the aorta and had insinuated itself into the adventitial covering beneath the visceral pericardium of the lower end of the superior vena cava and a portion of the right ventricle.

The structure of the aorta itself was definitely sclerotic, numerous atheromatous patches being present along the arch as well as in the thoracic portion. In the region of the upper aneurysmal sac, the medial wall was extremely thin and very friable. The dissected pocket in the adventitia had apparently been present for some time, and as a result the wall was quite smooth and very definitely thickened.

1720 Connecticut Avenue.

A POSSIBLE MISTAKE IN THE DIAGNOSIS OF GONOCOCCAL INFECTION OF THE KIDNEY

WITH REPORT OF A SUSPECTED CASE *

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There is an abundant literature concerning the types of kidney infection, and in the majority of instances these infections were mixed, that is, the urine collected from the diseased side contained two or more organisms. David[1] has isolated eighteen different types of aerobic and anaerobic organisms from infections of different parts of the urinary tract. Many of them, however, do not involve the kidney. In cases in which urine was collected directly from the kidney pelvis, he found that the *Bacillus coli* type occurred in 90 per cent., and the pyogenic cocci in 5 per cent. of the cases.

Most of the infections are easily differentiated by the bacteriologist, but in a few cases a possible error might be made, unless a most exhaustive laboratory study is carried out to determine the nature of the invading organism. Two such bacteria will be under discussion in this paper, namely, *Micrococcus catarrhalis* and the gonococcus. There is very little literature[2] available on the former micro-organism, and in none that I reviewed was the kidney the seat of infection; nor in any of these cases infected with *Micrococcus catarrhalis* was the organism found in the urine in either voided or catheterized specimens. This organism is commonly found in the sputum in inflammatory conditions of the respiratory tract, and at times in multiple abscesses or on the mucous membrane of the anterior urethra, where it may produce a catarrhal urethritis which generally responds readily to treatment.

Micrococcus catarrhalis[3] may grow profusely on plain and dextrose agar and retain its characteristic appearance in frequent and long continued subculturing, and there is no tendency to ferment sugars.

In considering the latter infection of the kidney, we have reported to date in our literature[4] twenty-seven cases of gonococcal infection of the kidney. Only fourteen out of these twenty-seven cases were a pure gonococcal infection; in the remainder, the infection was mixed. In twelve of these cases, the diagnosis was made by stained smears of material from the infected kidney, and in the remainder the laboratory tests consisted mainly of growing cultures on blood serum, serum agar, ascitic fluid and staining with the usual Gram stain. In none was mention made of the agglutination reaction or the complement fixation test in aiding the diagnosis.

As *Micrococcus catarrhalis* is not mentioned in the literature as a possible error in diagnosis with that of the gonococcus, its presence as an exciting factor in infections of the kidney must be extremely rare.

REPORT OF CASE

History.—S. S., a man, aged 20, white, in the fruit business, reported first for examination and treatment, Nov. 23, 1920, because of a urethral discharge that he first noticed three days before. The family history was negative. He was exposed to infection six days before. There was a slight urethral discharge, with burning during urination. The first urine was cloudy, and the second was clear with light shreds. A urethral smear made at this time showed many pus cells with gram-negative, intracellular and extracellular diplococci resembling the gonococcus. Treatment was immediately instituted, and on December 12, there was no urethral discharge, and both urines were clear. The secretions from the prostate gland, December 30, contained fifteen pus cells to the high power field. Jan. 14, 1921, there were many pus cells in the prostatic smear, and on February 2, the smear from the prostate was negative. The patient discontinued treatment after February 16, and at that time both urines were clear.

He returned again, August 21, with a slight urethral discharge, having been exposed two weeks before. The first urine was cloudy and the second hazy. The smears taken from the urethra showed many pus cells and a few pus cells containing many pairs of gram-negative intracellular diplococci resembling the gonococcus. The prostatic smear showed 26 pus cells to the field. There was no stricture formation anywhere along the urethra. December 12, the smears from the prostate and vesicles were negative. Both the first and the second urine voided remained hazy, but there was no urethral discharge.

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* Read before the Philadelphia Urological Society, Feb. 26, 1923.

1. David: Surg., Gynec. & Obst. **18**: 432, 1914.

2. Walker, I. C., and Adkinson, J.: J. M. Res. **30**: 373, 1916. Mayer, A.: Deutsch. med. Wchnschr. **45**: 660, 1919. Clark, P. J., and Murphy, E. J.: J. Infect. Dis. **20**: 306 (July) 1921.

3. Mallory and Wright: Pathological Technique, Ed. 6.

4. Gerster, A. G.: New York M. Month. **9**: 189-219 (April 20) 1897. Dodge, W. T.: J. Michigan M. Soc. **4**: 58 (Feb.) 1905. Lewis, B.: J. Cutan. & G.-U. Dis. **18**: 395 (Sept.) 1900. Wynn, W. H.: Lancet **1**: 352 (Feb. 11) 1905. Lewis, B.: M. Rec. **70**: 521 (Oct. 6) 1906. Sellei, J., and Unterberg, H.: Berl. klin. Wchnschr. **44**: 1113-1115 (Sept. 2) 1907. Hagner, F. R.: M. Rec. **79**: 569 (Oct. 1) 1910. Nixon, P. I.: Surg., Gynec. & Obst. **12**: 331 (April) 1911. Marcuse, B.: Therap. Monatsh. **17**: 73-78 (Feb.) 1903. Weisswange, F.: München. Med. Wchnschr. **55**: 967-968 (May 5) 1908. Stanton, E. M.: Urol. & Cutan. Rev. (Tech. Supp.) **1**: 179 (April) 1913. Hoover, F. B.: Interstate M. J. **22**: 163 (Feb.) 1915. Boyd, M. L.: Surg., Gynec. & Obst. **21**: 506-510 (Oct.) 1915. Buerger, L.: New York M. J. **108**: 1022 (Dec. 14) 1918. Simons: J. Urol. **7**, February, 1922. Lehr, L. C.: Report of a Case of Gonorrheal Pyelitis, J. A. M. A. **59**: 36 (July 6) 1912. Barney, J. D.: J. Urol. **9**, January, 1923.

The patient had had double pneumonia thirteen years before, but no other illness. He had never been troubled with a cough or sore throat. He had voided urine very frequently ever since he could remember, passing a small amount each time, and was a bed wetter until the age of 8 years. There had never been any difficulty in starting the stream, or pain on voiding.

TABLE 1.—*Results of Agglutination Reactions, Cultures of the Diplococcus Being Employed as Antigen*

	Serum							Antigen
	1:20	1:40	1:80	1:160	1:320	1:500	1:640	Control
Gonococcus	2	2	1	1	—	—	—	—
Catarrhalis	2	2	3	2	2	1	1	—
Meningococcus—								
Type I*	3	3	2	1	—	—	—	—
Type II	2	2	—	—	—	—	—	—
Type III	2	2	2	—	—	—	—	—
Type IV	2	2	2	1	—	—	—	—

* Gordon classification.

The patient continued to report for treatment on account of hazy urines. There are no other clinical signs of infection.

Physical Examination.—The patient was well developed and well nourished. There was nothing abnormal with the head, throat, chest, abdomen, back, extremities or external genitalia. The urine passed in two glasses was hazy, with light and heavy shreds, and smears showed a few gram-negative extracellular and intracellular diplococci. The analysis showed a slightly acid reaction, specific gravity 1.005, albumin a very faint trace, sugar negative. The high power field showed many pus cells, and a few red blood cells, about four to the field, occasional epithelial cells, and no casts. The blood pressure was: systolic, 125; diastolic, 85; pulse pressure, 40.

The first cystoscopic examination was made, Dec. 16, 1922, on account of persistently hazy and cloudy urine, and in the absence of any demonstrable urethral discharge.

The bladder capacity was only 140 c.c. The mucous membrane was normal in appearance, with marked trabeculation on the lateral walls of the bladder and fine trabeculation on the anterior wall. The trigon was markedly elevated, with the ureteral orifices situated close together. About the orifice of the right ureter, there was some puffiness, with slight congestion of the mucous membrane. Both ureters were catheterized, and the catheter extended to the pelvis of the kidney without meeting any obstruction. The urine coming from the left catheter was clear; that from the right, cloudy. Five cubic centimeters of indigocarmin was injected intravenously. It appeared from the left side in four minutes and from the right side in five and one-half minutes. There was marked intensity in one-half minute after the first appearance on both sides.

TABLE 2.—*Results of Agglutination Reactions with Gonococcus and Catarrhalis Serum, and Known Gonococcus and Catarrhalis Antigens**

	Serum							Antigen
	1:20	1:40	1:80	1:160	1:320	1:500	1:640	Control
Gonococcus	4	4	4	4	4	2	1	—
M. catarrhalis	2	2	—	—	—	—	—	—

* In Tables 2 and 3, 4 indicates complete agglutination; 3, 75 per cent. agglutination; 2, 50 per cent. agglutination; 1, 25 per cent. agglutination; —, less than 25 per cent. agglutination

Laboratory examination of the catheterized specimen from the right kidney revealed the urine straw colored and turbid. The reaction was very slightly alkaline. There was a trace of albumin. Sugar was negative. There were about 135 pus cells to the high power field, an occasional epithelial cell, and no casts. The urine from the left kidney was straw colored and clear. In reaction it was alkaline. There was a trace of albumin; sugar was negative. There were few red blood cells to the field, no pus and no casts. A smear from the right kidney disclosed three cells on a slide, containing quite a few pairs of gram-negative intracellular diplococci resembling the gonococcus. A smear from the left kidney, with Gram's strain, showed no pus and no organism.

A bacteriologic examination was made by Dr. John A. Kolmer and Dr. Malcolm J. Harkins of urine collected from the pelvis of the right kidney. This made a correct diagnosis possible. Dr. Kolmer reported that the specimen of urine showed the presence of gram-negative diplococci which were sometimes intracellular. From this standpoint, he thoroughly agreed that the cocci resembled the gonococcus very closely. Cultures proved disappointing, as there was no growth. Probably the failure at this time to cultivate the organism was due to the fact that the urine was collected fourteen hours before it was delivered to the laboratory, although during that time it was left in the incubator.

The third cystoscopic examination was made, Feb. 1, 1923. The urine was collected from the right kidney at 10 in the morning, and delivered to the laboratory before 1 o'clock in the afternoon. It might be of interest to mention that the bladder capacity had increased to 275 c.c., with marked decrease in the amount of frequency, although no treatment had been given in the interval.

During all of the cystoscopic examinations, great care was taken to sterilize thoroughly the anterior urethra before passing the cystoscope, and to cleanse thoroughly the bladder by repeated washings with sterile distilled water before introducing the catheterizing telescope. The catheter for the right kidney was introduced in the ureter immediately, and not allowed to scrape over the bladder surface.

TABLE 3.—*Results of Complement Fixation Test, Cultures of the Diplococcus Being Employed as Antigen**

	Serum Dilution				Serum Controls			
	1:5	1:10	1:20	1:40	1:5	1:10	1:20	1:40
Gonococcus	4	4	3	1	3	—	—	—
Meningococcus Type I †	—	—	—	—	—	—	—	—
Meningococcus Type II	—	—	—	—	—	—	—	—
Meningococcus Type III	—	—	—	—	—	—	—	—
Meningococcus Type IV	—	—	—	—	—	—	—	—

* The antigen consisted of a forty-eight hour growth on human blood agar suspended in 0.25 per cent. phenolized salt solution, heated one hour at 60 C.

† Gordon classification.

I had hoped to enter this patient in the hospital for a further study of the right kidney and ureter by roentgen ray and pyelogram, to try to determine if possible the predisposing cause of the infection, but he refused. However, I think we are safe in concluding that this is a case of simple pyelitis, with the findings to date of a normal dye output, and no evidence at any time of casts in the urine examined.

DETAILED REPORT OF LABORATORY FINDINGS

Microscopic Examination of Sediment of Urine.—There were a few gram-negative diplococci, mostly extracellular. For the bacteriologic examination, the sediment collected from the centrifugalized urine was cultivated on a human blood agar plate incubated forty-eight hours at between 37 and 38 C., and examined. Plate 1 revealed approximately twenty-five colonies, apparently in pure culture, approximately 0.5 mm. in diameter, of slow growth, round, smooth, convex, entire, translucent, with no hemolysin, and no coloring of the medium. Microscopic examination revealed a diplococcus, biscuit shaped, gram-negative, not clumped. Cultures on human blood agar were of very slow and scant growth, with a tendency to form colonies. After three or four generations, growth was more abundant, was moderate, filiform along the line of inoculation, raised, glistening, smooth, translucent, with no odor, and of somewhat viscid consistency; the medium was not changed; the water of condensation was clear; there was a precipitated growth at the bottom. Huntoon's[5] plain hormone or vitamin agar and bouillon yielded no growth.

Sugar reactions were: 1 per cent. glucose serum bouillon, 1 per cent. maltose serum bouillon, 1 per cent. saccharin

5. Huntoon, F. M.: J. Infect. Dis. **23**: 169 (Aug.) 1918.

serum bouillon and 1 per cent. levulose serum bouillon, no acid or gas. The cultures resembled *Micrococcus catarrhalis* more than the gonococcus, and the sugar reactions indicate that the organism is *Micrococcus catarrhalis*, which is known not to ferment sugars.

The antigen of the diplococcus consisted of a forty-eight hour growth on human blood agar suspended in 0.25 per cent. phenolized salt solution, heated one hour in a water bath at 60 C.

The agglutination tests showed that gonococcus serum agglutinated a known culture of gonococcus in a final dilution of 1:640, but the urine diplococcus in only 1:160; this indicates that the diplococcus was not the gonococcus.

These results indicated that the urine diplococcus may be the gonococcus, but additional tests with a known gonococcus antigen have shown positive results with higher dilutions of serum, indicating that the urine diplococcus is not the gonococcus, but has yielded a group reaction analogous to the agglutination reactions.

The report states that there was no growth on some of the plain mediums, while in others the growth was very scanty. The one outstanding point in favor of the organism's being *Micrococcus catarrhalis* is that it did not ferment sugars. However, it would have been difficult to come to any definite conclusion without the aid of the complement fixation and the agglutination tests.

MODE OF INFECTION

We know that the kidney and its pelvis may become infected through the blood stream, through the lymph supply, or by extension of suppuration from neighboring structures, and ascending infection or infection by continuity. Bacteria may pass from the infected blood stream through the normal kidney without producing disease if these bacteria are few in number and of the less virulent type. But if there exists a defect in the kidney itself, or one resulting in the stagnation of urine in the kidney pelvis, an infection is likely to follow. In this case we cannot prove the predisposing cause, but it must exist, as *Micrococcus catarrhalis* is usually but not always an organism of low virulence. The route of infection was in all probability by the blood stream. The type of infection of the lower genito-urinary tract would lead us to believe that in this case we are dealing with two entirely different infections, although existing simultaneously.

CONCLUSIONS

1. In morphology, the gonococcus and *Micrococcus catarrhalis* are practically identical. No one can safely differentiate them by morphology and staining.

2. The case reported in this paper shows how easily this infection of the kidney could have been mistaken for gonorrhea, had not a very careful bacteriologic study been made.

3. It is not possible in all cases of gonococcal infection of the kidney to make a diagnosis from cultural characteristics alone.

121 South Illinois Avenue.

Why the Ectoplasm Failed to Materialize.—Among the papers left by the late Professor Rénon of Paris was a description of his investigation of a celebrated medium of ectoplasm fame. The sitting was in a private house, and Rénon took newly bought garments for the medium to wear, had all the furniture except the chairs removed from the room, and sealed the openings. Then he examined the medium's mouth, nose and rectum, and had him put on the new clothing. The medium offered the guests a drink from a bottle he had brought with him, but Rénon protested against any drinking. Rénon's paper is published in full in the *Echo médical du Nord*. Strange to relate, the séance was a failure. No materialization of any kind occurred, no ectoplasm appeared.

EFFICACY OF ANTIVARIOLAR VACCINATION IN THE PHILIPPINES DURING 1921 AND 1922

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Heiser and Leach,[1] in their article entitled "Vaccination in the Philippines Still Effective," presented a summarized study regarding the possible causation of the outbreak of smallpox in 1918, and of the casualties of the disease up to 1920. In the same article, some of the many difficulties encountered in the way of vaccination were pointed out. In the present paper I shall attempt to supplement what was said on the immunizing value of antivariolar vaccination, as observed in the last two years.

For the purpose of this study, an analysis of all available statistics, on the morbidity and the mortality of smallpox and on the results of vaccination during 1921 and 1922, has been made.

MORBIDITY AND MORTALITY RATES IN GENERAL

In Manila, where there had been preformed every year higher proportions of successful vaccinations, smallpox completely disappeared in 1921 and 1922; the last five cases, with three deaths, occurred in 1920. In the provinces and in Mindanao and Sulu, the disease could be controlled to its possible minimum, there being a total morbidity and mortality rates, per 10,000 population, of 1.58 and 0.73, respectively, in 1921.

TABLE 1.—*Morbidity and Mortality Rates* per Ten Thousand Population as Compared with the Percentage of Population Immunized† During 1921*

Division	Morbidity Rate	Mortality Rate	Percentage of Immunized Population in 1921
Manila	0	0	30.22
The provinces	0.45	0.14	17.06
Mindanao and Sulu	18.76	9.67	14.78
Average	1.58	0.73	17.31

* Rates based on population of each division.
† Those estimated with + "takes."

It is noteworthy that, in places where the percentage of immunized population was the highest, the morbidity and mortality rates have been the lowest, and conversely—in other words, in Mindanao and Sulu, where there have been more numerous obstacles to successful vaccination; hence, the estimated percentage of immunity being only 14.78 per cent., the morbidity and mortality rates had been during the year relatively more exuberant: 18.76 and 9.57, respectively.

Up to the time this paper was written, the returns of 1922, from five provinces under the Division of Provincial Sanitation, show 126 cases with twelve deaths from smallpox and, from one province under the Division of Mindanao and Sulu, fourteen cases with seven deaths. The morbidity and mortality rates per 10,000 population for the former were approximately 0.13 and 0.01, and for the latter 0.12 and 0.05, respectively. For comparison, such rates in 1920 were 0.17 and 0.10 for Manila, 11.85 and 4.97 for the provinces, and 89.48 and 46.45 for Mindanao and Sulu.

Obviously the disease is gradually disappearing. The vaccination process, systematically conducted every year

1. Heiser, V. G., and Leach, C. N.: Vaccination in the Philippines Still Effective, J. A. M. A. 79: 40 (July 1) 1922.

in all parts of the archipelago, has been the potent factor in this rapid reduction. As a result, 17.31 per cent. of the total population had been immunized in 1921, against 15.87 per cent. in the yearly average of ten years ending 1920.

Failure to obtain a higher percentage of immunized population in 1921 has been due to various causes. In fact, experience has shown that it seems almost impossible to get a 100 per cent. positive "take" in tropical regions, unless an improvement is introduced to prevent the deterioration of the vaccine virus for a considerable length of time in hot weather. On the other hand, among those with negative "takes" there may be some who might have acquired previous immunity, and others in whom the results might have been misinterpreted by untrained sanitarians.

But, as far as the records are concerned, the percentage of positive "takes" during three periods of time may be comparatively expressed as in Table 2.

TABLE 2.—*Percentage of Positive "Takes" on the Vaccinated*

Periods of Time	Manila	The Provinces	Mindanao and Sulu	Total or Average
Aver., 1911 to 1920 inclusive.	52.95	65.02	58.85	64.32
1921	64.49	65.18	59.00	64.80
1922 *	74.22	61.19	52.93	61.02

* Up to November, 1922.

An inference may be drawn that, despite the supposedly low percentages of positive "takes," persistent vaccination of the unvaccinated, and revaccinations of those with negative "takes" every year, would perhaps produce complete immunization in all the islands in six or seven years. In an effort to explain the cause, in part, of the epidemic of 1918, it was stated [2] that at the beginning of the outbreak there were only 45.51 per cent. of the population immunized against the disease. With the present method, therefore, it is hoped that, if the duration of immunity conferred by successful vaccination is usually ten years, the time may not be reached for the expiration of immunity of the first batch that was vaccinated six or seven years ago.

SPECIFIC MORBIDITY AND MORTALITY RATES

The percentage distribution of the cases of smallpox that occurred in 1921 is given in Table 3.

In 1920, the disease occurred in twenty-seven out of thirty-eight provinces under the Division of Provincial Sanitation, and in seven out of nine provinces under that of Mindanao and Sulu. In 1921, it occurred in twelve provinces under the former and four under the latter. In terms of the "protected" and "unprotected" population of the infected provinces during 1921, the morbidity rates of the vaccinated and unvaccinated persons, per 10,000 of each of the former, are likewise expressed, in Table 4.

TABLE 3.—*Incidence in Percentage of the Vaccinated and Unvaccinated in 1921*

Specification	Manila (None)	The Provinces (No., 302*)	Mindanao and Sulu (No., 1,160)	Total (No., 1,462*)
Vaccinated †	0	18.87	0.69	4.44
Unvaccinated	0	81.13	99.31	95.56

* Excluding the sixteen unclassified cases from the province of Camarines Sur and unreported ones from Mindoro.
† Only those with positive "takes."

2. Council of Hygiene: Report on Smallpox and Vaccination in the Philippines, submitted to the Director of Health, Jan. 19, 1923.

This great discrepancy between the rate of the vaccinated cases and that of the unvaccinated, 0.40 and 6.04, respectively, clearly shows the protective value of vaccination against the disease. In similar manner, it can be shown that the mortality rates among the vaccinated is much lower than that among the unvaccinated.

As might be expected, 61.03 per cent. out of 1,478 cases occurred among the young population, against 38.97 per cent. among the adults (Table 5).

Further analysis similarly shows that the specific morbidity rate among children was relatively greater than that among adults (Table 6).

The relation of the morbidity rates and the percentages of immunized population in 1921 among the adults does not seem to follow that among the young. But, although vaccinations and positive "takes" in Mindanao and Sulu had been comparatively more frequent among the adults—the successful vaccination being in the proportion of 75.77 per cent.—yet, only 0.69 per cent. of the 1,160 cases that occurred in that division were among the successfully vaccinated. Moreover, the specific morbidity rate of unvaccinated cases, per 10,000 of unsuccessfully vaccinated population in the infected localities of Mindanao and Sulu, had been relatively excessive, it being 42.94, against 1.40 of those with positive "takes."

On the other hand, it is surprising to note that such rates in the provinces under the Division of Provincial Sanitation were 0.93 for the vaccinated and 0.82 for the unvaccinated. But the statistical figures indicate that in the infected provinces under this division in which 65.09 per cent. of the cases occurred in children, only 38.18 per cent. of the vaccinations with positive results were among the latter. The large remaining number of susceptible young "unprotected" population became affected more severely, which might perhaps have enhanced the endemic curve among the vaccinated. In

TABLE 4.—*Specific Morbidity Rates in Immunized and Nonimmunized Cases, per Ten Thousand of Vaccinated and Unvaccinated Population, in 1921*

Population	The Provinces	Mindanao and Sulu	Total or Average*
Immunized	0.37	0.88	0.40
Nonimmunized	1.18	49.22	6.04
Total or average	0.84	35.64	3.72

* Excluding the immunized and nonimmunized population of Manila.

TABLE 5.—*Percentage of Cases in 1921 by Age Groups*

Age Group	Manila (None)	The Provinces (No., 318*)	Mindanao and Sulu (No., 1,160)	Total or Average (No., 1,478*)
Children	0	65.09	59.91	61.03
Adults	0	34.91	40.09	38.97

* Excluding unreported cases from the province of Mindoro. There had been altogether 399 cases under the Division of Provincial Sanitation instead of 318.

TABLE 6.—*Specific Morbidity Rates per Ten Thousand of Children and Adults, Respectively, as Compared with the Specific Percentage of Immunized Inhabitants in Each of the Two Groups, During 1921*

Division	Children		Adults	
	Morbidity Rate	Per Cent. of Immunized Population	Morbidity Rate	Per Cent. of Immunized Population
The provinces	0.71	24.26	0.18	13.58
Mindanao and Sulu	35.86	11.07	10.95	16.47

other words, the virulent strain had presumably increased the chances of infecting some of those with positive "takes" during the year, by overcoming the resistance and immunity afforded by vaccination.

This phenomenon had occurred in the provinces of Albay, Capiz, Cebu and Negros Occidental, in which the number of cases among the successfully vaccinated showed a slight increase over the other infected regions; namely, the provinces of Iloilo, Masbate, Negros Oriental, Pampanga, Romblon and Sorsogon. In the former provinces, a total of 47.47 per cent. of the ninety-nine cases occurred among the vaccinated, while in the latter, 4.93 per cent. out of 203 cases occurred in that group. Again, in the former, the specific morbidity rates for the vaccinated were 1.73 per 10,000 of immunized population, and 0.31 for the unimmunized; while, in the latter, such rates were 0.36 and 1.73, respectively. The mortality rates in the two groups were likewise 0.28 and 0.53 per 10,000 inhabitants of the provinces concerned.

However, it is estimated that in that year, only 14.05 per cent. of the population in the former group, against 19.78 per cent. in the latter, were successfully immunized. The percentage fatalities (per hundred cases) in both groups were 54.54 and 30.88, respectively. It may, therefore, be possible that perhaps a large number of the smallpox cases that occurred dur-

TABLE 7.—*Specific Morbidity Rates in Infected Provinces of Mindanao and Sulu, as Compared with the Total or Average*

Localities	Vaccinated in 1921 with Positive Results		Not Vaccinated or Unsuccessfully Vaccinated in 1921	
	Population	Morbidity Rate	Population	Morbidity Rate
Mindanao and Sulu.....	57,131	1.40	268,301	42.94
Total or average of the provinces, and Mindanao and Sulu.....	670,035	0.97	3,257,398	4.29

ing 1921 in the first group of infected provinces showed positive vaccination scars in which the immunity had already waned, owing to the length of time that had elapsed. Moreover, the determination of positive "takes" of either recent or old vaccinations has been in certain instances occasionally difficult, especially for untrained sanitary inspectors.

Limiting our studies to six infected and representative provinces, the specific morbidity rates of immunized cases per 10,000 of immune population were high in those in which the percentages of immune population were low, and conversely. This is clearly indicated in Table 8.

Other measures, such as isolation or hospitalization and adequate treatment of the cases, and disinfection of the premises, had to some extent modified the incidence of the unvaccinated among the "unprotected" population in the infected localities.

The necessity of immunizing the young population in the provinces, as is being done more vigorously in Manila, may be shown by Table 9, in which it is observed tha in provinces where there is relatively a greater proportion of children, the specific morbidity rates among them were generally greater.

It may be surprising to note that in the province of Romblon, in which the percentage of immunized population in 1921 had been high (27.63 per cent.), the specific morbidity rates in children and adults were likewise high; but it should be recalled that this province had contributed the largest number of cases (ninety-four), all of which were in unvaccinated persons. Moreover, it had the largest total morbidity and mortality rates among the infected provinces; 14.15 and 5.72 per 10,000 population, respectively. On the other hand, in the province of Sorsogon, in which more than half of the total population (55.48 per cent.) was success-

TABLE 8.—*Specific Morbidity Rates per Ten Thousand Immune and Nonimmune Population, Respectively, as Compared with the Percentage of Immune on the Total Inhabitants of Each Province Concerned, During 1921*

Provinces	Morbidity Rates		Percentage of Immunized Population
	Immunized	Nonimmunized	
Albay.....	2.21	0.21	13.49
Capiz.....	3.67	1.14	13.01
Masbate.....	6.26	3.33	4.49
Oriental Negros.....	1.63	2.70	17.06
Romblon.....	0	19.55	27.63
Sorsogon.....	0	0.48	55.48
Total or average.....	1.32	2.37	20.80

fully vaccinated in 1921, and incidentally an equal proportion was of the young population, the specific morbidity rate was only 0.67 per 10,000 of the latter, and no case occurred among the adults.

As has been previously pointed out, the incidence of smallpox during 1922 has been epidemiologically negligible; and the relation of the disease to successful vaccination anywhere in the islands is practically the same; namely, that generalized and systematic vaccination with positive result renders relative immunity to the public, as well as to the individual against smallpox infection, diminishes the case fatality, and, in terms of population, lessens the mortality rate.

CONCLUSION

1. Interpreting the foregoing statistical results, it is firmly believed that protection of the public is afforded by systematic and successful antivariolar vaccination. There are no other factors to which the eradication of smallpox in Manila and the rapid reduction of the morbidity and mortality rates in the provinces during 1921 and 1922 may be chiefly ascribed.

2. Failure to get a higher percentage of positive "takes" than 70 has been due, in large measure, to the inability of maintaining the potency of the vaccine virus, now employed, under tropical conditions. But this can-

TABLE 9.—*Percentage of Children and Adult Population, and Specific Morbidity Rates (per Ten Thousand) Among Them, in 1921*

Provinces	Percentage of Population		Morbidity Rate	
	Children	Adult	Children	Adult
Albay.....	33.51	66.49	0.27	0.58
Capiz.....	34.82	65.17	2.45	0.94
Romblon.....	33.96	66.04	34.12	3.87
Sorsogon.....	55.48	44.52	0.67	0
Total or average....	33.59	66.41	3.68	0.82

not oblige the Philippine Health Service to lay aside the hope that, with persistent efforts in vaccinating and revaccinating yearly the susceptible and the non-immunes, the time will come when the public in general will be completely immunized to withstand subsequent epidemics. It is roughly estimated that this may be attained every six or seven years, if the present system is continually kept up. Moreover, our sanitary inspectors (vaccinating parties) are now becoming more

trained and experienced in the appreciation of positive "takes" and in the technic of the vaccination process.

3. In general, the specific morbidity and mortality rates of smallpox among the vaccinated have been the lowest in infected provinces in which the percentages of immunized population have been the highest, and conversely. On the other hand, all things being equal, the specific rates of the unvaccinated have been high in infected localities in which the percentages of immunized population have been low, and conversely also. Rare exceptions to this were due to the large number of susceptible children who became subsequently attacked with a more virulent strain that could not be overcome by the vaccination immunity, and those who, because of religious and various other causes, escaped vaccination.

4. On the whole, 61 per cent. of the cases during 1921 occurred among children, a great proportion of which were never vaccinated, or were unsuccessfully vaccinated. The problem, therefore, fundamentally centralized in the compulsory vaccination of children, such as is now being practiced to include infants of even 1 month old or under. And it is hoped that with subsequent modification of the vaccine virus to resist deterioration in hot weather, the actual endemic occurrence of the disease, in certain sections of the islands, will be completely done away with.

FATAL HEMORRHAGE FROM ERODED ARTERIA CYSTICA OF THE GALLBLADDER *

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Two acute dangers threaten the life of persons suffering from chronic peptic ulcer: the perforation of the ulcer into the peritoneal cavity, and fatal hemorrhage from eroded blood vessels. Fatal hemorrhages are comparatively rare events in chronic gastric ulcers. Da Costa [1] reports that only 3 to 8 per cent. of persons actually die of hemorrhage. The spread of an ulcer sometimes, though not as often as it is generally considered, causes obstruction of the blood vessels in its base by inflammatory changes in the vessel walls and by thrombosis. In this way larger hemorrhages may be prevented. But, on the other hand, the contractibility of a blood vessel embedded in the firm, cicatrized tissue of the ulcer may be impaired and so increase the possibility of abundant bleeding from smaller vessels.

My own experience is based on fifty-five cases in which the patients have died from peptic ulcer of the stomach or duodenum. In 41 per cent. of the cases perforation, and in 20 per cent., fatal hemorrhage had occurred.

Sometimes a large hemorrhage of the stomach is produced by the existence of a great many erosions of the mucous membrane, without the opening of a larger blood vessel. In most of the cases, however, a gaping vessel of larger or smaller caliber can be noted in the floor of a peptic ulcer. These eroded blood vessels are in the majority of cases arteries, especially branches of the coronary arteries of the stomach, of the gastroepiploic arteries, or the arteria gastroduodenalis or lienalis. Kaufmann,[2] and Finsterer and Glaessner [3] reported cases in which the ulcer had involved the spleen and led to an erosion of a branch of the lienal artery. Noelle [4] and Morrison [5] observed cases with fatal hemorrhages from the eroded liver. Merkel,[6] in a case of chronic gastric ulcer with abundant hemorrhage, recognized the bleeding blood vessel as the left vena renalis.

A very uncommon and interesting cause of fatal hemorrhage from a chronic gastric ulcer was noted in a necropsy which I performed recently at the request of the attending physician, Dr. Siebel.

A woman, aged about 70, well nourished, died suddenly after she had vomited large masses of blood. At necropsy, the skin was yellowish white; the mucous membranes were very pale. There were only a few livid patches. The lower extremities showed rigor mortis. The peritoneal cavity contained about 1 liter (quart) of dark red fluid blood. The intestine was distended. Dark red masses filled its lumen, as seen through its wall. The lesser curvature and the adjacent part of the anterior wall of the stomach above the pylorus were covered by, and fixed to, the lower edge of the right lobe of the liver and to the gallbladder. This connection was interrupted on the right and upper side in the region of the gallbladder. A round hole with a diameter of about 1 cm. gaped here. Clots of coagulated blood partly closed this hole. When the stomach was opened, two ulcers were seen just above the pylorus. One of them was located on the posterior surface. It was oval in a diagonal direction, and its diameter amounted to from 1.5 to 2.25 cm. Its shelving edges were indurated, and its floor was formed by the pancreas. The other ulcer involved the lesser curvature and a considerable part of the anterior wall. It was round, with a diameter of 2 cm., and it entirely penetrated the wall of the stomach. Its base consisted, in the lower part, of liver tissue deprived of the capsule and ulcerated; in the upper part, of the gallbladder. The wall of the gallbladder was there changed into a blood-stained ulcer, in the center of which gaped the lumen of an eroded artery. This proved to be the arteria cystica, a branch of the arteria hepatica. The liver was very pale yellowish brown, and firm. The ulcer on its lower edge was oval and smooth, with an almost black vascular injection. The gallbladder contained dark green bile; its mucosa showed no changes.

In the anatomic diagnosis may be noted: fatal hemorrhage from the eroded cystic artery of the gallbladder, the erosion being due to a peptic ulcer of the stomach, that had eroded the gallbladder and the right lower edge of the liver; chronic peptic ulcer of the posterior wall of the stomach; anemia of the organs; emphysema pulmonum; dilatation of the left ventricle of the heart, and a few small sclerotic plaques in the coronary arteries.

* From the Department of Pathology, University of Illinois College of Medicine, and the Uihlein Memorial Laboratory of the Grant Hospital.

1. Da Costa, J. C.: Modern Surgery, 1920, p. 1096.
2. Kaufmann: Spezielle pathologische Anatomie **1**, 1912.
3. Finsterer and Glaessner: Mitt. a. d. Grenzgeb. d. Med. u. Chir. **27**: 1, 1913.
4. Noelle: Inaug. Diss., Greifswald, 1899.
5. Morrison, Rutherford: Stomach, in Treatise on Regional Surgery **2**: 59.
6. Merkel: Virchows Arch. f. path. Anat. **173**: 1, 1903.

The Neanderthal Man.—The most famous of the skeletal remains representing men of the old Stone Age, when surgery had its first recorded existence, are portions of a skeleton of an extinct species of man found in a cave in the valley of the Neander River, in the Rhine province of Prussia; hence the individual is known as the Neanderthal man. The proximal end of the left ulna had evidently been fractured, since there is a marked widening of the articular fossa. The left humerus also shows signs of injury, in consequence of which it doubtless remained much weaker than the right bone. Virchow thought the condition of the bones of this ancient man indicated rickets, but Schwalbe restudied the question and decided that there was no evidence of malnutrition, and his conclusions are widely accepted.—Moodie: The Antiquity of Disease, University of Chicago Press, 1923.

EXPERIMENTAL STUDIES WITH MERCURIALS IN EXPERIMENTAL SYPHILIS

WITH A BRIEF NOTE ON THEIR CLINICAL APPLICATION, ESPECIALLY AS TO FLUMERIN

JUSTINA H. HILL, M.S.
AND
HUGH H. YOUNG, M.D.
BALTIMORE

PREAMBLE, BY HUGH H. YOUNG

Clinicians generally acknowledge the supremacy of the arsphenamins in the treatment of syphilis, but, at the same time, from every branch of medicine comes the complaint of uncured cases or persistent Wassermann reactions after supposedly thorough courses of treatment. It has been more and more evident that some form of mercury is generally required to effect a cure; but there is little agreement as to which preparation is the best.

I was greatly struck with this fact when commissioned to formulate routine methods of treatment for syphilis in the American Expeditionary Forces. Thorough investigations of the methods employed, particularly in the armies of our allies, showed a general agreement that neo-arsphenamin was the most practical drug for the initial treatment, and that some form of mercury should also be used; but here the agreement ceased. The British relied mostly on intramuscular injections of mercurial oil (gray oil) or mercurial cream, while the French and Italians employed either mercuric cyanid intravenously or mercuric benzoate or red mercuric iodid intramuscularly. In America, mercuric salicylate intramuscularly, or mercurial inunctions had apparently the preference, though mercuric chlorid, red mercuric iodid, yellow mercurous iodid and other forms of mercury, given in various ways, had wide usage.

The army syphilologists of France held that intravenous injections were preferable, as being more prompt and more benign in action; and, as we decided to treat our syphilitic patients with their organizations, and not to hospitalize them, we adopted the routine most commonly employed in the French army, viz., neo-arsphenamin, at first twice and later once a week, with intervening daily intravenous injections of mercuric cyanid. The plan adopted worked admirably. We did not need our hospitals which were sent over for venereal cases, and they were turned over to the wounded and sick, while the treatment of the syphilitic soldier was carried out while he was with his organization, on a duty status. This plan not only made it possible to continue the treatment longer and to give several courses in a year, but also had an excellent effect from the standpoint of morale, by keeping the soldier at the front.

Cursory observations made during the course of the war as to the results of the methods employed convinced me that there was great need for further experimentation, both laboratory and clinical, as to the treatment of syphilis—particularly to determine more satisfactory and sure methods in the use of mercury. When, therefore, in our clinical study of antiseptic mercurials which had been prepared by E. C. White in the chemical laboratory of the Brady Urological Institute, a salt of very low toxicity, which did not coagulate albumin and could be repeatedly injected intravenously was discovered, a series of animal experiments was determined on and carried out by J. H. Hill to see whether it had definite antisyphilitic value.

TABLE 1.—*Experiments with Flumerin* *

Rabbit	Pretreatment Period	Treatment Period	Posttreatment Period	Node Transfer
181	Left testicle and epididymis indurated throughout; small lesion left scrotum; large nodule right testicle	Resolution, beginning after second dose, was complete by day of sixth dose	Held without further lesions 78 days after last dose, when node transfer was made	Negative, 90 days
182	Left testicle enlarged and indurated; nodular lesions right testicle; scrotal lesion left side	Resolution of all lesions began after second dose; right testicle normal after 3 doses; resolution of other lesions complete by fifteenth dose	Held without further lesions 78 days after last dose, when node transfer was made	Negative, 90 days
179	Testicular lesion left side excised and 9 positive transfers made; nodular lesion right testicle	Resolution, beginning after second dose, was complete on day of fourth dose	Held without further lesions until forty-fifth day after last dose, when right scrotal lesion developed, from which organisms were found by dark field	

* Fifteen doses of 5 mg. per kilogram given intravenously, six weekly, beginning the forty-ninth day after inoculation. Series selected because it parallels series treated with other mercurials.

TABLE 2.—*Experiments with Mercuric Cyanid* *

Rabbit	Pretreatment Period	Treatment Period and Posttreatment Period
202	Large nodular lesions of left testicle, 4 nodules left scrotum	Left testicle became normal by fifth dose, the scrotal nodules also resolving, with the exception of one, which at time of the thirteenth dose became worse, simultaneously with the appearance of a nodule in the left epididymis, 1 cm. in diameter; the lesion of the epididymis resolved rapidly, and was gone by the twenty-first dose; the scrotal lesion persisted, grew worse after the last dose, and 6 days after the last dose, organisms were found in it by dark field
203	Left testicle excised and 5 positive transfers made; no further lesions	Treated in latent stage, with no lesions at any time during treatment; 35 days after the last dose, a nodule appeared in the right testicle from which organisms were found by dark field
212	Right testicle and epididymis indurated throughout; scrotal lesion right side	Resolution of testicular lesion began at ninth dose, was complete by sixteenth dose; resolution of lesion of epididymis began after the thirteenth dose, and was complete by the nineteenth dose; the scrotal lesion after growing worse at the time of the sixth dose, was completely resolved 6 days after the last dose; the testicle was atrophied; held without further lesions until fifty-seventh day after last dose, when node transfer was made, which was positive in 56 days
198	Left testicle indurated throughout, nodule right testicle; lesion left scrotum	Lesions grew worse, a second scrotal lesion developing on the left side the day of the sixth dose; lesions continued to grow worse, until on the day of the fifteenth dose, excision of the lesions of the left side was necessary, actively motile organisms being found in this material; nodules developed in the right epididymis the day of the eighteenth dose; resolution on the testicular lesion on the right side began the day of the twentieth dose, and was complete 5 days after the last dose; the nodules in the right epididymis persisted 57 days after treatment, organisms being found by dark field the fifty-seventh day after treatment

* Rabbits given twenty-one doses of 0.2 mg. per kilogram of mercuric cyanid intravenously, six weekly, beginning the forty-ninth day after inoculation.

These studies with the new drug in rabbit syphilis showed such remarkable curative power that its usage in human syphilis was begun in cases in the Brady Urological Institute, the Johns Hopkins Hospital Department of Syphilis, and at the Walter Reed General Army Hospital. The results of some of this work were presented in a previous paper.[1] Additional experience has shown the great value of the new mercurial, flumerin; but before proceeding further it seemed wise to apply the same methods of study of rabbit syphilis which had so effectively shown the spirocheticidal value of flumerin to other mercurials now in common usage, which, strange to say, had never been done. The first drug selected was mercuric cyanid, which is widely used in intravenous injections, 1 c.c. of a 1 per cent. solution daily being the usual dosage. The amount used in our rabbits corresponded to this dose.

Other drugs commonly used in America are mercuric salicylate and red mercuric iodid intramuscularly, and it was thought wise to subject them to the same experimental tests so as to be able to compare all three with the results obtained with flumerin in rabbits infected with *Spirochaeta pallida*.

In the following brief report of her very valuable series of experiments, Miss Hill has not only accurately recorded the results, including the measurements of the lesions from day to day, but, after holding the animals for prolonged periods, has tested out the permanence of the supposed cure by inoculation of the lymph nodes into other rabbits. Never before have mercurials been subjected to such exacting methods, and when her complete report is published, a most noteworthy contribution to syphilology will be presented.

TABLE 3.—*Experiments with Mercuric Salicylate* *

Rabbit	Pretreatment Period	Treatment Period
192	Entire right testicle enlarged and indurated, small scrotal lesion on right side	No resolution of lesions, which grew worse, a second scrotal lesion on the right side appearing after the fifth dose, simultaneously with the appearance of induration of left testicle; 2 lesions appeared on left scrotum after sixth dose; all lesions grew worse, until, after tenth dose, excision of lesions on right side was necessary, a small number of organisms being found by dark field in this emulsion; one scrotal lesion on left side then resolved, the other persisting
204	Large lesion left testicle, scrotal lesion forming left side	Lesions grew worse on left side, a lesion appearing in right testicle at third dose; lesions grew worse, until, after fifth dose, excision of lesions on left side became necessary and organisms were found in them by dark field; a nodule appeared in the right epididymis after the sixth dose, the right testicular lesion resolving; this nodule began to resolve after the eighth dose, and was entirely gone 8 days after the twelfth dose; a nodule appeared in the right testicle 46 days after the last dose
205	Large lesion throughout left testicle	No change in lesion until after fourth dose, when it became worse, a scrotal lesion developing on the left side at the sixth dose; this grew worse, breaking down the day of the eighth dose, when it was excised
211	Left testicle excised and 6 positive transfers made; right testicle indurated before treatment	Lesion remained the same until after the second dose, when it grew worse, a scrotal lesion developing then; resolution of the testicular lesion began after the fifth dose and was complete in 8 days, resolution of the right scrotal lesion beginning at the time of the seventh dose, complete after the tenth dose

* Rabbits given twelve doses of 0.6⅝ mg. per kilogram of mercuric salicylate intramuscularly, at weekly intervals, beginning the forty-ninth day after inoculation.

TABLE 4.—*Experiments with Red Mercuric Iodid* *

Rabbit	Pretreatment Period	Treatment Period
213	Right testicle and epididymis greatly enlarged and indurated	No change in lesions until twelfth dose, when scrotal lesion apeared on right side, followed by second scrotal day of twenty-first dose; the lesions of the testicle and epididymis resolved between the twenty-first and twenty-fifth doses; at end of treatment there remained 2 scrotal lesions, 1 being 2 by 1.5 cm., the other 0.25 cm. in diameter; these gradually resolved, until no macroscopic lesions could be observed the twenty-fourth day after the last dose
215	Right testicle and epididymis indurated, 2 scrotal lesions on right side	Lesions worse until after fifth dose, when marked improvement was noted, resolution continuing, scrotal lesion being healed by twenty-first dose, the other by twenty-fifth dose, when the testicular lesion was also completely resolved; a 0.5 cm. nodule persisted in the right epididymis after treatment, until 2 weeks after the last dose, when resolution was complete
222	Part of lesion in right side excised, leaving right side enlarged and indurated throughout	Operative wound healed rapidly during treatment, the induration being gone by the fifteenth dose; held for observation and transfer
207	Well-developed 1.5 cm. lesion of right scrotum	Lesion remained unchanged until eighteenth dose, when scrotal lesion began to resolve, being completely healed by the twenty-first dose; a well-defined nodule appeared in the left testicle at the tenth dose, which had resolved by the twenty-second dose

* Rabbits given twenty-five doses of red mercuric iodid, six doses weekly, beginning about the fiftieth day after inoculation.

TABLE 5.—*Summary of Treatment of Fifty Cases with Flumerin*

Stage of Syphilis	Number of Cases	Lesions Healed	Average No. of Days to Heal Lesions	Serologic Result (Blood) Good	Serologic Result (Blood) Poor	Average No. of Doses to Reduce Wassermann
Primary.....	5	4	22	4	1	3 remained 0 1 case, 12 doses
Secondary.....	21	21 Relapse in 1 case	19	11	10	8
Tertiary.....	24	19 Improved in 5 cases	25	9	15	10

GASTRO-INTESTINAL REACTIONS FROM FLUMERIN

Total Doses Given	Number of Injections Followed by: Immediate Nausea or Vomiting, Mild	Immediate Nausea or Vomiting, Severe	Immediate Nausea or Vomiting, Cramps	Diarrhea, Mild	Diarrhea, Bloody
945.....	22 (2.3%)	19 (2.01%)	7 (0.7%)	10 (1.0%)	8 (0.9%)
	41 (4.3%)				

REACTIONS FROM FLUMERIN

Total Patients	Stomatitis: Total Cases	Stomatitis: Mild	Stomatitis: Severe
96	36 (37.5%)	30	6 (6.2%)

	Urine Examinations: No Change	Existing Abnormalities Cleared up Under Flumerin	Transient Albuminuria or Casts During Treatment
77	50	10 (12.9%)	17 (22%)

	Phenolsulphonephthalein Output: No Change	Increased Plus 10 or More	Decreased Minus or More
61	36	16 (26.2%)	9 (14.7%)

EXPERIMENTAL WORK, BY JUSTINA H. HILL

At the time that the preliminary report[1] of our study of the action of flumerin on rabbit syphilis was made, there were no studies by the same method of the action of other mercurials, so that, while the marked antisyphilitic action of flumerin was demonstrated, it was not known whether this was greater or less than the action of the mercurials commonly used. Since then, syphilitic rabbits have been given the equivalent of the clinical course of treatment with mercuric cyanid, mercuric salicylate and red mercuric iodid. Although

1. White, E. C.; Hill, J. H.; Moore, J. E., and Young, H. H.: Flumerin: A New Mercurial for the Intravenous Treatment of Syphilis, J. A. M. A. **79**: 887 (Sept. 9) 1922.

some of these experiments are incomplete, enough indication of the action of these drugs has been obtained to make a preliminary report of some value.

METHOD

Two ways are available for carrying *Spirochaeta pallida* infections in rabbits, with the initial lesion in the testicle or scrotum, methods developed by Brown and Pearce. By the first,[2] a rabbit with a progressing testicular or scrotal lesion is placed under ether anesthesia and the lesion excised with aseptic precautions. This material is placed in a mortar with a few cubic centimeters of physiologic sodium chlorid solution, minced with scissors and emulsified by grinding. If dark field examination shows the presence of organisms, the material is suitable for inoculation. This is done by injecting not more than 0.5 c.c. into the testicle or scrotum or both of normal rabbits. Unilateral inoculations are preferable, as the uninoculated side serves as a control at first. By the second method,[3] the popliteal nodes of untreated syphilitic rabbits, which may or may not show lesions at the time of transfer, are excised, emulsified and injected as by the first method. Dark field examination of such material seldom shows organisms, although such transfers regularly produce the infection. The first method has been used in general in these experiments because more material is available for the inoculation of a number of animals from the same emulsion. The strain of organism used has been the Nichols[4] strain, first isolated in 1912, and since carried in rabbits, an animal with a testicular infection with this organism having been given us through the kindness of Dr. Wade Brown. No *Treponema cuniculi* infections have been found.

Lesions at the site of inoculation develop from fourteen to thirty days after inoculation. Treatment may be started any time after the appearance of lesions, but most of these experiments have been done with fully developed lesions; that is, treatment has been started about the fiftieth day after inoculation. After treatment, animals in which lesions have resolved are held for observation, usually for about fifty days. If no relapse occurs during this time, popliteal node transfers are then made, the greatest care being taken not to overdilute the emulsion, the entire available fluid part of which is injected into the testicles of one rabbit. If this transfer animal remains without a lesion during ninety days of observation, it is concluded that the antisyphilitic action of the drug tested has been sufficient to drive the organisms from the popliteal nodes of the treated animal, from which Pearce and Brown[5] have shown that they may be recovered regularly from untreated rabbits. A positive node transfer indicates subcurative action.

The method is of great value, because it allows the study of the action of drugs in latent syphilis, when the animal treated is without lesions, but from which a positive node-transfer may be obtained if subcurative treatment has been given, a marked advantage over earlier methods, which were limited to the observation of local lesions.

FLUMERIN

The experiments summarized in the first paper showed that flumerin has marked antisyphilitic action, if given either in large single doses or in repeated doses of 5 mg. or more per kilogram. When the tolerated single dose of 30 mg. per kilogram was given, in three out of four cases, node transfer was negative, in the fourth, positive. All of these animals showed transitory albuminuria the day after treatment, which disappeared in three days. All lesions were resolved within five days. With the smaller single dose of 20 mg. per kilogram given four rabbits, the maximum number of days required for the resolution of lesions was eleven, and in only one case was the node transfer negative. One animal showed a transitory albuminuria.



Fig. 1 (Rabbit 212).—Appearance of lesions before treatment: left side, normal; right side, testicular and scrotal lesions.



Fig. 2 (Rabbit 212).—After seven doses of mercuric cyanid: lesions on right side larger.

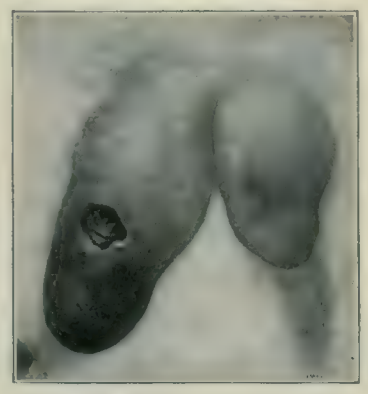


Fig. 3 (Rabbit 212).—After fourteen doses of mercuric cyanid: resolution in progress.

Five animals were given from four to eight doses of 10 mg. per kilogram on alternate days. In no case was there any albuminuria. There was complete resolution of lesions in every case. In the two cases in which node transfers were made, they were negative.

Our chief interest has centered on the action of repeated doses of 5 mg. per kilogram, as this seems to be a dose which can be used clinically and which has shown marked action in rabbits. In the first series of five animals so treated, two of which showed a transitory albuminuria, resolution of lesions was prompt invariably, and node transfers were negative in every case. A second series of three animals, given fifteen daily doses of 5 mg. per kilogram, is described in Table 2, as these animals have been treated under conditions

2. Brown, W. H., and Pearce, Louise: Experimental Syphilis in the Rabbit, I, Primary Infection in the Testicle, J. Exper. Med. **31**: 475 (April) 1920.

3. Brown, W. H. and Pearce, Louise: Latent Infections with the Demonstration of Spirochaeta Pallida in Lymphoid Tissues of the Rabbit, Am. J. Syph. **5**: 1 (Jan.) 1921.

4. Nichols, H. J., and Hough, W. H.: Demonstration of Spirochaeta Pallida in the Cerebrospinal Fluid, J. A. M. A. **60**: 108 (Jan. 11) 1913.

5. Pearce, Louise, and Brown, W. D.: A Study of the Relation of Treponema Pallidum to Lymphoid Tissues in Experimental Syphilis, J. Exper. Med. **35**: 39 (Jan.) 1922.

as parallel as possible to those under which other mercurials have been given. Node transfers from two of these animals were negative; in the third case there was a relapse. With a total of eight rabbits, therefore, given repeated doses of 5 mg. per kilogram, in every case resolution of lesions has been rapid; in seven node transfers were negative, and in one case there was a relapse.

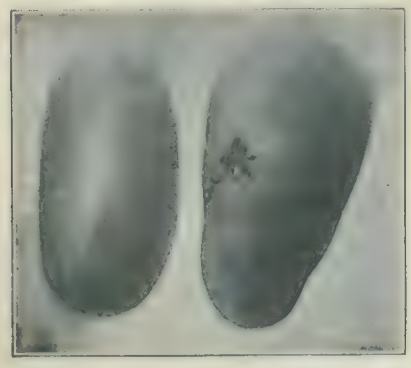


Fig. 4 (Rabbit 204).—Appearance before treatment: left testis indurated; scrotal lesion forming on left side.

No further experiments have been done with repeated doses of 3 mg. per kilogram, which was shown to be subcurative in three out of the four cases tried, only one giving a negative node transfer.

MERCURIC CYANID

The details of the experiments with mercuric cyanid are given in Table 2. The drug was given intravenously, in doses of 0.2 mg. per kilogram, six weekly, with a total of twenty-one injections. The cyanid, as an intravenous mercurial, is the most comparable to flumerin. The important facts shown in Table 3 are these: In one case, Rabbit 203, treated in the latent state, although there were no lesions during treatment, nodules developed thirty-five days after the last dose, from which numerous organisms were found by dark field examination. Two rabbits had lesions which persisted throughout treatment and from which organisms

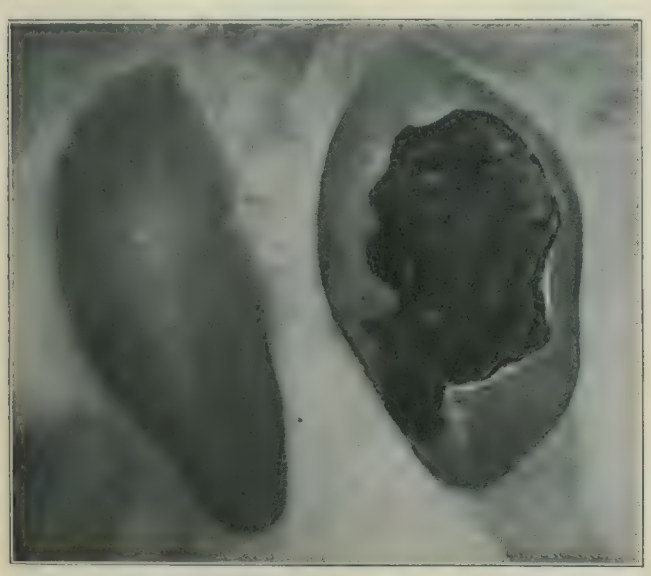


Fig. 5 (Rabbit 204).—Four days after third dose of mercuric salicylate: large lesion on right testis; scrotal lesion on left side worse.

were found after treatment. In one case, Rabbit 198, the scrotal lesion on one side became so much worse during treatment that excision was necessary the day of the fifteenth dose, when organisms were found in the emulsion. In only one case, Rabbit 212, has there been complete resolution of lesions, following the appearance of a new lesion during the first part of the treatment, node transfer from this animal, however, being positive in fifty-six days.

These experiments show that this treatment is subcurative in four cases, and that in the only case in which there was marked therapeutic action the resolution of lesions was so gradual that it would be impossible to distinguish it from the resolution of untreated lesions. Node transfer has been positive from this animal. These experiments parallel the flumerin experiments in method of administration, treatment interval, and in period of infection treated, with the difference that the cyanid series received six more treatments than the flumerin series.

MERCURIC SALICYLATE

Mercuric salicylate was given intramuscularly in oil, in weekly doses of 0.6⅔ mg. per kilogram, with a total of twelve doses (Table 3). The following points may be noted from these animals, which are still under observation: In all four cases the lesions present before treatment grew worse during the first half of the injection period, and new lesions developed, in one case organisms being found by dark field examination after



Fig. 6 (Rabbit 204).—Two days after fifth dose of mercuric salicylate: large lesion on right testis; left scrotal lesion broken down.

the fifth dose, in another, after the tenth dose. As has been shown by Schamberg, Kolmer and Raiziss,[6] the rate of absorption of salicylate is about 1 per cent. a day. The treatment period must include 100 days after the last injection. In our series, the amount of mercury absorbed during the first six weeks of treatment is shown to be insufficient to check the spread of the infection. Some resolution was noted in the latter part of the injection period. These rabbits will be held for fifty days after the treatment period, and node transfers will be made from any then without lesions. One hundred days after the last injection, however, one animal has a scrotal lesion which has persisted throughout treatment, and another a nodular testicular lesion which developed the forty-sixth day after the last injection.

RED MERCURIC IODID

Red mercuric iodid was given intramuscularly, six doses a week, with a total of twenty-five doses. The dosage was increased from an initial injection of 0.1⅓ mg. per kilogram to 0.2⅔ mg. per kilogram, the latter

6. Schamberg, J. F.; Kolmer, J. A., and Raiziss, J. W.: A Study of the Comparative Toxicity of the Various Preparations of Mercury, J. Cutan. Dis. **33**: 787 (Dec.) 1915.

dose being reached by the tenth injection. The details of this series are found in Table 4. This shows that, although in two cases resolution of lesions was incomplete at the end of the injection period, and although resolution began only after at least five doses, resolution has been complete in every case. Only further observation and node transfer can show whether these

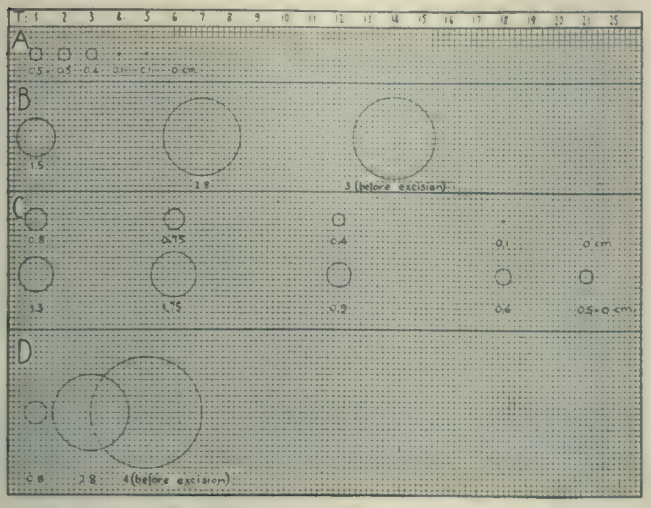


Fig. 7.—Diagram from measurements, showing action of mecurials on scrotal experimental rabbit syphilis: *T*, treatment; *A*, with flumerin, Rabbit 181; *B*, with mercuric cyanid, Rabbit 198; *C*, with red mercuric iodid, Rabbit 215, two lesions; *D*, with mercuric salicylate, Rabbit 204. The measurements are given in centimeters; each small square represents 2 mm.

animals are in a condition of latent syphilis, or whether the disease has been driven from the lymphatics.

SUMMARY

The marked antisyphilitic action of flumerin has been demonstrated further, fifteen doses of 5 mg. per kilogram being employed. The slight action of mercuric cyanid, given in twenty-one doses of 0.2 mg. per kilogram, and the lack of therapeutic action of mercuric salicylate, during the first part of treatment with twelve doses of 0.6⅔ mg. per kilogram, under which all animals grew markedly worse before enough mercury was absorbed to check the infection, have been shown. The slow but complete resolution of lesions under treatment with red mercuric iodid given in twenty-five doses of from 0.1⅓ to 0.2⅔ mg. per kilogram has indicated the antisyphilitic action of this drug, although the permanence of its action has not yet been demonstrated.

COMMENTS, BY HUGH H. YOUNG

Flumerin in repeated doses of 5 mg. per kilogram is shown by the preceding experiments to be of much greater value than mercuric cyanid in repeated doses of 0.2 mg. per kilogram; mercuric salicylate in repeated doses of 0.6⅔ mg. per kilogram, or red mercuric iodid in repeated doses of from 0.1⅔ mg. to 0.2⅔ mg. per kilogram in rabbits infected with *Spirochaeta pallida*. This was to be expected from mercuric cyanid, since we can introduce from six to ten times as much mercury by flumerin intravenously as is possible with mercuric cyanid. The fact that flumerin is so much more effective experimentally than the others which cannot be used intravenously would seem to warrant its extended trial in clinical syphilis. Only by its use in the most exacting clinics over a long period of time will its comparative value in all forms of syphilis be determined.

In our first series of 100 cases, the maximum dose employed in all but twenty-five cases was about 3 mg. per kilogram of body weight; but Miss Hill's experimental work has shown that consistent results could not be expected from less than 5 mg. per kilogram, and in over thirty human cases the facility with which this dosage can be used has been amply demonstrated, and much better results have been obtained than with the smaller dose.

In my own practice I usually employ neo-arsphenamin with intervening daily intravenous injections of flumerin, 5 mg. per kilogram, and have yet to see a serious reaction. The impunity with which the drug may be injected repeatedly into the same vein is of great advantage, as is the feeling of certainty engendered by intravenous administration.

SACROCOCCYGEAL CHORDOMA*

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AND
MARY INGALS, B.S.
CHICAGO

Chordomas are tumors arising from remnants of the notochord. They are reported to occur at the two extremes of the vertebral column; namely, at the base of the skull along the clivus, and opposite the sacrum and coccyx. Luschka,[1] in 1856, recorded the first chordoma arising from the clivus. Virchow,[2] in 1857, made the first complete description, but thought the tissue was essentially cartilage with softening of the cartilage matrix and hydropic degeneration of the cells. In describing these cell changes he introduced the term "ecchondrosis physaliphora." His tumor, also, was located near the spheno-occipital synchondrosis. Müller,[3] in 1858, first suggested that these tumors

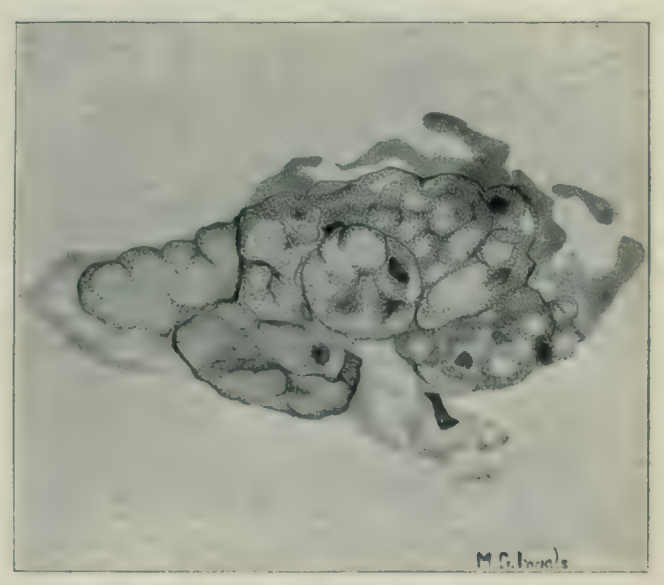


Fig. 1.—High power drawing of "physaliphora cells," illustrating their marked mucoid degeneration.

may be of notochord origin, and that retained fragments of notochord tissue may be demonstrated in the

* From the Pathological Laboratory of St. Luke's Hospital.

1. Luschka, H.: Ueber gallertartige Auswuchse am Clivus Blumenbachii, Virchows Arch. f. path. Anat. **11**: 8-11, 1857.
2. Virchow, Rudolf: Untersuchungen über die Entwickelung des Schadelgrundes, Berlin, 1857.
3. Müller, H.: Ueber das Vorkommen von Resten der Chorda dorsalis bei Menschen nach der Geburt, und über ihr Verhältnis zu den Gallertgeschwulsten der Clivus, Ztschr. f. rationelle Med. **2**: 202-229, 1858.

basilar cartilage and sacrum of man and animals, and that in the fetus the notochord extends to the sella turcica. In the spheno-occipital synchondrosis it persists as a small mass of soft tissue analogous to the nucleus pulposus of the intervertebral disks. This tissue persists here even after birth, although it has disappeared from the neighboring bones and cartilage.

Müller's views concerning the chordoma and its origin were not accepted by Virchow and others at that time, but in 1894 Ribbert [4] confirmed them conclusively. The first sacrococcygeal chordomas of clinical interest in man were reported by Feldmann [5] and Mazzia [6] in 1910, although Hennig,[7] in 1900, had reported a sacral tumor containing notochord tissue in a seven months' fetus. Ribbert asserts that he found notochord tumors of the clivus in 2 per cent. of his

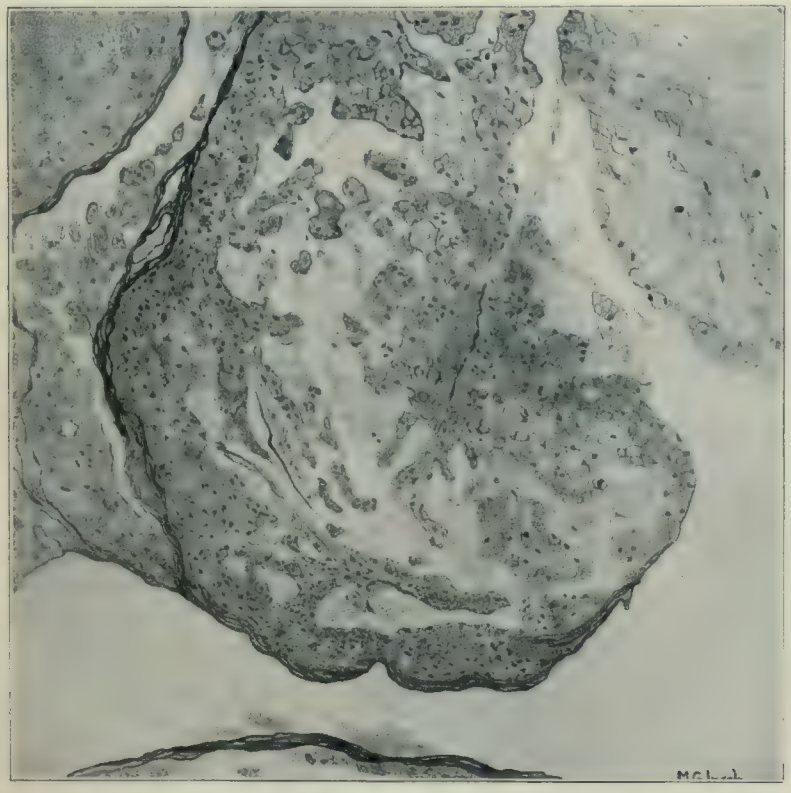


Fig. 2.—Low power drawing illustrating the structure of the chordoma.

necropsies, but no such frequency is mentioned by others. Stewart,[8] in 1922, reviewed the chordomas, recorded in the literature, in which definite clinical symptoms were manifested. His list mentions twenty-six, of which fifteen occurred in the region of the spheno-occipital synchondrosis, nine in the sacrococcygeal region, and two others in aberrant locations. Stewart includes in this list his report of a sacrococcygeal chordoma which recurred and produced metastases. Lemke [9] reports a malignant chordoma of the clivus with destruction of the regional tissues. His review of the literature mentions thirteen of these malignant tumors reported in this location. Another malignant sacrococcygeal tumor is reported by Bérard, Dunet and Peyron.[10]

Many of the early reports of chordomas mention small nodules along the course of the basilar artery, arising from some part of the clivus and usually without symptoms. It seems, then, that these tumors are of low malignancy, grow slowly, and at first are encapsulated. However, they may develop marked invasive properties, and recur after removal. Remote metastases with such malignant forms are uncommon.

The gross appearance of a chordoma, while not always the same, generally resembles colloid carcinoma tissue; that is, the tissue is nodular, the individual nodules being separated by bands of white fibrous tissue, and contain cell masses of varying dimensions, which have undergone mucoid degeneration. In the histologic preparations there are groups of large cells resembling epithelium with clear staining cytoplasm, which at first contain small granules responding to the mucin stains but later become vacuolated (mucin vacuoles) and much larger in size (physaliphora cells). After the escape of mucin, the cells are shrunken and necrotic, and the nuclei form irregular, dark staining masses.

All of the sacrococcygeal chordomas reviewed and reported by Stewart and the one reported by Bérard, Dunet and Peyron are malignant; the one mentioned in this report has not recurred after three years:

A man, aged 54, was admitted to the service of Dr. S. C. Plummer at St. Luke's Hospital complaining of a painless, round, firm mass in the midline of the back opposite the sacrum. It was observed first about eighteen months before, as a tumor about the size of a walnut. Six weeks before admission, the patient noticed that it had grown larger, but there were no symptoms other than pressure and inconvenience in sitting. The tumor, a slightly nodular encapsulated, gray-white tissue, roughly pear-shaped, 9 by 9 by 3.5 cm., attached behind to the sacral vertebrae, was removed under local anesthesia. The surfaces made by sectioning the tumor contained gray-white opaque tissue separated into nodules by septums of fibrous tissue, and were moist with a viscid, mucilaginous liquid.

Histologically the tissue contained vacuolated cells like those mentioned as present in a chordoma (Figs. 1 and 2). Mucin granules in the cytoplasm were demonstrated by the orange G-polychrome methylene blue stain in cells containing small vacuoles. Outside the cells were large, irregular spaces filled with mucin. Septums of fibrous tissue supported these masses of cells.

Sacrococcygeal chondromas, while relatively infrequent, deserve consideration clinically because of their tendency to recur. While practically all reported are malignant, the growth generally remains regional, and remote metastases are infrequent.

4. Ribbert: Ueber die Ecchondrosis physalifora spheno-occipitalis, Centralbl. f. allg. Path. u. Path. Anat. **5**: 457-461, 1894.
5. Feldmann, I.: Chordoma ossis sacri, Beitr. z. path. Anat. u. z. allg. path. (Ziegler's) **48**: 630-634, 1910.
6. Mazzia, O.: Chordom der Sakralin gegend, Centralbl. f. allg. Path. u. path. Anat. **21**: 769-772, 1910.
7. Hennig, L.: Ueber congenitale echte Sacraltumoren, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **28**: 593-619, 1900.
8. Stewart, M. J.: Malignant Sacrococcygeal Chordoma, J. Path. & Bacteriol. **25**: 40-62 (Jan.) 1922.
9. Lemke, R.: Ein Fall von malignem Chordom der Schadelbasis, Virchows Arch. f. path. Anat. **238**: 310-323, 1922.
10. Bérard, Dunet and Peyron: Abstr. Centralbl. f. allg. Path. u. path. Anat. **33**: 194-195, 1922.

Hemoglobinuric Spirochetosis.—At the recent Far Eastern Medical Congress, W. Schueffner and E. P. Snijders reported that spirochetes resembling the spirochete of infectious jaundice were found numerous in all the organs in a fatal case of clinical typical blackwater fever. Noc has reported a similar case since, which confirms the possibility of spirochetosis icterohaemoglobinurica.

SPONTANEOUS RUPTURE OF THE HEART IN A CASE OF ULCERATIVE ENDOCARDITIS *

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Spontaneous rupture of the heart, though a rare occurrence, has many examples in literature. To Harvey is attributed the first observation of a case, and Morgagni himself, who wrote much on the subject, strangely enough succumbed to this unusual accident. George II of England also died from a tear in the wall of the right ventricle. The history of this case is so typical and is so quaint in its wording that I make a short quotation from Dr. Frank Nicholl's [1] report: "About seven o'clock in the morning a noise was somewhere heard, as if a large billet had fallen down, and upon inquiry His Majesty was found fallen down on the ground, speechless and motionless. He appeared to have come from his necessary stool and as if going to his escritoir." An attempt was made to let blood, but the king did not revive. At the necropsy an opening was found in the upper side of the right verticle and about a pint of blood in the pericardium.

PATHOLOGY

It is almost certain, as was maintained by Morgagni, that a rupture never occurs in a sound heart muscle, the most frequent cause being fatty degeneration or infiltration of the muscles, and occlusion of the coronaries. Less commonly, myomalacia, abscess, gumma, echinococcus cysts and new growth are responsible.

Authors seem to agree that the vast majority of ruptures take place in the wall of the left ventricle, usually not far from the apex. Next in order of frequency come the right ventricle, right auricle and left auricle.

The size of the opening varies usually from 0.5 cm. to 1 or 2 cm. in length. Cases have been reported, however, in which the tear extended the entire length of the ventricle.

The immediate cause of the rupture is usually some exertion, but not a few cases have been reported in which the break has occurred during sleep.

SYMPTOMS

Probably in more than 70 per cent. death is instantaneous; but there may be a sense of anguish in the cardiac region with a feeling of suffocation, and life may be prolonged for several hours. Osler speaks of seeing a case in which the patient walked up a steep hill and lived for thirteen hours after the rupture occurred, and there is one case, at least, in which the patient survived for eleven hours.

It seems likely that the rapidity of death depends to some extent on the size of the rent and on the manner in which the muscle fibers are separated; i. e., whether the entire thickness of the wall gives way at once or by degrees.

Death results from shock, or from pressure produced by the overdistended pericardium.

REPORT OF CASE

History.—E., a man, aged 58, complained, Nov. 5, 1920, of pain in the back of his neck, and a general feeling of weakness; he had not been well for several days, but had kept at his work. He gave the history of an old prostatic trouble, and said that for years he had been told that he had an endocardial lesion, which, however, gave him no trouble.

He was well built, and except for a peculiar pallor of the skin, which he always had, was a healthy looking man. Gonorrhea in early youth was the only history of venereal disease. There was, however, a history of abscessed teeth, and it is possible that the infection may have originated from them.

Examination revealed a moderately enlarged heart, with a loud, harsh systolic murmur over the entire precordia, transmitted to the vessels of the neck and to the axilla, with greatest intensity over the second rib and sternum and at the apex. There was no diastolic murmur, nor was there any accentuation of either second sound. The radials were slightly thickened; there was no broadening of the dulness over the aortic arch. The blood pressure was normal; the lungs were clear; the abdomen and the reflexes were normal.

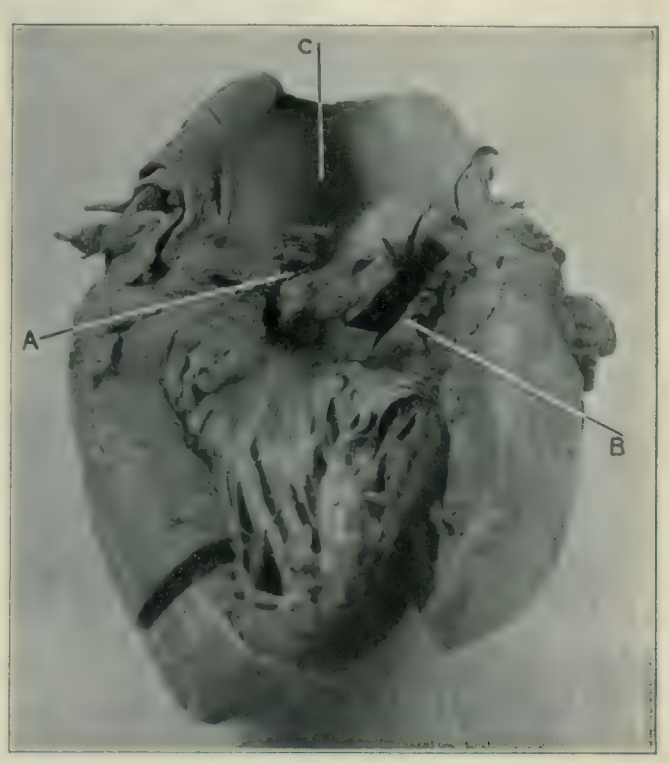


Fig. 1.—Interior of left ventricle and aortic orifice: *A*, character of vegetations on aortic leaflets; *B*, site of erosion, ulceration and rupture, from which section for microscopic examination has been removed; *C*, interior of dilated aortic root.

The urine showed a specific gravity of 1.016; no sugar, but a trace of albumin, with granular casts and a few pus cells. The indisposition continued with an irregular temperature, varying from normal to 102, and one week later (November 12) the leukocyte count was 21,000, with a relative increase in the polymorphonuclears. The Widal and Wassermann tests were negative. The course of the illness, together with the history of an old endocardial lesion, the irregular temperature and increased leukocytes now aroused the strong suspicion of septic endocarditis.

Dr. Frances F. Hagner, who had previously treated the prostatic trouble, was called in but was quite positive that the bladder condition was in no way responsible for the symptoms.

The leukocyte count, November 14, was 12,000, and a blood culture was negative. By November 19 the fever range was quite irregular but much higher, 104 F., and severe chills and sweats had set in. Dr. L. F. Barker now saw the patient, and fully concurred in the diagnosis of septic endocarditis, which was, that date, confirmed by positive blood findings which showed *Streptococcus viridans* in pure culture.

* Read before the Medical Society of the District of Columbia, Oct. 18, 1922.

1. Nicholl, Frank: Phil. Tr. London **52**: 266, 1761.

The patient grew rapidly worse, the temperature reaching 105, with most distressing chills and intense sweats. November 26, he complained of sudden pain in the heart and died in a few minutes, probably from shock, as the internal hemorrhage was small. The entire course of the illness, after the patient took to his bed, had been just three weeks.

Necropsy.—The necropsy, performed by Dr. Oscar B. Hunter, revealed, in the right pleural cavity, a small amount of bloody fluid; there were no adhesions or tumors. The right lung was markedly congested, particularly posteriorly, apparently for the most part postmortem hypostasis; there were some, but relative few, and apparently recent, bronchopneumonic spots in the less congested areas.

The left pleural cavity contained about 250 c.c. of bloody fluid; there were few old adhesions to the apex of lung, and some to the medial aspect of the lower lobe. The congestion was similar to that seen in the right lung, but more marked; pneumonic spots also were present.

The pericardium was acutely congested; on section it showed a moderate amount of bloody fluid, with small clots.

The heart was enlarged; there was a normal amount of pericardial fat, which was hemorrhagic in the region of the left auricular appendix. The musculature was soft and friable, with evidence of definite myocarditis. The cavity of the right auricle was dilated; the right ventricle was contracted.



Fig. 2.—Heart from above: *A*, hemorrhagic extravasation from aorta into superior wall of left atrium and left atrial appendix; *B*, tip of left atrial appendix; *C*, site of rupture; *D*, dilated aortic root.

The tricuspid valve leaflets were slightly thickened, with loss of their surface luster, but otherwise apparently normal, except toward the base, where the interatrial wall presented a few deep, interstitial, hemorrhagic spots. None of these spots were observed on the interventricular septum, from the right side. The pulmonary semilunar cusps were apparently normal except for the loss of their usual luster and firmness, being flabby, with flattening of the corpora aurantii and loss of outline of the lunulae. The pulmonary artery showed no well defined changes.

The left auricle and ventricle were dilated; the musculature was soft and somewhat friable. Beneath the endocardium of the auricle, in the interatrial septum, there was extensive discoloration from interstitial hemorrhage, which extended downward into the interstitial tissue of the mitral valve, involving both leaflets.

The anterior leaflet of the mitral valve was considerably thickened, nodular and discolored by hemorrhage, but not shortened. The posterior valve was wrinkled, thickened at the base, and also showed hemorrhagic extravasation into it, especially at the medial aspect.

Under the valve leaflets this hemorrhage could be seen infiltrating the musculature of the ventricle in the region of the annulus fibrosis.

The aortic cusps showed extensive thickening, and were distorted, with excessive vegetations somewhat verrucous in character, and greenish gray, with softening necrosis and ulceration, resulting in hemorrhage into the myocardium. The anterior coronary was apparently not involved, but the posterior coronary artery was in direct line with ulceration occurring at the root of the left auricular appendix. The sinus of Valsalva at this site was dilated and ruptured with hemorrhage seepage into the heart wall (interatrial septum and proximal part of left ventricle) and rather extensively into the wall of the left auricular appendix. Here and in the transverse sinus the bloody extravasation could be seen beneath the visceral pericardium. In one area on the superior posterior aspect of the left auricular appendix, rupture had occurred, and free blood had seeped into the pericardial cavity. A good sized clot plugged this aperture.

The root of the aorta was markedly dilated, and showed a diffuse, yellowish endarteritis.

1826 R Street, N.W.

A CASE OF DUODENAL DIVERTICULUM

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ST. LOUIS

The subject of duodenal diverticula is one which is of great interest not only to the gastro-enterologist but to the surgeon as well. This condition, while rare, has been recognized for many years, and more especially since the advent of the roentgen ray in the diagnosis of pathologic gastro-intestinal conditions.

No attempt is made, in reporting this case, to theorize on the causative factors of this condition or completely to review the literature on the subject, as this has been rather recently done by Andrews,[1] from an historical standpoint and also from more recent statistics. In his review, he says:

> Luismayer had 1,367 necropsies which yielded forty-five cases of diverticula, or 3 per cent. Buschi found 2 per cent. in all his researches, or a total of seventy-three cases, only fifty-four of which had clinical symptoms. Up to the time of this report (1911), no one author had had more than five cases. Later, 1913-1920, Case added reports from 6,847 examinations yielding eighty-five cases or 1.2 per cent. discovered by roentgen-ray examinations. I therefore reviewed all of our available roentgen-ray examinations of the last ten years and found that in about 2,200 stomach cases more than 300, or 14 per cent., showed deformations of the duodenal canal, of which twenty-six, or 1.2 per cent., resembled diverticula. These deformities range all the way from slight kinks or angulations of the tube caused by dragging or outside pressure to total obliteration. They include eleven cases of diverticula, large and small.

It will therefore be seen that true duodenal diverticula are comparatively rare and it is for that reason that this case is presented.

REPORT OF CASE

History.—C. S. G., aged 28, white, inducted into the Army, July 19, 1917, discharged Feb. 10, 1919, and admitted to U. S. Veterans' Hospital No. 35, Oct. 4, 1922, in December, 1917, while at Camp Cody, N. M., began to have some pain in the stomach, first noticed as an occasional pain in the epigastrium which came on about two hours after eating. This condition persisted until about eight months before admission to the hospital, at which time he thinks that he passed some black, tarry stools. Since that time, his condition had gradually grown worse, and he now had a steady gnawing pain in the epigastric region, which was worse about one and one half to two hours after eating, but was partially

1. Andrews, E. W.: Duodenal Diverticula, J. A. M. A. **77**:1309-1311 (Oct. 22) 1921.

relieved by the ingestion of food and by taking alkalis. About one year previously, he began to have pain also in the appendical region. The bowels as a rule were constipated. The patient had never vomited or coughed up any blood. He had lost 40 pounds (18 kg.) in weight since 1918.

Physical Examination.—This was an ambulatory case. The general appearance of the patient was rather poor. He was thin and rather anemic. The weight was 115 pounds (about 52 kg.); the height, 68½ inches (170 cm.).

The heart, lungs and extremities were negative. The blood pressure was systolic, 102; diastolic, 62. The abdomen was flat, rather tending toward a scapoid type, and tympanitic throughout. In the epigastric region, about 3 inches above the umbilicus, was a definite point of tenderness, but there was no muscle spasm. Over McBurney's point, there was slight, well localized tenderness on moderate pressure. No masses were made out.

Treatment.—The patient was placed on a general medical and dietetic treatment while a further study of the case was being made.

Laboratory Findings.—October 6, a urine examination was negative save for an occasional pus cell. The Wassermann reaction was negative. Examination of the blood revealed: red cells, 4,990,000; white cells, 9,300; hemoglobin, 95 per cent.; small mononuclears, 32 per cent.; large mononuclears, 9 per cent.; neutrophils, 59 per cent. October 14. Examination of the gastric contents revealed: free hydrochloric acid, 39 per cent.; combined hydrochloric acid, 10 per cent.; total acidity, 54 per cent.

Roentgen-Ray Examinations. — Preliminary examination revealed no gross pathologic condition of kidneys or gallbladder. Fluoroscopic and roentgenographic examination showed stomach to be of normal size and position, fishhook in type, with normal peristalsis and motility. No defects of the gastric walls were noted. The duodenal cap was apparently filled out well, but the proximal portion of the second portion of the duodenum was dilated and retained the barium sulphate. At six hours, the stomach contained about 10 per cent. of the meal, and the head of the column was in the splenic flexure. At twenty-four hours, the head of the column was in the rectum and the tail was in the cecum, and at seventy-two hours, about one half of the meal had been discharged. The cecum was movable and not tender to pressure. The appendix was visualized at forty-eight hours. It appeared to be retrocecal in position, and was tender to pressure.

Diagnosis.—Dilatation of the second portion of the duodenum, possibly a diverticulum, with slight chronic appendicitis (as shown in the accompanying illustration) was diagnosed.

October 20, the case was referred from the gastro-intestinal service to the surgical service for consultation, and the following report was made: "The roentgen ray in this case is the most suggestive factor as regards the presence of a duodenal diverticulum. There is some tenderness over the epigastrium and also over McBurney's point, which, together with the history, is suggestive of a duodenal ulcer or a duodenal diverticulum and also a chronic appendix. Advise exploratory laparotomy for investigation of the diverticulum and also an appendectomy."

Operation.—November 1, under ether anesthesia, an oblique incision was made, commencing just below the xiphoid process, and extending downward and outward nearly to the level of the umbilicus. The anterior sheath of the rectus was incised and the rectus muscle was displaced outward. When the peritoneal cavity was opened, numerous fine adhesions between the duodenum and the liver and also in the pyloric region were noted. On the anterior surface of the first portion of the duodenum, about one-half inch from the pylorus, was a healed ulcer. The center of this ulcer consisted of dense white scar tissue, and about this area there was moderate thickening. This area was surrounded by minute blood vessels, which converged in a stellate manner toward the center of the scar. Just below this ulcer was a pouchlike protrusion from the lower anterior aspect of the first part of the duodenum. This pouch or diverticulum was about 2.5 cm. wide at the point of junction with the duodenum, and at the distal end was about 3.5 cm. wide. The length was approximately 5 cm. This diverticulum was surrounded by adhesions, which held it to the pylorus and to the distal portion of the stomach along the greater curvature. The edge of the omentum was adherent to the tip and outer lateral border of the diverticulum. The gallbladder was apparently normal. The appendix was felt, but could not be delivered without enlarging the incision. No ulcers were found on the stomach.

The adhesions about the pylorus were freed, and the diverticulum was freed and clamped near the base. About three fourths of the diverticulum was removed; the cut edges were inverted, and the serous coat was sutured with catgut so as to restore the continuity of the lower surface of the duodenum. The omentum was sutured over the line of sutures so as to prevent further adhesions. Owing to the presence of the ulcer and also on account of possible weakening of the duodenal wall, it was felt advisable to perform a posterior gastro-enterostomy, and a typical posterior gastro-enterostomy was therefore done. The appendix was not removed at this time owing to the difficulty of delivering it; and, furthermore, it was not believed wise to prolong the operation at this time. The wound was closed in layers.



Appearance of diverticulum, showing in the duodenum a Rehfuss tube, through which the diverticulum was gradually filled. This roentgenogram was furnished by the courtesy of Dr. T. A. Burcham of Des Moines, Iowa, who made the original diagnosis of a duodenal diverticulum before the patient was sent to the hospital.

Course.—The postoperative convalescence was uneventful. The patient was up and about in ten days. He felt much improved and the gastric symptoms had entirely disappeared. There was still some pain and tenderness about the appendical region, and he was advised to have the appendix removed in order to clear up all areas of disturbance in the gastro-intestinal tract.

November 28, a fluoroscopic examination was made to determine what changes had taken place after the operation. The report was as follows: "Fluoroscopic and roentgenographic examinations show stomach to be of normal size and position, cow-horn in type, with poor peristalsis and normal movability, with a gastro-enterostomy opening on the posterior surface, functioning well. The duodenal cap was not visualized. At six hours, the stomach was empty, the head of the column was in the descending colon and the tail in the terminal ileum. At twenty-four hours, the head of the column was in the rectum and the tail in the cecum, and at seventy-two hours most of the meal had been discharged. The cecum was restricted in movability and was tender to pressure. The appendix was visualized at forty-eight hours and thereafter throughout the examination. It was found to be large, long, segmented and still contained barium at ninety-six hours when the gastro-intestinal tract was empty. Conclusions: Gastro-enterostomy functioning well. Chronic appendicitis."

Second Operation.—November 29, an appendectomy was performed. The tissues to the right of and below the level of the umbilicus were infiltrated with procain. A right rectus incision was made; the anterior sheath of the rectus muscle was incised and rectus muscle retracted toward the median line, and peritoneal cavity was opened. A long, moderately congested appendix was found in a retrocecal position. The tip of the appendix was free, swollen and congested. The proximal three fourths of the appendix was covered by a dense membrane, which held the appendix firmly to the cecum. The appendix was freed from the cecum, the meso-appendix ligated, the appendix clamped, ligated and removed. The stump was cauterized and inverted. The wound was closed in layers. The appendix when sectioned was found to contain two fecaliths.

Histologic Examination of Diverticulum and Appendix.—Small intestine: In this specimen, there was an irregular and atypical hyperplasia of the intestinal glands, many of which were branched and cystic. This was a nonmalignant adenoma.

Appendix: This was found to be atrophied from chronic inflammation.

Convalescence.—The patient had an uneventful convalescence from the appendectomy, and was discharged from the hospital, December 16. All gastric symptoms had disappeared, and the patient stated that "he felt like a new man." He gained 9 pounds (4 kg.) subsequent to the gastro-enterostomy and his general condition was much improved as compared to his condition at the time of admission.

5800 Arsenal Street.

Clinical Notes, Suggestions, and New Instruments

AN EFFICIENT METHOD OF APPLYING RADIUM WITHIN THE MOUTH

E. WOOD RUGGLES, A.M., M.D., ROCHESTER, N. Y.

The treatment of lesions within the mouth with roentgen rays or radium has always been a procedure of the utmost difficulty. It is much more practicable with radium, but the holding of an applicator on one area for hours is intensely

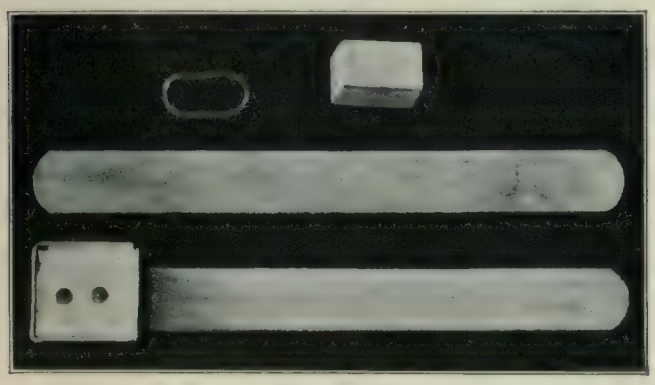


Fig. 1.—Separate parts of apparatus for applying radium within the mouth.

wearisome to the nurse, or to the patient if he does it himself. Besides this, it is practically impossible to hold the radium in exactly the same position for any length of time.

Five months ago a Polish girl, aged 6 years, was brought to me for the treatment of an extensive cavernous nevus of the internal surface of the right cheek and the lower lip. It encroached on the true skin beyond the vermilion border for an area of only about one-quarter by one-sixteenth inch (6 by 1.5 mm.) at the center of the lower lip. The cheek was nearly an inch in diameter at the most prominent part, and the lower lip hung down on the chin, causing a revolting appearance, like an exaggeration of the condition of the lower lip in a full-blooded African negro.

Treatment for this condition meant hours of exposure, and for a moment I was staggered, as the child was too young to hold the radium, and the parents too poor to pay for a nurse and not intelligent enough to do it themselves. It then occurred to me to attach the radium plaque to the end of an ordinary white pine tongue depressor, which is quite flexible, with rubber adhesive plaster, to locate it properly and then to place a similar depressor exactly opposite on the



Fig. 2.—Apparatus in place.

outside of the mouth. I then placed a rubber band, folded two or three times so as to give adequate pressure, at the center of the depressors, and inserted a block of wood about one-half inch thick between the outer ends.

The pressure produces no pain or even inconvenience except that of leaving the mouth open, even when left in position, as in this case, for five hours (with 0.2 mm. of brass protection). The plaque remains indefinitely in exactly the same location, as can be demonstrated by moving the outer ends up or down. On being released, they return to their original position. In treating the lower lip a cord was attached to the outer ends and looped over the back of the head so as to avoid downward tension on the lip.

The results in this case, while slow, have been very gratifying. The thickness of the cheek has been considerably reduced, and the child is able almost to close the lower lip to its normal position. Some discoloration has appeared near the angle of the mouth, evidently an extension of the nevus toward the skin, and an indication that, without treatment, the skin over the whole nevus would be involved. This area has not yet been treated, as the other parts were much thicker.

In the same manner I have also treated with radium a precancerous scaly lesion of the vermilion border of the lower lip, which had existed over a year, and the result was perfect. Lesions of the projecting part of the tongue can be treated similarly by increasing the thickness of the block which separates the outer extremities. The same method can be employed with lesions of the skin on the cheeks, lips and ears, especially when greater pressure is desired than can be obtained by adhesive plaster.

Of course the principal condition in which this apparatus would be useful is leukoplakia, but there are several other diseases of the oral cavity in which treatment with radium is indicated; for example, lupus vulgaris and erythematosus, epithelioma, carcinoma, lichen planus and, rarely, sarcoma and acanthosis nigricans.

I have endeavored to have the instrument constructed of aluminum, there being an alloy which has considerable

flexibility; but I have found that, to secure sufficient springiness, the pieces would be too heavy for comfort and might sag downward. The Standard Chemical Company of Pittsburgh has constructed, at my suggestion, an applicator which, while utilizing the tensile strength of wood, renders it much easier to retain the radium in position. An aluminum box which fits the 2 c.c. radium plaques, and is slightly shallower, is attached to the end of one of the tongue depressors, as shown in Figure 1. At one corner a slot is left, extending to the bottom of the box, so that a small instrument, such as a nail, can be used to dislodge the plaque if it is not easily removable.

I fully believe that this applicator will find wide use if once tested, as it renders the treatment of intra-oral lesions a procedure of the greatest ease and simplicity.

348 University Avenue.

A CASE OF PHARYNGEAL DIPHTHERIA PROBABLY DUE TO AUTO-INFECTION FROM A DIPHTHERIC LESION OF THE THUMB *

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A physician, aged 30, a graduate student, gave a positive reaction to the Schick test, Oct. 10, 1922. There was a very slight pseudoreaction. There was no history of previous diphtheria.

October 25, he carried out a virulence test with a culture from a known clinical case of diphtheria. At this date, he had not himself been in contact with a known clinical case for some time; nor had he been working with any other diphtheria cultures. While inoculating the guinea-pig, he pricked the skin on the dorsum of the terminal phalanx of the left thumb with the needle of a syringe containing the suspension from a twenty-four hour Loeffler slant. The suspension in the syringe was from a culture from the above mentioned case, and caused typical diphtheric lesions in the guinea-pig. October 29, the patient visited the laboratory and examined the inoculated animal, but after this date he was not exposed to any known source of infection.

October 27, a hard papule about the size of a millet seed developed at the site of the needle prick, and by the 29th this had developed into a necrotic ulcer, with hyperemia, edema and partial anesthesia over the area. Definite lymphangitis was present, a line one-quarter inch in width running along the dorsum of the thumb, up the flexor surface of the forearm to the antecubital fossa and along the inner side of the arm to a distance of about 6 inches above the elbow. No axillary tenderness was present, nor were the axillary glands palpable. The area on the thumb was freely incised, blood and serum, but no pus, being obtained. There were no constitutional symptoms, but the lesion did not heal, and, November 1, it showed a necrosis covering nearly the whole of the skin area on the dorsum of the terminal and encroaching on the outer side of the first phalanx.

November 2, a section of skin about a third of an inch square sloughed. During the night, the patient removed the bandage and the dressing from the thumb; and, he stated, he was under the impression that he had his thumb in his mouth during the night.

November 5, about midday, the patient complained of a sore throat, and on examination a patch of membrane was seen on the right tonsil. He had a temperature of 102.6 F. At 6 o'clock in the evening, when antitoxin was given, the patch was much increased in size. Cultures from his throat were positive, and the diagnosis of pharyngeal diphtheria was confirmed clinically at Sydenham Hospital, to which the patient was removed next day.

November 8, the membrane had disappeared from the throat and the thumb lesion had practically healed. Redness persists still (four months later) over the area of the wound. As the nature of the thumb lesion was not recognized until November 6, no cultures were secured from the wound.

COMMENT

The case presents these interesting features: (1) a laboratory wound infection in a person known to have given a Schick positive reaction; (2) a probable transference of the bacilli to the mouth during sleep; (3) a rapid disappearance of throat and wound lesions on the administration of antitoxin.

Since recovery, the patient has repeatedly given negative reactions to the Schick test, and his reaction was still negative, March 1. He had received altogether in November 12,000 units of antitoxin. An interesting feature is the marked pseudoreaction which has been present on each of these later tests.

An interesting case in the literature which somewhat resembles this one is that cited by Mallory[1] of a student who cut his finger while removing the organs of the neck during necropsy on a child who died of diphtheria. He sucked the wound in the attempt to prevent infection, and developed diphtheria at the end of twenty-four hours.

* From the Department of Epidemiology, School of Hygiene and Public Health, Johns Hopkins University.

1. Mallory: Pathology of Diphtheria, in Nuttall and Graham-Smith: Bacteriology of Diphtheria, Cambridge, 1913, p. 120.

CATHARSIS IN THE TREATMENT OF "COLDS"

HUGH MACDONALD, S.B., M.D., EVANSTON, ILL.

The almost universal use by the profession and the laity of laxatives and cathartics in the treatment of acute upper respiratory tract infections (so-called "colds") suggested an investigation to determine how large a rôle this method of therapy played in shortening the duration of these conditions.

A mild epidemic of acute respiratory infections—rhinitis, sinusitis, pharyngitis, tonsillitis, laryngitis, tracheitis and bronchitis—occurring during January and February, 1923, furnished an opportunity to investigate this problem among the employees of a large industrial organization situated in Chicago.

In most of the cases under observation there was a more or less generalized infection of the whole upper respiratory tract before the termination of the illness. The usual complaints were general malaise, "cold" in the nose, chilliness, headache, sore throat and cough. Fever was present in most cases, but in a few this one symptom alone remained absent. A definite leukocytosis was present in more than 95 per cent. of the cases.

About a half of the employees, reporting to the medical department for home passes because of illness, were instructed that, if their bowels were moving regularly (which was generally the case), they should refrain from the use of cathartics.

It is a routine of this industrial organization that the medical department examine, on their return to work, all employees who have been home for illness. The data in this report were collected at this time.

Information on fifty-one practically consecutive cases occurring during the height of the epidemic was obtained. Thirty-seven persons had used cathartics, mainly at the onset of the illness. The average duration of unemployment of this group was nine days. Fourteen had used no cathartics. Their average duration of unemployment was 7.71 days—14.3 per cent. less than the former group.

COMMENT AND CONCLUSIONS

Alvarez and others have demonstrated the decreased amount of gas pains and increased comfort experienced by surgical patients in whom the preoperative and postoperative purgatives had been omitted.

Cases are frequently observed in which the frequency of bowel movements and prostration from large doses of cathartics in the treatment of "colds" undoubtedly prolongs the period of incapacity. While it is not claimed that the omission of catharsis will hasten the subsidence of definite symptoms, it is suggested that the omission of cathartics in the absence of constipation in the treatment of "colds" does not apparently delay recovery.

1604 Chicago Avenue.

Special Article

PERIODIC MEDICAL EXAMINATIONS OF APPARENTLY HEALTHY PERSONS

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Chairman of Committee of Council on Health and Public Instruction
NEW YORK

From both medical and lay sources requests have come to the American Medical Association to prepare a description of the objects to be attained, the methods to be employed and results which may be expected from inquiry into and observation of the tissues and physiologic functions of persons, young and old, who are not at the time aware of any disease or defect which is causing them to seek medical relief.

By resolution of the House of Delegates in June, 1922, the Council on Health and Public Instruction was authorized to prepare forms suitable for use by practitioners of medicine in carrying out the purposes of the periodic health examination, and the statement here submitted is offered in fulfilment of this obligation.[1]

The preparation of forms for record of the applicant's history and the medical examination, without explanatory text as to the intent and meaning of the questions and the methods suggested for carrying out the tests of physical condition, seemed insufficient to comply with the spirit of the instructions of the House of Delegates. The forms will, in any event, be printed separately, and are intended for use on 5 by 8 inch cards printed on both sides, or on the single face of a letter sheet measuring 8 by 10 inches.

Medical experience of the benefits of periodic examinations of presumably healthy persons is sufficiently widespread to make any detailed reference superfluous. It is taken for granted that physicians are aware of the material reduction in infant deaths accomplished by the supervision under medical direction of the feeding and hygiene of healthy babies from birth to the age of 2 years.

During the years prior to entry into school life, and for many of the children during their school years, some form of medical supervision during apparent health has seemed justified by the number of important defects discovered which need correction, and by the improvement in growth and functions of body and mind when such handicaps are removed.

The annual physical examination of commissioned officers of the army is a type of medical service for health protection which is now increasingly called for by individuals and groups of adults, whether at their own initiative and expense or as a part of employment or insurance contracts as a sound financial investment.

The periodic medical examination of apparently healthy persons is designed to detect the early evidences of disorder before discomfort, inconvenience, interference with work, or anxiety has driven them to seek medical advice for the treatment of established disease. The methods employed are those used in the diagnosis of disease. The attitude of mind, the point of view of physician and patient is the chief distinguishing feature which makes the health examination sufficiently novel and important to both parties concerned to justify the following suggestions for the methods to be employed, and forms of record approved and found useful.

The use of these forms, or their equivalent, is to be encouraged, in part because, by recording methodically observations and opinions as to the physical and functional fitness of persons passing through their hands, physicians will acquire an increasing skill and keenness in detecting early evidences of preventable and curable conditions, and also because, by the general employment of a thorough and complete method of inquiry by physicians, the laity will learn to appreciate the importance to their own health of good medical examinations, and to expect attention to the details of personal hygiene on which continued health so often depends.

In the past, when a person has consulted a physician he usually has had symptoms of disease of which he has been aware, and concerning the importance of which he seeks opinion and relief through treatment, or he fears he has a disease, although not suffering from anything more tangible than apprehension of disability, or he has sought protection against some preventable infection, such as smallpox, typhoid and diphtheria. Nowadays we find people coming to physicians in increasing numbers to have an estimate of their state of health, and guidance in the means of maintaining or improving it, or for specific advice to avoid the disabilities of advancing years.

For whichever reason the physician is consulted, he must obtain such pertinent facts of the patient's personal and family experience as may bear on the specific diseased condition now existing, or which seem to require modification of his manner of life in the interest of his health.

HISTORY OF APPLICANT

However varied may be the questioning necessarily directed to elicit pertinent facts when an explanation or diagnosis of a particular diseased condition is sought, there is a more uniform series of facts which it is desirable to learn in dealing with those who are presumably well. The method of medical examination, however, should be in all essentials the same, whether a diagnosis of disease or the discovery of good health is sought. If anything, the physician must be more keenly alert, and his examination must be more comprehensive to detect early unsuspected evidences of faulty function or structure in the latter than in the former case. To quote from the Army Medical Bulletin [2] which deals in detail with the annual medical examination of officers:

> While the printed form upon which the pertinent facts are reported constitutes a guide to the logical steps by which the examinations should be conducted, it must never be considered as a measure of the scope of the investigation into the health of the individual.

Even though inquiry as to past illnesses of the patient and his ancestors does not directly contribute to an exact knowledge of his present bodily function and structure, the past personal and family history must be obtained because of the light they often throw on the patient's health.

It is important to know how he feels, how he sleeps, what he eats, how effectively he does his work and the nature of it, his home environment, his modes of exer-

1. At the November, 1922, meeting of the state secretaries in Chicago, a committee was appointed by the presiding officer to act in cooperation with the committee of the Council on Health and Public Instruction in preparing the forms. A preliminary draft was submitted in January, 1923, to the committee of the state secretaries (Drs. Rock Sleyster, Milwaukee; Edgar A. Hines, Seneca, S. C.; Tom B. Throckmorton, Des Moines, Iowa; Walter F. Donaldson, Pittsburgh, and Olin West, Chicago). After correspondence with leading clinicians in their respective states, the committee met with the Council on Health and Public Instruction, March 6, 1923, in Chicago, and numerous changes in the text were decided on. The consensus of the two committees is represented in the forms and text herewith submitted.

2. Army M. Bull. 7, Nov. 15, 1922, pp. 210-221.

cise and recreation, how he gets on with his family and associates, and whether he has any worries.

Health examinations should be arranged for on an appointment basis and not merely as incidental to service for the sick at crowded office hours. An appointment is in every way desirable for both patient and physician, because of the necessity of spending not less than from three quarters of an hour to an hour with each patient. The physician's time can be materially saved if the patient is asked to fill out beforehand and bring with him a sheet or card giving the information called for on Form A, unless the facts are already known to the physician. With suitable omissions and additions, this can be made appropriate for men and women at work in shops, offices or factories, or for women at home whose chief, if not only, occupation and interest is the household and the children. Special forms, such as those published by the Women's Foundation for Health for adult women, and those approved by the American Child Health Association to meet the particular needs of infants and children, may be found more convenient for these classes of patients. The physician will, in any event, wish to verify and develop by further questioning the answers submitted.

While it is believed that a reasonably thorough understanding of the patient's manner of life can be obtained only by exact information on all the items included in the History Form A, owing to the great variations which will be encountered in the social, economic and intelligence levels of the persons applying for these examinations, certain questions believed to be indispensable for even an elementary knowledge of the patient have been emphasized by printing these in heavy faced type. The physician will in most instances find it necessary to verify the answers submitted by the applicant, through additional questioning appropriate to each case.

DETAILS OF PERSONAL HISTORY

With few exceptions, the reasons for including the questions listed in Form A are obvious, and the phrasing of them is sufficient to express the intent of the physician. No form of questions will suit every physician or mean the same thing to all patients. The items under 1, 2 and 3 are desirable for purposes of identification, except the question as to religion, which is put here for convenience of spacing, and also because many factors of human relationship, mental and spiritual, diet and social habits are determined, particularly among our foreign born, by their church affiliations, and many of the resources needed in helping those who suffer more through their emotions than from organic disease can be brought to bear only by recognizing and using the established influences of religious beliefs and convictions.

If 4 and 5 are answered completely, 6, in which are suggested some of the more important factors which determine physical and mental deterioration, is perhaps unnecessary. The information to be obtained from 7 and 8, while not commonly sought by physicians in taking personal histories of the sick, has been found altogether necessary, or at least desirable, in getting a picture of the economic and social environment of the

Form A **HISTORY FORM**

1. **Name** **Country of Birth**
2. **Address** **White or Colored?**
3. **Age** **Religion** **Single, married, widowed, divorced?**
4. **What is your present occupation?**
5. How often have you changed your work? Why?
6. **What are the conditions of your work?**
   Regular, Satisfactory, Monotonous, Dangerous, Fatiguing, Indoors or out,
   Light, Dark, Dusty, Smelly, Noisy, Crowded, Seated, Standing,
   Walking, Hours per day? Days per week?
7. Do you support yourself, or others, by your work?
8. **What are your home conditions?**
   In a family, Alone, Room and bed to yourself, Quiet, Time to yourself,
   Congenial Depressing, Irritating?
9. **What are your sleeping conditions?**
   Hours in bed, Window open, Restful, Disturbed by children or others?
10. **How often do you eat?**
    Regularly, Where, Between meals, Time at meals?
11. **Are you a moderate or hearty eater?** Taking one or more helpings at a meal of:
    Meat (including fish and eggs) Sweets or sugar
    Baked beans Fruit
    Green vegetables (spinach, cabbage, etc.) Salads
    Potatoes (or rice, macaroni or cereal) Bread
    Pie, cake or pastry Butter
12. **How much do you drink daily of:**
    Water Tea Soft Drinks
    Milk Coffee Alcoholic Drinks
13. How frequently do you use candy? How much tobacco?
14. **Do you have a movement of the bowels daily without the use of drugs?**
15. Do you take any regular exercise in addition to your work?
    Competitive, Strenuous, Under direction, Indoors or out?
16. To what extent do you share in social, church, political, club or trade associations?
17. What are your pleasures or recreation?
18. **Are you subject to worries or moods, or periods of gloom and cheerfulness?**
19. **Have you ever been ill with any of the following, and at what ages?**
    Tuberculosis Scarlet Fever Frequent Colds
    Malaria Diphtheria Convulsive Seizures
    Rheumatism Typhoid Fever Nervous Breakdown
    Syphilis or Gonorrhea Tonsilitis (Sore Throat) Migraine or Neuralgia
20. **Have you been protected against smallpox, typhoid, diphtheria or other diseases by vaccination, and when?**
21. Have you had any accidents, broken bones or surgical operations?
22. How often do you consult your dentist? When last?
23. **Are your parents, brothers and sisters living?**
    If not what were the causes of death and at what ages?
24. Do you remember any diseases in your family which may have affected your own health?
25. **Do you consider yourself in good health?** If not, what is your complaint?
    If a woman, answer these:
26. **Are your monthly periods regular?** Prolonged? Excessive?
27. **Have they interfered with your occupation,** by pain? or headache?
28. **Have pregnancies and confinements been free from accident?**

individual wage earner, who constitutes so large a part of urban populations. Functional nervous disorders are not uncommonly explained chiefly by the anxiety and distress which result from narrow resources of money and friends.

Question 9 is fairly complete as it stands.

Questions 10, 11, 12 and 13 are obviously susceptible of considerable elaboration; but, aside from the reasonably exact information they may elicit for the physician's use, they will suggest to the mind of many patients the necessity of some thought and attention to the elements and proportions of their food and drink.

The prevalence and damaging effect on health of persistent constipation and habitual use of medication for its relief, and the ease with which most cases can be relieved by attention to regular habits of bowel evacuation, suitable use of fluids, appropriate diet and exercise, are sufficient reasons for 14 and 15.

Questions 16, 17 and 18 are, like 7 and 8, included with a view to obtaining some insight into the social, mental and emotional capacities, resources and liabilities of the applicant for a health examination. A correct estimate of a person's health cannot be arrived at by considering alone the structures and functions of the body without regard to personality and the psychologic factors.

The list under 19 may be extended or limited according to the age and place of residence of the applicant, etc.

Questions 20 to 28 require no comment.

THE MEDICAL HEALTH EXAMINATION

When the appointment is kept, preferably at the physician's office, with the completed questionnaire, a medical examination should be made to include at least observations as listed on Form B, given below. When the history or physical findings indicate some particular liability to defect, as for instance low sugar tolerance, high blood pressure, latent syphilitic infection, asthma or hay-fever, the appropriate supplementary resources of clinical and laboratory procedures will, of course, be called for. Or if, when the vision or the reflexes are tested, errors are detected which require more exact methods, reference will in some instances be made to the specialist.

The equipment and facilities for the examination are those of the practicing physician's office, and such instruments as are needed are commonly carried in a suitably equipped kit bag, with the exception of the weight scales.

The examining room must be warm, preferably between 70 and 74 F., and a light washable woolen cape or large square of flannel shaped to the shoulders should be provided for protection of the bared surfaces of the body as the examiner passes from one area to another. An examining table or other flat, firm surface is needed for the recumbent examination. The instruments needed are:

- Tape measure
- Tongue depressors
- Spot light
- Stethoscope
- Blood pressure instrument
- Otoscope
- Laryngeal mirror
- Tallqvist's hemoglobin scale, or Dare hemoglobinometer
- Nose speculum
- Vision chart (Snellen)
- Rubber gloves or finger cots
- Vaginal speculum
- Weight scales
- Simple urine testing outfit for appearance, specific gravity, albumin by acetic acid and heat test and sugar by Benedict test, or other standard test
- Thermometer

Form B **PHYSICAL EXAMINATION RECORD**

Name Case No.

1. Height Weight, Usual / Present / (Theoretical normal for age and height) Temp. Pulse S / L Bl. Pres. S { Sys. / Dias. } L { Sys. / Dias. }

Hearing R / L Vision R / L Corrected R / L

Urine: appearance Sp. gr. Sugar

Feces: appearance parasites

2. **Standing**
   - Posture
   - Muscle tests
   - Nutrition
   - Skin
   - Superficial glands
   - Chest
   - Hands
   - Arms
   - Male genitalia
   - Hernia
   - Legs
   - Romberg
3. **Sitting**
   - Hair
   - Eye reflexes
   - Nose
   - Teeth
   - Gums
   - Tongue
   - Tonsils
   - Pharynx
   - Ears
   - Heart
   - Lungs
4. **Lying**
   - Abdomen
   - Reflexes
   - Sensation
   - Liver
   - Spleen
   - Kidneys
   - Female genitalia
   - Rectum (hemorrhoids)

5. Summary: Defects of function and structure and errors of habit.

6. Advice given to the patient:

Other equipment that permits added completeness and convenience of the examination includes:

Centrifuge	Wassermann tubes
Microscope	Reflex hammer
Ophthalmoscope	Dynamometer
Flesh pencil	Tuning fork

THE PHYSICAL EXAMINATION

A certain group of observations (Section 1 of Form B) can often be made by a lay assistant, office clerk or nurse with accuracy, and these are therefore put in a group by themselves. Similarly, as the examination can best be carried out in an orderly manner, those other observations are grouped which are usually made in the standing, seated and recumbent positions respectively (Sections 2, 3 and 4 of Form B).

It will be noted that the blank form provides not for a series of detailed notes for all observations made on the various parts and functions of the body; but, recognizing that we are dealing here not with a diagnosis of established disease but with an estimate of health or certain variations from an accepted normal range of healthy conditions, only the headings are listed under which objective signs indicating abnormal conditions may well be described.

In other words, these record forms are not intended for anthropologic research or for statistical studies of physical signs, although many valuable contributions in these fields might well result from a large number of careful examinations of people in health. The form proposed is intended to offer suitable space in which to record the items of history and those objective findings on which a physician would be able to base his opinion as to the probable soundness of a person's health, or his advice in matters needing change in habits or conduct of life.

Further study and additional examinations will usually be required to determine the precise location, extent and character of various disease processes or defects which may be revealed or suspected as the result of the health examination.

The summary (Section 5) is for the convenience of future reference to the record, and to commit the physician to an expression of opinion as result of his study of the history and examination of the patient.

The advice given (Section 6) should consist of written directions to the patient, for the correction or limitation of defects or errors discovered. Simple, precise, nontechnical wording should be used, and only such measures should be proposed as fall within the possibilities of the patient to carry out.

Disease states will, of course, be treated by the examining physician, or the patient may be referred elsewhere for appropriate care.

It will commonly be found that social, recreational and other local resources with which the physician should be familiar can be used with advantage, as gymnasiums, libraries, clubs, and community groups of various kinds, for mental and physical development in the interest of health.

DETAILS OF PHYSICAL EXAMINATION

For the convenience of those physicians who have not been accustomed to follow a particular and comprehensive routine of physical examination, the following brief elaboration of each of the items listed in Form B is offered.

Height: To be taken barefoot, and where there is asymmetry, in the position with the pelvis at right angles to the vertical axis of the body.

Weight: Preferably stripped, or with the examining cape only. By the usual weight is meant the weight during apparent health during the past year and after attaining maturity. Excellent standard height and weight charts for adults are published by the National Tuberculosis Association, and for children by the American Child Health Association. A standard height and weight chart for men and women (from 15 to 84 years) wearing ordinary indoor clothing was prepared by the Medico-Actuarial Investigation of forty-two life insurance companies of the United States and Canada in 1912, and is widely used.

Temperature: The thermometer under the tongue for three minutes. In children, a rectal temperature is preferable.

Pulse: To be taken standing and in the recumbent position and recorded in each position when for two successive quarter minutes the rate remains the same. In addition to the pulse rate, its quality, rhythm, regularity, and the character of the arterial wall are to be noted. (It is the practice among life insurance examiners to take the pulse and the blood pressure in the sitting and standing positions only, and at intervals of thirty and forty-five seconds after exercising.)

Blood Pressure: The auscultatory method is advised and the systolic and diastolic pressures should be read in both standing and recumbent positions, when the pulse rate has shown the same rate for two successive quarter minutes. (Life insurance companies have published tables of blood pressures and the usual range within normal limits according to age and other factors.)

Hearing: The room must be quiet and the patient so placed that there is no greater resonance or reverberation from walls, etc., on one side than on the other. Any watch will serve to test acuteness of hearing if its audibility is known for people with normal hearing. The patient should keep eyes shut while the watch is held at various distances from the head on each side, and one ear should be closed, while the opposite ear is tested, by pressing the tragus firmly against the meatus. The test of hearing by the whispered and spoken voice, the patient being placed with his back to the physician, is in some ways better than the watch test, and is particularly valuable when malingering or deception by the patient is suspected.

Vision: Refractive errors are to be tested for near and distant vision by the Snellen test card or other standard types or forms. If corrective lenses are in use by the patient, the tests should be repeated with them on.

Urine: The appearance, as color, deposit, blood, pus or other sediment, the specific gravity at room temperature, the presence of albumin by the acetic acid and heat test and the presence of sugar by the Benedict test are to be noted. The Heller test for albumin and the Haynes test for sugar are widely used in life insurance practice. In persons over 50 years of age, and when traces or more of albumin are found, a microscopic examination of the urine is important.

Feces: In many instances in adults in whom dietary defects are suspected, and commonly in infants, the appearance of the feces will give valuable information. In persons living in or coming from areas of hookworm prevalence or widespread distribution of amebic dysentery and other tropical and subtropical intestinal manifestations, a microscopic examination of the fresh stool is desirable.

Posture: Mobility of chest, of spine, of all joints, relation of shoulders to pelvis, knees to ankles, pes planus and cavus, lordosis and scoliosis are to be looked for, and protuberant or flat abdomen to be noted. Musculature for development and quality, and tests by grip and resistance to flexion and extension of arms and legs.

Nutrition: Color and quality of skin and mucous membranes. Amount and distribution of subcutaneous fat. Relation of height, weight and age as compared with National Tuberculosis Association chart or other standard.

Skin: Eruptions, scars, areas of infection, urticaria, precancerous lesions of excessive cell proliferation, pigmented moles, calluses, corns.

Superficial Glands: Cervical, axillary, inguinal, epitrochlear, thyroid to be noted particularly for unusual size, tenderness or evidences of previous inflammation or enlargement.

Chest: Asymmetry, prominences or depressions indicating present or past disease of lungs or heart, or of errors of bony and muscular development, rickets.

Hands: Atrophy, tremors, grip, occupational or accidental injuries.

Male Genitals: Present lesions or past scars on glans, discharge or drop on stripping the urethra. Hydrocele or varicocele.

Hernia: In digital examination for undue patency of inguinal canals the subject should stand with feet well apart, feet toeing in, and then rise on balls of his feet with arms above his head and cough.

Legs: Varicosities.

Romberg Test: The subject should stand with heels and toes touching, away from contact with any object or person and with eyes closed. Any swaying and the direction of it should be noted.

Hair: Amount, distribution, dryness, lack of luster, irregular lengths indicating poor nutrition. Infections or infestations of scalp.

Eyes: Evidences of strain or irritation, congestion or inflammation of conjunctivae or closure of lacrimal duct. Scars on cornea. Discharge as in trachoma. Pupillary reactions to light and in accommodation. Preferably supplemented by retinal inspection with ophthalmoscope.

Nose: Patency of nares, evidence of infection, chronic discharge, character and location of obstruction. Direct inspection with nasal speculum.

Teeth and Gums: Occlusion. Failure or irregularity of eruption of teeth. Broken or carious surfaces, tenderness, evidence of present or past root abscesses. Inspection of surfaces under removable appliances. Sensitiveness to cold and heat. Tartar deposit. Bleeding, purulent discharge, erosion or retraction of gum margins. Inspection to be carried out with use of tongue depressor and spot light. A narrow arch and high palate are worth noting, particularly in mouth breathers among children.

Tongue: Search on tongue and cheeks for roughnesses, leukoplakia, or possible precancerous lesions or ulcerations. Test tongue for tremors and symmetry when extended. Test speech in repeating trial phrases such as "Third Artillery Brigade" or others to determine nervous or muscular control of throat, tongue and lips.

Tonsils and Pharynx: Careful search by direct inspection and, if necessary, with use of laryngeal mirror for foci of infection, or evidence of hypertrophy of lymphatic tissue in throat and retronasal space. Note presence and character of secretions.

Ears: After removing wax or other dirt, inspect ear drum with otoscope, especially noting scars, sclerosis, perforations or discharge, and tenderness in soft or bony parts in vicinity. If hearing has been found defective, test bone conduction for sounds.

Heart: All observations made with patient at rest should be repeated immediately after brief exercise, of a kind and amount to cause at least momentary increase in respiration. The location and character of apex beat, the size of heart, the force and character of systolic impulse, the correlation between apex impulse and carotid and radial pulses, the effect of exercise on heart action are all of more value in estimating the presence, degree and importance of organic heart defect than is the presence of murmurs. The source, location in the cardiac cycle and significance of abnormal sounds, murmurs and thrills should always be determined if possible. Inspection, palpation, percussion and auscultation should be used methodically before and after exertion, and the effect of exertion on the rate and extent of respiratory movement and on the color of the skin and lips, and the subjective symptoms of the patient should be carefully noted in order to estimate the work capacity or reserve of the heart muscle.

Lungs: In addition to the systematic observation of the chest, back and front, during quiet breathing, and in full inspiration and expiration, by inspection, palpation, percussion and auscultation, the subject should be required to breathe out fully, then cough lightly and immediately breathe in, with the stethoscope continuously applied to different areas of the chest in turn during such a maneuver, especially above the third rib in front and the spine of the scapula behind. In this way the minuter, moist sounds indicating an early or incompletely arrested tuberculous process are most likely to be detected. Often only by considering the physical findings, together with the history and perhaps repeated observation of the patient, can the significance of abnormal sounds in the chest be determined or the diagnosis of a tuberculous process be established or eliminated.

Abdomen: The patient's mouth should be kept open, the breathing be quiet and easy, the knees partially flexed, the hands crossed on the chest, and the head on a low pillow during abdominal examination. Search for tenderness, muscular resistance, masses, abnormal size, location or character of palpable viscera. Variations from usual signs should be elicited in the various regions of the abdominal cavity by inspection, palpation, percussion and auscultation. The excursion of the diaphragm should be noted on each side.

Reflexes and Sensation: The abdominal and cremasteric reflexes may well be elicited at this time, and the patellar reflex or knee jerk and ankle clonus tested while the patient is recumbent. The Babinski and other special toe signs should be elicited at this time. Hyperesthesia and hypesthesia to touch and temperature should be tested on the main areas of the trunk and extremities while the patient is recumbent.

Liver: The upper and lower levels of liver dulness in inspiration and expiration, the location and character of the lower margin, especially irregularities or unevennesses of surface or edge will be established by percussion and palpation.

Spleen: The size and character, i. e., hard or soft, will be sought by percussion and palpation.

Kidneys: In the dorsal, lateral or prone, or knee-elbow position with the abdominal wall relaxed, the outline and fixation or mobility of the kidneys can be made out by palpation except in those with very obese or heavy muscular parietes.

Female Genitals: In unmarried women no internal or vaginal examination need be made unless there is a history of symptoms such as irregular or excessive flow, abnormal discharge, or uterine discomfort to call for visual and manual examination of the vaginal tract, the cervix, body, and palpation for ovaries. Abdominal palpation alone or with rectal digital examination should suffice. In married women or those who have borne children or when there are warning symptoms of disease, inspection with the speculum and bimanual examination should be employed.

Rectum: The finger cot or rubber glove should always be used. A digital examination by rectum should be made in the case of men, to palpate the prostate and, if necessary, to carry out digital massage. In women under 45 when there is no history of menstrual disturbance, pain or irregular bleeding or persistent constipation or pain or bleeding at stool, the rectal examination may be omitted. When the examination is made in unmarried women by the aid of coincident abdominal palpation, a fairly complete palpation of the pelvic organs of generation can be made. In both men and women the digital rectal examination offers an excellent opportunity to test the character of rectal and perineal tissues and to detect the presence of inflamed hemorrhoids, fissures, tumor formation, obstruction or cicatrices.

In a procedure such as that required to obtain an accurate and comprehensive understanding of the condition of an apparently healthy person, the slavish or routine following of a standard procedure must lead to poor results. The method described above is sufficient to meet all the usual indications for a complete medical examination, but each physician will doubtless change the order and content here submitted, as may be called for in the particular patient before him. Physicians with long experience and mature judgment use a standard form as a basis from which to vary at their discretion. Those who have not developed a satisfactory method and routine will find the one here given a convenience.

It is the practice in some places where large numbers of medical examinations of healthy young adults are made, as at state universities, to approach the patient from the standpoint of his various bodily systems and their relationships, such as mental, nutrition and special

senses, instead of by the regional method proposed above. It is usually found that the individual practitioner will save himself time and get a better all around picture of the patient by following the stages of the examination indicated in the main groups 1, 2, 3 and 4, as given in Form B.

HYGIENIC ADVICE

Physicians whose training and attention have been devoted almost exclusively to the treatment of serious or long established disease processes which have interfered with the patient's comfort or earning capacity will not find themselves at once prepared to guide applicants for health service in the practices of personal hygiene.

A review of the physiology of digestion and nutrition, and the effect and uses of physical exercise and development on the muscular, nervous, circulatory and respiratory systems, will be the most helpful preparation of the physician for carrying out the object of health examinations, which is in its simplest terms the early correction of errors of personal hygiene which have developed defects of bodily function, or are likely to do so if disregarded.

Hygienic advice alone, in the presence of the many well marked disease conditions which are commonly discovered in any group of people who believe themselves wholly sound and healthy, will, of course, be of no avail without the application of appropriate medical and surgical treatment for relief and cure.

Of the many disorders found among people apparently in good health, there are five so common that advice is frequently called for to correct them. These are sleeplessness, constipation, overweight, underweight, and arterial hypertension. The physician should be prepared to give specific instruction as to hygiene, manner of life, diet, etc., according to his own opinion in helping patients, who think themselves quite well, to correct or counteract the harmful effects of these common errors which are likely to cause serious disturbance of health with advancing years.

During the past year 958 persons received health examinations as described above, at the three stations in New York City established by the United Hospital Fund and under the professional direction of a committee of physicians all members of the New York Academy of Medicine. These people of various races, both sexes, all ages and chiefly from among the wage earners' families and others of limited or insufficient means, either did not consider themselves in ill health at the time of the examination or were obtaining no medical care for conditions of which they were aware but for which they believed medical treatment unnecessary.

Table 1.—*Nature of Hygienic Advice*

Hygienic Advice	Per Cent.
For general dietary	22.8
For correction of obesity	4.7
For malnutrition	4.1
For constipation	11.3
For exercise and outdoor recreation	17.4
For adequate use of water in the dietary	9.3
For oral hygiene	9.3
For bathing	10.2
For sleep and rest	6.4
For enuresis, prenatal care, clothing, sex hygiene, etc.	4.5
	100.0

Of the 958 examined, twenty-four, or 2.5 per cent., were found to be in good health; 697, or 72.7 per cent., needed definite medical treatment (this number included 214 who needed, in addition, advice as to habits and personal hygiene), and 237, or 24.7 per cent., needed only hygienic advice to correct or arrest existing errors of bodily function or defects of structure.

The hygienic advice given to 451 examinees, 214 of whom also required definite medical treatment, fell under the headings in Table 1.

Table 2.—*Chief Diseases and Defects Needing Treatment*

Diseases and Defects	Percentage of Entire Group (958) Examined
Dental defects	56
Defective vision	35
Diseased tonsils and adenoids	30
Circulatory disorders	28
(Which included 77 instances of functional cardiac disorders and 37 of organic heart disease)	
Diseases of women (lacerations, displacements and menstrual disturbances)	39*
Faulty posture (serious enough to cause symptoms)	10
Malnutrition (children and adults)	16
Constipation	12
Obesity, defective hearing, cervical adenitis and flat foot were recorded in about 10 per cent. of the cases. Twenty-two cases of syphilis and twenty-eight of suspected tuberculosis were found.	

* Percentage of 433 women examined.

The chief diseases and defects among the 697 needing medical care and treatment are given in Table 2. Multiple defects in the same individual were common.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BARIUM SULPHATE-MERCK FOR X-RAY DIAGNOSIS (See New and Nonofficial Remedies, 1923, p. 66).

The following dosage forms have been accepted:

Skiabaryt for Oral Administration: A mixture of Barium Sulphate-Merck for X-Ray Diagnosis, 75 to 85 per cent. admixed with sugar, tragacanth, vanillin, cinnamon and cacao.

Dosage. Triturate 150 to 200 Gm. (5 to 6.5 ounces) with cold water added gradually to form a smooth, thin paste; then add warm water gradually until the mixture measures 500 Cc. (16 fluidounces). The mixture is then ready for drinking.

No U. S. patent. U. S. Trademark 165,022.

Skiabaryt for Rectal Administration: A mixture of Barium Sulphate-Merck for X-Ray Diagnosis, 75 to 85 per cent. admixed with sugar, tragacanth, vanillin and cinnamon.

Dosage. Mix 200 Gm. (6.5 ounces) with cold water to form a smooth paste; then add warm water with stirring until the mixture has acquired a fairly fluid consistency. It is then ready for administration through the irrigator.

No U. S. patent. U. S. Trademark 165,022.

Course in Medical History.—A late addition to the curriculum is the course in the history of medicine: and the reasons advanced for adding an additional burden to the already overloaded medical course and thereby helping to increase the total number of years of study, must be almost self-evident. The physician if he is to retain his status in society must be more and more a cultured gentleman. He must be more than "a dispenser of pills and powders." He must be a leader in the community, with high ideals. His aim should be "how much can I contribute rather than how much can I get out of this community." The study of the development and evolution of medicine can play a prominent part in stimulating such an altruistic attitude of mind.—*Canadian M. A. J.* **13**:195 (March) 1923.

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SATURDAY, MAY 12, 1923

NEW VIEWS ON THE PREDETERMINATION OF SEX

From early antiquity, the forecasting of the sex of the unborn child has been a matter to occupy the minds not only of physicians and biologists, but also of the public. The subject is mentioned as far back as the Jewish Talmud,[1] and reference to it crops up through intervening centuries down to the present.

Most of these conjectures, founded as they were on the insufficient data of ignorance, or plainly old wives' tales or traditions, carried no measure of conviction; but as our acquaintance with histology and biology spread and scientific minds lent themselves to the study of the question, somewhat more exact data were brought to light. In 1828, Girou de Buzareingues[2] wrote a monograph on this subject. In 1863, Thury[3] enunciated his "law," and within the last fifteen years Caullery,[4] Kushakewitsch,[5] Morgan[6] and others have contributed to the literature of the subject theories supported by more or less convincing data and experiments. In 1902, McClung[7] stated that the accessory chromosome which Henking and Montgomery had located in certain spermatozoa is the determinant of sex. In McClung's view, each animal produces two kinds of spermatozoa in equal proportions, one set of which possesses the accessory chromosome. These views were confirmed by Edmund B. Wilson and T. H. Morgan, the latter's experiments on *Rana esculenta* indicating that these accessory chromosomes also transmit the hereditary qualities that predominate in each sex. These experiments tended to discredit the untenable theories of sex determination advanced in the past.

1. Talmud Babli, Book Nidar, par. 3.
2. Girou de Buzareingues: De la génération, Paris, 1828.
3. Thury: Mémoire sur la production des sexes, Paris and Geneva, 1863.
4. Caullery: Le problème du determinisme du sexe, Biologica **1**: 193, 1913.
5. Kushakewitsch, Serge: Die Entwickelungsgeschichte der Keimdrüsen von Rana esculenta: Ein Beitrag zum Sexualitätsproblem, Festschrift für R. Hertwig **11**: 63-224, 1911; Ein Fall von Hermaphroditismus lateralis versus beim Rana esculenta, Anatom. Anzeiger **38**: 531-537, 1911.
6. Morgan, T. H.: Is the Female Frog Heterozygous in Regard to Sex Determination? Am. Naturalist **45**: 253-254, 1911; Is the Change in the Sex Ratio of the Frog That is Affected by External Agents Due to Partial Fertilization? ibid. **46**: 108, 1911.
7. McClung: Biol. Bull. **3**: 43-84, 1902.

Recently, Dr. A. Alich[8] of Paris has elaborated further on this subject. He takes exception, as unscientific, to the focusing on one of the two elements of procreation, the spermatozoon and the ovum, as the sole and only determinant in the matter of sex. He contends that, since both are concerned in the question of fecundation, both must be concerned in the matter of the initial formation of the genital organs of the fetus. Alich grants as probable the theory of chromosome activity advanced by McClung, but refuses to limit its potency to the elements contained in the structure of the spermatozoon. He contends that these activating microcellules are present in both the ovum and the spermatozoon, and that the question of sex determination is one that is explained by the preponderance of one or the other at the time of contact of the two elements. In this connection he quotes Yves Delage,[9] who in 1913 wrote:

> It may be conceded that chromatin [chromosome] is not a homogeneous substance of which the smallest particle [the microcell of today] possesses all the characteristics of the whole, but that it is a collection of units having a distinct chemical composition, of which each cell has a definite relation to certain organs of the future state, and these themselves, an analogous chemical constitution.

Alich goes on to say that both the ovum and the spermatozoon, prior to fecundation, have their cycle of life; that, like all colloids, they are subject to the laws of evolution, and that this evolution differs according to the element considered. It is granted that the human ovum may remain capable of impregnation from eight to twelve days after its extrusion from the ovary, and therefore after the conclusion of the menstrual flow. The spermatozoa may remain active in the uterus six or eight days, after having taken from six to twenty hours to arrive at this location.

With these data as a hypothesis, Alich advances the theory that each one of these microcells, either male or female, has its special complementary destination with an analogous microcell, and carries for the creation of the genital system of the new being its coefficient of creative power; that in the creating of this system in the embryo there will be involved a certain number of male microcells and equally a certain number of female. Wherefore, it may be stated that if there is in this union a greater number of male microcells than female, the result will be a male embryo, and vice versa. It is of interest to consider what Alich has to say in support of the theory advanced in the preceding sentence. He believes that spermatozoa and ova, like all organic and inorganic colloids, have, prior to fecundaiton, their vital curve; and, consequently, in their evolution, follow a fixed trajectory. That is to say, the ratio of microcellular energy in each is at its height in its early life, and becomes less potent as the life cycle of each of them decreases regularly up to the time of cellular death, when they cannot fertilize or be fer-

8. Alich, A.: Bull. de l'Acad. de méd. **89**: 363 (March 20) 1923.
9. Delage, Yves: Une hypothèse sur la base physique de la force héréditaire, Biologica, 1913, p. 161.

tilized. Granting this proposition of microcellular energy, the spermatozoon or ovum which is most potent in this particular form of energy must be the deciding factor in the production of either male or female.

Taking into account observations on animals, he finds this in support of his theory: A mare that has been much exhausted by work when bred with a fresh stallion gives male issue and vice versa. With sheep, if a number of the ewes are in rut at one time, the preponderance of lambs will be female, owing to the weakened force of the ram in covering an excessive number of ewes (relative numbers by experiment, three rams and fifteen ewes). If only a few of the ewes are in rut, the majority of the "get" will be male (relative number by experiment, thirteen rams, four ewes). The result between an adult rooster (2 years) and pullets of from 6 months to 1 year gives a preponderance of males, while in the opposite condition the balance is in favor of the female. From these three experiments, Alich makes the further deduction that, in addition to considering solely the question of the life cycle of the microcellular elements which he believes to be the determining factor in sex determination, account must be made for factors in the individual that affect this potential energy; that different individuals may have a different index of potency, and that this potency is influenced in the same individual by conditions such as fatigue or age, as exemplified in the foregoing experiments.

With these deductions, Alich believes that there is ready explanation, according to the theory which he advances, of the different hypotheses that have been advanced as explaining the question of sex incidence, and that it clarifies the vague premises advanced under heredity, dominant personality, superior physical strength and even the early one of priority of the orgasm, which is that advanced in the Talmud, already referred to.

He admits that there is perhaps a certain amount of conviction in these theories, but asserts that they fail in logic, since they are based on a one-sided view, taking into account only one of the generating elements, exclusive of the other.

In conclusion, he says:

> The laws which we have laid down and the study which we have made takes into consideration all facts which can be presented. This study shows us that, as Cuénot [10] believed, the determination of sex is syngameous; that is to say, it takes place at the time of fecundation. The two elements involved (the male and female microcells) decide the sex of the future individual at the time of contact and in accordance with the preponderance of microcellular energy in one or the other of the uniting elements, the spermatozoon or the ovum.
>
> On the variation in the relation of this intracellular energy hangs the formation of the genital tract of the fetus; any cause which tends to favor one or the other will weigh down the sex balance of the future individual.

Such is the theory that Dr. Alich offers to the French academy as explanation of this puzzling question. It is ingenious and fairly plausible; certainly as much so as what has already been advanced on the subject; but after all, as he says in finishing his discussion:

> We have laid down a law which seems in accord with experiments hitherto made along these lines and to fit the more or less empiric speculations of early writers and also the traditions handed down from father to son. That much accomplished, further confirmation of it now rests in the hands of the biologist.

10. Cuénot, L.: Arch. de zool. expér. et gén., Paris, Schleicher frères **4**: 6, 1907.

NEW ANESTHETICS: ETHYLENE AND ACETYLENE

Real additions to the subject of anesthesia are always welcome and desirable, and this year sees a revival of interest in two gas anesthetics: ethylene and acetylene. Both gases were the subject of experiment in anesthesia many years ago. In 1864, the physiologist Hermann [1] demonstrated anesthesia on himself with ethylene, and concluded that the gas acted similarly to nitrous oxid. It appears that Davy and Johannes Müller made similar demonstrations with ethylene on themselves. The effects that they reported were a sensation of pressure in the head, with moderate increase in respiratory rate in the beginning. This was followed by sleepiness, muscular weakness, dizziness and unsteady gait, and afterward headache. In 1876, Eulenberg [2] and, in 1885, Lüssem [3] published observations on animals. Lüssem found that ethylene in concentrations of from 70 to 80 per cent. by volume mixed with 20 per cent. of oxygen caused anesthesia in animals (frogs, birds, rabbits, dogs and guinea-pigs), preceded by excitation and followed by rapid recovery. Recovery in fresh air was complete in a few minutes. A sound, prolonged sleep was not observed in rabbits and dogs with concentrations of from 30 to 40 per cent., and the stage of excitation lasted longer. Apparently there were no after-effects and no demonstrable changes in the blood. Overdosage caused death by asphyxia. Lüssem also states that he produced light narcosis in himself with diluted ethylene.

The recent experiments of Luckhardt and Carter [4] of the Department of Physiology of the University of Chicago, and of Brown [5] of Toronto, confirm and extend these early observations, and appear to hold out greater promise of the future usefulness of ethylene.

Acetylene was described by Lewin [6] in 1885 as a rather efficient anesthetic, requiring only about 1 per cent. by volume in air for anesthesia, and apparently, therefore, more efficient than ethylene. This was confirmed in 1895 by Rosemann.[7] Marked effects in cats were produced by concentrations of from 15 to 20 per cent. by volume, many animals showing vomiting, and later

1. Hermann, Ludimar: Ueber die physiologischen Wirkungen des Stickstoffoxydulgases, Arch. f. Anat. u. Physiol., 1864, p. 521. Exp. Toxikol., 1874, p. 276.
2. Eulenberg: Gewerbehygiene, 1876, p. 398.
3. Lüssem, F.: Diss., Bonn, 1885; Ztschr. f. klin. Med. **9**: 397, 1885.
4. Luckhardt, A. B., and Carter, J. B.: The Physiologic Effects of Ethylene, a New Gas Anesthetic, J. A. M. A. **80**: 765 (March 17) 1923.
5. Brown, W. E.: Preliminary Report of Experiments with Ethylene as a General Anesthetic, Canadian M. A. J., March, 1923.
6. Lewin, Louis: Lehrbuch der Toxikologie, 1885. Ogier: Sem. méd., 1887, No. 11.
7. Rosemann, R.: Ueber die Giftigkeit des Acetylens, Arch. f. exper. Path. u. Pharmakol. **36**: 179, 1895.

dyspnea with marked general irritability. Blood appeared not to be altered by acetylene. Owing, however, to its unpleasant odor, acetylene was discarded. Apparently, this objection has now been overcome by the addition of oil of pine, as a flavor, according to the recent report of a personal visit by Horwitz [8] to Gauss' gynecologic clinic at Freiburg.

Horwitz reports that Gauss has successfully used a mixture of acetylene, 40 parts, and oxygen, 60 parts, flavored with oil of pine, as an anesthetic in major operations in 515 cases with no catastrophes. The advantages claimed for acetylene are: rapid induction (insensibility in five minutes); simplicity of administration; safety; absence of struggling and excitement, and rapid recovery. The anesthetized patients appeared to be in natural sleep and without change in color; respiration appeared to be a trifle quicker than usual, and the temperature fell about 1 degree. It is stated that women patients testified that there were no unpleasant sensations and that postanesthetic vomiting was absent. Relaxation was not so complete as with chloroform, though it was adequate for major operations. The acetylene-oxygen mixture is used by Gauss in obstetrics, but he warns that, like all general anesthetics, it diminishes uterine contractions.

In the case of acetylene, as in that of ethylene, recent observations confirm and extend those of the older workers, but with acetylene, trials on human subjects are not reported before Gauss. Both ethylene and acetylene are asphyxiants. Their usefulness in relation to that of nitrous oxid, and also to ether, remains to be demonstrated. Meantime, they should not be used indiscriminately. It will be better to permit those who can study them and observe their effects under controlled conditions to work out their relative value.

8. Horwitz, C. H. S.: A New General Anesthetic, Lancet **1**: 619 (March 24) 1923. Gauss, C. J., and Wieland, H.: Ein neues Betäubungsverfahren, Klin. Wchnschr. **2**: 113, 158, 1923.

SALT-RISING BREAD AND THE WELCH BACILLUS

Until late in the nineteenth century, the preparation of bread was an uncertain and wasteful process; then Pasteur's work on fermentation led to the perfection of bakers' yeast and revolutionized the baking industry. Today bakers' bread is manufactured scientifically and with assurance. Many people, however, continue to prefer salt-rising bread, which until recently was baked at home in the crude manner of former centuries. Salt-rising bread has a distinctive flavor and odor, and its food value per unit of volume is comparatively high. It is not made with yeast, but, for sufficient gas to raise the dough, depends on chance inoculation with gas-producing organisms that naturally reside in flour. These organisms vary with different lots of dough. Thus, failures to obtain good bread are not infrequent. There are now on the market products intended to insure an abundance of gas for baking salt-rising bread, and some of these—so-called "bread starters"—are practically cultures of gas-producing micro-organisms.

Kohman,[1] in 1917, reported the isolation of a bacillus from salt-rising bread which he predicted would have far-reaching results on the salt-rising bread industry. It was said to be an exact parallel of the discovery of yeast. Two thirds of the gas formed by this organism was said to be hydrogen, the remainder carbon dioxid. It was a spore-bearing bacillus, which, it was stated, produced no alcohol, and which perished during the process of baking. "Hence," it was said, "salt-rising bread is as sterile as bread made with yeast." "Bread starters" have since been concocted which, it seems, are not sterilized during the process of baking.

Recently, Koser [2] investigated a commercial "bread starter" which was advocated for the preparation of salt-rising bread, and found that it contained large numbers of *Bacillus welchii* (*B. aerogenes-capsulatus*). It was a coarse, white powder composed of starch and certain alkaline salts in addition to the bacilli. According to directions accompanying the product, it is added to boiling hot milk and kept over night in a warm place. It is then added to hot water and flour to prepare the "sponge," which is allowed to rise; then more hot water, flour and other ingredients are added to make the dough. This is molded into loaves and baked. The addition of this starter to milk results, after incubation over night, in a frothy mass which, Koser estimated, contained from 1,000,000 to 100,000,000 *B. welchii* organisms per gram. After the bread was baked, and, in fact, after it was placed on sale, the bacillus was recovered from the interior of the loaves. In samples as small as 0.01 gm., taken from the interior of loaves, *B. welchii* was found in eighty-five out of ninety-two samples examined. Larger samples of bread, 1 and 5 gram samples, gave uniformly positive results. In decided contrast to these findings were results obtained in the examination of ordinary yeast bread, in forty 5 gram samples of which only three showed the presence of *B. welchii*. Negative results were obtained in all of the 0.1 gram samples of yeast bread examined.

Guinea-pigs were injected in the thigh muscles with 1.0 c.c. of twenty-four hour cultures in beef infusion broth containing a piece of cooked meat. The guinea-pig receiving the "bread starter" culture became quite ill after twenty-four hours. Its entire thigh and flank became swollen and tender, an ulcer formed which eventually healed with a scar, and the hair over the affected portion fell out. The guinea-pig injected with the culture obtained from loaves of salt-rising bread became somewhat sick after twenty-four hours, the thigh and flank became swollen, an extensive scar formed over the affected parts, and the hair was lost.

1. Kohman, H. A.: Salt Rising Bread, Sc. Am. Supp. **84**: 212, 1917.
2. Koser, S. A.: Bacillus Welchii in Bread, J. Infect. Dis. **32**: 208 (March) 1923.

Thus, it seems, the virulence of these organisms was not very high. Koser then prepared salt-rising bread by using a virulent strain of the Welch bacillus. He obtained a culture of the "Silverman" strain, which originally was isolated from a war wound, and substituted it in the "bread starter." The bread thus made compared favorably in texture and size with the bread prepared from the starter.

The association of the Welch bacillus with wound infections in man is well known. It has also been associated with acute intestinal disorders in connection with public water supplies. It is said, however, to be a common inhabitant of the intestinal tract of man, and to occur frequently in milk. Nevertheless, the use of an organism of this type in a commercial process would appear to be a questionable procedure. A safer course would be to employ in "bread starters" an organism which is, beyond question, harmless.

Current Comment

MERCURIAL STOMATITIS

The characteristic inflammation of the mouth caused by the excessive use of mercury, and known as mercurial ptyalism or stomatitis, represents a condition rarely seen as a result of the therapeutic use of other drugs. Intoxication with mercury is by no means an uncommon clinical finding; the importance of this form of poisoning is, in fact, increasing, because of the wide use of mercury in certain fields of therapy, the possibility of the introduction of mercury and its salts into the body through ingestion, inhalation or cutaneous absorption in connection with industrial pursuits, and because of the current "popularity" of this poison for criminal purposes involving attempts against human life. In the more recent studies of the pathology of the subject, attention seems to have been focused on the kidneys, presumably because anuria becomes a prominent symptom in all severer forms of intoxication with the metal. Like other inorganic substances, mercury is secreted into the saliva; hence, various observers have championed the theory that mercurial stomatitis is attributable to the local irritation produced by the presence of the poison in contact with the mucosa. The German toxicologist Kobert favored this explanation, advancing in support of it the extreme sensitiveness of such membranes to even greatly diluted solutions of salts of mercury, so little as one part in a hundred thousand being perceptibly disagreeable. The problem has lately been subjected to a detailed critical review by Bessesen,[1] at the University of Minnesota. He admits that some specific local action of mercury may occur in mercurial stomatitis; but he regards this as inadequate to explain the intensity of the pathologic processes concerned. From his own observations, Bessesen finds distinct indications of blood and circulatory changes which must be taken into consideration in discussing any local lesion. They have been emphasized by many writers, and formulated into a variety of theories. The most recent review of the subject reasserts anew the belief that in mercurial poisoning the local lesions not only in the mouth but also in various other organs are due to local effects superimposed on more general or widespread vascular and cellular changes which make the local reactions possible.

1. Bessesen, D. H.: The Pathogenesis of Mercurial Stomatitis, Arch. Dermat. & Syph. 7: 332 (March) 1923.

SUGAR CONSUMPTION BY ACTIVE GLANDS

It is generally appreciated that functional activity in the body is the consequence of an exchange of materials —of metabolism, as it is currently designated. This transformation is commonly, and quite naturally, thought of in connection with the contractions of the musculature. Every one realizes that such work as is performed by the muscular system cannot be carried out without the conversion of energy, and that it goes on at the expense of organic substances stored in or brought to the contractile tissues. The mass of the muscles is so large in proportion to most other structures in the body that there is a tendency to identify the utilization of energy-yielding materials almost entirely with the functions of the muscles. The need of food fuel is, as a rule, thought of primarily in relation to the amount of muscular activity or work to be done. Since it has become comparatively easy to measure not only the heat output of the entire body as an index of its metabolic activity but also the equally significant oxygen consumption of individual organs, it has become more apparent that other structures than the muscles are also concerned with the use of energy-yielding organic compounds. Even the nervous tissues participate to a now measurable extent in the general metabolism of the organism. The blood stream leaves more than one tissue, other than that of the muscular tissues, poorer in oxygen and richer in carbon dioxid. With the development of microchemical methods for the estimation of both nitrogenous and non-nitrogenous compounds, such as amino-acids, urea and sugar, important progress has begun to be made in the appreciation of their origin, distribution or utilization. It has become possible, for instance, to estimate the actual consumption of sugar in glands as small as those which furnish the saliva. The studies of Anrep and Cannan [1] at University College, London, indicate that even the so-called resting submaxillary gland, for example, consumes blood sugar at a fairly constant rate. This utilization of readily available circulating carbohydrate is greatly increased under any influence that leads to salivary secretion. The maximal consumption of sugar corresponds with the maximal secretion, and does not occur, as does the oxygen consumption, in the postactive period. This suggests at once that there are two phases in the activity of such a secretory gland—the unoxidative phase, involving the breakdown of sugar, and the recovery phase, in which the products of this breakdown are removed, presumably through oxidation. It is interesting to see the field of the study of metabolism thus extended into domains beyond the consideration of the muscles alone.

1. Anrep, G. V., and Cannan, R. K.: The Metabolism of the Salivary Glands: The Blood Sugar Metabolism of the Submaxillary Gland, J. Physiol. 56: 248 (May) 1922; 57: 1 (Dec.) 1922.

Association News

THE SAN FRANCISCO SESSION

Dinners and Other Group Entertainments at San Francisco

Dr. Lawrence A. Draper has been appointed chairman of a special subcommittee of the Local Committee of Arrangements to arrange for dinners or other entertainments for special groups during the annual session of the American Medical Association. Several section dinners have already been arranged for, as well as other group entertainments. Those who may be interested may write directly to Dr. Draper, 806 Balboa Building, San Francisco.

Be Sure to Bring Blue Fellowship Card

Registration at the San Francisco session will be greatly facilitated if Fellows will have their blue Fellowship cards ready for presentation at a registration window. These cards have been forwarded to all Fellows whose names have been reported for enrolment by the secretaries of the constituent state medical associations. Unfortunately, some county secretaries have been dilatory in reporting the names of some members of their respective societies to state secretaries, and it has therefore been impossible for these to be enrolled on the membership roster of the American Medical Association.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Women's Medical Association.—The women physicians of the American Medical Association will hold a banquet in the Fairmont Hotel, San Francisco, June 28.

Changes in Faculty of Medical School.—The following promotions and appointments in the clinical staff of Stanford University School of Medicine, San Francisco, were announced, April 18: Dr. William P. R. Clark, promoted to professor of medicine in charge of tuberculosis work; Dr. Leo Eloesser, promoted to clinical professor of surgery; Dr. Philip K. Gilman, promoted to full clinical professorship; Dr. Thomas G. Inman, associate clinical instructor in neurology; Dr. John A. Bacher, professor of surgery in diseases of the ear, nose and throat; Dr. Harry L. Langnecker, professor of orthopedic surgery, and in charge of physiotherapy; Dr. James A. Cutting, clinical professor of medicine to conduct classes in psychiatry; Dr. Harry Spiro, assistant clinical professor of medicine; Dr. Rea E. Ashley, instructor in diseases of the ear, nose and throat; Dr. Morton R. Gibbons, instructor in hygiene and public health.

GEORGIA

Medical Association of Georgia.—At the seventy-fourth annual meeting of the Medical Association of Georgia, the following officers were elected for the ensuing year: president, Dr. John W. Daniel, Savannah; first vice president, Dr. Alfonso J. Mooney, Statesboro; second vice president, Dr. Henry C. Whelchel, Douglas, and secretary, Dr. Allen H. Bunce, Atlanta. Augusta was selected for the meeting in 1924.

ILLINOIS

Dr. Carriell Reinstated.—Dr. H. B. Carriell who was relieved as managing officer of the Dixon state colony, January 1, has been reinstated in the service of the state charities with rank of senior physician and has been ordered to report to Kankakee Hospital by the governor.

Child Health Conferences in Kane County.—A series of fifteen child health conferences were held the latter part of April by local organizations in Kane County; 600 children were examined and 1,127 physical defects recorded. These examinations are the basis of follow-up service which will be carried out by the agencies that sponsored the conferences.

Physician Sentenced.—Dr. Omar M. Willis of Metropolis, who was indicted for violation of the Harrison Narcotic Law, was sentenced recently, it is reported, to serve three years in Leavenworth, and to pay a fine of $500. Dr. Willis was indicted along with four others from the same city. Evidence was introduced to show, it is reported, that he had dispensed 13,000 grains of morphin within the last fourteen months.

Society News.—At a meeting of the Mercer County Medical Society in Aledo, April 17, the following officers were elected for the ensuing year: Dr. Bryce R. Winbigler of Aledo, president; Dr. Frederick J. Rathbun of New Windsor, vice president, and Dr. Victor A. McClanahan of Viola, secretary. Dr. Edward H. Ochsner of Chicago addressed the meeting.——The one hundredth meeting of the Fulton County Medical Society was held in Canton, April 10.——The Illinois Society for Crippled Children, fostered by the Rotary Club, was organized in Bloomington, April 12.——At the annual meeting of the Central Illinois Medical Society in Pana, Dr. Dorwin D. Barr, Taylorville, was elected president; Dr. Thomas O. Freeman, Mattoon, vice president, and Dr. Franklin A. Martin, Pana, secretary-treasurer.

Chicago

Large Fine for Physician.—It is reported that Dr. I. Clark Gary, proprietor of the Peoples' Hospital and Training School for Nurses, Chicago, was convicted in the federal court, April 23, on a charge of selling narcotics to drug addicts who were patients in the hospital. He was fined $2,200.

Society News.—At the annual meeting and banquet of the Chicago Laryngological and Otological Society, May 3, the following officers were elected for the ensuing year: president, Dr. John A. Cavanaugh; vice president, Dr. Austin A. Hayden, and secretary-treasurer, Dr. Edwin McGinnis; the president, Dr. Charles H. Long, spoke on "Chicago's Past Masters in Oto-Laryngology."——At a meeting of the Chicago Urological Society, April 30, Dr. Herman N. Bundesen, health commissioner of Chicago, spoke on "The Venereal Question in a Large City."

Cooperative Officing of Twelve Agencies.—Twelve social service agencies officially began work in a new home in the Keehn building, at 308 North Michigan Avenue, May 1. Two of the agencies were already located in this building, and within a few days, it is said all will be functioning there. Among the organizations which have their administrative offices at this location are: The Chicago Association for the Prevention and Relief of Heart Disease; the Illinois Society for Mental Hygiene; Illinois Society for the Prevention of Blindness, and the Infant Welfare Society.

INDIANA

Class Reunion.—Forty-three members of the class of 1903 of the Medical College of Indiana held a reunion in Indianapolis recently. Prof. John H. Oliver, their instructor twenty years ago, was the principal speaker. The Medical College of Indiana was the forerunner of the Indiana University School of Medicine.

IOWA

Veteran Member Honored.—The Polk County Medical Society held a testimonial meeting in Des Moines, April 24, in honor of Dr. David S. Fairchild of Clinton, who has completed fifty years as a member of the Iowa State Medical Society, and who is a former president of the society and editor of the *Journal of the Iowa State Medical Society*. Dr. Vincent O'Conor was the principal speaker. The testimonial was read by Dr. Harry E. Ransom, secretary of Polk County Medical Society.

KANSAS

Fifty Years in Practice.—The Doniphan County Medical Society gave a banquet and a gold-headed cane to Dr. William W. Carter of Wathena, April 11, in honor of his fiftieth year in practice.

MARYLAND

Library Association Convention.—The National Medical Library Association held a convention in Baltimore, May 7, at Osler Hall. This was the twenty-first anniversary of the organization. Dr. William Osler was its founder.

Medical Advisory Committee.—The following physicians have been appointed by the state board of welfare as a medical advisory committee to supervise the medical administration of the Maryland Penitentiary and the Maryland House of Correction: Drs. Francis L. Dunham, Lewellys F. Barker, Charles R. Austrian, Arthur M. Shipley and George Walker.

Survey at Bay View.—A survey of the 600 inmates of the almshouse at Bay View Asylum has been authorized by the supervisors of charities of Baltimore. The survey, which will be made during the summer by volunteer physicians under the direction of the medical director of the institution, will aim to improve the condition of the aged who are neither sick nor infirm, and determine how many of the inmates require treatment in the hospital for the insane.

Antiques Bequeathed to Johns Hopkins.—Furnishings from the home of the late Dr. William S. Halstead have been installed in the chief surgeon's office at Johns Hopkins Hospital. Dr. Halstead, who was surgeon-in-chief of the hospital and professor of surgery at the Johns Hopkins Medical School, left the entire contents of his home to the university and hospital. Some of these furnishings were recently exhibited at the Peabody Institute.

Medical and Chirurgical Faculty of Maryland Elect Officers.—At the one hundred and twenty-fifth annual meeting of the Medical and Chirurgical Faculty of Maryland, held at Baltimore, April 24-26, the following officers were elected for the ensuing year: president, Dr. Philip Briscoe, Mutual; vice presidents, Drs. Charles Urban Smith, Baltimore, and John Percy Wade, Catonsville; Dr. Joseph Albert Chatard, secretary, and Dr. Charles E. Brack, treasurer. Dr. Harry Gideon Wells, medical research director of the University of Chicago, gave an illustrated lecture on "Hereditary Influence on Cancer."

Hospital News.—Sydenham Hospital, adjoining Bay View, will become a tuberculosis hospital for negroes when the Municipal Hospital at Montebello is completed, about October 1.——A new state hospital, recently built at Henrytown, will open shortly, with 100 beds for tuberculous cases.——A new general hospital will be established in Baltimore on the site of the old Morrow Hospital, a part of the U. S. Public Health Service, which will be given up by the government in June. It will be known as an "open hospital," that is, any physician who is approved by the executive committee may send patients to private rooms and private wards. There will be ten free beds for radium treatment. The following physicians are members of the hospital committee: Dr. Anton G. Rytina, chairman, and Drs. James M. H. Rowland, William F. Lockwood, Julius Friedenwald, Alexius McGlannan, Emil Novak, George W. Mitchell, Charles F. Blake, Albertus Cotton and Arthur Hebb.

MASSACHUSETTS

New England Society of Psychiatry.—At a meeting of the society in Foxboro, April 11, the following officers were elected: president, Dr. Arthur H. Ruggles, Providence, R. I.; vice president, Dr. Charles H. Dolloff, Concord, N. H., and secretary-treasurer, Dr. Roderick B. Dexter, Taunton, Mass. Dr. Charles Macfie Campbell and Dr. Oscar J. Raeder read papers.

Personal.—Dr. A. G. Griffin of Malden has been appointed resident physician to the American Woolen Company's Community Center at Shawsheen Village. Dr. Griffin has been a member of the staff of the Malden Hospital for more than thirty years.——Dr. Edward K. Burbeck has been appointed medical director of the Devereaux Mansion Sanatorium, Marblehead, succeeding the late Dr. Herbert J. Hall, founder of the institution.——Dr. Frank B. Mallory, recently elected treasurer of the American Association of Pathologists and Bacteriologists, has been elected editor of the *Journal of Medical Research*.——Prof. Samuel W. Stratton, D.Sc., president of the Massachusetts Institute of Technology, Boston, will be formally inaugurated, June 11.——Dr. Richard P. Strong, director of the department of tropical medicine at Harvard Medical School, was recently elected vice president of Section N (Medical Sciences) of the American Association for the Advancement of Science.

MICHIGAN

Sterilization Bill.—The Sligh bill, providing for the sterilization of feebleminded and mentally defective persons, has passed both branches of the legislature.

Michigan Trudeau Society Elects Officers.—At the annual meeting of the society at Howell, the following officers were elected: Dr. Benjamin A. Shepherd, Kalamazoo, president; Dr. John W. Toan, Howell, vice president; Dr. William H. Marshall, Flint, secretary-treasurer.

Personal.—Dr. Wellington B. Huntley has been appointed city health officer of Ionia to succeed Dr. Joseph Johns, who has gone to Scotland for postgraduate work in surgery.——Dr. Henry M. Warren, Jonesville, has been reappointed health officer of Scipio Township. Dr. Warren is 83 years of age.——Dr. William H. Taylor of Ludington, practicing physician in Mason County for the last thirty-eight years, has announced his retirement, it is reported. Dr. Mason has been county physician for twenty-five years.

MINNESOTA

Annual Banquet.—Hennepin County Medical Society held its annual banquet in Minneapolis, April 17. There was an attendance of 275. The address of the evening was given by Dr. John R. Murlin, Rochester State University, New York, whose subject was "Progress and Preparation of Pancreatic Extracts for the Treatment of Diabetes."

MISSISSIPPI

Official Opening of Sanatorium.—Mississippi's tuberculosis sanatorium will be opened officially June 11, although all contracts have been completed, and patients have already been admitted. The total capacity is 415.

MISSOURI

Personal.—Dr. Robert C. Robertson, Aurora, secretary of the Lawrence-Stone Medical Society, has been appointed assistant physician at State Hospital No. 4, Farmington.——Dr. Harvey D. Lamb, St. Louis, has been appointed ophthalmologist to the Missouri School for the Blind, to succeed Dr. Joseph W. Charles, whose term has expired.——Dr. Nathaniel Allison, dean of Washington University School of Medicine, St. Louis, addressed the Jackson County Medical Society at Kansas City, April 14, on "Medical Problems."——Drs. Akira Fujinammi, Sahachiro Hata, Kinnosuke Kiura and Baron Takaki, of the commission of Japanese medical scientists, visited the Washington University School of Medicine, St. Louis, April 23-26, under the auspices of the Rockefeller Foundation.——Dr. Howard D. Kearby, city health officer of St. Joseph, has resigned. Dr. Leroy Beck, president of the Buchanan County Medical Society, has been elected to succeed him.——Dr. Otto Meyerhoff, professor of physiology, University of Kiel, lectured at the Washington University School of Medicine, St. Louis, on the "Dynamics of Muscle," and the "Energetics of Cell Processes," April 17-18.—Dr. Ralph A. Kinsella, acting professor of medicine, Washington University School of Medicine, St. Louis, addressed the Atlantic City meeting of the American Association for the Advancement of Medical Research on "Experimental Reproduction of Glomerular Nephritis."——Professor Bakule, Prague, gave a lecture and demonstration under the auspices of the St. Louis School of Occupational Therapy, Washington University School of Medicine, May 1. He is touring the United States with a group of handicapped children, whom he has trained to become adept at some gainful occupation.——Dr. Eugene L. Opie, professor of pathology, Washington University School of Medicine has again been elected to membership in the National Academy of Sciences.

NEBRASKA

State Medical Meeting.—The fifty-fifth annual convention of the Nebraska State Medical Association will be held in Lincoln, May 15-17, under the presidency of Dr. Benjamin F. Bailey. Drs. James B. Herrick, Chicago, and Arthur E. Hertzler, Kansas City, Mo., will be guests of honor.

NEW YORK

Women's Medical Association.—At the meeting of the Women's Medical Association of New York, to be held in the Hotel McAlpin, New York City, May 21, subjects concerning gastric disturbances and eye diseases will be discussed at the morning session, and subjects concerning diseases of the uterus, the relation of mental deficiency to prostitution, and other subjects will be discussed in the afternoon.

New Medical Society Formed.—The Rockaway Medical Society, recently formed, includes physicians from Rockaway Beach, Far Rockaway, Lynbrook, Rockville Center and other

Long Island towns. It has a membership now of thirty-five, and holds meetings on the third Fridays of each month. The officers are Leonard S. Rau of Lawrence, president; Abraham W. Victor, Rockaway Beach, vice president; Herbert L. Langer, Arverne, secretary; Louis V. Clark, Far Rockaway, treasurer.

Bill to Report Divorce Statistics.—A bill is under consideration by the legislature which would require all courts to report statistics of divorce cases to the state department of health. Its purpose is to give data for vital statistics and for social welfare workers concerning the names of divorced people, the nature of the divorce action, and the number, names, age and sex of the children involved. The bill is opposed on the ground that such information should not become public.

United Hospital Fund.—On April 17, the committee on dispensary development of the United Hospital Fund began a series of conferences intended especially for persons engaged in dispensaries or the outpatient departments of hospitals. The conferences are held at the New York Academy of Medicine and are free to all. The subjects to be discussed will include: admission of patients, records and statistics, cooperation between dispensaries and other agencies, clinic management, and follow-up work.

New York City

Hospital for Joint Diseases Raises Funds.—This institution is conducting a campaign to raise $700,000 for the completion of its new building on Madison Avenue between One Hundred and Twenty-Third and One Hundred and Twenty-Fourth streets. More than $200,000 of the amount required was raised in a few minutes at a meeting of the directors.

Bronx Physicians' Club.—For the purpose of scientific group discussion of the cases and problems met with by the general practitioner, the Bronx Physicians' Club has been organized. Every month an authority in some particular field is invited to speak. Officers of the society are: president, Dr. Benjamin Antin; secretary, Dr. William Koblenz, and treasurer, Dr. Benjamin Archer.

Academy of Medicine Campaign a Success.—The results of the drive to raise $250,000 among the members of the New York Academy of Medicine for the purchase of a site for a new building were announced by Dr. George David Stewart at the stated meeting of the Academy on May 3. The total amount subscribed up to that time by Fellows and associate members was $317,711.05. The total percentage of resident active Fellows subscribing is 90 per cent., the total percentage of all classes of members who have contributed is 82 per cent. The total cost of this campaign which has met with such unusual success was $6,627.92, or 2.1 per cent. of the amount raised. Dr. Royal Storrs Haynes was chairman of the committee of sixty, which had charge of the campaign. The success of the Academy in securing this fund assures it of the contingent fund of $1,000,000 from the Rockefeller Foundation and a similar amount from the Carnegie Foundation and opens the way for this institution to fulfil in a fitting way its function as a repository of medical learning.

OHIO

Memorial to Physician.—A $25,000 nurses' home will be erected in Youngstown, as a memorial to Dr. Rocco Montani, who was killed in an automobile accident, Nov. 26, 1922.

Physicians Fined.—It is reported that Drs. Clifford G. Smith, John A. Dodd and Dana O. Weeks, Marion, were recently fined $50, $75 and $200, and costs, respectively, when they pleaded guilty to violation of the Harrison Narcotic Law.

Chiropractors Arrested.—George E. Laubby, president of the Akron College of Chiropractic, and nine other chiropractors of Akron have been arrested for advertising to practice their profession without being licensed by the state, it is reported.

Society News.—The Academy of Medicine of Toledo and Lucas County held a general meeting, May 4, at which the following program was presented: "Trigeminal Neuralgia.—Tic Douloureux," Dr. William T. Coughlin, St. Louis University; "Diagnostic Signs of Endocrine Disease," Dr. John L. Tierney, St. Louis.

State Association Officers.—At the recent meeting of the state medical association at Dayton, May 2, Dr. George E. Follansbee, Cleveland, was chosen president-elect. Dr. Joseph S. Rardin, Portsmouth, is now president, and Don K. Martin, Columbus, executive secretary. The next annual meeting will be held in Cleveland.

Contagious Disease Outbreaks.—The schools of Homer were closed recently, due to an outbreak of scarlet fever.—— Smallpox has been reported in Pike County at four widely separated locations.——A measles epidemic at Elyria has been averaging about twenty new cases a day.——It was reported, April 18, that there was a total in the state of 502 cases of scarlet fever, 177 cases of diphtheria, and 147 cases of smallpox.

PENNSYLVANIA

Pennsylvania Food Law.—Since Governor Pinchot signed the so-called flour bill, amending clause 5 of section 3 of the state food law of May 13, 1909, the state department of agriculture has been asked what stand it will take in the matter. The Department of Agriculture will take, it is reported, no action for the present in connection with the manufacture or sale of aged, bleached or matured flour, pending further research and experimental investigation as to whether or not the nutritive value of flour is injuriously affected by such aging, bleaching or maturing. Should later developments disclose that the aging, bleaching or maturing of flour affects its quality or purity, or makes the flour appear better and of greater value than it really is, or that the substances used are injurious to health, action will then be taken by the department through the proper agencies.

Philadelphia

Dr. Work Addresses Medical Club.—Dr. Hubert Work, Secretary of the Interior, outlined the duties of the various bureaus of his department to more than 300 physicians at a meeting of the Medical Club of Philadelphia, April 20.

University News.—The first award of the Mary Ellis Bell prize for the best undergraduate work in medical research at the University of Pennsylvania was made to John B. Barnwell and Ralph Lynch for work on transplantation of islet tissue. This work was presented at the fifteenth annual meeting of the Undergraduate Medical Association, April 19.

Gift to Academy of Sciences.—A tablet to Alexander Wilson, American ornithologist, which will be unveiled at the Academy of Natural Sciences, May 17, was designed by Dr. R. Tait McKenzie and presented to the academy by the St. Andrews Society of Philadelphia, through the generosity of the late Dr. F. Lawson Cameron. Alexander Wilson was born in Paisley, Scotland, July 6, 1766, and died in Philadelphia, Aug. 23, 1813.

Society News.—The tenth annual meeting of the Public Charities Association of Pennsylvania was held, April 30. Dr. Charles H. Frazier was elected president, and Dr. Charles J. Hatfield, vice president. C. Allison Scully was appointed treasurer.——The seventy-seventh anniversary and annual banquet of the Northern Medical Association was held at the Hotel Adelphia, April 30.——The state meeting of the College of Physicians, held, May 2, was devoted to health education. Dr. Edwin C. Broome and Dr. James M. Anders gave addresses.——Dr. Joseph Sailer was reelected president of the Philadelphia Association for the Prevention and Relief of Heart Disease, at the second annual meeting, April 18. Drs. George W. Norris, vice president; William D. Stroud, secretary, and Morris W. Stroud, treasurer, were also reelected.

SOUTH CAROLINA

State Association News.—At the annual meeting of the South Carolina Medical Association, at Charleston, April 17, the following officers were elected: Dr. Leland O. Mauldin of Greenville, president; Benjamin O. Whitten, Clinton, first vice president; Edgar A. Hines, Seneca, secretary-treasurer (reelected). A woman's auxiliary society was organized, and Mrs. R. S. Cathcart, Charleston, elected president.

VERMONT

Sheppard-Towner Bill Rejected.—The senate has refused to adopt a resolution to accept the Sheppard-Towner Law.

VIRGINIA

Walter Reed Medical Society.—At the annual meeting of the Walter Reed Medical Society, at the National Soldiers' Home, Hampton, May 2-3, Drs. B. B. Vincent Lyon, Philadelphia, and Walter E. Dandy, Baltimore, were among the speakers. Officers elected for the ensuing year were: president, Col. Louis A. Thompson, Hampton; vice president, Dr. Harry D. Howe, Hampton, and secretary-treasurer, Dr. Landon E. Stubbs, Newport News.

WASHINGTON

Appropriation for Survey Requested.—At the semiannual meeting of the Washington State Board of Health, recently, the legislature was requested to appropriate $8,000 for a health survey of the Yakima Valley, in which there has been an annual epidemic of typhoid fever.

WISCONSIN

Personal.—Dr. Joseph Lettenberger, Milwaukee, has been appointed coroner of Milwaukee County, to succeed Frank Luehring, deceased.

Soldiers' Home Opened.—The new 662 bed tuberculosis hospital at the Northwestern Branch, National Home for Disabled Volunteer Soldiers, was formally opened to the public, May 1.

CANADA

Physicians Elected to Mayoralty.—Three physicians of Nova Scotia have been elected mayors of their respective towns. Dr. Edward DuVernet of Digby; Dr. Carmon S. Marshall of Bridgewater, and Dr. George W. Whitman of Stellarton.

Western Ontario Academy of Medicine.—At a meeting of the academy at London, Ont., April 7, Prof. L. J. Austin of Queens University, Kingston, gave an address on "Tuberculosis of the Kidney and Bladder." Dr. Albert J. Ochsner of Chicago, president-elect of the American College of Surgeons, gave a clinical demonstration of postoperative fistulas and gastro-intestinal diseases. At the meeting of the academy on April 27, Dr. Dean D. Lewis of Chicago spoke on "Diagnosis of Bone Lesions," and Dr. Henry S. Plummer of Rochester, Minn., on "Diseases of the Thyroid." At the next meeting, May 25, Dr. Hugh Cabot, Ann Arbor, Mich., will speak on "Renal and Bladder Calculi," and Dr. William Goldie, Toronto, on "Hypertension."

Public Health News.—The schools and churches in North Vancouver, B. C., have been ordered closed on account of an outbreak of smallpox. A total of six cases has been reported to date.——According to reports received by Dr. J. W. S. McCullough, provincial health officer for Ontario, the typhoid epidemic at Cochrane, Ont., has practically run its course. During the past few days the daily average of new cases has not been more than two or three, where formerly it was as high as fifteen and twenty. Recently the provincial health department forwarded $20,000 to the stricken center. During the epidemic the department has had two physicians, one supervisor, one engineer, nine public health nurses and one nursing supervisor in the afflicted district.

Hospital News.—A new hospital to care for acute mental cases is under construction at Essondale, B. C. It is to cost $650,000, and will have accommodations for 250 patients.——A new $500,000 home is planned for the Hotel Dieu de Precieux Sang at Quebec.——It is planned to build an addition to the 400-bed Hamilton General Hospital, Hamilton, Ont.——The new maternity hospital to be erected in Montreal will be known as the Salvation Army Maternity Hospital. The estimated cost of construction is $200,000.——The new epidemic hospital, connected with the General Public Hospital, St. John, N. B., was formally opened recently.——The late William Hill of East Toronto has bequeathed the sum of $100,000 for the purpose of erecting a hospital east of the Don.

GENERAL

Association of American Physicians.—At the annual meeting of the association at Atlantic City, N. J., May 1-3, the following officers were elected for the ensuing year: president, Dr. Charles F. Martin, Montreal; vice president, Dr. Lewis A. Conner, New York; secretary, Dr. Thomas McCrae, Philadelphia, and treasurer, Dr. Joseph A. Capps, Chicago.

Director of International Health. Board Appointed.—Dr. Frederick F. Russell, formerly director of the International Health Board's public health laboratory service, has been appointed general director of the International Health Board to succeed Wickliffe Rose, who resigned to accept the presidency of the newly incorporated International Education Board, and of the General Education Board. The latter office became vacant by the retirement of Wallace Buttrick, who became chairman of the General Education Board.

President George E. de Schweinitz Honored by British Ophthalmologists.—At the annual congress of the Ophthalmological Society of the United Kingdom, held in London at the headquarters of the Royal Society of Medicine, April 26 to 28, Dr. George E. de Schweinitz, President of the American Medical Association, delivered the Bowman Lecture on "Certain Ocular Aspects of Pituitary Body Disorders, Mainly Exclusive of the Usual Central and Peripheral Hemiopic Field Defects." Dr. de Schweinitz was elected an honorary member of the society.

American Medical Diplomas in India.—A warning has been issued to Indian medical students by the Bengal government against taking courses at a private institution to be established in Calcutta under the name of the "International Medical College." It is stated that this institution purports to train students for the M.B. and M.D. degrees of the Lincoln Jefferson University of Illinois (a university not recognized by the General Medical Council of the United Kingdom or the Council on Medical Education of the American Medical Association), and its degrees and diplomas will not, therefore, be accepted as satisfactory qualification for the practice of medicine in America, and Great Britain and her colonies.

Society News.—The American Dietetic Association will hold its annual meeting, Oct. 15 to 17, at the Hotel Claypool, Indianapolis, Ind.——The fifth annual meeting of the Western Electro-Therapeutic Association was held at Kansas City, Mo., April 19 and 20. The following officers were elected: Dr. Harry H. Bowing, Rochester, Minn., president; Edward H. Skinner, M.D., Kansas City, Mo., first vice president; Warren P. Grimes, M.D., Kansas City, Mo., treasurer; B. C. Harris, M.D., Sapulpa, Okla., registrar; trustees, Tilman Howard Plank, M.D., Chicago, and Burton B. Grover, M.D., Colorado Springs, Colo.——At the annual meeting of the American Society for Clinical Investigation, at Atlantic City, N. J., April 30, the following officers were elected: Campbell P. Howard, Iowa City, president; Alfred E. Cohn, New York, vice president; John H. Austin, Philadelphia, secretary; David P. Barr, New York, treasurer; member of council, James H. Means, Boston.

Pharmacopeial Trustees Entertained in Cincinnati.—The board of trustees of the United States Pharmacopeia met in Cincinnati, May 4 and 5, for the transaction of business connected with the publication of the tenth edition of the United States Pharmacopeia, the manuscript of which is nearing completion. Drs. Solomon Solis Cohen, Philadelphia; Henry M. Whelpley, St. Louis; James H. Beal, Urbana, Ill.; Dean F. J. Wulling, Minneapolis; Prof. E. Fullerton Cook, Philadelphia, and Samuel L. Hilton, Washington, were present. The board was entertained, May 4, at a dinner which was given by the Ohio Valley Druggists' Association and the Cincinnati Branch of the American Pharmaceutical Association, at which about 200 physicians were present. Brief addresses were delivered as follows: "Pharmaceutical Education in Cincinnati," Charles T. P. Fennell, Phar.D., dean of the Cincinnati College of Pharmacy; "Medicine in Cincinnati," Charles E. Caldwell, A.M., M.D., professor of clinical surgery and surgical anatomy, University of Cincinnati College of Medicine; "Early Pharmacy in Cincinnati," John Uri Lloyd, Ph.M., Sc.D., M.D., former president of the American Pharmaceutical Association; "The Pharmacist and the Pharmacopeia," James Hartley Beal, Phar.D., Sc.D., LL.B., Urbana, Ill., chairman of the board of trustees of the U. S. Pharmacopeia; "The Physician and the Pharmacopeia," Solomon Solis Cohen, A.M., M.D., Philadelphia, professor of clinical medicine, Jefferson Medical College. The address by Dr. Caldwell was full of historical data of interest to all Cincinnati physicians. He gave a long list of the names of pioneers who had made Cincinnati a medical center early in the nineteenth century, a list which included such names as Drake, Whitaker, Wright, Taylor, Connor, Busse, Graham, Roberts and Bartholow. The closing address by Dr. Cohen was a plea for a comprehensive pharmacopeia in which would be included all the medicaments of well-established value. He said that he was much pleased to note a recession in the tide of therapeutic nihilism which had swept over the medical world, and indications of a return to the conservative but intelligent use of medicines. Dr. Cohen edited a shelf of books devoted to therapeutic measures other than drugs, but he is thoroughly convinced of the value of drugs when properly administered. He decried the negative attitude of pharmacologists who, because they were unable to experience certain results reported by clinicians, denied the accuracy of the clinical observer. He said that the work of the pharmacologist was necessarily coarse in its results as compared with those obtained by the experienced and competent physician at the bedside. While he acknowledged the value of the service of pharmacologists, he protested strongly against the negative dicta so frequently put forth by some of them.

The National Antinarcotic Conference.—Representatives of various agencies engaged in antinarcotic activities assembled in Washington, D. C., May 2-5. Approximately fifty persons were present. Dr. George M. Kober of Washington was elected chairman of the conference and Mr. Rexford L. Holmes was elected secretary. Dr. W. C. Woodward, executive secretary of the Bureau of Legal Medicine and Legislation of the American Medical Association, was present to study the conference and to aid in determining the extent to which the Association might identify itself with the conference and its activities.

Symposiums were held on the narcotic problem, how organizations may assist in the fight against the narcotic habit, the control of the narcotic evil by the federal government, the state control of the narcotic evil, municipal control of the narcotic evil, international amity in fighting the narcotic evil and the place of the church and the university in the fight against narcotics. A statement prepared by Secretary of State Hughes was read, pointing out that it had been the policy of the United States to restrict the manufacture and distribution of narcotics to medicinal and scientific uses, adhering to the letter and the spirit of the Hague Opium Convention of 1912. The United States is, Mr. Hughes said, in constant communication with other nations, exchanging information looking toward the detection and apprehension of illicit dealers, and illicit traffic is becoming internationally more difficult; but adequate progress cannot be made in the suppression of the traffic until there is a general agreement on what is to be regarded as illegitimate traffic. The United States government regards as legitimate only traffic for medical and scientific purposes and feels that illegitimate traffic cannot be stopped unless production of the raw product for other than medical and scientific purposes is stopped. Mr. Hughes announced the intention of the Department of State to endeavor to bring about an international recognition of that principle.

The conference went on record as defining the legitimate use of opium as use for medical and scientific purposes, and denied the asserted legitimacy of its use in tropical countries as an alleged stimulant. Resolutions were adopted urging that statutes and ordinances for the limitation of the use of narcotic drugs to medical and scientific purposes should be enacted, where not already in effect, and strengthened where they already exist, and that a greatly increased field force be provided to see to their effective administration; but that inasmuch as regulations may be a burden to legitimate practitioners and dealers, the conference recommended that only such regulations be maintained as are absolutely necessary to prevent the evils aimed at. Other resolutions pointed out the necessity for the immediate material increase of the appropriations for the enforcement of the various federal narcotic laws, called upon the federal authorities to use all appropriate agencies of the government to suppress the smuggling of habit-forming narcotics into the country, since such smuggled narcotics constitute the greatest part of the pedler's supply, and recommended that federal enforcement of the narcotic laws and regulations be separated from enforcement of the prohibition laws and regulations. The Opium Advisory Committee of the League of Nations sitting in Geneva was requested to take steps to provide for the amending of the International Opium Convention so as to make it effective, if the committee should find that it is not now effective. In view of representations made to the conference that in event of the curtailing of the production of opium and its products and of cocain, by international agreement, synthetic heroin and cocain might be produced on a commercial scale, a resolution was adopted urging that all chemical laboratories manufacturing synthetic cocain or heroin be under governmental control, that such products be labeled synthetic, and that the amount of each that might be produced in each country be limited in the same manner as the corresponding natural products are limited.

The conference created a committee to arrange for a permanent organization, as a body made up of representatives of agencies engaged in antinarcotic activities, a committee to formulate a statement of the principles involved in the limitation and prevention of narcotic addiction, and a committee to further the formulation and enactment of uniform legislation by the several states to supplement the Harrison Narcotic Act where necessary. Without committing the American Medical Association to participation in the further activities of such conferences as may be called, Dr. William C. Woodward, executive secretary of the Bureau of Legal Medicine and Legislation, was appointed a member of each of the committees named.

LATIN AMERICA

League for Mental Hygiene Founded in Brazil.—At a recent special meeting of the Brazil Sóciedade de Psychiatria, it was decided to organize a Liga brazileira de hygiene mental, modeled on, and affiliated with, the League of Mental Hygiene in North America.

Yellow Fever in Brazil.—The *Folha Medica* relates that the extreme eastern coast of Brazil, from Ceará to Bahia, has a chain of endemic foci of yellow fever. The disease is prevailing now at the points farthest north and farthest south, and the latter are menacing Rio de Janeiro and the rest of the country.

Congress on Hospital Administration in Chile.—The *Revista de Beneficencia Pública* of Santiago, Chile, devotes a bulky number to the transactions of the Second Chilean Congress of all interested in the administration and support of the public hospitals of the country. The official organization for the purpose in Chile is called the Beneficencia Pública, and 286 of the officials, medical and lay, registered for the congress. The first one was held in 1917, and a large number of the resolutions voted then have been carried into effect. Among the new resolutions adopted were some urging the founding of regional hospitals and of institutes for welfare work for children. Twenty of the leading addresses are reproduced, including Dr. G. Greve's study of employment for the chronic sick in hospitals and asylums; Dr. G. Amunátegui's discussion of medical intern service, and others on pay patients in the free hospitals.

FOREIGN

Prophylaxis of Venereal Disease at Madrid.—The *Medicina Ibera* states that the first official dispensary for prophylaxis of venereal diseases has just been opened at Madrid.

Factory Regulations in Japan.—A bill for revising the Japanese factory law has been introduced into their house of representatives. Among its provisions are: to reduce the working hours for juveniles and females and to give them two holidays each month; to prohibit night work for juveniles; to restrict working hours for women before and after childbirth; to improve the sanitary conditions in the factories, and to give higher compensation for injuries, even when the accident is through the carelessness of the worker.

Prize for Medical Historical-Economic Study.—The Société médicale des hopitaux de Paris announces that the Paul-Legendre Prize of 3,000 francs will be awarded in December, 1923, for the best work on the subject "Statistical and Critical Historical Study of the Activities of the Civil and Military Medico-Surgical Corps of France during the War 1914-1918 and the Consequences as Affecting Physicians, with Conclusions Based on These Facts." Manuscripts should be sent to the bureau of the society, 12 Rue de Seine, before November.

Public Health in Finland.—A health council composed of twenty members has recently been formed in Finland. The president of the public health council; the professor of hygiene at Helsingfors University; representatives of the antituberculosis society, the Society for Combating Venereal Disease, the child welfare league, and the two Finnish medical societies are among its members. The council will work under the auspices of the Finnish Red Cross. Its first efforts will be to publish a bulletin representative of all its member societies, and to the question of a limited health demonstration.

Epidemic Encephalitis.—At the recent Congress for Internal Medicine at Vienna, April 9, this disease was the main subject for discussion, the opening address being by Economo, to whom the term "lethargic encephalitis" is due. The general verdict was that treatment has little prospect of success, and that the prognosis is growing graver as experience accumulates. Nonne commented on the three sets of symptoms in the chronic form: "depersonalization; changes in the motor apparatus; changes in the metabolism." In the lively discussion that followed, many single instances of a favorable outcome were reported.

Cancer Research in Japan.—The Japanese Sociey for Cancer Research was founded in 1908, and publishes the quarterly, *Gann*. It has now 280 members. Scholarships to a value of $5,000 were distributed to sixteen workers in 1922. It appeals to research workers in other countries for reprints of their publications so that they can be translated into Japanese as a part of the society's work. The editor, M. Nagayo, Pathologic Institute, University, Tokyo, Japan, should be addressed. *Gann* is published in an English-German edition, and the

issue for February, 1923, contains the list of contents of all the preceding numbers of the total fifteen volumes.

Personal.—Prof. A. V. Hill, Manchester, England, succeeds Dr. E. H. Starling as Jodrell professor of physiology at University College, London.——Dr. Giuseppe Caronia has been nominated professor of clinical pediatrics in the University of Rome to succeed the late Prof. Luigi Concetti.——Dr. Edward W. Scripture, formerly professor of experimental psychology at Yale University, New Haven, Conn., at present connected with King's College, University of London, England, has been appointed professor of experimental phonetics at the University of Vienna.——Sir Frederick Mott, director of the pathologic laboratory of the Maudsley Hospital of the London County Council, is retiring under the age rule, but the council has arranged to retain his services until next October. Sir Frederick has held the appointment since the hospital was erected.——At a special convocation, April 11, the University of Pennsylvania conferred the honorary degree of Doctor of Science on Sir Joseph Thomson, master of Trinity College, Cambridge. Sir Joseph, after concluding his lectures before the Franklin Institute, returned to England, April 14.——Prof. W. P. Wynne, Firth professor of chemistry in the University of Sheffield, was elected president of the Chemical Society of Great Britain, at the annual meeting, to succeed Sir James Walker.——Dr. Kenelm H. Digby, professor of anatomy and Ho Tung professor of clinical surgery, and dean of the Faculty of Medicine, University of Hong Kong, arrived in New York, April 3.——A pension of 8,000 francs has been granted by the city of Paris to the widow of Dr. Leray, the roentgenologist, who died in 1921 from injuries professionally acquired.——Prof. J. Bordet of complement fixation fame, has been decorated by the king of Sweden with the cross of the Order of the Pole Star.——

Deaths in Other Countries

Major **Thomas J. Crean,** veteran of the South African and World wars; recipient of the Victoria Cross, in London, March 25.——Dr. **Elfrida Spencer,** house surgeon, Victoria Hospital for Children, London, March 17, of influenza and pneumonia.——Dr. **A. G. Simmins;** served with the British Navy during the World War; of influenza, March 23.——Dr. **W. H. Lloyd,** senior naval honorary surgeon to the king of England, April 2, in London. Dr. Lloyd became a surgeon in the navy in 1856, and fought in the China seas and, during the American Civil War, aboard the flagship *Nile.* He represented the British admiralty at the International Congress of Military Surgeons in Washington, D. C., in 1887.——Dr. **Carl Spengler,** a Swiss authority on tuberculosis, recently, at the age of 64.——Dr. **F. de Ipanema Langgaard,** consul for Brazil at Copenhagen.——Dr. **Aquiles Ferrante** of San Fernando, Dr. **E. Loudet** of Sante Fé and Dr. **V. D. Madrazo** of Buenos Aires.——Dr. **M. Immelmann** of Berlin, a pioneer in roentgenology as applied to orthopedics and physical therapeutics, aged 56.

Government Services

General Hospital Authorized

Pursuant to instructions of the Secretary of War, the organization of General Hospital No. 8, organized reserves (New York Post-Graduate Medical School and Hospital Unit, New York) has been authorized.

Field Service School Graduates

Four medical officers of the National Guard, three of the Reserve Corps, and three of the Navy completed the short basic course at the Medical Field Service School, Carlisle Barracks, Pa., April 21. Brig.-Gen. Walter D. McCaw, assistant Surgeon-General, gave the principal address at the graduating exercises. Joseph C. DeVries, Lieut.-Col., M. O. R. C., Brooklyn, announced that he would donate a medal each year to the student officer who attained the highest proficiency in the subject of drill and command. Capt. E. F. Sanford, M. O. R. C., was medalist in this class. Col. Percy M. Ashburn, commandant, presented diplomas to the following:

Capt. D. E. Abraham, M. O. R. C., Louisville, Ky.
Lieut. J. H. Durrett, Med. Corps, U. S. Navy.
Capt. J. P. Golden, D.C., N. G., Natick, Mass.
Lieut. Com. J. V. McAlpin, D. C., U. S. Navy.
Lieut. James Humbert, M. C., U. S. Navy.
Capt. B. F. Pound, D. C., Ore. N. G., Salem, Ore.
Capt. S. H. Rinehardt, M. O. R. C., Waynesburg, Pa.
Capt. E. F. Sanford, M. O. R. C., Buchanan, Ga.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 17, 1923.

Veterinary Work in India

Last year an advisory committee appointed to report on research in diseases of animals in India stated that there were immense opportunities, which were almost wholly neglected. A conference of veterinary authorities convened by the government, which met last February at Calcutta, confirmed the preceding statement and urged the training in courses of two or three years of native veterinarians of a second grade cadre, who might at least be competent to carry out instructions and perform routine work. The present financial stringency prevents the materializing of a recommendation of previous conferences to provide facilities for the training of natives up to the highest standards. Experience with the training of Indians in other branches of applied science, such as medicine, shows their capacity to grasp fully the results of modern science. But for this, an ample preliminary education and a full course of four years' professional work at a properly equipped college would be necessary. The conference reviewed the state of knowledge and practice with regard to the chief animal diseases now ravaging India, and arrived at lamentable conclusions. Anthrax infection is so heavy in East Indian wool, hair and hides that the labor organization of the League of Nations drew attention to it. The cost of disinfecting wool is greater than its present value. The conference decided that the agencies for the notification of anthrax must be improved, and that much research and skilled inspection are required to attack the cause at its seat. Rinderpest still exacts a heavy toll from live stock in India, and although an efficient serum is produced in large quantities in the Muktesar Imperial Bacteriological Laboratory, the veterinary service is insufficient to distribute and administer this preventive measure. Surra disease of horses and camels is sometimes so disastrous as to interfere with military operations. It is known to be caused by a trypanosome and probably, like trypanosomiasis and nagana, is insect-borne. But entomologic and veterinary research is necessary to discover the bearer and, therefore, the means of dealing with the disease. Though tuberculosis is supposed to be a rare disease of cattle in India, it is an increasing cause of death in industrial centers, and a large proportion of cases show symptoms which in Europe are associated with the bovine type. But there is at present neither knowledge as to the prevalence of the human and bovine type of bacillus, nor any organization for getting it. Contagious abortion of mares and cattle, and the large number of infections due to hookworm, rabies and other diseases await research on a much larger scale. The conclusion is that veterinary education, research, legislation and administration in India are unsatisfactory, and require the serious attention of the government.

The Prohibition of Lead in Paints

The question whether white lead can be displaced by leadless paints is dealt with in an important government report. In 1911, the home secretary appointed two committees to investigate in regard to the painting of buildings and of coaches. These committees reported in 1915 and 1920, and advised that it was not practicable adequately to safeguard the health of the painters by regulations, and further, that substitutes existed which could satisfactorily displace white lead for all purposes. They therefore recommended its prohibition. During the war, no attempt was made to give

effect to the recommendation. In 1921, owing to the serious failures of these substitutes, which had been observed in government work, a new committee was appointed to examine the matter. This committee now reports that it cannot support the recommendation that the use of lead paint for the painting of buildings be entirely prohibited, and that for outside painting and certain internal painting there is no efficient substitute for lead. Prohibition would increase cost, but though economy is important just now, that is not regarded by the committee as an adequate reason for exposing workers to the risk of lead poisoning. However, since the reports of the 1911 committees were made, further research on the hygienic problems of painters has indicated preventive measures which would make their calling safer to health. A study of the whole of the scientific work done in this connection shows that the chief danger lies in the inhalation of dust produced during the dry rubbing-down process. As it is now practicable to substitute a dustless process, the former can be discontinued. The new process involves the use of a water-proof sandpaper, the manufacture of which has recently been successfully undertaken in this country. The committee suggests the adoption, with modifications, of the convention recommended at the international labor conference at Geneva in November, 1921.

The Coloring of Poisons

At a recent trial, a well-known judge suggested that solutions of deadly poisons should be colored as a safeguard against mistakes. The proposal to give poisons distinctive colors has now taken a practical shape. The privy council has asked the general medical council to express its opinion on the proposal that strychnin should contain enough "brilliant green" to make it readily recognizable. It is further proposed to add suitable dyes to the arsenical poisons "sheep dip" and "weed-killer," so that if they should be administered for homicidal purposes (as they have been in recent cases), the dye would be deposited in the body of the victim.

Physicians May Prescribe for Themselves

As stated in a previous letter, the dangerous drug regulations which have recently been brought forward by the government render it illegal for a physician to prescribe dangerous drugs for himself. This regulation was made because it had been brought to the notice of the home secretary that physicians who were addicted to cocain and morphin procured considerable quantities by writing prescriptions made out to themselves. But the hardship of this regulation has raised an outcry against it. In the House of Commons, Sir Sydney Russell Wells, physician to the London Hospital, while admitting that certain physicians were drug takers, stated that he was convinced that their number was small. This regulation was ridiculous. It hampered the physician by creating a new offense, and as a preventive it was futile. Drugs must be in his office for cases of emergency, and not one in a thousand did not carry with him a case in which there was a certain quantity of cocain and morphin for emergency use. The prohibition to prescribe for himself in no way affected the physician's power of obtaining a drug if he wished to take it. Owing to the pressure of medical opinion, this objectionable regulation has been withdrawn.

An Objection to the Poisoning of Rats as a Measure Against Plague

In the *Times*, an Anglo-Indian official, Mr. Walter Saise, points out the danger of poisoning rats as a measure against plague. A rat from a plague-infested house is a source of danger when it dies, as the rat fleas leave the cold carcass and search for another warm-blooded host. Before it dies, the plague rat is not a source of danger, as the fleas prefer it to another host. In a successful campaign against plague on the East Indian Railway Company's colliery estate in Bihar in 1904 and 1905, Mr. Saise declared that rewards would be paid only for live rats. Rat traps were served out to all the miners, who were promised one anna (two cents) for each rat caught. They were further told never to kill rats, or to handle any dead ones they might find about their houses. The miners or their children brought the traps, often quite full, to the collecting stations. The cages were immersed in a weak mercuric chlorid solution until the rats were dead. This procedure both drowned the rats and disinfected the cages. The cages were then shaken over small wooden boxes partly filled with jute waste. The dead rats fell into these boxes, and the fleas could be seen snuggling into the dry jute. The box, with rats and fleas, was placed on a shovel and thrown into the furnaces of the colliery boilers. The result was that the plague was stayed. In a population of 12,115, there were only seventeen deaths.

The Need for Public Education on Cancer

At the Royal Society of Medicine, Mr. J. E. Adams introduced a discussion on this subject. He desired to see a society formed for the control of cancer, similar to the societies in existence for combating tuberculosis and venereal disease. The support of the profession must first be obtained. Cancer was on the increase, and the majority of patients applied for medical assistance too late. Physicians were aware of a number of conditions which predisposed to cancer, such as syphilis, chronic degenerative mastitis and unhealed ulcerations of the cervix uteri. Were these treated as energetically as their association with cancer demanded? In any woman over 40, a lump in the breast was ten times more likely to be malignant than simple. Middle-aged men were apt to think that indigestion and hemorrhoids were the inevitable result of a sedentary life, and that drugs would put them right; but the real trouble might be a growth. The public ought to recognize that treatment without examination was not worth paying for, and the profession, that it was not worth doing. The public required enlightenment on the matter, such as was provided by the American Society for the Control of Cancer. In this country little has been done, though some health officers have issued leaflets urging people who had certain symptoms to consult a physician without delay. The British Red Cross Society was prepared to help in the distribution of authoritative intelligence, compiled by physicians on this subject. Mr. Adams proposed these resolutions, which, after discussion, were carried: (1) That it is desirable that the public should be given more information as to the early signs of cancer and the prospects of cure by immediate treatment; (2) that the British Red Cross Society be asked to conduct this publicity campaign by means of lectures and pamphlets; (3) that the Council of the Royal Society of Medicine be requested to nominate a standing committee to supply to the British Red Cross Society information suitable for wide dissemination and the education of the public.

The Danger of Food Preservatives

Dr. Reginald Dudfield, health officer for the metropolitan borough of Paddington, has presented a report in which he draws attention to the widespread use of food preservatives, their varied character, and the extraordinary range in the quantities used by different manufacturers. He points out that all the preservatives discovered to be in use are drugs, for the majority of which the British pharmacopeia lays down limits for use in prescriptions. While admitting that the quantity of any of the drugs used for preserving falls below the maximum dose laid down in the pharmacopeia, it has to

be remembered that (1) some persons manifest an intolerance to certain drugs which can be ascertained only by exhibition; (2) the effect on the human system, and particularly on the digestive tract, of drugs used as preservatives is still an undetermined question; (3) the action of some drugs is known to be cumulative, and (4) sick persons and young children are particularly affected by the majority of drugs used as preservatives. Moreover, it is to be feared that in many instances preservatives are used to disguise incipient putrefactive changes or to counteract the possible results of lack of care in the preparation of the foodstuff. A committee appointed by the government in 1899 found that the usual preservatives were: boric acid, borax (for sausages, potted meats, bacon, brawn), salicylic acid (for jams and temperance drinks), sulphites (for temperance drinks), and formaldehyd (very rarely for temperance drinks). Dr. Dudfield has sent, to a number of health officers, a questionnaire as to the use of preservatives, and has received replies from 109 areas. This table summarizes the principal results:

Commodity	Preservative	Occasion Found	Quantities of Preservative: Maximum Gr. per Lb.	Quantities of Preservative: Minimum Gr. per Lb.
Bacon	Boric acid	45	35.0	2.0
Dried fruit	Sulphur dioxid	22	15.2	1.4
Jam	Salicylic acid	27	10.0	0.07
Margarin	Boric acid	3,522	175.0	Trace
Fish pastes	Boric acid	120	105.0	Trace
Vegetables	Copper sulphate	265	10.2	Trace
Lemonade	Salicylic acid	64	13.1	0.06

PARIS

(From Our Regular Correspondent)

April 13, 1923.

Hospital Associations

An *union hospitalière* of the Northwest, which comprises fifty-two hospital establishments in thirty-two departments of this region, has just been formed. There were already three such unions hospitalières: the Union hospitalière of the Southeast, with headquarters at Lyons, the Union of the Northeast, with its seat at Nancy, and the Union of the Southwest, with its central office at Bordeaux. The fusion of these four unions hospitalières will give rise to the national federation of hospital establishments.

These *unions* are formed between the members of the administrative committees and the personnel of the hospitals, and not between the establishments themselves. The administrative personnel alone is admitted, while physicians are excluded. However, the medical profession has a certain interest in the activities of these groups, since they are called on to examine into "all the questions that are common to the hospitals and the municipal shelters." Among these may be mentioned, primarily, the relations between the physicians and the administrative councils of the hospitals. Furthermore, it is provided that certain articles constituting common needs may be purchased by these unions. It is important that physicians be consulted in regard to these purchases, so that they may, as far as possible, choose the instruments, and, at least in a general way, the supplies, with which they will be called on to work. Among other things, it is planned to establish sanatoriums in high and in moderate altitudes, such as the departments, by themselves, with their limited resources, could not hope to create. Here, too, the opinions of the medical profession should be consulted.

In a general way, the purpose of these unions may be summed up thus: an inquiry into and the protection of hospital interests; a study of all the questions common to hospitals and municipal shelters; securing for the personnel of hospital establishments the right to form associations; the recruiting and the status of the personnel; the establishment of a superannuation fund in which all members of the personnel may participate; cooperative purchases (linen, bedding, etc.); the creation of cooperative societies; the creation of regional hospitals and homes for convalescents; study of the problem of hospital fees, and the creation, for the benefit of hospitals, of a mutual fire and accident insurance fund.

Protection of Young Children in Alsace and Lorraine

The Roussel law, which regulates in France the supervision of children placed for remuneration in ward or as nurslings, has recently been introduced in Alsace and Lorraine. The administrative departments of Haut-Rhin and Bas-Rhin have decided to enlarge the scope of this law and to establish as complete and as perfect a service of child welfare as possible. Their efforts coincide, in a measure, with the enterprises of the Red Cross Society, certain municipalities, health insurance societies and private benefactors; likewise with the Association alsacienne et lorraine de puériculture, the purpose of which is to group together the child welfare societies and to give them a uniform direction and a scientific guidance. The collaboration of all these elements interested in the movements for the protection of childhood, on the one hand, and of the medical syndicates, on the other hand, has resulted finally in the creation of centers of puericulture. These child welfare centers have their own independent administration. They can be created by municipalities, the Red Cross Society, health insurance societies or private industries. Each center becomes a constituent society of the Association alsacienne et lorraine de puériculture, of which it forms a local group and from which it accepts suggestions as to technical management. Irrespective of their origin, these centers should endeavor to interest in their organization the municipalities and all private societies that are concerned with child welfare.

The child welfare centers are charged with the control of the application of the laws pertaining to welfare work among mothers and children—free milk grants and the protection of young children. Besides this work of control, they must endeavor to reach individually every mother and every child that need counsel or help, in order to promote the application of the rules of public health and to emphasize the value of breast feeding. The practical work of the child welfare centers will be directed by a physician, who will have one or more visiting nurses to assist him. The appointment of medical inspectors, the character of their service, and their salaries are regulated by a special agreement between the prefectures and the medical syndicates.

The midwives must be the collaborators of the visiting nurse. The latter will inform the midwives of a district of her intended visit, and will call on them personally. The midwives will call the attention of the visiting nurse to the pregnant women whom the nurse ought to visit. The midwives will communicate to the visiting nurse, on special postal cards furnished them, every confinement at which they have assisted. If the mother is nursing her child, the visiting nurse will pay her the first visit when the midwife ceases her calls. However, the midwife will appeal to the visiting nurse whenever, during her attendance on the mother, difficulties with respect to feeding arise. For every case correctly reported to the visiting nurse, the midwife will receive a fee of three francs from the child welfare center.

Congress on Cancer Research

The central office of the Association française pour l'étude du cancer has decided that a congress on cancer research shall be held in Strasbourg, July 23-25, 1923. These three main topics will be discussed: (1) the experimental production of cancer, by Drs. Borrel, professor at the Faculté de

médecine of Strasbourg; Fibiger, professor at the College of Medicine, Copenhagen; Ishikawa, professor at the College of Medicine, Sapporo, Japan; Murray, director of the Imperial Cancer Research Fund, London, and Pentimalli, of the Institute of General Pathology, Naples; (2) the local and general reactions of the organism to cancer, by Drs. Rubens-Duval, Paris, and Woglom of the Crocker Institute of Cancer Research, New York, and (3) treatment of epitheliomas of the skin and the buccal cavity by radium and roentgen rays, by Drs. Bayet, director of the Institut du radium, Brussels, and Regaud, director of the biologic laboratory of the Institut du radium, at the University of Paris.

A Municipal Subvention to the Paris Faculty of Medicine

The municipal council of Paris has voted an annual subvention of 3,000 francs to the Paris Faculté de médecine, to be used toward the establishment of a professorship charged with theoretical and clinical courses in orthopedic surgery as applied to adults who are suffering from industrial accidents, war mutilations or merely ordinary infirmities.

Personal

Prof. Jules Bordet, director of the Pasteur Institute at Brussels, has been appointed foreign associate member of the Academy of Sciences, Paris.

BELGIUM

(From Our Regular Correspondent)

April 16, 1923.

Increased Supply of Radium

Since the discovery in the Congo region of important radioactive deposits, Belgium has acquired almost a monopoly of the radium market. Since the first discoveries of uranium in the Katanga copper mines in 1920, numerous researches carried out by the Union minière have made it possible to increase the output. The mines at Chinkolwbe (Kasalo) furnish the mineral substances from which the radium is separated in the new works at Oolen, near Antwerp, which are affiliated with the Société Générale Metallurgique of Hoboken. The Union minière has promised to reserve for the use of Belgium the first 8 gm. of radium that are produced at Oolen, so that the metal may be immediately distributed among the various hospitals and sanitary establishments throughout the country.

The Antivivisectionists

Many medical men and men of science have been waging an energetic fight for vivisection. A voluminous questionnaire covering a series of questions in regard to this method of research has been sent to all the physicians of Belgium. The Antivivisection League hopes in this manner to learn the opinions of the medical profession, and thus to be in a position to formulate definite conclusions based on public opinion. Also the four universities of Belgium have become interested in the question, and each university has elaborated a report. At present it may be affirmed that the general opinion is that vivisection is an experimental method of the greatest experimental value, and that it cannot be abandoned. It goes without saying that all exaggerations which, under color of experiments, allow the commission of veritable crimes against unanesthetized animals should be suppressed.

There are indications that the medical profession will not withhold its interest in the question and, possessing, as it does, a full comprehension of the usefulness of the method, will be willing to consider the adoption of proper regulations.

A Tendon Transplantation Procedure in Pes Cavus

Before the Belgian Surgical Society, Dr. Delchef discussed the difficulties of the treatment of pes cavus owing to the obstacles in the way of reduction (lack of bony support, large mass of muscles, persistence of the paralysis causing the condition). Also, nonoperative reduction, with or without subcutaneous myotomy, often fails to achieve good results. Delchef presented a case in which he obtained a good result by means of his procedure, a modification of the Witeck method; Witeck first brings the pes cavus into a marked equinus position in order to reduce the calcaneum, and then does a tendon transplantation to maintain the result. Delchef, in the case referred to, changed this procedure as follows: A circular incision was made around the sole of the foot; extensive resection of the plantar aponeurosis was done; through buttonhole incisions over the malleolus, the tendons of the peroneus longus and flexor longus hallucis were detached from their insertions, drawn across the calcaneum and sutured to the periosteum. The foot was immobilized in a forced equinus posture by means of a plaster cast, for two months. When the cast was removed, manual reduction was very easily accomplished. At the present time both feet are almost flat, and the patient can rise vigorously on his toes. In this position the contraction of the transplanted tendons is easily visible.

Revision of the Medical Curriculum

The commission appointed to revise the medical curriculum, to whose deliberations I have already had occasion to refer, is continuing its investigations, and, at a recent meeting of the Academy of Medicine, it succeeded in having this resolution adopted which gives expression to some of the principles on which the elaboration of the proposed new medical curriculum will be based:

> The instruction in the pathologic sciences, which form the central basis of the examination for the doctorate, should comprise at least three and a half years of study; that is, at least half of the total duration of the medical course. In order to attain this end, the curriculum should be simplified by a considerable reduction in the number of hours given to instruction in botany, zoology, mineralogy, geology, logic, ethics and psychology.

BUENOS AIRES

(From Our Regular Correspondent)

March 21, 1923.

Visit of American Surgeons

March 16 we welcomed the American surgeons who arrived on the *Van Dyck*. During their five-day stay, the travelers visited the hospitals and attended operations performed by Drs. Arce, Finochietto, Ceballos, Valdés, Solé, San Martín, Copello, Medina and others. They made a hasty tour of the medical school, then beginning its annual courses. In the afternoon of March 17 a meeting was held at the medical school at which the visitors donned their gowns and caps. As the costume is not worn in this country, this lent a certain color to the ceremonies. Dr. F. H. Martin nominated Dr. M. Herrera Vegas as an honorary member of the college, and Dr. McDougall welcomed the nominee amid much applause. Then Dr. Young delivered a lecture on the advantages of peritoneal approach in prostatectomy, and Dr. Case spoke in Spanish on the use of radiology in postoperative treatment.

The delegates attended excursions to Tigre and the race course, and took a sightseeing trip through the city. The Society of Radiology held a special meeting in honor of Dr. J. T. Case. Finally, on the 21st, the delegates were received in audience by the president. That evening they left for Montevideo.

Antituberculosis Campaign

The Buenos Aires Public Assistance has added two more Calmette tuberculosis dispensaries to the four previously established. The last will be in charge of Drs. Rodolfo Vacarezza and Luis Rabufetti, respectively. It is planned to

open ten more such dispensaries at public bath-houses and sanitary stations. Vaccination stations will also be established in the same premises.

Plague

As happens every year at harvest time, some isolated cases of plague have been reported from rural districts. There was an outbreak in the race course district at Rosario, but it was eradicated through an energetic campaign by the local health authorities. In the other end of the country, at Jujuy, there were also reported several sporadic cases, and one death. The national health authorities have pushed the anti-rat campaign at all ports. They have also asked congress to extend their authority to the whole country, promising to put an end to the disease which every year causes isolated outbreaks.

Cancer Institute

The new cancer institute is showing considerable activity under the leadership of Dr. A. H. Roffo. The basic work is concerned with deep roentgen therapy and the use of a preparation of eosin-selenium-rubidium, the formula of which is kept secret. Dr. Beatti published an article recently in *La Semana Médica*, attacking this method.

Gift of a Maternity Hospital

There has just been opened at Rio Cuarto a maternity hospital, being a gift of Mr. and Mrs. Gardey-Kowak, who spent 200,000 pesos (about $73,000) on the building and who, in addition, will bear the maintenance expenses. The hospital will admit both free and pay patients. The amount collected will be also spent for maintenance. Technical supervision has been entrusted to Dr. M. Noroña, assisted by a licensed midwife. This philanthropic spirit deserves mention, since, while not uncommon in this country, it is not often exhibited to such advantage.

PRAGUE

(From Our Regular Correspondent)

April 4, 1923.

Joseph Thomayer

Prof. Joseph Thomayer celebrated his seventieth birthday, March 23. The echo which this occasion found in the daily and professional press demonstrated the popularity which this founder of the Czech school of internists enjoys in public and professional estimation. Joseph Thomayer was born in Trhanov, a small village in southern Bohemia. During his student days he was active in literary circles and a close friend of many Czech writers. He graduated at Prague in 1876; and became instructor of pathologic anatomy under Professor Klebs. He studied surgery in Germany, but his life career was determined by his work under Professor Charcot in Paris. On returning to Prague in 1880, he became assistant to Professor Eiselt, and since has devoted himself to internal medicine. It was through his energy that the Scientific Association of Czech Physicians and the journal published by that body became popularized among the medical profession. After another trip to London, he became, in 1883, assistant professor at the Prague Medical faculty, where he remained throughout his life. In 1886, he published an "Introduction to the Practice of Medicine," which became the fundamental book for Czech medical practitioners. At the same time he became chief of the Prague "policlinic," an institution exclusively for ambulant patients. During the sixteen years which he spent in this institution he educated a great number of medical men. Although the policlinic was located in a poor building and was badly equipped, the fame of Professor Thomayer was so great that students considered it an honor to be admitted to his sessions. His lectures were not obligatory for the students, yet he always had the largest attendance of any professor. His lectures were fascinating both in content and in form; he was a master in the art of making lectures interesting to students, and knew how to impress on them the relative values of clinical signs. In 1902, he became chief of the institute for internal medicine in Prague and brought it to its eminence. There he educated Drs. L. Syllaba and J. Pelnář who now hold the chairs of internal medicine in Prague. Dr. R. Vanysek, who holds the chair of internal medicine at the newly established medical faculty in Brno, is also one of his pupils. His rich clinical experience has been preserved in the "Pathology and Therapy of Internal Medicine," which has become the standard textbook of this branch of medicine for Czech students. Last, but not least, it should be mentioned that even as professor of internal medicine he continued his interest in literature. He published several books of popular stories, and it was certainly partly due to this ability that he was always such an interesting lecturer and teacher. In 1921, he left the chair feeling that the time had come for younger people to succeed him. The Czech medical profession honored on this occasion a man who has the same significance for Czech medical sciences that Dr. William Osler had for Anglo-Saxon medicine.

Social Medicine

The annual meeting of the delegates of the Czechoslovak Association of Physicians, which took place in Prague, March 11, defined exactly the standpoint of the organized medical profession toward the new trends of social medicine. The after-war period brought about a rapid development of all sorts of dispensaries, health centers, etc., and caused some uneasiness to the members of the medical profession, who look on all such institutions with suspicion. Undoubtedly, improper management, in many instances, caused misunderstandings between the institutions and the physicians. The younger generation of physicians, which is more progressive and more familiar with the modern problems of social medicine, has worked out rules and regulations for the management of preventive dispensaries and health centers, which were submitted in the form of a resolution to the meeting of the delegates a year ago; but the resolution was defeated by the conservative delegates. It was only after a year of educational work with public opinion that the resolution, with but slight modifications, was put through at the last meeting. The resolution defines dispensaries as places for modern diagnosis, and institutions for sanitary and social prophylaxis. The dispensaries are open to everybody. It is also the duty of members of the association to support and cooperate with the institutions. All the functions of private health and social agencies are honorary, and should not be paid for. The rules contain also detailed instructions for the salaried officers of preventive dispensaries. Only regular physicians, selected by open competition, should be employed in these institutions. Treatment should be given not at all, or only exceptionally in the case of the poor. Members of insurance associations should not be considered as poor. In Slovakia and Ruthenia, where the situation is less organized and more primitive, treatment should be given according to circumstances. The resolution finally does away with the negative position in which the organized medical profession has stood as regards the new movements in social medicine; these resulted in many misunderstandings in public health administration.

Postgraduate Courses

Dr. F. Hamza of the Brno medical faculty will organize postgraduate courses for physicians in social medicine in cooperation with the ministry of health. The course will consist of a series of lectures during a period of six weeks, followed by practical experience in different public health

institutions for four and one-half months. The ministry of health is offering ten scholarships for physicians who desire to participate in the course.

BERLIN

(From Our Regular Correspondent)

March 31, 1923.

Incidence of Rickets in Large Cities

As the result of the food scarcity during the war, rickets became widespread and led to grave crippling among the children. Owing to the effects of the present distressful economic situation, many new cases have developed, and have added to the previous injuries. Professor Engel in Dortmund gave recently some useful statistics on the incidence of the disease. Of 1,384 children in Dortmund belonging to the 2-10 age group, 594, or 42.8 per cent., were suffering from rickets. The percentage of severe types of rickets was very large, approximately 21.3 per cent. of those affected, while 40 per cent. were of the moderate type. On an average, 10 per cent. of all children examined presented severe or extremely severe types of the disease. That is an extraordinarily high percentage, which is of serious moment in view of the sequels of the severe types of the affection. In an inquiry into the causes of rickets, the accompanying table, which appears to establish a connection between unfavorable housing conditions and rickets, may be of value.

Housing Conditions in Relation to Incidence of Rickets

Number of Rooms to Family	Number of Persons to One Room	Incidence of Rickets Among Children (Per Cent.)	In Relation to One Room
1	3.90	70	0.95
2	2.41	44.18	0.39
3	2.06	30.56	0.26
4	1.82	46	0.23
5	1.23	25	0.07
6	1.08	33.50	0.08

Infant Mortality in Previous Centuries as Compared with the Present

Hanssen in Kiel reports the results of his investigations on the infant mortality of Schleswig-Holstein in previous centuries, as shown by church registers. In several communes, the mortality was formerly lower than it is today. For instance, Eichede, with a present population of 2,900, had an infant mortality of 12 per cent. during the period from 1677-1722, whereas, during the period from 1900-1912, the mortality was 14.5 per cent. In other localities, and, strange to relate, in the very districts that today also show the highest mortality rates, there was an exceedingly high infant mortality during earlier periods. For example, in Wesselburen, province of Ditmarsh, the mortality rate in 1872 was 63.9 per cent., while in 1904 it was 18.3 per cent. The low rates are commonly ascribed to the wide use of breast feeding, and the high rates to epidemics—chiefly smallpox. It can be shown, however, that in former centuries the "summer peak" of infant mortality was not in evidence. For the present epoch, Hanssen was able to show that the infant mortality, as the especially critical year 1917 has proved, can be reduced by increasing the number of breast-fed infants, while in other localities (for example, in Mecklenburg), where the percentage of breast-fed infants is smaller, a correspondingly increased mortality has been established.

Tuberculosis Among Village School Children in Eastern Brandenburg

G. Hartwich, during his year's term of office as medical examiner of schools in a district of eastern Brandenburg, examined nearly 7,000 school children. He found that 14.7 per cent. of the boys and 15.2 per cent. of the girls presented suspicious signs of tuberculosis. Pronounced signs of tuberculosis or scrofula were noted in 4.2 per cent. of the boys and 3.8 per cent. of the girls. In comparing the different years, it was apparent, as has been noted elsewhere, that, in more recent years, there was a greater tendency to tuberculosis than formerly. In the period from 1913-1916, 17.8 per cent. of the boys and 18.4 per cent. of the girls showed signs of tuberculosis, while pronounced evidence of tuberculosis or scrofula was noted in 6.3 per cent. of the boys and 4.4 per cent. of the girls. During the period 1908-1912, however, there were in the first group only 10.8 per cent. of the boys and 12.4 per cent. of the girls, and in the second group, 3.7 per cent. of the boys and 3.5 per cent. of the girls. From these statistics we may assume that, in from ten to fifteen years, we may expect a three or four fold increase of pulmonary tuberculosis unless energetic action is taken to prevent it.

Opening of a School for the Training of Public Welfare Workers

In common with the Empress Augusta Victoria House, a government institution for the combating of infant and child mortality, the merger of the central federations of social hygiene has decided to open a school for the training of assistants in public health and public welfare work. In establishing this new training school, the thought uppermost in the minds of the founders has been that by far the greater portion of public welfare work has to do with public health, and that it is therefore desirable to make public health work the main consideration in the training of public welfare workers. It goes without saying that the young women attending the new institution will likewise receive training in the educational and the purely economic aspects of public welfare administration, so that they may be equipped with not only the theoretical but also the practical knowledge needed in their work. The aim is therefore to train persons who will be able, when and where it is necessary—more particularly in the rural districts—to attend to all branches of welfare work. In the training of the institution, the main emphasis will be placed on the most important practical features of the work. The institution plans to supply also another need by establishing short training and continuation courses for nurses, welfare workers and administrative officers for welfare work. At the end of a two-year course, the last semester of which will be devoted more especially to practical training, students will be admitted to a state examination, and on receiving their diploma their names will be placed on a list of eligibles for government positions.

Marriages

HOSEA WEBSTER MCADOO, Berkeley, Calif., to Mrs. Maude Thormona Wentworth of Alexandria, Va., May 1.

CALVIN L. LONGSTRETH, Creston, Iowa, to Miss Carmen M. Post of Des Moines, at Cedar Rapids, recently.

WILLIAM MASON, Fall River, Mass., to Miss Nancy Campbell of Utica, N. Y., April 7.

JOHN G. SCIFRES, Indianapolis, to Miss Marguerite Schuck of Bridgeport, recently.

FRANK OLIVER NICHOLS to Miss Maybeth Dobbs, both of Etowah, Tenn., May 2.

GEORGE W. SMALLWOOD to Miss Caroline Ruth Bain, both of Boston, April 13.

FREDERICK E. GLAUNER, Marine, Ill., to Miss Morgan of Urbana, recently.

JOHN H. REGAN, Chadron, Neb., to Miss Irene Bennett of Omaha, April 26.

Deaths

James Macfarlane Winfield ⊕ Brooklyn; Bellevue Hospital Medical College, New York, 1882; emeritus professor of dermatology, Long Island Medical College, Brooklyn; member of the New York Pathological Society; past president of the Kings County Medical Society; the New York Dermatological Society, and the American Dermatological Society; aged 63; died, April 22, of injuries sustained in an automobile accident.

Louis Laberge, Montreal, Que., Canada; Montreal School of Medicine and Surgery, Montreal, 1874; formerly chief medical officer for the city of Montreal; represented Montreal at the International Congress of Hygiene in Paris, 1889; at the Medical Convention, Glasgow, Scotland, 1908, and at the Tuberculosis Congress in Washington, D. C., in 1908; aged 72; died, recently.

Lea Marion Murphy, South Pasadena, Calif.; Northwestern University Medical School, Chicago, 1911; member of the Medical Society of the State of California; formerly a practitioner in Minnesota and Illinois; specialized in ophthalmology, otology, laryngology and rhinology; aged 38; died, April 18, following a long illness.

Alexander MacKay, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1895; served with the Canadian Army Medical Corps, in France, during the World War; formerly chief medical inspector of the Toronto Public Schools; inspector of provincial hospitals for the dominion of Canada; aged 53; died, February 18.

Frank Ward Ross, Elmira, N. Y.; Medical Department of the University of the City of New York, New York, 1883; veteran of the Spanish-American and World wars; formerly county coroner, and member of the board of education; at one time on the staff of the Arnot-Ogden Memorial Hospital; aged 63; died, April 21.

John Kelliper Tretton, Rochester, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1888; at one time city physician; formerly on the staffs of the Hahnemann Hospital (Highland Hospital) and the Homeopathic Hospital; aged 63; died, April 9.

Francis Emory Asbury, Ashboro, N. C.; Medical College of the State of South Carolina, Charleston, 1876; member of the Medical Society of the State of North Carolina; past president of the Montgomery County Medical Society; aged 77; died, April 11.

Elizabeth Frances Kearney, Los Angeles; Keokuk Medical College, Keokuk, Iowa, 1892; served as instructor with the American Red Cross, during the World War; formerly a practitioner in Chicago; aged 61; died, April 17, of cerebral hemorrhage.

Howard Charles Emons ⊕ Chicago; Chicago College of Medicine and Surgery, 1917; served in the M. C., U. S. Army, during the World War; on the staff of the U. S. Marine Hospital No. 5, where he died, May 2, of pneumonia, aged 32.

Oscar F. McNabb, Whitwell, Tenn.; Chattanooga Medical College, Chattanooga, 1897; member of the Tennessee State Medical Association; aged 52; died, April 12, in Birmingham, Ala., of a bullet wound, inflicted, April 11, by a stranger.

Eugene S. Carroll, Center, Texas; University of Louisville Medical Department, Louisville, Ky., 1893; member of the State Medical Association of Texas; formerly county health officer; aged 57; died, April 10, following an operation.

William Henry Hawkins ⊕ Lewiston, Me.; Jefferson Medical College of Philadelphia, 1893; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 52; died, April 14, following a long illness.

Clinton Edward Powell, Polo, Ill.; Marion-Sims College of Medicine, St. Louis, 1897; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 49; died, April 17, of chronic nephritis.

Samuel Lile, Lynchburg, Va.; University of Louisville Medical Department, Louisville, Ky., 1888; member of the Medical Society of Virginia; aged 62; was found dead in bed, April 15, of cerebral hemorrhage.

James Worthington Parshall, Uniontown, Pa.; University of Maryland School of Medicine, Baltimore, 1887; member of the Medical Society of the State of Pennsylvania; aged 60; died, April 14, of pneumonia.

William Thompson Burch, Washington, D. C.; Medical Department of Columbian University, Washington, 1894; member of the Medical Society of the District of Columbia; aged 52; died, April 10.

Robert N. McMillen, Iola, Kan.; Louisville Medical College, Louisville, Ky., 1875; member of the Kansas Medical Society; aged 73; died, February 23, of cerebral hemorrhage, at Kansas City, Mo.

Joseph Leonard Norman Aus, Deer Park, Wis.; Illinois Medical College, Chicago, 1904; member of the State Medical Society of Wisconsin; aged 38; died recently, of acute articular rheumatism.

Andrew Jackson Boswell, South Bend, Ind.; Fort Wayne College of Medicine, Fort Wayne, 1882; Bellevue Hospital Medical College, New York, 1890; aged 68; died, April 19, of heart disease.

Roswell Barnum Raleigh, Los Angeles; Minneapolis College of Physicians and Surgeons, Minneapolis, 1894; formerly a practitioner in Iowa; aged 58; died, April 13, of heart disease.

Horace M. Stanley, Creston, Iowa; Ensworth Medical College, St. Joseph, Mo., 1907; member of the Iowa State Medical Society; aged 43; died, April 21, of cerebral hemorrhage.

Timothy Hartigan, Chicago; College of Physicians and Surgeons, Chicago, 1896; aged 62; was found dead in bed, April 23, of organic heart disease and chronic nephritis.

Thomas B. Rankin, Odon, Ind., Medical College of Indiana, Indianapolis, 1880; member of the Indiana State Medical Association; aged 73; died, March 13, in Scotland.

Benjamin Thompson ⊕ Tama, Iowa; Eclectic Medical College of Pennsylvania, Philadelphia, 1870; at one time mayor of Tama; aged 79; died, April 22, of senility.

Joseph Benson Kelsey, Deport, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1889; aged 67; died suddenly, April 10, of heart disease.

Lot Snoddy, Chicago; Jefferson Medical College of Philadelphia, 1880; member of the Illinois State Medical Society; aged 65; died suddenly, April 24, of heart disease.

David Monroe Buchan, Wray, Ga.; Georgia Eclectic Medical College, Atlanta, 1878; formerly member of the state legislature; aged 75; died, March 16.

Ernesto Conte Loffredo, Jamestown, N. Y.; Eclectic Medical College of the City of New York, New York, 1906; aged 47; died, March 14, of pneumonia.

Joseph E. Durr, Augusta, Ga.; Medical College of the State of South Carolina, Charleston, 1880; Confederate veteran; aged 82; died, April 16.

George W. Varner ⊕ Evansville, Ind.; Kentucky School of Medicine, Louisville, 1886; on the staff of St. Mary's Hospital; aged 61; died, April 20.

Helen Louise Story, Boston; Tufts College Medical School, Boston, 1897; aged 62; died, February 15, of chronic endocarditis and cardiac asthma.

John Edward Ottaway, Rochester, N. Y.; University of Michigan Medical School, Ann Arbor, 1886; aged 61; died, April 12, of heart disease.

Harvey Edwin McIntire, Auburn, Wash.; Bellevue Hospital Medical College, New York, 1884; aged 66; died, April 2, of cerebral hemorrhage.

Robert E. Tolleson, Sperry, Okla.; University of Arkansas Medical Department, Little Rock, 1898; aged 47; died, February 13, of pneumonia.

Charles S. Lindsay, Pittsburgh; Western Reserve University School of Medicine, Cleveland, 1879; aged 66; died, April 10, of angina pectoris.

Walter T. Brodbeck, Beverly Hills, Calif. (licensed, years of practice); formerly a practitioner in Ohio; aged 60; died recently.

Jacob A. Thomas, Bybee, Tenn.; Chattanooga Medical College, Chattanooga, 1896; died, April 16, of cerebral hemorrhage.

Dorwin A. Cookingham, Topeka, Kan.; Kansas City (Mo.) Homeopathic Medical College, 1889; aged 73; died, April 14.

Jules Frederick Roth, Los Angeles; Baltimore University School of Medicine, Baltimore, 1892; aged 60; died, April 11.

J. K. L. Norvell, Beechgrove, Tenn. (licensed, Tennessee, 1889); aged 73; died, April 16, of cerebral hemorrhage.

Henry Newton Speer ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1893; aged 53; died, April 19.

Annie M. Young, Chicago; Hahnemann Medical College and Hospital, Chicago, 1889; aged 65; died, April 13.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

FLEISCHMANN'S YEAST NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

In March, 1921, the Council took up the consideration of Fleischmann's Yeast on account of the extensive and extreme therapeutic claims which were made for this preparation. Since then the Council has given much attention to the subject of yeast therapy. The chairman called in consultation eminent students of nutrition and clinicians qualified to speak with authority on questions of nutrition, dietotherapy and pediatrics. The object was to determine whether the effects of yeast and yeast preparations on animals deprived of food containing vitamin B gave promise of having important therapeutic application. After a comprehensive discussion it was concluded that there is little likelihood that the administration of yeast or yeast preparations representing vitamin B concentrates will be of therapeutic value in many cases for which they are advertised. The view that there was no satisfactory evidence in favor of the therapeutic administration of yeast in most conditions for which it is advertised was concurred in by many of those who have contributed to the laboratory reports of the action of yeast or its vitamin in experiments on animals previously deprived of the growth-promoting constituents present in many foods and in yeast.

As a result of its inquiry, the Council adopted (THE JOURNAL, April 15, 1922, p. 1146) the following principles to guide in the consideration of yeast preparations and vitamin B concentrates:

1.—The claim that deficiency of vitamin B and diseases resulting therefrom are common conditions in the United States is not at this time supported by adequate, acceptable evidence.

2.—The claim that yeast preparations or extracts are, in principle or in general, essentially more effective or more practical or more available means of administering vitamins than the commonly available vitamin-containing foods is not at this time supported by adequate, acceptable evidence.

3.—The claim that therapy with yeast or yeast preparations has as yet more than an experimental status is not at this time supported by adequate, acceptable evidence.

Further, the Council has adopted (THE JOURNAL, July 8, 1922, p. 135) an article on yeast preparations for inclusion in New and Nonofficial Remedies in which, among other things, it is pointed out (1) that the opportunities to obtain vitamin B through the customary foods are so abundant as to make the demand from special sources of the vitamin limited at the present time; (2) that yeast is a mild laxative, but that the cause of this laxative action has not been determined so far as one can learn; (3) that the supposed beneficial effect of yeast administration on furuncles, acne, etc., lacks substantiating evidence; (4) that such laxative effects may be expected from an anticonstipation agent; (5) that it is not clear whether live cultures of yeast may be used to change the intestinal flora, if indeed such reaction becomes desirable, and (6) that many of the conditions for which yeast and yeast preparations have been proposed are so variable in their clinical courses and so likely to show improvement without special treatment that the elaborate claims that are made for yeast therapy for somewhat indefinite disorders must be largely discounted.

Many advertisements for Fleischmann's Yeast are misleading in that they tend to create the belief that many diseases are prevented or cured by its use. Advertisements addressed to the medical profession, through one-sided quotations, are likely to lead physicians to believe that the efficacy of yeast therapy in many conditions has been established. Advertisements addressed to the public are bound to create the opinion in the mind of the lay reader that reliance may be placed on yeast in many conditions which call for therapeutic treatment, the neglect of which may often lead to serious and even fatal consequences.

A booklet which is offered "free, to physiological chemists, physicians and hospitals," the phraseology of which creates the impression of being scientific and conservative in tone, asserts that "dentists have used yeast to advantage in pyorrhea, supplementing the necessary local treatment," whereas it has been generally acknowledged that internal medication has not been found to influence the course of pyorrhea. It is asserted in this booklet that a "frequent cause of general debility is lack of a sufficient quantity of vitamin B in the diet." This is contrary to the conclusions arrived at by the Council, as stated under (1) in the report quoted above from THE JOURNAL of April 15, 1922.

Fleischmann's Yeast is advertised directly to the laity for the relief of boils:

"For pimples or boils eat 1 to 3 cakes of Fleischmann's Yeast a day."

The patient who treats himself for boils in this manner may later die of a carbuncle as the result of the neglect of proper treatment. Many of the advertisements cite experiments of well-known physicians who reported that sixty-six patients improved, or were cured, during the use of Fleischmann's Yeast in a total of seventy-six patients suffering with furunculosis, acne vulgaris, acne rosacea, constipation, gastro-intestinal catarrh, intestinal intoxication, eczemas, arthritis deformans, psoriasis, erythema and urticaria, bronchitis, urethritis, pruritus, folliculitis, conjunctivitis, duodenal ulcer and swollen glands. It is not at all remarkable that skilled physicians could choose so many patients who were suited for treatment by almost any means, for it is very well known that an equal number of patients suffering from these diseases could be chosen who would improve without any medication whatever, provided that suitable hygienic and dietary measures were observed. On the other hand, there is no evidence that Fleischmann's Yeast yields any better results in the majority of patients suffering with these disorders than are obtained with exactly the same treatment minus the yeast.

One advertisement contains the following:

"You who do the work of the world in the sweltering heat of the summer need food that nourishes but does not overheat. Fleischmann's Yeast added to your diet builds vitality, power and endurance. Eat two to three cakes a day and see how they increase your ability to withstand summer heat. You will also desire less of the rich, heat-producing foods that make you uncomfortable in your summer work."

If this means anything it means that Fleischmann's Yeast contributes energy, in important amounts, to those who do hard work. A cake of yeast weighs half an ounce and contains protein, fat, and glycogen sufficient to yield approximately 12 calories, or less than one-half of one per cent. of the energy requirement of one who does hard work; yet yeast is advertised as an ideal food. It might as well be argued that as coffee will cause a little child to "desire less of the rich, heat-producing foods that make you uncomfortable in your summer work," one would be justified in recommending an abundance of coffee for a little child!

The statement that "People who are adding Fleischmann's Yeast to their daily diet find that their body functions are kept normal and regular," is manifestly incorrect. It is general and inclusive. It does not say that some people find this to be the case, but it makes the comprehensive and inclusive statement that, in general, those who add it to their diet obtain this result. If it were true, then no one who added the yeast to the diet would become ill. Such a statement is obviously absurd. If, as claimed, it was made by a prominent physician, then, evidently, even prominent physicians may make careless statements.

An example of the misleading character of the advertisements for Fleischmann's Yeast without direct falsehood is afforded by the following:

"When the plane of metabolism first must be raised.—Hundreds of experiments in animal nutrition have proved the great value of yeast in the growth-producing dietary. One of the most striking descriptions

of its importance is given by a man pre-eminent in the field of physiological chemistry: 'A scrawny, lethargic animal, rapidly dwindling in size, with unsleek coat and evident malnutrition, will completely change its appearance and responses in a few days at most on a diet unchanged except for a tiny bit of yeast.'"

That statement is not deliberately false, but taken without the context it is false. The previous diet of the "scrawny, lethargic animal" had been deliberately chosen for experimental purposes with a view to depriving the animal of one constituent which is present in a great variety of foods—and in yeast. One might conduct wholly analogous experiments in which anemic animals were deprived of food containing iron (rice and sugar, for instance, are free of iron) and by the addition of almost any suitable food known to contain iron, he could in a short time cause striking changes in the animal's condition. The advertisement is misleading in that it gives the impression that yeast is essential for this remarkable change in the condition of the animal. As a matter of fact yeast is merely one of a large number of the commonest articles of the daily diet that contain this vitamin.

The Council voted to refuse recognition to Fleischmann's Yeast (1) because it is advertised by means of unwarranted and misleading therapeutic claims and (2) because it is advertised to the public with unwarranted therapeutic claims that might become a detriment to the public health.

Correspondence

INTRAPERITONEAL INJECTION OF CITRATED BLOOD

To the Editor:—There is no doubt that the intraperitoneal method of giving citrated blood is unnecessary for some men. For the same reason, I very much doubt the ability of the average man successfully to expose and utilize the median cephalic vein in the new-born.

The mere fact that Helmholz recommends the sinus route; Robertson, the internal saphenous vein; Falls, the jugular vein; and Sidbury, the umbilical vein shows that difficulties have been encountered.

The method was not intended as a substitute for Dr. Lewisohn's excellent pioneer work, but only as an addition of possible merit. I have never used the intraperitoneal route in hemophilia neonatorum, for I have found whole blood intramuscularly a satisfactory therapeutic agent. However, it is felt that this means of approach may be used. I know of no scientific reason why citrated blood in the peritoneal cavity should be dangerous, "especially in the new-born infant."

DAVID M. SIPERSTEIN, M.D., Minneapolis.

"THE INTRACUTANEOUS GUINEA-PIG TEST FOR HUMAN SUSCEPTIBILITY TO DIPTHTHERIA"

To the Editor:—In THE JOURNAL, April 7, is a communication from Dr. Zingher, criticizing rather forcefully my paper on the intracutaneous guinea-pig test for human susceptibility and immunity to diphtheria. Merited criticism should be accepted gracefully, and I am free to admit that the use of my name in association with the test does not have the appearance of good taste; however, there were reasons besides vanity that seemed at the time of the first printed use of the term (on forms for the transmission of specimens) to weigh against the selection of any other. These were, the early local use of the name, the confusion with other laboratory examinations which immediately occurred, and the apparent necessity, since the test was for general use by the profession, of deciding between various cumbersome designations, such as "guinea-pig test for diphtheria immunity and susceptibility," or even just "diphtheria susceptibility reaction," the latter of which might do in the laboratory but would be too indefinite for general use. However that may be, I am at least open to no more serious accusation than an error of good form.

Dr. Zingher's statement in certain particulars will, if left unchallenged, leave the impression that the test described by me: (*a*) is an application of his modification of Römer's method; (*b*) is a crude application; (*c*) is a procedure intended for the same uses as his modification; (*d*) is subject to "various sources of error that may so easily creep in," and (*e*) is less reliable than the Schick test, all of which claims are not in accord with the facts, as I shall immediately show.

Römer's method of estimating the antitoxic content of serums was devised to take the place of the lethal test on guinea-pigs, whenever, in manufacturing and experimental work, the strength of antitoxins was to be found. It was never suggested as a means of determining natural immunity to diphtheria, as in the Schick test, and would not have been suitable for this purpose for various reasons. The same may be said of Zingher's modification of Römer's method. Römer's test never came into general use for the reason that it was worked out on a basis that did not admit of sharp, uniform and unequivocal results; too much depended on the personal equation of the users. Zingher's was in some respects better, but he perpetuated the same fault: a criterion of reaction that was dangerously indefinite. Doubtless, Dr. Zingher's opinion that my test is subject to "various sources of error that may so easily creep in" is based on experience with his own test.

A careful reading of both Dr. Zingher's article (*J. Infect. Dis.* **19**:557 [Oct.] 1916) and mine (THE JOURNAL, June 10, 1922, p. 1782; March 17, 1923, p. 748) will show any one that my test is based on Römer's observation of the uniformity of reaction of the skin of the guinea-pig to diphtheria toxin in varying amounts, and on his application of this to the determination of small amounts of antitoxin in horse serum. To this extent it is a modification of Römer's test, as I clearly indicated in my first paper. In the same paper I also gave credit to Dr. Zingher for having previously modified Römer's method, although such reference was not required, as there is nothing in common in the use and application of the two procedures. I also called attention to the fact that my modification was the first application of a skin test in guinea-pigs for the detection of natural immunity in the human subject.

The statement that the test is a "crude application" of his own test is unwarranted. It is true that both modifications depart from Römer's test in that they use toxin on the standard L + basis, but the plan is very different and the criterion of reaction totally different. My modification is so much simpler that it is applicable for general laboratory use for the purpose in view, which is not true of Zingher's test, as may be learned by referring the decision to any laboratory worker outside special research institutions, such as that in which Dr. Zingher labors. That this is true may also be surmised from the fact that my modification is already in use in three laboratories that I know of, besides its place of origin, whereas I am unable to find anywhere any evidence that Dr. Zingher's method has ever been adopted by any one, even for the purpose designed by him; certainly not for the routine test for natural immunity, preparatory to the administration of toxin-antitoxin. The relation of the two tests to each other and to the original of Römer is comparable to the relation between the test of Kolmer and of Craig to each other and to the original Wassermann test.

Leaving aside all quibbles as to differences or resemblances in technic, I believe my method has claims to simplicity, practicability, accuracy and originality of application that merit its separate identification and its general adoption for the purpose for which it is designed, i. e., the accurate determination of the immune status as regards diphtheria, of small groups of individuals, particularly those who are protein sensitive, and for the convenience of physicians who are not skilled in the use of the Schick test.

I will answer the claim that my test is not as reliable as the Schick test by referring to my two papers on the subject, in which certain errors in the interpretation of the Schick test are described, and further by asserting my entire willingness to demonstrate publicly to a gathering of medical men, and particularly immunologists, that my test, based on Römer's work, is *not* subject to the vague and unstated errors feared by Dr. Zingher, and *is* more accurate than the Schick test. Furthermore, I challenge any one to show how a false negative or a false positive result can be obtained through any cause inherent in the test.

W. H. Kellogg, M.D., Berkeley, Calif.

"SUPERIOR METHOD OF STAINING TUBERCLE BACILLI"

To the Editor:—In The Journal, April 14, p. 1092, Dr. Peter Mjedloff requests some further information concerning a bacillary stain in general use at the Kula Sanitarium. The stain to which he refers apparently is the stain designated as Much's granular stain. The stain which is in use at the sanatorium is identical with Much's stain, differing, however, in the fact that the Lugol's solution is used first on the prepared smear and this is then followed by the gentian-violet stain. After destaining with acid in the usual way, counterstaining in Much's technic is by means of a 1 per cent. methylene blue solution, although any other counterstain or dye, such as pyronin, may be used. In the usual staining technic this method of staining the tubercle bacilli is not considered superior to the carbolfuchsin or Ziehl-Neelsen method for detecting the bacilli if in their integrity. It is only when the bacilli have undergone retrogressive changes, are dissociated, that Much's granular stain is more advantageous. The bacillary granules are not stainable with the carbolfuchsin stain but are definitely stainable with the Lugol-gentian violet stain.

John Ritter, M.D., Chicago.
Clinical Instructor on Tuberculosis,
Rush Medical College.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EPINEPHRIN AND PITUITARY EXTRACT

To the Editor:—Can you furnish me with a succinct comparison between epinephrin and pituitary extract as regards (*a*) effect on blood pressure, (*b*) practical indications and (*c*) dosage and technic of administration? John W. Boyce, M.D., Pittsburgh.

Answer.—(*a*) Both epinephrin and pituitary extract (posterior lobe) cause a rise in blood pressure. The former acts more promptly and vigorously, and its effects are of much shorter duration.

(*b*) Both preparations have been used in cases of heart failure and shock, but the pituitary is generally preferred because of its more prolonged action, though they have sometimes been combined. Epinephrin has been recommended especially for the asthenia from prolonged exertion in which suprarenal secretion is exhausted. But epinephrin is only one element in suprarenal secretion, and its effects are transient. Pituitary extract stimulates the suprarenals, and is used especially in the later stages of labor, in properly selected cases, and also to stimulate the intestinal muscle in cases of postoperative bowel inactivity. Epinephrin is used particularly for its local effects in constricting arteries, thus diminishing swelling, arresting hemorrhage and diminishing absorption of local anesthetics.

(*c*) Epinephrin may be absorbed through the mucous membranes, e. g., of the tongue, and is then given in doses of from 5 to 10 drops of the 1:1,000 solution diluted with water. Pituitary extract solution (Liquor Hypophysis, U. S. P.) is usually given by injection into the muscles or subcutaneously. The dose of this solution and also of epinephrin (1:1,000) given in the same manner is from 0.5 to 1 c.c.

TREATMENT OF HOT FLUSHES OF THE MENOPAUSE

To the Editor:—Can you suggest some remedies other than corpus luteum which may influence the hot flushes of the menopause? Please omit name. M. J., Missouri.

Answer.—In the field of organotherapy, the remedy frequently advised for the hot flushes of the menopause is whole ovary in doses of from 0.2 to 0.3 gm. (3 to 5 grains) three times daily by mouth. Corpus luteum should be restricted to the disturbances of menstruation during the menacme. Hot flushes are merely one of the many sympathetic nervous system disturbances of the menopause, and are believed to be due, not so much to atrophy of the ovaries, as to overactivity of the suprarenal glands. Calcium lactate, from 0.5 to 0.75 gm. (7 to 10 grains) three times daily by mouth with or without small doses of nitroglycerin has proved valuable. Hot baths, combined with a careful supervision of the daily hygiene of the patient, are possibly of even greater benefit than the medicinal treatment.

WHOLESOMENESS OF WATER FROM DEEP WELLS

To the Editor:—The town of Humboldt, Tenn., with a population of about 5,000, has a water supply which is drawn from wells about 350 feet deep and pumped directly into the mains. To insure enough water in case of fire or other emergency, it is proposed to build a concrete reservoir of 250,000 gallons capacity, through which the water will constantly flow. Is there any reason why such an arrangement might affect the wholesomeness of the water? M.D., Tenn.

Answer.—There is no reason why deep well water stored in a reservoir in the way suggested should not remain perfectly wholesome, provided it is protected against contamination by surface wash. It sometimes happens that deep well waters stored in reservoirs exposed to sunlight develop algal growths; but while such a growth may lead to unpleasant odors, no danger to health is involved. The reservoir should, of course, be water tight, in order to prevent possible entrance of contaminated well water in case at any time the reservoir water should be drawn down below ground water level.

DEODORANT FOR PRIVY AND CESSPOOL

To the Editor:—What would be considered an economical and efficient deodorant for use in rural communities for water-closets and cesspools? These places are usually without a pit, and the excreta fall into a wooden box, which is more or less frequently emptied, or else on the ground at the same level as the building. Such conditions offer an attractive breeding place for flies, and also become very offensive in odor. I have not found lime or crude phenol quite satisfactory.

———, Missouri.

Answer.—The U. S. Public Health Service (Bulletin 89) recommends compound solution of cresol for disinfecting privy vaults or privy cans, and finely powdered dry earth or wood ashes as drying powders. For privies not provided with removable cans, the use of wood ashes should be supplemented by sprinkling the deposits occasionally with 9 per cent. formaldehyd solution (Solution of Formaldehyde, U. S. P., 1 part; water, 8 parts). As deodorants and disinfectants for cesspools, compound solution of cresol, formaldehyd solution and chlorinated soda solution (sodium hypochlorite solution) are useful.

Patience and Observation in Obstetrics.—Patience in obstetrics is next to asepsis, but it must be the active patience of close observation; not the passive patience of ignorance, allowing the mother to become totally exhausted or the baby in imminent peril of death before determining on a line of action.—J. A. Harrar, *Am. J. Obst. & Gyn.* **5**:251 (March) 1923.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.
FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.
IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
LOUISIANA: New Orleans, June 7-9. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.
MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.
MISSISSIPPI: Jackson, June 19-20. Sec., Dr. W. S. Leathers, University.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.
NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.
OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.
SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg.
VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.
WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.
WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

THE RELATION OF THE STATE UNIVERSITY HOSPITAL TO THE MEDICAL PROFESSION *

C. P. HOWARD, M.D.
Professor of Theory and Practice of Medicine, State University of Iowa College of Medicine
IOWA CITY

When I received the chairman's invitation to read a paper on the relation of the state university hospital to the medical profession, the first question I asked myself was: "Does a state university hospital bear any different relation to the medical profession from any other hospital?" At first I was inclined to answer this by an emphatic negative. On more mature consideration, however, I began to recognize several minor differences between the relation of a state university hospital and that of a privately endowed one to the medical profession. Possibly the best way to illustrate the various points will be to refer to our own experiences in Iowa. For example, while a state university hospital may be financially independent, it must offer a practical or scientific return to make it worth while for the general practitioner to refer cases which may prove of both an educational and clinical value to the student body. In other words, it must attract the clinically interesting types of disease and not merely the undesirable, as the epileptics, the advanced tuberculous, and the hopelessly crippled. We must admit that at first in Iowa it was just this undesirable class that came in greatest number. By the investigation of such cases from every possible angle and then by sending a written report of our conclusions and by advising the family physician how best to dispose of the patient, we began to win a certain measure of confidence on the part of our confrères in the state. Thus the ice was broken and friendly relations were established which, we believe, have become closer and closer with each succeeding year.

In the second place, several prejudices had to be overcome, especially in relation to the laboratory service of the hospital. For example, because the state board laboratories, situated in Iowa City, under the direction of the department of pathology, make routine examinations of sputum for tubercle bacilli, and of the blood for the Wassermann complement fixation and typhoid agglutination, without even a clinical history of the patient, some practitioners formerly sent to the clinical laboratory urine samples with a request for information as to the probable existence of nephritis or diabetes, or brought patients for a roentgen-ray examination of the chest or gastro-intestinal tract with the expectation of an immediate diagnosis of the patient's malady by the actinographer. In spite of the fact that some commercial laboratories offer such facilities, our medical friends were immediately informed that our roentgen-ray department would not undertake such a dubious service except in conjunction with a clinician of the hospital staff, who obtained a complete history, made a general physical examination and performed the other necessary laboratory tests, after which he would be in a proper position to interpret the fluoroscopic and plate findings. This ultimatum had naturally to be uttered by the men in charge of the clinical laboratory and roentgen-ray room. However, as we in Iowa have learned always to expect, this lesson was surprisingly quickly appreciated by the medical practitioner and it seldom happens now that a patient is brought or sent directly to the roentgen-ray department without being first referred to the clinic.

What was harder for our profession to appreciate is our refusal to train technicians in blood counting, urinalysis and other diagnostic procedures. The medical man failed to realize that such a request from them showed how little they appreciated the value of these procedures and how unlikely they could recognize the pitfalls and fallacies that would beset the path of such a half-trained technician. Our reply, therefore, to such a request is the advice that the physician himself come and take the postgraduate course we offer each summer, and then teach the laboratory methods to his office assistant and so be in a position to evaluate rightly her findings. Even this startling advice seems to have borne fruit, for each summer we have from six to a dozen of the older practitioners taking our short postgraduate course of four weeks, in which five hours a week are devoted to the clinical laboratory diagnostic methods.

THE POSTGRADUATE COURSE

A short description of this postgraduate course may be of interest: In general, the course is very similar to that offered the senior medical student, with the omission of the lecture "quiz." The first hour of the day is spent in the clinical laboratory, making routine examinations of the urine, sputum, stools, gastric contents and blood. Each practitioner is given some laboratory task to perform under skilled direction. Then some special method, as the removal of a test breakfast, is performed before the entire class, and the various steps in the examination explained in detail, and the significance of the various findings dilated on. The meaning of occult blood in the stools, and the necessity of repeated sputum examinations for tubercle bacilli and elastic tissue are stressed. The students are then individually instructed in blood counting, and are encouraged to examine the blood smears from the various interesting cases in the hospital.

The class is then taken by the head of the department on the daily ward visit to the medical or surgical wards. The histories of the new cases are read, discussed and enlarged on. The clinician then makes the routine physical examination and explains the why and the wherefore of each step.

* Read before the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, Chicago, March 6, 1923.

On the discovery of something of clinical significance by the teacher, each postgraduate student is asked in turn to tell what he sees, feels or hears, and what the phenomenon signifies. A summary of the case is then given, and a diagnosis is expected from the class. If necessary, it follows the patient to the fluoroscopic room, or inspects the roentgenograms. The group then visits the old cases and watches the progress of the disease or the results of the therapeutic measures enforced. The morning's work closes with an amphitheater clinic in the various special branches, as neurology, pediatrics, and genito-urinary and orthopedic surgery and dermatology. At these special clinics, type cases are presented in a simple manner, and the treatment of cerebrospinal syphilis, epilepsy, marasmus, gonorrhea, flat foot, chronic eczema and the like is discussed in detail. In the head specialties, only the simplest diagnostic procedures are taught, as the examination of the sinuses, the ear drum and the eye grounds. In the afternoons the various laboratory courses are given, as surgical anatomy, operative procedures on the cadaver, postmortem technic and morbid anatomy. By 4 o'clock the program is over for the day, and the postgraduate can read in the library, or drop into the clinical laboratory to do some work or look on at the various operating rooms. Such, in brief outline, is the course offered each year by the university to the medical profession for a registration fee of $25.

An annual clinic is held each winter for two days. To it every reputable medical practitioner of the state is invited. The program comprises amphitheater clinics, conducted by the entire clinical staff, with special demonstrations for those interested in some special field, as the head specialties, psychiatry, cardiology, actinography or cystoscopy. The first evening is devoted to a "smoker," at which addresses by the president of the university, the dean and prominent alumni are made. In this way the alumni, the faculty and undergraduate medical students are brought together and act as hosts to the graduates of other medical colleges practicing in the state. On the second day, some medical man of national repute lectures on his special field.

Naturally, the staff makes an attempt to accept all invitations to read papers or to hold clinics before the various county and district societies; this, of couse, calls for a considerable expenditure of time and energy. Lastly, when needed, the clinical staff goes out in consultation to neighboring towns, provided such a journey will not interfere with its teaching and hospital duties. Daily, during certain limited hours, we see in our offices in the hospital private patients referred by outside practitioners.

For the clinical patients we have a fairly accurate follow-up system—more elaborate in some clinics, as psychiatry and orthopedic surgery, than in others.

LAWS FOR CARE OF INDIGENT

While we feel that a large part of the success of the University Hospital in Iowa City has been due to the practices described, we must not fail to mention the state laws for the care of indigent children and adults. Yet it must be evident to any fairminded critic that these laws would not have been enforced if there had not been a demand for such legislation on the part of the public and the profession. Prior to 1915, many patients presented themselves for treatment who were unable to pay the clinical rate of $2.50 a day for the period necessary for their proper treatment; nor did the University Hospital have sufficient funds to care for them as free cases. Accordingly, in 1915 the Perkins law for indigent children was passed, and met with such approval that in 1917 a similar measure (the Klaus-Haskell Law) was introduced for the care of indigent adults.

The principle underlying each law is that any legal resident of a county desiring treatment at the University Hospital for himself or for any member of his family can make application through his physician, county supervisor, township trustee, public health nurse, overseer of the poor, policeman, priest or minister to the judge of the district or superior court. The latter then appoints a local physician to certify as to the nature of the applicant's disease and the possibility of its correction. A request by the court to the county attorney is also made to investigate the financial standing of the applicant. When the judge is satisfied with the medical and financial statements, the papers are forwarded to the superintendent of the University Hospital, who in turn refers them to the proper department, which, when a vacancy occurs, asks the patient to report for examination in the outpatient service. There the history is taken and a physical examination made by some duly authorized member of the department, who either recommends the patient for admission to the wards or returns him home in charge of his escort, if not amenable to treatment. In the case of acute surgical and medical emergencies, the patients are admitted to the wards before the papers have been received, on the understanding that the patient's family will be responsible for the hospital expenses if the papers are not forthcoming. As with all laws of their kind, they are open to abuses; yet, as time goes on, these abuses are being rectified.

Local pressure is no doubt sometimes brought to bear on either the physician or the county attorney to certify that a given case is either amenable to treatment or a true county charge. This complaint, unfortunately, has reached our ears on more than one occasion. We have naturally to accept the affidavits presented to the courts. On the other hand, the pay clinical cases are being more and more closely investigated by our social service department, which is gradually eliminating this abuse at least.

THE VITALIZING ELEMENT

Perhaps it would not be superfluous to close this rather rambling paper with a quotation from Osler, who, in his address on "Teacher and Student" in 1892, wrote:

"But it is a secondary matter, after all, whether a school is under state or university control, whether the endowments are great or small, the equipments palatial or humble; the fate of an institution rests not on these; the inherent, vital element, which transcends all material interests, which may give to a school glory and renown in their absence, and lacking which all the 'pride, pomp and circumstance' are vain—the vitalizing element, I say, lies in the men who work in its halls and in the ideals which they cherish and teach."

Connecticut November Examination

Dr. Robert L. Rowley, secretary, Connecticut Medical Examinating Board, reports the written examination held at Hartford, Nov. 14-15, 1922. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 20 candidates examined, 15 passed and 5 failed. Six candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University		(1922)	78.2
University of Maryland		(1922)	75.6, 84.5
Harvard University		(1922)	83.7, 87.7
Tufts College Medical School		(1921)	77.1
Columbia University	(1920) 82.5,	(1922)	87.7
Fordham University		(1919)	75
University of Buffalo		(1922)	78.1
Jefferson Medical College		(1922)	85.1
Vanderbilt University		(1916)	76.6
University of Vermont		(1922)	77.8
Medical College of Virginia		(1917)	75.4
University of Budapest, Hungary		(1919)*	75

College	FAILED	Year Grad.	Per Cent.
University of Vermont		(1899) 45.6, (1918) 72, (1921)	70.9
National University of Athens, Greece		(1918)*	65.2
University of Naples, Italy		(1920)*	60.2

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Harvard University		(1897)	Mass.
Dartmouth Medical School		(1912)	New York
Columbia University		(1903) Rhode Island, (1912) New York, (1915) North Carolina	
University College of Medicine, Richmond		(1905)	Virginia

* Graduation not verified.

Delaware December Examination

Dr. Henry W. Briggs, president, Medical Council of Delaware, reports the examinations held by the regular and homeopathic boards, Dec. 12-14, 1922. The examinations covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Michigan Homeopathic Medical College		(1922)	93
Hahnemann Med. Coll. and Hosp., Philadelphia		(1921)	91, 91
Jefferson Medical College		(1921) 79.7, (1922)	89.2
Temple University		(1922)	80.7, 82.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Johns Hopkins University		(1918)	Minnesota
Jefferson Medical College		(1912), (1920	Penna.

Kansas February Examination

Dr. Albert S. Ross, secretary, Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Feb. 13-14, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Eleven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University		(1922)	89.9
University and Bellevue Hospital Medical College		(1921)	89.3
University of Pennsylvania		(1921)	91.2
Chattanooga Medical College		(1906)	85

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1917)	Illinois
Northwestern University		(1921)	Illinois
College of Physicians and Surgeons, Keokuk		(1889)	Iowa
Keokuk Medical College, College of Phys. and Surg.		(1908)	Iowa
Kansas City College of Medicine and Surgery		(1921)	Wyoming
Missouri Medical College		(1882)	Missouri
National University of Arts and Sciences		(1913)	Missouri
St. Louis College of Physicians and Surgeons		(1892)	Nevada
Washington University		(1921)	Missouri
Eclectic Medical University		(1918)	Colorado
University of Nashville		(1911)	Oklahoma

North Dakota January Examination

Dr. G. M. Williamson, secretary, North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held at Grand Forks, Jan. 2-5, 1923. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University		(1922)	82.7
State University of Iowa College of Medicine		(1921)	80.5
Johns Hopkins University		(1921)	84
University of Nebraska		(1922)	83.9
University of Manitoba		(1921) 79.7, (1922)	80.5
University of Toronto		(1922)	81.1

College	FAILED	Year Grad.	Per Cent.
Cincinnati College of Medicine and Surgery		(1900)	*

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
State University of Iowa College of Medicine		(1921)	Iowa
University of Minnesota		(1922)	Minnesota

* No grade given.

Book Notices

DISEASES OF THE EAR, NOSE AND THROAT: MEDICAL AND SURGICAL. By Wendell Christopher Phillips, M.D., Professor of Otology, New York Post-Graduate Medical School and Hospital. Sixth edition. Cloth. Price, $8 net. Pp. 880, with 578 illustrations. Philadelphia: F. A. Davis Company, 1922.

The sixth edition of this always reliable textbook approaches, in its present form, the dignity of a true treatise. The work has been modernized to within a few months of its issue, not only by extensive elaboration and illustration, but also by the elimination of numerous methods and procedures which, though obsolete, still appear as necessary material in the mediocre textbook. Particularly refreshing are the chapters on suspension laryngoscopy, bronchoscopy and esophagoscopy, and one reads with respect the monograph on the ethmoid. The subject matter covering diphtheria, syphilis, asthma, allergy and the pollen treatment of hay-fever is unusually up to date. The book is well planned and executed. There are numerous excellent illustrations of prepared specimens, modern instruments, and reproductions of instructive roentgenograms. The volume can be recommended to the student and practitioner as an ideal text and reference work.

CAROTINOIDS AND RELATED PIGMENTS, THE CHROMOLIPOIDS. By Leroy S. Palmer, Ph.D., Professor of Agricultural Biochemistry, University of Minnesota. Cloth. Price, $4.50 net. Pp. 316, with 6 illustrations. New York: Book Department, The Chemical Catalog Company, Inc., 1922.

This is one of the valuable series of monographs the American Chemical Society is promoting, in order to make available concise but complete statements of the existing knowledge in many fields of chemistry. This is among the several projected or published monographs that have value for medicine, since the carotinoid pigments occur in man and occasionally show modifications in disease. We may mention, for example, the fact that a condition resembling jaundice has been observed following a diet containing excessive quantities of carrots and other vegetable foods rich in these pigments, especially in children. The yellow skin of diabetics, described by von Noorden as xanthosis diabetica, seems also to depend on the vegetarian diet of these patients. The yellow color of the corpus luteum, of the fat tissues, and probably the animal pigments called lipochrome, in general, are merely stored vegetable pigments of the carotinoid group. As a complete and lucid discussion of the subject with full bibliography, this book is of great value as a statement of everything learned to date in this field.

MULTIPLE SCLEROSIS (DISSEMINATED SCLEROSIS). An Investigation by The Association for Research in Nervous and Mental Diseases. Report of the Papers and Discussions at the Meeting of the Association. New York City, December 27th and 28th, 1921. Editorial Board: Charles L. Dana, M.D., Smith Ely Jelliffe, M.D., Henry Alsop Riley, M.D., Frederick Tilney, M.D., Walter Timme, M.D. Cloth. Price, $3.75. Pp. 241, with illustrations. New York: Paul B. Hoeber, 1922

This is the second volume of the transactions of the Association for Research in Nervous and Mental Diseases, and contains the latest work and views on the subject of disseminate sclerosis. These are not arranged as in a textbook, but practically every aspect of the disease is the subject of one or more articles, which are grouped according to topics and followed by the discussions that took place at the meeting. The volume has been carefully edited, and is well bound and illustrated; it lacks only an index. It cannot be equaled in any language, and can be heartily recommended to every neurologist.

TECHNIK UND METHODIK DER BAKTERIOLOGIE UND SEROLOGIE. Von Professor Dr. M. Klimmer, Direktor des Hygienischen Instituts der Tierärztl. Hochschule Dresden. Paper. Price, $2.80. Pp. 520, with 223 illustrations. Berlin: Julius Springer, 1923.

This book contains a well selected, critically elaborated series of directions for bacteriologic and serologic examinations. It will be helpful to physicians, veterinarians, bacteriologists, food chemists and investigators. It is intended as a book of reference, and is provided with an extensive index. While not expressly indicated, it is evident even

from a cursory examination that it is principally German procedures that receive consideration; but this limitation in mind notwithstanding, the book is recommended heartily to all who have use for a handy source of reference and description of bacteriologic and serologic methods.

VERLETZUNGEN DES AUGES IN KLINISCHEN BILDERN. Für praktische Aerzte. Von Prof. Dr. Ernest Blessig, Direktor der Univ. Augenklinik in Dorpat. Paper. Pp. 43. Berlin: S. Karger, 1922.

This little pamphlet, printed on the cheapest kind of paper and without embellishments of any sort, proves on careful analysis to be of great value. It is merely a clinical record of thirty-six cases of eye injury, illustrating nearly all possible types. The conventional division of injuries into five main groups has been followed in the main, and to these have been added the various types of unusual war-time injuries. Unnecessary details have been eliminated, the essential phases of clinical description being left, so that a mental image of the case in question is readily formed. The medical and surgical treatment in each case is outlined in sufficient detail, and the immediate outcome of the case is mentioned. It is somewhat unfortunate that the author did not include the ultimate outcome after several years of observation. Although originally written in Russian (owing to the cost of publishing, it has been impossible to bring out a Russian edition as was planned), the German is excellent, being clear and concise without circumlocution.

TEXT-BOOK OF PEDIATRICS. Edited by Professor E. Feer, Director of the University Children's Clinic, Zurich. Translated and Edited by Julius Parker Sedgwick, B.S., M.D., Professor of Pediatrics, University of Minnesota Medical School, and Carl Ahrendt Scherer, M.D., F.A.C.P. Cloth. Price, $8.50. Pp. 917, with 262 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

This is the first English translation of one of the most widely known continental volumes on pediatrics, a book now in its seventh German edition, from which the American translation is made. In translating the book, fifteen American and nine European contributors have collaborated, and the editor states in his preface that the collaborators have added much to the original subject matter, particularly in the way of original illustrations. The volume follows essentially the arrangement of most textbooks of pediatrics, taking up, first, general considerations, and following with the special diseases of the child. One of the faults of this, as of most similar works, is, of course, its unevenness, since the contributors naturally vary in the style of language and in the particular methods with which they are concerned. The book is perhaps open to the criticism that it does not represent any particular point of view but rather tends to represent all points of view. For this reason it is not so suitable as some of the special works of individual writers. On the other hand, it constitutes a vast storehouse of information regarding the diseases of infants and children. It has an elaborate index, and is an extraordinarily suitable reference work for both the student and the practitioner.

FOOD AND THE PRINCIPLES OF DIETETICS. By Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital. Fifth edition. Cloth. Price, $5. Pp. 610, with 32 illustrations. New York: William Wood & Co., 1922.

This volume has had a special place among important books on dietetics, since it deals primarily with principles rather than with menus and preparations. The last previous edition was published in 1916, since which time the author has had the experience of aiding the British government in war rationing. Unlike most English authors, he has not been inclined to accept blindly the claims of manufacturers as to the special nutritive values of various proprietary preparations. For example, consider this statement: "Preparations, such as Bovril and Oxo, to which meat fibre has been added, may theoretically be regarded as food, but contain far too little protein to admit of their ever being able to contribute appreciably to nutrition." While there is a vast amount of tabular data, concerning both natural and artificial foods, the author leaves it largely to the reader to construct suitable menus and diets on the basis of the information provided. It is planned for study rather than for spoon-feeding of information.

Miscellany

TUBERCULOSIS AMONG THE NORTH AMERICAN INDIANS

The National Tuberculosis Association appointed a committee in 1921 to investigate tuberculosis among the North American Indians. Drs. G. M. Kober, G. E. Bushnell, H. E. Dearholt, J. A. Murphy and A. B. Tonkin, and Mr. W. H. Baldwin comprised the committee. In its recent report, it is said that the peak of excessive mortality among the Indians was reached in 1913, when the death rate was 32.24 per thousand. This was gradually reduced until, in 1920, the rate was 22.33 per thousand. Of the total number of deaths of Indians in 1911 tuberculosis caused 32 per cent., in 1920, 27 per cent. Scrofula and consumption were observed among the Indians of North America as early as 1635-1658, in which period the prevalence of tuberculosis among the Indians was no greater than among the white race, and perhaps not as great. It appears that there has been a progressive increase in the prevalence of the disease since their contact with the white race. The variations in the prevalence of tuberculosis among the different tribes today are great: some are thoroughly tuberculized; others show the characteristics of recent acquaintance with the disease. Among the five civilized tribes of Indians in Oklahoma, tuberculosis is no more prevalent than among the white people of the state who live on the same industrial plane. The Indian has passed through a state of decadence when his disappearance was imminent. Medical science and a humanitarian government have overcome his downward trend, and there is now a hopeful outlook. The records of the Census Bureau indicate that there has been an increase in the Indian population of 7,241 since 1900.

The first hospital for Indians was established in 1882. In 1922, there were seventy-three hospitals, 200 physicians, 100 nurses, 100 hospital employees, ninety field matrons, and other employees in the Indian medical service. The committee says that, with few exceptions, the spirit which animates the work of the physicians, teachers and other employees in the conservation of the health of the Indians is worthy of commemoration and praise, and that the most urgent need today are provisions for adults in the incipient and advanced stages of tuberculosis. There are needed two or three sanatoriums, one of them for hopeless cases, where an adult Indian can die in peace and comfort without jeopardizing the lives of those to whose care he is committed. This sound policy, the committee continues, is absolutely essential for anything like reasonable success in mitigating the spread and ravages of the disease.

In some states, notably New York, there is a conflict of opinion as to whether the federal or state government is responsible for the health of the Indians. It appears that the federal government has never made any appropriation for the health service of the New York Indians, because the treaties between the Six Nations of New York and the United States have no reference to the Indians' health. The committee urgently recommends in justice to the tribes of New York that the conflict of jurisdiction be brought to the attention of the Department of Justice with a view of settlement. While there are a good many Indians who are citizens and taxpayers, it should be remembered that the majority of the 336,337 Indians in the United States are poor and scattered. The policy of the Bureau of Indian Affairs has been to make them self-supporting by teaching them how to work. Their employment unfortunately is often of a temporary character, and their income wholly inadequate to maintain a proper standard of living. Thus, their vitality is often so reduced they are unable to do a full day's work, and they are cruelly accused of being lazy, when in truth they have not sufficient food. The bureau is aware that insufficient food is an important cause of the undue prevalence of tuberculosis, and yet, sometimes in extreme emergencies, it is difficult, if not impossible, to meet the situation, owing to a lack of funds.

Medicolegal

Correctness of Instructions to Jury in Fracture Case

(Huber v. Hamley et al. (Wash.), 210 Pac. R. 769)

The Supreme Court of Washington says that the plaintiff contended that the defendant physicians negligently reduced a fracture in his right arm, and negligently treated the fracture after the reduction. On the trial, the following instruction to the jury was requested:

> You are instructed that, where a physician undertakes the treatment of a patient, not only must he use reasonable but ordinary skill and care in said treatment at the time he takes charge of said case, but also he must use ordinary skill and care in the subsequent treatment of the case, and it is his duty to give the patient such attention after the first examination or reduction of the fracture as ordinary physicians and surgeons, possessing ordinary skill and intelligence, practicing in the same general locality, would deem necessary in a similar case, and, if you find from the evidence that the defendants attempted to reduce the fractured radius for said plaintiff, but did not thereafter use reasonable care and skill in the subsequent treatment of said fractured bone, or such care as is imposed on physicians holding themselves out as physicians and surgeons possessing the ordinary knowledge and skill of the physicians and surgeons located and practicing their profession in the same general locality; and, if you further find from the evidence that because of such failure to use reasonable care and skill in the original treatment or subsequent treatment of the injured arm the plaintiff was permanently injured or suffered pain, injury and damage, then you will find for the plaintiff in such sum as you deem just and proper.

It was conceded by the defendant that this instruction properly stated the law, but it was argued that the substance thereof was given in other instructions; and the court says that were the refusal to give it the only error assigned, the case would not be reversed, yet this instruction would be proper to be given on a new trial. Error was assigned on the giving of the following two instructions:

> I instruct you that the burden of proof is on the plaintiff, and in order that the plaintiff recover in the action he must prove by preponderance of the evidence the following: first, that the defendants did not with medical skill and care properly treat plaintiff and his fractured arm; second, that such failure so to treat plaintiff with reasonable and ordinary skill, as defined in these instructions, resulted in the injury complained of; third, the said alleged injury is due to lack of the exercise of ordinary skill and care and not otherwise; fourth, that the plaintiff was not guilty of negligence contributing to such injury. And a failure to establish any of these matters required that the jury shall find a verdict for the defendants.
>
> The court instructs the jury that the only question in this case for your determination is whether the defendants, when the plaintiff called on them, properly reduced the fracture in the plaintiff's forearm, and gave him proper and necessary directions and instructions for the care of the same. If they did, then they cannot be held liable for any injury resulting from any redislocation of the said fracture that may have afterward occurred.

The first of these two instructions was erroneous for the reason that it placed the burden of proof on the plaintiff to establish the fact that he was not guilty of contributory negligence. The second instruction was erroneous for the reason that the jury was there instructed that the only question for its determination was whether the defendants had improperly reduced the fracture, whereas, as a matter of fact, the most important issue before the jury was the question of the defendants' responsibility for failure to treat the fracture after its reduction. Neither of these instructions should have been given, and they so vitally affected the plaintiff's rights that the giving of them was prejudicial, and for that reason the judgment of the lower court in favor of the defendant physicians is reversed, and a new trial granted.

Manager of Farm Not Liable for Medical Services

(Whitney & Chadbourne v. Holloway (Iowa), 190 N. W. R. 930)

The Supreme Court of Iowa, in reversing a judgment obtained by the plaintiffs for services rendered by Dr. Whitney, says that the defendant was in the employ of the owners of certain farms, having charge and management of the farms. Another employee, while assisting the defendant in hauling logs, sustained a fracture of one leg, and was taken to the office of a physician. That physician testified that he sent for the defendant and told him that he would have to engage some other physician. The defendant said, "All right." When asked who should be engaged, he answered, "Whoever you think best." The physician said, "I will get Dr. Whitney by telephone," and the defendant replied, "All right, get him." The physician called Dr. Whitney, and told him about the conversation with the defendant. The injured man testified about the conversation—that the physician told the defendant that he would have to have some help; he wanted to know whom he should get, and said, "We would get Whitney"; and the defendant said to get Whitney. Dr. Whitney testified that the other physician explained to him that the man had been injured during a logging operation on the Whiteis estate, and that the defendant, their agent, had instructed the physician to send for Dr. Whitney and have him take charge of the case, which he did. At the close of all the testimony the plaintiffs dismissed their petition against the owners of the farms.

The principal and primary question, then, was whether or not, on the record disclosed above, the defendant manager could be held liable for the value of the services rendered to the injured man by Dr. Whitney. This defendant was under no legal obligation to employ a physician for the injured man, or to become personally liable for the services of a physician rendered to him. He could have bound himself by an express contract to pay for such services. There was not sufficient evidence of the making of any such express contract to carry that question to the jury. Giving to the evidence the most favorable construction of which it was capable, there was no proof whatever of any express promise on the part of this defendant to pay for the services of Dr. Whitney or to become liable for them. This left the question of whether or not there was sufficient evidence of an implied promise on the part of this defendant, from what he said and did in connection with the matter, to carry the case to the jury and to sustain a finding of such implied promise on his part.

The general rule has been recognized by this court, in *Holmes* v. *McKim, 109 Iowa,* 245, 80 N. W. 329, wherein the court said:

> Where one merely calls a physician to attend on another, the law raises no implied promise to pay, on the part of the person making such request, unless the latter's relation to the patient is of such a character as imposes on him the duty to supply a physician, and the relation of employer and employee is not sufficient to do this.

This is a salutary and beneficient rule. Not every one who summons a physician to attend the sick or injured should be held personally liable by an implied contract to pay for the services rendered. It is readily within the power of the physician to secure an express contract in such a case. Otherwise he must look to the patient for his compensation. In the present case the defendant was under no legal obligation whatever to pay for the services that were rendered to the injured man. He did not agree to pay for the same. The fact that he was the superintendent of the work in which the employee who was injured was engaged created no legal obligation on the defendant's part to pay for the services that were rendered to the injured man by the physician. The defendant was liable only in the event of an express contract. There was no such contract proved. The trial court should have sustained the defendant's motion for a directed verdict at the close of the evidence.

Physician Not Qualified to Testify as to Tuberculin Test on Cattle

(Buerkli v. Carstens Packing Co. (Wash.), 210 Pac. R. 798)

The Supreme Court of Washington says that in this case, which involved a charge of misrepresentation with regard to certain cattle having been given the tuberculin test a few days before they were sold, a witness who was not allowed to testify was a physician and surgeon, but not a veterinary surgeon. He had never qualified in the veterinary science and had never treated cattle or animals, and knew nothing about the effect of the tuberculin test on cattle or other animals. He testified that he had never gone into the science or studied diseases of cattle. The trial court was right in rejecting his testimony. While a general physician may have some knowledge as to the effect of tuberculin tests on either human beings or other animals, this witness could not be said to have so qualified himself as to diseases of cattle and testing them for tuberculosis that he was a competent witness.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.
American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York.
Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.
Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

TENNESSEE STATE MEDICAL ASSOCIATION

Nineteenth Annual Meeting, held at Nashville, April 10, 11 and 12, 1923

The President, DR. H. M. TIGERT, Nashville, in the Chair

Three Years' Experience with Radium

DR. J. HOWARD KING, Nashville: Radium has its greatest value in the treatment of carcinoma of the cervix, uterine bleeding with or without tumors, and other mucous membrane malignancies in this order: mouth, rectum and vagina; in superficial malignancies, angiomas, and in benign excrescences, such as nevi, keloids and warts. Needle implantation is superior to surface application. Malignant cases in which one uniformly heavy dose is given do better than those in which repeated light dosage is employed. Some malignant cases that seem hopeless at first respond well later. This is especially true in older patients. In rectal cases, a permanent colostomy should first be established in order to permit sufficient irradiation without causing distressing symptoms. Indications are that results of much greater promise will be obtained by the aid of deep roentgen-ray therapy.

Acute Brain Injuries

DR. H. H. SHOULDERS, Nashville: When the destruction of brain tissue is not sufficient of itself to cause death, increased intracranial tension may prove fatal or produce a serious change in mentality. The condition of increased intracranial tension must be determined by the spinal mercury manometer. The symptoms of slow, full pulse, slow, deep breathing, increased blood pressure and choked disk appear too late to be of much value. Lumbar drainage, when performed with due caution, is a safe procedure in acute brain injuries. The relief of increased intracranial tension by lumbar drainage is possible in a large percentage of cases.

Lesions of the Stomach

DR. E. STARR JUDD, Rochester, Minn.: The characteristic symptoms of gastric ulcer are well known: chronicity; periodicity; seasonal incidence; hunger pain, relieved by food, alkali and vomiting; and rarely hemorrhage, perforation or obstruction. It is impossible to differentiate a benign from a malignant gastric ulcer by roentgen-ray examination. Therefore, patients with gastric ulcer should not be treated medically, and in the operative procedure the ulcer should be removed or destroyed, if possible, and a microscopic examination made. The type of operation will depend on the size and location of the ulcer, and whether or not hour-glass deformity or multiple ulcers are present. If the operation is simple exclusion, a gastro-enterostomy must also be performed; otherwise the emptying of the stomach may be impaired. If a sleeve resection is performed, gastro-enterostomy will not be necessary. There are two types of duodenal ulcer, the crater and the duodenitis. Surgical treatment is the same for the two types of ulcer. If the ulcer is accessible and there is not too much deformity of the duodenum, the lesion may be excised; excision is especially indicated if there is a history of hemorrhage. Some surgeons prefer a form of pyloroplasty with excision, but I do not believe this is necessary unless there is obstruction or marked spasm. Gastro-enterostomy has been a very successful operation for duodenal ulcer, but occasionally it results in the formation of a jejunal ulcer, which is a formidable complication. One great advantage of excision is that it is not followed by secondary ulcer. The symptoms of gastric syphilis are not definite. The average age of the patients is about 35 years. The prognosis depends on the duration of the symptoms. Clinical improvement is often prompt. Anatomic cure depends on the amount of sclerosis that has occurred. Free hydrochloric acid has appeared in the gastric secretion of patients who, before treatment, had achlorhydria. Benign tumors of the stomach are rare, comprising about 1.3 per cent. of all gastric tumors that come to operation. They are myomas, fibromas, angiomas, dermoids, polypi, adenomas and polyposis. Myomas are most common; gastric polyposis the most rare. It is not possible to determine the kind of growth by inspection, except in cases of gastric polyposis, which shows characteristic mottling. The surgical end-results are excellent. The immediate results of the radical operations for carcinoma of the stomach have been improved by better preoperative preparation of starved and anemic patients as well as by recent improvements in technic. The ultimate results compare well with those of operations for carcinoma of other regions. Sarcoma of the stomach is rare, occurring about once to sixty-seven carcinomas. The most common symptoms of lymphosarcoma of the stomach are loss of weight, pain, vomiting, bleeding and anemia. Occasionally there is an ulcer syndrome. The average age of the patients is 46 years, although the lesion has been found in persons aged 16 and 62 years. The only treatment is resection, if possible, but the ultimate results are very poor.

Comparison of the Wassermann Test with the Kahn Flocculation Test in One Thousand Cases

DR. WILLIAM LITTERER, Nashville: The Kahn reaction is distinguished from other precipitation tests by these salient

features: 1. The serum is employed without dilution, Kahn having shown that diluting the serum with salt solution delays the rapidity of the reaction. 2. The antigen is prepared so as to have a high antigenic titer. This is attained by using an alcoholic extract of dried heart muscle, which has been previously extracted with ether, thus removing fat and other nonspecific substances. 3. The antigen is diluted for the test with approximately the smallest amount of physiologic sodium chlorid solution that will hold it in solution, rendering it thereby susceptible to precipitation when mixed with positive serum. 4. The antigen and serum are employed in that relationship which will, in Kahn's opinion, result in maximum precipitation. Agreement with the Wassermann reaction was surprisingly accurate, in view of the simplicity and economy of materials and time. The test or its modification may be used with advantage to check the Wassermann reaction, especially in doubtful cases. I do not feel that the test should supplant the Wassermann reaction, but the two should be run conjointly to insure more accurate reports. It certainly deserves serious consideration on the part of serologists.

Deductions from a Review of One Thousand Roentgen-Ray Examinations of the Gastro-Intestinal Tract

DR. S. W. COLEY, Memphis: Simple gastric ulcers have been of rare occurrence in this series. There were eight simple gastric ulcers, and two gastrojejunal ulcers, a total of 1 per cent. of the series; the average age was 50 years, and the cases are equally divided between men and women. In this consecutive series there were eighteen gastric carcinomas, nine in men and nine in women; the average age was 60 years, the youngest a man, aged 31, the oldest, a woman, aged 73; eleven of these were diagnosed from the anatomic location and probable amount of involvement. By far the most frequent gastric and upper abdominal lesions revealed by the roentgen ray are the duodenal ulcers. The diagnosis of these ulcers in a typically deformed bulb is not a difficult matter, but not all duodenums are so situated as to be easily seen; nor are they when deformed in a typical manner. Proper and adequate screen facilities must be available. The diagnosis depends wholly on the efficient use of the fluoroscopic screen. We have incidentally found a few cases of gallstones during the process of our gastro-intestinal examinations. One interesting case was that of combined gallstones and duodenal ulcer, both of which were confirmed at operation. Studies of the colon have been interesting and illuminating in that most findings have been of functional nature with few organic lesions. By far the greater number of cases examined showed some degree of hypertonicity; atonic colons were exceptional. Coincident disease of the tract, such as appendicitis, cholecystitis, gastric or duodenal ulcer and postoperative adhesions, has been assigned as the cause of the spasticity in most cases. In this series there were six cases of carcinoma of the colon, four in men and two in women. The barium enema has proved the best method for locating these growths; the ingested meal has proved unreliable. The appendix was seen in about 35 per cent. of all cases examined; but unless it presented some abnormality in mobility, fixation or was obstructed by some foreign substance, no attention was paid to it.

Peptic Ulcer

DRS. R. L. SANDERS and C. C. KING, Memphis: In our clinic, 1,000 gastro-intestinal cases were studied during the last three years. All the patients complained sufficiently of stomach trouble to warrant a thorough gastric analysis and roentgen-ray examination. We found 118 positive cases. Of this number, eighty-seven were duodenal ulcers, nine gastric ulcers, twenty carcinomas and two syphilis of the stomach. This is about the average proportion reported from other clinics. Gastric hemorrhage has been looked on for many years as a sure sign of ulcer, but less reliance is now placed on this symptom alone. Vomiting and hemorrhage may be features, but when they are the only symptoms, ulcer is rarely found. If the ulcer is treated surgically after the patient has been properly prepared, the simplest and most applicable method should be used. There is a tendency toward radicalism, which we do not accept. It is rarely necessary to resect the ulcer-bearing zone in duodenal ulcers. There is no tendency to cancerous degeneration, the results after gastro-enterostomy or pyloroplasty are usually good and the mortality is not high; with resections, the risk is great. In gastric ulcer cases, when the ulcer is small, the simple method of cautery excision, as pointed out by Balfour, with gastro-enterostomy, will usually cure the disease, and the mortality is from about 3 to 5 per cent. If the ulcer is large and located near the pylorus, resection of the Billroth or Polya type should be done. The large ulcer near the middle of the stomach may best be treated by sleeve resection. Much has recently been written about the marginal or gastrojejunal ulcers that form after gastro-enterostomy. In our series we have two such cases, both of which have been relieved entirely by proper medical management. We believe that new ulcers probably came from the same source as the primary ones, and to prevent such recurrences, we remove all possible foci of infection as a part of the treatment. Trauma produced by the improper use of clamps in doing a gastro-enterostomy may be a factor, and on this account we either do not use them or use them with much care. Failures in the relief of symptoms by surgical treatment may also be due to unremoved abdominal disease.

Version

DR. R. O. TUCKER, Nashville: Potter has rendered a distinct service in reviving the operation of version, and it should be used more often than it is; when possible, it should replace high or even medium forceps operations. The indications have been much broadened, but I do not believe it should be used in normal left occipito-anterior positions.

Wassermann-Fast Syphilis

DR. BRYCE W. FONTAINE, Memphis: The best course to pursue in the treatment of Wassermann-fast cases of syphilis depends on the clinical appearance of the patient and the urgency of the symptoms. If the patient's physical condition is good, antisyphilitic treatment should not be pushed further than that ordinarily used in the treatment of resistant cases. Should there be present, with a persistently positive blood or spinal fluid Wassermann reaction, active and progressive involvement of the liver, aorta or cerebrospinal system, there should be no hesitation in continuing indefinitely the treatment with mercury, arsphenamin and the iodids. During this time, every precaution should be observed to prevent untoward results from the treatment. These cases should be under constant observation, with repeated and searching clinical examinations, and frequent microscopic examinations of the urine. The treatment should be carried on at proper intervals with arsphenamin, mercury and iodids in the interim, and there is no limit to the amount or number of doses than can be given before the Wassermann reaction finally becomes negative, and the symptoms that have demanded the urgent treatment subside. In resistant cases, it has been suggested that other drugs be tried. Kolmer prefers to use bismuth, according to the plan of Emery and Morin of Paris. The two most suitable preparations are hydrated bismuth oxid, which may be given intramuscularly, and colloidal bismuth, which may be given intravenously. The action of bismuth resembles that of mercury, and it is suggested that it be used in conjunction with an arsenical preparation. Sutton and others have obtained good results with silver arsphenamin; but the danger of producing argyria should not be overlooked.

Polycystic Kidney

DR. JOSEPH H. SMITH, Memphis: In polycystic tumors of the kidneys, the parenchyma of the kidney is generally entirely destroyed, the cystic degeneration filling the entire capsule. The cysts vary in size and, not being urinous in nature, have no communication with the sinus of the kidney. Their contents vary, some containing pus, some coagulated blood and others a watery or gelatinous substance. Most authorities contend that this condition is always bilateral. The case reported is doubly interesting from the fact that roentgenograms and kidney tests do not show that the opposite kidney is affected.

It is possible that the opposite kidney has undergone some degeneration which is not discernible. This condition is not surgical in nature when the cystic change is bilateral and the function of both kidneys is greatly impaired. In the bilateral cystic kidney some relief can be obtained by puncture of the cysts.

Intraperitoneal Injections in Children

Dr. Oliver W. Hill, Knoxville: In many hands, intraperitoneal injections have proved a safe and efficient way to furnish fluid. This method of combating loss of water is not to be used only as a last resort, but should be employed before dehydration has resulted in such serious damage to the kidney that it cannot resume its function, and before marked metabolic changes and protein destruction have occurred in the body. The indication for intraperitoneal injection is present in any condition that is accompanied by dehydration. In gastro-intestinal diseases, whether acute or chronic, that are characterized by vomiting and diarrhea of sufficient intensity to cause rapid loss of fluid from the body, dehydration of some degree is always present. Other conditions which are not primarily gastro-intestinal will frequently produce grave dehydration. To the solution injected into the peritoneal cavity, various substances have been added. Ten per cent. glucose has been used and also from 2 to 3 per cent. sodium bicarbonate. The use of glucose has been recommended because it is easily utilized and has a definite caloric value. As a carbohydrate, glucose also spares protein destruction. It has been asserted that sodium bicarbonate used in intraperitoneal injections has an effect on acidosis. Some authors recommend Ringer's solution. The majority of pediatricians find that as good results are obtained by the use of simple physiologic sodium chlorid solution as when other substances are added. With the salt solution alone there is less tendency to abdominal distention after the injection. In the light of present knowledge, it is better to introduce glucose or sodium bicarbonate intravenously if their use is so urgently indicated that administration by mouth will not suffice.

Traumatic Peritonitis from Nonpenetrating Violence

Dr. E. H. Baird, Dyersburg: In three cases there was no rupture of the intestines, but severe peritonitis was present in all. In such cases there seems to be a paralysis of the intestines, sometimes accompanied by dilatation of the stomach, with the usual train of symptoms: shock, vomiting of black liquid, rapid pulse, drawn expression, etc. In spite of the most energetic treatment, one patient in whom perforation did not occur died with the clinical picture of acute intestinal obstruction. In such cases there is doubtless a disturbance of the nerve control of the intestinal musculature producing a sort of paralytic ileus. The postoperative treatment is as important as the operative, and must be directed toward combating the paralysis of the intestinal wall and overcoming the effects of sepsis. The usual measures employed for this purpose, such as strychnin and other stimulants, proctoclyses of soda or other substances used by the operator, intravenous glucose injections or intravenous saline solution if there has been much hemorrhage, or even transfusion, must be faithfully and energetically carried out. Gastric lavage frequently and high enemas are essential. Morphin, according to indications, for pain and shock is advocated; also the position of the patient in bed most favorable to drainage should be maintained, as in any peritonitis, and the usual precautions as to undue pressure on viscera from drainage tubes, the time of their removal, etc., should be employed as indicated in each individual case.

Pelvic Infections

Dr. H. M. Tigert, Nashville: The vast majority (perhaps from 80 to 85 per cent.) of all cases of chronic pelvic infections from an etiologic standpoint fall into one of two classes: the gonococcic, which is by far the larger, or the streptococcic group. The biologic and pathologic manifestations of these two micro-organisms differ widely, and a full understanding of these differences is essential to the intelligent and successful surgical management of women affected with them. The majority of gonorrheal infections are arrested at the internal os, where they may remain latent for long periods awaiting a favorable opportunity for further extension. The endometrium, when infected, shows remarkable recuperative powers, whereas the converse is true of the oviducts, with their ciliated epithelial lining. Indiscriminate curettage is not infrequently the determining factor in a fateful extension. Once past the bar of the internal os, from whatever cause, one may expect to find endometritis, salpingitis, pelvic peritonitis and oophoritis, in varying degrees of intensity, with later pyosalpinx or ovarian, tubo-ovarian, or pelvic abscess. Unlike the gonococcus, the streptococcus penetrates the walls of the uterus and attacks the connective tissue. Thence it often spreads into the peritoneum, and produces peritonitis which is often fatal. Occasionally it may happen that the streptococci extend directly from the uterine cavity into the peritoneal cavity by way of the tubes, but such cases are exceedingly rare, and are usually fatal. If a patient survives such an attack and later presents herself for examination, it will be found in almost every case that the pelvic connective tissue has become involved in the process. It has been demonstrated that nearly all streptococcic masses in the pelvis are parametrial in whole or in part. The parametric mass is usually situated low down in the base of the broad ligament, is very hard and dense, and appears to blend with adjacent structures. At times the density may be almost of cartilaginous consistency. Streptococci do not spontaneously invade the nonpuerperal uterine cavity, but in virtually every instance can be traced directly to labor, abortion, miscarriage or intrauterine manipulation.

The Hypophysis and Some of Its Disorders

Dr. M. L. Graves, Galveston, Texas: Efforts to discover the function of the gland and its active principles have been made by many experimenters in animal and man. Feeding experiments with the whole gland or its constituent portions have been undertaken with some degree of success. In 1916, Robertson isolated tethelin, and demonstrated by feeding experiments that it produced the same effects on growth as anterior lobe and also increased tissue repair and stimulated the growth of pathologic tissues, such as carcinoma. In summing up the work of various authors, the weight of evidence inclines to the belief that the anterior lobe and particularly its active principle, tethelin, have a very large influence in body growth, sexual development and certain other functions. The posterior lobe has perhaps definite, though disputed, influence on carbohydrate metabolism, the secretion of urine, the equilibrium of vascular tension, the activities of the smooth muscles of the body, the stimulation of mammary secretion, and perhaps in conjunction with the anterior lobe, effects on the chemistry of the body not yet clearly understood. Clinical phenomena have been accumulating for many years and point with great emphasis to disorders in structure and function of this important little gland in the production of several well-known and other ill-defined diseases.

Carbon Monoxid Asphyxiation.—The Ohio State Department of Health reported eighty-one cases of carbon monoxid asphyxiation with thirty-four deaths during the first ten weeks of the past winter. The most frequent source of the carbon monoxid is the incomplete combustion of coal gas, natural or artificial, in domestic heating appliances. Regulation of the proportion of air to gas is of the greatest importance. Artificial gas requires about five times, and natural gas ten times, as much air as gas for complete combustion. The pressure under which gas is delivered from the mains may vary sufficiently, from hour to hour, to disturb the proportion of air-gas mixture; hence it is never safe to leave even a well adjusted burner operating for any length of time without efficient ventilation. Devices of the so-called "smoke consuming," "odorless" and "chimneyless" type for gas heaters are absolutely unreliable; in fact, no heater can be considered safe from the danger of pouring carbon monoxid into the air unless it is provided with a flue, though open windows and free draft lessen the danger. There is some evidence to show that if amounts of carbon monoxid, insufficient to be immediately fatal, are absorbed over an extended period, the result will be exhaustion and lowered vitality with increased susceptibility to disease, especially pneumonia.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

64: 1-181 (March) 1923

Conditions Determining Suprarenal Secretion. F. A. Hartman, H. A. McCordock and M. M. Loder, Buffalo.—p. 1.
*Effect of Restricted Diet. II. On Pubescence and Menopause. J. R. Slonaker and T. A. Card, San Francisco.—p. 35.
*Supposed Relation of Suprarenals to Blood Pressure Response During Cerebral Anemia. J. M. Rogoff and H. C. Coombs, New York.—p. 44.
*Laxative Action of Yeast. J. R. Murlin and H. A. Mattill, Rochester, N. Y.—p. 75.
Relative Physiologic Value of Spectral Lights. III. Pupillomotor Effects of Wave Lengths of Equal Energy Content. H. Laurens, New Haven, Conn.
Effects of Extirpation of Embryonic Ear and Eye on Equilibration in Amblystoma Punctatum. W. F. Greene and H. Laurens, New Haven, Conn.—p. 120.
Influence of Hydrogen Ion Concentration on Fertilization and Growth of Certain Marine Eggs. G. H. A. Clowes and H. W. Smith, Woods Hole, Mass.—p. 144.
Blood Clotting in Mammals, Birds and Reptiles. S. E. Dorst and C. A. Mills, Cincinnati.—p. 160.
Effect of Restricted Diet. III. On Number of Litters and Young Born. J. R. Slonaker and T. A. Card, San Francisco.—p. 167.
*Influence of Antineuritic Vitamin on Internal Organs of Single Comb White Leghorn Cockerels. A. J. Souba, St. Paul.—p. 181.

Effect of Restricted Diet on Sexual Life of Rat.—Slonaker and Card noted that, in rats, a restricted diet delayed pubescence, shortened the period of sexual activity, and increased sterility.

Blood Pressure During Cerebral Anemia.—Rogoff and Coombs investigated the supposed relation of the suprarenals to the vasomotor phenomena brought about by cerebral anemia induced by occluding the head arteries for short periods. They found that the number of vasomotor responses to cerebral anemia that can be elicited in an animal depends greatly on the basal level of blood pressure that is maintained in the intervals between occlusions of the head arteries. When the basal level of blood pressure approaches or reaches the spinal level, and occlusion of the head arteries fails to elicit a vasomotor response, it is possible to improve the condition of the bulbar centers by elevating the blood pressure through intravenous injection of Ringer's solution, and again to obtain the usual response to cerebral anemia. This can, frequently, be repeated successfully a number of times in the course of an experiment. The so-called "dissociation" or "double" curve is not a constant phenomenon. It may appear and disappear (and again reappear) at various periods in the course of an experiment, or it may be entirely absent. There is no significant difference, in the ordinary average number and the usual character of the responses to occlusion of the head arteries, between normal animals and animals in which the epinephrin secretion is interfered with by ligating, excising or clipping off the suprarenals in acute experiments, or that have survived operations for interference with epinephrin secretion. The so-called "dissociation" or "double" curve is elicited as frequently after interference with epinephrin secretion as in normal animals. It is evident, therefore, that "suprarenal activity" (epinephrin secretion) is not necessary for eliciting any of the vasomotor effects which result from acute cerebral anemia.

Laxative Action of Yeast.—The plan of investigation followed by Murlin and Mattill contemplated the use of both human and animal subjects. In the first series, ten students were placed on a nearly constant diet alternately in periods with and without yeast. In the second series five human subjects were placed on a more rigidly constant diet and in the same manner periods with yeast added alternated with periods in which no yeast was used. In the first series there was a measurable increase in the bulk of stool, which persisted for several days after the ingestion of yeast was stopped. In the second series a laxative effect was proved both by increased weight in the great majority of the tests and increased moisture in two thirds of the tests. The estimation of phenols in the feces and urine indicates that putrefaction is somewhat diminished by the ingestion of yeast. Boiled yeast does not produce so much laxative effect (moisture and weight) as raw yeast. It is more easily digested than raw yeast.

Influence of Antineuritic Vitamin on Cockerels.—Single comb white leghorn cockerels, on a diet deficient in vitamin B and apparently adequate in all other particulars, showed a decrease in the size and weight of organs in the following order: testes, spleen, heart, liver, kidneys, pancreas and thyroid gland. A diet deficient in vitamin B and apparently adequate in all other particulars gave rise to an increased weight of suprarenals when computed per kilogram body weight. The testes of single comb white leghorn cockerels were affected to a greater extent than the other organs by a diet low in vitamin B. These organs not only failed to develop but there was also an ultimate atrophy. The observations of Karr and Cowgill, that some relationship exists in animals between desire to partake of food and water soluble vitamin, has been confirmed in Souba's study on poultry.

American Journal of Tropical Medicine, Baltimore

3: 73-158 (March) 1923

*Dengue Fever. Report of Galveston Epidemic of 1922. L. Rice, Galveston, Texas.—p. 73.
Ticks of Panama, Their Hosts, and Diseases They Transmit. L. H. Dunn, Ovid, N. Y.—p. 91.
*Yellow Fever in Mexico. M. E. Connor, New York.—p. 105.
*Pathology of Leishmaniosis of Nose. O. Klotz and H. Lindenberg, São Paulo, Brazil.—p. 117.
Bronchial Spirochetosis. L. S. Huizenga, Nanking, China.—p. 143.

Dengue Epidemic in Galveston.—About 30,000 cases of dengue occurred in Galveston during the summer and fall of 1922, and observations on this epidemic form the basis of Rice's report. He studied 565 cases. The diagnosis is made on five principal points: (1) sudden onset with fever and a chill or chilly sensation; (2) aching pains which may be general, or localized in the head, back or legs; (3) suffused face and eyes; (4) normal or low leukocyte count with a relative lymphocytosis; (5) absence of jaundice and albuminuria. In addition to these fairly constant symptoms, there are usually noted: (1) soreness of the eyeballs and skeletal muscles; (2) prostration and loss of appetite; (3) alteration of taste. The symptoms should be confirmed by: (1) the appearance of a toxic rash; (2) termination of fever within three to seven days, and (3) the absence of any other disease to explain the symptoms. Pregnancy was not disturbed. Convalescence was slow and attended by a sense of weakness, fatigue, and soreness of the muscles, which lasted from one to six weeks. Immunity, at least partial, must be conferred, since only 108 recurrences were discovered. Treatment is simple and unsatisfactory. Salicylates, acetphenetidin, and codein sulphate for the pain; sponges, ice-caps, free intake of fluids, laxatives (not purges) and rest in bed constitute the known treatment. Drugs really have a doubtful place. The attack is self-limiting, and those who are carefully nursed do as well as those who take sedatives. All should remain in bed for two or three days after the temperature has subsided.

Yellow Fever in Mexico.—It is Connor's belief that yellow fever was present in Mexico long before the coming of the Spaniards, and that there have been in recent years at least three areas in which this disease has been to all intents and purposes, permanently endemic, namely, Yucatan, Vera Cruz and Colima. Probably there have been other endemic and pseudendemic areas. In this class Connor would place Campeche and Tabasco as centers which were at one time very active foci of infection, but from which the disease eliminated itself as the decadence of commerce caused migration of the population, thus bringing into play the principle of the failure of the human host. This principle was first developed and announced by Carter and has been of inestimable aid to the epidemiologist in shaping campaigns to eradicate yellow fever.

Pathology of Leishmaniosis of Nose.—This report comprises a study of fifteen cases of leishmaniosis of the nose, representing all stages of the disease from early nodular

swelling of the nasal mucosa to the late destruction of septum and alae. The lesion is one of a peculiar granuloma, having individual and characteristic tissue reactions, and passing through successive stages. The manner of development of the lesion of the nose suggests a metastatic distribution from the primary ulcer on the arms or legs. On the other hand, the centrifugal spread from the earliest point of infection, and the microscopic character of the local process suggests a lymphatic dissemination of the immediate neighborhood. The granuloma, beginning as a perivascular lymphocytic infiltration of the submucosa, passes through stages in which the plasma cells and endothelial cells gradually gain dominance and ends with the development of nodules largely composed of endothelial cells. These nodules may show central necrosis, or may undergo fibrosis. In the late stages, the accompanying endarteritis of the neighboring vessels leads to extensive ulceration and necrosis. The leishmania are almost constantly intracellular, within endothelial cells.

Archives of Internal Medicine, Chicago

31: 303-433 (March) 1923

*Roentgen-Ray Treatment of Toxic Goiter. J. H. Means and G. W. Holmes, Boston.—p. 303.
Correlation of Vital Capacity with Stem Height. W. L. Rogers, San Francisco.—p. 342.
*Clinical Report on Use of Quinidin Sulphate. L. E. Viko, H. M. Marvin and P. D. White, Boston.—p. 345.
Enlargement of Hemal Nodes. M. Lederer, Brooklyn.—p. 364.
*Detoxification of Cyanids. I. Factors Influencing Detoxification of Cyanids in Health and Disease. M. Bodansky and M. D. Levy, Galveston, Texas.—p. 373.
*Blood Gases in Case of Paroxysmal Tachycardia. E. P. Carter and H. J. Stewart, Baltimore.—p. 390.
*Cardiovascular System in Thyroid Disease. W. J. Kerr and G. C. Hensel, San Francisco.—p. 398.
Case of Rheumatic Fever with Cerebral Symptoms Simulating Encephalitis Lethargica. L. F. Frissell, New York.—p. 411.
*Gravimetric Estimation of Phosphates of Blood. Phosphates in Nephritis. W. J. Fetter, Pittsburgh.—p. 413.
Increase of Certain Vagal Effects with Increased Age. N. C. Gilbert, Chicago.—p. 423.
Exophthalmic Goiter and Involuntary Nervous System. L. Kessel, C. C. Lieb and H. T. Hyman, New York. III. Fifty Consecutive Cases of Exophthalmic Goiter. L. Kessel, H. T. Hyman and H. Lande, New York.—p. 433.

Roentgen-Ray Treatment of Toxic Goiter.—The data presented by Means and Holmes are interpreted as showing that the roentgen ray probably has a beneficial effect in cases of toxic goiter, and that for that reason it has its place in the armamentarium for treating these diseases. About two thirds of the patients with exophthalmic goiter so treated show either recovery or improvement coincident with the treatment. The remaining third neither improve nor grow worse. In exophthalmic goiter, when treated by the roentgen ray, if good results are not secured in a few months, surgery should be employed. Prolonged roentgen-ray treatment in patients showing no response is undesirable. Some patients with exophthalmic goiter who are not cured by the roentgen ray are, perhaps, made better operative risks by it. A combination of the two forms of treatment may sometimes accomplish more than either alone. In toxic adenoma there seems to be a similar improvement to that noted in exophthalmic goiter, but so far the authors have used it only with patients who have refused operation. In toxic adenoma, in contrast to exophthalmic goiter, surgery probably removes the actual cause of the disease, the adenoma. The indication for surgery would, therefore, seem more definite than in exophthalmic goiter. Even in toxic adenoma, however, in certain cases that are too thyrotoxic for safe operation, the roentgen ray may be used to advantage. To make a proper use of the roentgen ray in the management of toxic goiter of either variety, its limitations should be recognized and it should be correlated intelligently with other therapeutic measures, as the individual case may demand.

Quinidin Sulphate in Nonparoxysmal Auricular Fibrillation.—Of the seventy-five largely unselected cases of nonparoxysmal auricular fibrillation or auricular flutter in this series reported by Viko, Marvin and White, approximately two thirds were restored to normal rhythm by quinidin and approximately one third (twenty-six cases) still maintain normal rhythm. Other factors being equal, the rheumatic and arteriosclerotic types of heart disease respond to the drug equally well. The presence or absence of valvular disease in itself is not an important factor in determining response to quinidin. The duration of the heart symptoms is of importance as a factor in determining response only so far as it is associated with two other factors: the duration of auricular fibrillation and the degree of congestive failure. The most important factor in determining both restoration of normal rhythm and its maintenance is the duration of the auricular fibrillation. Cases with fibrillation of short duration (under six months) are not only more likely to be restored to normal but are much more likely to maintain it even without rationing, and, as a rule, give the best clinical results. The second most important factor in determining response to quinidin is the presence or absence, past or present, of objective congestive failure. Cases with objective failure are restored to normal rhythm about as frequently as those without such failure; the former, however, relapse very much more frequently. All cases showing objective congestive failure or tachycardia should probably be digitalized before beginning quinidin treatment. Though most cases responding to quinidin do so with small dosage, many of the most satisfactory cases require large dosage. This is apparently independent of the duration of fibrillation. Proper rationing with quinidin after restoration of normal rhythm will reduce the number of relapses. Embolism and sudden death (possibly also due to embolism) occurring under quinidin therapy are probably most likely to occur in cases with fibrillation of long duration and those where there is objective congestive failure at the time or in the past. Hence, the cases most likely to yield serious untoward results are the cases least likely to obtain a maintained normal rhythm from quinidin. A fair percentage of cases, particularly those with recent fibrillation and little or no objective congestive failure, receive definite benefit from restoration of normal rhythm—benefit apparently additional to that obtainable from digitalis alone. The clinical results appear to justify the use of the drug in cases with fibrillation of short duration and with little or no congestive failure. For the present quinidin should probably not be used in a routine way in other types of cases. For the present, at least, quinidin should be used in hospitals where careful observation and electrocardiographic control is possible. Quinidin will probably prove of much value in the prevention and treatment of paroxysmal auricular fibrillation. The data at present available are inconclusive regarding the value of quinidin in treating cases with premature beats. Quinidin is not indicated for the treatment of heart block.

Detoxification of Cyanids.—A functional test is proposed by Bodansky and Levy for the determination of the "cyanid detoxifying capacity" in man.

Blood Gases in Paroxysmal Tachycardia.—A case of auricular paroxysmal tachycardia was studied by Carter and Stewart from the point of view of the blood gases. The findings include: (1) Marked decrease of the arterial oxygen saturation without demonstrable pulmonary congestion to account for this. (2) Extremely low carbon dioxid content of the arterial blood during the paroxysm. (3) Very low oxygen saturation of the venous blood, part of which was attributable to the anoxic anoxemia, but the greater part was a true stagnant anoxemia due to slowing of the circulation. This stagnant anoxemia had entirely disappeared one hour after the end of the attack. (4) Greatly increased coefficient of utilization during the paroxysm, indicating a very slow circulation rate. (5) Decrease in vital capacity immediately following the paroxysm. In addition, there appeared to be a close connection between an acute infection and the disturbance of the cardiac mechanism. It was also noted that during quinidin sulphate therapy ectopic beats which had been numerous and troublesome disappeared.

Cardiovascular System in Thyroid Disease.—Kerr and Hensel report the cardiovascular condition of 181 patients with thyroid disease, 123 being classified as cases of adenoma and fifty-eight as cases of hyperplasia. It was evident that the cardiac signs and symptoms in toxic adenoma and hyperplasia differ only by the degree of toxicity. The vascular

changes are more marked in the cases of hyperplastic goiter. Cardiac irregularities are more common than is generally recognized. Auricular fibrillation or auricular flutter, usually paroxysmal in type, occurred in about one-third of all toxic cases. The authors believe that such paroxysmal attacks explain the periods of palpitation which are described by a large percentage of patients. The prognosis depends in large measure on the condition of the circulation. If surgical treatment is to be carried out, the "time and extent of the operation should be governed by the circulatory condition." Treatment of the thyroid heart depends on the stage of the disease. In all cases every measure should be employed to relieve the myocardium. Rest is essential. Sedative drugs are of some value. Elimination should be kept up. Digitalis is of great value in controlling auricular fibrillation and may be of value in preventing paroxysmal attacks. The amount required in controlling auricular fibrillation is usually less than in ordinary cardiac cases. It should be continued over long periods. Decompensation should be treated as in other myocardial cases. The electrocardiogram is of value in recognizing myocardial changes, in differentiating the types of irregularities and in prognosis.

Gravimetric Estimation of Phosphates of Blood.—A gravimetric method for the estimation of the inorganic and total phosphates in whole blood is described by Fetter. The results are recorded of a number of analyses carried out on normal persons, in cases of chronic nephritis and in cases of nephritis with acidosis. A suggestion is put forward as to the line of treatment to be adopted in relation to the findings of blood phosphates.

Archives of Ophthalmology, New Rochelle, N. Y.

52: 105-170 (March) 1923

Virus of Herpes Simplex. J. S. Friedenwald, Boston.—p. 105.
Case of Mesoblastic Leiomyoma of Iris. F. H. Verhoeff, Boston.—p. 132.
Case of Amaurotic Family Idiocy in Infant Not of Jewish Parentage. M. Cohen, New York.—p. 140.
Tuberculoma of Orbital Cavity. D. Roy, Atlanta.—p. 147.
Therapeutic Use of Weak Atropin Solution in Asthenopia. W. E. Gamble, Chicago.—p. 160.
Oil Cyst of Orbit. Removed by Krönlein's Operation. A. Knapp, New York.—p. 163.
Blocking Main Trunk of Facial Nerve in Cataract Operations. R. E. Wright, Madras, India.—p. 166.
Case of Melanosarcoma of Conjunctiva. A. S. Fernando, Manila.—p. 168.
Survey of Cases in Free Dispensary of Philippine General Hospital. A. S. Fernando, Manila.—p. 170.

Boston Medical and Surgical Journal

188: 477-522 (April 5) 1923

Postoperative Swelling of Upper Extremity, Following Operations on Breast and Axilla. W. E. Hartshorn, New Haven, Conn.—p. 477.
Diabetes Mellitus Complicating Surgery. A. T. Jones, Providence, R. I.—p. 483.
Postoperative Intra-Abdominal Adhesions. R. H. Seelye, Springfield, Mass.—p. 489.
*Clinical and Pathologic Study of Tonsils Subjected to Roentgen Ray Treatment. C. R. C. Borden, Boston.—p. 493.
Prompt Action of Radium Radiations in Treatment of Small or Large Infected Tonsils and Lingual Tonsils. F. H. Williams, Boston.—p. 497.
*Nontuberculous Pulmonary Abscess. W. Whittemore, Boston.—p. 499.

Effect of Roentgen Ray on Tonsils.—Fourteen cases of diseased tonsils irradiated with the roentgen ray from one to four times failed to show any clinical or pathologic changes as a result of the irradiation, except that during the times the radiations were being given many of the tonsils seemed to be smaller and more normal in appearance, but when subsequently removed by dissection no real change in size appeared to have taken place. After irradiation many of the tonsils appeared to be normal in size and color, but at the time of operation a number of them were found to be filled with pus or cheesy débris. As a method of reducing bleeding and assisting dissection at the time of operation, Borden says, such irradiation is useful. By diminishing oversecretion from the mucous surfaces of the throat it decidedly decreases the possibility of postoperative pneumonia or lung abscess following throat operations. In cases wherein diseased tonsils may justly be suspected of producing secondary infections in the joints, heart, kidney or other important organs, roentgen-ray irradiations are inadequate.

Treatment of Nontuberculous Pulmonary Abscess.—Whittemore prefers to give each patient a chance to cure himself by postural drainage and by building up his general condition before operation is advised. But, if at any time the patient's condition ceases to improve or becomes worse, operation should be performed. If there is not any improvement in three or four weeks, operation should be considered. Whittemore believes that the chances for a permanent cure are much better if the patient is operated on while the condition is subacute rather than if surgical treatment is delayed until the condition becomes chronic.

Journal of Experimental Medicine, Baltimore

37: 303-395 (March) 1923

*Experimental Studies of Nasopharyngeal Secretions from Influenza Patients. XI. Antibodies in Blood After Recovery from Epidemic Influenza. P. K. Olitsky, and F. L. Gates, New York.—p. 303.
*Cultivation of Anaerobic Treponemata on Surface of Blood Agar Plates. F. L. Gates, New York.—p. 311.
*Changes Produced by Roentgen Rays in Inflamed Connective Tissue. A. A. Maximow, Chicago.—p. 319.
Etiologic Significance of Vibrio Fetus. T. Smith, Princetown, N. J.—p. 341.
Increased Absorption of Roentgen Rays by Vitally Stained White Rats. W. M. Baldwin, Albany.—p. 357.
*Chemical Changes in Blood of Dog After Intestinal Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 365.
*Chemical Changes in Blood of Dog After Pyloric Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 377.
*Immunity Studies of Rocky Mountain Spotted Fever. I. Usefulness of Immune Serum in Suppressing an Impending Infection. H. Noguchi, New York.—p. 383.
Studies on Total Bile. I. Effects of Operation, Exercise, Hot Weather, Relief of Obstruction, Intercurrent Disease, and Other Normal and Pathologic Influences. P. D. McMaster, G. O. Broun and P. Rous, New York.—p. 395.

Bacteriologic Study of Nasopharyngeal Secretions in Influenza.—Although *Bacterium pneumosintes* is a stable organism which agglutinates only in low dilutions of the serum of actively immunized rabbits, Olitsky and Gates have always found the serologic reactions of this micro-organism to be consistent and specific. The results of the agglutination and precipitation reactions described by them indicate that the serum of normal persons does not contain demonstrable agglutinins or precipitins for *B. pneumosintes.* By contrast, agglutinins have been demonstrated in the serum of seventeen persons among nineteen who were examined from ten days to five months after recovery from epidemic influenza. The serum of ten persons who had influenza, followed in three instances by pneumonia, from two and one-half to three and one-half years before, proved negative. In one instance the appearance of specific agglutinins against *B. pneumosintes* was found to be coincident with an attack of uncomplicated influenza. In twelve of fifteen instances in which agglutinins were found, precipitins against *B. pneumosintes* were demonstrated also. It is noteworthy that these antibodies may persist in the blood at least five months after recovery from the disease.

Cultivation of Anaerobic Treponemes on Surface of Blood Agar Plates.—By a method of anaerobic cultivation that proved successful with *Bacterium pneumosintes,* characteristic surface colonies of old saprophytic strains of *Treponema pallidum* and *Treponema calligyrum* have been obtained by Gates. The medium used consisted of ordinary nutrient agar, made with beef infusion peptone broth, to which from 5 to 7 per cent. of fresh, sterile, unheated, defibrinated rabbit blood was added just before the plates were poured.

Changes Produced by Roentgen Rays in Inflamed Connective Tissue.—Maximow studied the reaction of inflamed tissue, the result of a foreign body, to the roentgen ray. He noted that irradiation produced a considerable depression of the usual reaction on the part of the fibroblasts. They remain idle, do not multiply at all, or start very late and often the division is abnormal. Simultaneously with these changes of the fibroblasts, an intensive edema of the connective tissue surrounding the foreign body is to be noted and in the immediate neighborhood of the latter a thick layer of netlike clotted fibrinous exudate is formed. No distinctive qualitative changes could be found in the leukocytes and polyblasts. The rate and the duration of the emigration of all the cells coming from the blood were increased, and there

was always a distinct delay in the process of the common transformations usually undergone by the polyblasts on the field of inflammation. The transformation of the polyblasts into fixed resting forms seems above all to be delayed. In the blood vessels swelling of the endothelial cells, with fragmentation of the nuclei, and, in the striated muscles, degeneration of the fibers can be detected. In the latter there occur partly typical coagulation necrosis, partly atrophy, accompanied by loss of striation, separation of fibrillae from one another, relative increase of sarcoplasm, and amitotic division of nuclei. These results seem not to agree with the predominating views on the action of roentgen rays on cells.

Chemical Changes in Blood After Intestinal Obstruction.—A study of the nonprotein nitrogen, urea nitrogen, uric acid, creatinin, amino-acid nitrogen, sugar and chlorids of the blood, and the carbon dioxid combining power of the plasma, in normal dogs, and in dogs after different types of intestinal obstruction, is reported on by Haden and Orr. Following ligation of the duodenum, ligation of the duodenum with gastro-enterostomy, and ligation of the upper half of the ileum, a fall in chlorids and a rise in the nonprotein nitrogen and urea nitrogen of the blood and in the carbon dioxid combining power of the plasma occur. The uric acid, creatinin, amino-acid nitrogen and sugar show no significant changes. The fundamental change is a fall in chlorids followed by an alkalosis. The degree of alkalosis depends on the rate of formation of carbonate, rate of excretion by the kidneys, and extent of neutralization of the carbonate by acid bodies formed during the intoxication. The fall in chlorids is probably due to utilization of the chlorin ion in the course of the intoxication. It is suggested that this use of chlorin is a protective measure on the part of the body. There are indications that high intestinal obstruction should not be treated by the administration of alkalies. The urea nitrogen is a good index of the protein destruction. Ligation of the ileum at the ileocecal valve is followed by little increase in nitrogen and no change in the chlorids or carbon dioxid combining power of the plasma. The close similarity of the blood findings in intestinal obstruction, acute lobar pneumonia, and serum disease suggests that these widely different conditions may have a common chemical basis.

Chemical Changes in Blood After Pyloric Obstruction.—The observations of other workers that a fall in chlorids and a rise in carbon dioxid combining power of the plasma occur, are confirmed by Haden and Orr. There is also a marked rise in the nonprotein nitrogen of the blood, consisting mainly of urea nitrogen and undetermined nitrogen. The fall in chlorids is not due to the loss of chlorids in the gastric juice. The chlorin is probably bound somewhere in the process of protein destruction. There is a close relation between the fall in chlorids and the protein destruction. The chemical changes following pyloric obstruction are essentially the same as those following high intestinal obstruction.

Immunity Studies of Rocky Mountain Spotted Fever.—From the results of the experiments presented by Noguchi it is evident that in guinea-pigs an early administration of immune rabbit serum will suppress the infection; that is, if it is given within the period of incubation, the effect being proportionately greater the earlier the serum is administered. Almost no beneficial effect is observed when the serum is given after the onset of the disease. In view of the comparative susceptibility of man and the guinea-pig it is recommended that in every instance when the bite of a tick gives reason to suspect a possible infection with spotted fever, or when a person accidentally inoculates himself with the virus, about 0.2 c.c. of the serum per kilogram of body weight (or 0.1 c.c. per pound) be injected immediately, preferably intravenously. For the average adult about 16 c.c. should be given.

Journal of Infectious Diseases, Chicago

32: 175-246 (March) 1923

Factors Controlling Intestinal Bacteria. Influence of Hydrogen-Ion Concentration on Bacterial Types. P. R. Cannon and B. W. McNease, University, Miss.—p. 175.
Paths of Infection by Bacterium Abortus in Rabbits, Guinea-Pigs and Mice. E. S. Sanderson and L. F. Rettger, New Haven, Conn.—p. 181.
Structure of Complement. I. L. Kritchevsky and A. I. Douchowsky, Moscow, Russia.—p. 187.
*Relation of Immunity Reactions to Biogenetic Law. Investigations of Chemical Structure of Protoplasm of Animals During Embryonic Development by Means of Heterogeneous Hemolysins. I. L. Kritchevsky, Moscow, Russia.—p. 192.
*Heterogenous Anaphylaxis. I. L. Kritchevsky, Moscow, Russia.—p. 196.
*Fusiform Bacilli and Spirochetes. III. Occurrence in Normal Women About Clitoris and Significance in Certain Genital Infections. I. Pilot and A. E. Kanter, Chicago.—p. 204.
*Bacillus Welchii in Bread. S. A. Koser, Washington, D. C.—p. 208.
*Bacteriostatic Action of Dyes on Streptococcus Viridans and Pneumococci. J. F. Norton and G. E. Davis, Chicago.—p. 220.
*Weil-Felix Reaction in Rocky Mountain Spotted Fever. F. L. Kelly, Berkeley, Calif.—p. 223.
*Invasion of Body by Bacteria from Intestinal Tract. W. B. Moody and E. E. Irons, Chicago.—p. 226.
Studies in Comparative Immunity. I. Resistance of Frog to Staphylococcus Aureus. F. L. Pickof, Chicago.—p. 232.
Growth of Pfeiffer Bacillus in Mixed Culture in Blood-Free Medium. A. F. Reith, Chicago.—p. 243.

Immunity Reactions and the Biogenetic Law.—Investigations were made by Kritchevsky of the chemical structure of the protoplasm of animals during embryonic development by means of heterogeneous hemolysins. He found that the hen's egg and the formative yolk do not contain heterogeneous sheep antigen. In earlier phases of the development (two days), the protoplasm of the hen embryo does not possess heterogeneous sheep antigen. The heterogeneous sheep antigen producing hemolysins against red corpuscles of sheep appears only in relatively advanced periods of the development of the hen; that is, not before four days after the division of the egg began. Therefore, Kritchevsky says that the biochemical properties of animal cells are subject to transformation during ontogenetic development.

Heterogenous Anaphylaxis. — Kritchevsky's belief that rabbits immunized with red corpuscles of the hen should produce not only hemolysins, but also heterogenous anaphylactic antibodies, as occurs with homologous antibodies, was confirmed by experiments. The animals that presented the picture of heterogenous anaphylaxis always possessed heterogenous hemolysins, and in the majority of cases the anaphylactic phenomena were directly connected with the degree of the hemolytic titer.

Fusiform Bacilli and Spirochetes About Clitoris.—Fusiform bacilli and spirochetes were found by Pilot and Kanter in the normal smegma secretions of twenty-one of thirty-six pregnant women. In their morphology, they appeared to be identical with similar organisms in the preputial secretions of men. Associated with these bacteria were pyogenic organisms, including staphylococci, colon bacilli, diphtheroids and streptococci. The occurrence of fusiform bacilli and spirochetes with pyogenic bacteria in certain genital lesions is held to indicate that these organisms may be primary and secondary infecting agents causing ulcerative and gangrenous processes. The presence of these organisms normally would indicate that such processes may result, especially under conditions of lowered general resistance, and do not entirely depend on the introduction of these bacteria from other sources.

Bacillus Welchii in Bread.—A commercial bread starter, recommended for the purpose of securing a constant inoculum of a gas forming bacterium in the preparation of salt rising bread, was found by Koser to contain organisms of the *Bacillus welchii* type in numbers of about 1,000 per gm. The addition of this "starter" to milk, followed by an overnight incubation in a warm place, as called for in the directions for use, results in a light, frothy, gaseous mass. The predominating organism was found to be *B. welchii*, which was present in numbers of from 1,000,000 to 100,000,000 per gm. of material. Loaves of salt rising bread prepared by several bakeries using the starter in question contained spores of *B. welchii* in considerable numbers. Small quantities of bread from the interior of the loaves yielded the gas bacillus in almost every instance, in decided contrast to the results secured from the interior of the loaves of ordinary yeast bread in which the Welch bacillus was found rarely. Several cultures of the organism isolated from the starter and from the baked loaves were found to be in agreement in morphologic, cultural, and biochemical properties with a strain of *B. welchii* obtained originally from a wound and also with the published descriptions of this bacillus. The cultures obtained from the bread possessed only a low grade of viru-

lence for guinea-pigs, while the type *B. welchii* originally obtained from a wound and used for comparison was highly pathogenic. All available evidence indicated that the *B. welchii* incorporated in the "starter" is the active agent concerned in the preparation of the salt rising bread. This was substantiated by the fact that on substitution of an authentic *B. welchii* strain (with a history of wound infection for the strain) in the bread starter, loaves of salt rising bread were prepared comparable to those obtained by the use of the starter.

Bacteriostatic Action of Dyes on Streptococcus Viridans.—Of the forty-one dyes used by Norton and Davis in their experiments only sixteen showed bacteriostatic action in dilutions of 1:1,000 or greater. Of the sixteen dyes which showed bacteriostasis, eight belonged to the triphenylmethane group and six to the diphenylamines. Of the two remaining, one was an azo and the other a diazo compound. Of the eight triphenylmethanes, six were triamino compounds and two were diamino compounds. There was no difference between the action of the dyes on the strains of *Streptococcus viridans* and those of the pneumococci. A survey of the chemical structure of these dyes shows that, with one exception, all contained three benzol rings, either attached to a single carbon atom as in triphenylmethane, or connected as in anthracene. In some cases, a ring carbon atom is substituted by nitrogen. In addition to the three benzol rings, all these active dyes contain two or more amino groups. The hydrogen atoms in these groups were all substituted with alkyl radicals in those dyes showing the greatest inhibitory action. In most instances, this alkyl radical is the methyl group, but in brilliant green—the most active dye—ethyl groups are present. Acid dyes or salts of acid or basic dyes were inert. The substitution of an hydroxyl radical for a methyl group decreases the inhibitory power.

Weil-Felix Reaction in Rocky Mountain Spotted Fever.—The tests made by Kelly suggest that the Weil-Felix reaction is negative in Rocky Mountain spotted fever and may be of value in differentiating between this disease and typhus fever.

Invasion of Body by Bacteria from Intestinal Tract.—There seems to be no question, Irons says, as to the passage of certain resistant organisms, such as tubercle and anthrax bacilli, through the intact intestinal mucosa. Less resistant organisms rarely pass the intestine of healthy animals. Under conditions in which resistance to infection is decreased or when unusually hardy organisms enter the bowel, or when lesions of the bowel are present, Moody and Irons believe it is reasonable to suppose that bacteria may enter the blood stream from this source.

Journal of Nervous and Mental Disease, New York

57: 105-208 (Feb.) 1923.

*Total Immobilization in Extremities Through Hypertonia After Epidemic Encephalitis. K. Petrén and L. Brahme, Lund, Sweden.—p. 105.
*Cerebellar Syndrome Resembling Multiple Sclerosis. M. Q. Howard, Pueblo, Colo.—p. 128.
Pathology of Senile Psychosis. Differential Diagnostic Significance of Redlich-Fischer's Miliary Plaques. S. Uyematsu, Boston. (To be continued).—p. 131.

Immobilization of Extremities Following Encephalitis.—Petrén and Brahme observed a case of epidemic encephalitis, in which there was present almost complete immobilization of the body (only the ocular, respiratory, and swallowing movements being conserved). Though no true paralysis existed, as a consequence of the hypertonia no movements could be performed, nor were passive movements possible. A case of hemiplegia in which neither active nor passive movements were possible also was due to the hypertonia and not to a paralysis. In these two cases no reasons were found for a lesion of the pyramidal tracts. Babinski's sign was never present. In the second case the motility returned in some weeks, at first distally and then progressing in a proximal direction (in the lower extremity the dorsal flexion of the foot was the first returning function). It is assumed that the symptoms were due to a lesion of the extrapyramidal motor system.

Cerebellar Syndrome Resembling Multiple Sclerosis.—A case is reported by Howard which resembled both multiple sclerosis and the cerebellar syndrome called dyssynergia cerebellaris progressiva. Unlike the latter, there was a positive Babinski sign, cerebellar fits, greatly exaggerated tendon reflexes and an absence of vertigo. Sensory changes were present. Yet all the clinical manifestations of that condition, dyssynergia, dysmetria, hypotonia, adiadokokinesis and asthenia, as well as the intention tremor, were present. Howard believes that the case is probably one of atypical multiple sclerosis with more than the usual cerebellar involvement.

Maine Medical Association Journal, Portland

13: 195-214 (March) 1923

Colles' Fracture. C. C. Morrison, Jr., Bar Harbor.—p. 195.
Clinical Significance of Hematuria. C. H. Jameson, Thomaston.—p. 202.

Minnesota Medicine, St. Paul

March, 1923, **6**, No. 3

Future of Southern Minnesota Medical Association. W. F. Braasch, Rochester.—p. 127.
Congenital Hypertrophic Pyloric Stenosis. A. C. Strachauer, Minneapolis.—p. 131.
Use of Paravertebral Nerve Block Anesthesia in General Surgery. W. R. Meeker, Rochester.—p. 138.
*Nonspecific Irritation: Precipitating Cause of Anaphylactic Diseases of Infancy and Childhood. W. R. Shannon, St. Paul.—p. 154.
*Milk Transmission of Pollen Hay-Fever. E. T. Herrmann, St. Paul.—p. 161.
Relation of General Hospital to Tuberculosis Problem. A. T. Laird, Nopeming, Minn.—p. 162.
*"Local" Wassermann Reaction: New Diagnostic Aid in Primary Syphilis. D. Stern and H. Rypins, Minneapolis.—p. 167.
Results Obtained in Elephantiasis Through Kondoleon Operation. W. E. Sistrunk, Rochester.—p. 173.
Causes, Repair and Management of Cases of Postoperative Hernia. A. E. Benjamin, Minneapolis.—p. 178.
Chronic Intestinal Indigestion in Early Childhood. R. Taylor, Minneapolis.—p. 183.
Future of Medicine. J. C. Jacobs, Willmar.—p. 184.

Nonspecific Irritation Cause of Anaphylactic Diseases in Childhood.—Attention is directed by Shannon to the frequency with which certain diseases, alleged to be anaphylactic, are precipitated by local irritation of nonspecific nature. Experimental work on rabbits by Auer is quoted to show that the anaphylactic state increases the response of the animal tissues to local irritation. Analogous cases in man are cited in which neither the local irritation nor the anaphylactic state alone were sufficient to produce symptoms but in which the combination of the two produced the disease picture. In two cases local irritation did not produce symptoms after the anaphylactic state had been removed. In another case the reduction of local irritation did not permit relief from symptoms until the factor of anaphylaxis was cared for. It is therefore contended that the condition of anaphylaxis is the underlying factor which is responsible for the conditions mentioned and that the local irritation is merely a precipitating factor which would go unnoticed were its effects not augmented by the presence of the anaphylactic state.

Milk Transmission of Pollen Hay-Fever.—Herrmann asserts that ingestion of milk from a cow that has eaten ragweed tops produces clinical hay-fever within one-half hour after ingestion of the milk. Absence of gastro-intestinal symptoms following ingestion of one glass of milk and the appearance of selective anaphylactic phenomena in the upper respiratory tract may be due to chronic irritation and decreased resistance of tissues involved. Ragweed pollen protein is found apparently unchanged in the milk of cows that have eaten ragweed tops some hours earlier.

"Local" Wassermann Reaction New Diagnostic Aid in Primary Syphilis.—Stern and Rypins report the results they have obtained with the Klander and Kolmer "local" Wassermann test made on the surface serum of primary chancres. Out of forty-three cases, the blood Wassermann was positive in only thirteen and negative in thirty, or 69.8 per cent. The dark field was positive in all but two cases and negative in only two cases. The "local" Wassermann was positive in all cases, or 100 per cent., not only in the cases with positive dark fields, but also in the two cases with negative dark

fields, whose subsequent course showed them to be cases of primary syphilis. The test was negative on the serum from five proved nonsyphilitics. Treatment of the lesions with antispirocheticide, even when the spirochetes have disappeared, does not interfere with the reaction. The authors hold that the "local" Wassermann is a simple and practicable diagnostic procedure in primary chancre, and the reliability of the results obtained is comparable to those obtained by the dark field microscope.

Pennsylvania Medical Journal, Harrisburg

March, 1923, **26**, No. 6

Urinary Calculi and Sarcoma of Kidney in Children. H. T. Price, Pittsburgh.—p. 355.
Symposium on Headache. Headache from Ophthalmologic Standpoint. J. M. Griscom, Philadelphia.—p. 359.
Headache from Standpoint of Otologist. G. W. Mackenzie, Philadelphia.—p. 360.
Headache from Standpoint of Rhinologist. G. B. Jobson, Franklin.—p. 362.
Headache from Neurologic Point of View. C. W. Burr, Philadelphia.—p. 363.
Prognosis in Myocardial Disease. B. S. Oppenheimer, New York.—p. 371.
Vascular Hypertension; Etiologic Factors. J. Barach, Pittsburgh.—p. 373.
Practical Points in Diagnosis and Treatment. H. A. Hare, Philadelphia.—p. 377.
Epigastric Angina. R. Burns, Scranton.—p. 379.
Differential Diagnosis of Some Parasitic Infections of Hands and Feet. W. H. Guy and F. M. Jacob, Pittsburgh.—p. 384.
Behavior Disorders in Children. J. H. W. Rhein, Philadelphia.—p. 388.
Migraine. H. L. Foss, Danville.—p. 394.
Recent Developments in Surgical Research. J. E. Sweet, Philadelphia.—p. 396.

Philippine Islands Medical Association Journal, Manila

3: 1-18 (Jan.-Feb.) 1923

Splenic Enlargements in Malarious District of Philippines. R. G. Padua.—p. 1.
History of Medicine. F. H. Garrison.—p. 6.
Malaria in Children. I. Rosal, Manila.—p. 11.
Medical Impressions from Japan. O. Schobl.—p. 15.
Education Among Prostitutes. O. Alejandrino, Manila.—p. 18.

Public Health Journal, Toronto

14: 99-146 (March) 1923

Community Responsibility with Regard to Tuberculosis. A. F. Miller.—p. 99.
Clinical Aspects of Industrial Poisoning. N. C. Sharpe.—p. 110.
Child Health Program in British Columbia. V. S. MacLachlan.—p. 119.
Mental Hygiene in Toronto Public Schools. E. K. Clarke.—p. 127.

South Carolina Medical Association Journal, Greenville

19: 422-440 (March) 1923

Does Adult Tuberculosis Begin in Infancy Always? W. P. Cornell, Columbia.—p. 422.
Medical Practitioner and American Society for Control of Cancer. J. E. Rush.—p. 429.
Radiation. L. J. Ravenel, Florence.—p. 432.
Spinal Fluid and Syphilis. H. M. Smith, Columbia.—p. 437.
Tuberculosis as Public Health Problem in South. E. O. Knotts, Newberry.—p. 440.

Wisconsin Medical Journal, Milwaukee

21: 435-466 (March) 1923

Challenge of Chronic Patient from Public Health Standpoint. M. P. Ravenel, Columbia, Mo.—p. 435.
Relationship of Fatigue to Chronic Patient. E. H. Ochsner, Chicago.—p. 439.
Diverticulum of Stomach. Review of Literature with Report of Case. E. E. Tupper, Eau Claire.—p. 442.
Fractures of Anatomic and Surgical Necks of Humerus. V. F. Marshall, Appleton.—p. 446.
Medical Men and Institutions of Petrograd in 1917 and 1922. M. M. Zlatovsky, Duluth, Minn.—p. 452.
Decreased Intraocular Tension in Diabetic Coma. W. S. Middleton, Madison.—p. 458.
Pulmonary Syphilis with Associated General Arthritic Involvement. Report of Case. R. L. Gilman, Madison.—p. 459.
Multiple Toxic Adenoma of Thyroid. A. S. Jackson, Madison.—p. 461.
Studies on Heart Size. W. J. Meek, Madison.—p. 462.
Postmortem Acidosis. E. L. Severinghaus and A. E. Koehler, Madison.—p. 463.
Medical Practitioner and American Society for Control of Cancer. J. E. Rush.—p. 464.
Water-Borne Diseases with Relation to Public Water Supplies. W. W. Bauer, Milwaukee.—p. 466.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

March, 1923, **7**, No. 3

Case of Secondary Carcinomatous Infiltration of Pia-Arachnoid of Brain, Presenting Exclusively Ocular Symptoms During Life: Meningitis Carcinomatosa. F. M. R. Walshe.—p. 113.
Importance of Radiography in Doubtful Cases of Optic Atrophy with Special Reference to Pituitary Disease. R. E. Wright and T. W. Barnard.—p. 123.
Ladd Franklin Hypothesis of Color Vision. H. Hartridge.—p. 139.

British Medical Journal, London

1: 543-578 (March 31) 1923

The Drug Habit. W. E. Dixon.—p. 543.
Man's Posture: Its Evolution and Disorders. A. Keith.—p. 545.
Nature of Arteriosclerosis. G. Evans.—p. 548.
Ancylostome Infestation. C. Lane.—p. 551.
*Influence of Intestinal Bacteria on Thyroid Gland. D. J. Harries.—p. 553.
Treatment of Incipient Phthisis. W. Gordon.—p. 555.
Acute Puerperal Inversion of Uterus. C. S. L. Roberts.—p. 557.

Intestinal Bacteria and Thyroid Gland.—Harries summarizes his observations as follows: Exophthalmic goiter is due to the excessive absorption of tryptophan from the intestine; this, in turn, is traceable to the absence of the indol producers from the intestine. The absence of indican from the urine indicates the absence of indol producers from the intestine. In exophthalmic goiter the early disappearance of indican from the urine is of a serious prognostic importance. Operative surgery has a definite place in the treatment of exophthalmic goiter. Medically, much can be done by suitable dietetic measures. Diffuse parenchymatous goiter is characterized by an excess of indican in the urine, suggesting an excessive destruction of tryptophan. If this excess gives place to a diminution or complete disappearance of indican, it suggests that the case is assuming the exophthalmic form. Myxedema is due to atrophic changes in the thyroid gland, which loses its capacity for dealing with the circulating tryptophan, whether that substance be excessive, deficient, or normal in amount. The disease is thus compatible with the presence or absence of urinary indican.

Calcutta Medical Journal

17: 10-48 (Jan.) 1923

Kala-Azar. R. H. G. Bahadur.—p. 10.
Toxicity of Some Antimonial Compounds and Their Value in Treatment of Kala-Azar. U. N. Brahmachari.—p. 1.
Transmission of Kala-Azar. L. E. Napier.—p. 6.
Kala-Azar. D. Banerji.—p. 7.

Glasgow Medical Journal

17: 145-180 (March) 1923

Surgical Treatment of Uterine Fibroids. J. N. Stark.—p. 145.
Roentgen Rays in Treatment of Uterine Fibroids. J. R. Riddell.—p. 151.
Etiology of Eczema. J. F. Smith.—p. 160.
Glasgow Eye Infirmary: Story of Its Beginning. L. Buchanan.—p. 169.

Journal of Laryngology and Otology, Edinburgh

38: 109-146 (March) 1923

Neuro-Otologic Examination in Eleven Verified Cases of Brain Tumor. D. E. S. Wishart.—p. 109.
Cases of Otosclerosis Showing an Uncommon Symptom; Otosclerosis Paradoxus. A. A. Gray.—p. 141.
Malingering and Allied Conditions of Deafness. T. B. Layton.—p. 146.

Journal of State Medicine, London

March, 1923, **31**, No. 3

Antitoxic Treatment. T. Madsen.—p. 101.
Need for Research in Framing Tuberculosis Schemes. S. L. Cummins.—p. 120.
Pathogenicity and Treatment of Flagellate Dysentery. H. E. Whittingham.—p. 126.

Journal of Tropical Medicine and Hygiene, London

26: 71-86 (March 1) 1923

White Settlement in Tropical Australia. W. H. W. Cheyne.—p. 71.
Leptospira Icterohemorrhagiæ in Wild Rats of Warsaw. L. Anigstein.—p. 81.

26: 87-102 (March 15) 1923

Association of Certain Common Complaints as Seen in Native Hospital Patients with Presence of Microfilarle in Blood. B. J. Courtney.—p. 87.

*Epidemic Occurring Among Recruits in Training Station in Siam. M. C. Thavara.—p. 89.

Epidemic Resembling Plague Among Recruits in Siam.—The cases reported by Thavara resembled plague, dengue and typhus but could not be classified specifically. The clinical history is reviewed.

Lancet, London

1: 579-630 (March 24) 1923

*Nature of Arteriosclerosis. G. Evans.—p. 579.
Treatment of Epithelial Tumors of Urinary Bladder. F. Kidd. (To be continued).—p. 582.
*Intracardiac Injection of Epinephrin. C. Bodon.—p. 586.
*Extreme Dilatation of Left Auricle. J. G. Emanuel.—p. 591.
*Heredity in Alcaptonuria. C. F. Cuthbert.—p. 593.
*Liquid Petrolatum. H. B. Russell and P. C. Brett.—p. 594.
Tracheotomy in an Infant. E. Thorp.—p. 594.
Case of Craniocleido Dysostosis. A. B. Cocker and H. S. Sims.—p. 595.

Nature of Arteriosclerosis.—The problem of arteriosclerosis is stated by Evans as follows: Arteriosclerosis is a lesion characterized by pathologic thickening of arterial coats, particularly of the intima; inflammatory reaction is of first importance; degenerative changes are an essential part of the picture; hyperplastic and involutionary processes play a part; no unit factor is responsible for its causation. Its development in extent and form depends on a balance between the action of toxic agents and the power of resistance of the vessel wall to their attack.

Intracardiac Injection of Epinephrin.—A case of life-saving by an intracardiac injection of epinephrin is quoted by Bodon. A man, aged 56, suddenly developed cardiac dyspnea. He was in serious condition. Bodon administered 1.5 cg. morphin subcutaneously with no visible effect. As the patient began to sink rapidly, Bodon gave him every minute one or two hypodermic and intramuscular injections of camphor oil (0.2 gm.) accompanied by hypodermic applications of ether, caffein, and one of epinephrin, to the number of eight to nine injections. No improvement could be effected, and the radial pulse became impalpable. An attempted intravenous injection of strophanthin and epinephrin proved impracticable. Bodon then resolved to try an intracardiac injection—hurried to his rooms to provide himself with a long needle, and, returning within a few minutes, found that the patient had nearly passed away in the meantime. He lay relaxed and apparently lifeless in his chair, with head fallen backward; the cyanosis of lips and skin had given place to a deathlike pallor. The eyes were widely open, with largely dilated pupils; corneal reflexes were absent; there was complete loss of consciousness. Shallow inspirations at long and irregular intervals carried the air only as far as the larynx or bronchi. The radial and carotid arteries were not palpable. The systolic murmur over the heart was to be heard intermittently and the diastolic murmur was inaudible ("woodpecker's rhythm"). Respiration ceased completely, the patient passed stools and urine involuntarily, and the action of the heart definitely stopped. Bodon considered him to be dead; there was no possibility of doing any harm by an intracardiac injection. The needle, thrust cautiously through the fourth left intercostal space exactly at the sternal border, glided easily into the heart. A light, short contraction caused by the irritation of the needle touching the heart muscle was felt. Bodon emptied the syringe, which contained 1 c.c. of 1:1,000 epinephrin solution, and extracted it quickly; not a drop of blood was to be seen on the needle or at the site of injection. A few seconds later a steady improvement of the heart beat was noted, which proved regular and effective in less than half a minute. The radial pulse not only regained palpability, but was more satisfactory than when first examined. Simultaneously with the improvement of the heart's action, respiration set in with inspirations progressively deeper and more regular. Some minutes later the corneal reflexes returned, and the formerly widely dilated pupils contracted. The extreme pallor of lips and face subsided and was replaced by a dark bluish-red color, which subsequently lost its cyanotic hue as a deep, snoring respiration became established. The patient did not recover consciousness for two hours. On awakening he remembered nothing of what had happened. Two and a half hours after the injection, he could walk with assistance the few steps to his bed, feeling tolerably well but very tired. Three months after the injection, the patient felt perfectly well, as he is now in every respect. Bodon is convinced that the intracardiac injection saved this patient's life.

Extreme Dilatation of Left Auricle.—Emanuel records a case in which the heart was of such enormous size as to appear to fill the entire thorax. The great size was due to auricular dilatation and, in the main, to dilatation of the left auricle. This had dilated, for the most part, in a horizontal direction, so that during life it presented in the right axilla beyond the right edge of the right auricle and was tapped under the belief that it was a pleural effusion. Emanuel believes that the dilatation is an expression of a pathologic condition that may affect the mitral valve and myocardium at the same time, and that condition is a carditis, frequently of rheumatic origin. Pericardial adhesions are always present in these cases. The dilatation is not the result of these pericardial adhesions in the sense that the adhesions act mechanically by traction on the auricle, for the dilatation is uniform. The pericardial adhesions, like disease of the mitral valve, are merely the permanent indications of an erstwhile carditis, the brunt of which, for some unknown reason, fell on the myocardium of the auricles. The auricular walls thus weakened by an attack of myocarditis give way under the intra-auricular pressure.

Heredity in Alcaptonuria.—The father and mother in the instances cited by Cuthbert were first cousins, the father's mother and the mother's mother being sisters. The parents know of no case of alcaptonuria among their forbears. They have had six children, all of whom are alive and in good health. There have been no miscarriages or stillbirths. None of the children exhibit any structural malformation. Neither parent is alcaptonuric; of their six children, three (two boys and one girl) exhibit the anomaly. The blood Wassermann in all these cases was negative.

Liquid Petrolatum.—A report is made by Russell and Brett on the action of liquid petrolatums of widely varying viscosities. He states that a product of viscosity 230 gave more satisfactory results than one with a viscosity of 130. The authors strongly recommend that a viscosity standard of not less than 180 should be adopted. The viscosity figure is the time in seconds taken by 50 c.c. of oil maintained at 100 F. to flow out from a Redwood viscometer.

1: 631-680 (March 31) 1923

*Treatment of Duodenal Ulcer. B. Moynihan.—p. 631.
*Treatment of Epithelial Tumors of Urinary Bladder. F. Kidd.—p. 636.
*Therapeutic Action of Bismuth in Syphilis. C. Levaditi.—p. 639.
Serum Dosage in Diphtheria. C. B. Ker.—p. 642.
*Syphilis and Marriage. A. Routh.—p. 644.
*Case of Middle Meningeal Hemorrhage. A. B. K. Watkins.—p. 646.
*Case of Acute Nontraumatic Bilateral Suprarenal Hemorrhage. A. G. M. Severn.—p. 647.
Sudanese Albino. H. E. S. Stiven.—p. 648.

Treatment of Duodenal Ulcer.—More than 90 per cent. of the patients on whom Moynihan performed a gastro-enterostomy for duodenal ulcer are in excellent health. In the remainder the discomforts may almost be regarded as negligible, especially by comparison with the protracted suffering before the operation. One patient is known to have developed a jejunal ulcer subsequently. Moynihan has operated in six cases of jejunal ulcer in which no ulcer was found in the stomach or jejunum at the time the operation of gastro-enterostomy was performed. The treatment of jejunal ulcer is very difficult. Moynihan has no knowledge of an undoubted case in which the symptoms have disappeared entirely and have long remained absent after medical treatment. The immediate results of medical treatment are good, but relapses are, perhaps, invariable. The operations which may be practiced are: (1) excision of the ulcer with local repair of the anastomosis; (2) excision of the ulcer with closure of the anastomosis; (3) excision of the ulcer, closure of the anastomosis and the making of a new anastomosis, anterior or posterior; (4) excision of the ulcer, closure of the anastomosis and the performance of gastroduodenostomy; (5) gastrectomy (Moynihan has performed this operation more frequently as his experience of the condition enlarged); (6) jejunostomy. Moynihan is convinced that the operation of gastro-enterostomy has been greatly discredited in con-

sequence of its performance in grossly unsuitable conditions. The results, when the operation is undertaken for an appropriate reason, and in a suitable case, are unequalled by those of any other of like magnitude in surgery. Speaking of the after-treatment of patients on whom any gastric operation has been performed, Moynihan states that among the most harmful of habits for all these patients is smoking. An "attack" of duodenal ulcer often follows an orgy of tobacco; and many attacks are checked by abstinence from it. "Attacks" ascribed to duodenal ulcer are sometimes due only to nicotin poisoning. The close mimicry of "hunger-pain" in nicotin intoxication appears to have escaped notice.

Treatment of Epithelial Tumors of Urinary Bladder.—In cases of papilloma of the bladder of a benign type, Kidd says, diathermy, as applied through the cystoscope, holds out at least a 90 per cent. chance of cure without the risk of opening the bladder. In cases of papilloma of the bladder of doubtful malignancy, it is possible to obtain a certain number of cures by means of diathermy applied through the cystoscope. In cases of malignant papilloma, early papilliferous carcinoma, and even of very early ulcerating carcinoma of the bladder, subtotal or partial cystectomy marks a great advance in bladder surgery. It should render the old intravesical operation obsolete, except in a few isolated cases. Total cystectomy has been rendered almost obsolete by partial cystectomy, diathermy and radium. It should be reserved for cases of multiple malignant papilloma that defy other treatment, and for a few favorable cases of early carcinoma involving both ureteric openings. Ureterostomy presents almost as great risk to life as total cystectomy. When successful, it brings great relief, and it may be used as a preliminary to total cystectomy in a few favorable cases. In Kidd's opinion radium has not yet justified its claim to supersede surgery.

Syphilis Treated by Bismuth.—Investigations made by Levaditi into the toxicity of bismuth in the rabbit have shown that it required 200 mg. sodium potassium bismuthotartrate per kilogram, given subcutaneously, to kill a rabbit; intravenously, only 5 mg. were required. In oily suspension this preparation is no longer toxic. Insoluble preparations should be used for intramuscular injection. Injections should be made with a 5 c.c. syringe and a sufficiently large needle, as the liquid is sometimes thick. The most favorable region for injection is the superior gluteal area. Injections should be made alternately into either side, not too close to the site of previous injections. The intravenous route is too dangerous. The dose should be 2 c.c. (0.2 gm. of the active preparation), repeated every three or four days, until a total dose of 2.8 or 3 gm. has been reached. The series of injections should be repeated after an interval of a month, until the Wassermann reaction becomes negative. On the basis of his experience and that of others, Levaditi feels that he can maintain that sodium potassium bismuthotartrate and metallic bismuth achieve rapid cicatrization of syphilitic lesions at all stages of the disease. When used early and in sufficient quantity bismuth will cure syphilis. The absence of recurrences of the disease, and the effect on the Wassermann reaction, confirm this opinion. Equal, from a therapeutic point of view, to arsenical preparations, better than mercurial preparations, bismuth is a valuable antisyphilitic remedy, particularly in those manifestations of the disease which resist the action of arsenic and mercury.

Syphilis and Marriage.—The association of syphilis and marriage, Routh points out, is the cause of more individual, social, and national trouble than any other disease affecting family life. Obviously, syphilis and marriage should never be associated, and yet, though this is realized by health authorities, physicians, and legal experts, it is only beginning to be realized by the state and by the nation at large. The difficulties, therefore, which physicians experience when they try to prevent a syphilitic patient from marrying are largely due to the absence of general education on the subject, the inadequacy of the law of libel to protect them, and to the absence of legal penalties for one person infecting another. Routh discusses the pros and cons of notification of syphilis and of health certificates. Closing, he says, that these results prove conclusively that even if infected men and women can be prevented from marrying and having children (for syphilis does not tend to sterilize either men or women), it is possible, by treatment of the mothers during pregnancy, to have healthy children born and by continuing the treatment of the mothers and children after parturition, it is possible, in each such family, to prevent the occurrence of congenital syphilis almost entirely. Probably, this success would be rendered more certain if the father were also treated.

Bilateral Middle Meningeal Hemorrhage.—The interesting points in Watkins' case were: (1) bilateral hemorrhage; (2) laceration of the artery at the foramen spinosum; (3) ligature of the external carotid controlled the hemorrhage; (4) orbital hematoma, and (5) hyperpyrexia.

Acute Nontraumatic Bilateral Suprarenal Hemorrhage.—The symptoms in Severn's case were: sudden collapse of a woman, aged 59, who had appeared well during the early part of the day. She seemed profoundly asthenic; her temperature was 102.2 F. Face and extremities were cold and somewhat cyanosed; radial pulse was 126 per minute, irregular, "thready," and almost imperceptible. There were very marked flatulent distension of abdomen, and general loss of muscular tone. There was no vomiting, no apparent pain or localized tenderness. The heart sounds were feeble; blood pressure was greatly diminished. Her condition grew worse and death took place within three hours. Both suprarenals contained an unorganized blood clot. Microscopic examination of both suprarenals showed recent hemorrhage into the medulla causing complete disorganization of the cells, and the thin cortical layer was infiltrated with blood.

Medical Journal of Australia, Sydney

1: 225-252 (March 3) 1923

Use of Sugar Injections in Pulmonary Affections, Including the Tuberculous. J. E. F. Stewart.—p. 225.
Differential Diagnosis of Dengue Fever and Influenza. E. P. Thurston.—p. 227.
Medical Aspects of Life Assurance. R. S. Skirving.—p. 227.
*Strangulated Hernia in Infant. I. McNeil.—p. 235.
Tuberculosis of the Skin. C. Joyce.—p. 236.

Strangulated Hernia in Infant.—McNeil reports a case of strangulated inguinal hernia in a child, 6 days old, which proved to be a congenital inguinal hernia of the vaginal type. The sac contained about 5 cm. of cecum and 5 cm. of small intestine and the appendix. The child made an uninterrupted recovery.

South African Medical Record, Cape Town

21: 97-120 (March 10) 1923

Treatment and Tests Employed in Gonorrhea and Syphilis. B. Bernstein.—p. 99.
Hospital Control. R. P. Mackenzie.—p. 106.
Postpartum Hemorrhage. A. Abelheim.—p. 109.
*Removal of Uterine Polypi from Child Aged One Year and Seven Months. C. de W. Gibb.—p. 111.
Experimental Infection of Some Animals with Cercaria from Fresh-Water Snails. F. G. Cawston.—p. 112.

Removal of Uterine Polypi from Child Aged One Year and Seven Months.—When Gibb's patient was 3 months old, a vaginal discharge was noticed. This discharge continued until the patient was 8 months old, when for the first time a mass appeared at the vulva. This gradually enlarged. The growth arose from the inner surface of the posterior wall of the cervix uteri. It was amputated. Sections of this growth showed it to consist of a number of polypi, which structurally were composed of nonstriped muscle, similar to that of the normal cervix. These polypi contained abundant wide but very thin-walled blood vessels, and there had been extensive hemorrhages from many of these into the stroma of the polypus. There was no indication of anything of a malignant nature about the growth. The case is said to be especially unique because it is the only one on record.

Annales des Maladies Vénériennes, Paris

18: 97-176 (Feb.) 1923

*Urinary Elimination of Arsenicals. Lévy-Bing and Férond.—p. 97.
*Endocrine Disturbances and Nitritoid Crises. G. Lévy et al.—p. 127.
Chronic Gonorrhea without Acute Stage. Mouradian.—p. 132.
Soft Chancre with Phagedenic Bubo. Oudard and G. Jean.—p. 143.

Urinary Elimination of Some Arsenical Compounds.—Lévy-Bing and Férond studied the elimination of different

compounds of arsenic related to arsphenamin. They found that amino-arseno-phenol and the diglucosid of arsphenamin are not indicated for intravenous use, because they are too diffusible. Distribution to the body is better if they are given by mouth.

Endocrine Disturbances and Nitritoid Crises.—Lévy, Juster and Lafont found that accidents in arsphenamin injections are more liable to occur in patients with endocrine troubles. Changes in the thyroid gland may occur during treatment. Irregular menstruation, fleeting edemas, other vasomotor disturbances, and endocrine symptoms should put the physician on his guard against arsphenamin accidents. Epinephrin is an excellent remedy against them. Asthenia, fatigue in the morning, and apathy are among the minor signs of insufficiency of the suprarenals.

Bulletin de l'Académie de Médecine, Paris

89: 187-222 (Feb. 6) 1923

*Preventive Serotherapy in Measles. Méry et al.—p. 194.
*Fever and Arthropathies Due to Proteins. M. F. Bezançon.—p. 205.
*Home for Nursing Mothers in Department of Rhône. Commandeur.—p. 215.
A Physiologic Adjuvant in Treatment of Tuberculosis of Lungs. A. Knopf (New York).—p. 220.

Convalescents' Serum in Prophylaxis of Measles.—Méry, Gastinel and Joannon used inactivated serum taken from convalescents about the fifteenth day. The preventive injection is effective if given before the sixth day of incubation; otherwise it seems at least to diminish the severity of the infection. The dose for infants is 2 c.c.; 4 or 6 c.c. for older children. The dose should be larger in the later stages of incubation. They draw attention to the necessity of regulating the use of this prophylactic, and avoiding useless generalization.

Fever and Arthropathies Due to Proteins.—Bezançon and co-workers report a case of diarrhea, arthropathies and fever, which were connected with ingestion of proteins. The passage through the intestines was very quick, and the meat was not sufficiently digested. Peptone (0.2 gm.) taken one hour before the meals had a favorable influence. Another case reported was in a man suffering from gout and a pleural exudate. The punctures of the pleural cavity and especially subcutaneous injection of the fluid caused conditions resembling serum sickness.

Home for Nursing Mothers.—Commandeur reports on the home for nursing mothers at Vinatier. Only two conditions are required for admission: The girl has to acknowledge her child and has to nurse it, until it can be weaned. Absolute secrecy is kept, if desired by the mother. The home has forty-nine beds for mothers and sixty beds for infants. It is well situated, and under daily medical supervision. Motherless infants are also accepted, though they have a greater mortality than the other children.

Néoplasmes, Paris

2: 5-48 (Jan.) 1923

*Multiplex Pathology and the Cancer Problem. W. S. Bainbridge.—p. 5.
Italian Works on Cancer in 1922. G. Bolognesi.—p. 13.
*Pathogenesis of Cancer. J. Stefani.—p. 20.

Multiplex Pathology and the Cancer Problem.—Bainbridge analyzes nine cases of malignant tumors, and comments on the difference in malignancy in the course of cancers of the same structure. This may be due to a difference in their pathogenesis or to other unknown factors. A short historical survey shows that a number of other diseases have at one time been considered to be cancer.

Pathogenesis of Cancer.—Stefani exposes briefly his theory of the origin of malignant disease. He believes in the existence of unicellular germs which he calls hybridozoa because, according to his conception, they conjugate with the tissue cells of the host. The cells of the resulting tumor would thus be hybrids.

Paris Médical

13: 97-128 (Feb. 3) 1923

*Radiotherapy of Brain Tumors. A. Béclère.—p. 97
*Inhalation of Thorium Emanations. Cluzet and Chevallier.—p. 105.
*Roentgen-Ray Treatment of Hypertrophied Tonsils. T. Nogier.—p. 109.
*Radium Treatment of Hypertrophied Tonsils. F. H. Williams.—p. 110.
*Radium Treatment of Metrorrhagia. A. Siredey.—p. 113.
*Secondary Infection of Cancers. C. Regaud and S. Mutermilch.—p. 121.
*Roentgen-Ray Treatment of the Eye. Japiot and Bussy.—p. 126.

Radiotherapy of Brain Tumors.—Béclère considers the results of this treatment of tumors of the pituitary as excellent. One girl whom he treated in 1908 is well today except for reduced visual acuity. Yet vision improved after the radiotherapy to such an extent that she can do fine work. She had a pituitary tumor with gigantism, genital infantilism, obesity, headaches, dizziness and blanching of the optic papilla. About fifty cases are on record of roentgen-ray treatment of pituitary tumors. New researches have demonstrated that the pituitary itself cannot be incriminated for several syndromes formerly attributed to it. Acromegaly and gigantism are the only syndromes left to it. The other syndromes (adiposogenital dystrophy, diabetes insipidus, glycosuria) are due to compression of the base of the brain, and may subside after treatment. Radium does not compete successfully with roentgen rays in these cases. The most important aid in diagnosis is the measuring of the field of vision.

Among the tumors of the brain itself, gliomas are amenable to irradiation, while fibromas are not influenced. Tumors of the brain proper present three distinct advantages for radiotherapy: They grow slowly; they do not induce metastasis, and the normal brain cells are extremely tolerant of radiation. The limits of radiotherapy are given by the uncertainty of the localization and the difficulty of distinguishing between tumors and other affections. It should be the rule to think of syphilis first. If the Wassermann reaction in the blood or spinal fluid is positive, antisyphilitic treatment is imperative. If the reaction is negative, the physician has the right to try antisyphilitic treatment. If it fails, roentgen rays should be tried early and before the knife, except in emergency, especially in neglected cases. Irradiation may follow the operation. The introduction of radium requires extreme asepsis and an open wound. It can be applied only to exactly localized tumors, while the roentgen rays may be given a trial even in less well diagnosed cases.

Inhalations of Emanations of Thorium.—Cluzet and Chevallier's experiments demonstrated the action of thorium emanations by inhalation. They induce in rabbits an increase in the numbers of erythrocytes and polymorphonuclears, and a decrease in the monocytes and especially in lymphocytes. After a few days the number of blood corpuscles decreased.

Roentgen Ray in Treatment of Hypertrophied Tonsils.—Nogier reports permanent results with this treatment of soft enlarged tonsils. It is the method to be used in hemophilia, cardiovascular disease and nephritis.

Radium in Treatment of Hypertrophied Tonsils.—Williams prefers radium to roentgen rays in treatment of enlarged tonsils, because the dosage is exact and the radiation is absorbed almost entirely by the tonsils.

Radium Treatment of Uterine Hemorrhage Not Due to Cancer or Fibroma.—Siredey emphasizes the impossibility of limiting the action of penetrating rays to the pathologic process. Therefore he urges the necessity for restricting the indications for this treatment. Metrorrhagia may be due to general conditions, especially in young girls, and the treatment should be appropriate. Organotherapy may give excellent results. Radiation is contraindicated in metrorrhagias for which syphilis or lesions in the adnexa are responsible (ovarian cysts, salpingitis, etc.). Frequent hemorrhages following marriage stop with rest. More important are the sequelae of nondiagnosed early abortions; these are also a contraindication for radiotherapy. The latter is indicated in hemorrhagic metritis and recurring polyps near the menopause. The dose required differs in every woman: 4 millicuries may be sufficient in some while menstruation may persist in others after exposure to 16 millicuries. In women under 40, the dose at first should be 3 to 6 millicuries. This treatment should be used in young girls only in very exceptional cases, yet in one of his cases thus treated a healthy infant was born some years later after several preceding miscarriages.

Secondary Infection of Cancers from Standpoint of Radiotherapy.—Regaud and Mutermilch do not consider superfi-

cial ulceration as a contraindication to radiotherapy. Deep suppuration, however, may progress dangerously under the exposures, and may poison the whole organism. Hence it is necessary to treat the suppuration first. Staphylococcus infection is influenced better by vaccines than streptococcus or pyocyaneous infection. They never witnessed any benefit from intercurrent erysipelas in cancer of the face. In cancer in the mouth, spirilla and fusiform bacilli are a frequent cause of suppuration. Local and general arsphenamin treatment is indicated in such cases. A very important point is the occurrence of local infections and ulceration in tissues that have been exposed to the rays. As this may occur even after an interval of several months (they publish three instances) it may be mistaken for recurrence of the cancer, and this might lead to a new irradiation, which would increase the injury. These lesions heal spontaneously. A histologic examination may be indispensable. Whenever signs of periuterine infection are found, which is frequent in advanced malignant disease of the uterus, radiotherapy should not be tried. Even an old infection of the kind may flare up and prove rapidly fatal (two observations). Superficial ulceration of the uterine cancer does not contraindicate radiotherapy.

Roentgen-Ray Treatment of Certain Inflammatory Affections of the Eye.—Japiot and Bussy in four years' experience have gained a favorable impression of the action of the roentgen rays in this field. The best results were obtained in interstitial keratitis, especially in its more inflammatory forms. Four or five exposures might be tried in the treatment of trachoma. Corneal lesions may occasionally improve under radiotherapy, yet the question remains whether the same results might not have been obtained without the roentgen rays.

Revue Franç. de Gynécologie et d'Obstét., Paris

18: 145-176 (March 10) 1923

*Rupture of Uterus After Pituitary Treatment. L. Pouliot and J. Truchard.—p. 145.
*Treatment of Gangrene from Criminal Abortion. G. de Rouville.—p. 157.
*Fibromas in Lower Segment of Uterus. P. Balard and J. Dehan.—p. 159.

Rupture of Uterus After Pituitary Treatment.—Pouliot and Truchard criticize the article by Rucker and Haskell in The Journal, May 21, 1921, p. 1390, "The Dangers of Pituitary Extract." They assert that the commotion which the article has caused in obstetric circles is unjustified. To begin with, they show that of the 53 observations of rupture of the uterus after pituitary treatment, which Rucker and Haskell cite, a number are duplicates, so that the actual number is only 33. In 16 of this group of 33 no particulars are specified as to the shape of the pelvis, the cervix, the presentation, etc. Excluding these 16 cases, there are 17 left which they proceed to analyze: In 9 of the cases the pelvis was not a normal pelvis; in 2 the head was not engaged in the pelvis; in one instance each the presentation was transverse, or the woman had borne an unusual number of children, or there was albuminuria in addition to the multiparity, and in 2 cases there was stenosis or rigidity of the cervix. There are thus a total of 16 cases in which the use of pituitary extract was contraindicated. This leaves only one of the total "53" compiled in which the pituitary treatment can be incriminated for the rupture of the uterus. Pouliot and Truchard remark, "This case is much to be regretted, but should we renounce the benefits of organotherapy in obstetrics on the basis of a single case?" It should be applied only when the pelvis is normal; the presentation longitudinal; the fetus completely engaged; the cervix supple, the lower segment stretched very thin; the uterine musculature not weakened by multiparity or by a preceding cesarean section; the woman free from any complications on the part of the heart or kidneys, and, finally, the uterus in *inertie utérine caractérisée*. Ability to recognize all of these conditions is not to be expected of the average midwife, and hence they reiterate the necessity for officially restricting to physicians the right to use pituitary extract in obstetric cases. This demand has already been presented to the authorities by the French Société d'obstétrique. In short, they add, "Pituitary extracts are dangerous only in the hands of those who do not know how to use them."

Gangrene from Attempted Criminal Abortion.—De Rouville reports a case of perforation of the uterus, with numerous complications, in which he succeeded in saving enough of the ovaries and uterus to enable menstruation to continue although total castration seemed inevitable.

Fibroma Praevia.—A medium sized fibroma growing from the inferior segment of the uterus may interfere with delivery or it may work upward out of the way and allow delivery to proceed unhampered. Balard and Dehan found that this latter occurred in 75 per cent. of 8 and 13 cases in which the fibroma was located in the anterior or lateral walls but only in 25 per cent. of 39 cases in which the fibroma grew from the posterior wall. Further analysis of these 60 cases suggests the wisdom of waiting for labor to decide the question. If the fibroma then shows no signs of working upward and if it is implanted on the posterior wall, it is better to operate at once; if implanted on the anterior or lateral wall, we ought not to wait for its ascent longer than three hours. A woman at term with a fibroma of the kind should be placed in an environment that will allow proper treatment of any eventuality.

Pediatria, Naples

31: 105-168 (Feb. 1) 1923

*Enuresis and Deformity of Lower Spine. O. Cozzolino.—p. 105.
Hereditary Syphilis in Naples. Ivo Nasso.—p. 125.
*Metastasis in Joints of Gonococcus Ophthalmia. V. Di Bella.—p. 146.
Ether Treatment of Whooping Cough. G. Castorina.—p. 151.
Treatment of Postdiphtheric Paralysis by Large Amounts of Antitoxin. C. Benedetti.—p. 157.

Enuresis with Deformity of Lower Spine.—Cozzolino examined the lower spine in seventeen children with enuresis and twenty-five other children normal in this respect. Occult spina bifida or other deformity was found in a large proportion of the children with enuresis. He considers this a predisposing factor for enuresis and also for pains in the region and sciatica, although the essential basis of the enuresis seems to be a neurosis. In Provinciali's case there had been enuresis in childhood, and sciatica developed later; roentgenoscopy showed spina bifida in the sacral region.

Gonococcus Ophthalmia with Metastases in Joints.—The gonococcus ophthalmia in the new-born infant was followed by swelling and pain of the joints in the hand on the eleventh day and in the ankles two days later. Other joints then became affected, but under vaccine therapy the cure was complete by the twentieth day. Gonococcus affections of the joints in infants seem to have a favorable prognosis.

Policlinico, Rome

30: 45-100 (Feb.) 1923. Medical Section

*Epidemic of Asthma from Pediculoides Ventricosus. G. Ancona.—p. 45.
*So-Called Anaphylactic Asthma. G. Petragnani.—p. 70.
Pleural Pressure and Collapse of Lung in Artificial Pneumothorax. G. Breccia.—p. 89.

Epidemic of Asthma from Pediculoides Ventricosus.—Ancona describes an epidemic of asthma resembling hay-fever among millers and peasants, who worked with corn which was infested with *Tinea granella*. Yet neither the corn nor these weevils were the cause of the disease. He was able to prove that a species of acarus (*Pediculoides ventricosus New*), a parasite of the weevils, produced the sensitization. Cutaneous reactions and a hemoclastic crisis proved valuable in differentiation. Desensitization was tried in two patients and gave favorable results. The sensitization occurred very probably by inhalation, as the millers did not eat bread from the spoiled flour. All the persons, who came repeatedly into close contact with the antigen, became sensitized.

Experimental Research on So-Called Anaphylactic Asthma.—Petragnani found in experiments on guinea-pigs that extracts of hair and pollen do not induce anaphylaxis. The leukopenia caused by intravenous injections of pollen extract is more marked, but the diminution of complement is much less pronounced than in real anaphylactic shock induced by serum. The so-called anaphylactic asthma occurs only in predisposed individuals. It is a much more complex phe-

nomenon than anaphylaxis. The hypersensitivity is natural, due to a predisposition, and is not produced by sensitization. Asthma is a derangement of the metabolism with dysfunction of endocrine glands. The predisposition is essential, but only some of the persons thus predisposed are sensitive to certain asthmogenic (not anaphylactogenic) substances. Treatment should aim to modify the general condition and thus reduce the predisposition to the asthmogenic (not anaphylactogenic) substances. General treatment, he says, does not have the slightest effect on true anaphylaxis.

Arquivos do Inst. Bact. Camara Pestana, Lisbon

5: 133-256, 1922

*Intermediate Host of Schistosoma. A. Bettencourt and I. Borges.—p. 133.
*Biologic Reactions in Congenital Syphilis. L. de Castro Freire and A. Antunes de Menezes.—p. 137.
*Bilharziasis in Portugal. A. Bettencourt and I. Borges.—p. 189.
*Antirabies Treatment in Portugal. E. Pereira da Silva and L. Figueira.—p. 231
Louis Pasteur A. Bettencourt.—p. 245.

Experimental Bilharzia Infestation. — Bettencourt and Borges report that adult schistosomas developed in mice which they had exposed to the schistosoma larvae, cercaria, from snails taken from the focus of endemic bilharziasis at Tavira in Portugal. The adult schistosomas were found in the portal vein of three of the mice, and seemed to be *Schistosoma haematobium*. The snail intermediate host was *Planorbis metidjensis*.

The Sachs-Georgi Reaction in Congenital Syphilis.—A number of tables are given showing the findings with the Wassermann and the Sachs-Georgi tests applied parallel to more than 100 children, including a number of the new-born. In the children with simple dystrophia, the response was generally negative to both tests. In the differential diagnosis of congenital syphilis, the Sachs-Georgi test seems to be less sensitive than the Wassermann, but it does not give so many nonspecific positive reactions. With active congenital syphilis, the reaction was positive with both tests in 100 per cent.

Bilharziasis in Portugal.—The discovery of the endemic focus at Tavira has already been mentioned in these columns. This is the official and illustrated report of the commission sent by the Lisbon Bacteriologic Institute to investigate it. The water from a thermal spring is used by the local washerwomen, who stand in the warm water. It provides tropical conditions for the schistosomas. The snail found to be the intermediate host is a different species from that noted elsewhere. No other focus has been discovered, although schistosomas are frequently brought into the country from Africa. See second abstract above.

Rabies in Portugal.—The report of the Lisbon institute, 1893-1920, shows 17,609 persons treated after having been bitten by animals suspected of rabies. Among the 56 deaths occurring more than fifteen days after the treatment, 3 were in adults who had been bitten by a cat. In five of the years since 1900 none of the patients died more than fifteen days after the treatment; in the other years this death rate ranged from 0.077 to 0.23 per cent. In two recent years the Högyes method was applied, but the death rate increased, and the ordinary technic was resumed. It is described in detail.

Crónica Médica, Lima

39: 507-560 (Dec.) 1922

*Polymorphonuclear Leukocytes in Sputum. E. Escomel.—p. 507.
*Prophylaxis of Peruvian Verruca. J. Arce.—p. 510.
*Chicha, the Alcoholic Beverage of Peru. N. E. Cavassa.—p. 512.
*Influenzal Colitis in Infants at Lima. O. Botto.—p. 522.
Need for Teaching Mental Hygiene. C. A. Bambarén.—p. 539.

Polymorphonuclear Leukocytes in Tuberculous Sputum.—Escomel has long made it his routine practice to examine with the microscope the sputum of every patient who has been coughing for more than two weeks. This has demonstrated that the leukocytes in the sputum are more or less degenerated early in tuberculosis. This polymorphonucleolysis may occur alone or may be accompanied with abnormal proportions of mononuclears, especially lymphocytes. The fragments of the disintegrated polymorphonuclears may be incorporated by phagocytes in the sputum. If the polynucleolysis is pronounced and the polymorphonuclear regeneration scanty, the prognosis is grave. Intense polynucleolysis with mononucleosis indicates that the organism is rallying its forces for the defense against chronic infection, tuberculosis or syphilis. With increasing weakness, loss of flesh, tenacious cough and morning expectoration, the absence of tubercle bacilli from the sputum does not exclude tuberculosis if the polymorphonuclears are seen to be disintegrated and dissolved and the mononuclears abnormally numerous. The absence of syphilis, and of other diseases inducing mononucleosis suggests possible tuberculosis.

He adds further that this diagnosis was confirmed in many cases by the appearance of tubercle bacilli in the sputum in two or three months. Hence he urges vigorous treatment at once on discovery of this polynucleolysis with mononucleosis in the sputum of a patient who is growing weak, losing flesh and coughing. "By prompt action we can block the invasion, as tuberculosis in its incipiency is the most easily cured of all diseases."

Prophylaxis of Peruvian Verruca.—Arce calls attention to this disease as peculiarly favorable for research on the conditions favoring and checking it. It is restricted to a certain small region, and intensive study of this region and of adjacent free regions may reveal the factors responsible for the prevalence of this disease and possibly of others. By stamping out this disease in its stronghold not only Peru would be benefited but other countries would be protected against invasion by it.

The Corn Liquor of Peru.—This communication was read at the recent Latin-American Medical Congress at Havana. It is a complete study of chicha and its evils.

Influenzal Colitis in Infants.—Botto relates that influenzal colitis at Lima is more prevalent during the winter and is graver than food disorders in the summer. He advises change of air and treatment with vaccines. It is graver the younger the child.

Prensa Médica Argentina, Buenos Aires

9: 685-712 (Jan. 20) 1923

*Hydatid Cysts of Brain and Spinal Cord. R. Chiappori.—p. 685.
*Infection of Enlarged Prostate Gland. A. Astraldi.—p. 692. Conc'n p. 758.
*Sciatica from Inherited Syphilis. S. Libarona Brian.—p. 699.
Pathologic Physiology of Retention of Urine in Women. A. Calmens.—p. 702.

Hydatid Cyst in the Brain.—Chiappori never fails to suspect echinococcus disease when a child shows signs of a brain tumor and comes from a cattle-raising district. Children present hydatid cysts in the brain much more frequently than adults. In Argentina the proportion is as 6 to 2. Besides the primary hydatid cyst, there may be secondary or metastatic involvement of the brain.

Infection of Hypertrophied Prostate.—Astraldi has found eosinophilia a valuable symptom of this condition, in contrast to the low numbers of eosinophils in cases of cancer of the prostate. Figures above 1.5 per cent. testify to simple infected adenoma when palpation through the rectum gives dubious findings.

Sciatica from Tardy Inherited Syphilis.—The man, aged 36, had complained for twelve years of intermittent pain and tenderness in the fifth lumbar vertebra, the pain spreading to the groin and scrotum and to the right sciatic domain and becoming continuous. For twenty years, bending and flexing the lumbar spine had been painful or impossible. Rheumatism seldom affects one joint alone, and an infectious process in the vertebra would probably have spread during this long period. The disturbances were ascribed to kidney disease by three consultants. There was nothing to suggest syphilis in the family, but under tentative treatment for syphilis all the pains permanently disappeared.

Revista de la Asoc. Médica Argentina, Buenos Aires

35: 739-869 (Nov.) 1922

Recurring Inguinal Hernias. M. Balado.—p. 739.
Hydatid Cyst in Hip Bone. A. Buzzi.—p. 756.
Retroperitoneal Fibroma in Woman A. Gutierrez.—p. 761.

*Retrobulbar Optic Neuritis. E. B. Demaria and J. Layera.—p. 769.
*Grave Iridocyclitis. A. Gowland and J. A. Gallino.—p. 788.
*Hydrocephalus Simulating Brain Tumor. J. M. Obarrio.—p. 791.
Perception and Association in Aphasia. G. Bosch and A. Mo.—p. 809.
*Tumor in Cow Embryo. V. Widakowich.—p. 817.
*Action of Snake Venom on the Heart. M. A. Magenta.—p. 824.
*Bacteriophagy Without the Bacteriophagic Virus. C. E. Pico.—p. 860.
Anaerobe Found in Gas Gangrene. A. Sordelli.—p. 864.

Retrobulbar Optic Neuritis in Sinusitis.—Demaria and Layera describe a case which illustrates the necessity for consultation with the ophthalmologist and the rhinologist when there is a suspicion that retrobulbar neuritis is traceable to posterior sinusitis. They discuss the literature, diagnosis and treatment. In case of doubt it is better to open up the sinuses to drain freely into the nose.

Grave Iridocyclitis.—Gowland and Gallino were contemplating enucleation of the eye, as no measures had proved effectual. At the sixth day a daily parenteral injection of milk reduced the pain somewhat, but no benefit was apparent otherwise. Then they injected 1 c.c. of turpentine to induce a fixation abscess, and a turn for the better was manifest by the next day. By the ninth day thereafter conditions in the eye had returned clinically to normal, with vision 1/10. The fixation abscess suppurated profusely, with slight fever. It was evacuated the third day.

Lateral Internal Hydrocephalus Inducing Focal Symptoms in Rolandic Region.—Obarrio's diagnosis was confirmed by the operation. The release of the accumulation of fluid in the left lateral ventricle was followed by subsidence of all the symptoms in the girl, aged 10. The diagnosis had been based on the intracranial hypertension and hemiplegia in extension. Lumbar puncture had given no relief, and a decompressive operation alone would probably have been futile likewise. The communication between the lateral ventricle and the subarachnoid space was restored, and this provided the outlet for the superfluous fluid. The moment this communication had been made, the paralyzed leg was drawn up. The fluid was normal and the cause for the obstruction of the foramen of Monro could not be discovered. Vision had been lost in this case before the child had been brought to the hospital.

Tumor in Embryo.—Widakowich illustrates an abnormal collection of cells forming an evident tumor found in a very young bovine embryo.

Action of Snake Venom on the Heart.—Magenta's research was mostly on the frog heart, but a number of electrocardiograms are reproduced showing the action of snake venoms on the mammalian heart (dogs).

Bacteriophagy Without the Bacteriophage.—Pico reports experiments showing transmission of autolysis for the anthrax bacillus without the intervention of the supposed bacteriophagic virus. The lysant principle seems to be in the bacilli themselves. It is merely an exaggeration of the normal autolysis of the bacteria.

Archiv für klinische Chirurgie, Berlin

123: 1-864 (March 15) 1923

*Rare Surgical Affections of Bile System. Klose and Wachsmuth.—p. 1.
Drainage or Suture After Cholecystectomy? A. H. Hofmann.—p. 31.
*Erosion of Vessels by Drainage Tubes. Schönbauer and Gold.—p. 43.
*Furuncles on the Face. W. Hofmann.—p. 51.
*Testis Grafting. H. F. O. Haberland.—p. 67.
Functional Importance of Levator Ani. A. W. Fischer.—p. 105.
*Operative Treatment of Incontinence of Urine. Brjosowsky.—p. 116.
Operative Treatment of Prolapse of Rectum. H. Finsterer.—p. 124.
Surgical Anatomy of Phrenicocostal Sinus. A. Melnikoff.—p. 133.
Rupture of Dorsal Aponeurosis. G. Hauck.—p. 197.
Tendovaginitis and Snapping Finger. G. Hauck.—p. 233.
*Occupational Tendon Sheath Inflammation. E. Sattler.—p. 259.
*Operation for Cleft Palate. O. Stahl.—p. 271.
*Intravenous General Anesthesia. A. Lehrnbecher.—p. 317.
Inflammation in Costal Cartilage After Typhus. E. Busch.—p. 330.
*Caries of Costal Cartilages. Jassenezki-Woino.—p. 345.
Surgery of Prescapular Region. Ssoson-Jaroschewitsch.—p. 378.
Traumatic Dislocation of Both Shoulders. W. Pilz.—p. 400.
*Postoperative Tetanus. K. Wohlgemuth.—p. 409.
Pepsin as Resolvent of Scar Tissue. L. Frankenthal.—p. 415.
Intestinal Disturbance After Operations on Stomach. Lehmann.—p. 433.
Subsidence of Grave Brain Symptoms After Resection of Carotid Aneurysm. E. Glass.—p. 502.
Callus Formation in Relation to Anemia and Splenectomy. Schönbauer.—p. 510.
*Choice of Tracheal Cannula. P. J. Mink.—p. 516.
*Gas Peritonitis. H. Stegemann.—p. 523.
Regeneration Processes in Long Bones. C. Rohde.—p. 530.
Research on Greater Omentum in Man. E. Seifert.—p. 608.
Aneurysm of Superior Mesenteric Artery. L. Kolin.—p. 684.
Coxa Valga Luxans: Loose Hip Joint. W. Block.—p. 704.
*Genital Tuberculosis in Men. F. Rydgaard.—p. 758.
*Physical Chemistry and Surgery. H. Schade.—p. 784.
"Bone Regeneration." Böker.—p. 796. Reply. Martin.—p. 804.
*Bone and Joint Tuberculosis in Children. S. Simon.—p. 807.
Circumscribed Retroperitoneal Processes. D. Juhl.—p. 821.
*Wound Diphtheria. C. Uhlhorn.—p. 833. Idem. H. Landau.—p. 716.
Parenteral Protein Nonspecific Therapy. R. Lauenstein.—p. 842.
Fibrous Osteitis of the Skull. N. N. Petrow.—p. 849.
Operative Treatment of Esophagus Diverticulum. G. Spiess.—p. 856.
Improved Technic for Artificial Respiration. G. Kelemen.—p. 858.
Improved Technic for Suturing Bladder. C. Kamogawa.—p. 861.

Polyposis of the Gallbladder.—In the case described, the polyposis was diffuse, but one polyp acted like a valve, obstructing the cystic duct.

Klose reports that five cases of so-called white bile were encountered in 638 operative cases of disease of the biliary apparatus during the last ten years at the Frankfurt clinic. It is a sign of obstruction of the bile ducts, and removal of the gallbladder does not do away with this obstruction. He advises cholecystenterostomy by the Kausch method if the obstruction in the common bile duct cannot be removed. If the obstruction is centrad from the gallbladder, hepaticoduodenostomy is preferable.

Erosion of Blood Vessels by Drainage Tubes.—The experimental research reported indicates that there is no danger of erosion in aseptic conditions in animals.

Furuncles of the Face.—Hofmann discusses the reasons for the peculiar gravity of furuncles and carbuncles in the face. The mortality was 8.2 per cent. in the 182 cases of furuncles of the face given operative treatment during the last fifteen years at the Berlin surgical clinic in charge of Bier. The upper lip was the site of the furuncle in more than half the cases, and formed a third of the fifteen fatalities, including one of the two diabetics. Furuncle of the face may run a rapidly fatal course from the start, with thrombosis of the cerebral sinuses, uninfluenced by treatment. Conservative treatment, with hot cataplasms, possibly with Bier's passive hyperemia from a constricting band around the neck, is the treatment advised. With a large furuncle, the patient should stay in bed and the region be spared all mechanical strain. Above all, speaking should be forbidden. Physicians should inform patients of the gravity of face furuncles, and warn against picking and squeezing the furuncle. Friedemann has recently reported the success of conservative treatment in seventeen cases, including one with thrombosis of the cavernous sinus. In Hofmann's fifteen fatal cases, in three the furuncle had been incised by others, and in five the patients themselves had squeezed or otherwise maltreated the furuncle. Omitting these cases, the mortality of the 174 treated by conservative measures alone was only 4 per cent.

Testis Grafting.—Haberland reports experiments on 56 animals including 2 pigs, 3 cats and 5 dogs, giving photomicrographs of the findings in some of the animals. In connection with this report he gives a table of the known instances of testis transplantation in man, with the outcome, from Lespinasse and Lydston to Gregory and Stabel in 1922. His conclusion from all this material is that we must constantly bear in mind that the glands with an internal secretion, the testes included, form a system, a whole. If any part of this system drops out, the whole—if conditions are favorable—may be able to compensate vicariously the missing function. "If this theory of suggestion and vicarious compensation does not appeal to the reader, there is a further assumption possible, namely, that the wound hormones from the engrafted testis may have a stimulating action on the entire organism, and hence on the other glands of the endocrine system."

Operative Treatment of Incontinence of Urine.—Brjosowsky slits a strip up from the levator ani on each side and overlaps and sutures to the opposite side these pedunculated strips. They thus form an elastic band pressing on the urethra. This method can be applied to both the male and female urethra. The technic is illustrated.

Tendon Sheath Inflammation as Occupational Affection in Hand or Foot.—Sattler describes a large variety of synovial disturbances liable to develop from occupational strain. The

affection is observed in locksmiths, joiners and brakemen, in women who do much pressing or rubbing, and in children learning to write. He gives details of four clinical cases. Even a history of syphilis and positive Wassermann reaction do not stamp the affection as of syphilitic origin; in one such case the lack of benefit from antisyphilitic treatment finally cleared up the case. Then treatment was begun according to Calot's methods: The fluid was released by puncture, and a solution injected of guaiacol, 2 parts; creosote, 8; iodoform, 20; ether, 65, and oil of sweet almonds, 100 parts. In one case the fluctuating swelling over the metatarsophalangeal bursa in the young woman had recurred at intervals during two years. The diagnosis of hygroma bursae hallucis is generally made in such cases, and resection is advised; this leaves cicatricial changes which are often the cause of disturbances. After two or three days of rest for the foot, Sattler merely punctured and injected 1 c.c. of the Calot solution, and the cure was prompt and permanent, without cicatricial tissue.

Cleft Palate.—Stahl gives the ultimate outcome in forty-two cases recently reexamined after a plastic operation according to Langenbeck. In 54.7 per cent. the results were excellent; in 49.5 per cent. the cleft was only partially closed, and in 4.8 per cent. the operation was a failure. In one case the defective speech of the boy aged 9, after unsuccessful attempt to correct the deformity, was duplicated by a younger brother whose palate was normal, but the defective speech was functionally reproduced by imitation. Between the third and sixth year seems the most favorable period for the operative correction of cleft palate, and the Langenbeck method the preferable technic. He describes it in detail.

Intravenous General Anesthesia.—Lehrnbecher reports on 850 cases in which the Burkhardt method of intravenous anesthesia has been applied at Nürnberg. He says it is harmless; the drawbacks are the rather complicated technic and the slight exaggeration of the tendency to bleed.

Operative Treatment of Caries of Costal Cartilages.—The usual methods of treating progressive necrosis of the costal cartilages entail fistulas, and less than half of the patients are finally cured, after long martyrdom. Woino attacks the process radically from the first, removing the entire set of cartilages with one or two beyond the diseased ones, far into sound tissue. The incision for this is a deep semicircle, extending from the middle of the sternum vertically two fingerbreadths below the costal arch and then swinging up and out to the side. He has thus operated eighty times in a total of sixty-five cases, with ten deaths. All the other patients with two exceptions—who refused the complete operation—were promptly and permanently cured.

Tetanus After Operations.—Wohlgemuth relates that tetanus developed in two cases after an operation on the small intestine in Unger's surgical service at Berlin. The tetanus was speedily fatal. Mice inoculated with feces from one of the cases, a woman aged 27, developed tetanus; no bacteriologic examination was made in the male case. His study of the literature seems to show that postoperative tetanus is most liable to develop after operations on the intestines, and he suggests that the infection is traceable to tetanus bacilli already in the bowel at the time. Under ordinary conditions they are harmless saprophytes, but the trauma of the operation rouses them to virulence. He urges in consequence that at all operations severely injuring or opening the bowel, tetanus antitoxin should be injected beforehand as a routine prophylactic measure.

Choice of Tracheal Cannula.—Mink's article was summarized recently on page 1280 when published elsewhere.

Gas Peritonitis.—Stegemann adds a new case to the three—which are all that he has been able to find on record—of accumulation of gases in the abdominal cavity to such an extent as to threaten life. The gases had developed in his case in the course of gangrene of the abdominal walls, but the pulse remained good. The incision for enterostomy released an enormous amount of odorless gases. The bowel seemed to be normal although squeezed nearly flat.

Tuberculosis of Genital Organs.—Rydgaard analyzes the experiences in Rovsing's service at Copenhagen with 77 cases of tuberculosis of the male genital organs given operative treatment. The superior advantages of epididymectomy are established by the outcome, but the epididymis must be removed as a whole and the central end of the vas deferens sutured to the skin. The earlier the operation is done the better the outlook for preventing spread of the process to the other side. Trauma seemed to have been a predisposing factor in a number of the cases, but not preceding gonorrhea. Epididymectomy on one or both sides did not seem to affect the sexual life, but unilateral castration with epididymectomy on the other side had a depressing influence on the sexual sphere. No light is thrown by these experiences on the question as to a rejuvenating influence from the operations.

Physical Chemistry in Relation to Surgery.—Schade points out that the colloidal state of the fluids of the body and the condition of the ions are of extreme importance to surgery. "We should turn from research on the cells and their granules to study the colloids and the ions." As an instance of what we can expect from this, he recalls that by freshening with a knife the rudimentary eyes of an embryo and pushing the two into contact, a single eye results, a cyclopean eye But what is realized here with the knife can be done equally well by physical chemistry: Addition of a certain proportion of magnesium chlorid to sea water containing fish embryoes, induces colloidal changes which result in the development of a cyclopean eye. The knife and the ions thus accomplish the same result by different means.

Tuberculosis in Bones and Joints.—Simon states that 126 were discharged from the children's sanatorium as cured, of the 357 that have been under treatment; 22 have died, and 82 failed to complete the course. Of the 33 who have been kept under observation for years since their discharge, only 2 have shown any signs of recurrence.

Wound Diphtheria.—Uhlhorn insists on the importance of early recognition and antitoxin treatment of diphtheria infection of a wound, as the diphtheria is liable to entail post-diphtheric paralysis, besides the danger of infecting others. If bacteriologic examination gives dubious findings, inoculation of animals should not be omitted.

Münchener medizinische Wochenschrift, Munich

70: 105-136 (Jan. 26) 1923

*Blood Circulation and Nutrition of Tissues. A. Bier.—p. 105.
*The Menopause. J. Halban.—p. 110.
Treatment of Septic Conditions. H. Eufinger.—p. 112.
*Thyrogenous Constipation. G. Deusch.—p. 113.
Spasm of Sphincters of Digestive and Urogenital Tracts. K. Helly.—p. 115.
Treatment of Stasis in Lower Extremities. H. Fischer.—p. 116.
Separate Opening for Drainage, Especially in Gallstone Operations. H. Hans.—p. 117.
Tuberculin Injury. F. Hamburger.—p. 119.
"Torsion of Internal Organs." H. Sellheim.—p. 119.
Systematic Eugenics. F. Hueppe.—p. 122. Idem. Lenz.—p. 123.
Diagnosis of Ileus from Strangulation. A. Krecke.—p. 123.

Blood Circulation and Nutrition of Tissues.—Bier adheres to Galen's, Bichat's and Virchow's opinion that the organs attract to themselves the necessary blood supply. The common opinion postulates that "naturally" the arterial blood is essential and the venous injurious to a good nutrition. He discovered that things which are considered natural, even by scientists, are frequently very unnatural. Nature has with its investigators, the same troubles as the Creator with his theologians: Nature and the Creator have to behave as these people prescribe. But in reality they don't. There is a difference between nutrition of a working organ (muscle), which needs a quick stream of highly arterialized blood, and the nutrition which serves to conserve and recuperate existing tissues. The recuperating tissues get along very well with a slow stream. The blood supply is only a secondary factor in the nutrition and regeneration of tissues. The primary agent is a pathologic stimulus. An organ which is in danger from lack of nourishment, draws blood forcibly from the general circulation. This capacity is independent of the blood pressure or the size of the afferent artery, and of the nervous system. He recalls his old experiments on pigs with severed arteries, and adds several new on arterio-

sclerotic limbs. The wound on an extremity which has been treated with a constricting band bleeds only after the previously anemic tissue has supplied itself with blood. In a limb that has not been constricted, the arteries bleed immediately The general assumption is the contrary of these facts.

He takes up again his old term "blood sense," *Blutgefühl*, and finds that it is restricted to the external parts of the body, which are more liable to get injured or have their blood supply impaired. The internal organs, especially the intestines, have no blood sense. Therefore the internal organs (heart, kidney, brain) suffer from arteriosclerosis more than the extremities, even if the latter are more severely affected. Organs without blood sense have no sensibility. The attraction of the blood by the blood sense is more efficient, and requires less energy than the pumping of the blood by the blood pressure.

The Menopause.—Halban has found that older women, as a rule, bear stronger children than young ones. He ascribes it to the increase in the size of the ova which he found in lower animals. The teleologic view would relate the menopause to the fact that children need care much longer than young animals. An old mother could not provide for them long enough. The loss of ovarian secretion causes certain disturbances in the metabolism, especially of calcium and fat, and the irritability of the sympathetic nervous system is increased. Psychic changes are not only of pathologic nature. Hysterical symptoms may disappear about this time in women. The bleeding in the preclimacteric period is important. If there are symptoms of a diminished ovarian function only between the bleedings, one may assume menstruation and not metrorrhagia. Yet a curettement is frequently necessary for diagnosis. Venesection has a favorable action on hot flashes. Hydrotherapy, theobromin and organotherapy may give good results. The ovaries should be respected and treated as conservatively as possible.

Thyrogenous Constipation.—Deusch finds that constipation may be due to hypothyroidism.

Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

85: 469-672 (Feb. 10) 1923

*Obstetric Examination Through Rectum. W. Fürst.—p. 469.
*Hemeralopia of the Pregnant. E. Klaften.—p. 485.
*Local Anesthesia in Operative Gynecology. R. Zimmermann.—p. 502.
The Interstitial Ovarian Gland in the New-Born. J. Matsuno.—p. 523.
*Ratio of Sexes at Birth. R. Tauber.—p. 539.
*Origin of Genital Flora. III. R. Salomon.—p. 554.
*Asphyxia of Cesarean Section New-Born Infants. H. Küstner.—p. 567.
Placenta Praevia. R. Freund.—p. 581.
Pregnancy Cardiac Arrhythmia. Schubert.—p. 593.
*Hydrops and Eclampsia. Zondek.—p. 600.
*Fatality from Transfusion of Own Blood. Schäfer.—p. 607.
*Permanent Cure of Ovarian Cancers. Schäfer.—p. 613.
Paravaginal Radium Treatment. Bumm.—p. 624.
*Rehabilitation of Alexander-Adams Operation. Bumm et al.—p. 631.

Obstetric Examination Through the Rectum.—Fürst outlines the conditions in which the examination must be vaginal: disproportion between the size of the presenting part and the lumen of the pelvis; essential hemorrhage and erythrocytes in the urine during delivery (as this indicates crushing of the bladder mucosa). Under other conditions, examination through the rectum is sufficiently informative; it is fully as instructive as a vaginal examination with two fingers. He advises using half the hand or the whole hand for vaginal examination. He reiterates that hemorrhages with pathologic childbirth entirely exclude rectal examination. He makes a practice of testing the vaginal secretions for the gonococcus as soon as the woman enters the maternity ward. If the gonococcus is found, the rectum is left unmolested. This practice has the further advantage of often explaining eventual fever. Students should be taught the exact indications for and limitations of examination by rectum and vagina.

Pregnancy Hemeralopia.—Klaften cites some cases from the records, and gives the details of seven personally observed. The night blindness usually develops during the last few weeks or days before delivery, but in two of his cases it began early and persisted throughout the pregnancy. It always subsided harmlessly after delivery. Protection against the light may be advisable.

Local Anesthesia in Operative Gynecology.—Zimmermann reviews the aims and limits of local anesthesia, his conclusion being that for laparotomies general anesthesia is preferable. Infiltration anesthesia has special advantages for vaginal operations, but the intraspinal, paravertebral and nerve blocking technics have too many drawbacks, or are ineffectual for gynecologic operations.

Ratio of the Sexes at Birth.—Tauber includes the miscarriages and abortions in a total of 89,071 births at Vienna. The figures do not differ essentially from the usual average 100: 106 ratio.

Origin of the Genital Flora.—Salomon has continued his bacteriologic research on new-born infants, examining the vulva, mouth, rectum and vagina at brief intervals.

Asphyxia of Infants Delivered by Cesarean Section.—Küstner's experiments on rabbits have apparently established that the anesthetic given the mother for the cesarean section is responsible for the condition of the offspring delivered in this way. The respiration is shallow and infrequent and the heart action may be modified—all resembling the condition in adults given too much anesthetic. The anesthetic reduces the sensibility of the nerve centers to carbon dioxid, so that when the child is extracted, the physiologic process of respiration does not come properly into play. This occurs in an even more pronounced form when the mother has been given morphin (twilight sleep), as the new-born are more susceptible to morphin than to ether and chloroform. A third factor also cooperates to induce asphyxia in the cesarean section infants: In normal deliveries, the circulation in the uterus, and hence the supply of oxygen to the fetus, is shut off more or less during the labor pains. The blood is overloaded with carbon dioxid, and this would stimulate the respiration center to initiate respiratory movements if it were not that, as the labor contraction subsides, the blood and oxygen reach the fetus. There is thus an intermittent stimulation of the respiration center which, he argues, acts as a kind of preliminary training of the respiratory apparatus, which facilitates the child's breathing when it finally emerges into the atmosphere. Children delivered by cesarean section lack all of this preliminary training. They are born unprepared, and have not learned how to breathe. Successful treatment of the asphyxia requires artificial respiration (Schultze swinging).

Hydrops and Eclampsia.—Zondek presents evidence to refute the assumption that water is the essential eclampsia toxin, inducing the convulsions by the edematous swelling of the brain. He describes cases of eclampsia in which there was apparently no tendency to hydrops.

Fatal Outcome of Retransfusion of Own Blood.—Schäfer comments on the often life-saving action of reinfusion of the woman's own blood after ruptured tubal pregnancy. The procedure has been applied in his service in twenty cases, and in three of them the women would evidently have succumbed otherwise. It is not always harmless. Besides slight disturbances, Opitz has reported jaundice in one case, and Bumm, chills and fever in two; Arnim a case with cyanosis and chills, and Schweizer a case of fatal hemoglobinuria. Schäfer adds another fatal case to the list. The woman aged 40 reached the hospital unconscious. Puncture of the abdomen showed a large quantity of fluid blood. The pulse was still imperceptible after intravenous injection of 300 c.c. of saline; then 500 c.c. of citrated blood from the abdomen was filtered through gauze and transfused in a vein in the arm. The pulse did not improve but the lips showed a better color. A severe chill followed, that lasted for an hour and a half, followed by transient hemoglobinuria. The condition gradually improved, but the next day the pulse ran up to 140 and the heart grew progressively weaker. The transfusion seemed to be responsible for this fatality. Probably the blood had been shed too long, although Lichtenstein has been successful with transfusion from four to nine days after the first extravasation. In Schäfer's case, the interval after the first hemorrhage had been forty-eight hours, and only a few hours after the hemorrhage that had rendered the woman unconscious. As the blood looked rather dark, he tried saline infusion first. Only after this failed, the blood was trans-

fused as a last resort. The liver and kidneys showed evidences of recent degeneration which he ascribes to the toxic action of the transfused blood.

Permanent Cure of Ovarian Cancer.—Schäfer relates that of ninety-nine women given operative treatment for ovarian cancer from five to ten years ago, 13.13 per cent. have been permanently cured to date.

The Alexander-Adams Operation and Ventrixation.—Bumm and others spoke at the meeting of the Berlin Gynecologic Society on the rehabilitation of the Alexander-Adams operation and ventrifixation. A lively discussion followed; the whole is reproduced.

Zentralblatt für Chirurgie, Leipzig

50: 377-424 (March 10) 1923

Interpretation of Roentgenogram in Hallux Valgus. Weinert.—p. 377.
*Dilation of Esophageal Stenoses. H. Kurtzahn.—p. 381.
*Bismuth Stone in the Appendix. A. Mülleder.—p. 384.
Idiopathic Hyperplasia of Spleen Follicles. L. Fiedler.—p. 385.
Flooding of the Pulmonary Circulation with Mercury. Esau.—p. 388.
Secondary Cysto-Urethrorectal Fistula After Suprapubic Prostatectomy. E. Stark.—p. 389.
"Incarceration of Intestine in Glass Tube." F. Franke.—p. 392.
Treatment of Postoperative Intestinal Paralysis. F. Franke.—p. 392.
"Deutschländer's Tumors of the Metatarsus." Blencke.—p. 395.

Dilation of Esophageal Stenosis.—Kurtzahn recommends metal olive-shaped beads for dilation of the stenosis. The polished metal is smoother, is more easily sterilized, and is cheaper than bone or ivory, which have been formerly employed. The long olives are strung on a string, each bead being slightly larger than the last, until a size is reached that will just pass the stenosis without too much traction; other olives are then added in the reversed order of sizes. The symmetrical arrangement on either side of the largest olive makes it possible to use the see-saw movement to advantage. Kurtzahn regards the blind use of a sound in any serious stenosis of the esophagus, without the employment of a pathfinder, as a gross violation of technic, since the danger of perforating the wall of the esophagus is very great. Also in stricture of the urethra, he has found this necklace bougie occasionally of great value.

A Bismuth Calculus in the Appendix.—Mülleder reports the case of a man aged 43 who when admitted to the hospital complained of general abdominal pain attended by vomiting. As was learned later, two years previously he had been examined with the roentgen rays for gastric ulcer. He was operated on for appendicitis; when cut open the appendix was found to contain, enclosed in a membranous capsule, a whitish yellowish calculus, 1.5 cm. thick and 4 cm. long, apparently encapsulated bismuth. Mülleder refers also to Kummant's finding of a bismuth calculus in the stomach during gastric resection. He reports also the formation of a calculus in a physician aged 73, following a bismuth meal for roentgen examination. Three days after the examination the patient brought to him a bismuth calculus as large as a man's fist, which he had removed from the rectum himself after two hours of effort with the aid of an instrument, not without considerable injury to the anal opening.

Zentralblatt für Gynäkologie, Leipzig

47: 337-384 (March 3) 1923

*Rectal Injection of Ether in Childbirth. Thaler and Hübel.—p. 338.
Anatomic and Topographic Considerations for My Operative Method in Vaginal Defect. G. Schubert.—p. 347.
*Spontaneous Intra-Uterine Rupture of the Cord. Geller.—p. 353.
*Retention of Umbilical Cord. F. Heinlein.—p. 356.
Myomas and Carcinomas of the Tubes. P. Schäfer.—p. 357.
Treatment of Prolapse of Female Genitals by Wertheim-Schauta Method. Goldberg.—p. 362.
Extraperitoneal Exposure of Ruptured Uterus. Lemperg.—p. 367.
"Rupture of Uterus without External Sign." Neuwirth.—p. 369.

Oil-Rectal Administration of Ether in Childbirth.—Thaler and Hübel report the results in 100 cases of childbirth in which a mixture of 90 gm. of ether and 120 gm. of olive oil was employed. In 88 of the cases the results were very satisfactory, and in only 4 cases did the method prove an absolute failure. In 80 of the 100 cases normal or very strong labor contractions were noted. In some cases the labor seemed to be even improved by the injection of the ether-oil mixture. In the other 20 cases labor was reduced by the injection. In these cases, quinin or pituitary extract was used as an adjuvant, mainly in order, by shortening the duration of the birth, to lessen the consumption of ether. The average duration of the birth was for the 73 primiparas 20¾ hours; for the 27 multiparas, 10¼ hours. In all cases in which the sleep was profound, the women did not strain, and consequently the expulsion period was no doubt prolonged. No anomalies of the afterbirth period were observed: 84 of the children were in normal condition at birth and cried immediately; 14 were apneic for a short time, though they looked well and began to breathe normally at the end of five minutes, at the most, without any special attempts at resuscitation being necessary. In 2 cases the infants were suffering from typical asphyxia. Of these, one (a spontaneous birth) was revived in a short time; the second (a forceps delivery) could not be resuscitated. In the majority of cases, during the intervals between labor contractions the patients lay as if asleep, but during the labor contractions they were slightly restless and would groan occasionally. As during twilight sleep, the women received physical impressions but could not retain them in the memory. Ether-oil injections should be given only in hospitals where the patient can be under constant observation and any emergency promptly met.

Spontaneous Intra-Uterine Rupture of the Cord During Labor.—Geller reports a case of spontaneous rupture of the cord, and in that connection recalls the causes and circumstances surrounding such cases. It occurs most frequently in precipitate labor; according to Winckel in 19 per cent., and, according to Hellhake, in 34 per cent. of such cases. Favoring circumstances, aside from precipitate labor, are abnormal shortness, looping of the cord about the fetus, velamentous insertion of the cord, knots or varices of the cord, and reduced resistance of the umbilical cord to traction, which according to recent investigations is doubtless dependent on the nature and the filling of the vessels and not on the amount of whartonian jelly present, as older writers believed. Of course, the cords of premature and macerated children are more easily ruptured than those of mature infants. The site of the tear varies. The mother also incurs a certain danger, since the same factors that lead to the rupture of the cord may bring about a premature total or partial loosening of the placenta or, in very rare cases, inversion of the uterus.

Retention of the Umbilical Cord.—Heinlein reports a rare instance in which the umbilical cord remained in the uterus although the placenta had been expelled without difficulty by the Credé method. The placenta itself was intact, but showed no place of insertion of the cord, so that it was evident that it was a velamentous insertion. The retention of the cord was caused by adhesion of the fetal membranes to the uterine wall in the region of the insertion. The adhesion was so firm that the fetal membranes with their blood vessels were torn loose at the margin of the placenta, when the placenta was expelled. The cause for this occurrence must doubtless be sought in inflammatory changes in the decidua and the other fetal membranes; the premature rupture of the fetal membranes was probably due to the same cause.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1074-1188 (March 17) 1923

*Digestion Leukocytosis and Leukopenia. J. C. Schippers and Cornelia de Lange.—p. 1074.
*Intra-Ocular Pressure in the Two Eyes. E. Marx.—p. 1082.
*Exostosis on Os Calcis. C. B. Tilanus, Jr.—p. 1095.
*Intracardiac Injection of Epinephrin. J. Exalto.—p. 1098.
Case of Atresia Ani Vesicalis. J. P. Asjes.—p. 1106.
Share of Syphilis in Progressive Spinal Muscular Atrophy. Bolten.—p. 1107.
Functional Tests of the Liver. J. Hekman and J. J. van Leeuwen.—p. 1111.
*Measures Needed for Fight Against Tuberculosis. J. Sanders.—p. 1150.

Digestion Leukocytosis and Digestion Leukopenia.—Schippers and de Lange present here their second report on research in this line. They tabulate the findings including the Arneth differential count, every twenty minutes in five infants and three older children, all healthy. There does not seem to be any regular standard either for the leukocytosis

or the leukopenia. The white blood picture seems to be subject to so many influences, mechanical and others, that only extreme variations can be regarded as significant if at all. "In these days of relativity," they remark in conclusion, "the leukocyte findings can be considered only in connection with all the other possible data."

Difference in Tension of the Two Eyes.—Marx had occasion to measure the intra-ocular pressure of large numbers of healthy eyes, and was struck by the difference in the tension of the two eyes in many persons. He noted also that the tension was highest in the left eye as a rule. He discusses the reason for this, both in righthanded and lefthanded persons. In 41 cases of primary glaucoma, the left eye was affected first in 16, the right in 17, and both together in 4. Embolism in the retinal arteries occurs more frequently in the right than in the left eye. These two paradoxic facts show that other factors besides the primary tension are involved.

Exostoses on Os Calcis.—Tilanus describes a few cases in which the pain and discomfort from the "calcaneum spur" were cured by an insole and recess in the shoe, relieving the spur from pressure. In some of the cases the cause of the discomfort was first revealed by the roentgen rays. In several cases he removed the exostosis.

Intracardiac Injection of Epinephrin.—Exalto relates that an infant aged 6 months collapsed during general ethyl chlorid and ether anesthesia while an extensive angioma on the forearm was being cauterized. Artificial respiration and massage of the heart for four minutes failed to restore the breathing or heart action. The child was livid, the intensely dilated pupils did not react to light, and dejecta escaped from the sphincters. As a last resort, he injected 0.7 c.c. of a 1:1,000 solution of epinephrin directly into the heart, introducing the needle in the fourth interspace, close to the sternum. He turned to lay the needle aside and when he looked at the child again, the livid color had given place to the natural tint, and in a few seconds the heart began to beat forcibly, the pupils contracted, and respiration became regular. He reviews the cases on record of resuscitation after intracardiac injection of epinephrin. When the heart had been arrested for ten or fifteen minutes, the damage had been irreparable and although the subject was revived, the resuscitation was only transient. Six minutes seem to be the longest interval that allows of recuperation; two minutes was the shortest in which the injection was made. The dangers of the procedure are the possibility of injuring the internal mammary artery or a coronary artery and the pleura. In Esch's case the patient was resuscitated by the injection but succumbed seven hours later to the effects of the pneumothorax which had been induced; it is easy to avoid this. It seems best to inject the drug directly into the ventricle. The aspiration of blood shows when the ventricle is reached; it was at a depth of 2 cm. in this infant; in adults the depth is about 4 or 4.5 cm. In the permanently successful cases, epinephrin had always been used.

The Fight Against Tuberculosis.—Among the seven measures which Sanders considers indispensable is that the sputum of elderly persons with chronic bronchitis should be rendered harmless as if certain that it contained tubercle bacilli, which it often does. Other measures are the optional segregation of bacilli spreaders, the creation of sanatoriums convenient to the cities, compulsory notification even of the suspects, and provision of school lunches.

Hospitalstidende, Copenhagen

66: 153-168 (Feb. 21) 1923

*Abortive Treatment of Syphilis. H. Boas.—p. 153.

Abortive Treatment of Syphilis.—Boas classifies, according to the treatment applied, several hundred cases of incipient syphilitic infections given abortive treatment with arsphenamin alone or with mercury. All have been under supervision since for from two to eleven years. His data prove the incorrectness of the assumption that the disease can be considered cured when two years have elapsed without serologic or clinical manifestations of the infection. He has witnessed recurrence of symptoms after a free interval of seven years. The only certain sign that the disease is cured is reinfection, with a typical primary lesion. This occurred in twelve of his patients; eight had been treated with a total of 1 gm. of arsphenamin and fifty mercurial inunctions. The interval before the reinfection ranged from nine months to seven years. The fact that the spinal fluid is apparently normal after the abortive treatment does not exclude neurosyphilis later. A later preventive course of mercurial treatment seemed to reduce slightly the proportion of recurrences, but the number is too small to be decisive. His final conclusion is that the experience to date in all countries is in favor of as vigorous treatment as possible, begun as early as possible, with arsphenamin or silversalvarsan supplemented by mercurial treatment. Neo-arsphenamin did not prove so effective in abortive treatment in his experience, but this may have been due to inadequate doses.

Hygiea, Stockholm

85: 33-64 (Jan. 31) 1923

*Pulmonary Edema After Thoracocentesis. S. H. Lindblom.—p. 36.
*Case of Spirochetal Jaundice in Sweden. H. Lapidus and A. Flaum. —p. 40.
*Queckenstedt's Sign of Compression of Spinal Cord. E. Sahlgren.—p. 53.

Pulmonary Edema After Thoracocentesis. — Lindblom released about 2 liters of effusion from the right pleura in the young man. He had been confined to bed for several months with pericarditis. The pericarditic effusion had been gradually resorbed. The thoracocentesis had been done in the home and two and a half hours later emphysema and pulmonary edema developed. Lindblom had no apparatus for artificial pneumothorax and the emergency called for quick work. He therefore plunged an ordinary cannula into the needle hole, and, after a few drops of fluid had escaped, air streamed into the pleura. When the patient coughed, he shut off the air with his finger on the cannula, as an improvised valve. The patient was given injections of camphor and morphin, and the cough was arrested at once. In an hour Lindblom withdrew the cannula and injected with a syringe more air, to induce a little overpressure. A tight bandage was applied to the chest, with a pad to press on the needle hole. The coughing after the thoracocentesis had expelled the air and the negative pressure in the pleura exaggerated the cough, a vicious circle which entailed pulmonary edema, or it may have followed at once on the change in pressure after the thoracocentesis. Treatment should aim to restore the previous pressure conditions in the chest. With heart disease, extreme caution is necessary with thoracocentesis; it might be better to release only a little fluid at a time. In this case the thoracocentesis had been done very cautiously, taking nearly an hour for it.

Spirochetal Jaundice in Sweden. — Lapidus and Flaum found *Spirochaeta icterohaemorrhagiae* in a case of Weil's disease at Lund. It was the first time this spirochete has been discovered in Sweden. It was not isolated directly, but only from the guinea-pigs inoculated with the urine, the animals all developing typical spirochetal jaundice.

Sign Revealing Compression of the Spinal Cord.—Sahlgren gives the details of six cases of tumors or inflammatory processes compressing the spinal cord in which the Queckenstedt sign was pronounced, and afforded valuable information. In some of the cases it was the only diagnostic sign available. The patient reclines for the lumbar puncture. Then the veins in the neck are compressed on one or both sides. In normal conditions the spinal fluid shows an abrupt rise in pressure as this is done, but with a tumor or other process compressing the spinal cord and obstructing the passage there is no or very slight and sluggish rise in the pressure. This sign occurs very early. Long before there is actual compression of the cord, the swelling of the tissues closes the lumen of the spinal canal more or less completely, and the Queckenstedt sign is positive.

Ugeskrift for Læger, Copenhagen

85: 161-184 (March 8) 1923

Epidemic Meningitis in Greenland, 1920. F. Wirring.—p. 161.
Viscera-Skin Zones of Anemia. T. B. Wernøe.—p. 166.
Intestinal Infection as Cause of Diabetes. O. M. Henriques.—p. 171.

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THE DIAGNOSIS AND TREATMENT OF STONE IN THE URETER*

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The high plane of efficiency that has been achieved in the treatment of stone in the ureter is directly due to the splendid developments in the field of roentgenology, the perfection of urologic diagnostic instruments and the results derived from the combination of these two factors. With the improved technic in roentgen-ray examinations, recently fortified by the new Potter diaphragm, stones in the ureter are being more and more frequently demonstrated. As for the perfection of the various types of urologic instruments, this scarcely needs comment at this time.

The treatment of stone in the ureter has passed through three more or less arbitrary periods. The first period began about the time the use of the roentgen rays was introduced as a diagnostic measure. Many shadows were found that were wrongly interpreted, and it is unpleasant to record that as a result patients were subjected to a needless open operation which failed to show the presence of a stone.

The second period dates from the introduction of the shadowgraph catheter, by means of which many of the shadows hitherto misinterpreted were proved to be of extra-urinary origin; that is, a free interval was demonstrated between the shadowgraph catheter and the shadow under suspicion (Fig. 1). It goes without saying that, following the introduction of this diagnostic aid, many unnecessary operations were avoided, though mention should be made here that at this time a diagnosis of stone in the ureter was synonymous with an open operation. Despite the fact that the shadowgraph catheter was a definite advance in excluding the various extra-ureteral shadow-producing bodies, there still remained a small number of cases which involved a doubt as to the exact location of the shadow-producing body. The possibility of error in this matter was the incentive to the introduction of stereoscopic roentgenograms. Braasch was one of the early advocates of the employment of ureterograms to overcome this difficulty.

In order to reduce the possibility of error still further, I described a new method for the localization of stone in the ureter, in which a double exposure is made on a single plate with a shift in the tube, a procedure that is of much aid in the technic of determining the origin of the suspicious shadow, and can be applied in the routine study of cases. I have found this process extremely valuable in certain doubtful cases. In a case in which a diagnosis of possible ureteral stone has been made, the shadowgraph catheter is passed in the usual way, and an exposure is taken with the catheter in place. A second exposure is made on the same plate without changing the position of the patient and without changing the position of the plate; but the position of the tube is changed, so that one obtains a double exposure on one plate. If the shadow under discussion and the shadowgraph catheter lie within the ureter, that is, in the same body plane, they will both move in the same direction and remain in contact with each other and will be seen in contact on the plate (Figs. 2 and 3). If the shadow and shadowgraph catheter do not lie in the same body plane, there results a definite interval between the shadowgraph catheter and the shadow.

Recently, Bransford Lewis suggested a new procedure in the diagnosis of ureteral stone. In cases in which he finds a questionable shadow apparently in contact with the shadowgraph catheter contained in the ureter, he withdraws the catheter and replaces it with a metal ureteral dilator, and makes another exposure of the same field. If the shadow is that of stone, it still shows in contact with the instrument within the ureter; but if it is a phlebolith, it is now seen to be distinctly separated from the ureter.

Although during the second period more accurate diagnoses were made, and the number of surgical errors were greatly reduced, the consensus of opinion was that the treatment of ureteral calculus was surgical.

Braasch, in a recent article, likewise emphasizes the necessity of conservatism in handling these cases. He says:

> The majority of stones will probably pass within three or four months following the first symptom. It may be stated, therefore, that it is usually inadvisable to operate for a stone either in the kidney or ureter until at least three months, and possibly six months, have elapsed since the onset of the symptoms. Immediate operation for stone following the first or second attack of pain without evidence of other complications is strongly to be condemned.

DIAGNOSIS

The various abdominal lesions producing pain of a colicky nature must be considered in a differential diagnosis. Perhaps the greatest source of error arises in cases in which the stones occur on the right side, since right-sided abdominal pain associated with nausea and vomiting is most frequently mistaken for an attack of appendicitis, many patients having had their appendixes removed without obtaining the desired relief. In this series, fifteen patients underwent appendectomy. Next in point of frequency is error in confusing stone in the ureter with lesions of the female pelvic organs. Because of abdominal pain, with or without bladder

* This article has been abbreviated in THE JOURNAL by the omission of four illustrations. These appear in the author's reprints.

distress, a hurried and incomplete pelvic examination is made, and tubes and ovaries are needlessly removed. Next in frequency, lesions of the gallbladder give rise to diagnostic errors, but this occurs only at long intervals. In four cases, the symptoms were attributed to various rectal conditions, but no relief resulted from:



Fig. 1.—Free interval between shadow and catheter.

dilatation of rectum (one case); fistula in ano (one case); hemorrhoidectomy (two cases).

While not attempting to discuss all of the various abdominal lesions for which stone in the ureter has been mistaken, the foregoing citations will suffice to emphasize the fact that no patient suffering from indefinite abdominal colic should be operated on until a careful urologic study has been made.

TABLE 1.—*Points of Radiation*

	Number of Cases		Number of Cases
Groin	10	Hip and penis	1
Penis	10	Hip and bladder	1
Penis and testes	3	Above pubes	2
Penis and bladder	2	Leg	2
Glans penis	1	Along sciatic nerve	1
Root of penis	1	Appendix	1
Penis and groin	1	Stomach	1
Bladder	9	Across transverse colon	1
Bladder and penis	2	Thigh	1
Bladder and perineum	1	Pelvis	1
Hip	4		

SYMPTOMS

In this series of 140 cases, pain was the most constant symptom, and in the largest number it was described as being of a colicky nature. In eighty-nine cases, the patients gave a history of typical renal colic; hence, it was evident that there was a lesion of the urinary tract. In these cases, the pain began in the back along the course of the ureter, passed downward and forward along the ureter and often radiated into the groin. In some instances, the pain did not radiate into the groin, and some rather unusual points as regards radiation were noted.

Table 1 presents the points of radiation in those cases with a typical history of renal colic, as well as in those lacking in this history.

Of the urinary symptoms, frequency headed the list, being present in seventy-two cases. Next in point of frequency was hematuria, noted in forty-five cases. Other urinary symptoms are presented in Table 2.

URINALYSIS

The value of urinalysis in cases of ureteral stone cannot be overemphasized. An ordinary specimen taken at random and examined but once may not yield much information, but in a large majority of suspected cases of stone in the ureter, if repeated careful examinations are made, one will be rewarded by finding an occasional red blood cell, some pus or perhaps both blood and pus in the urine. The presence of a few blood and

TABLE 2.—*Urinary Symptoms*

	Number of Cases		Number of Cases
Frequency	72	Tenesmus	12
Hematuria	45	Difficulty	11
Nocturia	38	Retention	11
Burning	32	Dribbling	4
Dysuria	22	Incontinence	3
Urgency	17		

pus cells is not always pathognomonic of stone in the ureter. Nevertheless, in a given case of indefinite pain in which a careful urinary examination shows the presence of some of these elements, this should be of sufficient moment to direct attention to the possibility of a lesion in the urinary tract; and, furthermore, these patients should be given the benefit of a careful roentgenographic examination before operation. One cannot but feel that if careful examinations are made of all specimens passed by patients during an attack of severe abdominal colic, the amount of evidence obtained will call attention to the urinary tract, and hence the patient



Fig. 2.—Stone shadow in same relation to catheter before and after shifting of roentgen-ray tube.

will be given a careful urologic examination. Records are available in 110 cases as shown in Table 3.

Bacteriologic studies, for various reasons, could not be carried out in all cases, since some of the patients were seen but once, either in their homes, in other hospitals or in the country. The data are summarized in Table 4.

The point which should be emphasized here is that careful repeated urinary examinations yield information of great help in localizing the origin of the patient's symptoms, and, as previously stated, may be the means of preventing an unnecessary operation.

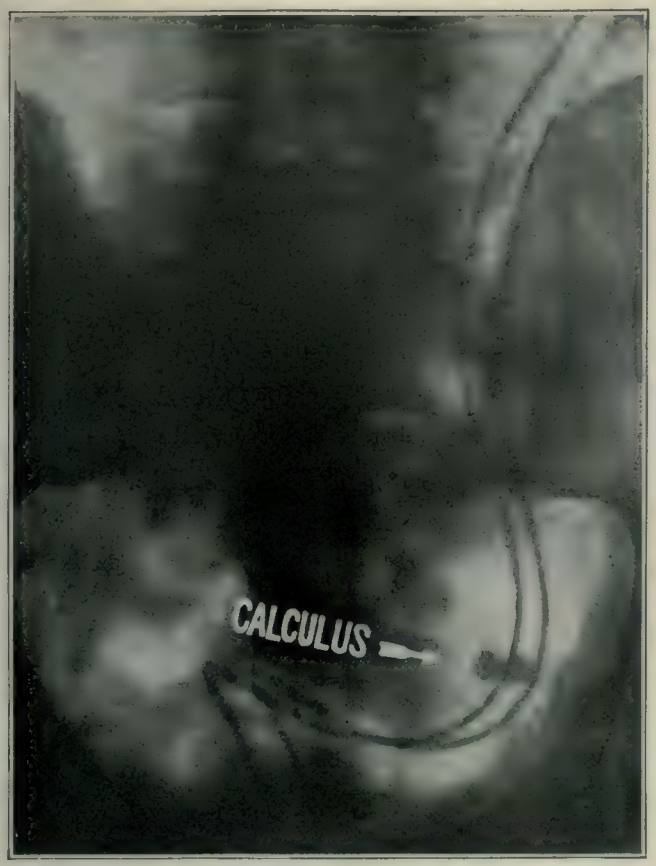


Fig. 3.—Calculus in right ureter: a double exposure on a single plate with shift in tube; stone shadow in contact with catheter in both exposures.

GASTRO-INTESTINAL SYMPTOMS

Reflex nausea and vomiting are the accompanying symptoms of calculus disease of the kidney and ureter, and also of the gallbladder, and it is rare not to find one

TABLE 3.—*Findings in Urinalysis*

	Number of Cases		Number of Cases
Pus cells only	48	Negative urines	7
Red blood cells only	9	Casts only	1
Pus and red blood cells	45		

TABLE 4.—*Results of Bacteriologic Studies*

Organisms Found	Number of Cases	Organisms Found	Number of Cases
Sterile	45	Staphylococci and diphtheroids	1
Staphylococci	15	Streptococci	1
Bacteria (in smears)	20	Streptococci and staphylococci	1
Colon bacilli	11	Staphylococci and Bacillus pyocyaneus	1
Colon bacilli and staphylococci	3		

of these symptoms or both present during a severe attack. This statement is borne out by the experience in this series. Table 5 shows the number of cases presenting gastro-intestinal symptoms.

ROENTGEN-RAY DATA

At times, the question asked by the patient concerns the possible source of error to which the roentgen ray may be subject in the diagnosis of stone in the ureter. The percentage of error, as given by various authors, is variable. Geraghty and Hinman state that the roentgen rays failed to show the presence of stone in 15 per cent. of their cases.

In this series, positive evidence of stone was obtained in 89.28 per cent. of the cases. In several instances, the plates were reported negative at first, and subsequently small stones were passed. This led to a careful rereading of the plates, and we were then rewarded by being able to see shadows that corresponded in size and shape with the stones passed by the patients. This happened in cases in which a plain plate was made, and also in plates from cases in which a shadowgraph catheter had previously been passed. The most frequent source of error was our failure to recognize small shadows lying over bony structures.

TABLE 5.—*Gastro-Intestinal Symptoms*

	Number of Cases		Number of Cases
Nausea and vomiting	51	Constipation	18
Nausea	5	Diarrhea	2
Vomiting	9		

The roentgen-ray exposure should include both kidneys and both ureters, in order that stones in the kidneys be not overlooked (Figs. 4 and 5).

The presence of calculi in other organs of the genito-urinary tract were noted in fifteen cases. The calculi were distributed thus: the kidney in nine cases; the prostate in four, and the bladder in two.

TREATMENT

Once the diagnosis has been made, and the question of treatment is under consideration, it is well to bear



Fig. 4.—Stone in right kidney with impaction of sand in right ureter; small calculus in left ureter.

in mind the fact that a large number of these calculi will pass unaided. This is a very important fact to remember, since the patient should be given the benefit of this knowledge.

The number of cases in which stones pass unaided is variable. In my own series, 26.428 per cent. of the patients passed the calculus unaided. Judd states that

12 per cent. of a group of about 400 persons responded in the affirmative when questioned with regard to passing of stones.

NONOPERATIVE TREATMENT

The removal of calculi from the ureter by means other than an open operation has been advocated for many years both in this country and abroad.

1. *Simple Ureteral Catheterization.*—Of the various methods at our disposal, ureteral catheterization is the simplest. The mere passage of an ureteral catheter has been followed at times by the passage of calculi whose presence had not been suspected or demonstrated before ureteral catheterization was carried out for diagnostic purposes.

2. *Ureteral Catheterization and Injections of Various Drugs.*—The use of local anesthesia in the ureter to relieve pain, to overcome spasm and to aid in passing the catheter above the stone has been in vogue for a great many years. Bugbee, Nitze, Casper, Bevan and Kretschmer, Crowell, Bransford Lewis, Geraghty, Young and many others have advocated it in published

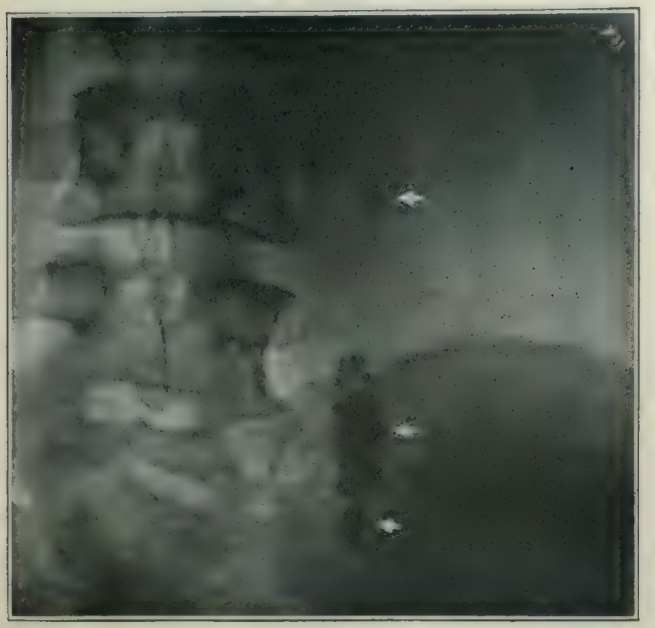


Fig. 5.—Large collection of stones left in ureter after nephrectomy for renal calculus.

articles. Nevertheless, as far as I know, it has not been practiced as a routine procedure except by Crowell, who has recently reported that he was able to remove the stone in seventy-six of seventy-eight consecutive cases of ureteral calculi, without a fatality.

Injections of various oily solutions, such as olive oil, sweet almond oil and liquid petrolatum, have been advocated, to aid in the passage of the stone. These may be injected either with or without local anesthesia. In order to obtain relaxation of the ureter and thereby facilitate the passage of the stone, intraureteral injections of papaverin have been advised, but our experience shows that this preparation has not yielded the results claimed for it. There has always been a question in my mind as to how much benefit should be attributed to the various drugs employed, and how much credit should be given to the passage of the catheter, as a result of which the stone no doubt is quite frequently dislodged. Passage of the catheter may also produce a certain amount of dilatation of the ureter, thus facilitating the passage of the stone.

3. *Fulguration.*—The use of the frequency spark to aid in removing stones from the ureter has been advocated by Buerger, Furniss and Young.

4. *Operative Procedures Through the Cystoscope.*—Various operative procedures have been advised. In instances in which the ureteral orifice is small, so that the stone cannot enter the bladder, it may be cut with either the knife or scissors through the operating cystoscope. Dilatation may be carried out with a Garceau catheter or with a Bransford Lewis ureteral dilator. By these procedures, the lower ureter is enlarged to allow free passage of the stone into the bladder. On a number of occasions, I have succeeded in grasping the stone with the Buerger forceps when it seemed to be caught within the ureteral orifice itself.

ECONOMIC ADVANTAGES

In cases that can be managed in the manner outlined above, there are these definite advantages:

1. The patient avoids a major operation and the incident anesthesia.

2. Even though stricture of the ureter following ureterotomy is rare, it should be reckoned with, and this applies equally well to stricture with destruction of the kidney, which, though rare, can and does occur.

3. The procedure does not necessitate a stay in the hospital, or if the patient does remain in the hospital, his stay is generally not longer than twelve hours. Furthermore, if this procedure is carried out, a larger number of hospital beds are available for other cases, and last, but not least, the patient loses but little time from his work.

INDICATIONS FOR SURGICAL INTERVENTION

The indications for an open operation are variable, but in general can be clearly outlined in practically every case.

Size of the Stone.—It is obvious that, in cases in which there are large stones, which cannot pass through the ureter, the patient should be operated on (Fig. 6). This statement should not stand unqualified, since patients often bring in large stones which, from their size as shown by the roentgen ray, had appeared impossible of passage through the intramural part of the ureter.

Number of Stones.—When stones in the ureter are multiple, it is generally considered better judgment to perform an open operation, although I have seen one instance in which a patient had three large stones on one side and two large ones on the other, and passed them unaided.

Location of Stone.—In stones of the lower ureter, nonoperative measures should be tried repeatedly before open operation is resorted to, because there is a better chance for passage when stones are in the lower ureter than when they are in the upper ureter.

Impacted Stones.—If, according to the history, the stone has remained in one position, and this can be verified by roentgen rays, the possibility of success with nonoperative measures is not very great; for not infrequently at operation the stone is found firmly imbedded in the ureter, and at times it may be situated in a diverticulum.

Failure of Careful Nonoperative Treatment.—To determine what is responsible for the failure of this treatment is difficult, but its success depends in part on the patient's willingness to cooperate, as well as the surgeon's desire to carry out the treatment. Not infrequently the patient is given an injection of oil, and,

if the stone is not passed immediately, he is told that the condition will never respond to treatment and an operation must be performed. Again, some are willing to carry out the treatment a certain number of times, and if this fails, operation is advised.

Supression of Urine.—This condition calls for immediate surgical operation, especially if one kidney has been previously removed, or if it is the seat of extensive destruction due to calculous disease, and the stone is in the opposite ureter.

Acute Pyelonephritis.—Repeated attacks of acute pyelonephritis are of sufficient moment to warrant immediate operation, especially if the attack follows each instrumental manipulation.

Reaction to Treatment.—Certain patients, for one reason or another, do not tolerate instrumentation, so that following each treatment they suffer from severe pain, chills and fever, and sometimes bleeding and severe bladder distress. In this group of cases, the cure is worse than the disease, and it seems wise to lose no time with instrumental treatment, but to operate as soon as possible (Fig. 7).

RESULTS

In presenting this series of cases, it was the purpose to study and compare the results obtained by means of the various forms of nonoperative treatment. Although much has been written on the subject of the treatment of stone in the ureter, publications dealing with a critical review of the various forms of treatment, carried out in a large or small series of cases, are rather rare. To go over the records and tabulate the results of treatment was a primary object of this paper.

TABLE 6.—*Results in Author's Cases*

	Number of Cases	Percentages
Calculi passed without treatment	37	26.428
Calculi passed after manipulation and oil injections	46	32.857
Operations	16	11.428
Stopped treatment	13	9.285
No treatment instituted	26	18.571
Under treatment	2	1.428

In Table 6, the number of cases treated and the results, as well as the percentages, are given.

From a perusal of the table, it will be seen that 26.428 per cent. of these patients passed the stones without the aid of surgery of any sort, a figure slightly higher than figures given by Judd.

In forty-six cases, or 32.857 per cent., the stones were passed following various types of nonoperative treatment, which consisted in thirty-five cases of the passage of ureteral catheters and injections of sterile oil into the ureter, and, in the eleven remaining cases, of simple passage of the ureteral catheter, slitting of the ureteral orifice and injection of papaverin. In some of these cases, local anesthesia of the ureter preceded the oil injections.

Open operations were performed in sixteen cases, or 11.510 per cent. Five of these cases had previously been subjected to nonoperative treatment, as described above. This treatment was discontinued after prolonged use, because of the onset of acute pyelonephritis, or because the patients did not tolerate instrumentation; and open operation was subsequently carried out. In the eleven remaining cases, operation was instituted without previous cystoscopic treatment.

Thirteen patients, or 9.285 per cent., stopped treatment for various reasons, and the result could not be determined. It is reasonable to assume that a certain number may have eventually passed the calculus.

No treatment was instituted in twenty-six cases, or 18.571 per cent. Some of these patients were seen in consultation; some lived out of town, and some refused treatment.

Two cases are still under treatment.

122 South Michigan Avenue.

THE DIAGNOSIS OF SARCOMA IN BONE

REPORT OF CASE

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NEW YORK

The vast amount of information revealed to us by means of the roentgen ray in the diagnosis of pathologic conditions of bone still leaves us at the threshold of a proper understanding of this field of medicine.

A confused terminology, incomplete clinical reports, too few histologic examinations and single roentgenograms, when a series should have been made, are what one finds in a fairly voluminous literature.

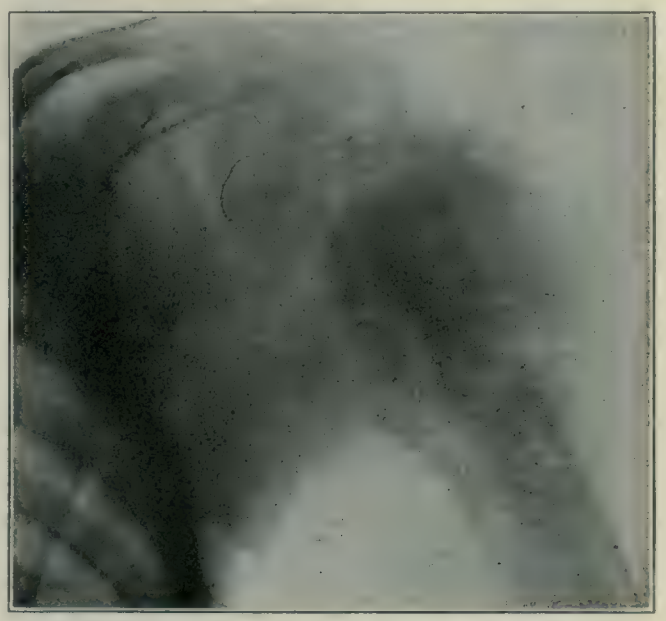


Fig. 1.—The growth is limited to the diaphysis, and it will be noted that throughout the series of roentgenograms the epiphysis remains uninvaded by the tumor; the cortex is already broken, and there is new formed periosteal bone. Cartilage, having neither blood nor lymph vessels, is not attacked by neoplastic processes. Undeveloped epiphyses, such as occur in the young, are therefore not invaded.

Many attempts have been made to correlate these bone lesions pathologically, from their roentgenographic appearance. Such classification is peculiarly difficult, and as yet no satisfactory grouping has been made. Much of the difficulty is a consequence of our attempt to translate at once the roentgenographic plate into terms of pathology; in other words, to seek on the plate the markings that spell sarcoma or osteomyelitis.

I believe there never will be found any hard and fast lines or infallible marks of differentiation in the roentgenographic diagnosis of bone lesions, on account of the nature of the medium in which the pathologic process occurs. Bone has a certain definite way of responding to irritation, it makes no difference whether the provocative be of a malignant or of a benign nature; bone can only do what bone can do. If periostium is

irritated from a benign or a malignant cause, it will form new bone; if it is irritated from an inflammatory process or from a traumatic cause, it will form new bone.

The presence of the new bone itself is not indicative of the nature of the process stimulating its production.



Fig. 2.—Advance in growth of tumor, and the disposition of new formed bone to be laid down in spicules at right angles to the axis of the bone.

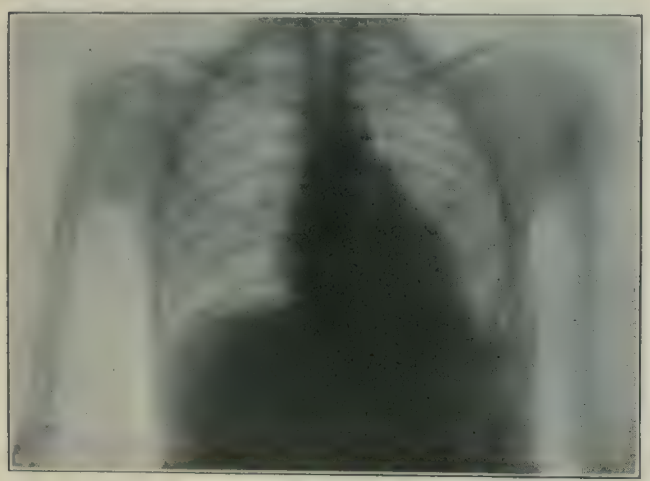


Fig. 3.—Appearance of centrifugal growth and metastasis in the mediastinum, Oct. 16, 1921. The medullary canal was nearly completely involved in the tumor. The epiphysis was still not invaded by the growth. There was noticeable relative shortening of the humerus on the affected side as compared with that on the normal side, even though the epiphysis was apparently not involved, indicating that its growth controlling function had been intercepted.

The distribution and the manner in which the new bone is laid down will, however, often suggest the nature of the pathologic process.

There are various other reactions in bone that manifest themselves in the roentgenogram. These are atrophy, sequestrum formation, cloaca formation, absorption areas and cortical thickening, each one of them of considerable aid in establishing the diagnosis.

In order to correlate the roentgenologic finding with the pathologic process, we must read the roentgenogram by an intelligent interpretation of the various signs of bone reaction as portrayed therein.

Of the reactions mentioned, all are late manifestations except new bone formation; which is also the most constant of these pathologic changes.

It may be stated that generally when new bone is developed as a result of an inflammatory process it is laid down parallel to the axis of the bone, and when developed as a result of neoplastic irritation, it is laid down in plaques or spicules at right angles to the axis of the bone.

In medullary neoplasm, before there is any evidence of new bone formation, the bone cortex will be found fissured, as though from some powerful centrifugal force. This is a result of extension of the growth along the haversian canals, producing the appearance of a bomb at the moment of bursting.

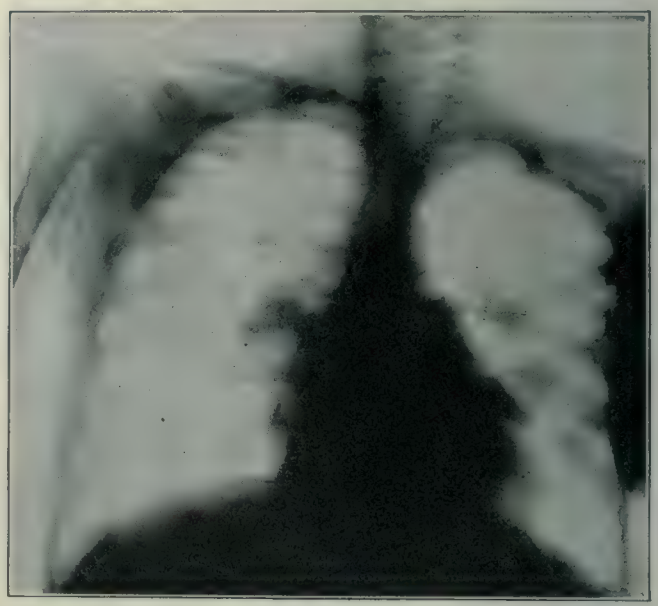


Fig. 4.—Further growth of mediastinal metastases, October 22.

Figure 1 shows this exceedingly well. This centrifugal growth is manifest in the entire series of roentgenograms.

In examining a roentgenogram of bone sarcoma, we must realize that we are not looking at the roentgenogram of the tumor but of a bone struggling in its way to protect itself from the invasion of disease, and that the shadows that we see must be interpreted much in the way that the roentgenologist interprets the roentgenogram of a bismuth meal. From the shadows that he sees, which are of a material entirely foreign, he interprets the nature of the disease; and so I believe that, until we examine our roentgenograms from this standpoint, we are not going to make definite advances in roentgen-ray diagnosis.

In very early lesions of bone, the roentgen ray is inevitably going to fail us in diagnosis (fractures and dislocation do not enter into this discussion), for the reason that the changes in bone that can be shown by the roentgen ray take a definite time to occur. Acute osteomyelitis or acute epiphysitis shows no definite lesion

until after one week at least, and neoplasm in bone after a much longer time.

I have had the opportunity to observe the course of a rapidly growing and fatal medullary sarcoma of the humerus in a child.

REPORT OF CASE

A girl, aged 7 years, whose father was 34 years old, living and in good health, whose mother died at the age of 29 years, following burns, but was healthy preceding this accident, and who had two brothers and one sister, living and well, in July, 1921, was struck on the shoulder while playing. She did not complain of any pain at that time, but a swelling was noticed at the upper third of the humerus. July 19, she was brought to the Hospital for Joint Diseases. The swelling was readily detected. It was fusiform in outline, occupying the entire circumference of the humerus in its upper third, but not including the epiphysis.

A roentgenogram was taken at once. The upper third of the humerus was found to be enlarged. The cortex was

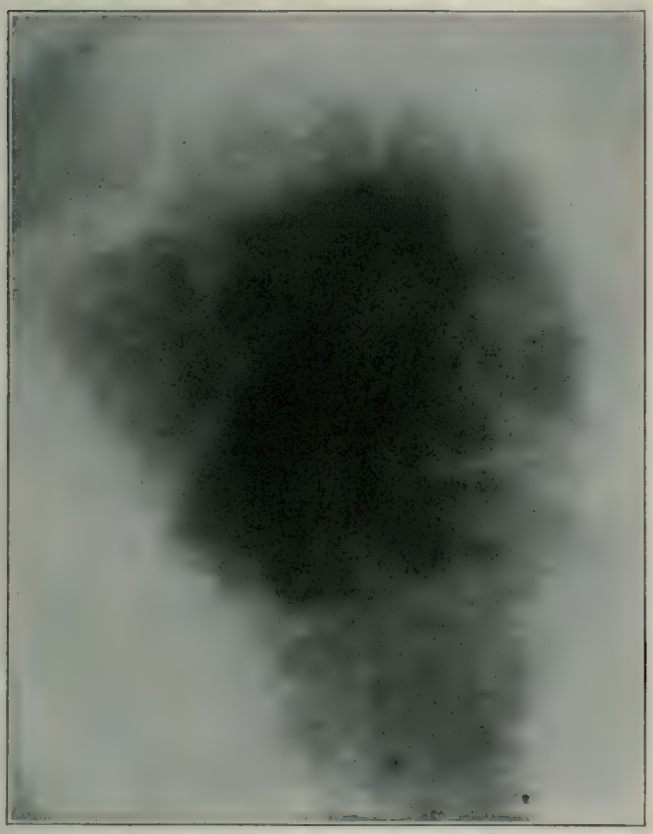


Fig. 5.—Great mass of centrifugal bone formation, November 18. The epiphysis apparently was still uninvolved, but the entire diaphysis is involved. It will be noticed that the new bone is arranged in spicules laid at right angles to the shaft of the humerus. This is typical of neoplastic bone formation. It is asserted that in round and spindle cell sarcoma, the destructive process is so rapid that new bone formation cannot occur. This statement seems not to be universally true, at least not in the later stages of the growth.

fissured. The epiphysis was not involved, and there was no new bone formation or periosteal thickening. We felt reasonably certain that we were dealing with a malignant growth of considerable virulence, probably sarcoma of the small round cell type.

It is our routine to place all these patients under a rigorous antisyphilitic treatment, regardless of the Wassermann reaction, which in this case was negative. In bone and joint cases, we do not use arsphenamin, as we find it less effective than mercury. In using mercury, we attempt to force it speedily to a point of saturation (salivation), then wait a couple of weeks, and salivate a second time.

If the clinical symptoms are markedly alleviated, we continue with mercury. If the mercury has not affected the condition, we discontinue its use. That was done with this child.

August 17, the child was again examined by roentgen ray. The growth showed a rapid advance for one month. The

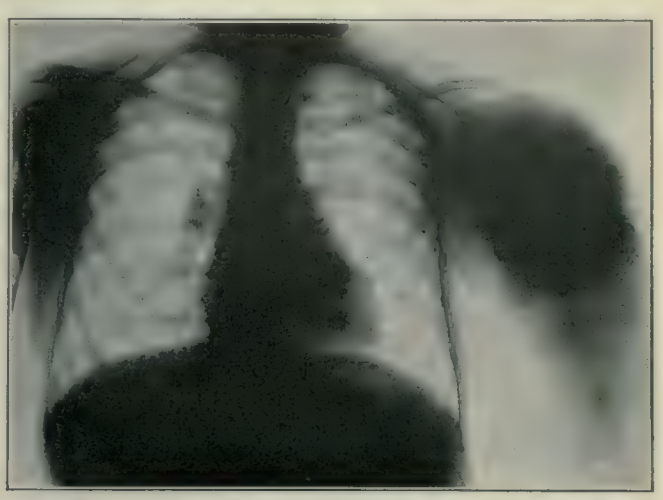


Fig. 6.—Advance of the thoracic metastasis (Jan. 24, 1922). In this enormous growth, the epiphysis seems still able to resist the neoplastic invasion.



Fig. 7.—Appearance of growth toward the fatal termination.

question of amputation was considered, and the father was consulted. On being told of the extent of the deformity following amputation at the shoulder, he was definitely opposed to it.

Even at this time, we believed that the growth had advanced beyond the limits of operability.

The blood showed a secondary anemia throughout the course of the illness. The urine was normal. The child was then referred to Dr. H. B. Philips for roentgen-ray therapy. In the last two weeks of August, 1,000 mg. hours of radium was administered by cross fire through the upper humerus, and intensified roentgen-ray cross fire irradiation of the chest. The first two weeks of September, about 1,500 mg. hours was administered by cross fire through the upper humerus and the same roentgen-ray cross fire given the chest. During the month of October, the patient received interstitial irradiation.

October 11, four radium needles of 12.5 mg. each were inserted into different portions of the tumor for twenty-four hours. This was repeated at weekly intervals, so that in a month every portion of the tumor was irradiated, and a total of 5,000 mg. hours was given interstitially in the course of about five weeks.

As the chest metastases and the primary tumor progressed unfavorably notwithstanding this extremely heavy treatment, it was discontinued at this time.

The growth assumed enormous proportions, as will be seen from the photograph. The child suffered comparatively little. Death ensued, and necropsy was not permitted.



Fig. 8.—Appearance of growth, indicating its size.

COMMENT

This case is typical of rapidly growing bone sarcomas.

From the standpoint of malignancy, there is probably no neoplastic process more rapidly destructive. Metastases occur early, usually in the mediastinum. The roentgen ray and radium are of very questionable benefit. Our sole resort is amputation at the earliest moment.

35 West Eighty-First Street.

Relation of Hospital Personnel.—The purpose or function of an institution should determine not only the type but the relation and distribution of its personnel. Whatever may be the process or processes through which the result sought may ultimately be effected, it is desirable that a person seeking such result through an institution created for the attainment of that end should be as immediately as possible related to those whose discernment in the matter has been "sharpened to a point" through training and experience. The failure to appreciate the importance of such adjustments has been, and still is, one of the outstanding weaknesses of hospitals and dispensaries, owing mainly to an inadequacy of funds and, ipso facto, an insufficient and inefficient personnel.—A. W. Goodrich, *Hospital Social Service* **7**:170 (March) 1923.

CONGENITAL TOTAL HEMIHYPERTROPHY

REPORT OF CASE *

JAMES N. STANTON, M.D.
AND
LOUIS TUFT, M.D.
PITTSBURGH

Congenital total hemihypertrophy, characterized as the name implies, by symmetrical enlargement or hypertrophy of the whole side of the body, is one of the rarest anomalies known to medicine. Its rarity can be appreciated by the fact that, in a complete survey of the literature on this subject, but forty-one cases of true hemihypertrophy could be collected. An example of this curious anomaly of development came under our observation recently, and it is because of its rarity and interest that we wish to report it here, with a brief review of the literature.



Appearance of patient with hemihypertrophy.

REPORT OF CASE

History.—A. P., a white girl, aged 16, admitted to the service of Dr. Stanton at the Passavant Hospital, June 12, 1921, complained of a small tumor in the left breast which she had noticed for a month previously. In the course of a routine physical examination, it was noticed that the entire left side of the body was more developed than the right. This condition, the patient stated, had been present since birth and had caused her little inconvenience. Since the right leg was shorter than the left, she was forced to limp slightly. When younger, on account of the increased size of the left side of her tongue, she had had difficulty in talking, and especially in pronouncing "th's." As she grew older, this became less and less noticeable, until at present it is very slight. The right side of the body seemed to her to be the stronger side, and she seemed to be able to lift and carry things better with the right hand than with the left. Other members of the family verified the fact that this condition was congenital, and also stated that it was most marked in her tongue, often causing difficulty in swallowing and later in talking. This condition became greatly improved as the child grew older.

The delivery of the child had been perfectly normal, and the pregnancy uncomplicated. As a child, she had always been well, except for measles and whooping cough. She was alert mentally. She graduated from public school, and had finished two years of high school at the age of 16. At

* Read before the Pittsburgh Academy of Medicine, Feb. 6, 1923.

this time, she was employed as a stenographer. Her mother had died of tuberculosis. Her father was an alcoholic. She had four sisters and four brothers, all of average size. Nowhere in the family was there a history of a similar condition. When admitted to the hospital she felt perfectly well and, except for the lump in her breast, had no complaints. There was no menstrual irregularity.

Physical Examination.— The patient was well nourished, weighing 118 pounds (53.6 kg.), with a height of 5 feet and 5 inches. There was a distinct difference in size between the right and the left side of the body. Measurements were taken to verify this. Differences in size noted are given in the accompanying table. The left cheek was bigger than the right and the left half of the tongue distinctly larger than the right. The thyroid gland was slightly enlarged, probably of a juvenile type. The breasts were well developed, and the left contained a small, freely movable mass in its lower and inner quadrant. The pubic hair was feminine in type and the external genitals were well developed, there being no evidence of sexual dystrophy, suggestive of pituitary disturbance. To compensate for the increased length of the lower extremity, the right shoulder was drooped and scoliosis was present. Aside from these findings, the examination was negative. The accompanying illustration shows the character of this anomaly.

Laboratory findings in this case were negative. Roentgenograms were taken of the entire bony skeleton, revealing the fact that the enlargement was present not only in the soft structure but also in the bones of the left half of the body. The pituitary fossa was found to be normal.

Operation and Course.—The small tumor in the left breast was removed without difficulty. It proved to be a fibroadenoma. The patient made an uninterrupted recovery, and left the hospital, June 24.

Variation in Measurements of Right and Left Sides

Part Measured	Right Inches	Left Inches	Difference Inches
Head, circumference	10½	11½	1
Width of orbit	2¼	2½	¼
Width across shoulders	8½	9	½
Arm length	12½	13	½
Forearm length	8¾	9	¼
Arm girth	7¼	8¼	1
Forearm girth	7⅞	8½	½
Wrist girth	6	6¼	¼
Middle finger, length	3⅞	4¼	⅜
Chest, breadth	5½	6½	1
Abdomen, circumference	12	15	3
Abdomen, umbilicus to anterosuperior spine	5	6	1
Pelvis, circumference	15	18	3
Lower external anterosuperior spine to internal	32	34	2
Thigh, girth	17	19	2
Leg, girth	12⅞	14	1⅛
Foot, girth	9¾	10	¼
Leg, length	14¼	15¼	1
Tip of big toe to heel	10¼	10¾	½

REVIEW OF LITERATURE

Probably the earliest case of true hemihypertrophy on record was reported by Desvousges [1] in 1856. Since then, forty-one others have been reported by various authors, only seven of which were found recorded in American literature. Various names have been used to describe it: unilateral macrosomia, hemimacrosomia and unilateral gigantism, but congenital total hemihypertrophy seems to be the most popular term. The exact nature of the factors causing this curious developmental anomaly is as yet obscure. That it is congenital and not hereditary, most authors agree. The family history in these cases is usually satisfactory, especially as to history of deformities. Various theories have been advanced as to its origin. Some suggest that the condition resembles acromegaly, but no evidence of pituitary disease has been found in any of the reported cases. Mummery [2] believes it to be due to one half of the body growing faster than the other half, and that this unequal growth is progressive. This has not been the experience of other authors, who found that the hypertrophy was usually stationary, any increase being very inappreciable. Thus Ahlfeld,[3] Wagner [4] and Moebius [5] reported a case which they separately observed over a period of eleven years, and found no difference in the measurements of the two sides of the body. That it is truly a hypertrophy and not a hemiatrophy can be readily seen by observation, for the tissues on the unaffected side are well developed and of normal size and structure.

Other theories, attributing it to diseases of the central nervous system, to trophic influences or to enlargement of the blood vessels on the affected side, with corresponding increase in blood supply and overnutrition on this side, have also been advanced, but these theories have few supporters. Probably the most logical explanation of its origin is that it consists in an erroneous deviation from the normal course of development in the embryonic period (Gesell [6]), probably in the cleavage stage.

Pathologically, the condition consists of a unilateral hypertrophy of the soft structure vessels and bones, and occasionally of the paired organs. Necropsy in several cases has shown that such paired organs as the kidneys, brain or testes are enlarged correspondingly on the affected side; also that the larger blood vessels, such as the carotid and subclavian, show enlargement on the affected side. In one case (Gordinier [7]) which came to necropsy, examination of the pituitary body and sella showed that these organs were normal.

Hornstein [8] examined the tissues microscopically in two cases and found that the hypertrophy was limited to the soft parts, i. e., the subcutaneous tissues, muscles and, to a less extent, the skin; and that the thickening of the bones, especially the epiphyses, was chiefly due to an increase in interstitial connective tissue. He also found an increase tissue in the peripheral nerves.

The characteristics of this curious anomaly are well brought out in the case reported above. The case differs a little from the average in that it occurred in a girl and the left side was affected. The majority of cases reported occurred in males, and the right side was usually affected. As in our case, aside from a slight limp in walking, the condition usually occasioned little inconvenience. The patients were quite healthy and of good intelligence usually, although in several cases the anomaly was associated with definite mental defect (Gesell's case [6]).

A very common finding in the reported cases is the presence of nevi in the skin. Simple capillary nevi are the most common type, but at times larger telangiectases are present. These nevi are not limited to the affected side alone but are generalized over the body, although the right side is most often affected. These nevi become more marked when the child cries; at times, instead of definite nevi being present, large areas of the skin

1. Desvousges: Bull. Soc. anat. de Paris **31**: 510, 1856.

2. Mummery, P. L.: A Case of Hemihypertrophy, Proc. Roy. Soc. Med., London, Clinical Lecture 61 **1**, 1907-1908.

3. Ahlfeld, T.: Die Missbildungen des Menschen, Leipzig, F. W. Grunow, 1880-1882.

4. Wagner, P.: Zur Casuistik des angeborenen und erworbenen Riesenwuchs, Ztschr. f. Chir. **26**: 281, 1887.

5. Moebius: Ueber Hemihypertrophie, München med. Wchnschr. **37**: 751, 1890.

6. Gesell, Arnold: Hemihypertrophy and Mental Defect, Arch. Neurol. & Psychiat. **8**: 400 (Oct.) 1921.

7. Gordinier, H. C.: A Case of Unilateral Hypertrophy of the Whole Left Side, with Necropsy, Albany M. Ann. **39**: 47 (Feb.) 1918.

8. Hornstein, S.: Ein Fall von halbseitigen Riesenwuchs, Virchows Arch. f. path. Anat. **133**: 440, 1893.

would become congested when the child cried, as in a case reported by Finlayson.[9]

In some of the cases, other peculiarities not already noted have been observed; for example, excessive secretion of the sebaceous and sweat glands, a thicker growth of hair, more rapid growth of nails, higher temperature by a degree or two and earlier eruption of teeth, all on the affected side. In a few cases, enlargement of fingers and toes on the otherwise normal side have been noted. No abnormality in position of any of the viscera has ever been detected in any of the cases.

The diagnosis of this condition offers no difficulty. Observation is usually sufficient to distinguish it from any other condition which might in any way resemble it. From hemiatrophy, it is readily differentiated by the fact that the unaffected side shows no signs of atrophy but is normally formed in every respect. Acromegaly should offer no difficulty either, since it is bilateral, confined chiefly to the hands, face and feet, and is not congenital. Often, too, changes in the sella turcica and pituitary can be found by the roentgen ray. This does not occur in hemihypertrophy.

The prognosis in these cases is always good. The condition is usually nonprogressive; hence, patients or relatives can be told that the deformity is unlikely to become worse and that it will not seriously interfere with the child's future. The limp may be overcome by means of an extension shoe. Except for the correction of this deformity, no treatment is required.

9. Finlayson, J.: On the Case of a Child Affected with Congenital Unilateral Hypertrophy and Patches of Cutaneous Congestion, Glasgow M. J., Series 4, **22**: 327, 1884.

IMPORTANCE OF PHRENIC SHOULDER PAIN IN DISEASE INVOLVING THE DIAPHRAGM *

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Pain produced by irritation of the diaphragm is never localized within the diaphragm, but is always referred to some distant portion of the body. When one considers the frequency with which disease occurs in the region of the diaphragm, the importance of a familiarity with the locations of the referred pain from this organ is quite apparent.

ANATOMY AND PHYSIOLOGY OF THE PHRENIC NERVE

The phrenic nerve has its origin from the third, fourth and fifth cervical nerve roots. The largest number of its fibers arise from the fourth cervical root. There has been some doubt and some difference of opinion in regard to the distribution of the phrenic nerve. It is known to have both motor and sensory fibers. Ferguson,[1] in 1891, proved experimentally that the phrenic nerve contains sensory fibers, but the extent of its innervation has not been accurately determined. It has, however, been fairly well established that the nerve supplies sensory branches to both the pleural and the peritoneal surfaces of the diaphragm except at the rim, where both surfaces to some extent receive sensation from the sixth to the twelfth intercostal nerves. Experimental and clinical observations have very definitely proved that the pleural pericardium is supplied with sensation by the phrenic nerve. Sensory fibers also reach as far as the suprarenal bodies. The coronary ligament of the liver, and possibly the liver itself, is also supplied by this nerve. It communicates with the diaphragmatic plexus, which in turn communicates with the semilunar ganglions of the solar plexus.

The embryology of the diaphragm and phrenic nerve is of interest in this connection. Mall [2] has stated that, in its development, the whole diaphragm wanders from the head to the abdomen, passing by, as well as modifying, the structures and organs along the way. In the head region of the early embryo lies the anlage of the diaphragm, together with those of the heart and liver. In fact, the three embryonic body cavities, pericardial, pleural and peritoneal, arise from the embryonic head and neck region, and descend to their anatomic positions during development. The phrenic nerve, which arises in the cervical region, enters the diaphragmatic anlage and, as the organ descends, lengthens to give it innervation. A study of the development of the heart, liver, diaphragm, lungs and stomach explains the passage of the phrenic and vagus nerves through the thorax. With this in mind, the innervation of the pericardium, diaphragmatic pleura and peritoneum, liver and suprarenals by the phrenic nerve are quite well understood.

In a consideration of the physiology of the phrenic nerve and other nerves supplying the diaphragm, the general laws of the production and distribution of visceral pain, as outlined by Head,[3] have here direct practical application. Referred pain from the viscera has been summarized in these four statements:

1. It is often remote from the site of the irritation.
2. It follows lines on the skin of the spinal segmentation rather than the course of the peripheral nerves.
3. It is usually associated with cutaneous hyperesthesia and tenderness to pressure.
4. Often the pain fails to involve the whole segmental area of the skin, but finds expression in one or more points of maximal tenderness and spontaneous pain.

In 1911, Capps [4] of Chicago made an experimental study of the pain sense in the pleural membranes. This was an excellent piece of work and, if correct, clears up to some extent the innervation of the diaphragm. His observations were made in cases of pleurisy with effusion, by introducing a wire through a cannula into the pleural cavity and noting the location of the pain when various parts of the parietal, visceral and diaphragmatic pleura were irritated. He concluded that the visceral pleura is not endowed with pain sense. The parietal pleura is supplied by the intercostal nerves, and irritated points on its surface are accurately localized, by the person, over the spot touched. Such irritations never give rise to referred pain in the neck or abdomen. The diaphragmatic pleura receives its sensory supply from the phrenic nerve and lower six intercostal nerves. The central portion of the diaphragm is innervated by the phrenic nerve, and irritation of this portion causes pain in the neck and shoulder on the corresponding side. The peripheral rim of the diaphragmatic pleura for a distance of 2 or 3 inches in front and lateral, and for about one third of the distance posterior is innervated by the sixth to twelfth intercostal nerves. Pain in this area causes referred

* Read before the Kansas City Academy of Medicine, April 6, 1923.

1. Ferguson, J.: The Phrenic Nerve, Brain **14**: 282, 1891.

2. Mall, F. P.: On the Development of the Human Diaphragm, Bull. Johns Hopkins Hosp. **12**: 158, 1901.

3. Head, Henry: Disturbance of Sensation, with Special Reference to Pain of Visceral Disease, Brain **16**: 1, 1893; On Disturbances of Sensation, with Especial Reference to the Pain of Visceral Disease (Part II Head and Neck), ibid. **17**: 339, 1894.

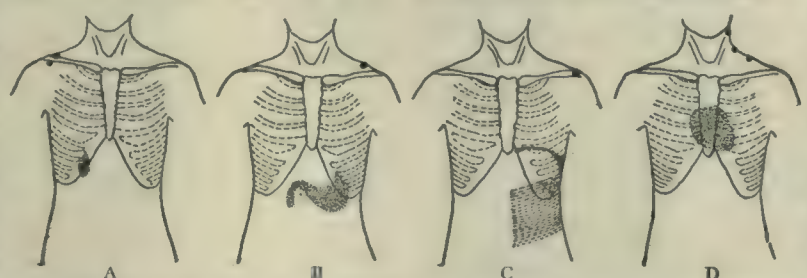
4. Capps, J. A.: An Experimental Study of the Pain in the Pleural Membranes, Arch. Int. Med. **8**: 717 (Dec.) 1911.

pain to the lower thorax, lumbar region and abdomen. This is a true referred pain. It is distributed in segmental areas over the regions noted. Irritation of the pericardial pleura causes pain in the neck in a location the same as that produced when the central portion of the diaphragm is irritated.

Capps and Coleman [5] have recently studied the pain produced by irritating the under surface of the diaphragm by means of a wire introduced through a cannula in patients having ascites or pneumoperitoneum. They conclude that pain produced by stimulation of the diaphragm is never located in the diaphragm itself, but is referred to some distant part. Stimulation of the central portion of the diaphragm produces pain along the trapezius ridge. Stimulation of the outer diaphragm margin causes pain over the lower costal region and subcostal abdominal wall.

CLINICAL OBSERVATIONS

It seems quite evident, in talking with my medical and surgical confrères, that the shoulder and neck pain frequently produced in disease involving the diaphragm is not given its proper importance as a diagnostic aid. On the other hand, clinicians are constantly on the alert for referred pain to the abdomen in chest conditions, and all enlightened medical men consider such pain in their differential diagnoses. The following is a list of conditions in which phrenic shoulder pain or neck pain has been described: pneumonia, pleurisy, pericarditis, pulmonary infarct, actinomycosis of lower right lung, liver abscess, perforated gastric or duodenal ulcer, subphrenic abscess, cholecystitis with peritonitis, perforation of gallbladder, perisplenitis, rupture of spleen (spontaneous), acute pancreatitis, appendicitis, ruptured extra-uterine pregnancy, pressure of drainage tube, and suprarenal tumor.



Location of referred pain to neck and shoulder region: *A*, gallbladder disease; *B*, perforated duodenal ulcer; *C*, pneumonia with diaphragmatic pleurisy; *D*, pericarditis.

Referred pain to the shoulder or neck is characterized by its spontaneous appearance, and its accurate localization in the distribution of a spinal segment or to a small portion of the segmental sensory distribution, by accompanying hyperesthesia and hyperalgesia, and often by increase of pain during deep respiration, cough or change of position. At times the pain is quite severe. It has been described by patients as feeling as if a nail were driven into the joint. In one of Oehlecker's [6] cases of old tuberculous pleurisy with empyema, the pain was so severe that he was led to section the phrenic nerve in the neck on that side.

Pain referred to the abdomen from the diaphragm is in the abdominal wall and not in the viscera. Here hyperesthesia and hyperalgesia are a differential feature. As a rule, deep pressure is well borne in referred pain, a fact that is not the case in disease involving the abdominal viscera.

Capps [7] has reported sixty-one clinical cases with diaphragmatic pleurisy, in which fifty-four patients had referred pain to the abdomen. Thirty-three had referred pain to the neck and shoulder, which was more than 50 per cent. of the total number.

Cope [8] of London, in 1922, presented a clinical study of phrenic shoulder pain, and attempted to establish a localizing correspondence between the part of the diaphragm irritated and the part of the shoulder to which the pain is referred. He presented cases to show that irritation of the anterior part of the diaphragm causes pain in the anterior part of the corresponding shoulder, and irritation of the posterior part of the diaphragm supplied by the phrenic nerve causes pain in the suprascapular region. The experimental work of Capps [4] is contradictory to these clinical findings of Cope. Capps writes: "The maximum pain point in a given individual was the same from whatever part of the diaphragm it was elicited."

Regardless of the exact location of the pain point in disease involving certain portions of the phrenic sensory distribution, the value of the symptom is not lessened. In many diseases, especially those in the abdomen, the existence of a shoulder or neck pain is a distinct adjunct in diagnosis. Waring [9] reports a case of amebic abscess of the liver, in which pain in the shoulder region was the only symptom indicating the location of the disease. Its presence is definite evidence that the sensory distribution of the phrenic nerve is involved in the irritation. To be of value, referred neck and shoulder pains must be carefully differentiated from pain due to disease in and about the shoulder.

In those diseases having a direct contact with the diaphragm, it is quite clear that the pain is referred through the phrenic nerve to the spinal cord and out into the neck and shoulder region through the third, fourth or fifth cervical nerves. In such conditions as appendicitis, ruptured ectopic pregnancy, suprarenal tumor, gallbladder disease, perforated gastric or duodenal ulcer, acute pancreatitis and pressure from drainage tubes, a word of explanation may be advisable. Shoulder pain in acute appendicitis is rare. To produce such pain it is, of course, necessary for infection to come in contact with the phrenic nerve. The length and location of the appendix may be factors in this involvement. It is well known how frequently subdiaphragmatic inflammation follows suppurative appendicitis. Evidence of phrenic nerve irritation in such a condition may be of great value. Pain in the shoulder region associated with rupture of an extra-uterine pregnancy can be caused only by a flow of blood to the subdiaphragmatic region. In suprarenal tumor, the cause of the referred pain is more direct, since the suprarenal capsule receives sensory fibers from the phrenic. Mayo-Robson [10] has reported three clinical cases of suprarenal tumor in which this symptom was well developed. It is quite probable that cholecystitis, stone in the cystic duct and stone in the common duct

5. Capps, J. A. and Coleman, G. H.: Experimental Observations on the Localization of Pain Sense in the Parietal and Diaphragmatic Peritoneum, Arch. Int. Med. **30**: 778 (Dec.) 1922.
6. Oehlecker, F.: Zur Klinik und Chirurgie des Nervus phrenicus, Zentralbl. f. Chir. **40**: 852, 1913.
7. Capps, J. A.: A Clinical Study of Pain Arising from Subphrenic Inflammation and Diaphragmatic Pleurisy, Am. J. M. Sc. **151**: 333 (March) 1916.
8. Cope, Zachary: Clinical Study of Phrenic Shoulder-Pain, Brit. J. Surg. **10**: 192 (Oct.) 1922.
9. Waring, E. J.: An Enquiry into the Statistics and Pathology of Some Points Connected with Abscess in the Liver as Met with in the East Indies, 1854.
10. Mayo-Robson, A. W.: Three Cases of Removal of the Suprarenal Capsule, Brit. M. J. **2**: 1100 (Oct. 21) 1899.

do not cause the phrenic nerve shoulder pain here considered, unless there is associated with these diseases some peritonitis, congestion or edema of the adjacent parts which come in contact with the phrenic nerve endings. This type of shoulder pain in gall tract disease is not to be confused with the textbook "shoulder pain," which is pain referred to the region of the scapula. It is not quite clear what tissues in the region of the gallbladder are innervated by the phrenic nerve. Clinical observations indicate that the right crus of the diaphragm and perhaps other tissues about the cystic duct receive phrenic nerve supply. Perforations of the stomach and duodenum cause diaphragmatic irritation by direct extension of the alimentary tract contents or a subsequent peritonitis to the diaphragmatic region. This is true also of acute pancreatitis, although here the left semilunar ganglion may receive the irritation. Mayo-Robson relates two cases in which pressure from a drainage tube to a gallbladder stump caused pain in the right supraspinous fossa. These were explained by pressure on the right crus of the diaphragm and the vena cava. Removal of the tubes gave prompt relief.

REPORT OF CASES

CASE 1.—B. B., a man, aged 41, was admitted to Bell Memorial Hospital, Dec. 20, 1922, with a diagnosis of perforated gastric or duodenal ulcer that had occurred five hours before. He had intense epigastric pain, vomiting and board-like rigidity of the upper abdomen. There was a history of stomach trouble extending over a period of several years. Soon after the onset of the abdominal symptoms, a persistent pain developed in the left shoulder region, which continued without interruption until operation. It was not again noticed after operation. Operation was performed eight hours after perforation. The patient recovered.

CASE 2.—H. R., a man, aged 27, was admitted to the Veterans' Hospital, Nov. 22, 1921, with a complaint of severe pain in the left chest, upper left abdomen, head, left shoulder and back. He gave a history of a chill two days before, followed by a high fever. On admission to the hospital, he appeared quite ill. His chief pain was in the left lumbar region, left upper abdomen and left shoulder. He had a leukocytosis, and albumin and pus in the urine. On examination, he was quite tender in the left lumbar region and upper abdomen along the costal margin. Perinephric abscess had been diagnosed by the physician who made the first examination. On careful examination, however, the day after admission, the foregoing findings were noted and, in addition, a few moist râles were found at the base of the left lung in the midaxillary line. A slight cough had also developed. The pain continued for three or four days in the left upper abdomen and loin, and was also quite severe in the region of the left acromion process. A diagnosis of pneumonia involving the diaphragm was made and confirmed by the later clinical course.

CASE 3.—C. F., a woman, aged 34, was admitted to the Bell Memorial Hospital for a gallbladder operation. The history corresponded to that of gallbladder disease which had lasted for one year. During some of the attacks in the gallbladder region, there was a definite pain in the region of the right shoulder, located by the patient near the acromioclavicular joint and just above the coracoid process. This was always associated with pain in the gallbladder region, and was increased by deep breathing and lying on the left side. At times the pain in the shoulder region was much more severe, and disturbed the patient much more than the abdominal pain. There was not at any time any pain referred to the scapular region. There was, however, a pain which seemed to extend around the costal margin from the gallbladder to the upper part of the right flank. At operation, a gallbladder was found with slightly thickened wall and definitely involved in adhesions over its lower half and about the cystic duct. There were no shoulder pains after the removal of the gallbladder.

CASE 4.—A girl, aged 11, whom I observed during my intern service in St. Mary's Free Hospital for Children in New York in 1912, had been admitted to the hospital several times for heart disease. She had both endocarditis and pericarditis. During her stay in the hospital, she complained bitterly on many occasions of pain in the left shoulder region and neck. This we interpreted as due to the pericarditis, since there was no evidence of local disease in or about the shoulder.

COMMENT

The four cases here briefly reviewed are typical examples of what may be observed by clinicians at any time. In Case 1, the location of the pain was unusual for perforated duodenal ulcer, since it was on the left side. Perforations of the lesser stomach curvature or near the cardia are more apt to cause left-sided shoulder pain. Perforation of the duodenum usually causes irritation of the right diaphragm. In this case, the pain did not reappear after the operation. Case 2 was a typical case of acute inflammation of the diaphragmatic pleura with pain most intense over the left lumbar muscles, left upper abdomen and left shoulder. There was definite tenderness in the left upper abdomen and in the left lumbar region. The definitely localized pain and tenderness and the urinary findings led to an early diagnosis of perinephric abscess. The third case gave a typical history of gallbladder disease with shoulder pain increased by deep breathing and lying on the left side. At operation, inflammation outside the gallbladder was found, which bears out the observations of Mayo-Robson that, to produce shoulder pain, the gall tract must have some peritonitis, congestion or edema outside of the tract disease. In the fourth case, the pericarditis was an outstanding feature and produced typical burning pains along the side of the neck below the mastoid and extending out a short distance along the trapezius ridge. This area was also quite sensitive.

CONCLUSIONS

1. Referred pain to the shoulder region in diseases involving the diaphragm is a fairly common occurrence.
2. The importance of this clinical symptom is probably not sufficiently emphasized by the average clinician.
3. The diagnostic value of phrenic shoulder pain is definite. When typical, it is a positive indication of an irritation to the phrenic nerve and should be sought where disease is suspected in the upper abdomen or lower chest.

Nutrition and Tuberculosis.—The well fed resist tuberculosis well; the underfed yield readily. Every attack of indigestion, every missed or partially consumed meal has its adverse effect on nutrition at any age of life. . . . The rich business man who hastily consumes a scanty breakfast of toast and coffee and works hard all day in an office with only a hasty lunch at noon cannot consider himself well fed even though he consumes a full meal in the evening. His child who refuses at table wholesome articles of food, such as bread and butter, vegetables and meat, cannot maintain a satisfactory degree of nourishment. . . . A lack of knowledge of food values is very common, especially in cities where delicatessen products made to tempt the eye and palate too often in the busy urban life take precedence over wholesome soups, roasts, and stews from the home kitchen. It should not be forgotten that the fatty articles of food, including butter, fat meats, cream and olive oil, are especially valuable in building up resistance to tuberculosis; but the diet must be suited to the age of the individual. Bread and butter, meat, and abundant vegetables must not be slighted simply because milk and eggs are so commonly mentioned as ideal foods.—F. C. Smith, *Pub. Health Rep.* **38**:779 (April 23) 1923.

THE INTESTINAL LESION IN ANAPHYLAXIS

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One of the characteristic features of canine anaphylaxis is the development of a hemorrhagic lesion in the intestinal mucosa. This lesion is usually confined to the upper half or two thirds of the small intestine, but occasionally it extends as far as the ileocecal valve. It is always most marked in the duodenum. In the milder type of anaphylactic shock, although the mucosa is markedly hemorrhagic, little or no blood escapes into the intestinal lumen. In severer shocks the lumen may be filled with extravasated blood.

It is currently assumed that this hemorrhagic lesion is due to an intestinal engorgement, caused by an increased resistance to blood flow through the liver.[1] A mechanically increased hepatic resistance, however, sufficient to raise the portal blood pressure to the maximum portal pressure observed during anaphylactic shock does not produce this hemorrhagic change.[2] It seems probable, therefore, that factors other than passive congestion of hepatic origin play a rôle in its production. We have endeavored to determine these factors by histologic and physiologic methods.

HISTOLOGIC STUDY

To prepare material for histologic study, the intestines were fixed, at various stages of anaphylactic shock, by injecting nonacid Zenker's solution [3] plus 4 per cent. formaldehyd into the intestinal lumen. At the four to ten minute stage, the intestinal villi are markedly edematous, with stasis in the majority of their blood vessels. The epithelium is usually separated from the central portion of each villus by edematous fluid. The separation is often so marked that the epithelium is inflated to form a small bladder protruding into the intestinal lumen.

At the thirty to ninety minute stage, the epithelium is usually lost. The villi are now reduced to naked connective tissue structures. The outer portion of each structure in immediate contact with the intestinal contents shows altered staining reactions suggesting necrosis.

PHYSIOLOGIC REACTIONS

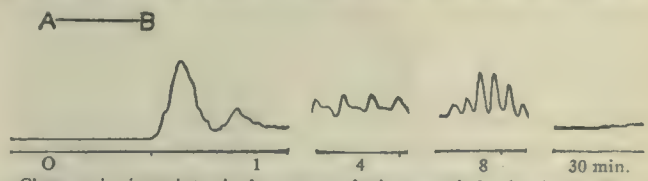
Marked changes were noted in the tone of the intestinal musculature during the anaphylactic reaction. In order to follow these changes, a cannula was tied in one end of a duodenal loop and connected with a mercury manometer. Changes in intra-intestinal pressure were then recorded, following intravenous injection of specific foreign protein. A typical record is shown in the accompanying tracing.

The intraduodenal pressure recorded with the abdomen open is usually about 7 mm. of mercury. On throwing the dog into shock, the pressure usually rises to from 40 to 100 mm. of mercury by the end of forty-five seconds. The pressure then falls to about 20 mm. by the end of ninety seconds, and then gradually increases to about 30 mm. by the end of four minutes. After the fourth minute, the pressure very slowly decreases, reaching about 15 mm. by the end of thirty minutes. Rhythmic contractions of varying strength are usually recorded during the first ten minutes of the test.

PHYSIOLOGIC DEDUCTIONS

The effect of this prolonged increase in intra-intestinal pressure must be interpreted in the light of the parallel changes in arterial blood pressure. During typical anaphylactic shock, the aortic pressure falls to about 40 mm. of mercury by the end of ninety seconds, and then gradually sinks to about 28 mm. by the end of ten minutes. During the recovery period the pressure slowly rises, and is usually restored to normal in from forty to ninety minutes, depending on the severity of the shock.

An uninterrupted intra-intestinal pressure of 20 mm. of mercury, supplemented by the normal intra-abdominal pressure, would presumably completely stop the circulation in the intestinal mucosa during the period of low arterial blood pressure. In a shock of average severity, this stasis would probably last about twenty minutes. It would be followed by a stage of progressively decreasing passive congestion during the recovery



Changes in intra-intestinal pressure during anaphylactic shock: 12 kg. dog sensitized to horse serum. *A — B*, intravenous injection of 25 c.c. of 50 per cent. horse serum. (Scale, about 1: 2.5.)

period. Even a marked passive congestion of the intestinal mucosa for this length of time would presumably be sufficient to account for the characteristic histopathologic findings.

The cause of this prolonged increase in intra-intestinal pressure has not yet been determined. It is, of course, conceivable that it is due to muscular contractions caused by intestinal anemia (low arterial blood pressure). It may possibly be partly due to increased tissue pressure from the local edema.[4] In the light of the findings of Schultz, Dale and others, with isolated intestinal strips, however, one is inclined to attribute the reaction to a direct toxic stimulation of the intestinal musculature or of the local nerve endings. An analysis of the factors entering into the reaction will be reported later.

SUMMARY

1. The characteristic intestinal lesion in canine anaphylaxis is a stasis and marked edema of the intestinal mucosa, followed by epithelial desquamation, hemorrhage and superficial necrosis during the later stages of the shock.

2. This lesion is due to a prolonged contraction of the intestinal musculature, increasing the intra-intestinal pressure sufficient completely to stop the circulation in the mucosa during the period of low arterial blood pressure.

1. Weil, Richard, and Eggleston, Cary: Anaphylaxis in Dogs, a Study of the Liver in Shock and Peptone Poisoning, J. Immunol. **2**: 525 (Oct.) 1917. Simonds, J. P.: The Fundamental Physiologic Reactions in Anaphylaxis and Peptone Shock, J. A. M. A. **73**: 1437 (Nov. 8) 1919. Wells, H. G.: The Present Status of the Problems of Anaphylaxis, Physiol. Rev. **1**: 44 (Jan.) 1921.

2. Manwaring, W. H.; Brill, S., and Boyd, W. H.: The Hepatic Mechanical Factor in Peptone Shock, J. Immunol. **8**: 121, 1923.

3. Stock Zenker's solution; acetic acid not added before using.

4. Manwaring, W. H.: Chilcote, R. C., and Hosepian, V. M.: Capillary Permeability in Anaphylaxis, J. A. M. A. **80**: 303 (Feb. 3) 1923.

THE RÔLE OF THE CIVILIAN PHYSICIAN IN THE TRAINING OF CITIZEN SOLDIERS

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The scientific advances of the last century have served to render the science and art of medicine an essential and inherent part of the military art, and no feasible plan for national defense can be devised and carried to a successful conclusion without the cooperation of the medical profession. The individual soldier constitutes the basic unit of any fighting force, and his ability to perform the duties that he may be called on to undertake in the defense of his country is fundamentally dependent on his physical fitness. Of all men, only the physician possesses the knowledge that will enable him to select from the great mass of the national man power those individuals who are physically fit for military service, and to eliminate the incompetents whose presence would tend to prevent the successful outcome of military operations. However, the responsibilities of the medical profession do not terminate with the proper selection of recruits, but on the medical officers of all component parts of the army must devolve the duty of guarding these soldiers against disease until they return again to civil life.

By the enactment of the National Defense Act of June 4, 1920, the people of the United States have for the first time in the history of the nation inaugurated a definite and comprehensive military policy. While provision is made for a small regular army, the major element for defense in time of war will be a force of citizen soldiers, trained during peace, and comprising, at least theoretically, all that part of the population who are eligible for military service. Thus, whereas in the past only professional soldiers and members of the National Guard were, during peace, trained for war, the present plan involves the participation and training of citizens from all walks of life, and this training must be accomplished without undue interruption of their civilian vocations. While the administration of the National Defense Act is, as yet, far from perfect, the experimental stage is past and it can now be definitely stated that the effective development of its provisions will serve to prevent the repetition of many of the unfortunate experiences of past wars, and will provide an army of trained citizens ready and capable of meeting any emergency that may arise in the future.

THE CITIZENS' MILITARY TRAINING CAMPS

By a wise and important provision, the National Defense Act provides short periods of military training for the youths and young men of the country through the medium of the Citizens' Military Training Camps. This feature of the defense plan is one that should appeal to every physician, not only as a valuable means of training men for the performance of their duties as protectors of the nation, should the need arise, but also as a public health measure. The training period consists of thirty days each year, and camps were operated for this length of time in 1921 and 1922. The experiences gained during the thirty days spent in camp under a military regimen exert a decided influence for good on the health of the trainee, who, on his return home, serves to promulgate the gospel of good health among his friends and associates.

The cooperation of the physicians throughout the country is an essential factor in the success of the Citizens' Military Training Camps, actually to a much greater extent than is now realized by the medical profession, in general. The methods employed in selecting applicants for admission to camp and the nature of the training necessitate the close contact of the trainee with the physician from the time he makes application for training until he leaves the camp at the end of the training period.

It is quite apparent that, under the present conditions, the successful operation of any Citizens' Military Training Camp must depend to a very considerable degree on the selection of suitable men as candidates for training; and the responsibility for this selection rests, in the ultimate analysis, on the shoulders of the physician who conducts the preliminary physical examination, by which otherwise qualified applicants are tentatively accepted for training. This examination may be made either by a medical officer of the Army, Navy, or U. S. Public Health Service, or by a civilian physician located in or near the community in which the applicant resides. However, in actual practice it is, as a rule, performed by a civilian physician who may, or may not, hold a commission in the National Guard or Officers' Reserve Corps, but who, in any event, is willing to devote a small part of his time to assisting in the selection of individuals suitable for training.

PHYSICAL EXAMINATIONS

The procedures by which applicants for training are admitted to Citizens' Military Training Camps is now decentralized to the various corps areas. The military organization within the continental United States is divided into nine corps areas, and the operation of the Citizens' Military Training Camps within a corps area is under the direct control of the commander of that corps area. The young man who decides to apply for training in one of these camps obtains an application blank from one of the several agencies to which these blanks have been distributed by the corps area headquarters. He then presents this application blank to his family or other local physician, or to a medical officer of one of the federal services, who conducts the physical examination in accordance with the physical standards specified in the instructions printed on the blank. On completion of the examination, if the examining physician finds that the applicant meets the physical requirements for training, he certifies to that effect on the application blank, which is then returned to the applicant, who forwards it to the corps area commander.

IMMUNIZATION

In addition to complying with the physical standards, it is also required that each accepted applicant be immunized to smallpox and to typhoid and paratyphoid fevers, within the three-year period preceding the day he reports at a training camp. If, on receipt of the report of his preliminary physical examination at corps area headquarters, it is found that he has not been so immunized, but is otherwise acceptable, the necessary typhoid-paratyphoid vaccine is forwarded from corps area headquarters to the physician who conducted the preliminary examination, and the applicant is notified that he should report to him for vaccination against typhoid and paratyphoid fevers. Smallpox vaccine is

not, however, furnished to the applicant by the corps area headquarters because of the difficulties attending its distribution by ordinary mail. If it is determined that the applicant requires vaccination against smallpox, he is notified that he should obtain the vaccine at his own expense, or from local health authorities, and be vaccinated by a physician, preferably the one who performed the preliminary physical examination.

IMPORTANCE OF PRELIMINARY EXAMINATION

This method of provisionally designating and immunizing candidates for admission to a camp possesses many advantages for the applicant and for the physician. To the applicant it affords the opportunity of receiving at the hands of his family physician a thorough physical examination, which, should physical abnormalities be revealed, will provide the basis for the application of corrective measures for the purpose of alleviating or removing such defects. Furthermore, should disqualifying physical abnormalities be detected, a fruitless journey to the training camp is prevented. The preliminary examination provides for the civilian physicians an opportunity to receive training in the requirements and the technic of performing a physical examination for military service, and the vaccinations connnected therewith; training which will be of great value to them and to the nation should it ever be necessary again to mobilize the man power of the country to meet a national emergency. Through these examinations, the physician, if he so desires, can advance the cause of public health in his own community by focusing public attention on the importance of the physical examination as a health-conserving measure, and by emphasizing the value of vaccination in the prevention of disease. The importance attached by the government to these two fundamental methods of maintaining physical fitness will, if supported by the local physicians, aid in fostering in the public mind a true conception of good health.

Under the present law, no funds are available out of which physicians can be paid for rendering to the government this most valuable service. However, the physician, by the very nature of his profession, assumes certain patriotic duties, and by making the preliminary physical examination of applicants for training he is, in this manner, enabled to participate in the defense of his country, to do his share in furthering the best interests of his community and of the nation, and to prepare himself partially for the duties that would be required of him in a national emergency.

If the preliminary physical examination is to be of value, and serve the purposes for which it is intended, it must be conscientiously and intelligently conducted. The applicant who is passed as physically fit at the preliminary examination is transported at government expense to a training camp, where he is given a final physical examination before being definitely accepted for training. The final physical examination is thorough; and, should it reveal the presence of disqualifying defects, the applicant is returned to his home, and his return transportation must also be paid for by the government. The results of the final physical examination at the opening of the camps in 1922 indicate all too plainly that a few of the physicians who performed the preliminary examination of the applicants did not fully realize the necessity of making a thorough physical survey. In all, 23,330 applicants were passed as physically qualified at the preliminary examination and were sent to camps for training. On their arrival there, the final physical examination showed that 957, or 4.1 per cent., of these men were physically unfit for service. Although in each instance the examining physician had certified that the applicant did not possess disqualifying defects, nevertheless, fully 75 per cent. of the physical abnormalities found during the examination at camp were of such a nature that they should have been easily detected.

CAUSES OF REJECTION

Table 1 gives the common causes of rejection at camp and the relative frequency of their occurrence.

TABLE 1.—*Disqualifying Defects Found Among 23,330 Applicants for Training at Twenty-Eight Citizens' Military Training Camps in 1922*

Defects Causing Rejection	Number	Per Cent. of Total Number
Defective vision	131	13.7
Hernia	123	12.8
Organic heart lesions	66	6.9
Underweight	66	6.9
Pes planus	60	6.3
Venereal disease	49	5.1
Otitis media	34	3.6
Deficient mentality	24	2.5
Scabies	23	2.4
Ankylosis	17	1.8
Other defects	364	38.1
Total	957	100.00

During 1922, the average cost of transporting an applicant from his home to the camp and return was $25; therefore, the rejection of 957 men caused a money loss to the government of approximately $24,000. The expense of transporting the applicant to the camp and back again to his home is a matter of considerable moment, since the funds available for all expenditures connected with training in these camps are limited and must be disbursed with care. Also, when a physically defective individual is allowed to pass the preliminary physical examination and proceed to camp, not only does the government lose the money expended for his travel expenses, but the applicant is subjected to the disappointment, chagrin and inconveniences that must necessarily follow his rejection at camp. Nor can the rejected man be replaced by a physically fit applicant, as the money appropriated for his transportation has been spent, and the training schedule of the camp is by that time well under way.

Defective vision and hernia proved to be the most frequent causes for rejection. Such conditions are, as a rule, easily diagnosed, and should seldom pass unnoticed at the preliminary physical examination. Their detection in men of this age is also of great importance because of their tendency to impair the future success of the man in civilian pursuits, and the ease with which they can in many instances be partially or wholly removed. The majority of the other disqualifying defects were likewise found to be susceptible of ready diagnosis, and to consist of types that were amenable to remedial measures.

The available records indicate that a few examining physicians did not appreciate the necessity for exercising care in making these examinations. Some of the applicants asserted that they had been certified as physically qualified by a physician without any physical examination being made. When a physician does not desire to conduct a thorough physical examination, he should, in justice to himself, to the applicant, and to the

government, refuse to sign the certificate stating that the applicant is physically fit for military service.

DEFECTS THAT DID NOT DISQUALIFY

It is believed that the physical requirements for admission to a Citizens' Military Training Camp are just and not unduly high. Physically defective men are acceptable when their defects are minor in character and cannot reasonably be expected to impair their future usefulness as soldiers. Among the 22,373 men who were finally accepted for training in 1922, there were found 11,109 defects, none of which were considered to be disqualifying in character. The types of such defects and their distribution is shown in Table 2.

TABLE 2.—*Nondisqualifying Defects Found Among 22,373 Trainees in Twenty-Eight Citizens' Military Training Camps in 1922*

Defects	Number	Per Cent. of Total Number
Pes planus	2,427	21.85
Defective vision	1,643	14.79
Varicocele	1,032	9.23
Underweight	953	8.58
Ancylostomiasis	463	4.16
Defective physical development	248	2.23
Deviation nasal septum	191	1.72
Tachycardia	96	0.86
Cardiac murmurs not organic	76	0.68
Curvature of spine	58	0.52
Atrophy of testicle	44	0.40
Cryptorchidism	44	0.40
Cicatrix	41	0.37
Hydrocele	40	0.36
Hallux valgus	38	0.34
Scoliosis	37	0.33
Ingrowing nail	35	0.32
Defective hearing	19	0.17
Mitral regurgitation	10	0.09
Other defects	3,614	32.53
Total	11,109	100.00

It will be noted that, as was the case with the disqualifying defects, the greater proportion of the nondisqualifying defects were susceptible of improvement or cure by proper remedial treatment. In view of this, whenever a physical abnormality, whether disqualifying or not, was diagnosed by the examining officers at the camp, the applicant was so informed; and, if treatment was indicated, he was urged to consult his physician after he returned to his home. As an additional precaution, the parents of the applicant were, when practicable, communicated with by letter and informed of the presence and nature of the defect in order that corrective measures might be instituted by the family or other local physician.

IMPORTANCE OF CAMPS AS HEALTH MEASURE

There can be no doubt that the physical examinations, the immunizations to disease, the emphasis laid on the desirability of obtaining treatment for many of the minor physical abnormalities, and the instruction in hygiene received at the training camp will serve to render the Citizens' Military Training Camp policy a public health measure of national importance, not only by reason of its direct effect on the health of the trainee, but also through its educational value to the population of the country as whole. During the last two years, civilian physicians throughout the country have ungrudgingly given their time and skill to the furtherance of this work, and the nation's thanks are due them for this assistance, as without it progress would be impossible of attainment. It is confidently expected that their continued cooperation will be forthcoming not only during the year of 1923 but for the years to come.

ETHYLENE AS A GAS ANESTHETIC

PRELIMINARY COMMUNICATION *

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AND
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In our first communication [1] we published results showing that ethylene gas in proper concentration and admixture with oxygen possessed marked analgesic and anesthetic properties when administered to the usual laboratory animals. We likewise published results showing that man was as susceptible to its influence as the laboratory animals. On the subjective side it was readily established that analgesia and surgical anesthesia are induced very rapidly "without any sense of asphyxia, but, on the contrary, with a sense of well-being and comfort"; and that, on recovery, which is very rapid, many volunteers experienced only a very temporary nausea, others experiencing no ill effects whatsoever, except for a slight and temporary sense of weakness even under conditions which are known to favor untoward effects.

These preliminary experiments were performed on normal, healthy men. Further extension of the work demanded actual operative work in a hospital and on patients requiring surgical interference; for we had gone as far as it was possible to go in a physiologic laboratory.

We therefore arranged for a further demonstration on ourselves of the anesthetic properties of a suitable ethylene-oxygen mixture before a group of surgeons, physicians and professional anesthetists, Dr. Carl Dragstedt administering the gas.[2] Within several days after this demonstration (March 14, 1923), surgical work with its use was begun at the Presbyterian Hospital, Chicago. All precautions were taken to give the gas a fair but adequate trial. After it had been used in simple and uncomplicated cases with gratifying results, more extensive and prolonged operations were undertaken with similar success. Impressed with its many desirable properties, other staff surgeons at the hospital began to use it. From March 14 to April 26, 106 operations were performed.

CLINICAL ASPECT OF THE WORK

We offer a brief analysis of the clinical aspect of the work in the form of a short report, which we recognize as quite superficial and incomplete.

Sex.—Of the 106 patients operated on, forty-two were males and sixty-four were females.

Age.—The average age of the patients was 39.8 years. The youngest patient was a boy, aged 10; the oldest, a man, aged 64.

Nature of Operations.—We have grouped the operations as occurring on the head, thorax, abdomen, perineum or extremities. In addition, ethylene has had some use in obstetrics. This is a highly arbitrary system of grouping, and not above criticism. It allows, however, of a rapid enumeration of the various operations that have been performed:

* Read before the Chicago Institute of Medicine, April 27, 1923.

* From the Hull Physiological Laboratory, University of Chicago, and the Presbyterian Hospital.

1. Luckhardt, A. B., and Carter, J. B.: The Physiologic Effects of Ethylene, a New Gas Anesthetic, J. A. M. A. **80**: 765 (March 17) 1923.

2. There were present, at this demonstration, Drs. Lester R. Dragstedt, A. D. Bevan, Dean Lewis, Gatewood, H. L. Jones, G. Hovnanian, A. E. Kanter, Isabella Herb, Mary Lyons and Frances Haines.

(*a*) Head: Removal of a wen; excision of a carbuncle; abscess of the jaw; mastoid operation; removal of tonsils; osteomyelitis of jaw with removal of sequestrum; opening of abscesses of neck and in axilla; drainage of cervical abscess.

(*b*) Thorax: Two excisions of breast tumors; two radical breast removals.

(*c*) Abdomen: Six herniotomies (one double); three exploratory laparotomies; six appendectomies; operation for undescended testicle; a cystostomy; cholecystectomy; two operations for shortening the round ligament of the uterus.

(*d*) Extremities: Reduction of a dislocated shoulder; five operations consisting of the amputation of a toe; operation on fractured and dislocated ankle; manipulation of shoulder for breaking up of adhesions; aspiration of a knee joint; osteomyelitis of tibia; osteomyelitis of femur (three operations); stretching of the sciatic nerve; bilateral amputation of thighs; osteomyelitis of ileum; removal of a sequestrum from the tibia; two operations for bunions, two operations on varicose veins; an astragalectomy; operation on a double fracture of the leg and dislocation at ankle of six months' duration.

(*e*) Obstetrics: Ethylene was used in four normal deliveries with very satisfactory results. It was found better than nitrous oxid used the preceding hour or hours. An 80 per cent. concentration was employed. The color of the patient remained good. The fetal heart tones remained unchanged.

(*f*) Perineum: Dilatation of cervix and curettage (nine); two radium needles into cervix uteri; pelvic examination; double rectal fistula; two prostatectomies; two operations for removal of hemorrhoids; cystoscopy; five operations in which radium needles were introduced into the prostate; ureteral catheterization; anal fissure; vaginal cesarean section; perineal incision prior to delivery and subsequent repair; insertion of Voorhees bag; amputation of cervix uteri; perineorrhaphy; manual exploration of uterus; incision of pelvic abscess; colpotomy.

Concentration of Ethylene Used.—The average concentration of ethylene used in 101 operations (in which a record was kept) was 81.9 per cent., the other gas, as with nitrous oxid administration, being oxygen. Individual variation exists as with other anesthetics, regardless of the nature of the operation. Whereas a 77 to 80 per cent. ethylene and a 23 to 20 per cent. oxygen mixture sufficed to render some patients analgesic or even anesthetic, others were not in a state of surgical anesthesia unless the ethylene was given in a concentration of 90 or even 95 per cent. The latter patients were exceptionally resistant, and were few in number. Otherwise the percentage of ethylene necessary for the 101 patients as a whole would not average down to 81.9 per cent. ethylene. Such a concentration allows, as will be noted, of the simultaneous administration of about 18 per cent. oxygen.

Duration of the Operations.—The length of the operations varied considerably—from a few minutes to one hour and fifty minutes. The average length of ninety-two operations was 27.8 minutes.

Recovery from the Anesthetic.—In the entire series of ninety-two cases in which ethylene was the sole anesthetic used, we find no record that the patient had not recovered his senses within five minutes after discontinuance of the anesthetic. Following the shorter operations, recovery was almost immediate. But even after very long operations the patients were usually quite rational within three minutes after ceasing to breathe the ethylene-oxygen mixture.

Nausea and Vomiting.—Three of the ninety-two patients felt nauseated, and fourteen vomited. The retching or vomiting was of short duration, occurring when the patient was but lightly anesthetized or for a very brief time immediately on recovery from the anesthetic. It consisted very often of a few retching movements, and was never serious.

Evaluation by the Surgeon.—Nineteen surgeons operating with ethylene as the anesthetic agent have made this preliminary study possible.[3] Their verdict was not only that the gas was "good" or "very satisfactory," but that it produced in a given type of operation or manipulation a decidedly better relaxation than was possible with nitrous oxid. Upper or lower respiratory infections were not brought on by its administration, nor were such, when existant at the time of operation, made worse.

Opinion of the Anesthetists.—The administration of ethylene was almost exclusively in the hands of Drs. Isabella Herb and Mary Lyons. Whether used to induce anesthesia in an ethylene-ether sequence (fourteen cases) or as the sole anesthetic agent, these well known anesthetists felt very well satisfied with it, as the following quotations, culled from the protocols of various patients will prove:

Unable to hold under nitrous oxid in similar operation. Better relaxation than with nitrous oxid. (Herb.)

Sequence easier than with nitrous oxid. (Herb.)

Much better than nitrous oxid. Patient given nitrous oxid several times before—always unsatisfactory. (Herb.)

Have given him six anesthesias before, always with excitement. None this time. (Herb.)

Quieter induction. (Lyons.)

Very satisfactory. (Lyons.)

Patient with hemoglobin of 35 per cent. This type does poorly under nitrous oxid. Used ethylene with complete relaxation. (Lyons).

Less bleeding—no cyanosis. (Lyons.)

More satisfactory than nitrous oxid. (Herb.)

Perfect relaxation. Excellent color. (Gaston.)

Opinion of the Patients.—Many volunteers for the preliminary work and some patients stated that ethylene was the best anesthetic they had ever had.

In our first publication we mentioned the possible advantages of ethylene over nitrous oxid. These advantages were surmises based solely on experiments with normal animals and healthy men. Each of these predictions was verified when put to the test in the clinic For purposes of emphasis and as a partial summary, we repeat them here:

1. Anesthesia may be maintained:
   (*a*) In the absence of all signs of asphyxia.
   (*b*) In the absence of effects on blood pressure.
   (*c*) In the absence of dyspnea.
   (*d*) With complete muscular relaxation.
2. It may be used in obstetrics, a state of complete analgesia being possible at a concentration of 80 per cent. ethylene.
3. There is rapid recovery after long continued administration without evidence of after-effects.

3. They are, with the number of operations performed by each: Dr. Dean Lewis, twenty-nine; Dr. A. D. Bevan, sixteen; Dr. N. S. Heaney, twelve; Dr. D. B. Phemister, eleven; Dr. H. L. Kretschmer, eleven; Dr. G. L. McWhorter, three; Dr. E. D. Allen, three; Dr. Gallagher, three; Dr. Montgomery, four; Dr. Gatewood, one; Dr. C. H. Davis, two; Dr. Edward Miller, two; Dr. F. B. Moorehead, two; Dr. Edwin McGinnis, one; Dr. H. H. Everett, one; Dr. Kellogg Speed, one; Dr. Carey Culbertson, one; Dr. G. E. Shambaugh, one, and Dr. Vernon David, two.

Failures.—We frankly admit, however, two failures. In one the failure was complete, a concentration of from 90 to 95 per cent. producing in this young man marked cyanosis without the slightest relaxation. The other patient was rendered analgesic by a 95 per cent. ethylene-oxygen mixture, but was never profoundly anesthetized. At a subsequent operation under apparently identical conditions (except for the nature of the operation), surgical anesthesia was induced, together with complete muscular relaxation.

Such refractory cases are known to occur occasionally with nitrous oxid. In the past, no attempts have been made to determine why some patients are refractory to nitrous oxid, or even to ether anesthesia. It seems to us that a group of such cases should receive a most careful study by all available means with the hope that such a study might possibly furnish evidence as to the mechanism of anesthesia.

COMMENT

On the basis of this clinical study, comprising a series of 106 patients with and without cardiovascular, renal and other complications, we can state briefly that ethylene-oxygen anesthesia is very satisfactory. Since it is possible to administer with the ethylene, on the average, as much as from 16 to 18 per cent. oxygen, asphyxia and its consequences are avoided, and cyanosis, so commonly seen with nitrous oxid, is conspicuously absent. Analgesia comes on surprisingly early. Considering, furthermore, that the relaxation is more complete than with nitrous oxid, we find that ethylene compares most favorably with ether. In fact, the impression is gaining ground that ethylene has some of the advantages of ether, without many of its troublesome aftereffects. The very prompt recovery points to a rapid elimination of the ethylene, and may necessitate the administration of morphin immmediately on the conclusion of an operation.

CONCLUSION

We append a note of warning to those who contemplate using ethylene in the clinic. Ethylene gas is inflammable. It forms, moreover, with air (or oxygen) an explosive mixture in a concentration of four volumes of ethylene with ninety-six volumes of air. Until further work, now in progress, has been performed on its explosive properties, we warn surgeons and anesthetists not to use the gas in the presence of an electric spark, the actual cautery or a free flame.

Satisfied that, under proper conditions of administration (soon to be published by Drs. Herb and Lyons), ethylene gas produces in most individuals not only analgesia but also a state of surgical anesthesia incomparably better than with nitrous oxid for any kind of surgical work, we offer the gas to the medical profession for further trial in the clinic.

We feel that others who use it will be impressed with the rapidity and ease with which anesthesia is induced, with the slow and regular respiration, with the dryness and warmth of the skin, with the generally pink coloration of the skin and viscera, with the slowness and regularity of the pulse, with the absence of salivation, with the absence of blood pressure changes during or following considerable trauma and manipulation, with the complete muscular relaxation, and, finally, with the remarkably rapid recovery without serious sequelae after even a prolonged anesthetization.

In the meantime, we are continuing our investigations in the laboratory and clinic on various aspects which are of immediate importance.

ABORTIVE TYPE OF TUBERCULOUS HIP-JOINT DISEASE

REPORT OF TWO CASES

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Tuberculosis of the hip-joint is a disease entity with well-established diagnostic features in etiology, history, symptoms and signs, as well as definite principles of treatment. It is a condition marked by a long-continued, progressive course, unless halted by proper treatment, which of necessity requires a long time.

Abortive types of tuberculous hip-joint disease are unusual, and there is considerable question whether or not abortive types occur. Theoretically, it might seem very possible for a tuberculous infection in the hip-joint, though well started, to become overwhelmed by body resistance, in an early stage, and be cured. The possibility of an immunity to the infection being established, however, is much less in a joint infection than in a lung infection, for example, because of the comparatively poor blood supply to the joint.

In the few articles found in the literature that discuss the question, there is practically an agreement that abortive types do not occur. Friedländer [1] describes cases of ephemeral coxitis which apparently are abortive types of tuberculosis, but concludes that these cases cannot be proved to be tuberculous. Again, Friedländer [2] states that he believes one group of cases represents an abortive tuberculosis. Sundt,[3] in a study of thirteen cases of obscure hip affections, whose later histories ruled out a typical tuberculosis, concludes that tuberculosis could be excluded in twelve cases and, though in the thirteenth case it could not be excluded, the condition probably was nontuberculous. Sundt states that while it is impossible to disprove the existence of abortive joint tuberculosis, he doubts whether it ever occurs in the hip. Rogers [4] mentions the case of a man, aged 21, who at operation showed a definitely proved tuberculous synovitis of the hip-joint, with no involvement of bone; this, however, would not necessarily be an abortive type.

Among the conditions that might be considered as abortive tuberculosis of the hip-joint is nontuberculous synovitis, which, judging from a search of available literature, is very rare in the hip-joint. Keen [5] mentions an acute synovitis of the hip in children that might give symptoms of hip-joint tuberculosis. Etiologic factors, such as injury or focal infection, should be fairly clear in a nontuberculous synovitis. Acute arthritis may be eliminated by its usual feverish, acute course, and by the rarity of its location in the hip. Pseudocoxalgia, Perthes' or Legg's disease, should be considered, but can be excluded by the roentgen ray, as a flattening and irregularity of the head of the femur is very constant in this condition. Also the symptoms and findings are typically different from those of tuberculosis. To mention other possible simulants of hip disease, Sundt gives coxa vara, epiphyseolysis coxae, fracture of the neck of the femur, arthritis deformans, osteomyelitis, and hysterical joint.

1. Friedländer: Wien. klin. Wchnschr. **26**: 1022 (June 19) 1913.
2. Friedländer: Koxalgische Attacke im Kindesalter, Wien. klin. Wchnschr. **32**: 811 (Aug. 7) 1919.
3. Sundt, H.: Tubercle **2**: 289 (April) 1921.
4. Rogers, M. H.: J. Bone & Joint Surg. **4**: 679 (Oct.) 1922.
5. Keen, W. W.: Surgery, Philadelphia, W. B. Saunders Company **2**: 325.

The lack of definite roentgen-ray findings in an early tuberculosis of the hip-joint does not preclude the diagnosis; for though, often, the tuberculous involvement is first located in adjacent bone, a primary tuberculous synovitis is recognized. Murphy [6] states that in infants primary tuberculosis develops in the synovia.

The occurrence of two very similar cases of clinically definite tuberculosis of the hip-joint, both of which cleared up with practically no treatment and in a comparatively short time, brought up the question of an abortive type, and I wish to record the findings for what bearing they may have on the subject.

REPORT OF CASES

CASE 1.—M. F., a boy, aged 2½ years, whose past history was uneventful and whose family history was not pertinent examined, Oct. 23, 1920, complained of lameness of the right leg and pain above the right knee. The onset was two days previously, when he awakened and cried out with pain in the knee, and it was found that he could not stand on the right leg. The child had been healthy and vigorous, but, on question, the father recalled that, for a month before, the boy had often asked to be carried after walking a few blocks, and had said that his knee hurt him. There was no history of injury, but the child cried out often in his sleep.

Pain was localized in front of and just above the knee joint. The right leg was held with the knee flexed and the foot everted. The posterior gluteal sulcus was obliterated on the right. Motions of the hip were limited, the muscles being spastic; measurement showed no shortening. The temperature was 98.6 at 10 a. m. The roentgen-ray report was negative. The Pirquet skin test was markedly positive in twenty-four hours.

A diagnosis of tuberculosis of the hip-joint was made, and hospitalization for treatment by immobilization advised. The parents wished to wait a few weeks and, against the recommendation for immediate treatment, rest and hygienic measures were carried out. One week later, the condition was unchanged; the temperature had been up to 99 or more each evening. Three weeks after the examination, the child was able to walk, had but little pain, and limped slightly. In view of the improvement, it was decided to wait, and six weeks after the onset, recovery was complete, symptomatically and as to examination. A recent report states the child has remained well.

CASE 2.—M. L., aged 3 years, examined, Sept. 26, 1921, whose past history was negative, as was the family history, had complained of pain in the knee, beginning four days previously, and when walking, he limped and dragged the right foot. He had night cries, but there was no injury. Examination of the right hip showed a picture similar to that in Case 1. There was spasticity of the muscles, limitation of movements, and obliteration of the posterior gluteal fold, and the leg was held in flexion. Roentgen-ray examination was negative. The Pirquet test was positive in twenty-four hours.

In view of the course in Case 1, rest and hygienic measures were advised, with a request for a report each week. After two weeks there was slight improvement, and six weeks after the onset, there was complete relief of symptoms, and examination was negative. A report in January, 1923, shows the child free from trouble. During the October following the examination, two cows of the herd from which the family obtained milk were condemned for tuberculosis.

COMMENT AND CONCLUSION

In these cases we have, in favor of a diagnosis of tuberculosis, (1) etiologic factor; (2) typical history and symptomatology; (3) typical objective signs; (4) positive Pirquet tests (in children of these ages, the positive skin test should have considerable weight), (5) lack of any other diagnosis except acute synovitis, the occurrence of which is unusual, and for which we have no etiology.

Against the diagnosis of tuberculous joint disease, we have (1) the lack of bacteriologic proof of the organism, and (2) the course and outcome, for the recovery of a so-called tuberculous hip-joint in a few weeks is a strong argument against the diagnosis.

Though not definitely proved, it would seem that there is an abortive type of hip-joint tuberculosis.

6. Murphy: Clinics, 5: 103.

THE DIFFERENTIAL DIAGNOSIS OF NEURITIS AND CONDITIONS SIMULATING IT

WITH ESPECIAL REFERENCE TO POSTINFLUENZAL MULTIPLE NEURITIS AND ATAXIA *

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Perhaps no diagnosis is made with less foundation in fact and made so loosely as the diagnosis of neuritis, a term that is usually applied by the physician and the layman to connote a variety of conditions, the chief symptom of which is pain. If neuritis is of the mixed variety, that is, both motor and sensory, or if of the sensory type, it will be associated with pain; however, the two commonest types of neuritis seen in civil practice are instances of motor neuritis and hence are unassociated with pain. These two conditions are involvement of the seventh nerve and of the musculospiral, and are usually due, in the first instance, to exposure to a draft, and in the second, to pressure. A mononeuritis involving a mixed nerve and hence a condition which gives rise to pain, is extremely uncommon, the ulnar, median and sciatic nerves being only rarely so affected.

If a neuritis is present, producing pain, it must necessarily be of a sensory nerve, or of a nerve that contains both motor and sensory fibers. Such a disease should have as its chief symptoms pain along the course of the nerve, tenderness on pressure, weakness in the muscles supplied, a diminution of all forms of sensation in the distal parts of the nerve involved, depression or loss of the deep reflexes, and, if the condition is of any severity at all, muscular atrophy with a change in the electrical reaction. If the nerve involved is only a motor nerve, pain will be absent, as in the case of an ordinary Bell's palsy or of a musculospiral paralysis.

Granting that the foregoing remarks are true, what are the conditions which, when present, are so frequently thought to be neuritis, when, as a matter of fact, no such condition primarily exists? Given a patient with pain in any part of the body as his chief complaint, a methodical and systematic order of investigation should be instituted in every case in order to arrive at a proper diagnosis. I believe the fact is frequently overlooked that the pain complained of may be due to irritation of a nerve trunk or root much higher up than the site of the patient's pain. To paraphrase a line in an old poem, "the doctor properly to unravel the pain should begin at the cord," and thence work toward the periphery. The pain pro-

* From the Neurological Department of the University of Pennsylvania School of Medicine.

* Read at the Seventh Annual Clinical Session of the American Congress on Internal Medicine, Philadelphia, April 4, 1923.

duced by disease of or irritation of a posterior root is variously described as sharp, shooting, cutting or burning, and is often increased by sneezing, coughing or jarring. The fact that a root pain is often increased by sneezing or coughing frequently leads to an incorrect diagnosis of pleurisy (which may also exist) in the patient suffering from involvement of a posterior root in the dorsal region.

The chief conditions that irritate or destroy a posterior root are, in order of their frequency, syphilis, disease of the vertebrae, herpes zoster, spinal tumor and tumors, including aneurysms, growing outside the spinal canal.

Syphilis causes involvement of a posterior root by the production of a low grade of meningitis, such as is seen in tabes dorsalis and in meningomyelitis. Diseases of the vertebrae, of which ostearthritis, Pott's disease and carcinoma are the chief offenders, cut down the size of the vertebral foramina and also impinge directly on the roots. Herpes zoster is an involvement of the posterior root ganglion and, according to some investigators, is the analogue of acute anterior poliomyelitis. The pain of herpes zoster, as is well known, may persist for months after the eruption has disappeared. Tumors of the cord, which are usually benign, frequently grow from a posterior root or involve it by pressure. Tumors outside the vertebral canal involve the roots by pressure.

As a rule, a posterior root neuritis is not associated with tenderness at the site to which the pain is referred, although such a condition may exist. Whenever the disease of the root is of any severity, the so-called anesthesia dolorosa is present, in which case a paradoxical situation is seen; viz., the patient, although suffering from an intense pain in an area, is unable to differentiate the point from the head of a pin in this painful zone. It is needless to say that very often the conditions mentioned above will have other signs and symptoms than pain and a disturbance of sensation.

Posterior root disease may produce pain in any part of the body, yet how often does the examining physician who is called to treat a pain in the chest, abdomen or in any one of the four extremities think of the spinal cord and its posterior roots as the possible origin of the pain? I will not venture a reply.

After disease of the vertebrae, the cord and its coverings have been eliminated, one should try to visualize the course of the nerves, an involvement of which may give rise to pain. In the case of pain in or around the chest and the abdomen, a careful effort should be made to find the organ at fault, if the conditions mentioned above have been ruled out.

Pain in an extremity is only on the rarest occasion due to a neuritis; for ulnar neuritis, median neuritis and real sciatica are extremely uncommon conditions which should never be diagnosed until all the evidence in the case has been carefully sifted. The chief causes of pain in an extremity, in addition to posterior root involvement, are arthritis and disease of the vessels. I believe that the condition most frequently called neuritis in an extremity is in reality arthritis, the joint disease usually striking the shoulder or the hip. In addition to the changes as shown by the roentgen ray and the absence of any disturbance of sensation, joint disease produces an atrophy of the muscles that move the joint, especially the extensors, the atrophy being often rapidly produced and usually associated with increased reflexes in contradistinction to the lost reflexes that occur in neuritis. This type of atrophy is not associated with fibrillary tremors or with changes in the electrical reactions.

Disease of the vessels as a cause of pain in the extremities is usually easily recognized, and in this condition a neuritis may come on because of interference with the nutrition of the nerves.

Multiple neuritis may be of the sensory, motor or mixed types, the mixed variety being the commonest and due, as a rule, to alcohol. The signs or neuritis as outlined above will be present over many nerves instead of over one. Occasionally, any one of the acute infections may produce a multiple neuritis which may be in no way different from that produced by alcohol, but which, occasionally, is of an unusual type resembling in some of its manifestations tabes dorsalis and frequently referred to as pseudotabes. The sensory loss in this type of multiple neuritis may simulate closely those seen in the cord changes occurring in the course of severe anemia. In 1919, I called attention to this condition occurring in three cases of postdiphtheric ataxia.

Through the kindness of Dr. Spiller, I present two instances of postinfluenzal multiple neuritis and ataxia from the University Hospital.

REPORT OF CASES

Case 1.—*History.*—A white man, aged 24, unmarried, referred to the hospital, March 15, 1923, by Dr. J. W. Mitchell of Lewistown, Pa., complained chiefly of numbness and loss of power in the legs and arms. He had never had scarlet fever, diphtheria or pneumonia. He had a chancre in May, 1921, and was treated with mercury and six injections of arsphenamin. He was also given three injections of arsphenamin three weeks before admission, because his present trouble was thought to be tabes. He was well until three months before admission, when he had an attack of the grip, with cough and fever, the whole thing lasting about four weeks. Shortly after this he noticed a tingling sensation in his tongue, a condition which persisted ten days. A few days later he noticed that he staggered when walking. This difficulty in locomotion gradually progressed, and about two weeks before admission it became so severe that he could not walk, and had to remain in bed. At the time of examination, his legs were so weak that he could not bear his body weight on them. The upper extremities had been involved in the same manner as the legs, and he had very little use of his hands and arms. He had had no pain, and he had never been completely paralyzed in any muscle or group of muscles. He had had no eye symptoms and no relaxation of the sphincters.

Physical Examination.—The man was well developed and well nourished, was confined to his bed because he was unable to walk or stand, and sat up only with great difficulty. The pupils were equal and regular, and reacted somewhat sluggishly to light, but better in accommodation. The cranial nerves were normal, and hemianopia, exophthalmos and nystagmus were absent. The upper and lower extremities were well developed, and no atrophy was seen. All of the muscles of the upper and lower extremities were extremely weak. The biceps, triceps, patellar and Achilles reflexes were absent on both sides. Plantar stimulation produced flexion. Pain, touch, heat and cold were diminished in the distal portions of the upper and lower extremities. The sense of position and the sense of vibration were greatly impaired in all four extremities, and stereognostic perception was lost in both hands. Deep pressure was markedly involved in the hands and feet. The nerve trunks were tender on deep pressure. The electrical reactions showed normal faradic response and slight diminution of galvanic excitability.

The blood, spinal fluid, urine and gastric contents were normal.

CASE 2.—*History.*—A white man, aged 40, referred to the hospital by Dr. J. B. Nutt of Williamsport, Pa., March 16, 1923, had never had scarlet fever, diphtheria, rheumatism or tonsillitis. He was married and had six children, all whom were living and well. He stated he had never had venereal disease, and that he did not use alcohol. The patient was perfectly well until the latter part of December, 1922, when he contracted influenza, associated with high fever, headache and pains in the extremities, symptoms that persisted for three weeks. A few days later he noticed a tingling in the ends of his fingers and a marked defect in vision for near objects. After a few days' rest, he felt better and returned to his work for several days. The latter part of January, his legs suddenly became too weak to bear his weight, and his hands became weak and numb. He went to bed for three days, improved, and tried to walk, a feat that he did with a great deal of difficulty and staggering. His vision became normal after the first of February. The weakness of his four extremities continued, and gradually involved them to a marked degree. Three weeks before he was admitted, he again collapsed when walking. At the time of examination, he could walk with support. He had lost about 20 pounds (9 kg.) since the onset of his illness. He had had no pain or sphincter disturbance.

Physicial Examination.—All of the muscles of the extremities were extremely weak, but no atrophy was made out. He could walk for a short distance, showing an ataxic gait. Romberg's sign was present. The biceps, triceps, patellar and Achilles reflexes were lost. Plantar stimulation produced flexion on both sides. Touch, pain, heat and cold were slightly involved in the distal portions of the extremities. The sense of position and the sense of vibration were lost in the hands and feet. Deep pressure sense was normal. Intense pain was produced when the nerves of the extremities were palpated. The blood and urine were normal in every respect. The electrical reactions sowed no changes.

COMMENT

These two cases represent an unusual form of multiple neuritis in which ataxia and a loss of deep sensibility are prominent physical findings. In the first case, a diagnosis of tabes dorsalis had been made, although this diagnosis is certainly untenable because of the rapidity of the onset, the absence of shooting pains, sphincter disturbance, and eye signs, the presence of normal reactions of the blood and spinal fluid, and because of the marked weakness which is not a symptom of tabes dorsalis. The history of the onset coming closely after an attack of influenza makes a diagnosis of postinfluenzal multiple neuritis and ataxia a likely one. The second case, similar in a great many respects to the first, also developed on the heels of an attack of influenza and showed much the same clinical picture.

It is extremely unusual that in a case of multiple neuritis the sense of position and the sense of vibration should be lost with relatively little involvement of the other forms of sensation. This naturally suggests the possibility of posterior columns of the cord being involved, as well as the peripheral nerves. The resemblance of this sensory loss to that occurring in the cord changes seen in the course of severe anemia is very striking, but the absence of pyramidal tract symptoms and the presence of a normal blood and gastric contents rule out such a possibility.

The diagnosis made in these two cases, therefore, is postinfluenzal multiple neuritis, with a possibility of involvement of the posterior columns of the cord as well as of the peripheral nerves. Both patients are rapidly improving and each should make a complete recovery.

1909 Chestnut Street.

THE ADMINISTRATION OF HYPERTONIC SALT SOLUTIONS FOR THE RELIEF OF INTRACRANIAL PRESSURE*

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The use of magnesium sulphate to assist in controlling intracranial tension was first introduced into this clinic a little more than two years ago. During this time, certain observations as to its effects and mode of administration have been recorded, and the conditions in which its use is beneficial will be noted. It was adopted by the neurosurgical service as a means of reducing intracranial pressure and volume, following my observation that infants showed a marked retraction of the fontanels after its use, because of the dehydration that it produces throughout the cerebral system.

At the time a method brought forward by Cushing and Foley [1] of the intravenous injection of 35 per cent. sodium chlorid solution was in use, but since that time this method has been replaced in the majority of cases by the easier and more satisfactory administration of magnesium sulphate solution, either by rectum or by mouth. The intravenous method of sodium chlorid administration is still found to be of great value in cases in which rapid reduction of intracranial pressure and volume is necessary on the operating table.

Magnesium sulphate has been found of decided value in the preoperative study of cases presenting intracranial pressure. The patients have been relieved of headache, vomiting, choke disk, medullary depression and coma. Their symptoms and responses could be more carefully observed when the intracranial tension was relieved, and they could be kept in comfort for several days previous to operation. Dangerous medullary symptoms may be relieved long enough to permit time for the proper localization of a lesion before an operation is undertaken (Chart 1). The use of magnesium sulphate as a routine measure before operation in cases of suspected intracranial tension has permitted exposure of the cortex otherwise unsafe in the presence of decided pressure.

In the postoperative treatment of the so-called medullary edema, magnesium sulphate had been found indispensable. Cases in which stupor supervenes following intracranial exploration, with marked fall in respiration and pulse, rapid dehydration will check the pressure on the basal centers and allow a return of the respiration and pulse to normal (Chart 2).

In cases of traumatic injuries to the brain in which fracture of the skull or concussion is associated with marked stupor, respiratory and cardiac depression due to intracranial pressure and "medullary edema," dehydration by magnesium sulphate is followed by marked relief of these symptoms (Chart 3).

MODE OF ADMINISTRATION

Magnesium sulphate is best given by rectum. We have found 3 ounces (90 gm.) of the crystals dissolved in 6 (175 c.c.) ounces of warm water and introduced by means of a soft rubber catheter and syringe the most effective and the simplest method. The effects become apparent in about an hour. The patient is

* Read before the Philadelphia Neurological Society, Jan. 26, 1923.
* From the neurosurgical clinic of Dr. Charles H. Frazier, University Hospital.

1. Cushing, Harvey, and Foley, F. E. B.: Proc. Soc. Exper. Biol. & Med. **17**: 217, 1920.

saved the distress of active catharsis, and, in cases of vomiting, the administration of the salt by mouth may increase emesis, and the value of the drug will then be lost to the patient.

When given by mouth, 1½ ounces (45 gm.) of the crystals in 8 ounces (235 c.c.) of water brings relief a little sooner but is not without its disadvantages from the standpoint of the patient. This dose may be repeated every fourth hour until the desired dehydration is obtained.

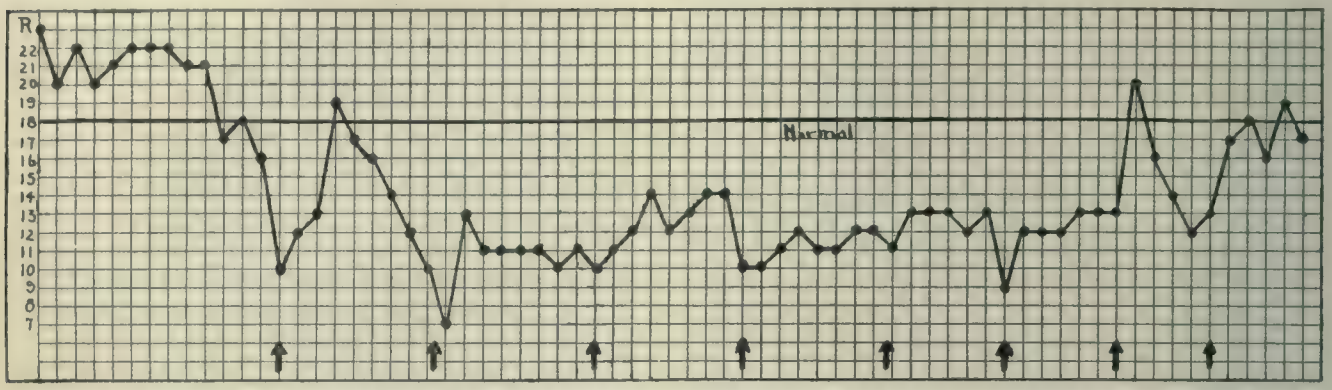


Chart 1 (M. S.).—Respiration of patient admitted with increased intracranial pressure for study and localization of lesion; sudden attack of medullary depression with stupor; patient relieved by administration of magnesium sulphate; safe and satisfactory condition maintained until lesion could be localized and removed: *R*, respiration; arrows, magnesium sulphate.

When given by rectum, no discomfort has been noted, and the accumulated fluid is siphoned off from time to time. The dose may be repeated in four hours and until the desired effect is produced. If more than 6 ounces of fluid is used, the patient may expel the solution, owing to its volume. In cases in which the patient is irritable, a dram (4 c.c.) of camphorated tincture of opium added to the salt solution may be of great benefit in assisting him to retain it. Fluid intake should, of course, be restricted to a minimum.

COMMENT

Weed and McKibbon [2] were the first to show the value of hypertonic sodium chlorid solutions by vein, and sodium sulphate and sodium chlorid by rectum and bowel for the reduction of intracranial pressure. Foley and Putnam [3] also confirmed this work, and a clinical application was made of these findings by Haden,[4] Cushing and Foley [1] and Sachs.[5] In a more recent article, Dowman [6] points out his use of magnesium sulphate in cases of intracranial tension, with marked success.

The use of sodium chlorid in solution by mouth (or in 2-gram capsules coated with phenyl salicylate), if given in sufficient quantities to produce dehydration, was found by us to be attended with vomiting and much distress, such as thirst and gastritis, so that this method has given way to the use of magnesium sulphate in this clinic. From a physiologic standpoint, the action of sodium chlorid is due not only to the presence of hypertonic saline solution within the bowel, but also to absorption of salt into the blood stream, the hypertonic solution of blood thus created causing a withdrawal of fluids from tissue spaces and especially the ventricular system. Hypertonic sodium chlorid solu-

2. Weed, L. H., and McKibbon, P. S.: Am. J. Physiol. **48**: 512 (May) 1919.

3. Foley, F. E. B., and Putnam, T. J.: Am. J. Physiol. **53**: 464 (Oct.) 1920.

4. Haden, R. L.: Therapeutic Application of Alteration of Brain Volume by Injection of Glucose, J. A. M. A. **73**: 983 (Sept. 27) 1919.

5. Sachs, Ernest, and Belcher, G. W.: Use of Saturated Salt Solution Intravenously During Intracranial Operations: Preliminary Report, J. A. M. A. **75**: 667 (Sept. 4) 1920.

6. Dowman, C. E.: Management of Head Injuries with Real or Potential Brain Damage, J. A. M. A. **79**: 2212 (Dec. 30) 1922.

TABLE 1.—*Results of Giving Magnesium Sulphate by Mouth and by Rectum*

Case	Method	Amount, Ounces	Effect	Lesion
1	Rectal	2½ every other day	Respirations restored to normal; relief of headache and vomiting; great relief of tension; vision improved; kept comfortable for 10 days until subtemporal decompression	Tumor ?, unverified
2	Mouth and rectal	1 every 4th day	Headache relieved; vomiting relieved; postoperative respiratory drop; restored; palliative	Pituitary syphilis
3	Mouth	1 in the a. m.	Entire relief of intense headaches, vomiting, and became less irritable, so examination could be made	Cerebellar tumor
4	Rectal	3	Respirations raised from 12 to normal; headache and stupor relieved	Brain abscess
5	Mouth	1 every 4th hr.	Relief of headache, vomiting and dimness of vision; palliative until operation	Cerebellar tumor
6	Mouth	1½ every 4th hr.	Some relief of symptoms; toward the last there was no relief from headache and marked retraction of neck; cerebellar tumor had extended down the neck through an old decompression opening; tumor as large as a grapefruit found	Cerebellar tumor
7	Mouth	1 in a. m.	Relief of headache, vision better, vomiting ceased	Brain abscess; lateral sinus thrombosis
8	Mouth and rectal	3; 1 by mouth	Respirations returned from 9 to 18; some improvement of stupor and mental condition; examination made possible	Temporal lobe tumor
9	Mouth	1 every 4th hr.	Relief of headache and vomiting	Pituitary
10	Mouth	1	Relief of headache and vomiting	Frontal lobe tumor
11	Mouth	1½ every 4th hr.	Relief of headache and vomiting	Glioma, frontal
12	Rectal	1 every 4th hr.	Respirations restored from 14 to normal	Parietal lobe tumor
13	Mouth	1½ every 4th hr.	Respiration restored to normal; headache and vomiting improved; vision improved; died, sudden respiratory failure after 3 days	? Pituitary
14	Mouth	1½ every 4th hr.	Respiration restored to normal; vomiting, headache and restlessness relieved; sleep induced	Temporal lobe tumor
15	Mouth and rectal	3, 1½	Edema of lungs cleared up.....	Trans. myelitis, 5th cervical segment
16	Mouth	1½ q. s.	Headache such that patient rolled about on the floor; relieved completely	Subcortical glioma

tion is dialyzable, and in the increased chlorid content of the blood leads to a temporary secondary tissue retention with a rapid return of pressure symptoms some hours after its administration. Magnesium sulphate, on the other hand, is nondialyzable, and produces its action by a rapid dehydration of blood plasma fluids solely through the intestinal walls, with a compensatory absorption on the part of the blood from the fluid spaces, especially the ventricular system, in order to maintain normal blood volume.

chlorid solution while on the table, in order to facilitate exploration. In all but two cases, pressure was found to be rapidly relieved so that the dural incision could be made without herniation of the cortex. In several cases, at the close of exploration, the administration of the solution while on the table allowed the operator to close the dura safely.

During the early use of this solution, 30 c.c. of a 35 per cent. sodium chlorid solution was used intravenously causing a slight reduction in intracranial ten-

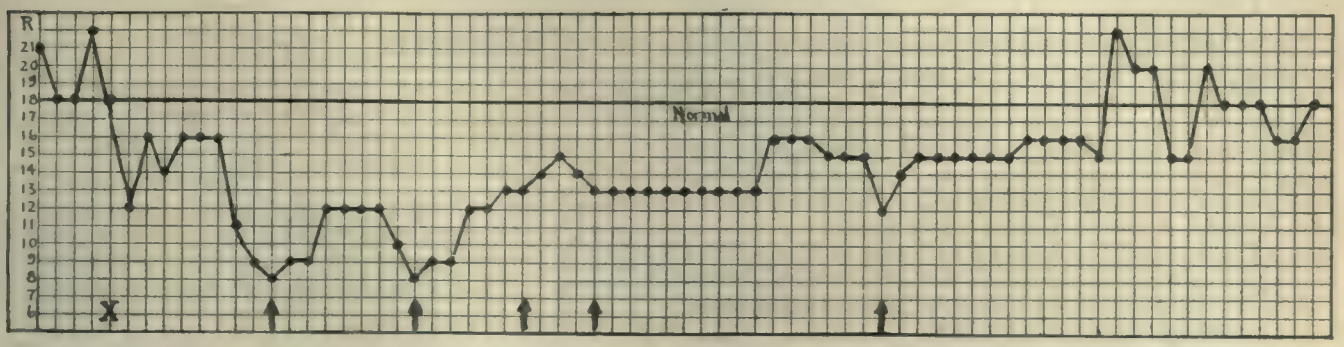


Chart 2 (I. R. S.).—Rapid postoperative fall in respiratory rate due to medullary pressure, relieved by magnesium sulphate, with eventual recovery: *R*, respiration; *X*, exploratory craniotomy; arrows, magnesium sulphate.

No ill effects from its repeated use have been noted by us.

A wider application of our method for the administration of magnesium sulphate has been noted by other services of this hospital, and the results so far reported have been very satisfactory. Spiller has found the use of this salt very effective in reducing the papilledema seen in certain forms of encephalitis. In several of his cases, the swelling of the optic disks has been reduced from 5 diopters to less than 2. Thompson has suggested its use in glaucoma, and de Schweinitz and Baer have noted that appreciable reduction of intra-ocular tension has followed its administration. Ravdin was able to control an edema of the glottis following Lud-

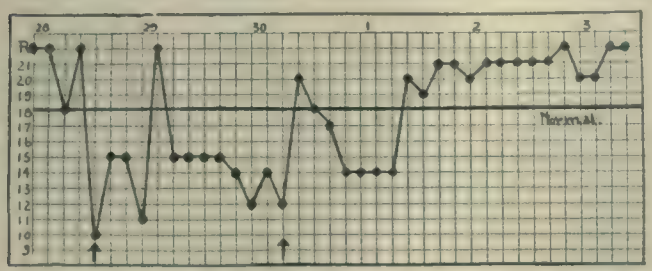


Chart 3 (H. S.).—Respiration after concussion resulting from blow on head; medullary depression relieved by magnesium sulphate with rapid return of respirations to normal: *R*, respiration; arrows, magnesium sulphate.

wig's angina in a case in which a tracheotomy seemed imminent. We found it of marked value in clearing up what appeared to be a fatal edema of the lungs appearing a few hours after injury, in a case of traumatic transverse myelitis at the fifth cervical segment. These are merely possibilities for its use whenever active reduction of edema seems necessary. Further investigation along the lines suggested is needed before the exact value of the drug may be determined in other branches.

INTRAVENOUS HYPERTONIC SALT SOLUTION

Of the exploratory craniotomies performed in this clinic in the last two years, 17 per cent. of the patients received an intravenous injection of hypertonic sodium

sion. Later, when larger amounts of a 15 per cent. solution were used, the reduction of pressure became more marked, and led to the adoption of from 50 to 120 c.c. of 15 per cent. solution, by vein, as that which would yield the best results in the shortest period of time.

TABLE 2.—*Results of Intravenous Injection of Hypertonic Sodium Chlorid Solution*

Case	Size of Ventricle	Type of Tumor	Salt Solution	Results (Cortical Pressure)
1	?	Pituitary, suprasellar	32 c.c. 35%	No change
2	Large	Glioma, cerebellum	30 c.c. 35%	Reduction of intracranial pressure
3	One large, other collapsed	Subcortical glioma	30 c.c. 35%	Very slight reduction of pressure
4	Small	Cortical adenocarcinoma	40 c.c. 35%	Slight reduction of pressure
5	One large, other collapsed	Subcortical glioma	120 c.c. 18%	Marked reduction so dura could be opened
6	Large	Cerebellar tumor ?	140 c.c. 15%	Roused from stupor
7	?	Subcortical tumor	30 c.c. 15%	No effect
8	Large	Subcortical glioma	35 c.c. 15%	Intracranial pressure reduced
9	Small, 5 c.c.	Endothelioma	60 c.c. 15%	Pressure reduced enough for exploration and removal
10	?	Subcortical gliomatous cyst	10 c.c. 15%	Pressure reduced by evacuation of cyst as salt was being given
11	? Moderate	Subcortical glioma; cortical invasion	40 c.c. 15%	Marked reduction in pressure
12	Enlarged	Postchiasmal tumor	60 c.c. 15%	Pressure reduced
13	Small	Subcortical ?	60 c.c. 15%	Pressure reduced
14	Large	Pituitary	90 c.c. 15%	Pressure reduced
15	Small	Temporal lobe tumor	100 c.c. 15%	Pressure reduced slowly; exploration possible

Its immediate value to the surgeon is clearly shown by extracts from the operative notes, relative to the effect of intravenous salt solution:

CASE 5.—On reflection of the osteoplastic flap, the dura was found to be under great tension, too great to warrant opening the dura until pressure had been relieved. An attempt was made by direct ventricular puncture and by collosal puncture to evacuate fluid from the ventricle, without effect.

Two or three incisions were made in the dura on the superior and anterior margins of the opening to see whether the tumor presented on the surface. None could be seen.

Meanwhile 80 c.c. of 15 per cent. solution of sodium chlorid was given intravenously in about twenty minutes, and during this time there was a very decided reduction of tension, so much so that there seemed to be no impropriety in opening the dura. This was done, and the surface of the brain subjected to inspection and palpation.

The exploration was concluded, and some difficulty was experienced in closing the dura, as during the manipulation, the brain had become somewhat swollen. It became necessary to give 40 more cubic centimeters intravenously of 15 per cent. sodium chlorid before the dura could be safely closed.

Case 9.—Tension was so great that it was thought unwise to reflect the dural flap unless it could be relieved temporarily at least. Almost simultaneously a direct ventricular puncture was made along with the intravenous injection of 60 c.c. of 15 per cent. sodium chlorid solution covering twenty minutes. Very little fluid escaped from the ventricular puncture needle, perhaps only 4 or 5 c.c.; but because of this or because of the effect of the salt solution, the tension diminished appreciably so that we proceeded at once to reflect the dural flap. When about halfway open, the tumor was discovered, involving the cortex, etc.

Case 8.—To determine what might be expected from the use of salt solution, 35 c.c. of 15 per cent. sodium chlorid solution was given intravenously, and the pressure was reduced by this enough to warrant an exploration.

Case 4.—To facilitate closure at the conclusion of the operation, the patient received 60 c.c. of 15 per cent. sodium chlorid solution intravenously.

Case 11.—Before the wound was closed, an attempt was made to determine how much relief might be obtained by the use of sodium chlorid solution. Forty cubic centimeters of a 15 per cent. solution was introduced intravenously in fifteen or twenty minutes. There was decided reduction of pressure by the time the sutures were in place.

Sachs [5] showed that there was no increase in fragility of red blood cells with the introduction of this hypertonic salt solution. No reaction following its use has been noted in the neurosurgical service. Observations here showed that the most marked dehydrating effects were noted in cases of dilated ventricles with hydrocephalus and less so in those presenting large infiltrating growths. However, there was a marked reduction in nearly every case; and the use of this method as a diagnostic sign between an obstructive hydrocephalus and a large infiltrating tumor, although not at all conclusive, may point toward one or the other, depending on the time necessary for the dehydration to occur, large infiltrating growths requiring the longer time.

CONCLUSIONS

1. Hypertonic salt solutions are of great value as dehydrating agents for the rapid reduction of intracranial tension.

2. Magnesium sulphate solution, 1½ ounces of crystals in water by mouth or 3 ounces of crystals in 6 ounces of water by rectum, has given marked relief from symptoms of intracranial pressure and "medullary edema."

3. It is of assistance in eliciting symptoms, otherwise masked by intracranial pressure.

4. The routine administration of magnesium sulphate solution two hours before operation in cases with increased tension has been of decided value.

5. It is of assistance further in checking the rapid advance of papilledema, and in relieving the coma and respiratory depression seen in cases of marked intracranial pressure.

6. In traumatic head injuries in which the pulse and respirations fall below the normal, its use is very effective, so that surgical intervention in this group of cases has been found unnecessary.

7. Rapid dehydration of other fluid collections in the body, as in edema of the lungs, may also be accomplished by this agent.

8. The intravenous injection of from 50 to 120 c.c. of 15 per cent. sodium chlorid solution, covering a period of twenty minutes, has been found a great adjunct in exploratory craniotomies, especially when the dura is tightly distended and ventricular puncture is unsatisfactory or cannot be effected.

FACTORS IN THE ETIOLOGY OF TRAUMATIC APPENDICITIS

WITH CERTAIN CLINICAL OBSERVATIONS

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The comparatively infrequent, but obvious, association of acute appendical attacks with some form of strain or injury immediately preceding the attack has forced on clinicians the question of there being a true relationship of cause and effect present in this repeatedly observed sequence of events. The question has two parts: one having to do with the initiating of an original inflammation in a previously healthy appendix, and the other, with the establishing of an acute exacerbation of a previously existing inflammation.

Concerning the first part of the question there is a unanimity of authoritative opinion to the effect that trauma does not initiate an original inflammation in the healthy appendix; concerning the last part of the question there is a great diversity of opinion. Two factors appear to be responsible, in large measure, for this situation. The first factor is the oft repeated dogma of the textbooks that the appendix is immune to the effects of external violence or muscular strain on account of its deep-seated position in the abdomen and its free mobility.

The deep location and the mobility of the appendix would, indeed, be safeguards against injury if the abdomen were a solid body and, in obedience to the laws of physics, transmitted a received force only in the direction in which the force was applied. But the abdomen is not a solid body. It is essentially a liquid and gaseous mass and is subject to the laws governing the transmission of force by liquid and gaseous mediums, i. e., the pressure exerted on it is transmitted equally in all directions. The deep location of the appendix, therefore, is not a factor that contributes either to the liability of the appendix to damage resulting from external violence, or to its immunity in such an accident.

Concerning the mobility of the appendix, it is reasonable that this factor should facilitate its escape from the area of impact of a force locally applied. But that such escape is of any material moment is doubtful, as will appear later.

The second of the two factors responsible for the previously mentioned diversity of opinion as to the causal relationship of trauma and appendicitis is the variety of meanings with which the word "trauma" is invested, and the absence of histologic proof of mechanical injury to the tissues from without. To illustrate: An acute appendicitis follows the reception of a heavy blow over the right lower quadrant of the abdomen. An appendix, containing a coprolith, is removed, acutely inflamed and about to perforate. The clinician speaks of "traumatic appendicitis." The pathologist returns

his findings as "perforative appendicitis." In another case, appendicitis develops quite in an ordinary manner. There is no suggestion of any violence or untoward incident. The removed appendix with its concretion is sectioned, and minute abrasions of the mucosa, caused by crystallized particles of vegetable iron or by the sharp vegetable hairs described by Shattock,[1] afford obvious portals of entry for micro-organisms. The report from the pathologist is "traumatic appendicitis."

The net result is that any quotation involving the word "trauma" in this connection must, to be intelligible, define the sense in which the word is used. In the present article the word "trauma" is intended to indicate the results of gross violence, or of untoward or unusual muscular action.

There will probably be no question that appendicitis is an infectious disease; that the causative agent gains access to the lumen of the appendix by way of the gastro-intestinal tract,[2] and finds lodgment in the depths of the glands of the appendical mucosa, where it may remain inactive for an undetermined length of time; that the contents of the appendix are received from the cecum; that they are retained in the appendix for a time and then again expelled by it into the cecum; and that the cecal and appendical contents are at all times laden with organisms capable of invading the appendical wall under favorable conditions.

The wide use of the barium meal and the barium enema for diagnostic purposes has made it a matter of common knowledge that cecal contents can be forced into the appendix by relatively slight pressures. Fürbringer and von Hansemann [3] were able to express the contents of a full cecum into the appendix by light manual pressure over the cecum, by light manual pressure over the ascending colon and by the introduction of air into the rectum. They used colored fluids as an indicator.

To reason that a blow on the abdomen or a muscular strain which increases intracecal pressure would probably force cecal contents into the appendix is both logical and in harmony with the observations noted above. If the appendix were normal and its lumen unobstructed through its extent, the appendix would empty itself and the incident would be closed. If the appendix should be unable to empty itself in any portion or throughout the whole of the extent of its lumen, fecal stasis would result. And fecal stasis is a condition well recognized as favorable to infection.

Since the damage comes to the appendix through overdistention of, and fecal stasis in, its lumen, the mere escape of the appendix from the actual impact of a blow on the abdomen is of slight moment. Moreover, it is apparent that it is the ability of the appendix to discharge its contents that determines the future course of events.

Adhesions that compress or angulate the lumen, scars of healed mucosal lesions, fibrous replacement of the musculature of the wall, and, most important of all, coproliths, are the principal lesions that are to be considered in this connection.

Brunig [4] states that while concretions were present in 35 per cent. of his cases of appendicitis, they were found in 65 per cent. of those cases of appendicitis which followed trauma.

The coprolith has for a long time been recognized as conclusive evidence of preexistent appendical disease. It is composed of fecal material mixed with bacterial masses and inspissated mucus, formed in the hypersecretive stage of an inflammation, and remaining throughout the subsidence of the inflammatory reaction to become hardened by chemical change and absorption. Its surface is usually smooth, and it flattens out the mucosa with which it comes in contact, so that the mucosal crypts in the area in contact with the coprolith are obliterated and no longer afford lodgment to organisms. Aschoff [5] states that the primary or most active focus of infection is just distal to the coprolith, and a focus of secondary importance is found at the proximal end of the concretion. The intervening area of mucosa in contact with the concretion is usually free from actual foci of infectious material.

Here, then, we have every condition favorable to the development of a traumatic appendicitis. We have an appendix (*a*) with the lumen obstructed by a coprolith; (*b*) with fecal stasis in, and defective drainage of, the distal segment, and (*c*) with an increase of the virulence of the contained organisms due to their confinement.

If, now, an excess of cecal contents is forced into the appendix, it must either push the coprolith farther toward the tip of the appendix, or flow over and around the obstruction, filling and distending the terminal segment. The immediate result of this afflux of cecal contents is pain, from the distention of the appendix and from its efforts to empty itself. The distended appendical wall is rendered anemic by pressure, particularly in its mucosal layer; an excess of toxin is forced into the tissues by dialysis under pressure; and the virulence of the organisms is heightened by the establishment through the fecal stasis of conditions favorable to their development. These factors eventuate in an immediate and destructive invasion of the appendix wall. This type of appendical disease may be likened to a loaded weapon, the distal segment representing the cartridge and the coprolith representing the firing pin, actuated by the force from behind. The resultant explosion in each is dependent on the amount and character of the confined contents. Clinical experience has well demonstrated the danger from active purgatives in appendicitis. Sir Berkeley Moynihan's [6] alliterative sequence of "pain, aperient, perforation" represents the same mechanism as that obtaining in a traumatic case, but substitutes as the propelling force the hypermotility of the stimulated intestine in the place of direct external pressure.

EVIDENCES OF TRAUMA

In these circumstances there is no finding of free blood in the peritoneum, or histologic evidence of direct trauma to the appendix (with the connotation that has been assigned above to the word "trauma"), both of which findings are urged as essential to the proof of a traumatic appendicitis by Sprengel [7] and other opponents of the idea of a traumatic origin of this affection. Dr. Sprengel's contention that there has never been a case of traumatic appendicitis scientifically proved is undoubtedly correct. The morphologic proof which he demands cannot be adduced because it never exists, and there is no reason why it should exist. In those rare instances in which enveloping adhesions about the appendix have been torn by direct external violence, or

1. Shattock, S. G.: Proc. Roy. Soc. Med., Sec. Path. **13**: 105 (July) 1920.
2. Hematogenous and lymphatic infections are purposely omitted.
3. Quoted by Emil Schepelmann: Med. Klin., June, 1915, p. 687.
4. Brunig, F.: Deutsch. med. Wchnschr. **28**: 322, 1912.
5. Aschoff, L.: Pathologische Anatomie, Ed. 3, **2**: 793-795, 1913.
6. Moynihan, Berkeley: Essays on Surgical Subjects, Philadelphia, W. B. Saunders Company, 1921.
7. Sprengel: Deutsch. med. Wchnschr. **37**: 2318, 1911.

even the appendix wall itself lacerated, the time elapsing between the receipt of the injury and the operation has permitted the rapidly advancing inflammatory process to obliterate all evidence of mechanical injury to the tissues.

Aschoff [8] says:

> Since the lymph follicles of the appendix push forward as far as the epithelium, it follows that, on the occasion of an injury, the epithelial covering is ruptured clear through the capsule of the node. And I have frequently, with sufficiently careful search, been able to demonstrate the very delicate fissures filled with fecal bacteria which have proceeded from the lumen into the substance of the lymph node.

Against this it has been urged that the same findings have been demonstrated in cases of appendicitis in which there was no history of trauma. The presence of these bacteria-filled fissures does not prove trauma, but does indicate very clearly an overdistention of the appendical lumen to the point of actual rupture of its lining epithelium, and the admission of infectious organisms into the substance of the appendical wall. Muscular strain or the action of an aperient, as has already been indicated, would readily account for the presence of these fissures in cases not associated with a history of external violence. These factors invalidate the objection.

When it is considered that active lesion of the appendix wall can be demonstrated within one hour of the beginning of an infectious process, and that perforation may occur in six hours, it seems doubtful whether operative interference will ever be sufficiently prompt to provide the laboratory with material from these cases which will be of definite value in the study of the earlier histologic pictures following trauma. It would seem probable that these histologic pictures would be identical with those from cases not associated with trauma.

As no laboratory help has, in the past, been available to aid in the discrimination between traumatic and nontraumatic appendicitis, and as none seems likely to be forthcoming, the recognition of the traumatic case must, for the present at least, depend on accurate clinical observation. Four points are to be considered: (*a*) the anamnesis; (*b*) the circumstances of the immediately preceding trauma; (*c*) the time relationship between the trauma and the onset of symptoms, and (*d*) the pathologic conditions found at operation.

Unfortunately, there is little information of real value to be gleaned from the anamnesis. Inflammatory conditions may have eixsted in the appendix for years wholly without the knowledge of the patient; or a most circumstantial history may be woven about an appendix entirely free from disease. Again, there may have been an active appendicitis which has long since undergone complete resolution, leaving no trace behind.

A knowledge of the circumstances attending the immediately preceding trauma is of great value and should be carefully acquired in detail, not only as to the character and severity of the injury, but also as to whether it was a single impact or a series of impacts, as to whether general to the abdomen as a whole or local, as to the location of the impact on the abdominal wall, and, most particularly, as to its proximity to the cecum and the ascending colon. Falls on the abdomen, kicks, heavy blows and the striking of the right lower quadrant against the corner of a table or similar object are among the more usual causative injuries. Muscular strain usually occurs in lifting. Sir William Osler [8] says, "Persons whose work necessitates the lifting of heavy weights seem more prone to the disease. Trauma plays a very definite rôle, and in a number of cases the symptoms have followed very closely a fall or a blow." This was written at a time when only the more acute forms of the disease as we recognize it today were denominated appendicitis.

While it is true that an attack is more likely to follow those injuries which fall on the region of the cecum or the ascending colon, it may follow a general diffuse abdominal trauma, as illustrated by Case 1:

> CASE 1.—A girl, aged 10 years, fell from a swing a distance of about 2 feet and landed prone on level ground. Pain was immediate and severe, vomiting followed, and eighteen hours after the fall all the symptoms of peritonitis were obvious, and the operation, thirty hours after the fall, disclosed an appendix acutely angulated at its midpoint by a single firm adhesion. Immediately distal to the point of angulation, all of the coats of the appendicular wall were ruptured. An actively advancing peritonitis was present. There were no delimiting adhesions.

Case 2 is another example of appendicitis following general, and in this instance repeated, trauma to the abdomen as a whole.

> CASE 2.—A boy, aged 9 years, was industriously enjoying the first sliding of the winter by "belly floppin'" on his sled. On account of abdominal pain, he abandoned his sport after about two hours' play. Vomiting followed, and seventy-two hours afterward a perforated gangrenous appendix containing a coprolith was removed from a well-walled-off abscess containing 4 ounces of the usual foul colon pus.

In those instances in which the trauma has been received immediately over the cecum or ascending colon, there are two factors of equal importance to be considered. One is the force of the blow, and the other is the directness with which that force is permitted to act on the cecal contents—its "access to the cecum," so to speak. This "access" is influenced very considerably by the muscular development of the individual, by the amount of adipose tissue in the abdominal wall, and by the preparedness of the muscles of the abdomen to receive the impact. It is obvious that in a thin walled abdomen with a minimum of adipose tissue and poorly developed musculature in a normal state of relaxation, a less force will be required to exert a given amount of effect on the underlying intestine than would be required to produce that same amount of effect in an abdomen with thick, powerful muscular walls, an abundance of overlying fat and the musculature held tense in anticipation of an impact.

> CASE 3.—A schoolgirl, aged 19 years, feared that she was the victim of an appendical attack on account of some transient right lower abdominal pain, which recurred at intervals. She had previously experienced two brief attacks of appendicitis, with intervening intervals of two or three years. On the examining table she relaxed well, the abdominal wall was thin, and conscientious deep palpation of the right lower quadrant failed to elicit any evidence which would justify an opinion that the appendix was inflamed. Reassured that her fears were groundless, she went home and, as directed, took a saline aperient. As she was leaving the office she complained that the examination had "made it ache down there." The ache grew worse, vomiting ensued, and at 5 o'clock the following morning, sixteen hours after the "conscientious deep palpation," a sudden agonizing pain announced the perforation of the appendix, which, together with its contained coprolith, was removed two hours later.

COMMENT

When, as in this instance, an aperient has been administered, the responsibility for ensuing destructive dis-

8. Osler, William: Practice of Medicine, Ed. 3, 1899, p. 524.

ease of the appendix must be divided between the trauma and the aperient. As to the trauma itself, it was mild in degree, but its "access" to the cecal contents was unimpeded by any of the previously mentioned factors.

It is not probable that a local injury to a portion of the abdominal wall remote from the cecum would give rise to an attack of appendicitis. Such an injury, if of sufficient severity to cause any material increase in the intracecal pressure, would most probably result in damage to the viscera lying immediately under the site of the injury. Blows on the back and flanks do not cause appendicitis, because of the large and powerful muscles which are interposed between the impact and the abdominal cavity. A considerable portion of any force applied in these regions is transmitted to and dispersed by the heavy bony structures to which these muscles are attached, while at the same time the thinner and more elastic portions of the abdominal wall are free to expand and dissipate the transmitted forces.

Bearing in mind that the initial pain in cases of traumatic appendicitis is due to the overdistention of the appendix and to its efforts to relieve itself of the burden by peristaltic action, it is readily appreciated that the onset of pain in the true traumatic case will be either immediate or occur within a very brief time after the injury. The appendical wall may have been so altered by preceding disease as to render an immediate peristaltic response to overdistention impossible. In this event, there will be a delay of a few hours in the onset of the pain, pending the accumulation of products of inflammation.

When the onset of the pain is immediate, it is usually of moderate severity, and it frequently diminishes or disappears entirely in a brief time. In a few hours it returns with renewed intensity, is usually accompanied by vomiting, and the classical clinical picture of peritonitis is rapidly completed. This pain-free interval is caused by the failure of active appendical peristalsis incident to the progressive destruction of the appendical wall and the anesthetizing effect of the accumulating edema on the terminal nerve filaments concerned in the neuromuscular reflex arc. This pain-free interval is invariably the preperforative stage of the true traumatic appendicitis, and the ideal time for effective operative intervention. Unfortunately, it is frequently looked on as an indication of improvement, and the opportunity to forestall the catastrophe of perforation is lost. If in a given case the circumstances are such as to justify the reasonable belief that damage has come to the appendix through trauma, this fact alone justifies immediate operative intervention. And this is particularly true in children.

The most important and reliable information bearing on the question of trauma as the causative factor of an appendicitis is obtained at operation. The question which the observer must consider has to do with the condition of the appendix at the moment the trauma was received. He must discriminate between the acute pathologic condition that has been added by the inflammatory reaction subsequent to the trauma, and the more ancient pathologic conditions which antedated the trauma. From the whole picture as presented at the operating table he must subtract the former and consider whether there remains a lesion sufficient to have materially impeded the emptying of the lumen of the appendix at the time of the injury. It is a question for nice judgment.

Clinical Notes, Suggestions, and New Instruments

OSTEOMYELITIS OF CREST OF RIGHT PUBIC BONE

A. BELCHAM KEYES, M.D., CHICAGO

The infrequency of pubic osteomyelitis, both as a spontaneous disease, and as secondary to the rare anterior pelvic (parametric) abscess that may later involve the bone, makes a report of this case of especial interest.

History.—Mrs. R. W., white, aged 24, with one boy, living and robust, aged 3, was brought to my office, April 7, 1920. With the exception of children's diseases she had always had good health. The heredity was good, and the patient stated that there had been no venereal disease, attempts to induce abortion, or pelvic treatment or examination of any kind.

In the autumn of 1918, she had influenza and pneumonia, being sick about four weeks, with very violent spells of coughing, occasionally lasting as long as fifteen minutes, and often accompanied by bleeding from the mouth and ears.

Some weeks after recovery, though still quite weak, she went to work in a stationery store. While working, she had to clean out big show cases, which required a crouching position and considerable stretching in order to reach the farthermost parts. The patient also had to carry up heavy bottles of ink and other supplies from the basement of the store. These duties, in her still weak condition, were very exhausting, but she apparently always recuperated rapidly after a short rest.

Some evenings later, feeling stronger, she attended a basketball game. When the game was over and she was arising to go home, she was taken with a terrifically violent pain in the rectum, necessitating her sitting down in the snow to rest on the way home, only a few blocks away. It was near her menstrual period, and as she had had similar pains before (at such times), though never so severe, she thought no more of it.

However, the following morning she was so sick that the family doctor was called in and made a pelvic examination, causing her much additional pain. He reported finding nothing more than a displacement of the uterus. The pain was still so severe that she was forced to remain in bed, and at night on several occasions hypodermics had to be resorted to, in order to allow her to rest.

After fourteen weeks in bed she could sit up a little; so she, accompanied by her mother, was taken, in a wheel chair, by train to the Mayo Clinic. Here an examination was made, and she was told that she was suffering from a pelvic abscess, which was discharging into the vagina, and advised to return home and take hot douches of compound solution of cresol and hot sitz baths, and to report back to Rochester in three months.

By following out this treatment faithfully, she gained a little strength, and, with great effort, she was able to walk. Her husband having moved to Chicago, she did not report back to Rochester.

Examination.—When I first saw her, she was barely able to walk, and was much emaciated. She entered the Passavant Memorial Hospital, Chicago, April 8, for complete diagnosis and in order to be built up for possible operation. The physical examination showed some thickening and tenderness around the pubic bone on the right side. Other organs, supradiaphragmatic and infradiaphragmatic, were normal; the urine, vaginal smear, and Wassermann tests were all negative; the husband stated that she had not been exposed to venereal disease, either before or after marriage. A roentgen-ray examination by Dr. S. R. Hurlbut (Passavant Hospital) revealed inflammation and loss of substance of the crest of the right pubic bone.

Operation.—April 14, Dr. Keyes performed a laparotomy and sterilization by removal of both tubes and anterior fixation of the uterus. Intraperitoneally there was no inflammation. After the abdominal incision was closed, a lower

transverse incision was made over the cavum retzii, and the affected right pubic bone was curetted, and iodin and an iodoform gauze drain were inserted.

Course.—April 26, she left the hospital, still with a discharging sinus, and returned to the office every two or three days for dressing. Health, strength and the ability to walk returned gradually.

The patient was readmitted to the Passavant Hospital, October 4, and the soft parts were again opened widely and recuretted for removal of bone sequestrums. Iodin and a drain were reinserted. The patient was again discharged from the hospital, October 30. The sinus was still open, but strength and ability to walk now became markedly improved. The patient returned to the office, for a time, on every third day to have the wound dressed, during which time repeated roentgenograms were taken by Dr. Hollis E. Potter to note progress.

The healing having progressed considerably, the patient was allowed to go to Boise, Idaho, where she continued the dressings under my instructions. The last report from the patient, March 15, 1923, says, "Wound entirely healed for the past sixteen months. Am able to do all my own housework, dance, run and hike up the mountains, and do what any one else can do."

122 South Michigan Avenue.

TRAUMATIC PNEUMOTHORAX CAUSED BY TOY BALLOON

FRANK S. CHILD, JR., PH.M., M.D., PORT JEFFERSON, N. Y.

Edith D., aged 4 years, had been to the circus, Aug. 5, 1921. While returning home, she was running with a balloon stick in her mouth, and fell face downward. In falling, the stick was driven into the left side of her throat, piercing the thorax. The little girl picked herself up and pulled the broken stick from her mouth. She was immediately taken home. When I saw her one hour later, she was expectorating blood. Her mother stated there was considerable bleeding at first.

On examination, I noted that the left neck was very tender, the base of the tongue was lacerated, and there was a slight oozing of blood from the left side of the throat. The front of the neck was swollen, and the skin crackled when palpated, because of the emphysema. She was in moderate shock, with a respiration of 40 and a pulse of 150. Cold compresses were applied to the neck, and the patient was kept in bed.

The following day, August 6, amphoric breathing was noted over the entire left chest, and there was no respiratory movement on this side. The general condition of the little patient was good and continued to improve until August 13, eight days after the accident. Then she had a chill, followed by a fever of 104. By August 15, her condition had become so serious that I had her removed to the hospital. At this time she had a temperature of 105.4, pulse 170, respiration 54. I suspected pneumonia. Examination of the chest was very difficult because of the amphoric breathing, although bubbling râles could be heard. A roentgen-ray examination disclosed a collapsed lung on the left side, but no sign of fluid. A diagnosis of lobar pneumonia was made and the development of an abscess feared. The prognosis seemed poor.

At this time, August 17, Dr. Richard Derby of Oyster Bay was called in consultation. He advised a continuation of the expectant treatment. For five days the patient continued in an uncertain condition, her temperature remaining around 105. Then the fever began an irregular course, subsiding by lysis.

August 25, the roentgen-ray examination revealed a slight expansion of the lung, and on September 8, thirty-four days after the accident, another roentgen-ray examination showed a normal expansion of the lung. Amphoric breathing had disappeared, and only scattered crepitant râles remained.

The patient was discharged from the hospital, September 11, with a respiration of 34. Nov. 1, 1921, I examined her and found the lungs in normal condition, and although the little girl still showed effects of her illness, she was playing about the house. April 1, 1923, I examined her again, and found her active and in excellent physical condition.

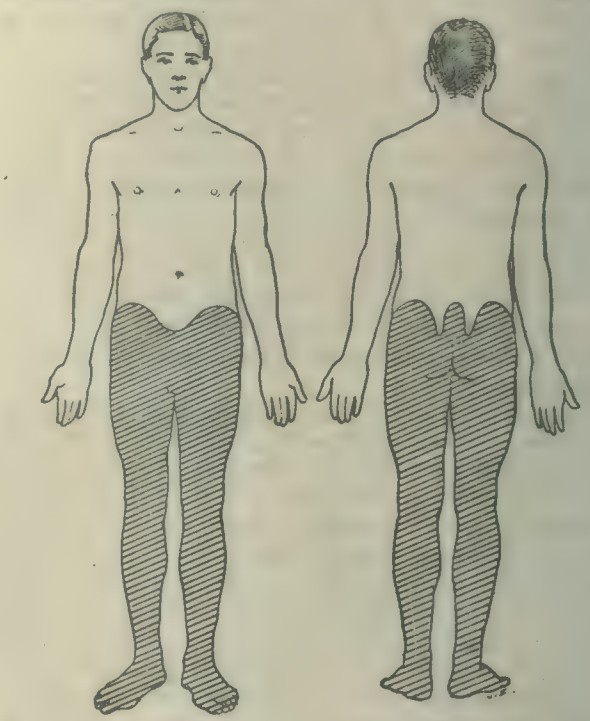
I am prompted to call attention to this case because of mention of similar accidents recently in THE JOURNAL.[1]

209 East Broadway.

HEMANGIOMA OF THE SPINAL CORD

M. E. BLAHD, M.D., CLEVELAND
Associate Director of Surgery, Mount Sinai Hospital

Although I have nothing new to add to the subject of hemangioma of the spinal cord, the extreme rarity of the condition warrants the report of a case which came under my observation recently. Up to the year 1915, Cobb was able to compile seven cases from the literature, to which he added one of his own, making a total of eight. A careful search of the literature since 1915 has not revealed an additional instance; therefore, the case which I am now reporting is the ninth on record.[2]



A B

Fig. 1.—Distribution of sensory loss (shaded portion): *A*, ventral surface; *B*, dorsal surface.

REPORT OF CASE

History.—R. H., a youth aged 14 years, entered the Elyria Memorial Hospital, May 12, 1922, complaining of complete paralysis of both lower extremities and both sphincters. His family history contains nothing of importance. His personal history is negligible except for one fact. About eight months previous to his entry into the hospital, while walking through the woods, he was seized with a severe attack of pain in the right groin, which lasted about five minutes. After resting a short time, he was able to continue his walk and then return home, a distance of several miles. A few months later, he had a similar attack, which also lasted only a very short time and, as in his previous experience, complete cessation of the pain took place in five or ten minutes. During this entire time, he walked back and forth to school, a distance of 4 miles each way. Finally, in January, 1922, while sitting in a chair at his home, he was again taken with excruciating pain in the right groin. On this occasion, however, the pain was much more intense than in his previous attacks. Furthermore, instead of abating after a short period of time,

1. The Fatal Toy Balloon, London Letter, J. A. M. A. **80**: 1017 (April 7) 1923.

2. The Histories of the previously reported cases and a review of the entire subject are given by Cobb, Stanley: Ann. Surg. **62**: 641 (Dec.) 1915.

as had been its custom, it grew steadily in severity, and compelled him to take to his bed. The onset of the pain occurred at about 10 o'clock in the morning; by 7 that evening, he was completely paralyzed from the waistline down, including both sphincters.

The physical examination, with the exception of the neurologic findings, showed nothing of interest.

Neurologic Examination. — This was performed by Dr. Stevens of Elyria, Ohio. The pupils were round and equal in size. They reacted promptly to light and in accommodation. There was no nystagmus. There was no diplopia. There was no impairment of the innervation of the facial muscles. There was no atrophy or paralysis of the upper extremities. The biceps, triceps and periosteoradial reflexes were normal on both sides. The umbilical reflex was present in the upper quadrants, but absent in the lower quadrants. The cremasteric reflex was absent. The Achilles tendon reflexes and plantar reflexes were absent. There was complete flaccid paralysis of the legs from the hips down. Sensory tests showed a complete loss of all sensations in the legs from a point about 3 cm. below the crest of the ilium. On the dorsal surface, the zone of anesthesia was slightly lower. The exact distribution of the sensory loss is shown in Figure 1. Coordination of the arms was good.



Fig. 2.—Hemangioma of the spinal cord. From original drawing made at time of operation, by Ruth Blanchard.

Laboratory Tests.—Lumbar puncture was performed, and 8 c.c. of clear spinal fluid under moderate pressure was withdrawn. The cell count was 11 per cubic millimeter. The Nonne test was positive. The colloidal gold test was: 1342000000. The Wassermann reaction on the spinal fluid and the blood was negative.

From a consideration of the paralyzed muscles, the zone of anesthesia and the reflexes, it appeared that the lesion implicated the spinal cord in the twelfth dorsal segment..

When I first saw the patient, July 1, 1922, he was very emaciated and had two large decubiti over the buttocks. The neurologic findings were the same as previously described.

The diagnosis was tumor of the spinal cord involving the twelfth dorsal segment.

Operation.—The lamina of the eighth, ninth, tenth and eleventh dorsal vertebrae were removed and the dura exposed. This membrane was very tense and presented a peculiar dark blue color. When the dura was opened, a mass of large distended veins, about 5 cm. in length and 2 cm. in width, immediately presented itself. These veins appeared to take origin in the pia. The underlying cord was markedly compressed in its anterioposterior diameter. No attempt to remove the tumor or ligate the vessels was made. The dura was not sutured, and the remainder of the wound was closed in the usual manner.

COMMENT

This case presented practically the same symptoms as the cases previously reported. The acute onset of the symptoms and the paralysis were undoubtedly due to a hemorrhage into the cord which originated in the tumor.

Cobb pointed out that, in cases in which a sudden bilateral paralysis is antedated by one or more severe attacks of pain, with symptom-free intervals between the attacks, the presence of a hemangioma of the spinal cord must be considered.

When I last saw the patient, March 3, 1923, his general condition was greatly improved, but there was no improvement as far as the paralysis is concerned.

3912 Prospect Avenue.

A MUSCLE INDICATOR FOR PLOTTING OUT THE FIELD OF DIPLOPIA AND VISUALIZING THE POSITION OF THE MUSCLE INVOLVED WITH FACE TURNING AND HEAD TILTING

EDWIN B. MILLER, M.D., PHILADELPHIA

In 1922, at the March meeting of the Ophthalmic Section of the College of Physicians, Philadelphia, I presented the original model of the muscle indicator. From the favorable comments made by the fellows at that time, I was encouraged to complete the apparatus.

It is not intended that this apparatus take the place of the study of the ocular muscles, but that it be used as a reference to help visualize conditions as they exist. It can be held in the hand in the presence of the patient, and will help to pick out quickly and accurately the muscle or muscles at fault.

The classification employed is that according to Duane. Both right and left turners are shown on the central part of arm A, the white line representing the true image and the red the false image. The right turners are the right external rectus and the left internal rectus. The left turners are the left external rectus and the right internal rectus. The elevators and depressors are shown on the squares at the ends of arm A, the white lines representing the true image and the red the false image. The right hand elevators are the right superior rectus and the left inferior oblique. The left hand elevators are the left superior rectus and the right inferior oblique. The right hand depressors are the right inferior rectus and the left superior oblique. The left hand depressors are the left inferior rectus and the right superior oblique.

The method of using the indicator, described on the back of the apparatus, is as follows:

The patient is seated in a darkened room. A trial frame with a red glass is placed over one eye. The examiner stands about 10 feet in front of the patient with a lighted candle or small electric light. The field of diplopia is located.



Muscle indicator.

In paralysis of the right turners the false image is in the right field, and in paralysis of the left turners the false image is in the left field. The maximum separation of the images is in the lateral direction.

In paralysis of the elevators the false image is in the upper field, and in paralysis of the depressors the false image is in the lower field. The maximum separation of the images is in the vertical direction.

If the straight muscles are involved, the vertical separation of the images is greatest when the eyes are turned toward the affected side. If the oblique muscles are involved, the vertical separation is greatest when the eyes are turned toward the sound side.

To identify the muscle involved when the false image is in the lateral field, the indicator is held before one to the right, if one is studying the right field, or to the left, if studying the left field, with arm A in a horizontal position. The red figures in the center of the horizontal arm represent the false image; the white ones the true image. The

schematic eye is turned until the red arrow points toward the false image that is nearest on the indicator, which corresponds to the false image already located in the field of diplopia, and the findings on the chart are now read.

In locating an elevator or depressor, the indicator is held before one with arm A in a vertical position and to the right. The schematic eye is turned until the red arrow points toward the false image that is nearest on the indicator, which corresponds to the false image already located in the field of diplopia, and the findings on the chart are read off.

FACE TURNING

In paralysis of the turners, the face has a tendency to turn in the direction of the line of normal action of the paralyzed muscle; in paralysis of the right turners, the face is turned to the right; in paralysis of the left turners, the face is turned to the left.

In paralysis of the right hand elevators, the face is turned to the right in the direction of the maximum pull of the right superior rectus, which is exerted when the right eye is turned out 23 degrees, or of the left inferior oblique, which exerts its maximum pull when the left eye is turned in 39 degrees.

In paralysis of the left hand elevators, the face is turned to the left, in the direction of the maximum pull of the left superior rectus, which is exerted when the left eye is turned out 23 degrees, or the right inferior oblique, which exerts its maximum pull when the right eye is turned in 39 degrees. The same rule holds good for the right and left hand depressors.

HEAD TILTING

The normal physiologic pull of the superior recti, when the eyes are moved from the primary position (parallel, looking straight ahead) is up and the upper end of the vertical corneal meridian is rotated in toward the median line; therefore, the head is turned up and tilted in toward the sound side.

The normal physiologic pull of the superior oblique, when the eyes are in the primary position (parallel, looking straight ahead) is down, and the upper end of the vertical corneal meridian is rotated in toward the median line; therefore, the head is turned down and tilted in toward the sound side.

The normal physiologic pull of the inferior rectus, when the eyes are in the primary position (parallel, looking straight ahead) is down and the upper end of the vertical corneal meridian is rotated out; therefore, the head is turned down and tilted out or toward the affected side.

The normal physiologic pull of the inferior oblique, when the eyes are in the primary position (parallel, looking straight ahead) is up and the upper end of the vertical corneal meridian is rotated out; therefore, the head is turned up and tilted out or toward the affected side. These facts can be demonstrated by the indicator.

For example, in a case involving branches of the third nerve, causing paralysis of the right internal rectus and the right superior rectus, the face would have a tendency to turn toward the sound side in an effort to modify the diplopia caused by paralysis of the internal rectus, and up and out to modify the diplopia caused by paralysis of the right superior rectus, while the head would be tilted toward the median line; therefore, one would have a tendency to equalize the other. The external rectus would still be acting strongly and, with the two obliques, would be rotating the eye out, while the inferior rectus would be turning the eye down, overcoming the action cited above. Finally, the eye would be down and out and the face would be turned in, with tilting of the head up and in toward the sound side.

In every case the action of the antagonist as well as the synergist muscles must be grouped together and their action studied.

2008 Walnut Street.

Early Birds.—Traces of teeth are found in the embryos of some of the birds of today and are believed to be a heritage from early primitive reptile-like ancestors which had a full set of teeth.

A CASE OF CHRONIC APPENDICITIS SIMULATING ANGINA PECTORIS

ANTHONY BASSLER, M.D., NEW YORK

Instances of chronic appendicitis being confused with disturbance in the gallbladder, gastroduodenal ulcer and various functional gastric disturbances are well known, operation usually disclosing the misdiagnosis, generally with benefit to the patient from the indicated surgery. There being no surgery or curative treatment for angina pectoris, this case is of interest:

A. M., a stock broker, aged 50, came under observation, Jan. 17, 1922. His father died of "heart disease," his mother of apoplexy. His past history was negative. He had been constipated most of his adult life, excepting on vacations, so he thought it was due to nervousness from active business strain. One night in early November, 1921, he suddenly awakened with an intense pain in the lower abdomen, followed by a temperature of 104, nausea and vomiting. The illness lasted four days, and was treated by rest in bed and colon irrigations, the latter being continued for two months. About a week after the onset of this illness he began to have a burning sensation in the chest. This was independent of meals or other noticeable cause, and gradually intensified and deepened into distinct pain. The attacks of burning and pain would come on suddenly, continue for varying lengths of time, and stop quickly. Various measures of treatment were employed without benefit. These attacks were always brought on by exertion, at first not so marked, but in a few weeks so severe that he was unable to walk from his home to his office, a distance of about 700 yards, without severe attacks.

He reported: "Yesterday morning I got up feeling fine. The pain came on, but it was not bad. I left my house for the office, and after walking about 200 feet, it became so terrific that I had to sit down in the street. I was gripped so tight that I could not breathe, and a passer-by told me afterward that I was white as a sheet, was doubled up with my knees on my chest, and was crying in agony. Within a few minutes I was all right again, and proceeded to walk to the office. After walking about 150 yards, it came again worse than before, because it lasted longer. A passer-by took me in his car to the office and, sitting on my desk chair, I worked hard all the day and felt fine. I have been to see three physicians who say I have angina pectoris. In the last three weeks, when the attack comes on, I have a marked pain down the left arm."

The patient was well nourished. His tongue was coated, and he had a marked gastric splash and moderate hemorrhoids. The urine contained an excess of indican and urorosein, a very occasional hyaline cast and a few pus cells. The gastric contents showed a slightly increased acidity, but otherwise were normal. The stool examination showed occult blood, excess mucus, and a high (90 per cent.) gram-negative count. The heart was of the dropped type, transverse measurement 11 cm. and oblique 13 cm., and was apparently normal. The vessels were normal. The systolic blood pressure was 145; diastolic, 93. Roentgen-ray examination of the abdomen displayed a moderate ptosis and an abnormal appendix, which was tender on pressure at the time the physical examination and three fluoroscopic examinations were made.

January 21, the appendix was removed by Dr. Charles Peck. The diagnosis was confirmed, and the patient made a smooth recovery. Microscopic examination showed the usual findings of a chronically diseased organ with subacute addition. After leaving the bed, some slight attacks of burning sensations and slight pain in the chest occurred on exertion, these lasting (gradually getting less) for about three months. A year has now transpired since the last of these, and the man has been uninterruptedly well. On many occasions he has tried by vigorous exercise (ice-skating, swimming, very long walks, laborious work on his farm) to test himself, and he has experienced no recurrence of the chest symptoms.

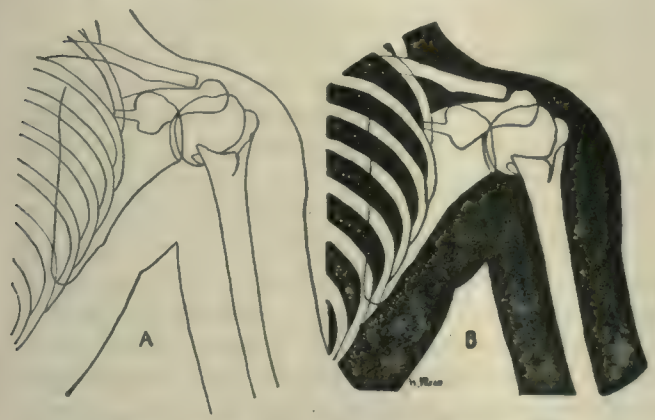
21 West Seventy-Fourth Street.

ROENTGEN-RAY SILHOUETTES: A METHOD OF CASE RECORDING *

JOHN J. MOORHEAD, M.D., NEW YORK

A number of methods have been designed for recording roentgen-ray findings, particularly in cases of fracture. These methods vary from a simple tracing to an elaborate colored photograph. During the war, the French had a very good idea in which colored chalk was used; but while this method is excellent and graphic, it requires considerable time and experience.

At the Post-Graduate and Beekman Street hospitals I have recently been using a modification of this French plan; our roentgen-ray records are now in black and white, and for want of a better name, I call them silhouettes.



Ordinary tracing (*A*), and finished silhouette (*B*).

An ordinary tracing is first made (*A*) on architect's tracing paper (sometimes called vellum), and then the interosseous and extra-osseous parts are painted solid black (*B*) with a small brush, a dull black paint, such as black japan, being used. The parchment-like tracing paper is quite absorptive, and the paint will not run. An ordinary 8 by 10 plate with the usual size image can be traced in about eight minutes, and shortly thereafter the paint will be dry enough to permit the silhouette to be handled. These tracings stand up with great detail when held up to the light, as in a viewing box or before the window, and they have the additional advantage of standing out prominently when used as illustrations in a magazine or a book.

For the final development of the method and for the detailed care with which it has been evolved, I am indebted to Mr. Harry Wein, roentgen-ray technician at the Beekman Street Hospital.

115 East Sixty-Fourth Street.

A CASE OF CAISSON DISEASE, OR DIVERS' PARALYSIS, TREATED WITH COMPRESSED AIR

W. H. PERRY, M.D., WASHINGTON, D. C.
Lieutenant, Medical Corps, United States Navy

On the afternoon of March 3, 1922, O. T., a deep sea diver employed by a wrecking company of New London, Conn., was stricken with complete loss of power of the lower extremities half an hour following an ascent from a dive in 95 feet of water. He had worked on the bottom for an hour and ten minutes, and was brought to the surface in less than four minutes. Symptoms appeared fifteen minutes after the removal of the diving dress. He first noticed incoordination in walking, and a feeling of weakness in both legs. Half an hour after the ascent he had completely lost control of the lower extremities. From his own statement, there were no areas of anesthesia. There was retention of urine. There was no headache, vomiting or dyspnea. So far as we were able to determine, the patient did not experience the customary pains in the joints referred to as "bubbles" by deep sea divers.

The morning of the same day, this diver had made a dive at the same depth and remained on the bottom for an hour and four minutes. The accepted theory as to the cause of caisson disease is that bubbles of nitrogen are liberated in the various body tissues, including the blood, and, on a sudden decrease in pressure, emboli and infarcts are formed because of the slow absorption of nitrogen. It then seems reasonable to assume the tissues in the case of this diver were more or less saturated with nitrogen as a result of the first dive, and on the sudden decompression following the second dive his body was unable to take care of the excess nitrogen, and as a result an embolus was formed along the motor area.

In view of the fact that this diver had made a previous dive the same day at the same depth, at least fifty-two minutes should have elapsed from the time he left the bottom until he reached the surface. He was placed in the recompression tank of the U. S. S. *Falcon* at the New York Navy Yard twenty-three hours after the attack, and subjected to pressure according to tables prepared by G. R. W. French. Thirty minutes at 50 pounds served to give complete relief of all symptoms. The patient remained in the tank four hours.

* Read before the Section of Surgery, N. Y. Academy of Medicine, March 2, 1923.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

NEUTRAL ACRIFLAVINE.—Acriflavina Neutra.—The base, 3:6 diamino-10 methylchloracridine, $C_{14}H_{14}N_3Cl+H_2O$.

Actions, Uses and Dosage.—Neutral acriflavine has the actions and uses of acriflavine (See Acriflavine and Proflavine, New and Nonofficial Remedies, 1923, p. 23) but being neutral in reaction is claimed not to have the smarting and irritating effect of acriflavine solutions.

Neutral acriflavine is a brownish-red, odorless, granular powder. It is soluble in less than 2 parts of water, forming a brownish-red solution which fluoresces on dilution and which has a bitter taste; incompletely soluble in alcohol; nearly insoluble in ether, chloroform and the fixed volatile oils. An aqueous solution of neutral acriflavine (1: 250) is neutral to congo paper (*distinction from acriflavine which has an acid reaction*).

Add a few drops of hydrochloric acid to an aqueous solution of neutral acriflavine which is sufficiently dilute to be fluorescent. The fluorescence disappears, but partially reappears on further dilution with water. Add 2 drops of sulphuric acid to about 1 Cc. of an aqueous solution of neutral acriflavine (1: 250) and agitate the mixture. An orange-red precipitate is produced. An aqueous solution of neutral acriflavine (1: 250), acidified with nitric acid, gives a precipitate with silver nitrate solution (*distinction from proflavine*). An aqueous solution of neutral acriflavine (1: 250), acidified with hydrochloric acid, does not give a precipitate with barium chloride solution (*distinction from proflavine*). An aqueous solution of neutral acriflavine (1: 250) does not give a precipitate with formaldehyde solution (*distinction from proflavine, which gives a brown precipitate*). Add 2 drops of diluted hydrochloric acid to 5 Cc. of an aqueous solution of neutral acriflavine (1: 250) and immediately add 2 drops of sodium nitrite solution (1: 10). A violet color is produced. By the further addition of an excess of sodium nitrite solution, a violet precipitate is formed, and, after a few minutes, the color of the solution becomes cherry-red. This may be best observed after filtration (distinction from proflavine, the filtrate from which is colorless). An aqueous solution of neutral acriflavine (1: 250) gives an orange precipitate with sodium hydroxide test solution (*distinction from proflavine, which gives a yellow precipitate*).

Dry about 1 Gm. of neutral acriflavine, accurately weighed, to constant weight at 100 C. The substance loses not more than 10 per cent. of its weight. Dissolve about 1 Gm. of neutral acriflavine, accurately weighed, in 250 Cc. of warm water, collect the insoluble matter, if any, in a weighed Gooch crucible, wash the insoluble matter with hot water, dry and weigh the residue. The insoluble matter amounts to not more than 0.5 per cent. Heat with an excess of sulphuric acid at a low temperature about 1 Gm. of neutral acriflavine, accurately weighed. The "sulphated" ash amounts to not more than 4 per cent.

Neutral Acriflavine-Abbott.—A brand of neutral acriflavine-N. N. R.

Manufactured by The Abbott Laboratories, Chicago, under U. S. patent 1,005,176 (Oct. 10, 1911; expires 1928) by license of the Chemical Foundation, Inc. No U. S. trademark.

Tablets Neutral Acriflavine-Abbott, 0.03 Gm. (½ grain).

Enteric Coated Tablets Neutral Acriflavine-Abbott, 0.03 Gm. (½ grain).

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SATURDAY, MAY 19, 1923

THE WASSERMANN TUBERCULOSIS REACTION

As has been widely reported,[1] Dr. August von Wassermann, originator of the well known test for syphilis, has succeeded in devising a serologic test for tuberculosis which, he claims, is more specific than other tests thus far devised. According to a recently issued statement, the formulation of this test was begun by the preparation of an antigen freed from the lipoid substances of the bacilli by a prolonged extraction with tetralin. The latter substance is a naphthalene with four molecules of water of hydration, and has a neutral reaction. After the lipoid substances are removed, the remainder acts as a strong tuberculin and is capable of producing complement fixation antibodies. It also gives a strong reaction with the serums of animals immunized with tubercle bacilli.

Wassermann [2] reports that he was at first disagreeably surprised when he found that the antigen did not react with the serums of men and animals suffering from tuberculosis, and addition of the extracted lipins did not improve the test. However, other authors, especially Bougouet and Negri, Much and Meier, who are quoted by Wassermann, found that lipoids play their part in the immunizing phenomena in tuberculosis. Moreover, Rabinowitsch-Kempner recently found that the serums of patients with tuberculosis give a certain reaction with the syphilitic reagent of Sachs-Georgi. These considerations led Wassermann to add lecithin to his antigen, for, he points out, the bacilli alone do not make the symptoms of the disease. The reaction of the tissues is equally involved. Therefore, it is necessary to add lecithin for the clinical test, whereas this addition is superfluous in immunized animals in which there are only bacilli and not affected tissues. Wassermann concludes that his test reveals the presence not only of tuberculosis but also of active tuberculosis, since it is the actual affection of the tissues that makes necessary the addition of lecithin and produces the response to the test. It is, of course, possible, as Wassermann himself points out, that lecithin may act merely to make the reaction more easily apparent. However, the serum from the immunized animal reacted with the lecithinized antigen in greater dilutions than without lecithin. Wassermann found that cholesterol also increased the sensitiveness of the test, but that it led easily to nonspecific reactions with syphilitic serums.

The new test was used on several hundred patients, and the results indicate that whereas the positive reaction proves the presence of active tuberculosis, a negative reaction does not seem to exclude it. Wassermann believes that the comparative usefulness of Besredka's and Negri's antigens is explained by the presence of lipoids, and that his antigen has the advantage of an exact proportion between the specific tuberculin antigen and the amount of lipoids, and that it thus avoids positive reactions with syphilitic serums. In outlining the test, Professor von Wassermann indicates the necessity for controls consisting of the extract, the serum, nontuberculous serum and the usual controls employed with the Wassermann test for syphilis. He considers it advisable to use a known syphilitic serum as one of the controls. The test is therefore dependent on the definitely lipophilic character of the serum of the tuberculous, and on the fact that such serum is differentiated from the serum of syphilitics in that it does not react with lipoids alone, other components being needed in the antigen. It also differentiates serum from patients actively tuberculous from the serum of patients having tubercle bacilli but not active lesions; the former require more lipoid in the antigen in order to give a positive reaction than do the latter.

Whether or not the newly designed test will prove to be of the same value as the well known reaction for syphilis is, of course, dependent on extensive confirmation by other serologists. Its clinical and practical value will lie in the early detection of active processes of the disease with the hope of modifying the hygiene of the individual so as to permit cure of the disease while cure is possible. However, the lack of any efficient medicinal armamentarium against this disease as compared with syphilis would appear to lessen to some extent the practical importance of the work.

1. Berlin letter, J. A. M. A. **80**: 1329 (May 5) 1923.
2. Von Wassermann, August: Ueber experimentelle Grundlagen für eine spezifische Serodiagnostik auf aktive Tuberculose, Deutsch. med. Wchnschr. **49**: 303 (March 9) 1923.

SUPPLY OF PHYSICIANS IN RURAL ENGLAND

The United States is not the only country in which a lack of physicians threatens in rural communities. England has a similar problem,[1] the reasons being quite parallel to those in this country. A generation or two ago, a capable physician could make a fair living in a country district, provide the essential comforts, and lay aside something for the future. At the present time, however, no matter how energetic or persevering the physician may be, country practice presents unusual

1. Brit. M. J., Supp., April 21, 1923, pp. 117-119.

difficulties. Formerly, the country physician attended all classes of people in the community, the rich man and his family as well as his servants and dependents; at present, however, with the greatly improved means of transportation, the wealthy country people have fallen into the habit of going to cities for their various necessities, and in case of illness go to the city physician or are sent to the hospital in the city.

Formerly, the difficulties under which the physician practiced and the cost of living were less in the country than in the city. Now, the conditions have been reversed, and the country physician must pay for the taxes and up-keep of one or two automobiles, and expend a large amount of time in visiting his widely scattered patients, while the city physician is in easy walking distance, or has the use of the street-cars and can visit many patients where the country practitioner sees one. Schools in the country are usually of grammar school grade, and in order to give his children the benefits of better education, the physician must employ tutors or send his children to private schools, high schools and colleges in distant towns or cities. Opportunities for financial income from public sources, appointments, salaried positions, and similar emoluments are fewer or lacking in the country, as compared with cities. The country physician cannot establish regular hours, but must answer calls as they come, and must see at any time the patient who may have come many miles to see him. The very difficulties under which the country physician works, and the essential expenditure of a large proportion of time in caring for a few patients, also make it difficult for him to do the essential reading and keep up to date educationally and professionally. The very influences that are causing country physicians to lose patients are directly to the advantage of the city physician. However hard he may work, the country physician is held within rigid limitations. Some figures in the article quoted show that of ninety-four country physicians, the average number of patients cared for was 629, and the average income was about $1,500; of 219 semiurban physicians, the average number of persons cared for was 1,263, and the average income about $3,000, while it was stated that the average income of physicians in large towns was estimated at approximately $4,500. The author states as an inevitable result that "the good men will not go into country practice."

The reasons for the scarcity of physicians in rural England, therefore, are identical with those in the United States, and the solution will largely need to be worked out in a similar manner. Physicians will not go to localities where they cannot make a fair livelihood without undue hardships. In this country the problem will be met by guaranties of income by citizens of the community or, as has just been provided by legislative enactment in New Hampshire, the taxing of citizens of any town to support a resident physician. In England, as shown by the author's suggestions, modifications of the national insurance acts may relieve the situation by making more generous financial provision in mileage and other allowances for the country practitioner.

FAMINE AND THE INCIDENCE OF COMMUNICABLE DISEASE

Famine, pestilence and war are three of the "Four Horsemen of the Apocalypse." With increasing malnutrition there is a greater incidence of morbidity and mortality. Severe as these sequels of national underfeeding have been, statistics from famine-swept Russia show that conditions have been underestimated, rather than overestimated. Cheinisse,[1] quoting the report of Tarassévitch[2] of Moscow to the Health Section of the League of Nations, states that from 1918 to 1921 there were, in Russia, from twenty-five to thirty million cases of exanthematous typhus—about one fifth of the total population—and that deaths from this cause were between two and one-half and three millions. Furthermore, Zlatogorov, Fedorov, Martzinovsky, Lubarsky and others note that famine adds grave trophic complications to the disease, among which are gangrene of the lower extremities and tendency to hemorrhage.

As testimony of the evil effect of malnutrition in regard to epidemic disease in Russia, Professor Otto[3] of Germany presented this motion at the meeting of the Health Section of the League of Nations held at Warsaw, March 22, 1922:

> The European Health Conference lays especial stress on the necessity for supporting health measures to be undertaken in Russia and the Ukraine by a campaign against famine, which is one of the chief causes of the epidemics, and invites all nations to take part in this campaign, without which efficient measures against the epidemics are impossible.

The resolution was adopted unanimously, showing that those who had studied conditions at first hand held no doubt as to the importance which normal nutrition plays in regard to the incidence of disease. The report continues:

> Of all countries in eastern Europe, Russia has suffered most from epidemics during the last four years, during which time about seven million cases of typhus and relapsing fever were officially reported, without counting the figures for the Red army. The culminating point was reached in 1919 and 1920, when 4,917,000 cases of typhus and 1,259,500 of relapsing fever were officially recorded. The official figures, however, do not represent the total incidence, and must be multiplied by at least two and one-half in order to obtain an approximate picture of the situation. . . . Reported cases of typhus and relapsing fever were, for October, 1922, 14,578 and 29,258; for January, 1923, 87,742 and 89,535, respectively. . . . The cholera epidemic, which broke out in 1921, when 176,885 cases were officially reported, has proved the most deadly visitation for many years. In 1922, cholera reappeared in spite of the severity of the winter, in twenty-one different districts of the Ukraine and in Soviet Russia. . . . It is not usually realized that absolute famine, or conditions approaching famine are now (March 22, 1922) involving

1. Cheinisse, L.: La famine et les maladies infectieuses, Presse méd. **31**: 681 (April 25) 1923.
2. Tarassévitch, L. A.: Report of European Health Conference, Geneva, April 3, 1922, p. 27.
3. Otto: Centralbl. f. Bakteriol. I Ref. **74**: 1, 1922.

8,000,000 of the inhabitants of southern Ukraine, and that there is, so far, no provision made to provide food from abroad, and that local resources are nearing an end.

It needs no further emphasis to indicate that disease in epidemic form makes grave inroads on underfed bodies: more grave than we have hitherto acknowledged. As to the course and symptomatology of recurrent fever, Cheinisse states that, in addition to the augmentation of the number of cases, the duration of the febrile period is longer (from six to ten days), and that the number of attacks has risen to from six to sixteen.

The only dissenting voice as to the view that famine predisposes to epidemic diseases is that of Sternberg,[4] who holds that with the exception of dysentery and measles there has been no increase due to famine conditions. Sternberg, in addition to his general denial, particularizes as to tuberculosis, and as explanation for his assertion that this disease is also unaffected by famine, advances a theory based on endocrinology and having as its key the assumption that in conditions of malnutrition a state of hypothyroidism exists, and that this condition is less favorable for the development of the disease than that of hyperthyroidism, which is normally present in the young adults who are most susceptible to the disease.

Alone in his contention, he is vigorously attacked by Dr. V. M. Kogan, one of the editors of the Russian journal *Vratchebnoïé Délo*, and Dr. M. I. Lifchitz, professor of the medical faculty of Kharkov, who maintain not only that his theoretical reasoning is not well based, but also that the experience of all Russian physicians who have had personal contact with conditions proves him wrong. They both state that, under conditions of bad feeding, chronic tuberculosis, usually relatively benign, takes on an acute form with death in two or three months. They further state that there is much greater frequency in the occurrence of the acute miliary type and an increase in the rarer varieties, such as multiple localizations on the various serous surfaces, and granular phthisis with fatal issue prior to the miliary stage. They also note an increase in the frequency of intestinal tuberculosis and the involvement of the mesenteric glands and the peritoneum. Confirmation comes also from Bruns,[5] who, in investigating the living conditions of the city of Trier, Germany, found that nutrition played a responsible part in the incidence of the disease.

Regardless of the academic conclusions of Sternberg, based on a perhaps ingenious, but doubtfully sustained hypothesis, the definite fact remains that those who are well nourished have a higher factor of safety as regards disease, epidemic or otherwise, than those who are at a low vital ebb. But we do not seem to have realized, thus far, that starvation can assume such overwhelming proportions as a predisposing factor to epidemic disease as it has done, and is doing, in war-torn, famine-swept Russia.

4. Sternberg, A.: Deutsch. med. Wchnschr. **48**: 581 (May 5) 1922.
5. Bruns, E. H.: Report on the Economic Conditions of the Poorer Population of the City of Trier as Determined by House to House Visits, Mil. Surgeon **46**: 418 (April) 1920.

Current Comment

THE PROGRESS OF RESEARCH

This week THE JOURNAL publishes the results of the clinical tests with ethylene made at the Presbyterian Hospital, Chicago, under the direction of Drs. Luckhardt and Carter.[1] The evidence seems to indicate that, properly administered, ethylene presents a real advance over other gaseous anesthetics. As the investigators point out, anesthesia has been induced with rapidity and ease, and many of the unpleasant symptoms and sequelae of other types of anesthesia have been absent. It is interesting, in view of these results, to reflect on a parallelism between the manner of development of this product and of insulin. In each instance previous workers had studied the problem, but in each instance also had stopped far short of the necessary experimentation to yield a practical result. It is apparent that Zuelzer, Steiner, and even Minkowski and Mering, as well as many others, might have continued their researches and eventually have reached the discovery achieved by Banting. As was noted in THE JOURNAL last week, Herrmann, Davy, Miller, Eulenberg and Lüssem had experimented with ethylene, but none of them had carried the work forward to the point at which its actual practical value was demonstrated. After all, this is what makes the romance of research. And it displays, too, the greatest attribute necessary for the successful research worker—the vision to see beyond the facts.

OAT-SEEDS AS A CAUSE OF FOREIGN-BODY TUBERCLES

Professor Marnoch of the University of Aberdeen performed an exploratory laparotomy for an acute attack of pain, preceded by discomfort in the upper part of the abdomen of several months' duration. He found an eruption of pink nodules on the visceral peritoneum, mostly over the pyloric end of the stomach. No acute inflammation was present, and the nodules were thought to be tuberculous. It was noted, however, that their distribution and consistency were unusual, and several were clipped off and sent to the pathologic department for investigation. The specimens, thus obtained, were prepared in the usual manner for study. Microscopic examination disclosed[2] that the nodules were made up of granulation tissue which was partly young, vascular, almost myxomatous connective tissue with occasional mononuclear and polymorphonuclear leukocytes, and partly more cellular areas enclosing fragments of some vegetable substance, the longest of which was 1 mm. in length. Giant cells, some with sixty nuclei, were closely applied to the fragments. Identification of this foreign material was

1. Luckhardt, A. B., and Carter, J. B.: Ethylene as a Gas Anesthetic, J. A. M. A., this issue, p. 1440.
2. Shennan, Theodore: Foreign-Body Tubercles on Serous Coat of Stomach, Caused by Escape of Particles of Oat-Seed, J. Path. & Bacteriol. **26**: 82 (Jan.) 1923.

difficult. It was found from collections in the botany department of the university that sections of grains of wheat and sections from the pathologic material were closely similar. All of the commoner cereals—wheat, oats, rye, barley, maize—were then prepared as the surgical specimen had been, cut in series and mounted. Thus, by comparison, it was demonstrated that the vegetable fragments from the abdominal tubercles had come from grains of oats. It could not be determined, however, when or how the oats had been transplanted from the mucous to the serous surface of the stomach. The assumption was that it had occurred through a small perforation which healed quickly and without much local reaction. The patient lived in northeastern Scotland, where oatmeal is a common food. Any foreign body embedded in the tissues stirs up the same response. The tuberculization of fragments of oats in the abdominal cavity, however, appears to be an extraordinary observation.

SPICES

Of all the flavors that tantalize the palate of man, none are so fragrant in their appeal to taste, to odor and to every sensation of pleasure as the spices, and it is not strange to read in a recent account of the growth and development of the spice trade that they were used by man in the earliest times. "When Alaric, the Goth," says LaWall,[1] "conquered Rome in 410 A. D., one of the ransoms asked by him was 3,000 pounds of pepper, then worth more than its weight in gold." In that period, caravan and ship carried ever as a part of their burden a certain quantity of "spices, gross spices or groceries, as well as minor spices." In fact, the first organization of dealers was known as "the fraternity of pepperers," and it was in the fourteenth century that the name was changed to "the Guild of Grocers," which depicted on its coat of arms six cloves. When Venice was at the peak of affluence, its trade in spices amounted to approximately ten million dollars annually. The name of Vasco da Gama has long been known as that of a famous sea-fighter, and it is interesting to know that one of his most important voyages was made to secure a cargo of pepper, cinnamon and ginger from India. When he returned from his voyage, which required almost two years to carry on, he was presented with remarkable emoluments for his courage, for he had paid to his supporters a sixty-fold profit. The war for supremacy between Venice and Portugal in this trade led da Gama to perform those cruelties in warfare which have made his name stand as the very symbol of terrific vengeance. In his consideration, Dr. LaWall traces the development of the trade in spices, how it passed from the Portuguese to the Dutch, and from the Dutch to the Germans and English and, in the latter part of the sixteenth century, how the famous freebooters Drake, Hawkins, Granville and Oxenham harassed the homeward bound spice ships of the king of Spain. The account is concluded with a list of the common spices now employed, more than thirty in number. A few almost priceless spices which were the treasures of the middle ages have thus developed into an extensive list which are sold in pounds instead of ounces in groceries and markets, and which are the common household commodity. A mere list of their names provokes pleasant thoughts and fragrant memories—allspice and cinnamon, nutmeg and anise, coriander and marjoram, mace and dill, mustard and ginger, sage and thyme, savory and paradise.

1. LaWall, C. H.: The Romance of Spices, Am. J. Pharmacy, April, 1923.

WHAT MILWAUKEE—AND SOME OTHER PLACES—THINK OF ABRAMSISM

At a largely attended regular meeting of the Medical Society of Milwaukee County, held, May 10, Dr. G. E. Seaman offered the following motion:

"That the entire Abrams method is such a palpable fraud that this Society considers it beneath its dignity to appoint a Committee to investigate it, and that the pursuit of the Abrams method on the part of any member of this Society shall be considered inconsistent with membership in this Society."

The motion was carried without a dissenting vote. Two or three weeks ago, THE JOURNAL published a resolution printed in the *Bulletin* of the Los Angeles County Medical Association, in which that society went on record as declaring that the "Abrams method of diagnosis is a fraud" and that any physician who practiced the method was ineligible to membership in the association, and that any member of the association who practiced the method would have charges of unethical conduct preferred against him. As a result of this editorial note we have received a brief letter from Dr. W. B. Moore, the secretary of the Harrison County (Ky.) Medical Society, reading in part:

"I wish to state that the Harrison County Medical Society expelled two of its members March 5 for practicing this fraud. This is the first instance I have noticed of a doctor being expelled from his society for such unethical conduct."

In this connection, it may be of interest to recall the fact that last January the Tulsa County (Okla.) Medical Society expelled two of its members who were local exponents of the Abrams methods. More than a year and a half ago the Massachusetts Medical Society called for the resignation of one of its members who was an Abramsite, and about a year ago the same individual had his license to practice medicine revoked by the Massachusetts Board of Registration in Medicine on the charge that he was guilty of deceit, malpractice and gross misconduct in the practice of his profession in that he had treated a young man by the so-called Abrams [1] method.

1. A reprint of the matter that has appeared in THE JOURNAL on the Abrams vagaries will be sent on receipt of four cents in stamps.

The Schick Test in Mexico and Uruguay.—In a group of 1,603 Mexicans of all ages up to 55 years, O. Rojas Avendaño secured positive results with the Schick test in 816, i. e., 50.9 per cent. There were 447 protein pseudoreactions. Among children 2 to 4 years old the proportion of positive tests was 69 per cent. M. Ponce de León used the test in 307 persons in Montevideo, with results very similar to those obtained by Park and Zingher in New York City. Up to the age of 15 years, there was an average of 77 per cent. negative tests. Only in people over 40 years was there found 100 per cent. negative tests.

Association News

THE SAN FRANCISCO SESSION

Fraternity Banquets

The Phi Rho Sigma Fraternity will have a banquet at the St. Francis Hotel at 6:30 p. m., Wednesday, June 27. The dinner will be over in time to allow Fellows to attend the President's reception later in the evening. Dr. Charles E. French, 749 Flood Building, San Francisco, is the chairman of the committee. Information about this banquet can be secured from him.

Nu Sigma Nu will have a forty-niners' banquet for local and visiting Fellows at the Bohemian Club on the evening of June 28. A special entertainment is being provided. Dr. H. D. Crall, 1242 A Second Avenue, San Francisco, is the chairman of the Nu Sigma Nu Committee.

Special Trains

Southern Medical Association Train: The Southern Medical Association will operate a train to San Francisco to be known as "Our President's Special." This train will start from St. Louis and will go by way of Kansas City, Colorado Springs and Salt Lake City, leaving St. Louis at 9 a. m. Tuesday, June 19. A part of Wednesday, June 20, and a part of Thursday, June 21, will be spent at Colorado Springs. Salt Lake City will be reached at 12:25 p. m., Friday, June 22, and departure for San Francisco will be at 11:40 a. m., Saturday, June 23. Information about this train can be secured by addressing the Southern Medical Association, Birmingham, Ala.

Special Train from Seattle: A special train will be operated over the Union Pacific for the accommodation of members and visitors to the meeting of the Pacific Northwest Medical Association to be held in Seattle, June 19-21. This train will leave Seattle at 9:30 a. m., June 22, Portland at 5:30 p. m., June 22, and is timed to arrive in San Francisco at 7 p. m., June 23. While in Portland, the party will be entertained by the Portland members of the Pacific Northwest Medical Association. Dr. F. R. Underwood of Seattle is the chairman of the transportation committee, and can be communicated with for information concerning this train.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

State Society Forwards Resolution.—At the annual session of the Alabama State Medical Association, April 17-20, a resolution was passed addressed to the director of the U. S. Veterans' Bureau, requesting that action be taken regarding the discontinuance of placing new trainees in chiropractic. A resolution was also passed commending the activities and policies of the U. S. Veterans' Bureau in general.

Colored Staff at Veterans' Bureau Hospital.—The entire staff of the U. S. Veterans' Bureau Hospital at Tuskegee will be composed of colored men and women. The U. S. Civil Service announces examinations for these positions. Applications should be addressed to the secretary, Fifth U. S. Civil Service District, Post Office, Atlanta, Ga. Fifteen general physicians, salaries up to $3,250 a year, and eighteen specialists, particularly in neuropsychiatry and tuberculosis, salaries up to $5,500 a year, will be appointed for service at the hospital, the capacity of which will be about 600 beds.

ARKANSAS

Physician Fined.—It is reported that Dr. J. Wesley Cunningham, Little Rock, was fined $1,000 and sentenced to two years in the penitentiary, following conviction by a jury in the federal court, April 25, for violation of the Harrison Narcotic Law.

State Medical Meeting.—At the forty-eighth annual convention of the Arkansas Medical Society, at Hot Springs, May 2-4, the following officers were elected for the ensuing year: president, Dr. William T. Wootton, Hot Springs; vice presidents, Dr. Jesse C. Graves, Lockesburg, and Dr. James O. Rush, Forrest City; secretary, Dr. William R. Bathurst, Little Rock, and treasurer, Dr. Robert L. Saxon, Little Rock. Fayetteville was unanimously selected for the 1924 convention.

CALIFORNIA

Governor Vetoes Bill Regulating Quack Advertising.—The bill making it unlawful for any person to use the words, letters or title of doctor, unless such letters or titles are accompanied by the degree on which his title is based, with the name of the school that conferred it, recently passed by the senate and assembly (THE JOURNAL, April 28, 1923, p. 1249), has been vetoed by Governor Richardson. The governor held, that, although the bill is designed to protect the public against fake advertising, its language is involved and ambiguous.

Hospital News.—The present Lodi Hospital, Lodi, will be torn down to make room for an office building. A new hospital will be erected at a cost of $75,000.——A two-story addition will be erected by the Burbank Hospital in the near future with a fifty bed capacity.——Ground for the new San Antonio Community Hospital, to be erected at Upland, was broken, April 3. The hospital, which will cost approximately $150,000, was made possible chiefly by the late Mrs. J. L. Paul, whose original donation of $75,000 has been augmented by other gifts.

CONNECTICUT

Yale University School of Nursing.—Miss Annie W. Goodrich of Teachers College, Columbia University, New York, has been appointed dean of the new Yale University School of Nursing, New Haven (THE JOURNAL, April 28, p. 1249). Miss Goodrich was recently awarded the Distinguished Service Medal by the War Department.

Old Medical Societies Meet.—The one hundred and thirty-ninth annual meeting of the New Haven County Medical Society was held, April 26. President Charles H. Brown, Waterbury, spoke on cancer.——At the one hundred and thirty-first annual meeting of the Middlesex County Medical Association, at Middletown, April 12, Dr. F. T. Fitch was elected president, to succeed Dr. James H. Kingman.——The one hundred and thirtieth meeting of the Windham County Medical Society was held at Willimantic, April 19. Dr. Stanley H. Osborn, Hartford, spoke on "The Practicing Physician and Preventive Medicine."

ILLINOIS

Hospital News.—Work will soon be started on the new wing of St. Francis Hospital, Wilmette, which will have a capacity of 100 beds.——The board of managers of the Illinois State Baptists has voted to accept the offer to take over the Allen Sanatorium, Robinson, and make it a Baptist hospital. It will be known as the Allen Baptist Sanatorium.——The Methodists of the Rock River Conference will erect a 100-bed hospital, at a cost of $300,000, in Morrison this summer. It will replace the Globe Hospital.

Personal.—Dr. John A. Lindquist has succeeded Dr. Jay T. Wood as city physician of Springfield. Dr. Wood resigned recently after eight years of service.——Dr. John W. H. Pollard was reappointed public health officer, and Dr. Earl L. Caddick was reappointed director of the public social hygiene clinic of Quincy, recently.——Dr. Amos A. Crooks, Peoria, has been appointed health superintendent of the district composed of Bureau, Stark, Tazewell and Mason counties.——Dr. John E. Lee has been reelected mayor of Venice.——Dr. George T. Palmer, president of the Illinois Tuberculosis Association, gave a public address on tuberculosis at Newton, April 24.——Drs. Andrew D. Miller, Sullivan, and Samuel L. Stevens, Dalton City, were elected president and secretary-treasurer, respectively, of the Moultrie County Medical Society, April 25.

Chicago

Hospital Assumes New Name.—The name of the Hahnemann Hospital of Chicago has been changed by the board of trustees to "The Chicago Memorial Hospital." The board states that the practice and work of the hospital now con-

forms in all respects to that of other approved hospitals of Chicago.

Epidemic of Measles.—The average number of cases of measles increased from thirty-three a day in January to 144 a day during the first ten days of May. The council finance committee, May 10, voted $2,000 for extra quarantine officers to fight the epidemic. The city health commissioner stated that since January 1, 10,836 cases have been reported in Chicago.

Medical Women Incorporate.—The Chicago Council of Medical Women, organized for the purpose of collecting scientific data and promoting fellowship among women practitioners, was granted a charter of incorporation, May 8. Dr. Anna M. Blount, Oak Park, was elected first president of the council, which is limited to seventy-five members, and Dr. Lena K. Sadler, secretary.

Personal.—Dr. George W. Hoover, for the past nine years chief of the Chicago district of the U. S. Department of Agriculture, has been appointed chemist in charge of the drug control of the United States, it was announced, April 20.——Dr. Cassius C. Rogers discussed the treatment of cranial and intracranial lesions, before the Lee County Medical Society, April 10, at Dixon.——Dr. Dean D. Lewis addressed the Richmond Surgical Society at Richmond, Va., April 6, on "Some Problems in Peripheral Nerve Surgery."

IOWA

Training for General Practice.—A committee representing the state medical association and other organizations has been named to cooperate with the State University of Iowa College of Medicine, in connection with the new medical school, in planning courses to train physicians for general practice in rural sections of the state. Many rural sections, it is said, have been found to need physicians.

Iowa State Medical Society.—At the seventy-second annual convention of the society, at Ottumwa, May 9-11, Dr. Oliver J. Fay, Des Moines, was elected president for the year 1923-1924. Dr. Frank M. Fuller, Keokuk, was elected president-elect; Drs. Harvey B. Gratiot, Dubuque, and William E. Long, Mason City, vice presidents; Dr. Addison C. Page, Des Moines, treasurer, and Dr. Tom B. Throckmorton, secretary. The next meeting of the society will be held in Des Moines, May 7-9, 1924.

Summary of Recent Health Legislation.—The Iowa Tuberculosis Association and the state medical society prepared a summary of eighteen major and six minor health measures advocated by health workers, which passed the fortieth general assembly. Six proposals altering the present health laws of the state, in a manner deemed detrimental, were defeated or postponed. The physical education bill, which passed, provides that practical health instruction and training shall be given weekly in every school to all children of both sexes and that actual observance of the rules of health shall form part of the grades. A manual of methods will be furnished teachers by the superintendent of public instruction. This bill was supported by the American Legion, the state teachers' association, the state medical society, the state conference of social work, the physical education association and other organizations.

KANSAS

State Medical Meeting.—At the fifty-seventh annual convention of the Kansas Medical Society, at Kansas City, May 2-4, the following officers were elected for the ensuing year: president, Dr. Edwin D. Ebright, Wichita; vice presidents, Dr. Alfred O'Donnell, Ellsworth, Dr. Samuel J. Crumbine, Topeka, and Dr. Hugh Wilkinson, Kansas City; secretary, Dr. John F. Hassig, Kansas City, and treasurer, Dr. George M. Gray, Kansas City. Iola was selected for the next annual session.

Law Creating Commission for the Blind.—The Kansas State Legislature has passed a bill creating a commission for the blind. In addition to the usual responsibilities placed on such commission, the act provides:

"That it shall be the duty of the commission to cooperate with state and local boards and agencies, both public and private, in preventing the loss of sight, in alleviating the condition of . . . persons with failing sight. The commission shall cooperate with the state and local boards of health, the state and local boards of education, and such other state and local agencies as may be directly or indirectly concerned with the prevention of blindness and the conservation of vision and shall furthermore seek to disseminate information concerning the proper care of the eyes, such information to be prepared in cooperation with the departments which may be concerned."

KENTUCKY

Lexington Physicians Sentenced.—Drs. Elmer Northcutt and Wiley E. McWilliams, both of Lexington, were convicted and sentenced to three years each in the federal prison, Atlanta, Ga., May 12, according to reports. Dr. Northcutt was convicted on four and Dr. McWilliams on five counts for violation of the Harrison Narcotic Law.

MARYLAND

Eudowood Hospital to Expand.—Plans for a campaign to raise $200,000 to increase the capacity of Eudowood Sanatorium, Towson, to be held during the week of May 21, have been formulated by the board of directors. The capacity of the hospital is to be doubled and a department for tuberculous children opened.

McCready Hospital Given to Crisfield.—A deed to the completed McCready Hospital at Crisfield was formally presented to the board of directors, May 6, by Mrs. Caroline Ritt McCready of Chicago. Dr. Thomas S. Cullen announced a gift also of two scholarships by Mrs. McCready; one for $500 to be given to the physician who had done most for the community, the other for $300 to the best nurse.

Personal.—Dr. George Walker, Baltimore, has been awarded the Distinguished Service Medal for services in preventing the spread of disease at the base ports in France during the World War.——Dr. Carl L. Alsberg, director of the Food Research Institute, Stanford University, San Francisco, delivered a lecture on "Economic Aspects of Our Food Supply" before the School of Hygiene and Public Health, Johns Hopkins University, April 16.——Dr. J. W. McCartney of the University of Edinburgh gave an address on "Primary Pneumococcal Peritonitis" before the medical societies of the Johns Hopkins Hospital, May 7.——In commemoration of his eightieth birthday, a dinner was given Dr. Henry M. Hurd, superintendent of the Johns Hopkins Hospital, Baltimore, May 3. Prominent medical men in Baltimore and several distinguished guests from out of town were in attendance.

MASSACHUSETTS

"Quacks" Arrested.—Fred LaPlante was re-arrested on his return from Deer Island, where he completed a fifteen months' sentence for larceny through the sale of quack medicine in Boston. A similar offense was committed in Saugus, according to recent reports.——Dr. Harmon P. McKnight, Somerville, claiming to be a "magnetic physician and osteopath" and a graduate of several medical schools, was arrested on a charge of practicing medicine without a license recently. It was reported that he has served in various penal institutions.

Boston Medical History Club.—At the annual meeting of the club, April 16, the following officers were elected for the ensuing year: president, Dr. John W. Farlow; vice president, Dr. Malcolm Storer, and secretary-treasurer, Dr. John W. Cummin. Dr. Timothy Leary read a paper on "Benjamin Church, Jr., First Surgeon-General of the American Army." Dr. Leary exhibited colonial documents in original and photostat reproduction, also Church's medical notebooks. After the meeting about 300 medical portraits, collected by the late Dr. Ernest B. Young, and recently presented to the library by his family, were displayed.

MICHIGAN

Memorial to Physician.—The new city hospital now under construction at Traverse City on the state hospital grounds will be named the James Decker Munson Hospital, as a memorial to Dr. J. D. Munson, who has been superintendent of the local institution since 1885.

MINNESOTA

Mayo Laboratory Burned.—The new animal experimental laboratory on the estate of Dr. Charles H. Mayo, Rochester, burned to the ground, May 7. The loss is estimated at $150,000.

MISSISSIPPI

State Board Creates Oral Hygiene Division.—The state board of health has created a division of mouth hygiene under the bureau of child welfare. The Mississippi Dental Association has expressed in special resolutions a desire to cooperate in this work.

State Medical Meeting.—At the annual meeting of the Mississippi State Medical Association, at Vicksburg, May 8-9, the following officers were elected for the ensuing year: president, Dr. William A. Dearman, Long Beach; vice presidents, Drs. Lancelot L. Minor, Hollywood, James M. Guthrie, Meridian, and Alvan L. Chapman, Hermanville; secretary, Dr. Thomas M. Dye, Clarksdale, and treasurer, Dr. James M. Buchanan, Meridian.

MISSOURI

Committee for Mental Hygiene.—The psychiatric clinic, inaugurated about a year ago at St. Louis by the National Committee for Mental Hygiene, was formally taken over by director of public welfare, Nelson Cunliff, May 1, when it became a city institution. Dr. William L. Nelson has been appointed chief psychiatric clinic director.

National University Extension Association.—At the annual meeting of the association in St. Louis, which closed, April 21, the following officers were elected for the ensuing year: president, Prof. Richard R. Price, University of Minnesota, Minneapolis; vice president, Prof. Frederick W. Shipley, Washington University, St. Louis, and secretary-treasurer, Prof. James A. Moyer, Massachusetts department of education, division of university extension, Boston. Madison, Wis., was selected for the next annual meeting.

NEBRASKA

Hospital News.—The West Nebraska Methodist Hospital, Scottsbluff, which is under construction, will be ready for occupancy this fall. Its capacity will be 100 beds.——A clinic on "Asthma" was held at St. Clara's Hospital, Lincoln, under the auspices of the Logan County Medical Society, April 19. Drs. Burton D. Haseltine and Alvin W. LaForge, both of Chicago, addressed the meeting.

NEVADA

State Association News.—The next annual meeting of the Nevada State Medical Association will be held at Reno, September 28-30, or thereabouts, the secretary announces. Popular vote was taken as to whether it should be held in June or October. The *California State Journal of Medicine* is now the official journal of the Nevada State Medical Association following a vote at the recent Elko meeting. Subscriptions of $2 for one year should be sent to Dr. W. E. Musgrave, 1016 Balboa Building, San Francisco.

Legislative News.—The public hospital bill has been signed by the governor. Under the new law 25 per cent. of the taxpayers in any county that wants a public hospital can present a petition to the commissioners, who will put the question on the ballot at the next general election. If the question carries, the commissioners will immediately proceed to provide the hospital. The nurses' registration bill also become a law. Graduate nurses and all other nurses that have had twenty-eight months' training in a Nevada hospital, under the direction of a physician licensed in that state, are entitled to register without examination, provided they do so by July 1.

NEW HAMPSHIRE

Orphan's Home Burned.—Two buildings of the New Hampshire Orphan's Home, Franklin, were destroyed by fire recently. The loss is estimated at $60,000.

Appropriations for Physicians in Small Towns.—The New Hampshire legislature has recently passed a law which permits any town to raise money toward the support of a resident physician which, in the absence of such appropriation, could not obtain one. The act became effective, April 5.

NEW JERSEY

Personal.—Dr. Henry A. Cotton, medical director of the State Hospital for the Insane, Trenton, has accepted the invitation of the British Medico-Psychological Society to deliver an address in London before the annual convention in July.

Physician Arrested.—According to reports, the New Jersey State Board of Medical Examiners revoked the license to practice medicine of Dr. James F. Kerr, Newark, November, 1922, following his conviction on a charge of performing an abortion. Dr. Kerr, who was recently in jail, was held in $3,000 bail, May 5, on a charge of performing an illegal operation, March 24.

NEW MEXICO

School for Health Officers.—The New Mexico State Bureau of Health proposes to conduct a four weeks' course of intensive instruction for health officers in order to qualify them for full-time county positions. The course will be given provided there are enough entrants to justify the time and expense. It is expected to follow the annual meeting of the state medical society, June 25.

NEW YORK

State Aids Veterans.—The New York State Senate passed the Kleinfeld bill, which provides $1,000,000 for the relief of sick and disabled veterans of the World War. A similar $1,000,000 fund under which veterans' aid has been given has just been exhausted.

Legislation.—It is reported that the chiropractic bill and the Lattin medical practice bill are "dead" for this session of the legislature. The Bloch narcotic bill has not been endorsed by the governor. There are indications that a new commission will be appointed to study the narcotic situation and to make recommendations to the next legislature.

"Bootleg Pharmacies" Hit.—The Twombey-Lattin bill to place the ownership of drug stores in New York state with licensed pharmacists was recently signed by Governor Smith. This bill, which received the approval of the Medical Society of the County of New York and of the state pharmaceutical association, restricts ownership of drug stores to licensed pharmacists only. It is hoped the measure will do away with so-called "bootleg pharmacies."

Glen Cove Must Pay Health Officer.—The Appellate Division has awarded a mandamus to Dr. Joseph B. Conolly, compelling the finance commissioner to pay him his salary as health officer of the City of Glen Cove, from which certain officials attempted to oust him in 1922. The Supreme Court had refused him a mandamus, but the Appellate Division reversed that decision, holding that Dr. Conolly took a competitive examination and is an employee under civil service rules and not a "public official."

Model Milk Ordinance.—The Albany Common Council held a public hearing on the question of the adoption of the model milk ordinance for cities as recommended by the state department of health, and the New York State Conference of Mayors, May 7. This model ordinance eliminates all Grade C milk and prohibits the sale of Grade B raw milk. It permits the sale of Grade B pasteurized milk, certified milk and Grade A raw and pasteurized milk. The ordinance also forbids the sale of dipped milk, requiring that all milk be sold in bottles, filled and capped at the place of production or at the collecting and distributing station. The Albany Medical Society passed a resolution that Albany be the first to adopt the model milk ordinance.

New York City

Chair of Nursing Endowed at Columbia.—Through the foundation of a chair of nursing by Mrs. Helen Hartley Jenkins of New York, Miss Adelaide Nutting has been made professor of nursing at Teachers College, Columbia University. This is reported to be the first endowment of its kind.

Cancer Institute for City's Poor.—The New York Cancer Institute will be established by the commissioner of public welfare, for the exclusive treatment of cancer among the city's poor. The hospital division of the institute will be located in a set of buildings of the City Hospital on Blackwell's Island, where accommodations will be available for 200 patients. The clinical division will be located on Fifty-Ninth Street temporarily, but within two months will be housed in a home of its own, it is stated. The cost of installing the roentgen-ray machines and radium emanation laboratories will be borne by several prominent citizens. Dr. Isaac Levin, clinical professor of cancer research at the New York University, has been appointed medical director of the cancer institute.

Annual Report of Committee.—According to the annual report of the public health committee of the New York Academy of Medicine, there is a shortage of hospital beds in New York for the treatment of neurologic and mental diseases, and the state hospitals are overcrowded to a degree that should not be tolerated. The report covers many subjects, among which are: the prophylactic value of pneumonia vaccines; spread of tuberculosis among families by domestics; disposal of city waste; automobile exhaust gas; anthrax; housing and transportation; prolonged neglect of proper sewage disposal; more sources for the city's water

supply; child health; measurement of growth of children; codification of child welfare laws; continued study of communicable diseases in hospitals; hospital information bureau; continuous collection of hospital statistics; relation of the community to hospitals; scrutiny of city's budget dealing with health and hospitals; supplying lists of expert examiners to civil service commissioner; rebates to physicians; legislation on health and medical education, and other subjects.

NORTH CAROLINA

"State Medicine" Defined.—At the annual meeting of the state medical society in Asheville, recently, the term "state medicine" was defined (when the report of the committee of public health administration was formally accepted) as any practice or policy provided for in the legislative acts of a state which has to do with the prevention or treatment of disease, and which may roughly include the following:

Legislation which determines who shall and who shall not be permitted to treat disease and which prescribes the conditions under which a person may practice medicine; which provides for the education of the general public in matters of personal and public hygiene; which provides public laboratories for assisting the profession in the diagnosis of specimens; which provides for the immunization by vaccines and serums of the general public against infectious diseases; which provides for the reporting of births, deaths and communicable diseases and prescribes measures for the restriction of the spread of contagion; which provides institutional treatment for the delinquent, the defective and the diseased; which provides for the physical examination of schoolchildren, and which provides for health insurance and for panels of physicians who are paid out of the public funds at rates fixed by the state.

OHIO

Child Welfare Campaign.—A special "Save the Babies" child welfare campaign was held in Dayton, May 7-12, at which examination of babies under 2 years of age was held daily at the division of health. A health bulletin was issued giving information on prenatal and infant care, which will be mailed free each month on request.

Dr. Brock Wins Golf Tournament.—Dr. Lucian L. Brock, Washington, won the president's silver championship golf trophy at the Ohio Medical Golf Association Tournament at Dayton, during the annual meeting of the state medical association. A silver mounted cane was also awarded to Dr. Brock for being among the four players turning in the lowest scores for thirty-six holes from a field of 104 players.

Chiropractors Fined.—According to reports, C. E. Schillig, Willard, secretary of the state chiropractors, was fined $100 and costs by Judge Lutts, at Norwalk, May 1, for practicing medicine without a license. Schillig refused to pay and was committed to jail.——Five Zanesville chiropractors, Marcus Hull, W. F. Stiers, L. O. West, J. T. Brooks and A. A. Crabbe, were fined $50 and costs, each, April 30, for practicing medicine without a license. Three went to jail in preference to paying the fine.

Personal.—Dr. N. C. Yarian was recently elected president of the Cleveland Society of Industrial Physicians.—— Dr. Frank E. Bunts, professor of surgery, Western Reserve Medical College, Cleveland, spoke on "A Consideration of Diseases of the Breast, Based on a Study of 1,250 Cases," before the Wayne County Medical Society, Detroit, May 7. ——Dr. Edward W. Misamore has been appointed city health officer of Findlay.——Dr. William G. Rhoten, Hillsboro, for the last three years district health commissioner of Highland County, has assumed the same position in Hocking County and the city of Logan.——Dr. Albert D. DeHaven has been elected mayor of Xenia.——Albert P. Mathews, Ph.D., professor of biochemistry, University of Cincinnati College of Medicine, has been granted leave of absence to attend the Pasteur centenary in Paris and Strasbourg as a delegate from the university. Dr. Mathews has been appointed one of the twelve delegates from the United States to the International Union of Pure and Applied Chemistry to be held in Cambridge, England; he will also attend the International Congress of Physiology in Edinburgh in July.—— Robert C. Walker has been appointed to the Seely Teaching Fellowship in Medicine at the University of Cincinnati College of Medicine, for the next school year.——Dr. David I. Wolfstein has resigned as professor of psychiatry, University of Cincinnati College of Medicine, because of ill health.

OKLAHOMA

Addition to Soldiers' Memorial Hospital.—Work will be started at once on the construction of the new personnel building for the Oklahoma Soldiers' Memorial Hospital, Muskogee.

PENNSYLVANIA

Course for Health Officers.—Col. P. M. Ashburn, commandant of the Army Medical School at Carlisle Barracks, will conduct a six weeks' course in sanitation, at the request of the state health commissioner, for health officers attached to the state department. This instruction is in line with the plan the health commissioner expects to follow in the larger counties of the state, where full-time district sanitary officers, properly trained in public health work, will be assigned.

Chiropractic Bills.—The Dunn bill, to regulate the practice of chiropractic and to provide for licensing by a board of examiners, failed in the house after nearly two hours' debate. The vote was 82 to 78.——Senator Joyce, Luzerne, has presented a bill to the state legislature to create a board of chiropractic examiners consisting of three members who would have power to issue and revoke chiropractors' licenses. The bill also provides that persons who have been practicing chiropractic for two or more years, would be licensed without taking a state examination on payment of a fee of $20.

Hospital News.—Plans have been approved and bids requested for the Luzerne County Hospital, the estimated cost of which is $1,000,000.——The Conemaugh Valley Memorial Hospital, Johnstown, in its recent campaign for $500,000, realized $500,460, in two weeks. Work for enlarging the hospital will be started at once. When completed the institution will accommodate more than 300 patients.—— The House appropriations committee recently reported out 118 bills for hospitals and other institutions carrying a total of $5,080,000, which sum is $1,480,000 more than the maximum fixed by the governor in the budget.

Changes in County Hospital Law.—The governor has signed an amendment to the county hospital law, which gives counties the right of eminent domain in acquiring land for tuberculosis hospital purposes, and also gives the hospital board and the county controller joint supervision with the county commissioners in erecting such hospitals. As amended, Section 2 of the county hospital law now reads as follows:

If a majority of the voters on such question at such election shall be in favor of the establishment of the hospital, the county commissioners, *county controller, where such office exists, and the board of trustees, hereafter provided for,* shall have plans and specifications prepared and shall select and acquire a site for such hospital by *purchase or condemnation with the same power and with the like procedure as land is now acquired under existing laws by school districts for school purposes, the county commissioners exercising the authority exercised by school directors for that purpose.* On the approval by the commissioner of health of the plans and specifications and the location of such hospital the hospital shall be constructed and equipped *under the direction and supervision of the board of trustees, the county commissioners, and the county controller, where such office exists,* and in the same manner as other county buildings are constructed and equipped.

Philadelphia

Personal.—In honor of his recent election as provost of the University of Pennsylvania, the alumni of New York City selected Josiah H. Penniman, Ph.D., as their guest of honor at their thirty-fifth annual dinner at the Hotel Pennsylvania, New York, April 7.——Dr. Isaac M. Rubinow, New York, has been appointed executive director of the Jewish Welfare Society, Philadelphia.

Jefferson Alumni Day.—The annual dinner of the alumni association of the Jefferson Medical College will be held at the Bellevue-Stratford, May 31, preceding the ninety-eighth annual commencement, June 1. Dr. Ross V. Patterson, dean of the college, and president of the alumni association, will be toastmaster. The list of speakers include prominent graduates of Jefferson from various parts of the country.

Faculty of Woman's Medical College Reorganized.—Dr. Lida Steward Cogill was named, May 9, to succeed Dr. Alice Weld Tallant as head of the department of obstetrics at the Woman's Medical College of Pennsylvania, Philadelphia. The board of trustees accepted the resignations of the twenty-four professors who resigned as a protest in favor of Dr. Tallant and has made a complete reorganization of the teaching staff. Dr. Rudolph Max Goeppe was appointed to the chair of medicine, to succeed Dr. Arthur A. Stevens. Dr. Walter Estell Lee has been offered the chair of surgery formerly occupied by Dr. Harry C. Deaver.

TEXAS

Chiropractors Petition Governor.—A petition was presented to Governor Neff, April 27, by the president of the state chiropractors' association, requesting the governor to submit to the legislature the creation of a state board of chiropractic examiners. The petition was 3,928 feet long, and contained 67,520 names.

CANADA

Society News.—The next annual meeting of the Canadian Society of Anesthetists will be held in Montreal, June 12-14. ——At the annual meeting of the Academy of Medicine, Toronto, the following officers were elected: president, Dr. John T. Fotheringham; vice president, Dr. John H. McConnell; secretary, Dr. Dennis Jordon, and treasurer, Dr. Harold M. Tovell.

The Cochrane Typhoid Epidemic.—The number of cases of typhoid in the Cochrane epidemic has reached about 820. The death rate has been about 7 per cent. New cases average now one a day, and the emergency hospital has reduced the number of beds by about 25 per cent. The Red Cross Society of Ontario voted $25,000, and, it is reported, the Ontario Provincial Board of Health will increase its financial assistance beyond the $25,000 already spent by the board.

University News.—At a recent meeting of the board of governors of the University of Toronto, Dr. Frederick G. Banting was officially appointed professor in medical research, and arrangements were made for distributing the balance of the money recently voted by the legislature of Ontario for the furtherance of research in the treatment of diabetes.——An insulin clinic will be established in the near future at the University of Alberta Hospital, Edmonton. Dr. J. B. Collip, codiscoverer of insulin and discoverer of glukokinian from vegetable sources, which also has a curative effect on diabetes, is to be the guest of honor at a banquet given by the citizens of Edmonton during "Insulin Week."

Personal.—Dr. Harry G. Grant, who has been conducting the tuberculosis clinic Health Center No. 1, Halifax, since November, 1920, has resigned to teach at Dalhousie University Faculty of Medicine. Dr. Saul H. Keshen has succeeded him.——Dr. Joseph W. Warren, radiologist at Calgary General Hospital, has been appointed radiologist at Jubilee Hospital, Victoria, B. C.——Dr. J. H. Elliott, Toronto, was recently elected vice president of the American Congress of Physicians at a meeting held in Philadelphia. Five other Toronto physicians were elected fellows of the American College of Physicians, as follows: Drs. J. T. Fotheringham, F. G. Banting, Henry C. Wales, George Porter, director of health, Toronto University, C. E. Cooper Cole. Dr. Neal of Peterboro, Ont., was also similarly honored.——Drs. John J. R. Macleod, professor of physiology, University of Toronto, and J. S. Plaskett, director of the Dominion Astrophysical Observatory, Victoria, B. C., were recently made Fellows of the Royal Society of London, England.

GENERAL

American Gastro-Enterological Association.—At the annual meeting of this association, in Atlantic City, N. J., April 30-May 1, the following officers were elected: president, Dr. R. Walter Mills, St. Louis; vice presidents, Drs. David Riesman, Philadelphia, and Arthur F. Chace, New York; secretary, Dr. John Bryant, Boston, and treasurer, Dr. Clement R. Jones, Pittsburgh.

Hospital Day.—The one hundred and third anniversary of the birth of Florence Nightingale was observed, May 12, by the nearly 7,000 hospitals of the United States and Canada, as National Hospital Day. Mr. E. S. Gilmore, of the Wesley Hospital, Chicago, president of the National Methodist Hospital Association, broadcasted a radio message on "The Value of the Hospital." This was the third national observance of Hospital Day.

Maternity Law Suit Opened.—Oral arguments were commenced, May 3, in the U. S. Supreme Court, Washington, D. C., in the case brought by the state of Massachusetts to test the constitutionality of the Sheppard-Towner Maternity Law. The right of the state of Massachusetts to question the validity of the law, in view of its failure to take advantage of the statute, was challenged by the federal government on the grounds of jurisdiction.

Amendment to Narcotic Act.—Amendment of the Jones-Miller Act regulating the importation and exportation of narcotic drugs was proposed by the American Drug Manufacturers' Association at its recent meeting in New York City. The association desires that the act be so amended as to permit the importation and storage of crude opium and of cocoa leaves, in excess of current needs, to provide against any possible emergency, and to permit the American exporter to export narcotics to countries which maintain systematic control of imports of such drugs, even though such countries may not have ratified the International Opium Convention of 1912.

International Society of the History of Medicine.—At a meeting of the permanent committee of the society at Antwerp, April 11, it was voted to hold the Fourth International Congress of the History of Medicine at Geneva, Switzerland, during the third week of July, 1925. The following officers were elected: president, Dr. Charles Greene Cumston, Geneva, formerly of Boston, and secretary general, Dr. A. de Peyer, rue General Dufour, 20, Geneva. Sir D'Arcy Power, London, England, was elected president of honor, and the following physicians, vice presidents of honor: Edward P. Krumbhaar, Philadelphia; J. G. de Lint, Gorinchem, Holland, Tricot Royer, Antwerp; Charles Singer, London.

Expenditures of Rockefeller Foundation.—In the recent report of the Rockefeller Foundation, issued ten years after its charter was granted, May 14, 1913, it is stated that the funds expended during the decade amounted to $76,757,040. While the chartered purpose is stated as "the well-being of mankind throughout the world," the work of the foundation has become chiefly centered on public health and medical education. In carrying out its various activities the foundation has expended all of its income from year to year, and in addition $17,500,000 of its general fund or principal. A further sum of $15,500,000, payable in future years, has been pledged to various medical schools and public health projects. The expenditures are roughly divided as follows:

Medical education	$24,716,859
War relief	22,298,541
Public health	18,188,838
Other philanthropic work	10,445,628
Administration	1,107,174
Total	$76,757,040

American Child Health Association Awards Scholarships.—The association announces that $10,000 has been set aside for twenty-five scholarships and fellowships to be offered to teachers, supervisors and educational executives who have done effective work in health education and who desire to improve their training, in universities, normal schools and colleges. The awards will include fifteen summer school scholarships and traveling expenses for tours of observation to health education demonstration centers. They will be available for the summer sessions in 1923 and for the school year, 1923-1924. Awards for summer schools will be made about June 15. Five $1,000 scholarships and fellowships will be awarded to college graduates now in service as principals or elementary school supervisors; five $500 scholarships, to normal school graduates or college graduates now engaged in classroom teaching, and fifteen $200 scholarships to holders of teachers' certificates engaged in classroom teaching. These amounts are approximate, depending on circumstances. Further details will be furnished on request to the Committee on Teacher Scholarships and Fellowships of the American Child Health Association, 370 Seventh Avenue, New York.

Rockefeller Foundation Fellowships.—During 1922 a total of 226 fellowships were granted by the foundation and its various boards; of these, 79 were fellowships in public health administered by the International Health Board, 22 were under the division of medical education, 63 under the China Medical Board, and 62 were fellowships in physics, chemistry or medicine, supervised by a committee of the National Research Council. These fellowships represent the following countries: United States, 111; Brazil, 20; Czechoslovakia, 16; China, 14; Canada, 12; Poland, 10; Great Britain, 9; Philippine Islands, 4; Austria, Australia, Hungary, Nicaragua and Syria, each 3; Colombia, Japan, Jugoslavia and Siam, each 2; and Ceylon, Costa Rica, Mexico, Mauritius, Norway and Salvador, 1 each. The gift of the foundation for scholarships and fellowships in Germany is considered the most important constructive assistance given that country since the war. It is estimated that 100 fellowships are in active force and that 100 more will be granted during the course of the next six months. Dr. Alonzo E. Taylor of Stanford University School of Medicine, San Francisco, who recently returned from a survey of conditions in medical education in Europe, where he assisted Dr. Richard M. Pearce, Jr., states that supplies, such as animals, instruments, chemicals, and other facilities for medical research, are so difficult to get and so prohibitive in price in Germany that the number of students entering medical schools in that country has diminished to about one fourth the prewar number.

United States District Court Holds Limitations on Liquor Prescriptions Unconstitutional.—So much of the National Prohibition Act and of the act supplemental thereto as undertakes to limit the amount of spirituous and vinous liquor that may be prescribed by a physician for internal use by a single

patient has been declared unconstitutional by Judge John C. Knox of the U. S. District Court, New York City. The decision was rendered in a suit brought by Dr. Samuel W. Lambert to restrain the Commissioner of Internal Revenue, the Federal Prohibition Director for New York and New Jersey, and the U. S. District Attorney for the Southern District of New York from interfering, under color of the acts named, with the complainant's prescribing liquor for his patients in excess of the quantities specified in those acts. Dispatches from Washington, D. C., quote Prohibition Commissioner Haynes as saying that the decision, if upheld, would wreck law enforcement, not only with respect to liquor but also with respect to narcotic drugs, and bring into question the validity of all state laws limiting the right of physicians to prescribe intoxicating liquors in excess of a fixed amount. The government, which will take an appeal to the U. S. Supreme Court, expects that, pending a decision, a stay of execution will be granted. If a stay be granted, there will be no change in the regulations governing the prescribing of liquor by physicians until after the U. S. Supreme Court has rendered its decision which will scarcely be before the spring of 1924, unless in the meantime Congress enacts legislation to meet the situation. If a stay be not granted, special regulations may be put into effect within the jurisdiction of the court by which the recent decision was granted, in order to comply specifically with the decree of that court, and the regulations elsewhere throughout the United States be allowed to remain as they are, pending action by the Supreme Court.

Medical Fellowships of the National Research Council.—These fellowships are supported by joint contributions of the Rockefeller Foundation and the General Education Board and are administered by a special Medical Fellowship Board of the National Research Council (THE JOURNAL, Nov. 25, 1922, p. 1856). The fellowships are open to citizens of both sexes of the United States and Canada who possess an M.D. or a Ph.D. degree, or the equivalent of one of these degrees. They are intended for recent graduates and not for those already professionally established. The basic stipends awarded are $1,800 for unmarried and $2,300 for married fellows per annum. These stipends may be increased when there are other dependents or for other cogent reasons. Awards are made for one year, but fellowships may be renewed. Fellows are chosen at two semi-annual meetings of the Medical Fellowship Board in April and September and applications to receive consideration at these meetings must be filed on or before March 1 and August 1, respectively. Appointments may date from any period subsequent to the board meetings. The fellowships are designed to recruit men and women as medical teachers and investigators. Fellows may choose any branch of medicine or public health for their ultimate career, but at present those candidates, otherwise suitable, will be favored who plan to specialize in one of the preclinical sciences or to approach clinical medicine through temporary identification with one of the sciences. The fellowships are not granted to any institution or university, but the choice of place to work, either in this country or abroad, is left to the fellow, subject to the approval of the Fellowship Board. The appointments are for full-time and no other remunerative or routine work is permitted. The particular individual with whom a fellow wishes to work should, ordinarily, have agreed to accept him, prior to the consideration of his application by the board. Opportunities, but not obligations, for a certain amount of teaching must be available. It is further required that the Fellow be charged no fees or tuition by the institution where he chooses to work. Further particulars concerning these fellowships may be obtained by addressing the Chairman, Board of Medical Fellowships, National Research Council, 1701 Massachusetts Avenue, Washington, D. C.

LATIN AMERICA

Medical Congress in Venezuela.—The organizing committee has already issued the official program for the Fourth Venezuela Medical Congress, at Caracas, Dec. 1-8, 1924. The congress will be divided into three sections: medicine and surgery; pharmacology and natural history, and odontology. The officers of the organizing committee are: Drs. F. A. Risquez, president; David Lobo, vice president, and L. Razetti, secretary.

Lepers Released in Venezuela.—Four lepers were recently discharged as cured from the Cabo Blanco Leper Colony. A library of over 1,000 volumes for the lepers was recently opened, the books being donated by public subscription. Two schools for lepers are also about to be opened. Plans are now being studied for the construction of isolation and convalescent pavilions. Dr. A. Benchetrit is the new head of the leper colonies of Venezuela.

New Public Health Law in Costa Rica.—A law just enacted in Costa Rica centralizes all public health matters in a new department, to be designated the bureau of hygiene and public health. Public health clinics will be organized as soon as possible for the treatment of venereal and skin diseases. Five per cent. of the proceeds of the public lottery will be devoted to the antivenereal campaign. Custom duties are remitted on all antisyphilitic remedies. The organization of local health departments is made compulsory. The public health bureau will also supervise the practice of medicine. Licenses to practice can be granted only by the medical school authorities. The joint practice of medicine and pharmacy by the same person is forbidden. The first undersecretary of public health is Dr. Solón Núnez.

FOREIGN

Medical Congresses at Strasbourg This Summer.—During the exposition to illustrate the advances in science due to Pasteur's discoveries, which will follow the unveiling of the Pasteur monument at Strasbourg, June 1, a number of medical and scientific congresses will be held: June 1, Hygiene and Bacteriology; June 2, Tuberculosis; June 11, Ophthalmology; July 23, Cancer; July 24, Dermatology and Syphilology, and July 26, Leprosy.

Congress of the International Surgical Association.—The sixth congress of the International Surgical Association will be held in London, Tuesday to Friday, July 17-20, 1923, under the chairmanship of Sir William Macewen. The provisional program follows: July 16, meeting of the International Committee, reception at the University of London; Tuesday, July 17, 11 a. m., opening meeting; 2 p. m., papers and discussions on surgery of the endocrine glands; 8 p. m., reception by the president of the association; Wednesday, July 18, 9:30 a. m., papers and discussions on arthroplasty; 2 p. m., operations in various hospitals; 5 p. m., demonstration of anatomic specimens by Prof. Sir Arthur Keith at the Hunterian Museum; 8 p. m., reception by the Lord Mayor; Thursday, July 19, 9:30 a. m., papers and discussions on the remote results of interventions for nerve traumatisms; 11:30 a. m., general assembly; 2 p. m., operations in the hospitals; 4 p. m., reception by the College of Physicians; 8 p. m., reception by the College of Surgeons; Friday, July 20, 9:30 a. m., papers and discussions on serotherapy and shock; 2 p. m., operations in the hospitals; 2 p. m., demonstration of methods of vaccinotherapy by Prof. Sir Almroth Wright at St. Mary's Hospital; 8 p. m., banquet, reservations in advance. All meetings will be held at the headquarters of the Royal Society of Medicine, 1, Wimpole Street, W.1, where those attending the congress may have their mail sent, if desired. The papers to be read at the meeting are being printed and copies will soon be sent out. A committee of women has been appointed to accompany the wives of physicians in their tours about the city and vicinity. After the congress, two separate excursions into the provinces, occupying three days, July 21-23, are planned, one to Oxford-Leamington-Stratford-on-Avon-Warwick, the other to Bournemouth-Lulworth-Isle of Wight. Applications and requests for information should be addressed to Le Secrétaire-Général, Dr. L. Mayer, 72, rue de la Loi, Brussels.

Personal.—Czerny, who has been called the "ferment of pediatrics," recently reached his sixtieth birthday, which was celebrated by the pediatricians of Germany with a festival in the children's clinic at Berlin, of which he is director. A special volume of the *Monatsschrift für Kinderheilkunde* was presented as a *Festschrift*, and he was also presented with a portrait plaque and a fund to defray the expenses of works issued by the clinic. His pioneer work in infant feeding, in nutritional disturbances, in the exudative diathesis and in exact metabolic research in pediatrics is familiar to every physician. He has recently been impressing on pediatricians that their duty to children includes supervision of the training of the child.——Dr. Lozano, professor of surgical pathology at Zaragoza, recently delivered an interchange lecture at Paris, speaking on "Surgery of the Ileocecal Valve, Hydatid Cysts and Brachial Plexus."—Among the Italian professors who reach the age limit this year in their work in the medical faculties are Profs. E. Maragliano, Pio Foa, L. Bianchi and P. Albertoni, all of whom are senators; also Profs. F. Falchi of the eye clinic at Pavia, V. Grassi of the ear clinic at Pisa, and D. Majocchi of the dermatology clinic at

Bologna.——The Société médicale des hôpitaux de Paris recently elected, as corresponding members, Professors Ruitinga and Snapper of Amsterdam, and Gautier and Reh of Geneva.——A prize medal has been endowed in honor of Prof. Hans Horst Meyer of Vienna. It is to be awarded every five years for distinguished work in the domain of theoretical medicine. It was presented for the first time to Meyer himself on the occasion of his recent sixtieth birthday. ——Prof. P. Micheleau of Bordeaux has been awarded the triennial Pirondi prize offered by the Comité médical des Bouches-du-Rhône for his work on "General Pathology and Antisepsis."——Professor Poels recently resigned the charge of the state serum institution at Rotterdam; Dr. H. Klinkert was the spokesman at a meeting to extol his long services and present him with his portrait in oil.——Dr. J. S. Fraser, Edinburgh, recently arrived in this country to deliver lectures before the American Laryngological, Rhinological and Otological Society, and the American Otological Society, at Atlantic City. He also delivered an address before the otological section of the New York Academy of Medicine on "A Plea for an International Investigation into Otosclerosis and Allied Subjects," May 4.

Deaths in Other Countries

Dr. **J. A. Valdés Anciano,** professor of nervous and mental disease at the University of Havana, aged 56. He was a member of the leading neurologic societies in this country, France and Belgium, and had recently been elected corresponding member of the Paris Société médicale des hôpitaux. ——Dr. **Légenne** of Cousolre, France, victim in an automobile accident.——Dr. **C. Tamburini** of Milan, aged 85. He was editor of the *Gazzetta degli ospedali* for many years.—— Dr. **Moritz Probst** of Vienna, noted for his research on the anatomy and physiology of the brain, aged 56. Lewandowsky gave Probst's name to a commissure and a tract in the brain which the latter first described.——Dr. **J. Turin** of Vevey, who took the initiative in the introduction of adenoidectomy and roentgenoscopy into Switzerland, aged 70.—— Dr. **E. Menéndez Tejo** of Besaya, Spain, an authority on balneotherapy.——Dr. **Murga,** a bacteriologist of Seville, who assisted Ferrán in the anticholera campaign in 1885.——Dr. **V. Lafuerza,** professor of anatomy and ophthalmology at the University of Zaragoza.——Dr. **M. Bider** of Basel, a leader in public health work, succumbed to a rapidly fatal epidemic encephalitis.——Dr. **V. D. Madrazzo** of Buenos Aires.——Dr. **Valassopoulo,** physician in charge of the Greek hospital at Alexandria, corresponding member of the Paris Société des hôpitaux.

CORRECTION

Cornerstone of Medical School Laid.—The Cleveland *News,* April 11, from which an item in The Journal, April 28, p. 1251, was taken, stated that Prof. William T. Corlett of London, England, gave an address at the laying of the cornerstone of the new Western Reserve University Medical School. Dr. Corlett writes that he is a resident of Cleveland.

Government Services

Veterans' Bureau Neuropsychiatric School Graduates

Graduating exercises of the U. S. Veterans' Bureau School of Neuropsychiatry were held at St. Elizabeth's Hospital, Washington, D. C., May 11. The class comprised forty-four physicians. This school was inaugurated by the Veterans' Bureau under the supervision of Dr. F. F. Hutchins to obtain sufficient competent neuropsychiatrists to care for ex-service men. The course of training opened January 15; the lectures, clinics and laboratory work occupied six hours a day; many of the instructors were eminent scientific men, selected with reference to subjects on which they were recognized as authorities. The graduates will be sent to hospitals throughout the country. Abstracts of the lectures given will be compiled into a volume which will be of great assistance to neuropsychiatric hospitals and clinics. There are 9,556 neuropsychiatric cases in Veterans' Bureau hospitals. It is estimated that eventually there will be from twelve to fifteen thousand such cases. In the successful completion of this school at St. Elizabeth's, those who closely followed this unprecedented project believe that something fundamental has been accomplished in psychiatry.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 23, 1923.

Prohibition

The view that prohibition is not acceptable to this country, expressed in a previous letter, is confirmed by the rejection by the House of Commons by an overwhelming majority, of a bill to enforce it. The bill was introduced by Mr. Scrymgeour, the solitary member of the house returned as a prohibitionist. In a speech tinged with religious fervor, he drew a lurid picture of the evils of drink, and twitted the house on its inconsistency in forbidding the saloon to those under 18, and treating it as "a paradise regained" for those above that age. Those engaged in the drink business paid the penalty: they died off more rapidly than those engaged in any other business. The motion in favor of the bill was seconded by Dr. Slater, a physician and member of the labor party. He pointed out that the house had taken strong action against dangerous drugs because they tended to antisocial actions. The position in regard to the drug alcohol was exactly the same. The first effect was to diminish the higher power of self-control. How many members of the house could say that they got a clean bill of ancestral mental health? He knew distinguished men in his own profession who showed all through their lives self-control, complete mental stability, but when they were 50 or 55 succumbed to the alcohol habit. Throughout the population there was a large number of persons as susceptible to alcohol as the majority of people were to morphin and cocain—they could not help becoming slaves to the drug once they started taking it. The members who opposed the bill argued that the English people had been getting more sober for many years. They were in favor of temperance, but it could be better promoted in other ways than by destroying the freedom of the individual. While the evils of drink were to be deplored, medical authorities showed that far more men died from overeating than from overdrinking. What was the good of bringing in prohibition with the example of America before them? Prohibition in that country had produced more corruption than any law introduced there. The way to promote temperance was to improve the saloons and make them open places, like the café system on the continent of Europe. Arrests for drunkenness in twenty-six American cities chosen at random had increased by 4,000 in 1922, as compared with 1918. The bill was rejected by 236 votes to 14. It is noteworthy that only a small number of the labor party, which counts well over 100 members in the house, voted for the bill.

Insulin

At last insulin is for sale. The Medical Research Council announces that insulin may be obtained from certain firms to whom provisional authority has been granted. These firms undertook the manufacture under agreement with the council, and have satisfied all the requirements and tests of the council for authenticity, standard, value, therapeutic efficiency and sterility. In addition, a supply is to be received from the American firm Eli Lilly & Co. The British firms have adopted a method of purification of the final product worked out by Dr. Dudley at the National Institute for Medical Research. By this method it is possible to get rid of more than 90 per cent. of the solid matter in the crude end-product of the original process, so that the active principle is obtained in the form of the hydrochlorid in a highly concentrated form freed from accidental irritants and other substances. Every batch put on sale will be biologically

tested under the supervision of the council. The present price of insulin is 60 cents for 10 units, which is the average dose. It is a watery solution issued in rubber-capped bottles. On the advice of a committee of eminent physicians appointed by the minister of health, manufacturers are directed during the present period of restricted production to supply insulin only to hospitals and registered physicians that have proper facilities at their command for making accurate blood sugar estimations. Each hospital and physician so supplied must undertake to observe these restrictions:

1. Careful correlation will be made of the diet, of the blood sugar changes, and of the insulin dosage in each case. For at least one group of cases it is known already that the insulin dosage can be reduced progressively with suitable adjustment of diet. This reduction allows economy of insulin, besides the advantage it may bring to the patient.
2. Insulin will not be given to those whose symptoms can be controlled by moderate restrictions of diet. There should be no luxury use of insulin till supplies are abundant.
3. It is understood, of course, that in emergency and apart from the careful correlation just mentioned, insulin will be given to those in diabetic coma or those nearly approaching it, and it may be given to those with diabetic symptoms needing special preparation for some surgical operation.
4. Care will be taken to avoid the danger of giving insulin in non-diabetic cases (e. g., to patients with renal glycosuria).

The Octocentenary of St. Bartholomew's Hospital

St. Bartholomew's Hospital, the oldest of the London hospitals, is making great preparations for the celebration, June 5 and the following days, of the eight-hundredth anniversary of its foundation. Like most of the old hospitals of Europe, it is of religious origin and was founded by the Norman monk Rahere in 1123. The celebration will begin by a service in the Priory Church of St. Bartholomew the Great, which still maintains a connection with the hospital. A most imposing pageant will be held in the hospital grounds. It will consist of five processions. The first will be formed by Augustinian canons chanting the ancient hymn used at the foundation of an Augustinian priory. The hospital was controlled by this religious order for the first four centuries of its existence. The second procession will illustrate the return of Rahere from his pilgrimage to Rome. The third procession will show King Henry VIII giving the charter for the refounding of the hospital to the lord mayor and citizens of London. Mr. Arthur Bouchier, the actor, will enact the part of the king. The fourth procession will show a detachment of the Royal Army Medical Corps with an ambulance such as was used in the war. The fifth procession will be formed by the Prince of Wales, accompanied by the officers and staff of the hospital. At the Guildhall the prince, as president of the hospital, will receive congratulatory addresses from delegates nominated by the English-speaking universities and colleges. In the great hall of the hospital, tableaus illustrating various events in the history of the hospital will be produced with appropriate music. The students of the hospital will reproduce the ancient institution of Bartholomew fair as it was in the time of Henry VIII. The old English sports of quarter-staff, wrestling, tumbling and acrobatic performances will be shown. The celebration will be concluded by a meeting of the Rahere lodge of Freemasons.

The Rockefeller Buildings at University College

May 31, the king will open the new Anatomy Institute of University College, London, which has been built by the munificence of the Rockefeller Foundation. The foundation has given $6,000,000 to University College to form an ideal medical school equipped on the most modern lines. Of this, $1,850,000 is for an institute of anatomy and for additions to the staff. The cost of the site, building, equipment and library of the institute is estimated at $950,000, leaving a capital sum of $900,000 to provide $25,000 for additional staff in the anatomy department, $12,500 in the physiology department and $7,500 in other departments. The number of beds at the service of the clinical units recently established at University College Hospital was considered too small, and proper provision was not made for obstetrics. It was therefore decided to build a new obstetric hospital. The Rockefeller Foundation has given $2,000,000 for building operations, and $2,175,000 for maintenance of the medical school. The income of this endowment is to be used for promoting education and research in the medical school, but a sum not exceeding $80,000 a year is to be applied to the upkeep of 120 beds at the service of the medical and surgical units until such time as the money can otherwise be raised, when the income of the endowment will be restored to its original purpose of helping medical education and research.

PARIS

(From Our Regular Correspondent)

April 20, 1923.

University Group in Favor of the League of Nations

There has been founded at Paris a university group so called, in favor of the League of Nations, the purpose of which, as the title indicates, is to disseminate throughout France, and especially among young men with university training, a knowledge of the League of Nations and a love of peace. It is on the generation of young men who will direct the affairs of the France of tomorrow that the university group proposes to bring its influence to bear—by systematic propaganda; through the columns of the press, and by means of publications and also lectures, to be delivered at Paris and in the provinces by men who stand high in authority, and even within the walls of the colleges and universities.

The series of lectures has begun with that of Lord Robert Cecil, who was welcomed by Prof. Paul Appel, rector of the University of Paris. Intellectual cooperation, M. Appel stated, is one of the surest means of bringing about a rapprochement between nations. The rector ended his welcome with the words of Pasteur: "I believe absolutely that science and peace will triumph some day over ignorance and war."

In his address, Lord Robert Cecil emphasized particularly that fraternity or brotherhood is the principle on which is based the existence and the development of the League of Nations. How else can we interpret the aid given Austria in her distress; to Poland on the occasion of the epidemics that threatened it, and to Russia during its great famine?

Extension of Workmen's Compensation Law to Include Agricultural Laborers

A recent decision at law is to the effect that legislation concerning responsibility for industrial accidents is applicable to the workmen, employees and domestics engaged in agricultural pursuits of all kinds, including animal husbandry, training of animals, and all enterprises in which agricultural exploitation is the main object. But the law does not apply to those who ordinarily work alone, or are assisted only by certain near relatives and members of their immediate family, even though they may employ occasionally one or more salaried assistants.

Protection for the Results of Scientific Research

French law protects effectively the rights of authors of literary works, musical composers, painters and sculptors, but this is not true of scientists and inventors. The act of 1844, to be sure, provides for the granting of patents on inventions, but in reality only inventions strictly industrial in their nature come within the scope of this law. No pharmaceutic products or remedies of any kind may be patented. This state of affairs has recently given rise to sharp criticism. It has been emphasized that it is unjust that biologic discoveries and inventions which are of the greatest practical value in

agriculture, in veterinary science and in human medicine, and which occupy today such an important place in pure and applied science, should be deliberately excluded from the benefits of the law respecting letters patent and should become public property from the date of their origin. The question was made the subject of a long discussion at a meeting of the Confederation of Intellectual Workers, and the draft of a law providing for the protection of the rights of scientists has been prepared by a commission. According to this draft, the text of which has been submitted to the chamber of deputies and the League of Nations, the authors of scientific discoveries and inventions shall enjoy, for the duration of their life, the exclusive right of deriving a profit from their invention or discovery. Entitled to protection under this proposed law are: discoveries (that is, demonstrations of the existence of previously unknown principles, bodies, agents or properties of living beings or matter), inventions (that is, creations of the mind consisting of methods, apparatus, products, compositions of products as yet unknown), and, in a general way, all new applications of discoveries and inventions. To establish his right, the author of the discovery or invention must prove that his discovery or invention has been given sufficiently wide publicity. Publication in certain accepted periodicals will be regarded as sufficient publicity. Reproduction for commercial purposes of the name of the author of the published text or of the scientific communication and the bibliographic reference is prohibited, unless the written consent of the author is secured. The authors of inventions and discoveries may not oppose the industrial or commercial exploitation of new applications of their discoveries or inventions, but they will retain an author's rights in any exploitation in which applications of their initial inventions and discoveries have been made. The authors of discoveries or inventions in the domain of therapeutics will participate in the benefits of this law, it being understood that they cannot exploit of themselves their discoveries and inventions unless they hold the diploma of a pharmacist.

Typhoid in Paris

Whereas typhoid has considerably diminished in the large cities of the United States (The Journal, March 10, 1923, p. 691; March 17, p. 776), the municipal statistics of Paris record, at present, a slight recrudescence of this disease. The Assistance publique has recently published information on this point, from which it appears that the number of new cases rose, during the period from March 30 to April 9, from thirty-seven (the average figure) to sixty-nine. On the other hand, the hospitals of Paris have under treatment at present 148 typhoid patients as against seventy, the usual number. One point is very significant, and that is the sex incidence of the disease. Whereas, in 1913, 978 men and 823 women (a relation of seven men to six women) were affected with the disease, the proportion today is two men to six women. The explanation for this is that, since 1913, antityphoid vaccination has been compulsory in the army, and that almost the totality of the mobilized forces has been given such vaccination.

A New Review of Endocrinology

A new periodical, the *Revue française d'endocrinologie,* to be published under the direction of Professors Lucien and Parisot and Dr. Richard (Nancy), has been announced. This review will appear every two months. The first number will contain, among others, an article by Professor Gley on the history of endocrinology in France, an article by Prof. J. Sabrazès (Bordeaux) on senile dementia and lesions of the suprarenals, and a contribution by Dr. Mauclaire on grafts of endocrine organs.

It is to be hoped that this publication will be able to make a judicious choice in the somewhat encumbered domain of endocrinology. In this field, possibly more than anywhere else, really serious things should not be confused with trivial matters, but that is just what has happened to the *Vie médicale,* which names as the official organs of organotherapy *Endocrinology* and a certain pseudoscientific publication emanating from an American laboratory and sent out in profusion to the physicians on the continent. It is true that the director and proprietor of this laboratory was recently in Paris and was able to gather at a dinner several eminent members of the medical profession, who also took seriously what was not of any particular moment. A recent number of the *Gazette des hôpitaux* contains a letter from the United States, in which Dr. Faxton E. Gardner (New York) makes this statement: "There is a certain laboratory in the United States, which is flooding, copiously and frequently, the physicians of the continent with pseudoscientific propaganda in the interest of their numerous organic products with which all diseases may be treated and cured. It would almost seem as if the human organism were a mechanical device animated or propelled by a group of glands only one of which need be touched in order to unleash the desired effect. The physician, like the electrician standing near an electric display, needs only to push the proper button that is applicable in the particular case with which he is dealing. One may thus arrest a diarrhea, change a feebleminded child into a wide-awake pupil, or give renewed youth to those who have become enfeebled with age."

The Centenary of the Election of Laënnec to the Academy of Medicine

At the last meeting of the Academy of Medicine, Professor Achard, the general secretary, called the attention of the academy to the fact that it was in 1823 (consequently, just 100 years ago) that this learned society admitted Laënnec to membership in the section of medicine. In reality, this anniversary should have been celebrated several months ago, for the election of Laënnec dates from Jan. 14, 1823. However, the illustrious inventor of auscultation did not take a very active part in the work of the academy.

The Fourth International Neurologic Conference

The fourth annual international neurologic conference will be held in Paris, June 8-9, 1923. The following question will be discussed: Compressions of the Medulla Oblongata. The essayists will be (1) from the standpoint of pathogenesis and pathologic anatomy, Drs. James Purves Stewart and George Riddoch (London), and (2) from the standpoint of pathologic physiology, and the clinical and therapeutic aspects, Dr. C. Foix (Paris).

BUDAPEST

(From Our Regular Correspondent)

April 7, 1923.

The Housing Problem

The problem of providing sanitary dwellings for the ever-increasing population of the city of Budapest has caused much anxiety to the authorities. Recently a series of regulations was drawn up by a committee of architects and physicians, and was presented for approval to the building committee of the city council. The principal points were: the fixed minimum to be 1,200 cubic feet of air space for each inhabitant; every inhabited room to have windows admitting direct light and air; the yard of a one-story house to be at least 10 by 6 yards in size; overcrowding (less than the air space minimum) to be prevented by special regulation of subletting; the width of future streets to be not less than 10 yards, or at least equal to the height of the houses; compulsory weekly cleansing of all toilets to be carried out by agents of the landlord, and kitchens to be separated from the

vicinity of the toilets. The proposal of the committee, however, is likely to be rejected by the majority of the city council on account of the exorbitant price of building, and building materials.

Malaria with One Single Symptom: Headache

Dr. Martonfy, who recently returned from imprisonment in Russia, reports a case of malaria without fever occurring during a Siberian winter. The patient was a physician named Lümegi; the only symptom complained of was headache, which appeared each forenoon and lasted a few hours. The patient had had no previous malarial symptoms. Dr. Martonfy did not examine his friend's blood, nor did he suspect the presence of malaria. However, when returning through Moscow, Dr. Martonfy and his patient visited a hospital bacteriologist, who made an examination of the blood. No perfect organisms were found, but numerous malarial spores were present which appeared to be of tertian type; the organisms and the symptoms rapidly disappeared under quinin.

The Dangers of Some New Arsenic Preparations

Dr. Forbath read a communication in the medical union of a large provincial town, in which he brought forward a series of twelve cases of syphilis treated by "arsolnol" (an arylarsonate). The success secured induced him to continue its use and to recommend it until the middle of last year, when an untoward occurrence compelled him to abandon it and to regret that he had ever advocated it. A syphilitic patient was treated with phelarsonate (a preparation manufactured in Germany), and at the end of a course of ten injections given in the prescribed doses on alternate days, the patient complained of impaired vision, and was found to be suffering from incipient optic atrophy. This naturally caused him immediately to abandon the treatment. Dr. Forbath mentioned a similar case, which was reported in Germany, of a syphilitic patient who became blind after a course of about twenty-five injections of arsolnol. It is unnecessary to enter more fully into the history of these and other cases observed by different authors; Forbath would not have reported these cases, had not he recently received a pamphlet from the manufacturers of the preparations named. In this pamphlet, casual mention is made of the fact that signs of intolerance had been met after the use of arsolnol, such as "visual disturbances, nausea, vomiting, gastric pains, dermatitis, nervousness and insomnia," and that "the appearance of any of the foregoing symptoms should be a signal for withholding the drug." This is the only warning in the pamphlet, though the manufacturers had been informed of one case of total and irremediable blindness after the use of arsolnol, and knew that the physician had abandoned the use of the drug on that account. It is gratifying that the German supreme board of sanitation, having knowledge of a few such cases, took legal steps to prohibit the manufacture of arsolnol and phelarsonate.

Postgraduate Medical Courses in Hungary

On the initiative of the Hungarian minister for public instruction, postgraduate medical courses will again be established in Hungary. The movement has been set on foot by a resolution, passed by the International Committee of Post-Graduate Education, that mutual support be given by different countries (chiefly the new, so-called successor states) to postgraduate education. The minister expressed a preference for the German system, in which the function of the central institution is extended to the provinces. He has charged the dean of the medical faculty of Budapest University with the task of carrying the plan into execution. The dean has convoked the professional board of the university, and, in setting forth the scheme, said that in Hungary the summer vacation courses were the only means for postgraduate medical instruction until 1910, when a regular postgraduate medical school was established and was continued until 1914. During the thirty years preceding the war, eighteen courses had been held, which had been attended by about 2,000 physicians. They had been given by some 300 lecturers, and the fees had served to cover expenses.

Inoculation Against Typhoid Fever

It has been ordered by the Hungarian command that, to encourage soldiers voluntarily to accept inoculation against typhoid, lectures on the advantages of this preventive measure will be given at stated intervals. The men should be advised to be inoculated as soon as they attain service age or become liable to service in Danube navigation, and it is suggested that quarterly inoculation of volunteers might take place in each garrison. If necessary, this could be done at monthly instead of quarterly intervals. The men should not be inoculated until they have completed the course for recruits and the training as soldiers should not be interfered with.

BERLIN

(From Our Regular Correspondent)

April 7, 1923.

Sexuality in Relation to Constitution

In the Hygienic Institute of the University of Berlin, the Aerztliche Gesellschaft für Sexualwissenschaft und Eugenetik held recently a special meeting in celebration of the tenth anniversary of its existence. The main topic discussed was, "Sexuality in Relation to Constitution." Many guests from different parts of Germany and from foreign countries were present. The president of the society, Dr. Max Hirsch, outlined in his opening address the position of sexual science as a branch of natural science and medicine. Sexual science has an historical and philosophical side, and has also a connection with the natural sciences and biology. But only since, in our era, the connection with the natural sciences and biology has been recognized and the scientific mode of inquiry has been introduced, has it been possible for medical thinkers and medical investigators to penetrate more deeply the domain of sexual phenomena. The lecturer pointed out that sexual science and the theory of constitution are based on the doctrine of internal secretion and the theory of heredity. The path leads from the observation of the cell to observations on cell systems—from researches on a single organ to researches on the whole organism. In other words, in place of observations on local organs must come researches on constitution.

Professor Kraus spoke on the subject, "History and Nature of the Problem of Constitution." He discussed the method of local diagnosis which still prevails, and the idea which is coming slowly to be realized that physicians must establish a personal relationship with their patients; that the whole organism is a clinical problem; that investigations on constitution must be regarded as the basis, but that researches on the individual must constitute the superstructure, for the reason that the activity of the patient's individual nature is of paramount importance in all medical treatment. The biologic aspects of constitution must be studied from the standpoint of the development of the species and the individual. Hereditary variation and modification must be sharply distinguished from the development of the individual due to the influences of environment. This double determination of man and the difficulty of recognizing or establishing hereditary influences often compel physicians to view all physical characteristics from the same point of view. Participation in certain sports may cause the same changes as are caused by organic disease. Certain diseases may have their origin in the brain as well

as in various glands. What we see is a form in which development has been completed, and therefore signifies much more than the mere notion of form. Therefore, we are not justified in making deductions with reference to individual character from mere external appearances—not even from observations on form. Professor Kraus discussed the conceptions of physical systems and the researches on the physiologic significance of form, and emphasized the extreme importance of the predisposition of the individual as it affects the mode of reaction to external stimuli. He warned, however, against the mistake of regarding the sexual sphere as the only psychologic source of exalted intoxication, since associative ideas may produce in us quite different types of exalted feeling. Medicine occupies a midway position between the natural sciences and the mental sciences, and must hearken to both.

Professor Hartmann of the Kaiser Wilhelm Institute in Dahlem, a suburb of Berlin, spoke on "The Biologic Basis of the Sexual Constitution." He gave a short survey of the mendelian theory of heredity, and showed how deeply sex distinctions affect all living nature. The determinants of heredity are inherent in the chromosomes of the cells, while each cell contains the determinative principles of both sexes. Only the presence (female) or absence (male) of the accessory chromosome constituting the sex differentiator is the determining factor of sex. The crossings of different breeds or strains, which possess these factors in different potency, produce, then, so-called intersexual organisms. Besides this hereditary intersexuality, there is also a hormonal intersexuality which is determined by the evolution of the secretions. A cell, however, may be masculine with reference to a second and feminine with respect to a third cell. The lecturer illustrated this thought by reference to examples of more primitive organisms, and called attention to the great difficulty of carrying out the needed experiments on complicated organisms. He stated that there was, however, no doubt that sexuality was a paramount factor in all cell life; that is, in all cellular systems.

Professor Kretschmer (Tübingen) outlined the basis for "The Psychology and Pathology of the Sexual Constitution." In connection with his classification of human beings as pycnic, asthenic, etc., he discussed the effects of constitutional tendencies as revealed in persons of note, pointing out parallels between psychic endowments and constitution in certain well known personages. He stressed also the possibility of the development of instinctive desires through the association of ideas, pointing out that in certain constitutions their repression was liable to lead to apparently unexplainable hysteria and neuroses. He interpreted the ideas and purposes of the ascetics as due to suppressed sadistic and masochistic tendencies, and showed that asceticism should no longer be regarded as conditioned by an absence of natural instincts, but rather as due to the satisfaction of strong instincts urging the infliction of self-torture. The "idealistic pathos" of the period of puberty, he explained, is due to psychic sexual representations that fall short of realization. He showed that the constitutional dynamics represented by the power of instincts affect to the uttermost all manifestations of the mind and determine its output.

Professor Hübner (Bonn) treated the relations between "Sexual Constitution and Jurisprudence," and showed how a knowledge and consideration of the sexual motives in all criminal cases open up an entirely different point of view in dealing with "amateurs," and allow one to judge their conduct much more justly. He discussed sexual suggestibility and various problems pertaining to the relations of the sexes, which must be better understood before we can establish a just system of criminal law and avoid treating disease as crime.

Great importance for the further development of sexual science attaches to the statements of Professor Matthes with reference to the establishment of types and the difficulties of the problem, owing to the fact that we must consider not only environmental influences but also the modifications in character, since the same individuals in the course of their life undergo most remarkable constitutional changes.

Professor Posner (Berlin) called attention to the progress in medicine that has resulted from the study of sexual science. Many diseases that formerly were treated with doubtful success as localized diseases can now be treated with much better understanding because the part played by constitutional factors has been recognized. For the determination of constitution, he advised starting with the aspects of individual conditions and testing them as to the type elements they contain.

Professor Mühsam expatiated on "The Effects of Sexual Constitution on the Psyche," showing to what extent the character of an individual depends on his sexual constitution and the changes in character brought about by influences affecting sexuality. He referred to Steinach's experiments on the organs of sex as still unexplained. The sexual constitution is influenced by various endosecretory processes.

Professor Peritz referred to the significance of the "reaction type" for the constitution. As the determinants of the constitution he designated the sexual factors in the cells, the hormones in the gonads and the endogenous "reaction types" in the nervous system. Changing the sexual factors does not lie within our power; the hormones are undergoing a constant change as time goes on, and they influence in turn the "reaction type." It is this reaction capacity that determines a child's character. In the period of puberty a complex of inhibitions begins to develop, and keeps pace with the maturing of the gonads. The final development depends then entirely on the relation that is established between these two complexes.

Sanitätsrat Magnus-Hirschfeld considered the stability of constitutional types, and explained, by means of numerous illustrations from the rich collection in the archives of the Institute for Sexual Research, the various human organisms that occupy an intermediate position sexually. He described in some detail their physiologic and psychologic peculiarities, and pointed out their necessity and difficulty of constantly repressing their natural sexual instincts. In closing, he expressed the hope that the better understanding of the theory of constitution and the doctrine of hormones might furnish an improved basis for an independent sexual science, the need of which was shown by the convening of this society, which he aided in founding.

Heredity and Education

At a recent meeting of the Deutsche Gesellschaft für Rassenhygiene (eugenics), the important problem "Heredity and Education" came up for discussion. According to Poll, the new professor in the field of hereditary transmission, the notion of heredity in modern biology has changed fundamentally. Hereditary transmission of a quality, character or function has been shown to be a rare and exceptional occurrence. An explanation of the fact that so much more frequently dissimilarities in form and performance are observed in ancestor and descendant awakens today a lively interest. The modern biologic theory of evolution, like the modern chemical theory of development, has come by means of exact experiments and observations to the conception that all living organisms have a definite constitution; that, just as chemical compounds are formed from atoms, biologic compounds, as represented by plants, animals and man, are formed from *Genen* or hereditary units. On the relationship of these hereditary units depend the form and behavior of all living

bodies. In the development of a living organism, external circumstances exert a modifying influence on the constitution of these hereditary units. The manner in which living organisms may be modified by external influences is determined by a hereditary capacity. Education signifies modification of a given constitution of man. The relationship of the hereditary units sets, therefore, insurmountable limitations on the capacity for modification under external influences; that is, on education. With the exception of twins, which have developed from two like germ cells, all human beings have a different hereditary constitution. It is, therefore, biologically illogical to endeavor to impose the same training and the same education on all human beings alike. Strictly speaking, since the hereditary constitution of every human being is different, every person should receive an education such as is best adapted to his (or her) peculiar nature. In closing, the speaker touched on the problem of improving mankind by education. In the light of the modern biologic theory of evolution this is a hopeless task, for there is no hereditary transmission of modifications. A progressive development of man can consequently not be brought about in this manner.

In his address which followed, Schlemmer, educational commissioner, expressed himself somewhat as follows: When an educator considers the conclusions reached by the science of heredity with respect to the hereditary transmission of modifications of character, his first impression is that, in the face of such facts, all efforts at education are entirely useless; and, indeed, the educator will do well to rid himself of the sovereign idea, which frequently takes possession of him, that he can accomplish with a pupil whatever he wishes; likewise, many of the time-honored methods of education, such as admonition, punishment and good example, will have to undergo considerable modification. However, from other points of view, the science of heredity introduces to us a wealth of important educational problems. To be sure, the inherited disposition of the child cannot be changed, but how the child's disposition develops depends to a large extent on the educational influences that are brought to bear on it—on environment, training, formal education, etc. It is also true that researches on heredity throw an entirely new light on many pedagogic problems; for example, welfare education, selection and separation from the multitude of the more gifted children, and a specially adapted training and education for girls. Pedagogy based on the highest ideals has much to learn from the teachings of heredity; nor are the findings of hereditary science out of harmony with the fundamental facts of religious experience.

A German Hygienic Expedition to Brazil

Prof. F. Munk (Berlin) accepted the invitation of Professor Chagas (Brazil) to undertake a hygienic expedition to Brazil, and has now published his report, from which the following statements are cited. Public health conditions in Brazil have improved greatly in recent years. After the bad conditions along the coast were abolished, the authorities began waging a successful fight against disease in the interior. A strange disease termed the "Chagas disease" has been encountered thus far only in Brazil, but it has a certain interest for us in Germany because there seem to be points of resemblance between the Chagas disease and a peculiar type of goiter that occurs here. The Chagas disease is common in a very dry plateau region, the population of which consists in large part of negroes and Indians of mixed blood. Chagas discovered trypanosomes in a bug by the bite of which the disease is transmitted to man. The symptoms consist of a goiter, cutaneous swellings, cardiac disturbances, etc. The whole course of the disease has not been cleared up, as yet.

Marriages

D. EMMETT WELSH to Mrs. Fannie M. Koon, both of Grand Rapids, Mich., at Los Angeles, April 2.

WILLIAM G. TELFAIR, Long Island City, N. Y., to Miss Adaline Bennett of Manchester, April 4.

WILLIAM T. JOHNSON, Eldorado, Ill., to Mrs. Katherine Patterson, of Norris City, April 29.

ROY EDMUND KRIGBAUM to Miss Lillian Agnes McGrath, both of Columbus, Ohio, May 5.

HELMUTH C. W. ERNST to Miss Gertrude Rose Bush, both of East Chicago, Ind., April 24.

RUSSELL M. FARNHAM to DR. HARRIET J. BOWER, both of Los Angeles, in April.

Deaths

Thomas Grant Allen, Chicago; Northwestern University Medical School, Chicago, 1898; member of the Chicago Pediatric Society and the Central States Pediatric Society; formerly professor of children's diseases at the Post-Graduate Medical School; served in the M. C., U. S. Army, during the World War; on the staff of U. S. Veterans' Hospital No. 30; aged 59; died, May 10, of pneumonia.

Louis Milton Coy ✠ San Bernardino, Calif.; College of Physicians and Surgeons, Los Angeles, 1915; past president of the San Bernardino County Medical Society; served in the M. C., U. S. Army, during the World War; formerly superintendent of the San Bernardino General Hospital, where he died, April 13, of Vincent's angina of the larynx, aged 33.

St. Clair Smith, New York; New York Homeopathic Medical College, New York, 1869; emeritus professor of theory and practice of medicine at his alma mater; formerly on the staffs of the Flower Hospital, New York, Morristown Memorial Hospital, Morristown, N. J., and St. Mary's Hospital, Passaic, N. J.; aged 77; died, May 1, in Pasadena, Calif.

William Dayton Shields ✠ Holdrege, Neb.; Medical College of Indiana, Indianapolis, 1886; member of the American Academy of Ophthalmology and Oto-Laryngology, the Omaha Ophthalmological Otological Society, and the Sioux Valley Eye and Ear Academy; aged 66; died, April 26.

Eliseo Font Y. Guillot, San Juan, P. R.; Universidad Santiago de Compostela, Spain, 1880; past president of the Medical Academy of Porto Rico, and at one time subcommissioner of health; on duty at the U. S. Public Health Service Relief Station; aged 67; died, March 27.

Earle Appleton Gayde, Taberg, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1898; formerly city medical inspector of Utica; at one time on the staff of the Utica Homeopathic Hospital; aged 54; died suddenly, April 17, of angina pectoris.

John Joseph Reid, New York; Medical Department of Columbia College, New York, 1869; member of the Medical Society of the State of New York, 1869; formerly on the staffs of the City and New York Foundling hospitals; aged 77; died, May 1, of myocarditis.

Edward Pinchon Bartlett, Springfield, Ill.; St. Louis Medical College, St. Louis, 1870; Bellevue Hospital Medical College, New York, 1875; state commander of the Grand Army of the Republic; aged 81; died, May 10, of cardiac asthma, at a local hospital.

Francis Marion Martin, Maryville, Mo.; Hahnemann Medical College and Hospital, Chicago, 1877; member of the Missouri State Medical Association; formerly county coroner; on the staff of St. Francis Hospital; aged 72; died, April 29, of pneumonia.

George E. Parsons ✠ Elk River, Minn.; University of Minnesota Medical School, Minneapolis, 1905; served as secretary of the Central Minnesota Medical Society for several years; aged 40; died, April 5, at the Abbott Hospital, Minneapolis.

Alexander Joseph Monge, Rochester, N. H.; Laval University Faculty of Medicine, Quebec, Que., Canada, 1897; member of the New Hampshire Medical Society; served in the

M. C., U. S. Army, during the World War, with the rank of captain; aged 56; died, April 21, of cerebral hemorrhage.

Gustav Hausser ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1902; formerly instructor of dermatology at the Cincinnati Polyclinic and Post-Graduate School; aged 49; died, April 22, of pneumonia, at the Good Samaritan Hospital.

James Fey Cole, Oelwein, Iowa; State University of Iowa College of Medicine, Iowa City, 1887; served in the M. C., U. S. Army, during the World War, with the rank of captain; former mayor of Oelwein; aged 58; died, April 21.

Samuel Lanham Allen, Lancaster, S. C.; Medical College of the State of South Carolina, Charleston, 1912; member of the South Carolina Medical Association; aged 38; died, April 20, at the Spartanburg Hospital, Spartanburg.

Lewis Llewellyn Wickersham, Malden, Ill.; Rush Medical College, Chicago, 1882; also a druggist; aged 63; died, April 23, at the Perry Memorial Hospital, Princeton, of an overdose of veronal, presumably self-administered.

Morris Nathan Karash, New York; Columbia University College of Physicians and Surgeons, New York, 1896; member of the Medical Society of the State of New York; aged 61; died, April 28, of chronic myocarditis.

George Thomas Fuller, Jr., Tucson, Ariz.; Eclectic Medical College, Cincinnati, 1918; member of the Arizona Medical Association and the Kentucky State Medical Association; aged 31; died, April 20, of tuberculosis.

William Madison Dinsmore, Decatur, Ala.; Birmingham Medical College, Birmingham, 1909; member of the Medical Association of the State of Alabama; aged 43; died, April 18, of septicemia, at Nashville, Tenn.

George James Haslam ⊕ Fremont, Neb.; M.R.C.S., England, 1880; Queens University, Ireland, 1880; served in the M. C., U. S. Army, during the World War; aged 64; died suddenly, April 24, of heart disease.

William Whitfield Stevens, Philadelphia; Ensworth Medical College, St. Joseph, Mo., 1892; member of the Medical Society of the State of Pennsylvania; aged 62; died suddenly, April 21, of heart disease.

Frederick Lee Morse ⊕ Lake Odessa, Mich.; Saginaw Valley Medical College, Saginaw, 1898; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 47; died, April 30.

Thomas Jefferson Lyne, Stockport, Ohio; Dartmouth Medical School, Hanover, N. H., 1882; member of the Ohio State Medical Association; also a druggist; aged 63; died, April 21, of pneumonia.

Charles Wesley Blake, Jefferson, Iowa; State University of Iowa College of Medicine, Iowa City, 1898; member of the Iowa State Medical Society; aged 49; died, April 22, of cerebral hemorrhage.

Daniel Stanley Lyons, New York; Medical Department of Columbia College, New York, 1876; member of the Medical Society of the State of New York; aged 73; died, April 24, of heart disease.

Boulanger Gwaltney, Traskwood, Ark; University of Arkansas Medical Department, Little Rock, 1913; served in the M. C., U. S. Army, during the World War; aged 35; died recently.

Archibald Bryant Taylor, Hanover, Ont., Canada; Trinity Medical College, Toronto, 1876; for nine years mayor of Hanover; aged 70; died, March 17, of heart disease and pneumonia.

Willis Mather Baker ⊕ Warren, Pa.; University of Buffalo (N. Y.) Department of Medicine, 1878; past president of the Warren County Medical Society; aged 66; died, April 21, of pleurisy.

Life Harrison, Peoria, Ill.; Chicago College of Medicine and Surgery, Chicago, 1911; member of the Illinois State Medical Society; aged 57; died, May 6, in Delmar, Iowa.

Thomas P. McCluney, Lincoln, Calif.; St. Louis Medical College, St. Louis, 1860; Civil War veteran; formerly a practitioner in Missouri; aged 87; died recently, of senility.

Horace Hill Cowles, Lander, Pa.; Medical Department of the University of the City of New York, New York, 1877; aged 70; died, April 15, of influenza and pneumonia.

Frank P. Culverson, Greenfield, Iowa; College of Physicians and Surgeons, St. Joseph, Mo., 1880; also a druggist; aged 68; died, April 20, of cerebral hemorrhage.

Mercer R. Girvin, Mount Nebo, Pa.; College of Physicians and Surgeons, Baltimore, 1893; aged 54; died, April 25, at the Lancaster General Hospital, Lancaster.

Melville Hamilton Embree, Ottawa, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1904; aged 44; died, April 1, at Ste. Anne de Bellevue.

William Penick Millen, Halls, Tenn.; Memphis Hospital Medical College, Memphis, 1902; aged 47; died, April 26, of uremia, at a sanatorium in Memphis.

George William McNamara, Erie, Pa.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1879; aged 71; died recently, of senility.

W. H. McNorrill, Waynesboro, Ga.; University of Georgia Medical Department, Augusta, 1874; aged 69; died, March 16, of pneumonia, at Telfairville.

Charles Joseph Lopez, New Orleans; Medical Department University of Louisiana, New Orleans, 1873; aged 68; died, April 21, of diabetes mellitus.

Felix Spinzig, St. Louis; St. Louis Medical College, 1883; member of the Missouri State Medical Association; aged 65; died, March 1, of erysipelas.

Charles Frederick Haynes, Gorham, Me.; Bowdoin Medical School, Portland, 1862; Civil War veteran; aged 84; died, April 24, of senility.

Abram Baldwin Sturges, New Rochelle, N. Y.; Medical Department of the University of the City of New York, 1868; aged 76; died, April 28.

Sanford H. McCall, Santa Ana, Calif.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1900; aged 60; died, April 21, of paralysis.

Briton Havelock Richardson, Brooklyn; Long Island College Hospital, Brooklyn, 1893; aged 64; died, May 1, of cerebral hemorrhage.

Joseph Benjamin Robinson, Birmingham, Ala.; Vanderbilt University Medical Department, Nashville, Tenn., 1882; aged 74; died, April 13.

Nathaniel H. Manring, Elwood, Ind.; Indiana Medical College, Indianapolis, 1876; aged 77; died, April 19, of cerebral hemorrhage.

George Washington Hart ⊕ Hartwell, Ark.; University of Arkansas Medical Department, Little Rock, 1920; aged 34; died, April 13.

Franklin Pierce Bivins, Shelbyville, Ill.; Miami Medical College, Cincinnati, 1881; aged 69; died, April 22, following a long illness.

George William Nash, Hurley, N. Y.; Medical School of Harvard University, Boston, 1884; aged 66; died, April 13, of carcinoma.

Charles A. Canfield ⊕ Preston, Idaho; Homeopathic Medical College of Missouri, St. Louis, 1890; died, April 21, of heart disease.

Mark Spicker, Chicago; Medical Department of the University of the City of New York, 1872; aged 72; died, May 10, of uremia.

William Richardson, Carson City, Mich.; University of Michigan Medical School, Ann Arbor, 1871; aged 78; died, March 18.

William Robert MacKenzie ⊕ Chester, Ill.; University of Michigan Medical School, Ann Arbor, 1870; aged 79; died, April 24.

James Franklin Barker ⊕ Albany, N. Y.; Albany Medical College, 1877; aged 71; died, March 18, following a long illness.

John George A. Stahl, Chicago; Rush Medical College, Chicago, 1895; aged 59; died, May 10, of cerebral hemorrhage.

Peter Macdonald, London, Ont., Canada; Trinity Medical College, Toronto, 1872; aged 86; died, March 24, of senility.

Thomas Bernard Morrissey, Los Angeles; Rush Medical College, Chicago, 1899; aged 56; died, April 23, of pneumonia.

William Ellwood Lewis, Bothell, Wash.; Jefferson Medical College of Philadelphia, 1878; aged 72; died, April 21.

Otto Morton Roberts, Winkelman, Ariz.; Miami Medical College, Cincinnati, 1887; aged 60; died, April 28.

Barnett Linton Embry, Villa Rica, Ga.; Atlanta Medical College, Atlanta, 1878; aged 70; died, April 21.

Robert Lucy, Guelph, Ont., Canada; Trinity Medical College, Toronto, 1885; aged 61; died, April 3.

Henry Buschmann, Cincinnati; Medical College of Ohio, Cincinnati, 1897; aged 72; died, April 23.

W. B. Yoe, Cambridge, Ohio (licensed, years of practice); aged 81; died, April 23, of senility.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THE STANDARDIZATION OF PITUITARY EXTRACT

Pituitary extract—a solution containing the water soluble principle or principles from the fresh posterior lobe of the pituitary body of cattle—is official in the United States Pharmacopeia as Solution of Hypophysis *(Liquor Hypophysis)*. It is required to be standardized so that 1 c.c. diluted 20,000 times has the same activity on the isolated uterus of the virgin guinea-pig as a one-to-twenty-million solution of beta-iminazolyl-ethylamine (histamine) hydrochloride.

In practice the pharmacopeial standard has been found unreliable and manufacturers have adopted various modifications of the method in an attempt to overcome the objections to this assay method. Further, the pharmacopeial solution has been found too weak and a number of manufacturers have marketed nonpharmacopeial solutions which are considerably stronger. New and Nonofficial Remedies lists products some of which (intended for obstetrical use) are approximately two and one half or three times and others (intended for surgical use) five or six times the strength of the official preparation.

The wide variation in the strength of commercial pituitary extracts and the unsatisfactory character of the pharmacopeial assay method is shown in a study carried out at the Pharmacology Laboratory of the University of Michigan Medical School by Erwin E. Nelson (*J. Lab. and Clin. Med.* **8**:318 (Feb.) 1923). An examination of ten specimens showed that preparations claimed to be of pharmacopeial strength differed widely, some being but one fifth the strength of others. Nelson believes that this variation may be due largely to the undependability of the assay method—that is, that the method gives different results in the hands of different operators.

As a result of his work, Nelson favors the adoption of a method of standardization in which the commercial extracts are standardized against a preparation of pituitary gland.

The unreliability of the present market supply of pituitary extract and the need for a better method of assay is further emphasized through a study carried out by Maurice I. Smith and William B. McClosky (*Public Health Rep.* **38**:493 [March 16] 1923). They made an assay, by the isolated uterus method of nine commercial pituitary extracts against preparations of their own make from desiccated and defatted postpituitary lobes. There was a wide variation in the activity of the commercial extracts, ranging approximately from that of 9 mg. of fresh postpituitary substance to each cubic centimeter to nearly 70 mg. It also appears that several of the extracts assayed at from 2 to 3 per cent. of fresh substance, two at about 1 per cent. two at 4 per cent. and one at nearly 7 per cent., respectively.

A MEANINGLESS STANDARDIZATION

The authors report that all the commercial extracts bore the inscription "physiologically standardized"; that each manufacturer is using his own standard of strength; and that the standards of the different manufacturers have no relation to each other. Some of the preparations had the statement that the extract represented 20 and even 30 per cent. of fresh posterior lobe material. From these experiments it appears that the strongest preparation represents only 7 per cent. of fresh postpituitary gland, while most of the others are considerably below 5 per cent. Obviously, the manufacturers either succeeded in getting out only part of the activity of the gland, lost much of it during process of manufacture, or the extracts suffered deterioration during the time intervening between the time of their manufacture and the time of this examination. Two extracts that, according to the manufacturers' statement, were supposed to represent 20 per cent. of fresh gland material, were found to assay only a little over 3 and 4 per cent., respectively. One extract said to represent the activity of 30 gm. of fresh infundibular substance to each hundred cubic cetimeters of solvent, assayed at less than 1 per cent. It did not appear to the examiners that the time element, within reasonable limits, would be a factor in the deterioration of extracts. The 5 per cent. fresh gland extract which they themselves made gave no evidence of deterioration after a period of six months.

Smith and McClosky describe a method for the preparation of an infundibular powder of uniform potency, representing the whole oxytocic and pressor activity of the infundibular lobe of the pituitary gland. The powder has not shown any deterioration after nearly eight months. The active principle (or principles) is readily extracted quantitatively from the powder by simple manipulation. It is proposed that an infundibular powder such as is described be used as a standard for the assay of commercial extracts by the isolated uterus method, and the recommendation is made that manufacturers be required to make and standardize their extracts to represent the activity of 4 mg. of the standard powder, or its approximate equal of fresh gland substance (which is 30 mg.) per cubic centimeter of extract.

THE NEED OF CONTROL

It is to be hoped that the next pharmacopeia (which is now in process of preparation) will provide a pituitary solution of satisfactory strength and that an assay method will be adopted which will ensure a satisfactory control of this important medicament. The strength of this preparation should be such as to make the marketing of two strengths unnecessary. Thus, for instance, instead of administering 0.5 to 1 c.c. of an "obstetric" and the same amount of a "surgical" solution which is twice as strong, the dose might be from 0.5 to 1 c.c. when used in obstetrical work and 1 to 2 c.c. when used for surgical cases. In this connection it may be suggested that the pharmacopeia committee consider the replacement of the unpopular term "solution of hypophysis" by one which physicians will find more familiar, such as solution of pituitary.

The investigation of Nelson and of Smith and McClosky would have been of greater value to physicians had the names of the preparations and of their manufacturers been disclosed. Until such time as the Pharmacopeial Revision Committee adopts a method of bio-assay of pituitary extract which will insure a product of uniform activity the physician will do well to use one of the pituitary preparations accepted for New and Nonofficial Remedies, which he has found to be satisfactory in his experience.

Correspondence

EPIDEMIC ENCEPHALITIS

To the Editor:—In a recent leading article in THE JOURNAL, reference is made to some views that I am supposed to hold, and which, it is said, are no longer seriously considered. I am sure you will allow me space to say that the belief that poliomyelitis and encephalitis lethargica have the same virus, or that the virus of encephalitis lethargica is the same, or a variation of that of poliomyelitis, does not quite accurately represent my position.

So far as I can see, there has not yet been put forward any single clinical, epidemiologic or pathologic criterion that clearly separates the vast mass of these nervous cases into two groups: that enables us to say definitely, in respect of *all* cases, which should be put on the left and which on the right. So long as this is so, it seems to me wise to use one common name, and to speak of cases of epidemic encephalomyelitis, or the like. But, if a clear division can be made, then we may use two separate names, and proceed to discuss

and investigate the difference or community in respect of virus in the two groups. It by no means follows that differences in respect of virus should follow the same line of separation as clinical, or even pathologic differences. For the moment, in asking whether poliomyelitis and encephalitis lethargica have "the same virus," it seems to me that we are begging an important question: namely, whether the setting up of these two rather undefined concepts as those of two separate diseases is justified except as a temporary expedient.

Put in another way, we are begging an important question if we ask a pathologist to determine the virus in a case of "encephalitis lethargica" on one day, and in a case of "poliomyelitis" the next.

Such a pathologist might well reply: "I have read what Netter has said on this question: are you sure that your case of 'encephalitis lethargica' is not one of 'poliomyelitis of the cerebral type,' and your case of 'poliomyelitis,' one of 'encephalitis of the spinal type'?"

Our conception of poliomyelitis has gradually widened, during my lifetime, from one of an acute motor palsy of children depending on a lesion of an anterior horn, to the much broader notion put forward in the books of Dr. Draper and Dr. Ruhräh.

It seems to me that only a little extension is now required to bring the cases called "encephalitis lethargica" under the Heine-Medin, or "epidemic encephalomyelitis" umbrella; and so far no one has shown definite causes to keep them out from that friendly shade. Even the results of the bacteriologists and immunologists cancel each other out, and fail to give the "clear cut" some hoped for.

P. G. Crookshank, M.D., F.R.C.P., London.

"MERCURIALS IN EXPERIMENTAL SYPHILIS"

To the Editor:—Supplementary to our article in The Journal, May 12, page 1365, two of the node transfers from rabbits treated with red mercuric iodid have become positive, making the treatment with this drug subcurative in at least three of the four cases.

Justina H. Hill, M.S., and H. H. Young, M.D., Baltimore.

PROPER COURSE FOR PROPONENTS OF NEW METHODS IN TREATING SYPHILIS

To the Editor:—I have read with interest the recent reports of the Council on Pharmacy and Chemistry of the American Medical Association dealing with various preparations for the treatment of syphilis. I think the Council is to be congratulated on its effort to protect the field of syphilotherapeutics from objectionable types of propaganda.

The problem of what is and what is not effective treatment for syphilis may, of course, be a matter for wide difference of opinion. The questions involved are undoubtedly of great complexity. There is certainly no excuse for a hidebound traditional outlook that would restrict the treatment of the disease absolutely to the orthodox arsphenamins and mercury and iodid by the older methods of administration. On the other hand, treatment for syphilis is peculiarly a field susceptible of irrational and unprincipled exploitation. The mechanism of action of the drugs even now employed, while fairly understood by a few, is not sufficiently familiar to most practicing physicians to enable them to judge for themselves the worth of claims made by drug manufacturers for this or that innovation. The proponent of a new or modified form of treatment for syphilis, it seems to me, before he even considers placing his preparation in the hands of the medical profession at large for every-day use, should seek definite knowledge and authoritative corroboration of his findings on certain points, as follows:

1. He should know the composition of the medicament in question, and be prepared to state it publicly.

2. Its toxicity for animals and by inference for man should have been definitely appraised.

3. The reactions which the drug may produce in animals, and the means of preventing them, should have had careful study.

4. The trypanocidal index of the preparation should have been correctly measured, and the ultimate as well as the immediate trypanocidal effect in animals definitely worked out.

5. After the study of trypanocidal effects should come the study of the effect of the drug on *Spirochaeta pallida* in the rabbit. The uncertainties of this phase of the investigation must be borne in mind, and the experiments not accepted as a final measure of value. Lymph-node inoculations are a necessary part of this work.

6. In preparations which are not expected to exhibit a direct destructive effect on *Spirochaeta pallida,* evidence should be available to show that the preparation under examination has a definite and definable effect on the resistance mechanism in syphilis which results in therapeutic responses in animals not dependent on direct spirocheticidal action.

7. Definite information should next be obtained as to the stability or instability of the preparation under marketing conditions, so that the physician who may later employ it may know whether he is dealing with a product of constant or variable effectiveness. If variations or deteriorations can be detected chemically or biologically, they must be planned for in advance of any clinical trial.

8. Not until these requirements are satisfied should a new preparation for the treatment of syphilis receive a clinical test on man. Such a clinical test should not be conducted under the auspices of isolated and partially equipped physicians, but should be carried out in properly equipped hospitals and clinics under expert direction. Systematic study of the viability and rate of destruction of *Spirochaeta pallida* in active early lesions must be carried out, and the effect on serologic and clinical manifestations of the diseases observed. The keeping of adequate records should be regarded as an essential qualification in all clinics asked to undertake this work. Mere number of patients or treatment, without proper follow-up and observation, does not provide final evidence for the clinical evaluation of drugs to be used in the treatment of syphilis.

9. The action of the new drug or combination should be studied in comparison with that of known effective antisyphilitic drugs of all types.

10. The reports of clinical results obtained with a new preparation should be given the widest possible publicity through the medium of medical journals of high standing before the preparation is made generally available.

11. The cooperation of the Hygienic Laboratory of the United States Public Health Service and the Council on Pharmacy and Chemistry of the American Medical Association should in this country be sought before and not after advertising and sales campaigns are considered or formulated.

Such a series of labors preparatory to a pharmaceutical début in the syphilologic field may seem Herculean to the average drug manufacturer, eager to capture a lucrative and uncritical clientele. Yet it embodies no more than the past decade has taught us in regard to the chemotherapy of syphilis. How many of these requirements have the manufacturers of the Herradora specialties or other recent prep-

arations with a more pretentious front attempted to meet before circularizing the medical profession at large?

I think it is Professor Dewey who has said, in effect, that one of the chief functions of education in this day of cheap printing and tainted news should be to assist mankind in distinguishing sound values in experience from the bunk and hokum that flows in on us from every side. If this is indeed the purpose of education, the service of the Council on Pharmacy and Chemistry conforms in the best sense to educational ideals. Its aid in preventing the exploitation of a large group of unfortunates will be appreciated by syphilologists.

JOHN H. STOKES, M.D., Rochester, Minn.

"THE INSIDE STORY OF DOPE"

To the Editor:—In a recent article on "The Inside Story of Dope in This Country" (*Hearst's International*, May, 1923), Sidney Howard makes a vicious indictment against the medical profession. This arraignment is admittedly premeditated, for in paragraph 3, page 17, he says, "Over half of our addicted population owes its plight to the circumstance or ignorance of medical treatment. This is the real and appalling importance of the dope problem."

In paragraph 4, on the same page, this erudite gentleman gives "figures from the records of the Charles B. Towns Hospital" which he claims to have obtained from Dr. Alexander Lambert. "Here are eleven hundred and some addicted male patients who received treatment in the course of a year. Of that number exactly ninety-six are listed as members of the Underworld while four hundred are doctors." Then, through a process of careful analysis, he shows "this group of ninety-six criminal types against better than a thousand respectable unfortunates most of whom have become addicted through unskilled or unavoidable medical treatment." This able statistician with astute mixture of mental gymnastics and legerdemain produces an additional "eight hundred thousand odd noncriminal addicts as proof positive of the futility of criminal prosecution as a single weapon against dope."

This Moses, who has taken his allotted time in getting out of the wilderness, asserts that "the existence of the pedler is no more than an automatic economic response to a great market from which the legitimate supply has been cut off by law. The authorities in charge of enforcing antinarcotic legislation denied the doctors the right to prescribe narcotics to narcotic addicts except in treatment of incurable diseases or for the aged and infirm. Unquestionably the blatant misdemeanors of many doctors justified this regulation."

The camel's load was apparently too heavy, for the sentence following the foregoing reads, "None the less, it is very certain that addiction grows and spreads more rapidly with drugs in the hands of the greedy pedler than ever it did in the days of promiscuous doctor's prescriptions." Then, in his incoherent rambling, he continues: "I am not interested in any solution which is no better than the lesser of two evils. The thing, so viewed, is simply a vicious circle from pedlers to doctors and back to pedlers again."

After this producer of human interest documents has submerged the doctors into the seven circles of Hades, whitewashed the Underworld, and made "nice, clean, hundred per cent." Americans out of dope pedlers, he eructates the following pronunciamento: "As for the doctors, they are either cowards of necessity or opportunists by profession. They know nothing. They have done nothing. They will dare nothing. Except the few whose consciences are not above paying the income tax on quackery."

He raves on: "As long as the average general practitioner of medicine remains of the opinion that his job is no more than the gentle art of killing pain, we can expect a considerable overuse of morphin and a resulting population of innocent addicts."

"Again and again I ask opiate users what the sensations are. Their answers run so consistently that I can typify them."

How really wonderful! They are human and speak for themselves: "I smoked opium for a while. I had fine dreams of castles in Spain and perfectly equipped harems and anything I happened to want I couldn't get. Then I stopped dreaming but I couldn't stop smoking. It made me sick when I tried. . . . After I laid off the pipe I had no more use for it. I was in for morphin and in for it right. It fooled me at first. I thought I had something good. At first it made everything seem so easy. That didn't last two weeks. I tried heroin. I use fifty grains a day now." Mighty "consistent" is this writer, who has the doctors running opium joints on Mott Street!

The writer develops suddenly into a "full fledged" doctor. He describes the etiology, pathology, symptoms, complications and prognosis of opiumism. He has arrived at the point where he prescribes for the patient dying from morphin poisoning. Then he proceeds with the treatment. The language of the author of "dope" is more convincing: "As I have seen it happen over and over. There was a witness in the district attorney's office in New York. I mentioned him once before in these articles. I shall never forget the blue look of him lying on the floor, the deathly sickness, the pulse that, as I took it, was surely near to death itself. When we administered the shot which would enable him to continue his testimony, the effect was magical. In two minutes he was talking again, as vigorously as any one of us." How marvelous! Perhaps if the writer had used epinephrin, the result would have been instantaneous. And so continues the bunk in these articles.

In behalf of a profession that has suffered much for humanity and a constructive civilization and gained little in wordly goods, I ask, Why should the medical profession be subject to such humiliating unjustifiable criticism?

W. F. DUTTON, M.D., Philadelphia.

AID FOR RUSSIAN PHYSICIANS

To the Editor:—As public health adviser to the Russian Commission of the National Information Bureau, I have had the opportunity of making a survey of health conditions in the larger cities, in normal country districts, and in the famine districts of Russia. Our observations agree with the reports of the League of Nations Health Section as to typhus, recurrent fever, cholera, dysentery and smallpox. Great effort is being made to control epidemic diseases, but they are still to be found in all parts of the country to an extent that would tax the health resources of any country. Accurate medical statistics are not available, but the fact that in the last five years, according to the most moderate estimates of epidemiologists, there have been 25,000,000 cases of typhus alone, gives some idea of the extent of the problem. Malaria is widespread, especially among the peasant population, and is still on the increase. In December the commissariat of health reported 8,000,000 cases registered. No statistician dares even estimate the inroads of tuberculosis on an exhausted population in a chronic state of undernutrition.

One of the most serious problems that confronts the medical profession is the care of millions of children whose health has been damaged by adverse social and economic conditions. Studies made among 25,000 school children in Kiev and 22,000 in Kharkov, both in the famine region, show 75 and 82 per cent. classified as tuberculous on the basis of Pirquet tests plus positive clinical findings in each case. A

school dispensary in Petrograd reports that if marked anemia and malnutrition are included, 100 per cent. of the 27,000 children examined in 1922 presented symptoms requiring treatment.

Hospitals, which have been taxed to the utmost to meet the epidemic situation, are now running with greatly reduced efficiency, owing to lack of necessary equipment and supplies. Surgical instruments are worn beyond the possibility of repair. The American Relief Administration and other foreign relief organizations have sent great quantities of medical supplies, but Russia is so large and so impoverished after the many years of isolation and disease that we found medicines only in small quantities or entirely lacking in all the districts we visited in Russia. In many of the so-called normal areas, which have never been touched by foreign relief, the lack of essential supplies is even more acute than in the famine area. Dispensaries, while still running, are hampered by the lack of even the simplest drugs. For example, one district in the Samara government reporting 4,500 cases of malaria, had not one grain of quinin.

Russian physicians and nurses, as a result of their self-sacrificing efforts to maintain a high standard of medical work, have reached the point of exhaustion. It is certain that at least 75 per cent. of these men and women are existing on incomes inadequate for even the bare necessities of food and clothing. Great numbers of physicians and nurses have died in fighting epidemics; others have contracted tuberculosis; and those who remain are so weakened by years of privation and overwork that they have slight resistance to disease. All achievement is being paid for in terms of undermined health and death among the medical personnel, but Russian physicians everywhere, while admitting their desperate economic condition, made only one appeal for themselves—medical literature from the outside world.

In my opinion, the point of attack in the present health situation of Russia is to preserve the medical personnel and to supply their essential professional needs. There is great need for food and clothing to protect the health of the individual physician and nurse; for instruments, drugs, medical supplies and literature to make their work effective. I trust that the national campaign of physicians and surgeons in behalf of medical aid for Russia will bring this situation so forcibly to the attention of the American public that immediate and generous aid will be given.

H. O. EVERSOLE, New York,
Commission on Russian Relief.

To the Editor:—An earnest effort is being made by the American Medical Aid for Russia, the Medical Division of the American Friends Service Committee (Quakers), to collect money, clothing, instruments, books and journals for our medical colleagues in Russia.

The condition of these men is deplorable. Removed happily by the nature of their profession from the political disturbance, they have suffered doubly from the troubles of the last six years in that, while the demands for their assistance have multiplied immensely, they have been almost deprived of medical supplies: indeed, even of the necessities of life. They not only lack the barest necessities of food and clothing, but are terribly in need of drugs, medical and surgical instruments, and of books and journals.

The Quakers are in a position to assure American physicians who are willing to assist their Russian colleagues that distributions will be promptly and efficiently made in Russia. Literature will be distributed in cooperation with the Russian Health Department through notices printed in the official bulletin, to the effect that medical literature in English is available and can be had on request. The Quaker relief workers will directly supervise the distribution of this material to Russian hospitals, medical schools and individual physicians.

If every one of us would make his personal effort to help to send such money and clothes as he can, and to send files of journals which he himself does not use, as well as such medical books and instruments as he can spare, it would be an immense help.

It's not a charity; it's a duty.

W. S. THAYER, M.D., Baltimore.

[NOTE.—The American Friends Service Committee has two warehouses: 108 Dobbin Street, Brooklyn, and 1521 Cherry Street, Philadelphia. Physicians can send to either of these at their own convenience. It is requested that those who do not care to assume the expense of forwarding books and instruments will communicate with the American Medical Aid for Russia, 103 Park Avenue, New York, estimating the bulk and probable cost of shipment of the proposed donation.—ED.]

"THE INTRACARDIAC INJECTION OF EPINEPHRIN"

To the Editor:—The editorial on "The Intracardiac Injection of Epinephrin" (THE JOURNAL, May 5) is very timely and of considerable interest.

April 4, 1923, I was called to see a woman living 7 miles in the country. About the time I got in the house she died from an attack of angina pectoris; at least, the heart had stopped, and she gasped for the last time. The daughter was notifying the relatives over the telephone that the mother had just died, but in the meantime I gave her an injection of epinephrin, 1 c.c., as described in the editorial, and in a few minutes she rallied and is alive and well today.

I had a patient die just the other day in the hospital in just the same way, while the nurse was trying to reach me over the telephone; so it seems to me that it should be a part of the nurse's training to give these injections when the physician cannot be reached, before that "intangible thing known as the spirit has passed away."

J. R. BRIDGES, M.D., Kahoka, Mo.

"NEW ANESTHETICS: ETHYLENE AND ACETYLENE"

To the Editor:—Your editorial (May 12, 1923, p. 1383) called our attention to some early work on ethylene. Twice in the progress of our own work (spring, 1918, and summer, 1922) we made, as we thought, a thorough search of the literature for possible references to ethylene, assisted the last time by an expert medical librarian. Unfortunately we failed to find this bibliography. We cannot understand why these early results which, according to the editorial statements, seemed so promising, failed to stimulate the original authors or the later pharmacologists and anesthetists to extend the work during the intervening thirty-eight years as we have done; perhaps their interest was in an investigation of the probable toxic and not the anesthetic properties of ethylene.

A. B. LUCKHARDT, M.D.,
J. B. CARTER, M.S.,
Chicago.

Increase of Typhoid Fever in Manila.—Typhoid fever, says Dr. Proceso Gabriel (*Rev. de Med. y Farm.*, January, 1923) has shown a steady increase in Manila during the last few years. From an average death rate of 20.73 per hundred thousand in 1911-1913, mortality increased to 50.94 in 1914, 83.91 in 1918 and 102.60 in 1920. In 1921 and 1922, the increase persisted. Artesian wells, flies, stables, unsanitary restaurants, together with the practice of filling hollows with refuse, are said to be the cause.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"DIAGNOSIS OF RABIES"

To the Editor:—I have been much interested in reading the query on the diagnosis of rabies (THE JOURNAL, May 5, p. 1333).

A boy, aged 10, who had been in good health, was brought to me for advice, May 4. On the preceding day, while on his way to school, he was bitten in two places, on the back and on the palm of the right hand. Although there was some laceration in both wounds, neither of them showed penetration, and the wounds were not opposite. The boy went to a neighbor's, who washed his hand; and, having dried it, applied tincture of iodin freely and put on a roller bandage. When I saw the patient next day, about twenty-four hours after the injury, there was a slight swelling, barely perceptible, and the boy said he felt well, except that he had vomited that morning before breakfast, which was unusual. There was no fever. As I am under the impression, having read it in an excellent work, that it requires six hours for infection to break down the wall of lymphatic resistance (if there is infection), and feeling the futility of opening up the wounds and cauterizing with fuming nitric acid, I again painted the healing wounds with compound tincture of iodin and gave instructions that they be painted with iodin twice a day for a week, and the outcome reported. The dog had had a reputation for being vicious for a long time, and I advised that the animal be kept under observation, but not confined. I did this because one of the neighbors, a single man, told me that he intended to have the animal killed at once, before the dog could do any more damage. I advised him not to kill the dog until the danger period was past, but I advised him that if the dog was killed, to decapitate it, pack the head in ice, and have it sent to a first class laboratory for diagnosis. 1. Did I omit any therapeutic agent that may be of benefit to this patient? 2. Is there an antitoxin or any other agent that I might use now that could be of benefit to this patient?

M.D., Minnesota.

ANSWER.—It is not apparent that anything of benefit to the patient has been omitted in this case except, of course, the use of antirabic vaccine. In a case of this kind, in which there is doubt whether the dog in question is rabic, it is always difficult to decide whether to submit the bitten person to a course of antirabic vaccinations or not. It would seem best in all cases in which there is a possibility that the dog may be mad to follow the rule of "safety first," and that means the injection of antirabic vaccine. There is no other treatment of any kind, antitoxic or otherwise, that is known to have any influence on the development of rabies from the bite of infected animals.

THE RECORDING OF VISION

To the Editor:—In the medical certificate of the U. S. Civil Service Commission's application blank there appear these directions in testing for vision: Question 3:

"Vision: Test both eyes, near and distant, using, if possible, Snellen's types.

O. D.—Near $\frac{}{20}$—; distant $\frac{}{20}$—, O. S. near $\frac{}{20}$—; distant $\frac{}{20}$—."

Not being familiar with this method of recording the near vision or of using the figure 20 as the denominator in recording the distant vision, I will thank you for this information.

C. A. KISSINGER, M.D., Melrose, Wis.

ANSWER.—This is either a printer's error or else a statement by a layman, ophthalmologically speaking. Near vision is invariably recorded in terms of Snellen or Jaeger type (Sn 1, 2, 3, etc., or Jg 1, 2, 3, etc.). More recently, the Committee on Compensation for Eye Injuries of the Section on Ophthalmology of the American Medical Association has introduced a method of recording near vision, based on the ability to perceive characters at 14 inches, the normal being one that subtends an angle of 5 minutes on the retina. This method uses the ratio of 14/14, 14/28, 14/35, etc.

When Snellen introduced the present method of recording distant vision, he did not intend that the ratio expressed by 20/20 should be considered as a fraction. The first number (so-called numerator) indicates the distance in feet at which the test is being made. The second number (so-called denominator) indicates the smallest character that can be perceived at that distance, the normal being a character that subtends a 5 minute angle on the retina and whose component parts subtend a 1 minute angle. Thus, if 20/20 indicates the normal, 20/40 would indicate that the subject could perceive at 20 feet a character that a normal vision could discern at 40 feet.

By an inversion of the process, the second number (so-called denominator) may be made the constant. The normal character, indicating vision of 20/20, is used and the distance between the person under examination and the test letter is varied. Thus, 10/20 would indicate that the subject could see only at 10 feet distance a character that the normal person should be able to perceive at 20 feet. This method of testing is rather uncertain, and has fallen into disuse.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.
FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.
IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
LOUISIANA: New Orleans, June 7-9. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.
MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.
MISSISSIPPI: Jackson, June 13-14. Sec., Dr. W. S. Leathers, University.
NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.
OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.
SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg.
VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.
WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.
WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

THE EDUCATION OF THE PARTIALLY TRAINED SANITARIAN NOW EMPLOYED

FREDERICK W. SEARS, M.D.
Associate Professor of Hygiene and Preventive Medicine, Syracuse University College of Medicine
SYRACUSE, N. Y.

The education of the partially trained sanitarians now employed should be considered from its practical rather than from its theoretical side. It is quite impossible to make any radical change without first securing favorable public sentiment. Home rule is a firmly established principle in rural communities and must be kept in mind in bringing about these changes. We should not make a course of instruction so comprehensive as to be prohibitive or unattractive to the local health officer, as we must rely largely on his efforts to bring about the desired change in public sentiment.

PRESENT STATUS

One of the greatest obstacles to progress in public health work in rural communities is the conception by the public of what the duties of the health officer are. Some boards of health regard the health officer as a medical policeman who should function only during an epidemic, his compensation being in accordance with his activities during such time. It has been only within a comparatively few years that this attitude has been to any extent changed. Securing adequately paid, well-trained health officers under such conditions is practically impossible. The great majority of health officers are practicing physicians whose salaries as health officers are a small fraction of their incomes. Many of them have accepted the office from a sense of duty to their community, some of them with the feeling that the duties of

the office will be so slight as not to interfere materially with their practice. I have found the majority of them eager to improve their knowledge in public health matters.

The conditions under which most health officers have been expected to produce results have been most discouraging. They are underpaid and are given no financial resources for health activities; they are appreciated by the community and their board of health for what they do not do rather than for efficient service; they are isolated from those of similar interests, with little or no opportunity given them to keep in touch with the newer methods and facilities of preventive medicine. Insufficient knowledge of laboratory methods has given rise to misundestandings and doubts as to the value of the laboratory. Efficient service can come only from self-confidence inspired by a knowledge of one's subject. It is only by efficiency that we can gain the confidence of the public and the respect of the physicians for our official positions. No matter how conscientious a public health worker may be, his enthusiasm soon wanes if he is conscious that his work is not appreciated.

In the recent past the majority of health officers have been selected for their political activities rather than for their fitness for the position, and the office is still regarded by some local boards as a political plum which should be passed around. The greatest factor in bringing about a complete change in sentiment is the personality of the health officer. If he can be brought to realize the great significance of preventive medicine and can bring it to the attention of his community by showing practical results, he will be able not only to secure more adequate compensation and funds for his work, but also to place his tenure of office beyond the dickerings of politicians.

THE IDEAL HEALTH OFFICER

The health officer should be regarded by his community as a specialist in public health and hygiene. In order to meet the dignity of his position, his knowledge of public health subjects should be broad and comprehensive. His selection to office should be made solely in regard to his fitness. His duties should not be the perfunctory ones of a sanitary policeman, who is often regarded by the public as a worse menace than the disease which he quarantines. He should be entrusted with the giving of instructions as to the methods to be adopted in preventing the spread of disease—a function which the family physician too frequently assumes. Misunderstandings frequently arise from such an assumption. The attending physician should seek the health officer's advice in matters pertaining to health regulations in the same spirit in which he would seek the advice of the consulting surgeon or internist.

Through a better knowledge of public health, the work of the health officer should impress itself on the municipality in a manner sufficient to command cooperation and assistance from all civic societies and organizations. His visits to the afflicted home should be looked on as that of a wise counselor and friend, and not as that of a heartless official to be dreaded. This will secure more prompt reporting of disease by the family. To secure such recognition he must possess certain qualifications of character and education which will command the respect of the entire community.

The health officer should be prepared to answer promptly and intelligently all questions relating to the fundamental principles underlying public health work, when such advice is asked by the local physicians. His knowledge of epidemiology should be sufficient to enable him to meet effectually all outbreaks of disease and, so far as possible, to trace them to their source.

The question naturally arises, "How can the health officer secure such qualifications without too great a sacrifice of time and money?" When we consider the meagerness of his salary in proportion to his income from private practice, we are but little surprised at the query so commonly expressed, "How can I afford to do it?"

TRAINING THE HEALTH OFFICER

We must furnish the health officer with a course which will afford him these opportunities with the least possible loss of time from his regular practice. It must be of such a character that its teachings will be of the highest value to him as a practitioner in medical lines which are closely allied to public health work. Our aim should be to open up to him the broader fields which he can cultivate by future reading. It would require years of training to qualify a physician as a specialist in bacteriology, but he can acquire in a comparatively short time the fundamental principles of laboratory work and laboratory methods which will enable him to appreciate their limitations and the wonderful assistance to be obtained from them when they are properly understood.

The health officer should, in a general way, know the principles which govern the growth and propagation of bacteria, something of their morphology, selective staining, and the difficulties encountered by the bacteriologist when specimens are improperly collected, tabulated and dispatched to his laboratory. He should have some knowledge of the methods used in isolating pure cultures and for what purposes they are isolated. He should know what is meant by "dark field illumination" in the diagnosis of certain diseases; the principles underlying agglutination tests and complement fixation; and the methods of ascertaining the various types of pneumonia for the purpose of serum treatment. He should understand some of the underlying principles of immunity, both active and passive, and the great value of immune serums when administered properly. He should understand in a general way the phenomenon of anaphylaxis and the dangers of administering large amounts of foreign proteins without suitable precautions, and the effects of horse serum products on asthmatic patients.

He should have some knowledge of vaccine therapy and its precautions. He should understand the difference between vaccines and immune serums. He should have a general knowledge of the production of diphtheria antitoxin, its standardization, dosage and administration under varying conditions; how Vincent's angina can be distinguished from diphtheria; what we mean by the Schick test and its application; what the toxin-antitoxin method of immunization against diphtheria is; how to secure blood for the Wassermann test and other similar reactions; what spinal puncture is and its importance as a diagnostic and therapeutic measure in certain meningeal affections. To my mind, the knowledge of these various phenomena cannot be obtained without practical demonstrations and conferences with competent teachers; reading alone is totally inadequate.

If this work is to be taught effectually, the class must be limited in numbers, and we must have only teachers who are practical and who have the enthusiasm and personality which will bring out the difficult points through personal questioning, explanations and painstaking demonstrations. The same methods should be used in demonstrating other phases of the work. Practical demonstrations should be given in the early diagnosis of tuberculosis by the best specialists obtainable in this line of work. The class should be shown that sanatorium control of this disease should be both educational and for the arrest of the progress of the disease.

The student should be familiar with the treatment of venereal diseases, and have practical demonstrations in the administration of their remedies and, so far as possible, be

taught the technic of intravenous therapy by actual demonstration. The same practical methods should be used in demonstrating school examinations, school inspections and the problems underlying its various branches. He should be shown open-air schools in operation. He should be taught the value of substituting industrial teaching for the atypical and backward pupils. He should be taught industrial hygiene, and personal hygiene in the handling of foods. He should visit certified dairies, milk pasteurization plants and ice cream factories, and should be shown the methods used in scoring dairies by men of experience.

He should visit hospitals for communicable diseases and observe these diseases in their various manifestations throughout their course. He should be taught the rôle of the disease carrier in the spread of disease, and how best to protect the public from them with the least amount of hardship to the afflicted family. He should be taught the various methods for the purification of water for municipal purposes, including chlorination and mechanical and slow sand filtration. He should visit sewage disposal plants in operation and the various other municipal health activities. He should be given practical demonstrations in prenatal care and infant welfare work. He should be taught the value of vital statistics and the general laws governing their activities, and he should be well drilled in the requirements of the sanitary code.

The question naturally arises in one's mind, "Is all this possible in so short a course?" Without enthusiasm, cooperation and a determination to succeed, it would be impossible. If a corps of instructors can be secured who will work with little or no remuneration, who have enthusiasm for the work and who can inspire their men with the highest ideals, it is possible.

A SHORT-TERM COURSE

In January, 1916, I submitted to the New York State Public Health Council a plan for a short-term course to meet the conditions outlined above. The plan which was approved by the council consists of combining reading and residence work extending over a period of twelve weeks, two days of each successive week being spent in class work in Syracuse; four or five hours each day being employed in lectures, practical demonstrations and conferences, the spare time of the remainder of the week to be devoted to selective reading, the program being so arranged as to link together correlated subjects. Sufficient opportunity is given the men for conferences among themselves for the purpose of checking up and fixing the subject-matter in their mind. The latter, I believe, is a most essential feature of the course. Only men of broad, practical experience and enthusiasm should be selected as teachers, the selection being made from the university, the municipality and the state health department. A tentative program covering the entire course is issued to the members of the class several weeks before the course begins, and a corrected weekly program a few days in advance. This enables the men to familiarize themselves with the work in hand. The classes are conducted at a season of the year most convenient for the men, and arrangement is made for telephone calls to be received from their homes.

The first course started March 24, 1916, with a class numbering twenty-seven. I have now conducted fourteen classes since that time—twelve in Syracuse in connection with Syracuse University, and two in Ithaca in connection with Cornell University. About 220 health officers from a radius of 80 miles have taken these courses, an average of about fifteen to the class. Four classes on a similar plan have also been conducted in connection with Albany Medical College—two in New York, and two in Buffalo, during the last four years. We are now planning to have a similar course in Rochester the coming spring.

In order to keep up the interest and supplement the activities of those who have taken the course, about four years ago the Central New York Public Health Association was formed, the membership being limited to the graduates and faculty. This association meets annually in Syracuse for a two-day session, and splendid programs have been carried out.

RESULTS

The sacrifice of time in the weekly attendance has, of course, been great, but none have complained. The effect on the morale and efficiency of the health officers can hardly be overestimated. Higher spirit of cooperation was manifested; keener interest and enthusiasm in the development of new activities in their municipalities has been very evident; greater confidence in their own ability to meet their health problems has been shown, also a higher appreciation of the efforts of the state health department in the control of disease. Boards of health have shown greater confidence in the health officers who have taken the courses, as has been manifested by increased remuneration and better cooperation in a large percentage of the municipalities. Many of the local boards have borne the expenses of the course; several of them have increased their per capita compensation; and, in one instance, the salary of the health officer was increased from $150 to $500 per annum.

As a result of the requirements of the New York State Public Health Council, that health officers should have certain qualifications before appointment, there has been less tendency to change the tenure of office of the qualified man. We fully realize that the ideal for which we are working can be accomplished only by the securing of well-paid, full-time county health officers, but until we can create public sentiment and an appreciation by physicians of the great importance of preventive medicine, we must use the material at hand, not only to meet our present health situation, but in order to stimulate the public to a better appreciation of public health work.

Pennsylvania January and February Examination

Mr. C. D. Koch, preliminary examiner, Pennsylvania Bureau of Medical Education and Licensure, reports the written and practical examination held at Philadelphia, Jan. 30-Feb. 3, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 43 candidates examined, 39 passed and 4 failed. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
Howard University	(1920), (1921)	2
University of Louisville	(1911)	1
Johns Hopkins University	(1920)	1
Boston University	(1921)	1
Harvard University	(1922)	1
Tufts College Medical School	(1907)	1
Detroit College of Medicine and Surgery	(1921)	1
University of Michigan Homeopathic Medical School	(1921)	1
University of Michigan Medical School	(1900), (1921)	2
Cornell University	(1920)	1
New York Homeo. Med. College and Flower Hospital	(1910)	1
University and Bellevue Hospital Medical College	(1921)	1
Hahnemann Med. Coll and Hospital of Philadelphia	(1921)	5
Jefferson Medical College of Philadelphia	(1921)	4
Temple University	(1921)	3
University of Pennsylvania	(1920, 3), (1921, 4)	7
Woman's Medical College of Pennsylvania	(1921)	1
Laval University, Faculty of Medicine	(1903)	1
University of Manitoba	(1919)	1
Imperial University, St. Petersburg, Russia	(1911)*	1
University of Berne, Switzerland	(1919)*	1
University of Geneva, Switzerland	(1907)	1
FAILED		
Howard University	(1920)	1
University of Louisville	(1910)	1
Baltimore Medical College	(1897)	1
Ohio Medical University	(1898)	1

* Graduation cannot be verified.

Book Notices

AN INDEX OF PROGNOSIS AND END-RESULTS OF TREATMENT. By Various Writers. Edited by A. Rendle Short, M.D., B.S., F.R.C.S., Lecturer in Physiology at the University of Bristol. Third edition. Cloth. Price, $12 net. Pp. 594. New York: William Wood & Co., 1922.

The last previous editlon of this book appeared in 1915. It contains in alphabetical order discussions of the prognosis for life and for health in various diseases. It represents a compilation of a large amount of material by men especially competent to judge the value of the statistics and literature considered. Practically all of the well known English clinicians have cooperated in the preparation of this book. Of particular interest are the sections on anesthesia and appendicitis. The authors adopt the point of view that the appendicitis operation is far less serious than any possible delay. It is interesting to note that the English experience agrees with that of the United States in regard to epidemic encephalitis, namely, that in the majority of cases there is left behind some persistent sign of nuclear disease. A long section on the mental diseases has been thoroughly worked out by the late T. S. Clouston. In the discussion of congenital pyloric stenosis, the author has neglected to include the most important American operative figures, namely, those of Downes and Strauss, which show a far smaller mortality than the 25 to 50 per cent. mortality which apparently exists in England.

SELECTED PAPERS AND ADDRESSES. By William Williams Keen, M.D., LL.D., Emeritus Professor of Surgery, Jefferson Medical College of Philadelphia. Cloth. Pp. 340. Philadelphia: George W. Jacobs & Co., 1923.

Over a period of many years Dr. W. W. Keen has served the profession and the public, interpreting the science of medicine to the public, and helping the medical profession to take account of itself. It was a happy idea for him to gather in one volume some of his most significant addresses. Practically all of the papers appearing in this book have been previously published in periodicals. It is unnecessary to state that the literary style of Dr. Keen is simple, direct and easily followed. Certain of the incidents recounted could have been told only by Dr. Keen, since in some instances he was the only American or the only physician present. Some of the addresses carry us back to the medicine of the prescientific era; thus, the sketch "Before and After Lister." Such essays as the "Graduation Ceremony" and the "Early Years of Brown University" have a wide general educational appeal. The book is printed in large type on good paper, and is a worthy addition to any medical library that is not confined exclusively to technical publications.

DIE SYPHILIS DES ZENTRALNERVENSYSTEMS, IHRE URSACHEN UND BEHANDLUNG. Von Professor Dr. Wilhelm Gennerich. Second edition. Paper. Price, $1.80. Pp. 295. Berlin: Julius Springer, 1922.

The first edition of this important monograph appeared in 1921, and was reviewed in these columns. While Nonne's still larger monograph deals chiefly with pathology and symptomatology, Gennerich's work is centered on the treatment. He is a strong advocate of the intraspinal method. The new edition contains some additions, especially regarding the technic of intraspinal injections, and a brief discussion of the treatment of paresis and tabes by inoculation of malaria or relapsing fever.

CONTRIBUTION À L'ÉTUDE DES MANIFESTATIONS TARDIVES DE L'ENCÉPHALITE ÉPIDEMIQUE. (Formes prolongées et reprises tardives). Syndrome Excito Moteur — Syndrome Parkinsonien Forme Respiratoire — Forme Insomnique et Hypomaniaque de l'Enfant. Par le Docteur Gabrielle Lévy. Paper. Pp. 312, with 53 illustrations. Paris: Vigot Frères, 1922.

This is a Paris thesis by a pupil of Pierre Marie, and it is based on 129 cases observed in his service in the Salpêtrière. This master clinician has published comparatively little on encephalitis under his own name, and for that reason this thesis, of which Marie is "president," assumes great importance as it no doubt expresses his views and records observations controlled by him. It will be recalled that Marie in similar manner allowed his pupils to publish the details of his epoch-making work on acromegaly and aphasia. Seventy cases presented the parkinsonian syndrome, and forty-three various excitomotor syndromes, such as choreic and myoclonic. Sixty-eight cases are given in detail. Four of the late cases were also studied histologically. Altogether, this thesis is a gold mine of information on this timely subject.

EUGENICS, GENETICS AND THE FAMILY. Volume I, Scientific Papers of the Second International Congress of Eugenics. Committee on Publication: Charles B. Davenport, Chairman, Henry Fairfield Osborn, Ex Officio, Clark Wissler, and H. H. Laughlin, Secretary. Cloth. $6. Pp. 439, with 24 illustrations. Baltimore: Williams & Wilkins Company, 1923.

EUGENICS IN RACE AND STATE. Volume II, Scientific Papers of the Second International Congress of Eugenics. Committee on Publication: Charles B. Davenport, Chairman, Henry Fairfield Osborn, Ex Officio, Clark Wissler, and H. H. Laughlin, Secretary. Cloth. Price, $6. Pp. 472, with 20 illustrations. Baltimore: Williams & Wilkins Company, 1923.

The essays in these two volumes comprise the scientific papers delivered at the second international congress of eugenics, held in New York City in 1921. Three addresses, by Osborne, Darwin and Davenport, are written particularly for the public. The scientific papers are technical in character, and cover the entire field of heredity and family studies. These papers indicate that the scientific study of inheritance has traveled a long road during the last twenty years. Such questions as the genesis of twins, disturbances in development produced by radium, inheritance of cancer, eye defects and mental disorders, the effects of inbreeding, race mixture, religious intermarriage, eugenic reform and similar problems have an interest that is not the problem of any one field of science but the equal problem of every branch of biology. In the two volumes are included 108 papers of an authoritative and serious character. For those wishing the last word on the problems discussed, no better source can be recommended.

OXIDATIONS AND REDUCTIONS IN THE ANIMAL BODY. By H. D. Dakin, D.Sc., F.I.C., F.R.S. Second edition. Boards. Price, $2 net. Pp. 176. New York: Longmans Green & Co., 1922.

Ten years have passed since Dakin's first publication of this book, during which time we have learned much more about oxidation, despite the fact that most of the fundamental problems remain unanswered. There is some consolation in this statement in the preface: "Perhaps when it is recalled that the pure chemist is still debating as to what really happens when carbon monoxide burns in oxygen, the biochemist may not feel so dissatisfied with the modest progress that has been made in elucidating biochemical oxidations." The scope of the book remains unchanged. It differs from the first edition entirely in the addition of newer materials, which have increased the volume nearly one third. The chief advances have been made in the study of carbohydrate oxidations, this chapter having been rewritten. It is to be expected that the present activities stimulated by the discovery of insulin will add much more to this subject in a short time. There is an extensive bibliography, and the monograph is of inestimable value as an accurate critical summary of our present knowledge concerning biochemical oxidations, which are, of course, the fundamental source of all manifestations of living energy. The only adverse criticism that can be made is that typographic errors are more numerous than one is accustomed to note in works of this class.

A MANUAL OF DISEASES OF THE NOSE AND THROAT. By Cornelius G. Coakley, A.M., M.D., F.A.C.S., Professor of Laryngology and Otology in the College of Physicians and Surgeons, Columbia University. Sixth edition. Cloth. Price, $4.25. Pp. 664, with 152 illustrations. Philadelphia: Lea & Febiger, 1922.

As the name implies, this book briefly and compactly covers the practical features of examination, diagnosis and treatment of nose and throat diseases, and is designed primarily for students and practitioners. The present edition has been augmented by articles on sinusitis in children, Vincent's angina, parapharyngeal abscess, and direct laryngoscopy and esophagoscopy. The author has made every effort to bring the text up to date and, in view of the size of the book, has achieved considerable success. The volume is attractively illustrated, and is very readable in its limited scope.

Medicolegal

Insufficient Evidence that Accident Caused Cancer

(Green et al. v. Locomotive Engineers' Mut. Life & Accident Ins. Ass'n (Iowa), 190 N. W. R. 934)

The Supreme Court of Iowa, in reversing a judgment that was rendered in favor of the beneficiaries of a policy of accident insurance, says that the insured was a locomotive engineer. August 1, while he was attempting to pass from the deck of an engine to his seat in the cab, his foot slipped and he struck his side against the seat. The only trip that he made after that was on August 3. Some time early in that month he consulted a physician, who testified that he found no external evidence of injury, although he said that the insured had told him that he had had an accident. Not very long afterward, the ailment was diagnosed as cancer of the kidney. The patient died, December 1, and a necropsy revealed the cancer which, it was conceded, was the cause of death. The plaintiffs contended that the accident caused the cancer. The medical experts expressed the opinion, in answer to a hypothetic question, and also gave it as their judgment, that a cancer might be produced by a blow or injury, but they were about equally emphatic in their statements that it might result from the position assumed by a locomotive engineer while sitting on the seat in the cab. No expert testimony was offered by the defendant. It seems to the court that the evidence offered by the plaintiffs was so indefinite, uncertain and speculative in its character that the court could not say that it preponderated in favor of the plaintiffs' theory. The probabilities in favor of the plaintiffs did not outweight the opposite probabilities, and the testimony was not at all convincing.

Construction of Law as to Privileged Communications

(Myers v. State (Ind.), 137 N. E. R. 547)

The Supreme Court of Indiana, in reversing a judgment of conviction of manslaughter in this case, in whcih a wife was charged with killing her husband, says that by the statute of that state "physicians, as to matters communicated to them, as such, by patients, in the course of their professional business, or advice given in such cases," are privileged, except by consent of the patient. This statute, being in derogation of the common law, under all rules of statutory construction should not be enlarged by intendment to include as privileged information entirely aside from that necessary to communicate to enable the physician or surgeon to act or prescribe. However, contrary to the strict rules for construing statutes, the one in question has been somewhat broadened to include, as privileged, not only communications by the patient to his physician, but any other information the physician may obtain from a physicial examination of the patient, or by observation while in the discharge of his professional duty, or knowledge gained through the intervention of a third party, with a view to intelligent treatment. And, according to the decisions of some courts, the words "matters communicated," as used in the statute to cover privileged information, may be defined as information obtained in the sickroom, heard or observed by the physician, or of which he is otherwise informed, pertaining to the patient, and on which he is persuaded to do some act or give some direction or advice in the discharge of his professional obligation.

In this case a physician whom the defendant called as a witness was asked what, on a certain occasion when he was leaving a room of the dwelling occupied by the defendant's husband, he heard the husband say. The offer to prove was, "I will get her yet." The objection was interposed that "anything he learned there was on account of his confidential relation," and the evidence was excluded on the ground that the witness was there in the capacity of a physician, and that "what transpired there was all in the scope of his professional employment." It appeared that, after examining and treating the man, the physician departed from the sickroom, but while he was in the hall or a room adjoining the sickroom, he heard the patient use the language excluded by the trial court. Under this state of the evidence it could not reasonably be maintained that the statements proposed by the witness tended to reveal that which should be kept inviolate, nor were they such as would enable him to give advice, treat or prescribe for the patient, nor could it be said that they were intended for him. The question of privilege, under this showing, did not depend on inferences to be drawn from testimony. It was not, therefore, a question of fact, but one of law. Competence to testify and competence of evidence are questions for the court, with the recurring thought that incompetence is the exception. With these general principles in mind, the supreme court is clearly of the opinion that the statute should not be extended to cover as privileged the excluded testimony, although there are expressions in the books seemingly broadening the literal meaning of the words thus employed.

The general rule governing privileged communications between attorney and client is applicable to physician and patient; and with respect to this rule this court has said that "to come under the protection of the rule, in question, the communications claimed to be privileged must be addressed to an attorney in his professional character of a legal adviser, with a view to legal advice which as an attorney it was his duty to give." The offered evidence should have been admitted.

Right of Injured Employee to Choose Own Physician

(Lading v. City of Duluth (Minn.), 190 N. W. R. 981)

The Supreme Court of Minnesota says that the plaintiff, while in the performance of his duties as a policeman in the service of the defendant city, was shot in the arm. He called a physician of his own selection to treat him, and afterward sought to recover in this proceeding under the workmen's compensation act the reasonable value of the services of the physician. The city resisted on the ground that, since the regular city physician was subject to the call of the plaintiff, to his knowledge, he, having elected to secure the services of another, was not entitled to reimbursement. The statute referred to, which controlled the issues, provides that the employer shall furnish the injured employee such medical, surgical and hospital treatment as may be reasonably required at the time of the injury, and during the disability thus created, not exceeding ninety days or $100 in value; "and in case of his inability or refusal seasonably to do so, the employer shall be liable for the reasonable expense incurred by or on behalf of the employee in providing the same."

The statute is clear and unambiguous, and imposes on the employer the obligation to furnish medical aid to an injured employee to the extent therein stated; and, if he is unable or refuses to do so, imposes liability for the reasonable value of the services rendered by a physician employed by or on behalf of the injured employee. To justify a recovery of the reasonable value of the services of a physician called by the employee, it must appear either that the employer was unable to furnish one, or that he refused to do so. Of this the statute leaves no doubt. But the requirements of the statute were not met by the plaintiff. There could be no claim that the city was unable to furnish the needed medical attention. A physician was in its employ for the purpose of responding to cases of the kind, and his services were available to the plaintiff. Nor was there any showing of a request by the plaintiff for his services, and no occasion was presented for volunteer action on his part. There was therefore no refusal by the city to furnish the necessary medical attention. The plaintiff voluntarily chose his own physician, on the apparent theory that he had the right to do so at the expense of the city. He proceeded advisedly in the matter, for his injury was not of a character to render him mentally incompetent.

It followed, then, that the plaintiff was not entitled to recover the reasonable value of the services of the physician so called. But the court is of the opinion that the statute should not be construed to impose on the employee the unqualified obligation to accept the physician selected by the employer, or forfeit the right of reimbursement there given. It often happens—a situation perhaps more or less general—that the employee has a family physician to whom he prefers

to turn in case of injury or sickness, rather than to accept the services of another with whom he has no acquaintance, or in whom, perchance, he has no confidence. In that situation he should have the option or unquestioned right to choose his medical attendant or accept the one tendered him by the employer, but within the limits of liability on the part of the employer imposed by the statute. The statute contains no language unconditionally requiring the employee to accept unconditionally the physician tendered him, or relinquish the right of reimbursement altogether; and this court construes it to give him an option, and, when exercised in good faith, to entitle him to reimbursement to the extent provided by the statute.

The fact that the employer in this case was a municipal corporation and employed a physician for all such cases, paying him a fixed salary, could not alter the construction given the statute; nor could that be made to apply to different employers in a different degree of liability. It is susceptible of one construction, applicable alike to all employers, municipal corporation or individual. It followed that the plaintiff was entitled to reimbursement for the services of the physician called by him to the extent of $100, and no more.

The court applies the doctrine of this case to the case of *Bookman* v. *Lyle Culvert & Road Equipment Company*, 190 N. W. 984, holding that under a prior statute, which contained a provision similar to this one, an employee engaging her own physician could recover the reasonable expense incurred to the amount of $100.

Obligation to Pay Physician's Bill Implied

(Stoudemire v. Davis (Ala.), 94 So. R. 498)

The Supreme Court of Alabama, in affirming a judgment in favor of plaintiff Davis for damages for personal injuries inflicted by the defendant's automobile, says that exception was taken to an instruction to the jury with regard to the plaintiff's right to recover the amount of medical expense resulting from his injury. But there was at least an implied obligation on his part, he being then an adult, to pay the physician's bill, shown to be reasonable for the service rendered him; hence such liability therefor by the plaintiff as to justify the recovery of the amount if, of course, the plaintiff was otherwise found entitled to judgment for the injury suffered. The fact that his father sent for the physician did not conclude against the plaintiff's implied liability to pay for these professional services to him.

Total Disability from Fracture—Injury to Old Man

(Clark v. Clearfield Opera House Company et al. (Pa.), 119 Atl. R. 136)

The Supreme Court of Pennsylvania, in affirming on order making an award for total disability under the workmen's compensation act, says that the claimant, who was 79 years of age, was suffering from an ununited fracture of the neck of the left femur, in that part of the bone that formed the hip joint, known as an intracapsular fracture. The employer and insurance carrier contended that this was a permanent injury, causing the loss of the use of a leg. It was a permanent injury, but it covered a wider area and extended beyond the leg proper. The injury affected the physical structure of the body in a manner that does not normally follow accidents of this character, when the bones unite. It involved the leg and the hip joint, and was attended with unusual pain and suffering in the region of and above the hip joint when the claimant sat down, lay down, or changed position. He was not able to dress or bathe himself, get into bed, or attend to his bodily requirements without assistance. This was a direct result of the permanent injury, with a direct relation to it and a causal connection beyond any disability, disadvantage or suffering that would ordinarily come from the loss of a leg. The physical structure of the body (the hip joint and parts above) was affected through the nerves, tissue, blood supply, muscles, bony tissue and other parts that make up the hip joint, not a part of the leg from the joint to the foot. These conditions were not the normal result of the loss of a leg, and when such conditions exist, most unusual in their nature, followed by a disability, they cannot be solely attributed to the permanent or actual loss of the member. If the claimant could undergo an operation, it would be one involving not only the leg but the hip joint as well, incidentally removing one sixth of the body. What further effect it might otherwise have, destroying or injuring the structure, the court does not know; the existing situation showed that a large part of the body was practically useless.

The claimant was found to be totally disabled. This court's conclusion is not influenced because of his age, though humane principles should guide the court in the interpretation of this law. If necessary to sustain the award because the claimant was an old man, predisposed to such accidents, this court would not hesitate to do so, as both employer and insurer must have known that such accidents, with like results, may happen to old men. This court stands, however, on the causal connection between the injured part and the other affected parts of the body as a direct result of the injury.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.

American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.

American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.

American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.

American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.

American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.

American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.

American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.

American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ransom, Bureau of Animal Industry, Washington, D. C., Sec'y.

American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.

American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.

Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.

Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.

California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.

Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.

Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.

Montana, Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.

National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.

New Hampshire Medical Society, Concord, May 22-23. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.

New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.

North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.

Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.

Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.

Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.

Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.

Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.

West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.

Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.

Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

31: 339-438 (March) 1923

Independence of Mitochondria and Bacillus Radicicola in Root Nodules. E. V. Cowdry, New York.—p. 339.
Pubic Symphysis of Guinea-Pig in Relation to Pregnancy and Parturition. T. W. Todd, Cleveland.—p. 345.
Two European Types. R. B. Bean, Charlottesville, Va.—p. 359.
Development of Primitive Reptilian Vertebral Column, as Shown by Study of Alligator Mississippiensis. G. M. Higgins, Galesburg, Ill. —p. 373.
Development of Metanephric Anlage of Chick in Allantoic Grafts. R. R. Atterbury, New York.—p. 409.

American Journal of Hygiene, Baltimore

3: 99-180 (March) 1923

*Pathologic Anatomy of Ophthalmia Produced by Diets Containing Fat Soluble A Vitamin, but Unfavorable Contents of Certain Inorganic Elements. S. Mori, Dairen, Manchuria.—p. 99.
*Whole Culture Method of Testing Virulence of Diphtheria Bacilli. C. G. Bull, and C. M. McKee, Baltimore.—p. 103.
*Biologic Study of Diphtheria Bacillus. H. M. Powell, Baltimore.—p. 109.
*Anopheline Mosquitoes of Siam. M. E. Barnes, Bangkok, Siam.—p. 121.
Control of Hookworm Disease. XVI. Variation in Length of Life of Hookworm Larvae from Stools of Different Individuals. D. L. Augustine, Baltimore.—p. 127.
*Control of Hookworm Disease. XVII. A Quantitative Study Defining Point of Breakdown of Hookworm Eggs Cultured in Feces, and Its Association with Intense Acidity. N. R. Stoll, Baltimore.—p. 137.
*Control of Hookworm Disease. XVIII. Relation Between Number of Eggs Found in Human Feces and Number of Hookworms in Host. N. R. Stoll, Baltimore.—p. 156.
Effects of Changes in Diet on Incidence, Distribution and Numbers of Certain Intestinal Protozoa of Rats. R. W. Hegner, Baltimore.—p. 180.

Ophthalmia of Dietetic Origin.—Xerophthalmia and keratomalacia were produced by Mori in rats by feeding them diets deficient in fat soluble A vitamin. The same changes may also result from the consumption of diets which have an abundant supply of fat soluble A vitamin, but which contain certain unfavorable salt mixtures. The two conditions are clinically and pathologically identical and are identical with human xerophthalmia and keratomalacia. It would seem from this experiment that in cases of xerophthalmia in human beings other factors than fat soluble A vitamin may have to be considered in regard to the etiology and treatment of the condition.

Testing Virulence of Diphtheria Bacilli.—Havens, Powell, Force and Beattie recently described the whole culture virulence test for diphtheria bacilli. The chief value of the method lies in the fact that virulence tests can be made with the original diagnostic culture, eliminating the necessity of isolating pure cultures, and this is representative of the whole culture instead of one or two colonies selected at random from plates made from the diagnostic culture. It also makes it possible to make virulence tests on cultures from which it is not possible to isolate pure strains. The observations made by Bull and McKee are based on 3,995 combined nose and throat cultures made from children. One hundred and ninety-eight of the cultures were tested for the presence of virulent diphtheria organisms by the whole culture method. On the basis of morphology, eighty-two of these cultures were diagnosed as unqualifiedly positive, thirty-seven were questionably positive and seventy-nine were questionably negative. These observations complement those of Havens and Powell.

Biologic Study of Diphtheria Bacillus.—During two years' time, covering about fifty generations, no detectable change in the property of virulence occurred among more than 300 strains of *Bacillus diphtheriae* which were propagated by Powell on Loeffler's serum medium.

Anopheline Mosquitoes of Siam.—No previously undescribed species of anopheline mosquitoes have been found by Barnes in Siam. Of the 3,901 anopheline mosquitoes collected in his house, 1,954 were females and 1,947 were males. The great majority of these mosquitoes were *Anopheles rossii*. It would appear that the males follow the females in their flight instead of remaining near the breeding pools to which the females will return and from which newly matured females are emerging. Another observation is the efficiency of small webless spiders as destroyers of anopheline mosquitoes. Barnes observed also the capture of a mosquito by a dragon fly.

Analyzing Hookworm Culture Conditions.—Experimentation detailed by Stoll demonstrates a method of analyzing hookworm culture conditions by combining the use of an egg count method before (and during) the culturing and the larval isolation procedure afterward. Two experiments are described in detail in which very acid feces were cultured for hookworm larvae under a variety of conditions. The unmodified feces produced few or no larvae. This was accompanied by an intense acidity at all stages of the experiment, as measured in terms of either the hydrogen ion concentration or the titration values. In general the p_H reading was from 4.8 to 5.0, the feces titrating more than 1 c.c. of decinormal sodium hydroxid solution per gram. Charcoal and soil cultures from the same stirred stools reared up to 69 per cent. of larvae.

Relation Between Number of Eggs Found in Human Feces and Number of Hookworms in Host.—An intensive study of ten hookworm cases in Utuado, P. R., is reported on by Stoll in which the total number of hookworm eggs in the feces has been computed for from one to five days and compared to worm counts made after treatment. The consistency of the data presented is such as to recommend the use of a dilution egg counting method to determine intensity of infections of patients with hookworms.

American Review of Tuberculosis, Baltimore

7: 1-62 (March) 1923

*Biochemistry and Chemotherapy of Tuberculosis. XXIV. Alimentary Absorption of Calcium and Its Deposition in Tissues in Experimental Tuberculosis. M. E. Maver and H. G. Wells, Chicago.—p. 1.
*Nutrition in Experimental Tuberculosis. I. Effect of Fat Soluble A Vitamin on Tuberculosis of Guinea-Pig; Value of Cod Liver Oil in Experimental Tuberculosis. M. I. Smith, Washington, D. C.—p. 33.
*Experimental Tuberculosis in Rats on Varied Diets. Protein and Salt Factors. L. B. Lange and N. Simmonds, Baltimore.—p. 49.
*Case of Primary Lower Lobe Tuberculosis Manifested Immediately After Prophylactic Typhoid Inoculation. I. S. Kahn, San Antonio, Texas.—p. 60.
Case of Closed Tuberculous Pyopneumothorax Treated by Formaldehyd-Glycerin Injections with Recovery. I. S. Kahn, San Antonio, Texas. —p. 62.

Alimentary Absorption of Calcium.—A review of the literature on the therapeutic use of calcium in tuberculosis, and especially the experimental evidence on this subject, reveals the presence of a considerable body of clinical observation indicating a favorable effect of calcium therapy on the tuberculosis itself as well as on certain of its complications, a certain amount of evidence that such favorable results are not obtainable, and a complete lack of convincing experimental evidence in support of calcium therapy. The hypothesis of a decalcification or demineralization in tuberculosis, according to Maver and Wells, does not receive support from the most carefully conducted investigations. Also, the best chemical evidence is that there is no demonstrable deficiency of calcium in the blood or tissues in tuberculosis, and that feeding of calcium salts does not appreciably increase the amount of calcium in the blood when this is already normal. The authors' experiments have shown that guinea-pigs on an ordinary laboratory diet exhibit some variations in the calcium content of the same tissue in different animals, and of different tissues in the same animals, yet, averaged together in a series of animals, the results are not far from identical, being generally lowest in the liver and highest in the lymph nodes; but not far from the same content as the blood, that is, from 10 to 13 mg. of calcium for each 100 gm. moist weight. These studies have failed to produce experimental evidence to support the empirical clinical evidence that calcium administration has a favorable influence on the course of tuberculous infection. They do support the evidence of chemical studies that administration of calcium salts by mouth does not appreciably increase the amount of calcium in the blood and tissues, for this is nor-

mally maintained at a level not far below the saturation point of the body fluids.

Effect of Fat Soluble A Vitamin on Experimental Tuberculosis.—The results of Smith's experiments are negative in so far as concerns the action of cod liver oil on tuberculosis of the guinea-pig. This substance has not shown itself definitely beneficial, either as regards weight curve, length of life or extent of the disease process, in experimentally infected guinea-pigs kept on a normal or a deficient diet. There has been no evidence of deposition of calcium in tubercle of the guinea-pig when this element was administered with the cod liver oil. Cod liver oil appears to have, however, a definite, though slight, effect on the nutrition of the nontuberculous guinea-pig, especially when the latter is maintained on a diet deficient in the fat soluble A factor.

Experimental Tuberculosis in Rats on Varied Diets.—Four series of rats were infected by Lange and Simmonds with bovine tubercle bacilli by subcutaneous inoculation into the groin and the progress of the infection was studied at intervals of from one week to five months. Three series were on diets of varying protein content, adequate, high and low. No significant difference was noted in the reaction to infection in the three groups, either in the general condition and weight curves or in the necropsy findings. The fourth series was on a diet deficient in salts but otherwise adequate. These animals showed a more diffuse and extensive local reaction at the site of inoculation, a slower dissemination and a slower elimination of the lesions. In all four series there was a high resistance to tuberculous infection. As far as it went, the reaction was similar in character and progress to that found in less resistant animals, but the process never advanced in any of the sixty-six infected animals to extensive necrosis. Instead, the invading bacilli appear to be overcome directly rather than to be merely walled off. No instance of connective tissue encapsulation was observed. Instead, there was slow shrinkage and absorption of the tuberculous tissue accompanied by disappearance of the tubercle bacilli.

Case of Primary Lower Lobe Tuberculosis.—Immediately after a prophylactic typhoid inoculation, Kahn's patient developed fever and cough. Examination a week later showed moderate tuberculous infiltration extending from hilum to periphery of the lower lobe of the right lung, with one small old cavity in the upper portion of infiltration. The upper lobes were clear. The sputum was scanty and mucoid, but contained tubercle bacilli.

Annals of Surgery, Philadelphia

77: 257-364 (March) 1923

General Plastic Surgery. J. S. Davis, Baltimore.—p. 257.
Treatment of Anthrax Infections. A. McGlannan, Baltimore.—p. 263.
Treatment of Diverticulum of the Esophagus. C. H. Mayo, Rochester, Minn.—p. 267.
*Metastasizing Tendency of Esophagus Carcinoma. G. F. Helsley, Fresno, Calif.—p. 272.
*Papilloma and Adenoma of Gallbladder. I. Abell, Louisville.—p. 276.
*White Bile in Common Duct. E. S. Judd and J. H. Lyons, Rochester, Minn.—p. 281.
*Surgical Treatment of Chronic Ulcerative Colitis. H. B. Stone, Baltimore.—p. 293.
Mesenteric Thrombosis. Report of Case. J. F. Mitchell, Washington, D. C.—p. 299.
*Sarcoma or Embryoma of Kidney in Infants. C. R. Robins, Richmond, Va.—p. 306.
*Spontaneous Hematoma in Sarcoma of Kidney. F. K. Boland, Atlanta, Ga.—p. 311.
Ureteral Injuries During Pelvic Operations. J. M. Maury, Memphis.—p. 314.
*Typhoidal Osteomyelitis. N. Winslow, Baltimore.—p. 319.
Radical Operation for Chronic Empyema. C. Eggers, New York.—p. 327.
Case of Teratoid Mixed Tumor of Breast. M. A. McIver, Boston.—p. 354.
*Rupture of Long Head of Biceps Flexor Cubiti Muscle. N. A. Ludington, New Haven, Conn.—p. 358.
Value and Limitations of Blood Transfusion. E. W. Peterson, New York.—p. 364.

Metastases of Esophagus Carcinoma.—In seventy fatal cases of carcinoma of the esophagus analyzed by Helsley, metastases were present in 36 per cent. In 6 per cent. the secondary growths were limited to the regional lymph nodes. This indicates a limited tendency to metastasize. The average duration of symptoms, 4.8 months, in the patients who died without metastases indicates that in the majority of cases ample time is given for diagnosis and treatment before metastasis occurs. However, the striking change for the worse in the pathologic picture during the average of sixty-nine days by which the patients that survived gastrostomy outlived the patients that succumbed thereto, gives warning of the speed with which metastases develop in a somewhat advanced stage of the disease. Irrespective of the duration of the disease, the possibility of metastasis formation, without definite evidence of same, should not be considered as a contraindication to radical operation.

Papilloma and Adenoma of Gallbladder.—Benign tumors of the gallbladder, notably papilloma and adenoma, Abell says, are not so rare as formerly thought, occurring in the Mayo series once in every twenty-three cases of cholecystectomy and once in every thirty-six cases of the series reported on by Abell. The invariable presence of chronic inflammatory changes in gallbladders containing such tumors would argue the importance of chronic irritation as an etiologic factor in their development. The overshadowing clinical picture is that of cholecystitis, there being no correlation of symptoms with the presence of such tumors. The fact that such tumors occur in the course of chronic cholecystitis, in Abell's opinion, is an additional argument in favor of cholecystectomy.

White Bile in Common Duct.—Cases in which there is white or colorless fluid in the common duct, Judd and Lyons assert, represent a very serious surgical type. They are not, however, necessarily fatal as the finding of this fluid in the duct does not mean that the liver is interfered with more than in any deeply jaundiced patient. The colorless fluid, or so-called white bile, is a product of the glands of the duct wall. It is secreted under sufficient pressure to continue to form, regardless of the secretion of bile from the liver, and it collects in the ducts only when the activities of the gallbladder are destroyed. Nineteen cases are reported.

Surgical Treatment of Chronic Ulcerative Colitis.—When chronic ulcerative colitis resists medical treatment or becomes severe, Stone asserts that operative intervention is indicated, and ileostomy and separate appendicostomy for colon irrigations, with exclusion of the colon from function, offers best results.

Sarcoma or Embryoma of Kidney in Infants.—The case reported by Robins is of interest because the specimen is a very typical example of this type of tumor and because the patient is still alive and in robust health two years after the operation. He is now 3 years old.

Spontaneous Hematoma in Sarcoma of Kidney.—Boland's patient, a female, aged 51, was seized with a sudden violent pain in the left loin, accompanied by extreme weakness, faintness and nausea. Within two hours she was in a state of collapse, with a very weak pulse, a distended abdomen, and an easily discernible mass in the left loin, the size of one's head and extended toward the pelvis. It was tender, hard and immovable. Gentle inflation of the descending colon with air showed that the mass was retroperitoneal. No roentgen-ray equipment was available, and the weakness of the patient and difficulty of moving her seemed to contraindicate the use of the cystoscope. An exploratory operation was performed. The mass proved to be the kidney, its lower pole enveloped by an hematoma 22 cm. in diameter, apparently held within the perirenal fat. A new growth, 7 cm. in diameter, probably malignant, occupied the lower third of the organ. A nephrectomy was done. Examination of the excised organ showed that it had "blown out" at its lower pole through the new growth, producing hemorrhage and the enormous hematoma. What excited the rupture at this particular time could not be determined. The pathologic diagnosis was spindle cell sarcoma. Boland failed to find a similar case on record.

Typhoidal Osteomyelitis.—Winslow calls attention to osteomyelitis as a relic of typhoid fever; tabulates the cases in which *B. typhosus* has been found and records two additional cases.

Rupture of Long Head of Biceps Flexor Cubiti Muscle.—A new diagnostic test is described by Ludington. The patient

is directed to rest his folded hands, palms down, on the top of his head and allow the interlocked fingers to support the weight of the arms. In this position there is maximum relaxation of the long head of the biceps. The examiner then places two fingers on the tendon of the long head of the biceps in each arm, and directs the patient to contract and relax his biceps muscles simultaneously. The contraction of the long head tendon on the sound side is plainly felt while it is absent on the affected side if the tendon is ruptured.

Archives of Dermatology and Syphilology, Chicago

7: 429-572 (April) 1923

*Study of Erosive and Gangrenous Balanitis. Special Reference to Rôle of Fusiform Bacilli and Spirochetes. J. Brams and I. Pilot, Chicago.—p. 429.
Herpes Zoster Generalisatus. Report of Case. Review of Literature. M. B. Parounagian and H. Goodman, New York.—p. 439.
Lichen Nitidus. Report of Two Cases. W. B. Trimble and E. R. Maloney, New York.—p. 452.
Acute Papular and Desquamative Exanthem in an Orang-Utan. H. Fox and F. D. Weidman, Philadelphia.—p. 462.
*Syphilitic Macular Atrophy. V. Pardo-Castello, Havana, Cuba.—p. 465.
Epithelioma of Auricle. D. W. Montgomery and G. D. Culver, San Fancisco.—p. 472.
Nevus Pilaris with Hyperplasia of Nonstriated Muscle. J. H. Stokes, Rochester, Minn.—p. 479.
*Inability of Serum with High Cholesterol Content to Increase Strength of Wassermann Reaction. W. Thalhimer and B. Hogan, Milwaukee.—p. 482.
Jaundice in Syphilitic Persons Receiving Arsenical Medication. Its Early Detection and Possible Prevention. L. Chargin and S. Z. Orgel, New York.—p. 495.
Common Errors in Dermatologic Terminology. H. Fox, New York.—p. 499.
*Treatment of Pruritus Ani with Bacterial Injections. F. C. Knowles and E. F. Corson, Philadelphia.—p. 505.
*Geranium Dermatitis. Report of Case. J. W. Anderson, Norfolk, Va.—p. 510.

Erosive and Gangrenous Balanitis.—Four cases of gangrenous and erosive balanitis are reported by Brams and Pilot because the comparative bacteriologic study of the secretions in these diseases and the normal preputial secretion suggested the etiology of the infection. The cases did not present a history of any unnatural sexual acts or saliva contact of any kind. Bacteriologic study showed that normal preputial secretions often harbor fusiform bacilli, spirochetes and pyogens. Under suitable conditions, often associated with diminished lowered general resistance, balanitis may result from the organisms normally present as saprophytes. To prevent balanitis, proper hygiene of the sac should be carried out, particularly in patients with a long foreskin. Early recognition and proper treatment of the disease is imperative, as the process spreads with great rapidity.

Syphilitic Macular Atrophy.—A case of cutaneous macular atrophy of syphilitic origin in a colored man, 29 years of age, is reported by Castello. No other signs of syphilis could be found. The Wassermann reaction was strongly positive. Pathologically, there was degeneration and atrophy of the elastic tissue, hyperplasia of the connective tissue, arteritis, moderate perivascular infiltration and atrophy of the epidermis. This case resembles closely the condition described by Schweninger and Buzzi under the name of multiple benign tumor-like new growths. The condition first reported by these authors seems to be a form of macular atrophy of the skin due to different etiologic causes, one of which might be syphilis. The diagnosis of syphilis in this case is based on the history of the patient, the pathologic findings, the strongly positive Wassermann test, and on the fact that after four months of intensive specific treatment no new lesions have appeared.

Inability of High Cholesterol Serum to Increase Strength of Wassermann Reaction.—The investigation made by Thalhimer and Hogan is said to have demonstrated that when relatively large amounts of a high cholesterol serum are added to the Kolmer quantitative test, no increase in the strength of the reaction occurs. The authors believe that this indicates that hypercholesterolemia does not increase the strength of the Wassermann reaction whether plain or cholesterolized antigens are used. The experiments also demonstrate that hypercholesterolemia does not cause a falsely positive (nonspecific) Wassermann reaction.

Bacterial Injections in Treatment of Pruritus Ani.—Knowles and Corson report having obtained good results in cases of pruritus ani from the injection of killed *Streptococcus fecalis*. The doses used were large, running from 175,000,000 to 1,000,000,000 killed organisms. Adherence to small doses (less than 100,000,000) seemed to produce little effect. Those benefited only improved when the number of bacteria was increased to several hundred millions. Injections were given at weekly intervals. The length of time the condition had existed varied from four months to ten years.

Vesicular Geranium Dermatitis.—A case of vesicular dermatitis cause by contact with the leaves of a geranium is reported by Anderson. It is said to be the first case of the kind on record. This condition was proved by a cutaneous test, arsenic and other parasiticides having been eliminated.

Boston Medical and Surgical Journal

188: 523-566 (April 12) 1923

Smallpox and Vaccination. B. White, Boston.—p. 523.
Granuloma Inguinale in Boston. G. C. Shattuck, Boston.—p. 530.
Fish-Egg Mucocele of Appendix; Cystic Type of Chronic Catarrhal Appendicitis. Report of Case. W. R. Morrison, Boston.—p. 532.
Excising the Appendix Vermiformis. W. Van Hook, Chicago.—p. 537.
Full-Time School Physician. H. G. Rowell, New Bedford, Mass.—p. 540.
Are Amputation Stumps Receiving Adequate After-Care? C. Bearse, Boston.—p. 542.
High and Low Enemata. A Mistaken Conception. S. W. Ellsworth and F. E. Wheatley, Boston —p. 545.

Canadian Medical Association Journal, Montreal

13: 152-189 (March) 1923

Recent Cancer Therapy. F. C. Wood, New York.—p. 152.
Control of Cancer. A. Primrose, Toronto.—p. 160.
Clinical Diagnosis of Smallpox and Chickenpox. H. W. Hill, Ontario.—p. 162.
Scoliosis or Lateral Curvature of Spine. A. M. Forbes, Montreal.—p. 168.
*Congenital Syphilis. E. A. Morgan, Toronto.—p. 171.
Management of Discharging Ears in Children. E. Boyd, Toronto.—p. 175.
Phosphate Content of Serum of Cases of Bone Tuberculosis Treated by Heliotherapy. F. T. Tisdall and R. I. Harris, Toronto.—p. 177.
Supplemental Feeding in Gastro-Intestinal Disturbances of Breast Fed Infant. R. R. MacGregor, Kingston.—p. 179.
Testing of Clinical Thermometers. W. C. Way, Ottawa.—p. 180.
Limp of Childhood. J. A. Nutter, Montreal.—p. 182.
Four Cases of Bronchoscopy (Including Two of Lung Abscess). R. H. Craig, Montreal.—p. 185.
Hypertonic Solutions. W. Bourne, Montreal.—p. 188.
Epilepsy. A. G. Morphy, Montreal.—p. 189.

Treatment of Congenital Syphilis.—The routine treatment adopted by Morgan in 186 cases was as follows: One of the arsenical compounds is injected intravenously once a week for six weeks, followed by a course of mercury for six weeks. Blood for a Wassermann test is then taken and if still positive the courses are again repeated. This routine is continued until a negative test is obtained or the hope of securing a negative test is regarded as small. The veins used for injection are those of the scalp, of the antecubital space, or the external jugular. The longitudinal sinus is never used since it is believed that such a procedure is not unattended with danger. Mercury is given by inunction to the infants, and by inunction and by mouth to the older children. Intramuscular injections are employed in those cases in which there is a well founded suspicion that the home treatment by inunction is being neglected by the parents. In a few instances arsenic and mercury have been administered at the same time. Cases of neurosyphilis were treated in the manner suggested by Swift and Ellis. Of 100 patients, three died, and only 21 per cent. failed to improve.

Colorado Medicine, Denver

20: 61-86 (March) 1923

Hypertrophic Stenosis of Pylorus. Report of Twenty-Four Cases. J. W. Amesse, Denver.—p. 68.
Surgical Treatment of Congenital Hypertrophic Pyloric Stenosis. G. B. Packard, Jr., Denver.—p. 73.

Georgia Medical Association Journal, Atlanta

12: 89-132 (March) 1923

Percussion of Healthy Chest. B. C. Teasley, Hartwell, Ga.—p. 89.
Treatment of Ruptured Appendix. E. H. Greene, Atlanta.—p. 92.
Pemphigus Conjunctivae; Report of Case. C. Stockard, Atlanta.—p. 95.

Interesting Experiences in Cataract Extraction Among Confederate Veterans. M. Equen, Atlanta.—p. 97.
Vernal Conjunctivitis. (Spring Catarrh. Conjunctivitis Aestivalis). New Observations on Treatment. A. G. Fort, Atlanta.—p. 101.
Syphilis Among Insane. G. L. Echols, Milledgeville, Ga.—p. 103.
Accidental Hemorrhage. Report of Five Cases. A. C. Wade, Augusta, Ga.—p. 105.
Case of Sudden Death in Labor Due to Intracranial Hemorrhage. R. A. Bartholomew, Atlanta.—p. 109.
Rational Surgery in Gallbladder Disease. L. W. Grove, Atlanta.—p. 111.

Journal of Immunology, Baltimore

8: 75-151 (March) 1923

*Physiologic Adaptations of Fixed Tissues in Anaphylaxis and Immunity. I. Reactions of Isolated Rabbit Heart to Cobra Venom. W. H. Manwaring and T. B. Williams, San Francisco.—p. 75.
Study of Microbic Tissue Affinity by Perfusion Methods. W. H. Manwaring and W. Fritschen, San Francisco.—p. 83.
Prophylactic Action of Atropin Sulphate on Anaphylactic and Allergic Reactions of Excised Uterus of Virgin Guinea-Pigs. O. O. Stoland and N. P. Sherwood, Rosedale, Kan.—p. 91.
*Complement Fixation Test in Chronic Gonorrhea in Women. M. A. Wilson, M. V. Forbes and F. Schwartz, New York.—p. 105.
Hepatic Reactions in Anaphylaxis. II. Hepatic Mechanical Factor in Peptone Shock. W. H. Manwaring, S. Brill and W. H. Boyd, San Francisco.—p. 121.
Hepatic Reactions in Anaphylaxis. III. Extrahepatic Mechanical Reactions in Peptone Shock. W. H. Manwaring and W. H. Boyd, San Francisco.—p. 131.
Bacterial Anaphylaxis. N. P. Sherwood and O. O. Stoland, Lawrence, Kan.—p. 141.
Substance in Immune Horse Serum Which Interferes with Alexin Fixation. H. Zinsser and J. T. Parker, New York.—p. 151.

Physiologic Adaptations of Fixed Tissues in Anaphylaxis.—The observations made by Manwaring and Williams are to the effect that the cardiac tissues apparently play a purely passive rôle in immunologic adaptation to cobra venom.

Complement Fixation Test in Chronic Gonorrhea in Women.—Investigation made by Wilson, Forbes and Schwartz of various culture mediums for the preparation of gonococcus antigen showed that any of the starch-free and hemoglobin-free mediums that would give a profuse growth of the gonococcus within forty-eight hours at 37 C., would give antigens of equal value. Recently isolated gonococci were of lower antigenicity than the Torrey strains isolated many years ago.

Journal of Nervous and Mental Diseases, New York

57: 329-364 (April) 1923

The Mneme, the Engram and the Unconscious. Richard Semon. His Life and Work. S. E. Jelliffe, New York.—p. 329.
Tumors of the Upper Cervical Cord. Report of Cases. I. Abrahamson and M. Grossman, New York.—p. 342.
*Lumbosacral Pain and Sacralization of the Fifth Lumbar Vertebra, Complicated by Involvement of the Spinal Cord. A. Gordon, Philadelphia.—p. 364.

Lumbosacral Pain and Sacralization.—Gordon reports a case in which the symptoms pointed to a compression of the roots and nerves passing through the intervertebral foramina, which by reason of the excessive enlargement of the transverse process of the fifth lumbar vertebra became narrowed. There was also the involvement of certain tracts within the spinal cord evidently secondary in its development. The case is an example of sacralization of the transverse process of the vertebra and more on one side than on the other. The pain appeared when the patient was 26, demonstrating a late ossification of complementary points in the transverse process of the vertebrae.

Journal of Radiology, Omaha

4: 75-104 (March) 1923

Progression of Chest and Determination of Normal. W. W. Wasson, Denver.—p. 75.
Surgical Diathermy in Relation to Radiotherapy. G. Kolischer and H. Katz, Chicago.—p. 76.
Physical Principles of Alpha Ray Therapy. V. F. Hess, New York.—p. 78.
Ultraviolet Radiation. A. J. Pacini, Chicago.—p. 80.
Roentgenologic Aspects of Visceral Crises. A. W. Crane, Kalamazoo, Mich.—p. 85.

Journal of Urology, Baltimore

March, 1923, 9, No. 3

*Diathermy in Treatment of Tumors of Lower Urinary Tract. C. Corbus, Chicago.—p. 203.
*Treatment of Cancer of Bladder by Radium Implantation. G. G. Smith, Boston.—p. 217.
*New Method of Applying Radium Through the Cystoscope. L. Buerger, New Rork.—p. 227.
Electrotherapeutics in Prostatic Conditions. V. C. Pedersen, New York.—p. 249.
Case of Stone in Bladder Which Formed Around Suture of Pagenstecher Linen. H. L. Kretschmer, Chicago.—p. 281.
Partial Spontaneous Inversion of Diverticulum of Bladder with Dumb-Bell Stone. C. R. B. Crompton, Rochester, Minn.—p. 283.

Diathermy in Treatment of Tumors of Lower Urinary Tract.—Corbus asserts that diathermy can be used to destroy cancer in areas that are totally inaccessible by any other procedure. In order to accomplish successfully the destruction of malignant tumors with thermic electrocoagulation, however, a current must be used that is low in voltage and high in amperes, only enough voltage being used to drive the current through the tissues. This, of course, varies in different parts of the body. In coagulating tumors of the bladder by the low infusion of heat 1,500 milliamperes are, as a rule, sufficient.

Radium Therapy for Cancer of Bladder.—Smith's experience has been that the implantation in bladder cancer of bare tubes of radium emanation of low potency, or of radium bearing needles of 5 mg. each, will cause complete necrosis of the tumor, provided the radium carriers are inserted 1 cm. apart and are so placed that the entire periphery of the growth is brought within reach of rays of lethal power. Two classes of cases are said to be suitable for this treatment: (1) small, single papillary carcinomata, into the base of which bare emanation tubes may be deposited by intravesical methods; (2) sessile carcinomata, or the bases of large fungating growths after destruction of the tumor by cautery, into which radium may be implanted through a suprapubic cystotomy. It is inadvisable to bring about the necrosis of a tumor more than 3 or 4 cm. in diameter, as the absorption of toxins from the infected slough is likely to prove fatal. The problem in treating cancer of the bladder by this method is to use enough radium to destroy the cancer, but not enough to destroy the patient. In a number of cases of cancer of the bladder in which the growth could not have been excised successfully, there has been complete disappearance of the growth, clinically, following the implantation of radium.

New Method of Applying Radium in Bladder Cancer.—Buerger has perfected a method of applying radium in bladder cancer that will eliminate the necessity of leaving the cystoscope in the bladder, and thus permit the prolongation of radium contact over a period of many hours without excessive discomfort to the patient. The armamentarium which has been successfully employed includes: special radium needles; special applicators for the insertion of the needles into the growth and either the author's operating cystoscope, a direct or oblique vision cystoscope, or the author's oblique vision radium cystoscope.

Kentucky Medical Journal, Bowling Green

21: 113-170 (March) 1923

Preventive Medicine and General Practitioner. J. M. Dodson, Chicago.—p. 115.
Abscess of Lung Occurring After Tonsillectomy. J. R. Peabody, Louisville.—p. 121.
Hill Billy Abdominal Surgery. J. G. Carpenter, Stanford.—p. 128.
Pyonephrosis with Multiple Calculi in Child of Twelve Years. G. P. Grigsby, Louisville.—p. 139.
Therapeutic Problems of Acute Middle Ear Infection. M. F. McCarthy, Cincinnati.—p. 140.
Cooperative Full Time County Health Department. P. W. Covington, Louisville.—p. 144.
Infection and Inflammation of Investing Tissues of Teeth and Their Relation to Maxillary Sinus. G. B. Brown, Lexington.—p. 149.
What the Family Physician Should Know About Syphilis. C. J. Broeman, Cincinnati.—p. 152.
Summer Diarrhea. J. W. Bruce, Louisville.—p. 158.
Brain Tumor. Case Report. L. W. Frank, Louisville.—p. 160.

New Orleans Medical and Surgical Journal

75: 483-531 (March) 1923

Sketch of Life of Pasteur. O. L. Pothier, New Orleans.—p. 483.
Influence of Pasteur on Surgery. H. B. Gessner, New Orleans.—p. 494.
Influence of Pasteur on Bacteriology and Pathology. J. A. Lanford, New Orleans.—p. 499.
Pasteur — His Work and What It Has Done for Medicine. J. D. Weis, New Orleans.—p. 505.
Pasteur's Influence on Hygiene. W. H. Seeman, New Orleans.—p. 515.
Pasteur's Contributions to Chemistry. H. W. Mosely, New Orleans.—p. 519.

Influence of Pasteur on Obstetrics and Gynecology. E. L. King, New Orleans.—p. 527.
Safe and Practical Method of Administering Scopolamin-Morphin Anesthesia in Obstetrics. B. Van Hoosen, Chicago.—p. 531.

75: 585-694 (April) 1923

Nervous System in Syphilis. C. Pierson, Alexandria, La., and E. M. Levy, Jackson, La.—p. 585.
*Diarrhea and Disturbances of Digestive Functions. D. N. Silverman, New Orleans.—p. 592.
*Lethargic Encephalitis (Epidemic). Report of Four Cases with Residual Symptoms. W. S. Kerlin, Shreveport, La.—p. 600.
*Correlation of Blood, Spinal Fluid and Clinical Findings in Unselected Cases Presenting Probable Syphilitic Condition. F. M. Johns, New Orleans.—p. 606.
Treatment of Tetanus by Serum. D. W. Kelly, Winnfield, La.—p. 615.
Blood Pressure. H. G. Richie, New Orleans.—p. 618.
Treatment of Typhoid Fever. G. S. Bel, New Orleans.—p. 629.
The Unusual Child. W. J. Otis, New Orleans.—p. 641.
Leukocytic Count and Its Relationship to Various Diseases. W. H. Harris, New Orleans.—p. 649.
Puzzling Case of Fever (Yellow Fever?). A. E. Fossier, New Orleans.—p. 658.

Diarrhea and Disturbances of Digestive Functions.—Silverman relates a case of chronic diarrhea following a cholecystectomy in which microscopic studies of the duodenal contents showed thousands of vegetative Giardia present. The administration of five doses of silver arsphenamin intraduodenally, aggregating a dosage of 7 dg. in four weeks, caused the disappearance of the Giardia in both the duodenal contents and stools. But, the diarrhea persisted. The giving of pancreatin resulted in two stools daily and the disappearance of undigested food from the feces.

Residual Symptoms in Lethargic Encephalitis.—Four cases of lethargic encephalitis are reported by Kerlin which presented late manifestations and recrudescence of symptoms. In one case the patient complained of inability to control her movements, restlessness and jerking of hands. Another suffered from constant yawning and drowsiness; a third exhibited nervousness and a tremor involving principally the muscles of the right leg. The fourth patient also complained of nervousness as well as weakness of the back muscles.

Correlation of Blood Spinal Fluid and Clinical Findings in Syphilis.—Of 100 cases analyzed by Johns in which syphilis was possibly present, forty-two were diagnosed as such. In 85 per cent. of the positive diagnoses, confirmatory laboratory findings were present in the blood or spinal fluid. In forty cases there was clinical evidence of organic central nervous system involvement, with thirty-nine showing clinical evidence of meningeal involvement and thirty-four of these gave evidence of organic degenerative changes in the spinal fluid. All of the cases in this limited series that presented either an increased globulin content, + colloidal gold reaction or increased cell count presented some degree of symptoms referable to a meningeal involvement. Two cases of tertiary syphilis with no evidence of central nervous involvement gave neither increase in the globulins and cells nor reaction with colloidal gold.

New York Medical Journal and Medical Record

March 21, 1923, **117**, No. 6

Vitamin C as Vegetable and Animal Tyrosin and Tyrosinase, Jointly the Homologues of Epinephrin Tests and Food Values. C. E. de M. Sajous, Philadelphia.—p. 325.
Diagnostic Criterion and Serum Therapy in Lethargic Encephalitis. M. Neustaedter, New York.—p. 333.
Educational Methods of Various Schools of Medicine and Treatment of Disease. J. M. Anders, Philadelphia.—p. 335.
*Medical School Curriculum Leading to Rational Therapy Recommended by American Therapeutic Society. O. T. Osborne, New Haven, Conn.—p. 340.
Social Service Ward for Women and Children. Solution of Family Problems of Venereal Disease. V. C. Pedersen, New York.—p. 345.
Synergistic Analgesia in Rectal Operations. J. F. Saphir, New York.—p. 351.
Advances in Roentgen-Ray Therapy with Special Reference to High Voltage Homogeneous Rays. W. H. Dieffenbach, New York.—p. 354.
*Case of Cyst of Epiglottis Presenting Some Unusual Features. H. M. Taylor, Jacksonville, Fla.—p. 357.
Clinical Manifestations of Anaphylactic Reaction. J. F. Anderson, New Brunswick, N. J.—p. 358.
Dawn of Surgery: Its Armamentarium. J. Wright, Pleasantville, N. Y.—p. 361.
Health Conditions in New York City Prisons. J. A. Hamilton, Albany, N. Y.—p. 364.

Medical School Curriculum Recommended by American Therapeutic Society.—The plan outlined by Osborne is as follows: Biochemistry and physiology should be taught principally in the first year, but the chemistry of the tissues and secretions, and nutritional and metabolic processes should be presented repeatedly to the medical student throughout his course in pharmacology and therapeutics, so that he will constantly bear in mind the functions and the chemical reactions of the diseased parts he is called on to treat. Pharmacology should be taught principally in the second year by assigned lessons in a textbook and by personal participation, under supervision of the instructor, in the demonstration of the action of therapeutically useful drugs. The close relationship between physiology and pharmacology should constantly be impressed on the student. Didactic instruction should be given and, when possible, quizzes based on textbook lessons should be held on all useful drugs the action of which cannot be demonstrated pharmacologically, such as quinin, mercury, iodids, iron, and others. Also, such instruction should be given concerning the value of drugs used externally, as antiseptics, germicides, and those used as stimulants or sedatives to the skin and mucous membranes. The principles of therapeutics should be taught in the first half of the third year, and must be preceded by the study of the pathology of disease, as unless the physiology and pathology of a part, or a diseased condition, are understood, a rational application of therapeutic measures cannot be made. Applied therapeutics should be preceded by instruction in physical diagnosis, clinical laboratory instruction, and didactic and textbook instruction of internal medicine. Clinical instruction in therapy, that is, applied therapeutics, should be begun at the bedside, in the latter half of the third year and should continue throughout the fourth year. Didactic instruction in applied therapeutics should, during the third year, supplement the bedside instruction. The part that foods play in diseases of metabolism and the proper diet for each individual patient should be presented to the student so that he will recognize the importance of dietotherapy. Preferably hospital therapeutic instruction should precede dispensary therapeutic instruction, as more scientific diagnoses can be made and the results of treatment can be watched in the former cases. Throughout the whole course of the student's hospital and dispensary clinical instruction, the effect, success or failure of any drug or physical treatment given should be brought emphatically to his attention.

Cyst of Epiglottis Presenting Unusual Features.—In Taylor's case, the forty-third on record, a cystadenoma of the epiglottis was removed. There followed an entropion of the epiglottis which gave rise to the same symptoms as did the tumor. Seven weeks after the removal of the cyst, during which time the patient was having nocturnal attacks of choking, that portion of the epiglottis showing a definite entropion was removed by the use of the alligator punch forceps. The result was relief from all distressing symptoms.

Northwest Medicine, Seattle

22: 77-114 (March) 1923

Treatment of Carcinoma of Uterus. Special Reference to Surgery, Roentgen Rays and Radium. H. Schmitz, Chicago.—p. 77.
Deep Roentgen Ray Therapy. C. B. Ward, Spokane, Wash.—p. 81.
High Voltage Roentgen Ray Therapy in Treatment of Carcinoma of Breast. J. Aspray, Spokane, Wash.—p. 85.
Method of Intensive, Systematic and Prolonged Treatment of Syphilis and Importance of Its Application in Primary and Early Secondary Stages. H. M. Greene, Portland, Ore.—p. 87.
Pulmonary Sequelae of Oral and Nasal Operations. C. C. Browning, Los Angeles.—p. 92.
Pyelitis. Some Clinical Relationships. E. W. Janes, Tacoma, Wash.—p. 96.
Eugenics and Heredity. J. W. Snoke, Tacoma, Wash.—p. 100.

Oklahoma State Medical Association Journal, Muskogee

16: 53-84 (March) 1923

Cholecystitis. O. W. Rice, Alderson, Okla.—p. 53.
Pernicious Anemia. H. T. Ballantine, Muskogee.—p. 57.
Treatment of Eye Injuries. Use of Conjunctival Flap in Perforations. O. I. Green, Bartlesville, Okla.—p. 61.
Congenital Anophthalmos. Report of Case. U. C. Boon, Chickasha.—p. 63.
Urethritis. J. H. Hays, Enid, Okla.—p. 64.

Southwestern Medicine, Phoenix, Ariz.

7: 65-89 (March) 1923

Diagnosis and Treatment (Heliotherapy) of Intestinal Tuberculosis. R. O. Brown, Santa Fe, N. M.—p. 65.
Hysterectomy for Pernicious Vomiting in Pregnancy with Fibroid. J. R. Gilbert, Alamogordo, N. M.—p. 71.
Intensive Treatment of Early Syphilis. W. G. Schultz, Tucson, Ariz. —p. 73.
Over Three Years' Surgical Work at Clifton (Arizona) Hospital without Surgical Mortality. T. B. Smith, Morenci, Ariz.—p. 77.
Cerebrospinal Fluid. C. Jay, Morenci, Ariz.—p. 81.
Appendicitis. H. A. Phillips, Fort Bliss, Tex.—p. 86.
Disorders of Locomotion and Their Significance. C. L. Lowman, Los Angeles, Calif.—p. 89.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

7: 161-204 (April) 1923

So-Called Glass Workers' Cataract Occurring in Other Occupations. Report of Two Cases. A. W. Sichel.—p. 161.
Macular Perception in Advanced Cataract. G. Young.—p. 167.
Monocular Optic Neuritis. L. Buchanan.—p. 170.
Siderosis. J. L. Gibson.—p. 174.
Ophthalmomyiasis. A. Ticho.—p. 177.

British Medical Journal, London

1: 579-616 (April 7) 1923

*Congenital Hypertrophy of Pylorus. G. F. Still.—p. 579.
*Ten Cases of Ovariotomy in Women Over 70 Years of Age. H. R. Spencer.—p. 582.
Man's Posture: Its Evolution and Disorders. A. Keith.—p. 587.
*Nature of Sugar in Blood. J. A. Hewitt.—p. 590.
*Septicemic Infection Following Operations for Appendicitis. A Prophylactic Serum. H. H. Brown.—p. 591.

Congenital Hypertrophy of Pylorus.—Of 225 cases observed by Still, 156 children recovered and 69 died. So far from operation being essential in all cases, Still says, there are some cases in which without special treatment of any kind, beyond painstaking and efficient regulation of the feeding, generally in the direction of reducing the food to small quantities at short intervals, the tumor and peristalsis have gradually disappeared, and after many weeks or months of hovering on the verge of collapse the infant has completely recovered. Among the 156 recoveries, six infants were treated this way, and one infant, after lavage had been perseveringly tried without success, eventually recovered with prolonged care in feeding. Of seventy-eight babies treated only by lavage, forty-three recovered and thirty-five died. With all its drawbacks, however, lavage has had sufficient successes, in Still's experience, to justify its retention as a method of treatment which may be the best one to adopt in particular cases. When the mother is breast-feeding her infant, Still believes it is usually the wisest course to proceed at once to operation, so that only with an interruption of forty-eight hours, to allow for recovery from the immediate disturbance of operation, the infant may continue the breast milk. Forcible dilation was done in 108 cases, with good results in eighty-six. Death occurred in twenty-two cases. The Rammstedt operation was successful in eighteen out of twenty-nine cases. Still favors dilation.

Ovariotomy in Women Over Seventy.—The ten cases reported on by Spencer occurred among 625 cases of ovarian tumor, the frequency being 1.6 per cent. Operation was done in each case, and all of the patients recovered.

Nature of Sugar in Blood.—Until evidence is brought that gamma glucose does exist as the sugar of blood and does not exist in diabetic blood, Hewitt says, no theory of diabetes can be formulated as to the relation of these sugars to this pathologic condition. Formation of gamma glucose in carbohydrate metabolism may take place as and when required, and the active modification may possibly have no more than a transitory existence.

Prophylactic Serum in Certain Cases of Appendicitis.—It occurred to Brown that it might be possible, by injecting a prophylactic serum before and at the time of operation and shortly afterward, to produce an immunity for the time which would prevent or largely minimize the danger of blood infection at the operation, if performed during the dangerous period of an abscessed appendix. It was decided to prepare such a serum by immunizating horses with cultures of *Streptococcus faecalis* and *Bacillus coli* provided from cases. Brown has not had an opportunity to test the value of this serum. He asks others to help him.

Indian Medical Gazette, Calcutta

58: 97-144 (March) 1923

Bacteriologic Notes on Epidemic of Seven-Day Fever. C. J. Stocker. —p. 97.
Field for Research in Indian Indigenous Drugs. R. N. Chopra and B. N. Ghosh.—p. 99.
Further Practical Experience with Aldehyde Test. L. E. Napier.—p. 104.
Berger's Stereoscopic Lenses for Ophthalmic Practice. E. A. R. Newman.—p. 108.
[illegible]gical Treatment of Chronic Dyspepsia. E. W. C. Bradfield.—p. 109.
New Method of Treatment for Inoperable Cancer (Auto-Inoculation). S. Mallannah.—p. 113.
Case of Quintuplets. R. E. Veerana.—p. 115.
Case of Lethargica Encephalitis with Parkinsonian Syndrome. J. C. De. —p. 117.
Edema of Leg Following Plague. G. S. Chawla.—p. 120.
Aseptic Thermometer Case. Lachmandas.—p. 120.

Lancet, London

1: 681-730 (April 7) 1923

*Diagnosis of Ulcers of Stomach and Duodenum. Value of Gastrojejunostomy in Their Treatment. A. Young.—p. 681.
After Effects of War Nephritis.—G. L. Thornton.—p. 690.
*Reflex Dulness in Old Chest Wounds. A. Neville.—p. 693.
*Intravenous Injection of Serum. P. Iversen.—p. 694.
Toxemic Aspect of Ocular Disease. P. Dunn.—p. 696.
*Treatment of Gluteal Aneurysm. A. W. Adams.—p. 697.
Research in Calcutta School of Tropical Medicine. R. Knowles.—p. 728.

Diagnosis of Ulcers of Stomach and Duodenum.—Of the 110 cases analyzed by Young, only sixteen were not diagnosed correctly and the error was not uniformly serious or material. Of nine cases diagnosed as simple gastric ulcer, only one case was wrongly diagnosed, and even that one was recognized as duodenal (after perforation), prior to operation. Of thirty-eight cases diagnosed as pyloroduodenal ulceration, only two were proved erroneously diagnosed, one being a case of general visceroptosis, including gastroptosis, the other being a case of cholecystitis and chronic appendicitis. Of twenty-one cases diagnosed as duodenal ulcer, four proved to be of another nature, but the error here could not be said to be of a serious order, the condition in all four cases being merely more extensive in location, and involving the pyloric region as well as the beginning of the duodenum, i. e., a case of pyloroduodenal ulceration, instead of purely duodenal. Of twenty-six cases diagnosed as certainly or probably cancer of the stomach, in only five did the diagnosis prove to be unjustified. In four of these five cases operation disclosed pyloroduodenal ulceration (in one case complicated by other lesions); in the remaining case (no operation performed), the aftercourse suggested that it was of the same order as the others. One case of supposed congenital stenosis of the pylorus was found to be of a simple spasmodic nature. In one case of cholecystitis, with gallstones, in which duodenal ulceration was also suspected, there was no direct evidence of the latter at operation, though some adhesions were found between duodenum and gallbladder; while in another case of the same nature pyloroduodenal ulceration was found where it had not been previously expected.

Significance of Band Dulness in Chest Wounds.—In nontuberculous cases, Cox says, the presence or absence of the band dulness sign is closely related to the presence or absence of a retained foreign body in the chest. In wound cases, therefore, this sign cannot be taken as being diagnostic of active tubercle. Accepting Riviere's view that the sign indicates an irritation or inflammation of the lung parenchyma, it appears that a bullet or shell fragment is not always retained by the lung with such complete indifference as has been thought. It appears also, since band dulness was found in some instances so long as seven years after the wound was sustained, that the symptoms due to a retained foreign body may last a long time, and are by no means entirely subjective. In two cases there was clear evidence that the foreign body was changing its position in the lung. One of these patients had severe hemoptyses about the times of shift in position. Apparently, wounds of the lung are only rarely followed by tuberculosis; two instances out of sixty-

five cases were found in this series. The physical sign of "reflex band dulness" is frequently found in old lung wound cases, when there is a retained foreign body. Both this sign and the symptoms experienced by these patients suggest that a piece of metal retained in the lung keeps up a certain amount of chronic irritation.

Intravenous Injection of Diphtheria Antitoxin.—Iversen asserts that the intravenous injection of diphtheria antitoxin is not a dangerous method. It should be the method of choice, even in patients who have previously received serum. It is only necessary to give the injection slowly, and temporarily or definitely discontinue it on the appearance of any reaction by the patient. The most unfavorable attacks after reinjection occur at the time when the serum rash appears.

Treatment of Gluteal Aneurysm.—Aneurysm of the gluteal artery, Adam says, should be treated by (1) preliminary ligation of the internal iliac. This is in itself harmless and will control hemorrhage from the sac; (2) the aneurysmal sac is dealt with locally according to the condition found in the buttock: (*a*) if the wall of the sac is ill defined, as in this case of ruptured aneurysm, intrasaccular ligation is best; (*b*) if a well formed sac is present, then obliterative endo-aneurysmorrhaphy is the ideal method.

Practitioner, London

February, 1923, **110**, No. 2

Recent Work on Diseases of Heart. C. W. Chapman.—p. 137.
Essential Enuresis. K. M. Walker.—p. 145.
Sigmoidoscope and Its Uses. L. E. C. Norbury.—p. 156.
Diagnostic Significance of Uterine Hemorrhage. M. Donaldson.—p. 168.
Cancer of Breast: Its Treatment by Roentgen Rays and Electricity. F. Hernaman-Johnson.—p. 177.
Influence of Abdominal and Thoracic Lesions on Respiratory System. D. J. Harries.—p. 188.
Zinc Ions in Psoas Abscess. M. Wardle.—p. 195.
Case of Tetanus. J. O'Neill.—p. 196.

March, 1923, **110**, No. 3

*Therapeutic Value of Vomiting in Intestinal Obstruction and Acute Appendicitis. C. Symonds.—p. 205.
Dupuytren's Contraction of Palmar Fascia and Some Other Deformities. A. H. Tubby.—p. 214.
*Venous Thrombosis During Attack of Acute Rheumatism in Child. F. J. Poynton.—p. 221.
Surgical Aspect of Gastric Ulcer. W. H. C. Romanis.—p. 224.
Interrelation of Certain General Conditions with Gastro-Intestinal Disorders. T. I. Bennett.—p. 242.
Some Problems of Prostatectomy. C. Morson.—p. 253.
Early Diagnosis and Treatment of Disseminated Sclerosis. E. W. Scripture.—p. 259.
Cerebral Hemorrhage. J. Burgess.—p. 261.
Thickening of Skin, or Cornification, as Signs of Abscess Formation in Palm and Sole. F. D. Bana.—p. 263.

Value of Vomiting in Intestinal Obstruction and Appendicitis.—Cases are reported by Symonds to illustrate the value of vomiting as a life saving symptom in these cases. He insists that the free administration of fluids, principally water, in suspected intestinal obstruction or acute appendicitis is sound practice. After operation vomiting should be encouraged, especially in advanced cases, until the rejected material is free from bile. When hiccup is present and vomiting does not follow the free exhibition of fluids, the stomach should be washed out, in severe cases every four hours, in others, two or three times a day. The injured bowel will maintain obstruction for from two to four days, and during this period the best treatment is to encourage vomiting. To permit the reflexes to come into operation as soon as possible (*a*) the preoperative dose of morphin should be omitted; (*b*) the operation should be as brief as possible, and the minimum amount of anesthetic employed, and (*c*) morphin should be withheld until the rejected material is free from bile. When free vomiting has occurred, the symptoms of toxemia are absent, and, therefore, the prospects of recovery after operation are immensely increased. The cases also show that movement does no harm; in fact, Symonds says it is beneficial, for if vomiting results the danger is removed.

Venous Thrombosis During Attack of Acute Rheumatism in a Child.—Poynton relates the case of a boy, aged 13, who after a chill from swimming, developed articular rheumatism. The arthritis subsided in a week, to be followed by the sudden development of chorea, and later by renewed arthritis, carditis and pleurisy. The type of chorea was essentially paralytic, with profound mental disturbance and great general weakness. After a few days in the hospital the chorea was found to be increasing in intensity. There were also present complete incontinence and dumbness. Then the right elbow became acutely painful, the temperature never reached the normal line, and the heart beat more rapidly and was more dilated. A small patch of pleurisy was detected over the right lung anteriorly. On the thirteenth day all the superficial abdominal veins below the umbilicus on both sides were distended and formed a tracery over the hypogastrium. The blood flow downward was impeded, and there seemed no escape from the diagnosis of a venous thrombosis at the lower end of the inferior vena cava or the upper end of both common iliac veins. Next, the ankle joints swelled and became very painful; the heart had a cantering rhythm; the circumference at a selected level on the right thigh was 5 inches greater than on the left. The left thigh began to swell, but the right limb was diminishing in size. Improvement was rapid and steady, with the exception of a transient arthritis of the left elbow joint.

Sei-I-Kwai Medical Journal, Tokyo

42: 1-28 (Feb.) 1923

*Deafness Through Mumps. M. Kurosu.—p. 1.
Urease. T. Yokota.—p. 24.
Comparative Study of Power of Intestinal Antiseptics Observed from Amount of Urine Indican. H. Nagaoka.—p. 26.
Studies of Staircase Phenomenon. Part I. Literal Consideration. S. Uramoto.—p. 28.

Deafness Through Mumps.—Eleven cases of deafness complicating mumps are reported by Kurosu. The principal cause seems to be neuritis, which arises through a toxin produced by the exciting agent of parotitis. The seat of the affection is usually said to be retrolabyrinthine, as the affections of the vestibularis appeared in all these cases except one, in which the blindness developed exceptionally slowly. Meningitis, too, may be the cause of mumps-deafness, but seems to be responsible for it only very rarely. There may, however, be cases, in which it is clinically impossible to decide if meningitis or neuritis is the real cause. The primary seat of the injury to the acoustic nerve has not been determined.

Tubercle, London

February, 1923, **4**, No. 5

Gas Embolism and Other Accidents of Chest Puncture. C. Lillingston.—p. 193.
Treatment of Pulmonary Hemorrhages by Artificial Pneumothorax. M. J. Fine.—p. 200.
Thermolite Lamp; Results at a Tuberculosis Institute. F. Clifford.—p. 204.

4: 241-268 (March) 1923

Influence of Industrialism on Age Incidence of Phthisis. E. L. Collis.—p. 241.
Experiences of Refractory Industries (Silicosis) Scheme, 1919. C. L. Sutherland and W. C. Rivers.—p. 255.

Annales de l'Institut Pasteur, Paris

37: 1-106 (Jan.) 1923

*Neurotropic Ectodermoses. C. Levaditi and S. Nicolau.—p. 1.

Research on Vaccinia: Neurotropic Ectodermoses.—Levaditi and Nicolau have succeeded in cultivating vaccine virus serially in rabbits' brains, like rabies virus. With this neurovaccine, as they call it, they have apparently demonstrated that only the tissues derived from the ectoderm are susceptible to infection from the filtrable, invisible viruses. Bacteria, spirilla, fungi and protozoa induce infection only in the tissues derived from the mesoderm. Each of these two groups of infectious agents is thus restricted in its action to one of the embryonal layers. The agents of the mesodermoses induce immunity by means of phagocytosis and a bactericidal and antitoxic action. The agents of the ectodermoses induce immunity by producing a local refractory condition. Probably the two embryonal layers have a different physicochemical composition; very few micro-organisms seem to have an affinity for both. The spirochete of syphilis is one of the few exceptions. The very existence of vertebrates depends on the fact that the pathogenic micro-organisms which swarm on the skin, intestines and nasopharynx are virulent only for the mesoderm and not for the ectoderm. Among the ectodermoses, they call attention to the neurotropic subgroup comprising vaccinia, herpes, encephalitis,

rabies and poliomyelitis. The invisible viruses of this subgroup have many characteristics in common, especially the intense affinity for the central nervous system and a less pronounced affinity for the external segment of the ectoderm, the skin, cornea and nasopharyngeal mucosa. The virus does not attack any cells unless they are of the ectoderm (or endoderm) and in a condition of regenerative proliferation or karyokinetic rejuvenation from some irritation. The research reported sustains the assumption that the virus of vaccinia, herpes and encephalitis spreads rapidly by the blood or peripheral nerves to all the tissues for which it has an affinity. After recovery each receptive tissue is left refractory to further infection of the same kind. General immunity is thus an accumulation of as many partial immunities as there were susceptible tissues to begin with. The refractory state gradually wears off. This occurs the more rapidly, the more rapid the regeneration of the tissue involved. The article is profusely illustrated.

37: 107-227 (Feb.) 1923

*New Principles of Therapeutic Inoculation. Sir Almroth E. Wright, L. Colebrook and J. Storer.—p. 107.
*Plurality of Syphilis Viruses. Fournier and Schwartz.—p. 183.
Anthrax Pustule Necrotic from the Start. Morel.—p. 225.

Test for Power of Immunizing Response to Therapeutic Inoculation: Vaccine Response Test.—One of the new principles involved in therapeutic vaccination, which have been discovered by Wright and his co-workers, is that antibacterial substances come—not from the tissues—but from the leukocytes. The leukocytes spontaneously set free bactericidal and opsonic substances when vaccines in appropriate concentration come into operation on the leukocytes in the blood, both in the living body and in the test tube. "A test tube vaccine response test is thus possible by introducing graduate quanta of vaccine into a series of volumes of the patient's blood and seeing whether there is any improvement in the phagocytic power of the vaccinated bloods or in the opsonic power of the serums. Investigations of the bactericidal power can also be carried out when there is no emergency. We can thus ascertain readily whether a patient is or is not capable of an immunizing response. Where he is competent to make such response, we can further ascertain to what dose of vaccine, intravenously inoculated, he will be able to make the optimum response." In the alternative of his not being able to make immunizing response, we can evoke the immunizing response in the healthy blood of another subject, and inject the latter's blood—an immunotransfusion, as Wright calls it. [Practically this same article appeared in the *Lancet* of Feb. 24, March 3 and 10, 1923, and the general conclusions were summarized in these columns April 28, p. 1273.]

Plurality of Spirochetes of Syphilis. — Fournier and Schwartz relate that syphilitic chancres which developed in rabbits after inoculation with material from different patients showed such differences in character and course that the spirochetes inducing them apparently belonged to different species. They describe experiments which confirm the difference between the dermotropic and the neurotropic strains, and present arguments to show that the latter alone is responsible for general paralysis and tabes.

Bulletin de l'Académie de Médecine, Paris

89: 223-237 (Feb. 13) 1923

*Hygienic Reforms Among Mohammedans in Tunis. Dinguizli.—p. 233.

Hygienic Reforms Among Mohammedans in Tunis.—Dinguizli shows that it would be comparatively easy to introduce hygienic measures among the Mohammedan population, because their ritual contains similar requirements. Two of his quotations from Mohammed are interesting: "The study of the science of the human body shall be given the preference over the study of the religious sciences." . . . "If it were not for that fine dust which we see floating in the sunbeam, and if it were not for the danger from stagnating waters, Adam's son would live ten centuries." The use of alcohol, hashish and opium is widespread among the natives. Being a native himself, Dinguizli asks for prohibition of manufacture and importation, and especially for laws against the sale of all intoxicant drugs to natives.

Bulletins de la Société Médicale des Hôpitaux, Paris

47: 59-100 (Jan. 19) 1923

*Dissociated Icterus. E. Chabrol and H. Bénard.—p. 60.
Purulent Thyroiditis from Paratyphoid Bacilli. Carnot and Blamoutier.—p. 66.
*Neurectomy in Angina Pectoris. Daniélopolu and Hristide.—p. 69.
*Deforming Arthritis and Syphilis. Haguenau and Bernard.—p. 73.
*Anaphylactic Enterocolitis and Dyspepsia. Le Noir et al.—p. 77.
*Anaphylactic Chronic Colitis. Richet, Jr., and de Fossey.—p. 81.
*Treatment by Proteins and Specific Serum in Meningococcemia. L. Blum.—p. 83.
Splenomegaly: Type Gaucher. Harvier and Lebée.—p. 87.

Dissociated Icterus.—Chabrol and Bénard prefer stalagmometry to Hay's test with sulphur flowers for determination of bile salts in urine. They emphasize the possibility of error. The bile salts circulate normally from the liver through the bile to the intestines and back to the liver. If this circle is interrupted by occlusion of the choledochus, there is very little excretion of bile salts. Therefore practically every mechanical icterus is a dissociated icterus (main excretion of pigments) and all other conclusions are erroneous.

Resection of Spinal Nerves in Angina Pectoris.—Daniélopolu and Hristide anesthetized the second and third left spinal nerves in a case of angina pectoris in which the pains corresponded to the area of these nerves. While otherwise the slightest effort caused attacks, none occurred, in spite of the dyspnea, during the anesthesia. They propose therefore the resection of the roots of the nerves corresponding to the pains in this condition (from the eighth cervical to the fourth dorsal).

Deforming Arthritis and Syphilis.—Haguenau and Bernard find no reasons for assuming a syphilitic etiology in chronic arthritis deformans.

Anaphylactic Enterocolitis and Dyspepsia. — Noir, Richet and Barreau publish a case of diarrhea due to raw meat. The skin reaction to it was negative, but was immediately followed by a drop in the number of white corpuscles. Another case of dyspepsia probably due to green peas could be controlled for some time by peptone.

Anaphylactic Chronic Colitis.—Richet and Fossey report a case of intolerance for meat and fish. Ingestion of 0.5 gm. of peptone one hour before the meal was followed with recovery in a short time.

Treatment by Proteins and Specific Serum in Meningococcemia.—Blum observed a very good effect of protein treatment in one case of meningococcemia, but none in another case. This was probably due to a meningeal localization in the second case, which requires specific treatment.

47: 101-142 (Jan. 26) 1923

Deforming Arthritis. Milian.—p. 102.
Meningococcemic Cyanosis and Purpura. Clerc et al.—p. 102.
*Essential Incontinence of Urine. Delbet and Léri.—p. 105.
Agglutination of Meningococci. Dopter et al.—p. 106.
Ulcerous Pulmonary Tuberculosis in Paratyphoid. Eschbach and Laprade.—p. 112.
*Foreign Body Simulating Chronic Bronchitis. Halphen.—p. 114.
Serotherapy in Gonococcus Arthritis. Merklen and Minvielle.—p. 116.
Idem. Clerc and Perrochaud.—p. 118.
Complications of Gonorrhea. Stérian.—p. 121.
*Menacing Pneumothorax. Emile-Weil and Isch-Wall.—p. 127.
Herpes Zoster and General Vesicular Eruption. Jeanselme and M. Bloch.—p. 131.
Pocket Apparatus for Percussion and Auscultation. Chiray.—p. 134.
*Two Atypical Cases of H. Roger's Disease. Variot and Cailliau.—p. 135.

Surgical Cure of "Essential" Urinary Incontinence Due to Occult Spina Bifida.—Delbet and Léri report that after failure of roentgen treatment they operated, removing a pad of fibrocartilaginous tissue which had been compressing the dura and the cauda equina. The enuresis was cured at once and permanently.

Unsuspected Foreign Body in Bronchus Simulating Chronic Bronchitis.—Halphen extracted a foreign body which had induced localized bronchitis. The cause was not suspected until a roentgenogram was taken. The mucopurulent secretion was a guide in the bronchoscopy, leading to a bronchus of the second degree. Recovery was complete.

Treatment of Suffocating Pneumothorax.—Emile-Weil and Isch-Wall report a case of pneumothorax with increased

pressure. The suffocative attacks ceased after repeated intrapleural injections of medicated olive oil. The oil reached at last the height of the third rib. They intend to perform an artificial pneumothorax later. In the discussion that followed, F. Ramond proposed to use pure olive oil without any addition, since the action seems to be due simply to the viscosity of the oil.

Two Atypical Cases of Roger's Disease.—Variot and Cailliau present the organs of two cases of opening in the interventricular septum. Both patients had a loud and long systolic murmur over the whole pericardiac region, without cyanosis (Roger's disease), yet radiography showed a greater enlargement of the ventricle than one finds usually. The first case had a stenosis of the pulmonary valve while the other was typical. The hypertrophy of the left ventricle in this case may be due to nephritis.

Presse Médicale, Paris

31: 109-120 (Feb. 3) 1923

Treatment of Aneurysms. R. Matas (New Orleans).—p. 109.
*Anaphylactic Conjunctivitis. H. Lagrange.—p. 112.
Infundibulo-Pituitary Syndromes in Epidemic Encephalitis. J. Mouzon.—p. 113.

Anaphylactic Conjunctivitis.—Lagrange reports a case of conjunctivitis in a diabetic, subject to attacks of urticaria. Manipulation of wood was the cause, and an application of oak bark provoked a marked hemoclastic crisis.

31: 193-238 (Feb. 28-March 10) 1923

*Radium Treatment of Cancer of Esophagus. J. Guisez.—p. 193.
*Rupture of Intercostal Artery. J. Henrichsen.—p. 195.
Remarks on Vitiligo. K. Lindberg.—p. 196.
*Hepatitis and Cholecystitis of Intestinal Origin. Brulé and Garban.—p. 205.
*Masked Hypertension in Surgical Cases. Jeanneney and Tauzin.—p. 207.
The Vitamins in Decoctions of Cereals. M. Springer.—p. 208.
Present Status of Research on Pressure in the Capillaries. M. Weiss.—p. 211.
*Pathogenesis of Hemorrhagic Pancreatitis. Brocq and Binet.—p. 219.
*Influenza and Epidemic Encephalitis. Volpino and Racchiusa.—p. 222.
Nutrition in the Obese. M. Labbé.—p. 227.
*Localized Ossifying Myositis. Chaton and Caillods.—p. 228.
*Hepatism: Chronic Functional Disease of the Liver. R. Glénard.—p. 230.
Present Status of Symptomatic Treatment of Dysmenorrhea. Cheinisse.—p. 232.

Radium Treatment of Cancer of the Esophagus.—Guisez has applied the radium rays in 180 cases of cancer of the esophagus since 1909. During the first few years the benefit was only palliative, but during the last three years a number of apparent cures have been realized, as the technic has improved. In all the cases treated during the last six months not a trace of the cancer can be seen and all difficulty in swallowing has disappeared. The applications ranged from twelve to twenty-four hours, to a total of sixty to seventy hours of exposure. The endoscopic pictures of a number of cases are reproduced.

Rupture of Intercostal Artery.—The hemothorax after fracture of a rib was successfully treated by resection of the rib.

Liver and Gallbladder Disease of Intestinal Origin.—Brulé and Garban examine the urine for urobilin and bile salts as a routine practice, and they have been amazed at the prompt reflection in the functioning of the biliary apparatus of even slight intestinal derangement, an exceptionally hearty meal, or period of constipation. They assert that the diagnosis of gallstone disease will be made less frequently when liver and gallbladder disease of intestinal origin is better known. Calomel and saline purgatives, given to act on the biliary apparatus, may injure an already damaged bowel. Both intestines and biliary apparatus may improve under treatment with inert powders, oily or mucilaginous laxatives, digestive ferments or lactic acid ferments. They have had occasion to treat patients who had had their appendix or gallbladder removed on a mistaken diagnostic basis, and the intestine and liver had continued to suffer as before.

Masked Arterial Hypertension.—Jeanneney and Tauzin refer to cases in which the high blood pressure is temporarily masked by some intercurrent factor causing hypotension.

Pathogenesis of Hemorrhagic Pancreatitis.—Brocq and Binet were able to induce hemorrhagic pancreatitis with fat necrosis in dogs in the absence of any infectious process. It is the result of autodigestion of the pancreas, but this requires the activation of the pancreatic ferments by some extraneous substance, such as bile or intestinal juice, finding its way into the pancreas. This is liable to occur with duodenal stasis from spasm, overfilling of the digestive tract, or other cause. An operation on the pancreas relieves the immediate danger but a second operation may be necessary to remove the cause. The pylorus, the duodenum and the duodenojejunal angle should all be examined to discover the mechanical cause inducing the reflux of bile or intestinal juice into the pancreas.

Influenza and Epidemic Encephalitis.—Volpino and Racchiusa report that rabbits inoculated with virus from human influenza sputum developed a fatal disease closely resembling epidemic encephalitis in man. No bacteria were found in the rabbits, but the brain cells showed peculiar inclusions which resembled Negri bodies in rabies. Other findings suggested those of human epidemic encephalitis.

Focus of Myositis with Necrobiosis.—Chaton and Caillods found the bones in the leg normal in a man, aged 65, who presented a large encapsulated tumor in the leg containing numerous spicules of bone. The roentgenograms are reproduced and the lesion defined as an ossifying inflammatory process in the muscle tissue, showing pronounced necrosis. The characteristic roentgenograms excluded the first presumptive diagnosis of sarcoma, and a complete cure followed evacuation of the products of necrobiosis of the degenerated muscle.

Hepatism.—Glénard includes in this term the diseases of nutrition, gastro-intestinal dyspepsia and neuropathies, as well as the pathology of the liver itself. He defines the various pathologic syndromes resulting from disturbances in any one of the twelve known functions of the liver.

Schweizerische medizinische Wochenschrift, Basel

53: 105-132 (Feb. 1) 1923

*Radium Treatment of Uterine Cancer. O. Beuttner.—p. 105.
*Multiple Sclerosis and Its Etiology. E. Long.—p. 109.
*Serodiagnosis of Tuberculosis. N. Takenomata.—p. 112.

The Result of Radium Treatment of Carcinoma of the Uterine Cervix.—Beuttner, on the basis of sixty-three cases observed during the last eight years, believes that the result of radium treatment depends less on the microscopic form of the carcinoma or the number of applied milli-curie-hours than on the age and general condition of the patient. The older patients give the best results. The prognosis of carcinoma in comparatively young women has improved through radium treatment. Radio-active bodies are also given intravenously, based on Kotzareff's experiments on fixation of the emanation in embryonic and malignant cells. The experiences related have demonstrated that even if it still is an open question as to whether operable carcinomas should be removed by the knife or by radium or roentgen rays, irradiation has given better results in inoperable cases than the old palliative methods.

Multiple Sclerosis and Its Etiology.—Long, basing his statement on statistics, says that only 20 or 25 per cent. of the cases diagnosed as multiple sclerosis are of the classic form, with all the symptoms described by Vulpian and Charcot. The recent experiments caused a change in the conception of the etiology of this disease: Inoculations of the cerebrospinal fluid of multiple sclerosis patients and the nerve substance seemed to prove that there is a specific virus which produces the disease. The hope awakened by arsphenamin must be abandoned.

Serodiagnosis in Tuberculosis.—Takenomata, experimenting with serum from forty-five tuberculous and suspect patients and forty-eight controls, has shown the complement-fixation reaction to be of positive assistance in diagnosis. In tuberculosis of the lungs, tuberculous pleuritis, and also in other tuberculous affections, the complement-fixation reaction is, as a rule, positive though in the early stages the reaction may be uncertain. The Besredka antigen (made from tubercle bacilli, cultivated in egg-bouillon, and killed by heating) has proved itself efficient, but the bacillary emu-

sion of human types produced by Takenomata served the purpose at least equally well. Tuberculin is not so efficient as antigen.

Policlinico, Rome

30: 57-112 (Feb. 15) 1923. Surgical Section

*Malarial Splenomegaly and Its Complications. O. Cignozzi.—p. 57.
Traumatic Dislocation of the Testis. M. Margottini.—p. 68.
Subphrenic Abscesses. G. Pisano.—p. 74.
*Trauma in Origin of Tumors. G. Pistocchi.—p. 83. Cont'd.
Two Cases of Cystic Pneumatosis. L. Torraca.—p. 112.

Malarial Splenomegaly.—Cignozzi denounces attempts to remove a normally located spleen, no matter how much it is enlarged. Medical measures alone are all that is needed. But in case of rupture or displacement of the spleen, or suppuration in or near it, an operation is necessary. He gives details of seventeen cases in this latter group and the ultimate outcome after splenectomy in fifteen. The blood-producing organs gradually assume the tasks of the spleen, so that the blood returns to normal after five or six months. Malaria may recur after splenectomy, and three of Cignozzi's cases seem to suggest that the resisting power to septic affections is reduced by splenectomy. One woman, for instance, developed fatal puerperal fever seven years after the spleen had been removed. A conservative operation on the spleen exposes to recurrence of the malaria; it is better to remove the entire organ with its lurking parasites.

Cancer and Trauma.—Pistocchi reports a case of primary lymphosarcoma of the stomach found at necropsy five months after severe contusion of the epigastrium. The pain had been intense at the time and persisted continuously afterward, suggesting at first fracture of ribs. The pain finally localized in the stomach. It was not aggravated by food. The exacerbations resembled colic and tabetic crises. He is inclined to accept a direct connection with the trauma in this case.

Semana Médica, Buenos Aires

1: 185-228 (Feb. 1) 1923

*Intracranial Hypertension in Children. A. Segers.—p. 185.
Intracutaneous Tuberculin Reaction in Parturients and the New-Born. M. L. Pérez.—p. 188.
Vaccine Therapy in Acute Urethritis. E. Castaño.—p. 197.
Tuberculosis in the Army. J. A. López.—p. 204.
*Suggestion in Crime. J. C. Belbey.—p. 210.
Case of Eunuchoidism. C. L. Echevarne.—p. 219.
Findings a Year After Total Colectomy. P. Barbieri.—p. 223.
Anaphylaxis to Antialpha Vaccine. J. Ferrán.—p. 224.

Intracranial Hypertension in Children.—Segers declares that physicians wait too long before diagnosing intracranial hypertension, allowing the causal lesions to become irreparable. He cites a number of instructive cases, and warns that examination of the fundus of the eye should never be neglected or postponed when a child presents headache, vomiting and persistent constipation without well defined cause. The neurologist locates the lesion and the frequent success with surgery in such cases justifies prompt intervention. Syphilis has been found a factor in not more than 1 per cent. of the total cases of brain tumors in children, and specific treatment is futile in these cases, although the focal changes at the first doses of mercury often seem to confirm the diagnosis. In one girl, aged 10, the operation completely and permanently cured the left hydrocephalus. The symptoms had been noted fifteen months before, and the girl had been blind for a month. She is now healthy but blind. Another child presented symptoms of a tumor in the cerebellum. Under mercurial treatment, stomatitis and ulcerating sore throat developed, and the child soon died. Necropsy disclosed a single tuberculoma which could easily have been shelled out.

Suggestion in Crime.—This is a medical study of famous examples in literature, from Don Quixote and Othello to Vargas Vila and D'Annunzio's recent novels.

Deutsche medizinische Wochenschrift, Berlin

49: 105-136 (Jan. 26) 1923

*Kidney Function Tests. Schlayer.—p. 105.
Etiology of Tumors. E. Schwarz.—p. 108.
"Predisposition to Tumors." W. Roux.—p. 110.
*Assimilation in Avitaminosis and Hunger. J. A. Collazo.—p. 110.
*Peripancreatic Fat Necrosis Due to Gallstone. Schottmüller.—p. 112.
*Rheumatic Purpura. E. Rautenberg.—p. 112.
*Anesthesia and Tuberculin Reaction. H. Biberstein.—p. 113.
*Tuberculosis and Pregnancy. Winter and Oppermann.—p. 115. Conc'n.
*Early Diagnosis of Pregnancy. L. Lewin.—p. 117.
Obesity in Emphysematous Habitus. J. Deupmann.—p. 118.
Objections to Mixed Arsphenamin and Mercury Treatment. H. Nover.—p. 119.
Diverticula of Esophagus. H. Krekel.—p. 119.
Action of Blood Transfusions. Opitz.—p. 120.
Filaments and Rods in Blood. H. Zeller.—p. 120.
Mole in Twin Pregnancy with One Normal Ovum. Günther.—p. 121.
Relative Aspermia without Urogenital Disease. Huhner.—p. 121.
Portable Examining Table. Freistadt.—p. 121.
For and Against Compulsory Vaccination. Liebermann.—p. 122.
*Smallpox in Switzerland. Sobernheim.—p. 122. Conc'n p. 155.

Kidney Function Tests.—Schlayer recommends the use of several tests. The dilution and concentration tests are good in every form. The "tissue factor" does not interfere with the use of the tests, if the results are considered critically. Determining the elimination of added urea or salt is not a reliable test. Even a very sick kidney may eliminate quantitatively.

Assimilation in Avitaminosis and Hunger.—Collazo finds that the animal loses its vitamins if it is on a diet without vitamins, but keeps them during starvation. This accounts for the fact that starving dogs increase at first in weight if they get food without vitamins. Organs from starving animals act like food containing vitamins, while organs from dogs which were on a diet without vitamins have no action. Hunger acts in a certain sense as prophylaxis against loss of vitamins.

Peripancreatic Fat Necrosis Due to Gallstone.—Schottmüller publishes a case of fat necrosis around the pancreas in a woman with an incarcerated gallstone in the duodenal papilla.

Rheumatic Purpura.—Rautenberg had striking results with intraspinal injections of 4 c.c. of a 0.5 per cent. solution of novocain in normal saline. The red spots in his cases were not real hemorrhage, and disappeared very quickly.

Anesthesia and Tuberculin Reaction.—Biberstein did not find inhibition of the tuberculin test by previous local anesthesia.

Tuberculosis and Pregnancy.—Winter and Oppermann consider artificial abortion and eventual sterilization as a safe means to protect tuberculous women from the dangers of pregnancy.

Early Diagnosis of Pregnancy.—Lewin examined 100 women for glycosuria after injection of 2 mg. phlorizin; 8 per cent. of the 50 controls were positive. Most of the pregnant women in the earliest stages were also positive.

Smallpox Epidemic in Switzerland.—Sobernheim shows by statistics the causal relation between the "conscientious objectors" and the cases of smallpox in Switzerland.

Klinische Wochenschrift, Berlin

2: 237-284 (Feb. 5) 1923

Extrapyramidal Motor System. Lewy.—p. 237. Conc'n.
Diseases of Bones and Growth. F. J. Lang.—p. 240.
*Dosage of Roentgen and Radium Rays. E. Opitz.—p. 243.
*Determination of Hypoxemia. F. Kauders and O. Porges.—p. 247.
*Dyspepsia of Infants. A. Adam.—p. 248.
*Postural Treatment of Bronchial Disease. Schaefer.—p. 252.
Dorsal Subluxation of Metacarpus of Thumb. Sonntag.—p. 253.
*Treatment of Hypertrophy of Prostate by Vasectomy. Landau.—p. 255.
*Spontaneous Appearance of Spirochetes Resembling Pallida in a Non-syphilitic Rabbit. F. Neumann.—p. 256.
Diagnosis of Normal and Extrauterine Pregnancy and Ovarian Hematomas. M. Samuel.—p. 257.
*Quantitative Test for Bilirubin. Adler and Meyer.—p. 258.
History of Neosilverarsphenamin. A. Binz.—p. 259.
Iso-Electric Point of Mammalian Corpuscles. Straub and Meier.—p. 260.
Significance of Potassium Ions for Muscle Tonus. Neuschlosz.—p. 260.
*Guanidin Poisoning. L. Nelken.—p. 261.
Speed of Sedimentation of Erythrocytes in Hemoclastic Crisis. E. Wiechmann and E. von Schröder.—p. 261.
Osteomyelitis of Pubis Simulating Tuberculous Fistula of Anus in a Child. H. Plaut.—p. 262.
Surgical Treatment of Pylorospasm in Infants. Heile.—p. 262.
*Pulmonary Tuberculosis in School Children. Poelchau.—p. 265.
Chemistry of Proteins and Biology. H. Handovsky.—p. 267.

Dosage of Roentgen and Radium Rays.—Opitz finds that there is no dose which will annihilate the carcinoma in every case. He is strictly opposed to Seitz and Wintz' "carcinoma dose" and still more to their "sarcoma dose." The general

action of the rays on the whole body is an important factor, which may be beneficial or injurious, according to the dose.

Determination of Hypoxemia.—Instead of using arterial blood and gas analysis, Kauders and Porges take a drop of blood from the ear in a capillary tube and compare its color with the blood of a healthy subject, to estimate the carbon dioxid content.

Dyspepsia of Infants.—Adam points out that the strains of colon bacilli found in dyspeptic infants have a stronger fermentative and a weaker putrefactive action than normal strains. The foods which produce or increase dyspepsia (peptone, sugars, fatty acids and alkaline soaps of the feces) increase the growth of these strains. Food which is indicated in this condition (amino-acids, casein, calcium) inhibits the growth of these bacilli.

Postural Treatment of Bronchial Disease.—Schaefer tried Quincke's method on eleven patients suffering mostly from bronchiectasia. The patient remains, after the usual expectoration in the morning, for two hours in a horizontal position and, when accustomed to it, the foot end of the bed is raised for about 30 cm. The method is excellent only in localized disease of the lower lobes.

Treatment of Hypertrophy of Prostate by Vasectomy.—Landau reports 26 cases of hypertrophy of the prostate, in which radical operation was contraindicated because of the general condition of the patients. He resected both vasa deferentia and had 10 failures and 16 very good results. He attributes the subjective and objective improvement in most of the cases to the relief from the prostatic trouble and not to a rejuvenation in the sense of Steinach.

Spontaneous Appearance of Spirochetes Resembling Pallida in a Nonsyphilitic Rabbit.—Neumann found spirochetes resembling the pallida in an isolated rabbit which he scarified near the vulva. He doubts the absolute diagnostic value even of typical spirochetes found in man.

Quantitative Estimate of Bilirubin in Urine.—Adler and Meyer recommend Grimbert's test: Add 0.25 gm. barium chlorid to 5 c.c. of urine and centrifugate. Extract the sediment with alcohol, containing 4 per cent. of hydrochloric acid, by stirring and keeping a few minutes in water at 70 or 80 C. The green color is specific, and may be used for quantitative estimation.

Influence of Guanidin Poisoning on Calcium and Phosphates of the Blood.—Nelken found in rabbits and cats poisoned with guanidin an increase in the calcium and phosphates of the blood.

Pulmonary Tuberculosis in Schoolchildren in Berlin Suburb in 1921.—Poelchau found in 1921 a slight increase in tuberculosis in boys in Charlottenburg over the figures of 1912. The girls have the same rate as in 1912.

Medizinische Klinik, Berlin

19: 133-162 (Feb. 4) 1923

Constitutional and Familial Hyperglobulia. H. Curschmann.—p. 133.
Metabolism in Dermatology. E. Pulay.—p. 135. Conc'n.
*Treatment of Hemoptysis. H. Horalek.—p. 138.
*Gymnastic Exercises for Infants. E. Czapski.—p. 140.
Treatment of Essential Enuresis. F. Fischer.—p. 142.
Premature Senility of Face. Landsberger.—p. 143.
*Colibacteriophages. O. Bail.—p. 144.
Estimation of Onset of Disability. Wulsten.—p. 146. Cont'n.
Hypnotics. C. Bachem.—p. 147. Cont'd.
Diseases of Bladder. E. Portner.—p. 149.
Recent Literature on Ophthalmology. Adam.—p. 150.
Recent Literature on Menstruation. W. Liepmann.—p. 151.

Treatment of Hemoptysis.—Horalek recalls the temporary ligation of the extremities, which was recommended by Hippocrates. Its action consists in the increase in coagulability of the blood. Another similar remedy is the intravenous injection of 5 c.c. of a 10 per cent. solution of sodium chlorid with 0.2 gm. of calcium chlorid and addition of a little of a digitalis preparation, as recommended by Windrath. Digitalis helps in cases when the weak heart causes passive congestion in the lungs.

Gymnastic Exercises for Infants.—Czapski recommends gymnastics for infants after the sixth month, if they are too fat or weak. Beginning rachitis was well influenced.

Colon Bacilli Bacteriophagy.—Bail uses the specificity of resistance against bacteriophages as a means to differentiate bacteriophage strains. He found, however, one exception in a strain that formed much mucus. This strain was generally resistant. The cause of this behavior was that the mucus acted as a protecting colloid against all bacteriophages, in the same way as gelatin. Its action was in proportion to the concentration, and the strain lost its resistance with the loss of formation of mucus. The specific resistance is inherited. Another interesting fact was that a strain which became resistant against one bacteriophage, lost its former resistance against others. If it was cultivated with these, it became again resistant to them, but was dissolved by the first bacteriophage. This experiment was repeated several times.

Münchener medizinische Wochenschrift, Munich

70: 137-166 (Feb. 2) 1923

*Birth Injuries and Their Consequences. H. Siegmund.—p. 137.
*Influence of Musical Rhythm on Motor Sequelae. E. Meyer.—p. 139.
*Therapeutic Effect of Inflammation on Sepsis. F. Rolly.—p. 139.
*Untoward Effects of Bismuth Treatment. Görl and Voigt.—p. 143.
*Tissue Cultivation in Study of Typhus. Krontowski and Hach.—p. 144.
*Syphilis Acquired in Aspirating from New-Born Infant. Sigwart.—p. 146.
Intravenous Injections of Morphin by Addict. Gruber.—p. 147.
*Anopheles and Malaria in Baden. F. Eckstein.—p. 147.
Cephalad Displacement of Transverse Colon by Trauma. Hofmann.—p. 149.
Apparatus for Graduated Vacuum Suction. Herz and Stern.—p. 149.
Blister Fluid in Prophylactic Serotherapy. Thomas and Arnold.—p. 150.
Improved Technic for Turbidity Test. E. Meinicke.—p. 150.
Migraine in Children. F. Hamburger.—p. 150.
*Treatment of Women with Myoma. M. Nassauer.—p. 152.

Birth Injuries to the Brain and Their Consequences.—Siegmund maintains that it is the vascular system which is most directly affected by birth trauma. Mechanical injuries to the small vessels cause disturbance in the circulation, stasis, diapedesis of erythrocytes and, as a result, impairment of the nourishment of adjacent tissues. The resulting degeneration may lead to complete necrosis. Such softening processes stand in close relation with the development of cysts, porencephaly, sclerosis, microgyria, etc. Small foci of cicatricial softening are often found in infants, especially in the premature, within the first six months. Because of the active metabolism in children, even slight disturbances may exert a great influence on the formation of the central nervous system, more particularly of the medulla. Subdural hemorrhage may entail external hydrocephalus while intracerebral hemorrhage may lead to internal hydrocephalus. The fatty degenerative process of neuroglia, known as encephalodystrophia of the new-born is, in the majority of cases, due to birth trauma. Sigmund asserts that any one who has had occasion to examine postmortem a large number of recently born infants cannot fail to be impressed by the intense hyperemia not only of the skin but of the cerebral meninges and the brain tissue. He is convinced that many deaths during delivery are the consequences of minute hemorrhages and diapedesis occurring from birth trauma.

Therapeutic Influence of Musical Rhythm on the Parkinsonian Motor Sequelae of Epidemic Encephalitis.—Meyer, basing his opinion on four cases, believes that motor disturbances of this nature can be benefited by cultivating a sense of rhythm in the patients through music. One of the patients, showing the purely lethargic form of epidemic encephalitis, who spent his days in complete inactivity, as if shackled, but without other sure symptoms of the parkinsonian syndrome, roused himself toward evening and danced to mandolin music. Another, with pronounced parkinsonian symptoms, was tested with marches, played on a mouth organ, to which he walked faster and with better carriage than otherwise, and also used his arms better. He had been a soldier only for six months and had never been specially interested in music. The other two patients responded similarly to musical rhythm. Hauptmann and Steiner, who lately have made similar experiments, believe that encephalitic motor disturbances are not only amenable to influences from without but also from within the patient, and suggest that the awakening of sex feelings may be of therapeutic value.

The Therapeutic Effect on Sepsis of Local Inflammation and Abscess Formation.—Rolly reports that in a case of severe puerperal sepsis, by mistake, twenty-four subcutaneous (instead of intravenous) injections of a silver salt had been made in the lower extremities. Inflammation and abscesses developed around the needle holes. The recovery of this apparently moribund patient led him to repeat the experiment in another case of the same nature. Pure cultures of ordinary streptococci were found in the blood and pus of the abscesses. The streptococci disappeared from the blood in seventeen days, and the patient recovered. Later he inoculated mice to induce pneumococcus bacteremia and found that these animals survived longer when inflammation and abscesses could be produced by subcutaneous injection of a silver salt or turpentine. The general reaction to the local inflammatory process may be beneficial or the reverse. Hence he advises a fixation abscess only as a last resort.

Untoward Effects of Bismuth Treatment for Syphilis.—Görl and Voigt caution against the use of bismuth when there is disease of internal organs, especially of the heart. Their experience has shown that even a dose of 0.4 gr. is liable to induce menacing weakness and irregular heart action.

Cultivation of Tissues in Study of Typhus.—Krontowski and Hach have long been experimenting on the behavior of typhus virus in tissue scraps and in explantation. They used the leukocytes of typhus patients, scraps of skin from the petechiae, the brain tissue, or the spleen or brain tissue of guinea-pigs with experimental typhus. Among the points learned in experiments on 205 guinea-pigs is that the virus in spleen tissue kept at body temperature under aseptic conditions loses its potency so rapidly that after the second day typhus fails to develop after inoculation with it. But cultivation of typhus spleen tissue by the explantation technic for three or five days, allowed the persistence of virulence, and guinea-pigs inoculated with the cultures all developed typical typhus. Hence the cultivated tissue evidently contained the virus. The explantation technic opens a new field for research on the experimental biology and morphology of typhus virus.

The Tracheal Catheter in Transmission of Syphilis from the New-Born.—The maternity nurse developed a primary syphilitic lesion in the tonsil after aspirating the mucus and fluid from the throat of a new-born infant. Sigwart says that he has been able to find in the literature only one analogous case (Wigglesworth, 1884) with the tracheal catheter.

Mosquitoes and Malaria in Baden.—Eckstein emphasizes the fact that the habits of the anopheles and especially their fondness for warmth determine whether they attack domestic animals or man. He ascribes the prevalence of malaria in Baden during the last century in large part to the fact that the barns were so cold that in severe weather the cow and horse were taken into the house. Nowadays, the barns are built to keep out the cold, and they are often warmer than the house. The thermophile *Anopheles maculipennis* in particular is numerous in the barns and not in the houses. Eckstein has also noted a difference in the regions where the cattle are kept in the pasture; the mosquitoes stay with the cattle. When the cattle are driven to the pastures in the morning and return to the barns at night, the mosquitoes stay in the barns, and at twilight sally forth hungry. The barns with numerous swallows were found comparatively free from mosquitoes.

Treatment of Women with Myoma.—Nassauer insists that we must not speak of "treating the disease" but of treating the patient. Any disorder in the heart action without manifest cause should suggest possible myoma. If there is much bleeding with a myoma, he advocates vaginal irrigations with water as hot as the patient can bear with her finger, using 2 or 3 liters, the woman reclining. He discusses the pros and cons of curettement, and advises informing the women that the effect of curettement seldom lasts for more than a few months. The circulation in a myomatous uterus is certainly far from normal, and thrombosis and embolism have been observed after curettement. Operative measures may become necessary if the tendency to hemorrhages cannot be arrested or the myoma presses on adjacent organs, and radiation proves ineffectual or is not available. Only a laparotomy should be considered, and the specialists should then decide whether a subserous myoma should be shelled out, leaving the rest of the uterus intact for future pregnancies, or whether the entire uterus should be removed or the vaginal portion retained. Malignant degeneration of a myoma is by no means rare. For this reason, also, women with myomas should be kept under permanent surveillance. In conclusion he emphasizes the beneficial influence of the family physician's advice in dyspareunia, and other sources of worry.

Wiener Archiv für innere Medizin, Vienna

5: 283-604 (Jan. 30) 1923

The Cheynes-Stokes' Syndrome. S. Wassermann.—p. 283.
*Chemistry of Spinal Fluid. Depisch and M. Richter-Quittner.—p. 321.
*Akropachy. Schirmer.—p. 345.
*Indicanemia in Insufficiency of Kidneys. G. Baar.—p. 353.
Leukemia and Leukocytosis. G. Holler and H. Haumeder.—p. 357.
*Percussion of Hilum. O. Haus.—p. 373.
*Carbon Dioxid and Gastric Secretion. Kauders and Porges.—p. 379.
*Blackwater Fever. Barrenscheen and Glaessner.—p. 409.
*Action of Drugs on Blood Sugar. Grossmann and Sandor.—p. 419.
*Pituitary Extract Diuresis in Nephritis. O. Klein.—p. 429.
*Pulsatory Motions of Diaphragm. Hitzenberger.—p. 451.
*Dilatation of Heart. E. Weiser.—p. 473.
Anatomic Basis of Flint's Murmur. H. Elias.—p. 497.
*Carbon Dioxid and Blood Chlorids. Essen et al.—p. 499.
*Treatment of Anemia with Colloidal Metals. B. Aschner.—p. 523.
*Pharmacology of Vegetative Nervous System. R. Hoffmann.—p. 543.
Diastolic Blood Pressure. S. Peller.—p. 553.
Heart After Muscular Exertion. E. Kauf.—p. 567.
*Diabetic Edema. W. Falta.—p. 581.
*Action of Fats on Gastric Secretion of Acid. P. Frank.—p. 591.

Chemistry of Human Cerebrospinal Fluid.—Depisch and Richter-Quittner examined 167 normal and pathologic cerebrospinal fluids. The depression of the freezing point was always greater than that of the serum. Chlorids are almost always higher than in the serum and sometimes far higher. They believe that this is to compensate for lack of colloids. The sugar and total calcium concentration is always lower. The amount of calcium ions was constant, if calcium was present at all. In some of the fluids, calcium was not present, and these patients complained of headaches, as well as those who had an abnormally high calcium concentration.

Akropachia: Pseudohypertrophic Pulmonary Osteoarthropathy.—Schirmer describes and gives microscopic pictures of a case of infantilism, lymphogranulomatosis and purulent bronchitis with typical clubbed fingers. They contained a tissue which resembled an embryonic mucoid tissue.

Indicanemia in Insufficiency of Kidneys.—Baar recommends examination of the blood for indican as an early and reliable sign of insufficiency of the kidneys.

Percussion of Hilum.—Haus confirms Felsenreich's findings of parasternal fields of dulness adjacent to the central dulness in patients with enlarged lymphatic glands at the hilum.

Relation of Carbon Dioxid Tension of Alveolar Air to Secretion of Stomach.—Kauders and Porges found after meals an increase in the carbon dioxid tension of the alveolar air only in persons whose gastric juice contained hydrochloric acid. Since the tension did not change in patients with carcinoma of the stomach, they conclude that the anacidity in carcinoma is primary, and not due to a neutralization of the secreted acid. The low alveolar tension of patients suffering from malignant tumors seems to be due to the cachexia.

Blackwater Fever.—Barrenscheen and Glaessner believe that the difference between an attack of malaria and of blackwater fever is only quantitative. The resistance of erythrocytes during the attacks of malaria is always lowered. If the washed corpuscles of a person with malaria are treated with the serum of another suffering from blackwater fever, the osmotic resistance of the corpuscles is lowered. The serum has no action on normal corpuscles.

Action of Drugs on Blood Sugar.—Grossmann and Sandor found that atropin lowers the blood sugar level in some instances (sometimes in diabetes) for about a day. They made also tests with epinephrin and pilocarpin.

Pituitary Extract Diuresis in Nephritis.—Klein found four different types of diuresis following injections of pituitary extracts. The action is protracted and less marked in nephritis, but shows differences especially between edematous patients and others without tendency to edema.

Pulsatory Motions of Diaphragm.—Hitzenberger studied roentgenologically the pulsatory movements of the diaphragm. In healthy persons and in cardiac troubles without tricuspid insufficiency or auricular fibrillation, there is in the right half a presystolic movement upward and quicker systolic movement downward. In tricuspid insufficiency (positive venous pulsation of liver) the systolic movement is upward. Pleuropericardial adhesions in the right angle between liver and heart cause a quick systolic movement upward.

Dilatation of Heart.—Weiser finds that small hearts with thin walls and lack of tendency to hypertrophy do not get dilated. Since dilating is a compensatory mechanism, such patients die very quickly if the heart becomes insufficient. The big strong hypertrophic hearts can be repeatedly dilated without having ever caused a deficiency of circulation.

Relation of Carbon Dioxid Tension of Alveolar Air to the Blood Chlorids.—Essen, Kauders and Porges found an intimate relation between the chlorids of the serum and the carbon dioxid tension of the alveolar air. An increase in the serum chlorids is followed by a decrease of the carbon dioxid tension, which is an indicator of the carbonates of the serum. Prolonged ingestion of chlorids or carbonates causes the expected change in the alveolar air. With emphysema, there is high carbon dioxid tension and low chlorids. Nephritics with hyperchloremia have a low carbon dioxid tension. In edemas of other than cardiorenal origin, these relations were not always present.

Treatment of Anemias with Colloidal Metals.—Aschner had no therapeutic results with intravenous injections of a colloidal preparation of iron in nine different cases of anemia. The iron content of the preparation is too low to stimulate erythropoiesis or to block the reticulo-endothelial system. It is besides questionable whether even a real blocking would inhibit a pathologically increased hemolysis.

Pharmacology of the Vegetative Nervous System.—Hoffmann injected pilocarpin and epinephrin in different combinations. He found that the effect depends chiefly on the state of the autonomic nervous system produced by the drug used first. The glycosuric action of epinephrin was enhanced by the subsequent injection of pilocarpin, but inhibited, if pilocarpin was injected first.

Diabetic Edema.—Falta reports a case of diabetes with formation of edema during a diet containing sodium bicarbonate, but free from chlorids. Potassium bicarbonate caused loss of edemas. The urine during the diuretic period contained very little chlorids, and the edema itself had only 0.151 per cent. of chlorin. The depression of the freezing point was normal and caused probably by the bicarbonates. Acidosis cannot be the main cause of diabetic edema, since it is present even in patients who have lost their acidosis.

Action of Fats on Gastric Secretion of Acid.—Frank found that fat taken before a meal lowers the acidity of the gastric juice. If taken during the meal, it does not change it, or increases it if the fat is decomposed.

Wiener klinische Wochenschrift, Vienna

36: 81-100 (Feb. 1) 1923

Structure and Function of Kidneys. E. Schwarz.—p. 81. Conc'n p. 101.
Identity of Virus of Herpes and Encephalitis. Schnabel.—p. 84.
*Action of Gelatin on Bacteriophages. O. Nakamura.—p. 86.
Heart Disease and Trauma. J. Reder.—p. 87.
*Treatment of Dysentery with Sodium Sulphate. T. Hausmann.—p. 89.
Medicolegal Aspects of Cremation. A. Haberda.—p. 89.

Action of Gelatin on Bacteriophages.—Nakamura confirms the inhibitory action of gelatin on bacteriophages, which, however, does not destroy them. He found that sugar has a similar, though smaller influence. Other colloids (gums) had a very strong inhibitory action.

Treatment of Dysentery with Sodium Sulphate.—Hausmann believes that nobody would die from dysentery if large amounts of sodium sulphate (15-20 gm. of the dry salt) were given in time. Sodium sulphate reduces the tendency to spasm of the intestine, and is therefore preferable to magnesium sulphate.

Casopis lekaruv ceskych, Prague

62: 109-136 (Feb. 3) 1923

*Preservation of Milk by Hydrogen Peroxid. G. Kabrhel.—p. 109.
*Immunity in Experimental Anthrax. J. Lukes.—p. 116.
*Refractometry of Serum. J. Becka.—p. 120.
*Pathogenesis of Meningitis. R. Pollak.—p. 122.

Preservation of Milk by Hydrogen Peroxid.—Kabrhel advises against legal sanction of the use of a proprietary preparation containing sodium perborate for preservation of milk. The oxidizing and reducing power of the liberated oxygen may hurt the vitamin content, and the alkali may camouflage the acid fermentation of the impure milk, which would otherwise lead to coagulation, a natural warning sign against the use of it.

Immunity in Anthrax of Guinea-Pigs and Rabbits.—Lukes found the same severity of infection by anthrax bacilli when he inoculated a rabbit intravenously with precautions to avoid infection of subcutaneous tissue, or without these precautions. He attributes this result to the great virulence of the strain he used. Intracutaneous and percutaneous inoculation of guinea-pigs and rabbits with Pasteur's anthrax vaccine caused the death of some of the animals, and did not protect sufficiently those that survived.

Refractometry of Serum.—Becka found that diluting serum with normal saline causes changes in refraction, which do not correspond with the theoretical values. These differences are maximal in a certain degree of dilution. If the serum is mixed slowly with the salt solution, the refraction is less than if mixed quickly. The refraction of the diluted serum diminishes usually after a few (eighteen) hours.

Pathogenesis of Meningitis.—Pollak finds that bacteriologic examination of persons who have been in contact with cerebrospinal meningitis has not much value. A strict isolation is not necessary.

Tohoku Journal of Experimental Medicine, Sendai

3: 305-657 (Dec. 30) 1922. English and German Edition

*Anticoagulants and the Oxygen Capacity of Blood. M. Yamakita.—p. 305.
*Lipoidemia and Xanthoma. S. Yamakawa and M. Kashiwabara.—p. 317.
Changes of Agglutination of Bacilli of Mice Typhoid. T. Konno and K. Sakai.—p. 333.
Relations Between Agglutination and Group Agglutination. Sakai.—p. 341.
*Hyperchloridemia in Asphyxia. K. Yamakami.—p. 352.
Induced Hyperglycemia and Glycosuria in Cats. S. Morita.—p. 363.
*Research on Gaseous Metabolism and Blood Flow in Brain. M. Yamakita.—pp. 414-566.
Internal Secretion and Gaseous Exchange of Blood. Yamakita.—p. 567.
*Oxygen Administration in Anoxemia. M. Yamakita and T. Kato.—p. 608.
*Alcohol Precipitate of Serum as Antigen. Ryo Tsukasaki.—p. 653.

Anticoagulants and the Oxygen Capacity of Blood.—Yamakita found that large amounts of potassium oxalate and sodium citrate inhibit the complete laking of blood, and cause by it lower values of the oxygen capacity.

Lipoidema and Xanthoma.—Yamakawa and Kashiwabara describe a patient suffering from multiple xanthomas. His serum contained about three times the usual amount of cholesterol and neutral fat and a little more than the normal amount of phosphatids. The tumors contained much cholesterol and its esters, and only traces of phosphatids. They believe that xanthomas should be classed rather among the disturbances of metabolism than among tumors.

Hyperchloremia in Asphyxia.—Yamakami found an increase in the blood chlorids (frequently over 10 per cent. of the original value) and a small decrease in the chlorids of muscles in suffocated animals. The probable explanation lies in an irritation of the center.

Gaseous Metabolism and Blood Flow in Brain Under Narcosis and Hypnotics.—Yamakita describes the method and results of his studies on rabbits. In ether narcosis the cerebral blood flow and oxygen consumption increase in the stage of excitation, decrease (oxygen over 50 per cent.) during the narcosis and increase after it. Chloroform decreases

the oxygen consumption in spite of the frequently augmented blood flow. Yet in the reparatory stage the blood flow decreases. Magnesium decreases the oxygen consumption strongly. Injection of calcium stops this narcosis but the gaseous exchange remains low. Chloral hydrate diminishes the oxygen consumption, but does not diminish the blood flow. The changes of cerebral activity, blood flow and oxygen consumption under the influence of narcotics and hypnotics are not always parallel. These experiments brought no evidence for a causal relation between the oxygen consumption and narcosis. Injection of strychnin, caffein and cocain increased very strongly the blood flow and especially the oxygen consumption. Antipyrin acted in a similar way. Cold and hot applications on the head increased, usually, the oxygen consumption of the brain. The blood flow was often diminished by cold, while hot applications on the head always increased the blood flow. The rate of the blood flow influences the oxygen consumption of the brain more under normal conditions, than during activity of the brain. The average amount of oxygen used per minute per gram of brain of rabbits is 0.0944 c.c. which is more than in other organs. The average difference between the oxygen content of the arterial and venous blood of the rabbit brain was 6.92 c.c. per hundred c.c. of blood in 185 animals.

Anoxemia and Effect of Oxygen Administration.—Yamakita and Kato found in ten normal adults and several patients with normal heart and lungs, the "oxygen unsaturation" of the blood between 0.85 and 1.85 c.c. per hundred c.c. of blood. The unsaturation was more marked in some cases of pulmonary tuberculosis, pleurisy and especially in seropneumothorax, but not in chronic bilateral processes. Oxygen inhalation diminished the unsaturation in these cases as well as in healthy persons. Nine cases of heart disease had a distinctly higher unsaturation. Oxygen inhalation relieved the condition only in cases, which were not decompensated. Experiments on animals gave similar results and demonstrated the inefficacy of oxygen inhalation in different poisonings, and the favorable action in anoxemic states with an intact ventilating surface of the lungs. This effect is only temporary. Ten to thirty seconds after withdrawal of oxygen, the unsaturation rose to the previous level.

Alcohol Precipitate of Serum as Antigen.—Tsukasaki was able to immunize animals with an emulsion of the dried precipitate of serum. The powder preserves its antigenic property for a long time.

Finska Läkaresällskapets Handlingar, Helsingfors

65: 1-149 (Jan.) 1923

The Pasteur Centennial. R. Tigerstedt.—p. 1.
*Polyarthritis and Heart Disease. R. Ehrström and J. Wahlberg.—p. 15.
*Rheumatic Endocarditis. A. Krogius.—p. 28.
Familial Aplasia of the Iris. J. G. Lindberg.—p. 38.
Pylorospasm in Infants. B. Sourander.—p. 48.
Attenuated Criminal Responsibility. E. Ehrnrooth.—p. 54.
*Neuroses Following Epidemic Encephalitis. J. Hagelstam.—p. 69.
Balantidium Colitis. M. Savolin.—p. 92.

Polyarthritis and Heart Disease.—The 1,072 cases of heart disease at the Helsingfors medical clinic from 1842 to 1921 have been investigated as to the connection with acute polyarticular rheumatism. Treatment with the salicylates did not begin until 1876, but the proportion of cases with heart complications was not reduced by it. The average has increased from 2 to nearly 4 per cent. since then. The unmistakable influence of the salicylates on the joint process may be merely a chemical sensitizing of the joint itself, without any action on the causal virus. The symptomatic action of the salicylates may be compared to that of iodid and mercury in syphilis. Further analogy with syphilis is seen in Holst's and Poulsson's recent assertions that polyarticular rheumatism is not an acute but a chronic disease: The virus persists after the acute phase has subsided, just as in syphilis, and it may overwhelm the organism anew in a recurrent attack of the febrile rheumatism. In the intervals, the virus acts on the heart and nervous system, or the virus may attack the heart first, and a chronic valvular defect develop before the case is explained by symptoms from the joints. The heart disease and the chorea from the virus attacking the nervous system usually develop without fever and are not influenced by salicylate treatment, and are not even warded off by it. Ehrström and Wahlberg regard the heart involvement as the main feature of the disease; the joint processes are merely episodes in its course. And we are powerless in respect to the main feature of the disease, the carditis.

Is Endocarditis a Complication or the Primary Localization of Febrile Rheumatism?—Krogius presents arguments to prove that the virus locates first in the heart valves, and that minute emboli from this source are swept to the joints and elsewhere from time to time. This explains the course, the tendency to recurrence of the polyarticular phase, and the chorea phase when the virus attacks the nervous system. He believes that more careful investigation in typical polyarticular rheumatism would reveal the primary heart lesion in these cases, both during life and at necropsy. It is possible, he adds, that gonorrheal arthritis may be secondary to a similar endocarditis of gonococcus origin. He has no direct proof to offer, and anticipates vigorous protests from the internists, but reiterates that the pathogenesis of acute polyarticular rheumatism needs revision.

Postencephalitic Neuroses. — Hagelstam describes four cases of neuroses in which the differential diagnosis was difficult. They were the only cases of the kind observed in ninety cases of epidemic encephalitis in 1920 and 1921. The ages in the neurosis cases ranged from 10 to 53; all were in males. Hysteria had been assumed at first. The psychogenic character of many of the symptoms, their periodic recurrence and the benefit from psychotherapy are main features of the cases. Hagelstam calls attention further to the presence of certain symptoms which we know from other forms of encephalitis. This suggests the necessity for seeking an organic basis in all cases of neuroses.

Ugeskrift for Læger, Copenhagen

85: 105-120 (Feb. 15) 1923

*Obesity. E. E. Faber.—p. 105.
*Apparatus for Demonstrating Mechanics of Throat. W. Talvi.—p. 109.
*Diagnosis of Cancer in Colon. T. E. Hess Thaysen.—p. 110.
Experiences with Toxin-Antitoxin. C. C. C. Vogel.—p. 111.

Obesity of Endogenous and Exogenous Origin.—Faber explains how the physiologic balance requires that the calory content of the food must equal the basal metabolism plus the work of digestion, plus the amount of energy used up in muscular work. He expresses this in the equation $C = B + D + M$. War experiences and research since have confirmed the view that the intake of calories is often above the physiologic requirement, and the superfluous calories throw an extra task on the organs which regulate oxidation and radiation of heat. If they are unequal to this task, the superfluous nourishment is deposited as fat. The metabolic anomaly in this endogenous obesity may not affect the basal metabolism, but thyroid treatment may stimulate the organs involved and lead to the throwing off of the fat deposits. Another point he emphasizes is that the organs involved (endocrine glands) may become exhausted from their extra work, so that even when the intake of calories is reduced very low they still are unable to cope with them. Obesity is rare in the young because their endocrine glands are so active that they can handle an excess of work. In exophthalmic goiter, the abnormally active thyroid diverts the energy to tremor and sweating, rather than to accumulation of fat. The tendency to accumulation of fat increases as the endocrine system grows less active with advancing years. This is especially manifest in women at the menopause although the basal metabolism is normal. He remarks in conclusion that even the most pronounced cases of *endogen adipositas* may show no benefit from thyroid or other treatment until the intake of food is materially reduced. This confirms the almost invariable blending of the endogenous and exogenous types.

To Demonstrate Movements in Larynx and Pharynx.—Talvi's illustration shows the apparatus he has devised for amphitheater teaching.

Diagnosis of Cancer in the Colon.—Thaysen asserts that a contrast meal is of no use for the diagnosis of a stricture in the colon. Only a contrast enema is instructive.

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THE THERAPEUTIC USE OF TRYPARSAMID IN NEUROSYPHILIS*

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In the latter part of 1919, we entered on a study of the treatment of syphilis of the central nervous system with a view to the development and use of new drugs. At the suggestion of Dr. Wade H. Brown, we began our study with tryparsamid, the sodium salt of *N*-Phenyl-glycineamid-*p*-arsonic acid, $C_6H_4(NHCH_2CONH_2)\cdot(AsO\cdot OH\cdot ONa)$, which was first made by Jacobs and Heidelberger [1] in 1915. The biologic action of this substance has been studied experimentally by Brown and Pearce [2] in normal animals and in animals infected with trypanosomes and with the spirochetes of relapsing fever and of syphilis. Tryparsamid had also been used in a comparatively small group of patients for the treatment of syphilis other than that of the central nervous system, first by Louise Pearce and later by Keidel and Moore; and at the time our investigation began, it was about to be tested by Dr. Pearce in the treatment of human trypanosomiasis.[3]

From the work which had been done, it was known that single doses of the drug as large as 5 gm. could be administered with safety except for the occasional occurrence of transient symptoms of amblyopia. It had also been found that old or indolent lesions of syphilis disappeared promptly under treatment with tryparsamid, that patients showed a marked improvement in physical condition, and that a positive blood Wassermann reaction could be reduced to negative. Early primary and secondary lesions, on the other hand, responded less favorably, so that the employment of the drug in this class of patients was discontinued.[4]

The introduction of tryparsamid into the therapy of syphilis was not based primarily on its spirocheticidal action, which was comparatively feeble, but on certain unusual features of toxicologic and therapeutic action observed in experimental animals, such as the promptness of recovery from toxic injury, tolerance to repeated doses, a marked tonic effect, and the ability of the drug to induce resolution and healing of syphilitic lesions, even in the presence of actively motile spirochetes, but without increasing the liability to the occurrence of a generalized disease.

There were additional facts to recommend the use of this drug in the treatment of syphilis of the central nervous system. From the results obtained by the administration of toxic doses of tryparsamid to laboratory animals, there was abundant evidence to show that the drug possessed an affinity for the tissues of the central nervous system, and it appeared that, with proper regulation of dosage, the difficulties of penetration hitherto experienced with arsenicals and other drugs might be overcome and that the affinity of the drug for these tissues might be utilized for therapeutic purposes. This had been accomplished in rabbits with trypanosomiasis, in which there is a distribution of organisms and of lesions in the central nervous system comparable to those of cerebral syphilis in man.

Statistics show that approximately 5 per cent. of persons with syphilis later develop paresis. It is now well known that from 30 to 40 per cent. of all syphilitic patients show positive spinal fluid findings at some time in the course of the disease; yet, from clinical experience, we know that the incidence of paresis is far below 40 per cent. Therefore, many of these cases must be arrested at some time in the course of the disease and paresis spontaneously prevented. In such instances, it seems permissible to hypothecate a defensive mechanism of some kind which protects nervous tissues, a reaction which either makes the cell more resistant or the toxins less destructive: in either event, a protective agency that is endogenous. Such speculation allows for the conception of remedies that might not be directly inimical to the infecting organism, but act as stimulants to such a natural defensive mechanism.

Moore [5] has recently pointed out that the relative infrequency of clinical neurosyphilis in women, as compared with men, may be due to the incidence of pregnancy. It has long been known that pregnancy modifies the reaction to syphilitic infection. It may be that physiologic processes incident to pregnancy tend to prevent the disease.

Dunlap [6] states that the treatment of general paresis may not be absolutely hopeless; that some of the spirochetes at least are probably accessible, and that we may need a modified therapeutic agent different from that which succeeds with the ordinary syphilitic strains.

The tryparsamid used in our work has been furnished us by the Rockefeller Institute; and Drs. Brown

* Tryparsamid is described under New and Nonofficial Remedies in this issue. The substance is not yet offered for sale.

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1. Jacobs, W. A., and Heidelberger, M.: J. Am. Chem. Soc. **41**: 1584, 1917; J. Exper. Med. **30**: 411 (Nov.) 1919.
2. Brown, W. H., and Pearce, Louise: J. Exper. Med. **30**: 417, 437, 455, 483 (Nov.) 1919; **33**: 193, 1921.
3. Pearce, Louise: J. Exper. Med. (supplement) **34**: 1 (Dec.) 1921.
4. Personal communication to the authors.
5. Moore, J. E.: Studies in Asymptomatic Neurosyphilis: Apparent Influence of Pregnancy on Incidence of Neurosyphilis in Women, Arch. Int. Med. **30**: 548 (Nov.) 1922.
6. Dunlap, C. B.: Spirochetes in General Paralysis, Arch. Neurol. & Psychiat. **8**: 589 (Dec.) 1922.

and Pearce have placed at our disposal all of their experience with the compound.

The drug is a white, crystalline solid, extremely soluble in water. It is odorless and tasteless and possesses practically no local irritating action. On intravenous injection of a 50 per cent. solution in the anesthetized animal, no observable changes are noted in the blood pressure or respiration, and the drug is remarkably inert as to immediate effects.

We have confirmed many of the laboratory findings of Brown and Pearce and have studied the rate of excretion of tryparsamid in man and animals. We have made a study of the effect of tryparsamid on the retina in animals and have studied the clinical use of the drug in neurosyphilis and other forms of late syphilis, but the present report deals in the main with cases in which there was involvement of the central nervous system. The laboratory findings and the details of the clinical work will be published elsewhere, and we desire to present herewith merely a statement of the therapeutic results which we have thus far obtained with the drug.

TYPE OF CASES

A list of the type of cases treated is shown in Tables 1 and 2. Table 1 shows patients committed as insane, and Table 2 shows the noncommitted ambulatory patients. Most of our patients were insane and the cases were diagnosed by us as paresis. In view of the rather generally held conception of paresis, especially from the standpoint of the futility of treatment, it seems desirable for us briefly to define this disease. It is our clinical experience, largely borne out by histologic studies, that the demarcation between meningovascular syphilis and paresis is not very clear. Excepting the extremes of these conditions, the transitional point, or mean, is a matter of opinion. We, therefore, have fixed a syndrome which we regard as paresis, preferring to discard entirely this term because its original use was determined in a great measure by a psychotic manifestation. In our work we include under paresis any case of syphilis of the central nervous system that has a certain physical symptom-complex and which is associated with definite mental symptoms of sufficient severity to warrant the conclusion that a psychosis exists. This psychosis may be varied in its symptoms; most common is a general dilapidation shown by a lessened interest and capability, with a proneness to confusion and faulty memory for recent events, associated with an emotional instability bordering on a childlike happiness or simplicity. These placid mental states are frequently interrupted by sharp periods of excitement. In some cases a manic-like picture is seen, but most common and characteristic is a feeling of happiness or well-being. This may be actually expressed or evidenced by conduct and may be inferred from the topic of conversation selected by the patient or his general manner of speech. The carelessness and indifference of the patient relative to his immediate circumstances and the future are also characteristic mental symptoms of paresis. The classical picture of megalomania or delusions of great wealth, great physical strength or great attainment are relatively uncommon today. This is probably due to our recognizing paresis without these expansive ideas that were essential for the picture as recognized years ago. To sum up, in the mental symptoms associated with the physical signs of tremors, disturbed deep reflexes, pupillary anomalies, speech defects, etc., that complete the picture of paresis, most stress would be laid on definite changes in character or personality; mental or intellectual indolence; mild or marked euphoria; memory disturbances; confusion; excitement; delusions; hallucinations, etc. In addition to this syndrome, a completely positive serology in both blood and spinal fluid in an untreated case adds the other elements essential for our diagnosis of paresis.

Next in order to the long-standing institutional cases we have included in our series twelve fairly early paretics—patients that were committed because of some serious conduct disorder, regarded and easily recognized as insane by laymen. These cases differed from the first mentioned in that the history of mental disorder rarely extended further back than six months previous to admission. This group comprised, largely, younger adults, and were mostly ex-service men. Their psychotic manifestations were usually quite acute, and in some instances presented a picture of manic excitement. The physical signs, especially tremors and loss of weight, were pronounced. Hyperreflexia was also especially marked. Some of these were cases that in the old days were referred to as fulminating paresis because of great excitement, rapid loss of weight, and death from exhaustion in a matter of one or two months after admission of the patient to a hospital. Quite frequently these cases are mistaken for manic excitement. In this group the pupillary anomalies were but slightly in evidence. In some cases the changes approached the Argyll Robertson type, but rarely was this sign bilaterally present. Usually one found a relative slowness and limited excursion in response to light as compared to the response in accommodation, a condition which might be termed Argyll Robertson-like. In some cases, no pupillary anomalies were found, although most cases manifested some changes, such as irregularity in outline or an inequality or loss of sympathetic dilatation. Tremors were very constant and especially noticeable about the lips and tongue. These were usually made more evident by emotional upset or excitement. Speech incoordination was also very frequent, and, again, intensified by strain and effort at conversation. Among these cases were some that might be regarded as classical from the standpoint of expansiveness. Most of the patients bordered on a euphoric condition. A few were inclined to be depressed or emotionally unstable. In every case the physical and mental symptoms, together with completely positive serologic findings, gave sufficient evidence clearly to warrant the diagnosis of paresis as seen at any hospital for the insane.

It has been a common experience since serologic methods have been widely used to find patients giving all the laboratory findings of paresis without any suggestion of mental disturbances. For such cases we have reserved the term of asymptomatic paresis. Of these, we had fourteen that were entirely free from mental symptoms. Usually these patients sought a physician or a hospital because of a "nervous breakdown." Most of them, knowing of their syphilitic infection, had a well-defined fear that it was active. Among these were also patients that had been treated extensively but were serologically positive when referred to us. In these cases, the physical findings were relatively few or poorly defined. Those usually found were quite active deep reflexes and slight tremors. Headaches and fatigability are frequently early complaints in the history. The general complaints are

of such a character that these cases might easily be passed by with the diagnosis of neurasthenia or psychoneurosis. In such cases, the diagnosis is definite only when the serologic findings are completely positive.

We had in our series five cases of frank tabes dorsalis and five cases of taboparesis.

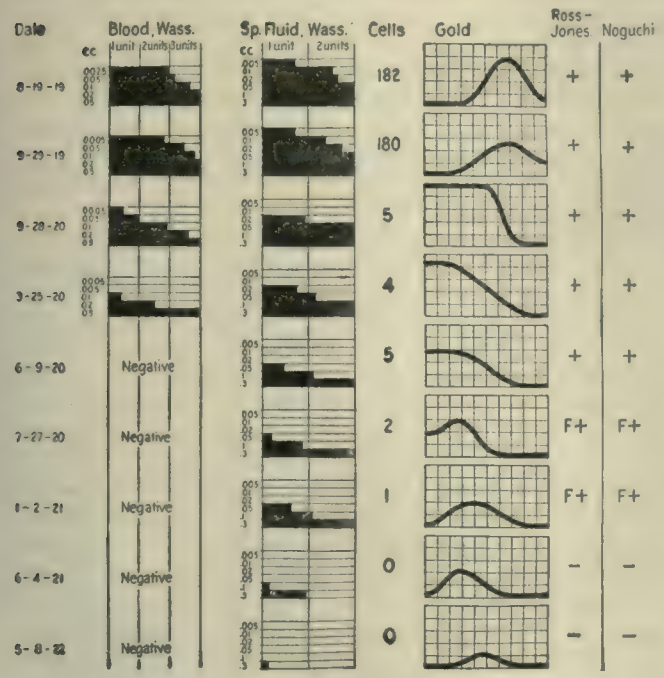


Chart 1.—Observations in a case of manic excitement, later diagnosed general paralysis, committed to the State Hospital for the Insane. Over a period of two years, the patient was given three courses of tryparsamid and five of mercuric salicylate. After nine months of hospitalization, the patient was discharged, as the case was clinically arrested, and has continued to earn a comfortable living, without return of symptoms. The serologic findings, as seen in the last puncture, were completely negative. At the beginning of treatment the patient weighed 142 pounds (64 kg.), and at the end, 176 pounds (78 kg.). In this chart and the accompanying charts, black indicates the degree of Wassermann positivity. The length of the black lines shows the number of units absorbed. All Wassermann tests were made with varying amounts of serum or of cerebrospinal fluid, as indicated. Plus signs mean a positive globulin test. F + indicates a faintly positive reaction; —, a negative globulin test. Numerals in the "Cell" column indicate the number of lymphocytes per cubic millimeter.

We designate another group, under the general heading of syphilis of the central nervous system, as meningovascular syphilis. In this group we include all the cases that are generally referred to as cerebrospinal syphilis. In these the clinical syndrome is headache, ocular palsies, ptosis, dizziness, epileptiform seizures, transient or permanent cerebral focalization, such as spastic paraplegia of the upper or lower extremities, unilateral deafness, paralysis, and atrophy of the tongue with speech disturbances and impairment of deglutition. Insomnia, irritability, loss of ambition and an inability to concentrate are also quite common with a cerebrospinal fluid in which the serologic findings are quite different from those so commonly seen in paresis. In this group the cell count may be normal or greatly above that encountered in paresis. The Wassermann reaction of the spinal fluid is rarely positive in 0.1 c.c., usually requiring from 0.5 to 1 c.c. for a positive result. The colloidal gold test is also fairly characteristic in showing a maximum response in the fourth, fifth and sixth tubes. Of the meningovascular type, we had ten patients.

In addition, we had in our series nine cases that we have designated as late syphilis without central nervous system involvement. These comprise systemic syphilis, general in its character, such as congenital syphilis, cardiovascular syphilis, tertiary skin lesions and gummas. Included herewith were four cases of generalized syphilis in which there had been severe reactions to neo-arsphenamin; one an almost fatal case of dermatitis exfoliativa; another one of severe jaundice.

METHODS

The work began with a study of the action of tryparsamid in late paresis. It was obvious that we could not expect any great clinical improvement in the late cases. In these, the full measure of brain damage in the form of extensive parenchymatous degeneration had been done. Therefore, it was clear that our sole criteria of improvement would be the laboratory findings, which, for this reason, assumed great importance. In the earlier cases, therapeutic efficiency was estimated from the definite demonstrable clinical improvement and the serologic changes. There was first obtained the constant or basal serologic level by a series of examinations of both the blood and the spinal fluid before treatment started. Most of our patients had received treatment at some time prior to our efforts, but in no case had any antisyphilitic treatment been given for six months previous to our initial examinations.

The blood Wassermann test is performed in a special way. We use a serial dilution of blood serum from 2.5 to 50 per cent. Of each dilution, 0.1 c.c. is used in the test. In addition to these varying amounts of serum, we use separately in each test with each dilution one and two units of complement. Preferring unheated serum, we therefore first measure the amount of native complement present in each dilution, and furthermore we measure any anticomplementary reaction that may be present in each of the various dilutions of serum used. The total set-up for one test of a serum comprises twenty test tubes. The final result gives us the minimum amount of serum that will fix both one, two or more units of available complement.

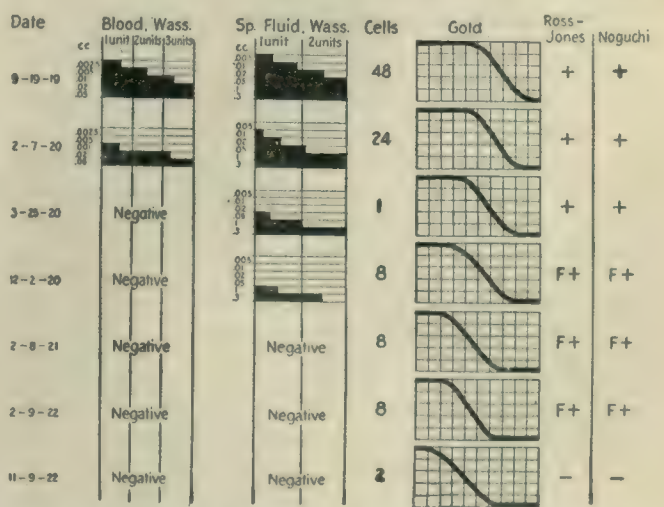


Chart 2.—Observations in a case of late general paralysis committed to the State Hospital for the Insane. Treatment was begun in February, 1920. Only two courses of the drug were given; no treatment was given subsequent to December, 1920. The patient has returned to normal activity and has continued to earn a livelihood without recurrence of the clinical symptoms. The last puncture shows negativity of blood and spinal fluid, cells and globulin, but a persistence of the colloidal gold curve. At the beginning of treatment the patient weighed 165 pounds (75 kg.), and at the end 178 pounds (80 kg.).

In other words, we are able to measure the amount of complement deviated or fixed and the least amount of serum required to fix such measured amount of complement. The other components of the Wassermann

test, as made by us, are acetone insoluble, alcoholic ethereal extract of heart muscle as antigen; freshly obtained sheep cells in 1 per cent. suspension, and anti-sheep hemolysin produced in rabbits. On the day of the test, units are established by careful titration in which the time element employed in the final test is followed. The antigen used must conform to certain fixed requirements. It must not be anticomplementary or hemolytic in 0.5 c.c. of a 20 per cent. emulsion. Its fixing property is such that 0.1 c.c. of a 2.5 per cent. emulsion completely fixes two units of complement in the presence of a 0.03 c.c. pooled positive serum. The dose used in the test is 0.1 c.c. of a 10 per cent. emulsion, or approximately ten units. Incubation at 39° C. is used throughout.

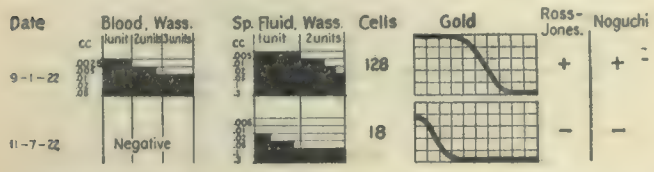


Chart 3.—Observations in a case of asymptomatic paresis in a woman, aged 24, who received one course of eight doses of tryparsamid, 3 gm., and eight doses of mercuric salicylate. The second lumbar puncture was made two weeks subsequent to the last treatment. At the beginning of treatment the patient weighed 128 pounds (57 kg.), and at the end, 133 pounds (60 kg.).

Our spinal fluid examinations consist of a Wassermann titration similar to that already described for blood serum. In addition, a cell count is made on the freshly drawn fluid, and a globulin estimation is made, the Noguchi butyric acid test and the contact test of Ross-Jones being employed. The colloidal gold test is done in accordance with the generally accepted method; that is, serial dilutions of spinal fluid, beginning with a 1:10, then 1:20, 1:40, 1:80, etc., in all, ten tubes being used. To each of such dilutions there is added 5 c.c. of the colloidal gold solution, and the results are read after twenty-four hours.

After a series of examinations for a period of from one to several weeks, our patients were placed on tryparsamid, and later tryparsamid and mercuric salicylate. During the period of treatment, blood specimens were taken every week and lumbar punctures were made usually at intervals of six weeks. After drug administration and during the period of rest, further examinations of a similar character were made.

Before and during treatment, very complete clinical observations were made, including careful physical and mental examination, blood counts, body weight, etc.

We found intelligence tests (Terman's) to be useful in gaging mental improvement. The test level may not necessarily be fixed by intellectual ability as such, but probably is determined also by such factors as interest on the part of the patient, cooperation, emotional states, and such other mental phenomena as contribute to the final intellectual effort of the patient. In employing such tests it is imperative to adhere to a fixed technic and method, or else the results cannot be compared. Renal functional tests were made in order to exclude kidney injury. During the course of treatment and subsequently, many similar detailed clinical and serologic examinations were made. As a consequence we were able to estimate with fair accuracy the changes that occurred.

At the outset we used tryparsamid without any other antisyphilitic medication. We gave the drug in doses of 5 gm. at intervals of one week over a period of from five to six weeks. The patients were then given no further treatment. It was evident from our initial trial that tryparsamid alone has very marked beneficial effects, both on the clinical and on the serologic pictures. After several months under the same clinical observation, it was found that the serologic improvement was not stable. Regression approaching the original findings developed, although clinically the improvement which had occurred seemed stationary. Fearing a clinical relapse, we decided to use mercury in addition to tryparsamid. We then found that the additional use of mercury during the time of tryparsamid treatment resulted in more permanent improvement of the serologic findings as well as apparently more rapid clinical improvement.

When tryparsamid was used in 5 gram doses at weekly intervals, we found that after four or five such administrations, approximately 40 per cent. of our patients complained of dimness of vision. This condition was transient in all except two cases, and disappeared as soon as the drug was stopped. In the two cases in which the condition was persistent, the patients were far advanced paretics who had had abnormal eyegrounds before treatment. In view of this experience, we adopted the rule, which we recommend for general application, that every case to be treated with tryparsamid be subjected to careful ophthalmoscopic examination, and that in any case showing retinal changes the drug be used with great caution. Except for the appearance of amblyopia, 5 gram doses were very well tolerated by all. We have given a patient weighing 90 kg. as much as 8 gm. of tryparsamid at one injection without any untoward manifestations. In view of the eye symptoms developing with 5 gram dosage, we began with much smaller doses and gradually increased. By this method, we found that a dose of 3 gm. of tryparsamid, given weekly, yields the therapeutic effect of the drug, and during the period of more than one year we have at

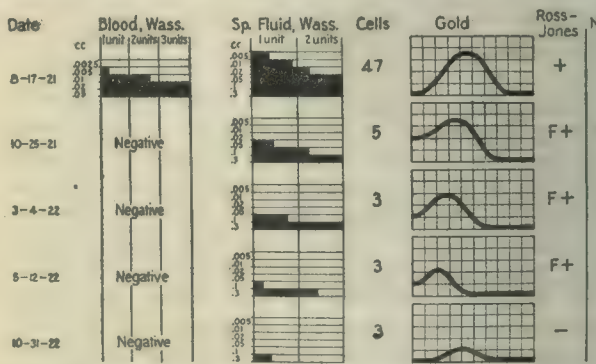


Chart 4.—Observations in a case of meningovascular syphilis in which four courses of tryparsamid and mercury were given, each course consisting of eight doses, with rest periods of six weeks. The last lumbar puncture was made one month subsequent to the final treatment. At the beginning of treatment the patient weighed 148 pounds (67 kg.), and at the end, 178 pounds (80 kg.).

no time observed any retinal disturbances or any other untoward manifestations.

Our practice during the last year has been to dissolve 3 gm. of tryparsamid in 10 c.c. of sterile freshly distilled water, and to inject the total amount intravenously. This solution is given at intervals of one week and for a period of eight weeks. At the same time, mercuric salicylate is administered intramuscularly in 1 grain doses. The mercury is given three days before the tryparsamid and a total of nine such injections

alternated with the eight injections of tryparsamid comprises a course. It has then been our practice to give the patient a rest period of from five to eight weeks, when a second similar course is repeated. After this second course and a period of rest, if there is continued evidence of activity, or the case is still serologically positive, a third course is given.

RESULTS

With few exceptions, all of our patients have remained under our clinical observation and a large number have had a complete serologic examination made recently.

Of the forty-two far advanced paretic patients treated, twenty-one have been discharged from the hospitals and are working. In the twelve earlier cases and relatively acute, extremely agitated type of paretic, our results have been most pronounced. Seven patients have fully recovered their normal mentality and have been discharged and are earning their livelihood. The remaining five patients are mentally in condition to earn their livings; but, on account of serologic findings they have not been discharged.

months to one year. Such a definite and decided change in the course of paresis is, in our experience, extremely rare among untreated cases.

Of the total of fifty-four cases of paresis studied, twenty-eight patients have been discharged from the hospitals and are holding positions and earning a livelihood for themselves and their families for periods ranging from six months to two years.

It should be noted that tryparsamid has a definite effect on nutrition. The majority of our patients have made a decided gain in weight, and their general state of health has markedly improved. This phase of the action of the drug cannot be overlooked, especially in patients in a poor state of nutrition. These patients on the average show a gain of weight of about 20 pounds (9 kg.).

Of the ten cases of meningovascular syphilis treated, the blood Wassermann reaction became negative, in eight and was mildly positive in two. The spinal fluid serologic findings became negative in four of the cases, improved in five, and was unchanged in one case.

The effect of treatment from the clinical and serologic standpoints is summarized in the accompanying

TABLE 1.—*Summary of Results in Patients Committed as Insane*

Classification	Clinically: Arrested and Working	Clinically: Improved	Clinically: Unimproved	Blood Wassermann Reaction: Became Negative	Blood Wassermann Reaction: Mildly Positive	Blood Wassermann Reaction: Unchanged	Spinal Fluid: Wassermann	Spinal Fluid: Cell	Spinal Fluid: Globulin	Spinal Fluid: Colloidal Gold	
Paresis, late (42 cases)	21	4	17	80%	17%	3%	30% 54% 16%	50% 50% —	34% 52% 14%	12% 48% 40%	Negative Reduced Unchanged
Paresis, early (12 cases)	7	5	—	84%	16%	—	40% 52% 8%	72% 28% —	56% 44% —	24% 68% 8%	Negative Reduced Unchanged
Taboparesis (2 cases)	1	1	—	100%	—	—	50% 50% —	100% — —	50% 50% —	50% 50% —	Negative Reduced Unchanged
Tabes (1 case)	1	—	—	100%	—	—	100% — —	100% — —	100% — —	100% — —	Negative Reduced Unchanged
Meningovascular syphilis (2 cases)	2	—	—	100%	—	—	50% 50% —	100% — —	50% 50% —	50% 50% —	Negative Reduced Unchanged
Generalized syphilis (2 cases)	2 (Both patients suffering from acute alcoholic psychosis.)	—	—	100%	—	—					

TABLE 2.—*Summary of Results in Noncommitted Ambulatory Cases*

Classification	Clinically: Arrested	Clinically: Improved	Clinically: Unimproved	Blood Wassermann Reaction: Became Negative	Blood Wassermann Reaction: Mildly Positive	Blood Wassermann Reaction: Unchanged	Spinal Fluid: Wassermann	Spinal Fluid: Cell	Spinal Fluid: Globulin	Spinal Fluid: Colloidal Gold	
Paresis, asymptomatic (14 cases)	13	1	—	84%	16%	—	42% 51% 7%	77% 23% —	56% 44% —	28% 72% —	Negative Reduced Unchanged
Taboparesis (3 cases)	3	—	—	67%	33%	—	33% 67% —	67% 33% —	33% 67% —	— 67% 33%	Negative Reduced Unchanged
Tabes (4 cases)	3	1	—	100%	—	—	25% 75% —	75% 25% —	25% 75% —	— 100% —	Negative Reduced Unchanged
Meningovascular syphilis (8 cases)	7	1	—	75%	25%	—	37% 50% 13%	50% 50% —	50% 50% —	37% 50% 13%	Negative Reduced Unchanged
Generalized syphilis (7 cases)	7	—	—	42%	29%	29%					

This brings up for consideration a so-called characteristic of paresis which is so frequently offered as an explanation for response to any form of treatment; that is, the so-called "remission." Our experience with paresis in all its stages has been large and spread over a considerable number of years. We cannot, in the light of this experience, subscribe to the oft-repeated statements of the frequency of remissions in paresis; that is, if one is to regard as a remission the complete disappearance of all mental symptoms and a return to fairly normal mental activity over a period of six

tables. We present four charts to illustrate in detail the effect of treatment on the serologic findings. We found that tryparsamid alone altered the blood Wassermann reaction in more than 80 per cent. of the cases treated. Some cases became absolutely negative, as previously stated. However, when mercury was used, together with tryparsamid, the blood Wassermann reaction was more promptly altered. In nearly every case so treated there was a demonstrable change in the direction of negativity. Some cases were never made completely negative.

The spinal fluid Wassermann reaction was favorably altered in seventy-eight cases. In thirty-two cases the spinal fluid became completely negative—that is, complete hemolysis with 0.5 c.c. of fluid and one unit of available complement. In fifty-four cases the lymphocyte count was reduced to normal range. Forty cases showed negative globulin tests after treatment. The colloidal gold test was favorably affected in sixty-eight cases. The changes in this reaction followed the order frequently observed when syphilis of the central nervous system is effectively treated. The initial paretic curves would change and become more of the meningovascular type. Eventually this response would be changed, and in eighteen cases the reaction became negative. Of the total number of cases treated in which there were completely positive serologic findings in the spinal fluid, eighteen became negative in all phases of spinal fluid serology.

From our present experience we recommend this method of treatment in properly selected cases: The tryparsamid should be used in doses of 3 gm., dissolved in sterile freshly distilled water, sufficient to make approximately a 30 per cent. solution; that is 3 gm. dissolved in 10 c.c. of water. This solution is given intravenously at intervals of one week and for a period of eight weeks. At the same time, mercuric salicylate should be administered intramuscularly in 1 grain doses. The mercury should be given three days before the tryparsamid, and a total of nine such injections with eight of the tryparsamid should comprise a course. After such a course has been given, we believe that a rest period of from five to eight weeks is good practice, when a second course similar to the first is repeated. After the second course and after a period of rest, if there is still evidence of clinical activity or the case is still serologically positive, a third course should be given.

We have had four patients on weekly injections of 3 gm. of this drug over a period of six months without a rest period, during which time careful kidney function tests were made, and at no time was there any evidence of renal derangement.

From our present experience we recommend the use of tryparsamid and mercury in cases of neurosyphilis and believe that this combination is more effective in paresis than any other measures now in use. The beneficial effects are especially striking in early paresis. We also recommend that this drug combination can be used advantageously with patients that cannot take the other arsenicals used in the treatment of syphilis. This combination is also recommended for trial in cases that are Wassermann fast. Owing to the absence of any untoward reactions and the conviction that this method of treatment is less drastic than arsphenamin and neo-arsphenamin, we recommend its use in cases of late syphilis in patients past middle age. Generally, this type of case must be more gently handled than younger patients, and we believe that this combination can be advantageously used for patients that might be very seriously damaged by arsphenamin.

Finally, we recommend the use of these drugs in cases exhibiting a poor state of nutrition, as tryparsamid has a definitely favorable effect on the nutrition.

In the use of tryparsamid it is imperative that a very complete physical examination be made, especially of the eyegrounds. Furthermore, that any case under treatment should be watched carefully for retinal changes and the patient so questioned as to bring out any disturbance in vision. It is, of course, important not to suggest symptoms to the patient; but if there is any evidence of a visual disturbance, the drug should be immediately withheld.

SUMMARY

Tryparsamid and mercuric salicylate, given according to the method herein described, is especially effective in early paresis and other forms of neurosyphilis. In our experience, it is more effective than any other form of treatment used.

We also recommend its trial in cases that are "Wassermann fast" and in syphilitic patients showing a poor state of nutrition and those beyond middle age.

Tryparsamid, when employed in dosage of 3 gm., produces no local or general symptoms, either immediate or late, and can be used to advantage in cases in which the patient cannot tolerate other arsenicals.

Clinical and serologic improvement in early and violent cases of paresis is extremely striking. The recovery or improvement is not absolutely stable; but the use of mercuric salicylate with the tryparsamid tends to stabilize the improvement. Some of the cases, after a period of two years, again show serologic activity, although clinical improvement has continued without change. The attitude of the patient toward this entire method of treatment is such that continued treatment and repeated courses are taken without complaint, and, indeed, with cooperation.

Finally, we desire to emphasize the fact that tryparsamid possesses the potentiality of injuring the optic tract and should not be used in cases showing degenerative changes in the retina.

THE PRECIPITIN TEST IN THE DIAGNOSIS OF SYPHILIS*

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Meinicke,[1] in 1917, and Sachs and Georgi,[2] in 1918, reported the practical application of the precipitin test to the diagnosis of syphilis. They claimed that the results were as accurate as those obtained by a carefully performed Wassermann test, and further that frequently the blood from a known syphilitic which gave a negative Wassermann reaction would give a positive precipitin reaction. Within the four years following this announcement, these results were confirmed by many reports both here and in Europe.

The technic as followed by Sachs and Georgi is much simpler than that of the Wassermann test, since the precipitin test requires only patient's serum, antigen and salt solution. The disadvantage of the Sachs-Georgi technic is that it requires two incubation periods of about twenty hours each during which bacterial growth may take place, producing a cloudiness resembling that observed in a positive precipitin test.

Recently, Kahn[3] has offered improvements to the technic obviating those objections and at the same time rendering the test more simple. The antigens used by Kahn are carefully prepared extracts of dried heart muscle, and are similar, except in the percentage of

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1. Meinicke, E.: Berl. klin. Wohnschr. **54**: 613, 1917.
2. Sachs, H., and Georgi, W.: Med. Klin. **14**: 805, 1918.
3. Kahn, R. L.: Simple Quantitative Precipitin Reaction for Syphilis, Arch. Dermat. & Syph. **5**: 570 (May) 1922; **5**: 734 (June) 1922; **6**: 332 (Sept.) 1922.

cholesterin used, to the antigens which Kolmer [4] recommends in his proposed standard Wassermann technic. In addition to a variation in the antigen, Kahn's method applies the principle that undiluted serum, when mixed with antigen, gives a more prompt and definite precipitin reaction than when the serum is diluted. The technic consists in measuring 0.3 c.c. of inactivated serum into each of three tubes. Into two of these is measured 0.08 c.c., respectively, of each antigen properly diluted. To the third tube is added a like quantity of salt solution as a control. The tubes are vigorously shaken and a preliminary reading is made within a few minutes. The tubes are then incubated for three hours at 37.5 C. before the final readings are made. Strongly positive reactions show a heavy flocculent precipitate, while the weaker reactions show a fine turbidity of minute white particles, either suspended in the serum or settled to the bottom of the tube. Negative serums remain clear, as do the controls.

Since Kahn's announcement, several reports have appeared detailing the results of other workers.[5] All of these tend to the same conclusions: that the precipitin test parallels very closely the results of the Wassermann test, and that occasionally it appears more delicate than that test. Frequently, the serums of known syphilitics, particularly in cases of long standing, that are negative by Wassermann test give a positive precipitin reaction.

Herrold [6] has proposed a modification of Kahn's technic that makes use of the fact, previously noted by Hektoen and others, that in precipitin tests most precise and definite results are obtained if the antigen is not mixed with the serum but is superimposed upon it in a definite layer. When this is done, a positive result is shown by a distinct circle or ring of fine white precipitate at the plane of contact of the two fluids. This ring appears promptly, and if not present after one hour at room temperature, it will not appear later.

Herrold's series of 244 cases, tested in parallel both with Kahn's method and with the Wassermann test, showed absolute agreement in 95.5 per cent. of cases. Serums which gave doubtful results by the Wassermann or by the Kahn test gave definitely positive or negative reactions by the ring test. His technic has the advantages of extreme simplicity, a short period of incubation and sharp definite result. When the same antigen is employed, there is no apparent reason for variation in results between the two methods of performing the precipitin test. The apparent advantages led me to begin the series of parallel tests which are the basis of the present report.

A short trial showed that the results of the precipitin test by the ring method paralleled very closely those of the Wassermann test. The series had not progressed far until it was seen that a greater number of positive results was obtained by the ring method than by the Wassermann test. Frequently, such cases were found to be treated cases of syphilis of many years' duration. Presently, it was noted that lipemic serums having a distinct whitish turbidity would give a positive ring test regardless of the presence or absence of syphilis. This occurred so regularly that we were able to predict that serums having this appearance would, when tested, give a positive ring. The ring in such cases would often be thicker and have a fuzzy surface distinct from the sharp line seen in typical positive tests; but in many instances it was impossible to recognize these false positive reactions by any characteristics. It was at first thought that the false results were due to some quality peculiar to the particular antigen being used. Other antigens were prepared and tested, but the same results followed with each of six different preparations of antigens. When this observation had been confirmed, lipemic serums were thereafter excluded from the tests. However, a number of such cases had been recorded as positive before these observations had been made.

The precipitin test by the ring method was tried on 528 serums, using antigens prepared as directed by Kahn. The Wassermann test on the same serums was performed according to the standard technic proposed by Kolmer,[4] using two antigens, and with incubation at icebox temperature. The results of the ring tests are shown in Table 1. There was absolute agreement in 91.5 per cent. of cases; relative agreement in 2.9, and disagreement in 5.5.

RESULTS OF WASSERMANN TEST IN FOUR CASE GROUPS

An attempt was made to study those cases in which the tests showed disagreement of results. Unfortunately, clinical data with definite reference to syphilis were not obtainable in every case. In those cases coming from the Robert W. Long Hospital or from the City Dispensary, there was no difficulty in securing accurate data. In cases sent in from other sources, often no data were available, or the clinical features were summed up in such statements as "acne," "no history of syphilis" and "arteriosclerosis." The results of such study of cases as was possible are presented in groups according to the results of the Wassermann test.

TABLE 1.—*Results of Wassermann and Ring Tests*

Ring Reactions	Wassermann Reactions: Positive ++++	Positive +++ or ++	Doubtful +, ± or Anti-complementary	Negative
Negative.....	2	3	3	346
Positive.....	131	5	1	25
Doubtful.....	1	1	2	8

GROUP 1.—*Wassermann reaction strongly positive* (four plus). Two cases in this group gave a negative ring reaction. In one, there was a history of two miscarriages, but no other evidence of syphilis. In the other, no clinical data were obtainable. In the 131 cases in which the results coincide, each test may be regarded as corroborative of the other. In the one case in this group with a doubtful ring and a positive Wassermann reaction, there was definite history and clinical evidence of syphilis. I do not feel that a negative or a doubtful precipitin reaction should detract from the import of a strongly positive Wassermann reaction.

GROUP 2.—*Wassermann reaction moderately positive* (three plus or two plus). Three cases in this group gave negative ring reactions. In one, there was paralysis of the external rectus muscle of the eye, with blurring of the optic disk and dizziness, but no other clinical evidence of syphilis, which was probably pres-

4. Kolmer, J. A.: Studies in the Standardization of the Wassermann Reaction: New Complement-Fixation Test for Syphilis Based upon Results of Studies in Standardization of Technic, Am. J. Syph. **6**: 82 (Jan.) 1922.

5. Ide, Sohei, and Smith, G. J.: Comparative Study of Kahn and Wassermann Reactions, Arch. Dermat. & Syph. **6**: 770 (Dec.) 1922. Keim, H. L., and Wile, N. J.: Kahn Precipitation Test in Diagnosis of Syphilis, J. A. M. A. **79**: 870 (Sept. 9) 1922. Young, C. C.: Public Health Value of Kahn Test for Syphilis, J. A. M. A. **79**: 1674 (Nov. 11) 1922. Moody, W. B.: The Precipitin Reaction for Syphilis, J. A. M. A. **80**: 383 (Feb. 10) 1923.

6. Herrold, R. D.: Ring or Contact Precipitation Test for Syphilis, J. A. M. A. **79**: 957 (Sept. 16) 1922.

ent. In a second case there was paralysis of the external oblique muscle. The patient had had cerebral hemorrhages, and there was a definite history of syphilitic infection thirty years previously. Clinically, an old latent syphilis was diagnosed. Blood from this case was retested three weeks later; the Wassermann reaction proving negative, the ring reaction positive. In the third case, no history was obtainable.

In the five cases in this group having a positive ring reaction, the laboratory evidence is strongly indicative of syphilis. In each case in which data were obtainable, there was clear clinical evidence of syphilis.

TABLE 2.—*Results of Parallel Tests*

Number of Cases	Wassermann Test	Herrold Test	Kahn Test
55	—	—	—
21	+	+	+
5	—	+	+
1	+	—	—
2	+	+	—
2	—	+	—
14*	—	+	—

* In these cases, lipemic serum (serum having a whitish or opalescent turbidity) was employed.

The one case having a two plus Wassermann and a doubtful ring reaction was clinically cerebrospinal syphilis. In the entire group having a two plus or a three plus Wassermann reaction, no case was found in which syphilis could be excluded. Here, as in Group 1, a positive precipitin reaction is corroborative, but a negative or doubtful reaction should not be regarded as evidence against syphilis.

GROUP 3.—*Wassermann reaction doubtful* (plus, plus-minus or anticomplementary). Only one case was found having a doubtful Wassermann and a positive ring reaction. This case had a definite history and clinical evidence of syphilis.

In those cases having a doubtful Wassermann and a negative ring reaction, the laboratory evidence is against syphilis, and in none of these cases have I found clinical evidence of syphilis.

In the small group of cases in which both the Wassermann and the ring reactions were doubtful, the laboratory evidence must be regarded as nil.

GROUP 4.—*Wassermann reaction negative.* In 346 such cases, the ring test gave corroborative results. The twenty-five cases with negative Wassermann and positive ring reaction are of particular interest. In six of these, I was unable to secure any clinical information. In eight cases, the clinical evidence was meager, consisting of these statements: 1. There was acute gonococcal infection. 2. Arteriosclerotic gangrene followed trauma. 3. There was pelvic inflammatory disease, but no history of syphilis. 4. No syphilitic lesion was present, and the history was negative. 5. Osteomyelitis was present. 6. Lung abscesses followed aspiration of a tooth. 7. Frontal headaches, choroiditis and frequent urination were complained of. 8. There had been mechanical crushing of the hand; there was no history of syphilis.

These eight cases occurred in the early part of the series, and a few of them were noted to have the lipemic type of serum which I later found to give false positive reactions. Since the clinical data were so incomplete, it is impossible to say whether any one of these cases should be regarded as a false positive; but it would not be fair to assume that all of the fourteen patients in whom no evidence of syphilis was found were syphilitic. It is more probable that in many of them there were false positive reactions, as will be discussed in a later paragraph.

In each one of the remaining eleven cases in this group having positive ring reactions, there was definite clinical evidence and a history of syphilis, and most of them were old treated cases. From this it appears, as has been observed by others, that many old cases of syphilis that gave a negative Wassermann reaction will give a positive precipitin reaction.

None of the eight cases having a negative Wassermann and a doubtful ring reaction were shown to be syphilitic.

TESTS IN ONE HUNDRED ADDITIONAL CASES

It was found that the precipitin test performed by Kahn's method did not give false positives with lipemic serums as did the ring method of Herrold. This was demonstrated by performing the three tests in 100 additional cases. The results are shown in Table 2.

Special attention is called to the group of fourteen lipemic or turbid serums on which both the Wassermann and the precipitin reactions by Kahn's method were negative, but which gave a distinct contact ring by Herrold's method. The same preparation of antigen, appropriately diluted as directed by the authors, was used in each method. Inspection of the table will show that the ring precipitin test gives, as claimed by Herrold, a higher number of positives than Kahn's method, but the disadvantage of false positives in turbid serums makes it unreliable.

The five cases with negative Wassermann and positive precipitin reactions by both methods are of particular interest. Two of these had definite clinical evidence and a history of syphilis. In one case, no history was obtainable. In the two remaining cases, a careful history and searching clinical scrutiny revealed no reason for even a suspicion of syphilis. The same was true of one of the two cases in which the ring test was positive and both the Wassermann and the Kahn test were negative.

RESULTS OF VARYING THE ANTIGEN

It should be borne in mind that the antigen here used was made strictly in accordance with Kahn's directions and contained 0.4 per cent. cholesterin. Sad experience with the Wassermann test taught serologists that an antigen containing 0.4 per cent. cholesterin is unreliable for routine use because of the frequency of false positive reactions. There are many reasons for believing that the same biochemical mechanism is the basis for both the complement fixation and the precipitin reaction in syphilis. If this is true, it is probable that an antigen containing 0.4 per cent. cholesterin may give false positives with the precipitin test as well as with the Wassermann test. Table 3 presents the results in 100 cases tested with two antigens prepared from the same alcoholic extract of beef heart muscle, one having 0.4 per cent. and the other 0.2 per cent. cholesterin.

TABLE 3.—*Results of Tests with Two Antigens*

Number of Cases	Wassermann Test	Precipitin Test 0.4% Cholesterin	Precipitin Test 0.2% Cholesterin
63	—	—	—
23	+	+	+
6	—	+	+
3	+	—	—
5	—	+	—

Particular attention is directed to the group of five cases in which the Wassermann test and the precipitin test with 0.2 per cent. cholesterin were negative, but in which the precipitin test with 0.4 per cent. cholesterin was positive. Three of these were strongly positive, and two gave a weak reaction which might be designated as + or + +. There were no points in the histories or in the clinical aspects of any of these five cases which would support a suspicion of syphilis. Unless we assume, in spite of the evidence to the contrary, that each case was syphilitic, we are forced to conclude that the precipitin test may give false positive reactions if performed with an antigen containing as much cholesterin as Kahn has recommended.

VARIATION OF OTHER FACTORS

Variations in other factors were found to affect the reliability of the results. Kahn recommended dilution of the antigen with salt solution 1:12 for use. The antigen thus prepared should be markedly opalescent but should not be turbid or form even a light sediment on standing. In other words, the optimum condition of the diluted antigen is a suspensoid of colloidal particles having a certain size. If the particles are larger, the suspensoid becomes turbid and may form a sediment after standing. Such an antigen dilution may cause spontaneous precipitation when mixed with serums from nonsyphilitic cases. If the particles are smaller, the opalescence of the suspensoid becomes less marked. Such a dilution of antigen is less easily precipitated and hence less sensitive to the effect of serum from a syphilitic patient. Now the size of the particles in the suspensoid is easily influenced by even so minor a factor as the speed with which the antigen and salt solution are mixed. Nor is temperature a negligible factor. If the salt solution has a temperature of 10 C., it will produce a more turbid suspensoid than salt solution of higher temperatures, as 20 or 30 C.

A factor with which Kahn did not deal in his announcements is the concentration of the salt solution used in diluting the antigen. He stated that it was the physiologic concentration of 0.85 per cent. Such a concentration has given, in our hands, a suspensoid of far too great turbidity. This turbidity became less as salt solution of lower concentration was used. The same antigen diluted with 0.3 or 0.4 per cent. salt usually gave the desired degree of opalescence. But another batch of antigen, prepared from heart muscle by exactly the same method, under as nearly identical physical conditions as was possible and containing the same proportion of cholesterin, required 0.6 per cent. salt solution to produce a similar degree of opalescence. From which it is apparent that: 1. We have as yet no determined criterion as to the preparation of antigen which will have a proper degree of sensitivity and yet will be known to give no false positives. 2. Two antigens prepared by identical procedure may vary widely in their colloidal equilibrium. 3. At present, the only standard by which to determine the suitability of an antigen dilution is the opalescence of the suspensoid, judged optically. This admits a large personal factor, allowing considerable variations in the suspensoids prepared on different days by the same worker.

The higher sensitivity of the precipitin test as compared with the Wassermann, and the relative simplicity of its technic, make it worth the labor necessary to eliminate the foregoing objections. This could probably be accomplished with a small fraction of the experimentation which brought the Wassermann test to its present status.

CONCLUSIONS

The precipitin test performed by the ring method described by Herrold gives confusing results on turbid or lipemic serums.

Antigen containing 0.4 per cent. cholesterin occasionally gives a positive precipitin reaction with serums from nonsyphilitic patients.

The precipitin test under proper conditions is more sensitive than the Wassermann test, in that the serums from known syphilitics which give a negative Wassermann reaction will often give positive precipitin reaction.

Careful work must yet be done to determine the optimum conditions of performance to obtain a maximum sensitivity with no false positives.

So many variable factors enter into the manipulation of the antigen that, in order to secure reliable results, the test must be performed by serologists of experience. It is not a simple test to be used by physicians in practice or by unskilled laboratory workers.

THE BLOOD WITH DEEP ROENTGEN-RAY THERAPY

HYDROGEN-ION CONCENTRATION, ALKALI RESERVE, SUGAR, AND NONPROTEIN NITROGEN *

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The almost universal use of roentgen-ray therapy has prompted numerous chemical examinations of the blood with the purpose of demonstrating any regular changes induced by such treatment and especially with the hope of establishing some variation that might serve to explain the roentgen-ray sickness so frequently observed in patients following treatment. Hall and Whipple [1] have reviewed the various theories advanced to explain this roentgen-ray illness, but few of them have a substantial scientific basis and some are quite hypothetic. Lange [2] suggests that roentgen-ray sickness results from an acidosis caused by cellular degeneration or from increased catabolic cellular activity. The work of Denis, Aldrich and Martin [3] supports this idea, for they observed an acidosis in rabbits, when some portion of the intestinal canal is included within the irradiated area. Golden,[4] from observations on patients treated and on dogs exposed experimentally to roentgen rays, finds no diminution of the alkali reserve, and believes accordingly that the constitutional reaction is not associated with an acidosis. Hussey [5] observed an increased alkali reserve and alkalinity of the blood in rabbits twenty-four hours after roentgen-ray treatment, a condition designated by him as a state of uncompensated alkali excess.

As regards variations in the nitrogen constituents of the body, Hall and Whipple [1] find the total nonprotein nitrogen and the urea nitrogen in the blood of dogs

* From the Pathological Laboratory of St. Luke's Hospital.
* Aided by a fund given by Mr. Albert B. Kuppenheimer.

1. Hall, C. C., and Whipple, G. H.: Roentgen-Ray Intoxication, Am. J. M. Sc. **157**: 453 (April) 1919.
2. Lange, S.: Roentgenotherapy, Am. J. Roentgenol. **3**: 356 (July) 1916.
3. Denis, W.; Aldrich, M., and Martin, C. L.: Am. J. M. Sc. **160**: 555 (Oct.) 1920.
4. Golden, R.: Alkali Reserve in "Roentgen-Ray Sickness," Arch. Int. Med. **30**: 629 (Nov.) 1922.
5. Hussey, R. G.: Influence of X-Rays on Properties of Blood, J. Gen. Physiol. **4**: 511 (May) 1922.

exposed to roentgen rays usually increased much above normal shortly before death, and the elimination of the urine nitrogen increased on the day following treatment and remaining high until death. They observed focal necrosis in the lining of the small bowel, and suggest that this may cause the general intoxication with its vomiting and diarrhea. Later studies by Whipple and his associates [6] confirm these observations. Nürnberger [7] observed an increase of the sugar in the blood of patients with roentgen-ray treatment, sufficient to be termed a roentgen-ray hyperglycemia. The maximum concentration was reached usually on the first and second days of the treatment. According to his literature quotations, there has been observed an increased urinary elimination of uric acid, purin bases and phosphoric acid, findings that agree with Whipple's observations.

Variations in the amounts of the nonprotein nitrogen constituents and other substances of the blood may occur with roentgen-ray treatment, and in the hope of demonstrating changes which, in turn, may have some significance in explaining the roentgen-ray sickness, a chemical study of the blood was made on certain patients coming to this hospital and treated in the routine way with high voltage roentgen rays. The urea nitrogen, the total nonprotein nitrogen, the uric acid, the creatinin and the sugar of the blood were determined according to Folin and Wu; [8] the carbon dioxid combining power of the blood plasma according to Van Slyke,[9] and the hydrogen-ion concentration of the whole defibrinated blood by the gas chain method. Blood was taken from the arm vein before treatment, one to two hours after treatment, and again after about twenty-four hours. The blood samples were drawn into 20 to 25 c.c. defibrinating tubes containing glass beads in such a way that all of the air was displaced, and in the closed tubes the blood was defibrinated by shaking. The hydrogen-ion determinations were made in a McClendon electrode vessel, the transfer of blood into the vessel being completed without exposure to air.

Results of Observations

	p_H	Carbon Dioxid	Urea Nitrogen	Total Nonprotein Nitrogen	Uric Acid	Creatinin	Sugar, per Cent.	Comment
Before	7.41	68.58	14.48	31.08	3.87	....	0.084	Carcinoma of breast; not sick; sodium bicarbonate by mouth
*After (2 hours)	7.30	72.25	13.20	29.98	3.32	....	0.083	
After (24 hours)	7.46	.....	13.90	29.47	3.74	....	0.081	
Before	7.50	64.14	9.99	41.81	2.12	....	0.179	Carcinoma of cecum; nauseated by treatment; sodium bicarbonate by mouth
*After (2 hours)	7.34	63.81	10.04	45.73	7.72	. ..	0.097	
After (24 hours)	7.43	62.75	12.61	52.13	3.75	....	0.162	
*After (2 hours)	7.25	62.62	9.20	41.44	4.94	....	0.072	
Before	7.40	43.35	14.75	30.01	4.00	....	0.094	Carcinoma of cecum; nauseated by treatment; sodium bicarbonate by mouth
*After (24 hours)	....	67.02	15.75	31.07	4.12	....	0.091	
Before	7.44	58.63	10.55	27.84	3.10	1.45	0.185	Abdominal carcinoma; orange juice and sodium bicarbonate by mouth; patient markedly nauseated toward end of the course of treatment
*After (2 hours)	7.36	56.43	9.85	27.75	2.39	1.41	0.138	
After (24 hours)	7.50	58.83	9.15	27.24	2.40	1.49	0.176	
*After (1¼ hours)	7.38	58.05	10.09	26.91	2.47	1.49	0.086	
After (24 hours)	7.37	56.72	13.40	25.68	2.58	1.44	0.155	
*After (2½ hours)	7.22	50.19	12.24	27.81	2.50	1.47	0.087	
After (24 hours)	....	53.75	10.79	25.44	2.45	1.43	0.140	
*After (1½ hours)	7.20	54.15	8.64	26.67	2.37	1.43	0.060	
After (24 hours)	7.39	57.24	7.70	25.62	2.42	1.43	0.127	
Before	7.33	50.30	15.83	38.22	7.95	1.44	0.068	Sarcoma of thigh; no appreciable distress with treatment
*After (2 hours)	7.15	54.01	14.38	37.46	6.99	1.42	0.110	
After (24 hours)	7.50	50.70	14.83	34.56	9.90	1.43	0.092	
*After (2 hours)	7.47	54.40	14.48	34.98	9.02	1.42	0.099	
After (24 hours)	7.50	53.71	12.61	32.25	8.05	1.50	0.098	
*After (¾ hour)	7.36	50.77	11.91	30.15	8.15	1.50	0.091	
After (24 hours)	7.40	51.93	12.28	28.78	6.74	1.31	0.080	
Before	....	40.87	60.52	101.04	15.06	3.36	0.131	Carcinoma of uterus; sodium chloride solution and orange juice by mouth; nausea and vomiting
*After (2 hours)	7.42	34.47	57.91	101.68	14.16	3.36	0.146	
After (24 hours)	7.40	33.28	57.44	89.12	15.10	3.32	0.088	
*After (2 hours)	7.33	37.48	54.64	88.92	12.41	3.35	0.111	
After (24 hours)	7.38	37.59	59.96	118.03	14.97	3.37	0.122	
*After (2 hours)	7.21	33.15	58.84	106.32	15.08	3.30	0.167	
48 Hour Interval								
Before	7.44	38.64	65.15	99.24	14.49	3.27	0.142	
*After (2 hours)	7.35	38.50	66.27	99.63	13.47	3.19	0.095	
After (24 hours)	7.51	38.04	67.95	101.00	16.57	3.35	0.144	
*After (2 hours)	7.28	38.51	59.54	96.12	15.45	3.21	0.068	
*Before	7.60	52.98	11.72	42.70	4.70	1.25	0.108	Abdominal carcinoma; nausea
*After (2 hours)	7.55	51.45	11.58	42.52	4.58	1.27	0.107	
After (24 hours)	7.62	55.44	9.01	36.14	4.65	1.34	0.141	
*After (24 hours)	7.44	52.45	14.06	39.78	10.40	1.34	0.143	Control; no malignant growth; roentgen ray over chest; slight nausea
*After (1¼ hours)	7.35	50.47	21.30	39.48	10.50	1.30	0.121	
After (24 hours)	7.54	59.93	14.85	33.15	7.45	1.36	0.133	
No roentgen ray	7.48	52.45	.....	.....	....	....	.....	Control; no roentgen-ray treatment; bled from arm vein only
After (2 hours)	7.47	50.72	.....	.....	....	....	.....	
After (24 hours)	7.44	52.31	.....	.....	....	....	.....	

* indicates roentgen-ray treatment.

The results from eight of the fourteen patients studied are contained in the accompanying table, the results of the others agreeing in all essentials.

COMMENT

These examinations demonstrate no striking or consistent alteration in the urea nitrogen, the total nonprotein nitrogen, the uric acid, the creatinin or the sugar concentration in the blood of patients treated with roentgen rays. There is, however, a disturbance of the acid-base equilibrium, manifested immediately after treatment by an increase of the hydrogen-ion concentration and sometimes by a slight lowering of the alkali reserve. In the blood, after twenty-four hours, these relationships are reversed, and there is a diminished hydrogen-ion concentration and an increased alkali reserve. The latter observation agrees with the results obtained by Hussey in rabbits, and

6. Whipple, G. H., and Warren, S. L.: J. Exper. Med. **35**: 187, 203, 213 (Feb.) 1922.
7. Nürnberger: Strahlentherapie **12**: 732, 1921.
8. Folin, O., and Wu, H.: J. Biol. Chem. **38**: 81 (May) 1919; **41**: 367 (March) 1920.
9. Van Slyke, D. D.: Studies of Acidosis, J. Biol. Chem. **30**: 289 (June) 1917.

the mechanism concerned is probably like that in other physiologic reactions in which the acid-base equilibrium of the body is disturbed,[10] and a transient acidosis is followed by an overcompensating alkali response (alkalosis). It may be that this disturbance of the acid-base equilibrium, or perhaps some as yet unknown factors associated with it, is responsible for the sickness following roentgen-ray treatment.

THE TREATMENT OF TYPE I PNEUMOCOCCUS LOBAR PNEUMONIA WITH SPECIFIC SERUM*

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It is now nearly ten years since Cole and his associates at the Hospital of the Rockefeller Institute for Medical Research began the use of specific antipneumococcus serum in the treatment of lobar pneumonia due to the Type I organism. In spite of the brilliant results from time to time reported from the Rockefeller Hospital, this method of treatment has not met with special favor. Indeed, during the last few years, there has developed a somewhat widespread and growing skepticism regarding the value of antipneumococcus serum in the treatment of lobar pneumonia due to this organism. Many physicians are inclined to class this method of treatment with the numerous vaunted remedies for pneumonia which have proved of little or no value, and in which medical literature abounds.

The principal reasons why the Type I serum has not come into more general use are evident. The first and most important obstacle to its use is the great difficulty in getting an early bacteriologic diagnosis. Frequently, no sputum for typing is obtainable until some days after the onset of the disease, and then only too often at least twenty-four hours elapses before the laboratory furnishes its report. This means that the serum treatment, if given at all, is begun late in the course of the disease, when it is generally agreed that it exerts but slight curative power. The technical difficulties to the proper administration of such a powerful serum are such as to discourage its general use outside hospital practice. In many instances, it would appear that the serum has been given in too small doses or at too long intervals to be effective. Finally, a most important obstacle to its further use is the fact that other observers have not been able to duplicate the strikingly low mortality figures obtained at the Rockefeller Hospital.

There is now a considerable accumulation of available reports on the use of this serum. My object in this communication is to make a critical examination of recorded results, together with observations not previously published, in the hope that it may be possible to estimate more accurately the clinical value of this form of treatment.

EFFICIENCY OF A SERUM

It may be well to define by what criterion the efficiency of a specific serum in such a disease as pneumonia is to be judged. I need not particularly stress the importance of the subtle dangers in deductions from casual observations in this disease. In its symptomatology and course, it shows an "unrivaled variability." Its limited but variable duration, its peculiar tendency to almost miraculous change in the clinical picture, which often occurs with crisis, the fact that not infrequently there is sudden recovery in seemingly hopeless cases, all indicate the difficulties of an accurate clinical judgment of therapeutic results. Under such circumstances, the most rigid criteria are necessary.

The elaborate scientific studies made by many eminent workers during the last thirty years have provided an unusually sound experimental basis for the use of antipneumococcus serum of the type and in the manner now under discussion. The proof of the possibility of producing an active or passive immunity against Type I pneumonia in certain animals, or even of curing the pneumonia in infected animals by the intravenous injection of homologous serum, does not establish its value in man. Nor do these results of animal experimentation warrant the acceptance of conclusions from clinical tests that are not based on the most exact clinical observations. To be fully trustworthy, it is absolutely essential that therapeutic results, whether the agent employed is a drug or an immune serum, should be checked by a control series.

The clinical test of the efficiency of specific immunotherapy in pneumonia must consist in (1) the accurate observations regarding the course of the disease following serum, and (2) a statistical study of the final case fatality rate. Under the former, the chief considerations are the study of the effects of the serum on (1) the toxemia; (2) the pulse and temperature curves; (3) the duration of the disease; (4) the extension of the disease after serum; (5) the bacteremia; (6) the rate of resolution, and (7) the development of complications.

The figures with regard to the case fatality rate are of value only when taken into consideration with (1) the dose of serum and the frequency of its administration; (2) the time of administration, i. e., the day of the disease; (3) the patient's age, and (4) the general estimate of the type of patient treated.

RESULTS OF TREATMENT

My own experience with the treatment of Type I pneumonia with homologous immune serum is confined to a relatively small series of 145 cases in the special pneumonia service at the Boston City Hospital. The cases have been arbitrarily divided into groups A and B. Group A comprises seventy-five cases studied during the years 1919 and 1920. These were without controls. Group B includes seventy cases treated and controlled by a parallel series of seventy-one untreated cases during the years 1921 and 1922. On the whole, these cases were perhaps a very severe test of the effectiveness of the serum, since in a general municipal hospital the type of case is probably a less favorable one than would be encountered elsewhere.

In Group A, the average total amount of serum given to those who recovered was 182 c.c., and in the case of those who died, 266 c.c. Somewhat larger amounts were given to the patients in Group B; i. e., in the case of the living, 374 c.c., and in the fatal cases, 342 c.c. Fourteen of the patients in group B who died received 600 c.c. or more. It would appear from these averages that even greater amounts were employed than in the treatment of the series at the Rockefeller Hospital.

Blood cultures were made as a routine and positive results were obtained as follows: Group A, thirteen

10. Hirsch, E. F.: J. Infect. Dis. 28:275 (March) 1921.
* Read before the New York Academy of Medicine, Feb. 20, 1923.

cases, or 17.3 per cent.; Group B, thirty-one cases, or 44.3 per cent.; Group B (controls), sixteen cases, or 22.5 per cent. Unfortunately, cultures were not taken regularly following the serum, making it impossible to form any judgment of the effects of the serum on the bacteremia when present.

In general, we have not observed the striking effects on the patients' general condition following serum which have been described by Cole and a few other authors. A small percentage of the cases seemed definitely less toxic. In a few instances, the improvement in the patient's condition has been so striking as to seem convincing that the results were directly due to the intravenous injections. For example, in Group B, only six cases showed strongly suggestive evidence of a specific action of the serum. In eight others, the general estimate of the results was entered in the records as "suggestive," or "improvement probably due to serum." The remaining fifty-six gave no indications of benefit to be attributed to the serum. Constant observation of the simultaneous control group frequently showed similar sudden changes and ones quite as striking, which, had they occurred in the treated individuals, would certainly have been attributed to the specific therapy. The constant demonstration of the fallibility of judgment by the observation of the treated and untreated patients side by side has made us feel less confidence in the general impression of the effects than in the final statistical study of the duration course, complications and mortality.

A study of the average duration in the 145 treated and the seventy-one untreated controls, i. e., the duration from the onset of the disease to the discharge from the hospital, apparently shows no advantage for the serum cases (Table 1).

Such differences as are shown in this table are so slight as to be regarded as probably without significance. Similar figures for the duration, as measured by the time from onset to a normal temperature, are likewise without any essential difference.

In order to compare directly the course of the temperature and pulse in the two series of Group B, two

TABLE 1.—*Average Number of Days from Onset of Disease to Discharge*

	Treated Cases				Control Cases, Group B	
	Group A		Group B			
	Living	Dead	Living	Dead	Living	Dead
Whole group	29.2	12.7	33.0	10.8	27.9	10.8
Group without complications	26.5	10.3	25.3	10.8	22.1	14.0
Group with complications	41.4	18.2	48.7	11.1	44.8	9.2

composite curves have been made from the temperature and pulse records throughout the course of the pyrexia. These curves in the case of both the temperature and the pulse are almost identical. The conclusion seems fair that, on the whole, so far as the temperature and pulse are concerned, no benefit can be granted the cases treated by serum. This accords with the impression gained by following the individual charts from day to day. When similar composite curves are made for all patients first receiving serum on the third and fourth days of their disease and compared with the control cases entering the hospital on the corresponding day, then the treated cases appear to show a decided advantage over the untreated, since the curves of temperature and pulse are distinctly lower. The duration, however, is the same. The few patients, then, who received serum as early as the fourth day, on the average had a slightly lower temperature and pulse than did the untreated patients who entered the hospital on the corresponding day of the disease. A fourth chart, comprising only those patients receiving serum on the fifth day, indicates no advantage for either group.

The serum cases show a slight advantage over the controls in regard to the number of lobes involved. Only a single lobe was involved in 69 per cent. of the former and 62 per cent. of the latter. In no patient who recovered has extension of the pneumonia been noted after the administration of serum. This fact lends weight to the impression formed that in a few cases the serum has seemed to stay the progression of the disease.

TABLE 2.—*Complications, Groups A and B*

	Group A: Treated, 75 Cases		Group B			
			Treated, 70 Cases		Untreated, 71 Cases	
Complications	Living	Dead	Living	Dead	Living	Dead
Total number of cases	13	4	16	7	12	7
Empyema	9	1	6	1	4	1
Septicemia	..	..	..	4	..	6
Endocarditis	..	..	1	..	..	1
Pericarditis	1	1	2	..	1	..
Pleurisy with effusion	1	2	2	1	3	..
Meningitis	..	..	..	1	..	..
Phlebitis and thrombosis	1	..	2	..	1	..
Focal infections	1	..	3	1	1	..
Otitis media	..	..	2	..	1	..
Nephritis	..	..	2	..	..	1
Embolism	..	..	..	1	..	..

It has not been noted that resolution in the serum-treated patients was more rapid than in those who did not receive serum. Although the exact character of the process of resolution is unknown, there seems sufficient evidence to warrant the statement that it is entirely "independent of the immunity reaction." In other words, however favorable the reaction to serum may be, there is no reason to anticipate any direct influence on the rate of resolution.

Tabulation of the number and type of the principal complications in the two groups indicates no very manifest differences, though in the seventy treated cases of Group B there appear a slightly greater number of complications than in the seventy-one untreated (Table 2). Furthermore, the percentage of incidence of empyema in the 145 serum cases is 10 per cent., while in the controls it is slightly under 6 per cent. The greater frequency of complications, and especially empyema, in Group B, as compared with the controls of Group B, is too small to warrant any definite deductions. It is interesting, however, as being in accord with the observations of Cole, that, in the case of the serum-treated pneumonia patients, focal infections are somewhat more common, and that infection in passively immunized animals is also apt to be focal. The question of whether complications are more common after serum can be answered only by the observation of a much larger series of cases.

An exact general estimate of the significance of these general observations on the course of the disease under serum treatment is extremely difficult. When all the evidence is weighed, we do not feel convinced that in our two groups any very decided advantage has resulted from its use.

The final and most important test of the value of serum therapy in the case of any infectious disease, such as pneumonia, is to be found in the figures of mortality. There is always the danger of drawing "positive and sweeping" conclusions from too small a series of observations. Particularly in pneumonia, among the infectious diseases, the series on which mortality figures are based should be large, and should preferably comprise the experience of a considerable number of competent observers. It is of the utmost importance, furthermore, that the series of treated cases should be checked by a similar and simultaneous control series. The comparison of the case fatality rate obtained through specific serum with the assumed general mortality rate in untreated cases is, at best, haphazard. The general case fatality rate in Type I pneumonia is extremely variable, as shown by the numerous reports already published, and can be accurately determined only by the accumulation of a very large number of cases. The general estimate so often made that the mortality rate in Type I pneumonia in hospitals is approximately 30 per cent. seems to me grossly inaccurate. At the Boston City Hospital, the

TABLE 3.—*Mortality with Reference to Day of Disease When Treatment Began*

Day	Group A		Group B		Totals		
	Total Cases	No. Deaths	Total Cases	No. Deaths	Total Cases	No. Deaths	Per-centage
Second	1	..	..	..	1	..	0.0
Third	7	..	4	..	11	..	0.0
Fourth	13	2	13	5	26	7	26.9
Fifth	13	1	17	..	30	1	3.3
Sixth	9	2	12	..	21	2	9.5
Seventh	13	2	10	3	23	5	21.7
Eighth	8	3	7	1	15	4	26.7
Ninth	4	1	4	1	8	2	25.0
Tenth or more	4	2	2	2	6	4	66.7
Unknown	3	..	1	..	4	..	0.0
Total	75	13	70	12	145	25	

mortality in the 364 cases of Type I pneumonia was 18.1 per cent. Deducting the sixty-three cases occurring in children under 15 years, the figure is raised to 19.6 per cent. Cecil and Larsen,[1] working at Bellevue Hospital, in 162 cases of Type I pneumonia, used as a part of the control series for their work with reference to the therapeutic value of pneumococcus antibody solution, found a mortality rate of 22.2 per cent. The general mortality rate for Type I pneumonia is, I believe, not far from 20 per cent.

A factor of no small importance as influencing the mortality is the age of the patients treated. The mortality in children under 15 years is very low when compared with adults. In our series of sixty-three Type I pneumonias in children of this age, only seven, or 11.1 per cent., died. Only eight, or 6.2 per cent., of a total of 129 cases of pneumococcus pneumonia in children of all ages died, as contrasted with 27.3 per cent., in the case of the 772 adults. Shattuck and Lawrence [2] calculated, from the study of 2,882 cases of lobar pneumonia treated at the Massachusetts General Hospital from 1889 to 1917, an increase in the mortality rate of, roughly, 10 per cent. for each decade after the age of 20. In Group A, six of the patients were under 15 years and all recovered. With the single exception of one child of 6, all of the cases in Group B were adults. The average age in the seventy treated cases in Group B was 35.2 years, and in the seventy-one control cases, 34.1 years.

Table 3 shows the mortality in the 145 cases treated at the Boston City Hospital, with reference to the day

TABLE 4.—*Mortality Rate, Groups A and B, with Reference to the Stage of the Disease When Serum Was Given*

	Number of Cases	Number of Deaths	Mortality, per Cent.
145 Serum Treated Cases:			
Serum given within first 3 days	12	0	0.0
Serum given within first 4 days	38	7	18.4
Serum given within first 5 days	68	8	11.8
Serum given within first 6 days	89	10	11.2
Serum given after 6 days	56	15	26.8
71 Untreated Cases (Controls):			
Admitted within first 3 days	13	4	30.8
Admitted within first 4 days	32	4	12.5
Admitted within first 5 days	46	4	8.7
Admitted within first 6 days	58	7	12.1
Admitted after 6 days	13	5	38.5

of the disease on which treatment was begun. As will be noted, no deaths occurred among the twelve cases treated on the second and third days of the disease. The sharp rise in the case fatality rate to 26.9 in the cases beginning serum on the fourth day, and the sudden drop to 3.3 per cent. in the fifth day cases is difficult to explain. It seems probable that these wide differences would not be shown in a larger series of cases. If the serum played any part in the recovery in these groups, then it appears that the effectiveness of the serum therapy bears a direct and important relationship to the stage of the disease when given; i. e., it is most effective when administered early. This is one of the positive conclusions drawn by Cole and his co-workers from their study of the treated cases at the Rockefeller Hospital. More recently, Cecil and Blake [3] reached similar conclusions from their experience in the treatment of experimental pneumococcus Type I pneumonia in monkeys treated with Type I antipneumococcus serum.

Table 4 seems to give a better general idea of the possible relation between the mortality and the period

TABLE 5.—*Case Fatality Rate—One Hundred and Forty-Five Treated; Seventy-One Control Cases*

	Number of Cases	Number of Deaths	Mortality, per Cent.
Group A	75	13	17.3
Group B	70	12	17.1
Totals	145	25	17.2
Controls, Group B	71	12	16.9

of the disease when serum was used. The most noteworthy features are the absence of any deaths among the twelve treated within the first three days, the high mortality percentage in those beginning treatment on the fourth day, and the contrast between the 11.2 per cent. mortality for those treated within the first six days and 26.8 per cent. for those treated after six days. It has been suggested that the day of entrance to the hospital may be the factor concerned, and not the early administration of serum. The evidence, however, from the control group, so far as it is of any value in so

1. Cecil, R. L., and Larsen, N. P.: Clinical and Bacteriologic Study of One Thousand Cases of Lobar Pneumonia, J. A. M. A. **79**: 343 (July 29) 1922.

2. Shattuck, F. C., and Lawrence, C. H.: Boston M. & S. J. **178**: 245 (Feb. 21) 1918.

3. Cecil, R. L., and Blake, F. G.: J. Exper. Med. **32**: 1 (July) 1920.

small a number of cases, is against this view. It may be noted that in four of the thirteen cases, or 30.8 per cent., in the untreated group entering the hospital within the first three days of the disease, the patient died. It is interesting that in this control series a similar contrast in mortality rate is shown between those entering on or before the sixth day and those admitted after the sixth day. Until a much greater number of cases are available, one is not warranted in attempting any

TABLE 6.—*Mortality Rate with Reference to the Stage of the Disease When Serum Was Given* *

	Number of Cases	Number of Deaths	Mortality, per Cent.
Serum given within first 3 days	44	4	9.1
Serum given on the fourth day	47	13	27.7
Serum given on the fifth day	53	5	9.4
Serum given on the sixth day	42	8	19.0
			16.1
Serum after the sixth day	70	19	27.1
Day of disease unknown	6	0	0.0
	262	49	18.7

* Peter Bent Brigham, Massachusetts General and Boston City Hospitals.

positive deductions. The main fact seems to be that the general mortality rate in the treated and untreated groups is the same (17.2 and 16.9 per cent., respectively) as shown on Table 5.

Dr. Christian of the Peter Bent Brigham Hospital and Dr. Lord of the Massachusetts General Hospital have generously allowed me to use the statistics of the cases treated in those two hospitals. Table 6 combines these with the figures for the Boston City Hospital just given.

The figures for this larger number of cases materially change the results. The apparent advantage of those injected within the first three days over those treated later, as shown in previous tables, becomes much less suggestive, since the mortality rate for the former rises to 9.1 per cent. The percentage of deaths for the fifty-three cases treated on the fifth day is essentially the same as for the forty-four treated on or before the

TABLE 7.—*Death Rate with Reference to Stage of Disease When Serum Was Given: Totals from Civilian Hospitals*

	Number of Cases	Number of Deaths	Mortality, per Cent.
Serum begun within the first 3 days	57	7	12.3
Serum begun on fourth day	71	16	22.5
Serum begun on fifth day	71	7	9.9
Serum begun on sixth day	54	13	24.1
Serum begun after sixth day	88	23	26.1
Day of disease unknown	12	2	16.7
	353	68	19.3

third day. The ratio of the mortality percentage in those treated before and after the sixth day as shown in the previous table: namely, 11.2 per cent.: 26.8 per cent., is changed to 16.1 per cent.: 27.1 per cent.

Adding to this table all cases reported from civilian hospitals in which the day of treatment is given, we have mortality statistics of a considerable group, namely, 353 cases.

The suggestion given by Tables 4 and 6 of the advantage in the early administration of serum seems to have largely vanished. On the other hand, the relatively high mortality rate of those beginning serum on the fourth day, and the relatively low rate for those beginning treatment on the fifth, persists. In the case of the latter, it is considerably lower than in the fifty-seven receiving serum on the third day or earlier, i. e., 9.9 per cent. and 12.3 per cent., respectively. When the table is changed to show the mortality percentage of all cases treated within three, four, five and six days, the figures are fairly uniform, namely, 12.3, 17.9, 15.1 and 16.9 per cent., respectively. What bearing these figures have on the real question of the efficacy of serum therapy is impossible to state. Indirectly, since they do not indicate any well-defined advantage in early treatment, they furnish important evidence against the value of the serum in general. More direct evidence against the serum as an effective therapeutic agent is

TABLE 8.—*Case Fatality Rate in Type I Lobar Pneumonia Treated with Specific Serum*

Author and Publication	Number of Cases	Number of Deaths	Mortality, per Cent.
MILITARY HOSPITALS			
Nichols (Mobilization Camp, Texas) Mil. surgeon **41**: 149, (Aug.) 1917	63	5	7.9
Thomas, H. M., Jr. (Camp Meade, Maryland) J. A. M. A. **71**: 1307 (Oct. 19) 1918	50	3	6.0
Stone, Phillips and Bliss (Camp Riley, Kan.) Arch. Int. Med. **22**: 409 (Oct.) 1918	27	4	14.8
McClelland, J. E. (Camp Beaureguard, La.) Clev. Med. J. **17**: 226 (April) 1918	15	0	0.0
Cecil (Camp Upton, N. Y.) M. Clin. N. Am. **2**: 567 (Sept.) 1918	20	2	10.0
Vaughan and Schnabel (Camp Servier, N. C.) Arch. Int. Med. **22**: 440 (Oct.) 1918	10	2	20.0
Tenney and Rivenburgh (Camp Upton, N.Y.) Arch. Int. Med. **24**: 545 (Nov.) 1919	61	9	14.8
Park and Chickering (Camp Jackson, N.C.) J. A. M. A. **73**: 183 (July 19) 1919	31	2	6.5
Leopold (Camp Dix, N.J.) N. Y. Med. J. **110**: 578 (Oct. 4) 199	24	2	8.3
Henson (Camp Johnston, Fla.) South. Med. J. **13**: 178 (March) 1920	22	3	13 6
McGuire (Naval Hospital, Chelsea, Mass.) Boston M. & S. J. **186**: 389 (March 23) 1922	35	2	5.7
Total	358	34	9.5
CIVILIAN HOSPITALS			
Bloomfield (Johns Hopkins Hospital) Bull. Johns Hopkins Hosp. **28**: 301 (Oct.) 1917	11	3	27.3
Hart (Presbyterian Hospital, N. Y.) M. Rec. N. Y. **95**: 895 (May 31) 1919	30	7	23.3
Thomas, W. S. (St. Luke's Hospital, N. Y.) J. A. M. A. **77**: 2101 (Dec. 31) 1921	50	9	18.0
Christian (Peter Bent Brigham Hospital, Boston) to be published; compare Alexander, H. L., Boston M. & S. J. **177**: 874 (Dec. 20) 1917	53	10	18.9
Lord (Massachusetts General Hospital, Boston) to be published	64	14	21.9
Locke (Boston City Hospital) not yet published, except for 75 cases	145	25	17.2
Cole (Rockefeller Hospital Series) Nelson Loose-Leaf Living Medicine **1**: 269, 1920	195	18	9.2
Total	548	86	15.7

shown in the 19.3 per cent. mortality for the total of 353 cases, a figure that is but insignificantly, if any, lower than the general mortality rate for untreated Type I pneumonia. This collection of cases includes all so far published from civilian hospitals, with the exception of the 195 recently mentioned by Cole [4] as having been treated at the Hospital of the Rockefeller Institute for Medical Research and concerning which, so far as I am aware, no data with reference to the age of the patients receiving serum and the day when the injections were first given have ever been published.

Figures of the total cases thus far recorded, together with the number of deaths, are given in Table 8. Those from the camps and the civilian hospitals are grouped separately, as the mortality rate is not comparable in the two. Such statistics from the army and navy

4. Cole: Nelson Loose-Leaf Living Medicine **1**: 269, 1920.

hospitals are based on lobar pneumonia in robust men between the ages of 18 and 31, a strictly selected group which is generally known to show a very low mortality rate. It is generally conceded that the disease as seen in the army camps ran a mild course, and the mortality was probably not in excess of 10 per cent.[5] As in the case of the civilian hospitals, none of the series were checked by contemporaneous controls. The combined figures for the army and navy camps give a mortality in the 358 cases of 9.5 per cent. As this figure is practically the same as the general mortality rate for lobar pneumonia in the army and navy, there would seem to be no evidence that these results show any advantage in the use of the Type I serum. Nor is it reasonable for the considerations stated above to combine them with the figures from civilian hospitals.

With the exception of the 195 cases reported by Cole, the mortality figures for all cases reported from civilian hospitals have been given in Table 7. The general mortality rate is 19.3 per cent., a figure that is not significantly lower than the rate for untreated cases. If, however, Cole's series is included, the case fatality rate for the 548 cases from civilian hospitals is 15.7 per cent., a figure that is significantly lower than the general mortality rate for cases not receving serum.

A final estimate of the value of this serum in Type I lobar pneumonia based on the figures thus far published is impossible. As emphasized above, no analysis of these results is possible, since for the most part no data have been published regarding the day of the disease when serum treatment was begun, the total dosage, the severity of the infection, the age of the patient and the relation to a simultaneous control group of untreated cases. Except in the Rockefeller Hospital series, the results as measured by the final mortality rate are but little, if any, better than in the general run of patients with Type I pneumonia not receiving serum treatment. On the other hand, the very striking figures presented by Cole must be accepted as weighty evidence in favor of this form of specific serum therapy.

Granted that the serum is given every eight hours and in sufficient doses, the most vital consideration is unquestionably the stage of the disease when serum injections are begun. A careful study of the published reports fails to show any indications of benefit from serum given late in its course. My own conviction is that the further compilation of a sufficient number of cases will furnish proof of the value of Type I serum, but confined to those in which its administration was begun within the first three days of the disease.

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5. The Annual Report of the Surgeon General of the United States Army, 1918, p. 176, states that among 6,964 cases of lobar pneumonia, there were 474 deaths, or a case fatality rate of 10.7 per cent.

Alkalosis.—The acid-base equilibrium is shifted toward the alkaline side during an acute clinical fever. If the fever is sufficiently high the alkalosis may result in distressing symptoms.—Koehler, *Arch. Int. Med.* **31**:605 (April) 1923.

AN OPERATION FOR RELIEF OF DISABILITY IN OLD FRACTURES OF OS CALCIS

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So far as can be learned by reference to the literature there has been little or no attempt made to relieve the serious disability which results from unrecognized or badly treated fractures of the os calcis; and for the workingman, in whom this fracture most frequently occurs, there is none that more often leaves a permanent disability. It occurs practically always as a result of a fall from a high point with the patient landing squarely on his heels, and results in a comminution and impaction, usually, through the middle third of the os calcis with a carrying upward and outward of the posterior fragment, a widening of the heel, and a laceration of the plantar fascia, with a consequent pronation of the foot and a formation of callus behind and underneath the external malleolus. The mechanics and treatment of the acute condition have been described.[1]

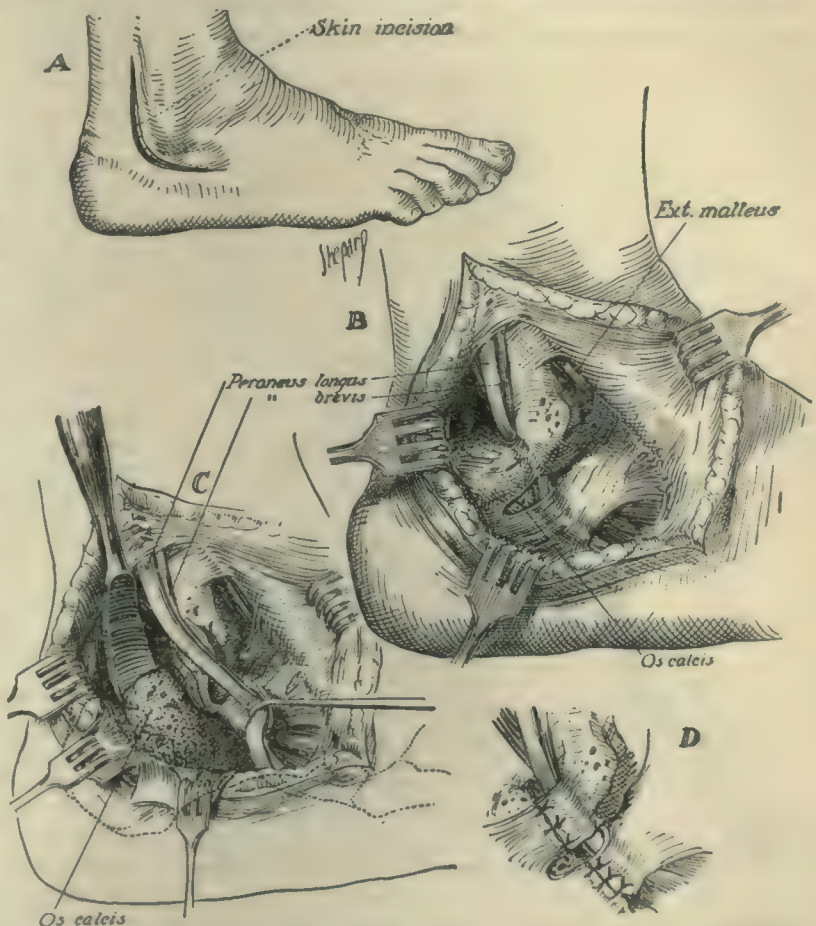


Fig. 1.—*A*, line of incision; *B*, excess callus formation under arrow, displaced tendons pinched between external malleolus and callus, or displaced outward; *C*, method of removal of callus with sharp, curved chisel (no curetting); *D*, replaced tendons, peroneus longis and brevis, back of the external malleolus.

Cotton, who reported a series of cases followed up for a number of years following injury, stated that 90 per cent. result in a permanent partial disability of the foot; and in my experience as medical director of

1. Magnuson, P. B.: Fractures of Os Calcis, J. A. M. A. **68**: 530 (Feb. 17) 1917.

the Illinois Industrial Commission, I saw practically no fractures of the os calcis which did not result in from 30 to 75 per cent. disability of the foot.

The symptoms complained of are: (1) Pain underneath and a little posterior to the external malleolus, where a mass, which is callus, may be felt and which presses against the peroneal tendons and the external malleolus; (2) extreme pain in the longitudinal arch as a result of the pronation of the foot and the strain placed on the plantar fascia, and (3) loss of lateral motion. These symptoms are almost always uniform. Added to them, if the patient continues to walk on the pronated foot, there are tenderness and pain at the attachment of the supporting ligaments of the scaphoid bone and up the backs of the legs, sometimes extending into the hips and back, and inability of the patient to rise on the toes or propel weight by the toes in walking.

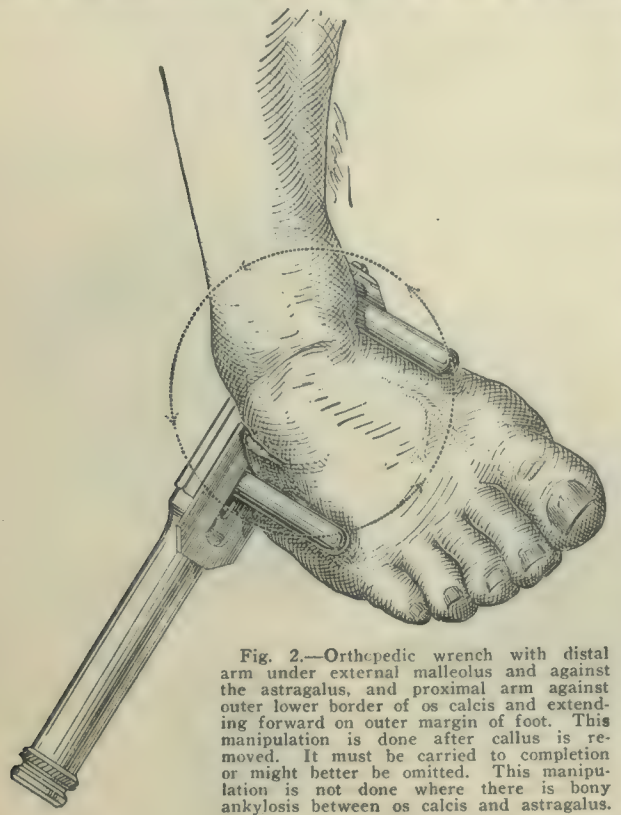


Fig. 2.—Orthopedic wrench with distal arm under external malleolus and against the astragalus, and proximal arm against outer lower border of os calcis and extending forward on outer margin of foot. This manipulation is done after callus is removed. It must be carried to completion or might better be omitted. This manipulation is not done where there is bony ankylosis between os calcis and astragalus.

Because such considerable and permanent disability arose from these fractures, and with the mechanics and pathology in mind, the operation which is here described was designed. It was performed first in 1914. It has been performed in eighteen cases, eleven of which have been followed for varying periods of six months to six years. Three presented fractures of both heels; the fifteen others fractures of one heel. In the eleven cases followed, all patients, including those with double fractures, have gone back to their former occupations. Included among the patients were one teamster, three laborers, one construction engineer, one brakeman, one railroad engineer, one structural iron worker, one painter and two bricklayers. All suffered some remaining disability, which was more apparent in damp, cold weather, for several years following operation. All are able to rise on the toes; all have from 35 to 75 per cent. of normal lateral motion, with no pain under the external malleolus. Pronation of the foot has been relieved and the weight bearing line reestablished.

Cotton has, since 1918, reported three cases in which operation was performed by this method, with recovery. William R. Cubbins also has followed this procedure successfully in a number of cases. It is therefore believed that the value of the operation has been established satisfactorily.

OPERATIVE PROCEDURE

An incision (Fig. 1 *A*) is made, starting behind and about 2 inches above the external malleolus, following down just back of the posterior edge of the fibula and under the tip of the malleolus about one-half inch below it, and continued forward onto the foot, to the anterior margin of the os calcis. The skin is dissected back, exposing the external ligaments of the ankle joint and the callus which has formed at the site of fracture at the anterior end of the posterior fragment (Fig. 1 *B*). It will be noticed that the peroneal tendons either are caught between this callus and the external ligaments or have been forced entirely away from behind the external malleolus, and are held tightly under their pulley ligament in the groove between the two structures. The ligament which binds the peroneal tendons between the os calcis and the external malleolus is severed if necessary, and with a sharp, curved chisel, starting above or below, as is convenient, the entire mass of bone lying behind the external malleolus is removed, leaving here a hollow instead of a hump (Fig. 1 *C*). This must be thoroughly excavated with a sharp chisel; no scraping should be done and sufficient bone should be removed so that there is no possibility of reformation and the pinching again of the peroneal tendons. There will be considerable bleeding from the cancellous bone, which can be easily controlled by hot sponges.

Thus far the procedure has relieved only one symptom, the pain beneath and behind the external malleolus, which results from pressure on the tendons between two bony surfaces. The next step was designed to replace, so far as possible, the weight bearing line of the foot in its normal position, and, if possible, to move the os calcis inward on the astragalus, thereby reestablishing normal relation of the foot to the leg. Before the wound is closed, an orthopedic wrench (Fig. 2) is placed with the handle posterior to the heel, its distal bar under the internal malleolus against the astragalus and pointing toward the toes; the proximal bar underneath the external malleolus against the os calcis, extending forward over the outer margin of the foot. With the operator's hand grasping the foot and the wrench posteriorly, holding them in firm apposition, the opposite hand grasps the distal end of the wrench and the os calcis is forcibly moved in and over on the astragalus. A ripping of ligaments may be heard which almost frightens one on his first attempt, but this procedure cannot be carried too far. The only danger is that of stopping before the os calcis is moved over and the foot thoroughly inverted. It should be possible after this procedure, if it is completed, to invert the foot to its full normal position without any considerable amount of force, and to invert it to its normal limit of inversion on forced motion. If this cannot be done, the procedure has not been carried far enough and should be repeated. There is only one type of case to which this is not applicable and that is one in which a fracture has extended into the astragalocalcaneal joint, and this joint has become ankylosed with bony callus. In these cases it is impossible to reestablish any lateral motion.

The ligaments which have been retracted are replaced behind the external malleolus, no attempt being made to suture the ligaments that have been torn by the inverting process. The wound is closed with fine subcuticular catgut and the cast is applied, extending from the base of the toes to just below the knee, with the foot in strong inversion and at a right angle with the leg. The inverting force must be applied over the anterior part of the os calcis, because it is this that must be inverted and not the anterior part of the foot (Fig. 3). The subcuticular catgut is used to eliminate the necessity of removing the cast or cutting a window to remove the sutures, because it is extremely important to hold the inversion for a sufficient period to allow the supporting ligaments of the foot and internal lateral ligaments of the ankle to contract, and the torn ligaments on the external part of the ankle to heal in the inverted position. Three weeks is usually a sufficient time, after which the cast may be removed.



Fig. 3.—Method of holding os calcis and posterior part of the foot in strong inversion with plaster bandage while applying cast; knee flexed, foot at right angle, inverting bandage exerting pressure over anterior two thirds of os calcis and posterior half of astragalus.

AFTER-TREATMENT

In the interim, while the cast is worn, the surgeon should see that the patient is supplied with a pair of strong shoes, not of the arch support type, but on a good broad last which have been raised from an eighth to a quarter of an inch on the *inner* margin of the heel and sole, the heel being preferably of the extension type commonly called orthopedic. Immediately after the cast is removed, massage and passive and active motion should be started. The passive motion should all be devoted to inverting the foot; the massage to reestablishing the elasticity in the external lateral ligaments of the ankle joint and strengthening the plantar flexors and the invertors of the foot. The active motions should be those which are used for exercises in the cure of weak feet.

The patient is allowed to walk as soon as he can do so with reasonable comfort after the cast is removed, which is usually within a few days. If necessary the longitudinal arch should be supported by a felt pad inside the shoe, attached to a soft leather insole. It has not been found necessary or advisable to use metal arches or arch plates, since these do not contribute to exercise in walking, which would strengthen the plantar fascia or invertors of the feet. Care should be taken that the patient walks with both feet squarely under him, with the toes pointing straight ahead or a little in pigeon fashion, and that he does not use a cane or crutch, which is conducive to throwing the foot a little out from the perpendicular, and consequently throwing the weight on the arch rather than squarely in the middle or outside of the foot. From four to eight weeks of massage is not too much for most of these cases, and the after-treatment must be carefully watched so that the patient does not continue his bad habit of walking with the toe turned out 45 degrees or more from the anteroposterior line, which he will usually do to prevent throwing weight on the ball of the foot and raising his weight by the calf muscles. It will be found necessary to keep the shoes in constant repair for several months after the patient has fully recovered or it is easy to cause a pain in the arch by a relapse into the former habits of walking.

CONCLUSION

The constant application of this treatment, not only the surgical procedure, but also the careful after-treatment, will in all cases give much relief to the worst cases, establishing a practical cure in the large majority of patients who ordinarily would suffer the rest of their lives with a disability incapacitating them for their occupation.

30 North Michigan Avenue.

LESSONS TO BE LEARNED FROM THE RESULTS OF TONSILLECTOMIES IN ADULT LIFE

OBSERVATIONS IN MORE THAN THREE HUNDRED CASES *

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What are the indications for tonsillectomy in adult life? Why is it that some persons are greatly benefited by the operation, while others get no help? Is there any way in which we can distinguish between the two groups when they first come to us for advice? After puzzling over these questions for a long time and finding little help in the literature, it occurred to me, about two years ago, that I might get the information I desired by questioning the patients who were daily passing through my office with their tonsils already removed. They could tell me why they had consented to have the operation, what they had been promised, and what they had obtained. The objection to this method of study is that presumably only the failures would be represented, because those persons who had obtained good results would no longer have need of a physician. Although it is true that there were some with arthritis, headaches, inanition, etc., who might not have come to see me if their tonsillectomies had been successful, it should be noted that eighty-one, or 32 per cent., of the 251 subjects who were investigated most carefully and listed in Chart 1 were very glad that they had had the work done; and sixty-nine more, or 27 per cent., asserted that they had received some benefit. Some had lost the troubles for which they had sought relief, while others had gained markedly in weight and general

* From the George Williams Hooper Foundation for Medical Research, and the Department of Medicine, University of California Medical School.

health. They returned because, in the course of years, they had developed other troubles, some of them probably in no way related to the success or failure of the tonsillectomy. It seems to me, therefore, that although the sampling from the community is imperfect because it has been done in a doctor's office, the statistics obtained may not be any more defective than those procured in the usual way by sending out questionnaires, because, in that case, the small percentage of people who

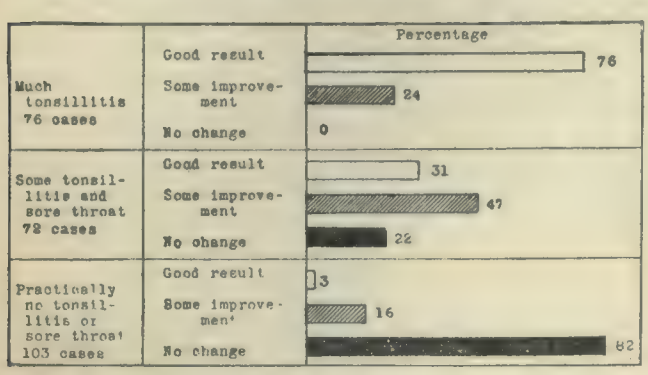


Chart 1.—Results of tonsillectomy in 251 cases.

answer may not, for one reason or another, be representative of the group as a whole.

Every one of the 345 men and women without tonsils who have passed through the office during the last two years has been questioned, but unfortunately not all the data can be used, because in some instances the tonsils had been removed too recently to judge of the result, while in others they had been removed so early in life that we could not speak of an adult tonsillectomy, or the patient could not say what the indications for removal had been. It is hard to classify many of the cases, because the patients were often pleased with the complete relief from tonsillitis, but still disappointed with the failure to get any improvement in general health. Others lost their tonsillitis and gained in general health, but failed to get what they wanted most, that is, relief from some particular affliction. An effort to segregate the cases with these different types of success and failure made the chart so complicated that I have classified most of them under the designation "some" improvement. Some of the data not complete enough for inclusion in Chart 1 have been used in other parts of the paper.

Before proceeding to a study of these statistics, it may be of interest to note that one person out of every four entering my office has had his or her tonsils out. This tonsil-less fraction of the community must be growing rapidly, and it is probably higher among the intelligent and well-to-do than among the poor.

RESULTS OF THE STUDY

The most striking fact which has come out of this study is apparent in Chart 1, in which it will be seen that those who had had much tonsillitis were practically always greatly helped, while those who had had no tonsillitis or sore throat were rarely pleased with their results. Those who had had a moderate amount of sore throat sometimes were helped and sometimes were not.

Chart 2 and Table 1 show that in adults it pays best to remove tonsils for recurring tonsillitis and sore throat; it does not pay so well to remove them for frequent colds; and still less does it pay to remove them on general principles, or because the patient is run down and nervous, or because he has headaches, deafness, otitis media, enlarged glands in the neck, stomach troubles, or bad breath.

I wish to call particular attention to the poor results obtained after the removal of tonsils simply because something could be squeezed out of them, or because they looked infected. I have no doubt that many of the tonsils in this series did contain more cheesy material than usual, because a number of them were examined by men in whose skill and honesty I have the greatest confidence. Nevertheless, only ten out of the thirty-two in this group could see any improvement, and not one of them was satisfied with the result obtained.

In this series, the results of removal for "rheumatism" were poor, only seven out of forty-seven reporting a cure, and five reporting improvement. I do not stress this point, however, because we would naturally expect to encounter more failures than successes among those still making the rounds of doctors' offices. It should be noted, however, that in a good many of those cases in which the arthritis was partly relieved or uncured, it was so mild that the patient really consulted me about something else. In answer to a question that will undoubtedly arise in the minds of my readers, I will say that in many of these cases the other easily accessible sources of focal infection had been well attended to.

Table 1.—*Reasons for Removal of Tonsils, with Result*

Removed for	Result				
	Good	Some	None	Tempo. Improve.	Worse
Run down state	...	1	1	...	2
Duodenal ulcer	...	...	2	...	1
"Neuritis"	1	...	...	1	...
Large tonsils	3	2	...	...	...
Dropping in throat	2	1	1	...	...
Hoarseness	...	1	...	...	...
Mouth breathing	...	2	...	...	...
Bad breath	...	1	3	...	...
Bad taste	1	...	1	...	...
Antrum infection	...	...	1	...	...
Ear noises	...	...	2	...	...
Ear pain	1	...	...	...	...
Attacks of fever	2	...	...	...	...
Diphtheria carrier	1	...	...	...	...
Bloodshot eyes	...	...	1	...	...
Facial acne	...	...	1	...	...
Asthma	...	...	4	...	1
Hay-fever	...	...	...	...	1
Heart trouble	...	1	...	...	2
Anginoid pain	...	1	1	...	...
Hypertension	...	...	2	...	1
Nervousness	...	...	3	...	2
Insanity	...	...	1	...	...
Epilepsy	...	...	1	...	...
Goiter	...	1	2	...	...
Mucous colitis	...	...	2	...	1
Constipation	...	...	2	...	...
"Autointoxication"	...	...	1	...	...
Cholecystitis	...	...	...	1	...
Appendicitis	...	...	1	...	...
Indigestion	...	...	2	1	1
Undernutrition	...	...	1	...	...
Numbness in hands	...	...	1	...	...
Tuberculosis	...	...	1	...	...
Cough	...	...	1	...	...
Dizziness	...	...	...	1	...
Great sensitiveness to sound	...	1	...	...	...

UNDUE FREQUENCY OF TONSILLECTOMY

I think that a glance down Table 1 will leave many with the impression that tonsillectomy is too often resorted to as a panacea or as a forlorn hope. It is unfortunate that all therapeutic measures which prove valuable in one or two diseases have, for a time, to go through the stage of being tried out on everything and everybody.

Table 2 is of interest, as it shows some of the most probable reasons for the failure to get an improvement

in health after the operation. The large percentage of cases of cholecystitis, appendicitis and duodenal ulcer is due probably to the fact that most of my patients seek my advice with regard to gastro-intestinal troubles. In many cases, it seemed probable that the failure to cure the patient was due to the fact that although the tonsils and teeth had been removed, a diseased gallbladder, appendix or prostate had been left. Hypertension is probably an even more common cause for failure than the table would indicate, as only the most striking and definite cases have been listed.

NEED FOR A CAREFUL PHYSICAL EXAMINATION

In a large proportion of cases, I feel sure that, had a careful physical examination been made at the start, the tonsillectomy would not have been done. Thus, in several instances, even a cursory examination would have shown that the enlarged glands in the neck, for which the operation was advised, were secondary to carcinoma elsewhere, or that they were manifestations of a widespread Hodgkin's disease.

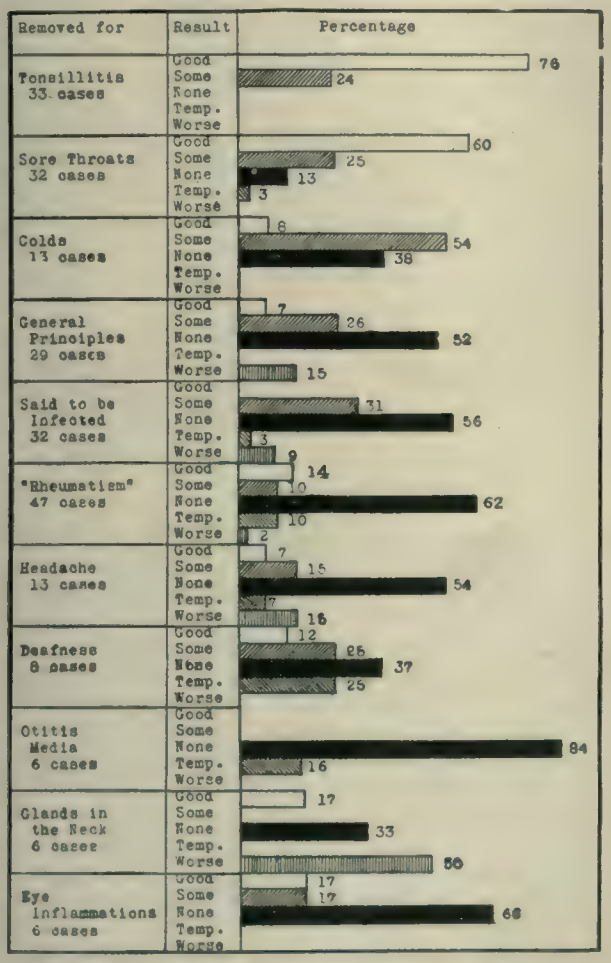


Chart 2.—Reasons for removal of tonsils, with results.

On the other hand, in many of the cases, especially those of physicians and their relatives, the rooting out of focal infections had been, if anything, too thorough. One man had parted with his tonsils, all of his teeth, his gallbladder, his appendix, and his prostate, and still he suffered from a disease which, so far as we really know, may have nothing to do with any infection.

REPEATED OPERATIONS

In many other cases, as physicians had kept on insisting that the failure to get relief was due to the leaving of tonsillar remnants, the patients had submitted to operation after operation, usually without any improvement in the result (Table 3). In one amusing case, the man consulted his physician about a "rheumatism," and the following dialogue took place:

"Your tonsils must come out."
"But Doctor, they are out already."
"I don't care—rotten job."
"But Doctor, you did it!"

The conclusion to which I am driven is that many diseases cannot be influenced by the removal of focal infections, no matter how thoroughly it is done. Sometimes, as in arthritis, the joints become so damaged that they represent foci of infection themselves, and it no longer does any good to remove the door through which the bacteria originally entered.

TABLE 2.—*Reasons for Failure*

	No. of Cases		No. of Cases
Appendicitis	11	Hypothyroidism	1
Asthenia	5	Nervous breakdown	1
Carcinoma	2	Pituitary disease	1
Cervicitis	1	Poorly removed	1
Cholecystitis	30	Prostatitis	4
Duodenal ulcer	8	Pyelitis	1
Epilepsy	2	Sinusitis	5
Giardiasis	2	Syphilis	4
Heart disease	2	Teeth infected	4
Hypertension	14	Tuberculosis	2

TRIVIAL REASONS FOR TONSILLECTOMY

It was often amusing or saddening to hear the reasons given by the patient for his having submitted to the operation. One man said simply that he had always been well until his brother had his tonsils out and gained 30 pounds in weight, whereupon there was no peace in the family until he went and tried it too. Unfortunately, he got practically no result. Another man explained sheepishly that his tonsils had never bothered him, and the only reason he had them out was that he became very friendly with a doctor's nurse. She introduced him to the physician, who immediately found some excuse to look down his throat, and soon afterward got him to the operating room. Another man was persuaded to have a tonsillectomy because he had one mild attack of constipation. He nearly died of pneumonia after the operation, and never forgave the physician.

TABLE 3.—*Results of Repeated Tonsillectomies*

Number of Operations	Number of Cases	Result				
		Good	Some	None	Tempo. Improve.	Worse
2	17	2	6	7	1	1
3	6	..	1	5	..	..
4	1	..	1	..	..	..

Another man interested me very much because I think he proved the point that there are no tonsils so small and innocuous that some one will not be willing to take them out. This man traveled extensively, and although always in perfect health, had a penchant for getting a physical examination in every large city through which he passed. One day he rushed in in great distress to say that he had found two physicians who told him his tonsils must come out. He practically never had sore throat and, at the age of 56, the tonsils were almost entirely atrophied. Five physicans had

already told him to forget it, and I joined with them in an effort to calm his fears. Although somewhat reassured, he finally decided that peace of mind could come only with a tonsillectomy, so it was done. His satisfaction was, unfortunately, short lived, for within the year two physicians remarked, while going over him, that his "tonsils ought to come out!" This upset him so that he rushed back to California to have his tonsillar fossae scraped a second time. He now thinks that he feels a little better for all this effort.

Two persons had their tonsils out because they were related to physicians, and the operation would not cost much. One regrets it bitterly, because his faucial pillars were mangled and his throat has not felt right since. Another had his tonsillectomy because he blinked his eyes. He had a nice local result, but he still blinks. Another had his operation for a gonorrheal arthritis and iritis. In this case a little group medicine would have been helpful. Another man was talked into his tonsillectomy because there was a diphtheria scare in town. Another was promised relief from sleeplessness.

Although I have just been emphasizing some unfortunate phases of tonsillectomy, it must not be assumed that I have any antipathy to the operation or that I fail to appreciate its value. I wish only to see its use restricted to those cases in which it is likely to do some good. I might add that, during the period covered by this study, sixteen tonsillectomies were done at my suggestion. Unfortunately, in spite of my conservatism in the matter, several of these patients are now listed among those who got no result.

BAD RESULTS

That the operation should not be done for trivial reasons is shown by the fact that twenty-one out of the 251, or 8 per cent., of these people were the worse for it, or suffered greatly for a while afterward. Five nearly bled to death; one nearly died under the anesthetic; one had a lung abscess; one had a severe pneumonia because he was operated on while he had a cold; one has had recurring bronchitis ever since; two had their throats so badly torn that food regurgitated into their noses for months afterward; one says his throat has never felt right since; three lost greatly in weight and never regained it; four were carried over into severe nervous breakdowns; two feel that they are more subject to colds; one, with deafness, developed ear noises; two developed sinusitis within a few days after the operation, and one developed a cholecystitis which later had to be operated on.

GAIN IN WEIGHT

Only eight reported decided gains in weight. One reported a gain of 30 pounds (14 kg.) in three months, but he still has stomach trouble and a sensitive throat. Another gained 30 pounds but now has a cholecystitis. Another gained 10 pounds (4.5 kg.) in a few weeks, but still had to give up work on account of a nervous prostration.

SUMMARY

It appears that it is not so much what the adult tonsil looks like but what it does that counts; i. e., unless it is inflamed enough to cause sore throat and tonsillitis occasionally, the chances are against the patient's being much benefited by its removal. Furthermore, if the patient suffers from repeated attacks of tonsillitis, he will almost always be grateful for the operation, even if he fails to get relief from some other trouble.

Tonsillectomy should not be done for the relief of troubles outside the throat until the patient has been studied very carefully by a competent internist. Few promises should be made if some chronic disease is found elsewhere in the body.

Conservatism should be the rule except in those cases in which the patient is seriously menaced, or in which there are good reasons for believing that the disease is one that can be influenced by the removal of focal infections.

Some of the experiences reported here may seem to reflect somewhat on the honesty or good sense of the medical profession, but I feel that our faults are no worse than those of humanity in general; that is, we tend to remember our successes and to forget our failures. The worst offenders are often physicians who have been cured of some infirmity by the removal of tonsils or teeth. They are so impressed with the good result obtained that thereafter they give no quarter, but insist that their patients submit to the same therapeutic procedures. If their attention is called to their many failures, they point to the few remarkable successes and maintain that these are worth all the failures. My feeling is that if we use enough care and judgment in the selection of cases, we can still get the successes, with perhaps only a tenth of the failures which we now see.

177 Post Street.

JAUNDICE IN MYOCARDIAL INSUFFICIENCY *

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The occurrence of outspoken jaundice with yellow sclerae and bile pigments in the urine as an incident in myocardial insufficiency was long ago observed, but is not common. Very frequent, on the contrary, is the development of a faint yellow or brownish-yellow pigmentation of the skin without the presence of bile pigments in the sclerae or urine. Determination of the exact shade of the coloration is made more difficult by the usual accompaniment of cyanosis, a condition that makes the jaundice more readily perceptible on the skin of the abdomen than on that of the extremities or face. This frequent combination of slight ochrodermia with the dusky tinge of cyanosis has resulted in the application of the term cyanotic icterus to the condition. Recent investigations have shown, in fact, that many patients with myocardial insufficiency have an increased amount of bilirubin in the blood. Bilirubin in the urine is rare, though urobilinogen is usually present. My object here is to report quantitative studies on the bilirubin content of the blood of patients suffering from cardiac insufficiency and the correlation of bilirubinemia with other evidences of disturbed hepatic function and extrahepatic bilirubin production.

METHOD

It was shown by Hijmans van den Bergh [1] and his co-workers that the red color produced on addition of Ehrlich's diazoreagent to an alcoholic bilirubin solution formed an extremely sensitive (detecting one part in 1,500,000) and reliable test for the presence of bilirubin

* From the Medical Division of the Montefiore Hospital.

1. Van den Bergh and Snapper: Die Farbstoffe des Blutserums. Deutsch. Arch. f. klin. Med. **110**: 540, 1913. Van den Bergh: Der Gallenfarbstoff im Blute, Leyden and Leipzig, 1918.

in the blood serum. He was able to elaborate this reaction into a colorimetric method for the quantitative estimation of the bilirubin content of the blood. Furthermore, van den Bergh demonstrated that by means of the diazoreaction applied to the blood serum, it is possible to differentiate between cases of jaundice due to mechanical obstruction of the bile passages and those not obviously mechanical (so-called hematogenous or pleiochromic icterus). He found that the bilirubin present in the serum in cases of mechanical icterus immediately gives a red reaction on the addition of Ehrlich's diazoreagent, while the serum in "hematogenous" icterus gives this red reaction only after several minutes or on the addition of alcohol. The first type of reaction he terms the direct; the second, the indirect. These findings of van den Bergh have been confirmed in principle,[2] but it seems that the distinction is not always so clear cut as the Dutch investigator believes, and that mixed types occur. The two reactions of van der Bergh apparently correspond to the dialyzable and adialyzable varieties of bilirubin described by Blankenhorn.[3]

That bilirubin is a physiologic constituent of the blood serum was long denied by Hammarsten and others, but was conclusively demonstrated by the investigations of Gilbert [4] and his co-workers. The normal blood bilirubin gives the indirect reaction and varies in amount between one part in 250,000 and one part in 400,000 parts of serum. The average of sixteen normal individuals whom I tested was 1: 330,000. Following van den Bergh, I shall term a concentration of one part of bilirubin in 200,000 parts of serum as one unit of bilirubin. Hence, the normal bilirubin content of the serum averages 0.6 unit. Values of more than one unit I have found only in pathologic cases.

BILIRUBIN CONTENT OF THE BLOOD IN CARDIAC DECOMPENSATION

The accompanying table shows the blood bilirubin values in twenty-three cases of cardiac decompensation. All bilirubin determinations were made by the technic of van den Bergh, as described in his book, cited above. At the time of examination, the patients presented subjective and objective evidences of severe impairment of the myocardial reserve. In all instances, the myocardial insufficiency was of long standing, and nearly all had a history of one or more previous episodes of decompensation.

The patients in the accompanying table were severely decompensated and had been so for long periods, being mostly in the wards of the Montefiore Hospital, which contain, largely, very chronic cases. Since the normal bilirubinemia is less than one unit, it is readily perceived from the figures how marked the hyperbilirubinemia of cardiac failure may be. In cardiac decompensation of recent inception, we found a marked increase in the blood bilirubin to be less common. Of seven such cases, only two presented a bilirubinemia of more than one unit; in both these cases, pulmonary and hepatic congestion was very intense. These findings correspond to the clinical experience that icterus in cardiac patients occurs most frequently in chronic cases and is of ill omen as to the prognosis. The figures in the table show hyperbilirubinemia to be more a feature of mitral than of aortic disease, this apparently being connected with the more frequent occurrence of venous stasis in mitral disease.

While a few of the patients exhibited ochrodermia marked enough to be immediately obvious, most of the cases with notably increased blood bilirubin presented only a brownish-yellow discoloration which could not be definitely ascribed, on inspection, to bile pigment. Others showed no pigmentation of the skin whatsoever. Thus, Patient 18 had an absolutely white skin, despite the presence of 1.8 units of bilirubin in the blood. Patient 4 was definitely icteric, with yellow sclerae at the time of his first examination, his blood bilirubin being 2.9 units. After venesection, rest and digitalis, he appeared merely sallow and the blood bilirubin was 0.8. He stated that during a previous attack of decompensation he had become very yellow, the jaundice disappearing on treatment for the cardiac condition. We have found, as did Lepehne,[2] that the high blood bilirubin values occurring in cardiac insufficiency are lowered with an improvement in compensation.

Blood Bilirubin Values in Twenty-Three Cases of Cardiac Decompensation

Patient	Diagnosis	Size of Liver	Urobilinogenuria	Nature of Reaction	Units of Bilirubin in Blood
1	Chronic bronchitis, emphysema, myocardial degeneration	Very large	Present	Indirect	2.9
2	Mitral disease, auricular fibrillation	Large	Present	Indirect	1.8
3	Adherent pericardium, auricular fibrillation	Large	Slight	Indirect	1.2
4	Aortic regurgitation; mitral stenosis and regurgitation; auricular fibrillation	Large	.....	Indirect	2.9
5	Emphysema, right heart dilated	Large	Present	Direct	2.2
6	Arteriosclerosis, myocardial degeneration	Not palpable	Present	Indirect	2.1
7	Hypertension, auricular fibrillation	Large	Present	Indirect	1.7
8	Aortic regurgitation, mitral stenosis and regurgitation	Very large	Present	Indirect	2.5
9	Hypertension, auricular fibrillation	Not palpable	Small amount	Indirect	2.0
10	Hypertension	Not palpable	Present	Indirect	1.1
11	Aortic stenosis and regurgitation	Palpable	Absent	Indirect	0.5
12	Syphilitic aortitis, aortic insufficiency	Large	Present	Indirect	1.4
13	Mitral stenosis and insufficiency, adherent pericarditis, pulmonary infarct	Very large	Present	Indirect	2.4
14	Mitral stenosis, auricular fibrillation, embolic hemiplegia	Very large	Present	Indirect	1.0
15	Chronic nephritis, auricular fibrillation	Large	Present	Direct	3.8
16	Mitral stenosis, myocardial degeneration	Large	.....	Indirect	3.7
17	Aortic insufficiency	Large	Absent	Indirect	0.6
18	Aortic stenosis and insufficiency, mitral regurgitation	Large	Present	Indirect	1.8
19	Auricular fibrillation (moribund)	Very large	Present	Direct	3.1
20	Mitral stenosis	Large	Present	Indirect	2.3
21	Aortic insufficiency and stenosis	Palpable	Absent	Indirect	1.6
22	Aortic insufficiency	Large	Present	Indirect	2.2
23	Mitral stenosis and regurgitation, hypertension, myocardial degeneration	Large	Present	Direct	4.2

PATHOGENESIS OF CARDIAC ICTERUS

The frequency of ochrodermia in cardiac insufficiency raises the question of the mechanism of its production. That the yellow pigment is bilirubin has been

2. Lepehne, G.: Deutsch. Arch. f. klin. Med. **132**: 96, 1920; **135**: 79, 1921.
3. Blankenhorn, M.A.: Acholuric Jaundice, Arch. Int. Med. **27**: 131 (Jan.) 1921.
4. Gilbert: Herscher et Posternak, Compt. rend. Soc. de biol. **55**: 1587, 1903.

surmised from clinical observation, and is conclusively demonstrated by the high blood bilirubin values found in all such cases. The source of the abnormal amount of bilirubin in the blood has been variously explained. Several factors must be taken into consideration in this connection.

1. Congestion of the mucous membrane of the bile passages. This has been thought of by some as the cause of the jaundice in cardiac decompensation. But it would seem that if mechanical blocking of the lumen of the bile ducts by a congested mucous membrane at any point from the papilla on occurs at all, it must be very rare. It has been shown above that the bilirubin in the serums of decompensated cardiac patients gives, in the large majority of instances, the indirect reaction of van den Bergh, while that from cases of mechanical icterus (common duct stones, carcinoma of the head of the pancreas, etc.) gives the direct reaction. Available clinical evidence also suggests that this form of jaundice is not of obstructive origin, for neither bile pigments nor bile salts are found in the urine, though urobilinogen is present usually in copious quantities. Far from being decolorized, the stools are often more highly pigmented than normal. Symptoms of cholemic intoxication are conspicuously absent, but their absence cannot be evaluated in favor of nonobstructive jaundice, for the icterus is rarely intense enough (long-standing though it usually is) to warrant the expectation of cholemia. Itching of the skin we have observed in but one case. In cardiac patients, the bradycardia of cholemia would be difficult of detection. Moreover, postmortem observation does not reveal swelling of the mucous membrane of the bile passages sufficient to cause biliary retention.

Only in the very rare instances of intense jaundice with marked bilirubinemia does it seem probable that mechanical obstruction in the bile ducts plays a part in the production of the icterus. In the large majority of cases, the jaundice is dissociated, only bilirubin and not other constituents of the bile accumulating in the blood, and the explanation must be sought in the causes of nonobstructive icterus; i. e., injury to the liver cells and excessive destruction of erythrocytes.

2. Injury to the liver cells. The familiar picture of severe chronic passive congestion of the liver with great destruction of the parenchymal cells at the center of the lobule by pressure between the ectatic blood capillaries, and the marked fatty changes in the more peripherally located cells whose nutrition is not maintained by the slow-moving blood stream, immediately suggests that herein lies the cause of the jaundice of cardiac insufficiency. Clinically, this variety of jaundice is most often, though not invariably, associated with a palpably enlarged liver. There can be little question that these anatomically demonstrable changes in the liver cells play a part in at least the more severe cases of cardiac jaundice. But, in his classical work on icterus, Stadelmann [5] pointed out, years ago, that there are cases of the most intense passive congestion of the liver without any jaundice, and that therefore the venous stasis cannot be the only factor in its pathogenesis. The foregoing estimations of the blood bilirubin are confirmatory of this view, and we have seen cases with high blood bilirubin values and livers not large enough to be palpable; Brulé [6] also notes such instances. Particularly in cardiac decompensation of recent inception, there may be most intense congestion of the liver without much increase in the bilirubin content of the blood.

3. Increased destruction of red blood cells. That an abnormally great destruction of erythrocytes occurs in the course of chronic cardiac decompensation is indicated by the postmortem appearance of the organs. The liver, spleen and, in the highest degree, the lungs, exhibit large amounts of iron-containing pigment hemosiderin, which is derived, of course, from the hemoglobin of disintegrated red cells. It is in the lung that the greatest amount of blood destruction occurs. Decompensated cardiac patients constantly give evidence of this by expectorating sputum in which are to be found the so-called heart failure cells, which are merely phagocytic wandering and epithelial cells containing hemosiderin from the broken-down red cells. Eppinger [7] considers the chief source of the increased bilirubin content of the blood in cardiac insufficiency to be the multiple hemorrhagic infarctions which occur so readily in the congested lung. It seems very probable that pulmonary infarction does play a considerable part in the production of cardiac jaundice. Cases do occur, as one seen by Libman, in which a large pulmonary infarct is followed very quickly by marked jaundice. But in most instances there is no evidence that pulmonary infarction plays a preponderating rôle. Most of the bilirubin apparently comes from the red cells stagnated in the lung and other viscera.

The postmortem appearance of the spleen and liver also points to an increased destruction of red cells. Eppinger [8] has pointed out the marked similarity of the histologic picture of the spleen in chronic passive congestion and hemolytic jaundice. In the liver are to be found, in nearly all cases, the so-called bile thrombi, indicative of an increased destruction of red cells with consequent higher concentration of the bile. The bile thrombi block the biliary canaliculi, which become dilated behind them and rupture into the adjacent lymph spaces, into which the bile is discharged, adding to the bilirubin content of the blood.

Clinically, the patients show urobilinogenuria and an increased amount of urobilin in the stools as well as of bilirubin in the duodenal juice,[9] conditions that also point to an increased destruction of erythrocytes. That the patients do not always develop an anemia, in fact, often exhibit a polycythemia, is explained by the increased production of red cells, evidence of which is offered by the red bone marrow in the shafts of the long bones often found in cases of cardiac decompensation.

The evidence presented in the preceding paragraphs indicates that in severe cardiac decompensation there is an increase in the destruction of red cells. There is very little evidence that this takes place within the circulating blood stream, as was thought by Grawitz.[10] The resistance of the red cells is not diminished. The circulatory stasis results in the stagnation of red cells in the various organs, to the highest degree in the lungs, and these stagnated erythrocytes fall prey to the erythrophagic cells of the reticulo-endothelial apparatus. Among the end-products of the decomposition of the hemoglobin molecule are an iron-containing fraction,

5. Stadelmann: Der Icterus, Stuttgart, 1891, p. 263.
6. Brulé: Recherches recentes sur les ictères, Paris, 1919, p. 77.
7. Eppinger, in Kraus-Brugsch: Spezielle Pathologie und Therapie 6: Part 2, p. 295.
8. Eppinger, in Kraus-Brugsch: Spezielle Pathologie und Therapie, p. 297.
9. Eppinger: Die hepatolienalen Erkrankungen, Berlin, 1920, p. 384.
10. Grawitz: Klinische Pathologie des Blutes, Berlin, 1911, Ed. 4, p. 838.

which causes the siderosis of various organs, and bilirubin. It is this anhepatically formed bilirubin that predominates in cardiac icterus. The increased bilirubin content of the blood results in a pleiochromia of the bile, and bile thrombi form in the biliary canaliculi with resulting obstruction, but this is secondary to the increase in anhepatic bilirubin.

SUMMARY

1. Hyperbilirubinemia is very common in myocardial insufficiency, particularly in cases of long standing.

2. The slight yellow or yellowish-brown discoloration of the skin so frequently observed in cardiac insufficiency is a true jaundice, being due to the hyperbilirubinemia.

3. In cardiac insufficiency, there is an increased destruction of stagnated red cells by the reticuloendothelial cells of the various organs, particularly the lung, liver and spleen. This is compensated for by increased activity of the bone marrow.

4. Anhepatic bilirubin formation from the hemoglobin of the red cells thus destroyed results in the hyperbilirubinemia of cardiac decompensation, though insufficient excretion of bile pigment by the injured liver cells plays an accessory part.

170 West Fifty-Ninth Street.

POSSIBLE APPLICATION OF PHENOLTETRACHLORPHTHALEIN TEST TO OBSTRUCTIVE JAUNDICE *

REUBEN OTTENBERG, M.D.
AND
SAMUEL ROSEN, M.D.
NEW YORK

The diagnosis of complete obstruction of the common bile duct is usually easy. If, however, we are asked on any given day whether complete obstruction is still present, we cannot give a certain answer, because the subsidence of the symptoms on which the diagnosis rests—acholic stools, jaundice, choluria, bilirubinemia—takes a number of days.

There are certain situations in which the answering of this question may be of great practical value. For example, if a surgeon about to operate on a patient with protracted jaundice due to stone in the common bile duct could ascertain that the stone had just passed spontaneously, he would in most instances postpone operation to a time when the patient's general condition was more favorable.

The question might, of course, be answered by the use of the duodenal tube. But in the absence of bile, it is very difficult to be certain that the tip of the tube is in the duodenum. And the objection of many patients to the passage of the tube is so great that this method has not introduced itself into practice.

An accidental observation has led us to believe that the phenoltetrachlorphthalein test (by the new and simple technic of Rosenthal [1]) might be useful in answering this question.

In trying out this test of liver function, we have examined, so far, eighteen cases. Four of these were apparently cases of complete obstruction. Of the four, three cases behaved in the typical and expected way; that is, there was complete retention of the dye. The percentage of dye in the serum at the end of an hour was as high as it had been fifteen minutes after the injection. The figures in these three cases are given in the accompanying table.

Results of Phenoltetrachlorphthalein Test

Case	Duration of Jaundice	Diagnosis	Per Cent. of Dye in Serum at 15 Minutes	Per Cent. at 1 Hour
1	4 months	Carcinoma of pancreas	30	30
2	2 days	Common duct stone	20	25
3	1 week	Common duct stone	22	22

The fourth case gave an entirely different result: The percentage at fifteen minutes was 10, and at one hour was 8. This, according to the results of Rosenthal (and our own have so far been entirely confirmatory of his), is to be interpreted as meaning only slight impairment of liver function (and evident excretion of dye). This patient was operated on two days after the test had been done. The gallbladder contained numerous stones, but the common bile duct, though dilated, showed no stone and was unobstructed. It was evident that the stone must have escaped at some time prior to the operation. The history of the case is as follows:

S. G., a woman, aged 47, housewife, referred, Feb. 5, 1923, by Dr. A. A. Berg, nine weeks previous to admission had had a sudden attack of pain in the right upper quadrant of the abdomen radiating to the shoulder, accompanied by jaundice. Jaundice and clay-colored stools lasted for five days. Then the jaundice lessened, and she was well until four days previous to admission, when another exactly similar attack occurred, lasting eight hours. After the attack, the jaundice grew deeper and the stools became clay colored.

The patient gave evidence of pronounced jaundice. There was tenderness and a small globular mass in the right upper quadrant, and the urine showed a large amount of bile. An operation was performed, February 10, by Dr. Lewisohn, who found numerous stones in a shrunken and adherent gallbladder. Both hepatic and common ducts were probed, and no obstruction was encountered. A cholecystectomy was done. Recovery was uneventful, and the patient was discharged, cured, February 25.

On reviewing the case after the operation, two additional points were noted. The stool recorded by the nurse prior to operation had been described as of a light brownish color; and the patient's serum obtained for the dye tests two days before operation had been only slightly jaundiced (whereas her skin had been deeply jaundiced).

One other point deserves mention. The obstruction had been relieved at the time of the test, but the liver function had not yet returned entirely to normal—presumably as the result of damage to liver parenchyma. After more prolonged obstruction, the injury to the liver cells is much greater, and it is possible that under these circumstances the return to normal function (as shown by the partial excretion of dye) might not occur so promptly. Only a considerable series of observations can answer this question.

We are suggesting the present application of the phenoltetrachlorphthalein method now, because the accident of testing a patient shortly after the escape of an obstructing stone may not happen to us again soon, and it is hoped that the report of the present case may lead others to determine whether this application of the test has any value.

15 West Eighty-Ninth Street.

* From the Medical Service of the Mount Sinai Hospital.

1. Rosenthal, S. M.: New Method of Testing Liver Function with Phenoltetrachlorphthalein, J. A. M. A. **79**: 2151 (Dec. 23) 1922.

Clinical Notes, Suggestions, and New Instruments

PRACTICAL RULES FOR THE DIAGNOSIS OF CARDIAC ARRHYTHMIAS

MAURICE LEWISON, M.D., CHICAGO

1. Sinus arrythmia is the common irregularity of the young; premature contractions cause the common irregularity of those past middle life.

2. The absence of a predominant rhythm indicates auricular fibrillation.

3. Comparison of the heart rate, as determined by auscultation with the pulse rate, will show a pulse deficit in all conditions excepting heart block and sinus arrhythmia.

4. When the pulse rate is increased by exercise, the irregularity is decreased or made to disappear when caused by premature contractions or sinus arrhythmia, and is increased in auricular fibrillation.

5. Deep breathing increases the irregularity in sinus arrhythmia.

6. A rapid regular pulse, persisting under rest treatment, indicates paroxysmal tachycardia or auricular flutter.

7. If the jugular are compared with the radial pulsations, the jugular pulsations will be found absent in fibrillation and more rapid in heart block.

8. If the pulse is compressed with the cuff of a sphygmomanometer, a pulse deficit will be increased in auricular fibrillation and premature contractions. In pulsus alternans, the pulse will be halved.

9. A sudden onset of rapid heart with a regular pulse indicates simple paroxysmal tachycardia. If it is irregular, with a predominant rhythm, it indicates auricular flutter; but when a predominant rhythm is absent, it is auricular fibrillation.

10. A slow regular rhythm below 40 indicates complete heart block.

11. Sudden halving of the pulse indicates development of heart block, premature contractions or pulsus alternans.

12. Auricular fibrillation is the most common arrhythmia associated with cardiac failure.

104 South Michigan Avenue.

PERFORATION OF GASTRIC ULCER BY STOMACH TUBE: REPORT OF CASE

GEORGE SCHWARTZ, M.D., NEW YORK

Adjunct Surgeon, Peoples Hospital; Attending Surgeon, Child Welfare Board

A brief review of the available literature at hand fails to show any reported cases of perforation of gastric ulcer due to a stomach tube or to lavage. I have been in communication with several surgeons of wide experience, all of whom have told me they had never seen a case. Because of the extreme rarity of such a condition, I deem it sufficiently worthy to report, and also to note that gastric lavage, or even the passage of a stomach tube for a gastric analysis, is a dangerous procedure in the presence of a chronic perforating type of ulcer, and the trauma arising from the use of the stomach tube may cause an acute perforation of a chronic ulcer.

REPORT OF CASE

History.—J. B., a man, aged 28, Jewish, had been suffering for the last two years with pain in the pit of the stomach, which came on about twenty minutes after he had partaken of food. The pain varied in degree, at times being only a fulness in the epigastrium, while at other times the pain was severe, but was relieved by sodium bicarbonate and belladonna. When the pain was mild, he did not vomit, but when it was severe, he vomited and then felt relieved. This severe pain was probably due to pylorospasm, as it was relieved by the belladonna, and he vomited only when he had the severe pain due to the spasm. He never had hematemesis. His weight was 135 pounds (61 kg.). He had frequent attacks of heartburn which were relieved by sodium bicarbonate. He had a series of roentgenograms taken by Dr. I. W. Held, who told him that he had a chronic perforating type of ulcer and advised operation, which the patient refused. February 15, about two weeks after the roentgenograms were taken, he went to a physician, who told him that he would feel better if he had his stomach washed, to which he consented. When the stomach tube was passed, the patient had an agonizing pain in the pit of the stomach, and felt like fainting. The physician withdrew the tube and allowed the patient to recline for a while, after which time he felt slightly better. He was then taken home and given a hypodermic injection (presumably morphin), and spent a fairly comfortable night. On arising in the morning, he felt weak and had a slight pain in the pit of the stomach. For breakfast he ate two soft-boiled eggs, one cracker and a cup of warm milk; in a few minutes he fell to the floor with an agonizing cry and fainted. The family physician, on being called, at once referred the patient to me for operation. He was taken to the Peoples Hospital, Feb. 28, 1923, at 10 a. m.

Examination.—The patient was in profound shock; the extremities were cold and clammy; the temperature (rectal) was 97, the pulse, 136, and respiration, 42. There was an anxious expression on the face, and grunting and crying aloud without any movement of the body. Breathing was costal in character. The abdomen presented a typical picture of perforated ulcer, that is, boardlike rigidity, obliteration of liver dulness, and shifting dulness with fluid in the flanks, with all the other evidences of an acute abdominal calamity. The blood pressure was: systolic, 85; diastolic, 60. Blood count revealed hemoglobin, 75 per cent.; white blood cells, 16,000; polymorphonuclears, 81 per cent. The diagnosis of perforated gastric ulcer (traumatic) was made.

Operation.—Gas, oxygen and ether were administered. The abdomen was discovered full of a seropurulent fluid. The eggs, crackers and milk which the patient had had for breakfast were free in the abdominal cavity. There was a large perforation, which easily admitted the ring finger and which was large enough for a stomach tube to enter it, on the anterior wall of the stomach near the lesser curvature, and about 2½ inches (63 mm.) from the pylorus. The gastrohepatic omentum had made a feeble attempt to encircle the perforation, which, however, was too large to permit its being sealed from the general peritoneal cavity. The perforation was closed with a double purse-string suture and a piece of the gastrohepatic omentum sewed over it for added protection. No gastro-enterostomy was done because the patient was moribund, and I deemed it wisest to perform the quickest operation possible to close the perforation and get out.

All the fluid in the peritoneal cavity was aspirated with the suction apparatus, one drain being placed in the kidney pouch, and another in the pelvis through a suprapubic stab. The patient was given morphin liberally, placed in the Fowler position, and given a rectal drip. He reacted poorly, and his pulse went to 140; so I arranged for a blood transfusion. I had difficulty in securing a donor, and so I waited until the following morning. By that time the patient's condition had so improved that the blood transfusion was not necessary. He was given nothing by mouth for five days, but was given 1,500 c.c. of physiologic sodium chlorid solution by hypodermoclysis daily, with a continuous rectal drip of 5 per cent. glucose and sodium bicarbonate. He was permitted fluids by mouth on the sixth day; he made an excellent recovery and was out of bed and taking a soft diet on the thirteenth day. I have seen him twice since he left the hospital, and he says he feels fine, has gained 9 pounds (4 kg.), has absolutely no pain and has not vomited. He has felt so well that he has eaten steaks and other meats against my orders, apparently without any ill effects.

COMMENT

I think that this patient had a chronic perforating type of ulcer which was acutely perforated by the stomach tube, the tip of the tube going through the stomach wall, and being temporarily walled off by the gastrohepatic omentum.

In the morning the entire breakfast had free access to the general peritoneal cavity, and the profound shock was probably due to the unusually large size of the perforation.

143 East Twenty-First Street.

A PILLOW AT THE FOOT OF THE BED AFTER ABDOMINAL OPERATIONS

THOMAS S. CULLEN, M.D., BALTIMORE

That continued disuse of the muscles is followed by a certain amount of atrophy and flabbiness is well known to all of us, and nowhere can we find a better example than in the legs after the patient has lain in bed some weeks.

For many years I have often made it a practice, unless there were contraindications, to order a pillow placed at the foot of the bed a few days after an operation. This pillow can be pushed down between the lower end of the mattress and the foot of the bed, or be firmly fastened to the latter.

The patient is instructed to use this pillow much as one would use a punching bag, and, in addition, the pillow also acts as a fixed point enabling him to push himself up gently in the bed. The frequent punching of the pillow in large measure prevents the muscles from becoming flabby; and, when the patient is allowed out of bed, he is at once able to walk fairly well instead of wabbling.

I have incidentally referred to the pillow at the foot of the bed in my classes, but in view of the simplicity of the procedure, I never mentioned it to my colleagues.

During the last month it was again necessary for me to spend nearly four weeks in bed, and several of my associates wanted to know why I had the pillow at the foot of the bed —they had never tried it. Perhaps some one has already referred to its value, perhaps not. My sole object is to draw attention to a simple procedure which is of much value and comfort to the patient.

The new hospital bed in which the head or the knees can be easily raised by a crank at the foot of the bed, coupled with the pillow for the feet to practice against, adds greatly to the comfort of the patient during his sojourn in the hospital and helps him on in his convalescence.

New and Nonofficial Remedies

TRYPARSAMIDE

Preliminary Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following statement on the experimental status of Tryparsamide.

W. A. PUCKNER, Secretary.

Tryparsamide is a new arsenical developed in the Rockefeller Institute for Medical Research. It is manufactured by the Powers-Weightman-Rosengarten Company for the Rockefeller Institute. Pending the outcome of clinical study, the substance is not offered for sale. At present the institute has entire control over the chemical and biologic testing and distribution of the substance.

Tryparsamide is the sodium salt of N-phenylglycineamide-*p*-arsonic acid, the formula of which is $C_6H_4(NHCH_2CONH_2)$. (As O.OH.ONa). The dried salt contains 25.32 per cent. of arsenic, in the pentavalent form. Tryparsamide is a colorless, odorless powder, readily soluble in water.

Tryparsamide is primarily a trypanocidal agent, but it possesses some spirocheticidal activity. It is said to produce "tonic" effects. It is proposed for use in the treatment of trypanosomiasis, syphilis of the central nervous system and late stages of syphilis with inactive or indolent lesions, and it is said to be especially indicated in the treatment of cachectic individuals. The use of the drug is not advised during the early stages of syphilis while lesions are actively developing. The drug can be administered subcutaneously, intramuscularly or intravenously.

The toxicity of Tryparsamide has been studied by Brown and Pearce.[1] They found the minimum lethal dose to vary between 0.75 and 2.75 gm. per kilogram of body weight for different species. The toxic effects resemble those of a number of other organic pentavalent arsenic compounds.

Trypanosome infections,[2] due to various species in different experimental animals, were very favorably influenced by doses well below those that prove toxic. Action on members of the spirochete group of organisms[3] was less pronounced. With *Spirochaeta obermeieri,* it was not possible to obtain cures in more than 75 per cent. of cases. The action on *Spirochaeta pallida* is more pronounced, but the dose required may be large. The lesions may be favorably influenced out of proportion to the action on spirochetes.

Studies have been made of the therapeutic effect of Tryparsamide in human trypanosomiasis.

Pearce[4] treated seventy-seven cases of trypanosomiasis in various stages of infection by *Trypanosoma gambiense.* It was relatively easy to sterilize the peripheral blood of patients with single doses of from 3 to 7 gm. administered intravenously, but relapses were liable to occur unless treatment was continued. Intramuscular administrations produced a longer immunity against relapse than did the intravenous administrations. The patients improved perceptibly both subjectively and objectively. The dose was repeated at intervals of one or two weeks.

Impairment of vision, occasionally permanent, occurred in a number of cases. The authors suggest that this is not necessarily due to direct toxic action of the drug but may be associated with the process of resolution of a lesion of the disease.

A report on the use of Tryparsamide in the treatment of neurosyphilis, particularly in paresis, has been furnished the Council by Lorenz, Loevenhart, Bleckwenn and Hodges.[5] The dose usually employed was 3 gm. each week. It is pointed out that there is risk of injury to the optic nerve, although in most cases the visual disturbance clears up rapidly on withdrawal or reduction of the drug. It was found desirable to carry on mercurial treatment at the same time. The authors of the report consider the results very satisfactory, and regard them as superior to those obtainable by any other medication.

The favorable reports of the effect of Tryparsamide on trypanosomiasis and neurosyphilis appear to warrant controlled trials of the drug in these conditions. The possibility of harm to vision should be given due consideration, particularly in cases of neurosyphilis showing involvement of the optic nerve.

The Council has postponed the acceptance of Tryparsamide for New and Nonofficial Remedies until confirmatory evidence of its therapeutic value and safety is submitted, and until it is on the market and standards have been established for the control of its composition and uniformity.

1. Brown, W. H., and Pearce, Louise: J. Exper. Med. **30**: 417 (Nov.) 1919.
2. Brown, W. H., and Pearce, Louise: J. Exper. Med. **30**: 455 (Nov.) 1919.
3. Brown, W. H., and Pearce, Louise: J. Exper. Med. **30**: 483 (Nov.) 1919.
4. Pearce, Louise: J. Exper. Med. (Supp.) **34**: 1 (Dec.) 1921.
5. This appears in THE JOURNAL, this issue, p. 1497.

Gary Infant Mortality Survey.—In a survey of conditions made in Gary by the Children's Bureau of the U. S. Department of Labor, infant mortality in that city was found to have a close relation with economic and civic factors, such as low income, poor housing and sanitation, and lack of public welfare activity. In Gary the basic industry is steel manufacturing, and there is a large and diverse foreign-born population. A subsidiary land company of the steel corporation adopted the policy of renting its houses only to Americanized workmen, a condition which resulted in leaving the foreign-born laborer to house himself. The result has been to concentrate the foreign-born population in certain sections of the city having poorer houses and fewer sewers and water mains, where there has been a much higher infant death rate than in sections developed by the land company. The infant death rate in the former districts was 141.2 per 1,000 births; in the latter, 90.6. As in preceding studies, it was again demonstrated that an increase in infant mortality occurs with a fall in the earning power of the fathers. In the year of study in Gary, when the chief breadwinners' earnings amounted to at least $1,850, the infant death rate was 89.4; when the earnings were between $1,050 and $1,850, the rate was 127.1; when earnings fell below $1,050, the rate rose to 137.8. The heaviest toll among infants was taken by gastric and intestinal diseases.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 26, 1923

RURAL MEDICAL SERVICE IN AMERICA

The state of New York has 10,600,000 inhabitants. There are 15,848 physicians in the state, or one physician for each 670 persons. The question as to whether this number of physicians is adequate for the population has received special consideration by the committee on medical economics of the Medical Society of the State of New York, and the published reports seem to indicate that the supply of physicians is adequate. It is, of course, a fact that there will inevitably be some localities in which medical service is temporarily inadequate. Physicians may die, and time must elapse before others take their place. Construction of new roads leads to a rearrangement of medical locations, with temporary changes in distribution and in the ability of a physician to reach certain parts of his community. On the whole, however, the facts assembled lead the committee, headed by Dr. E. M. Stanton, to conclude that the relative magnitude of the rural health problem has been enormously magnified and to suspect that there are some fundamental inaccuracies in the data that have been circulated. In 1913 there was one physician in New York State for each 620 inhabitants, and now there is one for each 670, a relative decrease of only 8 per cent., whereas at the same time there has been a decrease of 20 per cent. in the relative preventives of communicable disease. In one county a special study was made because many complaints had come as to the adequacy of medical service; it was shown by the committee that whereas there had been an actual decrease of sixteen physicians from 1913 to 1922, at the same time there had been a decrease of population and a shifting of physicians so that actually the service was better. With better roads, better telephone facilities, decreased incidence of disease, better hospital facilities and better means of transportation for physicians, medical service appears to be more readily available now than before.

As Dr. Stanton wisely points out, the three chief factors of supplying physicians to rural communities are: (1) getting the physician to the patient sick in a rural home 5 or 10 miles distant, or getting the patient that is not so sick to the office of the physician for consultation and treatment; (2) a reasonably well-trained home nursing service, and (3) reasonable hospital facilities. The relative importance of these items is 80 per cent. for the first, 12 per cent. for the second and 8 per cent. for the third. Bearing in mind all of the factors involved, it is the conclusion of Dr. Stanton that, instead of a shortage, there is an actual surplusage of physicians in New York State.

Several weeks ago, THE JOURNAL published a report by Dean E. P. Lyon of the Medical School of the University of Minnesota, relative to the supply of physicians in that state. In Minnesota he was unable to find a single town in which an osteopath or a chiropractor was serving the people without a regular physician available. There was no town in Minnesota having more than 750 population which was without a physician. The charge that persons were compelled to receive medical attention from poorly trained cultists because of the lack of physicians was not sustained by his investigation, since it was shown that the cultists tend to locate in the largest centers, just as do the physicians. It is well to have actual studies, such as these, so that claims of shortage of physicians, advanced with a view to lower the standard of medical education, may be met by statements of fact.

"HUMANITY'S DEBT TO MEDICAL SCIENCE"

In the *Current History Magazine* for April, Mr. Fred C. Kelly, who on previous occasions has indulged in antimedical propaganda, published an attack on modern medicine entitled, "Is Better Health Due to the Doctors?" It was apparently the view of Mr. Kelly that the great advances in sanitation and hygiene, as well as in the care of disease, were due to other agencies. In the same publication for May, Dr. Ray Lyman Wilbur, President-elect of the American Medical Association, replies to Mr. Kelly and indicates promptly his belief that the attack is a good illustration of what modern medicine is likely to mean to those who lack scientific training and who, even though making the gesture of being fair, have closed their minds to fact. "Better health is due to the doctors," asserts Dr. Wilbur, "because they have discovered and introduced facts regarding the recognition and prevention of disease into ordinary life."

The reasoning of Mr. Kelly was confused by the fact that his knowledge of medical work was not intimate. Every time a physician prevents disease, Dr. Wilbur points out, he prolongs life. First must come diagnosis, and for this the individual physician is responsible. Mr. Kelly's reasoning is like that of many others who criticize and question medical accomplishment blindly and who are unwilling to see. They understand that arsenic will kill parasites on an orchard tree, but seem unable to appreciate that arsphenamin,

when injected into a human body harboring the living spirochete of syphilis, will kill that organism.

"None can sanely deny," continues Dr. Wilbur, "that his [the physician's] services in the aggregate have brought about better health, more comfort and longer life." But the scoffers are those who are unfamiliar with the achievements of modern medicine; who have not experienced the benefits of relief from modern anesthetics; who have not realized the relief afforded by modern surgery. It is easy for those who do not know to ascribe the great results from modern sanitation to other than medical agencies but, Dr. Wilbur pleads, "only those familiar with biological rules can be trusted. It is as unsafe for a community to build a bridge without the authority of a trained engineer to approve the plans, as for a community to make health laws without using the authoritative knowledge of the doctor."

It is well that Dr. Wilbur has presented the case for medical science, but unfortunate that a periodical of high standing should have made necessary a reply to an attack by a writer of the scientific training—or rather of the lack of it—of Mr. Kelly. To those informed there is no question. "I venture to state," concludes Dr. Wilbur, "that if the people of the United States were willing to avail themselves fully of what is now known of the control of diseases and the care of the human body, and would spend as much for this purpose as they do for the protection of the Republic from outside prospective enemies, we could ensure an average additional increase of ten years to the span of human life."

THE "LOCAL" WASSERMANN REACTION

An early diagnosis is possible in virtually all cases of primary syphilis. In about 75 per cent. of the cases, the diagnosis can be made with the dark field microscope, and the earlier this apparatus is used the larger the percentage of positive findings will be. Simple, prompt, unquestionable, it is the ideal method; but it fails to disclose spirochetes in all cases, and especially in those that have been locally treated before the examination is made. Contrary to the opinion of some observers, the ordinary Wassermann reaction is of distinct value in the early diagnosis of primary syphilis. It has occasionally been positive as early as three days after the initial lesion appeared. It was positive by the end of the first week in 36 per cent. of 600 cases,[1] and by the end of the third week in almost 70 per cent. of these cases. A single Wassermann test at a very early date will therefore be negative in most instances, but repeated tests show that the reaction usually becomes positive before secondary symptoms appear. It is positive in some cases when the dark field findings are negative. Both procedures, therefore, should be employed when one or the other fails. A third valuable method for the diagnosis of primary syphilis has recently been introduced and named the "local" Wassermann reaction.

The local Wassermann reaction is simply the ordinary Wassermann reaction carried out on the serum that exudes from the surface of a primary lesion instead of on a patient's blood serum. Sufficient local serum can be obtained ordinarily without difficulty. The lesion is simply sponged with physiologic sodium chlorid solution, and is then dried and gently squeezed. The serum that exudes is collected by capillary suction in a pipet until 0.1 c.c., or the amount desired, is obtained. If necessary, the surface of the lesion may be lightly scratched with the end of the collecting pipet, since a little blood in the serum does not interfere with the reaction. Usually from 0.1 to 0.2 c.c. of serum may thus be obtained. It seems reasonable to suppose that adding four or five drops of physiologic sodium chlorid solution to the fluid on the surface of the lesion would give a concentration strong enough to yield positive reactions. In a series of thirty-four cases [2] the reaction was uniformly positive in 0.0125 c.c. of serum. Thus, obtaining serum for the test is as simple as it is for the dark field examination.

Klauder and Kolmer [3] have reported observations on the Wassermann reaction on exudates, transudates and secretions. To demonstrate a local as well as a hematogenous origin of the specific complement-fixing antibodies, they performed Wassermann reactions in several cases on the surface serum of primary chancres, and found that "these tests yielded almost uniformly a four plus reaction." Later a series of fourteen cases was reported by the same authors.[4] Stern and Rypins [5] have recently reported a series of forty-three cases of demonstrated primary syphilis in which the local Wassermann reaction was positive in 100 per cent. of the cases, the dark field microscope in 95.3 per cent., and the blood Wassermann reaction in 30.2 per cent. Local Wassermann reactions were obtained in this series as early as three days after the initial lesion appeared, and local treatment did not interfere with the reaction, even when the spirochetes had disappeared.

It appears that the local Wassermann reaction is of much more value in primary syphilis than is the blood Wassermann reaction, and that it yields as high a percentage of positives as the dark field microscope. Obviously, the dark field examination will remain the only absolute and unquestionable means for diagnosis. But when a dark field apparatus is not available or when its findings are negative, and when local treat-

1. Craig, C. F.: The Wassermann Test, Ed. 2, St. Louis, C. V. Mosby Company, 1921.

2. Stern, D., and Rypins, R.: The Local Wassermann Reaction in the Early Diagnosis of Primary Syphilis, J. Lab. & Clin. Med. **8**: 91 (Nov.) 1922.

3. Klauder, J. V., and Kolmer, J. A.: The Wassermann Test with Secretions, Transudates and Exudates in Syphilis, with a note on the Origin of the Complement Fixing Antibody, J. A. M. A. **76**: 1635 (June 11) 1921.

4. Klauder, J. V., and Kolmer, J. A.: The Wassermann Test Performed with Chancre Fluid as an Aid in the Early Diagnosis of Syphilis, Arch. Dermat. & Syph. **5**: 566 (May) 1922.

5. Stern, D., and Rypins, R.: The Local Wassermann Reaction: A New Diagnostic Aid in Primary Syphilis, Minnesota Med. **6**: 167 (March) 1923.

ment has driven the spirochetes from the lesion, the local Wassermann reaction will be an invaluable aid in making a positive diagnosis at a time when proper treatment will be most effective.

Current Comment

HOW VON MOLTKE DIED

When Gen. Helmuth von Moltke died, June 18, 1916, during a celebration held in honor of Field Marshal von der Goltz in Berlin, the crown prince said, "He died of a broken heart." In 1922, Eliza von Moltke, wife of the famous general, published the memoirs of her husband, containing many letters which he had written to her. From 1911 until the time of his death, General von Moltke had suffered constantly with a disabling disease, and his letters reflect his views of his condition and also of his treatment. During a part of this time he was under the care of Dr. August Herrmann, director of the hospital in Karlsbad. Dr. Herrmann [1] takes exception to some of the medical statements of the famous general, and has recently explained the incidents that led up to von Moltke's death. When von Moltke came to him in 1911, he found the noted military officer suffering with a shortness of breath, which von Moltke ascribed to increased weight and to indigestion. However, the Karlsbad physician, after a serious and painstaking examination, concluded that the chief difficulty was an infection of the walls of the heart. As he inquired into the previous medical history of his famous patient, he discovered that during the previous year von Moltke had suffered with pain in the throat, and that the medical adviser whom he consulted for this pain had massaged the tonsils, which were at that time inflamed. Following this massage, the infection had been forced out of the crypts of the tonsil and carried by the blood stream to the heart, where it had set up a local infection far more serious than the original complaint. Dr. Herrmann relates that he informed General von Moltke of his diagnosis and his belief as to the cause of the disease. Two days after he consulted Dr. Herrmann, von Moltke wrote to his wife: "I had to tell the physician the history of my disease, and he said at once that as a result of the forcible handling of my tonsils the infectious material in the body had been driven out and that I would always suffer as a result of this infection. He was relieved at the present state of my heart. He said, after he had thumped me long and thoroughly, that my present condition was merely a light indisposition of the digestion and a slight inflammation of the liver." Von Moltke returned each year to Karlsbad and appeared to be holding his own; in fact, a year later his physician told him that he found his condition somewhat better than previously. In 1913, however, Dr. Herrmann was unable to assure him so well as before. He discovered that the heart murmur had become louder and that there had appeared a considerable quantity of albumin in the urine. Furthermore, the width of the heart had increased so that it was certain that the condition was becoming worse. He told his famous patient of his findings, but von Moltke refused to believe that the condition was actually worse, and said, "I am not so sick as you believe." When Dr. Herrmann answered, "Your excellency is nevertheless much more seriously sick than you believe," he replied sharply, "According to your view, doctor, I cannot continue as chief of the general staff." In 1914, von Moltke came twice to Karlsbad, and although he lived in the institution conducted by Dr. Herrmann, he did not consult him medically, but visited instead another Karlsbad physician who had previously taken care of his wife. As has been stated, General von Moltke died suddenly, June 18, 1916, and Dr. Herrmann comments cynically on the statement of Crown Prince Wilhelm that he died of a broken heart. "For the physician, the manner of his death will be more easily understood when I add that he did not die of the sorrow and distress of a disturbed heart, but of a heart, changed through an endocarditis and myocarditis, which had ceased to beat on that day."

1. Herrmann, August: Die Erkrankung des Generalobersten Helmuth v. Moltke, München. med. Wchnschr. **70**: 534 (April 27) 1923.

PEDICULOSIS, CHIROPRACTICALLY SPEAKING

The ranks of chiropractic are torn with dissension. There are two camps, the Big-endians and the Little-endians, or, more descriptively, the strict constructionists and the liberal constructionists, the literalists and the latitudinarians. The strict constructionists are the 100 per cent. boys. To them, pathology and therapeutics begin and end in chiropractic. All human ailments, from soft corns to hardening of the liver, are due to subluxated vertebrae impinging on nerves, and the cure of all these ailments lies in the "adjustment" of these subluxations. Those in the latitudinarian camp, on the other hand, take a more rational, if less orthodox view, of both pathology and treatment. They admit that there are certain pathologic states that are not explainable on the chiropractic theory, and that there are certain conditions that may be more efficiently treated by methods other than the "chiropractic thrust." The amount of feeling exhibited by the opposing camps is characterized by more heat than light. The chief and most valiant exponent of the orthodox school of chiropractic is B. J. Palmer of Davenport, who is familiarly dubbed by his disciples "B. J." This individual is the son of D. D. Palmer, who founded the "Palmer School of Magnetic Healing," which, as the "magnetic healing" game became passé, evolved into the "Palmer School of Chiropractic." A year or so ago, the Palmer School of Chiropractic at Davenport brought suit against the city of Edmonton, an Edmonton physician and the College of Physicians and Surgeons of the Province of Alberta asking $20,000 damages for matter that had been published that the Palmer concern considered libelous. It may be said, in passing, that the Davenport institution did not get a verdict but had to pay its own costs. The star witness for the chiropractors was B. J. Palmer, the redoubtable "B. J." Palmer's testimony under oath in this case makes very funny

reading, or it would be funny if one could forget that chiropractic is a menace to the public health. One of the questions asked Palmer was relative to the chiropractic treatment for lice. Palmer oracularly answered:

"The Chiropractic Philosophy constantly imbues the same fundamental thought that all external or internal germs, or other scavengers, are scavengers strictly in the sense that they live upon body waste and dead matters; the purpose of the Chiropractic adjustment being to make normal tissue that there would be no waste matter upon which any kind of scavenger could live either inside or outside of the body."

Then followed these questions put by the attorney for the city of Edmonton, and the answers made by B. J. Palmer:

"*Question.*—And what particular vertebra did you teach them to adjust for lice on the head, if any?

"*Answer.*—The adjustment for any scavenger would depend entirely upon where that scavenger was.

"*Q.*—Well, take scavengers such as lice on the head: what vertebra would you adjust for those?

"*A.*—In the cervical region.

"*Q.*—And suppose you had body lice in the groin, what vertebra would you adjust for those?

"*A.*—In the lumbar region.

"*Q.*—Any particular vertebra?

"*A.*—It would depend entirely upon the particular one subluxated. It might fluctuate in different individuals.

"*Q.*—What fluctuations would there be there?

"*A.*—From the second to the fifth, inclusive; it could be any one."

Comment on this would be painting the lily and gilding refined gold.

SUGGESTIVE THERAPEUTICS

Public interest in the mental aspects of human health and sickness was greatly stimulated by the experiences of the war period and has been evidenced in many ways, both helpful and harmful. As usual an army of parasitic harpies has been quick to sense this interest, and through cults and books has exploited and taken advantage of it. Unfortunately, the subject lends itself to mysticism, and appeals to deeply rooted, instinctive longings; and simpletons, mountebanks and misguided fanatics can always be found to play the part of the cat in the grab for chestnuts. Recently, Hon. John J. Kindred, a medical member of Congress, addressed the House of Representatives with a timely, frank and instructive history of suggestive therapeutics. He outlined the history of the use and abuse of suggestion from the days of the Assyrians and Egyptians to the present, pointing out that there has never been a time when it has not been practiced in some form or another. The scientific study of these phenomena has also been continuous, and though tinged at times with mysticism and often obscured by clouds of meaningless words and phrases, has gradually discovered something of the laws of operation, if not of the nature, of suggestion. That there is much of a helpful kind in the outcome of these studies for treating and explaining the mechanism of disease, is unquestionably true; but, as Dr. Kindred wisely insists, there are limitations as well as possibilities in its applicability, and if great harm and unnecessary suffering are to be avoided, it is essential that it be not used indiscriminately and blindly. Physicians have neglected the subject, partly from a fear of being confused with the charlatans who have exploited it; but it is one in which there is much of value and which cannot be properly applied in treatment until it is applied with a knowledge of physiology and pathology.

SMALLPOX IN 1922

The virulence that smallpox displayed in parts of this country and of Canada in 1921 was more than maintained in 1922. There were 495 deaths [1] among 9,936 cases reported in 276 cities. The case mortality rate therefore was 5 per cent., whereas it was 1 per cent. in a much larger number of cases in 1921. It has already been noted [2] that the case mortality rate for 1921 in ninety-two cities was six times what it was in 1920, and now it appears to have been in 1922 five times what it was in 1921. Among the cities that have been visited by virulent smallpox are Okmulgee, Okla., where 85 per cent. of the patients died; Muskegon, Mich,. 38 per cent.; Tucson, Ariz., 20 per cent.; Chicago, 16 per cent.; Moberly, Mo., 39 per cent.; Denver, 31 per cent.; Kansas City, Mo., 46 per cent., and Kansas City, Kan., 42 per cent. It cannot be predicted where or to what extent smallpox will next appear, but with the disease entrenched on this continent, as it apparently is, it is reasonable to believe other severe outbreaks will occur. There is little comfort in the reduction in the number of cases in 1922, when the actual number of deaths increased. A smallpox hazard exists which cannot be surmounted by indifference to the warnings noted above, and which will be more difficult to surmount as the period of inaction increases. The loss of 50,000 lives in the Philippines is a recent example of the danger of smallpox to a country that disregards local outbreaks of the disease.

PITUITARY SECRETION

There is no longer any doubt that parts of the pituitary gland can yield constituents that are capable of exerting potent physiologic reactions. Extracts of the organ are, in fact, used for therapeutic purposes because they bring about desired changes in certain functions. If the hypophysis plays a part in the organism by virtue of specially elaborating some active product concerned with the usual performances of the body, it becomes important to learn how and when the "hormone" or specific secretory substance finds its way into the circulating mediums. The anatomic relation of the pituitary to the cerebrospinal fluid has naturally suggested that the latter may receive the product in question directly from the cells that produce it. Opinion as to the actual conditions existing has been divided. Recently, Dixon [3] of the pharmacologic laboratory at Cambridge University has presented seemingly convincing evidence that the pituitary gland secretes into the cerebrospinal fluid. The latter shows the presence of those constituents that have been described under a variety of designations

1. Statistical Bulletin, Metropolitan Life Insurance Company, April, 1923.
2. Smallpox, editorial, J. A. M. A. **79**: 304 (July 22) 1922.
3. Dixon, W. E.: Pituitary Secretion, J. Physiol. **57**: 129, 1923.

and proprietary names. It is a striking circumstance that pituitary extract injected into the circulation causes the gland to secrete. Pituitary extract injected into the cerebrospinal fluid rapidly causes the ordinary systemic effects by passing into the general circulation. A balance is struck between the amount in the blood and that in the cerebrospinal fluid. This reminds one somewhat of the conditions existing in the liver, which also is stimulated to increased secretory response by injection of bile salts, products of its own activity.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Measles in Montgomery.—Reports of the city and county health officer of Montgomery, May 5, showed that since the measles epidemic appeared in the county, a total of 2,600 cases had been reported. A rapid decline is now noticeable.

ARKANSAS

Physician's License Revoked.—It is reported that the license of Dr. John Wesley Cunningham, Little Rock, has been revoked, following his conviction, April 25, on a charge of having violated the Harrison Narcotic Law. Dr. Cunningham was sentenced to the federal penitentiary.

CALIFORNIA

Belgium Honors Dr. Gay.—Dr. Frederick P. Gay, professor of bacteriology in the University of California, San Francisco, and chairman of the division of medical sciences of the National Research Council, has received from the Belgian ambassador, on behalf of King Albert, the decoration of Commander of the Order of the Crown, in recognition of his scientific work.

Chiropractic Board Sued.—Alleging that none of the members of the newly appointed state board of chiropractic examiners are eligible to hold office under the act passed at the November election, suit was filed in the superior court of San Francisco, May 4, to remove from office the five members of the board appointed by Governor Richardson. In the suit which is filed in the name of the people of the state of California through George D. Gillespie, a chiropractor, the members of the board are declared not to have qualified under the requirement calling for three years of practice prior to appointment on the board. The suit is in the nature of quo warranto proceedings and was filed with the consent of the attorney-general.

IDAHO

Personal.—Dr. William P. H. Habel, Lewiston, has been elected health officer to succeed Dr. Frederick T. Harris, who resigned recently. Dr. Habel has been connected with the U. S. Indian Agency, Fort Lapwai.——Drs. George M. Waterhouse, Weiser, and Frank W. Almond, Boise, were elected president and secretary-treasurer, respectively, of the South Idaho District Medical Society, at Boise, April 14.

ILLINOIS

Senate Passes Sheppard-Towner Bill.—The senate passed the Sheppard-Towner federal aid maternity bill, May 21, by a vote of 27 to 8, with four not voting. The house has not yet passed this measure.

State Medical Election.—At the seventy-third annual meeting of the Illinois State Medical Society at Decatur, May 15-17, the following officers were elected for the ensuing year: president, Dr. Edward H. Ochsner, Chicago; president-elect, Dr. Lewis C. Taylor, Springfield; vice presidents, Drs. Cecil M. Jack, Decatur, and Blanche A. Burgner, Chicago; secretary, Dr. William D. Chapman, Silvis, and treasurer, Dr. A. J. Markley, Belvidere.

Chicago

St. Luke's Intern Association Entertains.—The association of interns of St. Luke's Hospital will tender a banquet to former interns of the hospital, June 4, at the Hotel Morrison. It is requested that all former interns communicate with Dr. Dean Burns at the hospital.

Prof. Stieglitz Receives Medal.—At a banquet of the Chicago Section of the American Chemical Society, May 25, the Willard Gibbs Medal was presented to Julius Stieglitz, Ph.D., in recognition of his research work on molecular rearrangement and his interpretation of univalent nitrogen. The medal was presented by its founder, Mr. W. A. Converse. Professor Stieglitz is chairman of the department of chemistry, University of Chicago; chairman of the Committee on Synthetic Drugs of the National Research Council and has been a member of the Council on Pharmacy and Chemistry of the American Medical Association since its inception.

Dr. Sachs' Widow Superintends Institute.—Mrs. Theodore B. Sachs, widow of the late Dr. Sachs, has succeeded James Minnick as superintendent of the Chicago Tuberculosis Institute. The staff comprises a physician, a crusade director, a publicity director, a placement bureau director, a supervisor of nurses, two assistant supervisors, eighteen public health nurses, and a custodian of property. The institute has recently arranged to furnish tooth brushes and powder for children at cost. These are dispensed by public health nurses employed throughout Cook County by the institute. To raise money for a cottage for tuberculous nurses, photographs of the London monument to Edith Cavell are being sold.

KENTUCKY

University of Louisville Expands.—Several changes in the University of Louisville Medical Department have recently been announced by the board of trustees. The university has acquired a new $270,000 campus of about forty acres in the south central portion of the city, to which the College of Arts and Sciences will be moved within two years and on which new buildings will be erected. A new university council has been created, consisting of the chancellor, president and four deans, ex-officio, two faculty representatives each from the College of Arts and Sciences and the school of medicine, and one each from the school of dentistry and school of law, with advisory capacity to the board of trustees in educational matters. A new agreement has been made between the city and school authorities by which the professional administration of the Louisville City Hospital is given over entirely to the university, which undertakes to furnish professional care throughout each year. Dr. Stuart Graves, Syracuse, professor of pathology and bacteriology, and acting dean this year, has been made dean of the school of medicine to succeed Dr. Henry Enos Tuley, who resigned on account of ill health. Dr. Tuley has been made dean emeritus and professor emeritus of pediatrics as well as editor of the *Alumni Bulletin*. During the coming summer, extensive alterations will be made in the medical school building; new laboratory equipment will be installed and additional teachers added to allow a maximum of seventy-five freshmen, sixty-five sophomores and sixty each of juniors and seniors. Requirements for admission and promotion have been entirely revised. The following additions to the faculty have been announced, effective the coming school year:

Anatomy: S. I. Kornhauser, Ph.D., professor of anatomy, histology and embryology, continuing as head of the department; Dr. Sydney E. Johnson, professor of gross anatomy; Dr. Stillman J. Hathaway, assistant professor of anatomy; Dr. Herman Humphrey, lecturer in applied anatomy, and Dr. Lamar W. Neblett, instructor in anatomy.

Physiology and Pharmacology: Dr. Henry G. Barbour, professor of physiology and pharmacology, head of the department.

Pathology and Bacteriology: Dr. William C. Martin, instructor in bacteriology and hygiene; Dr. Earl R. Gernert, resident pathologist and instructor in clinical pathology; Dr. Robert B. Poling, instructor in pathology and bacteriology.

Surgery: Dr. Fred W. Rankin, professor of surgery; Dr. Archibald M. McKeithen, resident in surgery.

Medicine: Dr. John Walker Moore, professor of medicine; Dr. Hulbert V. Noland, resident in medicine, and Dr. Henry H. Turner, assistant in medicine.

LOUISIANA

Portable Picture Outfits for Health Officers.—Pictures will be provided by the U. S. Public Health Service, the Rockefeller Foundation, and other similar organizations for the purpose of equipping every parish health unit with portable motion picture outfits to help eradicate the mosquito, fly and hookworm. A special department will be inaugurated by the state board to provide films for the county health units.

Five additional "suitcase" machines, consisting of a portable electric light plant, slide projector and picture machine, and eight new generators will be put into use.

MAINE

Osteopathic and Chiropractic Bills.—The proposed amendment to the osteopathic practice act which would give such practitioners the right to use drugs and perform surgical operations was defeated. The bill providing for a separate board for the chiropractors was passed. The latter are not permitted to use the prefix "Dr." or the word "doctor" or to use drugs, to do surgical operations, or to practice obstetrics.

MASSACHUSETTS

Physician's License Revoked.—The board of registration in medicine has revoked the registration of Dr. Walter B. Willey of Everett. Dr. Willey was fined last summer for operating an automobile while under the influence of alcohol. Subsequent to this conviction a hearing was held and the board placed the case on file with the understanding that if his behavior should later be unsatisfactory, further action would be taken. Dr. Willey was recently found under the influence of intoxicating liquor. The board has revoked his license to practice medicine.

MICHIGAN

Michigan Health Exposition. — The Michigan Health Exposition will be held in the General Motors Building, Detroit, June 7-16, under the auspices of the Wayne County Medical Society, with the cooperation of the department of health, the board of education, the recreation commission, the police and fire departments, and other official and non-official organizations. The University of Michigan Medical School regents are considering an educational exhibit in the exposition, and the matter has been referred to an executive committee. Dr. Hugh Cabot, dean of the medical school, Ann Arbor, has accepted the offer of Dr. Robert A. C. Wollenberg, general chairman of the exposition, to become a member of the advisory council.

MINNESOTA

Epidemic of Measles.—According to the city health officer, St. Paul is passing through the greatest epidemic of measles in the history of the city. Ninety-seven cases were reported in one day, April 30. In order to check the disease, the health department has extended the quarantine period from ten to fourteen days.

MISSOURI

State Medical Association.—At the annual meeting of the association, in Joplin, May 8-10, the following officers were elected for the ensuing year: president, Dr. George Wilse Robinson, Kansas City; vice presidents, Drs. Joseph W. Love, Springfield, Albert J. Campbell, Sedalia, James B. Wright, Trenton, Robert L. Hamilton, Richmond, and Charles E. Hyndman, St. Louis. Dr. Edward J. Goodwin, St. Louis, who has filled the office of secretary for fifteen years, was reelected, and Dr. J. Franklin Welch, Salisbury, who has served for twenty-five years, was reelected treasurer. A resolution to create a permanent legislative bureau of the Missouri State Medical Association and to make assessments against individual members for the maintenance of the bureau that it might promulgate legislation helpful to public health was adopted by the assembly. Springfield was selected for the 1924 convention.

NEW MEXICO

New Hospital Opened.—The Holy Cross Sanatorium, Mahoney Park, Deming, was formally opened by the Sisters of the Holy Cross, recently. This institution is exclusively for the treatment of tuberculosis, and has a capacity of 125 beds. Dr. W. H. Cryer of the Union Printers' Home and Tuberculosis Sanatorium, Colorado Springs, Colo., is medical director of the new institution.

NEW YORK

New York City

Physician Sentenced.—According to reports Dr. Leonard K. Hirshberg was sentenced to four years in the Atlanta penitentiary, May 11, by Federal Judge Hard, following his conviction for using the mails to defraud investors in a "blind pool." When Dr. Hirshberg left the court, freed in $15,000 bail after his attorneys had filed notice of an appeal, he was rearrested on a warrant issued by the state of Maryland on a charge of perjury.

Veterans' Camp in Adirondacks. — Caduceus Post 818, American Legion, composed of more than 400 ex-service medical men, met, May 10. Dr. Samuel Lloyd, New York, past commander of the post, spoke on the Veterans' Mountain Camp in the Adirondacks, recently opened for patients. This camp is for ex-service men who do not receive compensation from the government. It was stated that funds from the sale of poppies on Memorial Day in New York would go to aid this camp.

New York's Century-Old Hospitals.—With the recent celebration of its centennial by the New York Nursery and Child's Hospital attention is brought to the group of institutions in the city that have rounded out more than a century of activity. Some with the date of founding follow: New York Hospital, 1771; Bellevue Hospital, 1811; New York Dispensary, 1791; Lying-In Hospital, 1799; Orphan Asylum Society in the City of New York, 1851; New York Eye and Ear Infirmary, 1820; Hebrew Orphan Asylum, 1822; New York Nursery and Child's Hospital, 1823.

Dental Exhibit at Academy of Medicine.—The earliest works on dentistry by Fauchard and his contemporaries, first dental works published in America, collections of dental histories, bibliographies, indexes and histories, historical photographs, medical text illustrating the history of dentistry, written prior to 1600, and old instruments were exhibited at the New York Academy of Medicine recently in connection with the annual meeting of the state dental society. The Fauchard bicentennial commemorative exercises, celebrating the two hundredth anniversary of the completion of the writing in 1723 of the first dental textbook, "Le Chururgien Dentiste," were held, May 10.

OHIO

Medical Society Loses Charter.—After the house of delegates refused to review further the quarrel of two years' duration among members of the Sandusky County Medical Society, the Ohio State Medical Association, in annual session in Dayton, revoked the charter of the county organization. It is suspended until a reorganization is made. The trouble arose originally over the organization of a medical staff in the Memorial Hospital, Fremont, when eight members of the society who joined the staff were suspended. The state organization decided that the county society acted illegally in suspending them.

OKLAHOMA

State Medical Meeting.—At the thirty-first annual meeting of the Oklahoma State Medical Association in Tulsa, May 15-17, the following officers were elected for the ensuing year: president, Dr. Everett S. Lain, Oklahoma City; vice presidents, Drs. Charles H. Ball, Tulsa, Abraham L. Blesh, Oklahoma City, and George S. Baxter, Shawnee; secretary-treasurer and editor of the *Journal of the Oklahoma State Medical Association*, Dr. Claude A. Thompson, Muskogee. Resolutions were adopted protesting the training of chiropractic by the U. S. Veterans' Bureau, and asking that certain irksome restrictions now placed on physicians by the regulations in connection with the National Prohibition Law and the Harrison Narcotic Law be removed.

PENNSYLVANIA

Memorial Tablet to College Founders.—Dedication services of a memorial tablet in honor of the founders of the original faculty of the Western Pennsylvania Medical College will be held in the School of Medicine of the University of Pittsburgh, May 31. The tablet has been donated by alumnae of the school.

Open-Air High School.—A new open-air school will be ready to accommodate 150 junior high school pupils in Reading next September. The present fresh-air school, opened in 1912, accommodates only twenty. The Reading Sanatorium for Treatment of Tuberculosis, in cooperation with the school authorities, accomplished the new school.

Pittsburgh Physicians to Use "M.D."—The Allegheny County Medical Society, through its public health legislation committee, is recommending its members to request personally or by letter, the telephone directory publishers to publish "M.D." instead of "physician" after their names in the regular listing of the new Pittsburgh telephone directory.

Philadelphia

Public Health Day.—Under the leadership of Dr. James Anders, president of the Health Day Organization, May 2 was set aside to be observed as public health day in Philadelphia. The Health Day Organization is composed of a number of organizations, which include the Philadelphia County Medical Society, the College of Physicians of Philadelphia, the Civic Club, the New Century Club, the Philomusian Club, the city parks association, the department of public health, the department of public education, the housing committee, the city child playground association and the association of public welfare.

SOUTH CAROLINA

Hospitals Amalgamate.—The Pryor Hospital and the Chester Sanatorium, Chester, combined, May 14. Physicians, nurses, patients and the superintendent of the Chester Sanatorium moved to the Pryor Hospital, of which Dr. R. H. McFadden is superintendent. The Pryor Hospital will be operated and conducted by the trustees named in the will of the late Dr. Stewart W. Pryor.

TEXAS

Chiropractic Bill Killed.—The McMillin chiropractic bill, seeking to establish a state chiropractic licensing board, was killed when the public health committee of the senate unanimously reported unfavorably on the measure, May 4.

State Association News.—At the fifty-seventh annual session of the State Medical Association of Texas in Fort Worth, May 8-10, the following officers were elected for the ensuing year: president, Dr. Arthur C. Scott, Temple; president-elect, Dr. Murff F. Bledsoe, Port Arthur; vice presidents, Drs. Jasper N. White, Texarkana, Alonzo A. Ross, Lockhart, and John W. Torbett, Marlin, and secretary, Dr. Holman Taylor, Fort Worth. Governor Davidson delivered the principal address on: "The Responsibility of the State for the Health of Its Citizens," and Dr. Oscar Dowling, chairman of the board of trustees of the American Medical Association, spoke on the work of the national organization. Dr. Holman Taylor, secretary of the state association and editor of the *Texas State Journal of Medicine*, was presented with a watch for "meritorious service." The council on legislation and public instruction was enlarged and divided into two separate bureaus. San Antonio was selected for the 1924 meeting.——Preceding the opening session of the state medical society, the following special meetings were held: Texas Railway Surgical and Hygienical Association; the State Pathological Society of Texas; Texas Roentgen Ray Society, and the public health conference under the auspices of the state board of health.

VIRGINIA

County Medical Society Reorganized.—At a meeting of the Accomac County Medical Society at Olney, May 3, Drs. Joseph L. DeCormis, Accomac, and John W. Robertson, Onancock, were elected president and secretary-treasurer, respectively. This was the first meeting of the society since 1919. A. H. Payne, epidemiologist, Johns Hopkins Hospital, Baltimore, who has recently been appointed epidemiologist of the Virginia State Board of Health, gave an address.

University Hospital to Enlarge.—The contract has been let for the immediate erection of a new $115,000 wing at the University of Virginia Hospital, which will be ready for use in September. The wing will be immediately south of the present hospital buildings and will conform to the Steele wing on the north. This new building was made possible by a gift from Paul Goodloe McIntire. The new wing will house the obstetrical and orthopedic departments of the hospital and will provide sixty-three beds and two nurseries.

State Health News.—In order to facilitate the collection of reports of contagious disease and other vital statistics by county health officers so that they may more quickly apply preventative measures, the state health department has sent to each physician, in counties having organized health units, boxes containing report cards and forms, mailing cases for collecting and sending specimens to the state laboratory, and a copy of the revised rules and regulations. Inside the lid of each box is a synopsis of public health laws and a list of supplies furnished by the state board of health.

WASHINGTON

Society News.—The last scientific meeting, until September, of the Pierce County Medical Society was held in Tacoma, May 8. Dr. Lester J. Palmer, Seattle, spoke on "Insulin."

New Deaconess Hospital Opened.—The new Deaconess Hospital at Wenatchee was dedicated, April 22, by Bishop Shepard of Portland, Ore. The building was erected at a cost of $100,000.

WISCONSIN

Board of Health of Oshkosh.—At a meeting of the commission council at Oshkosh, May 1, Mayor McHenry was elected chairman of the board of health, and Dr. Arthur H. Broche, secretary. Dr. Alvin G. Koehler was appointed city health officer. The board voted that the health commissioner shall hereafter file with the commission council a quarterly report summarizing all health activities of his department.

CANADA

New Health Centers Announced.—The provincial health authorities announce that, providing the necessary cooperation is forthcoming, health centers comprising clinics for tuberculosis and child welfare will be opened this summer at Three Rivers, Quebec. A grant of $500,000 by the Quebec government is to be expended in five years in an effort to reduce the death rate due to tuberculosis and infantile diseases.

Society News.—The forty-third annual meeting of the Ontario Medical Association will be held in Windsor, May 29-June 1. Dr. Walter R. Parker, Ann Arbor, Mich., and Dr. Don M. Campbell, Detroit, will be among the visiting speakers.——The first annual session of the Canadian Society for the Study of Diseases of Children will be held in Montreal, June 15-16.——At the fourteenth meeting of the Montreal Medico-Chirurgical Society, Dr. Lionel M. Lindsay read a paper on "Food Edema."——The annual banquet of the Halifax Medical Society was held, April 18. Dr. Matthew G. Burris was elected president; Dr. Edward V. Hogan, vice president, and Dr. Solomon J. Turel, secretary-treasurer.——At a meeting of the Norfolk County Medical Society (Ontario), Dr. Ernest W. Zumstein was elected president, and Dr. Alan B. Jackson, Simcoe, secretary-treasurer.

GENERAL

American Bronchoscopic Society.—At the annual meeting of the society in Atlantic City, N. J., May 9, the following officers were elected: president, Dr. Robert C. Lynch, New Orleans; vice president, Dr. Fielding O. Lewis, Philadelphia, and secretary-treasurer, Dr. William B. Chamberlain, Cleveland.

American Laryngological, Rhinological and Otological Society.—At the annual meeting of this association in Atlantic City, N. J., May 10-12, the following officers were elected for 1923-1924: president, Dr. Hanau W. Loeb, St. Louis; vice presidents, Drs. Frederick N. Sperry, New Haven, Conn., Ray Connor, Detroit, and Thomas E. Carmody, Denver; Dr. William Haskin, New York, was reelected secretary, and Dr. Ewing W. Day, Pittsburgh, was reelected treasurer.

Prescription Permits More Readily Obtained.—An order was issued by Prohibition Commissioner Haynes, May 21, stating that hereafter physicians may get liquor prescription permits from state prohibition directors without applying to the Treasury Department at Washington, D. C. According to reports the new regulations were issued after it had been found impossible to investigate thousands of applications for permits which had accumulated in the Treasury Department. There are approximately 150,000 physicians in the United States and of these, it is said, 35,000 are now licensed to prescribe wines and spirits.

Chemical Trade Commissioner Appointed.—The appointment of Dr. Frederick E. Breithut as chemical trade commissioner of the United States to Germany and other European countries has been announced by the Department of Commerce at Washington, D. C. The appointment was made because of significant developments in the chemical industry in Germany and the importance of these developments to the American industry. Dr. Breithut will be attached to the staff of the commercial attaché, Charles H. Herring, Berlin, but will study the chemical industries in England, France and elsewhere in Europe where there have been developments of interest to the United States. The Department of Commerce states that the American industry is facing a critical stage of

its development and it is imperative that this country be advised of the developments in Germany and other countries.

Census Bureau Takes Hospital Census.—The U. S. Bureau of the Census, Washington, D. C., is sending out questionnaires for the purpose of taking the census of all the hospitals and dispensaries in the United States. The schedules for both hospitals and dispensaries were sent out between February 16 and February 26, and the returns must be in before June 30. Returns were received during April from 3,427 hospitals and 1,363 dispensaries. The hospitals and dispensaries conducted by the Federal government and by the American Red Cross, under a cooperative arrangement, are to be separately reported by the various agencies controlling them, thus reducing the number of hospitals and dispensaries from which a direct return of schedules is to be made. Excluding the above classes, there remains a total of 2,498 hospitals and 721 dispensaries for which schedules have not yet been received.

Society News.—The thirty-sixth annual meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons will be held in Philadelphia, September 19-21.——The Sioux Valley Medical Association will hold its midsummer session at Sioux Falls, S. D., July 12. The by-laws specify a one-day session. For those wishing to spend two days in Sioux Falls, the local hospitals will present clinics, July 13.——The annual meeting of the Southern Minnesota Medical Association will be held in Faribault, Minn., July 11.——The thirty-sixth annual meeting of the Clinical Surgical Society of America will be held at Washington University School of Medicine, St. Louis, May 28, and at the clinic of Dr. Willard Bartlett, May 29. Papers by local surgeons will be delivered on recent advances on thoracic and cardiac surgery, roentgenotherapy and kindred subjects.——The seventeenth annual meeting of the Association of American Teachers of the Diseases of Children will be held at San Francisco, June 26.

Hospitals for American Indians.—The Commissioner of Indian Affairs, Washington, has recently issued a statement regarding the health of the American Indian. The Indian population of the United States, he said, is 340,197 and of these 225,000 are under the direct supervision of the bureau of Indian affairs of the Interior Department. It is estimated that there are approximately 25,000 Indians afflicted with some form of tuberculosis, and that approximately 80,000 have trachoma and other eye diseases. These make the greatest health problem which the bureau has to meet. The seventy-eight hospitals for Indians have a total bed capacity of 2,400, and during the past year more than 20,000 Indians received treatment at these institutions, which, in addition to medical treatment, are prepared to give also a modified educational course to patients. The Department of the Interior operates a hospital exclusively for the treatment of nervous and mental diseases among Indians at Canton, S. D.

Physical Standards for Working Children.—Two years ago the Children's Bureau of the U. S. Department of Labor appointed a committee of physicians to prepare a standard form for use in examination of children seeking to enter employment. Their recommendations were published in a bulletin on "Physical Standards for Working Children." According to a newly revised edition of the bulletin, twenty-two states now require the physical examination of every child applying for an employment certificate. Since the publication of the first edition, a considerable number of changes have been made in the various state laws with reference to such examination. Virginia now requires the examination of every working child at regular intervals during the years when it is especially susceptible to the strains of industry; eight other states and the District of Columbia allow the certificate-issuing officer to require an examination when he is in doubt as to the child's physical fitness, but in eighteen states there is still no legal provision of any kind for examination, even when a child first enters employment.

National Conference of Social Workers.—The fiftieth anniversary meeting of the National Conference of Social Workers was recently held in Washington. Hospital service, child welfare, disease prevention, medical research, nursing, public health, social health problems in rural communities, and the organization of health agencies, among other subjects, were discussed The director of the social welfare department of the New York Association for Improving the Condition of the Poor described how the death rate of small children in a tenement district has been diminished in the last five years by the Mulberry Health Center. Payment of adequate wages as a factor in promoting health and efficiency among industrial workers was advocated by Dr. Wade Wright, instructor of industrial medicine, Harvard University Medical School, Boston. On May 17, a testimonial luncheon and a silver tea service were tendered Homer Folks, president of the National Conference of Social Work, in honor of his thirtieth anniversary as secretary of the State Charities Aid Association of New York and his thirty-three years in social work. Addresses on Dr. Folk's work in various fields of public welfare were delivered by Secretary of State Hughes, Drs. Edward T. Devine, Livingston Farrand, Hermann M. Briggs, Hastings H. Hart, Lee K. Frankel and others. President Harding opened the grounds of the White House to conference delegates, May 21. Dr. Rene Sand, Belgium, formerly professor of industrial medicine at the University of Brussels, and secretary-general of the League of Red Cross Societies, with headquarters in Paris, was a guest of the conference. He spoke on "The Strategic Position of the School in Programs of Social Work From the Point of View of International Relations," May 22.

The National Rehabilitation Conference.—Vocational educators from twenty-five states attended the National Rehabilitation Conference at Washington, D. C., May 15-16, which was presided over by J. C. Wright, director of the Federal Board of Vocational Training. The principles underlying the federal government's work in vocational training and rehabilitation of civilians are identical to the Sheppard-Towner Law in their receipt of money from the United States and the matching of such money by the several states. The law creating the Federal Vocational Training Board will expire by limitation, June 30, 1924. In resolutions adopted by the conference it was declared "unwise to ask Congress to make any changes in the original act. It is practicable and largely meets the needs of the various states." The conclusion was reached that the existing law is a continuing one, provided Congress appropriates the funds to permit the federal board to function subsequent to June 30, 1924. The resolutions accordingly request that $1,000,000 be annually appropriated to the states as heretofore, so that no state will receive less than $5,000 per annum. In this connection the resolutions state: "The work has been inaugurated in thirty-six states, covering 84 per cent. of the country's population. If Congress would make an appropriation to the states for four years it would encourage some of the states which have not started the work to do so. Obviously when states, in which legislatures meet biennially, are reluctant to inaugurate work depending on federal funds for part payment of the expenses, then the federal appropriations must be made annually." It was taken for granted by the conference that the necessary funds will be appropriated by Congress to continue the work of the Federal Board of Vocational Training.

LATIN AMERICA

"Patent" Medicines Restricted in Peru.—According to recent regulations issued by the Peruvian Health Department, no "patent" medicine may be sold in drug stores unless it has been previously analyzed and its sale authorized by the health department. After September 1, no pharmaceutical specialty may be imported unless its formula is stated on the wrapper or label.

Two New Medical Journals.—The Mexican Medical Association has begun publication of a new journal entitled *A. M. M.* Drs. Manuel Zubieta, F. de P. Miranda and Ignacio Chavez are editor, assistant editor and manager, respectively. The association recently appointed officers for its various sections of medical sciences, propaganda, sociology, mutual protection and ethics and organized a new section on consultations, headed by Dr. D. M. Vélez and having among its membership representatives of the various specialties.——Dr. C. E. Roe, former assistant editor of *La Medicina Ibera*, has started at Lima, Perú, another journal entitled *Gaceta Médica Peruana.*

FOREIGN

Substitutes for Cocain.—The minister of health of Great Britain, after consultation with the Medical Research Council, has appointed a committee to investigate the comparative value, for the therapeutic purposes for which cocain is at present used, of various possible substitutes, and the evidence as to risk, if any, of such substitutes becoming drugs of addiction.

Second International Medico-Military Congress.—The permanent committee of the Congrès international de médecine et de pharmacie militaires will convene in Rome, May 28, prior to the meeting of the second congress. Dr. William

Seaman Bainbridge, who was delegate from the United States to the first congress in Brussels in 1921 and who is a member of the permanent committee, left for Rome, May 14. The congress is to be held under the patronage of the king, who, with the premier, will receive the delegates.

Opposition to Sex Literature.—New Zealand has forbidden the importation, sale or distribution of literature on sex hygiene and the venereal peril, stigmatizing it as "immoral." Sir Archibald Reid of New Zealand, an authority on questions of heredity, has published a public protest against this official interdiction.——The city of Genoa has taken the same stand as New Zealand and has forbidden the sale or distribution of the pamphlet written by Dr. Marchisio on the venereal peril. This work won a prize in a national competition for the best pamphlet of the kind for the young. The Italian Association for Hygiene published the pamphlet and awarded the prize. Its title is "Come ci possiamo difendere dal pericolo venero."

Deaths in Other Countries

Dr. **Arthur Latham,** physician and lecturer on medicine, St. George's Hospital, London, April 13, aged 56.——Dr. **Sol Jervois Aarons** of London, noted for his work on sterility; author of *Golden Rules of Gynecology* and *Gynecological Therapeutics;* April 21, following an operation.——Dr. **Robert Johnston** of Portrush, Ireland.——Dr. **Amarendra N. Banerjee,** on the faculty of Carmichael Medical College, Calcutta, India; of smallpox, aged 39.——Dr. **Carl V. Woegerer,** Vienna; in an automobile accident in New York.——Dr. **L. Brandt,** a specialist in oral surgery at Berlin, aged 69. He studied dentistry in Germany, Russia and at Baltimore, and later qualified for the medical degree. His "Surgery for Dentists" is a popular textbook.——Dr. **Pourtal,** retired surgeon-general of the French navy.——Dr. **Gonçalves Diniz,** formerly professor of pharmacy and natural history at Bahia. ——Dr. **Ferdinand May** of Munich, to whose initiative and appeals from the outset of the movement in Germany for sanatorium treatment of tuberculosis is due the founding of a large number of such institutions, aged 64.——Dr. **E. Minossi** of Rome, physician to the School for Deaf Mutes, author of numerous propaganda works on hygiene.

CORRECTION

Suicide Statistics.—In the editorial on "Suicide Statistics" (THE JOURNAL, May 5, p. 1316), it was stated that "the figures from the United States Census Bureau for the registration area are not available for 1921 and 1922." Dr. William H. Davis, Washington, D. C., Chief Statistician for Vital Statistics, writes that the figures (12.6) for 1921 were given out to the press last December.

Government Services

Army Medical Corps Data

Statistical data concerning personnel of the Medical Corps of U. S. Army recently issued stated that the average age of colonels in the Medical Corps is 53.3 years; of lieutenant-colonels, 47.7 years; of majors, 40.1 years, and of captains and lieutenants, 36.6 years. The University of Pennsylvania has the honor of having furnished more medical officers for the army than any other medical school; Jefferson Medical College of Philadelphia holds second place, with the University of Maryland, Baltimore, and the University of Virginia in the third and fourth places, respectively. As to the state of nativity, Pennsylvania and New York hold the first and second places with 111 and 99 representatives, respectively.

Sergeant Folk of the Medical Department

The retirement of Technical Sergeant Levi E. Folk, after about twenty-five years of almost continuous service in the Hospital and Sanitary Corps of the Army, recalls the achievement of the medical department in establishing the method of transmission of yellow fever. While at Columbia Barracks, Cuba, in 1900, Sergeant Folk volunteered to nurse yellow fever patients, and remained on duty at the hospital until November 30. Having also volunteered for experimentation, he was then transferred to Camp Lazear, where he came down with yellow fever, Jan. 23, 1901, five days after being bitten by an infected mosquito. Sergeant Folk has nine discharges from the Army.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 30, 1923.

The Teaching of Obstetrics and Gynecology

An important report on the arrangements in vogue for the teaching of obstetrics and gynecology in the medical schools of Great Britain has been made to the ministry of health by Dr. Janet Campbell, senior medical officer for maternity and child welfare. The provision of maternity beds in teaching hospitals is a recent innovation. The custom is for medical students or midwives to be trained at maternity hospitals or by attending the poor in their homes. In 1906, only two London hospitals with teaching schools possessed lying-in wards, and these were not used for teaching students; several have still none. The number of maternity beds now varies from seven to twenty-one, and the Royal Free Hospital (which is devoted to women medical students) has forty. But not all these beds are wholly at the service of medical students, for to some, pupil midwives have a prior claim. In the provinces and in Scotland, instruction in practical midwifery is usually less closely associated with the university and medical school. With certain exceptions the general hospitals used for clinical teaching have no maternity beds.

Arising from the practice of expectant mothers coming to hospital to arrange for attendance in their confinements, there has sprung up at Edinburgh in recent years the prenatal clinic, of which the late Dr. J. W. Ballantyne, a great authority on prenatal pathology, was the pioneer. Dr. Campbell points out that prematernal supervision offers the most promising field for preventive work in midwifery, gives opportunity for investigation of abortions, and affords the most hopeful means of reducing the mortality of the newborn. She recommends: (1) when necessary, modification of the medical curriculum so as to provide a minimum of three months' whole time for the study of gynecology and obstetrics, including the care and management of infancy, and the addition, when practicable, of a further period of one month for intern or extern midwifery; (2) a sufficient number of maternity beds to enable all students to obtain suitable intern practice, and, when the student has sufficient knowledge, the supplementing of extern practice; (3) systematic instruction in antenatal and postnatal supervision for all students; (4) instruction in the theory and practice of midwifery by systematic lectures, clinical demonstrations, prenatal clinic, use of the dummy, and attendance on the practice of a maternity hospital (this may largely be taken before the student commences practical midwifery); (5) instruction in clinical midwifery by a teacher of experience; (6) recognition and treatment of puerperal infection and ophthalmia neonatorum; (7) effective control of the teaching of practical midwifery by the medical school so that each student may deliver, personally, the required minimum of cases, and (8) arrangement of the staffs of the department of obstetrics and gynecology so as to admit of the two subjects being taken as integral parts of one whole.

Sex Education

The National Birth-Rate Commission, appointed by the National Council of Public Morals, has presented to the minister of education an important report on sex education. The reports of this commission have been given from time to time in THE JOURNAL, and have been received at home and abroad as original and permanent contributions toward the solution of the problems of population, birth control,

parenthood, sex education and venereal disease. The intention of the commission was to deal with adolescents primarily, but the evidence submitted showed that peril exists from childhood onward. The investigation was pursued on a number of lines—physiologic, psychologic, educational and sociological, with the ethical dominating throughout. The commission is convinced by the evidence heard that, however difficult and delicate is the task, sex education cannot, with due regard to the moral safety and welfare of youth, be shirked. The common assumption that education should be begun only on the approach of puberty was disproved by a great deal of the evidence submitted. All the witnesses insisted that questions asked by children about their own origin should be answered as fully and frankly as the capacity of the child allows. While reticence must be observed as to sex relations, the old legends must not be repeated; the child must not be made to feel that he has asked a question that should not be asked; and even if told that the full answer can only be given later, he must have his curiosity about himself satisfied.

It was generally agreed that it was impossible to fix on the age when such instruction need be given—the individuality, the development and the environment of the child affect the time when curiosity in these matters is awakened. The desire for knowledge should not be anticipated by teaching gratuitously given, but should be honestly satisfied when it shows itself. Knowledge should be imparted gradually, and not come with the shock of surprise at puberty, when harm may be done by the more precise information which must then be given, if it has not been prepared for. Instructions should be given whenever curiosity appears, or when there is any indication that bad habits are being formed. There was not the same agreement among the witnesses as to the content of the sex instruction. But almost without exception they thought that some reticence must be maintained; that a beginning should be made with the fact of motherhood; then, that the relations of the sexes might be referred to in general terms, the ideal of marriage and parenthood being dwelt on. The commission agrees with the more reticent policy, while recognizing that a longer experience and a wider inquiry are necessary to decide what may or may not be imparted. It holds that it is a serious mistake to isolate sex instruction from moral education generally, for this gives it undue emphasis. Chastity should be treated as only one element of a good life. The motive of fear of the consequences of any abuse of the generative function should not be stimulated. Nor should chivalry be unduly stressed, as that may make the relations between the sexes artificial. Even when a bad habit is formed, it should not be treated with harshness. Human parenthood should not be isolated, but treated as part of the evolution of life. The teaching should be as wide and as objective as possible, to awaken an intellectual interest rather than to stimulate an emotional response. As the mental development is gradual, so must the instruction be adapted. As the girl's development is usually in advance of the boy's, the same instruction is not suitable for the two. The insufficiency of knowledge to secure virtue was recognized. Hence the instruction should be given in a proper atmosphere of personal relation between teacher and pupil. While the instruction should not be emotional, it can be fully effective only when there is affection.

There was general agreement that the preparatory instruction as regards the facts of life, birth and growth, in the biologic lessons, might be given to a class, yet the instruction to be given at puberty could be most suitably given only to a small group, and any personal warning should be given individually. When a child leaves home for school, a private warning of possible difficulty or danger should be given, and again at the end of school life there should be a frank talk of the perils in the new life to be begun. As to who should instruct, there was general agreement that the duty rests first of all with the parents, but no less general was the agreement that many parents are not competent to instruct, fail to realize their responsibility or shirk it because of its delicacy. They are ready to throw the responsibility on to teachers. Even when the task falls on the teacher, the consent of the parents should be obtained and, as far as possible, their cooperation. The commission urges that teachers should be trained to impart the instruction. The danger to adolescence, especially in industrialism, when schools and other agencies lose their hold, is pointed out. The commission is convinced that to industrial hygiene must be added social hygiene, of which the chief aim must be the social protection of adolescence during the hours of leisure. Attention is called to the value of women police for the protection of children and adolescents. The protection of children from the age of 2 years was shown to be necessary. Among the measures recommended were supervision of parks, recreation grounds and streets, better lighting of streets, school attendance at an early age (in view of bad housing conditions), supervision of play hours and provision of open spaces for recreation.

A deputation from the commission presented the report to the ministry of education, and asked for a more careful thinking out of the whole question of sex education. Lord Eustace Percy (parliamentary secretary), in the absence of the minister, replied that the ministry was satisfied that detailed teaching of sex hygiene is inappropriate in public elementary schools, but that much might be done in the training colleges. The objections to mass instruction in sex matters were especially formidable in public elementary schools, including, as they did, children of both sexes, of different social grades, and of various religious beliefs. But individual advice was a duty and privilege which at any time might fall on the teacher.

Boats or Rafts for Life Saving

In the light of recent experience, including the disastrous war period, the Merchant Shipping Advisory Committee, at the instance of the board of trade, has examined the statutory life-saving appliances rules of May, 1914. Those rules originated from the *Titanic* disaster and give effect to the principle that every foreign-going passenger ship should carry sufficient lifeboats to accommodate all on board. The rules prescribe that as many lifeboats as possible shall be attached to davits, distributed along the length of each side of the ship, and that the remaining lifeboats may be grouped under the davits in tiers of two or three, or nested within one another, or in rows across a deck, bridge or poop. But it has been found that in some cases the requirements result in the decks being unduly encumbered, which leads to difficulty in launching, and that provision of a proportion of rafts, instead of boats, might be an advantage. The findings of courts appointed to inquire into the great shipping disasters show that the time available within which transfer of passengers from a sinking ship must be completed depends on the damage sustained and the margin of safety provided in the construction of the vessel. The circumstances of the loss of the *Empress of Ireland*, the *Egypt* and the *Lusitania* show that it is not possible to count on this time exceeding fifteen minutes. Further, emergencies arise in which there is not time to use all the boats that are actually attached to the davits. For such emergencies, there are now only life jackets and lifebuoys. Happily, wireless telegraphy has simplified the problem and reduced it from one of rowing

great distances to safety to one of keeping people afloat until assistance reaches the scene. Indeed, in narrow waters the need is merely to keep people afloat for minutes. The committee, therefore, now lays down the principle that, instead of encumbering the decks with a large number of heavy sea-going craft which may well prove useless and even dangerous, it would be better to carry a supply of light rafts sufficient to support the persons for whom accommodation cannot be provided in the heavy sea-going craft available for immediate launching. Thus, while boats will remain, they should be supplemented by light buoyant apparatus which in extreme emergency can be quickly flung into the sea and provide something to cling to until succor arrives.

PARIS

(From Our Regular Correspondent)

April 27, 1923.

Vital Statistics for 1922

The *Journal officiel* published recently the vital statistics for France for the year 1922. Compared with the statistics for 1921, the results are as follows:

	1922	1921
Marriages	383,220	456,221
Divorces	27,684	32,557
Births (living)	759,846	813,396
Stillbirths	34,854	37,809
Deaths	689,267	696,373
Excess of births over deaths	70,579	117,023

As will be seen, the excess of births over deaths was much less in 1922 than in 1921. In general, the statistics for 1922 are less satisfactory than for the two years preceding, especially as regards the birth rate, as is evident from the following table:

Years	Births	Deaths	Excess of Births
1922	759,846	689,267	70,579
1921	813,396	696,373	117,023
1920	834,411	674,621	159,790
1913	790,355	731,441	58,914

The demographic situation of France, worse than that of the two previous years, though slightly better than that of the years immediately preceding the war, still remains unfavorable as compared with that of other nations. While the population of France increased in 1922 only 70,579, that of England grew to the extent of 293,358, and that of the Netherlands, 101,389. For the other countries the figures for 1922 have not yet been received; but in 1921, when the population of France increased only 117,023, that of Germany was augmented by 661,128; England, 390,416; Belgium, 62,865; Spain, 192,746; Italy, 461,013; the Netherlands, 112,546, and Sweden, 53,310.

The Relation of Factory Physicians to the Management

For a long time, it had been a generally admitted fact in law that a physician, as the member of a liberal profession, could not be regarded as having hired out his scientific and professional services in any way whatsoever. A physician attached to a factory or a mine received a mandate from the manager of the enterprise to care for the sick and wounded of the plant, but he could not be regarded as an employee or subaltern. In return for his services, the practitioner received an annual salary and extra compensation based on the number of medical calls and consultations. As a result of this juridical conception of a medical man as a mandatary and not an employee, a physician could be dismissed on short notice, and could claim no indemnity. However, a sudden change has come about of late and the idea of members of a liberal profession, such as medicine, contracting their services for a specified sum is coming to be generally accepted. A recent decision of the *tribunal de commerce* of Marseilles grants an indemnity to a physician suddenly dismissed from his post where his duties consisted in caring for the sick and wounded of a factory.

Honor Loans to Students

The general association of the students of Paris has inaugurated a lecture course for the benefit of the honor loan fund. The first lecture was given by M. Georges Claude, the chemist, who is well known for his investigations on liquid air and ammonia synthesis. The proceeds will be turned over to Prof. Paul Appell, rector of the University of Paris, to be loaned to students on recommendation of the university council.

The Pasteur Tag Day

On May 27, which has been set apart as a Pasteur tag day for the benefit of the scientific laboratories, there will be sold on the streets insignia (tags) bearing the signature of some one of the following ten great artists: Abel Faivre, Gervex, Béraud, Besnard, Poulbot, Georges Barbier, Cormon, J. P. Laurens, Maurice Denis, Jonas. Each tag will bear this quotation from Pasteur: "Without laboratories scientists are like soldiers without weapons." A number of subscriptions, some of them for considerable amounts, have already been received by the national committee in aid of scientific research, the chairman of which is Professor Appell, rector of the University of Paris. Also the press has collected considerable sums, during recent weeks. Many workmen have consented to put in several hours overtime and to contribute their extra earnings to this urgent cause. Their employers have added their personal subscriptions.

BERLIN

(From Our Regular Correspondent)

April 14, 1923.

The Milk Scarcity in Berlin

Dr. Borinski, of the central public health office, Berlin, discussed the distressing milk situation recently before the Berlin Gesellschaft für öffentliche Gesundheit. According to his figures, the prevailing scarcity of milk in Berlin is due, mainly, to decreased production, as compared with the prewar basis, which is occasioned, in part, by a decrease in the number of milch cows. In 1913, the total annual production of milk in Germany was 24 billion liters, but in 1921 only 13 billion liters was produced. The year 1921 shows some improvement over 1919 and 1920, but the supply is only sufficient to meet the imperative needs of infants and children. The price of milk is often so high that many persons are unable to buy sufficient to supply their minimal needs. That was true especially while the high prices prevailed in November and December. Not only is the supply inadequate, but the quality is considerably below the standard of the prewar period. About 59 per cent. of milk specimens examined were dirty. When the milk reaches Berlin it is often sour or slightly turned. It has been found that about 50 per cent. of the milk that arrives in apparently sweet condition contains alkali, which has been added in the rural districts or when the milk passed through the provincial dairies, in order to counteract the sourness. The poorer quality of the milk consumed in Berlin is partly due to the difficulties of transportation and delivery, since the radius of the circle about Berlin from which the milk supply is derived (300 km.) is much wider than before the war. In the discussion, the director of the Berlin milk-inspecting service explained, in connection with the present high price of milk, that it is not possible to furnish cities with milk unless the price of milk is in a certain definite relation to that of butter, since, as the price of milk falls more and more below a certain level, increasingly large quantities are used for butter. At present, the price of milk as agreed on by the milk producers' asso-

ciation is 9.75 per cent. of the market price of butter. Another thing that adds to the price is the high cost of the cans required for transportation. In order to transport 20 liters of milk to Berlin, five cans, costing 60,000 marks apiece, or 300,000 marks, are needed. For the distribution of milk throughout the city, 63,000 small cans, costing 3,620,000 marks, are required. The profit that flows into the till of the retailers was, before the war, one-third the retail price but at present it is only one-fourth.

Investigations on the Limitations of Human Hearing

Prof. Martin Gildemeister has been conducting a new series of researches on various questions pertaining to hearing: What are the lowest and what are the highest tones that a person with normal hearing is able to hear? At what time of day, what time of the year and at what time of life does one hear best? Does one hear better with the right or with the left ear? Does one hear better by air or by bone conduction? The former researches to determine the upper limitation of human hearing yielded results varying between 15,000 and 50,000 vibrations per second. This inaccuracy in the findings was due to the fact that an unsuitable instrument, the so-called Galton whistle, had been used for the production of the tones. Gildemeister has now constructed entirely new apparatus for his researches, through which much more accurate results have been secured. His experiments were carried out on fifty-one experimental subjects, comprising pupils, students, girls, teachers, officials, merchants, farmers, and workmen of various kinds. All these persons, whose ages ranged from 6 to 47, were possessed of normal hearing, as was established by careful preliminary examination.

The upper limit of hearing for the youngest (6-year-old) pupil, for air and bone conduction to the right ear, was at 19,800 tone vibrations per second; for air conduction to the left ear, 18,700 vibrations; for bone conduction to the left ear, 19,800 vibrations. In the case of a 9-year-old pupil, hearing ceased for air conduction to the right ear at 20,400 vibrations; for bone conduction at 19,200 vibrations; for the left ear at 20,100 and 20,000, respectively; in an 18-year-old pupil, the best of all those examined, the upper limit for the right ear was at 20,800 and 18,800, respectively; for the left ear, at 20,400 and 19,100. In a 20-year-old student, the upper limit of hearing for the right ear was at 17,900 and 17,100 vibrations per second; for the left ear at 14,900 and 16,300, respectively; in a 33-year-old teacher, for the right ear, at 17,900 and 17,500, respectively; for the left ear, at 17,990 and 17,700, respectively; in a 44-year-old merchant, for the right ear, at 12,700 and 10,300, respectively; for the left ear, at 12,900 and 7,400, respectively.

A number of interesting facts are deducible from the results of Gildemeister's tests on hearing. It is comparatively rare for the hearing of the right and left ears to be equally good. There is often great difference in hearing between the two ears, and the findings during several tests on different days remain the same. But there was no evidence that the right or the left ear, in general, was essentially superior with respect to hearing. Age, however, plays a big part in the matter of hearing. Children and young persons up to 20 years of age hear best the high tones. Even in children, a slow but gradual falling off in hearing can be noted, and from 20, up to the middle of the fourth decade, the diminution becomes more marked. Up to the middle of the fifth decade, then, the hearing remains at approximately the same level, and then sinks rather rapidly up to old age. The diminution in hearing from age 6 to age 47 is represented, on the average, by 7,000 vibrations; that is, it sags from 20,000 to 13,000 vibrations. There is not the slightest evidence for the heretofore advanced assumption that hearing through bone conduction is keener and better than through air conduction. Of ninety experiments, hearing of the highest tones was better in fifty-two cases with air conduction; in eleven cases it was equally good, and only in twenty-seven cases was hearing better with bone conduction than air conduction.

The variations in hearing that are brought about by the changes from day to day in physical well-being may be represented by 200 vibrations at the most. On the other hand, occupation and practice play a certain part, for it has been shown that persons who telephone a great deal often present much more than average upper limits of hearing, whereas the limits of hearing in miners and smiths, who, through the nature of their calling, are constantly exposed to loud noises, were much reduced.

Death of Immelmann

Sanitätsrat Dr. Immelmann, general secretary of the Deutsche Röntgengesellschaft, died, April 4, in Berlin, at the age of 56. Immelmann, who was distinguished for his unusual gifts as a technician, after serving for a time as a practitioner in Berlin, established an orthopedic and physicotherapeutic institute. Soon after the discovery of roentgen rays, he included roentgenologic procedures in his methods of treatment, and for several years he was the only one who had a laboratory for private roentgenologic examinations. By his accurate technic and his keen scientific judgment, he achieved for himself not only a marked practical success but acquired also a leading position in the field of roentgenologic diagnosis and roentgenotherapy.

MADRID

(From Our Regular Correspondent)

April 25, 1923.

Lozano's Lecture in Paris

Dr. Ricardo Lozano, professor of clinical surgery at Saragossa, recently gave a lecture at the medical school of Paris, where many courtesies were extended to him. His lecture, entitled "Some Uncommon Cases in My Practice," was divided into three parts. In the first part, he referred to two cases of retraction by shrinkage of the ileocecal valve, which, despite its name, is really a sphincter. He expressed the opinion that foreign bodies are not as harmless as they are considered by modern surgeons; they may even block entirely the ileocecal valve, and cause dyspepsia through irritation.

In the second part of his lecture, Dr. Lozano dealt with hydatid cysts, which are common in his province. In more than 5,000 operations before 1920, 129, 2.4 per cent., were for echinococcus disease. Dr. Lozano feels sure, though he has no proof, that hydatid cysts come chiefly from the sheep, and not from the dog, as is stated in textbooks; transference to man takes place through water and not by vegetables. This view is based on the fact that most cases treated at Saragossa are from a village where no vegetables are grown because of the scarcity of water. The country people drink the water that collects in little pools and carries with it sheep manure from the hills. At sowing and harvest times, this is the only water used, with the manure still lying at the bottom of the pools. From this little village, Ejea de los Caballeros, with 7,700 population, came one seventh (ten cases) of the cases of echinococcus disease seen by Lozano; more than from Saragossa with a population of 142,340. In the Saragossa slaughterhouse, 30 per cent. of the sheep are infected with hydatids. The scolices may circulate through the arteries and pass through the wall of the latter, as shown in some cases and by experiment. In order to confirm this view, Lozano injected the contents of a cyst into the carotid of a lamb. Six months afterward, no traces of

infection could be found in the animal. This suggests that the scolices died on contact with the air, and also that the products of a hydatid cyst in man cannot develop in another animal. Lozano denied that hydatid cysts in the abdomen may, on being opened, cause infection of the peritoneum and originate other cysts.

As to the time required for the development of cysts, a youth from a town where the water is pure and free from echinococcus disease went to Ejea de los Caballeros, and, in two years, developed two hydatid cysts of the liver, each about the size of a cantaloup. The patient, aged 15 years, stated that three months after his arrival at Ejea, he had already noticed the presence of the cysts. Among symptoms, Lozano recalled the almost continuous hydatid tremor, and Weinberg's test, which has never failed him. He described a new sign for differentiating between liver and lung cysts. The patient is placed before the fluoroscopic screen and is instructed to breathe deeply. At the end of expiration and the beginning of inspiration, a seesaw movement occurs in the upper pole of the cyst; in the peripheral zone of the cysts, definite waves may be seen, which are independent of respiratory movements, although caused by them. If no such waves are seen, the cyst is above the diaphragm; if they are present, it is below. In medium sized cysts of the lung which have not reached the surface, a motion of the whole cyst occurs, somewhat similar to that of a buoy shaken by the sea waves. This motion is not seen in sarcoma or cancer of the lung.

In the third part of his lecture, Lozano discussed surgery of the peripheral nerves. He also described the first known case of fracture of the neck of the scapula with nerve injury and decrease of the lumen of the blood vessels. The outer fragment with the joint lay behind the bone. In the future, the possibility of this form of fracture must be considered in cases of paralysis from injury of the brachial plexus. The symptoms are flattening of the shoulder, projection of the acromion and lengthening of the arm, which takes a position similar to that in dislocations. The difference between cases of fracture and dislocation is that, in the former, pain may be caused by pressing on the coracoid process, and pain and hematoma occur at the posterior border of the axilla.

Opening of the Cancer Institute

Through the efforts of Dr. A. Pulido Fernández, senator, the government has finally built and endowed a cancer institute. Dr. Goyanes, a prominent Spanish surgeon, has been appointed director. The institute is provided with every facility for the study and treatment of cancer. As Dr. Neumann of Vienna said at the time of his visit, "You have here everything necessary to find the cause of cancer."

Marriages

WILLIAM M. DABNEY, Ruxton, Md., to Mrs. Elizabeth Martin Brown, of Baltimore, at Media, Pa., May 10.

WILLIAM E. WARREN to Miss Deborah Fleming, both of Williamstown, N. C., at Norfolk, Va., April 30.

WOODFIN GRADY PAGE, Dothan, Ala., to Miss Coral Helene Dikle of Marianna, Fla., April 26.

HARRIS BURNETT OSBORN ENSING to Miss Barbara Wingfelter, both of Detroit, April 26.

KARL M. SCOTT, Atlantic City, N. J., to Miss Marion Eaglestone of Baltimore, April 14.

JOHN H. R. BRODRECHT, Spokane, to Miss Lola M. Titus of Tacoma, Wash., April 11.

FREDERICK W. SMITH to Miss Marie A. Rotzell, both of Philadelphia, April 14.

Deaths

Thomas Edward Dolan ⊕ Elizabeth, N. J.; Jefferson Medical College, Philadelphia, 1887; formerly member of the board of health; for six years a surgeon on the American Steamship Line; on the staffs of the Alexian Brothers' and St. Elizabeth's hospitals; aged 59; died, May 7, of epidemic (lethargic) encephalitis, at the Neurological Institute.

Guilford Herman Sumner ⊕ Des Moines, Iowa; State University of Iowa College of Medicine, Iowa City, 1896; for twelve years secretary of the Iowa State Board of Health and Medical Examiners; at one time health officer of Waterloo; member of the American Public Health Association; aged 66; died, May 5, of cerebral hemorrhage.

McGuire Newton ⊕ Richmond, Va.; University College of Medicine, Richmond, 1897; professor of pediatrics at his alma mater and the Medical College of Virginia; member of the state board of health; on the staffs of the Memorial and Richmond City hospitals; aged 46; died, May 8, following a long illness.

Randolph Breese Brummett, Washington, D. C.; Georgetown University School of Medicine, Washington, 1893; formerly member of the District of Columbia Health Department; recently retired from the U. S. Veterans' Bureau service; aged 53; died, May 7, of heart disease, at the Emergency Hospital.

Albert Raymond Rice, Springfield, Mass.; Jefferson Medical College of Philadelphia, 1861; member of the Massachusetts Medical Society; Civil War Veteran; member of the city council and for eleven years city physician; formerly on the staff of the Mercy Hospital; aged 82; died, April 30, of senility.

William Alfred Belt Sellman ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1872; formerly professor of diseases of women, Baltimore University School of Medicine; aged 72; died, May 10, following a long illness.

William E. Metzger, Alvira, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1874; member of the Medical Society of the State of Pennsylvania; aged 73; died, April 27, following a long illness.

Hessel S. Yntema, Grand Rapids, Mich.; University of Michigan Medical School, Ann Arbor, 1906; on the staff of the Michigan Soldiers' Home Hospital, where he died, April 27, of cardiac paralysis, aged 46.

Henry Alfred Leipziger, Burlington, Iowa; Bellevue Hospital Medical College, New York, 1881; aged 64; died, May 2, at the Burlington Hospital, as the result of a fall in which he suffered a fractured leg.

James William McClanahan, Forest City, Mo.; American Medical College, St. Louis, 1881; aged 68; died recently, at the Ensworth Hospital, St. Joseph, of carcinoma of the stomach and liver.

Harriet Phebe Cutter, Utica, N. Y.; University of Michigan Medical School, Ann Arbor, 1900; member of the Medical Society of the State of New York; aged 66; died, April 24, of pneumonia.

Harley Leland Acuff ⊕ Knoxville, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1911; served in the M. C., U. S. Army, during the World War; aged 36; died, April 5.

Willis R. Smith ⊕ El Paso, Texas; University of Texas Department of Medicine, Galveston, 1896; assistant medical director of the Homan Sanatorium; aged 50; died suddenly, April 29.

Edward Hazard Hoxsie ⊕ Brooklyn; Medical Department of Columbia College, New York, 1884; attending physician to the Bushwick Hospital; aged 63; died, May 7, of heart disease.

Charles B. Ogden ⊕ East Liverpool, Ohio; Medical College of Ohio, Cincinnati, 1878; formerly city health officer; at one time on the staff of the city hospital; aged 71; died, April 4.

Theophilus West, Marianna, Fla.; Oglethorpe Medical College, Savannah, Ga., 1859; Civil War veteran; formerly member of the state legislature; aged 87; died, April 10, of senility.

Michael Sweeney, Winn, Mich.; Victoria University Medical Department, Toronto, Ont., Canada, 1891; aged 57; died, April 26, at a hospital in Detroit, following a long illness.

James Monroe Strohm, Fredericksburg, Pa.; Medical Department of the University of the City of New York, New York, 1881; aged 65; died, April 18, of embolism.

John Milton Prichard ⊕ Ashland, Ky.; Kentucky School of Medicine, Louisville, 1892; aged 54; died, April 30, at the Kings Daughters' Hospital following an operation.

George Amory Sargent ⊕ Boston; Medical School of Harvard University, Boston, 1888; formerly member of the board of health; aged 69; died, May 6, of heart disease.

William Eli Kay, Tuscaloosa, Ala.; Maryland Medical College, Baltimore, 1905; member of the Medical Association of the State of Alabama; aged 45; died, May 4.

George Joseph Monroe, Louisville, Ky.; Rush Medical College, Chicago, 1862; Bellevue Hospital Medical College, New York, 1869; aged 83; died, April 30, of senility.

Louis C. F. Schade, Hamburg, Germany; University of Griefswald, Prussia, 1870; for thirty years a practitioner in Buffalo, N. Y.; aged 78; died, March 20.

William L. Bogan, Hamburg, Iowa; Medical Department University of Iowa, Keokuk, 1858; Civil War veteran; aged 90; died, April 3, of uremia.

Henry Newcomb Dunnell, Scranton, Pa.; Medical Department of the University of the City of New York, 1870; aged 83; died suddenly in his office, April 25.

William Runge, Brooklyn; University of Jena, Germany, 1885; aged 66; died at the Wyckoff Heights Hospital, May 1, of pneumonia following cystitis.

William Thomas Miles, La Connor, Wash.; Jefferson Medical College of Philadelphia, 1888; formerly a druggist in Alaska; aged 69; died, April 29.

Elizabeth Neil Brady, Oak Park, Ill.; Northwestern University Woman's Medical School, Chicago, 1900; aged 53; died, May 18, of heart disease.

George Dixon Mahon, Blocker, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1886; aged 62; died, March 8.

Leonard A. Robison, Canton, Ill.; Cincinnati College of Medicine and Surgery, Cincinnati, 1888; aged 70; died suddenly, May 3, of erysipelas.

Fritz E. Skinner, De Soto, Mo.; Barnes Medical College, St. Louis, 1899; aged 52; died, April 22, of sepsis, due to a dento-alveolar abscess.

Jasper Kelsey, Nashville, Tenn.; University of Nashville Medical Department, Nashville, 1869; aged 84; died, April 26, at Fort Meade, Fla.

Henry Frain Womer, Johnstown, Pa.; Jefferson Medical College, Philadelphia, 1878; aged 78; died, April 29, following a long illness.

Edward N. Rice, Providence, Ky.; University of Louisville Medical Department, Louisville, 1893; aged 56; died, April 26, of pneumonia.

Jacob Donelson Moyer, Reading, Pa.; Jefferson Medical College, Philadelphia, 1886; aged 61; died, May 8, of cerebral hemorrhage.

Charles W. Pyle, Kansas City, Mo.; Hahnemann Medical College and Hospital, Chicago, 1884; aged 56; died, May 5, of heart disease.

Benjamin F. Leslie, Convoy, Ohio; Starling Medical College, Columbus, 1864; also a druggist; aged 81; died, May 1, of senility.

Henry G. Bradshaw, Delphos, Ohio; Eclectic Medical Institute, Cincinnati, 1896; aged 68; died, April 28, of carcinoma.

James Lawrence Orr, Jr., La Mesa, Calif.; Medical College of the State of South Carolina, Charleston, 1901; aged 44; died, May 7.

Henry T. Breeden, Colorado Springs, Colo.; Memphis Hospital Medical College, Memphis, Tenn., 1892; aged 68; died, March 12.

Frank H. Elder ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1881; aged 64; died, May 9.

Pine Elijah Bush, New York; University of Buffalo (N. Y.) Department of Medicine, 1885; aged 64; died, May 2.

Charles Adam Reinemund ⊕ El Paso, Texas; Jefferson Medical College of Philadelphia, 1904; aged 40; died, May 7.

W. S. Muldrow, Mineral Springs, Ark. (licensed, Arkansas, 1903); aged 73; died suddenly, May 2, of heart disease.

The Propaganda for Reform

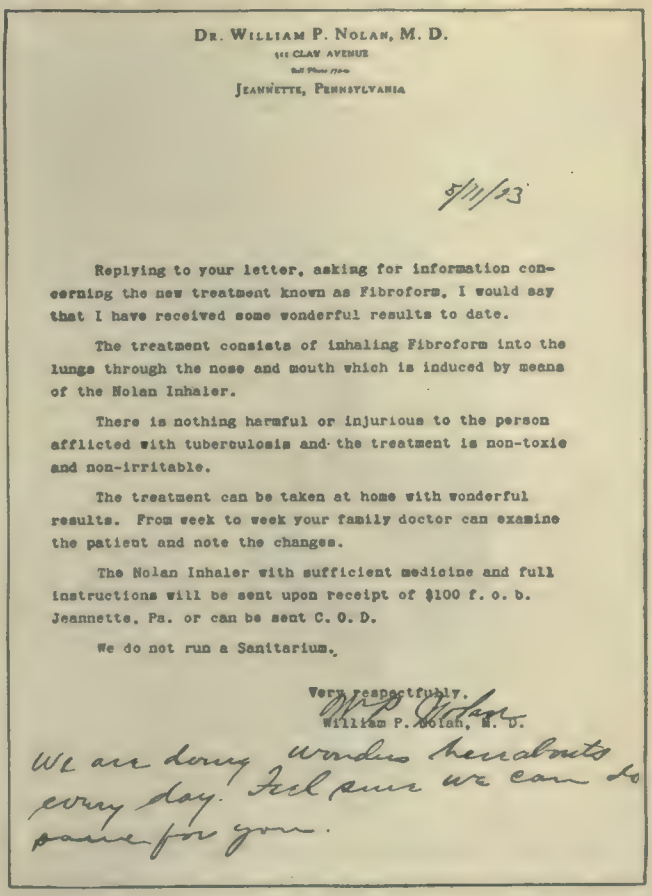
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

ANOTHER "CONSUMPTION CURE?"

Introducing "Fibroform" and the "Nolan Inhaler"

"A cure for pulmonary tuberculosis by the use of pure carbon and calcium was claimed by Dr. William P. Nolan of Jeanette, Pa., in an address before the Westmoreland County Medical Society in Greensburg, Pa."

Such is the first paragraph of a news story sent out by the Associated Press on May 2. According to a special dispatch that appeared in the New York *World* on the same



DR. WILLIAM P. NOLAN, M. D.
111 CLAY AVENUE
Bell Phone 7300
JEANNETTE, PENNSYLVANIA

5/11/23

Replying to your letter, asking for information concerning the new treatment known as Fibroform, I would say that I have received some wonderful results to date.

The treatment consists of inhaling Fibroform into the lungs through the nose and mouth which is induced by means of the Nolan Inhaler.

There is nothing harmful or injurious to the person afflicted with tuberculosis and the treatment is non-toxic and non-irritable.

The treatment can be taken at home with wonderful results. From week to week your family doctor can examine the patient and note the changes.

The Nolan Inhaler with sufficient medicine and full instructions will be sent upon receipt of $100 f. o. b. Jeannette, Pa. or can be sent C. O. D.

We do not run a Sanitarium.

Very respectfully.
William P. Nolan, M. D.

We are doing wonderful treatments every day. Feel sure we can do same for you.

subject "A treatise on the treatment has been forwarded to the American Medical Association and to the Rockefeller Institute of New York." The American Medical Association has not yet received the treatise at the time this is written. THE JOURNAL, however, has received a large number of inquiries regarding this new "cure." We have seen what is alleged to be the manuscript of the paper read by Dr. Nolan and referred to in the newspaper reports. This manuscript came to THE JOURNAL, not from Dr. Nolan direct, but through the representative of a Pittsburgh newspaper. The paper, which is entitled "A New and Sovereign Method of Treatment for Pulmonary Tuberculosis" goes into a good deal of detail regarding the pathology and bacteriology of tuberculous lung tissue but is somewhat vague regarding the cure itself. The treatment, it seems, consists in the inhalation of a fine powder said to be made by mixing soot with calcium carbonate, phosphate, chlorid and lactate. This Dr. Nolan calls "Fibroform." No quantities are given. The carbon and lime salts are said to be uniformly and thoroughly mixed and the powder is administered by means of

a device known as the "Nolan Inhaler." This inhaler, on which a patent is said to be pending, is being supplied, it seems, by Dr. Nolan.

The tuberculous, ever grasping at therapeutic straws, are beginning to write to Dr. Nolan, presumably in large numbers, as their inquiries are answered by means of a form letter (which we reproduce in miniature) printed on Dr. Nolan's stationery and reading:

"Replying to your letter, asking for information concerning the new treatment known as Fibroform, I would say that I have received some wonderful results to date.

"The treatment consists of inhaling Fibroform into the lungs through the nose and mouth which is induced by means of the Nolan Inhaler.

"There is nothing harmful or injurious to the person afflicted with tuberculosis and the treatment is non-toxic and non-irritable.

"The treatment can be taken at home with wonderful results. From week to week your family doctor can examine the patient and note the changes.

"The Nolan Inhaler with sufficient medicine and full instructions will be sent upon receipt of $100 f. o. b. Jeanette, Pa., or can be sent C. O. D.

"We do not run a Sanitarium.

"Very respectfully,

"Wm. P. Nolan, M.D."

Dr. Nolan, it is said, claims that he has tried his remedy in seventy-two cases. He gives brief details regarding four of these. There is nothing to indicate that the experimental work was controlled in any way. A rather careful search of contemporary medical literature fails to show that Dr. Nolan has ever described elsewhere his method of treatment.

Such reliable evidence as is available regarding the effects following the inhalation of carbon and calcium particles do not warrant one in assuming that such a treatment as that suggested by Dr. Nolan would have any curative value in tuberculosis. The facts, briefly, are that this latest "consumption cure" (1) is essentially secret in composition (no quantities being given), (2) it is put forward on a basis of utterly inadequate tests made only by its sponsor and (3) it is exploited in connection with an instrument sold only by its inventor.

The tragedy of every episode of this sort lies not in the fact that a reputable physician has allowed his enthusiasm to run away with his judgment but that thousands of optimistic consumptives are once more having their hopes of a short-cut, sure-cure raised only to be blasted. All that the medical profession can do is to warn the tuberculous that much better evidence will have to be forthcoming before it can be asserted that Dr. Nolan has developed even a therapeutic aid in the treatment of tuberculosis, much less a cure for this disease.[1]

Correspondence

"TREND OF THE WASSERMANN TEST"

To the Editor:—In THE JOURNAL, May 5, there was an editorial comment on the trend of the Wassermann test. I think that all present day serologists of experience are agreed that positive Wassermann reactions are not obtained when syphilis does not exist if the tests are made by properly trained persons in well equipped laboratories.

In November, 1917, while serologist at the New York State Laboratory in Albany, I published an article in the *Journal of Medical Research,* entitled "The Wassermann Reaction With Diabetic Sera." At that time it was contended that serums from patients with diabetes gave positive Wassermann reactions. I tested seventy-three serums from patients with a known history of diabetes. Of these, only one serum gave a positive reaction, fifty-one were negative, two were doubtful, and with nineteen the serum controls failed to hemolyze, so that no readings could be made. All the serums giving the so-called anticomplementary results were chylous. The one serum that gave a positive result had been obtained from a patient who had also a history of syphilis. The serums with which doubtful reactions were obtained gave only weak fixation. One of these serums was obtained from a patient who gave a history of a chancre twenty-six years previously. The other patient gave no history of syphilis.

This work would seem to show very conclusively that with properly made tests, serums from diabetic patients do not give positive Wassermann reactions, unless these patients are also syphilitic.

ANNA I. VAN SAUN, New Haven, Conn.
Director, Bureau of Laboratories.

THE ASSOCIATION FOR THE PROTECTION OF CONSTITUTIONAL RIGHTS

To the Editor:—In view of the wide publicity that has been given to the suit brought by Dr. Samuel W. Lambert, president of the Association for the Protection of Constitutional Rights, to test the constitutionality of the medical restrictions of the Volstead Act, the Executive Committee of the association desires to make the following statement to the medical profession of the country:

The increasing tendency of lay legislative bodies to enact laws restricting therapeutic procedure convinced certain New York physicians that the time had come when the medical profession must take some action to meet the actual and threatening dangers by which it was confronted.

Under this conviction, an association was formed and was called the Association for the Protection of Constitutional Rights.

The officers of the association are: Samuel W. Lambert, M.D., president; James F. McKernon, M.D., vice president; Frederic E. Sondern, M.D., treasurer, and Warren Coleman, M.D., secretary. The officers and Drs. Nathan E. Brill, Charles L. Dana, William K. Draper, James T. Gorton and J. Bentley Squier constitute the Executive Committee.

Membership in the association is restricted to physicians, but is unlimited in number. The association has no lay affiliations. Originally consisting only of physicians in and about New York City, the membership has gradually been extended to include others residing in Boston, Philadelphia and Baltimore.

The principal object of the association is to defend the constitutional right of the physician to practice medicine according to his best judgment.

On deciding to take action against the medical restrictions of the Volstead Act, the association passed the following resolution:

Resolved, That it is the sense of this association that the constitutionality of such provision of the act and the validity of such regulation be forthwith submitted to the courts; and that this association request its president, Dr. Samuel W. Lambert, under advice of counsel, to institute litigation to this end, in the interest of the public health and the preservation and prolongation of life, and for the vindication of the rights and honor of the profession; and it is further

Resolved, That the members of this association, however, favor and will advocate the enactment of such regulations as will require physicians prescribing alcoholic liquor in such amounts as they deem proper to file any and all prescriptions with properly designated governmental authorities, in order that any abuse by unworthy practitioners of the right to administer alcoholic liquor may be prevented and the offenders adequately and summarily punished.

Suit was brought in the United States District Court, Southern District of New York, and Judge John Clark Knox, before whom the suit was heard, has declared the limitation by Congress of the amount of alcohol which may be prescribed by physicians, for patients who in their judgment

1. After the above was in type there came to THE JOURNAL a four-page printed leaflet entitled "A New and Sovereign Treatment for Pulmonary Tuberculosis by William P. Nolan, M.D." This seems to be a print, modified here and there, of the manuscript referred to in the opening paragraph of the article above. It gives no more information than that which appeared in the manuscript.

require alcohol, to be null and void, and has issued an injunction restraining the prohibition authorities from enforcing the medical restrictions of the Volstead Act.

In the opinion of the members of the Association for the Protection of Constitutional Rights, the principle for which this fight has been made is of fundamental importance not only to the medical profession, but also to the citizenry of America. The question involved is whether the treatment of the sick shall be dictated by lay legislative bodies, at the behest of powerful lay groups, or whether the selection of remedies and therapeutic procedures and their application to the individual patient shall be left to the scientific judgment of the members of a profession especially trained in the prevention and treatment of disease.

The Association for the Protection of Constitutional Rights will continue its existence however the present contest ultimately is decided, ready to take the offensive whenever the public welfare is threatened by unwise laws directed against the ministry of the physician to the sick.

WARREN COLEMAN, M.D., New York.
Secretary of the Association.

"A CASE OF PHARYNGEAL DIPHTHERIA PROBABLY DUE TO AUTO-INFECTION FROM A DIPHTHERIC LESION OF THE THUMB"

To the Editor:—The report by Baldwin, McCallum and Doull (THE JOURNAL, May 12, p. 1375) of a case of pharyngeal diphtheria, probably due to auto-infection from a diphtheric lesion of the thumb, recalls a case that occurred in Durand Hospital, reported by Emge (THE JOURNAL, Aug. 7, 1915, p. 529). In this case an intern received an injury to his finger while performing an intubation for laryngeal diphtheria. The infection of the finger preceded the throat infection several days.

GEORGE H. WEAVER, M.D., Chicago.

MEXICAN TAX ON SAMPLES

To the Editor:—It would please the men of the medical profession throughout the republic of Mexico if you would call the attention of the manufacturers of drugs and chemicals, through your columns, to the fact that the Mexican government has imposed an import duty charge on catalogues and samples of drugs, medicines, tablets, etc. The daily receipt of numerous samples of medicines, pills, tablets and ampules of remedies for intravenous and intramuscular use is beginning to pall on us, especially as we are charged from ten cents to a peso for each sample.

EUGENE STADELMAN, M.D., Cananea, Sonora, Mexico.

THE SIZE OF DROPS

To the Editor:—The article of Strong and Wilmaers (THE JOURNAL, May 5, p. 1308) is much to the point. I am particularly interested in the matter of the relation of drops to minims. I have tested many digitalis tinctures, and agree with the writers that there are almost always at least 3 drops to a minim. To remove this difficulty, we have tried, at the Post-Graduate Cardiac Clinic, the use of special pipets graduated in minims. We found these difficulties: Inexpensive pipets were found to be grossly inaccurate in their markings. It was difficult to explain to patients of foreign tongues and sometimes limited intelligence how to use the pipets. Last of all, when the directions are plainly written in terms of "minims," many pharmacists persist in translating it into "drops" on the label. As the graduate pipet can physically be used as a dropper, the patient often simply counts so many drops.

The best solution seems to be to furnish some sort of graduate that cannot be used as a dropper. An alternative is to use a series of mixtures so gaged that a teaspoon represents certain amounts of the digitalis tincture.

BERTON LATTIN, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF TYMPANITES

To the Editor:—I am anxious to know the most effective drug to combat symptomatic tympanites. Please omit name.

——, Pachuca, Mexico.

ANSWER.—A turpentine enema, made of one teaspoonful of oil of turpentine, emulsified by means of yolk of egg and diffused through one pint or quart of hot water, is perhaps the most commonly employed measure in tympanites. This is often combined with the application of turpentine stupes, that is, flannel wrung out of hot water and then out of warm turpentine and applied to the abdomen for from fifteen to thirty minutes. Asafetida in doses of from 0.5 to 1 gm. in capsules is usually considered a rational intestinal carminative for peroral administration. A most effective means, when the foregoing measures fail, is the introduction, as high as possible, and leaving in place, of a thick colon tube.

CHLORINATION — FILTERS — FLY-TRAPS

To the Editor:—1. Please publish information relative to chlorinating water supplies. The Chicago system seems to be effective. 2. We have several large tanks in the mountains through which the water runs; these tanks are used to equalize the pressure. The take-off from these tanks is several inches higher than the lead-in, allowing considerable sedimentation. I would be pleased to get something on filters for the bottom of these tanks, either sand, charcoal or rocks, and how they are used. 3. Do you know of an effective outside fly-trap?

E. D. ABRAHAM, M.D., Gibson, N. M.

ANSWER.—1. Chlorination of water supplies has proved a very effective means of preventing water-borne diseases. Apparatus for chlorination is now in use in several hundred cities in this country. We would suggest that our correspondent write for information about the type of apparatus to be used to the nearest large city employing chlorination.

2. Any good sanitary engineer can design a simple filter for the tanks. The *Engineering News Record*, New York, can doubtless furnish the names of competent engineering consultants.

3. The Hodge fly-trap (described by C. F. Hodge in his "Nature Study") has given good results, but the best measure of suppressing common house-flies is through regulation of breeding places.

Medical and Nonmedical Workers in Hospital.—To select a physician merely because of knowledge to administer a business house or to select a business man to administer a hospital is, we believe, poor judgment, because of the waste of medical knowledge, on the one hand, and the handicap of the lack of it, on the other. It would, however, be equally poor judgment to appoint as the chief executive for either position a person with a predominantly research type of mind. In the personnel of the business concern of today would probably be included physicians and nurses, while the personnel of all modern hospitals includes nutrition workers, statisticians, librarians, accountants, engineers, and an almost endless variety of medical and nonmedical workers.—A. W. Goodrich, *Hospital Social Service* **7**:170 (March) 1923.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.
FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.
IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
LOUISIANA: New Orleans, June 7-9. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.
MARYLAND: Baltimore, June 19-22. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.
MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.
MISSISSIPPI: Jackson, June 13-14. Sec., Dr. W. S. Leathers, University.
MISSOURI: St. Louis, June 6-8. Sec., Dr. Cortez F. Enloe, Jefferson City.
NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW MEXICO: Santa Fe, June 18. Sec., Dr. R. E. McBride, Las Cruces.
NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.
NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.
OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.
OREGON: Portland, July 3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.
SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TENNESSEE: Memphis, Nashville and Knoxville, June 15-16. Sec., Dr. Alfred B. DeLoach, 1230 Exchange Bldg., Memphis.
TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg.
UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.
VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.
WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.
WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

Additional Hospitals Approved for Intern Training

Since the publication of the list of Hospitals Approved for Internships in the 1921 edition of the American Medical Directory, and the supplementary lists in THE JOURNAL of October 1, 1921, February 25 and May 13, 1922, the following institutions have been added:

SECTION I: GENERAL HOSPITALS

Fresno County Hospital, Fresno, Calif.
Seaside Hospital, Long Beach, Calif.
California Lutheran Hospital, Los Angeles, Calif.
Methodist Hospital of Southern California, Los Angeles, Calif.
St. Vincent's Hospital, Los Angeles, Calif.
Fabiola Hospital, Oakland, Calif.
Samuel Merritt Hospital, Oakland, Calif.
San Diego County General Hospital, San Diego, Calif.
St. Joseph's Hospital, San Diego, Calif.
Franklin Hospital, San Francisco, Calif.
French Hospital, San Francisco, Calif.
Hahnemann Hospital, San Francisco, Calif.
Mary's Help Hospital, San Francisco, Calif.
Southern Pacific Hospital, San Francisco, Calif.
St. Francis Hospital, San Francisco, Calif.
St. Joseph's Hospital, San Francisco, Calif.
Chicago General Hospital, Chicago, Ill.
St. Margaret's Hospital, Hammond, Ind.
St. Elizabeth's Hospital, Lafayette, Ind.
Jennie Edmundson Memorial Hospital, Council Bluffs, Ia.
Hotel Dieu, New Orleans, La.
W. A. Foote Memorial Hospital, Jackson, Mich.
Brownsville and East New York Hospital, Brooklyn, N. Y.
St. Mary's Hospital, Cincinnati, Ohio.
Grant Hospital, Columbus, Ohio.
Good Samaritan Hospital, Portland, Ore.
Sacred Heart Hospital, Allentown, Pa.
Altoona Hospital, Altoona, Pa.
Pottsville Hospital, Pottsville, Pa.
Reading Hospital, Reading, Pa.
Columbia Hospital, Columbia, S. C.
Swedish Hospital, Seattle, Wash.
St. Mary's Hospital, Milwaukee, Wis.
Vancouver General Hospital, Vancouver, B. C.

SECTION III. SPECIAL HOSPITALS

St. Charles Hospital for Crippled Children, Pt. Jefferson, N. Y.
Children's Orthopedic Hospital, Seattle, Wash. (Affiliated with Seattle General Hospital for intern training).
Firland Sanatorium, Seattle, Wash. (affiliated with Seattle City Hospital for intern training).
Northern Pacific Railway Hospital, Tacoma, Wash.
St. Elizabeth's Hospital, Appleton, Wis.
Madison Methodist Hospital, Madison, Wis.

The complete list[1] of hospitals that are approved for internships now contains 643 hospitals with a total capacity of 186,867 beds and offering 3,671 internships. Section I lists general hospitals to the number of 500, furnishing 3,103 general internships for medical graduates. The 30 hospitals in Section II are all for nervous and mental diseases and afford 57 internships. Other special hospitals, giving internships in the various specialized departments of medicine and surgery, are listed in Section III, which contain 113 hospitals affording 511 special internships.

Book Notices

TRAITÉ DES FRACTURES DES MEMBRES, EXAMEN CLINIQUE, RADIOGRAPHIE, TRAITEMENTS PRATIQUES. Par le Dr. Henri Judet, Ancien Interne des Hôpitaux de Paris. Second edition, Paper. Price, 36 francs. Pp. 617, with 442 illustrations. Paris: "L'Expansion Scientifique Francaise," 1922.

This comprehensive work on fractures of the extremities is illustrated with reproductions of roentgenograms, drawings from roentgenograms, and diagrams indicating steps in treatment and types of apparatus. Fractures in the adult and in the child are considered separately. Each part of the bones of the extremities is taken up in detail. Rare fractures also are mentioned. Various complications are described, and the method of avoiding some of them is indicated. Other complications are considered under separate chapters, as pseudarthrosis, pathologic fractures, mechanical and infectious, with especial reference to tetanus and gas gangrene. In the treatment of fractures and their complications, the best methods chosen from a large experience during the war are included as applied to civil injuries. Among the forms of treatment described are the many methods of suspension and extension, the use of plaster of Paris, and orthopedic apparatus. Modern nonoperative treatment is completely and graphically covered. Indications for operative treatment are considered, with a discussion of the probable measure of success to be expected, but operative technic is not included. The work consists largely of the experience of the author, but methods used by other leading surgeons are described.

NURSING AND NURSING EDUCATION IN THE UNITED STATES. Report of the Committee for the Study of Nursing Education, and Report of a Survey by Josephine Goldmark. Cloth. Price, $2. Pp. 585. New York: The Macmillan Company, 1923.

This is the report of an exhaustive survey of nurse training and education. It deals extensively with the multiplicity of problems connected with nurse training and service, including (*a*) the functions of the nurse in public health, in private duty, and in institutional work, and (*b*) the training of the nurse in the hospital school, extended reference being made to preliminary, theoretical and practical training and the conditions under which nurses work, and mention being made of the training of subsidiary nurses, of university schools, and of postgraduate courses. This is a thorough discussion of a very live topic and will be of extreme interest not only to the medical and nursing professions, but also to hospital superintendents, public health agencies, and all others who are interested in the training of those who are to aid the physicians in the care of the sick. The book cannot fail to exert an extensive and beneficial influence on the future training of nurses.

THE WONDER BOOK OF CHEMISTRY. By Jean-Henri Fabre. Translated from the French by Florence C. Bicknell. Cloth. Price, $2.50. Pp. 285. New York: The Century Company, 1922.

The literary art of Fabre and the exactness of his science are now matters of general acknowledgment. In the present book the elements of chemistry are explained by a delightful character, Uncle Paul, to two boys, Jules and Emile, who

1. The complete list, with revised data about each hospital, appears in the eighth edition of the American Medical Directory, now being printed. A separate reprint will be sent on receipt of 25 cents.

are the author's own children, faithfully portrayed even as to their names. The apparatus described is of the most elementary, home-made type; yet though the lessons are as elementary and simple as possible, Fabre presents his subject with such delicate philosophical considerations as to make it attractive to the well-informed adult. For instance:

> It is evident that carbonic acid gas is constantly being poured into the atmosphere in torrents that defy computation; and yet animal life has no reason to fear suffocation, either now or in the future. The atmosphere, continually being tainted, is as continually being purified: as fast as it is laden with carbon it is purged of it. Now, the health officer charged with the safeguarding of the general physical welfare is the plant, my little friends, the plant that lives on carbonic acid gas to prevent our dying by breathing it, and with it prepares the food that is to sustain us. This fatal gas in which is taken up so much of the putrefaction of all things is the plant's chief sustenance. To the plant's wonderful stomach, putrefaction is satisfaction. What death has cut down, the blade of grass builds up again.

If the physician is anxious to make chemistry attractive to his children, or to the lay reader, he will find few books for the purpose so suitable as this one by Fabre.

PROTISTS AND DISEASE. Vegetable Protists; Algae and Fungi, Including Chytridiineae; Various Plassomyxineae, the Causes of Molluscum Contagiosum, Smallpox, Syphilis, Cancer and Hydrophobia; Together with the Mycetozoa and Allied Groups. By J. Jackson Clarke, M.B., F.R.C.S., Senior Surgeon to the Hampstead and North-West London Hospital. Cloth. Price, $4.50. Pp. 229, with 60 illustrations. New York: William Wood & Co., 1923.

The object of this book is to direct the attention to certain bodies in the lesions of molluscum contagiosum, cancer and other diseases, which the author assumes represent pathogenic protists. The author is convinced that "in molluscum we have an easy key to smallpox, the filtrable organisms, and to cancer." The evidence in favor of his view is wholly morphologic in nature, and is in no way convincing; nevertheless, the book will interest the students of the etiology of cancer and other problems of causation.

Medicolegal

Compensation for Services Requested by Employer

(Weinreb v. Harlem Bakery & Lunch Room, Inc. (N. Y.), 197 N. Y. Supp. 833)

The Supreme Court of New York, Appellate Division, First Department, in affirming a determination of the appellate term that affirmed a judgment in favor of the plaintiff, says that the action was brought by a physician to recover the reasonable value of his services rendered at the request of the defendant to a man who was injured while in its employ and during the course of his employment. Two defenses were set up: (1) That the court did not have jurisdiction of the action, as the workmen's compensation law of the state confers exclusive jurisdiction on the compensation commission to determine the value of physicians' charges in such cases, and (2) that the action was barred by the workmen's compensation law. But the court does not accept the defendant's views. When the employer provides the medical attendance and treatment, the compensation of the employee for injuries must be based solely on the loss of earning power. It is only in the case of the employer's refusal or neglect to furnish the necessary medical attendance or treatment that the expense thereof can be recovered as a part of the employee's compensation for his injury. In the latter case, the fixing of the reasonable value of such service is exclusively vested in the commission and allowed as a part of the employee's compensation, and the amount fixed becomes a lien on the compensation awarded. The statute does not concern itself with the contract that the employer makes with the physician or surgeon, when the employer provides the medical attendance. He is at liberty to make any agreement that to him seems proper, and make such payment as he may stipulate, for the amount that he pays is not a part of the compensation to be awarded. If the employer hires the physician, it is simply a matter of contract between the physician and the employer. If the amount to be paid is stipulated, the physician is entitled to that sum. If no amount is named, the physician is entitled to receive the reasonable value of his services. A failure to pay gives rise to a common-law action that may be prosecuted in the courts. There is no more reason for giving the commission the right to limit or control the sum to be paid under this contract of employment than there would be to require all contracts with employees to be submitted to the commission to pass on the reasonableness of the wages agreed to be paid.

Claims of Physicians and Hospitals Under Contracts

(Western Indemnity Co. v. State Industrial Commission et al. (Okla.), 211 Pac. R. 423)

The Supreme Court of Oklahoma says that an employee of a company sustained an injury that entitled him to compensation under the workmen's compensation law of that state. Some weeks afterward, the state industrial commission made an award and ordered the employer, or the indemnity company that was its insurance carrier, to pay the amount of the award and also "all medical expenses as may be necessary as the result of said injury during sixty days after the injury or for such time in excess thereof as in the judgment of the commission may be required. Such charges shall not exceed the sum of $100 unless approved by the commission." When the employee was injured the employer directed him to a physician, and placed him in a hospital. The medical bill incurred was $135, and the hospital bill $232.80. The employer paid the hospital bill. The physician's bill was not paid. The insurance carrier paid to the employer, on these amounts, $100. Thereafter a review was had of the medical bill and hospital bill by the industrial commission, and the commission made finding that the claims of the physician and the hospital were reasonable charges, and ordered the employer or the insurance carrier to pay the physician $135, and that the insurance carrier reimburse the employer in the sum of $132, that being the balance of the hospital bill after crediting the insurance company with the $100 theretofore paid. But the award of the commission is reversed and remanded, with direction to dismiss the claims, because the commission is without jurisdiction to hear and determine claims of this character. In other words, the court holds that the industrial commission of Oklahoma is without jurisdiction to hear and determine the reasonableness or the unreasonableness of claims for medical or hospital services when they are based on a contract between the employer and the physician, or on one between the employer and the hospital furnishing services to an injured employee entitled to compensation under the provisions of the workmen's compensation law.

Compensation of Injured Mentally Defective Workman

(Belleville Brick & Tile Co. v. Industrial Commission et al. (Ill.), 137 N. E. R. 401)

The Supreme Court of Illinois, in affirming a judgment which confirmed a decision of the industrial commission that the disability had not diminished or ended for which an award had been made under the workmen's compensation act, says that the applicant for compensation, while wheeling clay with a wheelbarrow, had fallen on his left leg, causing an impacted fracture on the inside of the neck of the femur. There was a great deal of evidence of experts, who testified at length almost entirely concerning the mental condition of the applicant. The evidence was that his mental status was that of a moron 6 or 7 years of age; that he was a high-class imbecile; that he was a hydrocephalic, and that he was mentally deficient from birth. But none of the evidence on the question of mental condition was of any importance on the question submitted for decision as to whether the disability had diminished or ended. The workmen's compensation act makes no distinction based on mental conditions, and if the applicant was mentally defective from birth, a hydrocephalic, or a moron with the mental equipment of a child of 6 or 7 years, he was entitled to the use of his leg and compensation for being deprived of such use. The compensation is based on previous earnings and earning capacity, and is measured by loss of such capacity due to the accident, and not on mental condition except in that regard.

Society Proceedings

COMING EXAMINATIONS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
American Psychiatric Association, Detroit, June 19-22. Dr. C. Floyd Haviland, Drawer 16, Capitol Station, Albany, New York, Secretary.
American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.
American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
Montana, Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.
New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.
Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
Southern Minnesota Medical Association, Faribault, June 11. Dr. H. T. McGuigan, Redwing, Secretary.
Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.
Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL ASSOCIATION OF GEORGIA

Seventy-Fourth Annual Meeting, held at Savannah, May 2-4, 1923

The President, DR. J. M. SMITH, Valdosta, in the Chair

Extramural Psychiatry

DR. GEORGE L. ECHOLS, Milledgeville: The first great problem of extramural psychiatry is mental hygiene and preventive measures. The second great consideration is the early recognition of mental diseases and treatment started months or years earlier than treatment is started at present. Progress with the mental disease problem will be advanced by changing the present pessimistic ideas and views of insanity. Many a psychosis is a problem of internal medicine or surgery. It is absolutely necessary that we develop a more liberal consideration and after-care of patients dismissed from mental hospitals.

The "Semi-Insane"

DR. NEWDIGATE M. OWENSBY, Atlanta: There is hardly a physician who does not have among his clientele some person of undoubted social value to his community who shows signs of semi-insanity. It may only be an obsession relative to his health, or it may be of a more pronounced nature. The drunkard, the nymphomaniac, the moral delinquent and the sexual pervert should all be regarded as semi-insane and therefore only partially responsible.

Gravity of Ovarian Tumors of all Types

DR. T. P. WARING, Savannah: Ovarian tumors, even of small size, should not be considered of little consequence, because they are subject to accidents such as torsion, sepsis, inflammatory obstruction, proliferation and carcinomatous degeneration; therefore, they are fraught with grave danger to the patient, and should come out of the class of elective operations and be put into the class of imperative surgery.

Traumatic Cysts of the Brain

DR. CHARLES E. DOWMAN, Atlanta: The treatment which would probably prevent the occurrence of traumatic cysts of the brain is the principle of débridement employed in the handling of traumatic head cases during the recent war. Operation should be performed at the time of injury in all cases in which localized brain contusion is suspected. The operative procedure consists in exposing the injured area and carefully removing contused brain tissue and blood clots by means of catheter suction. If this is done thoroughly, a satisfactory healing of the brain wound should be expected. If, on the other hand, contused brain tissue and blood clots are allowed to remain, there is apt to occur a liquefaction through the action of enzymes, with a resulting cyst. Such a cyst is liable eventually to give rise to the same symptoms as may be caused by brain tumor, and demand late operative treatment.

A Clinical Study of Pelvic Inflammation in Women

DR. EVERARD A. WILCOX, Augusta: Virulent septic infections developing immediately after full term labor or miscarriage during the latter months will rapidly generalize and end fatally. There will be little local reaction to the infection. A few patients showing some resistance will be saved by prompt resection of the inflamed appendages. Infection after abortion must be waited on to localize. The time to operate will come when the patient's general condition is stabilized, with temperature always above normal, and with a tendency for the general condition to deteriorate. Blood cultures should be made in septic cases, and cultures and films of the exudate should be made in all cases. Gonococcus salpingitis must be given full time to abate before operation.

Mistakes in the Treatment of Acute Appendicitis

DR. FRANK K. BOLAND, Atlanta: Delay in operating may be considered the first great mistake in the treatment of acute appendicitis. The giving of purgatives and food before operating constitutes the second great mistake. The public, and mothers in particular, should be taught not to administer castor oil for every stomach-ache, and to refrain from giving food in the presence of continued abdominal pain. The laity should know three rules for the home treatment of persistent abdominal pain, with or without nausea and vomiting: (1) rest in bed; (2) the summoning of a physician, and (3) absolutely no food or medicine by mouth.

Obstetrics in the Home

DR. J. F. MIXSON, Valdosta: Under conditions found in the average home, good obstetrics may be practiced: (1) by conscientious antepartum care, that the mother may go into labor in the best mental and physical condition; (2) by avoiding meddlesome interference, and practicing cleanliness, that no outside infection be carried into the genital tract, and (3) by the prolongation of postpartum care for weeks, that the rehabilitation of the mother may be complete.

Vital Capacity Readings

DR. RALSTON LATTIMORE, Savannah: Determination of the vital capacity assists in determining whether or not cardiac involvement is present, and it gives a fairly accurate estimate of the functional capacity of the heart. As a rule, the lower the vital capacity, the poorer the prognosis. Vital capacity readings also give an index of the results of the treatment, and show whether the tolerance for work is increasing or diminishing.

The Epidemic of Dengue Fever in Savannah in 1922

DR. WILLIAM H. MYERS, Savannah: Dengue is most frequently encountered in the West Indies, and there is no doubt that from that locality the epidemic of 1922 was introduced into Florida, and thence northward to Georgia. The number of cases reported to me was approximately 2,000. Complications were noted in only seven cases. These were: insanity, appendicitis, peritonsillar abscess, otitis media, suppurative parotitis, septic sore throat, and abdominal trouble, with death.

Purity and Quality of Milk Supply of Cities of Three Thousand or More

DR. N. L. SPENGLER, Donaldsonville: All milk sold in Georgia as certified milk must be free from pus, blood and injurious bacteria, and must not contain more than 10,000 bacteria of any kind to the cubic centimeter at the time of delivery to the consumer. Such milk must have a specific gravity ranging from 1.029 to 1.034, and must be neutral or, at most, but faintly acid in reaction, must not contain less than 3.5 nor more than 4.5 per cent. of proteins, from 3.5 to 4.5 per cent. of butter fat, and from 4 to 5 per cent. of sugar. It must be free from all contaminating foreign matter or chemical substances added for preservative or coloring purposes. Immediately after milking, the milk must be cooled and thereafter kept at a temperature below 50 F. until delivered to the consumer. Milk sold in the city shall be whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and five days after calving, or such longer period as may be necessary to render the milk practically colostrum-free. It shall contain not less than 3.25 per cent. of natural milk fat and otherwise conform with the state laws as required by the state dairy and food department. Raw milk shall conform to these standards and to all other regulations applicable to raw milk, and shall not contain more than 50,000 bacteria to each cubic centimeter when delivered to the consumer. A physical examination shall be made by the dairy inspector, for which no fee shall be charged, at least quarterly of all animals in herds producing raw milk. Pasteurized milk shall have a bacterial count before pasteurization of not more than 500,000 bacteria to each cubic centimeter, and after pasteurization the count shall not exceed 50,000 bacteria to each cubic centimeter when delivered to the consumer.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

6: 257-352 (April) 1923

Causes of Bitemporal Contraction of Visual Field. E. Hill, Richmond, Va.—p. 257.
Detachment of Retina in Case of Pregnancy with Nephritis. Reattachment and Restoration of Vision. W. L. Benedict and R. D. Mussey, Rochester, Minn.—p. 268.
Quinin Amblyopia. J. N. Evans, Brooklyn.—p. 271.
Immune Reactions of Lens. L. Hektoen, Chicago.—p. 276.
Solarization in Trachoma. J. W. Wright, Columbus, Ohio.—p. 279.
Self-Registering Campimeter and Scotometer. J. W. Downey, Baltimore.—p. 281.
Etiology of Uveitis. B. Chance, Philadelphia.—p. 284.
Increase of Hyperopia in Diabetes. W. H. Roberts, Pasadena, Calif.—p. 291.
Lens Antigen (Vaccines) Used to Absorb Cortical Matter After Extraction of Cataract. A. E. Davis, New York.—p. 295.
Monocular Interstitial Keratitis. J. N. Hoffman, Canton, Ohio.—p. 296.
Iridectomy and Corneal Trephining with a Conjunctival Flap. G. W. Jean, Santa Barbara, Calif.—p. 297.

Archives of Neurology and Psychiatry, Chicago

9: 417-546 (April) 1923

Teratoid Cyst of Hypophysis. J. H. Globus, New York.—p. 417.
*Charcot-Marie Atrophy: Report of Case with Necropsy. C. S. Potts and G. Wilson, Philadelphia.—p. 431.
Recent Developments in Electrodiagnosis. P. Bailey, Boston.—p. 436.
*Arsphenamin Therapy in State Hospitals for Mental Disorders. G. W. Mills and C. L. Vaux, Central Islip, N. Y.—p. 450.
*Schizophrenic Catatonia with Associated Metabolic and Vegetative Features. Report of Case. T. Raphael, J. P. Parsons and M. N. Woodwell, Ann Arbor, Mich.—p. 471.
*Phenobarbital (Luminal) Treatment of Insane Epileptics. I. A. Darling, Warren, Pa.—p. 478.
*Pathogenesis of Epilepsy. M. Osnato, New York.—p. 488.

Charcot-Marie Atrophy.—The pathologic changes in the case reported by Potts and Wilson corresponded with the two findings most commonly reported in cases of Charcot-Marie atrophy in which necropsies have been recorded: degeneration of the peripheral nerves and of the posterior columns of the cord. Clinically, the case showed the presence of mental changes and Argyll-Robertson pupils. The occasional appearance of these unusual symptoms in Charcot-Marie atrophy may be explained on the ground that hereditary diseases of the nervous system are, at times, blended together; hence atypical findings are to be expected.

Arsphenamin Therapy for Mental Disorders.—For details, of the work done by Mills and Vaux, the original article should be consulted as limited space forbids abstracting. However, the authors believe that, in general, paretic patients should not be treated, at least not those admitted to state hospitals. Patients suffering from what is designated as late cerebral syphilis should usually not be treated. The time to treat neurosyphilis is during the first year or so after the primary infection. They do not believe that the so-called borderline cases should be stressed from a therapeutic standpoint; that, on the contrary, the cases admitted to state hospitals are usually clear-cut clinically. No reliance is placed on one negative Wassermann reaction in a case under treatment; and, in view of the numerous discrepancies and contradictions in the serology, it is recommended that repeated examinations be made in all unclear cases, and especially examinations in more than one laboratory.

Schizophrenic Catatonia.—An analytic report is made by Raphael, Parsons and Woodwell of a case which presented definite indications of primary or fundamental asthenic habitus, the gradual development of an acute schizophrenic catatonia with stupor reaction, and almost complete recovery; and which further, in strikingly phasic association, on the physiologic level, presented marked vagotonia and hypo-suprarenalism, and in somewhat less degree, hypophyseal and thyroid inadequacy with evidence of general metabolic depression, essentially hypo-oxidative in type. These findings strongly emphasize trends that have been noted in other acute schizophrenic reactions.

Phenobarbital in Epilepsy.—Darling reports the results of treatment with phenobarbital in a series of male patients who were classed as insane epileptics and required hospital care because of pronounced dementia or periods of extreme and dangerous violence. All of the patients treated belonged to one of four groups: idiopathic, traumatic, senile, or syphilitic. Favorable results were obtained from the administration of phenobarbital in cases diagnosed as idiopathic and traumatic epilepsy. The results in cases diagnosed as senile and syphilitic epilepsy were doubtful. Phenobarbital is not to be considered as a "cure" or specific for epilepsy. The author suggests that phenobarbital and bromid may be combined and better results thus obtained in selected cases. It appears that phenobarbital has a cumulative effect that appears to be successfully combatted by a break of two days in each week during its administration. A sudden break in the administration of phenobarbital is sometimes followed by a series of seizures. There is much less danger of such trouble if bromid is given as soon as the phenobarbital is withdrawn. One and one-half grains (0.09 gm.), given five days in each week, appears to be a safe dosage. If larger amounts are given, very careful observation is necessary to detect possible toxic symptoms early and to prevent the more serious disorders. The use of this drug may be followed by: rash, simulating measles or scarlet fever; symptoms like those of alcoholic intoxication; severe, cholera-like diarrheas; mental hebetude; delirious states, and other like troubles.

Pathogenesis of Epilepsy.—The factor of importance in epilepsy, Osnato asserts, is the acidosis, regardless of whether this depends on a viciously functioning carbohydrate metabolism which causes a general toxicosis, or on the local production of the toxic substance from disintegrating cellular

structures, secondary to vascular disturbances. The effect is the same, the only difference is the extent of the convulsive reaction.

American Journal of Obstetrics and Gynecology, St. Louis

5: 225-288 (March) 1923

Palliative and Operative Treatment of Prolapse of Uterus. J. C. Hirst and C. Mazer, Philadelphia.—p. 225.
Clinical Aspects of Blood Loss in Labor. P. T. Harper, Albany, N. Y. —p. 233.
Uterine Displacements and Pregnancy. B. R. McClellan, Xenia, Ohio. —p. 242.
*Functional Dystocia in Normal Pelves: Recognition and Management. J. A. Harrar, New York.—p. 246.
Pituitary Extract in Second Stage of Labor. M. A. Tate, Cincinnati. —p. 252.
Malformations of Uterus and Appendages. Report of Six Cases. A. T. Jones, Providence, R. I.—p. 254.
*Should Pubiotomy be Recognized as Justifiable Operation in Obstetrics? A. H. Bill, Cleveland.—p. 258.
*Genital Abnormality and Acute Appendicitis in a Girl of Eight. H. W. Yates, Detroit.—p. 261.
Case of Sacral Periosteal Sarcoma. F. Reder, St. Louis.—p. 266.
Case of Toxemia of Pregnancy, with Acute Yellow Atrophy of Liver. F. R. Oastler and H. G. Jacobi, New York.—p. 271.
Focal Infections and Their Clinical Relations to Metastases in Female Genitalia. A. B. Keyes, Chicago.—p. 277.
*New Measurement as Aid in Diagnosis of Rachitic and Generally Contracted Pelves. W. E. Welz and R. W. Alles, Detroit.—p. 283.
*Menstruation. Its Etiology. I. Kross, New York.—p. 285.
Identification of Babies in Maternities. J. B. De Lee, Chicago.—p. 288.

Functional Dystocia in Normal Pelves.—In Harrar's opinion it is proper to interfere in delay due to a posterior occiput, (1) when despite good contractions there is no advance, or (2) when with advancement there is an increasing extension of the head. Version with head above midpelvis in such conditions, manual rotation and forceps extraction with the head below midpelvis are the operations of choice. Molding of the head through the brim is no contraindication to version if under complete anesthesia the uterus relaxes with sufficient elasticity to readily admit the passage of the hand and wrist through the retraction ring. In fact, a well molded head is much easier to deliver in the breech extraction after version than one that has not molded. Complete Scanzoni rotation of the posterior occiput with the forceps, Harrar asserts, is a dangerous procedure in most hands. If there is but slight resistance the maneuver is satisfactory and is a beautiful operation. But if at all difficult, the leverage is so powerful that the anterior blade frequently cuts into the child's scalp and cheek just in front of the anterior ear and there is risk of high and deep vaginal tears. Under complete anesthesia, manual rotation with external assistance is much to be preferred and is usually successful.

Pubiotomy.—Bill emphasizes the fact that in certain cases pubiotomy offers something which no other obstetric procedure can replace. He does not consider pubiotomy to be an elective procedure, but merely an emergency operation, to be applied in those cases in which the child cannot be saved by other means without seriously endangering the life of the mother. Bill would not even advocate a broadening of its field and would especially speak against reckless performance of podalic version in cases of contracted pelvis under the safeguard of the prophylactic saw.

Exstrophy of Bladder and Genital Abnormality.—In Yates' case the umbilicus was about 9 cm. below its normal location. There was a diastasis of the recti muscles extending from a line drawn transversely from the anterior spines of the ilium downward for 7.5 cm. and separated at its widest portion 4.5 cm. There was an apparent exstrophy of the bladder through this diastasis up to and immediately beneath the integument. It was in the center of this apparently exstrophied part that the umbilicus was seen. Union of the pubic bones was absent—the ramus of each side apparently dipping down without fusion. The external genitals were in irregular and undefined folds, the clitoris alone appearing most normal. The urethral meatus was very small, scarcely admitting a uterine probe, the nymphae were so immature that they could only be distinguished with difficulty and in no sense were a guide to the stream while urinating, so that during urination the urine was thrown upward toward the abdomen. The vagina was entirely wanting, unless it could be marked by a slight aperture which admitted the smallest probe for about 0.5 cm. Repeated attempts were made to carry the probe farther in without success.

New Measurement as Aid in Diagnosis of Rachitic and Generally Contracted Pelves.—Welz and Alles believe that the measurement of the pelvic height is not only more easily determined but also is consistently of greater interpretive value than the measurement of the conjugata externa (of Baudeloque). It requires no particular skill to be determined exactly and, when it is found to be 20 cm. or below, a thorough internal examination of the pelvis is indicated. In view of the ease with which the measurement is taken and the apparent value in diagnosing certain types of pelvic contraction, the authors recommend it for the use of every one who practices obstetrics. The method of determining this measurement is very simple, requiring only the use of an ordinary pelvimeter. The patient is placed on either side, preferably the right, in the exaggerated Sims position. The left leg is flexed about 120 degrees with the body, and the patient instructed to relax all of the muscles of the leg. The tuberum ischii is then easily palpable and the one point of the pelvimeter is placed firmly upon it being held by the left hand of the operator. The fingers of the right hand then seek the highest point of the crest of the ilium which furnishes the other point for the measurement. The tips of the pelvimeter are then depressed to bring them as closely as possible to the bony landmarks, and the reading taken. One centimeter is deducted from this reading to allow for the thickness of overlying tissue. Of 200 normal pelves examined the average height was 20.89 cm. For rachitic and generally contracted pelves the average was 19 cm.

Etiology of Menstruation.—Kross believes that the statement is justified that clinical and experimental evidence is directly opposed to the theory that the corpus luteum is the causative factor in menstruation and that it points clearly and definitely to the mature graafian follicle as the responsible factor in this process.

Journal of Biological Chemistry, Baltimore

55: 323-548 (March) 1923

Creatinin and Creatin in Muscle Extracts. IV. Formation of Creatin from Methyl Guanidin in Muscle. F. S. Hammett, Philadelphia.—p. 323.
Exposure to Light as Source of Error in Estimating Uric Acid by Folin and Wu Method. H. Rogers, Indianapolis.—p. 325.
New Method for Separate Extraction of Vacuole and Protoplasmic Material from Leaf Cells. A. C. Chibnall, New Haven, Conn.—p. 333.
Gravimetric Determination of Organic Phosphorus. W. Jones and M. E. Perkins, Baltimore.—p. 343.
Refractometric Determination of Serum Proteins. B. S. Neuhausen and D. M. Rioch, Baltimore.—p. 353.
Ingested Fat and Body Fat as Precursors of Acetone Bodies. R. S. Hubbard, Clifton Springs, N. Y.—p. 357.
Synthesis of Amino-Acids in Animal Organism. II. Synthesis of Ornithine in Body of Fowl. J. H. Crowdle and C. P. Sherwin, New York.—p. 365.
*Studies in Uric Acid Metabolism. III. Influence of Fats and Carbohydrates on Endogenous Uric Acid Elimination. H. B. Lewis and R. C. Corley, Urbana, Ill.—p. 373.
*Studies on Yeast. V. Vitamin B Content of Yeast. V. G. Heller, Ames, Iowa.—p. 385.
Vitamin B. I. Modified Technic in Use of Rat for Determinations of Vitamin B. H. Steenbock, M. T. Sell and E. M. Nelson, Madison, Wis.—p. 399.
Vitamin B. II. Storage of Vitamin B by Rat. H. Steenbock, M. T. Sell and J. H. Jones, Madison, Wis.—p. 411.
*Colorimetric Determination of Iron and Hemoglobin in Blood. S. Y. Wong, Peking, China.—p. 421.
Use of Persulphate in Estimation of Nitrogen by Arnold-Gunning Modification of Kjeldahl's Method. S. L. Wong, Peking, China.—p. 427.
Use of Persulphate in Estimation of Nitrogen by Folin's Direct Nesslerization Method. S. Y. Wong, Peking, China.—p. 431.
Action of Diazomethane on Xanthosine. P. A. Levene, New York.—p. 437.
Nutritive Properties of Milk with Special Reference to Reproduction in Albino Rat. II. H. A. Mattill and N. C. Stone, New York.—p. 443.
Relation of Lipoids to Suprarenal Physiology. I. Cholesterol and Lipoid Phosphorus Contents of Blood of Rabbits Before and After Suprarenalectomy. E. J. Baumann and O. M. Holly, New York.—p. 457.
*Immediate Effect of Heavy Exercise (Stair Running) on Some Phases of Circulation and Respiration in Normal Individuals. II. Oxygen and Carbon Dioxid Content of Blood Drawn from Cubital Vein at Different Intervals After Exercise. C. Lundsgaard and E. Moller, Copenhagen, Denmark.—p. 477.

Action of Ammonium Cyanid on Dilestons. H. D. Dakin and C. R. Harington, New York.—p. 487.
*Physiology of Muscular Exercise. I. Changes in Acid-Base Equilibrium Following Short Periods of Vigorous Muscular Exercise. D. P. Barr, H. E. Himwich and R. P. Green, New York.—p. 495.
Id. II. Comparison of Arterial and Venous Blood Following Vigorous Exercise. D. P. Barr and H. E. Himwich, New York.—p. 525.
Id. III. Development and Duration of Changes in Acid-Base Equilibrium. D. P. Barr and H. E. Himwich, New York.—p. 539.

Uric Acid Metabolism.—It is believed by Lewis and Corley that the results they have obtained from their experiments support the theory that the increases in the output of endogenous uric acid, following the ingestion of nonpurin foodstuffs, are due, in part at least, to a general stimulation of cellular metabolism, occasioned by the presence of the foodstuffs or their products of catabolism in the cells.

Vitamin B in Yeast.—The vitamin B potency of yeast (*Saccharomyces cerevisiae,* Race F) has been determined by Heller. He found that 2.5 per cent. of this yeast is sufficient for growth at the normal rate. Reproduction is possible at this level, but it is perhaps not normal, although young may be brought to maturity. Five per cent. of this yeast allows growth at the normal, and even better than normal, rate. Normal young have been obtained and weaned. Shortly before weaning time, the young on this ration do not develop as normal young should. Drying of yeast (*Saccharomyces cerevisiae,* Race F) destroys some of the vitamin. *Saccharomyces cerevisiae* grown in a synthetic medium is not as rich in vitamin B as that grown in wort. *Saccharomyces cerevisiae* not only synthesizes the growth promoting vitamin, but the antineuritic vitamin as well.

Iron and Hemoglobin in Blood.—A simple and rapid colorimetric method is described by Wong for the determination of iron in blood. The proteins are completely destroyed by the action of concentrated sulphuric acid and sodium or potassium chlorate, and the resulting solution is treated directly with sulphocyanate. The entire procedure is carried out in a single test tube, much in the same fashion as in the determination of total nitrogen by the direct nesslerization method of Folin. The determination of iron in blood by the new method is said to be quite as simple as a determination of the hemoglobin by any of the colorimetric methods. Since the iron in blood is practically equal to the iron in the hemoglobin, Wong suggests the determination of hemoglobin. The former has the advantage that it is applicable to old as well as to fresh blood and that the standard solution is easily prepared and keeps indefinitely.

Effect of Heavy Exercise.—The period during which the oxygen content of blood drawn from a cubital vein is found to be low after fast stair-running five times, Lundsgaard and Möller state, is of very short duration (about one minute after the exercise is finished). From two to four minutes after exercise, venous blood drawn from the arm may contain almost as much oxygen as arterial blood. From five to eight minutes after exercise the value again decreases somewhat and becomes more like the "normal average." The carbon dioxid content of the blood decreases markedly (from 5 to 10 volumes per cent.) during the first few minutes after the exercise is finished.

Muscular Exercise Changes Acid-Base Equilibrium.—Barr, Himwich and Green state that following short periods of vigorous muscular exercise, remarkable changes occur in the acid-base equilibrium of the blood. The carbon dioxid combining capacity is greatly diminished. The arterial carbon dioxid tension is reduced, and the reaction of both arterial and venous blood becomes less alkaline. The degree of change varies considerably in different normal persons. The change in carbon dioxid capacity is accompanied by an increase in the concentration of lactic acid. The observed increase in lactic acid was compared with that calculated from the change in carbon dioxid capacity. No strict quantitative relationship could be demonstrated. The slope of the carbon dioxid absorption curves is flatter after exercise. As a consequence, the efficiency of the blood as a carbon dioxid carrier is diminished. In the change between any two physiologic tensions, a given volume of blood takes up less carbon dioxid from the tissues and eliminates less carbon dioxid from the lungs. Easy muscular exercise may be performed with scarcely detectable changes in the acid-base equilibrium of venous blood. With heavier work the degree of change, both in reaction and in carbon dioxid combining capacity, increases rapidly with each small increase in the amount of work.

Missouri State Medical Association Journal, St. Louis

20: 113-152 (April) 1923

Diagnosis and Management of Calculi in Upper Urinary Tract. N. S. Moore, St. Louis.—p. 113.
*Suggestion for Standard Technic in Application of Phenolsulphonephthalein Test, in Determination of Relative Functional Capacity of Two Kidneys. H. McC. Young, St. Louis.—p. 117.
Experience with Mozingo Method of Treatment for Empyema. A. L. Fuerth, Cape Girardeau.—p. 122.
Morphin-Hyoscin Hydrobromid Seminarcosis Preceding Operation (One Hundred Cases). C. D. O'Keefe, St. Louis.—p. 126.

Standard Technic for Phenolsulphonephthalein Test.—Young urges the adoption of a standard technic for this test and insists that the dye be collected simultaneously from the two sides, that the test should be brought to a conclusion on the two sides at the same time, and that the bladder should be catheterized at once. The regularity of flow on the two sides and the total quantity of fluid, in cubic centimeters, collected from each side during the test is important, and some note should always be made on the subject. If collection on one side begins and ends four minutes later than on the other the two kidneys are not working simultaneously.

Ohio State Medical Journal, Columbus

19: 245-270 (April) 1923

Advisability of Early High Amputation in Senile Gangrene of Lower Extremity. Report of Four Cases. D. B. Gilliam, Columbus.—p. 245.
Cured Case of Ankylosis of Jaw. W. G. Stern, Cleveland.—p. 248.
*Method Employed for Controlling Diabetics in Outpatient Department of Lakeside Hospital. C. D. Christie, Cleveland.—p. 250.
Lethargic Encephalitis. G. F. Zinninger, Canton.—p. 253.
Local Health Department, County Medical Society and American Red Cross. J. R. McDowell, Lakewood.—p. 256.
Relation of Immediate Intermediary Operation to Modern Obstetrics. J. L. Bubis, Cleveland.—p. 259.
What We Know About Psoriasis. H. J. Parkhurst, Toledo.—p. 261.
Hemorrhage of the New-Born. L. E. Leavenworth, Canton.—p. 265.
Vertigo. J. N. Hoffman, Canton.—p. 269.

Controlling Diabetics in Outpatient Department of Lakeside Hospital, Cleveland.—The diabetic clinic in connection with the outpatient department at Lakeside Hospital meets once weekly and is in charge of a physician, who has for his assistants a trained dietitian, a social service worker and a laboratory assistant. All diabetic patients who have been in the hospital for treatment are referred to this clinic for further education and follow-up work. The milder cases are sent to this department without ever being admitted to the hospital. The physician in charge sees all patients individually on clinic day if they have anything to discuss with him, and then he lectures to the assembled group concerning various phases of the disease. The dietitian gives set demonstrations on foods, showing the methods of preparation of certain special things and she is responsible for seeing that the patient is able either to calculate or to estimate with accuracy the diet which has been recommended by the physician. The duties of the social worker are to see that all patients referred to the department attend; to investigate home conditions and see if it is necessary to supply any particular or all foods; to make satisfactory boarding arrangements for those without homes; to see that those responsible for the preparation of the patient's food understand what they are about; and to keep accurate records of all attendance and see that laboratory and dietetic data are kept up to date. The laboratory assistant examines the urine specimens brought in weekly, does blood sugar determinations under direction of the physician, and teaches the patients how to examine their urine and do other simple tests if they are thought necessary. A patient is required to attend this clinic once every week. When he has been able to keep his urine sugar-free for one month, and occasional blood-sugar determinations have shown his glycemia to be nearly normal, the patient is then taught how to examine his own urine, after which he needs to report back but once monthly.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Edinburgh Medical Journal

30: 85-118 (March) 1923

*Tuberculosis of Lymphatic System. R. Philip.—p. 85.
*Experimental Work Bearing on Virulence of Tubercle Bacillus and On Localization of Tuberculous Lesions in Lungs. C. H. Browning.—p. 96.
*Complement Fixation in Tuberculosis. H. L. Coulthard.—p. 101.
Lymphatics and Lymph Glands: Their Rôle in Absorption of Foreign Particles and Tubercle Bacilli. P. T. Herring and F. G. Macnaughton.—p. 108.
Artificial Pneumothorax: Its Value in Early Stages of Tuberculosis. J. Crocket.—p. 110.
Special Diploma in Tuberculosis. J. L. Smith.—p. 115.

Tuberculosis of Lymphatic System.—Philip is of the opinion that the part played by the lymphatic system in the early spread of tuberculosis should be emphasized. Patients should be examined with that in mind, and the more important groups of glands should be reviewed systematically. In cases of general delicacy, all the readily accessible lymphatic glands should be investigated carefully. In young children, the lymphatic system should be investigated with special care, from time to time. Lymphatic tuberculosis, conspicuous in children, becomes less marked in later life. In cases of gross enlargement of one or more glands, exacting search should be made into the state of adjacent glands and other groups of glands. Operative treatment should be limited to emergencies—for example, the immediate removal of an ugly deformity in certain cases or the evacuation of an obviously softened gland. Save in exceptional cases, such operative treatment should not involve extensive incision. Operative treatment should not be regarded as radical. Tuberculous involvement of the lymphatic system can be combated effectively by continuous vaccine therapy.

Virulence of Tubercle Bacillus and Localization of Tuberculous Lesions.—The conclusion is reached by Browning that localization of infection and development of lesions in a given organ which is remote from the site of entry of the organisms may be the result of a special affinity of the tissue. Whether such affinity is due to structural or to chemical characters is not determined. The presence of extensive lesions, practically restricted to the lungs, can be brought about by organisms which certainly do not reach these organs by inhalation.

Complement Fixation in Tuberculosis.—Coulthard asserts that the complement fixation test in tuberculosis, rather than being diagnostic, possesses prognostic import. A strong positive reaction means well developed resistance to the tubercle bacillus, and, in consequence, a relatively long lease of life may be expected. On the contrary, a weak reaction in a well established case denotes lack of response to the infection, and, therefore, a guarded prognosis.

Lancet, London

1: 731-778 (April 14) 1923

*Lethargic Encephalitis (Epidemic Encephalitis). A. J. Hall.—p. 731.
*Importance of Protein Hypersensitivity in Diagnosis and Treatment of Special Group of Epileptics. R. L. M. Wallis and W. D. Nicol.—p. 741.
Some Congenital Anomalies of Eye and Their Confusion with Acquired Conditions. I. C. Mann.—p. 743.
*Heating of Tissues of Body by Light and Heat Rays. L. Hill and J. A. Campbell.—p. 746.
Treatment of Stuttering. E. W. Scripture.—p. 749.
Case of Inverted Pylorus Obstructing Gastrojejunostomy Aperture. J. McClure and H. E. Claremont.—p. 750.
Case of Torsion of Ovarian Cyst in 5 Months Old Infant. E. M. Powell.—p. 751.

Lethargic Encephalitis.—Hall makes an extensive review of the clinical history, epidemiology, relation to other diseases, etc., of this disease and includes a bibliographic summary.

Value of Protein Hypersensitivity Tests.—The results of protein hypersensitivity tests in cases of epilepsy are presented by Wallis and Nicol. Five groups of proteins were used: (1) Egg proteins; (2) meat and fish proteins; (3) milk of various animals; (4) vegetable proteins; (5) cereals. Tests were carried out on 122 epileptics. Of these, forty-six gave positive reactions to different proteins, while seventy-six did not react at all. The result of these observations has shown that in some cases in which it has been possible to adjust the diet on the basis of skin tests, no further treatment has been necessary. Peptone was given orally to twenty-four patients. In some cases the fits have become less frequent, and, in a small proportion of cases, there has been some mental improvement as well. In two cases the peptone made the patients decidedly worse. The tests are said to serve as a guide not only to diagnosis, but also to treatment.

Heating of Tissues by Heat and Light Rays.—Experiments were made by Hill and Campbell in which they exposed rabbits to the rays from the sun and from a carbon arc lamp, paying particular attention to the comparative effects on the temperature of the brain and of the body in general. They also endeavored to determine the comparative effects of the total rays from the same source, and total rays from a carbon arc lamp on the temperature of the human subcutaneous tissue. Exposure of the whole body of a rabbit to the sun's rays rapidly increased the temperature of the deeper tissues, the fur temperature rising as high as 54 C. Exposure of the head and upper part of the body was followed by a fall of temperature in the deeper tissues, the fur temperature in the sun not exceeding 46.5 C. Local exposure of the head of a rabbit to the carbon arc greatly increased the temperature under the scalp and in the brain, the fur temperature rising above 60 C. The body temperature—rectum—was often not greatly altered. The respiration was always very rapid—more than 100 per minute. These results are taken to show that local heating may occur, and confirm the utility of pith helmets and spinal pads on exposure to tropical sun. Using the skin of the human knee and ordinary sources of rays—carbon arc and gas radiators—Sonne's results were confirmed—i. e., luminous rays heat up the subcutaneous tissues to a greater degree than do nonluminous rays, the skin temperature being the same in both cases.

Medical Journal of Australia, Sydney

1: 253-280 (March 10) 1923

Recent Progress in Child Hygiene. H. Sutton.—p. 253.
Artificial Cyanosis in Hysterical Patient. O. W. Rawson.—p. 266.

1: 281-308 (March 17) 1923

Historic Notes from Records in Brisbane Hospital (1850-1870). F. S. Jackson.—p. 281.
Cardiac Muscle and Valvular Lesions in Chronic Heart Disease. W. N. Horsfall.—p. 287.
*Pneumococcal Pericarditis. S. F. McDonald.—p. 291.
Complete Separation of Facial Bones from Base of Skull. A. Aspinali.—p. 292.

Pneumococcus Pericarditis.—In McDonald's case the attack of pericarditis followed sore throat. The pericardial sac was incised and a drain inserted. It was removed after about two weeks. The pus from the pericardium yielded a pure culture of pneumococcus. Later on aspiration was done and 200 c.c. of fluid removed. The patient eventually made a complete recovery.

South African Medical Record, Capetown

21: 121-144 (March 24) 1923

Compound Sanitation. A. J. Orenstein.—p. 122.
Adenoids and Their Causation. S. E. Kark.—p. 133.
Case of Apparent Cure of General Paralysis of Insane by Arsenic and Mercury. G. B. Wilkinson.—p. 135.
Treatment of Penetrating Abdominal Wound. J. A. Clements.—p. 136.
Recent Outbreak of Anthrax at Paarl, Cape Province. A. M. Moll.—p. 137.

Japan Medical World, Tokyo

3: 41-66 (March) 1923

*Relation of Causative Organisms of Tsutsugamushi Disease and Blood Constituents, Also on Weil-Felix's Reaction. R. Kawamura.—p. 41.
*Artificial Production of Cancer in Lungs Following Intrabronchial Insufflation of Coal Tar. N. Kimura.—p. 45.
New Medium Favorable for Pigment Production by Staphylococcus, Also Contribution to Knowledge of Pigment Production. A. Fujita and S. Yoshioka.—p. 47.

Blood in Tsutsugamushi Disease.—Kawamura suggests that the virus of tsutsugamushi disease is in the leukocytes, especially in the polymorphonuclear leukocytes. It is not, however, firmly attached to the cells. The virus is not in the blood platelets. There is no positive result with red blood corpuscles alone, but according to various experimental results, it appears that red blood corpuscles have no impor-

tant meaning with the causative agent of the disease. The Weil-Felix's reaction with serum and the vesicle fluid taken during convalescence, and that of monkeys is entirely negative.

Experimental Cancer of Lung.—The intrabronchial insufflation of coal tar in a rabbit, killed on the eightieth day, caused an adenoma-like growth in the lung. In a guinea-pig, which had survived for 140 days, there occurred an overproduction of the bronchial epithelium, which often penetrated the wall and finally made its way into the peribronchial tissue.

Annales de Médecine, Paris

13: 93-188 (Feb.) 1923

*Pathogenesis of Carcinoma. L. Bard.—p. 93.
*Basal Metabolism. G. Marañon and E. Carrasco.—p. 124.
*Blood and Tissue Fluid Interchanges. R. Lévy.—p. 147.
*Cardiotonic and Diuretic Action of Calcium Chlorid. Loewenberg.—p. 172.
Oculo-Esophageal Reflex. Daniélopolu et al.—p. 182.

Pathogenesis of Cancer.—Bard finds that the pathogenesis of malignant tumors is much less obscure than generally assumed. He recalls his studies on the subject which appeared between 1885 and 1894. The results he then announced are now partly accepted (without being quoted), partly unknown. He maintained, in 1885, the unifocal origin and the absolute cellular specificity of the tumors, which may be derived from any of the tissues of the organism. The differences between tumors are due to physiologic differences between the normal cells from which they originate. It is important to distinguish between etiology, pathogenesis, and mechanism of action of pathogenic causes. The cells of malignant tumors have lost their ability to accept the moderating influence of the whole organism. The loss may be only partial, which accounts for the different degrees of malignancy. If the loss of this moderating influence of the organism—which he called "vital induction"—were the cause, the cancer would appear all over the body, at least in all the cells of the same kind. Therefore it must be the malformation of the cell, which does not accept the influence of vital induction, and thus starts to proliferate without limits. Any dysgenic influence may lead to formation of tumors. The "vital induction" which regulates the normal growth and renovation of tissues must be explained as the influence of the whole organism upon every one of its cells. The cells which escape this influence, give rise to malignant tumors. Heterotopic cells are predisposed, because they are already more or less refractory toward the general harmony of the development of the organism. This theory does not postulate a new acquired quality of the tumor cells, but on the contrary the loss of one of its fundamental normal properties, the ability to submit to the moderating action of the whole organism on its single constituents. It is not impossible that a treatment which would have a eugenetic action on such cells might succeed. The methods of fight against cancer are quite different from the fight against tuberculosis. There is no social prophylaxis, except in instruction of the public. Individual prophylaxis consists in treating local predisposing affections.

Clinical Significance of Basal Metabolism.—Marañon and Carrasco find a distinct diagnostic and prognostic value in determination of basal metabolism only in affections of the thyroid. It usually allows the differentiation of them from pathologic states grouped under the heading of "pseudohyperthyroid vegetative neuroses." Sex glands and the pituitary act in the same sense as the thyroid. If the disturbances of their function are associated with hypothyroidism or hyperthyroidism, the influence of the thyroid changes prevails, even if the other glands are affected in the opposite sense.

Interchanges Between Blood and Tissue Fluids.—Since the exchanges of substances between the blood, tissues and kidneys are too rapid in healthy persons, Lévy resorted to the investigation of pathologic cases, especially in nephritis and pleurisy, where the equilibrium was changed. He found that potassium and calcium chlorid, introduced by mouth or intravenously, pass quickly into the tissue fluid. Intravenous injection of calcium chlorid is almost constantly followed by an immediate concentration of the blood which precedes the diuresis. It continues and increases during the diuresis, after which dilution of the blood occurs. Sodium chlorid produced dilution of the blood, without a diuretic effect, in patients kept on salt-free diet.

Cardiotonic and Diuretic Action of Calcium Chlorid.—Loewenberg found that comparatively large doses of calcium chlorid (over 1.5 or 2 gm.) are necessary to produce diuresis. Small doses (0.1-1 gm.) are sufficient for a simple cardiotonic effect. Thus the diuretic action of the substance is not due to its influence on the heart. Small doses of calcium chlorid do not produce a concentration of the blood nor diuresis. Large doses cause both concentration of the blood and diuresis.

Bulletin Médical, Paris

37: 267-294 (March 10) 1923

*Bacteriophagy in Therapeutics. Beckerich and Hauduroy.—p. 273.
*Inoculation of Herpes in Encephalitis. Teissier et al.—p. 276.

The Bacteriophage in Treatment of Colon Bacillus Infection of Urinary Apparatus.—Beckerich and Hauduroy treated eight adults and three children with colon bacillus pyelitis or cystitis. They injected colon bacilli from cases of puerperal pyelocystitis, cultivated in bouillon and treated with the bacteriolysate representing the bacteriophage. The colon bacillus infection was rapidly and completely cured in six of the cases, and clinically cured in one. No effect was apparent in two others and in normal control cases. The action of the bacteriophage in the living subject seems to correspond with the phenomena in the test tube, the urine soon becoming sterile. They exclude from this treatment all cases in which the individual colon bacilli seem to resist the lysant action of the bacteriophage strain.

Inoculability of Herpes in Epidemic Encephalitis.—The seven patients inoculated with herpes responded with the same skin lesions as the healthy and patients with other diseases.

Bulletins de la Société Médicale des Hôpitaux, Paris

47: 143-182 (Feb. 2) 1923

Foreign Body Simulating Chronic Bronchitis. Lemaitre.—p. 144.
Combination of Digitalis and Ouabain in Heart Disease. Laubry et al.—p. 147.
*Urticaria Stopping During Measles. E. Apert and R. Broca.—p. 152.
*Polynucleosis of Spinal Fluid in Epileptic. Baylac et al.—p. 154.
*Hemorrhage in Suprarenal Capsules. Michaux and Marsset.—p. 161.
*Exudate in Gonorrheal Arthritis. Pagniez and Ravina.—p. 164.
*Cancerous Pleurisy. Loeper, Joly and Tonnet.—p. 166.
*Fatal Epileptic Etat de Mal After Ovariectomy. Marchand and Adam.—p. 168.
Protuberantial Syndrome. E. Duhot and L. Pardoen.—p. 172.
*Fissural Hemorrhages in Chronic Aortitis. Chabrol and Blum.—p. 176.
*Aneurysm of Aorta with Secondary Endocarditis. Laubry and Bordet.—p. 179.

Urticaria Stopping During Measles.—Apert and Broca treated without success a girl, aged 9, suffering from urticaria. The affection disappeared during ten days before and ten days after an eruption of measles in the child. This may be an instance of the anergy in measles, similar to that against tuberculin. On the other hand, a serum sickness (with urticaria) may be present in measles. Even without an injection of serum, urticaria can precede the rash.

Polynucleosis of Cerebrospinal Fluid in Epilepsy.—Baylac, Bize and Stillmunkes observed an increase in polynuclears in the cerebrospinal fluid during status epilepticus. The patient had also a marked hemoclastic crisis. They think that epilepsy is perhaps of anaphylactic nature.

Hemorrhage in Suprarenal Capsules.—Michaux and Marsset's patient died after severe diarrhea. He gave off a cadaverous odor, like certain patients with Addison's disease. The blood pressure was high (168). Necropsy revealed a normal heart and aorta, indurated kidneys and large hemorrhages in both suprarenal capsules.

Cytologic Variations in Exudate During a Gonorrheal Arthritis.—Pagniez and Ravina confirm the good prognostic significance of an increase in mononuclears in the exudate of gonorrheal arthritis. Yet a new attack may cause a new increase in polymorphonuclears.

Cytology and Chemistry of Irradiated Carcinomatous Pleurisy.—Loeper, Joly and Tonnet treated a carcinomatous pleurisy (after a carcinoma of the breast) with roentgen rays. The treatment led quickly to a disappearance of the fluid. The carcinomatous cells of the exudate showed progressive cytolysis during treatment, while the number of lymphocytes remained unchanged. The serum globulin fraction of the exudate increased from 1.5 per cent. to 2.75, while the albumins decreased from 3.25 to 2.1. Amino-acids increased from 0.0135 to 0.0225 per cent. after irradiation.

Status Epilepticus After Ovariectomy.—Marchand and Adam's patient was a woman, aged 60, with goiter of ten years' standing, whose uterus and ovaries had been removed for uterine fibroids. Three months after the operation the first epileptic attack occurred. Two months later the patient died in status epilepticus. The partial necropsy showed arteriosclerosis of the brain and a hemorrhage in the center of the anterior lobe of the pituitary gland.

Fissural Hemorrhages in Chronic Aortitis Simulating Gastroduodenal Ulcer.—Chabrol and Blum's patient suffered for eighteen months from melenas and apparent hematemesis. Only her refusal prevented an operation for pyloric ulcer. The patient died suddenly. They found a small fissure in the dilated and atheromatous aorta and a corresponding fissure in the trachea at the bifurcation.

Aneurysm of Ascending Aorta with Secondary Endocarditis.—Laubry and Bordet demonstrated the heart and aorta of a patient who died from a dissecting aneurysm of the aorta perforated into the pericardium. The aneurysm started in an ulcer probably above the valves, which were covered by endocarditic vegetations.

Gynécologie et Obstétrique, Paris

7: 113-192 (Feb.) 1923

Chronic Appendicitis and Appendicectomy. E. Rouffart.—p. 115.
*Localization of Pain in Gynecology. M. Muret.—p. 122.
*Wassermann Reaction in Pregnancy and After Delivery. P. Lasseur and H. Vermelin.—p. 130.
Vulvar Anus. H. Mondor and Gaudart D'Allaine.—p. 147.
Present Conceptions of Prognosis of Pulmonary Tuberculosis in the Pregnant. L. Cleisz.—p. 150.

Usual and Paradoxic Localization of Certain Pains in Gynecology.—Muret does not agree with Lomer who considers all the supposed lumbar abdominal neuralgias as hysterical phenomena. Yet he admits that they may exist without any lesion of the sex organs. He twice observed pains localized on the side opposite to the lesion. "One should not forget the frequency of superficial pains and pains which are simply psychic. The lack of knowledge of this fact is the reason for hundreds of useless appendectomies."

Wassermann Reaction in Pregnancy and After Delivery.—Lasseur and Vermelin applied the Wassermann test to 148 pregnant or recently delivered women. They had 63 positive and 85 negative results. Wherever the clinical findings showed syphilis, the reaction was positive. Treatment made the birth of living children possible. They had no false positive results in other diseases. The false results may be due to the anticomplementary action of the serum, which is to a certain small degree present in every case. The antigen binds also a very small quantity of complement. One must not forget that other biologic reactions do not always give the expected results. Yet the value of the Wassermann test is considerable.

Presse Médicale, Paris

31: 241-296 (March 14 to March 28) 1923

Serotherapy and Vaccines in Treatment of Tuberculosis. Jousset.—p. 241.
*Pathogenesis of Hemogenia. P. Emile-Weil and Isch-Wall.—p. 243.
Tubercle Bacilli in the Blood in Children. H. Lemaire and Turquety.—p. 245.
*Pathogenesis of Cirrhosis. N. Fiessinger and M. Wolf.—p. 253.
Tuberculous Bone and Joint Disease and Trauma. Sénèque.—p. 258.
*Akathisia and Tasikinesia. J. A. Sicard.—p. 265.
*Thoracoscopy for Severing Adhesions. Piguet and Giraud.—p. 266.
Immediate Mobilization of Fractured Olecranon Held in Place with Screw. R. Olivier.—p. 268.
Comparison of Digitalis and Strophanthin. Daniélopolu.—p. 273.
Are All Chronic Coughers Tuberculous? Halbron and Potez.—p. 275.
Regeneration of Clavicle After Removal. Hecquet.—p. 276.
"Mechanism of Digestive Leukocytosis." C. Ciaccio.—p. 277.
Is Hexamethylenamin a Diuretic? L. Cheinisse.—p. 278.
*Etiology of Cancer. J. Magrou.—p. 285.
Case of Syphilis of Lower Jaw. G. Picot and C. Ruppe.—p. 288.
Combined Radiotherapy of Cancer of Uterine Cervix. L. Mallet.—p. 289.
Leishmaniasis Appendicitis. G. L. Hartmann-Keppel.—p. 291.

Pseudohemophilia.—For the tendency to hemorrhages from anomalies in both blood and vessels, the term hemogenia has been coined. The special features of this pseudohemophilia are here described in detail. The fact is emphasized that it affects women, both in its sporadic and hereditary forms. The manifestations of the hemogenia may be restricted to the genital organs, and the excessive menstrual or supplementary hemorrhages may alternate with periods of amenorrhea. Thyroid anomalies are common, and girls with these excessive hemorrhages at puberty may present symptoms suggesting pituitary or suprarenal disorder. The instability of the blood is marked in hemogenia; although the blood coagulates defectively, yet intravascular thrombosis is sometimes observed. In hemophilia, on the other hand, the blood is stable, and symptoms suggesting anaphylaxis or colloidoclasis scarcely ever develop under any medication. The liver and blood are substandard in hemogenia, and tuberculosis and syphilis, especially inherited syphilis, may tip the scale in favor of the development of the hemorrhagic diathesis.

Pathogenesis of Cirrhosis.—Fiessinger and Wolf classify cases of cirrhosis according to the anatomic-clinical findings, not as "somebody's disease." They reiterate that the pathology of the liver is very much like that of the kidneys. Widal classifies the functional kidney syndromes as chloruremic, azotemic and hypertensive. This includes all the pathology of acute nephritis, parenchymatous nephritis and renal sclerosis. The arterial hypertension with renal sclerosis might be compared to the ascites of cirrhosis; the albuminuria to the jaundice with cirrhosis, and the retention of chlorids and nitrogen to the heart disturbances accompanying the cirrhosis. It is difficult to determine the relative share of alcohol and syphilis in the etiology. Benefit from treatment as for syphilis is decisive only if the size and consistency of the liver show a pronounced change, and it must not be forgotten that ascites may disappear under the simple diuretic action of intravenous injections of mercury cyanid. The fate of a patient with hepatitis depends on the functional capacity of his liver cells; but, with the exception of hypertrophy of the liver—which is often an unreliable symptom—we have no means for exact investigation of the liver cells.

Akathisia and Tasikinesia.—Sicard discusses the psychoses marked by morbid fear of sitting down and resulting inability to do so, and the morbid inclination to get up and walk and the resulting inability to remain seated. Certain cases of epidemic encephalitis begin with a tendency to tasikinesia. He describes a number of examples of each of these psychoses, his experience confirming the assumption that the centers for rhythm and cadence and rhythmic clonus are in the midbrain. When these centers are abnormally excited by the virus, the cortex loses control of them, and the midbrain functions automatically.

Thoracoscopy for Severing Pleural Adhesions.—Two cases are described to illustrate the harmlessness and efficacy of Jacobæus' method of breaking up adhesions in the pleura with the galvanocautery, under direct visual inspection, to facilitate artificial pneumothorax.

Etiology of Cancer.—Magrou theorizes on the cause of malignant disease, taking as his basis Perrin's recent research on the rays forming visible and invisible light as the cause of displacements of molecules. His theory seeks to explain the evolution of matter and of the universe and cancer growth as a cosmic phenomenon. One of Magrou's arguments is the distinct influence exerted on karyokinesis by radiation. His theory also opens a definite field for research on experimental malignant disease by cooperation of biologists, chemists and physicists.

Schweizerische medizinische Wochenschrift, Basel

53: 133-160 (Feb. 8) 1923

*Fat Embolism. C. Wegelin.—p. 133.
*Hereditary Element in Friedreich's Ataxia. E. Hanhart.—p. 139.
Determination of Basal Metabolism. M. E. Bircher.—p. 143.

Latent Exophthalmic Goiter. Holst.—p. 147.
*Diagnosis and Treatment of Nervous Dizziness. Kollarits.—p. 148.
Anatomy of Heart Muscle. Schweizer and Ujiie.—p. 149. Conc'n.

Fat Embolism.—Wegelin reports on Kojo's experiments and on three fatal cases. Lymphatic transport of fat is negligible in the etiology of fat emboli. The fat of the species (rabbits) is better split than foreign fats. In Kojo's experiments the minimal lethal dose of olive oil was 1 c.c. per kg. of body weight; of rabbit fat only 0.5 c.c. The resorption of the emboli is complete after two or three weeks.

Hereditary Element in Friedreich's Ataxia.—Hanhart recommends "Nature's experiments" for scientific study. Friedreich's disease is comparatively frequent in Switzerland, and he asks for more cases (to supplement his forty-six) in order to investigate the families.

Diagnosis and Treatment of Nervous Dizziness.—Kollarits finds that hysteric or neurasthenic dizziness is relieved by motion.

Rivista di Clinica Pediatrica, Florence

21: 1-64 (Jan.) 1923

*Inhalation of Foreign Body. Muggia.—p. 1.
Chronic Invagination of Appendix in Movable Cecum. Trinci.—p. 10.

Sudden Late Death After Aspiration of Foreign Body.—Muggia publishes a report on an infant who inhaled a piece of bone. Neither clinical nor roentgenologic symptoms of occlusion of bronchi were present. Yet the child died suddenly the next day, and necropsy showed that the foreign body had probably lodged first in the left bronchus and had caused atelectasia. Then it was thrown into the right side, which led to suffocation. The case shows that the physician should not rely on negative findings.

Semana Médica, Buenos Aires

1: 229-300 (Feb. 8) 1923

*Subacute Inguinal Adenitis. F. Destéfano and R. F. Vaccarezza.—p. 229.
Treatment of Scoliosis. R. A. Rivarola.—p. 292.
Hemoptysis with Bronchial Glandular Disease. Spangenberg.—p. 295.

Subacute Inguinal Lymphogranulomatosis.—This long study of the nonvenereal bubo fills sixty-three pages. It was described by Nélaton in 1890 and nearly every writer since has called it by a different name. The one preferred by Destéfano and Vaccarezza is subacute inguinal poradenitis. It occurs in endemic and sometimes epidemic form, but the pus is sterile, or the micro-organisms found have no causal significance. The lesion is contagious; the period of incubation ranges from ten to twenty-five days. The suppuration occurs in successive multiple and isolated foci, with an essentially chronic course.

1: 301-344 (Feb. 15) 1923

Present Status of Experimental Cancer. M. Beatti.—p. 301.
*Amputation of the Thigh. R. Finochietto.—p. 307.
Asthma and Asthmatic Bronchitis. J. C. Navarro.—p. 308.
Intraperitoneal Escape of Bile. C. L. García.—p. 311.
The Hemoclastic Crisis in the Pregnant. E. Zarate.—p. 317.
Nephrectomy for Tuberculosis. Silvetti and Ramírez.—p. 319.
Biochemical Research on Bacterial Cultures. R. Cárcamo.—p. 322.
Biochemical Study of Spleen Extract. M. P. Raurich.—p. 334.

Amputation of the Thigh.—Finochietto lays a long sheet, folded to a width of about 20 cm., to form a loop that passes under the thigh. After the amputation, the anesthetist, by pulling on the ends of the sheet at the neck, draws the stump of the thigh up vertical, and it is thus held firmly by the sheet for the surgeon to work on.

Deutsche medizinische Wochenschrift, Leipzig

49: 137-172 (Feb. 2) 1923

*Classification of Nutritional Disturbances. Langstein.—p. 137.
*Removal of Liver and Avitaminosis. A. Bickel.—p. 140.
*Anatomic Nature of Kidney Disease. Schlayer.—p. 141.
Symptoms of Funicular Sclerosis. P. Schröder.—p. 144.
Prevention of Prolonged Suppuration After Operation on Middle Ear. Boenninghaus.—p. 146.
Psychomotor Disturbances. S. Loeb.—p. 147.
Monster with One Head, Four Arms and Four Legs. W. Junginger.—p. 148.
Bean in Child's Trachea. F. Knab.—p. 149.
Diagnostic Import of Faust's Tapping Pain. F. Ehrlich.—p. 149.
Auto-Observation of Vasomotor Neurosis. A. Ehrlich.—p. 150.
Thiosinamin Preparation as Resolvent for Scar Tissue. Reh.—p. 151.
*Permanency of Roentgen Ray Depilation. F. M. Meyer.—p. 152.
Advice to Practitioners on Pulmonary Diseases. Goldscheider.—p. 153.
Epidemiologic Study of Smallpox in Austria. Kantor.—p. 156.

Classification and Treatment of Nutritional Disturbances.—Langstein says that internal medicine and pediatrics have gone separate ways under the flag of "nutrition disturbances." A uniform and systematic nomenclature of the diseases under this name is necessary. Diarrhea, loss of weight, emaciation and a number of other symptoms are spoken of as nutritional disturbances, though these conditions may be due to different causes: underfeeding, abnormal cellular functioning, etc.

Removal of the Liver and Avitaminosis in Their Relation to Sugar Metabolism.—Bickel, as a result of experiments with removing the liver in dogs—which he has accomplished without disturbance to the circulation by means of an inverse Eck fistula and later ligation of the portal vein at its entrance into the liver—asserts that bilirubin to a large extent must be formed outside the liver, as it appears in the blood plasm and fatty tissues even in a few hours after the hepatectomy. The animal minus its liver appears normal for a period of from five to eight hours. Then it suddenly collapses, and becomes incapable of movements except those of respiration. The blood sugar level sinks from 0.08 to 0.12 per cent. glucose noted before the operation, to 0.02 or 0.05 per cent. By introducing glucose solution by mouth, rectum or by the vein, the glycemia rises, and the life of the animal may be prolonged for eighteen hours. Though there are many similarities between the clinical picture in the animals suffering from the loss of the liver and in those suffering from avitaminosis, yet there is one essential difference: In the former, introduction of glucose prevents intoxication, at least temporarily, while in avitaminosis, injection or ingestion of glucose promotes the fatal intoxication. In the first group, glucose prolongs life; in the second group, it shortens it. It is evident that the liver plays an important part in maintaining the normal index figures of the blood, and that a functional disturbance of the liver plays an early part in the symptoms of avitaminosis.

The Present Methods of Recognizing the Anatomic Nature of Internal Kidney Disease.—Schlayer, in a postgraduate lecture on diagnosis of kidney diseases, says that albuminuria may be absent in certain stages of some kidney diseases, and tube-casts have been found in healthy athletes. The waxy tube-cast is generally a sign of dyscrasic influence and is often found in amyloid nephrosis, nephrosis, and pseudonephrosis. The presence of erythrocytes is of greater importance, as they indicate irritability, especially of the vessels. Chronic glomerular nephritis with edema is not always accompanied by high blood pressure. Hypertension may have other causes than renal disturbance, but the possibility of kidney disease should always be remembered. The form and fulness of the pulse should be noted. An overfull pulse is found mostly in benign arteriolosclerotic diseases; strong pulse with fulness in severe arteriolosclerotic contracted kidney. The composition of the urine after test meals should be carefully noted, as the relation between the anatomic nature and the condition of the functioning of the kidney is most important. The functioning of the kidney may be independent of the anatomic nature of the disease, and the changes may be the same in basically different diseases. There is no fixed relation between diffuse affections and functional changes. High blood pressure (without other cause) accompanies acute and chronic parenchymatous disease of the kidneys only when severe, and not always then. Anatomically similar injuries may express themselves in different functioning.

Permanency of the Result of the Removal of Hair by Roentgen Rays.—Meyer is of the opinion that as long as only rays of moderate strength can be used, hair cannot be permanently removed in one treatment. At least three treatments are required for permanent results. From six to eight weeks must elapse between the first and second treatment, and from eight to ten between the second and third. That no uniform dosage can be established is shown by the fact that he has by the same technic treated several epitheliomas which were alike in regard to location, macroscopic appearance, breadth, depth, etc., and found that one epithelioma would disappear quickly after the applied radiation, while others would show only improvement, and still others would continue to grow unaffected by the treatment.

Deutsche Zeitschrift für Chirurgie, Leipzig

177: 145-288 (Feb.) 1923

*Diarrhea with Paralysis of the Intestines. A. Szenes.—p. 145.
*Regeneration of Tendons. E. Wehner.—p. 169.
*Traumatic Cysts in the Brain. Wagner.—p. 196.
Is Focal Tuberculin Reaction Specific? C. Mau.—p. 224.
Digitalis to Ward Off Postoperative Lung Complications. Klug.—p. 236.
Treatment of Fracture of Upper Humerus. L. Ritter.—p. 245.
Chronic Traumatic Edema. L. Cadenbach.—p. 283.

Paralysis of the Intestines with Diarrhea.—Szenes refers to cases in which the bowel is paralyzed in consequence of peritonitis. He compares three cases personally observed with several from the records. Suppurative pancreatitis was the primary affection in a few instances, including the one case with recovery in his own series. The fetid diarrhea accompanying signs of paralysis of the large intestine suggests that the small intestine is still functioning properly, and that the loss of the bowel peristalsis is limited to the upper portion of the large intestine, and that conditions are reparable. The course was twelve days in one fatal case in which the peritonitis was encapsulated. The severe meteorism, pushing up the diaphragm, hampered the lungs and heart. Among the measures applied in treatment are atropin—to reduce secretion and check the liquefaction of the bowel contents. Drugs and enemas to promote peristalsis may have to be supplemented by enterostomy. This should be at the lowest point of the colon, that gravity may aid in emptying the bowel, instead of making the opening in the most distended loop. The paralysis seemed to be restricted to the colon in his cases. The fluid and gases thus formed a vertical column which ran over at times, and this caused the diarrhea. In his two fatal cases, multiple pericecal abscesses had rendered the bowel wall extremely fragile.

Regeneration of Tendons.—Wehner excised the patella in dogs and rabbits and reports that the quadriceps tendon regenerated to form a high grade tendon. The extent of the defect did not affect the regeneration. The experiments were made without suturing or resting the leg; regeneration occurred even when the course of the tendon had been altered.

Traumatic Cyst of the Ventricle.—Wagner reports that a smooth walled cyst of the right lateral ventricle, consecutive to a shrapnel tangential wound, was packed with two pieces of fat which healed in place. The young man's earning capacity is apparently normal, five years later, and there have been practically no symptoms from the large defect in the brain. This and other experiences related show that the ventricle system forms a living bridge to implanted fat tissue. The fat must touch the cyst walls all around, and leave as little space as possible for fluid. The fat implant may become emulsified and act as a foreign body. The symptoms therefrom subside after evacuation of the fat emulsion. The fat does not appear in the lumbar puncture fluid. The fine results with fat implants in traumatic cysts may justify their use in nontraumatic hydrocephalus.

Münchener medizinische Wochenschrift, Munich

70: 167-196 (Feb. 9) 1923

*Sterility of Women. M. Nassauer.—p. 167.
*Treatment of Infected Abortion. H. Albrecht.—p. 169.
*Catarrhal Icterus. F. Lindstedt.—p. 170.
*Treatment of Pyelitis with High Enemas. Sack.—p. 173.
*Prophylaxis of Arsphenamin Injuries. Schumacher.—p. 175.
Curative Vaccination in Actinomycosis. Friedmann.—p. 176.
Stomachics as Basis for Pills and Tablets. Heinz.—p. 176.
*Postpleuritic Scolioses in Children. Rey.—p. 176.
Supports for Severe Scolioses. Hohmann.—p. 177.
Apparatus for Centering Roentgen Rays. Grashey.—p. 177.
Localization of Cervix in Gynecologic Treatment by Roentgen Rays. Bartram.—p. 178.
Paraffin Spray in Burns. Rebaudi.—p. 179.
Portable Apparatus for Pneumothorax. Apel.—p. 179.
Excelsior in Plaster of Paris Technic. W. Müller.—p. 180.
"Blood Pressure in Sleep." C. Müller.—p. 180.
"Sputum Droplets and Tuberculosis Infection." Flügge.—p. 181.
Reply. Seiffert.—p. 181.
Etymology of "Scorbut." S. Müller.—p. 182.
*On American Publications. E. Zucker.—p. 183.
Syphilitic Disease of Organs of Circulation. Grassmann.—p. 184.

Sterility of Women.—Nassauer reports four additional cases with favorable results from his method. It consists in the application of a tube into the cervix, and is indicated in cases in which a spasm of the uterus prevents conception.

Treatment of Infected Abortion.—Albrecht pleads for early evacuation of the uterus, which, however, requires sometimes more skill and is more dangerous than a laparotomy.

Catarrhal Icterus.—Lindstedt reports an epidemic of six cases of seemingly "catarrhal icterus" with one necropsy. He believes that it is—at least in Sweden—a specific infectious disease with a long incubation. The icterus is a result of a parenchymatous lesion of the liver.

High Enemas in Treatment of Colon Bacillus Pyelitis and Sepsis.—Sack recovered from a severe acute pyelitis due to the colon bacillus, after a course of enemas introduced for 40 cm. into the bowel.

Prophylaxis of Arsphenamin Injuries.—Schumacher had good results with Sicard's method in seventeen patients who had previously had after-effects from arsphenamin injections. He injects without removing the constricting band for stasis of the blood, which should be placed as high as possible. He loosens the band slowly five minutes after the injection has been made.

Postpleuritic Scolioses in Children.—Rey found scoliosis in twenty-five of thirty children who had had pleurisy, with or without effusion, at the age of 1 or 2 years.

Access to American Publications.—Zucker points out that many American papers are published not only in the journals, but also in "Collected Papers" of different institutions. Therefore it may be frequently possible to get a reprint even if the journal is not accessible.

Wiener klinische Wochenschrift, Vienna

36: 101-120 (Feb. 8) 1923

Histology of Chronic Tonsillitis. O. Mayer.—p. 104.
*Fleming's Lysozym. O. Bail.—p. 107.
Autumnal Trombidiasis in Schlern District. K. Toldt.—p. 108.
*Arena's Homogenization Method for Sputum. Rosenblüth.—p. 111.
Medical History: Johann Emanuel Veith, 1787-1876. Fischer.—p. 112.

Fleming's Lysozym.—Bail draws attention to studies published long ago by Weil and Suzuki, who found in leukocytes a lytic agent with the same properties Fleming described, under the name of lysozym, in almost all tissues and secretions of the organism. Fleming demonstrated an increase in the lytic property by the action of the lysozym, and the possibility of acquired resistance of bacilli against it.

Homogenization Method for Tubercle Bacilli in Sputum.—Rosenblüth recommends Arena's method: 10 c.c. of sputum are mixed with 90 c.c. of a 10 per cent. solution of ammonium chlorid for five to ten minutes. If this is not sufficient for homogenization, 10 to 20 c.c. of glycerin may be added. The mixture is put for an hour into an incubator and afterward centrifugated at a speed of 2,000-2,500 turns. The decolorization must be made with at least 2.5 per cent. nitric acid.

Zeitschrift für Tuberkulose, Leipzig

37: 321-400 (Jan.) 1923

*Spontaneous Pneumothorax in Tuberculosis. G. Barth.—p. 321.
*Spondylitis with Ankylosis in Relation to Tuberculosis. K. Griep.—p. 328.
*To Enhance the Rest Cure in Tuberculosis. S. A. Knopf (New York).—p. 335.
Fight Against Tuberculosis in a Poor Country. A. Wolff-Eisner.—p. 343.
The Prussian Tuberculosis Law. Braeuning.—p. 354.
*Diagnostic Use of Passive Movements of Lungs. E. Ladeck.—p. 360.
Tuberculosis of Skin as Portal of Tuberculosis Infection and Its Relation to Tuberculosis of Epididymis. Hochstetter.—p. 362.

Spontaneous Pneumothorax in Tuberculosis.—Barth observed spontaneous pneumothorax in 0.2 per cent. of his cases of pulmonary tuberculosis. The condition is prognostically very bad.

Chronic Spondylitis and its Relation to Tuberculosis.—Griep publishes a case of Bechterew's disease, which perhaps may have been due to pulmonary tuberculosis. The ankylosis of the vertebrae has a favorable influence on the pulmonary tuberculosis, but cripples the patient hopelessly, since exercise treatment of the ankylosis might revive the infection.

Physiologic Enhancement of the Rest Cure in Pulmonary Tuberculosis.—Knopf recommends volitional reduction of the number of breaths to ten in the minute, and diaphragmatic breathing.

Diagnostic Use of Passive Movements of Lungs.—Ladeck examined the borders of the lungs in 120 cases of active and eighty of inactive pulmonary tuberculosis in the erect and prone positions. The lack of passive descent of the lower border, which Tar claimed as a test for activity of the process, was present in 42 per cent. of the active (only 36 per cent. in early cases) and 26 per cent. of the inactive cases. It is therefore without diagnostic value.

Zeitschrift für Urologie, Leipzig

17: 65-128, 1923

*Extirpation of Cancerous Bladder. K. Scheele.—p. 65.
*Aseptic Catheterization of Ureters. M. Klika.—p. 77.
*Bilateral Mycosis of Kidney Pelvis. J. Tannenberg.—p. 82.
*Sarcoma of Prostate. I. Bettoni.—p. 106.

Removal of Cancerous Bladder.—Scheele tabulates the details and outcome in 62 cases in which the entire bladder was removed on account of malignant disease. The outcome is not known in 4 cases, but 32 of the patients were permanently cured by the intervention. The operation is too extensive for a single sitting; 53.5 per cent. of the 43 patients treated in this way died. Radiotherapy can be given a trial under cystoscopic supervision, but, at the first sign of recurrence, no more time should be lost with it or with palliative operations. The entire bladder should be removed at once. He advises this even with benign papillomatosis if it cannot be thoroughly treated with diathermia. Bad general condition and severe pyonephrosis contraindicate radical removal of the bladder; mild infection of the kidney healed afterward in his own two cases, both in aniline dye workers.

Aseptic Catheterization of the Ureter.—Klika has modified his method for aseptic introduction of the catheter into the ureter passing through the infected bladder. He uses a No. 4 catheter inside a No. 8. The tip of the inner one is not pushed to the tip of the outer one. The whole is introduced into the bladder inside the cystoscope, while an assistant forces a weak disinfectant solution through the inner catheter. This fluid pouring from the catheter prevents contamination from entering. The disinfectant is still forced through it until the tip of the outer catheter is 1 or 2 cm. in the ureter. Then the inner catheter is pushed out beyond, and up into the ureter.

Mycosis of Kidney Pelvis.—Tannenberg relates that the kidney pelvis on both sides in the male diabetic, aged 32, was obstructed with masses of the thrush fungus. Infection seems to have been ascending, and the changes in the kidneys indicated a chemical toxic action from the fungus in addition to an ordinary pyelonephritis.

Sarcoma of the Prostate.—Bettoni adds another case to the 48 he has found recorded since 1902. Only 2 patients survived longer than two months in the 20 operative cases, and one of these died the fifth year from recurrence. Fully 34 per cent. of the cases were in children under 10. The success of Paschkis and Marion with radium treatment is encouraging.

Zentralblatt für Gynäkologie, Leipzig

47: 385-416 (March 10) 1923

*Promontorium Fixation in Prolapse of Uterus. Schmid.—p. 385.
*Purulent Adnexitis in the Pregnant. G. Richter.—p. 393.
Fistula from Empyema of Ovary. Lindemann.—p. 397.
Active Rotation of Child After Version from the Dorsoposterior Transverse Presentation. F. Heinlein.—p. 403.
Atypical Epithelial Growths on Cervix Uteri. Geller.—p. 406.
Hydrotherapy and Balneotherapy in Gynecology. W. Momm.—p. 411.

Promontory Fixation in Prolapse of the Uterus.—Schmid emphasizes that the indications for the operation must be drawn very closely. In the first three of the reported eight cases, which constituted only 2 per cent. of the 417 prolapse operations in the same period, he used the same technic he described in his report of the first case (1914). In the last five cases, however, he followed the modifications proposed by Oehlecker, fastening the posterior wall of the cervix to the intervertebral disk. On the whole, the end-results in his cases leave much to be desired. Although the lasting results in many cases were excellent, postoperative ileus is a real menace, having been reported by others in several instances. Promontory fixation is indicated only in procidentia with a deep Douglas pouch, when, for other reasons, a laparotomy is to be done; also in recurrent prolapse and in prolapse of the vagina following extirpation of the uterus or supravaginal amputation. For the vast majority of prolapses—also total prolapse—the vaginal operative methods have proved entirely satisfactory.

Inflammatory Tumors of the Adnexa in Pregnancy.—Richter brings out that the very grave prognosis demands energetic and active operative treatment, instituted as early as possible, in every inflammatory tumor of the adnexa associated with pregnancy. Reports in the literature show that even in advanced pregnancies, operation on the adnexa of the pregnant uterus is unusually well borne, and that interruption of the pregnancy is by no means a necessary consequence. But even if this does occur after removal of the pus tube, it is much less dangerous than abortion with the focus of infection still present. Laparotomy will practically always be necessary. Abscesses and pyosalpinx, impinging on the posterior fornix, may be opened by the vaginal route, but there is then danger of ascending intra-uterine infection and sepsis. Gross, however, describes a favorable outcome in such a case. The removal of the pregnant uterus together with the tumor, leaving intact, if possible, the ovary on the other side, as Richter did in this case, he regards as the method of choice in every case. To be content with the extirpation of the pus-containing adnexa leaves, he thinks, a doubtful if not grave prognosis.

Ugeskrift for Læger, Copenhagen

85: 217-230 (March 29) 1923

*Pulmonary Tuberculosis in Greenland S. Rohleder.—p. 217.
A Case of Myoclonia. P. Schultzer.—p. 220.
*Wassermann Reaction in Nonsyphilitics. Boas and Kissmeyer.—p. 221.
*Emetin Treatment of Amebic Dysentery. C. Holten.—p. 222.
*An Improvised Ophthalmologic Magnet. F. C. Lund.—p. 222.
*Pituitary Treatment of Herpes Zoster. S. N. Vendel.—p. 222.

Pulmonary Tuberculosis in Northern Greenland.—Rohleder, district physician in the Upernivik district, examined 98 per cent. of the 1,063 inhabitants, and found stethoscopic, or doubtful stethoscopic changes in the lungs of 13.4 per cent. of the total population. Of these, 66.8 per cent. were women, and 25.4 per cent. men.

Is a Positive Wassermann Reaction Possible in Nonsyphilitics?—Boas and Kissmeyer, referring to the positive Wassermann reactions in nonsyphilitic patients after one or more injections of arsphenamin, reported in THE JOURNAL of Nov. 27, 1920, believe that these were due either to faulty technic or to unreliable drugs. They have tested fifty positively nonsyphilitic individuals by the technic used at the state serum institute in Copenhagen, seven of whom were given arsphenamin; six neo-arsphenamin; twenty-six silver arsphenamin, and eleven neosilver arsphenamin. Thirty-nine of the patients had gonorrhea, and eleven had various kinds of skin diseases. From one to five injections were given to each patient, and they were examined once a week for the Wassermann reaction. All responded negatively before, during and after treatment.

Emetin Treatment of Acute Amebic Dysentery.—Holten, as ship physician, treated a case of acute dysentery by subcutaneous injection of emetin chlorid. He comments on its prompt, almost miraculous action.

An Improvised Ophthalmologic Magnet.—Lund, after unsuccessful efforts to remove an iron scrap from a workman's eye, took the patient to a paper mill and utilized the magnet used for removing iron fragments from the paper pulp, with entirely satisfactory results.

Cure of Herpes Zoster by Pituitary Treatment.—Vendel, contradicting the general opinion that only time can cure herpes zoster, presents the results of his experiments with eighteen cases, nine of which were treated in the usual way with the usual results. The others were cured by a subcutaneous injection of 1 c.c., or less, of pituitary extract, within a few days after treatment. High blood pressure and advanced age should be considered contraindications for this treatment.

THE SAN FRANCISCO SESSION

AMERICAN MEDICAL ASSOCIATION, SEVENTY-FOURTH ANNUAL SESSION SAN FRANCISCO, JUNE 25-29, 1923

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The seventy-fourth annual session of the American Medical Association will be held in San Francisco, June 25-29, 1923.

The House of Delegates will convene at 10 a. m., Monday, June 25. In the House the representation of the various constituent associations for 1923 is as follows:

Alabama	2	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	4	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	6
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	2	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	3	South Dakota	1
Iowa	3	Tennessee	3
Kansas	2	Texas	5
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	2	Alaska	1
Missouri	4	Canal Zone	1
Montana	1	Hawaii	1
Nebraska	2	Philippine Islands	1
Nevada	1	Porto Rico	1

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting to be held at 7:45 p. m., Tuesday, June 26. The sections will meet Wednesday, Thursday, and Friday, June 27, 28 and 29, as follows:

CONVENING AT 9 A. M., THE SECTIONS ON

Practice of Medicine.
Obstetrics, Gynecology and Abdominal Surgery.
Laryngology, Otology and Rhinology.
Pathology and Physiology.
Stomatology.
Urology.
Orthopedic Surgery.
Gastro-Enterology and Proctology.

CONVENING AT 2 P. M., THE SECTIONS ON

Surgery, General and Abdominal.
Ophthalmology.
Diseases of Children.
Pharmacology and Therapeutics.
Nervous and Mental Diseases.
Dermatology and Syphilology.
Preventive and Industrial Medicine and Public Health.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, June 25, 26, 27 and 28, and from 8:30 a. m. to 12 noon, on Friday, June 29.

GEORGE E. DE SCHWEINITZ, President.
FREDERICK C. WARNSHUIS, Speaker, House of Delegates.
OLIN WEST, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members (indicated by *) who have been reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA
J. D. Heacock, Birmingham.
*S. W. Welch, Montgomery.

ARIZONA
John W. Flinn, Prescott.

ARKANSAS
William R. Bathurst, Little Rock.
*George S. Brown, Conway.

CALIFORNIA
Charles D. Lockwood, Pasadena.
Victor G. Vecki, San Francisco.

COLORADO
L. H. McKinnie, Colorado Springs.
*C. N. Meader, Denver.

CONNECTICUT
John Edward Lane, New Haven.
*Walter Ralph Steiner, Hartford.

DELAWARE
*W. O. LaMotte, Wilmington.

DISTRICT OF COLUMBIA
William Gerry Morgan, Washington.

FLORIDA

GEORGIA
W. E. McCurry, Hartwell.
*J. W. Palmer, Ailey.

IDAHO
*E. G. Braddock, Lewiston.

ILLINOIS
T. O. Freeman, Mattoon.
C. J. Whalen, Chicago.
E. H. Ochsner, Chicago.
G. Henry Mundt, Chicago.

INDIANA
Albert E. Bulson, Jr., Ft. Wayne.
George F. Keiper, Lafayette.
*J. Rilus Eastman, Indianapolis.

IOWA
Donald Macrae, Jr., Council Bluffs.
William L. Allen, Davenport.
*M. Nelson Voldeng, Woodward.

KANSAS
C. S. Kenney, Norton.
*M. L. Perry, Topeka.

KENTUCKY
Irvin Abell, Louisville.
*L. S. McMurtry, Louisville.
*W. W. Richmond, Clinton.

LOUISIANA
W. H. Block, New Orleans.
*W. H. Seemann, New Orleans.

MAINE
Bertram L. Bryant, Bangor.

MARYLAND
Randolph Winslow, Baltimore.
*Thomas S. Cullen, Baltimore.

MASSACHUSETTS
C. E. Mongan, Somerville.
H. G. Stetson, Greenfield.
J. F. Burnham, Lawrence.
*F. B. Lund, Boston.
*E. F. Cody, New Bedford.

MICHIGAN
A. W. Hornbogen, Marquette.
F. C. Warnshuis, Grand Rapids.
G. E. Frothingham, Detroit.
J. D. Brook, Grandville.

MINNESOTA
J. W. Bell, Minneapolis.
*J. L. Rothrock, St. Paul.

MISSISSIPPI
Henry Boswell, Sanatorium.
*S. W. Johnston, Vicksburg.

MISSOURI
W. J. Ferguson, Sedalia.
A. W. McAlester, Jr., Kansas City.

MONTANA
Creswell T. Pigot, Roundup.

NEBRASKA
A. D. Dunn, Omaha.
*R. W. Fouts, Falls City.

NEVADA
*Horace J. Brown, Reno.

NEW HAMPSHIRE
D. E. Sullivan, Concord.

NEW JERSEY
Edward Guion, Atlantic City.
George E. Reading, Woodbury.
*Wells P. Eagleton, Newark.

NEW MEXICO

NEW YORK
Arthur J. Bedell, Albany.
E. Eliot Harris, New York City.
Grant C. Madill, Ogdensburg.
Thomas Clark Chalmers, Forest Hills.
J. Richard Kevin, Brooklyn.
Edward Livingston Hunt, New York City.

NORTH CAROLINA
M. L. Stevens, Asheville.
*H. A. Royster, Raleigh.

NORTH DAKOTA
*E. A. Pray, Valley City.

OHIO
J. H. J. Upham, Columbus.
B. R. McClellan, Xenia.
G. E. Follansbee, Cleveland.
*John P. DeWitt, Canton.
*W. D. Haines, Cincinnati.
*H. M. Hazelton, Lancaster.

OKLAHOMA
J. M. Byrum, Shawnee.
*W. Albert Cook, Tulsa.

OREGON
Joseph A. Pettit, Portland.

PENNSYLVANIA
William F. Bacon, York.
Edward B. Heckel, Pittsburgh.
Walter S. Stewart, Wilkes-Barre.
Wilmer Krusen, Philadelphia.
C. C. Cracraft, Claysville.
*Walter F. Donaldson, Pittsburgh.
*George A. Knowles, Philadelphia.

*John D. McLean, Harrisburg.
*Cyrus L. Stevens, Athens.†

RHODE ISLAND

J. F. Mowry, Providence.

SOUTH CAROLINA

*Edgar A. Hines, Seneca.

SOUTH DAKOTA

J. B. Vaughn, Castlewood.

TENNESSEE

J. A. Witherspoon, Nashville.
L. L. Sheddan, Knoxville.
*Jere L. Crook, Jackson.

TEXAS

J. W. Burns, Cuero.
E. H. Cary, Dallas.
*Holman Taylor, Fort Worth.
*S. P. Rice, Marlin.
*Joseph D. Becton, Greenville.

UTAH

*E. M. Neher, Salt Lake City.

VERMONT

*Fred T. Kidder, Woodstock.

VIRGINIA

Ennion G. Williams, Richmond.
Southgate Leigh, Norfolk.
*Joseph T. Buxton, Newport News.

† Deceased.

WASHINGTON

Frederick Epplen, Spokane.
*D. E. McGillivray, Port Angeles.

WEST VIRGINIA

Henry P. Linsz, Wheeling.
*J. R. Bloss, Huntington.

WISCONSIN

Joseph F. Smith, Wausau.
*Horace M. Brown, Milwaukee.
*Rock Sleyster, Wauwatosa.

WYOMING

*George P. Johnston, Cheyenne.

ALASKA

HAWAII

ISTHMIAN CANAL ZONE

PHILIPPINE ISLANDS

*W. de Leon, Manila.

PORTO RICO

Jacinto Aviles, San Juan.

GOVERNMENT SERVICES

United States Army, Albert E. Truby.
United States Navy, Charles N. Fiske.
United States Public Health Service, John W. Kerr.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE

Walter L. Bierring, Des Moines.

SURGERY, GENERAL AND ABDOMINAL

Carl B. Davis, Chicago.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

George Gray Ward, Jr., New York.

OPHTHALMOLOGY

Cassius D. Wescott, Chicago.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Burt R. Shurly, Detroit.

DISEASES OF CHILDREN

I. A. Abt, Chicago.

PHARMACOLOGY AND THERAPEUTICS

Leonard G. Rowntree, Rochester, Minn.

PATHOLOGY AND PHYSIOLOGY

David J. Davis, Chicago.

STOMATOLOGY

Eugene S. Talbot, Chicago.

NERVOUS AND MENTAL DISEASES

Charles R. Ball, St. Paul.

DERMATOLOGY AND SYPHILOLOGY

Walter J. Highman, New York.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

W. S. Leathers, University.

UROLOGY

Carl L. Wheeler, Lexington.

ORTHOPEDIC SURGERY

John Ridlon, Chicago.

GASTRO-ENTEROLOGY AND PROCTOLOGY

Louis J. Hirschman, Detroit.



THE SAN FRANCISCO SKY LINE FROM THE BAY

CALIFORNIA INVITES

The Welcome of the State Association—Information Concerning the Convention City

Map makers and courts define a San Francisco, but the sons and daughters of this City of Enchantment are children of a social and spiritual city of St. Francis whose boundaries no man may fix. It is this symbolic San Francisco that offers her hospitality to the American Medical Association. The same social and spiritual unity on a larger scale, which we call California, extends her hospitality through the session week and the postsession activities of the following week. In order not to confuse, roundabout San Francisco will be considered session zone, and the rest of the state, postsession zone.

The American Medical Association will hold its seventy-fourth annual session in San Francisco, June 25 to 29, 1923, as the guest of the California Medical Association. This is the first time that the Association has held its annual session as the guest of a state medical association. While the session is to be held in San Francisco, every one of the forty-one county medical societies of California and every member of each one of these societies has been charged by resolution of the house of delegates with the duties, responsibilities and pleasures of host.

THE SESSION ZONE

In order that this annual conference of representatives of the 90,000 members of the American Medical Association may be of the greatest use to physicians themselves, to hospitals and to other medical agencies, and particularly to the general public, the program has been arranged in two sections—that for the session week, and that for the postsession week. To make these two periods complementary, it has been necessary to classify San Francisco and roundabout as session zone and the rest of the state as postsession zone.

"MEDICAL CALIFORNIA"

The California committees are issuing for visiting Fellows and guests a book of 148 pages that attempts to present those features of California as a whole, as well as of its individual counties and other centers, that are considered to be what would most likely interest the medical visitor. The preparation of this book has taken a great deal of time, and it contains much information not previously published anywhere. Included in this book also is a complete outline of all social and entertainment features connected with the session. In fact, the attempt has been made to make the book itself so complete that it will not be necessary to issue to the visiting

Fellows and guests any other literature, except the scientific program. Copies of this book will be presented to Fellows and members of their parties when they register and receive the official program from the Association registration office.

THE CENTRAL COMMITTEE

Following these ideas to their logical conclusion, the California Central Committee of Arrangements is made up entirely of members who are elected officers of the state and county societies or who are chairmen of some one or another of the various committees or sections. This committee, therefore, represents officially every county society, every section of the state society, and all organizations having to do with medical progress.

In addition to the central committee representing the entire state, each county has a county hospitality and clinic committee.

There are three outstanding features in connection with the California session which ought to be of interest and which are expected to add to the value of the session, both to physicians and to the public: These are the extensive arrangements for session and postsession diagnostic clinics; the publication by the local committee of "Medical California," and the postsession program arranged in many places of the state for the benefit of physicians and the public.

SAN FRANCISCO AND ROUNDABOUT

San Francisco, Oakland, Berkeley, Alameda and many smaller cities, as well as many of the several counties forming the San Francisco Bay district, are so closely connected by social, commercial and family ties that it is difficult to separate them into integral parts. A veritable network of land and water transportation, including numerous ferry lines, with fast schedules, connecting with still more numerous fast electric railway lines, together with fine roads, combine to link the interests of the bay district as are the streets of a great city.

The principal centers for all this transportation are the Ferry Building at the foot of Market Street, San Francisco; the Oakland Mole; the Key Route terminal in Berkeley, and the Sausalito Ferry Station in Marin County. More than 60,000,000 pass through the San Francisco Ferry Building annually.

The principal centers that connect this great community with more distant points are the railway terminals at Oakland Mole; Southern Pacific station at Third and Townsend streets, San Francisco; the Western Pacific Mole at Oakland; the Santa Fe at Point Richmond, and the great ship berthing places in San Francisco, Oakland and elsewhere on the bay.

SAN FRANCISCO BAY

This, a large and beautiful land-locked harbor, is almost seventy miles long, from four to ten miles wide, and is connected with the ocean only by the Golden Gate, a strait a mile across at the narrowest point.

The statement has been made that all the navies and all the merchant ships of all the nations of the world could find anchorage together in this magnificent bay, which has a total water area of four hundred and fifty square miles. The upper portion of the harbor is divided into two smaller bodies of water, called San Pablo and Suisun bays, and into the latter flow the great rivers of California—the Sacramento and the San Joaquin.





ABOVE: A BIT OF CHINATOWN. BELOW: A SLICE OF SAN FRANCISCO BEACH

In all cosmopolitan America there is no place more cosmopolitan, more distinctive, than San Francisco, a city built on commanding heights, overlooking the broad waters of its matchless harbor, the hills, valleys and surrounding cities and distant mountains of the hinterland. The city occupies the northern end of a peninsula, with the Pacific Ocean on the west and the Bay of San Francisco on the east. The famed Golden Gate is hinged both on the hills of Marin County and on the mainland, and is locked by heavy ordnance at the nearby military reservation on the Presidio.

Among the places that should be seen are the Ocean Beach, with its Cliff House, seal rocks, Sutro Heights, and miniature Coney Island along the Esplanade, all of which will please and gratify the visitor.

The civic center is conveniently located, and is an imposing and impressive group of public buildings and plaza. It includes the Civic Auditorium, where the annual session will be held, all sections, the house of delegates, and committees meeting under one roof; the library, city hall and state building.

HOTELS AND RESTAURANTS

No visitor to San Francisco can get the full savor of the city without having an intimate peep into its famous hotels and restaurants. The palm court and gold ballroom of the Palace; the tapestry and fable rooms and the garden at the St. Francis; the terraced balconies, rainbow lane and laurel court at the Fairmont, commanding the Nob Hill skyline; the distinctive atmosphere of Tait's-at-the-Beach; the Cliff House, with the ocean surf booming at its base, all mean much to San Francisco and its people. These, together with the many other attractive places to dine, must be visited to appreciate to the full the buoyancy and the laughter-laden atmosphere that have endeared San Francisco to the hearts of so many world-famous men and women.



ABOVE: BERKELEY, SHOWING THE CAMPANILE OF THE UNIVERSITY OF CALIFORNIA.
BELOW: STANFORD UNIVERSITY CAMPUS.

The hills of San Francisco give to the city's skyline its picturesque effect, and they seem to impart a certain variety to the life of the inhabitants; in fact, one can scarcely imagine a many-sided city like San Francisco lying on a flat. Of the hills, Telegraph Hill, Russian Hill, Nob Hill and Twin Peaks are the most important, and each has its own particular and attractive view. Not often is a city truly spoken of as possessing scenery; but because of its wonderful setting and its varied terrain, San Francisco justly may be so described, and a trip to the top of even one of its hills will convince the visitor that it is a scenic city without a peer.

Chinatown, with its exotic architecture; exotic yellows, greens and reds; exotic sights and sounds—San Francisco's Chinatown is America's largest and most interesting Oriental colony.

Golden Gate Park is a fine expression of landscape engineering. All of its 1,013 acres have been transformed from bare sand dunes into areas of living beauty.

CLIMATE AND CLOTHING

The thermometer varies but slightly throughout the year in San Francisco. The average temperature in winter is 51, and in summer, 59. There are 280 sunshiny days. The coolest months are January and February, July and August. At the time of the session, the last week in June, it is likely that there will be a certain amount of wind and some fog, and that the evenings will be quite chilly. Rain is not usual at this time, and the days should be pleasant and delightful.

Persons coming to the session should bring overcoats and evening wraps; furs are worn by the San Francisco women in the evening at this time of the year. In the southern part of the state and the central valleys, the climate will be warmer, corresponding somewhat to the summer climate in the Eastern states. In the mountain districts and the mountain resorts of all parts of the state, the climate will more nearly approach that of San Francisco. Visitors who expect to travel much in the state will be more comfortable with the ordinary weights of underclothing, using overcoats and wraps to meet the varying climates in different parts of the state.

CALIFORNIA

It lies not East nor West,
But like a scroll unfurled,
Where the hand of God hath hung it,
Down the middle of the world.

California is an empire, extending from Mexico on the South to Oregon on the North. It includes 18,000,000 acres of virginal national forest land; 26,000 miles of fishing streams and 862,000 acres of lakes.

All climates, from balmy semitropical warmth to snow-caps on the mountains, are found closely mingled in many parts of the state every day of every year. The population is so cosmopolitan that any one from any part of the world may find congenial companions in many places in the state who speak his language. The population is nearly 4,000,000.

The educational opportunities are among the best, and the per capita wealth of the citizens is the second highest in the United States.

Of California scenery, David Starr Jordan says:

"To know the glory of California scenery, one must live close to it through the changing years. From Siskiyou to San Diego, from Alturas to Tia Juana, from Mendocino to Mariposa, from Tahoe to the Farallones, lake, crag or chasm, forest, mountain, valley or island, river, bay or jutting headland, every one bears the stamp of its own peculiar beauty, a singular blending of richness, wildness and warmth. Coastwise everywhere sea and mountains meet, and the surf of the cold Japanese current breaks in turbulent beauty against tall 'rincones' and jagged reefs of rock. Slumbering amid the hills of the Coast Range, 'A misty camp of mountains pitched tumultuously,' lie golden valleys dotted with wide-limbed oaks, or smothered under overweighted fruit trees. Here, too, crumble to ruins the old Franciscan missions, each in its own fair valley, passing monuments of California's first page of written history.

"Inland rises the great Sierra, with spreading ridge and foothill, like some huge, sprawling centipede, its granite back unbroken for a thousand miles. Frost-torn peaks, of every height and bearing, pierce the blue wastes above. Their slopes are dark with forests of sugar pines and giant sequoias, the mightiest of trees, in whose silent aisles one may wander all day long and see no sign of man. Dropped here and there rest turquoise lakes which mark the crater of dead volcanoes, or which swell the polished basins where vanished glaciers did their last work. Through mountain meadows run swift brooks, overpeopled with trout, while from the crags leap full-throated streams, to be half blown away in mist before they touch the valley floor. Far down the fragrant cañons sing the green and troubled rivers, twisting their way lower and lower to the common plains, each larger stream calling to all his brooks to follow him as down they go headforemost to the sea. Even the hopeless stretches of alkali and sand, sinks of lost streams, in the southeastern counties, are redeemed by the delectable mountains that on all sides shut them in. Everywhere the landscape swims in crystal-like ether, while over all broods the warm California sun. Here, if anywhere, life is worth living, full and rich and free."

TRANSPORTATION

The Trans-Continental Passenger Association, in letters addressed to the Secretary of the American Medical Association, authorizes the statement that summer excursion tickets will be on sale at all offices within its jurisdiction from May 15 to Sept. 30, 1923, for those who will attend conventions and meetings to be held on the Pacific Coast. The return limit on such tickets will be Oct. 31, 1923. The prices at which these excursion tickets will be sold represent a substantial reduction from the fares in effect ordinarily, and are less than those that would apply under the certificate plan.

From Eastern Points

Fares from points east of the territory within the jurisdiction of the Trans-Continental Passenger Association will be based on the rates established by that association. The Central Passenger Association is authority for the statement that the same summer excursion rates in effect last year will apply this year.

Stopovers

Summer excursion tickets will permit stopovers at all points on going and return trip within final return limit, information to conductors being all that is required to secure stopovers.

Official Transportation Representative

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements, San Francisco, announces that the American Express Company has been designated official transportation representative for that committee. This company has offices in all principal cities and is in close touch with all steamship, railroad and other transportation agencies. Its offices are in a position to answer all inquiries and furnish information about any contemplated trip. In San Francisco, the American Express Company is located on the ground floor of the Balboa Building, in which the Local Committee of Arrangements has its headquarters. A branch office will be maintained at the Civic Auditorium during the week of the annual session.

Routes from Chicago

C. B. & Q. R. R. or Rock Island R. R. to Denver; D. & R. G. W. R. R. to Salt Lake; Western Pacific or Southern Pacific R. R. to San Francisco.

C. B. & Q. R. R. or Rock Island R. R. to Denver; Union Pacific to Ogden or Salt Lake; Western Pacific or Southern Pacific R. R. to San Francisco.

C. B. & Q. R. R., Rock Island R. R. or C. & N. W. and Union Pacific R. R. to Denver; D. & R. G. W. or Union Pacific R. R. to Salt Lake; Union Pacific to Los Angeles; Southern Pacific to San Francisco.

C. M. & St. P. R. R. to Omaha; Union Pacific to Ogden; Southern Pacific to San Francisco.

I. C. R. R. to New Orleans; Southern Pacific to Los Angeles and San Francisco.

C. & N. W. R. R. to Omaha; Union Pacific to Ogden; Western Pacific or Southern Pacific to San Francisco.

C. & N. W. R. R. and Union Pacific to Denver; thence by one of routes above indicated to San Francisco.

Rock Island R. R. to Denver; D. & R. G. W. or Union Pacific to Salt Lake; Union Pacific to Los Angeles; Southern Pacific to San Francisco.

Santa Fe R. R. to Los Angeles; Southern Pacific to San Francisco.

The foregoing are submitted as some of the possible routes to San Francisco. It will be seen that various routes may be selected somewhat different from those mentioned.

Return Routes

Those who go to San Francisco by any of these routes may return to Chicago the same way or by the following routes without any extra cost:

Southern Pacific R. R. to Los Angeles:

Thence by Santa Fe (Grand Canyon Route); or Southern Pacific to Los Angeles and El Paso and then by Rock Island R. R.; or Southern Pacific to New Orleans then by I. C. R. R.; or from Los Angeles by Union Pacific to Salt Lake



ABOVE: Left, OAKLAND, LOOKING ACROSS LAKE MERRITT. Right, MOUNT SHASTA.
CENTER: Left, A SOUTHERN CALIFORNIA ORANGE GROVE. Right, A MOUNTAIN HIGHWAY.
BELOW: Left, THE STATE CAPITOL, SACRAMENTO. Right, BALBOA PARK, SAN DIEGO.

or Ogden; from Salt Lake to Denver by D. & R. G. W. R. R.; from Denver to Chicago by any direct line; from Ogden to Omaha by Union Pacific; then to Chicago by C. B. & Q., C. M. & St. P., or C. & N. W. R. R.; or from Los Angeles by Santa Fe R. R. to Denver, and thence by any direct line to Chicago.

Northern Routes

While, of course, all northern routes are available for going to San Francisco, it is probable that these will be most largely used for the return trip. From San Francisco to Portland the Southern Pacific is the only available road. From Portland the following are routes that may be selected:

Northern Pacific (Yellowstone Park Route) to St. Paul; Great Northern (Glacier Park Route) to St. Paul; S. P. & S. Ry. (Columbia River Route) to Spokane, thence Northern Pacific, Great Northern, or C. M. & St. P. to St. Paul; Northern Pacific, Great Northern, or Union Pacific to Seattle, thence Great Northern R. R. or Canadian Pacific Steamship Line to Vancouver and to St. Paul over the Canadian Pacific; any line from St. Paul to Chicago. The C. M. & St. P. R. R. operates through trains between Seattle and Chicago.

The return trip to Chicago from Portland may also be made by way of Ogden and Omaha, or by way of Salt Lake and Denver.

By Steamship from Los Angeles to San Francisco

Steamship service from Los Angeles to San Francisco is available to those who prefer it, and no extra cost will attach. It will be necessary to state that it is desired to go by steamer from Los Angeles when original tickets are purchased.

Yellowstone, Glacier and Rainier Parks

Those returning by way of Portland over the Northern Pacific may conveniently visit Yellowstone Park. The usual tour through the park consumes four and three-fourth days. Hotel and camp accommodations, including meals, lodging and transportation for the complete trip, will cost approximately $100. Glacier and Rainier National Parks are also easily reached, and are among the greatest of the scenic attractions of the great Northwest.

Railroad Fare

The following railroad fares are submitted as approximately correct and are based on the best information available. Additional information of authentic nature can be secured by applying to ticket agents.

From			
Chicago	$ 86.00	New York	$138.32
Kansas City	72.00	Philadelphia	133.14
Minneapolis	87.50	Pittsburgh	113.05
Denver	64.00	Washington	130.45
St. Louis	81.50	Boston	144.80
Omaha	72.00	Buffalo	116.10
Milwaukee	89.40	Richmond	130.45
Detroit	101.70	Atlanta	106.85
Cincinnati	101.35	Nashville	94.85
Cleveland	105.65	Memphis (by St. Louis)	85.15
Indianapolis	95.70	Memphis (by Chicago)	93.20
New Orleans	85.15	Louisville	97.75
Houston	72.00	Asheville	114.41

PULLMAN RATES FROM CHICAGO AND ST. LOUIS

	Lower	Upper	Drawing Room	Compartment
Chicago	$23.63	$18.90	$84.00	$65.75
St. Louis	22.50	18.00	79.50	63.00

Those who go to San Francisco by more southerly routes, but who wish to return by way of Portland, Seattle and the North Pacific Coast, will be required to pay $18 additional. There will also be additional cost for Pullman accommodations to those returning by this route.

The return trip may be made by any one of the several more southerly routes without additional cost. It will be necessary to state, when original tickets are purchased, what routes will be used in returning.

Those who desire to go to San Francisco direct and then go to Los Angeles and return to San Francisco and from there by way of Portland, Seattle and Northern Pacific Coast points will be required to pay $11.40 additional.

Special Trains

NEW YORK SPECIAL

A special train will be operated from New York to San Francisco by way of Chicago, and over the Santa Fe through the Grand Canyon and Los Angeles. THE JOURNAL, January 27, gives further details. Dr. E. Livingston Hunt, 17 West Forty-Third Street, New York, is chairman of the committee in charge of this train.

MICHIGAN GOLF SPECIAL

The "Michigan Golf Special" from Chicago to San Francisco will leave Chicago, June 17, at 8 p. m., and will stop at Omaha, Denver, Salt Lake City, Lake Tahoe and Del Monte, at each of which places a round of golf will be played by those aboard. This train is due to arrive in San Francisco at 8 a. m., June 23. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Mich., will give information.

OHIO SPECIAL

The Ohio State Association Special will be operated under the direction of the officers of that association. Mr. Don K. Martin, executive secretary of the Ohio State Medical Association, Columbus, Ohio, will furnish information concerning reservations.

HARLAN TOURS

The Harlan Tours of Chicago will operate the "Medical Special De Luxe." Information about this train was given in THE JOURNAL, February 3.

SANTA FE CHICAGO SPECIAL

The Santa Fe Railroad will run a train, to be called the "American Medical Special," which will leave Chicago at 8:15 p. m., June 16. Short stopovers will be made at Kansas City, Colorado Springs, Santa Fe and Albuquerque. The day of June 20 will be spent at the Grand Canyon. This train is due in Los Angeles at 3:30 p. m., June 21. From Los Angeles, choice may be made of rail or boat service to San Francisco. Detailed information may be obtained from J. R. Moriarty, Division Passenger Agent, A. T. & S. F. Ry., 179 West Jackson Street, Chicago.

SPECIAL TRAIN OF THE CHICAGO MEDICAL SOCIETY

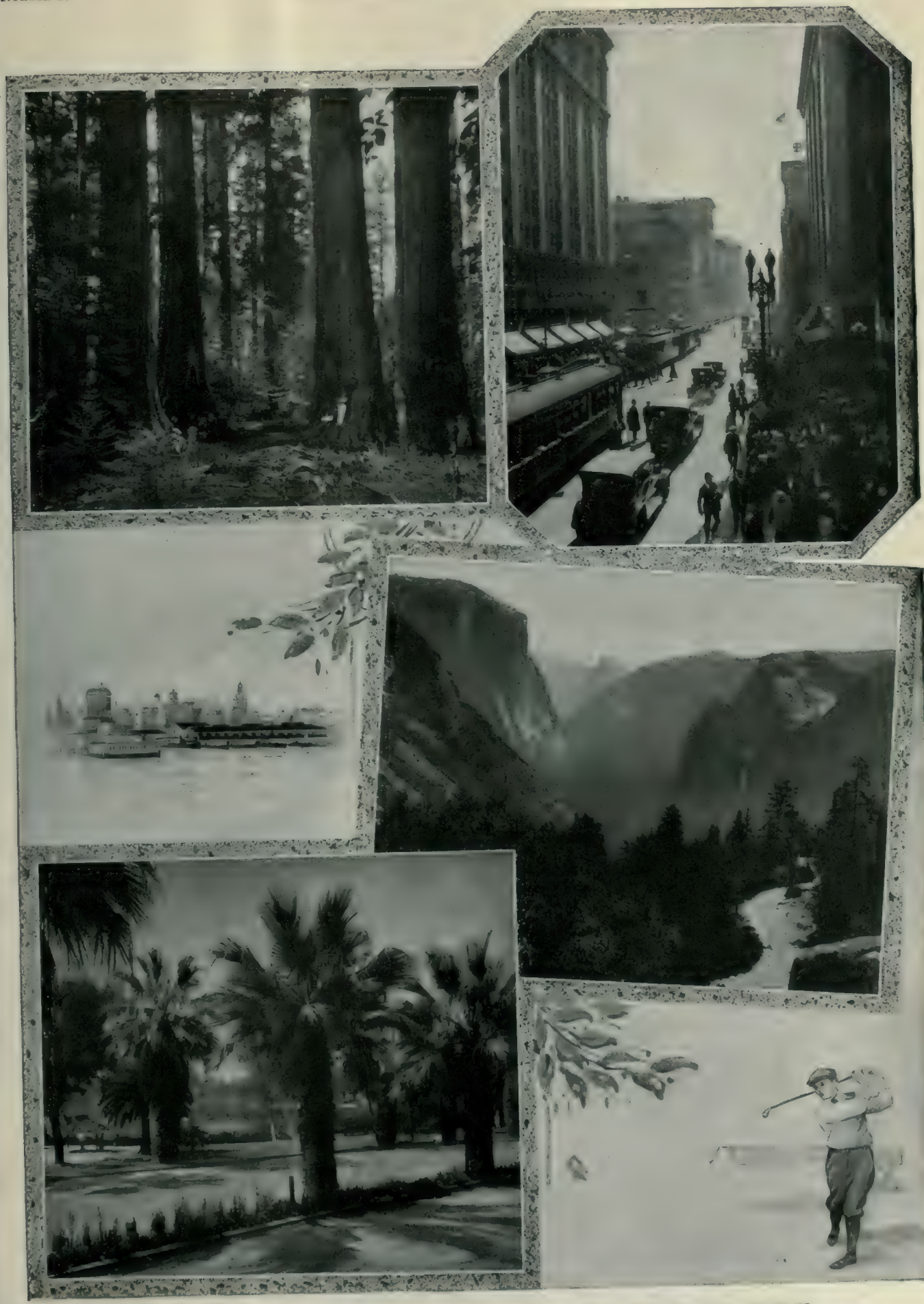
Arrangements have been completed by the Chicago Medical Society to operate a special train by way of the Chicago and Northwestern, Union Pacific, Denver and Rio Grande Western and Western Pacific railroads from Chicago to San Francisco for the annual session of the American Medical Association. This train will leave Chicago over the C. & N. W. Ry., at 11:30 p. m., Thursday, June 21, and will arrive at San Francisco at 5:45 p. m., Monday, June 25. The train will be composed of the finest equipment, and the schedule has been so arranged that practically all the principal points of scenic interest, including Denver, Colorado Springs, Pueblo, the Royal Gorge, Salt Lake City and the Feather River Canyon, will be passed in the daylight hours.

For accommodation of the members of the Chicago Medical Society who will not find it possible to leave Chicago, June 21, a second schedule has been arranged whereby members and Fellows going to San Francisco may leave Chicago at 8:10 p. m., Friday, June 22, on the San Francisco Overland Limited and arrive in San Francisco at 2:30 p. m., Monday, June 25. Special sleepers will be attached to the regular Overland Limited for the benefit of members of the Chicago Medical Society.

Railroad and Pullman rates from Chicago and other Western cities were printed in THE JOURNAL, February 3. Reservations may be secured by communicating with Mr. H. G. Van Winkle, General Agent, C. & N. W. Ry., 148 South Clark Street, Chicago. Dr. R. R. Ferguson, secretary of the Chicago Medical Society, 25 East Washington Street, Chicago, represented that society in the completion of the arrangements for the special trains referred to above.

AMERICAN MEDICAL SCENIC SPECIAL

A special train has been arranged for to leave Chicago over the Burlington Railroad at 11 p. m., June 20. Stops will be made at Aurora, Mendota, Galesburg, Burlington,



ABOVE: Left, CALIFORNIA RED WOODS; Right, A STREET SCENE IN LOS ANGELES.
CENTER: THE YOSEMITE VALLEY.
BELOW: WESTLAKE PARK IN LOS ANGELES

Ottumwa, Creston, Council Bluffs, Omaha, Lincoln, Denver, Colorado Springs, Glenwood Springs and Salt Lake City. This train will arrive at Omaha at 3:50 p. m., and at Lincoln about 5:30 p. m., June 21; at Denver at 7:30 a. m., June 22, where a short stop will be made, and at Colorado Springs at 10:30 a. m., June 22. A stopover of approximately twenty-four hours will be made at Colorado Springs to permit sightseeing trips to the Garden of the Gods, Pike's Peak and other places of interest. Sleeping cars will be placed conveniently, while at Colorado Springs, to meet the convenience of the party. Leaving Colorado Springs at 4 a. m., June 23, opportunity will be had to see the Royal Gorge and the Canyon of the Arkansas in daylight. About five hours will be spent in Salt Lake City, June 24. From Salt Lake City, the train will proceed over the Western Pacific Railway, known as the Feather River Canyon route, which offers some of the most interesting sights between Chicago and the Coast. San Francisco will be reached at 5:30 p. m., June 25. This special train will be made up of the finest Pullman equipment, with dining car and observation car. More specific information can be secured by addressing J. R. Van Dyke, General Agent, Passenger Department, C. B. & Q. Railroad, 179 West Jackson Boulevard, Chicago.

INDIANA SPECIAL TRAIN

Dr. Ralph S. Chappell, 305 Terminal Building, Indianapolis, has been delegated by the Indiana State Medical Association to arrange for a special train for the accommodation of members of that association, their families and friends who will go to San Francisco to attend the annual session of the Association, June 25-29. This train will be assembled at Indianapolis and will proceed to San Francisco by way of St. Louis, Kansas City, Colorado Springs, the Grand Canyon and Los Angeles. Dr. Chappell will give information concerning the details of the tour to those who are interested.

NORTHERN PACIFIC RAILWAY SPECIAL TRAIN

The Northern Pacific Railway will operate a special train for the accommodation of visitors to the annual session who wish to return by way of the Pacific Northwest. The tour will be conducted personally by Dr. A. W. Ide of St. Paul. The train will be designated the "M.D. Special," and will leave San Francisco at 10:20 p. m., June 29, for Portland, where a day will be spent. Seattle, Tacoma, Rainier National Park, Spokane, Livingston and Yellowstone Park will be visited. From Portland, Seattle, Tacoma and Gardiner, trips will be taken for the purpose of visiting the points of scenic and historical interest. About two days will be spent in Rainier National Park, and three days will be spent in Yellowstone Park. The train will leave Gardiner at 7:30 p. m., July 10, and will arrive in Chicago at 9 p. m., July 12. Full particulars about this train and all stops and side trips may be secured by writing to Dr. A. W. Ide, 914 Northern Pacific Building, St. Paul, Minn.

SPECIAL TRAIN FOR MASSACHUSETTS MEDICAL SOCIETY

A special tour for the Massachusetts Medical Society has been arranged under the direction of the Raymond and Whitcomb Company for the Fellows of that society and their friends who will attend the Annual Session. Leaving Boston at 2:10 p. m., June 14, the Massachusetts party will go to San Francisco by way of Chicago, Colorado Springs, the Royal Gorge, Salt Lake City, Riverside, Los Angeles, Yosemite and Big Trees, reaching San Francisco, Sunday, June 24. The return trip may be made either by way of Portland, Seattle, Vancouver and the Canadian Rockies, or by the direct Overland route by way of Ogden, Omaha and Chicago. For more detailed information concerning this tour communicate with the Raymond and Whitcomb Company, 112 South Dearborn Street, Chicago, or 17 Temple Place, Boston.

ST. LOUIS MEDICAL SOCIETY SPECIAL

The St. Louis Medical Society will have an all Pullman special train to Los Angeles, leaving St. Louis at 9:30 p. m., June 16, and arriving at Los Angeles at 3:30 p. m., June 21. This train will go over the Missouri Pacific to Kansas City and then over the Santa Fe to Los Angeles. Stops will be made at Kansas City, Colorado Springs, Sante Fe, Albuquerque and Grand Canyon. For information or reservations, write Dr. Noxon Toomey, Secretary, St. Louis Medical Society.

SOUTHERN MEDICAL ASSOCIATION TRAIN

The Southern Medical Association will operate a train to San Francisco to be known as "Our President's Special," starting from St. Louis and going by Kansas City, Colorado Springs and Salt Lake City, leaving St. Louis at 9 a. m. Tuesday, June 19. A part of Wednesday, June 20, and a part of Thursday, June 21, will be spent at Colorado Springs. Salt Lake City will be reached at 12:25 p. m., Friday, June 22, and departure for San Francisco will be at 11:40 a. m., Saturday, June 23. Information about this train can be secured by addressing the Southern Medical Association, Birmingham, Ala.

Special Train from Seattle: A special train will be operated over the Union Pacific for the accommodation of members and visitors to the meeting of the Pacific Northwest Medical Association to be held in Seattle, June 19-21. This train will leave Seattle at 9:30 a. m., June 22, Portland at 5:30 p. m., June 22, and is timed to arrive in San Francisco at 7 p. m., June 23. While in Portland, the party will be entertained by the Portland members of the Pacific Northwest Medical Association. Dr. F. R. Underwood of Seattle is the chairman of the transportation committee, and can be communicated with for information concerning this train.

Postsession Tour to Hawaii

In connection with the telegraphic invitation extended by Hon. Wallace R. Farrington, governor of Hawaii, as published in THE JOURNAL, March 10, the following comprehensive tour has been arranged:

Leaving San Francisco, night of June 29, the party will sail from Los Angeles, June 30, on the *Calawaii*. Visit to live volcano at Kilauea. Automobile drives round Honolulu and the island of Oahu. Reception by Governor Farrington. Visits to Kalihi leper receiving station and hospitals. Returning, arrive at Los Angeles, July 21. Total inclusive cost from Los Angeles back to Los Angeles, $415. Reservations and booklets may be obtained from Fred. J. Halton, 714 Marquette Building, Chicago, former secretary, Hawaii Tourist Bureau, who will personally escort the party to Hawaii.

Week End Trips After the Annual Session

Arrangements have been made for week end trips from San Francisco to Yosemite Valley and to Del Monte for parties who wish to visit these noted resorts. The trip to Yosemite Valley has been arranged as follows: Leaving San Francisco Saturday, June 30, at 11 p. m., and returning on Tuesday, July 3, at 10:05 p. m. The expenses, including Pullman berths, meals and lodging, will be included in the charge of $59. Special parties of six each can make arrangement for this trip by automobile at the same rate. Among the main points of interest to be visited are Artist Point, Inspiration Point, Signal Peak, Wawona, Mariposa Grove of Big Trees, Chinquapin, Bridal Veil Meadows, Mono Meadows, Ostrander Rock, Glacier and Overhanging Rock.

The trip to Del Monte will cost $30, and will be made by automobile. Parties for this trip must include at least six persons. Leaving San Francisco, June 30, at 10 a. m., the return to San Francisco will be at 6 p. m., July 2. Del Monte is one of California's largest and most popular resorts, consisting of a vast estate of approximately 18,000 acres, and is situated on the historic Monterey Peninsula. It is located 125 miles south of San Francisco. It is stated of Del Monte that it is the one place in America where one can do everything or nothing. Golf, polo, tennis, horseback riding, swimming, fishing, hunting, sailing, dancing, idling or working are all provided for. A special postsession golf tournament is being arranged for the morning of Sunday, July 1, and there may possibly be a polo game during the afternoon of that day.

Reservations for the Yosemite trip or for the Del Monte automobile trip must be made through the American Express Company, Market and Second streets, San Francisco.

Side Trips from San Francisco

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements at San Francisco, has submitted information concerning tours which may be taken, with San Francisco as a starting point, after the annual session:

A three weeks' trip to Honolulu on a special boat, touching all principal ports, including the leper colony, and return to San Francisco.

A trip up the western coast to Alaska and return. Those desiring to do so may leave the boat at Vancouver and return east over the Canadian Pacific, or at Seattle and return east over the Great Northern, or at Portland and then east over any available line. Returning to San Francisco, those who take this coast trip may return east by way of Los Angeles or the Panama Canal.

A comprehensive tour that will take four weeks for sightseeing in the Canadian Rockies.

Inquiries concerning transportation from eastern ports to San Francisco by way of the Panama Canal should be referred to steamship offices. It will be possible for those who wish to go to San Francisco by way of the Panama Canal to return by railroad.

For further information regarding side trips, address Chairman, Committee of Arrangements, 806 Balboa Building, San Francisco.

Automobile Routes to San Francisco

Many motorists in single cars, small parties and motor caravans from various parts of the United States are already in correspondence with the Local Committee on Arrangements. California is the motorists' paradise. Any part of the state is now easily accessible from anywhere. Nothing could be more delightful than to combine vacation and pleasure by coming from anywhere to the annual session by motor. There are four main transcontinental motor road arteries from Eastern and Midwestern states to California.



THE CIVIC AUDITORIUM AND PLAZA WHICH HOUSES GENERAL HEADQUARTERS, EXHIBITS AND SECTION MEETINGS

An oriental tour beginning at San Francisco, and leaving that city a day or two after the close of the annual session. Such tours will include Japan, China and the Philippine Islands and return to San Francisco, or a return by way of the Suez Canal and Europe.

A trip to Honolulu, with six days in that city and on the Island of Oahu, and two days in Hilo and the Kilauea National Park, with a visit by day and by night to the active volcano of Kilauea.

An Alaskan tour, embracing a twenty-four day cruise. Stops will be made at Ketchikan, Wrangell, Petersburg, Taku Glacier and Juneau. At Skagway a railroad trip to Bennett Station will be begun; returning, the boat will proceed to Sitka, from which place six days will be spent in the inside passage en route to Seattle. From Seattle a four days' trip to Rainier National Park will be made.

A tour which includes visits to Yellowstone, Glacier and Rainier national parks.

The Lincoln Highway alone will be traveled by more than 60,000 cars this year. This is the most direct route from New York and Chicago to San Francisco. It passes through Omaha, Cheyenne, Salt Lake City and Reno.

The National Old Trails route is through Kansas City, Trinidad, Albuquerque, Flagstaff, Needles, Los Angeles and San Francisco.

The Yellowstone Trail is from Chicago through Milwaukee, Minneapolis, Aberdeen, across Montana, Idaho, and into Seattle or Portland by way of Spokane or Pendleton, and thence down the west coast into California.

Victory Highway makes good California connections from Denver through Salt Lake City. Salt Lake City is the key

position between coast cities and most of the main motor arteries from the Eastern and Midwestern states. From Salt Lake City motorists can turn north through Pocatello, Idaho, Boise and Walla Walla to Portland, and thence south over excellent boulevard roads into California, or one can turn south at Salt Lake and follow the Arrowhead Trail through Provo, Beaver, St. George and Las Vegas to the National Old Trail through Goffs, and into Los Angeles and thence to San Francisco.

There are other good routes leading to the coast and into California. Once in the state of California, the motorist encounters a veritable network of splendid roads leading to all cities and points of interest. Those interested in this method of transportation to the session should write for information or help of any character.

Address communications to Dr. W. E. Musgrave, California Headquarters 1923 American Medical Association Convention, 806-809 Balboa Building, San Francisco.

REGISTRATION

The Bureau of Registration will be located on the first floor of the Civic Auditorium. A committee of local physicians will assist those desiring to register. A branch postoffice will be opened and a bureau of information established in connection with the Registration Bureau. Here may be secured copies of the *Daily Bulletin*, which announces the names of visitors and other important session items.

Only Fellows, Affiliate, Associate and Honorary Fellows, and Invited Guests may register and take part in the work of any of the sections of the Scientific Assembly. Members of the organization, i. e., members in good standing in the constituent associations, are eligible to Fellowship in the Scientific Assembly. The Fellows of the Scientific Assembly are those members who have, on the prescribed form, applied for Fellowship, subscribed to THE JOURNAL, and paid their annual Fellowship dues for the current year. These annual Fellowship dues provide a subscription for THE JOURNAL for one year. In a word, members of component county medical societies are *ipso facto* members of their several constituent state associations and are eligible for Fellowship in the Scientific Assembly. Members should qualify as Fellows before they start for San Francisco, and receive a pocket card certifying to their Fellowship. This card will enable its holder to register at the San Francisco Session readily and without undue delay. Those who do not have pocket cards should secure them by writing to the American Medical Association, 535 North Dearborn Street, Chicago.

Arrangements for Securing Pocket Card

Arrangements will be made so that it will be possible for members of the organization to qualify as Fellows of the Scientific Assembly after they reach San Francisco; but it will require more time to register, and the delay will not only be a hardship to the physician who postpones qualifying as a Fellow, but also will be an inconvenience to others waiting their turn to register.

Register Early

Physicians of San Francisco and California, as well as other Fellows who are in San Francisco on Monday and Tuesday, should register as early as possible. It will be an accommodation to visiting physicians to find the names and addresses of the members of the San Francisco profession lisited in the *Daily Bulletin* for Tuesday, June 26.

Suggestions That Will Facilitate Registration

Fellows should fill out completely the spaces on both sections of the front of the *white* registration card, which will be found on the tables in front of the Registration Bureau. (Ignore the application on the reverse side of card.)

Physicians who desire to qualify as Fellows should fill out completely the spaces on both sections of the front of the *blue* registration card, and sign the application on the back. These blue cards also will be found on the tables.

Physicians who take THE JOURNAL but who are not at present Fellows should fill out completely the spaces on both sections of the front of the *blue* registration card, and sign the application on the reverse side.

Entries on the registration cards should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out *white* registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in *white* registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster may occupy a considerable time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1923 dues are unpaid should present his filled in *white* registration card with the amount of his Fellowship dues ($6) at one of the windows marked "Cash." Here, too, there will be some delay; but the work of registering will be conducted as promptly as possible.

4. As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than June 6. Any applications received later than June 6 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time so that he can use it in registering at the San Francisco Session.

As already stated, it will be possible for members of the organization to qualify as Fellows at San Francisco. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the *blue* registration card and sign the formal application printed on the reverse side. It is suggested that those who apply for Fellowship at San Francisco shall provide themselves, before leaving home, with certificates signed by the secretary of their state association, attesting that they are members in good standing in the state and county branches of the organization. A state membership card for 1923 will be acceptable. The certificate or membership card should be presented along with the filled in *blue* registration card at the window in the registration booth marked "Applicants for Fellowship and Invited Guests."

MEETINGS OF WESTERN STATE MEDICAL ASSOCIATIONS

The Medical Society of the State of California will hold its annual meeting at San Francisco, June 21-23. Dr. W. E. Musgrave, 806 Balboa Building, San Francisco, Secretary.

The Arizona Medical Association will have its annual meeting at Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

The New Mexico Medical Society will meet at Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.

The Wyoming State Medical Society will have its annual meeting at Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary. All of these state associations have extended very cordial invitations to the members of the Association going to San Francisco.

MEETING PLACES AND SECTION HEADQUARTERS

HOUSE OF DELEGATES: Fourth floor of Civic Auditorium.

GENERAL MEETING: Arcadia Auditorium, Jones and Ellis streets.

PRACTICE OF MEDICINE: Larkin Hall, first floor of Civic Auditorium.

SURGERY, GENERAL AND ABDOMINAL: Polk Hall, first floor of Civic Auditorium.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Polk Hall, first floor of Civic Auditorium.

OPHTHALMOLOGY: Memorial Hall, third floor of Civic Auditorium.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Memorial Hall, third floor of Civic Auditorium.

DISEASES OF CHILDREN: Larkin Hall, first floor of Civic Auditorium.

PHARMACOLOGY AND THERAPEUTICS: Washington Hall, third floor of Civic Auditorium.

PATHOLOGY AND PHYSIOLOGY: Washington Hall, third floor of Civic Auditorium.

STOMATOLOGY: McKinley Hall, third floor of Civic Auditorium.

NERVOUS AND MENTAL DISEASES: Veteran Firemen's Hall, third floor of Civic Auditorium.

DERMATOLOGY AND SYPHILOGY: Lincoln Hall, third floor of Civic Auditorium.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH: Convention Hall, fourth floor of Civic Auditorium.

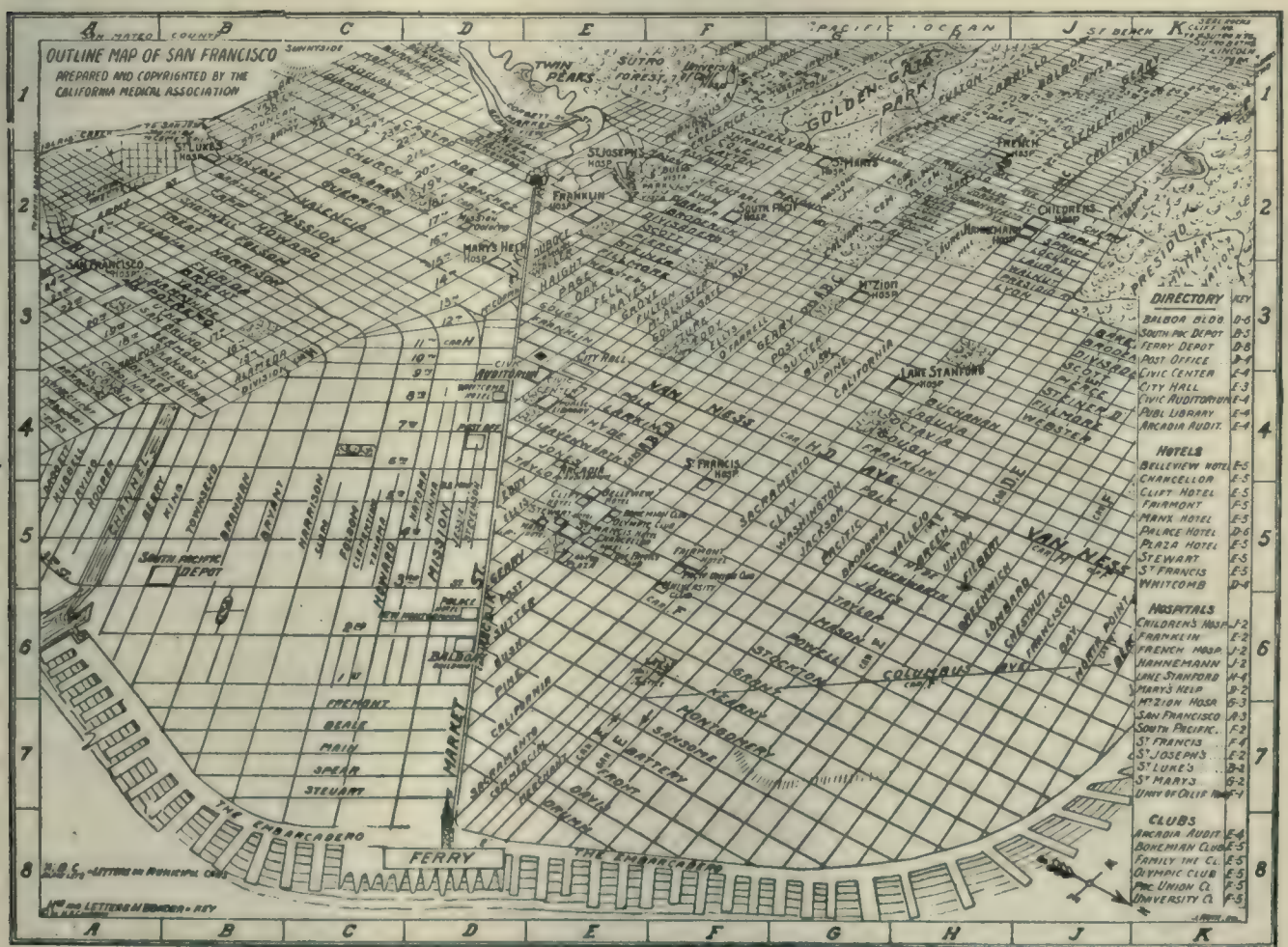
UROLOGY: Lincoln Hall, third flood of Civic Auditorium.

ORTHOPEDIC SURGERY: Veteran Firemen's Hall, third floor of Civic Auditorium.

GASTRO-ENTEROLOGY AND PROCTOLOGY: Convention Hall, fourth floor of Civic Auditorium.

MOVING PICTURE THEATER: Fourth floor of Civic Auditorium.

GENERAL HEADQUARTERS: SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, COMMERCIAL EXHIBITION, INFORMATION BUREAU AND ASSOCIATION BRANCH POSTOFFICE, first floor of Civic Auditorium.



OUTLINE MAP OF SAN FRANCISCO: AT CENTER, CIVIC AUDITORIUM CONTAINING GENERAL HEADQUARTERS, SECTION MEETING PLACES, REGISTRATION, POSTOFFICE AND SCIENTIFIC AND COMMERCIAL EXHIBITS.

FOREIGN GUESTS

The following distinguished physicians and surgeons from foreign countries will be Invited Guests at the San Francisco Session: Prof. F. K. Wenckebach, Vienna, Austria; Dr. Charles F. Martin, Montreal, and Dr. F. G. Banting and Dr. T. C. Routley, Toronto, Canada; Dr. V. Pardo-Castello, Havana, Cuba; Dr. Pavel Kucera, Prague, Czechoslovakia; Dr. J. M. H. MacLeod and Dr. S. A. Kinnier Wilson, London, England; Dr. Gabriel Malda and Gen. Enrique Osornia, Mexico City, and Dr. J. S. Fraser, Edinburgh, Scotland. Dr. T. C. Routley, acting general secretary of the Canadian Medical Association, is the official delegate from that association to the American Medical Association.

POSTOFFICE

A branch postoffice will be installed, in connection with the Registration Bureau, on the first floor of the Civic Auditorium. Members and guests are requested to order mail addressed to them "Care American Medical Association, Civic Auditorium, San Francisco, California," unless they prefer to receive mail at their hotels.

SAN FRANCISCO HOTELS

The following list of hotels with locations and prices is furnished by the Local Committee of Arrangements. Several hotels, as shown by the star, are already booked to capacity. All hotels are conveniently located except those in Oakland and Berkeley, which are about an hour from the Civic Auditorium.

The California Committee will be able to house all guests comfortably. In order that the most agreeable arrangements may be made, it is requested that from now on Fellows write directly to California Headquarters, 806 Balboa Building, for hotel reservations. Please give the date of expected arrival in all applications.

The lower prices quoted below refer to one person. The higher are for one to two persons in a room. Some hotels charge the same for one or two persons. All rooms have baths. Please make reservations early.

Leading Hotels of San Francisco (All European Plan)—Location and Rates

Name and Address	All Rooms with Bath
Alcazar, 326 O'Farrell	$ 3.00
Alexander, 352 Geary St	2.50 — 4.00
Ambassador, Mason and Eddy	2.50 — 4.00
Antlers, 245 Powell St	3.50 — 5.50
Argonaut, 44 Fourth St	2.00 — 3.50
Baldwin, 321 Grant Ave	3.00
Bellevue, Geary and Taylor Sts	3.50 — 5.00
Beresford, 635 Sutter St	2.50 — 5.00
Cadillac, 380 Eddy St	2.00 — 2.50
Cartwright, 524 Sutter St	2.50 — 4.00
Cecil (American plan), 545 Post St	8.00 — 12.00
*Chancellor, 433 Powell St	2.50 — 4.00
Clark, 217 Eddy St	2.50 — 3.50
*Clift, Geary and Taylor Sts	8.00
Colonial, 650 Bush St	4.00 — 5.00
Columbia, 411 O'Farrell St	2.00 — 2.50
Court, 205 Bush St	3.00 — 4.00
Dalt, 34 Turk St	2.50 — 3.50
*Fairmont, California and Mason Sts	7.00 — 10.00
Federal, 1087 Market St	2.50 — 3.50
Fielding, 386 Geary St	2.50 — 3.50
Garfield, 354 O'Farrell St	2.00 — 3.50
Garland, 505 O'Farrell St	2.00 — 3.00
Grand, 57 Taylor St	2.00 — 3.00
Herald, Eddy and Jones Sts	2.00 — 3.50
Herbert's (men only), 151 Powell St	2.00 — 3.00
Kensington, 580 Geary St	2.00 — 3.00
Keystone, 54 Fourth St	2.50 — 3.50
King George, 334 Mason St	2.50 — 5.00
Lankershim, 55 Fifth St	3.50
Larne, 210 Ellis St	3.00 — 4.50
Manx, Powell and O'Farrell Sts	4.00 — 5.00
Maryland, 490 Geary St	2.00 — 3.50
Mentone, 387 Ellis St	2.50 — 3.00
Normandie, 1499 Sutter St	1.75 — 3.50
Paisley, 432 Geary St	2.00 — 3.00
*Palace, Market and Montgomery Sts	8.00 — 10.00
*Plaza, Post and Stockton Sts	5.00 — 6.00
*Ramona, 174 Ellis St	2.50 — 3.50
Regent, 562 Sutter St	2.00 — 3.50
Richelieu, Geary and Van Ness Ave	5.00
Robins, 711 Post St	2.00 — 2.50
Somerton, 440 Geary St	2.00 — 4.00
Spaulding, 240 O'Farrell St	2.50 — 5.00
Stanford, 250 Kearny St	1.00 — 2.00
State, 16 Turk St	1.50 — 2.00
*St. Francis, Union Square	4.00 — 10.00
*Stewart, 353 Geary St	3.50 — 7.00
Stratford, Powell and Geary Sts	6.00
Sutter, Sutter and Kearny Sts	4.00
Travelers, 255 O'Farrell St	2.00 — 3.50
Terminal, 60 Market St	2.50 — 4.00
Turpin, 17 Powell St	3.00 — 3.50
Victoria, Bush and Stockton Sts	2.50 — 4.00
Washington, Grant and Bush Sts	2.50 — 4.00
Wellington, 610 Geary St	2.50 — 4.00
*Whitcomb, Market and Civic Center	4.00 — 8.00
Wiltshire, 340 Stockton St	3.00 — 4.50
Worth, 641 Post St	2.00 — 2.50
Hotel Oakland, Oakland, Calif	3.00 — 10.00
Hotel Claremont, Berkeley, Calif	3.00 — 5.00
Hotel Whitecotton, Berkeley, Calif	3.00 — 5.00

* Booked to capacity.

ENTERTAINMENT

(NOTE.—The official badge will be required for admission to entertainments and other places to which entrance is granted to those in attendance on the annual session.)

The Scientific Assembly will open with the general meeting convening at 7:45 p. m., Tuesday, June 26, in the Arcadia Auditorium, Jones and Ellis streets.

The Local Committee of Arrangements announces the following entertainments:

Monday, June 25

The Alameda County Medical Association, through its Committee on Hospitality and its Women's Entertainment Committee, will have a luncheon for visiting Fellows at the close of the diagnostic clinics. This luncheon will be at Mount Diablo. Afterward, a drive along the wonderful Skyline Boulevard and other points of interest in the transbay cities will be enjoyed.

Golf tournaments will be held in the afternoon at the San Francisco Golf and Country Club and the Lakeside Golf and Country Club. The annual golf banquet will be held at the San Francisco Golf and Country Club in the evening.

Fellows visiting the session diagnostic clinics will be entertained at luncheon by the staffs of the hospitals where these clinics are held.

Tuesday, June 26

There will be a tea given under the auspices of the Women's Entertainment Committee at the Fairmont Hotel, to which all visitors are invited.

After the General Meeting at the Arcadia Auditorium, there will be dancing until midnight.

Wednesday, June 27

The Women's Entertainment Committee will have women visitors as their guests at a luncheon at Tait's at the Beach.

In the evening, the President's reception will be held at the Fairmont Hotel. There will be dancing. Preceding the President's reception, a number of dinners have been arranged for fraternities and other special groups.

Thursday, June 28

Women visitors will be invited to go on an automobile drive about San Francisco to see the principal points of interest. At about 4 o'clock, the visitors will be escorted to a number of private homes for informal teas.

Alumnus and fraternity dinners and other forms of entertainment will be provided for the evening.

Friday, June 29

President and Mrs. Ray Lyman Wilbur will be at home at Stanford University to all Fellows and guests. There will be an organ recital in the Memorial Chapel, and opportunity will be given the guests to see the Stanford University campus, while enjoying the hospitality of President and Mrs. Wilbur.

For the evening, dinners for special groups, including alumnus associations and fraternities, have been arranged.

Saturday, June 30

Through the courtesy of the Mare Island Navy Yard and the Naval Hospital, Fellows and guests are invited to take the beautiful boat ride from San Francisco to Mare Island, have luncheon on the boat and spend the afternoon in visiting the great naval station, playing golf and otherwise enjoying the hospitality of officers and their families at the naval station.

In the evening, several hundred Fellows, all men, will enjoy a dinner and jinks at the Bohemian Club. Other club and special entertainments have also been arranged for this evening.

Sunday, July 1

Two hundred Fellows will be taken for a motor ride down the bay, and over the famous Crystal Springs road to the Family Farm, where luncheon will be served. The return trip to San Francisco will be over the El Camino Real.

Monday, July 2, and Tuesday, July 3

A social entertainment combined with the postsession diagnostic clinics will be offered in many places in the state. The programs at Los Angeles and at San Diego will take all of both days, and will culminate on Tuesday evening with a series of dinners and other forms of entertainment.

A Committee on Outdoor Entertainment has arranged for a number of short tours and sightseeing trips on these days, while the Golf Committee, in addition to the tournaments that will be held at San Francisco, has arranged for the complete cooperation of all golf and country clubs throughout the state.

"Medical California," a booklet prepared by the Local Committee of Arrangements will be given to all Fellows who register, and will contain complete and specific information about all entertainments, as well as about practically all other matters in which the Fellows may be interested as visitors to San Francisco.

NONAFFILIATED ORGANIZATIONS

The following organizations have announced that they will hold meetings in San Francisco during the days immediately preceding or immediately following those on which the Scientific Assembly of the American Medical Association will meet: The Medical Women's National Association; the American Association of Anesthetists; the Radiological Society of North America; the Medical Veterans of the World War; the American Radium Society; the American Society of Clinical Pathologists; the American Society of Tropical Medicine; the American Therapeutic Society; the Association for the Study of Internal Secretions; the Western Society for the Study of Hay-Fever, Asthma and Allergic Diseases.

The National Tuberculosis Association will meet at Santa Barbara, Calif., June 20-23.

The American Proctologic Society will meet at Los Angeles, June 22-23.

The Pacific Northwest Medical Association will meet at Seattle, June 19-21.

Associations of Alumni and Fraternities at San Francisco

The alumni of Jefferson Medical College in San Francisco are represented by a committee, which is arranging a program of entertainment for all visiting alumni of that institution during the annual session. The committee consists of Dr. W. P. Read, Flood Building, San Francisco; Dr. Claude A. Phelan, 760 Market Street, San Francisco, and Dr. Dudley Smith, Hutchinson Building, Oakland. Members of this committee will be glad to hear from Jefferson alumni in other parts of the country.

The Alpha Kappa Kappa fraternity has arranged for a banquet to be held on the evening of June 28. All members attending the annual session are strongly urged to communicate with the chairman of the banquet committee at 100 Judah Street, San Francisco. Sigma chapter's new home at this address will be open to all members, and opportunity will be afforded them to register as soon as they arrive. Dr. Louis W. Achenbach is secretary of the chapter.

The Nu Sigma Nu Fraternity has arranged for a banquet to be held at the Bohemian Club at San Francisco, Thursday, June 28, at 7 o'clock. Dr. H. D. Crall, 1242 A-2d Avenue, San Francisco, will be in charge of arrangements for this banquet. Any members of the Nu Sigma Nu Fraternity who wish to attend should write to Dr. Crall.

All members of the Phi Beta Pi Fraternity who attend the annual session are urged to make reservations for the dinner to be given by that fraternity at the "Plantation" at 7 o'clock, June 28. Dr. C. M. Johnson, 1344 Third Avenue, San Francisco, will be glad to receive applications for reservations.

Dinners and Other Group Entertainments at San Francisco

Dr. Harry E. Alderson, chairman of the Committee on Entertainment, 806 Balboa Building, San Francisco, asks that members and Fellows of alumnus associations and medical fraternities send suggestions to him as to dinners or other meetings that they may wish to have arranged for during the annual session.

Dr. Lawrence A. Draper has been appointed chairman of a special subcommittee of the Local Committee of Arrangements to arrange for dinners or other entertainments for special groups during the annual session of the American Medical Association. Several section dinners have already been arranged for, as well as other group entertainments. Those who may be interested may write directly to Dr. Draper, 806 Balboa Building, San Francisco.

CALIFORNIA DIAGNOSTIC CLINICS

Session Diagnostic Clinics

Each of the eighteen hospitals in San Francisco, Oakland and session zone that are accredited by the Council on Medical Education and Hospitals of the American Medical Association will hold diagnostic clinics on Monday and Tuesday, June 25 and 26. Each one of these hospitals has a committee of its own to arrange all details of the clinics, and the chairmen of these various committees form the central Committee on Diagnostic Clinics.

Altogether, 136 clinics will be given during the two first days of the session. About half of these clinics will be conducted by invited distinguished visiting Fellows, and the other half will be given by California Fellows, mostly by members of the staffs of the individual hospitals.

Postsession Diagnostic Clinics

More than 100 postsession clinics will be held, Monday and Tuesday, July 2 and 3, representing twenty counties, cities or accredited hospitals in various parts of California. In the large centers, such as Los Angeles and San Diego, the clinics will last the two days, while in smaller centers they will constitute a special program for a special meeting of the county society of one day, either July 2 or 3. These programs are all very similar, consisting of a special meeting of the county medical society at 10 o'clock in the morning, with clinics until 1 o'clock; then luncheon, with the visiting Fellows as guests; social entertainment during the afternoon, and a public banquet, with the visiting Fellows as speakers, in the evening, by this method giving the public in each of the many communities an opportunity to hear prominent visiting physicians discuss pertinent problems of public health.

Like the session clinics, these are all arranged by committees of county medical societies or accredited hospitals, or the two working together, and the chairmen of these committees form the central committee on postsession clinics.

Postsession Programs

In addition to the postsession clinics already discussed, an extensive social and entertainment program in a number of counties has been arranged by hospitality committees selected by the county medical societies and aided by women's entertainment committees.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the main floor of the Civic Memorial Auditorium. Among the exhibits will be the following:

DR. JOSEPH BLOODGOOD, Baltimore; DR. WILLIAM CARPENTER MACCARTY, Rochester, Minn.; DR. BENJAMIN T. TERRY, Nashville, Tenn.: Frozen section technic and diagnosis by the Departments of Surgical Pathology of Johns Hopkins University, the Mayo Clinic and Vanderbilt University. The technic of selecting, freezing, sectioning, staining, mounting and diagnosing fresh and fixed tissues will be demonstrated, as well as quick methods of preparing the polychrome methylene blue stains employed.

DEPARTMENT OF ANATOMY, UNIVERSITY OF CALIFORNIA: (1) DR. HERBERT N. EVANS and DR. P. E. SMITH: Experiments with hormone of the anteria hypophysis; (2) DR. EVANS and DR. K. S. BISHOP: Experiments on the relations between fertility and nutrition; (3) DR. EVANS and DR. SMITH: Experiments on amphibia with the hormones of the anterior and posterior hypophysis; (4) DR. EVANS: The estrual cycle of the rat, and experimental alterations of it as a study of the physiology of the ovaries; (5) DR. EVANS and DR. R. O. MOODY: The position of the stomach and some other abdominal viscera in a great number of healthy young adults.

DR. CHARLES R. GOWEN, Shreveport, La.: Demonstration of circulatory channels of lung, kidney and liver. Exhibit of casts in colors of the various circulatory channels of the lung, kidney and liver, showing the relation of these channels to one another.

DR. FRANK HINMAN and ASSOCIATES, San Francisco: The mechanism of hydronephrosis, an experimental and clinical study. Exhibit of specimens, microscopic slides, binocular preparations, stereopticons for photographs and photomicrographs, and a continuous lantern slide demonstration.

MAYO CLINIC and MAYO FOUNDATION, Rochester, Minn.: Research work of the clinic and the foundation. Exhibit of photographs and drawings, slides of specimens and roentgenograms dealing with operations and with clinical, pathologic and experimental studies.

DR. JEAN OLIVER, San Francisco: Biologic reactions of arsphenamin. Exhibit of charts showing biologic reactions occurring after intravenous injections of arsphenamin, and their modifications by the addition of gelatin.

DR. WILLIAM OPHULS, San Francisco: (1) Periarteritis nodosa: exhibit of microscopic slides and photomicrographs illustrating lesions in a case of periarteritis nodosa. (2) Statistical review of necropsies: exhibit of charts showing results of a review of a large series of necropsies.

MR. RALPH SWEET, San Francisco: Medical illustrations. Exhibit of drawings of operations, specimens and microscopic drawings.

DR. BENJAMIN TERRY, Nashville, Tenn.: Necropsy and surgical specimens, by the Department of Pathology, Vanderbilt University Medical Department. Exhibit of gross pathologic specimens showing common as well as unusual lesions.

DR. MILEY B. WESSON, San Francisco: Glass model of pelvis of term fetus. Exhibit of sections of fetus drawn in colored inks on glass plates, and stacked so as to show relationship of structures.

DR. T. HOMER COFFEN, Portland, Ore.: Electrocardiograms. Exhibits illustrating disturbances in conduction, articular flutter, articular fibrillation and abnormal Q R S T complexes.

DR. H. J. CORPER, Denver: Experimental tuberculosis exhibit: photographs covering the effect of carbon dioxid on tubercle bacilli; experimental tuberculosis produced by aspiration and posture; experimental eye tuberculosis.

DR. LOUIS CLIVE JACOBS, San Francisco: Original wax models of pathologic lesions in the posterior urethra.

DR. MORRIS KAHN, New York: Unusual electrocardiographic records: exhibit of electrocardiographic records of the human dying heart, reversed rhythm and heart block.

DR. HANS LISSER, San Francisco: Some types of ductless gland disease: exhibit of photographs of patients, with explanatory legends. Cases of colloid goiters, exophthalmic goiter, childhood and adult myxedema, acromegaly, Froehlich's syndrome, dystrophia adiposogenitalis and pituitary obesity.

DR. PAUL D. WHITE, Boston: The electrocardiogram in uremia.

DR. WALTER J. WILSON, Detroit: Exhibit of electrocardiograms.

DR. LUIS P. BERNE, New York: Plastic surgery of the face.

DR. VILRAY P. BLAIR, St. Louis: Reconstruction of the face: exhibit of photographs, drawings and plaster casts showing the original condition, the steps of repair and the final results.

DR. LEONARD W. ELY, San Francisco: Experimental and pathologic work on bones and joints. Exhibit of specimens, slides, photographs, photomicrographs and roentgen films.

DR. R. E. FARR, Minneapolis: Local anesthesia technic: exhibit of drawings illustrating the technic of operating under local anesthesia.

DR. AMÉDÉE GRANGER, New Orleans: New method for roentgenographing the sphenoid and ethmoids: exhibit of roentgenograms of skulls and of heads in which the sphenoid sinus is identified. Examples of diseased sphenoids correctly diagnosed before operation.

DR. J. RAWSON PENNINGTON, Chicago: Gastro-enterology and proctology: exhibit of portraits illustrating history of gastro-enterology and proctology; also charts illustrating the embryology and anatomy of the rectum and anus, and the topography of rectal and anal diseases.

DR. IRVING F. STEIN, Chicago: Roentgenograms in pregnancy: exhibit of a series of films of the fetus and abnormal pelvis; also a few of pneumoperitoneum in pregnancy.

AMERICAN ASSOCIATION OF MEDICAL MILK COMMISSIONS, Chicago: Exhibit of the commissions' work with certified milk—bacterial counts, microscopic slides, cleanliness, sanitation, etc.

AMERICAN LIBRARY ASSOCIATION, Chicago: Hospital libraries: exhibit of photographs, charts, hospital book truck and hospital literature.

AMERICAN SOCIAL HYGIENE ASSOCIATION, New York: Researches in the diagnosis and treatment of syphilis and gonococcal infection: exhibit of pathologic specimens, bacterial cultures and slides, photographs, photomicrographs, statistical tables, etc., illustrated by work done at Johns Hopkins, Harvard, University of Michigan, Washington University and other colleges.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York: Exhibit of work of the association.

AMERICAN WOMEN'S HOSPITALS COMMITTEE OF THE MEDICAL WOMEN'S NATIONAL ASSOCIATION, New York: American Women's Hospital: exhibit of photographs of surgical, medical, quarantine and general public health work in Serbia, Russia, Transcaucasus, Turkey, Greece and Greek Islands.

ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE, New York: Exhibit showing work of the organization.

CONFERENCE FOREIGN MISSIONS BOARDS OF NORTH AMERICA, New York: Medical missions exhibit: pictures, posters, charts, literature, specimens, etc., illustrating medical work in foreign fields.

LEAGUE FOR THE CONSERVATION OF PUBLIC HEALTH—BETTER HEALTH SERVICE, San Francisco: Hospital betterment and

better health: exhibit of modern hospital accounting, hospital record forms, Better Health Magazine, better health publicity service for newspapers, every physician's office a medical health center.

U. S. DEPARTMENT OF INTERIOR, BUREAU OF MINES, Washington, D. C.: Exhibit of typical Bureau of Mines standard first aid dressings on dolls; mine rescue self-contained oxygen breathing apparatus; oxygen inhalators; all-service gas mask; miner's self-rescue mask; carbon monoxid detector; carbon monoxid blood analysis outfit; dust sampling apparatus; photomicrographs of harmful dusts; roentgenograms showing lung conditions due to silicosis; also protographs and other apparatus connected with mine safety and the work of the bureau.

U. S. PUBLIC HEALTH SERVICE, Washington, D. C.: (1) Food poisoning, including botulism. (This work is cooperative with UNIVERSITIES OF STANFORD, CALIFORNIA, CHICAGO and HARVARD.) Exhibit of epidemiology, thermal death point and investigative procedures in outbreaks. (2) Various aspects of tularemia (Francis). (3) Control of biologics, Hygienic Laboratory.

AMERICAN MEDICAL ASSOCIATION

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS: Exhibit of charts and maps showing statistics on medical school enrolment, graduation and licensure; also charts and maps showing results of survey of dispensaries, outpatient departments, group practice and clinics, their growth and distribution.

COUNCIL ON PHARMACY AND CHEMISTRY: Cards and specimens illustrating the effort of the Council in the interests of scientific medicine and rational prescribing.

THE AMERICAN MEDICAL ASSOCIATION CHEMICAL LABORATORY: Cards and specimens bearing on such subjects as the newer synthetics, comparative prices of proprietary and nonproprietary remedies and drug control.

PROPAGANDA DEPARTMENT OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: Exhibit of (1) a series of educational posters; (2) specimens of pamphlets published for the purpose of furnishing information easily and quickly to the public, and (3) the two volumes of "Nostrums and Quackery." There will also be (4) an automatic projection apparatus displaying the stereopticon slides that have been prepared by the department for the use of physicians who may wish to give talks on the nostrum evil.

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION: (1) Exhibit of charts on health problems, and baby welfare, educational pamphlets and *Hygeia*—the new journal of health for the public; (2) Cooperative work of the National Education Association and the Council.

MOTION PICTURE THEATER

In the same building as the Scientific Exhibit, but on the fourth floor, will be the Motion Picture Theater. The theater will open at noon on Monday, and run continuously each day thereafter from 9 a. m. until 5:30 p. m. and until noon on Friday. Each speaker will demonstrate the talk with either lantern slides or motion pictures.

DR. FRED H. ALBEE, New York: The history and use of motion pictures as a teaching medium. Illustrated with motion pictures.

DR. WALTER C. ALVAREZ, San Francisco: Practical points in the diagnosis of gastro-intestinal diseases. Illustrated with lantern slides.

DR. LUIS P. BERNE, New York: Plastic surgery of the face. Illustrated with lantern slides.

DR. HARRY BOWING, Rochester, Minn.: Carcinoma of the breast favorably influenced through the application of radium and roentgen rays. Illustrated with lantern slides.

DR. ISRAEL BRAM, Philadelphia: Toxic goiter: its types and treatment. Illustrated with lantern slides.

DR. WALTER V. BREM, Los Angeles: The problem of pathologic service in a large community center. Illustrated by lantern slides.

DR. W. F. BRAASCH, Rochester, Minn.: Urography as an aid to diagnosis. Illustrated by lantern slides.

DR. ARTHUR J. CRAMP, Director, Propaganda for Reform Department, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: (1) Nostrums and Quackery; (2) Some Forgotten Fakes.

DR. ROLAND S. CRON, Ann Arbor, Mich.: Transuterine and transabdominal inflation of the female pelvis combined with roentgenography. Illustrated with lantern slides.

DR. CARL H. DAVIS, Milwaukee: Normal labor. Illustrated by motion pictures.

DR. D. J. DAVIS, Chicago: Pathology of gangrenous processes in the body. Illustrated by lantern slides.

DR. ERNEST C. DICKSON, San Francisco: The prevention and treatment of botulism. Illustrated by lantern slides.

DR. LEONARD ELY, San Francisco: Chronic arthritis—the two great types. Illustrated by lantern slides.

DR. R. E. FARR, Minneapolis: Major surgery under local anesthesia. Illustrated by animated motion pictures.

DR. OTTO GLOGAU, New York: Researches in the normal and pathologic microscopy of the inner ear. Illustrated by lantern slides.

DR. CHARLES L. GREENE, St. Paul: Factors vital to earlier diagnosis of chronic heart diseases. Illustrated by lantern slides.

DR. PAUL J. HANZLIK, San Francisco: Dangers of intravenous therapy: physical and chemical charges in the blood. Illustrated by lantern slides.

DR. JULIUS H. HESS, Chicago: Care and feeding of premature infants. Illustrated by lantern slides.

DR. W. G. HERMS, Berkeley, Calif.: Medical entomology. Illustrated by motion pictures.

DR. E. L. HUNT, New York: Common forms of nervous diseases. Illustrated by motion pictures.

DR. ALEXANDER LAMBERT, New York: Interpretation of cardiac instrumental records. Illustrated by lantern slides.

DR. DEAN LEWIS, Chicago: Fractures and associated injuries. Illustrated by lantern slides.

DR. H. LISSER and DR. CHARLES E. NIXON, San Francisco: Ductless gland syndromes. Illustrated by lantern slides.

DR. A. H. PEACOCK, Seattle: Changes in the ureter found by routine pyelograms and ureterograms. Illustrated by lantern slides.

DR. CHARLES G. STIVERS, Los Angeles: Development of vocal and other expression in orthopedic and subnormal children. Illustrated by slow motion pictures.

DR. WALTER J. WILSON, Detroit: Angina pectoris. Illustrated by lantern slides.

AMERICAN SOCIAL HYGIENE ASSOCIATION, New York: An efficient arrangement for a small town clinic. Motion picture films.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York: The reward of courage (Rockefeller cancer film).

AMERICAN WOMEN'S HOSPITALS COMMITTEE OF THE MEDICAL WOMEN'S NATIONAL ASSOCIATION, New York: Medical and quarantine work of the American Women's Hospitals in Greece and the Greek Islands. Motion picture film.

BUREAU OF ANIMAL INDUSTRY, U. S. DEPARTMENT OF AGRICULTURE, Washington, D. C.: Exhibit *Ascaris*. Motion picture film.

BUREAU OF MINES, U. S. DEPARTMENT OF THE INTERIOR, Washington, D. C.: Safety Lessons in a metallurgical plant. Motion picture film.

UNITED STATES PUBLIC HEALTH SERVICE, Washington, D. C.: Motion picture films dealing with public health problems and the science of life.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING MEETING

Tuesday, June 26—7:45 p. m.

Music.

Call to Order by the President, GEORGE E. DE SCHWEINITZ, Philadelphia.

Invocation. THE RIGHT REVEREND E. J. HANNA, Archbishop of California.

Address of Welcome. HON. FRIEND RICHARDSON, Governor of California.

Address of Welcome. H. G. BRAINERD, Past President, Medical Society of the State of California.

Address of Welcome. T. C. EDWARDS, President, Medical Society of the State of California.

Announcements. W. E. MUSGRAVE, CHAIRMAN, Local Committee of Arrangements.

Music.

Introduction and Installation of President-Elect RAY LYMAN WILBUR, Stanford University, Calif.

Address. RAY LYMAN WILBUR.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program, nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, as well as lists of committees, programs of the General Meeting, lists of entertainments, map of San Francisco and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN LARKIN HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—NELLIS B. FOSTER, New York.

Vice Chairman—ALFRED FRIEDLANDER, Cincinnati.

Secretary—EUGENE S. KILGORE, San Francisco.

Executive Committee—HENRY S. PLUMMER, Rochester, Minn.; LEWELLYS F. BARKER, Baltimore; NELLIS B. FOSTER, New York.

Wednesday, June 27—9 a. m.

1. Results in the Treatment of Pulmonary Tuberculosis by Means of an Artificial Pneumothorax (Lantern Demonstration). RAY W. MATSON, Portland, Ore.
   Discussion to be opened by F. M. POTTENGER, Monrovia, Calif., WILLIAM C. VOORSANGER, San Francisco, and ROBERT A. PEERS, Colfax, Calif.
2. The Total Metabolism in Exophthalmic Goiter (Lantern Demonstration).
   WALTER M. BOOTHBY, Rochester, Minn.
   Discussion to be opened by ALBERT ROWE, Oakland, Calif., and LOVELL LANGSTROTH and J. MARION READ, San Francisco.
3. Infectious Jaundice.
   GEORGE BLUMER, New Haven, Conn.
   Discussion to be opened by ALEXANDER LAMBERT, New York, and PHILIP KING BROWN, San Francisco.
4. Auscultation in the Diagnosis of Abdominal Conditions.
   JOSEPH SAILER, Philadelphia.
   Discussion to be opened by W. S. THAYER, Baltimore, and WALTER C. ALVAREZ, San Francisco.
5. Chronic Carbon Monoxid Poisoning.
   ANFIN EGDAHL, Grand Forks, N. D.
   Discussion to be opened by JAMES L. WHITNEY, San Francisco.
6. Hydrotherapy: General Principles and Certain Therapeutic Indications. JAMES M. ANDERS, Philadelphia.
   Discussion to be opened by A. J. SANDERSON, Berkeley, Calif., JOSEPH CATTON, San Francisco, and NEWTON EVANS, Loma Linda, Calif.

Thursday, June 28—9 a. m.

Election of Officers

7. Chairman's Address. NELLIS B. FOSTER, New York.
8. Heart Findings Compared with Heart Lesions—Postmortem. WILLIAM H. ROBEY, Boston.
9. Some Toxic Effects of Digitalis (Lantern Demonstration). WILLIAM DUNCAN REID, Boston.
10. The Favorable Prognosis of Auricular Fibrillation. T. HOMER COFFEN, PORTLAND, Ore.
11. Cinchona Derivatives in the Treatment of Heart Disorders. F. K. WENCKEBACH, Vienna, Austria.
    Discussion of Papers 8, 9, 10 and 11 to be opened by EMANUEL LIBMAN, LEWIS A. CONNER and HARLOW BROOKS, New York, and A. W. HEWLETT and WILLIAM J. KERR, San Francisco.
12. A Review of a Group of Professional Blood Donors (Lantern Demonstration). H. Z. GIFFIN, Rochester, Minn.
    Discussion to be opened by E. H. FALCONER, San Francisco.
13. The Therapeutic Value of Germanium Dioxid in Anemia. LUDWIG KAST, New York.

Friday, June 29—9 a. m.

JOINT MEETING OF SECTIONS ON PRACTICE OF MEDICINE, ON PHARMACOLOGY AND THERAPEUTICS, AND ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON FOODS

14. Basic diets in the treatment of nephritis. W. D. SANSUM, Santa Barbara, Calif.
15. Food Idiosyncracies. W. W. DUKE, Kansas City, Mo.
16. The Complete Diet. A. E. TAYLOR, Stanford University, Calif.
17. A Hitherto Unknown Dietary Factor Essential for Reproduction. KATHARINE SCOTT BISHOP, Berkeley, Calif.
18. Pathologic Effects of Lack of Vitamin A and the Antineuritic Vitamin. E. V. MCCOLLUM, Baltimore.
    Discussion of Papers 14, 15, 16, 17 and 18 to be opened by GEORGE DOCK, Pasadena, Calif., HERBERT EVANS, Berkeley, Calif., THOMAS ADDIS, San Francisco, and WARREN COLEMAN, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN POLK HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—EUGENE H. POOL, New York.

Vice Chairman—HARRY P. RITCHIE, St. Paul.

Secretary—URBAN MAES, New Orleans.

Executive Committee—GEORGE P. MULLER, Philadelphia; WALLACE I. TERRY, San Francisco; EUGENE H. POOL, New York.

Wednesday, June 27—2 p. m.

1. Congenital Occlusion of the Small Intestine (Lantern Demonstration). R. C. BRYAN, Richmond, Va.
   Discussion to be opened by A. A. STRAUSS, Chicago, and D. L. DAVIS, Omaha.
2. Intestinal Surgery (Lantern Demonstration). HARRY H. KERR, Washington, D. C.
   Discussion to be opened by HAROLD BRUNN, San Francisco, and WAYLAND A. MORRISON, Los Angeles.
3. The Ever Present Possibility of Diagnostic Error in Lesions of the Right Iliac Fossa. A. B. COOKE, Los Angeles.
4. The Baffling Symptoms of Chronic Appendicitis: Study of Two Hundred and Twenty-Five Cases. HARRY BLACKFORD, Seattle.

5. Surgery of the Appendix. WILLIAM E. LOWER, Cleveland.
Discussion of Papers 3, 4 and 5 to be opened by A. J. OCHSNER, Chicago, and FRED W. BAILEY, St. Louis.
6. Posttraumatic Bone Tumors with Infection (Lantern Demonstration). S. D. FOSTER, Toledo, Ohio.
7. A Clinical and Pathologic Study of Ten Bone Tumors (Lantern Demonstration).
JOHN J. MORTON and W. C. DUFFY, New Haven, Conn.
Discussion of Papers 6 and 7 to be opened by MELVIN S. HENDERSON, Rochester, Minn., and EDWIN I. BARTLETT, San Francisco.

Thursday, June 28—2 p. m.

8. Chairman's Adress. EUGENE H. POOL, New York.
9. The Treatment of the Velum Palati in Operations for the Repair of Congenital Fissure of the Palate (Lantern Demonstration).
JAMES E. THOMPSON, Galveston, Texas.
Discussion to be opened by G. V. I. BROWN, Milwaukee, and HARRY P. RITCHIE, St. Paul.
10. The Significance of a Hemorrhagic Discharge from the Nipple (Lantern Demonstration).
EDWIN M. MILLER and DEAN LEWIS, Chicago.
11. Recurrences in Cancer of the Breast.
JOHN E. SUMMERS, Omaha.
12. The Diagnosis of Early Breast Tumors Based on the Clinical History and Pathology at the Exploratory Incision (Lantern Demonstration).
JOSEPH C. BLOODGOOD, Baltimore.
Discussion of Papers 10, 11 and 12 to be opened by ALSON R. KILGORE, San Francisco; MALCOLM L. HARRIS, Chicago, and L. P. MCCALLA, Boise, Idaho.
13. The Condition of the Common Duct After Cholecystectomy (Lantern Demonstration).
E. S. JUDD, Rochester, Minn.
14. The Diagnosis and Management of Stones in the Common Duct: Review of Thirty Cases.
WILLIAM D. HAGGARD, Nashville, Tenn.
Discussion of Papers 13 and 14 to be opened by GATEWOOD, Chicago, and IRVIN ABELL, Louisville, Ky.

Friday, June 29—2 p. m.

Election of Officers

15. Causative Factors and Treatment of Chronic Empyema.
CARL A. HEDBLOM, Rochester, Minn.
16. The Treatment of Bronchial Fistulas: A Report of Thirty-Five Cases (Lantern Demonstration).
W. L. KELLER, Washington, D. C.
17. A Safer Substitute for Lobectomy in Cases of Chronic Suppuration of the Lung (Lantern Demonstration).
EVARTS A. GRAHAM, St. Louis.
Discussion of Papers 15, 16 and 17 to be opened by LEO ELOESSER, San Francisco, and GEORGE J. HEUER, Cincinnati.

JOINT MEETING OF THE SECTIONS ON SURGERY, GENERAL AND ABDOMINAL, AND ON NERVOUS AND MENTAL DISEASES

SYMPOSIUM ON NEUROSURGERY

18. Fractures of the Skull. ERNEST SACHS, St. Louis.
19. Brain Abscess, Clinical and Operative Data (Lantern Demonstration). CHARLES BAGLEY, JR., Baltimore.
20. Recent Advances in the Diagnosis of Compression of the Spinal Cord and Cauda Equina (Lantern Demonstration). WILLIAM J. MIXTER, Boston.
Discussion of Papers 18, 19 and 20 to be opened by HOWARD NAFFZIGER, San Francisco; GILBERT HORRAX, Boston, and LAWRENCE SELLING, Portland, Ore.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN FOLK HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—HARRY S. CROSSEN, St. Louis.
Secretary—CARL H. DAVIS, Milwaukee.
Executive Committee—JOHN O. POLAK, Brooklyn; SIDNEY A. CHALFANT, Pittsburgh; HARRY S. CROSSEN, St. Louis.

Wednesday, June 27—9 a. m.

1. Chairman's Address: Abdominal Surgery Without Detached Pads or Sponges (Lantern Demonstration).
HARRY S. CROSSEN, St. Louis.
2. The Therapeutic Value of Transuterine Inflation (Lantern Demonstration).
REUBEN PETERSON and ROLAND S. CRON, Ann Arbor, Mich.
Discussion to be opened by GEORGE GRAY WARD, JR., New York.
3. Pregnancy After Interposition of the Uterus.
IRVING F. STEIN, Chicago.
4. Retrodisplacements of the Uterus Following Childbirth: A Study of the Development of Its Symptoms (Lantern Demonstration).
FRANK W. LYNCH, San Francisco.
5. Local Anesthesia in the Upper Abdomen: The Factors upon Which Success Depends (Lantern Demonstration). R. E. FARR, Minneapolis.
6. The Value of Sacral Nerve Block Anesthesia in Obstetrics (Lantern Demonstration).
B. E. BONAR, Salt Lake City, and WILLIAM R. MEEKER, Rochester, Minn.
7. Scopolamin-Morphin Seminarcosis.
OTTO H. SCHWARZ and O. S. KREBS, St. Louis.
8. Obstetric Analgesia and Anesthesia: A Consideration of Nitrous Oxid-Oxygen and Various Combined Methods (Lantern Demonstration).
WILLIAM C. DANFORTH, Evanston, Ill., and C. HENRY DAVIS, Milwaukee.
Discussion of Papers 5, 6, 7 and 8 to be opened by HENRY A. STEPHENSON and W. F. WAKEFIELD, San Francisco.

Thursday, June 28—9 a. m.

9. Ocular Disturbances in Pregnancy and During the Puerperium. NELSON M. BLACK, Milwaukee.
Discussion to be opened by WALTER R. PARKER, Detroit.
10. A Contribution to the Study of Pyelitis in Pregnancy (Lantern Demonstration).
FREDERICK HOWARD FALLS, Iowa City.
11. The Treatment of Pyelitis of Pregnancy.
HERMAN L. KRETSCHMER, Chicago.
Discussion of Papers 10 and 11 to be opened by LUDWIG A. EMGE, San Francisco.
12. Brain Injuries in the New-Born.
WILLIAM SHARPE, New York.
13. Care of the New-Born in the First Weeks of Life.
E. J. HUENEKENS, Minneapolis.
Discussion of Papers 12 and 13 to be opened by HENRY HELMHOLZ, Rochester, Minn.
14. The Midwife Problem.
ANNA E. RUDE, Washington, D. C.
15. Results Gained in Maternity Cases That Have Received Antenatal Care (Lantern Demonstration).
FRED L. ADAIR and C. O. MALAND, Minneapolis.
16. How the General Practitioner Can Do Better Obstetrics: Practical and Clinical Hints.
JOHN O. POLAK, Brooklyn.
Discussion of Papers 14, 15 and 16 to be opened by HUGH A. COWING, Muncie, Ind.; G. C. H. MCPHEETERS, Fresno, Calif., and W. S. LEATHERS, University, Miss.

Friday, June 29—9 a. m.

Election of Officers

17. Incomplete Inversion of the Uterus.
RALPH W. FRENCH, Fall River, Mass.
Discussion to be opened by J. MORRIS SLEMONS, Los Angeles.
18. Electrothermocautery Treatment of Leukorrhoea Due to Endocervicitis. LINDSAY PETERS, Alameda, Calif.
Discussion to be opened by A. B. SPALDING, San Francisco.
19. Nephrotresis in Recurrent Bilateral Pyelolithiasis in Horse Shoe Kidney (Lantern Demonstration).
KERWIN KINARD, Kansas City, Mo.
20. Right Paraduodenal Hernia.
GUNTHER W. NAGEL, Rochester, Minn.
21. The Relation of Right Sided Abdominal Pain to Right Sided Pathology (Lantern Demonstration).
R. C. COFFEY, Portland, Ore.

22. The Choice of Operations for Gastric and Duodenal Ulcers, with Special Reference to Pyloroplasty (Lantern Demonstration).
J. SHELTON HORSLEY, Richmond, Va.
23. Achlorhydria in Gallbladder Disease (Lantern Demonstration). GATEWOOD, Chicago.
Discussion of Papers 20, 21, 22 and 23 to be opened by Frederick A. Speik, Los Angeles; E. STARR JUDD, Rochester, Minn., and DEAN LEWIS, Chicago.

SECTION ON OPHTHALMOLOGY

MEETS IN MEMORIAL HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—JOHN O. MCREYNOLDS, Dallas, Texas.
Vice Chairman—JOHN GREEN, JR., St. Louis.
Secretary—GEORGE S. DERBY, Boston.
Executive Committee—JAMES BORDLEY, JR., Baltimore; NELSON MILES BLACK, Milwaukee; JOHN O. MCREYNOLDS, Dallas, Texas.

Fellows are reminded that the meetings of the section will be called to order promptly on the hour scheduled for opening. The formal reading of the papers will be omitted, as reprints of the papers on the program have already been delivered to Fellows.

Each essayist will be given ten minutes in which to summarize the points in his paper and introduce the discussion (except in the case of five minute papers), and five minutes in which to close the discussion.

The Fellows appointed to open the discussion of any paper will be allowed ten minutes. Subsequent speakers will be limited to five minutes.

The papers and all discussions will be printed and bound, forming the Transactions of the Section on Ophthalmology for 1923. Copies of the Transactions may be obtained at $1.50 each, if subscriptions are sent to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, Chicago, by June 1, as only enough copies are printed to cover subscriptions received to the time of going to press.

Fellows are requested to register in the section registration book at the entrance. The full name and complete postoffice address should be written plainly.

Wednesday, June 27—2 p. m.

1. Chairman's Address.
JOHN O. MCREYNOLDS, Dallas, Texas.
2. Ophthalmia Myiasis Externa, Due to Larvae of Oestrus Ovis (Lantern Demonstration).
H. H. STARK, El Paso, Texas.
3. Filaria Loa in Subconjunctival Tissues.
J. W. KIMBERLIN, Kansas City, Mo.
Discussion to be opened by EDWARD F. GLASER, San Francisco.
4. Thrombosis of Central Retinal Vein and Its Branches.
ALLEN GREENWOOD, Boston.
Discussion to be opened by WILLIAM ZENTMAYER, Philadelphia.
5. Proposed Classification of Iritis and Iridocyclitis.
LEE MASTEN FRANCIS, Buffalo.
Discussion to be opened by CASSIUS D. WESCOTT, Chicago.
6. Iritis (Lantern Demonstration).
E. V. L. BROWN and ERNEST E. IRONS, Chicago.
Discussion to be opened by C. A. Veasey, Spokane, Wash.
7. Lens as Seen with Gullstrand Slit Lamp and Corneal Microscope. ARTHUR J. BEDELL, Albany, N. Y.
Discussion to be opened by A. C. MACLEISH, Los Angeles.
8. Ocular Phenomena Produced by Intracranial Lesions Involving Optic Tracts Near Chiasm (Lantern Demonstration). WALTER I. LILLIE, Rochester, Minn.
Discussion to be opened by GILBERT HORRAX, Boston.

Thursday, June 28—2 p. m.

DEMONSTRATION SESSION: EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

9. "All-or-Nothing" Principle of Nerve Conduction and Muscle Contraction in Its Relation to the Eye.
WALTER B. LANCASTER, Boston.
Discussion to be opened by EDWARD JACKSON, Denver.
10. Control of Pain in Functional Hyperesthesia of Ciliary Muscle (Painful Accommodation) Through Nasal (Sphenopalatine, Meckel's) Ganglion.
JOHN GREEN, JR., and GREENFIELD SLUDER, St. Louis.
Discussion to be opened by LLOYD MILLS, Los Angeles.
11. Technic of Iridectomy Done Under a Conjunctival Flap for Glaucoma Using a Broad Keratome (Lantern Demonstration). ROBERT G. REESE, New York.
Discussion to be opened by A. L. MACLEISH, Los Angeles.
12. Iridotasis. WILLIAM H. WILDER, Chicago.
Discussion to be opened by JOSEPH L. MCCOOL, Portland, Ore.
13. Posterior Sclerotomy with Permanent Drain, for Retinal Detachment. MEYER WIENER, St. Louis.
Discussion to be opened by VARD H. HULEN, San Francisco.
14. Treatment of Methyl Alcohol Blindness, with Especial Reference to Use of Arsphenamin and Neo-Arsphenamin. HERBERT MOULTON, Fort Smith, Ark.
Discussion to be opened by T. B. HOLLOWAY, Philadelphia.

Friday, June 29—2 p. m.

Executive Session
Election of Officers

15. Ossification in a Chalazion.
WALTER SCOTT FRANKLIN and FREDERICK C. CORDES, San Francisco.
Discussion to be opened by WILLIAM C. FINNOFF, Denver.
16. Active Agent in Milk Injections (Lantern Demonstration).
OTTO BARKAN, San Francisco.
Discussion to be opened by FREDERICK KIEHLE, Portland, Ore.
17. Antidiphtheric Serum in Ocular Infection: A Clinical Experimental Study of Ninety-One Cases (Lantern Demonstration). BEN WITT KEY, New York.
Discussion to be Opened by WILSON JOHNSTON, Portland, Ore.
18. Orbital Changes Produced by Radium in Cancer of the Upper Jaw. ARNOLD KNAPP, New York.
Discussion to be opened by EDWARD C. SEWALL, San Francisco.
19. Cataract Extractions Performed by Prof. Josef Meller of Vienna, 1919-1921: Review of Two Hundred and Forty-Nine Operations.
HANS BARKAN, San Francisco.
Discussion to be opened by WILLIAM H. WILMER, Washington, D. C.
20. Modern Aids to Cataract Extraction.
GEORGE S. DERBY, Boston.
Discussion to be opened by CHARLES A. MAGHY, San Francisco.
21. Premature Presbyopia.
WILLIAM F. BONNER, Wilmington, Del.
Discussion to be opened by W. O. LAMOTTE, Wilmington, Del.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN MEMORIAL HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—WILLIAM B. CHAMBERLIN, Cleveland.
Vice Chairman—J. WILKINSON JERVEY, Greenville, S. C.
Secretary—SAMUEL IGLAUER, Cincinnati.
Executive Committee—ROSS H. SKILLERN, Philadelphia; J. A. STUCKY, Lexington, Ky.; WILLIAM B. CHAMBERLIN, Cleveland.

Wednesday, June 27—9 a. m.

1. Chairman's Address. WILLIAM B. CHAMBERLIN, Cleveland.
2. Some Observations on Causes and Prevention of Otologic Conditions Following Swimming and Diving.
H. M. TAYLOR, Jacksonville, Fla.
Discussion to be opened by HILL HASTINGS, Los Angeles.

3. Systemic Manifestations of Sinus Disease (Lantern Demonstration). MILLARD F. ARBUCKLE, St. Louis.
Discussion to be opened by ROBERT CALDWELL, Little Rock, Ark.

4. Clinical Observations of Adenoids Removed with a Direct Vision Adenotome (Lantern Demonstration). I. D. KELLEY, St. Louis.
Discussion to be opened by FREDERICK W. LAMB, Cincinnati.

5. Roentgen-Ray Technic for Tonsil Treatment. M. WILLIAM CLIFT, Flint, Mich.
Discussion to be opened by HOWARD E. RUGGLES, San Francisco.

6. Removal of Tonsils, with Especial Reference to Methods Other Than Complete Enucleation. BURT E. SHURLEY, Detroit.
Discussion to be opened by GEORGE H. KRESS, Los Angeles.

7. Children's Upper Respiratory Abscesses Descending Into the Neck and Mediastinum. OTTO GLOGAU, New York.
Discussion to be opened by J. D. CONDIT, Pasadena, Calif.

Thursday, June 28—9 a. m.

8. The Clinical Picture of Streptococcic Osteomyelitis of the Temporal Bone. HARRY BOYD-SNEE, South Bend, Ind.
Discussion to be opened by AUSTIN A. HAYDEN, Chicago.

9. Hypodermic General Anesthesia. EUGENE R. LEWIS, Los Angeles.
Discussion to be opened by NEIL C. TREW, Los Angeles.

10. The Sphenoid and Ethmoid Positively Identified in Roentgenograms Made with the Head Held in the Author's Position (Lantern Demonstration). AMÉDÉE GRANGER, New Orleans.
Discussion to be opened by M. P. BURNHAM, San Francisco.

11. Congenital Obstruction of the Larynx and Pharynx (Lantern Demonstration). GORDON B. NEW, Rochester, Minn.
Discussion to be opened by THOMAS E. CARMODY, Denver.

12. Mastoiditis Without Apparent Middle Ear Involvement (Lantern Demonstration). BERT E. HEMPSTEAD, Rochester Minn.
Discussion to be opened by WILLIAM ELLERY BRIGGS, Sacramento, Calif.

13. Some Comments on Diagnosis and Treatment of Septic Sinus Thrombosis. WENDELL C. PHILLIPS, New York.
Discussion to be opened by RALPH A. FENTON, Portland, Ore.

Friday June 29—9 a. m.

Election of Officers

Exhibition of New Instruments and Appliances

Report of Committees

14. Reeducation of an Aphasic (Moving Picture Demonstration). CHARLES G. STIVERS, Los Angeles.
Discussion to be opened by ELMER E. KENYON, Chicago.

15. Surgery of the Cerebrospinal Circulatory System in Suppurative Intracranial Disease (Lantern Demonstration). WELLS P. EAGLETON, Newark, N. J.
Discussion to be opened by GEORGE S. WELLS, Santa Barbara, Calif.

16. The Correction of External Nasal Deformities (Moving Picture and Lantern Demonstration). LUIS P. BERNE, New York.
Discussion to be opened by PHILLIP C. MEANS, Santa Barbara, Calif.

17. Corrective Rhinoplasty: Some Reasons for Faulty Results (Lantern Demonstration). LEE COHEN, Baltimore.
Discussion to be opened by GRANT SELFRIDGE, San Francisco.

18. Neurotologic Studies in Epilepsy: Preliminary Report. ISAAC H. JONES, Los Angeles.
Discussion to be opened by HUGO A. KIEFER, Los Angeles.

SECTION ON DISEASES OF CHILDREN

MEETS IN LARKIN HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—BORDEN S. VEEDER, St. Louis.
Vice Chairman—JOHN A. FOOTE, Washington, D. C.
Secretary—EDGAR J. HUENEKENS, Minneapolis.
Executive Committee—FRANK C. NEFF, Kansas City, Mo.; EMANUEL C. FLEISCHNER, San Francisco; BORDEN S. VEEDER, St. Louis.

Wednesday, June 27—2 p. m.

1. Chairman's Address. BORDEN S. VEEDER, St. Louis.

2. Active Immunization Against Diphtheria in Private Practice (Lantern Demonstration). FRANK C. NEFF, Kansas City, Mo.
Discussion to be opened by E. C. FLEISCHNER, San Francisco, and E. J. HUENEKENS, Minneapolis.

3. The Relation of Infections of Upper Respiratory Tract to Pyelitis (Lantern Demonstration). H. F. HELMHOLZ, Rochester, Minn.
Discussion to be opened by LANGLEY PORTER, San Francisco.

4. Epidemiology of Colds in Children (Lantern Demonstration). WALTER FRITZ WINHOLT and EDWIN OAKES JORDAN, Chicago.
Discussion to be opened by OLIN W. ROWE, Duluth, Minn.

5. Rôle of Parental Nutrition in Causation of Rickets. A. H. BYFIELD and A. L. DANIELS, Iowa City.
Discussion to be opened by WILLIAM PALMER LUCAS, San Francisco.

6. Some Observations from Nature. M. L. TURNER, Des Moines, Iowa.
Discussion to be opened by HENRY DIETRICH, Los Angeles.

Thursday, June 28—2 p. m.

JOINT MEETING OF SECTIONS ON DISEASES OF CHILDREN AND ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

SYMPOSIUM ON PREVENTIVE PEDIATRICS

Neonatal Mortality: Its Causes and Prevention

7. Syphilis and Other Maternal Infections (Lantern Demonstration). ARTHUR BAKER SPALDING, San Francisco.

8. Birth Injuries, Congenital Defects and Hemorrhagic Disease of the New-Born (Lantern Demonstration). JOHN A. FOOTE, Washington, D. C.

9. Relation of Infant Feeding to Early Infant Mortality. F. P. GENGENBACH, Denver.

Relation of Private Physician to Health Centers, Etc., in Public Health in General

10. Place of Medicine in Public Health. WALTER M. DICKIE, Sacramento, Calif.
Discussion to be opened by W. S. RANKIN, Raleigh, N. C., and HAVEN EMERSON, New York.

11. Prevention and Control of Tuberculosis as It Concerns the Medical Profession. HENRY BOSWELL, Sanatorium, Miss.
Discussion to be opened by FRANCES M. POTTENGER, Los Angeles, and CHARLES L. MINOR, Asheville, N. C.

12. Growing Importance of Preventive Medicine in General Practice. JOHN M. DODSON, Chicago.
Discussion to be opened by VICTOR C. VAUGHAN, Chicago, and OSCAR DOWLING, New Orleans.

Friday, June 29—2 p. m.

Election of Officers

SYMPOSIUM ON THE MENTAL ASPECT OF CHILD HEALTH

13. The Psychology of the Normal Child. OLGA S. BRIDGMAN, San Francisco.

14. The Neuropathic Child. ISAAC A. ABT, Chicago.

15. The Subnormal and Psychopathic Child as Exemplified in Special Clinic. LOUIS A. LURIE, Cincinnati.
Discussion of Papers 13, 14 and 15 to be opened by WILLIAM PALMER LUCAS, San Francisco.

16. Measles: Data Gathered in a Period of Forty Years. H. M. McCLANAHAN, Omaha.
17. Study of the Physical Signs of Hilum Gland Enlargement in Children. EDWARD DYER ANDERSON, Minneapolis. Discussion to be opened by H. F. HELMHOLZ, Rochester, Minn.
18. Foreign Bodies in the Bronchi (Lantern Demonstration). HENRY DIETRICH and HUGH K. BERKLEY, Los Angeles.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN WASHINGTON HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—CARY EGGLESTON, New York.
Vice Chairman—PAUL J. HANZLIK, San Francisco.
Secretary—PAUL D. WHITE, Boston.
Executive Committee—LEONARD G. ROWNTREE, Rochester, Minn.; CARL VOEGTLIN, Washington, D. C.; CARY EGGLESTON, New York.

Wednesday, June 27—2 p. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON DERMATOLOGY AND SYPHILOLOGY

SYMPOSIUM ON SYPHILIS

1. Effect of Treatment on Bone Lesions of Congenital Syphilis. J. H. MITCHELL and G. F. SUTHERLAND, Chicago.
2. The Pharmacology of Mercury. R. V. A. LEE, San Francisco.
3. The Treatment of Early Syphilis. H. G. IRVINE, Minneapolis.
4. The Treatment of Visceral Syphilis. ALBERT KEIDEL, Baltimore.
5. The Treatment of Neurosyphilis. H. C. SOLOMON, Boston.

Discussion of Papers 1, 2, 3, 4 and 5 to be opened by HARRY ALDERSON and E. D. CHIPMAN, San Francisco, and E. F. RISTINE, Seattle.

Thursday, June 28—2 p. m.

Election of Officers

6. Chairman's Address: The Absorption and Elimination of Drugs by Man. CARY EGGLESTON, New York.
7. The Treatment of Mercuric Chlorid Poisoning. H. B. WEISS, Cincinnati.
8. The Function of Occupational Therapy as a Remedial Agent in Medical Treatment. E. G. BRACKETT and JOHN D. ADAMS, Boston.
9. The Treatment of Diabetes with Insulin (Lantern Demonstration). FREDERICK M. ALLEN, Morristown, N. J.
10. The Treatment of the Precomatose Case of Diabetes. R. T. WOODYATT, Chicago.

Discussion on Papers 9 and 10 to be opened by W. D. SANSUM, Santa Barbara, Calif., and F. G. BRIGHAM, Boston.

Friday, June 29—9 a. m.

JOINT MEETING OF SECTIONS ON PRACTICE OF MEDICINE, ON PHARMACOLOGY AND THERAPEUTICS, AND ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON FOODS

11. Basic Diets in the Treatment of Nephritis. W. D. SANSUM, Santa Barbara, Calif.
12. Food Idiosyncrasies. W. W. DUKE, Kansas City, Mo.
13. The Complete Diet. A. E. TAYLOR, STANFORD UNIVERSITY, Calif.
14. A Hitherto Unknown Dietary Factor Essential for Reproduction. KATHARINE SCOTT BISHOP, Berkeley, Calif.
15. Pathologic Effects of Lack of Vitamin A and the Antineuritic Vitamin. E. V. McCOLLUM, Baltimore.

Discussion of Papers 11, 12, 13, 14 and 15 to be opened by GEORGE DOCK, Pasadena, Calif.; HERBERT EVANS, Berkeley, Calif.; THOMAS ADDIS, San Francisco, and WARREN COLEMAN, New York.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN WASHINGTON HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—ARNO BENEDICT LUCKHARDT, Chicago.
Vice Chairman—KENNETH M. LYNCH, Dallas, Texas.
Secretary—JOSIAH J. MOORE, Chicago.
Executive Committee—EDWIN R. LECOUNT, Chicago; JOHN A. KOLMER, Philadelphia; ARNO BENEDICT LUCKHARDT, Chicago.

Wednesday, June 27—9 a. m.

1. Chairman's Address. ARNO B. LUCKHARDT, Chicago.
2. Fungus Diseases of Man in the State of Nebraska (Lantern Demonstration). MICHAEL G. WOHL, Omaha.
3. Actinomycosis of the Abdominal Wall. HENRY ALBERT, Reno, Nev., and J. W. HARRISON, Guthrie Center, Nev.
4. The Distribution of Actinomycosis in the United States (Lantern Demonstration). A. H. SANFORD, Rochester, Minn.
5. A Comparative Study of the Actinomycosis-Like Granules in the Tonsils of Man, Hog and Cow (Lantern Demonstration). DAVID J. DAVIS, Chicago.
6. The Occurrence of Blastocystis in Intestinal Inflammation (Lantern Demonstration). KENNETH M. LYNCH, Dallas, Texas.
7. The Kolmer Technic in the Wassermann Test. F. W. HARTMAN, Detroit.
8. The Euscope as an Aid to Microscopy. WILLIAM G. EXTON, New York.

Thursday, June 28—9 a. m.

Election of Officers

9. Studies on Aneurysm of the Aorta (Lantern Demonstration). BALDWIN LUCKE and M. H. REA, Philadelphia.
10. Periarteritis Acuta Nodosa (Lantern Demonstration). WILLIAM OPHULS, San Francisco.
11. Agglutination Studies After Triple Typhoid Vaccination. WALTER V. BREM, Los Angeles.
12. Endothelioma of the Pleura—the Pathologic Significance of the Term (Lantern Demonstration). H. E. ROBERTSON, Rochester, Minn.
13. Studies on the Etiology of Cancer (Lantern Demonstration). MONTROSE T. BURROWS, St. Louis.
14. The Cytologic Diagnosis of Neoplasms (Lantern Demonstration). WILLIAM CARPENTER MACCARTY, Rochester, Minn.
15. The Effect of Passive Congestion of the Liver in Tubercle Formation (Lantern Demonstration). WILLIAM F. PETERSEN and S. A. LEVINSON, Chicago.
16. Some Chemical Blood Changes in Chronic Alcoholism. F. R. NUZUM and G. D. MAUER, Santa Barbara, Calif.

Friday, June 29—9 a. m.

JOINT MEETING OF SECTIONS ON PRACTICE OF MEDICINE, ON PHARMACOLOGY AND THERAPEUTICS, AND ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON FOODS

17. Basic Diets in the Treatment of Nephritis. W. D. SANSUM, Santa Barbara, Calif.
18. Food Idiosyncrasies. W. W. DUKE, Kansas City, Mo.
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20. A Hitherto Unknown Dietary Factor Essential for Reproduction. KATHARINE SCOTT BISHOP, Berkeley, Calif.
21. Pathologic Effects of Lack of Vitamin A and the Antineuritic Vitamin. E. V. McCOLLUM, Baltimore.

Discussion of Papers 17, 18, 19, 20 and 21 to be opened by GEORGE DOCK, Pasadena, Calif.; HERBERT EVANS, Berkeley, Calif.; THOMAS ADDIS, San Francisco, and WARREN COLEMAN, New York.

SECTION ON STOMATOLOGY

MEETS IN MC KINLEY HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—ROBERT H. IVY, Philadelphia.
Vice Chairman—STEWART D. RUGGLES, Portsmouth, Ohio.
Secretary—G. V. I. BROWN, Milwaukee.
Executive Committee—HENRY S. DUNNING, New York; HERBERT A. POTTS, Chicago; ROBERT H. IVY, Philadelphia.

Wednesday, June 27—9 a. m.

1. Tuberculous Lesions of the Oral Cavity (Lantern Demonstration).
ROBERT H. IVY and JOSEPH L. APPLETON, Philadelphia.
2. Osteitis Fibrosa (Von Recklinghausen's Disease).
HERBERT A. POTTS, Chicago.
3. Results Following Removal of Dental Infection in Chronic Gastro-Intestinal Disorders (Lantern Demonstration).
G. REESE SATTERLEE, New York.
4. A Consideration of Impacted Teeth.
E. F. THOLEN, Los Angeles.
5. Adjustment of the Nostril in Congenital Lip Cleft.
VILRAY P. BLAIR, St. Louis.

Thursday, June 28—9 a. m.

6. Changes in Tooth Structures Resulting from Deficient Diet. JOHN ALBERT MARSHALL, San Francisco.
7. Vitamin Content of the Diet at San Quentin Prison and the Effect of Such Diet on the Health of the Men Over a Period of Ffteen Years.
L. L. STANLEY, San Quentin, Calif.
8. Observations of the Oral Manifestations Associated with General Systemic Disturbances.
J. S. EVANS, Madison, Wis.
9. The Contribution of Oral Lesions to the Cause of Cancer (Lantern Demonstration).
JOSEPH A. PETTIT, Portland, Ore.
10. The Treatment of Cancer with Particular Reference to the Region of the Maxillary Sinus.
ALBERT J. OCHSNER, Chicago.

Friday, June 29—9 a. m.

Election of Officers

11. The Teeth of the Cyclostomata (Lampreys) and the Teeth and Spines of the Elasmobranchii (Dog-fish, True Sharks and Rays) (Lantern Demonstration).
EUGENE S. TALBOT, Chicago.
12. Combating Infectious Diseases Arising in the Oral Cavity and Their Sequelae, with Special Reference to the Dental Problem. GUY S. MILLBERRY, San Francisco.
13. Oral Prophylaxis and Preventive Dentistry: What the Physician Can Do to Help.
PERCY B. WRIGHT, Pasadena, Calif.
14. Further Studies of the Histopathology of Pyorrhea.
F. V. SIMONTON, San Francisco.
15. Organisms Associated with Pyorrhetic Conditions.
IVAN C. HALL, San Francisco.
16. The Effect of Instrumental Treatment of Pyorrhea on the Quantity of Micro-Organisms in the Mouth.
MR. BATCHELDER, San Francisco.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN VETERAN FIREMEN'S HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—WALTER TIMME, New York.
Vice Chairman—MALCOLM A. BLISS, St. Louis.
Secretary—JAMES B. AYER, Boston.
Executive Committee—ARTHUR S. HAMILTON, Minneapolis; PETER BASSOE, Chicago; WALTER TIMME, New York.

Wednesday, June 27—2 p. m.

1. Chairman's Address. WALTER TIMME, New York.
2. Modern Conceptions of the Origin and Seat of the Epileptic Phenomena. CECIL E. REYNOLDS, Los Angeles.
3. Leptomeningitis and Temporary Dissociation of Personality: Report of Case.
JOSEPHINE A. JACKSON, Pasadena, Calif.
4. Rôle of Trauma in the Etiology of Organic and Functional Nervous Diseases.
S. A. KINNIER WILSON, London, England.
5. Demonstration Psychiatric Clinics for Juvenile Courts and Public Schools Conducted by the National Committee for Mental Hygiene.
V. V. ANDERSON, New York.
6. Constitutional Psychopathic Individuals, and Some of the Problems They Present.
THOMAS J. ORBISON, Los Angeles.
7. Endocrine Aspect of Certain Neuropsychiatric Cases.
CHARLES E. NIXON and HANS LISSER, San Francisco.
8. Rôle of Physical Therapy in Nervous and Mental Diseases. J. MADISON TAYLOR, Philadelphia.

Thursday, June 28—2 p. m.

9. Puncture of the Cisterna Magna: Discussion of Its Value After Three Years of Clinical Use (Lantern Demonstration). JAMES B. AYER, Boston.
10. Value of Labyrinthine Tests in Cerebellar Diagnosis.
LAWRENCE SELLING, Portland, Ore.
11. Abnormalities of Visual Fields Associated with Organic Brain Lesions (Lantern Demonstration).
SAMUEL D. INGHAM and T. C. LYSTER, Los Angeles.
12. Facial Paralysis Associated with Recurring Edema of the Face (Lantern Demonstration).
WALTER D. SHELDEN, Rochester, Minn.
13. Concerning Certain Peculiarities in the Development of Neurosyphilitic Types of Congenital Syphilis.
EDWIN G. ZABRISKIE, New York.
14. Epidemic (Lethargic) Encephalitis: Studies of the Recent New York Epidemic.
EDWARD LIVINGSTON HUNT, New York.
15. Treatment of Encephalitis. ROSS MOORE, Los Angeles.
16. The Causation of Spasticity.
I. LEON MEYERS, Los Angeles.
17. Arachnoiditis Simulating Brain Tumor, Its Surgical Treatment and End-Results.
GILBERT HORRAX, Boston.

Friday, June 29—2 p. m.

Election of Officers

18. A Clinical Entity Usually Included in the Trigeminal Neuralgias. BYRON STOOKEY, New York.
19. Anatomic Considerations in Ventriculography.
HOWARD C. NAFFZIGER, San Francisco.

JOINT MEETING OF SECTIONS ON SURGERY, GENERAL AND ABDOMINAL, AND ON NERVOUS AND MENTAL DISEASES

SYMPOSIUM ON NEUROSURGERY

20. Fractures of the Skull. ERNEST SACHS, St. Louis.
21. Brain Abscess: Clinical and Operative Data (Lantern Demonstration). CHARLES BAGLEY, JR., Baltimore.
22. Recent Advances in the Diagnosis of Compression of the Spinal Cord (Lantern Demonstration).
WILLIAM J. MIXTER, Boston.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

MEETS IN LINCOLN HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—MARCUS HAASE, Memphis, Tenn.
Vice Chairman—FRANKLIN W. CREGOR, Indianapolis.
Secretary—HAROLD N. COLE, Cleveland.
Executive Committee—WALTER J. HIGHMAN, New York; ERNEST DWIGHT CHIPMAN, San Francisco; MARCUS HAASE, Memphis, Tenn.

Wednesday, June 27—2 p. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON DERMATOLOGY AND SYPHILOLOGY

1. Chairman's Address. MARCUS HAASE, Memphis, Tenn.

SYMPOSIUM ON SYPHILIS

2. Effect of Treatment on Bone Lesions of Congenital Syphilis (Lantern Demonstration).
JAMES HERBET MITCHELL and G. F. SUTHERLAND, Chicago.

3. Pharmacology of Mercury.
R. V. A. LEE, San Francisco.
4. Treatment of Early Syphilis.
H. G. IRVINE, Minneapolis.
5. Treatment of Visceral Syphilis (Lantern Demonstration).
ALBERT KEIDEL, Baltimore.
6. Treatment of Neurosyphilis. H. C. SOLOMON, Boston.
Discussion of Papers 2, 3, 4, 5 and 6 to be opened by HARRY E. ALDERSON and E. D. CHIPMAN, San Francisco, and E. F. RISTINE, Seattle.

Thursday, June 28—2 p. m.

7. Xanthoma Tuberosum (Lantern Demonstration).
FRED D. WEIDMAN and WALTER J. FREEMAN, Philadelphia.
8. Precision in Dermatologic Roentgenotherapy: The Value of Recent Refinements in Apparatus (Lantern Demonstration). LYLE B. KINGERY, Portland, Ore.
9. Roentgen Ray Versus Vaccines in the Treatment of Acne. HOWARD FOX, New York.
10. Chromogenic Indicators in Dermatology (Lantern Demonstration).
HERMAN SHARLIT and WALTER J. HIGHMAN, New York.
11. Erythema Dose of Radium: An Experimental Study (Lantern Demonstration).
W. H. GUY and F. M. JACOB, Pittsburgh.
Discussion of Papers 8, 9, 10 and 11 to be opened by WILLIAM ALLEN PUSEY, Chicago, and I. C. SUTTON, Anaheim, Calif.
12. Hyperglycemia as an Etiologic Factor in Certain Dermatoses (Lantern Demonstration).
I. L. MCGLASSON, San Antonio, Texas.
Discussion to be opened by DOUGLAS W. MONTGOMERY, San Francisco, and W. E. NESBIT, San Antonio, Texas.

Friday, June 29—2 p. m.

Election of Officers

13. Surgical and Roentgen-Ray Results in Facial Deformities: Particularly the Effect of Roentgen Ray in Operative Scars in Rhinophyma (Lantern Demonstration). JAMES F. GRATTAN, New York.
14. Match Dermatitis (Lantern Demonstration).
O. H. FOERSTER, Milwaukee.
15. Roentgen-Ray Therapy Twenty Years Ago (Lantern Demonstration). WILLIAM ALLEN PUSEY, Chicago.
16. Treatment of Leprosy with Chaulmoogra Oil and Its Derivatives. V. PARDO-CASTELLO, Havana, Cuba.
Discussion to be opened by H. M. H. MACLEOD, London, England, and HOWARD MORROW, San Francisco.
17. Dermatoscopy: A Study of Blood Vessel Form and Arrangement in Various Dermatoses (Lantern Demonstration).
JEFFREY C. MICHAEL, Houston, Texas.
18. Chronic Actinic Cheilitis.
SAMUEL AYRES, JR., Los Angeles.
Discussion to be opened by KENDALL P. FROST, Los Angeles.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

MEETS IN CONVENTION HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—JOHN A. FERRELL, New York.
Vice Chairman—JOHN SUNDWALL, Ann Arbor, Mich.
Secretary—W. S. LEATHERS, University, Miss.
Executive Committee—JOHN D. MCLEAN, Philadelphia; S. W. WELCH, Montgomery, Ala.; JOHN A. FERRELL, New York.

Wednesday, June 27—2 p. m.

1. Chairman's Address: The Trend of Preventive Medicine in the United States. JOHN A. FERRELL, New York.
2. Reciprocal Responsibility of the Health Officer and Other Public Officials. OSCAR DOWLING, New Orleans.
Discussion to be opened by C. W. GARRISON, Little Rock, Ark.; I. D. RAWLINGS, Springfield, Ill., and S. W. WELCH, Montgomery, Ala.
3. Blue Sky Health Propaganda.
FREDERICK D. STRICKER, Portland, Ore.
Discussion to be opened by A. T. MCCORMACK, Louisville, Ky., and JOHN DILL ROBERTSON, Chicago.
4. Typhus Fever in Southern California.
L. M. POWERS, Los Angeles.
Discussion to be opened by WALTER M. DICKIE, Sacramento, Calif.; WILLARD J. STONE, Pasadena, Calif., and WILLIAM M. KERR, Washington, D. C.
5. Preventive Medicine Problems Peculiar to Pacific Coast.
PAUL A. TURNER, Seattle.
Discussion to be opened by JOHN M. DODSON, Chicago, and A. T. MCCORMACK, Louisville, Ky.
6. Problems in the Control of Diphtheria.
JAMES A. HAYNE, Columbia, S. C.
Discussion to be opened by F. M. MEADER, Detroit, and S. W. WELCH, Montgomery, Ala.
7. The Administrative Value of the Virulence Test for Diphtheria Bacilli, with a Report on the Use of Field Cultures. FRANK L. KELLY, Berkeley, Calif.
Discussion to be opened by JOHN N. FORCE, Berkeley, Calif., and N. E. WAYSON, San Francisco.
8. Constructive Health Activities in Public Schools.
JOHN SUNDWALL, Ann Arbor, Mich.
Discussion to be opened by ADELAIDE BROWN, San Francisco, and JAMES A. HAYNE, Columbia, S. C.

Thursday, June 28—2 p. m.

JOINT MEETING OF SECTIONS ON DISEASES OF CHILDREN AND ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

SYMPOSIUM ON PREVENTIVE PEDIATRICS

Neonatal Mortality: Its Causes and Prevention

9. Syphilis and Other Maternal Infections (Lantern Demonstration). ARTHUR BAKER SPALDING, San Francisco.
10. Birth Injuries, Congenital Defects and Hemorrhagic Disease of the New-Born (Lantern Demonstration).
JOHN A. FOOTE, Washington, D. C.
11. Relation of Infant Feeding to Early Infant Mortality.
F. P. GENGENBACH, Denver.

Relation of Private Physician to Health Centers, Etc., in Public Health in General

12. Place of Medicine in Public Health.
WALTER M. DICKIE, Sacramento, Calif.
Discussion to be opened by W. S. RANKIN, Raleigh, N. C., and HAVEN EMERSON, New York.
13. Prevention and Control of Tuberculosis as It Concerns the Medical Profession.
HENRY BOSWELL, Sanatorium, Miss.
Discussion to be opened by FRANCES M. POTTENGER, Los Angeles, and CHARLES L. MINOR, Asheville, N. C.
14. Growing Importance of Preventive Medicine in General Practice. JOHN M. DODSON, Chicago.
Discussion to be opened by VICTOR C. VAUGHAN, Chicago, and OSCAR DOWLING, New Orleans.

Friday, June 29—2 p. m.

Election of Officers

15. Disappearance of Hookworm Disease from the South.
WILSON G. SMILLIE, New York.
Discussion to be opened by SEALE HARRIS, Birmingham, Ala., and W. S. RANKIN, Raleigh, N. C.
16. Fundamentals of Rural Health Service.
W. F. DRAPER, Washington, D. C.
Discussion to be opened by WILSON G. SMILLIE and VICTOR HEISER, New York.
17. Use Antiserums. FREDERICK P. GAY, Washington, D. C.
Discussion to be opened by FRANK BILLINGS, Chicago, and WALTER V. BREM, Los Angeles.
18. Menace of the Unvaccinted. VICTOR HEISER, New York.
Discussion to be opened by HUGH S. CUMMING, Washington, D. C., and WILLIAM H. SHARPLEY, Denver.
19. Smallpox and Vaccination. J. P. LEAKE, Washington, D. C., and JOHN N. FORCE, Berkeley, Calif.
Discussion to be opened by E. H. BULLOCK, Kansas City, Mo.
20. Fatigue as a Factor in the Cause and Treatment of Tuberculous Disease. H. A. PATTISON, New York.
Discussion to be opened by J. W. PETTIT, Ottawa, Ill., and ROBERT A. PEERS, Colfax, Calif.

21. Miners' Silicosis, an Occupational Hazard: Its Etiology and Prevention. ROBERT T. LEGGE, Berkeley, Calif.
Discussion to be opened by CLIVE E. KINDALL, Oakland, Calif.

SECTION ON UROLOGY

MEETS IN LINCOLN HALL, AUDITORIUM

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Chairman—HENRY G. BUGBEE, New York.
Vice Chairman—CYRUS E. BURFORD, St. Louis.
Secretary—HERMAN L. KRETSCHMER, Chicago.
Executive Committee—RICHARD F. O'NEIL, Boston; JAM \. GARDNER, Buffalo; HENRY G. BUGBEE, New York.

Wednesday, June 27—9 a. m.

1. Fascias of the Urogenital Triangle (Lantern Demonstration). MILEY B. WESSON, San Francisco.
Discussion to be opened by ARTHUR B. CECIL, Los Angeles.
2. Surgical Trigon: Its Pathology, a New Method of Diagnosis and Its Operative Management (Lantern Demonstration). ERNEST M. WATSON, Buffalo.
Discussion to be opened by FRANK HINMAN, San Francisco.
3. New Procedure for Performing Litholapaxy (Lantern Demonstration).
ALBERT E. GOLDSTEIN, Baltimore, and J. F. LUTZ, Glenn Rock, Pa.
Discussion to be opened by EDWARD L. KEYES, JR., Forest Hill, N. Y., and WILLIAM F. BRAASCH, Rochester, Minn.
4. Study of Chemical Solvents Used in Dissolving Foreign Substances in Urinary Bladder, Such as Paraffin, Beeswax, Gum and Urethral Pencils.
HAROLD L. MORRIS and CLARENCE I. OWEN, Detroit.
Discussion to be opened by ALBERT E. GOLDSTEIN, Baltimore.
5. Stone-Evacuating Cystoscope.
RAYMOND L. SCHULZ, Los Angeles.
Discussion to be opened by O. S. LOWSLEY, New York.
6. Chyluria: Report of One Case with Cystoscopic Findings.
JOSEPH WELFELD, Chicago.
Discussion to be opened by B. A. THOMAS, Philadelphia.

Thursday, June 28—9 a. m.

7. Chairman's Address: The Present Scope of Urology.
HENRY G. BUGBEE, New York.
8. Examination and Treatment of Cases of Seminal Vesiculitis (Lantern Demonstration).
W. R. DELZELL and O. S. LOWSLEY, New York.
Discussion to be opened by FRANK HINMAN, San Francisco.
9. Seminal Vesicles in Arthritis, with a Discussion of the Symptomatology and the Surgical and Nonsurgical Treatment (Lantern Demonstration).
DANIEL E. SHEA, Hartford, Conn.
Discussion to be opened by GEORGE F. FARMAN, Los Angeles.
10. Factors in the reduction of Morbidity and Mortality in Prostatectomy (Lantern Demonstration).
B. A. THOMAS, Philadelphia.
Discussion to be opened by HERMAN L. KRETSCHMER, Chicago.
11. Prostatectomy, Perineal and Suprapubic (Lantern Demonstration). ROBERT V. DAY, Los Angeles.
Discussion to be opened by HOMER G. HAMER, Indianapolis.
12. Perineal Prostatectomy by a Modified Technic (Lantern Demonstration). JAMES R. DILLON, San Francisco.
Discussion to be opened by WILLIAM C. QUINBY, Boston.

Friday, June 29—9 a. m.

Election of Officers

13. Unusual Clinical Data with Renal Tuberculosis (Lantern Demonstration).
WILLIAM F. BRAASCH and A. J. SCHOLL, JR., Rochester, Minn.
Discussion to be opened by ANDERS PETERSON, Los Angeles.
14. Repair in Hydronephrosis, with Reference Particularly to the Late Changes of Repair Following Obstructions of Short Duration (Lantern Demonstration).
FRANK HINMAN and O. W. BUTLER, San Francisco.
Discussion to be opened by WILLIAM E. LOWER, Cleveland.
15. Urology in Women (Lantern Demonstration).
WILLIAM E. STEVENS, San Francisco.
Discussion to be opened by WILLIAM F. BRAASCH, Rochester, Minn., and HERMAN L. KRETSCHMER, Chicago.
16. Changes in Ureter Found by Routine Pyelograms and Ureterograms (Lantern Demonstration).
ALEXANDER H. PEACOCK, Seattle.
Discussion to be opened by JAMES GARDNER, Buffalo.
17. Necessity of the Simultaneous Use of Cystoscope and Roentgen-Ray (Lantern Demonstration).
JOHN W. MARCHILDON and EMIL E. HEIN, St. Louis.
Discussion to be opened by WILLIAM E. STEVENS, San Francisco, and HERMAN L. KRETSCHMER, Chicago.
18. New Method of Performing Complete Urethrectomy in Extensive Strictures of the Bulbar Urethra (Lantern Demonstration).
GRANVILLE MACGOWAN, Los Angeles.
Discussion to be opened by HENRY G. BUGBEE, New York.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN VETERAN FIREMEN'S HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—WILLIS C. CAMPBELL, Memphis, Tenn.
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Executive Committee—MELVIN S. HENDERSON, Rochester, Minn.; H. WINNETT ORR, Lincoln, Neb.; WILLIS C. CAMPBELL, Memphis, Tenn.

Wednesday, June 27—9 a. m.

1. Further Studies on the Survival of Bone After Removal from the Body (Lantern Demonstration).
S. L. HAAS, San Francisco.
Discussion to be opened by L. W. ELY, San Francisco.
2. An Operative Method for Correction of Certain Forms of Flat-Foot.
CHARLES LEROY LOWMAN, Los Angeles.
Discussion to be opened by J. W. Cokenower, Des Moines, Iowa, and A. L. FISHER, San Francisco.
3. The Value of Osteotomy of the Os Calcis and Inward Displacement of the Posterior Fragment (Gleich Operation) in Operations for Extreme Flat-Foot (Lantern Demonstration).
JOHN PRENTIS LORD, Omaha.
Discussion to be opened by JOHN RIDLON, Chicago, and J. T. WATKINS, San Francisco.
4. Notes on Foreign Orthopedic Clinics.
F. J. GAENSLEN, Milwaukee.
Discussion to be opened by W. G. STERN, Cleveland.
5. Metaphyseal Tuberculosis of the Hip Joint Region (Lantern Demonstration). ARTHUR STEINDLER, Iowa City.
Discussion to be opened by H. B. THOMAS, Chicago, and S. FOSDICK JONES, Denver.
6. Treatment of the Pathologically Flexed Knee.
CHARLES A. PARKER, Chicago.
Discussion to be opened by H. WINNETT ORR, Lincoln, Neb., and M. S. HENDERSON, Rochester, Minn.
7. Synovectomy in Chronic Arthritis of the Knee Joint (Lantern Demonstration). ELLIS JONES, Los Angeles.
Discussion to be opened by S. C. BALDWIN, Salt Lake City; FRED H. ALBEE, New York, and WALTER I. BALDWIN, San Francisco.

Thursday, June 28—9 a. m.

8. Arthrogryposis Multiplex Congenita.
WALTER G. STERN, Cleveland.
Discussion to be opened by WILLIS C. CAMPBELL, Memphis, Tenn., and G. J. MCCHESNEY, San Francisco.

9. Fusion for Scoliosis (Lantern Demonstration).
H. B. THOMAS, Chicago.
Discussion to be opened by FRED H. ALBEE, New York, and F. J. GAENSLEN, Milwaukee.

10. Nonunion of Fractures.
MELVIN S. HENDERSON, Rochester, Minn.
Discussion to be opened by DEAN LEWIS, Chicago, and WALTER B. COFFEY, San Francisco.

11. Chairman's Address: Fracture of the Neck of the Femur (Lantern Demonstration).
WILLIS C. CAMPBELL, Memphis, Tenn.

12. Fractures of the Lower End of the Humerus in Children (Lantern Demonstration).
C. F. EIKENBARY, Spokane, Wash.
Discussion to be opened by ARTHUR STEINDLER, Iowa City, and A. L. DRAPER, San Francisco.

13. Compression Fracture of the Spine, Developing Delayed Symptoms (Posttraumatic Spondylitis or Kuemmell's Disease) (Lantern Demonstration).
S. FOSDICK JONES, Denver.
Discussion to be opened by HAROLD BRUNN, San Francisco, and ALFRED E. GALLANT, Los Angeles.

14. The Second Great Type of Chronic Arthritis: Fourth Study (Lantern Demonstration).
LEONARD W. ELY, San Francisco.
Discussion to be opened by A. W. HEWLETT, San Francisco, and JOHN V. BARROW, Los Angeles.

15. Rehabilitation Surgery (Moving Picture and Lantern Demonstration). FRED H. ALBEE, New York.
Discussion to be opened by ALANSON WEEKS, San Francisco, and CHARLES LEROY LOWMAN, Los Angeles.

Friday, June 29—9 a. m.

Election of Officers

16. My Final Results in the Treatment of Congenital Dislocation of the Hip. JOHN RIDLON, Chicago.
Discussion to be opened by W. G. STERN, Cleveland, and C. A. PARKER, Chicago.

17. Certain Improvements in Technic in Operating on and the After-Care of Chronic Infections of the Bone (Lantern Demonstration).
H. WINNETT ORR, Lincoln, Neb.
Discussion to be opened by J. C. BLOODGOOD, Baltimore, and G. M. Barrett, San Francisco.

18. A Preliminary Report on the Treatment of Osteomyelitis. JOHN DUNLOP, Los Angeles.
Discussion to be opened by PHILIP K. GILMAN and S. NICHOLS JACOBS, San Francisco.

19. Osteomyelitis Variolosa (Chiari) (Lantern Demonstration). W. L. BROWN, El Paso, Texas.
Discussion to be opened by W. E. MUSGRAVE, San Francisco, and F. B. SHELDON, Fresno, Calif.

20. The Mechanism of Low Back Pain, with Special Reference to the Sacro-Illiac Joints (Lantern Demonstration). ALFRED E. GALLANT, Los Angeles.
Discussion to be opened by C. R. MCCLURE, Portland, Ore., and GEORGE MARTYN, Los Angeles.

21. Obstruction to the Lymph Channels by Scar (Lantern Demonstration). LEO ELOESSER, San Francisco.
Discussion to be opened by W. G. STERN, Cleveland; LEROY P. KUHN, Chicago, and EMMET RIXFORD, San Francisco.

22. The Value of Selective Voluntary Exercise in Restoring Certain Diseased or Traumatic Joints.
H. W. CHAPPEL, Los Angeles.
Discussion to be opened by A. L. FISHER, San Francisco, and HENRY W. WILCOX, Denver.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN CONVENTION HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—J. RAWSON PENNINGTON, Chicago.
Vice Chairman—FRANKLIN W. WHITE, Boston.
Secretary—SIDNEY K. SIMON, New Orleans.
Executive Committee—LOUIS J. HIRSCHMAN, Detroit; H. W. SOPER, St. Louis; J. RAWSON PENNINGTON, Chicago.

Wednesday, June 27—9 a. m.

1. Chairman's Address: Historical Sketch of the Development of Gastro-Enterology and Proctology in the United States. J. RAWSON PENNINGTON, Chicago.

2. On the More Practical Functional Tests of the Liver.
MAX EINHORN, New York.
Discussion to be opened by A. W. HEWLETT and W. F. CHENEY, San Francisco.

3. Present Day Problems in Regard to the Gallbladder.
WALTER C. ALVAREZ, San Francisco; KARL F. MEYER, Berkeley, and FLETCHER B. TAYLOR, San Francisco.
Discussion to be opened by JOSEPH SAILER, Philadelphia, and ROLAND CUMMINGS, Los Angeles.

4. Pancreatitis as Related to Gastro-Intestinal and Gallbladder Infections: With Special Reference to Diet in the Prevention and Treatment of Diabetes.
SEALE HARRIS, Birmingham, Ala.
Discussion to be opened by F. M. ALLEN, Morristown, N. J., and E. P. JOSLIN, Boston.

5. The Hysterical Rectum and Anus.
W. M. BEACH, Pittsburgh.
Discussion to be opened by ALFRED J. ZOBEL, San Francisco, and JEROME M. LYNCH, New York.

Thursday, June 28—9 a. m.

6. Benign Strictures of the Rectum.
L. A. BUIE, Rochester, Minn.
Discussion to be opened by LOUIS J. HIRSCHMAN, Detroit, and JOHN L. JELKS, Memphis, Tenn.

7. Carcinoma of the Rectum: Diagnosis and Surgical Prognosis. F. C. YEOMANS, New York.
Discussion to be opened by ALOIS B. GRAHAM, Indianapolis, and COLLIER F. MARTIN, Philadelphia.

8. Forced Milk Feeding in Adult Undernutrition.
E. C. FISHBAUGH, Los Angeles.
Discussion to be opened by THOMAS R. BROWN, Baltimore, and WILLARD J. STONE, Pasadena, Calif.

9. The Three Meal a Day Regimen: Comparative Caloric Values. C. D. SPIVAK, Denver.
Discussion to be opened by W. W. BOARDMAN, San Francisco, and H. G. WALCOTT, Dallas, Texas.

10. Phytobezoars: A Study of Seven Cases (Lantern Demonstration). W. E. HART, Decatur, Ill.
Discussion to be opened by RUDOLPH MATAS, New Orleans, and F. A. KINSLOW, San Francisco.

11. Results of a Roentgenologic Study of the Position of the Stomach, Liver and Colon in Six Hundred Healthy Adults.
R. O. MOODY and R. G. VAN NUYS, Berkeley, Calif., and W. E. CHAMBERLAIN, San Francisco.
Discussion to be opened by R. D. CARMAN, Rochester, Minn., and J. M. BLACKFORD, Seattle.

Friday, June 29—9 a. m.

Election of Officers

12. The Fundamental Principles of Gastric Analysis.
M. E. REHFUSS, Philadelphia.
Discussion to be opened by FREDERICK EPPLEN, Spokane, Wash., and E. J. BEST, San Francisco.

13. Amebic Infections in the State of Washington.
G. A. DOWLING, Seattle.
Discussion to be opened by GEORGE DOCK, Pasadena, Calif., and NOBLE W. JONES, Portland, Ore.

14. Acute Total Volvulus of the Stomach (Lantern Demonstration). MAX THOREK, Chicago.
Discussion to be opened by JAMES T. PILCHER, Brooklyn.

15. The Intimate Relation Between Rectal Affections and Diseases of the Upper Digestive Tract.
G. S. HANES, Louisville, Ky.
Discussion to be opened by LOUIS G. VISSCHER, Los Angeles, and MAURICE LESCALE, New Orleans.

16. The Relation of Pruritus of the Anus to Chronic Diseases of the Abdominal and Pelvic Viscera (Lantern Demonstration). J. F. MONTAGUE, New York.
Discussion to be opened by JOHN W. VISHER, Twin Falls, Idaho, and W. M. BEACH, Pittsburgh.



THE COMMERCIAL EXHIBITS

AT THE

SAN FRANCISCO SESSION



A FORUM OF PRESENT DAY ACHIEVEMENTS

Those who attended the last San Francisco Session in 1915 will remember the Exposition Auditorium, its ideal location and adaptability for housing the activities of the Convention. This Auditorium was erected as a permanent memorial to the Panama Pacific International Exposition. It covers one entire square in San Francisco's civic center and is undoubtedly the largest and most convenient building ever obtained by the American Medical Association for its Annual Session. It will house, in its various meeting rooms, the scientific assemblies, the scientific and commercial exhibits, Registration Bureau, post office, etc. Consequently, the conventionist can very conveniently attend the section meetings and spend the time at the exhibits which is required to appreciate thoroughly their educational and practical value.

While it is true that commercial houses exhibit at the Convention now as in the past, essentially to promote the sales of their various wares, their salesmanship is of a different quality than that found in dealing with other consumers. It is grounded primarily on service and helpfulness to the medical profession. The salesmen are not mere trades people, but in most cases trained, scientific experts, inventors, research students, many of whom have devoted a lifetime of intelligent effort and study in improving the apparatus, pharmaceutical products and technical equipment used in your daily practice.

You will find that these exhibits have become refined to a point where they are no longer an agglomeration of just books or apparatus to sell. They now feature the newer developments which you are seeking. It will be your opportunity to examine improved equipment that you have probably heard about or read about in advertisements, but never actually saw demonstrated.

You can spend several hours with the book people, examining the newest medical works and new editions of old works brought out in the past year.

Much profitable time can also be spent visiting the various instrument, apparatus and equipment exhibits, meeting the trained experts who can demonstrate and tell the visitor more in five minutes than could probably be obtained from other sources in hours and days of time.

Get acquainted with the pharmaceutical houses who are supplying you and the rest of the profession. This offers an opportunity to bring up problems that you have had stored up, unsolved, for some time. The pharmaceutic and biologic products on exhibit will be limited to those that stand accepted by the Council on Pharmacy and Chemistry. There will be many new products for your inspection. Note the genuine effort on the part of these houses in conforming to the high standard set for them by scientific medicine. The old days are gone when the popularity of the pharmaceutical exhibit depended on how many samples they could pass out. Today these exhibits get a real "looking over." The attraction to the visitor is not so much size and pomp, but the more practical interest in what has been achieved in making finer, better, more efficient medicaments, conforming with the rapidly advancing requirements of the scientific man.

With an eye to further achievements, you will want to find out everything the manufacturers of X-ray equipment have done in your interests. It will stimulate you to witness the developments in this line of manufacture—to have these technicians and engineers explain and demonstrate the finer points and modern accomplishments in the therapeutic and diagnostic application of roentgen rays.

When you are in the exhibit hall you should not at any time feel that you are in a salesroom. It is rather a "material clinic," where you have come to observe and learn. You will be free to examine, ask questions and seek demonstrations without that uncomfortable feeling that you are expected to buy.

Here is a list of most of the firms that will exhibit, as well as the brief descriptions of most of their proposed showings.

Owing to the magnitude of the exhibits as a whole, it would be impractical to try to see all of them in one trip through the hall. There will be ample time before, after and between Sessions to make your inspection of these exhibits leisurely and thoroughly. The Auditorium will be open from 8 a. m. to 6 p. m.

Rene Bine, M.D.,
Local Chairman of Exhibits.

Will C. Braun,
Director of Exhibits.

ANESTHESIA APPARATUS

Manufacturers of apparatus for the administration of anesthetics will contribute their newest developments and improvements for the inspection of visiting physicians. This is becoming more and more an important subject with the surgeon and the hospital. Any advances made that lessen the dangers of anesthesia are gladly welcomed.

The Gwathme Apparatus, latest models and other up-to-date anesthesia devices will be shown by the Foregger Company of New York, Booth 110.

The Safety Anesthesia Apparatus Concern of Chicago, in south half of Space 72, will show their latest models of Safety Gas-Oxygen Apparatus, both hospital and portable type. Their expert anesthetist, who will be in charge, has not only had experience in nitrous oxide-oxygen anesthesia, but can also tell you *about Ethylene*, the new gas anesthesia.

The Toledo Technical Appliance Company of Toledo, Ohio, at Booth 47, will show the well known McKesson Anesthetic Appliances with some interesting new inhalers; the McKesson Metabolor for the estimation of the basal metabolism, minute volume and vital capacity, and also the new McKesson Surgical Pump.

APPARATUS AND FURNITURE FOR THE OFFICE AND HOSPITAL

It is sometimes difficult for the average physician to appreciate the importance of the constant research that is being made by manufacturers of apparatus and equipment. While their efforts are associated with commercial enterprise, their accomplishments are of distinct benefit to the practitioner whose time is saved and work facilitated every time a really worthwhile development is placed on the market. Show these exhibitors that you appreciate their efforts by calling at their booths. Your

presence and interest will encourage them to more and greater effort in your behalf.

The Albatross Metal Furniture Company of Portland, Ore., will be represented during the Convention at Space 64. An exhibit of their newest creations in Instrument Cabinets and Office Equipment will be presented, featuring the Albatross Straight Line Design. A special display of grained finishes, mahogany and walnut, will prove of interest.

The W. D. Allison Company of Indianapolis will exhibit in Booth 68. As in the years past, they will have an exhibit of the "Allison Line" high grade office equipment. In addition to wood furniture, this company will have on exhibit a Specialist Chair made of steel and iron, finely finished and upholstered.

Stop a minute at Space 37 for a demonstration of the Baumanometer. See how quickly and easily it gives the systolic and diastolic blood pressure. Get a free copy of "Instructions for Taking Blood Pressure," prepared by the American Institute of Medicine.

E. Leitz, Inc., of New York, in Booths 98 and 99, will feature several new apparatus, among them: a Binocular Loupe for ear, nose and throat examination, and a Blood Pressure Recorder, which by graphic methods, records by curve the blood pressure and permits an automatic control. A few other important apparatus will be shown, such as the new model Mackenzie Ink Polygraph, "Dressler" Modification, Combination Microscope and the Stereo Binocular Magnifier for dissecting purposes.

Reid Bros., Inc., of San Francisco, Spaces 11, 12 and 25, will have an extensive showing of white Aseptic Steel Office and Hospital Furniture. Their new modern factory is located thirty-five miles from San Francisco and for that reason they anticipate making their exhibit an extra fine one. They extend a cordial invitation to those attending the convention to visit their factory and offices.

BASAL METABOLISM APPARATUS

The showing of metabolism apparatus will be in keeping with the great importance that the medical profession now accords the determination of the basal metabolism rate. There has been a great deal of scientific work coupled with real mechanical and engineering ability in developing this type of equipment. The exhibit at this convention typifies the best results so far obtained in the manufacture of this apparatus.

Middlewest Laboratories Company of Chicago, in Space 3, will feature the Metabolimeter and accessories for making basal metabolic rate determinations. Demonstrations will be made on normal subjects, and the complete test followed through to the final result which requires a total of less than five minutes. Clinical applications of the test will also be discussed for those unfamiliar with the subject.

Sanborn Company of Boston, Space 8, will have trained technicians to demonstrate diagnostic apparatus by actual tests on patients. The past year has shown unusual advances in autographic recording devices; in Metabolism Apparatus, by the Kymograf; in Heart Cases by the Pulse Wave Recorder for tracings of artery and vein. Sanborn technicians will endeavor to answer technical questions.

BOOKS

The publishers here represented will offer an excellent and varied showing of medical books. In a short time one can conveniently acquire a first hand knowledge of what is new and worthwhile in the realm of medical literature by browsing about the book booths. One will soon perceive that these exhibits are not merely a profuse agglomeration of books, but a systematic presentation of the newest and best the medical publishing industry has to offer its friend and customer, the American physician.

P. Blakiston's Son & Co. of Philadelphia will show at Booth 77 a number of works covering the big vital medical problems of today. Some of the authors represented are men who are doing original work, and who are widely recognized authorities. Do not fail to see the new Rost's "Pathological Physiology," Deaver's "Prostate," Lovett's "Lateral Curvature," Stitt's "Tropical Medicine," Greene's "Medical Diagnosis," etc.

Lea & Febiger of Philadelphia, Space 29, will feature a number of new editions and entirely new works. Among the latter are Lyon's "Non-Surgical Drainage of the Gall Tract," Leonard's "History of Physical Education," Hill on "Anus and Rectum," Farr's "Local Anesthesia." New editions to be featured are Joslin's "Diabetes Mellitus," Jelliffe and White on "Diseases of the Nervous System," Brown's "Tuberculosis," Carter's "Dietetics," Cabot's "Urology," Simon's "Chemistry," Whitman's "Orthopedic Surgery," Peter on "Perimetry," Knowles' "Diseases of the Skin," Wiggers' "Circulation in Health and Disease" and Bowen's "Anatomy and Kinesiology."

J. B. Lippincott of Philadelphia will have a special exhibit in Booths 34 and 35. A full line of practical medical, surgical, chemical and pharmaceutical and nursing books will be presented. In addition, there will be a display of the well-known Piersol Anatomical Charts, showing every muscle, nerve, vein and artery with beautiful accuracy.

The C. V. Mosby Company, St. Louis, publishers of medical, dental, surgical, and nursing books and journals, will show their complete line of standard books in Space 54. Among the new books on display will be Barnes' "The Tonsil," Watson on "Hernia," Sluder on "Tonsillectomy," Green and Ewing's "Optotypes," Sauer's "Nursery Guide," Beck's "Pathology in Nose, Throat and Ear Diseases," Sampson's "Physiotherapy Technique," Ivy and Ennis' "Interpretations of Maxillary Roentgenograms," and the new edition of Levinson's "Cerebrospinal Fluid."

Thomas Nelson & Sons of New York, Booth 95, will feature Nelson's Loose Leaf Living Medicine, a complete practice of medicine in seven volumes (250 contributors) and Index Volume, bound on the loose-leaf plan and brought up-to-date by regular issues of renewal pages which are substituted for out-of-date pages. This work was prepared and is under the continual supervision of an international advisory board and edited by sixty-seven prominent clinicians.

The W. F. Prior Co., Inc., Hagerstown, Md., will exhibit in Booth 103 their Threefold Unit of Service in such a way as to give every physician a definite idea of how this service meets his every need, (1) through the use of their Consulting Bureau, which supplies the literature of the world on any phase of a medical problem: (2) the International Medical Digest; (3) the Clinical Reference Section — Tice's Loose-Leaf Medicine.

Rebman Company of New York will show at their booth, north half Space 72, their beautifully illustrated books on skin diseases, both medical and surgical, and other standard publications contained in their catalogue.

W. B. Saunders Company of Philadelphia, Booths 55 and 76, will exhibit new books and new editions, including Gant's three volume work on Diseases of the Rectum, Anus and Colon; Labat's Regional Anesthesia; new edition of Crile's work on the Thyroid Gland; new (ninth) edition of Scudder's Treatment of Fractures; Lewellys Barker's Clinical Medicine; Jackson's Bronchoscopy; Stevens' new Practice of Medicine; latest numbers of the Medical Clinics of North America and the Surgical Clinics of North America; new (sixth) edition of Stevens' Therapeutics; new (second) edition of Peterson, Haines & Webster's two volume work on Legal Medicine and Toxicology, and Thomas' "The Successful Physician." Also advance sheets of important new works.

William Wood and Company of New York will welcome old and new friends at Booth 53. Every visitor is invited to examine all the new books, and the latest editions of their well-known standard works, without obligation to purchase. The outstanding feature will be the opportunity (which no traveling salesman can provide) to look over a complete set of the new fourth edition of the famous medical encyclopedia, the Reference Handbook of the Medical Sciences.

The American Institute of Medicine, Inc., Space 44, has perfected an international organization which abstracts the original articles appearing in all the important medical periodicals of the world. These abstracts are translated and gathered into sections, each of which covers a special field in medicine, and is supplied monthly to the members of the Institute.

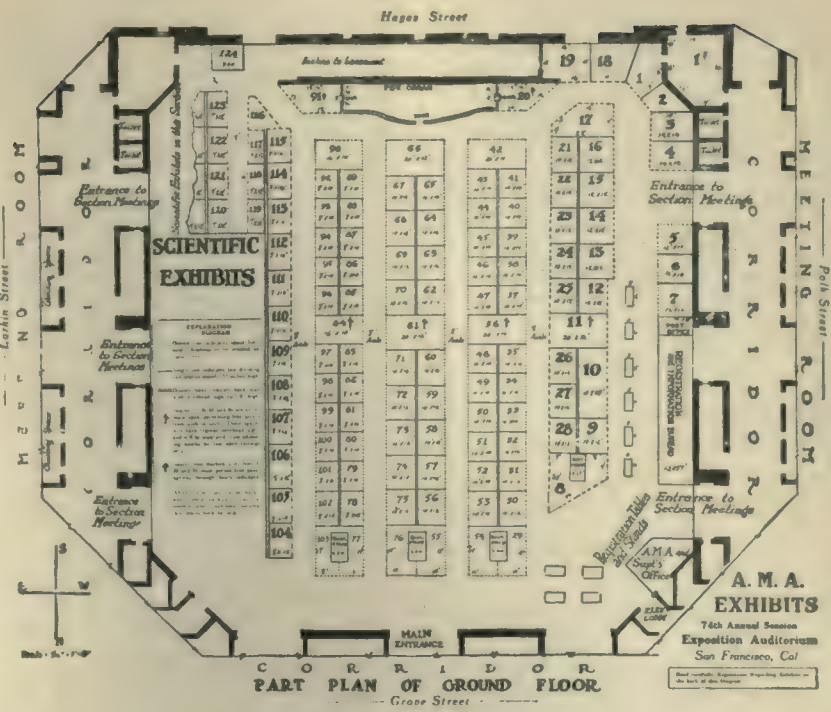
COMPRESSED AIR, SPRAYING AND NEBULIZING EQUIPMENT

Those specializing in eye, ear, nose and throat work as well as the general practitioner will be interested in noting the fine improvements that have been made in this line of manufacture and that are here offered for inspection and approval.

The DeVilbiss Co., of Toledo, Space 52, will, as usual, demonstrate the De-

List of Exhibitors

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Vilbiss Nose and Throat Sprays in an interesting and creditable manner. There will be a full showing of these well-known sprays, both for professional use and prescription purposes.

The Jaeckh Manufacturing Co., Cincinnati, will occupy Space 28, where they will make an interesting demonstration of electrically operated, compressed air and vacuum and anesthesia apparatus; atomizers, nebulizers, powder blowers and sinus and suction devices. An important feature will be the Improved Robertson Ether Vapor and Suction Cabinet, designed especially for surgical work.

ELECTRO-THERAPEUTIC AND DIAGNOSTIC EQUIPMENT

Scientific developments in electrotherapy have contributed new types of equipment that may be seen at the booths of firms listed under this classification. Many notable advances have been made in the construction, variety and uses of electrically lighted diagnostic equipment.

The Burdick Cabinet Company of Milton, Wis., will exhibit in Booth 90 a complete series of appliances for the generation and therapeutic application of their most recent adaptation of Radiant Energy—the Infra-red Rays. Their latest developments in Radio-Vitant Bath Cabinets and Deep Therapy Lamps will also be available for inspection by visiting physicians.

Cameron's Surgical Specialty Company of Chicago, Space 109, expect to interest every visitor in their new and improved Electro-Cautery which will be demonstrated continuously at their booth. Cameron's Electro-Diagnostoset De Luxe Model No. 3, and Cameron's Surgilites, of equal interest to surgeon, specialist and general practitioner, will also be on exhibit.

The Hanovia Chemical & Mfg. Co. of Newark, N. J., will exhibit, in Booths 83 and 84, two power maximum producers of Ultra-Violet Rays, the Kromayer Lamp and the Alpine Sun Lamp. Used as modalities in treating many different diseases, these lamps may be seen in active operation during the exhibit, and it will be well worth one's time to see and hear what actually can be accomplished by their use. In the present year, the use of Ultra-Violet Ray Therapy by the medical profession has increased to a remarkable extent.

FOODS AND BEVERAGES

The producers of foods and beverages have contributed much valuable information toward the solution of dietetic problems which years ago puzzled the average physician. Aside from seeing and sampling the newer preparations offered by these firms the visitor to these booths can learn wider uses for the products he has known for years.

The American Association of Medical Milk Commissions will have a scientific (Space J) as well as a commercial (Space 123) exhibit. Petri plates, microscopic slides and other exhibits comprising a clinical description of milk will be featured in the Scientific Exhibit, together with the methods and standards which have made certified milk the high art in the dairy industry. By means of stereopticon slides they will show in detail the production and handling of certified milk. This and the actual serving of certified milk to thirsty and hungry visitors will constitute the feature of the commercial exhibit.

The California Citrus Fruit Juice Co. of San Francisco, Space 59, will introduce "Valna" Concentrated Orange Juice and sampling demonstrations will also be conducted. Because of the extensive use of orange juice in the diet of infants, children and adults and in the treatment of deficiency diseases this exhibit should prove of interest to the visiting profession.

California is the home of Del Monte Canned Fruits and Vegetables. At Booth 62, visiting physicians will find an opportunity to become better acquainted with these well-known food products. The head office of the California Packing Corporation is located in San Francisco, operating about one hundred packing establishments in California and along the Pacific Coast.

The Dry Milk Company, New York, Space 45, are to show their two well-known products, Dryco, a special dry milk for infants and invalids, and Protolac, a calcium caseinate used particularly in infant diarrheas. They will have complete clinical data to give their medical friends, as well as the Dryco re-fill pencils, as souvenirs of their visits.

The Horlick's Malted Milk Company, Racine, Wis., invite the attention of all to their exhibit, Space 4, where the well-known pioneer products, "Horlick's," the Original Malted Milk, in powder and tablet forms, and Horlick's Food will be interestingly presented. The representatives in attendance will explain the use of the "Horlick's" products in the feeding of infants and invalids and in special conditions.

Infant Feeding Service. Doctors who will register at Booth 10 will be furnished with Mead's Infant Feeding Service, which makes it easier for the general practitioner to obtain better cooperation from mothers. Leave your name with the representative who will send you a physician's file index of loose-leaf cards containing Diets for Nutritional Disturbances of Infants, Prescription Blanks, Growth Charts, Weight Charts, History Charts, Diets for Older Children, and Mead's Reliable Infant Diet Materials. Mead's Dextri-Maltose Nos. 1, 2 and 3, Mead's Casec, Mead's Barley Flour, Mead's Oat Flour and Mead's Arrowroot Flour.

The Maltine Company of Brooklyn will show, in Space 70, various materials, such as Malt, Cod Liver Oil, Cascara Sagrada, Yerba Santa, etc., which enter into the composition of the Maltine preparations, together with the finished products. Handy souvenirs to visitors.

Mellin's Food Company of Boston will occupy Spaces 14 and 15. Holding the opinion that physicians are especially appreciative of detailed information in regard to such products that they find applicable in their practice, representatives of this company, well qualified to discuss the subject, will be prepared to give individual attention to all inquiries.

Merrell-Soule Sales Corporation will exhibit their Klim Brand Powdered Milk and Merrell-Soule Powdered Protein Milk. Klim Brand Powdered Milk will be served. Every means will be used in enabling visiting physicians to ascertain its natural taste and its perfect solubility. Opportunity will also be given to sample Powdered Protein Milk, and scientific literature on the subject will be available. Space 22. A service by which special formulas will be put up at the request and for the use of any physician will be discussed with all interested.

A notable contribution to infant feeding in recent years has been the development of S. M. A. (Synthetic Milk Adapted). The story of how this milk was developed in the Babies' Dispensary and Hospital of Cleveland so as to simulate breast milk physically and chemically will be told at Booth 63 by the representatives of the Laboratory Products Company.

The Welch Grape Juice Co. will be on the job, yes indeed! Call at No. 18 when your throat gets dry or your lips parched. Or if you just get the inclination for refreshments a glass of cold, tart-sweet, pure juice of Concord grapes will be right there to relieve you.

INSTRUMENTS

The surgical instrument industry, which was seriously handicapped during the war by reason of the shutting off of importations, has now gained not only its former power, but has forged ahead. The conventionist this year may be assured of seeing a wide variety of instruments, of new and improved design, of both foreign and domestic manufacture.

The A. S. Aloe Company of St. Louis will exhibit at Booths 26 and 27, located near the Registration Bureau. They will have on display the new 1923 models of the Spencer Microscope, the Lightning Electro Therapeutic Cabinet, and Deep Therapy Lamp, and the new model of the Brown-Buerger Cystoscope, surgical furniture and a complete line of surgical instruments.

The Bard-Parker Company of New York have made no changes or addition to their line of detachable blade knives since the last meeting. The full assortment will be shown at Booth 39. C. R. Bard will also display here a very complete line of Eynard Urological goods, including Ureteral Catheters, both regular and X-Ray; Soft Rubber and Woven Urethral Catheters; Suprapubic and Perineal Drains and Bougies; also Syringe for Regional and Spinal Anesthesia, Model of Dr. Labat.

Becton, Dickinson & Co., Rutherford, N. J., Spaces 41 and 43, will demonstrate the new B-D Manometer for blood pressure work and the new Luer-Lock Syringe for Local Anesthesia (needle locks securely with a quarter turn). They will also exhibit the complete line of genuine Luer Syringes, Yale Quality Needles, B-D Thermometers, ACE Bandages, Asepto Syringes and Fleischer Stethoscopes.

Charles F. Hindle of New York, recently incorporated with the Cambridge and Paul Instrument Co. of America, Space 33, will exhibit Electrocardiographs, Polygraphs, Microtomes, Alveolar Air, CO_2 instruments. This announcement should be of interest to physicians and scientists as this incorporation makes available the splendid scientific apparatus manufactured by the Cambridge and Paul Instrument Co. of England, so well known in this country.

The Kloman Instrument Company of Washington, D. C., Space 31, will exhibit several new instruments, chief among which will be the Electron Pulsator, Muncy Snare for taking off the posterior tip of the turbinate and Bishopp's Antrum Trocar. This company specializes in eye, ear, nose and throat instruments of high standard and will have an exhibit well worthy of the attention of the most exacting specialists.

David B. Levy of New York will occupy Space 117 and will exhibit the well-known "Levy" Luer Syringes, Hypodermic Needles, Herff's New Woundlip Clips and various other specialties. The feature of this exhibit will be the standard goods sold at special Convention prices.

The Pfau's American Instrument Co. of New York will show in Booth 118 a large and exclusive line of their famous European and American novelties of Ear, Nose and Throat Instruments. An especially attractive feature will be a splendid assortment of scientific anatomical preparations made under the personal supervision of professional authorities.

Riggs Optical Companies will exhibit in Booth 85 a full line of Mueller Surgical Instruments together with a well chosen representation of equipment for the ophthalmologist. Care has been used in selecting only the latest successful achievements of the manufacturers for this exhibit. Of special interest among these is the New Kratometer-Hazen used in measuring and for the treatment of muscular anomalies.

The Tycos display (Taylor Instrument Co., Rochester, N. Y.) at Booth 38 will include a complete line of fully efficient Urinalysis Glassware, which will be of interest to every physician. Of special interest, doubtless, will be the new Tycos Fermentation Sacchrometer, after the Lohnstein pattern. Also the Standard Albuminometer, which permits the use of either the Esbach or the Pfeiffer's reagents. There are also other attractive improvements in Urinalysis Glassware, which will materially assist in efficient diagnostic work. Special ethical medical bulletins will be given to those interested, containing practical information on reagents, etc.

OPTICAL GOODS

This industry has also rallied from the serious setback it suffered during the war and is now offering the profession a quality and quantity production never before attained. It will be to the advantage of all physicians to see the best in optical and ophthalmological goods of both foreign and American make which will be featured in these booths.

The American Optical Company of Southbridge, Mass., through the F. A. Hardy & Company Division and Merry Optical Company Division will exhibit in Spaces 104, 105 and 106 a full line of eye, ear, nose and throat instruments, ophthalmological equipment, office furniture and compressed air outfits.

Among the instruments displayed by the Bausch & Lomb Optical Co. of Rochester, N. Y., Space 91, will be their new Hemoglobinometer, Hand Centrifuge, Haemacytometer with one-piece construction, Bürker type counting chamber, and the FFSE binocular microscope. Ophthalmic instruments shown will include the Precision and Simplified Test Frames, Ophthalmic Test Lenses, Visual Acuity Apparatus with Ives Screens, Lancaster Astig-

matic Chart, Gullstrand and Hand Ophthalmoscope, Corneal Microscope with Slit Lamp Attachment, Interpupillary Gauge, Keratometer, and other B. & L. specialties.

The Spencer Lens Co., Buffalo, N. Y., will exhibit in Space 107. They will have on display many types of microscopes of which several will be shown for the first time. Their Clinical Microtome which is being used in more than 2,000 hospitals in the United States will be in operation.

Carl Zeiss of Jena, Germany, through their U. S. Agent Harold M. Bennett of New York, will exhibit in Booths 112 and 113. A representative line of Zeiss optical instruments will be shown, including new microphotographic eyepiece; new dipping refractometer; simple dark-field equipment; operating lamps; Wolf's diagnostic instruments, with Zeiss optics; an extensive range of monocular and binocular magnifiers; special spectacles, including such for eyes with low vision; instruments for microscopy of the living eye, and irradiating apparatus for light treatment.

ORTHOPEDIC, SUPPORTIVE AND CORRECTIVE APPLIANCES

The exhibits of these firms include many items of interest as explained in the following descriptions.

J. R. Siebrandt Mfg. Co. of Kansas City, in Booth 82, will show their complete line of "Eveready" fracture appliances and instruments. Of especial interest will be their "Eveready" Universal Splint. This splint serves as a Transport, Ambulatory, Suspension or Modified Thomas Splint. A practical demonstration will be a daily feature of the exhibit. Another interesting feature will be a new plaster cutting knife which moistens and cuts the cast in one operation.

Spencer Supporting Corsets, made by the Berger Brothers Company, New Haven, Conn., will be exhibited in Space 30. This exhibit will prove of particular value to those physicians interested in the subject of faulty posture. The models in the exhibit show clearly the different supports that are used for the relief of such conditions as faulty posture, floating kidney, sacro-iliac strain, enteroptosis, etc.

PHARMACEUTICAL AND BIOLOGICAL PRODUCTS

Well known pharmaceutical houses with a multitude of high grade, standard and accepted products will greet the visitor this year. Much could be said concerning the conscientious manner in which these firms have striven to supply the profession with goods of quality and dependability, co-operating with the Council on Pharmacy and Chemistry of the American Medical Association at every step of the way. The research and the astonishing results that have been accomplished in some of the newer drugs make dramatic stories. The physician who is interested in scientific and exact medication will be glad of this opportunity to talk personally to the men who can explain the latest developments in pharmaceuticals.

The exhibit of The Abbott Laboratories of Chicago will this year include, in addition to their own line of Council-passed specialties, the arsphenamins of the Dermatological Research Laboratories, Philadelphia. Physicians will find it worth while to stop and look over the newer medicinal specialties including Butyn, Neocinchophen, Neutral Acriflavine, Sulpharsphenamin, etc. You are invited to make the Abbott Spaces 5, 6 and 7 your headquarters for appointments in the exhibit hall.

P. Astier Laboratories, Paris, France, Space 75, will exhibit their Arheol, active principle of Santalwood oil, and Riordine, a 66 per cent. solution in oil, of an iodized ether of ricinoleic acid. At the same booth will be exhibited the new Tulle Gras: Lumiéré's T. G. (Balsam of Peru). Wide mesh medicated gauze for surgical use. A non-adhering, cicatrizing and deodorizing dressing.

G. W. Carnrick Co., New York, Space 19, will exhibit a line of organotherapeutic products including single glands, ampoules, etc. There will be an exhibit of Kaiserling preparations of the several endocrine glands of food animals used in medicine.

Hynson, Westcott & Dunning of Baltimore, Space 73, will feature the H. W. & D. line of prescription specialties as well as their diagnostic appliances and agents. Phenoltetrachlorphthalein Ampules for the Rosenthal liver functional test and Heparin, a new anticoagulant, are the latest scientific developments on display.

The Maltbie Chemical Company of Newark, N. J., Booth 13, will greet their many friends in attendance. They will show their creosote product, Calcreose, which they claim overcomes the objections to creosote. The "Calcreose Detail Man," who has frequently left a cheery word with physicians throughout the country, through the medium of the mails, will be present in person to explain this product.

The Salvarsans, Novocain in its various forms, Pyramidon, and other of the standard Metz pharmaceuticals, will be shown at the booth of the H. A. Metz Laboratories, Space 74. Those in charge are amply qualified to give all possible information in connection with the drugs mentioned and such well-known products as Anaesthesin and Orthoform, local anesthetics for use on abraded surfaces, and other Metz products.

Upsher Smith (Digitalis), Inc., Minneapolis, will exhibit at Booth 108, colored photographs showing the cultivation and preparation of the leaf at Foxglove Farm. It is hoped to display specimens of both Digitalis purpure and D. lutea in flower. Every physician who prescribes Digitalis should be interested in visiting this booth and talking with these producers of high grade tincture and capsules of Digitalis. Messrs. Upsher Smith and James Smith will be present to greet old and new friends.

E. R. Squibb & Sons of New York will occupy Spaces 60, 61 and 71, about the center of the hall. They will in a measure show the entire Squibb line. Sulpharsphenamin, a new arsphenamin compound, capable of being administered intramuscularly and subcutaneously, will be shown for the first time, and a special display will be made featuring the latest development in curative allergens.

The Wilson Laboratories of Chicago, Booth 49, will show an interesting collection of fresh animal glands, both whole and in section, and also a series of large photographs illustrating various steps in the collection and processing of endocrine derivatives. There will also be a selected assortment of endocrine pharmaceuticals, and surgical sutures and ligatures. The exhibit is entitled "From Farm to Pharmacy."

RADIUM APPLICATORS AND EQUIPMENT

Radium and its scientific application is a subject of continuous and increasing interest. It is a great advantage for the visitor to be able to talk with representatives of the following companies who are versed in their subject and in a position to explain the questions that have been puzzling you.

The Radium Company of Colorado, Denver, Booth 36, will exhibit a very elaborate equipment of radium needles, tubes, and plaques of the latest and most improved design, together with instruments, screens, and accessories designed to facilitate their proper therapeutic application.

The Radium Chemical Company of Pittsburgh, Space 56, will exhibit many new instruments for the handling and placing of radium tubes and needles. Technical and clinical experts will be in attendance to demonstrate the latest methods of application. Radium operators and all others interested in this work will find it well worth their while to visit this exhibit.

STERILIZING EQUIPMENT

What can be more interesting to the physician and surgeon than to witness the newest features in sterilizing equipment? The importance of efficient sterilization cannot be overestimated. Upon it depends many a reputation and life. If you have any sterilization problems it will please and encourage these exhibitors to have you consult them. These firms have brought out some highly specialized equipment, the crystallization of applied thought and engineering skill, to meet the requirements of modern surgery and medical practice.

The American Sterilizer Co. of Erie, Pa., will demonstrate, in Booth 69, their new Lakeside Model Saline Mixer, of particular interest to surgeons and hospitals doing major surgery in a large way. They claim that it is now possible to quickly secure a normal solution, sterile free from sediment, with foreign elements absent and with absolute assurance of uniformity. This apparatus can be attached to any ordinary water sterilizer with little alteration.

Physicians interested in complete sterilizing units which combine beauty with practicability will be interested in examining the exhibit of the Wilmot Castle Company of Rochester, N. Y., Booth 46. They will show a new sterilizer which will attract the eye of every

professional man, because it not only sterilizes instruments and water, but also has a large cabinet with two glass doors. Complete demonstrations will be given of the new Castle automatic cut-off which protects all Castle Electric Sterilizers from boiling dry.

The Pelton & Crane Company of Detroit, Space 89, will exhibit a complete line of "Pelton" Indestructible Sterilizers and Compressed Air Equipment. For the first time will be shown the new "Pelton" Water Sterilizers, of a design insuring positively sterile water.

X-RAY APPARATUS AND ACCESSORIES

The importance of the x-ray as a diagnostic aid is being more widely recognized every day. Here is your opportunity to see first hand demonstrations and talk personally with the men who understand all phases of scientific roentgenology. Devices for diathermy and other physiotherapeutic equipment will be presented to the profession in these exhibits.

The Acme International X-Ray Co. of Chicago will exhibit in Spaces 16 and 17 a complete line of X-Ray apparatus. Among these new items is their new tube-holder used for deep therapy. With this piece of apparatus the complete installation is made coronaless from and including the transformer all the way through and including the tube terminals. Another new item is their new split second X-Ray Exposure Timer and Circuit Breaker, which can be used for serial exposures, or one continuous exposure of any desired time from one-thirtieth second up.

George W. Brady Company of Chicago will exhibit in Space 9 their new model Potter Bucky Diaphragm with signal attachment for automatic X-Ray exposure. Also something new in Intensifying Screens that are guaranteed non-spotting. They have a new numbering device for Duplitized Films and a line of Developing Tanks and other accessories. A special type Bucky Diaphragm Table will also be shown.

The Eastman Kodak Company, Medical Division, Space 20, will exhibit for the first time their Dupli-Tized X-Ray Films, Super-Speed. This is a new film which is nearly three times faster than standard Dupli-Tized X-Ray Films, with consequent advantages in exposure technique. Accessories developed for x-ray use will also be shown. There will be a special exhibit of clinical photography, showing results possible with a small photographic unit. This unit will also be exhibited.

The Engeln Electric Company, Cleveland, report that their exhibit this year, in Booth 42, will far surpass any they have had in the past. They will exhibit a new type of X-Ray Unit which fills a long desired need in the medical profession. In addition, several new and desirable x-ray accessories will be exhibited. You will also see the latest Duplex-ray, a compact and efficient X-Ray Plant for Radiography and Fluoroscopy.

H. G. Fischer & Co., Inc., of Chicago, will have a splendid exhibit of Physiotherapy Apparatus in Spaces 114 and 115. Developments in this field have been very rapid and of vast importance to the medical profession, and they will show not only their most modern Electrophysiotherapeutic Apparatus but will demonstrate the latest technique as well. Under their banner will be found their New Low, Medium and High Voltage High Frequency Apparatus for all forms of Diathermy, Medical Diathermy Cabinet, Surgical Diathermy Cabinet, High Frequency Cabinets, High Frequency Portables, the Thompson-Plaster Combinations, the Morse Wave Generator, and an Improved 30 Milliampere Coolidge X-Ray Unit.

The High Tension Transformer and Equipment Corporation of Hoboken, N. J., will demonstrate, in Booth 86, the "Intermediate" X-Ray Unit, the "Standard, Jr." high frequency machine, a "Combination" X-Ray and high frequency apparatus and an improved generator of radiant energy. The "Infra-Ultra Rays Generator," which provides all wave lengths of the long infra-red, the visible and the far ultra-violet. A new device developing surgical diathermy will also be presented.

In booth 2, the Hogan Super Power High Frequency Apparatus No. 8400, the latest product of the McIntosh Electrical Corporation, Chicago, will be demonstrated. This apparatus is specially adapted for heavy Electro-Coagulation and affords up to 5000 M.A. for Diathermy of deep penetration. The McIntosh Polysine Generator No. 1058 will also be shown, demonstrating the 10 different modalities which it affords.

The Patterson Screen Company of Towanda, Pa., will show in Booth 92 the fine radiographic results obtained with Patterson Cleanable Intensifying Screens, which are impervious to dirt, dust and all of the factors that ordinarily destroy the unprotected type of Intensifying Screens. The Patterson Fluoroscopic Screen and Patterson Operating Fluoroscope will also be shown and demonstrated.

The Sweetbriar Laboratories, Inc., of Pittsburgh, will have a very interesting exhibit at Booth 87, consisting of washable Sweetbriar Screens, pictures taken with them, and other related matters.

You are going to attend the meeting with a view to acquiring worth-while facts and helpful ideas. Today the X-ray is admittedly one of the important aids to medical science. That you may inspect the latest developments in the design and construction of X-ray equipment, the Victor X-Ray Corporation of Chicago will have on display in Spaces 78, 79, 80, 100, 101 and 102 apparatus perfected after months of research and experimental work.

The Wappler Electric Company of New York, in Spaces 66 and 67, will display most of their principal products for the practice of Radiography, Fluoroscopy, Massive Dose X-Ray Therapy, Surgical and Medical Diathermia, and in addition, a complete assortment of their Genito-Urinary, Eye, Ear, Nose and Throat Instruments. Particularly interesting is the display of the Wappler Duplex Model, Roentgen-Ray Machine, and the Safety Deep Therapy Tube Holder and Table.

MISCELLANEOUS

Various special firms that appeal to the interest of the physician and offer him some professional service will be among the exhibitors at the 1923 convention. Each one of these booths represents a special service to the individual physician or his patients. It will be well worth your time to "stop, look and listen" at all of these exhibits. Several other firms who are not represented in these write-ups will be in attendance at convention and their booths promise features of just as much interest.

If you are interested in the administration of hospitals and institutions be sure to visit the exhibit of the American Laundry Machinery Co. This exhibit will be arranged so as best to demonstrate the latest developments in ironing machinery for the hospital or institution laundry. An experienced engineer will be in attendance.

The Buzzell-Flanders Co. of Boston, Space 23, will display Ligatures and Sutures of all kinds. These include Catgut, Silk, Derma, Silkworm Gut, Horsehair and Kangaroo Tendon. The Kangaroo Tendon is prepared by the special formula of Dr. Henry O. Marcy. Mr. Howard A. Flanders will be in charge of the demonstration.

The Colfax School for the Tuberculous of Colfax, Calif., Space 97, will have one of its employees in charge of its booth to answer questions regarding its institutional methods and to give to inquiring doctors information regarding the treatment and care of tuberculous patients.

The Earnshaw Knitting Co. of Chicago, manufacturers of "Vanta" Baby Garments, Space 111, will have their eleventh annual appearance at the convention this year. The Vanta Garments dress the baby complete without a pin or button, without turning the child once to put on a complete outfit. Be sure to see this exhibit and have the attending nurse send our Gift Box to some of your patients.

The Kolynos Company, New Haven, Conn., Space 57, extends to all doctors a cordial invitation to witness a new experiment which strikingly shows the destruction of living micro-organisms by Kolynos Dental Cream. This experiment is made possible by the Euscope which projects a microscopic field upon a ground glass 17 inches square.

The Medical Protective Company of Fort Wayne, Ind., will hold forth in the north half of Space 28, and explain the service which this company renders to the profession. Two of the company's experienced men will be in attendance for imparting information on the subject.

The Pacific Wassermann Laboratories of San Francisco will demonstrate in a very interesting manner at Booth 81 the Wassermann reaction and other clinical laboratory methods. Open house will also be kept at their local laboratory, Suite 928 Flood Building, corner of Market and Powell Streets, where demonstrations in clinical laboratory research will be made. Qualified men will be present at both places and will be pleased to meet friends and visitors.

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THE ROUTINE TREATMENT OF DIABETES WITH INSULIN

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BOSTON

Successful treatment of diabetes with insulin depends on the utilization of all those measures that have proved of the greatest value in the treatment of diabetes without insulin. These are: adherence to a diet which will keep the urine sugar-free; avoidance of over nutrition or extreme undernutrition, and a method of life compatible with the strength such a diet affords. A knowledge of the fundamental principles of the diet and of the food values of a few foods is essential; otherwise the insulin will be squandered and the patient placed in jeopardy.

Insulin does not cure diabetes. Insulin does not allow a diabetic to eat anything he desires. It is cruel for prominent individuals to make such statements and arouse false hopes. It is true that heretofore there has never been anything discovered as valuable for the diabetic as insulin; but diabetes, though subdued, is not yet conquered.

Insulin is no more dangerous than morphin, and it has these advantages: Whereas an excess of morphin leads directly to sleep, coma and death, an overdose of insulin causes a warning train of symptoms, beginning with nervousness and extreme hunger as the blood sugar drops below 0.07 per cent.; progressing to sweating and tremor, subconscious or evident, and ending with unconsciousness, as the blood sugar reaches 0.03 per cent.; and death is possible. Again, unlike the course in morphin poisoning, recovery follows the simplest of measures—the juice of an orange or from 1 to 3 teaspoonfuls of sugar—and takes place promptly within five or ten minutes. Recovery may be further expedited by 1 c.c. (15 minims) of a 1:1,000 solution of epinephrin subcutaneously administered, though this also is to be followed by the orange or sugar.

It is a mercy that at present insulin becomes inert when given by mouth, and that its use is restricted to a syringe. The medical profession cannot be too grateful to the Insulin Committee of Toronto for limiting the supply and the distribution for a few months. Consider for a moment what would happen if morphin was the drug discovered and then was at once sold over the counter. The useless pancreatic preparations of the past required no supervision; insulin does, because it is potent.

Insulin, nevertheless, should be and can be used by the general practitioner. This I have proved, because already 127 patients have been sent home from the hospital or boarding house across the street and are taking insulin under the supervision of their own physicians. There is no reason why any physician should not treat other patients, provided he spends one hour learning the diabetic diet, or makes certain that the patient knows it. This knowledge of diabetic arithmetic is a pivotal point in order to balance diet with drug with enough accuracy to justify the trouble of the treatment. If the diet much overbalances the drug, there will be free glycosuria, and the expense and pains are practically wasted. If the drug overbalances the diet, there is likely to be a reaction, always fraught with alarm; and, finally, if the physician does not know the diet, he may lose the confidence of his patient.

For example: Five weeks of dietetic treatment failed to control the severe diabetes of Alice S., last summer. With insulin she improved, and when it was time to go home, not her parents, but her old, overworked, country physician traveled nearly 200 miles to get her, to see for himself how she and other patients were treated, to observe for himself what they ate, and to hear them recite their lessons on food and insulin and sugar tests. Alice learned the diet for the doctor, and Dr. B. learned about insulin for Alice. The partnership has already earned a 40 per cent. dividend in weight for the child, and I fancy far more than that in joy for that faithful practitioner.

Intelligent patients can be taught the use of the diet and insulin in a week, and in two weeks the average patient can become free of acid and sugar, learn what is requisite either in hospital or in boarding house, or with a diabetically trained nurse in his own home. Thus, with education they accomplish with 5 units what would otherwise require 10 units. Blood sugar tests are very desirable, but I doubt whether one in ten of my patients has such a test once a month in his own home. The cost of one such test would probably supply them with insulin for a week, and they prefer the insulin. Instead of blood sugar tests, they depend on frequent Benedict tests of each single specimen of urine, of which the cost of one test is 1 cent. By testing the urine before and after meals they learn whether the relation between carbohydrate and insulin should be changed. If glycosuria is present and yet the patient is receiving sufficient calories, carbohydrate is reduced until all specimens throughout the day are sugar-free; or, if the carbohydrate is below 30 gm. in the diet, insulin may be increased. After a few weeks of preliminary treatment, "single specimen" days are only occasionally necessary, and the patient is safe with a test of all that portion of the twenty-four hour quantity of the urine that is voided at home.

The first diet given a diabetic patient showing glycosuria should approximate that which he has been taking, with these modifications: The calories should be reduced by a marked restriction in fat, and the protein limited to 1 gm. or less per kilogram of body weight; and it is desirable to begin with about 200 gm. of car-

bohydrate, or as much below that quantity as was in the patient's former diet, or, if that is unknown, with an equivalent of the grams of sugar in the urine. For use in the hospital, test and maintenance diets are useful; but advances in dietetic treatment and insulin force their constant modification, so that the one here shown must be regarded as tentative. It is a great advantage not to have invented a formula for computing diets, because one feels quite free to take the best of all systems. Having started the diet, one proceeds each day to the next diet in sequence until the urine is sugar-free. Fasting is practically never necessary for even one meal, since generally the patient becomes sugar-free on Test Diet 3 or 4. Then one skips to that maintenance diet which has about the same quantity of carbohydrate, and advances each day. If sugar returns, for instance, on the carbohydrate and protein and fat for the sixth day (C6 + PF6) and the patient is not receiving enough calories, one lowers the diet to C5 or C4 and advances the protein and fat (PF) to PF7 or PF8 or more as needed, or even adds extra fat in the form of cream or butter.

The place at which insulin is given is most frequently the arm, then the thigh, and lastly the buttock.

The average dose of insulin daily for 127 of my patients is 11 units. No patient is now taking in twenty-four hours more than 45 units, but three are taking as many as 30 units, while a considerable number (eighteen) receive less than 5 units a day.

The first of my patients chosen to receive insulin was selected because I knew of none more severe or more strictly faithful to every detail of treatment in the past:

Miss M., aged 42, who had had diabetes for five years, whose weight had fallen from 157 to 72 pounds (from 72 to 33 kg.); who could scarcely be kept sugar-free on any diet, and who had been down to the street but once in nine months, began insulin, Aug. 7, 1922. Since that date she has gained 20 pounds (9 kg.), has a normal blood sugar before and after breakfast, and is sugar-free while taking 10 units daily instead of the 35 units daily, which she at one time required. Her diet has been, carbohydrate, 25 gm.; protein, 43 gm.; fat, 105 gm., and I have now raised it to carbohydrate, 30 gm.; protein, 50 gm., and fat, 110 gm. I am content to have had the weight in my severest case of diabetes increase in eight months by 28 per cent., and to have reduced the dosage

TABLE 1.—*Insulin Diabetic Diets*

		Total Diet				Carbohydrate (C)						Protein and Fat (PF)					
	Diet	Carbohydrate	Protein	Fat	Calories	5% Vegetables	Orange	Oatmeal	Shredded Wheat	Uneeda	Potato	Egg	Cream 20% Fat	Bacon	Butter	Meat	Diet
Test	T. D. 1	181	46	44	1,304	300	300	..	3	4	240	3	120	..	..	...	1
	T. D. 2	101	35	43	931	300	300	..	1	2	120	3	120	..	..	...	2
	T. D. 3	66	24	37	693	300	300	..	½	2	...	2	120	..	..	...	3
	T. D. 4	34	15	30	466	300	200	..	..	..	...	1	120	..	..	...	4
Maintenance	C1 + PF1	14	15	30	386	300	...	..	..	..	...	1	120	..	..	...	1
	C2 + PF2	22	19	37	497	300	100	..	..	..	...	2	60	..	15	...	2
	C3 + PF3	32	24	37	557	600	100	..	..	..	...	2	60	..	15	...	3
	C4 + PF4	42	29	52	752	600	200	..	..	..	...	2	60	30	15	...	4
	C5 + PF5	52	32	66	930	600	200	15	..	..	...	2	60	30	30	...	5
	C6 + PF6	64	44	83	1,179	600	200	30	..	..	...	2	120	30	30	30	6
	C7 + PF7	74	52	88	1,296	600	300	30	..	..	...	2	120	30	30	60	7
	C8 + PF8	84	61	94	1,426	600	300	30	..	2	...	2	120	30	30	90	8
	C9 + PF9	98	65	106	1,606	600	300	30	½	2	...	2	180	30	30	90	9
	C10 + PF10	109	66	119	1,771	600	300	30	1	2	...	2	180	30	45	90	10
	C11 + PF11	135	80	135	2,075	600	300	30	1	2	120	2	240	30	45	120	11
	C12 + PF12	159	84	135	2,187	600	300	30	1	2	240	2	240	30	45	120	12

The first dose of insulin should be 1 unit. This is the amount necessary to lower the blood sugar of a 1 kilogram rabbit, fasting twenty hours, to 0.045 per cent. It is safer to begin with one unit, because I have known this to bring down the blood sugar of a diabetic patient with a tolerance for and while taking 91 gm. of carbohydrate to 0.03 per cent. Insulin is more often given than withheld at the hospital as soon as the diagnosis is definitely made, in order to meet the patient's wish to curtail hospital stay. Before the second meal, 2 units are given, 3 before the third, and so on up to 5 units, and then this quantity is given three times a day and increased or decreased as indicated. Sometimes the extract proves to be unnecessary after a couple of days. During this period the diet also is being changed. Once the patient is sugar-free, the attempt is made to get rid of the noon dose by shifting the carbohydrate as far as feasible to breakfast and supper, and decreasing the noon insulin by a unit each day. If unsparable, the omitted insulin is taken up again, but this time is divided between the doses before breakfast and supper.

The time at which insulin is given varies from one-quarter hour to one and one-half hours before meals, depending on the rapidity of absorption of carbohydrate from the stomach and insulin from the subcutaneous tissue, as estimated after observation of each individual patient.

of insulin from 35 units to 10 units. With the extra food allowed, she requires at least 5 units more of insulin. Her weight has again increased to 96 pounds (43.5 kg.). With the restricted diet, will she not again be able to reduce her insulin when her further gain in weight makes her once more underfed?

Patients omitting insulin through lack of supply must go to bed and restrict the diet one-third:

Thomas D., my faithful little patient, went home and, unfortunately, in the absence of his home physician, thought he could get along without insulin. After five days he became ill, an intercurrent respiratory infection occurred, coma developed, and he returned to the hospital to die in seven hours, Oct. 20, 1922. No other patient with coma has died at the New England Deaconess Hospital since Aug. 7, 1922.

The treatment of coma with insulin is spectacular, but coma is a diabetic accident, and, like all accidents, to be avoided. At the New England Deaconess Hospital, the lack of coma is to be attributed partly to the training given patients. They are taught, whenever ill from any cause to (1) go to bed; (2) keep warm; (3) take a glass of hot water, tea, broth, orange juice, or oatmeal water gruel every hour; (4) empty the bowels with an enema, and (5) call a physician, who, if he finds acidosis, probably will give them insulin, digitalis and caffein, and may wash out their stomachs. This freedom from coma is perhaps still more to be attributed to

the large general hospitals in Boston receiving such emergency cases. With the expansion of the Deaconess Hospital to 180 beds, more of these patients may enter.

In coma, insulin, from published reports, is best given in 10 unit doses every hour for about two to four doses, and then every other hour for four doses more, if necessary. One should be very cautious before giving more than 60 units in twelve hours. Few cases have required more than 100 units. The blood sugar percentage and the urine sugar, in addition to the clinical state of the patient, are the best guides in treatment. In some cases it may be safer to give 5 or 10 gm. of carbohydrate by mouth to offset the insulin, and some of the most successfully treated patients have received a few grams, from 15 to 30, of sodium bicarbonate. Promptness in beginning treatment is everything.

Insulin can be discontinued in a small fraction of cases. Those patients may be able to omit it who receive it temporarily because of an exacerbation caused by complications, and some patients whose diabetes is of recent onset, though perhaps the latter should receive it intermittently as a prophylactic against increasing severity. Many such instances in children are under observation.

To the Insulin Committee of Toronto, and through its recommendation to the Eli Lilly Company as well, I have been indebted for the rare privilege of using insulin. For this I cannot be grateful enough. The contribution of Banting and Best to the treatment of diabetes is greater than I ever expected to witness.[1]

81 Bay State Road.

TABLE 2.—*Foods Arranged According to Carbohydrate Content*

5%		10%*	15%	20%
1-3%	3-5%			
VEGETABLES (Fresh or Canned)				
Lettuce	Tomatoes	String beans	Green peas	Potatoes
Cucumbers	Brussels sprouts	Pumpkin	Artichokes	Shell beans
Spinach	Water cress	Turnip	Parsnip	Baked beans
Asparagus	Sea kale	Kohlrabi	Canned lima beans	Green corn
Rhubarb	Okra	Squash		Boiled rice
Endive	Cauliflower	Beets		Boiled macaroni
Marrow	Egg plant	Carrots		
Sorrel	Cabbage	Onions		
Sauerkraut	Radishes	Green peas, canned		
Beet greens	Leeks			
Dandelion greens	String beans, canned			
Swiss chard	Broccoli			
Celery	Artichokes, canned			
Mushrooms				
FRUITS:				
Ripe olive (20% fat)		Watermelon	Raspberries	Plums
Grape fruit		Strawberries	Currants	Bananas
		Lemons	Apricots	Prunes
		Cranberries	Pears	
		Peaches	Apples	
		Pineapple	Huckleberries	
		Blackberries	Blueberries	
		Gooseberries	Cherries	
		Oranges		

	30 Gm., 1 Oz., Contain Approximately			
	Carbohydrates, Gm.	Protein, Gm.	Fat, Gm.	Calories
Oatmeal, dry weight	20	5	2	118
Shredded wheat	23	3	0	104
Uneeda biscuits, two	10	1	1	53
Cream, 40%	1	1	12	116
Cream, 20%	1	1	6	62
Milk	1.5	1	1	19
Brazil nuts	2	5	20	208
Oysters, six	4	6	1	49
Meat (cooked, lean)	0	8	5	77
Chicken (cooked, lean)	0	8	3	59
Bacon	0	5	15	155
Cheese	0	8	11	131
Egg, one	0	6	6	78
Vegetables, 5% group	1	0.5	0	6
Vegetables, 10% group	2	0.5	0	10
Potato	6	1	0	28
Bread	18	3	0	84
Butter	0	0	25	225
Oil	0	0	30	270
Fish: cod, haddock (cooked)	0	6	0	24
Broth	0	0.7	0	3

* Reckon average carbohydrate in 5 per cent. vegetables as 3 per cent.; of 10 per cent. vegetables as 6 per cent.

TABLE 3.—*Results of Treatment*

SUMMARY OF 127 PATIENTS WITH DIABETES TREATED WITH INSULIN AND DISCHARGED TO THEIR HOME PHYSICIANS

No. of Cases	Age at Onset, Years		Duration of Disease, Years		Treatment with Insulin		Gain in Weight	
	Aver.	Range	Aver.	Range	Duration, Days	Units Daily Aver.	Lbs.	%
127	29	1-65	4	0.3-20	107	11	4	5
INSULIN IN THE TREATMENT OF DIABETES IN CHILDREN 15 YEARS OF AGE OR UNDER								
81	7	1-15	2	0.3- 8	122	10	5	11
PATIENTS TAKING 6 OR LESS UNITS DAILY (CHILDREN UNDER 15)								
13	6	1-13	2	0.3- 4	89	4	3	8

SPECIFIC SERUM TREATMENT OF EPIDEMIC (LETHARGIC) ENCEPHALITIS

FURTHER RESULTS

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By the use of special methods, a somewhat peculiar streptococcus has been isolated from infected tonsils, teeth and nasopharynx of patients suffering from various forms of encephalitis. With this streptococcus, typical symptoms and lesions of encephalitis have been reproduced in animals. The type of the disease induced experimentally often resembles that existing in the patient from whom the strain was isolated.[1] In the case of the strains from epidemic hiccup, a form of myoclonic encephalitis, it is possible to reproduce spasms of the diaphragm and other muscles not only with living cultures, but also with the filtrates of cultures and the dead bacteria.[2] The organism varies greatly in size and shape, depending on the method of cultivation. It has been cultivated from filtrates of nasopharyngeal washings, and from emulsions and filtrates of brain and medulla in fatal cases.[3] Large and small forms of the organism, sometimes in the same chain, have been demonstrated in the lesions in undoubted cases of encephalitis, and proved absent in adjacent normal tissues, and in the brains of persons who have died from other causes.[4]

In view of these and other facts, may it not be possible that the organism with which I am working is the larger aerobic antigenic form of the smaller anaerobic, relatively nonantigenic form isolated by Loewe and

1. A summary of the work of the Toronto group on insulin appeared in the Journal of Metabolic Research **2**: 125 (Aug.) 1922. An early article by Banting and Best appeared in the Journal of Laboratory and Clinical Medicine **7**: 251, 1922. A more recent clinical article by Banting, Campbell and Fletcher appeared in the British Medical Journal **1**: 8 (Jan. 6) 1923.

1. Rosenow, E. C.: The Production of Spasms of the Diaphragm in Animals with a Streptococcus from Epidemic Hiccup, J. Infect. Dis. **32**: 41-71 (Jan.) 1923; Experimental Studies on the Etiology of Encephalitis: Report of Findings in One Case, J. A. M. A. **79**: 443-448 (Aug. 5) 1922.

2. Rosenow, E. C.: Production of Spasms of the Diaphragm in Animals by Living Cultures, Filtrates, and the Dead Streptococcus from Epidemic Hiccup, J. Infect. Dis. **32**: 72-94 (Jan.) 1923.

3. Rosenow, E. C. (Footnote 1, second reference).

4. Rosenow, E. C., and Jackson, G. H., Jr.: Microscopic Demonstration of Bacteria in the Lesions of Epidemic (Lethargic) Encephalitis, J. Infect. Dis. **32**: 144-152 (Feb.) 1923.

Strauss,[5] Thalhimer,[6] and Maggiore and Sindoni,[7] and considered by them as the causative agent in encephalitis? In a series of immunologic and other experiments, to be reported shortly, it has been found that, while the various strains are of low virulence, they nevertheless have decided antigenic power. With the dead bacteria, rabbits have been successfully immunized against encephalitis, following the injection of homologous and certain heterogeneous strains. Agglutination and agglutinin absorption tests with convalescent human and hyperimmune horse serum show that most of the strains isolated are immunologically identical, and closely related to the pleomorphic streptococcus which I have isolated in poliomyelitis.

On the basis of these findings, methods of treatment by active immunization are being tested in the hope that benefit may be derived in the more chronic forms of the disease, and that recurrences and late manifestations, the so-called sequelae, may be prevented. The serum from rabbits and horses immunized by repeated injections of increasing doses of this streptococcus has been found to protect rabbits and mice against properly gaged doses of homologous, and immunologically similar, heterologous strains.

The results from the use of one lot of immune horse serum in the treatment of a few cases of encephalitis were encouraging,[8] but for some unknown reason, this serum became toxic and hence unsuited for use. Other lots of immune horse serum have been prepared since. The details of the method of immunization will be published elsewhere. Suffice to state here that the particular lot of serum used in the cases here reported was a mixture of the serum from two horses injected with four strains. One of these strains was isolated from the throat of a patient with lethargic encephalitis, one from the spinal fluid of a patient with encephalitis and marked involvement of the meninges, one from the throat of a patient having encephalitis with hiccup, and one from the medulla in a rapidly fatal case.

After it had been demonstrated that the serum contained antibodies, and that it had protective power in animals, its therapeutic effects were studied on patients in the neurologic service of the Mayo Clinic, and studies were made by physicians to whom the serum had been sent on request.

METHOD OF INJECTION

In determining the method of injection, I was guided by the results obtained in animals, and in the treatment of poliomyelitis with a similarly prepared serum, in which intravenous and intramuscular injections have given the best results. Owing to the somewhat toxic effect of horse serum when injected intraspinally, to the slight evidence of involvement of meninges in encephalitis, and to the fact that the streptococcus is rarely demonstrable in the spinal fluid in these cases, we used, at first, intravenous or intramuscular injections exclusively. Later, the results of intraspinal injections, after the withdrawal of at least an equivalent amount of spinal fluid, were also studied. The cell count in the spinal fluid the day after intraspinal injection of the serum was usually somewhat lower in cases in which the initial count was relatively high, and unchanged or somewhat higher in cases in which the initial count was exceptionally low (Case 5). With few exceptions, the effect on the symptoms was not perceptibly better than that following intravenous or intramuscular injection of the same or larger doses.

After a study of my own results, and those of other physicians, the most effective dose and interval between injections are still uncertain. However, the following procedure is tentatively recommended: An intradermal sensitization test should be made in all cases. If the patient is hypersensitive, desensitization should be practiced by injecting subcutaneously several small, but increasing doses, beginning with 0.5 c.c., and repeating the injection two or three times in twenty-four hours. Unless the condition is critical, whether or not the patient is sensitive, the first therapeutic injection, from 10 to 20 c.c., should be given intramuscularly, and preferably soon after the withdrawal of spinal fluid. The subsequent injections are to be of from 20 to 40 c.c., intravenous, intraspinal or intramuscular, given at intervals of from twelve to twenty-four hours, provided no reaction develops following the first injection. It is believed best to give intraspinal injections to patients with relatively high cell counts. If apparently good effects are obtained, the injections may be continued for from five to eight days, at which time hypersensitiveness to horse serum may develop, making further injections impossible, or forcing a reduction in dosage. In general, if no good effects have been noted after three or four injections, the serum treatment should be discontinued. If good results have been obtained following a series of injections, and the patient has had a relapse, the injections should be resumed, but with caution. Increasing doses, repeated two or three times the first day, should be given subcutaneously, beginning with 0.5 c.c., and all therapeutic injections should be administered intramuscularly.

RESULTS

The effect on the temperature has been variable. There was usually no change in temperature if it was normal at the time of the injection. If the patients were febrile, there was often moderate rise in the temperature for from six to twelve hours, when it returned to the former level, if no other beneficial effects were noted. If good effects were noted in other respects, the temperature usually dropped to a lower level with each subsequent injection, and reached normal after from two to five daily injections. Usually slight fever, sometimes a sharp rise, occurred during the serum sickness, which nearly always developed in from six to twelve days after the first injection. Beneficial effects were manifested in various ways, depending on the type of the disease. Lethargic patients became more wakeful (Cases 3, 6, 7, 8, 9, 10 and 11); semicomatose patients became conscious (Case 1); highly excited, restless (Cases 2, 13 and 15), delirious (Case 16), and in a few instances maniacal patients became more quiet and rational (Case 19); choreiform movements (Cases 2, 14 and 15) and myoclonic contractions (Cases 2, 10, 11, 12 and 13) became less marked and less frequent. The tremors, rigidity and masked expression in certain parkinsonian cases diminished (Cases 20, 21 and 22). Weakness of muscles was slower to respond in cases in which there were other manifestations, and in those in which there were various cranial nerve palsies, unassociated with other symptoms (Cases 17 and 18).

5. Loewe, L., and Strauss, I.: Studies in Epidemic (Lethargic) Encephalitis: Cultural Studies, J. Infect. Dis. **27**: 250-269 (Sept.) 1920.
6. Thalhimer, W.: Epidemic (Lethargic) Encephalitis: Cultural and Experimental Studies: Second Communication, Arch. Neurol. & Psychiat. **8**: 286-298 (Sept.) 1922.
7. Maggiore, S., and Sindoni, M.: Etiologia dell'Encefalite Epidemica, Pediatria **28**: 985-991, 1920.
8. Helmholz, H. F., and Rosenow, E. C.: Three Cases of Acute Encephalitis Treated with Specific Serum, J. A. M. A. **79**: 2068-2071 (Dec. 16) 1922.

The effects in 130 patients have thus far been studied. These were divided into two groups, according to whether or not apparently beneficial effects were noted during, or soon after, the injections of the serum, irrespective of duration or type of the disease and the amount of serum given. Of these 130 patients, eighty-five (65 per cent.) improved; forty-three showed no appreciable change (Cases 4 and 5); while in two acute cases, it was the opinion of the attending physicians that the symptoms were aggravated following the injection of the serum.

In the group of patients who improved, three died after temporary benefit, a mortality of 3.6 per cent. One of these, a myoclonic, wildly delirious patient, died of respiratory paralysis six days after receiving 56 c.c. of serum. One other myoclonic and delirious patient died four days after the sixth intravenous injection, receiving altogether 109 c.c. of serum. One, an extremely delirious patient, died ten days after two injections of serum, 35 c.c. in all.

The duration of the disease at the time of serum treatment in the group of patients who derived apparent benefit could be determined in seventy-one cases; it ranged from two days to three years. In twenty-three cases, it was seven days or less; in twenty-one, it was between eight and fifteen days; in thirteen, between sixteen and thirty days; in two each, it was one, two, three, four and twenty-four months; in one each, it was six, ten, fourteen and thirty-six months, respectively. The predominating type of the disease was reported in eighty cases in this group. Of these, thirty-four were predominantly lethargic, nineteen myoclonic, six choreiform, five parkinsonian, and sixteen neuritic, paralytic, acute or bulbar in type. The ages of the patients ranged from 1 year to 65 years. Forty-seven were males, and thirty-five females. In three, the sex was not recorded. In five patients, the improvement was slight; in thirty-eight, moderate, and in forty-two, marked.

In the group of forty-five patients in whom no beneficial effects were noted, nineteen died. These, together with the three who died in the favorable group, make a mortality rate of 17 per cent. Most of the fatal cases were acute and very severe forms of the disease, and in many, inadequate amounts of the serum were given; thus, twelve patients received less than 30 c.c.; five received between 30 and 50 c.c., and only five received from 90 to 120 c.c. The duration of the disease in the nonfavorable group at the time of the first serum treatment was determined in all but four cases, and ranged from four days to three years; in eleven cases, it was a week or less; in nine, between eight and fifteen days; in eleven, between sixteen and thirty days; in one each it was one and one-half, twelve, and twenty-four months; in three, it was two months; and in three, it was three years. On analyzing the results according to whether or not an adequate amount of serum was given, it was found that of the 130 patients, only eighty-five received 50 c.c. or more of the serum, and of these, eight died, a mortality of 9.4 per cent. No apparent effects followed the use of the serum in five additional cases, which later proved to be tuberculous meningitis, and in two cases of brain tumor.

The time when improvement began varied considerably, depending on the duration and severity of the disease, and the amount of serum injected. As a rule, improvement occurred within twenty-four hours after each injection, but in some instances, especially in the chronic forms of the disease, it did not occur until after recovery from the delayed serum reaction. In most cases in which improvement was apparently initiated by the serum treatment, it continued thereafter; in a considerable number, the gain was temporary, and the patient reverted to the former condition; in a few instances, a second series of injections (Cases 2 and 11), after desensitization, again produced beneficial effects. Improvement occurred in patients who had been in the same condition for weeks, and in some who were slowly growing worse; and, seemingly, recovery was hastened in some that were slowly improving. In some cases no good effects were noted, regardless of the duration or severity of the symptoms, and in no instance did the serum stay the process in fulminating bulbar types of the disease.

The reasons for lack of improvement in acute fulminating cases are obvious. The antibody content in the amount of material injected is necessarily small; in cases of long duration, anatomic changes may have taken place, precluding the possibility of benefit. In the milder forms of the disease, of relatively short duration, however, the reasons for the ineffectiveness of the serum are not so apparent. In several cases in my series, marked sepsis of the teeth and tonsils may have been responsible. In others, the explanation may be found in the fact that, as I have already pointed out, not all of the strains are immunologically identical. Indeed, it was found with one exception, a moribund patient, that in the cases in which benefit was derived, the organism isolated, with which encephalitis was produced in animals, was markedly agglutinated by the immune serum injected; and that in cases in which doubtful or no results were obtained, the organism isolated was agglutinated not at all, or only in low dilutions of the serum. In a number of cases in which improvement was noted, the agglutinating titer of the patient's serum against encephalitis strains showed, twenty-four hours after the serum was given, a sharper increase than could be accounted for by the amount of serum injected. It is possible, therefore, that some of the good effects are nonspecific in character.[9]

The beneficial effects obtained in certain chronic cases (Cases 21 and 22) are in keeping with the fact that the causative organism has been isolated from the nasopharynx and infected tonsils or teeth long after the onset of the disease.

Good effects have been noted in different types of the disease, in widely separated communities, and in cases that occurred during epidemic outbreaks of the disease, and in sporadic cases.

The results obtained thus far are encouraging and about what should be expected, in view of the results of protective and other experiments in animals, at the same time leaving much to be accomplished.

It is, of course, doubtful whether the serum treatment will prevent in all cases the late manifestations which are so common and so deplorable. The delayed serum reaction, which occurred in from four to twelve days after the first injection in most cases, makes the continued use of the serum impossible, and sometimes dangerous, even when the usual precautions are taken. My experimental studies indicate that the progressive and changing character of the disease, the exacerbations and the so-called sequelae, are due to an active infection by a streptococcus, which has peculiar neurotropic and other properties, and that invasion may be

9. Russell, C. K.: Epidemic Encephalitis: Influence of Horse Serum in Treatment: A Preliminary Note, Canadian M. A. J. 12: 705-710 (Oct.) 1922.

favored by the presence of primary foci of infection, such as in sinuses, teeth and tonsils. Hence, besides the serum and other forms of treatment, a thorough search for, and when possible, removal of, foci of infection, combined perhaps with active immunization with a vaccine prepared from the streptococcus proved guilty by animal inoculation, should be practiced in the hope of arresting the progress and preventing recurrences in this disease.[10]

In order to make clear the results obtained with the serum in various forms of the disease, I shall cite the essential facts in a series of illustrative cases in which seemingly undoubted benefit was derived, and in which doubtful or no results were obtained.

REPORT OF CASES

Case 1.—A farmer, aged 26, a patient of Dr. J. H. Stokes, six months prior to the attack of encephalitis, had received a series of six intravenous injections of arsphenamin for hereditary syphilis. He was free from symptoms, and the blood and spinal fluid Wassermann reactions were negative, but a second series of injections was thought advisable, and he returned to the clinic.

Feb. 6, 1923, four days after the fifth injection of arsphenamin, all without untoward symptoms, during an epidemic of respiratory infection resembling influenza, in which a number of cases of encephalitis developed, the patient complained of pain in the extremities, and developed symptoms of a moderately severe nasopharyngitis. He felt sick for three days, but the symptoms were attributed to the respiratory infection. The night of February 11, he was restless, tossed about a great deal, and was unable to sleep. The next day he felt worse, continued to be restless, but became listless, and experienced difficulty in walking and talking. On the morning of February 13, he was taken to the hospital in a semistuporous condition. He complained of headache and dizziness, moaned a great deal, was stuporous most of the time, but restless, and pulled almost constantly at the sheets. Examination revealed double vision, incoherent speech, slow and tremulous movements, marked rigidity of extremities, and incontinence of urine and feces. February 14, his condition was much the same. He was extremely rigid; there were ankle clonus, a positive Babinski, and marked increase in knee reflexes. During short intervals, he seemed oriented, but was stuporous most of the time. Twenty cubic centimeters of antiencephalitis serum was given intravenously at 10 p. m. The next morning the patient was remarkably improved. He was easily aroused and answered questions intelligently, although at intervals he lapsed into apparent unconsciousness. The extremities were less rigid, and the reflexes less exaggerated. From 40 to 50 c.c. of clear spinal fluid was withdrawn, and 20 c.c. of serum was given intraspinally. Daily injections of 20 c.c. of the serum, alternating intravenously and intraspinally, were given during the next five days. Improvement continued uninterruptedly, and apparently complete recovery followed.

Case 2.—A boy, aged 9 years, a patient of Dr. G. T. Joyce, Rochester, Minn., March 7, without previous respiratory infection, became apathetic, complained of double vision and inability to sleep, and developed muscular twitchings and jerky movements, beginning in the left arm, and extending to the left leg, and then throughout most of the body. His temperature ranged from 100 to 101 F. until March 12. My examination, on the evening of March 12, revealed diplopia, slight drooping of the eyelids, restlessness, twitching of the muscles of the left eyelids and left side of the face, and peculiar jerky movements of all extremities, resembling those of chorea, exaggerated knee jerks, and a temperature of 101 F. The spinal fluid was under normal pressure; the cell count was 28; the globulin test was positive. An intradermal sensitization test was positive. Five-tenths cubic centimeter of serum was given subcutaneously as a desensitizing dose. There was no change in the boy's condition the following day. Five cubic centimeters of serum was given intramuscularly in the morning, and 10 c.c. in the evening. The boy slept quietly most of the night, and the next day marked improvement was noted. The temperature was normal, and the twitchings and jerky movements of muscles were much less marked. Two injections of serum of 10 c.c. each were given that day, and one injection on each of the two succeeding days. Improvement continued, and on the fourth day after the serum treatment was begun, all symptoms had subsided, and the boy appeared well. One more injection was given, and in twenty-four hours serum rash appeared, and the injections were discontinued. There were no symptoms for eighteen days, when twitching of muscles of the left eyelids, diplopia in looking toward the left at objects at some distance, jerky movements of the left arm, and slight fever recurred. Desensitization was again carried out, and three daily intramuscular injections of serum were given, when they had to be discontinued on account of a severe attack of serum sickness. The twitchings and jerky movements again disappeared, and three weeks later recovery was complete, except for slight diplopia.

The streptococcus isolated from the nasopharynx produced a myoclonic type of encephalitis in rabbits, and was agglutinated specifically by the immune horse serum, by the patient's serum, and by the serum from several other cases of encephalitis.

In order to avert further recurrence and sequelae, a vaccine was prepared from the patient's own strain of the streptococcus, and is being administered once a week.

Case 3.—A farmer, aged 30, seen with Dr. A. E. Lange of the Mayo Clinic, had a cold in the head, which was followed a few days later by buzzing in both ears, nausea and vomiting, and about ten days later, by blurred vision, nystagmus, diplopia and lethargy. A diagnosis of lethargic encephalitis was made. Serum treatment was begun three weeks after the onset of the illness. Five daily injections were given, 90 c.c. in all. The patient was decidedly more wakeful the day after the first injection, and was able to read. Following this, there were fluctuations from day to day in the degree of nystagmus, ability to read and lethargy, but gradual improvement occurred, and two months later recovery was apparently complete, except for slight strabismus and blurred vision.

Case 4.—A man, aged 54, a section foreman, seen with Dr. A. E. Lange of the Mayo Clinic, had, four weeks before, developed aching pain in, and stiffness, hot feeling and sensitiveness of the right thigh, followed in four days by severe cramping and involuntary contractions of muscles on that side. Shortly afterward, he developed a similar condition of the left thigh, and became delirious and bewildered. The myoclonic movements extended to the lower abdominal muscles, and occurred in rhythmic alternation on both sides. These movements were still present on examination, but were not nearly so marked as during the first week or two. A diagnosis of myoclonic encephalitis was made. The temperature was normal; the leukocyte count was 15,400; the Kolmer test of the spinal fluid was negative, the Nonne, positive, and the sugar content slightly increased. Five daily intravenous injections of the serum, 101 c.c. in all, were given. Slight improvement occurred after the second dose, and during three weeks in which the patient was under observation, there was a gradual improvement in muscular movements and mental condition. However, it is doubtful whether the serum was of any benefit.

Case 5.—A man, aged 23, a cook, seen with Dr. A. E. Lange of the Mayo Clinic, had had influenza four weeks previously, and was sick for two weeks. He had had fever, was in bed for several days, and then apparently recovered. Two weeks later he suddenly developed severe frontal headache, blurring of vision, and in twenty-four hours diplopia, nystagmus, staggering gait, fever, restlessness, extremely irregular sighing respirations, marked edema of the lips, and bulging of the eyeballs. The leukocyte count was 13,600. Spinal fluid findings were: 1 lymphocyte, a negative Kolmer test, a positive Nonne, and 0.15 per cent. (Folin) sugar. One

10. Since this paper was written, forty additional cases that were treated with the serum have been studied. Favorable results were obtained in twenty-five cases, in nearly all of which the serum was given in the early stages of the disease; doubtful, or no apparent effects were obtained in fifteen cases, chiefly chronic or fulminating types of the disease.

intraspinal and one intravenous injection of serum, 20 c.c. each, had no apparent effect. Twenty-four hours after the intraspinal injection of serum, there were 60 lymphocytes in the spinal fluid. The patient died of respiratory paralysis forty-eight hours after the onset of symptoms of encephalitis.

The streptococcus isolated from rabbits that developed the bulbar type of encephalitis following injection of the nasopharyngeal washings, from filtrates of the nasopharyngeal washings and emulsions of the medulla, and corresponding filtrates, was not agglutinated by immune horse serum, but was agglutinated by the patient's serum and by the serum from one other case of the bulbar type of the disease.

CASE 6.—A man, aged 27, had had pain over the right eye, diplopia, insomnia for two days, ringing in the ears, nausea, retention of urine, chills and sweats, abnormal but variable reflexes, palsy of the face and right quadriceps, and drowsiness. The leukocyte count was 10,000. The spinal fluid cell count was 18, and globulin was increased. The Wassermann reaction was negative. A diagnosis of lethargic encephalitis was made. Serum treatment was begun on the fifth day of illness; three daily intramuscular injections were given, 70 c.c. in all. The diplopia, drowsiness, and retention of urine disappeared within twenty-four hours after the first intramuscular injection of serum. Complete recovery followed, with the exception of a positive Babinski sign on the right.[12]

CASE 7.—A woman, aged 32, had pain in the back of the head, and dizziness, diplopia, blurred vision, photophobia, restlessness, delirium, stupor, dysphagia and moderate intermittent fever. The spinal fluid was normal. A diagnosis of lethargic encephalitis was made. Serum treatment was begun on the seventh day of the illness; three daily intravenous injections were given, 67 c.c. in all. The restlessness, pain, and headache were greatly relieved, and gradual recovery followed.[13]

CASE 8.—A girl, aged 12 years, had headache, delirium, fever and inequality of pupils, followed by diplopia, apathy and somnolence. The spinal fluid cell count was 10. The Wassermann reaction was negative. Lethargic encephalitis was diagnosed. Serum treatment was begun on the fourteenth day of illness; five daily intramuscular injections were given, 47 c.c. in all. Improvement in the mental state began the day following the first injection, and was progressive. Complete recovery followed.[14]

CASE 9.—A man, aged 35, had recurring attacks of lethargic encephalitis three years, nine months and three weeks prior to the administration of serum. Lethargic encephalitis was diagnosed. On the twenty-first day of the last attack, serum treatment was begun; three daily intravenous injections, followed by three daily intraspinal injections, were given, totaling 60 c.c. The lethargy almost completely disappeared, but divergent strabismus persisted.[15]

CASE 10.—A girl, aged 18 years, had had high fever, headache, nystagmus, myoclonic twitchings of the face, neck, abdomen, arms and legs, and dysphagia, lethargy, muscular rigidity, ankle clonus, Babinski on the right side, and incontinence of urine. A diagnosis of lethargic and myoclonic encephalitis was made. Serum treatment was begun on the fifth day of illness; four daily intramuscular injections were given, totaling 90 c.c. The muscular rigidity and jerkings diminished, the mental state greatly improved the day after the second injection, and improvement thereafter was gradual but steady. The patient recovered completely.[15]

CASE 11.—A boy, aged 12½ years, had had muscular pains in the shoulders, arms and legs, and a temperature of 100 to 101 F. for a week. He then developed hiccup every two to six minutes; drowsiness increased, and twitchings of the muscles of the legs were noted, with involuntary clonus of the left ankle, synchronous with spasms of the diaphragm, generalized clonic convulsions at intervals, and intermittent diplopia. The leukocyte count was 7,600. The blood and spinal fluid Wassermann reactions were negative. The urine was normal. The abdominal and cremasteric reflexes were greatly increased. A diagnosis was made of lethargic and myoclonic encephalitis. Serum treatment was begun on the twelfth day of illness; four daily intravenous injections were given, totaling 40 c.c. The spasms of the diaphragm and other muscles, and lethargy disappeared completely during the serum treatment. Muscular twitchings of the left shoulder, which returned five days after the last injection, disappeared within twenty-four hours after an additional injection of 10 c.c. of serum. The patient recovered completely.[16]

CASE 12.—A woman, aged 22, had an initial attack of influenza. She had a moderate degree of fever, increasing slowness of speech, severe muscular pains the sixth day, increasing rigidity and lethargy, and unconsciousness on the eighth day, which continued until the eleventh day, when the first intramuscular injection of serum was given. Diagnosis of lethargic and myoclonic encephalitis was made. Seventy-one cubic centimeters was given in four daily doses. Decided but gradual decrease of all symptoms followed the second intramuscular injection of serum. The patient was troubled with insomnia during convalescence, but recovered completely.[17]

CASE 13.—A woman, aged 68, was sleepless and restless, and had painful clonic spasms of the abdominal muscles and the diaphragm on the right side. The spinal fluid cell count was 12; the Wassermann reaction was negative, and pressure greatly increased. A diagnosis of myoclonic encephalitis was made. Serum treatment was begun on the ninth day of illness; five injections were given, totaling 98 c.c. The symptoms diminished after each of five serum treatments, in which 10 c.c. was given intravenously, and 10 c.c. intraspinally from twenty-four to forty-eight hours apart. The patient recovered completely shortly after the last serum treatment.[18]

CASE 14.—A girl, aged 12½ years, developed uncontrollable movements of the feet and arms, and the muscles of the trunk, which increased to violent choreiform movements involving the whole body. She was aphasic, and semicomatose, with the eyes half opened. Her fever was high, and she was stuporous following an attack of cystitis and parotitis. Athetosis was marked; she made bizarre grimaces. The patellar reflexes disappeared. Loss of weight was marked. The blood and spinal fluid Wassermann reactions were negative. The cell count ranged from 2 to 40; the globulin was slightly increased. A diagnosis of the lethargic and choreiform type of encephalitis was made. Serum treatment was begun on the ninety-fifth day of illness; five daily intravenous injections were given, 50 c.c. in all. The fever gradually declined during the four days following the first injection; the mental status remained unchanged; the muscular spasms diminished slightly. The patient gradually improved thereafter, with ultimate complete recovery.[19]

CASE 15.—A man, aged 28, had had hiccup for three days, and a week later, severe pain around the left ear and left side of the face, with involuntary movements of the muscles of the face, arms and lower extremities. He had severe headache, insomnia, diplopia and fever, and was excited and talkative. The leukocyte count was 6,800. A diagnosis of the choreiform type of encephalitis was made. Serum treatment was begun on the sixteenth day of the illness; four intramuscular injections were given, 70 c.c. in all. Fever, diplopia, choreiform movements, insomnia and pains were markedly lessened during the period of serum injections. The patient recovered completely.[20]

CASE 16.—A man, aged 38, had fever, pain in the head, neck and shoulders, vertigo, and twitchings of muscles, followed by choreiform movements of the hands and arms, hiccup, associated with short, quick respirations, tachycardia and delirium, and was stuporous. The spinal fluid was normal, but the pressure was increased. A diagnosis of the neuritic and myoclonic type of encephalitis was made. Serum treatment was begun on the thirtieth day of the illness; three daily intravenous injections were given, the total being 67 c.c.

11. Case reported by Dr. F. W. Heagey, Omaha.
12. Case reported by Dr. Kenelm Winslow, Seattle.
13. Case reported by Dr. Maurice H. Tallman, Boise, Idaho, and Dr. W. M. Mitchell, Parma, Idaho.
14. Case reported by Dr. W. L. Allison, Fort Worth, Texas.
15. Case reported by Dr. A. E. Westervelt, Bowdon, N. D.
16. Case reported by Dr. M. R. Hoon, Pittsburgh.
17. Case reported by Dr. D. W. Matthaei, Fessenden, N. D.
18. Case reported by Dr. D. L. Dawson, Rice Lake, Wis.
19. Case reported by Dr. F. J. Sladen, Henry Ford Hospital, Detroit.
20. Case reported by Dr. M. M. Banowitch, Beth Moses Hospital, Brooklyn.

There was marked improvement twenty-four hours after the first injection of serum. The patient recovered completely.[21]

CASE 17.—A woman, aged 35, had vertigo, prostrating weakness, and paralysis of the sixth and seventh cranial nerves on the left side, but no fever. The leukocyte count was 9,600. The blood Wassermann reaction and spinal fluid findings were negative. A diagnosis of neuritic encephalitis was made. Serum treatment was begun on the eleventh day of the illness; six daily injections were given, 80 c.c. in all. Two days after the sixth dose of serum, symptoms of paralysis of the cranial nerves had almost disappeared, only slight widening of the palpebral fissure remaining.[22]

CASE 18.—Mrs. C., aged 28, had an attack of encephalitis in which she developed incomplete facial paralysis, and complete inability to cough, evidently from paralysis of the diaphragm. She was given three daily intravenous injections of 10 c.c. of the serum five weeks after the onset of the illness. Marked improvement was noted after the use of the serum, and after the serum reaction, which occurred the day following the third injection. Twelve days later, the facial palsy had disappeared; she was again able to cough, and had apparently recovered completely.[23]

CASE 19.—A woman, aged 30, had moderate fever, headache and restlessness. An abnormal mental state was followed by acute mania. The patient refused food and medicine, and would alternately strike, bite and scratch the nurses, and sing. Urination and defecation were involuntary. The spinal fluid cell count was 1, and Fehling's test was positive. A diagnosis of encephalitis, with maniacal symptoms, was made: After withdrawal of spinal fluid, which was under pressure, the patient became quieter, but continued to be irrational, and refused food and medicine for a week. On the eleventh day of illness, 1 c.c. of serum was given subcutaneously, and a short time later, 10 c.c. intravenously. The following day there was marked improvement. After two more daily intravenous injections of 15 c.c. each, the patient was quite normal, asked for a daily paper, which she read, and wanted to go home. Three days later, she reverted to her former condition, refused to take nourishment, or to speak, and kept her head covered. Ten cubic centimeters of serum was given intravenously. The following morning she was normal again, and remained so.[24]

CASE 20.—A man, aged 26, had diplopia, severe pain in both shoulders, lassitude, and fever for five days, followed by increasing lethargy and stupor, a staring, masked expression, and muttering speech. The spinal fluid was normal. A diagnosis of the lethargic and parkinsonian type of encephalitis was made. Serum treatment was begun on the fifteenth day of the illness; six daily injections were given, totaling 70 c.c. Lessening of fever, pain, stupor and the parkinsonian facies followed the first injection, and improvement continued after subsequent injections. Recovery was complete.[25]

CASE 21.—A woman, aged 39, was weak, completely disabled, and mentally apathetic, and all movements were slow and difficult, with marked muscular resistance and tremor of the hands. She was unable to feed herself, and had marked drooling of saliva. The condition had developed gradually for three years, following an obscure infection considered to be walking typhoid. Blood Wassermann and spinal fluid reactions were negative, and the urine was normal. A diagnosis of postinfluenzal encephalitis, of the parkinsonian type, was made. Serum treatment was instituted, 10, 20 and 20 c.c., respectively, of serum being injected intravenously on alternate days. No effect was apparent until after the last injection, when rash, slight swelling of joints, and elevation of temperature developed, lasting forty-eight hours. When these symptoms subsided, gradual but well-marked improvement followed. The mental attitude improved; muscular resistance and drooling of saliva gradually decreased; the patient became much encouraged, was able to feed herself and walk about the hospital wards, and carried her grip as she left the hospital, apparently recovered.[26]

21. Case reported by Dr. Kenelm Winslow, Seattle.
22. Case reported by Dr. C. S. Bluemel, Denver.
23. Case reported by Dr. William House, Portland, Ore.
24. Case reported by Dr. B. H. Champion, Vancouver, B. C.
25. Case reported by Dr. T. B. Kelly, Butte, Mont.
26. Case reported by Dr. G. W. Dishong, neurologic service, St. Joseph's Hospital, Omaha.

CASE 22.—A man, aged 35, after an attack of influenza had had lethargic encephalitis, lasting several weeks, and had been unable to work the past year on account of weakness, stiffness and tremor of muscles, and mental depression. Examination revealed stiffness and weakness of all muscles, "pill-rolling" movements between thumb and index finger of the right hand, and a slow, laborious gait with stooping posture. The patient's condition remained unchanged for two months while he was in the hospital. The blood and spinal fluid Wassermann reactions were negative. A diagnosis of parkinsonian syndrome following lethargic encephalitis was made. Serum treatment was begun fourteen months after the onset of the disease, 10, 20 and 25 c.c. of serum being injected intravenously on alternate days. Severe serum reaction followed soon after the third injection, but marked improvement began simultaneously with recovery from the serum sickness. The weakness and stiffness of muscles, the tremor in the right hand, and the facial mask have practically disappeared, and improvement has been continuous for two months.[27]

THE VALUE OF THE TOXIN (ANTIGEN) OF RHUS TOXICODENDRON AND RHUS VENENATA

IN THE TREATMENT AND DESENSITIZATION OF PATIENTS WITH DERMATITIS VENENATA

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In this contribution I present a statistical discussion of two problems. The first is a study of the relative value of the antigen method of treating dermatitis venenata due to poison ivy or poison oak, as compared with the older methods of local applications. The second phase of the discussion is whether or not this specific toxin (antigen) treatment is of value in the prevention of attacks of dermatitis venenata in those who are highly susceptible to it. The data represent the accumulated experiences, not only of myself, but of many other physicians throughout the country who have utilized this method of treatment.

TREATMENT OF THE ATTACK OF DERMATITIS VENENATA

The attack of dermatitis venenata represents a state of hypersensibility on the part of the person affected to this particular form of irritant. The old method of local application utilized remedies, in the treatment of dermatitis venenata due to poison ivy or poison oak, which were either slightly astringent and itch relieving, or medicinal substances which were, in themselves, irritants. The first group of remedies, by their cooling and soothing influences, attempted in this fashion to quiet the inflammatory reaction of the skin, diminish its subjective and objective cutaneous manifestations, and thus limit the spread of this form of dermatitis. The second group of remedies, those applied in the nature of counterirritants, attempted to overcome this specific cutaneous inflammation by increasing the amount of defensive substances sent to the inflamed skin, and thus conquer the inflammation and control it spread. This method, owing to the possibilities for harm, has never enjoyed great popularity among the profession. The great weakness of this mode of treatment is the attempt to overcome a specific reactionary inflammation with nonspecific remedies. It has

27. Case reported by Dr. G. W. Dishong, neurologic service, St. Joseph's Hospital, Omaha.

occurred to us that the employment of the active principles derived from the plants, capable of producing a dermatitis venenata in the susceptible subjects, represented the rational therapeutic method of procedure.

TABLE 1.—*Patients Suffering from Dermatitis Venenata Due to Poison Ivy and Poison Oak Treated by the Toxin (Antigen) Method of Treatment*

Physician	No. of Patients Treated	Successful Results	Doubtful Results	Unsuccessful Results	No. of Hours after First Injection Before Results Were Noted	No. of Injections to Complete Cure	Average No. of Injections Given to Each Patient
1. Dr. M.	7	7	..	..	24 to 48	2 to 3	2 to 3
2. Dr. F.	16	16	..	..	3 to 24	2 to 4	3
3. Dr. A.	2	2	..	..	48	3	3
4. Dr. B.	1	1	..	..	.....	3	3
5. Dr. E.	4	4	..	..	48	3	3
6. Dr. H.	8	7	1	..	24 to 36	2 to 3	3
7. Dr. H.	4	4	..	..	6 to [illegible]	2 to 4	2 to 4
8. Dr. H.	4	4	..	..	48	3	3
9. Dr. L.	6	6	..	..	24 to 48	4	4
10. Dr. M.*	20	15	3	2	24	3 to 4	4
11. Dr. P.	2	1	1	..	24	2	2 to 3
12. Dr. R.	1	1	..	..	24	3	3
13. Dr. S.	2	2	..	..	24	3	3
14. Dr. S.	1	1	..	..	4	[illegible]	2
15. Dr. S.	1	1	..	..	24	2	2
16. Dr. S.	1	1	..	..	..	6	6
17. Dr. T.	1	1	..	..	48	3	3
18. Dr. T.	1	1	..	..	2	3	3
19. Dr. W.	9	9	..	..	24	2 to 3	2
20. Dr. J.	8	8	..	..	2	2 to 5	2 to 3
21. Dr. L.	2	2	..	..	..	1 to 3	1 to 3
22. Dr. S.	24	24	..	..	24	3 to 4	3
23. Dr. B.	2	2	..	..	12 to 24	3	3
24. Col. K.†	17	17	..	..	24 to 48	1 to 2	1
25. Dr. E.	6	3	3	..	.....	.....	.....
26. Dr. D.	4	..	..	4	No results	.....	.....
27. Dr. E.	1	1	..	..	.....	.....	.....
28. Dr. B.	1	..	1	..	.....	.....	.....
29. Dr. M.	2	2	..	..	48	2	2
30. Dr. Q.	6	6	..	..	48	2	2
31. Dr. R.	2	2	..	..	4th day	5	5
32. Dr. B.	6	6	..	..	24	1 to 2	2
33. Capt. P (Oak)	50	50	..	..	24 to 48	2 to 3	2
34. Dr. A. (Oak)	34	34	..	..	24 to 48	1 to 3	2
35. Dr. S. (Author)	100	96	..	4	24 to 48	2 to 4	3

* University of Wisconsin.
† West Point Military Academy.

The most authoritive work shows that the active principle of poison ivy or oak is a substance of glucosidal nature. This substance is nonvolatile even when mixed with acetic acid and alcohol. The method of isolating the substance has already been discussed.[1]

The toxin (antigen) treatment of dematitis venenata, caused by poison ivy, which is the most common type in the eastern United States, consists in the intramuscular injection of a solution of this specific antigen. The author's technic consists in giving a series of from three to five injections, the number administered varying with the severity of the attack and the response on the part of the patient. The dose of the present preparation varies from 0.3 to 0.5 c.c., although doses up to 0.7 c.c. may be given.

The first two doses are given at a twenty-four hour interval, the remainder at intervals of from forty-eight to seventy-two hours, depending on the response of the patient. As a rule, to which there are few exceptions, the itching associated with this form of dermatitis disappears completely, or is greatly modified, within twenty-four hours after the first injection.

With the relief of the itching, the swelling and redness of the parts affected begin to disappear, and vesicles present begin to dry up and form crusts, which soon fall off. The skin is usually restored to normal in from four to five days after treatment is instituted, except in those generalized and violent cases of dermatitis venenata in which the restoration of the skin to normal may be more delayed. These results are accomplished without the aid of any external remedies whatsoever.

Table 1 gives a detailed account of the results achieved in the treatment of more than 350 cases of dermatitis venenata due to poison ivy or oak treated with the toxin (antigen) method.

A study of the table shows that there are records of 356 patients suffering from dermatitis venenata due to either poison oak or poison ivy and treated with the toxin (antigen) method. Of this number, ten patients, or 2.8 per cent., received no benefit whatsoever and nine patients, or 2.5 per cent., received some, though doubtful, improvement. These results compare favorably and, indeed, are vastly superior to those obtained by any form of local application as yet devised for the treatment of this affection.

In some instances, improvement was noted as early as two hours after the institution of treatment; and when success was attained, improvement never occurred later than forty-eight hours after treatment was begun. In the vast majority of cases, improvement was noted twenty-four hours after the institution of this mode of treatment. In many instances, one or two injections were all that were required to cure, but in the larger number of instances, three or four injections were deemed necessary.

DESENSITIZATION

The desensitization that can probably be conferred by the antigen method of treatment against dermatitis venenata by poison ivy or poison oak is in all probability of short duration and one which has to be renewed from time to time. It also appears probable that this immunity is a tissue immunity similar to that of hay-fever. Various immunologic studies have failed to disclose any immune substances in the blood serum of susceptible patients. The technic for immunization varies slightly from that employed in the cure of the attack. The injections, numbering four, are given intramuscularly, three or four days apart. The dose varies from 0.3 to 0.5 c.c. After the course of intramuscular injections, the patient is advised to take the tincture of rhus toxicodendron or the tincture of rhus venenata, as the case may be, by mouth, for a period of one month. The dose of this mouth remedy varies from 5 to 10 drops of the tincture well diluted in water, after meals.

TABLE 2.—*Results Obtained by the Use of the Toxin (Antigen) Method of Desensitization in Patients Suffering from Dermatitis Venenata Due to Poison Ivy*

Physician	Number of Patients Desensitized	Results
1. Dr. B.	1	No return of poisoning since last acute attack (no dates given in report); result was apparently favorable
2. Dr. R.	1 (himself)	Highly favorable result; although exposed, had practically no outbreak
3. Dr. T.	1	Favorable result; patient, although exposed, had practically no outbreak
4. Dr. P.	1	Favorable result; patient, although exposed, had practically no outbreak
5. Dr. S. (author)	16	Favorable results in fourteen cases; in two cases the author failed to immunize the susceptible patient

1. Strickler, Albert: The Toxin Treatment of Dermatitis Venenata, J. A. M. A. 77:910 (Sept. 17) 1921.

In all, we have the record of twenty patients who have been immunized by this method and whom we have been able to follow. Table 2 summarizes the results obtained by various physicians, including the author, in their effort to desensitize highly susceptible patients.

The following are the records of some of the patients desensitized:

REPORT OF CASES

Dr. R. reports one case: "I have been a sufferer from ivy poisoning almost every year. I took the whole course of treatment as directed, the three injections and tincture by mouth. I paid no more attention to where I went on my fishing trips than if the weed were nowhere in sight. On one occasion, I had a small row of blisters on one hand which remained distinctly localized and did not spread at all."

Dr. T. reports one case: "This person spends her summers in the northern woods, and each summer suffers intensely from rhus poisoning. During the month of June last year, I gave her six injections of the antigen, following the last of which she departed immediately for the north. She then took the preparation by mouth, as outlined. On her return home in late September, she related that she had had no trouble during the months of July and August, although frequently exposed, but had had a very slight attack about two weeks before arriving home, and three weeks after the use of any drug by mouth. She felt sure that all credit was due to the use of the preparation."

Dr. P. reports one case: The treatment was administered in July, 1922, with four immunizing doses at weekly intervals. This patient has always been susceptible to rhus dermatitis, and the past summer was her most comfortable summer in years. While on her vacation in August, after exposure to rhus, she had about a dozen scattered blebs, on the arms and legs. She was given an injection of the toxin, and the blebs dried up within twenty-four hours. This patient could not take the rhus tincture internally, as it caused an inflammation of the buccal mucous membrane.

AUTHOR'S SERIES

H., a young boy, highly susceptible to poison ivy, was immunized in the early summer of 1921. Although frequently exposed, he passed through the summers of 1921 and 1922 without any attacks of dermatitis venenata. Early in 1923, the patient developed a mild attack of poison ivy.

Miss Q., aged 11 years, highly susceptible to poison ivy, was immunized in the summer of 1921, and since that time has been free from dermatitis venenata, although exposed.

Miss R., aged 9 years, also highly susceptible to dermatitis venenata, caused by poison ivy, was immunized in the summer of 1921. Although exposed since, she has been free from any attack.

Mrs. H. T. F. had been subject to dermatitis venenata every summer. It was so severe that she was confined to bed for a period of from four to six weeks. During the summer of 1921, she was given five intramuscular injections of rhus toxin, dose 0.5 c.c., every third day. After this course of treatment, she went out in the woods and even picked the ivy leaves without suffering any ill effects.

In this connection, I quote from an unpublished communication of H. E. Alderson, by courtesy of the author:

A young woman had acute dermatitis on her face and extremities, of two days' standing, caused by exposure to poison oak. The usual dose of 1 c.c. was injected intragluteally. The next day, her condition was somewhat improved. She was given another injection, 1 c.c. Within three days after the first dose, all her lesions had subsided to a great extent, and within two more days she was practically well. Locally, a zinc oxid starch was used.

To test her immunity, two months later, she deliberately rubbed some poison oak leaves into her skin. The results were most favorable. No dermatitis venenata resulted. Always, previous to this occasion, she was very susceptible to the effects of poison oak. This test seems to prove that immunity had developed.

I could enumerate other instances in which such desensitization has been accomplished, but the cases enumerated constitute sufficient evidence of what can be accomplished by this therapeutic procedure.

COMMENT

In the treatment of dermatitis venenata due to poison ivy or poison oak, the toxin (antigen) method of treatment constitutes the best method of procedure. Counting the unsuccessful and doubtful results in this series of 356 cases, there were noted nineteen cases, or slightly more than 5 per cent., in which failure or only slight improvement resulted. I know of no method of treatment in which such a small percentage of failures has been encountered. It is to be emphasized that these results were obtained without the additional use of local applications. It is also to be remembered that relief is obtained usually within twenty-four hours after the institution of treatment, and only occasionally and in very severe and generalized cases does a forty-eight hour interval elapse before relief is obtained. Cure of this condition is obtained within from four to five days after the institution of this mode of treatment.

In the desensitization of highly susceptible patients, our results seem to be encouraging. With the small series at our command, one cannot be too dogmatic or overenthusiastic. All that can be said is that the use of this method is to be encouraged, as it is incapable of doing harm, is worthy of a trial, and the results thus far obtained by a number of different physicians, including myself, are very highly encouraging.

The method of desensitization is a rational one, and it is based on principles that have been successfully applied in the desensitization of other disease conditions. Considering that, in the past, no hope of prevention could be held out for these constant sufferers from poison ivy and realizing the great suffering and dread which these patients undergo, there is more than ample justification for the employment of this method of desensitization. The treatment is simple and can be carried out with ease, and if future results justify past experiences, this treatment should prove a great blessing to these highly susceptible persons. The method of procedure in desensitization is a combination of intramuscular and oral administration, exact technic of which has already been indicated.

As a result of the combined experiences here recorded, this form of therapy, both as a mode of treatment and as a method of desensitization, is offered to the profession as a great advance in obtaining relief for their patients suffering from poison ivy and poison oak.

327 South Sixteenth Street.

Hospital Is a Laboratory.—The value of the hospital as a laboratory cannot be too greatly emphasized. The congregation and variety of cases makes possible in a few months an experience that it would take otherwise years to obtain, but in this bedside experience should be included those diseases now prevalent, such as, mental, tuberculosis, and pediatrics. Furthermore, definite and comprehensive experience should be given in obstetrics and adequate experience as well as instruction in normal child life. The period of case experience should be of sufficient length and continuity to fix impressions and enable experimentation for the end result.—A. W. Goodrich, *Hospital Social Service* **7**:172 (March) 1923.

ENCEPHALITIS FOLLOWING INTERFERENCE WITH DEAD TEETH

REPORT OF TWO CASES *

ROBERT BURNS, JR., D.D.S.
SAN FRANCISCO

In 1921, Potts [1] reported a case of encephalitis developing rapidly after the extraction of a dead tooth. I have seen two similar cases. No attempt will be made here to discuss the etiology of encephalitis, but special attention may be directed in Case 2, to the entire absence of contact with an active case and the great improbability of contact with a carrier. The patient had not suffered from a prior attack of influenza and had not come in contact with any one so suffering.

REPORT OF CASES

CASE 1.—S. B. F., a married woman, aged 38, referred to me, Sept. 13, 1920, by Dr. William Banks, relative to the possibility of oral infection, had been in poor health for a number of years, had given evidence of hyperthyroidism, and had once been told that she had "incipient tuberculosis." Both these conditions were quiescent when she was sent to me, but she suffered a good deal from an anacid gastritis with incident colitis. To relieve pain, she took codein and, occasionally, heroin; she also was addicted to the use of barbital. The patient was a writer, a clever woman, but plainly of the neurotic type. Her married life had not been happy, and about one year prior to the time when I saw her, she had suffered the shock of an automobile accident in which her son was killed.

Oral examination revealed a hopeless pyorrhea, with such a condition of malocclusion that masticatory efficiency was almost nil. Several teeth were absent, and pus exuded, on pressure, from the gums. In the upper jaw, nine of the remaining teeth were dead, infected or showed larger or smaller areas of rarefaction about the apexes. The right upper lateral incisor was absent, but there remained in situ the temporary lateral which had been devitalized for a porcelain crown supported by a pin. The root canal of this tooth had been perforated, and filling material protruded into the cancellous bone. On the gum over this tooth, also involving the permanent cuspid, was a tumor, irregular in outline and approximately 15 to 20 mm. in diameter—a papillary fibroma. In the lower jaw there were five dead teeth.

September 30, under ether, all the teeth were removed. The tumor, with the bone and the two teeth involved, was removed *en bloc*. No unusual circumstances occurred during the operation. The anesthetic was started at 9:05 and stopped at 10:20 a. m. At 3 p. m. the patient complained of headache, which persisted and required the administration of morphin. The following morning she was apathetic, and remarked, "Why, doctor, I see two of you." She had slight fever, the temperature being between 99 and 100 F., with a pulse rate of 100 to 112. She was restless and slept poorly, and, October 2, insisted on returning to her home.

October 4, she was dull, somnolent and apathetic; her faculties were not clear, and she answered dully when spoken to. It was said that she had taken barbital; how much was not known. Twice during the night, she had also been given one-eighth grain of morphin, hypodermically. I warned against the use of these drugs, and advised Dr. Banks.

October 6, I removed the sutures in the mouth; the wounds were healing well, and that phase of the case was satisfactory, but I was worried about the drowsiness. I again cautioned about cutting down the morphin. The temperature at that time was 100. That evening, at about midnight, Dr. Banks was called hurriedly, and found the patient in coma. A partially empty bottle of tablets of barbital (veronal) was found in the bed. There was no positive knowledge that the patient had swallowed any of the tablets, but the usual emergency measures were taken. Dr. O. B. Jellinek was called in consultation, October 8, and lumbar puncture was done. Examination of the fluid was negative. At this time, the physicians made the diagnosis of epidemic (lethargic) encephalitis.

The patient remained in complete coma for at least three or four days, and then slowly began to recover consciousness. During the period of coma, the evening temperature was about 102; the morning temperature was lower. By October 12, the patient was much better, and eventually recovered completely. For two years she enjoyed better health than she had had for many years.

In October, 1922, she again began to fail in health, and for a period of about two months was confined in a private institution, the victim of manic-depressive insanity. At the height of this attack, she developed acute mastoiditis, and radical mastoidectomy was performed. She made a good recovery from this and the mental disorder, and is at the present time apparently well.

CASE 2.—T. E. B., aged 34, mother of two children, residing on a ranch in California, had always had good health, except that a little more than six years previously she had suffered a "nervous breakdown." She had entirely recovered, and was doing all the usual work of a ranch housewife. She had pyorrhea and six dead teeth, from which she suffered no local discomfort until January, 1922, when a dentist "killed the nerve" of two additional teeth by the application of arsenous oxid. One tooth gave no trouble; the other, in April, began to ache, the gum swelling slightly. The patient took acetylsalicylic acid.

May 10, the tooth ached badly, and was sore to the touch, and again the gum swelled.

May 11, the dentist drilled into the tooth. The patient said that blood and pus escaped, and relief was immediate.

May 16, she felt tired and dull. The next day she had dizzy spells and occasional diplopia.

May 20, diplopia was still present, and there was stiffness of the tongue and ringing in the ears.

The following day there was difficulty in swallowing and pronounced ptosis of the eyelids, with marked drowsiness, dryness of the mouth and inability to use the arms and shoulder muscles. The weakness of the arms continued, the right leg dragged, and vomiting occurred after a dose of calomel and also after taking salts. The patient reports that, May 25, she was at her worst, was helpless from the waist up, could not lift her head if it fell forward, and could scarcely swallow water.

She was examined by Dr. T. C. Edwards of Salinas, who reported to me that, when he first saw her, she had a slight elevation of temperature, with difficulty in deglutition and speaking, evidently on account of inability to use properly the muscles of the tongue and throat. In fact, all muscles, from those supplied by the brachial plexus upward, showed a decided loss of tone, though they were not paralyzed completely. Examination of the urine revealed: albumin,; no sugar; no indican; many stratified epithelial cells; several granular casts and one fine granular cast.

The patient remained in Salinas under the care of Dr. Edwards until June 2, when I first saw her. She was placed in St. Francis Hospital, under observation by Drs. Thomas Kelly and Walter F. Schaller, who concluded that the patient was suffering from epidemic encephalitis. The oral findings were: general pyorrhea of advanced degree with deep pockets, with gums turgid and bleeding on slight pressure. Both upper central incisor teeth, the left upper bicuspid, right lower third molar and second bicuspid were dead, with rarefied areas in the apexes; the right lower central incisor had an area of rarefaction in the apical region, the root having been amputated several years before; the left lower first and second bicuspids and the first molar, which was the tooth which the dentist had probed, showed rarefied areas.

July 31, under a local anesthetic, I removed both left lower bicuspids and the first molar by turning back a flap and removing enough bone to uncover a large abscess cavity, into which the roots of the teeth projected. Healing was rapid and uneventful, and there was no systemic reaction.

* Read before the St. Francis Hospital Clinical Society, March 30, 1923.

1. Potts, H. A.: Report of Case of Cephalic Chancroid, and Case of Encephalitis Following Extraction of a Tooth that had Infection at the Apex, J. A. M. A. 77: 1885 (Dec. 10) 1921.

November 1, Dr. Edwards wrote me: "Her condition is markedly improved. The only thing she complains of now is the uncertainty of movement of the hands when they are elevated above the head, as in the efforts to fix the hair. There is some dryness of the mouth, under unusual excitement, and on exertion she gets a little dizzy and is short of breath. She weighs over 160 pounds [73 kg.] and looks exceedingly well." In January, 1923, when I did further dental work, all symptoms had disappeared except slight weakness in the deltoid muscles, under stress.

COMMENT

I would emphasize the improbability of contact with epidemic encephalitis in Case 2. The patient lives on an isolated ranch, 12 miles from a village of a few hundred inhabitants, where she consulted the dentist. The practice of this dentist is purely local, and he knows, personally, all his patients and their families. If any of his patients had ever had epidemic encephalitis, the dentist and the whole community would have known it. It is not impossible that the stirring up of the dental focus liberated into the blood stream an organism that lodged in the encephalon and produced the syndrome recorded.

135 Stockton Street.

INSULIN IN DIABETES COMPLICATED BY INFECTION

NECROPSY REPORT OF THREE FATAL CASES *

SOLOMON STROUSE, M.D.
AND
OSCAR T. SCHULTZ, M.D.
CHICAGO

Our own clinical experiences with insulin [1] have been uniformly favorable. It has reduced blood sugar, caused the disappearance of glycosuria, increased the patient's weight and working capacity, and in several instances has tided over patients in crises which without insulin probably would have ended in death. One of our first patients had an unusually severe type of disease complicated by fever of unknown etiology, and ending in death from pneumonia while under insulin therapy. Two other patients died while receiving insulin; in all three, immediate necropsies were obtained. It seemed to us that a careful clinical and pathologic investigation of these three cases would be of considerable importance in determining the value of the new remedy under unfavorable circumstances. All three cases were complicated. Infection played an important rôle in the death of all. Clinicians have always dreaded the onset of even a mild infection in patients with diabetes; this evaluation of insulin in infection should be of particular importance at the present time. In addition to the three fatal cases, we can add two cases of diabetes with severe infection in which insulin exerted a definitely potent and valuable effect.

CASE 1.—*History.*—W. D., a man, aged 38, white, admitted, April 13, 1922, had had diabetes three and one-half years, and had shown a steadily downward course. At the onset of the disease he weighed 150 pounds (68 kg.); in April, 1922, he weighed only 96 pounds (43.5 kg.).

He was 6 feet, ½ inch tall and looked like a skeleton. The eyes were deeply set and sunken into hollows. There was a systolic blow over the mitral area; there was no heart enlargement and no signs of decompensation. No other abnormalities were found on careful examination.

The urine on a test diet of 40 gm. of protein, 90 gm. of fat, and 50 gm. of carbohydrate, contained 30 gm. of sugar, 8.5 gm. of nitrogen, and gave marked positive acetone and ferric chlorid reactions. The blood sugar was 0.28 per cent.; nonprotein nitrogen, 46.2; carbon dioxid, 51.3 per cent. by volume.

A rather difficult patient to handle dietetically, he was discharged from the hospital, June 14, 1922. His diet then was: protein, 40 gm.; fat, 125 gm.; carbohydrate, 30 gm.; calories, 1,405; weight, 106½ pounds (48.4 kg.). The blood sugar was 0.12 per cent.; the urine was normal, and in general he felt stronger.

He kept in good condition most of the summer, mainly sugar-free, but we were never able to increase his tolerance beyond 1,400 calories. Oct. 26, 1922, he again entered the hospital for the study of insulin treatment.

Clinical Course.—On admission, no change was noted in the physical examination, except a loss of weight to 101 pounds (45.8 kg.). On a diet of protein, 45 gm., fat, 130 gm., and carbohydrate, 25 gm., calories, 1,450, the daily sugar output was 13 gm.; nitrogen, 9 gm.; the acetone and ferric chlorid reactions were negative. The blood sugar was 0.208 per cent.; carbon dioxid, 50.7 per cent. by volume.

October 31, 10 units of insulin was injected. The following day only a trace of sugar was excreted, and on the second day, the urine was sugar-free. From 10 to 12 units was given daily; the diet was increased very rapidly, so that by the end of the seventh day, it was protein, 65 gm.; fat, 160 gm.; carbohydrate, 95 gm. The urine remained sugar-free. His weight rose to 104 pounds (47.2 kg.), and he felt strong and "peppy." The blood sugar was 0.18 per cent. The amount of glucose burned had risen in one week from 38 to 133 gm.

A period of experimental study of the possibilities of giving insulin by inunction resulted in immediate glycosuria; but successful insulin therapy was noted from November 17 to December 4. On this date the diet consisted of protein, 65 gm.; fat, 150 gm.; carbohydrate, 65 gm.; calories, 1,870; the weight, however, was only 102 pounds (46.3 kg.), despite the absence of abnormal urinary constituents.

Beginning December 4, a definite change in the clinical picture was observed. At irregular intervals the patient's temperature rose, at times only as high as 99.4, again to 101.8 F. There was no regularity to the febrile recrudescences, and the only manifestation of their occurrence was the apathy of the patient. Physical examinations were made by us as well as by other members of the hospital staff, but nothing was found to account for the fever. The systolic heart murmur noted at the first examination was constantly present; otherwise there were no physical signs of disease. This febrile course lasted until December 31. From this date until Jan. 27, 1923, the temperature showed weekly remissions. Several blood cultures were negative. The Wassermann test was negative.

During this time the patient gradually grew more apathetic and steadily lost weight (98 pounds [44.5 kg.] before death). January 27, he developed an acute lobar pneumonia of the left upper lobe, from which he died, January 31.

During all this time, insulin was pushed. During one period of about a week between December 16 and 21, work with other patients showed that the extract was not very potent, but this was quickly remedied by an extra supply. The dosage employed varied between 30 and 40 units. Sugar was almost constantly present in the urine in amounts from 3 to 30 gm. By January 1, the diet had been reduced to protein, 45 gm.; fat, 130 gm.; carbohydrate, 25 gm.; calories, 1,450. The blood sugar was 0.308 per cent.; acetone appeared in the urine during this period. There were no other signs of acid intoxication.

Necropsy.—This was done three hours after death. The brain was normal, and the hypophysis showed no change. The thyroid was decreased in size, each lobe measuring 4 by 2.5 by 0.8 cm. Dense fibrous adhesions almost completely obliterated each pleural cavity. The peribronchial lymph nodes were slightly enlarged, and one was fibrous and partly caseous. The upper lobe of the left lung was completely consolidated in a stage of gray hepatization. The pericardial

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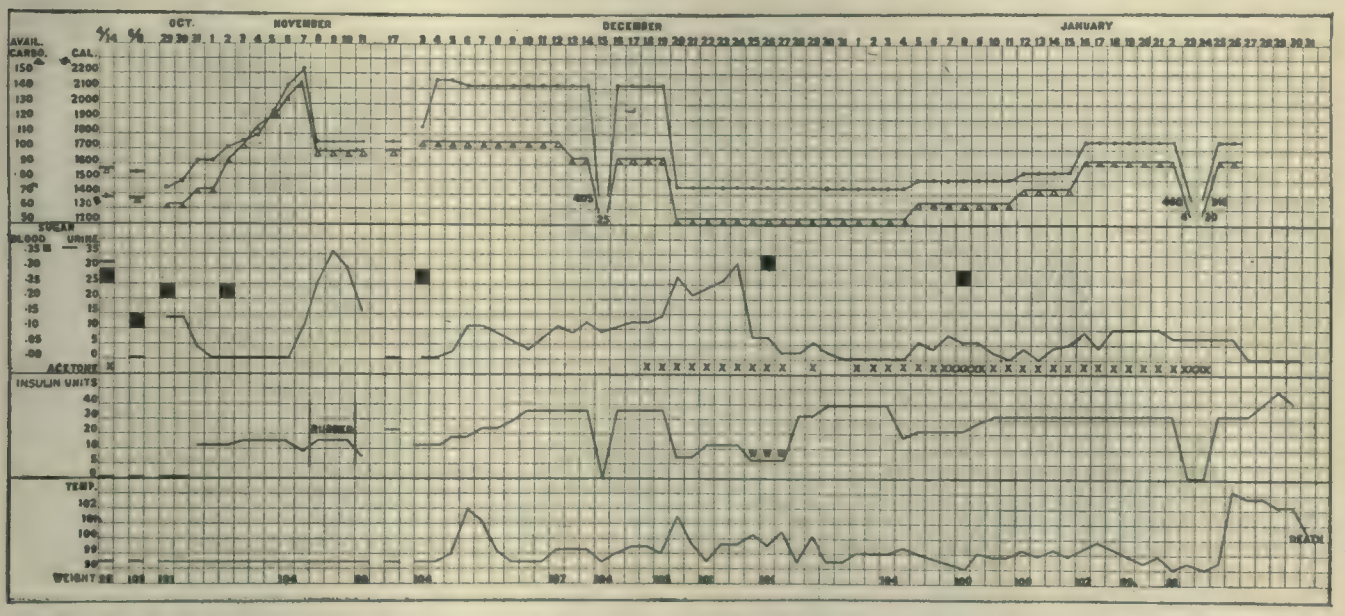
1. The insulin used in this study was insulin-Lilly.

cavity contained about 200 c.c. of clear fluid. Small, calcified nodules were scattered about in the visceral pleura of each lung. Beneath the capsule of the liver were about twenty whitish, firm nodules from 1 to 2 mm. in diameter. Similar nodules were present beneath the capsule and in the substance of the spleen. The pancreas measured 15 cm. in length, 6 cm. in greatest width and 0.8 cm. in thickness; it weighed 27 gm. It was finely lobulated, soft, and salmon pink.

Microscopic examination revealed marked acute degenerative changes in the myocardium. The cross striations of the muscle fibers were indistinct; the cytoplasm was swollen, cloudy and vacuolated. The aorta contained nodular areas of sclerosis with central degeneration. In the liver there was marked central congestion, with compression and partial atrophy of the cells of the central zone. Many of these cells contained granular brown pigment. In the rest of the liver lobule, the parenchyma cells were swollen and compressed the sinusoids. Their cytoplasm was homogeneous and glassy. Some of the portal vein branches of the interlobular tissue were surrounded by narrow zones of leukocytic infiltration. The nodules of the pleura, liver and spleen had a thick outer layer of very dense, hyaline, fibrous tissue poor in nuclei, and a center of granular, homogeneous, structureless, often partly calcified material. The partly caseous peribronchial lymph node had a similar structure. All of these lesions appeared to be old, well healed tubercles with no evidence whatever of recent activity. The changes in the consolidated lung were those typical of lobar pneumonia in the gray hepatization stage.

In the pancreas, an acinous arrangement was indistinct, the entire pancreas being composed of small groups of cells and suggesting fetal pancreatic tissue in appearance. The lobules were small, but ducts were numerous and were more closely placed in the tissue than normal. The islets were decreased in size, but definitely recognizable. In general, their size was small, the average dimensions being 70 by 90 microns; a few were larger, and measured 130 by 160 microns. The islets were composed of anastomosing cords one or two cells wide, the cords being separated by broad sinusoids. The cells were of uniform size and morphology. Their nuclei were relatively large and vesicular. The cytoplasm formed a narrow rim about each nucleus, and was homogeneous, finely granular and rather deeply stained. In some of the cells it was vacuolated. In a small number of islets, marked degenerative changes were present. Such islets were decreased in size even below the average dimensions given above. They were almost completely transformed into an eosin-stained, coarsely and finely vacuolated ground substance, in which the sinusoids could not be recognized. This material still contained a few cells, some with shrunken pycnotic nuclei, others with greatly enlarged hydropic nuclei poor in chromatin.

This was a severe case of diabetes in which the maximum glucose tolerance under dietotherapy alone was 30 gm., and which immediately reacted to insulin by a tremendous increase in tolerance. During the treatment a fever developed, the etiology of which was not disclosed even at necropsy. The old healed tubercles were completely encapsulated and showed no signs of activity; active tuberculosis can hardly have been the cause of the fever. At the onset of fever there was a large increase in sugar excretion, which was certainly due in part to a poor quality of insulin, as was proved by the immediate beneficial effect of some other insulin. After potent insulin was again used, the sugar excretion dropped, but despite diminished food intake and increased insulin dosage, the following febrile period was characterized by the constant excretion of small amounts of sugar daily. During this period the patient's general condition gradually deteriorated, he grew weak and apathetic, lost weight, and developed an acute lobar pneumonia from which he died.



Course in Case 1. Available carbohydrate (according to the formula C. + 0.58 P.) is recorded as total grams in twenty-four hours; urinary sugar, as total grams excreted in twenty-four hours. At the point marked "Rubbed" on the insulin curve, subcutaneous administration of insulin was replaced by inunctions of insulin in hydrous wool fat. From December 16 to 24, the insulin used was of low potency; on the days marked "W" on the insulin curve, it was replaced by insulin from another source; following this period the insulin was again highly potent.

The cause of the constant glycosuria is difficult to determine. The extra glucose derived from body protein should have been taken care of by the amount of insulin used. Whether this sugar existed in a form not influenced by insulin is a problem raised by the recent work of Winter and Smith.[2]

In attempting to interpret the results in this case, we believe we must be guided by a sense of mathematical proportions. Diabetes is a disease characterized by a mathematical derangement of metabolism, and insulin is a therapeutic agent with mathematically defined possibilities. From evidence so far collected, it is apparently true that the power of inducing sugar combustion in the patient with diabetes is not a constant factor in each case.

2. Winter, L. B., and Smith, W.: J. Physiol. **56**: 227 (May) 1922; **57**: 100 (Dec.) 1922.

In the present case the course can be divided into four stages: (1) The maximum improvement under dietary therapy, followed by a stationary period during which the patient barely held his own; (2) a period of marked improvement under insulin therapy; (3) the febrile period, during which the insulin effect was less powerful than before, and (4) the onset of acute lobar pneumonia in a man who for more than three years was steadily going down-hill from a severe diabetes. This must be considered the real reason for the failure of insulin to prevent death.

CASE 2.—*History.*—Mrs. K. K., aged 65, white, seen on the night of March 13, 1923, had been suffering for two weeks from an attack of upper respiratory infection which was epidemic in Chicago at the time. In the preceding twenty-four hours she had rapidly grown worse, and was becoming sleepy, and disoriented. The respirations were becoming increasingly rapid. She gave a history of untreated diabetes with constant glycosuria and much loss of weight for fourteen years.

Physical Examination.—The patient was much disoriented and very "dopey," but could be roused by strong stimuli. The ocular tension was low. The breathing was distinctly of the Kussmaul type; acetone was evident in the breath. The pharynx was injected; scattered râles were present in the bases of both lungs; the heart measured 11 cm. to the left in the fifth interspace, and 3.5 cm. to the right. A rough systolic blow was heard at the apex. The pulse was 120 and very small. The deep reflexes were not obtained. A plain specimen of urine contained much sugar, albumin, acetone and diacetic acid.

Treatment and Course.—Her condition was so extreme that she was rushed to the hospital, and without waiting for further laboratory study, insulin injections were immediately begun. At 10:30 p. m., 12:30 a. m., 3 a. m. and 7 a. m. she received 10 units. Digitalis was given in large doses; orange juice, milk, hot drinks and sodium bicarbonate were also given.

Early on March 14, it was evident that the threatened diabetic coma had been averted, but the general condition of the patient was bad. Her temperature was 102 F.; the pulse, 160 and irregular; respirations 40, but not of the Kussmaul type. She was still disoriented. The tongue was dry. A lobar pneumonia of the left lower lobe was found; the heart was dilated. The liver was palpable 5 cm. below the costal margin.

The urine contained decidedly less sugar and less acetone than the specimen voided the night before. The blood sugar was 0.41 per cent.; nonprotein nitrogen, 67.2; carbon dioxid, 40 per cent. by volume; Wassermann reaction, negative; hemoglobin, 60 per cent.; red blood count, 2,900,000; white blood count, 4,500.

The treatment was continued as outlined; insulin in 20 unit doses was given at 1:30 p. m. and at 3:30 p. m. The afternoon urine contained only a trace of acetone. Cardiac weakness became steadily more marked, and she died at 6:40 a. m., March 15.

Necropsy.—This was done at 9 a. m. The lower lobe of the left lung was almost completely consolidated, its cut surface being red and rather dry. The lower right lobe and the upper left lobe contained patchy areas of consolidation. The remaining lung tissue was edematous. The aorta appeared normal, but the coronary arteries of the heart were sclerotic. The myocardium was red, and contained an increased amount of connective tissue. The pancreas measured 15 by 3.5 by 0.8 cm. It was pink, and contained a slightly increased amount of fat. The remaining organs showed no gross changes of importance.

Microscopic examination disclosed that the process in the lungs appeared to be a confluent bronchopneumonia. The heart muscle fibers were swollen, and in some the striations were indistinct and the cytoplasm was vacuolated. Small, scarlike areas of connective tissue were present in the myocardium. Groups of liver cells contained large fat vacuoles. The nonvacuolated cells were swollen, and their cytoplasm had a homogeneous, waxy appearance. Many of the nuclei were edematous. Parenchymatous changes were marked in the kidneys.

Small, round areas of fat were scattered about within the lobules of the pancreas, and interlobular adipose tissue was moderately increased in amount. The islets were few in number, and averaged about 90 microns in diameter. A few were larger, and had dimensions of 160 by 220 microns. The islet cells varied somewhat in size, and had a less definite cordlike arrangement than in the first case. The smaller cells had finely granular, solid, deeply stained cytoplasm. In the larger ones the cytoplasm was more faintly stained, and was finely to coarsely vacuolated. The nuclei varied considerably in size. Chromatolysis was evident in some of them. The acinous tissue appeared normal.

This was a neglected case of diabetes in an elderly woman who developed an upper respiratory infection terminating in bronchopneumonia. Severe diabetic acidosis was produced, with characteristic Kussmaul air hunger. Under insulin therapy there was a striking and rapid disappearance of the signs of diabetic acidosis, although the pneumonic intoxication and the cardiac decompensation increased in severity and caused death.

CASE 3.—A widow, aged 70, white, admitted, Feb. 2, 1923, complained of diabetes of five years' duration; steady itching around the genitalia; infection of the right foot for four weeks, and abdominal swelling for five years.

The diabetes was mild. For two years after the onset she had sugar, and then under moderate diet restriction she was free of sugar for three years. Three weeks before admission, sugar reappeared. The swelling of the abdomen was first noticed five years ago; it increased in size for three years, and has been quiescent for the last two years. Five years ago she was told she had a prolapse of the bladder. The infection around the right foot had steadily been growing worse, and was associated with much pain.

Examination.—The patient looked very old. The lungs were clear. The heart was enlarged. The systolic blood pressure was 136; the diastolic, 78. The peripheral arteries were thickened. No pulsation was felt in either popliteal space. There was an area of infected gangrene on the inner side of the right foot. Occupying a large part of the right side of the abdomen was a large tumor mass, which in parts was cystic and in other parts was firm and nodular (cystic tumor of ovary). The skin around the genitalia and thighs was red and inflamed.

The Wassermann reaction was ++++ with cholesterinized antigen, and + with lipoid and syphilitic antigens. The blood sugar on admission was 0.20 per cent. The urine contained sugar in varying but small amounts.

Although only a small amount of sugar was present in the urine, and the blood sugar was comparatively low, the gangrene and infection both spread rapidly. The temperature rose to 108.8; the pulse was 120. The consulting surgeon advised amputation, which was refused. With the marked arterial sclerosis present it was not believed that the glycosuria or low grade hyperglycemia were causative agents. Insulin, however, was used from February 16, at first in small dosage, and then 20 units daily. March 10, the patient became drowsy, and on March 11, at 9:30 a. m., she died. There was no acetonuria; sugar was present only in traces. Unfortunately, we were not able to observe this patient for the last two weeks of her life, and no further blood chemical studies were done. However, the notes on the chart indicate that the patient did not die of diabetic coma but of the toxic effects of her infection.

Necropsy.—This was begun within an hour after death. In brief, the findings were a large cystadenoma of the right ovary; fibrous pleuritis; chronic bronchitis; pale, hypertrophied heart; coronary sclerosis; a mottled, fatty liver; chronic cholecystitis with stones; acute splenic tumor, with a large recent infarct; atrophic fatty pancreas; slight nephritis; uterine polyp; general extensive arteriosclerosis with marked calcification, and gangrene of the foot.

Microscopic examination revealed the same degenerated parenchymatous changes in the myocardium, liver and kidneys as were present in the other two cases. Arteriosclerosis, with obliteration of numerous smaller arteries, was marked. The interlobular tissue of the liver contained many areas of dense lymphocytic infiltration about the vessels.

The pancreatic tissue was extensively replaced by fat, the latter forming large areas in which one to a few lobules of pancreatic tissue were embedded. Smaller areas of fat were present within some of the lobules. The islets present were of normal size, averaging 180 by 260 microns in diameter. Their number per lobule appeared normal, but the total number in any given area of pancreas was decreased by the loss of pancreatic tissue through fatty replacement. The islet cells were large and polyhedral, and had large, vesicular, round nuclei. An occasional nucleus was undergoing chromatolysis. The cells formed solid masses of considerable size, these masses being separated from one another by sinusoids. The cytoplasm of a few cells was vacuolated; that of the nonvacuolated cells was finely granular and faintly stained. In some of the lobules which were completely surrounded by fat, interlobular and intralobular stroma was increased; but when islets were present in such lobules, they were not involved in the fibrotic process.

Review of this case forces the conclusion that diabetes played a minor and insignificant rôle in the condition as presented in the hospital. The arteriosclerosis was surely responsible for the foot gangrene and infection. The presence of chronic cholecystitis and stones may account for the low grade glycosuria. Whether the arteriosclerosis originated as a result of diabetes or was part of general senile sclerotic changes in which the pancreas took part is also open to doubt, although we are inclined to the latter view. At any rate, the comparatively low blood sugar in a case in which high grade hyperglycemia may be expected would greatly lower the probabilities of effective insulin therapy.

COMPARATIVE STUDY OF THE PANCREAS

The pathology of the pancreatic islets in diabetes has been the subject of numerous reports which it is unnecesary to review at this time. The changes may be so slight as apparently to be out of all proportion to the clinical severity of the disease; but it is the occurrence of such not very obvious changes, limited strictly to the islets, that furnishes the strongest evidence of the relation of islets to diabetes. Abnormal functioning of the islets, without definite morphologic changes detectable by ordinary methods, must be considered possible. Diffuse pancreatic fibrosis invading both acinous and islet tissue is seen in some cases of diabetes. This condition was not present in the pancreas of the cases reported above. Usually the pancreatic involvement is much less obvious, and consists of hyaline degeneration or fibrosis or both combined, limited sharply to the islandic tissues. To these qualitative changes must be added a quantitative one, a decrease in the number of islands. Allen has emphasized hydropic degeneration of the islet cells, manifested morphologically by vacuolization of the cytoplasm, as the most constant finding in experimental diabetes. This degenerative process may be succeeded by hyalinization and fibrosis of the involved islands, and is probably the precursor of these terminal changes sometimes encountered. Of greater importance is the fact, pointed out by Allen, that hydropic degeneration may lead to dissolution of the islet cells with complete disappearance of the islands, the acinous tissue filling in the small defect thus brought about. Such a process of degeneration and disappearance of islands without fibrosis explains the condition frequently seen in the diabetic human pancreas, namely, a simple decrease in the number of islands without obvious changes in those still remaining. In the human pancreas, the stage of hydropic degeneration is usually not seen, probably because of the time elapsing between death and removal of the organ. By the use of specific staining methods, two types of cells, alpha and beta, have been found to make up the pancreatic islet. According to Allen, hydropic degeneration occurs first in the alpha cells, and the latter are the first to disappear, indicating a specific relation to diabetes even without the islet itself.

A careful study of the islets of the pancreas from cases which have been under insulin therapy is of importance in order to determine the degree of repair possible in the damaged pancreas. The ideal to be hoped for from insulin therapy would be such recovery of the islets from degenerative changes as would permit permanent maintenance of the patient with diabetes on minimal doses of the extract, or even without continuous administration of the material. The latter is not to be expected if the number of islands has been reduced to such a degree as to be incompatible with normal metabolic function, since regeneration of islands which have disappeared completely is probably out of the question.

In the three cases reported above, the necropsy was begun within an hour after death in one case, and within three hours in the other two cases. In Case 3, generalized senile arteriosclerosis was the underlying factor, and the slight grade of glycosuria was apparently associated with atrophy of the pancreas rather than with any marked grade of specific alteration in the islets. The latter were of about normal size and structure, but cytoplasmic vacuolization was present in a few cells. In the other two cases, the most striking gross findings were the decreased size and the increased vascularity and pink color of the pancreas, especially marked in the first case, which had been subjected to prolonged insulin administration. The vascularity was like that of the pancreas of a dog at the height of digestion, and raised in our minds the question whether insulin may not have a specific organ stimulating effect on acinous tissue in addition to its action in sugar metabolism. In both of these cases, vacuolar degeneration of the islet cells was present without fibrosis, the islands were diminished in numbers, and the average diameter of those remaining was decreased. It seems proper to conclude that hydropic degeneration over a prolonged period had led to disappearance of islands, and that the cause of the degenerative process was still active, in that vacuolated cells were still present in considerable number. In Case 1, there were a few completely degenerated islands, the latter being transformed into small areas of granular, vacuolated ground substance in which were embedded a decreased number of nuclei, some pycnotic and some greatly swollen and edematous. In this case the indistinctly acinous character of the pancreatic tissue was also striking. This has been referred to above as suggestive of the fetal pancreas. This condition and the small size of the acinous cells may have been the result of decreased functional activity due to the very low total metabolism of the patient over a prolonged period.

Sections from the different portions of the pancreas from the three patients were studied by specific granule methods. On our material, as is usually the case with that of human origin, the stains have not been so satisfactory as they are with animal material removed immediately after death. The zymogen-containing acinous

cells took on a deep violet color, but granules were indistinct. In the islets of the third patient, whose pancreas showed chiefly fatty replacement with normal appearing islets, a few larger cells with staining reactions like those of alpha cells could be recognized. Most of the cells had a diffuse, finely or indistinctly granular violet tone, lighter in color than zymogen-containing acinous cells. In the islets of the other two cases, only cells of the latter type were present, and no cells of the alpha type could be recognized. The absence of alpha cells is suggestive, but because of the uncertainty of the methods when applied to human material, undue importance is not attached to this phenomenon.

CASE 4.—*History.*—C. W. S., a man, aged 49, white, seen, March 7, 1923, had diabetes of ten years' standing, "more or less" under control. Most of the time he was not under a strict diet, but in the preceding year had been moderate in his consumption of carbohydrates. He had lost weight and grown considerably weaker. Ten days before, the small toe of the right foot was sore and inflamed; this had steadily grown worse.

Examination.—The patient appeared pale and sallow. There was general thickening of the peripheral arteries; there was no pulsation in the dorsalis pedis of either foot. The right small toe was covered with a purulent exudate which came from the base of the toe, between the toes, and from under a mask of dead skin covering the toe. After cleansing, two large gangrenous areas were seen—at the base of the toe and on the sole adjoining. A small gangrenous area was seen on the inner aspect of the toe. The tissue at the base of the toe was denuded almost to the bone. On the outer aspect of the great toe on the same foot was a large callus, around which a small gangrenous area was present.

The urine contained large amounts of sugar and some acetone.

Treatment and Course.—The patient was given a low caloric diet, low in carbohydrate, and was kept at absolute rest; the toe was cleansed and then kept dry. After five days the process had extended. He then entered the hospital for insulin treatment.

In the hospital on a balanced diet of protein, 35 gm., fat, 75 gm., carbohydrate, 37 gm., calories, 955, the sugar excretion was 13 gm.; acetone, negative. Insulin was given in 30 or 40 unit doses daily, and the diet was increased to 1,300 calories without producing glycosuria. The toe was kept clean and dry. Two surgeons were consulted; one advised immediate amputation of the toe; the other did not consider surgical amputation necessary, as the toe was bound to amputate itself.

April 15, the fasting blood sugar was 0.15 per cent.; the urine was normal; the tissue around the toe showed some signs of health. The small area of gangrene about the callus on the great toe had extended, and was now 1¼ inches long by ½ inch wide. April 28, the gangrenous areas around both toes were easily detached, and, when removed, the underlying tissue was found perfectly healthy.

We doubt whether such results would be possible without insulin.

CASE 5.—*History.*—Mrs. P., aged 54, white, entered the hospital, May 5, with a history of severe diabetes of at least six years' standing. While under treatment a year before, she developed severe acidosis. Eight days before admission, she became aware of a painful red swelling on the inner side of her right thigh gradually increasing in size.

Examination.—The breath was heavy with acetone. The patient looked flushed and ill. The temperature was 98.4. The general examination was negative. A large infiltrated abscess about 3 inches in diameter on the upper inner aspect of the right thigh was present. A plain specimen of urine voided at 4 p. m. on admission contained 3 per cent. sugar; acetone, +++; ferric chlorid, ++. The laboratory was closed, and the severe acidosis in the presence of an abscess did not warrant further delay in treatment. Hot applications were applied to the infected area. Dietary restrictions were ordered. At 5 p. m., 10 units of insulin was injected, and at 7 p. m., 10 more. The urine voided the next morning was sugar-free, and contained only a trace of acetone. The patient looked and felt quite different; acetone was absent from the breath. The abscess was incised, and much pus evacuated.

On the second morning the laboratory reported blood sugar, 0.19; nonprotein nitrogen, 36.4; plasma bicarbonate, 51.7.

The diet was carefully increased, and insulin was given in doses of 20 units daily. The infiltrated area around the abscess rapidly softened, and all pain disappeared. May 9, the patient was walking around the room.

The history of this patient indicated that she had a severe diabetes. No one who has seen the rapidity with which diabetic patients are thrown into severe acidosis and come by infections such as this abscess can doubt the importance of the result in this case. Although she was already on the verge of coma, the condition was completely and rapidly changed after two insulin injections.

SUMMARY

Insulin was given a severe trial in five cases of diabetes complicated by infection. Three of these patients died and came to necropsy, two having died of acute pneumonia and one of intoxication from a severe infected gangrene of the foot. The pathologic findings in these three cases were so extensive that it would be beyond reason to expect insulin to accomplish any more than it did. In two other cases the effect of insulin was truly remarkable.

In one case, in which the patient was dying of pneumonia and entered the hospital only twenty-four hours before death in a state of extreme acidosis, there was marked and rapid relief of the acidotic symptoms under insulin therapy, but the symptoms of intoxication due to the infection persisted.

In two of the fatal cases, the islets of Langerhans were decreased in number, and vacuolar degeneration was present in the islet cells, having gone on to complete degeneration of a few of the islands in one case. In the third, primarily one of senile arteriosclerosis in which glycosuria was a minor and late manifestation, the pancreas was largely replaced by adipose tissue, leading to a decrease in the number of islands, in some of which hydropic degeneration of a few cells had occurred.

In diabetes complicated by infection, insulin is a powerful therapeutic agent which may rapidly overcome the symptomatic effects due to diabetes, thus increasing the chances for a successful fight against the infection. Insulin alone, however, cannot overcome the latter, nor can it be expected to restore to normal, tissues which have undergone degenerative changes as the result of acute or long continued intoxication.

During the course of infection in diabetes there may occur a low grade of glycosuria which does not yield to increasing doses of insulin, although the extract may have kept the patient's urine free of sugar before the development of the infection. This may be due to the decreased sugar tolerance, which has long been known to be one of the effects of infection in diabetes.

Study of the islets of Langerhans in our fatal cases suggests that hydropic degeneration of the islet cells may persist, and perhaps progress, even when insulin is being administered.

Besetting Fears.—Fear is necessary to self-preservation. In itself it therefore is not morbid. It is morbid only when inappropriate to the situation which provokes it.—Williams: Dreads and Besetting Fears, Boston, Little, Brown & Co., 1923.

THE TREATMENT OF DIABETES MELLITUS WITH INSULIN *

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The recent isolation by Banting and his co-workers of an active glycolytic, nontoxic, pancreatic extract opens up a new era in the treatment of diabetes mellitus. Ever since the classical experiment of Mering and Minkowsky proved the existence of pancreatic diabetes, frequent attempts at specific pancreatic therapy have been made. These attempts in the past have been uniformly unsuccessful and now possess little but historical interest.

The isolation of insulin, which is described as the active hormone of the islands of Langerhans, has excited unusual interest among both physiologists and clinicians. Allen [1] has written an excellent summary of all articles published on this subject up to August, 1922, and enables one to trace step by step the various phases in the development of this important discovery.



Fig. 1.—Boy with severe juvenile diabetes, Dec. 7, 1922.

A more recent article by Banting, Campbell and Fletcher [2] describes the results obtained from the use of this preparation, in patients suffering from diabetes. They state that glycosuria is abolished, that ketones disappear from the blood and urine, and that the blood sugar is lowered and maintained at a normal level. They found also that the alkali reserve returns to normal and that the cardinal symptoms are relieved. Perhaps the most interesting statement that they make is that insulin is a specific in the treatment of diabetic coma.



Fig. 2.—Appearance of patient, Feb. 26, 1923.

The preparation of insulin (insulin-Lilly) which is made in the United States has been used extensively in this country during the last few months. We thought it might prove of interest to record the results obtained in this clinic with the use of this preparation. We have used it in the treatment of thirty cases, and the results obtained have confirmed the therapeutic value described by Banting, Campbell and Fletcher. This group consisted mainly of moderately severe cases, but also included four cases of severe juvenile diabetes, four patients on the verge of coma who could be aroused only with great difficulty, and three patients in complete coma. Since a detailed description of the cases is not attempted in this report, a few typical results are shown in the accompanying illustrations and charts.

The boy shown in Figure 1 is an example of severe juvenile diabetes. At the time the picture was taken, Dec. 7, 1922, he had had diabetes for two years, and it had been impossible to render him aglycosuric except on a diet of 5 per cent. vegetables, with days of complete starvation. His weight at this time was 15 pounds (6.8 kg.). Treatment was begun at the St. Louis Children's Hospital under the direction of Dr. W. McKim Marriott, to whom I am indebted for this picture and

* From the Department of Internal Medicine, University of Kansas School of Medicine.

1. Allen, F. M.: Summary of Publications on Insulin to Date, J. Metabol. Res. **2**: 125, 1922.

2. Banting, F. G.; Campbell, W. R., and Fletcher, A. A.: Further Clinical Experience with Insulin, Brit. M. J. **1**: 8 (Jan. 6) 1923.

for the earlier data in his case. Figure 2 shows the same boy, Feb. 26, 1923. At this time he weighed 30 pounds (13.6 kg.) and was on a diet of 55 gm. of carbohydrate, 85 gm. of protein and 100 gm. of fat. April 15, 1923, he was in excellent condition, weighed 32 pounds (14.5 kg.), and was on a diet of 60 gm. of

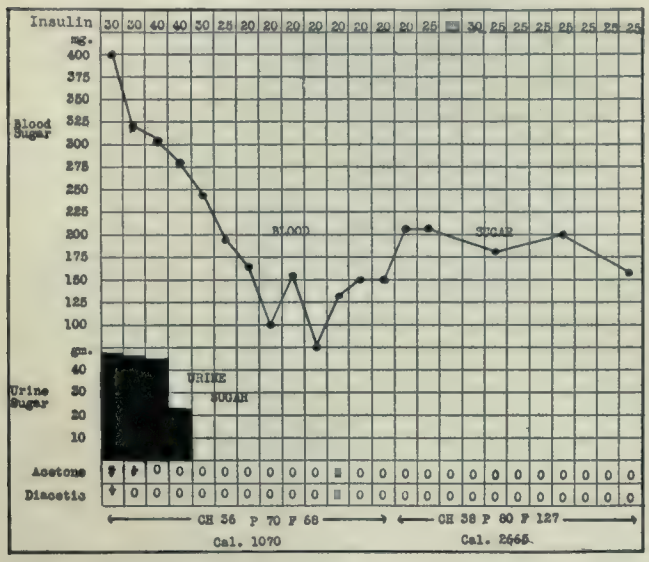


Fig. 3.—Disappearance of glycosuria in four days and fall of blood sugar from 400 to 100 mg. per hundred cubic centimeters in eight days. The dosage of insulin in units is given at the top. Acetone disappeared in two days, and diacetic acid in one day.

carbohydrate, 80 gm. of protein and 70 gm. of fat. During a period of three months his daily dosage of insulin has been reduced from 75 units to 15 units, which we feel is indication of an increasing carbohydrate tolerance.

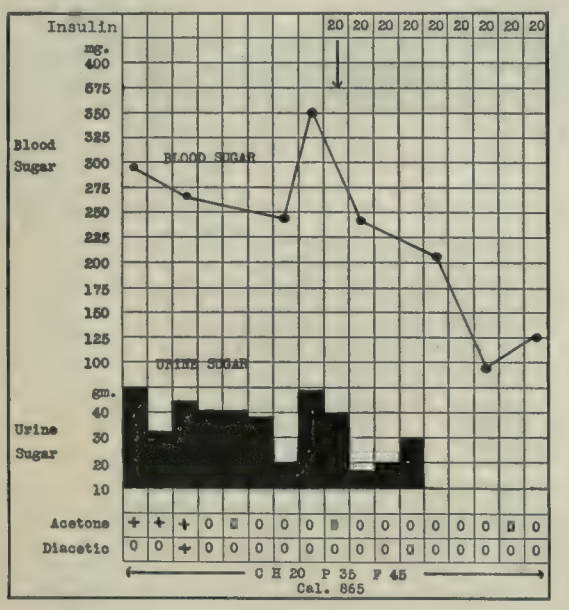


Fig. 4.—Effect of injections of insulin on a patient maintained on a constant diet throughout: disappearance of hyperglycemia and glycosuria.

Figure 3 illustrates the specific blood sugar lowering effect of the preparation.

A man, aged 35, who had had diabetes for two and one-half years, was admitted to the Bell Memorial Hospital on the verge of diabetic coma with a very severe nasal infection, which had led to gangrene of the soft palate. For six months before admission he had never been sugar free except by complete starvation. His condition was regarded as hopeless, and it was felt that this treatment offered his only chance of recovery. The patient was placed at once on a diet of 36 gm. of carbohydrate, 70 gm. of protein and 68 gm. of fat, and given insulin in doses of from 30 to 40 units a day. He became sugar free in four days, and diacetic acid and acetone disappeared from the urine promptly. The blood sugar fell to normal in eight days. Improvement in his general condition was striking. The soft palate healed, all symptoms of acidosis disappeared, and his gain in weight and strength has been rapid and constant. Following an increase in diet the patient again had an elevation of blood sugar, which, however, rapidly returned to normal. He continues aglycosuric with a normal blood sugar, and has resumed the practice of his profession.

A man, aged 35, whose case is charted in Figure 4, had suffered from diabetes for one year. He was placed on a diet of carbohydrate, 20 gm., protein, 35 gm., fat, 45 gm., with a total caloric value of 865, and was kept on this diet throughout. On this diet the patient had a continued hyperglycemia and glycosuria. Following the injection of 20 units of insulin daily, in two doses, the patient's glycosuria disappeared in four days and the blood sugar became normal in

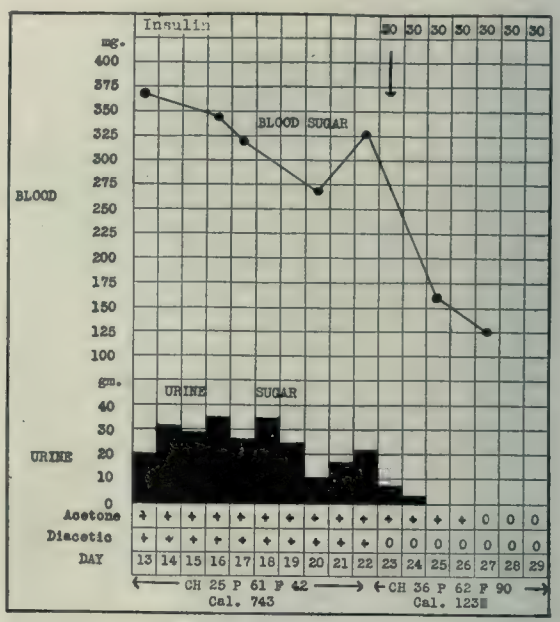


Fig. 5.—Disappearance of glycosuria and hyperglycemia under treatment with insulin, in spite of the marked increase in diet. The insulin figures are given in units.

seven days. This patient is under observation at the present time and has not shown any return of hyperglycemia or glycosuria.

In Figure 5 the undoubted effect of this preparation is shown in a very striking way.

A woman, aged 40, whose illness had a duration of two years, when admitted to the hospital was placed on a diet of 25 gm. of carbohydrate, 61 gm. of protein and 41 gm. of fat with a total caloric value of 743. Hyperglycemia and glycosuria were present on this diet. After remaining on the diet for ten days, the patient was given 36 gm. of carbohydrate, 62 gm. of protein and 90 gm. of fat, the total caloric value being 1,238. Coincident with the increase, the patient was given 30 units of insulin daily in two doses. The patient's glycosuria disappeared in two days, and in five days the blood sugar was normal. This patient is still under observation, and continues to show a normal urine and also a normal blood sugar.

We are also able to confirm the statement of Banting, Campbell and Fletcher that insulin is of great value in the treatment of diabetic coma. We have used it in three cases of coma.

The first of these patients died after admission to the hospital, but was moribund when the first injection was given, and was pulseless when first seen.

The second patient was a boy, aged 3, who had been in coma twenty hours, when the first injection was given, and who died five hours later. His blood sugar on admission to the hospital was 344 mg. per hundred cubic centimeters, and his carbon dioxid tension 10 per cent. by volume (Van Slyke). Just before death, following the injection of 35 units of insulin in two doses, the patient's blood sugar had fallen from 344 mg. to 244 mg. per hundred cubic centimeters, and the carbon dioxid tension had risen slightly to 11.5 per cent. by volume.

The third patient was a man, aged 26, who went into coma at 7 a. m., Feb. 21, 1923. He had shown symptoms of diabetes for only two weeks, and the positive diagnosis was made two days before the onset of coma. He was seen on the afternoon of the same day at 4 o'clock, and had been unconscious. His pulse was 140; the blood pressure, 75 systolic and 55 diastolic. His blood sugar was 667 mg. per hundred cubic centimeters. He was given 25 units of insulin at 4 p. m., at 8 p. m., at midnight and the following morning at 4 o'clock. At 8 a. m., February 22, he seemed partially conscious, and his blood sugar had dropped from 667 to 294 mg. per hundred cubic centimeters. He was given 10 units at 8 a. m., 11 a. m. and 1 p. m., twenty-four hours after the first dose, the patient, having received 130 units, was conscious and rational, talked with his family, and his blood sugar had fallen from 667 to 170 mg. per hundred cubic centimeters. Improvement has been constant since that time, and he has been free from sugar. This patient had a small area of gangrene on the right toe which cleared up completely in ten days, and a larger area on the sole of the left foot which healed in three weeks. This patient received no alkali, and in addition to receiving 130 units of insulin, was given 3,000 c.c. of physiologic sodium chlorid solution by hyperdermoclysis.

Two patients presenting a high degree of lipemia were studied. Figure 7, illustrates the marked fall of

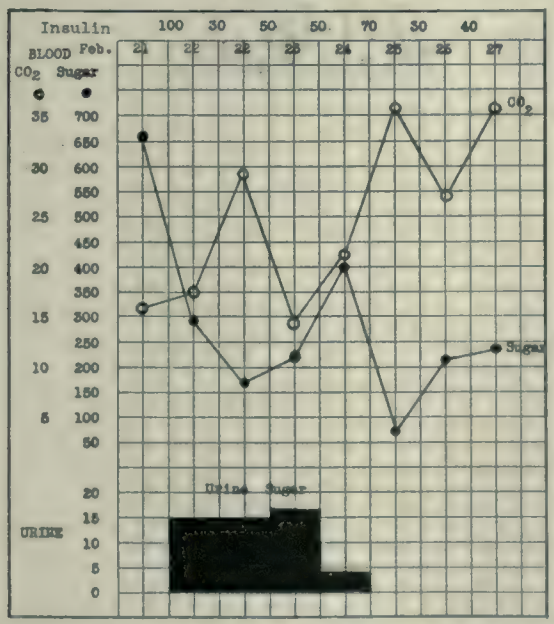


Fig. 6.—Reduction in blood sugar, with increase in carbon dioxid tension and disappearance of glycosuria in a patient suffering from diabetic coma. Recovery.

the blood cholesterol in a patient following treatment. In the two patients with marked lipemia, the milky appearance of the serum disappeared in four days, and in five patients, a cloudy serum became clear in the same length of time. These observations are of especial interest as emphasizing the close relationship between persistent marked lipemia and disturbed carbohydrate metabolism.

Our studies to date indicate that 1 unit of insulin takes care of approximately 2 gm. of carbohydrate in the diet. The study of the urinary output has shown that a polyuria of from 3,500 to 5,500 c.c. in twenty-

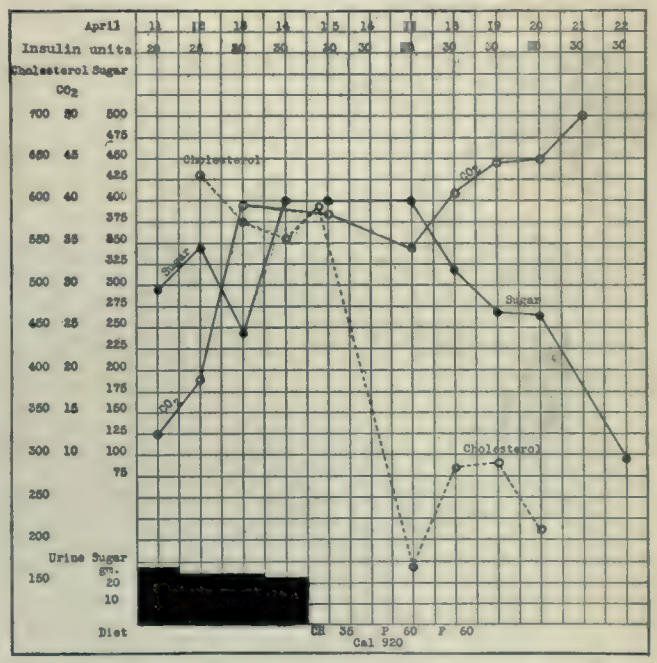


Fig. 7.—Fall in blood cholesterol in a patient showing a marked lipemia: rapid rise in carbon dioxid tension, patient semiconscious when admitted, and kept on a constant diet.

four hours is commonly present with an absence of glycosuria. Such large amounts of urine, however, were coincident with high values for blood sugar, although the ratio between the two was not constant. In only one patient in this series was sodium bicarbonate used. It had no apparent effect on the acidosis.

In two patients we have seen symptoms of collapse, accompanied by profuse sweating and a sense of great oppression and fear, three hours after the injection of 15 units of insulin. One of these patients was given 20 gm. of glucose by mouth, and recovered promptly. The second patient recovered quite suddenly from his collapse, without treatment. This attack occurred during the night, and the blood sugar the following morning at 8 o'clock was 50 mg. per hundred cubic centimeters. Both of these patients had a hypoglycemia when studied soon after these symptoms, and it is probable that the blood sugar was markedly depressed during the attacks. Our experience with these two patients emphasizes that caution must be exercised in the use of this preparation. This danger has been emphasized by Banting and his co-workers.

The blood sugar determinations referred to in this paper were carried out according to the method of Folin and Wu, the carbon dioxid tension in the blood by the method of Van Slyke, and the blood cholesterol by the method of Myers and Wardell.

SUMMARY

1. Insulin has a specific effect in abolishing glycosuria, hyperglycemia and ketonuria, and in relieving the cardinal symptoms of diabetes mellitus.

2. Patients treated with insulin have shown a prompt rise in carbon dioxid tension.

3. The marked lipemia often present in diabetes disappeared rapidly under treatment.

4. In one case of diabetic coma this treatment had a specific action, promptly restored the patient to consciousness, and abolished glycosuria and hyperglycemia.

5. The necessity of extreme caution in the use of this preparation must be emphasized.

CICATRICIAL STENOSIS OF THE ESOPHAGUS CAUSED BY COMMERCIAL LYE PREPARATIONS *

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Sad cases of esophageal burns from swallowing caustic alkalis continue to be seen at the Bronchoscopic Clinic, in various degrees of food and water starvation from esophageal stenosis. During the last sixteen months, twenty cases were admitted, a brief synopsis of which will be given.

REPORT OF CASES

CASE 1.—A boy, aged 3½ years, sent to the clinic by Dr. Lawrence Lee, Aug. 26, 1921, was very ill, markedly emaciated, and could swallow neither food nor water; even saliva was regurgitated. He coughed almost continuously because of the overflow of saliva into the larynx. His weight was 16 pounds, 14 ounces (about 7.7 kg.). Almost eight months before admission, the child drank of a solution of "Sterling Lye," found among other articles in a smokehouse. There was immediate dysphagia, which increased, and emaciation became extreme. Gastrostomy was done two months after the accident. On admission, Dr. F. F. Borzell, by roentgen-ray examination, found a complete atresia of the middle third of the esophagus. Esophagoscopy showed absolute atresia of the esophagus. Communication was eventually established by perforation by combined peroral and retrograde esophagoscopy. A string was carried through, and retrograde dilation performed, using the Tucker bougie. Unfortunately, the child contracted measles, complicated by a severe bronchopneumonia, which terminated fatally.



Fig. 1.—Six of the twenty children admitted to the Bronchoscopic Clinic during the last sixteen months suffering with stricture of the esophagus from swallowing caustic alkalis put up in packages for household use. In order, from left to right, the preparations accidentally swallowed were: Red Seal Lye, Red Devil Lye, Kleanall, Sterling Lye, Babbitt's Lye and Red Seal Lye. The photograph was taken some months after admission, when the children were much improved by treatment. Most of them were in a pitiable state of emaciation when admitted.

CASE 2.—A man, aged 39, was sent to the clinic because of dysphagia for solid foods. At the age of 18 months he drank from a pitcher containing a lye solution used in making soft soap. This lye was put up in a tin container; the brand was not remembered. He was very ill for about two weeks. For the last thirty-seven years he had been able to eat only soft foods and liquids. On roentgen-ray examination, Dr. W. F. Manges found three definite strictures of the esophagus. Esophagoscopy revealed the uppermost stricture. Esophagoscopic bouginage was instituted.

CASE 3.—A boy, aged 6 years, was referred, Sept. 7, 1921, by Dr. Martin J. Farrell, because of inability to swallow solid foods, and dysphagia for liquids. Five weeks before admission, the child drank from a pitcher standing on a window-sill. The pitcher contained a solution of "Red Seal Lye," which was being used to wash clothes. Roentgen-ray examination by Dr. H. K. Pancoast showed marked constriction of the esophagus. Esophagoscopy revealed active ulceration of the esophagus, beginning below the cricopharyngeus. Retrograde dilation was carried out.

CASE 4.—A youth, aged 18, was referred, Sept. 7, 1921, by Dr. J. C. DaCosta, because of aphagia of six days' duration. Ten years ago the patient swallowed some "Red Seal Lye." When admitted, he was in a serious state of water hunger. Gastrostomy was done by Dr. T. A. Shallow under local anesthesia. Roentgen-ray examination by Dr. W. F. Manges showed a complete obstruction of the esophagus. On esophagoscopy, a mucosal web stenosis of the esophagus was found. This was ruptured by the tube, and subsequent roentgen-ray study showed a practically normal esophagus. The patient was discharged well.

CASE 5.—A girl, aged 4 years, was referred, Jan. 5, 1922, by Drs. Walter Lathrop and Ira Freyman, because of difficulty in swallowing. About three months before, the child drank from a glass which contained a solution of "Red Seal Lye." Severe burning of the mouth and pharynx resulted, and she was unable to swallow any food for many days. Later, liquids could be taken only in small quantities, and these were often regurgitated. On admission, the patient showed considerable weight loss. Dr. W. F. Manges, by roentgen-ray examination, found a marked narrowing of the esophagus, which was verified by esophagoscopy. Gastrostomy was performed by Dr. T. A. Shallow, and later a string was swallowed and retrograde dilation begun.

CASE 6.—A man, aged 53, came to the clinic, March 3, 1922, because of difficulty in swallowing. About thirty-one years before, he had drunk of a bottle containing a solution of home-made lye, mistaking it for a cough mixture. There was severe burning of the mouth and throat, and difficulty in swallowing solid foods was noticed. For thirty years he had eaten only liquid and semisolid foods. Roentgen-ray study by Dr. W. F. Manges revealed an irregular lumen of the esophagus, the narrowest point being in the lower third, where there was considerable constriction. Esophagoscopy verified these findings. Esophagoscopic bouginage was instituted.

CASE 7.—A girl, aged 10 years, was referred, March 9, 1922, by Drs. Ayer and Buff, because of aphagia. About twenty-two months before admission, the patient drank of a solution of "Red Seal Lye." Severe burns of the mouth and throat, with dysphagia, resulted. During October, 1921, aphagia resulted, and gastrostomy was performed. On admission, the patient was fairly well nourished, underdeveloped and unable to swallow any food. On roentgen-ray examination, Dr. W. F. Manges found practically complete obstruction of the esophagus. Esophagoscopy revealed a stenosis of the upper part of the thoracic esophagus. Following esophagoscopic bouginage, retrograde dilation was started.

CASE 8.—A boy, aged 5 years, was referred, March 27, 1922, by Dr. J. J. Reilly, because of inability to swallow solids and frequent regurgitation of liquids. About four

* From the Bronchoscopic Clinic, Jefferson Hospital.

weeks before admission, the child swallowed some liquid which produced severe burns of lips, mouth and throat. The mother stated that there was some lye in the house, but is not certain whether this was swallowed by the patient. Difficulty in swallowing resulted and became slowly worse, so that only liquids could be swallowed. There was progressive weight loss. Roentgen-ray examination by Dr. W. F. Manges showed almost complete obstruction of the upper esophagus. On esophagoscopy, a stenosis of the esophagus was found, ending in a blind fistula. Because of the emaciation and the continued failing of nutrition, gastrostomy was advised. This was done by Dr. T. A. Shallow. The patient did not react well, and subsequently died. A necropsy was not permitted.

CASE 9.—A man, aged 27, was referred, March 28, 1922, by Dr. J. A. Bertolet, because of aphagia of two days' duration. When the patient was 18 months old, he swallowed a solution of "Banner Lye." Dysphagia developed, and he was treated at the Presbyterian Hospital with marked improvement so that he could swallow liquids and soft foods. Three days before admission, some corn lodged, producing aphagia, which persisted until shortly after admission to the clinic, after which it passed spontaneously. By roentgen-ray examination, Dr. W. F. Manges found complete obstruction of the esophagus in the middle third. Its appearance indicated a foreign body. Following the spontaneous removal of the foreign body, he again studied the case and found a stenosis of the esophagus in the lower portion of the middle third. On esophagoscopy, a cicatricial stenosis of the esophagus with esophagitis was found. Esophagoscopic bouginage was instituted, with favorable results.

CASE 10.—A girl, aged 2 years, was referred by Dr. John B. Murphy, April 26, 1922, because of inability to swallow any solid foods. Successful attempts were made to treat the stricture of the esophagus, which had been diagnosed by roentgen-ray examination. The general nutrition was good. Six weeks before admission, she put some "Red Devil Lye" powder in her mouth. The lye powder had been left lying on the lid of the container. Vinegar was given immediately afterward. Slight burns of the mouth resulted. Inability to swallow solids came on immediately, and has persisted. Esophagoscopy showed ulceration of the esophagus, which was swollen apparently shut. Gastrostomy was done by Dr. T. A. Shallow, and the esophagus was put at rest for a time. Retrograde dilation was then instituted, and is still being carried out.

CASE 11.—A boy, aged 2 years, was seen at the clinic in consultation with Dr. Richmond McKinney, April 14, 1922, because of inability to swallow any food, either solid or liquid. About eight months before admission, the child had swallowed some concentrated lye, the brand unknown. Difficulty in swallowing, with the usual progressive emaciation, developed. A gastrostomy was done, as the esophagus completely closed in a short while. The roentgenologist reported a stricture at about the middle of the esophagus, which completely closed its lumen. Bouginage had been done at various times, but the lumen of the stricture could not be located. On admission, the patient was in good general condition. There was complete aphagia. On esophagoscopy, a tight stenosis was found 23 cm. from the upper teeth. No opening was found, either by inspection or by esophagoscopic bouginage. Esophagoscopic search was repeated at intervals for weeks by Dr. McKinney, who reports that eventually an opening through the atresia was established.

CASE 12.—A girl, aged 19, was sent to the clinic, May 16, 1922, by Drs. Hays and Burnett, because of dysphagia for solids. When about 4½ years of age she drank from a cup which had been used with some "Red Seal Lye." For about three years following the accident, she was unable to swallow anything but liquid foods. Then swallowing gradually improved, but recently she has been able to take only liquids. Dr. W. F. Manges, by roentgen-ray examination, found a marked narrowing of the lumen of the esophagus in the lower third. Esophagoscopy showed a web-stenosis of the esophagus about 3 cm. below the crossing of the left bronchus. The web was stretched and ruptured with the tube mouth. Subsequent roentgen-ray examination did not show any obstruction, and the patient was able to swallow normally.

CASE 13.—A boy, aged 3 years, was sent to the clinic by Dr. B. Bigger Best, May 25, 1922, on account of dysphagia for solid foods and beginning difficulty with liquids. Three weeks before admission, the child's mother, while using some lye (name unknown) for cleaning purposes, was called to answer the telephone. During this brief interval the child either ate some of the lye powder or drank of the lye solution. His lips and mouth were severely burned. Since the accident, he had been unable to swallow solid foods, and liquids were taken with difficulty. There had been a gradual

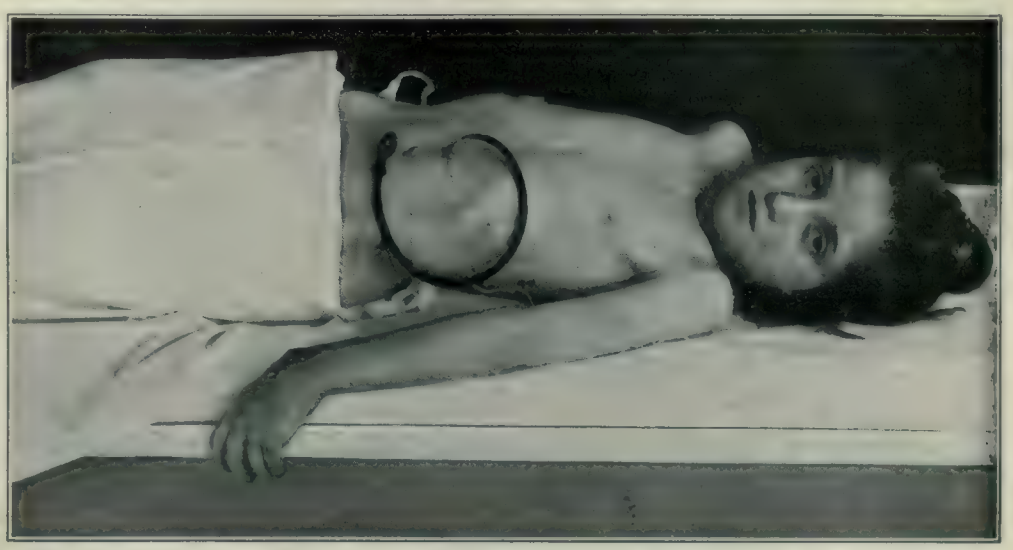


Fig. 2.—This child swallowed a teaspoonful of Kleanall Lye, which had been left in a saucer. It was not known that this lye was poisonous, for nowhere on the label was there anything to show that it was a poison.

loss in weight, and on admission the child was very pale, undernourished and quite ill. Roentgen-ray examination by Dr. W. F. Manges showed marked narrowing of the esophageal lumen. To provide sufficient nourishment, a gastrostomy was done by Dr. T. A. Shallow. Esophagoscopy done later revealed a strictured cicatricial lumen. Retrograde dilation was instituted.

CASE 14.—A girl, aged 2 years, was referred by Dr. J. F. Baldwin, June 8, 1922, because of inability to swallow solid foods. About twelve weeks before, the child's mother was using "Banner Lye" to make soap, pouring the solution into cups. The child drank from one of the cups which, previously emptied, still contained a few drops of the solution. Severe burning of the mouth and throat resulted. Dysphagia for solids was noted immediately afterward, and a progressive difficulty in taking liquids ensued. Nutrition being seriously impaired, Dr. Baldwin did a gastrostomy. On admission, the child was in good condition generally. On roentgen-ray examination, Dr. H. K. Pancoast found a tight stricture of the upper esophagus, which was verified by esophagoscopy. After considerable perseverance, a string was passed through and retrograde dilation started.

CASE 15.—A man, aged 58, was sent to the clinic, July 15, 1922, by Dr. J. James Condran. About four weeks before admission, the patient had drunk from an unlabeled bottle in an icebox where drinking water was kept. The bottle contained a solution of caustic soda. He was profoundly shocked, and complained of intense pain in the mouth, throat and abdomen. Marked dysphagia resulted. On admission, he presented the picture of inanition and acute water starvation. No roentgen-ray examination or esophagoscopy was made. Dr. C. F. Nassau saw the patient and advised against gastrostomy, as the patient was moribund and an operation would simply hasten the end. The patient died within forty-eight hours after admission. A necropsy was not obtained.

CASE 16.—A girl, aged 22 months, referred by Dr. C. Heard, Aug. 14, 1922, was unable to swallow anything but liquid foods, and these only in small quantities. There was moderate loss of weight and a mild degree of anemia. Nine weeks before admission, while playing in the yard, the child found a can of "Babbitt's Lye" and put some of it in her mouth. There were severe burns about the mouth and lips. Progressive dysphagia ensued. A gastrostomy was done by Dr. T. A. Shallow because of aphagia. Roentgen-ray examination by Dr. M. A. Almy showed a partial stenosis of the esophagus. Esophagoscopy revealed a tight stricture about 4 cm. below the cricopharyngeus. Retrograde dilation is being carried out.

CASE 17.—A girl, aged 2½ years, was referred by the pediatric outpatient department, Sept. 6, 1922. About one year before admission, the child drank of a solution of "Red Devil Lye," and sustained severe burns of the mouth and throat. Difficulty in swallowing began two weeks afterward, and became progressively worse. On admission, the child weighed 13¼ pounds (6 kg.), could swallow no solid food, and liquids were taken with great difficulty. There was marked emaciation, with beginning water starvation. Gastrostomy was performed immediately by Dr. G. P. Mueller. Roentgen-ray examination by Dr. H. K. Pancoast showed extensive stenosis of the esophagus. Esophagoscopy revealed extensive ulceration of the upper esophagus. Retrograde dilation is being done with marked improvement, the child now weighing 28 pounds (11.8 kg.).

CASE 18.—A boy, aged 2 years, was referred, Sept. 27, 1922, by Dr. L. B. Overlock, because of inability to swallow any food, or even saliva. Three months before admission, the child drank from a cup which contained some concentrated "Babbitt's Lye." The lips, mouth and throat were severely burned. He was able to swallow liquids for about one month, after which time aphagia supervened, and gastrostomy was immediately done by Dr. Overlock. On admission, the child was in a fair state of nutrition. There was complete aphagia, saliva being regurgitated. Dr. Solis-Cohen found on roentgen-ray examination that there was complete closure of the esophagus. Esophagoscopy verified these findings. The lumen being eventually restored, retrograde dilation was started.

CASE 19.—A boy, aged 9 years, was referred by Dr. W. A. Burke, Oct. 26, 1922, because of marked loss of weight and inability to swallow anything but liquids. He was underdeveloped and poorly nourished, weighing but 36¾ pounds (16.7 kg.). There was marked anemia. When 4 years of age, he accidentally took some "Red Seal Lye" in coffee, mistaking it for sugar. He had received no treatment of any kind since the accident, and his condition was brought to the attention of the American Red Cross during the medical examination of school children in the rural schools. Dr. W. F. Manges, by roentgen-ray examination, found almost complete obstruction of the esophagus. This was verified by esophagoscopy. On account of the emaciation of the patient and his inability to swallow sufficient food to maintain his nutrition, gastrostomy was done by Dr. T. A. Shallow. Retrograde dilation will soon be instituted.

CASE 20.—A girl, aged 2 years, was sent to the clinic Nov. 4, 1922, by Dr. Charles H. Hunt, because of dysphagia for all but liquid foods. Four months before admission, she drank of a solution of "Kleanall," which had been left in a cup. Together with burns of the mouth there was dysphagia, which slowly increased, with marked loss of weight. About three months after the accident, the patient was unable to swallow even liquids; so a gastrostomy was performed immediately by Dr. Hunt. The general condition on admission was good. Roentgen-ray examination by Dr. W. F. Manges showed a marked obstruction of the upper esophagus. On esophagoscopy, marked narrowing of the esophageal lumen was found. Retrograde dilation is being done.

The treatment carried out in these cases is dilation, either by esophagoscopic bouginage in the cases without gastrostomy, or by retrograde dilation in the gastrostomized cases, using the special bougie devised by Dr. Gabriel Tucker.

COMMENT

In these cases, as in practically all cases of esophageal stenosis resulting from lye preparations, an analysis of the circumstances attending the ingestion of the alkali reveals several points of interest.

The swallowing is practically always accidental, the lye, in powder or solution, being left within reach of the child, or put on the kitchen shelf with other containers and mistaken for one of these. Sometimes it is a residue adhering to a cup which has been used to measure lye. This apparent carelessness is due to a lack of knowledge of the highly poisonous nature of all lye preparations. Since lye may be purchased anywhere, and since the labels on the containers either have no poison or warning notice, or, if present, it is usually inconspicuous, it is readily seen that education as to the poisonous nature of lye is only by bitter experience.

Viewing the matter purely in the abstract, it is difficult to understand why necessary legislation has not been provided to prevent these pathetic occurrences by adequate "scare labels," especially when, on every hand, efforts are being made to protect against disease, to safeguard against injury, and to prolong life.

Poisoning, due to the accidental swallowing of poison sold by druggists, is relatively uncommon, and this is due in great part to the profound respect inspired by the "skull and cross-bones" and "poison scare labels" which are required by legal regulations to be placed on these containers.

Similar precaution could be taken with lye preparations to warn the public of the highly poisonous nature of these substances. It would then be very properly stored in a safe place beyond the reach of these poor, innocent children. A careful presentation of this question to legislators and manufacturers from the humane side, as well as a consideration of its economic aspects,

should convince them of the necessity of remedial measures.

This is a review of a pathetic condition which is the cause of much suffering and distress to these innocent patients, who are in this state because it was not known that lye was a poison. That this disease is preventable is obvious. The essential point is that parents do not fully realize that these preparations are poisons.

THE RATIONAL TREATMENT OF FRACTURES OF THE UPPER END OF THE HUMERUS

REPORT OF END-RESULTS

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In following a series of cases of fractures of the upper end of the humerus, I have been impressed by two things: (1) The fact that no textbook emphasizes the absolute necessity of the abduction treatment of this type of fracture, so far as a result expressed in terms of good function goes, and (2) the generally poor results obtained in these fractures as a result of the usual routine methods of treatment as determined by subsequent function. In this paper, I wish to impress on all those who are called on to treat these fractures that better results will be obtained in less time if traction, following reduction of the fragments, is used in the abducted and outwardly rotated and elevated position, rather than using the older and usual method which employs the shoulder cap, sling and Velpeau bandage. By the latter method, one not only insures future disability as far as good function of the shoulder goes, but primarily establishes, through bony union, false anatomic relations of the united parts. The first method of treatment is applied generally to all unimpacted cases. The cases of impacted fracture of the upper end of the humerus in old persons may be left alone or treated by the usual methods, but even better results will be obtained in the average case of impaction if the abducted, elevated and outwardly rotated position with gentle traction for at least a week is insisted on. There are certain cases in which exception may be made to this procedure, and the fracture may be treated only by a sling for the arm, with massage, baking and passive and active exercises started as early as the tenth to the fourteenth day. By this method, most patients, by the end of the fourth week, can use the arm and hand well, go without a sling, even elevate the arm above the shoulder level, and put the hand behind the head. This abduction method also prevents the subsequent condition of shoulder joint subluxation occasionally seen after fracture of the upper end of the humerus and apparently due to capsular and muscle relaxation resulting from injury and atrophy as well as gravity pull of the distal fragment, plus the occasional use of traction in the vertical direction. These subluxations and partial dislocations may clear up as the arm recovers, but may persist as a cause of considerable future functional disability.

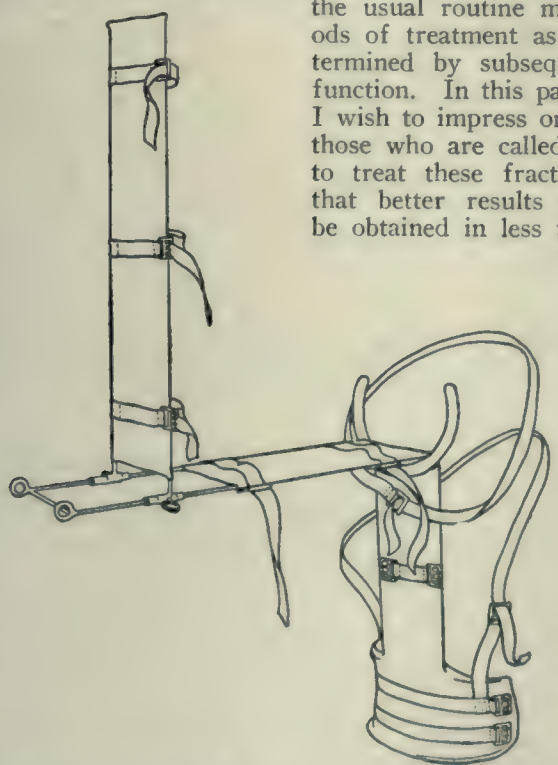


Fig. 1.—Abduction splint: There is a sliding upright for the forearm, with cross bar at end of horizontal arm for attachment of traction. The split ring at the axillary end is for fixation of the shoulder. The vertical body portion should extend from the axilla to well below the crest of the ilium, almost to the trochanter, just long enough to allow for a comfortable sitting position. It should be no wider than the width of the arm.



Fig. 2.—Splint applied: There is traction on the arm; the figure of eight strap round the left shoulder prevents arm and splint from riding forward.

In the study of the literature, there is little in the textbooks that calls attention to the necessity of the abducted position in the treatment of these types of fractures. A certain amount of abduction, possibly 45 degrees, is spoken of occasionally, but almost invariably in connection with inward rotation of the humerus. This, of course, is exactly what is not wanted. There are a good many arm splints, such as the Middledorp triangle, which is in the form of three narrow wooden splints made together as a frame and having its apex in the axilla. This, of course, is the ancestor of the Penhallow-Osgood splint, but does not hold the arm either in sufficient abduction or outward rotation. The so-called Red Cross basic splint, an abduction arm splint, is crude; and while it might be used to advantage temporarily in an emergency in war work, it is not an efficient splint for ordinary civil practice. Nor does it hold the arm in outward rotation. Judet [1] has used abduction with plaster casts, but only to 45 degrees; and Schuller [2] has used the angle wire bandage reinforced with sodium silicate, both holding the arm in inward rotation.

Most of the authors apparently think a wedge-shaped pad in the axilla and a shoulder cap of plaster of Paris will answer every purpose. This, of course,

1. Judet: Presse méd., Jan. 6, 1907.
2. Schuller: Arch. Orthop. **2**: 58, 1904.

is not a satisfactory method either in view of the results we have been getting or in regard to proper anatomic relation. Royster [3] believes that the old and accepted type of treatment is satisfactory and that in the case of dislocation with fracture, an immediate operation is necessary to replace the fragments; but he lays no emphasis on the essential position of abduction and outward rotation, following reduction.

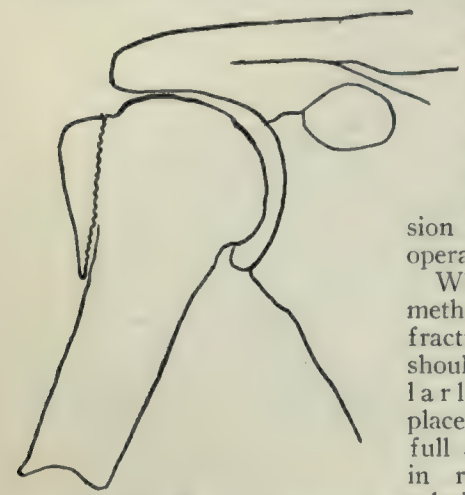


Fig. 3 (Class 1). — Fracture of greater tuberosity of humerus: Patient was not treated by abduction and outward rotation, but by shoulder cap and sling; accident happened in August, 1922, and patient still has considerable disability.

Buchanan [4] reports a number of cases of fracture of the humerus and dislocation of the head, discusses mechanics, and thinks excision of the head the operation of choice.

Whitman [5] describes methods of reducing fractures about the shoulder joint, particularly epiphyseal displacements, and believes full abduction essential in restoring anatomic relations. After replacement of the fractured surfaces, the arm is dressed in abduction, but carried forward in inward rotation and held in a shoulder spica. This is to my mind satisfactory only so far as it goes, and is much better than the old method of keeping the arm strapped to the side.

Albee [6] has described a new postural treatment, emphasizing the necessity of restoring the fractured surfaces by means of traction temporarily, but the arm, after the surfaces are apparently in approximation, is dressed in a plaster spica holding the arm markedly inwardly rotated and carried forward so that the humerus is almost parallel to the sagittal plane.



Fig. 4 (Class 1 A).—Fracture dislocation of shoulder before and after reduction. Fracture of greater tuberosity of humerus.

He states that the first mention that he was able to find of reduction of this type of fracture was by E. M. Moore of Rochester, N. Y., in 1874. He states that Moore, after restoring the fractured surfaces, found great difficulty in retaining the corrected position when he brought the arm down to the side of the thorax for fixation. He also states that, in 1902, Beck, and Whitman previously quoted, described successful results from fixing the arm in a position of lateral abduction. If lateral abduction, such as Albee and Whitman describe, is that shown by the illustrations, it certainly is not anatomically correct from the point of view of later function.

Jorge [7] felt that the arm should be immobilized in slight inward rotation in a plaster cast after reduction. He believes that lack of proper correction is certain to entail serious consequences. Massage, however, with passive exercises, he thinks should be begun as early as the second week. In this I agree with him.

Robert Jones [8] feels that the abducted position is the best position when it has become necessary to correct extreme deformity by operation. He does not feel, however, that passive motion should be begun before the fourth week.



Fig. 5 (Class 2).—The patient fell on the left shoulder July 20, 1920. Fracture resulted, with splitting off of the greater tuberosity. Oct. 1, 1920, there was good union, and good motion except in elevation. In March, 1922, shoulder motions were all normal.

Henderson [9] states that, as a result of a study of a number of cases of injury to the shoulder joint, he finds that the motion most often complained of by the patient is that of upward and outward rotation and elevation; also that failure to obtain this motion is due to the fact that not only arthritic changes occur in the joint but also callous production resulting from fracture tends to obstruct these two motions.

Van Hook [10] states that it is his belief that in cases in which there has been a fracture dislocation of the head of the humerus, it is better to use the Murphy fat and fascia transplant to insure later motion, and believes that removal of the fragments of the humeral head after simple fracture with dislocation of the head gives an excellent result after operation, provided muscular attachments are reestablished. He quotes Hennequin and Loewy,[11] who state that intracapsular as well as extracapsular fractures at the shoulder heal in comparison with similar fractures of the hip joint, but full recovery cannot take place in those fractures occurring in persons beyond middle age in less than six months or a year, or at all unless reduction of the fracture is absolutely complete.

Helfrich [12] says nothing about abduction methods of treatment of this type of fracture.

MECHANICS OF THE FRACTURES

These fractures are generally caused by a fall, the patient's arm being held in a position of abduction,

3. Royster, H. A.: The Management of Dislocation at the Shoulder Joint Complicated by Fracture of the Neck of the Humerus, J. A. M. A. **49:** (Aug. 10) 1907.
4. Buchanan, J. B.: Ann. Surg., May, 1908.
5. Whitman, Royal: Ann. Surg., May, 1908.
6. Albee, F. H.: Juxta-Epiphyseal Fracture of the Upper End of the Humerus, M. Rec., May 4, 1912.
7. Jorge, J. M.: Semana Med., July 18, 1912.
8. Jones, Robert: Brit. M. J., Dec. 7, 1912.
9. Henderson, F. F.: Dislocations of the Shoulder, with a Few Complications, Boston M. & S. J. **177:** 550 (Oct. 18) 1917.
10. Van Hook, Weller: Fracture Dislocations of the Humeral Head, Boston M. & S. J. **187:** 960 (Dec. 28) 1922.
11. Hennequin and Loewy: Les fractures des os longs, 1904.
12. Helfrich: Atlas of Fractures and Dislocations, Munich, 1910.

hand pronated and humerus inwardly rotated. As a result of this position, the tuberosity of the humerus comes forcibly into contact with the tip of the acromion. It follows, then, that (1) the tuberosity is broken off; (2) a fracture of the neck of the humerus occurs; (3) a dislocation of the humerus occurs, or (4) a combination of the various preceding conditions results.

In fractures alone of the greater tuberosity, there are two main types: One in which there is merely a crack running through the base of the tuberosity, and one in which the tuberosity as a whole is pulled forcibly off and rotated backward and outward. The latter condition is due to the pull of the supraspinatus, infraspinatus and teres minor muscles. Any attempt to reduce this fracture in any position other than outward rotation, elevation and abduction of the humerus will, of course, fail. Not infrequently, this type of fracture may be complicated by a fracture of the surgical neck, an impaction of the head and shaft, or a dislocation.

In fractures of the neck of the humerus in young people before the epiphysis has united, it is not uncommon to see the entire epiphysis displaced. This displacement may be partial or complete. The entire head of the shaft is not infrequently rotated upward and backward, but often it is in a position of sub-

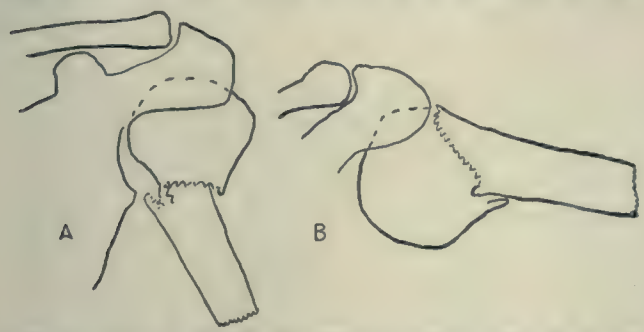


Fig. 6 (Class 2 A).—*A*. Fracture of surgical neck of humerus in position assumed after ordinary Velpeau dressing and shoulder cap; *B*, position after abduction and outward rotation: almost perfect anatomic restoration of fragments.

coracoid dislocation and upside down. The mechanics of the injury is the same in these cases as in the fractures of the greater tuberosity, but has had the added force of the body weight applied to the shaft through the acromion acting as the fulcrum with the arm abducted. In the latter cases the parts may occasionally be manipulated into position, but more often operation has to be performed and the fragments replaced, or, in adults, the articular head of bone removed. Frequent manipulative attempts should not be encouraged for fear of damage to the axillary vessels and nerves. Associated with this type of fracture is always the inward rotation of the distal fragment consisting of the shaft of the humerus. This inward rotation is due to the unopposed pull of the pectoralis major, latissimus and teres major. There may also be some upward displacement of the lower fragment, due to the unopposed pull of the triceps, biceps and coracobrachialis. All these perverted muscle pulls have to be taken into consideration and corrected before any adequate anatomic reposition may be accomplished.

The severer types of these fractures are associated with capsular tears and exudates into the joint, and so add to the subsequent disability greatly. Early motion after reduction is as much an essential to a satisfactory result as a primarily correct anatomic reposition, in spite of the fact that Sir Robert Jones states that no passive motion should be attempted before the fourth week. The results one sees in these cases treated by routine methods are bad. That is, motions are always limited in abduction, outward rotation and elevation, with little or no ability to put the hand behind the head for a long time—eight to ten months, if ever. Early traction in abduction and outward rotation, with right angle elevation, would give the patient a base from which to start these motions and would ultimately lead to a vast improvement in our results.

One principal difficulty later in effecting outward rotation and abduction and elevation after this type of injury and following the old method of treatment is that new bone or exuberant callus blocks the sliding of the greater tuberosity under the acromion. With the arm in the primary position of outward rotation, abduction and elevation no such blocking callus can form, and the principal difficulty to later function is at once prevented.

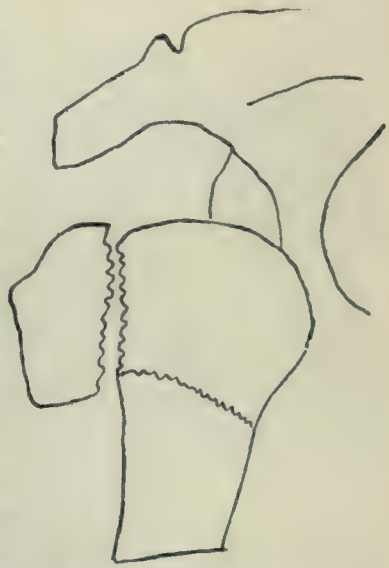


Fig. 7 (Class 2 B). — Fracture of greater tuberosity, surgical neck and dislocation of the humerus from the glenoid. Seven years after the accident, this woman still has considerable disability in elevation and outward rotation of arm. She was treated by the usual routine method.

METHODS OF APPLYING TRACTION

There are several methods of applying traction to the humerus following manipulative or operative reduction of the fracture. All of the ambulatory splints on the market at present are inefficient, not so much from the point of view of traction, but from the fact that the humerus is always held in inward rotation and generally in a plane forward of the shoulder joint. Inward rotation of the humerus is just what is not wanted, and so they fail to furnish a

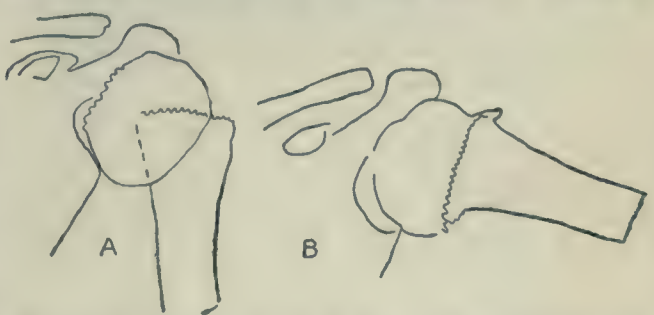


Fig. 8 (Class 2 A).—*A*, fracture of surgical neck, with complete rotation of head; *B*, replacement of fracture as result of manipulation followed by external rotation, abduction and traction, which was continued for about three weeks; after the omission of traction, the patient was massaged for about four months, and two years later she had perfectly normal motion and no shortening.

satisfactory supporting or anatomic position. Following a fracture of the upper end of the humerus which has been reduced by manipulation under ether, the traction may be applied to the arm in the usual manner, that is, two long side pieces of surgeon's plaster parallel to the long axis of the arm and the figure of eight

spiral pieces. If the patient is to stay in bed, an ordinary arm Thomas splint may be used and so fastened to the head of the bed with a bandage as to prevent dropping of the arm below the shoulder level. Its outer end may be supported on a bedside table or slung from an overhead support.

Care should be taken in these cases not to extend the sticking plaster below the elbow, as too much or too

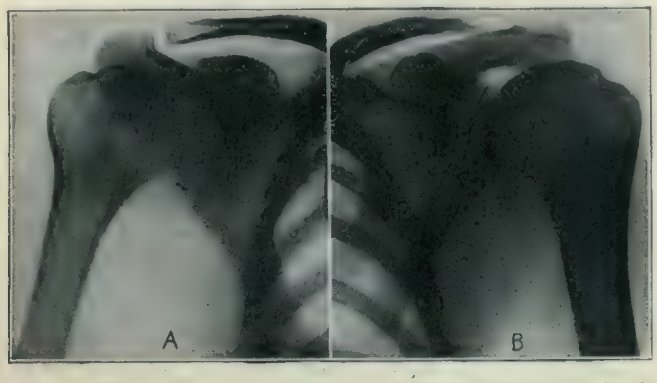


Fig. 9 (Class 2 A).—*A*, condition of fractured left shoulder in the case illustrated in Figure 9, two years after the accident; virtually no difference from normal right shoulder, *B*.

long continued traction, or even sufficient traction to hold the fracture in adequate position and overcome muscle pull, may be enough to start up an arthritis or periarthritis of the elbow which will prove very troublesome for a long period of time. It is better to have the elbow flexed and the hand supinated with all the pull coming on the upper arm. If the lower arm is incorporated in a plaster cast with the elbow bent, the cast going a few inches above the elbow, traction can be made on the cast in the bend of the elbow without danger and with excellent control of the traction and rotation. Care should also be exercised to prevent overtension on the nerves of the arm, which may lead to temporary paralysis of the hand or lower arm.

From ten days to two weeks is a sufficiently long time to insure enough union so that the patient may be allowed up and about with an ambulatory splint which maintains the corrected primary position. This splint can be applied in all simple cases of impaction



Fig. 10 (Class 2 A).—*A*, fractured surgical neck, with considerable overriding of fragments; *B*, replacement of fragment, with arm abducted and outwardly rotated about a week after injury; *C*, condition of arm after abducted and outwardly rotated position had been given up two months later. This man, however, had to have the arm operated on in order to replace the fragments, and a cast was applied in the abducted and outwardly rotated position. This cast he wore for a month or six weeks. He enlisted in the navy and was drowned in New York Harbor, Oct. 6, 1921. The arm up to that time seemed normal, four years after the fracture.

from the first, but the patient is more comfortable and safer in bed in the more severe types of fractures the first week or two, especially those which have required manipulative or operative reduction.

CONSTRUCTION OF SPLINT

This splint is modified somewhat from one which has been used extensively in a more simple form for the treatment of cases of obstetric paralysis. With the addition of extra room at the elbow for traction and a split ring at the shoulder for security, it offers a very

Classification of Fractures of Upper End of Humerus

Class 1.—Simple fracture of greater tuberosity without displacement; *A*, with upward and outward rotation of fragment, may be associated with dislocation of shoulder.

Class 2.—Simple fracture of surgical or anatomic neck without displacement, or with impaction of fragment; *A*, with displacement of fragment, but without dislocation of head; *B*, with displacement of fragments and complete dislocation of head, generally subcoracoid.

Class 3.—Fracture of neck of humerus, generally comminuted, with fracture of shaft, without dislocation of head.

adequate apparatus for the ambulatory treatment of these fractures. It is made of copper washed iron wire of one-fourth inch gage and can be readily adjusted to fit any individual case by any one (Fig. 1).

EXAMPLES OF DIFFERENT CLASSES OF FRACTURES

CLASS 1.—*Simple fracture of the greater tuberosity without displacement.* This injury consists of a line of fracture running parallel to the long axis of the

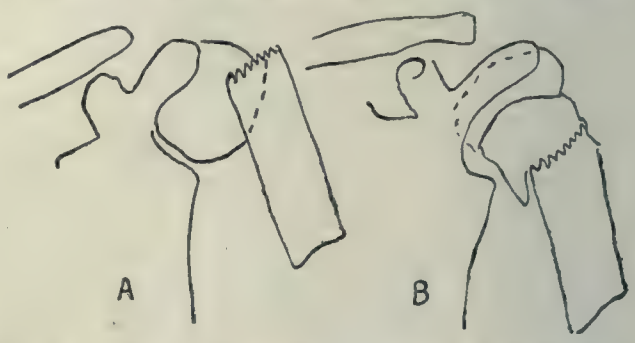


Fig. 11 (Class 2 A).—Left arm: *A*, fracture of surgical neck or epiphyseal separation, Dec. 27, 1915; rotation of head, with overriding of distal fragment; *B*, replacement following manipulation; traction was applied with arm abducted, and was continued for a month; then a sling was used, and massage and baking were employed for several weeks. This case is further illustrated in Figure 12.

humerus, and simply separating wholly or in part a portion of the greater tuberosity from the head. It is a very common injury and should be treated by the advocated method of external rotation, traction and abduction. Treatment in this position for a few days or a week can then be followed by a sling and passive and active motion (Fig. 3).

CLASS 1 A.—*More extensive injury, in which the greater tuberosity is split off and rotated upward, backward and outward.* By outward rotation, elevation and abduction, the fractured surfaces can generally be approximated. Operation is rarely indicated, not for removal of fragment, but to restore the fractured surfaces to their normal relations. Plating or bone pegging for this condition should be discouraged in all but the exceptional case.

Dislocation of the shoulder may also be present with this class of injury, and, following the reduction of the dislocation, the treatment may be carried out in the usual way, with the caution that baking, massage and passive and active motion be started not later than the end of the first week (Fig. 4).

CLASS 2.—*Simple fracture of surgical or anatomic neck without displacement, or with an impaction of fragments, and with or without a fracture of the greater tuberosity* (Fig. 5). This case represented a fracture which had been treated as a contusion for three weeks before being roentgenographed, and followed a fall on the shoulder. Massage and exercises were started at once following the roentgen-ray examination, but it was several months before even good function was restored. There was no opportunity in this case to use any other than the conventional sling method of treatment. The roentgenogram shows a fracture of the greater tuberosity as well as a fracture of the surgical neck with displacement and overriding of the fragments, and really represents Class 2 A of our classification. The functional result was eventually perfect. Figure 6 *A* also illustrates a case of Class 2 A, which had been dressed with a shoulder cap and Velpeau bandage. Twenty-four hours later, under gas, manipulation, followed by traction, abduction, and outward rotation, the result illustrated in Figure 6 *B* was obtained. A good result was obtained anatomically and functionally.

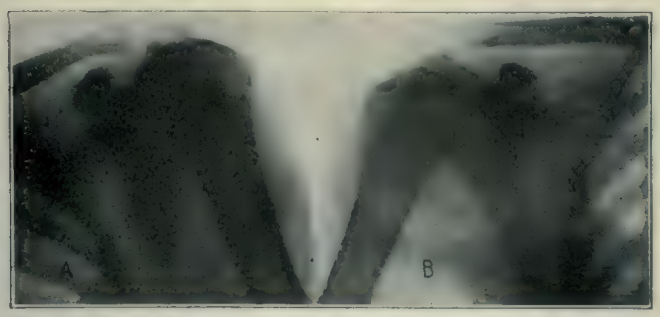


Fig. 12 (Class 2 A).—The patient whose injury was illustrated in Figure 11 reported for observation seven years later, at which time she had absolutely perfect motion. The left arm (*A*), which was fractured, and the right arm (*B*), which was normal, are very nearly identical.

Class 2 B is shown in Figure 7, representing a fracture of the greater tuberosity, with a subcoracoid dislocation of the head and a fracture of the surgical neck. This was in a woman, aged 60, who, following reduction of the dislocation, had fixation for several weeks, and then massage for six months. She wrote in February, 1922, that she had very good use of the arm, but still had some trouble in getting her hand to her head to comb her hair. I venture to state that with traction, elevation and outward rotation, her anatomic and functional result would have been better and the time saved considerable.

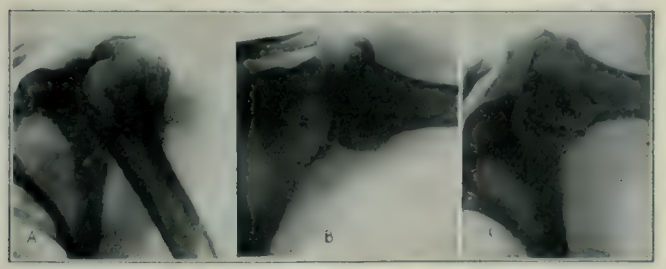


Fig. 13 (Class 2 A).—*A*, left shoulder before reduction: fracture of surgical neck, with overriding and rotation of articular surface; *B*, after manipulative reduction; traction with Thomas splint, abduction and outward rotation; *C*, three weeks after reduction; anatomic restoration of fractured surfaces, with good joint motion. In January, 1923, there was a moderate amount of limitation of outward rotation and abduction, with some limitation of elevation of arm at shoulder. This is probably due to the fact that this case was complicated by considerable arthritis of the elbow joint as a result of traction, and also by the fact that motion was not instituted early enough. Anatomically, the arm is perfect. Functionally, it is not yet satisfactory.

Other roentgenograms in Class 2 A are as follows: Figures 8 and 9 represent a case of epiphyseal separation in a girl, aged 17 years. The fracture was the result of a fall on the ice in January, 1919. Figure 8 shows the condition before and after manipulative reduction. Figure 9 shows for comparison the left shoulder, which had been fractured, and the normal right shoulder two years later. At that time there was no disability, atrophy or shortening. The case was treated by traction in abduction and outward rotation, following reduction, for a period of about three weeks.

The other roentgenograms of Class 2 carry their own legends and tell their own story.

Figure 18 represents the more severe type of fracture dislocation, about which certain individuals differ in their advised procedures. Some advocate removal of the head at once (Buchanan); others advise replacement of the head to its normal position (Royster), with suture if necessary, and still others advise not only removal of the head, but covering the ends of the distal fragment with a muscle flap to improve later function. Obviously, when the head has been displaced for any appreciable time, it should be removed. Also, when there has been much comminution of the upper end of the distal fragment, it should be removed. In certain cases, in which the patient is operated on at once, under favorable conditions it might be replaced



Fig. 14 (Class 2 A).—*A*, fracture of surgical neck, with overriding of fragments but with no complete dislocation of head; *B*, traction applied with Thomas splint; still slight overriding, but marked improvement in position; *C*, fragments have slipped as a result of traction having given way, with increased deformity and increased rotation of head of humerus; *D*, three months later, after operative attempt to restore position of fragments; *E*, right arm a year after injury. There has been complete restoration of normal motion and strength, and while there is some anatomic change in shape, there is no impairment of function; *F*, normal left shoulder.

with a fair chance of good function. Too long a delay would probably lead to death of the articular head, sequestration, and later secondary removal. Function after removal of the head is always impaired, but the usefulness of the arm is never as bad as one might suppose. In this case, with the extensive comminution of the distal fragment, it was obviously impossible to replace the articular head, and it was removed. The arm was put up in a Thomas splint, with a cast about the elbow, in abduction, outward rotation, elevation and supination. Traction on the cast was continued for two weeks, and then a sling was applied and active and passive motion started. Five months later, fair function was present even without any very active after-treatment.

CLASS 3.—*Fracture of the head of the humerus, generally comminuted, with fracture of the shaft, without dislocation of head.* This class of fracture is not as common as the two previous classes and usually is the



Figure 15



Figure 16

Fig. 15 (Class 2 A).—Fracture of left surgical neck of humerus, with splitting of shaft and overriding of fragments; also fracture of tip of acromion. Accident occurred in February, 1918. Treated by abduction, outward rotation and traction, and patient reported in May, 1922, that his left arm was in as good condition, so far as he was aware, as it ever was. He could move it in any direction without discomfort.

Fig. 16 (Class 2 A).—Fracture and separation of epiphysis, with complete tipping upside down of head of humerus with considerable overriding of the fragments. Operation was performed in November, 1919; the lower fragment was found in front of the head of the humerus; the head was replaced and fastened with kangaroo tendon: traction abduction and outward rotation were applied for several weeks. The patient was discharged from the hospital, Dec. 11, 1919. Feb. 1, 1922, motion was perfect in all directions; there was some atrophy of the left deltoid, with no shortening of the arm. This case is further illustrated in Figure 17.

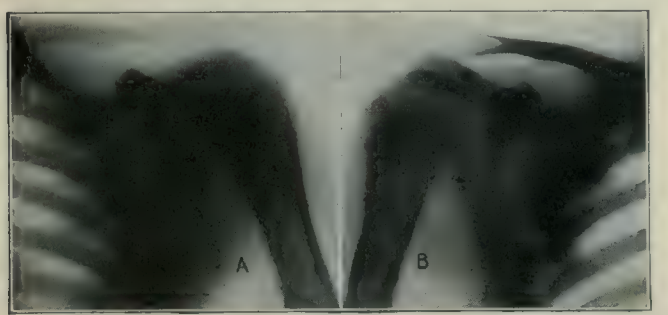


Fig. 17 (Class 2 A).—*A*, appearance of left shoulder in February, 1922; practically no anatomic difference from right shoulder (*B*), twenty-six months after fracture.

result of more forcible trauma. Coaptation splints must be used on the shaft of the humerus, and traction in abduction and outward rotation may be employed if it is found that the opposing pull of the pectoralis major does not distort the fragments of the shaft. The treatment otherwise is to be carried out as in the two previous classes, with passive motion, however, started later, about the third week.

CONCLUSIONS

These points are essential in the treatment of fractures of the upper end of the humerus:

1. Anatomic restoration of fragments is best obtained by abduction, outward rotation and elevation of the humerus.

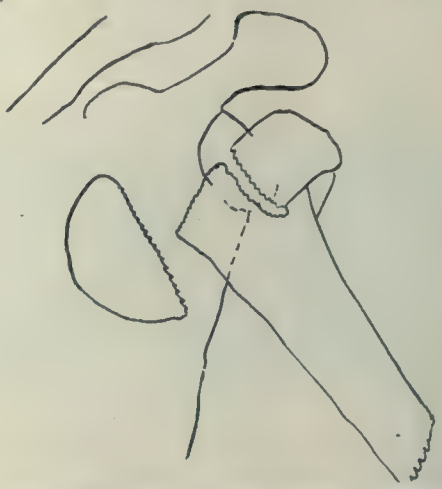


Fig. 18 (Class 2 B).—Fracture, with dislocation and displacement of left humeral head; fracture through shaft of humerus and splitting off of greater tuberosity. Humeral head removed, and arm put up in abduction, outward rotation and traction for two weeks; end-result not yet known; no muscle flap used in joint.

2. Traction in this position is essential for from four or five days to two or three weeks.
3. A satisfactory ambulatory splint may be employed rather than bed treatment.
4. Better and more quickly obtained functional results may be secured by this method than by any other.
5. Operation, except in certain cases of fracture dislocations, is generally unnecessary to restore fractured surfaces.

321 Dartmouth Street.

A MILK-BORNE EPIDEMIC OF SEPTIC SORE THROAT IN PORTLAND, OREGON *

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AND
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PORTLAND, ORE.

The epidemic here reported, which includes 487 cases of septic sore throat, with twenty-two deaths, occurred almost exclusively among the customers of a single raw-milk dairy. All but one of the patients who died had drunk this milk. Prompt detection of the cause of the epidemic and equally prompt control of the milk supply by heating were made possible by complete cooperation between the clinicians, the city health bureau and the dairy management, and resulted in checking further extension of the epidemic within twenty-four hours after the suspicion of a milk-borne epidemic was first brought to the attention of the health bureau, March 27, 1922.

HISTORY OF THE OUTBREAK

A child, aged 2 years, died, March 25, 1922, with the clinical picture of sore throat and acute encephalitis. Other cases occurred in various parts of the west side

* From the departments of pathology and bacteriology, University of Oregon Medical School, and the City Health Bureau, Portland, Ore.

of Portland on this day and the next two days, all evidently referable to the milk of a single dairy. Several cases appeared in a forty-bed hospital and many in a home for girls, but it was asserted that the latter institution obtained its milk from a different source—a certain pasteurizing dairy. The city health bureau authorized us to undertake an investigation, and on the morning of March 28, it was easily determined that the girls' home, the hospital referred to above and a predominance of the cases in homes owed their infection to a single raw-milk dairy. On our recommendation, the health bureau at once ordered heating of all the milk of this dairy by whatever method would be feasible, and placed two employes of the bureau in charge of operations at the dairy. Within twenty-four hours after this plan was put in operation, the incidence of new cases of septic sore throat declined to such an extent that the very few which appeared could be ascribed to contact infection. A more detailed study of the epidemic brought out the facts which follow.

CONDITIONS AT THE DAIRY

We found fifty-one milking cows of various breeds, well housed in a wooden structure with concrete floors and with proper facilities for flushing floors and handling excreta. The system of cooling milk appeared efficient. We learned that cows having diseased udders were kept in their regular stalls along with healthy cows, and in some instances only the diseased quarter was excluded from the milking. This condition, together with the fact that milkers did not always handle the same shift of cows, but sometimes exchanged shifts, would make it possible for a milker to include milk which should be discarded. Except for the points mentioned, we found the sanitary conditions generally good, and the city milk inspection had always given this dairy one of the best ratings in the city as regarded bacterial count and general quality of the milk.

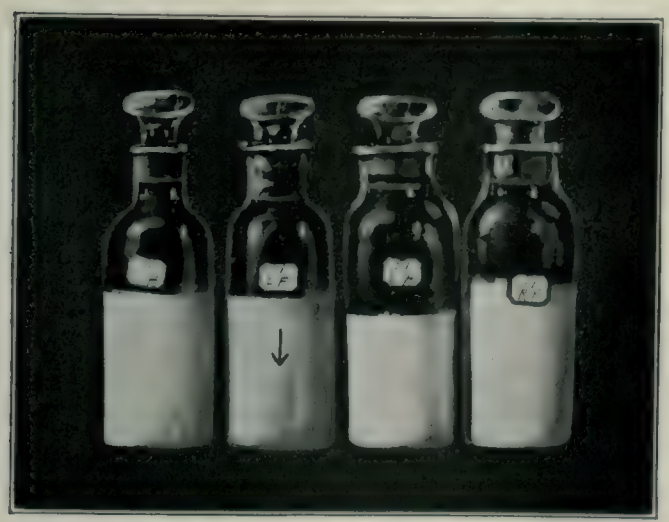


Fig. 1.—Milk samples from each quarter of Cow 51 after standing twenty-four hours. The arrow indicates the upper line of pus, which has settled out in the sample from the consolidated quarter.

CULTURES OF MILK SAMPLES

Cultures of the whole milk of the herd were taken, March 28, and gave a very few hemolytic streptococcus colonies. At this time, however, the whole milk did not include the milk of cows which were known to have diseased udders.

More instructive are the results of culture of the individual milk of each cow, and it is best to consider some of these separately.

Cow 1 had a large abscess on one hind leg, but its milk had been included with that of the herd. Cultures revealed *Streptococcus viridans* in the abscess pus and no unusual flora in the milk; nevertheless, we excluded this animal from the herd.

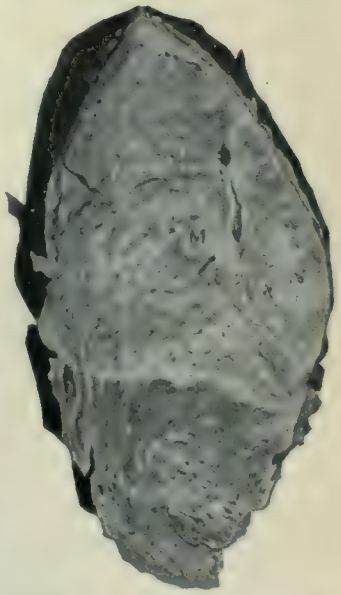


Fig. 2.—Udder of Cow 51, left front quarter, which yielded hemolytic streptococcus of human type: *M*, massive consolidation. Reduced to one-fourth natural size from drawing.)

Cow 51 had a consolidation of the left front quarter of the udder. The dairyman insisted that the milk of this animal had not been included in the whole milk for two weeks. Examination of the milks from separate quarters showed all of normal gross appearance except that from the left front quarter, which sample appeared grayish and mucinous. On standing twenty-four hours this milk settled out differently from that of the other quarters (Fig. 1). The lower half of the milk column consisted of yellowish, creamy pus, containing numerous pus cells and many streptococci in chains. Cultures revealed 10,000,000 hemolytic streptococci per cubic centimeter in the milk from this quarter, a few in the left rear quarter, and none in the other two quarters. It will be shown farther on that this cow, whose milk gave a pure growth of hemolytic streptococcus of human origin, was the probable source of the epidemic, perhaps from being milked into the herd milk unknown to the operator of the dairy. We learned afterward that this cow, which had a markedly increased temperature, had been kept in the same row of stalls as other cows which were furnishing milk. We shot her, April 9, and performed necropsy. The only noteworthy change was an almost complete purulent consolidation of the left front quarter of the udder, and slight infiltration in the left hind quarter (Fig. 2).

Cow 21 had had no increase of temperature reported, and had been milked in with the herd previous to the onset of the epidemic. Culture of her milk gave an abundant growth of hemolytic streptococci, which, as shown below, was of the bovine type. It was considered advisable to kill this cow also. Necropsy showed a purulent infiltration of the udder (Fig. 3).

The milk samples from four other cows yielded hemolytic streptococci in small numbers. A comparative study of the hemolytic streptococcus cultures isolated from these six cows is given in Table 1.

About three weeks after the whole herd was examined, eight cows which either had diseased udders or had gone dry in one or more quarters were examined, but no hemolytic streptococci were found.

From the data of Table 1 it will be seen that the culture from the diseased quarter of Cow 51 is the only culture isolated from the entire herd which seems to resemble in essential qualities the organism found in

the human cases of septic sore throat. All other cow strains differ markedly from the human strains in cultural characteristics and, following the method of Avery and Cullen,[1] their high limiting H ion concentrations in glucose broth identify them definitely as of bovine origin. Culture 51 L F from Cow 51 is, on the other hand, in this respect a human strain. The virulence of this culture for rabbits and white mice was also similar in every way to that of the human strain.



Fig. 3.—Portion of udder of Cow 21, which yielded hemolytic streptococcus of bovine type: *M*, consolidated area, very similar to that in Cow 51. (Reduced to one-fourth natural size.)

CULTURES FROM THE DAIRY EMPLOYEES

The one hemolytic streptococcus culture isolated from the dairy employees was from the throat of a milker who had large, red, inflamed tonsils, and who had complained of a mild sore throat. This culture could not be distinguished in any way from those isolated from the patients with sore throat and from the diseased quarter of Cow 51. It had a p_H value of 5.3, and a serum prepared against it definitely agglutinated strain 51 L F, though, on account of a propensity to spontaneous agglutination which could not be overcome, this serum could not be shown to agglutinate its own specific strain.

CULTURES FROM THE DAIRY EMPLOYEES

The hemolytic streptococcus isolated from patients was similar in all respects to the organism commonly described as the incitant of this disease. On horse blood agar plates, well isolated colonies were from 0.5 to 1 mm. in diameter, were of a whitish, watery appearance, and were surrounded by a perfectly transparent zone of hemolysis having a diameter from two to four times that of the colony. The characteristics of the colony placed the organism definitely in the beta group of Smith and Brown.[2] Growth in infusion broth was generally of the flaky type, and accumulated on the sides and bottom of the tube, leaving the medium quite clear. All cultures fermented lactose, salicin and maltose, and failed to attack mannite and inulin. The majority of cultures were incapable of attacking saccharose, but there were a few exceptions. Litmus milk was acidified slowly, as a rule, and was not coagulated in any case in seven days. No tendency to a reduction of the litmus was observed in any milk culture. The limiting H ion concentration in glucose broth fell within the limits of p_H 5.4 and p_H 5.2.

The virulence of the cultures for rabbits was low, several animals failing to die from intravenous injections of as high as 1 c.c. of a twenty-four hour broth culture. Frequently the organisms could be isolated from the blood of the animal after several days, but would subsequently disappear from the blood stream, and necropsy would reveal either kidney and liver abscesses, or joint infections or both. White mice regularly succumbed to intraperitoneal injections in about two days, with a generalized bacteremia.

CONCLUSIONS FROM EXAMINATION OF VARIOUS CULTURES

It has been stated that all hemolytic streptococcus cultures from the throats of patients with septic sore throat in this epidemic had (in glucose broth) a limiting H ion concentration between the limits of p_H 5.4 and p_H 5.2. Of the various samples of cow's milk examined, only one, that from the left front quarter of Cow 51, gave a hemolytic streptococcus culture whose limiting H ion concentration fell within the same limits; viz., p_H 5.2. The p_H for all other milk samples, including even that from the left hind quarter of Cow 51, fell within the limits of from 4.5 to 4.3, indicating a bovine origin for the organisms. We have shown that one milker had a tonsillitis of marked degree, which yielded a hemolytic streptococcus having a p_H value of 5.3, and agreeing in all respects with cultures from patients with sore throat and from the left front quarter of Cow 51. The presumption, therefore, is that the milker in question was responsible for the infection of this cow's udder; that she developed a mastitis of human streptococcic origin in one quarter, and that her milk, which was proved to contain 10 million hemolytic streptococci per cubic centimeter, was at some time included by mistake in the whole milk of the herd. Such a massed infection of the dairy milk supply accounts logically for the sudden outbreak of a highly virulent epidemic like the one here described. By a comparison of the dates at which several patients in a hospital drank the milk, it was concluded that the herd milk must have become infected on one particular day, March 22, or perhaps on two successive days. This agrees well with the time of onset of the majority of cases, as gathered by the survey of the dairy route.

TABLE 1.—*Comparison of Six Hemolytic Streptococcus Cultures from Cows*

Culture	Lactose	Mannite	Salicin	Maltose	Saccharose	Litmus Milk*	p_H
51 L F†	+	—	+	+	—	A	5.2
51 L H	+	—	+	+	+	ACR	4.3
21	+	—	+	+	+	ACR	4.5
3	+	+	+	+	+	ACR	4.5
17‡	+	+	+				
23‡	+	+	+				

* A, acid; C, coagulation; R, reduction of litmus.
† L F and L H refer to the left front and left hind quarters, respectively.
‡ These cultures were lost; therefore the data in regard to them are incomplete.

STATISTICS OF THE EPIDEMIC

In order to obtain as thorough and accurate information as possible concerning the extent and character of the epidemic, one of us made a complete canvass of the dairy route in the company of the regular driver

1. Avery, O. T., and Cullen, G. E.: J. Exper. Med. **29**: 215 (Feb.) 1919.
2. Smith and Brown: J. M. Res. **31**: 455, 1915.

of the milk wagon. The accompanying map (Fig. 4) gives an idea of the distribution of the customers, and hence of the cases.

The dairy supplied 300 families, including 1,200 individuals; one hospital containing thirty-five patients and thirty-four attendants and help, a total of sixty-nine; a girls' home containing 104 adults, and a small grocery depot which kept no milk book, but which

TABLE 2.—*Deaths from Septic Sore Throat*

Case	Sex*	Age, Years	Date of Death	Date of Onset	Contributing Causes of Death
1	♂	2	3/25/22	3/24/22	Acute encephalitis
2	♂	1	3/27/22	3/25/22	Peritonitis
3	♀	86	3/29/22	3/24/22	Myocarditis
4	♂	66	3/30/22	3/24/22	Myocarditis; double pneumonia
5†	♂	59	3/30/22	3/26/22	Cardiorenal disease; decompensation
6	♀	79	3/31/22	3/24/22	Erysipelas
7	♀	8	3/31/22	3/25/22	Septicemia
8	♂	18 mo.	3/31/22	3/25/22	Peritonitis; septicemia
9	♂	11 mo.	3/31/22	3/25/22	Peritonitis; erysipelas, slight; bronchopneumonia; encephalitis; septicemia
10†	♂	34	3/31/22	3/24/22	Hemolytic streptococcus septicemia; laryngitis
11	♂	10 mo.	4/ 1/22	3/25/22	Peritonitis; septicemia
12	♂	8	4/ 1/22	3/26/22	Tonsillitis; appendicitis
13	♀	52	4/ 1/22	.....	Septic myocarditis; septic cholecystitis
14	♂	27	4/ 2/22	3/27/22	Myocarditis
15†	♀	66	4/ 2/22	.....	Encephalitis; septicemia; endocarditis
16	♀	40	4/ 5/22	.....	Erysipelas
17	♀	35	4/ 5/22	3/27/22	Pleurisy; erysipelas; pneumonia
18	♂	2	4/ 8/22	3/24/22	Peritonitis
19	♂	72	4/ 8/22	.....	Septicemia; multiple arthritis; bronchopneumonia
20‡	♂	47	4/12/22	3/29/22	Central pneumonia
21	♂	1	4/12/22	3/26/22	Pneumonia; erysipelas
22	♀	52	4/24/22	3/26/22	Streptococcus septicemia; toxic goiter; erysipelas; goiter heart; acute nephritis

* In this column, ♂ indicates male; ♀ female.
† Necropsy.
‡ This is the only septic sore throat death in a nonuser of milk from the dairy mentioned in this report.

supplied an indefinite small number of customers. At least 1,400 persons were using the milk and cream.

The total number of cases of septic sore throat arising on this milk route during the week from March 24 to March 31 is computed at 487. Of these, 166 were severe, i. e., either had serious complications or gave trouble from protracted sepsis; 321 were listed as moderate or mild cases. Twenty-three cases, with three deaths, occurred among sixty-nine users of the milk in the hospital; forty-five cases, without fatalities, among 104 users in the girls' home. The remainder of the cases were in private homes. Four known cases arose among those who obtained this milk through the small grocery agency. Several persons who were not customers of the dairy became infected by drinking the milk in the homes of regular customers, and two deaths are included in this category.

There were twenty-two deaths in the epidemic, twenty-one of these among users of milk from the dairy in question. This gives a mortality rate of 4⅓ per cent. of those affected. Three of the fatalities were in patients who were already ill in the hospital with some preexisting condition when the epidemic started. Several others were in senile individuals. Table 2 gives the main facts concerning deaths in this series.

Necropsies were performed in three of the fatal cases, and the anatomic diagnoses were as follows:

CASE 5.—Acute pharyngitis, laryngitis, and cervical lymphadenitis; acute tracheitis and bronchitis, with early confluent bronchopneumonia of right lung; moderate bilateral pleural effusion; serofibrinous peritonitis with moderate ascites; slight serofibrinous pericarditis; marked hypertrophy and dilatation of both sides of the heart in the presence of marked arteriosclerotic narrowing of the left coronary artery; marked arteriosclerosis of the aorta and the kidneys; chronic passive hyperemia of the liver; large, fresh infarction of the spleen; cholelithiasis; encapsulated pulmonary tuberculosis.

CASE 10.—Acute purulent peritonsillitis, laryngitis, and cervical and mediastinal lymphadenitis; acute tracheitis and bronchitis, with early bronchopneumonia; edema of the glottis; marked hyperemia and moderate edema of the meninges; streptococcus septicemia; red splenic tumor; slight aortic atheroma.

CASE 15.—Moderate inflammation of the upper respiratory tract, with enlargement of the cervical lymph nodes; streptococcus septicemia and encephalitis; chronic and acute vegetative endocarditis of the aortic valve; cloudy swelling of the parenchymatous organs; diffuse scarring of pia-arachnoid.

The survey of 487 cases of septic sore throat elicited that the frequency of the main complications occurred thus: erysipelas, 20; otitis media, 14; arthritis, 12; septicemia, 12; peritonitis, 10; vomiting, diarrhea, 10; skin eruptions, 6; myocarditis, 5; endocarditis, 1; appendicitis, 2; encephalitis, 2; laryngitis, 3; sinus infection, 3; neuritis, 1; nephritis, 2; subcutaneous hemorrhage, 1.



Fig. 4.—Map of west side of Portland, showing results of survey of dairy route: Rings designate unaffected users of milk in question; solid circles, users of milk acquiring septic sore throat; crosses, deaths among users; arrows indicate infection by drinking this milk obtained through another person; *P*, cases in hospital; *W*, girls' home (104 users, not indicated by dots); *G*, grocery store and milk depot, giving rise to at least four cases.

Cervical lympadenitis occurred in nearly all cases, often requiring paracentesis. Erysipelas came sometimes from the ruptured middle ear, sometimes from the nares, and in one instance from the eye.

Contact infections were quite the exception. We found evidence of less than a dozen such cases on our house-to-house survey. In the hospital, one physician became infected in this way, and in the same institution three nurses became infected, presumably from one particular patient whom they attended. There were a very few contact infections also in the girls' home.

SUMMARY

It is evident from the data obtained that this epidemic, with 487 cases and twenty-two deaths, was caused by the drinking of raw milk from one dairy, which had been rated as one of the best in the city.

Similar strains of hemolytic streptococcus were obtained in almost pure culture from the inflamed udder of a cow of the herd, from one milker's throat, and from the throats of numerous septic sore throat patients and contacts. All these strains were shown to be of the human type.

It is probable that the milker in question infected the udder of the cow, producing purulent mastitis; that, on one or more occasions, this cow was milked in with the herd, and that the massed infection thus produced resulted in the epidemic.

This cow's udder had both human and bovine strains of hemolytic streptococci. One quarter, containing a human strain, had a massive mastitis indistinguishable grossly from garget; another quarter, having a bovine strain, was only slightly consolidated.

PARAVERTEBRAL ANESTHESIA IN ACUTE SUPPURATIVE PLEURISY *

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Paravertebral nerve block anesthesia lends itself for the induction of regional analgesia. It has been sufficiently developed to be employed almost as a routine in a certain group of cases. The good results reported by Kroenig and Siegel in 1916, with paravertebral conductive anesthesia in a large series of abdominal and gynecologic operations, prompted me to utilize this method in patients with empyema of the chest.

It is conceded that it is somewhat hazardous to subject a patient, already in a state of lowered resistance from a suppurative pleurisy, to the risks of a general anesthetic. Some of the dangers encountered with general anesthesia are the induction of a new pathologic lesion or an extension of an existent process in the lungs. For these and many other reasons, local anesthesia is advisable in this group of cases.

Paravertebral anesthesia was first conceived by Sellheim in 1905. The object of the paravertebral injection is to block the spinal nerves at their exit from the intervertebral foramina, where the anterior and posterior branches have already joined. This includes the communicating branches to the sympathetic system, which is derived from the anterior root of the spinal nerves.

A knowledge of the location and distribution of the spinal nerves with special reference to the vertebrae is an essential preliminary requirement for the accomplishment of the desired results.

* From the Surgical Service, Beth Israel Hospital.

TECHNIC

Three quarters of an hour prior to operation, the patient is given a hypodermic injection of a quarter of a grain of morphin sulphate and $\frac{1}{150}$ grain of atropin sulphate. A freshly prepared solution of procain is employed in 0.5 per cent. strength. Ten drops of a 1 : 1,000 epinephrin chlorid solution is added to each 30 c.c. of the anesthetic solution.

The patient is placed on the normal side, the head slightly flexed on the chest. The thighs are semiflexed on the abdomen, which increases the posterior convexity of the vertebral column, thereby creating an increased distance between the spinous processes, and also between the ribs posteriorly. With the patient in this position, the approach to the spinal nerves coming through the intervertebral foramina is accomplished with greater ease. It has been my practice to block the three spinal nerves above and the two below the rib chosen for the resection. With an empyema located in the right chest, a section of bone from the eighth rib, usually just in front of the angle, is removed. On the left side, the ninth rib is selected.

In patients with a right suppurative pleurisy, a point $1\frac{1}{4}$ inches (32 mm.), or two finger breadths, external to the tip of the fifth dorsal spinous process is selected, at which an intradermal wheal is first made. A long, thin needle is then directed perpendicularly and somewhat upward until the upper edge of the sixth rib is felt. The needle is then directed upward and a little inward, thereby reaching the intervertebral foramen through which the fifth dorsal spinal nerve emerges. In this region the needle is first passed for a distance of 2.5 cm., and then for about 3 cm. after going over the edge of the rib. From 15 to 20 c.c. of the solution is injected, only a small quantity being infiltrated on insertion and removal of the needle. This procedure is repeated opposite the sixth, seventh, eighth and ninth dorsal spinous processes.

It is very important to bear in mind, as the needle passes over the rib or approaches bony structure, that manipulation must be gentle because of the sensitive periosteum. One must also wait at least fifteen minutes after the last injection, in order to secure complete analgesia of the operative field.

To obtain complete analgesia when the incision is extended to the inner side of the mammary line, it is necessary to infiltrate over the sternum above and below the chondrosternal articulation of the rib to be resected, and for the same distance as posteriorly. This is done to block the intercommunicating branches of the nerves coming from the opposite side.

When local anesthesia by infiltration over the operative field is used for rib resection, pain is experienced by the patient because analgesia of the sensitive periosteum is never complete. As the pleura is incised, respiration becomes labored and more rapid, and is accompanied by an expulsive cough. When general anesthesia is administered there is marked cyanosis, and the breathing becomes irregular and stertorous. Often it is necessary to discontinue the administration of the anesthetic on account of the continuous cough. The dangers incident to general anesthesia must always be borne in mind.

This picture should be contrasted with that experienced in a series of twenty-seven cases in which operation was performed for acute suppurative pleurisy, the paravertebral method of regional anesthesia being employed. The general appearance of the patient remains unchanged. There is freedom of pain through-

out the entire period of operation. This is especially striking when the periosteum is separated from the rib, and when the latter is cut through or removed by the rongeur. Within the entire area of analgesia, the chest wall is seen to be rigid. The rate and character of the pulse and respiration are not disturbed. The usual expulsive cough following the opening of the pleural cavity is absent. The exposed lung can be manipulated without producing any evidence of irritation. The pus and fibrin can then be removed. The pus is removed by gentle suction, or the patient can be tilted to the desired position so that the contents of the pleural cavity can be evacuated just as water is poured from a pitcher, without causing any undue change in the condition of the patient. The fibrin is removed from the pleural cavity and the surface of the lung by dressing forceps or a ring clamp, without any irritation.

RESULTS

The paravertebral method of conductive anesthesia was employed in seven cases up to August, 1917. At that time the work was discontinued on account of my entering the U. S. Army service. In 1920, the method was again used in two cases. Since September, 1922, the work has been resumed, and is used in all cases of acute suppurative pleurisy that come under my care.

To emphasize the advantages of the paravertebral method of conductive anesthesia, a detailed report of two of the cases of this series of acute suppurative pleurisy will be instructive.

CASE 1.—W. G., a man, aged 25, admitted to the medical service, Aug. 3, 1916, complained of pain in the left chest, an irritable cough, chills and fever of four days' duration. The temperature on admission was 105.2 F.; pulse, 114, and respiration, 40. A left lobar pneumonia was diagnosed. The clinical picture remained unchanged for the following twelve days. The left pleural cavity was then aspirated, and pus was obtained. Operation was performed, August 16. Ninety cubic centimeters of 0.5 per cent. solution of procain, with 10 minims of a 1:1,000 solution of epinephrin chlorid to each 30 c.c., was injected into the region of the sixth, seventh, eighth, ninth and tenth dorsal spinal nerves of the left side. About fifteen minutes after the last injection, the skin, subcutaneous tissue and muscle were incised over the ninth rib just in front of its angle. There was an entire absence of pain. Then the periosteum was incised and separated from the rib, and the latter was resected. After the pleura was incised, a thick, greenish-yellow, purulent fluid was evacuated. The patient did not show any evidences of shock. His general appearance improved, and the pulse and respiration rates became slower. Analgesia persisted for two hours after the completion of the operation. The temperature gradually came down to normal in three days. The patient then made an uneventful recovery, and was discharged from the hospital thirteen days after the operation, with the wound completely healed.

CASE 2.—P. G., a married woman, aged 41, admitted to the surgical service, Oct. 19, 1920, had been operated on at another institution, fifteen months before, for an acute suppurative cholecystitis. There remained a persistent biliary sinus discharging a bile-stained mucopurulent fluid. October 23, a cholecystectomy and a choledochotomy were performed. During convalescence, she contracted a left lobar pneumonia. November 25, a roentgen-ray examination showed clouding of the lower half of the left pulmonary field. With the patient in the upright position, fluoroscopy demonstrated a fluid line at about the level of the angle of the scapula. Pus was aspirated from the pleural cavity in the eighth space, midscapular line. Culture showed the presence of *Staphylococcus pyogenes-albus*. On the following day, operation for empyema was performed with paravertebral anesthesia. The ninth rib for a distance of 3 inches in front of its angle was resected. A large quantity of thick, greenish pus was evacuated. The clinical picture, however, remained unchanged. The abdominal wound was almost healed. The chest wound continued to discharge a small quantity of pus. Dec. 20, 1920, aspiration of the same side of the chest in the sixth intercostal space revealed pus. With the same method of anesthesia, a portion of the seventh rib posteriorly was resected. There was found an encapsulated empyema, which was separated from the lower cavity by a dense band of adhesions running from the interlobar fissure to the chest wall. This was evidently the result of a pleurisy which she had had some years previous to her first gallbladder operation. The patient then made an uneventful recovery. She was discharged from the hospital, Jan. 8, 1921, with all wounds completely healed. A year and a half later the patient showed a gain in weight of 40 pounds (18 kg.), and was in good physical condition.

MORTALITY

Of the total number of twenty-seven cases ranging from 14 months to 64 years, only two terminated fatally:

CASE 3.—The first fatality occurred in M. T., a man, aged 52, who was admitted to the medical service, Sept. 13, 1922, with a complaint of precordial oppression, dyspnea and cough. Eight months prior to admission, he was discharged from the hospital, with a diagnosis of a right serofibrinous pleurisy. For the following two months he was much improved, complaining of an infrequent cough with foul smelling sputum. Four months before admission, he became progressively worse, there being rusty sputum, pain in the right chest and interscapular region, and an afternoon rise of temperature. The temperature on admission was 102.2 F.; pulse, 110, and respiration, 40. A diagnosis of acute suppurative pleurisy was made, which was confirmed by aspiration and roentgen ray. September 20, thoracotomy and resection of a portion of the eighth rib was done under paravertebral anesthesia. Improvement was progressive to September 26, at which time a complicating right saphenous phlebitis occurred. The patient then had a septic temperature. Blood culture showed *Streptococcus hemolyticus*. The patient died, October 1.

CASE 4.—The second mortality occurred in S. S., a boy, aged 3 years, who was admitted to the medical service, March 3, 1923, complaining of fever, pain in right chest and cough of one week's duration. Examination of the chest showed a bronchopneumonia of the upper half of the right chest; aspiration of the chest in the sixth space posteriorly revealed the presence of an empyema. The temperature on admission was 102.6 F.; pulse, 130, and respiration, 60. The patient was operated on the same day, with paravertebral anesthesia, a thoracotomy and rib resection being done. The child did not improve, and died eleven days after operation from a general sepsis.

No definite conclusions concerning the mortality rate in so small a series can be attempted. However, it must be borne in mind that many of the patients in this series had severe protracted empyemas, and the results are, indeed, encouraging.

COMMENT

The postoperative comfort of the patient is striking. This is probably due to the almost entire elimination of shock.

The period of convalescence was decidedly shortened. Complete healing of the wounds ranged from a period of from twelve to sixty days.

The ability to palpate the pleural cavity, and to remove the fibrin and break up fresh adhesions without causing any irritative symptoms, demonstrates the effectiveness of the analgesia obtained by the paravertebral method.

With perhaps few exceptions, I employ paravertebral anesthesia now as a routine in acute suppurative pleurisy, and I consider it the method of choice.

252 West Eighty-Fifth Street.

DIMINISHED GLYCOLYSIS IN THE BLOOD IN DIABETES

PRELIMINARY REPORT, AND A TENTATIVE THEORY OF THE DISEASE *

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It is well known that when blood is removed aseptically from the body and kept at body temperature, the blood sugar steadily diminishes and may entirely disappear in twenty-four hours. This process is called glycolysis, and is thought to be caused by a ferment known as the glycolytic ferment. It is important to emphasize that this action occurs in vitro.

Very little is known about this ferment, even less than the little we know of the fundamental nature of most of the other ferments. It has been demonstrated [1] that the glycolytic ferment is present only in the cellular elements of the blood, and not in the plasma; also there is evidence that the leukocytes contain considerably more than do the red blood cells.

A ferment similar to, and in all probability identical with, the glycolytic ferment of blood is present in other tissues, perhaps in varying amounts in all tissues. Pieces of kidney, obtained aseptically, will cause a marked lowering of the copper-reducing power of a solution of glucose; Levene and Meyer [2] have shown that lactic acid is formed.

Our interest in this ferment has been stimulated by the remarkable work of Banting, Best, Macleod, and their collaborators on insulin. The clinical work that we have undertaken with insulin [3] has caused us to study a number of phases of carbohydrate metabolism, but in this preliminary report only the studies of blood glycolysis will be presented. Other investigations are in progress and will be reported later.

BLOOD GLYCOLYSIS

We have been able to find in the literature only two important investigations of blood glycolysis. Lepine [4] states that the glycolytic ferment is markedly diminished in diabetic blood. Careful search of his publications reveals that all his observations, with the exception of one, were made on the blood of depancreatized dogs with experimental diabetes. The one exception was the blood of a patient with severe diabetes, in which the blood glycolysis was very much diminished. His observations will be of inestimable value when more is known about carbohydrate metabolism and the mechanism of the action of insulin.

Macleod,[5] as a result of his experiments, states that blood glycolysis is not changed in "diabetes." He places "diabetes" in quotation marks, referring to hyperglycemia produced in dogs and not to true diabetes. This hyperglycemia was caused by stimulation of the splanchnic nerves, by asphyxia (with curare) or by injections of epinephrin. All of the animals were anesthetized with ether. His experiments show that under these conditions there is no change in blood glycolysis. There is no evidence to prove that the cause of the hyperglycemia produced by these methods is the same as the cause of hyperglycemia in diabetes. Since all of the animals were anesthetized with ether, this may have had some effect on the blood glycolysis. Macleod found that the presence of oxalate in the blood, to prevent coagulation, reduces the amount of glycolysis. He has shown that the glycolytic ferment utilizes, equally well, either commercial glucose or glucose made from glycogen, when these are added to the blood.

Eadie [6] has recently demonstrated that the addition of insulin to sterile defibrinated blood, to oxalated blood or to mixtures of this blood and expressed muscle juice has no influence on the rate of glycolysis.

We have determined the amount of glycolysis occurring in twenty-four hours at 37 C.[7] in defibrinated blood from a series of normal persons and from a series of patients with diabetes. The blood (from 30 to 60 c.c.) was drawn from an arm vein with a sterile syringe. It was transferred immediately to sterile flasks containing glass beads, and in every instance it was defibrinated by shaking for one-half hour. A few cubic centimeters of the original blood was placed in a tube containing oxalate for a routine blood sugar determination. Every experiment was controlled bacteriologically, and only those results are reported in which the blood was sterile at the end of twenty-four hours.

*Loss of Blood Sugar by Glycolysis in Defibrinated Blood of Diabetic and Normal Persons **

Diabetic Patients	Blood Sugar	Blood Sugar after 24 Hrs.	Total Loss	Severity of Diabetes
Bm	294.3	100.5	193.6	Mild
Be	268.5	230.0	38.5	Severe
Cn	268.5	66.7	201.8	Mild
Gy	254.8	106.9	147.9	Moderate
Sr	392.2	229.9	62.3	Severe
Ps	307.8	136.5	171.3	Moderate
Nn	296.3	104.2	192.1	Moderate
Rl	579.8†	526.3	53.5	Severe
Fh	320.1	138.8	181.3	Moderate

Normal Subjects	Blood Sugar	Blood + Dextrose	Blood Sugar after 24 Hrs.	Total Loss
Sr	105.8	434.6	210.5	219.6
Ls	115.6	454.5	72.5	382.0
Hr	89.2	519.5	233.9	285.6
Hi	93.0	449.5	235.3	214.2
Hl	91.3	512.8	210.5	302.3
Ny	85.2	869.5	563.4	306.1

Patient	Time	Blood Sugar	Blood + Dextrose	Blood Sugar after 24 Hrs.	Total Loss
Gy	8 a. m.‡	178.2	500.0	449.5	50.5
	10 a. m.§	183.5	506.3	400.0	106.3
	1 p. m.#	123.8	625.0	335.8	289.2

* All of the figures for blood sugar and dextrose are given in milligrams per hundred cubic centimeters of blood.
† Blood fortified with dextrose.
‡ 8 a. m., before breakfast, last injection of insulin eighteen hours before.
§ 8:15 a. m., 10 units of insulin and breakfast.
12 noon, 10 units of insulin.

BLOOD SUGAR UNDER INSULIN TREATMENT

We found, early in the investigation, that the sugar present in the blood of normal persons and in that of some patients with diabetes in which a low blood sugar was due to insulin treatment disappeared in twenty-four hours. To estimate the amount of glucose susceptible of being destroyed by the glycolytic ferment,

* From the Laboratories of Columbia Hospital.
1. Rona and Döblin: Biochem. Ztschr. **32**: 489, 1911. Von Noorden: Ibid. **45**: 94, 1912.
2. Levene and Meyer: J. Biol. Chem. **11**: 361, 1912.
3. The Preparation used was insulin-Lilly.
4. Lepine: Le diabète sucre, Paris, 1909; Le sucre du sang, Paris, 1921.
5. Macleod: J. Biol. Chem. **15**: 497, 1913.
6. Eadie, quoted by McCormick, Macleod, Noble and O'Brien: J. Physiol. **57**: 247, 1923.
7. The twenty-four hour period was decided on as yielding more information than a shorter period.

all of the normal and these diabetic bloods were fortified with chemically pure dextrose.

The Folin-Wu [8] method was used for determining the blood sugar, and the readings were made with a Bausch and Lomb Duboscq type colorimeter. The original blood sugar determinations were made immediately after the half hour of defibrination, and a second determination was made on the defibrinated blood which had been incubated at 37 C. for twenty-four hours.

The results of these experiments are given in the table. The blood sugar figures and the loss by glycolysis in twenty-four hours are recorded in milligrams per hundred cubic centimeters of blood. It has been borne in mind that the number of leukocytes in the blood may influence the rate and amount of glycolysis. Leukocyte counts have been made on all samples of oxalated blood, but are not presented, as no significant correlation is evident at this time.

The accompanying table shows that glycolysis was definitely less in blood from patients with diabetes than from normal persons. The averages of our results show that normal blood, incubated at 37 C. for twenty-four hours, lost 289 mg. of glucose per hundred cubic centimeters, and that blood from patients with diabetes lost only 138 mg. of glucose. The amount of glycolysis in blood from diabetic patients was inversely proportional to the severity of the diabetes. We observed that the same amount of glycolysis occurred in defibrinated diabetic blood as in the same blood fortified with glucose. We have been unable to perform this experiment with normal blood, as in every instance the glycolytic ferment has been more than sufficient to use up all the normal amount of glucose (blood sugar) present. One experiment with a mixture of one part of normal defibrinated blood set up in duplicate with two parts of diabetic defibrinated blood and with two parts of the same blood fortified with glucose showed less glycolysis than the calculated amount. Experiments such as these must be repeated many times, but, in the meantime, one must bear in mind the possibility of the presence of an antiglycolytic ferment in diabetic blood. The difference in the average amount of glycolysis which occurred in normal and in the diabetic bloods studied is about the same as the difference in the average amount of blood sugar that was present.

We found that lactic acid is present in the blood after glycolysis in sufficient quantities to give a distinct yellow color with ferric chlorid (equal amounts of dilute ferric chlorid solution and the protein-free filtrate from the blood were used). Similar filtrates of blood before glycolysis did not yield a yellow color under these conditions.[9]

We have been able to study satisfactorily the variation in blood glycolysis in one case of diabetes treated with insulin. Results given at the bottom of the table indicate that the amount of glycolysis varied directly with the administration of insulin. In one other case, we were able to make only two observations on blood obtained before and after the injection of insulin, and here the variation in glycolysis, while not so marked, was in the same direction. Since Eadie has demonstrated that insulin does not increase the glycolytic power of blood when added to it in vitro, it seems probable that the increase in glycolytic action observed in these two cases was caused by an indirect action of insulin on some ferment mechanism within the body.

The significance of the results reported must await accurate interpretation until more is known of carbohydrate metabolism. Macleod [5] has pointed out that the amount of glucose used up by glycolysis within twenty-four hours, even when calculated for the total amount of circulating blood, is small compared with the amount of glucose utilized by the entire body.

The relationship of the lactic acid formed by tissue or blood glycolysis to carbohydrate metabolism is a problem of the future. This may be of significance, since Hill and Lupton [10] and others have shown that the glycogen in the muscle is converted into lactic acid with explosive rapidity when the muscle is stimulated to contract. Repeated contractions, to the stage of exhaustion, cause all the glycogen to be converted into lactic acid. With recuperation of the muscle, about five sixths of the lactic acid is slowly reconverted into glycogen, but one sixth of it disappears. This suggests that lactic acid may be an early intermediary product in glucose metabolism.

The end-products of glucose metabolism are carbon dioxid and water. Therefore this must be accomplished by a process of oxidation or of dehydrogenation. The early intermediary products in this metabolism are probably glyceric aldehyd, methyl glyoxal and lactic acid. Nothing further of importance is known, but suggestive investigations have been reported recently.

It occurred to us that if this process is one of oxidation, oxidizing ferments may be its cause. This speculation is strengthened by the knowledge that insulin increases the repiratory quotient in diabetic patients, therefore increasing the oxidation processes in these persons.

Oxidizing ferments are known to be present in all, or practically all, animal and vegetable tissues. These include the oxidases and peroxidases, but very little is known about them.

We tested insulin for these ferments with alphanaphthol and with paraphenylendiamin, but our results were negative. Eadie [6] has found that insulin added to blood in vitro does not increase the loss of glucose that normally occurs (glycolysis). Therefore, since insulin causes increased glucose combustion in the animal organism, it must act indirectly by stimulating, or activating, an oxidizing ferment or ferments. Our results indicate that less glycolytic ferment is present in the blood of diabetic than in that of normal persons, and that administration of insulin increases the amount of glycolytic power in the blood of diabetic patients. Blood glycolysis, as well as tissue glycolysis, converts glucose into lactic acid. This is not an oxidation process, but occurs by a transformation of one molecule of glucose into two molecules of lactic acid. Nevertheless, it seems probable that the formation of lactic acid is a preliminary step in the oxidation of glucose in the body.

This consideration led us to test the ability of raw potato, which contains both oxidases and peroxidases, to lower the blood sugar of animals, and to reduce the amount of glucose in a glucose solution.

In one experiment, 5 c.c. of juice expressed from a raw potato, injected intravenously into a 1,500 gram rabbit, was followed by reduction of the blood sugar

8. Folin, O., and Wu, H.: J. Biol. Chem. **41**: 367 (March) 1920.
9. Quantitative determination of the amount of lactic acid formed is being undertaken.
10. Hill, A. V., and Lupton, H.: Quart. J. Med. **16**: 135 (Jan.) 1923.

in one hour from 0.17 to 0.13 per cent. This result is comparable to the early results obtained by Banting and Best with their original unconcentrated preparations of insulin. We have also found that sterile pieces of potato, and juice expressed from these, introduced into a glucose solution, after incubation for twenty-four hours at 37 C., caused this to lose from 26 to 36 mg. of glucose per hundred cubic centimeters.

Since the performance of these experiments, Winter and Smith [11] have published their findings, namely, that a solution of a substance prepared from yeast causes lowering of blood sugar after intravenous injection into rabbits in a way comparable to that caused by insulin. This substance they found to have other properties similar to those of insulin.

CAUSATION OF DIABETES

While continuing our experimental investigation on the properties of vegetable extracts (oxidases), we wish to suggest, tentatively, a new theory of diabetes.

There have been so many theories of diabetes proposed that we feel we must apologize for adding another. This theory has the advantage that it can be submitted completely to experimental test.

The correlation of two recent investigations with our theoretical considerations has also been borne in mind, and whereas there is no incompatibility, the significance is not clear at present. These studies are those of Winter and Smith [12] on alpha, beta and gamma glucose, and those of Hopkins [13] on the oxidizing and reducing power of a substance, glutathion, which he has found in the body.

We suggest that carbohydrate metabolism is performed by oxidizing ferments, of which oxidases are examples; and that one of the first steps in this process is the conversion of glucose into lactic acid. An example of this is blood glycolysis, wherein the glycolysis is effected mainly by the leukocytes, which are known to contain oxidases.

Vegetable substances caused in some experiments lowering of blood sugar and loss of glucose from a solution of glucose. Insulin does not cause a loss of glucose when added to blood in vitro, nor does it contain oxidases. Injection of insulin into animals does cause lowering of blood sugar and increase in the respiratory quotient. Our results also indicate that blood glycolysis, which is low in the blood from patients with diabetes, is increased in this blood when insulin is injected subcutaneously.

We, therefore, suggest that diabetes is caused by a deficiency in the power, or amount, of oxidizing ferments in all the tissues of the body, and that the index of this is found in the glycolytic power of the blood. These oxidizing ferments are mainly controlled by a pancreatic hormone, and insulin acts indirectly on all the tissues by stimulating or activating the oxidizing ferments.

CONCLUSIONS

We do not believe that blood glycolysis measures the total amount of glucose utilized in the body, but we do suggest, tentatively, that it represents an index of the ability of the tissues to utilize glucose. This index may have somewhat the same significance and value, as regards carbohydrate metabolism, as have quantitative blood sugar determinations.

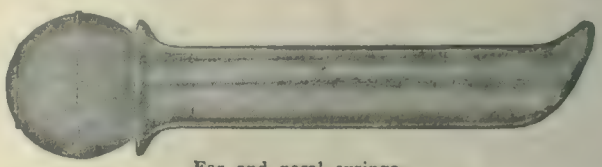
11. Winter, L. B., and Smith, W.: J. Physiol. **57**: 40 (Nos. 3 and 4) 1922.
12. Winter, L. B., and Smith, W.: J. Physiol. **57**: 100 (Dec.) 1922.
13. Hopkins, F. G., and Dixon, M.: J. Biol. Chem. **54**: 527-563 (Nov.) 1922.

Clinical Notes, Suggestions, and New Instruments

A NEW EAR AND NASAL SYRINGE

W. B. MASON, M.D., WASHINGTON, D. C.

In the treatment of the nose and ear, the necessity for a good syringe is generally recognized. My experience with the piston syringe has been unsatisfactory, and the fountain syringe or irrigating can are unpractical. I have had Becton, Dickinson & Co. modify their Asepto syringe to make it more suitable for our purposes, and find it most satisfactory. This modification consists of a curved, blunt nozzle which enables the physician to hold the syringe in a perpendicular position, thereby increasing its efficiency.



Ear and nasal syringe.

The advantages of this syringe are: It is inexpensive, simple in construction, and easy to sterilize; it is manipulated with one hand; it is self-filling; it gives an even, steady stream instead of squirting the solution into the nose or ear in jerks, as in the case of a piston syringe which is not in perfect order; there is no odor of lubricating oil or leather washers, and it is not formidable in appearance to a child or nervous patient.

1738 M Street.

CONGENITAL ABSENCE OF UTERUS AND VAGINA: REPORT OF A CASE

G. J. FERREIRA, B.S., M.D., BIWABIK, MINN.

History.—Mrs. B., a woman, aged 20, of Finnish parentage, married nine months, came to my office, Dec. 23, 1922, complaining that she had never menstruated. In the spring of 1922, shortly before her marriage, she consulted a physician in a nearby town for the same complaint. After examination, she was told that there was nothing to worry about, and that she would probably menstruate within another year. Thus encouraged, she married.

Examination.—The patient was well developed, well proportioned, and of pleasing personality. The head and neck were normal, the thyroid normal, the heart and lungs negative. Axillary hair was present in normal quantity. The mammae were well developed, the abdomen was normal.

The pelvis was well formed, and of the female type. Pubic hair was abundant and of characteristic distribution. On superficial inspection, the vulva appeared normal. The labia majora and minora and the clitoris were well developed. The introitus appeared normal, and there were small folds of mucous membrane which resembled a hymen. Examination, however, revealed a complete absence of the vaginal inlet. Rectal examination revealed a total absence of the uterus and probably of the vagina. Two small ovaries and two small tubes could be made out, the tubes being fused centrally into a small, hardened body.

March 14, 1923, the patient was examined by my chief, Dr. C. W. Bray, and my associate, Dr. W. G. Vande Steeg, and the same findings were registered.

The patient admitted quite marked libido.

Diagnostic Value of Reflex Dyspepsias.—The reflex dyspepsias, whether secondary to gallbladder, appendicular or other abdominal disease, comprise an important group, and it is essential that we should collect information as to the way in which their symptoms are produced.—J. A. Ryle, *Clin. J.* **52**:141 (March 21) 1923.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

INSULIN.—An aqueous solution of an active principle from pancreas which affects sugar metabolism. The strength of insulin is expressed in "units," one unit being one-third of the amount required to lower the blood sugar below 0.045 per cent. and cause convulsions in a rabbit weighing 2 kg. which has been previously starved for 24 hours.

Actions and Uses.—Insulin lowers the blood sugar in normal rabbits causing characteristic symptoms when a low level is reached, which symptoms are overcome by the administration of glucose. It prevents the hyperglycemia due to piqure, asphyxia and epinephrin. It increases the sugar consumption of the isolated mammalian heart. It causes glycogen to be deposited in the liver of diabetic animals fed with carbohydrates, and raises the respiratory quotient of such animals. It effects the metabolism of fat in diabetic animals and causes the acetone bodies to disappear from the urine. It has been demonstrated that the administration of insulin to diabetic dogs and to man in severe cases of diabetes mellitus restores to the body the lost ability to oxidize carbohydrate, and that glycogen is again stored in the liver. If insulin is administered at suitable intervals to a person suffering from diabetes mellitus, the blood sugar is maintained at a normal level and the urine remains free of sugar; fat is also burned and as a result, ketone bodies do not appear in the urine and diabetic acidosis and coma are prevented.

The administration of insulin is indicated in cases of diabetes mellitus which cannot be controlled at a satisfactory level by dietetic treatment. In such cases, with proper regulation of the diet, insulin should be administered in such amounts as to prevent glycosuria and a too great hyperglycemia. In some cases the dosage of insulin may be gradually decreased as the body power of utilizing carbohydrate returns toward normal.

Overdosage of insulin is followed by the development of serious symptoms which demand immediate treatment. The patient complains of weakness and fatigue and a feeling of nervousness or tremulousness. This is followed by profuse sweating, which is the most characteristic sign of overdosage. There is sometimes pallor or flushing. In the more severe forms there is acute distress with mental disturbances and even unconsciousness. These symptoms are relieved by the administration of some form of available carbohydrate by mouth or stomach tube, or, if the patient is comatose, by the intravenous injection of from five to twenty grams of pure glucose in a five to fifty per cent. sterile solution. (The intravenous injection of glucose may at times be obviated by the subcutaneous injection of 0.3 Cc. to 0.6 Cc. of a 1:1,000 solution of epinephrin chlorid, but this must always be followed by carbohydrates by mouth.)

Dosage.—Insulin is administered subcutaneously in the arm, thigh or buttock, one, two or three times a day, 15 to 60 minutes before a meal, depending upon the rapidity of absorption of carbohydrate from the stomach and insulin from the subcutaneous tissue, as estimated after observation of each individual patient. The dosage of insulin which is required to reduce the blood sugar to approximately the normal level should be determined for each patient by estimations of blood sugar before and after administration of insulin. If insulin must be administered without adequate control of blood sugar, it is safer to have a blood sugar somewhat above normal with a transient glycosuria, than to have the urine sugar free and the blood sugar at or below normal. The average dosage depends on the diet and severity of the disease. Small doses of a few units should be used in the beginning and this increased as may be necessary. When sugar is no longer found in the urine, the dose of insulin is decreased; the attempt being made to get rid of the noon dose by shifting the carbohydrate as far as feasible to breakfast and supper, and decreasing the noon insulin by a unit each day.

In cases of coma or severe acidosis, an initial dose of 15 or 20 units of insulin may be given, followed subsequently at 3 to 4 hours intervals by doses of 10 units with the simultaneous administration in each case of 10 to 20 grams of glucose. More than 60 units in twelve hours are rarely indicated.

In a small number of cases of diabetes mellitus, insulin can be discontinued, particularly with patients who receive it because of an exacerbation caused by complications, and where diabetes is of recent onset (though perhaps the latter should receive it intermittently as a prophylactic against increasing severity).

Insulin-Toronto.—A brand of insulin.

Manufactured by the Connaught Antitoxin Laboratories, University of Toronto, Toronto, Canada, under license from the Insulin Committee of the University of Toronto.

Insulin-Toronto 5 Cc. vials, 5 units in each cubic centimeter.
Insulin-Toronto 5 Cc. vials, 10 units in each cubic centimeter.

Fresh pancreatic beef glands from which the fat and connective tissue has been removed are minced and treated with equal weight of 80 per cent. alcohol containing 0.3 per cent. absolute sulphuric acid and the mixture constantly agitated during three hours. The mixture is then transferred to plaited filters contained in glass funnels and the filtrate is collected. The residue is then re-extracted for three hours with 60 per cent. alcohol. The mixture is then transferred to plaited filters and the filtrate added to the first filtrate. The united filtrates are neutralized, using litmus as indicator, and chilled to 0 C. The turbid liquid is filtered and the filtrate concentrated to about one-fifteenth of its original volume in a vacuum still at a temperature below 30 C. The concentrate is transferred to a separator, acidified to 1 per cent. absolute sulphuric acid and ammonium sulphate is added to half saturation (37 gm. per 100 Cc. of concentrate). After one hour the clear liquid is drawn off from the protein material, which has separated and risen to the top and in part adheres to the walls of the separator. The protein matter in the separator (which contains the insulin) is treated with sufficient 95 per cent. alcohol so that the concentration of the alcohol is between 70 to 80 per cent. The mixture is filtered and the alcoholic filtrate (containing the insulin) is precipitated by the addition to the filtrate of an equal volume of anhydrous ether. After six hours the ether-alcohol solution is decanted from the precipitate. The precipitate is dried in vacuo and washed well in acidified water (*p*H 4.7 to 5.0) containing 0.3 per cent. cresol and allowed to stand over night. The supernatant liquid is then poured off and the precipitate is dried by centrifuging. This residue is taken up in acidified water containing 0.3 per cent. cresol, adjusted to *p*H 3.7 and filtered. The filtrate (containing the insulin) is purified by a so-called isoelectric precipitation, that is, by adjusting the acidity to a *p*H 4.7 and allowing the solution to stand in an ice chest for from ten to twenty-four hours. The mixture is filtered; the precipitate taken up in acidified water (*p*H 2.5) filtered and diluted with acidified water to the desired potency.

The method for determining the potency of insulin is that described in the *American Journal of Physiology*, Vol. 62, p. 162. The insulin solution is then diluted, if necessary, with sterile distilled water of a correct *p*H concentration (usually 2.5) to the desired strength and 0.1 per cent. cresol is added. The solution is then passed through a sterile Mandler filter and the potency of the filtered solution is determined by the accepted method. The liquid is then filled into vials. A number of vials of each lot is set aside and the sterility of these is determined before the remainder is released.

QUININE ETHYL CARBONATE.—Quininae Aethylcarbonas.—$C_2H_5O.CO.O.C_{20}H_{23}N_2O$.—The quinine ester of ethyl carbonic acid. First introduced as euquinine.

Actions and Uses.—Quinine ethyl carbonate is used in place of quinine sulphate and similar soluble quinine salts when a practically tasteless quinine compound is preferred (see quinine derivatives New and Nonofficial Remedies, 1923, p. 254).

Dosage.—The same as that of quinine sulphate.

Quinine ethyl carbonate occurs as a light, fleecy conglomeration of delicate white needles, which are practically tasteless. It is sparingly soluble in water, but freely soluble in alcohol, ether and chloroform. It is soluble in petroleum benzin. Quinine ethyl carbonate possesses basic properties; it forms well crystallizable, bitter salts with acids. Quinine ethyl carbonate melts at from 89 to 91 C.

Dissolve about 0.2 Gm. of quinine ethyl carbonate in 5 Cc. of diluted sulphuric acid and dilute to 50 Cc. The solution exhibits a strong blue fluorescence, and responds to the general tests for alkaloids. Add 2 or 3 drops of bromine test solution to a 1 cubic centimeter portion of the solution followed by 1 Cc. of ammonia water; the liquid acquires an emerald green color due to the formation of thalleoquin. Dissolve 0.2 Gm. of quinine ethyl carbonate in 5 Cc. of nitric acid and dilute to 25 Cc. To a 5 cubic centimeter portion, add 1 Cc. of silver nitrate solution. No precipitate is formed (*chloride*). To another 5 cubic centimeter portion, add 1 Cc. of barium chloride solution. No precipitate is formed (*sulphate*). Add 5 Cc. of iodine solution to about 0.2 Gm. of quinine ethyl carbonate, decolorize with sodium hydroxide solution and warm. The odor of iodoform is manifested (*ethyl group*). Incinerate about 0.5 Gm., accurately weighed. Not more than 0.1 per cent. of residue remains.

Quinine Ethyl Carbonate-M. C. W.—A brand of Quinine ethyl carbonate-N. N. R.

Mallinckrodt Chemical Works, St. Louis, distributors. No U. S. patent or trademark.

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SATURDAY, JUNE 2, 1923

RECENT PHYSIOLOGIC FINDINGS REGARDING INSULIN

As could be expected, the almost dramatic clinical results that have attended the introduction of insulin into the therapy of diabetes have focused attention in many places on the nature of this uniquely potent product. The search for the substance to which the therapeutically active products owe their efficacy ought to be, and assuredly will be, pursued assiduously by scientific talent until some reward is secured in the discovery of the actual hormone. Thus, the history of research which led to the isolation of epinephrin and thyroxin is likely to repeat itself, whereupon the organic chemist will find a stimulus to further labors in the direction of artificial synthesis. It would, indeed, be a fortunate and happy circumstance if the approaching centennial of the first artificial synthesis of a substance, urea, earlier assumed to owe its origin to the inimitable "vital" activity of living tissues, could be made to encompass the synthetic production of a number of the recognized physiologically potent hormones which have baffled the chemical investigator.

Meanwhile, the enthusiasm for helpful clinical therapy must not be allowed to overshadow entirely the pressing need of further fundamental investigations on the genesis of diabetes, the origin of insulin, the variations in its production in the body, and the mode of its action. Insulin therapy, as shown by the clinical articles appearing in this issue, is essentially a palliative. The underlying defect in the organism that fails to burn its sugar probably remains to be discovered. The patient prosecution of the problem of diabetic pathogenesis must not be obscured by the remedial blessing.

Attention may well be called, in this connection, to the researches of Murlin and his collaborators [1] at the university at Rochester, N. Y. These show that, through perfusion of the surviving pancreas, solutions can be obtained which promptly raise the respiratory quotient of diabetic animals. As this is clear evidence of actual combustion of sugar in the body, it becomes an excellent criterion of relief from the diabetic condition.

Insulin-containing extracts have already been secured from a considerable variety of sources, including various vegetable products; at any rate, the extracts have been found to affect the level of the blood sugar after they are introduced into the living body. The Rochester experiments duplicate, in a sense, the process by which the blood may normally acquire its supply of insulin from the pancreas. According to them, insulin is extracted by perfusion of the pancreas with acidulated Ringer's solution more readily than with the same fluid made slightly alkaline. Another feature with respect to the behavior of insulin has recently been elucidated by E. C. Noble and J. J. R. MacLeod.[2] It has become well known to all who have worked with the hormone that overdosage leads to serious symptoms associated with the consequent hypoglycemia. The symptoms give the impression that some substance having a highly irritative influence on the central nervous system has become developed. As Noble and MacLeod remark, it can scarcely be the case that this stimulus is afforded by a lowered percentage of glucose in the blood per se. It is more likely either that the hypoglycemia is related to the setting free of some toxic metabolic product which in the normal animal is directly or indirectly antidoted by a certain concentration of glucose, or that it causes some change in the chemical or physicochemical equilibrium within the cells, which results in a disturbance of their normal functions. One of the ways by which light can be thrown on this question is to see whether sugars other than glucose have the power to remove the symptoms. If a given sugar fails to have this effect, evidence is afforded not only that it cannot itself act like glucose, but also that it is not converted, to any considerable extent at least, into glucose in the animal body. The latest studies from Toronto show that the only sugar which can definitely antidote the symptoms that accompany the hypoglycemia due to insulin is glucose. Levulose, galactose and maltose may be followed by temporary slight improvement in the symptoms, and they cause a marked increase in the blood sugar. Arabinose, xylose, sucrose and lactose have no apparent effect on the symptoms, although there may be an increase in the reducing power of the blood. Glycerol and alkalis have no effect on the symptoms. Rational insulin therapy must now be placed on the safe basis of profound physiologic studies in which every detail of the reactions of the hormone

1. Murlin, J. R.; Clough, H. D., and Stokes, A. M.: Extraction of the Antidiabetic Substance (Insulin) by Perfusion of the Pancreas, I, The Influence of Neutral or Alkaline Perfusates on the Respiratory Metabolism of Depancreatized Animals, Am. J. Physiol. 44: 330 (April) 1923. Murlin, J. R.; Clough, H. D.; Gibbs, C. B. F., and Stone, N. C.: Extraction of the Antidiabetic Substance (Insulin) by Perfusion of the Pancreas, II, Influence of Acid Perfusates upon the Blood Sugar, D:N Ratio and Respiratory Metabolism of Depancreatized Dogs, ibid. p. 348.

2. Noble, E. C., and MacLeod, J. J. R.: The Influence of Sugars and Other Substances on the Toxic Effects of Insulin, Am. J. Physiol. 44: 547 (May) 1923.

has been carefully considered. Then, indeed, it will not be too much to expect even greater advances in the therapy of the abnormal metabolism of the carbohydrates.

CALCIUM THERAPY IN TUBERCULOSIS

The resistance to tuberculosis of those who work in lime dust is traditional. Whether lime salts taken into the lungs in these cases are deposited in the tubercles, or stimulate fibrosis by mere mechanical action, or whether they exert any beneficial influence at all, is not known. Nevertheless, the therapeutic administration of calcium in tuberculosis has gained favor and has been endorsed by many clinicians. Wersen administered calcium lactate by mouth to twenty children with tuberculous peribronchial lymph nodes, and studied them, with an equal number of controls, by the fluoroscope. He believed that the treated patients showed more calcification of the nodes and a greater improvement in health than did those who had not received calcium. Clinical reports of favorable results from the use of calcium are numerous, but in a recent review of the literature, Maver and Wells [1] state that they have been unable to find the reports of any clinical study that has been adequately controlled. They also conclude there is no experimental proof that the administration of calcium, either by mouth or otherwise, increases the amount of calcium deposited in tubercles or other necrotic areas, unless Wersen's observation is considered experimental.

An appreciable increase in the amount of calcium deposited in tuberculous tissues by increasing the calcium intake is not to be expected, except when the blood calcium is already below normal. The normal amount of blood calcium represents about the maximum that the blood can carry. A greater amount than normal is promptly precipitated out of the blood in those tissues that are most alkaline. It does not appear that any deficiency in blood calcium exists in tuberculous patients. At least, there are no figures obtained by modern methods which indicate such a deficiency. Steinitz and Weigert [2] analyzed the entire body of a one year old child who died of tuberculosis. They found a normal total ash figure and no abnormal distribution of the inorganic elements of the ash. Jacobowitz was not able to increase the blood calcium by oral administration either in normal children or in those with tetany. It has been shown, furthermore, that the subcutaneous injection in cats of nearly lethal doses of calcium chlorid produces a rise in blood calcium, which reaches its maximum in from thirty to ninety minutes, and which falls again to normal within five or six hours. The intravenous injection of large quantities may drive the blood calcium far beyond its normal amount, but the original figure is restored in about two hours.

In view of the supposed clinical benefits of calcium in tuberculosis, and of Wersen's observation especially, an experimental study of the influence of calcium feeding on the deposition of calcium in tuberculous and nontuberculous tissues was made by Maver and Wells. Their first analyses were of normal laboratory animals to establish controls. A dose of calcium lactate equivalent to from 25 to 30 gm. for an adult person was administered daily for periods varying from fifteen to 288 days. Various tissues were then examined. It was found that the administration of calcium had not generally appreciably increased the calcium content of the tissues, and no recognizable difference was found between animals that had received calcium for long or for short periods. A series of animals injected with human tubercle bacilli of low virulence, which were fed calcium after the lymph nodes became palpable, and another series injected with a virulent strain of human tubercle bacilli, were similarly examined. To determine the effect of calcium on the course of tuberculosis, twenty-four other normal guinea-pigs were at the same time inoculated subcutaneously with 0.005 mg. of a culture. Twelve of this series received calcium from the day of inoculation, and twelve received no calcium. Eighteen of these animals, evenly divided between calcium fed and controls, died within 135 days. Analysis of the two separate lots of tissues showed that the administration of calcium to these animals did not reduce the spread of the tuberculous lesions, or lead to a greater amount of fibroplastic tissue reaction. The average length of life of the calcium-fed animals in this series was 92.5 days, and of the animals receiving no calcium, 74.4 days. Maver and Wells say that nothing is less constant than the length of life of tuberculous guinea-pigs, even under identical conditions of dosage and environment, and the slight difference indicated here is of no significance whatever.

These experiments show, among other things, that the addition of calcium lactate to the diet of normal guinea-pigs does not increase the amount of calcium to be recovered from most of the tissues. The kidneys may contain a little more, presumably because they are excreting any excess absorbed, and the lymph nodes usually show an increased amount, presumably from the inhalation of dust. A marked tendency of calcium to accumulate in the tuberculous lesions was noted, but the amount of calcium in tuberculous tissue was not appreciably modified by feeding calcium lactate in addition to the usual diet. Tuberculous lungs showed a much less tendency to accumulate calcium than tuberculous spleens, livers or lymph nodes.

This study failed, therefore, to furnish evidence that the administration of calcium exerts a favorable influence on the course of tuberculosis. It involved numerous observations and repeated analyses of many small

1. Maver, Mary E., and Wells, H. G.: The Alimentary Absorption of Calcium and Its Deposition in the Tissues in Experimental Tuberculosis, Am. Rev. Tuberc. 7:1 (March) 1923.
2. Steinitz and Weigert: Deutsch. med. Wchnschr. 30:838, 1904.

animals, a mass of scientific detail carefully controlled, and a considerable period of time. It is convincing. In the face of a large amount of empiric belief of the beneficial effect of calcium, it would appear desirable to conduct clinical experiments of an equally scientific nature if the use of the calcium compounds is to be continued. Certainly there appears to be no scientific basis for their continued utilization.

THE BEHAVIOR OF STRONTIUM IN THE BODY

In the fundamental structures of the body, comparatively few elements are normally concerned. Despite the close relationship of various elements from the standpoint of chemical criteria, it by no means follows that their physiologic rôles are equally comparable. One need merely contrast the difference between the alkali metals sodium and potassium in this respect. In the case of the familiar alkali earth metals calcium, magnesium, barium and strontium, it is well known that the last two are decidedly detrimental to physiologic well-being, in contrast to calcium, for example, which is present in the properly developed adult to the extent of several pounds.

There has long been a debate in physiologic literature as to whether strontium can be substituted to any extent for calcium and magnesium, particularly in the skeletal system, in which the use of calcium salts seems to be primarily structural rather than functional. The results of the earlier feeding experiments with strontium have not given a clear answer to the problem. Strontium resembles barium in some of its actions. However, it is asserted to stand far behind the latter in toxicity, being even less toxic than calcium, according to Sollmann.

In a new series of investigations in the Department of Chemical Hygiene at the Johns Hopkins University, it has been demonstrated beyond question that strontium can actually be deposited in the bones. The deposition may go on quite rapidly under permissible conditions of diet.[1] As the amount of strontium in the skeletal structures increases, the content of calcium decreases. The available data seem strongly to indicate that strontium behaves independently of calcium as a constituent of the bone and does not replace it physiologically as a bone-building element. Strontium can be excreted into the milk so that the young can secure it in this way. The element may also be transmitted through the placenta into the body of the developing fetus.

Although strontium behaves like calcium so far as its susceptibility of being deposited in the bones and in the milk is concerned, the similarity ends there. When strontium does enter the body through either the placenta or the alimentary canal, its presence in the new bones may lead to conspicuously pathologic manifestations. A form of "strontium rickets" arises which, in contrast to ordinary rickets, cannot be combated with cod liver oil.[2] So long as strontium salts retain a place in the list of officially recognized medicinal agents, it is well to bear in mind the possibilities of its abnormal physiologic behavior. Although such compounds have been used to a limited extent in medicine, pharmacologists are in general agreed that strontium possesses no therapeutic indications. Taken in connection with the unfavorable action on bone development, this in itself is sufficient ground for abandoning entirely the use of strontium in therapy.

1. Kinney, E. M., and McCollum, E. V.: A Study of the Rate of Deposition and Paths of Absorption on Strontium in the Rat, J. Pharmacol. & Exper. Therap. **21**: 165 (April) 1923.

2. Shipley, P. G.; Park, E. A.; McCollum, E. V.; Simmonds, Nina, and Kinney, E. M.: Strontium and Growing Bones, Bull. Johns Hopkins Hosp. **33**: 216, 1922.

Current Comment

TRYPARSAMID AND ITS PENETRATION INTO THE SPINAL FLUID

Last week THE JOURNAL published the report of the University of Wisconsin investigators [3] on the use of tryparsamid in neurosyphilis. Of forty-four patients who were in an advanced stage of general paralysis, twenty-one had been discharged from the hospital and were earning a living. Of twelve other much agitated patients in an acute stage of the disease, seven recovered normal mentality and were earning a living. The remaining five mentally were in condition to work, but had not been discharged on account of the serologic findings. Workers of the United States Public Health Service have now made available the results of an experimental investigation [4] of the penetration into the cerebrospinal fluid of tryparsamid and other arsenicals, which is enlightening as to the mechanism by which the reported effects are brought about. A heavy suspension of *Trypanosoma equiperdum* was injected into the cranial subarachnoid space of rabbits. No essential difference in behavior toward arsenicals has been discovered between *T. equiperdum, T. gambiense* and *Spirochaeta pallida*. Preliminary investigation demonstrated that trypanosomes thus injected could be recovered in considerable numbers. Tryparsamid and other arsenicals were then injected into the ear vein of the infected animals. After twenty-four hours a careful search was made in at least six different specimens of cerebrospinal fluid taken from the various subarachnoid spaces of the brain and medulla. The absence of trypanosomes in these specimens was considered evidence of permeability of the meninges by the arsenical injected or of some trypanocidal derivative. Under these experimental conditions, tryparsamid proved more effective than any other arsenical used. An amount which was only 4 per cent.

3. Lorenz, W. F.; Loevenhart, A. S.; Bleckwenn, W. J., and Hodges, F. J.: The Therapeutic Use of Tryparsamid in Neurosyphilis, J. A. M. A. **81**: 1497 (May 26) 1923.

4. Voegtlin, Carl; Smith, M. I.; Dyer, Helen, and Thompson, J. W.: Penetration of Arsenic into the Cerebrospinal Fluid, with Particular Reference to the Treatment of Protozoal Infections of the Central Nervous System, Pub. Health Rep. **38**: 1003 (May 11) 1923.

of the minimal lethal dose was 87 per cent. efficient. With 16 per cent. of its minimal lethal dose, sulpharsphenamin was 82 per cent. efficient. In a list of ten arsenicals in order of efficiency, those already noted were first and second; atoxyl was fifth; neoarsphenamin, sixth; arsphenamin, seventh; silver arsphenamin, eighth, and "arsenoxid," ninth. Thus, clinical and experimental evidence indicates that tryparsamid, injected intravenously, penetrates into the cerebrospinal fluid more effectively than other available remedies.

THE OCTOCENTENARY OF "OLD BART'S"

Age with honor has ever commanded respect; when it is combined with healthy growth and vigor, young in all that spells progress and vitality, it is worthy of admiration. St. Bartholomew's Hospital in London this year celebrates the eight hundredth anniversary of its foundation: For eight hundred years it has rendered distinguished service to humanity and medical science. Founded as a monastic institution in 1123, it has since been in practically continuous operation on its present site, though not one of the original buildings is now standing. Rebuilding and reconstruction have been progressively carried out since 1729. Today the hospital has six hundred beds and all the laboratory and teaching facilities required to make modern in every respect the great medical school that is a part of it. The monastic control passed away in 1536, and the hospital was surrendered to the mayor and citizens of London by King Henry VIII by a charter that was signed, Jan. 13, 1547. At that time there was inaugurated a system of government by an elected board of governors, similar in many respects to that which obtains today in many hospitals in this country. The ideals that have directed the management of the hospital continuously are admirably and quaintly expressed in the charge that was given to the matron and her assistants at that time: "Ye shall also faithfully and charitably serue and helpe the poore in al their grieues and diseases, aswel by kepyng them swete and cleane as in gyueng thim their meates and drinks after the most honest maner. Also ye shall use unto them good and honest talk suche as may comforte and amend them." The value of hospitals as centers for medical teaching as well as for treatment and research is well exemplified by the history of this hospital, which has ever stood in the forefront of English medicine. Though the medical school was not formally organized until 1843, lectures and demonstrations were certainly given as early as 1750. Training of nurses was started in 1650, though the organized training school was not established until 1877. The list of celebrated physicians and surgeons who have practiced and taught in the hospital includes such names as William Harvey, Percival Pott, John Abernethy and Sir James Paget. The commemorative exercises to be held June 5 and on subsequent days will depict various stages in the growth of the hospital by means of pageants, and there will be a revival of the Fair of St. Bartholomew. Details of the program were outlined by our London correspondent in THE JOURNAL, May 19. The event is not only of historic interest, but also an inspiring stimulus to that far-sighted, unselfish devotion that has ever been the ideal of the medical profession.

Association News

RESOLUTIONS OF OHIO STATE MEDICAL ASSOCIATION

The following resolutions were officially transmitted through the Secretary of the Ohio State Medical Association for publication in THE JOURNAL, after adoption by the House of Delegates of that association at its meeting in Dayton, May 2, 1923:

WHEREAS, The activity of certain individual members of the Ohio State Medical Association and certain few component county societies has carried to many members of the medical profession throughout the United States the impression that the sentiments expressed and the actions demanded by the late "Medical Advisory Committee" and the "American Medical Press" are approved and are supported by the Ohio State Medical Association, therefore, be it

Resolved, That the opinions and the propaganda of the "Medical Advisory Committee" and the "American Medical Press" do not represent the opinions of, and are not approved by the Ohio State Medical Association; and further, be it

Resolved, That a copy of this resolution be sent to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for publication.

ANNUAL MEETING OF THE IDAHO STATE MEDICAL ASSOCIATION

The annual meeting of the Idaho State Medical Association will be held at Idaho Falls, June 13 and 14, 1923. Arrangements have been made for taking the guests of the Association on a trip through Yellowstone Park. Fellows of the American Medical Association en route to San Francisco are cordially invited to attend the annual meeting of the Idaho State Medical Association at Idaho Falls.

THE SAN FRANCISCO SESSION

Invitation from Colorado Springs

The physicians and sanatoriums at Colorado Springs invite the members of the American Medical Association to stop over there as they go or as they return from the annual session in San Francisco. Colorado Springs is noted for the treatment of tuberculosis as well as for its wonderful scenery. Visiting physicians will be given an opportunity to observe the methods in use in the sanatoriums, among which are those maintained by the Modern Woodmen of America, the International Typographical Union and the Union Printers' Home. In addition to these are the Cragmor Sanatorium, the Glockner Sanatorium, St. Francis Hospital, Sunnyrest, Idlewold, Montcalm Sanatorium, Nob Hill Lodge, Star Ranch-in-the-Pines, and Crestone Heights Sanatorium. Stopovers will be allowed at Colorado Springs without extra cost.

Alpha Kappa Kappa Dinner

The Alpha Kappa Kappa dinner will be held at the Family Club Farm, Woodside, Calif., Thursday, June 28. San Francisco members of the fraternity will provide automobiles for carrying visiting members to the Family Farm. Those who desire to do so may remain overnight and return to San Francisco at 8 o'clock in the morning of Friday. Dr. Lloyd Bryan, Butler Building, San Francisco, is the secretary of the Alpha Kappa Kappa of California.

Omega Upsilon Phi Fraternity Banquet

The Omega Upsilon Phi fraternity will have a banquet in the University Club, San Francisco, Thursday evening, June 28. Dr. William O. French, Jr., Stanford University Medical School, Sacramento and Webster streets, San Francisco, is the scribe of Iota Chapter of Omega Upsilon Phi, and is anxious to have the names of all members of the fraternity who will attend the annual session in San Francisco.

Phi Chi Medical Fraternity Banquet

The Phi Chi Medical Fraternity will have a banquet at the Hotel Whitcomb at 6:30 p. m., Wednesday, June 27, the Stanford and University of California chapters acting as hosts. The dinner will be over in time for those present to attend the President's reception. Those who expect to attend this banquet will please notify Dr. K. O. Haldeman, 2525 Durant Avenue, Berkeley, Calif.

Special Train to San Francisco

The Chicago, Rock Island and Pacific Railway offers special accommodations on its trains leaving Chicago, June 20 and June 21, for those who wish to go to San Francisco to attend the annual session. These trains will leave Chicago at 10 p. m., central standard time, and will arrive at Colorado Springs at 7:30 a. m. the second day. Leaving Colorado Springs at 10:58 a. m. the same day, Salt Lake City will be reached at noon the third day and San Francisco at 5:45 p. m. the fourth day. From Salt Lake City, the route will be by way of the Feather River Canyon.

Utah State Medical Association

The twenty-ninth annual meeting of the Utah State Medical Association will be held at Salt Lake City, June 20-22. A splendid program has been arranged, with contributors from all parts of the country, each of whom is eminent in his own special field of practice. Physicians en route to the annual session at San Francisco are invited to stop off at Salt Lake and visit the Utah State Medical Association.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Dr. Dinsmore's Successor Named.—Dr. John C. Bragg, Albany, president of the Morgan County Medical Society, has been elected to the board of health to fill the vacancy caused by the death of Dr. William M. Dinsmore.

ARKANSAS

Hospital News.—The last session of the Arkansas Legislature appropriated $75,000 to establish a tuberculosis sanatorium for negroes. There was also an appropriation of $75,000 for additional buildings at the State Tuberculosis Sanatorium at Booneville. This will increase the present capacity, which is 184, to 260 beds. The Masonic order of the state has plans for a $50,000 fire-proof building at the State Sanatorium for Tuberculous Children. When these buildings are completed, the capacity of the sanatorium will be 300.

CALIFORNIA

Faculty Changes at Stanford University.—The following promotions and appointments in the clinical staff of Stanford University School of Medicine, San Francisco, have recently been announced: Dr. Sylvan L. Haas, assistant clinical professor of surgery, assigned to orthopedics; Dr. Harvey S. Hunsberger, clinical instructor in medicine; Dr. J. Walter Jones, clinical instructor in surgery; Dr. John J. Kingston, clinical instructor in medicine, assigned to pediatrics; Dr. Mary H. Layman, assistant clinical professor of medicine, assigned to pediatrics; Dr. Mary J. Mentzer, clinical instructor in medicine; Dr. Philip Hale Pierson, assistant clinical professor in medicine, assigned to tuberculosis; Dr. Merton James Price, clinical instructor in surgery, assigned to otology, rhinology and laryngology; Dr. Joseph A. Sampson, clinical instructor in medicine, assigned to pediatrics; Dr. William E. Stevens, associate clinical professor in obstetrics and gynecology, and Dr. Wilber F. Swett, clinical instructor in surgery assigned to ophthalmology. Promotions on the academic staff: Dr. Frank Ellsworth Blaisdell, professor of surgery; Dr. William E. Chamberlain, associate professor of medicine, assigned to radiology; Dr. John F. Cowan, professor of surgery; Dr. Ernest C. Dickson, professor of medicine; Dr. Leonard W. Ely, professor of surgery, assigned to orthopedics; Dr. Ludwig A. Emge, associate professor of obstetrics and gynecology; Dr. Harold K. Faber, professor of medicine, assigned to pediatrics; Dr. Henry G. Mehrtens, associate professor of medicine, assigned to neurology; Dr. Robert Ried Newell, assistant professor of medicine, assigned to radiology, and Dr. Albert Victor Pettit, instructor in obstetrics and gynecology. Dr. Charles Haskell Danforth has been appointed associate professor of anatomy.

COLORADO

Ophthalmologic and Otolaryngologic Congress.—The Colorado Congress of Ophthalmology and Otolaryngology will be held in Denver, July 30-31. Plans are being perfected for a graduate teaching course which will be given for a period of two weeks prior to the congress.

DELAWARE

Personal.—Dr. L. August H. Bishop has been reelected president of the board of health of Dover.——Dr. Luther S. Conwell, who has been secretary of the state board of health, will resume private practice at Camden.——Dr. William C. Behen, Dover, was recently honored by Poland with the Cross of the Valiant for services in that country with the American Red Cross Hospital Train No. 1, during the Bolshevik drive on Warsaw in 1920.

DISTRICT OF COLUMBIA

Roentgenologist Loses Hand.—Dr. Thomas A. Groover, Washington, associate professor of roentgenology at George Washington University Medical School, recently suffered the amputation of his left hand and two fingers on his right hand, from extended exposure to roentgen rays.

Medical and Surgical Meeting.—The twenty-fifth annual banquet of the Washington Medical and Surgical Society was given at the Wardman Park Hotel, May 10. Dr. Edward John Beardsley, Philadelphia, was the guest of honor. Officers of the society are: president, Dr. Caryl Burbank; vice president, Dr. Coursen B. Conklin; secretary, Dr. Augustus C. Gray, and treasurer, Dr. Frank E. Gibson.

State Health Officers' Conference.—Following the conference of State and Provincial Health Authorities of North America, which was held in the auditorium of the District of Columbia Medical Association, May 14-15, the twenty-first annual conference of state and territorial health officers with the U. S. Public Health Service was held in Washington, May 16-17. Representatives from thirty-five states attended the conference. Vital statistics, systematization of health laws, malaria and venereal disease control, maternity and infant hygiene, and rural health work were among the subjects discussed.

GEORGIA

"Ductless Gland" Clinic.—There has been opened in Atlanta a clinic to be known as the Good Samaritan Clinic, devoted exclusively to disorders of the ductless glands. It is to be operated on a strictly charity and nonsectarian basis. It is supported by a group of prominent capitalists who form its board of trustees. Twenty physicians and one orthodontist compose its medical staff. Clinics will be conducted daily.

ILLINOIS

Personal.—The Morgan County Tuberculosis Board has announced that Dr. Francis M. Roberts, Chapin, has been appointed superintendent of Oak Lawn Sanatorium, Jacksonville.——Dr. James B. Hundley has been appointed city health officer of Danville, to succeed Dr. William C. Dixon, who resigned, May 14.——Dr. Robert J. Burns has been appointed health commissioner of Freeport.

Society News.—Druggists, dentists and physicians of Henry, Stark, Knox and Bureau counties gave a dinner in Kewanee, May 11, in order to discuss proposed legislation to restore former methods of state supervision through the various professional boards. Dr. Charles Humiston, formerly president of the Chicago Medical Society and the state medical society; Samuel L. Antanow, president of the Illinois Pharmaceutical Association, and G. Walter Dittmar, D.D.S., former president of the Illinois State Dental Society, gave addresses.——A meeting of the Iowa and Illinois Central District Medical Society was held, May 24, in Moline. This

meeting, which is one of the four held every year, was presided over by Dr. Frederick H. Lamb, Davenport, Iowa. Dr. James B. Herrick, professor of medicine, Rush Medical College, Chicago, and Dr. Albert H. Byfield, professor of pediatrics, State University of Iowa College of Medicine, Iowa City, gave addresses.

Chicago

Fine for Physician.—According to reports, Dr. James H. Lyon was fined $1,500, May 18, following conviction of violation of the Harrison Narcotic Law. It was stated at the trial that Dr. Lyon had issued, during a period of fourteen days, nearly 2,500 prescriptions, calling for 71,636 grains of morphin.

Personal.—Dr. Fuad Bey, member of the Turkish nationalist assembly from Angora, former minister of health and public works of Turkey, arrived in Chicago, May 24. He is touring the United States to study social conditions, particularly with reference to children.——Dr. Julius A. Toren, Chicago, gave an address on the "Diagnosis of Oral Infection by Blood Examination" before the Mercer County Medical Society and the county dental society at Trenton, N. J., May 10.

Opinion on Quarantine in Venereal Disease.—The city law department has been asked for an opinion by Chief of Police Collins and Health Commissioner Bundesen as to whether the health department has the authority to hold in quarantine persons arrested in disorderly houses until they can be examined for evidence of contagious disease. The chief of police states that this might amount to a refusal of bail and would thus be illegal. The health commissioner holds that such action is necessary to reduce venereal disease in the city.

Annual Report of United Charities.—According to the sixty-sixth annual report of the United Charities, issued May 22, the sum of $663,877 was paid out between Oct. 1, 1921, and Sept. 30, 1922. The organization aided 12,076 families, at a cost of $344,755. Of this amount $105,884 was spent for the employment of superintendents, social workers, interpreters, visiting housekeepers and clerical help; $23,068 for the maintenance of ten district offices, and $46,036 for general administration and the maintenance of general offices.

Hospital News.—A new woman's home and hospital will be erected in Chicago by the Salvation Army at a cost of $250,000.——It was announced, May 22, that St. Luke's Hospital will launch a drive, June 11-16, to collect $2,500,000 for the erection of a nineteen-story addition to the hospital buildings. The institution now has accommodation for 400 patients.——Ground was broken at Riverside, May 22, for the new $70,000 home for British aged to be erected under the auspices of the Daughters of the British Empire of the United States. Samuel Insull presented the organization with the eight acre plot.

Society News.—The Chicago Tuberculosis Society held its last meeting of the season, May 10, at which the following officers were elected: president, Dr. Clarence L. Wheaton; vice president, Dr. Alfred E. Owens, and secretary-treasurer, Dr. Hermann J. Achard (reelected).——At the annual meeting of the Chicago Neurological Society, May 14, Dr. Julius Grinker was elected president; Dr. Ralph C. Hamill, vice president, and Dr. Lewis J. Pollock, secretary-treasurer.——Dr. Lydia M. DeWitt was elected president of the Chicago Pathological Society at the annual meeting, May 19. Dr. William F. Petersen was elected vice president, and Dr. George H. Weaver, secretary.

INDIANA

School Closed for Smallpox.—The Central High School, Fort Wayne, was closed, May 10, by the city board of health following the discovery that a student had smallpox. There are twenty-three cases of smallpox in the city at the present time. Seven of the patients are at the isolation hospital.

KENTUCKY

Physician Vindicated.—Dr. John P. Huff, Olive Hill, whose narcotic license was recently revoked and his supply of blanks and morphin confiscated by a revenue officer, demanded an investigation of the charges. This resulted in restoring his loss.

Society News.—At the fifty-third annual meeting of the Southwestern Kentucky Medical Association in Paducah, May 9, Dr. Herbert H. Hunt, Mayfield, was elected president; Dr. Vernon Blythe, Paducah, secretary, and Dr. James T. Reddick, Paducah, treasurer.

LOUISIANA

Personal.—Dr. George E. Beyer, entomologist of the state board of health, New Orleans, formerly adjunct professor in biology at Tulane University School of Medicine, has been requested to aid in stamping out malaria in San Domingo. Dr. Oscar Dowling, president of the state board of health, has granted Dr. Beyer a leave of absence.——Dr. John F. McHugh, Mansfield, has resigned as health officer of De Soto Parish.

MAINE

New Hospital for Caribou.—Bids closed, May 5, for the erection of a $50,000 hospital building in Caribou.

Personal.—Dr. Cyrus C. Sturgis, Boston, gave an address before the Androscoggin County Medical Society at Lewiston, May 8, on "Relationships of Goiter."——Dr. Stephen E. Vosburgh, superintendent of the Maine School for the Feebleminded, West Pownal, delivered an address before the York County Medical Society at Biddeford, April 5.

MARYLAND

Personal.—Dr. Howard A. Kelly presented a Della Robbia Bambino to the Babies' and Children's Clinic at the University of Maryland on May 29.

Instruction in Social Service Study at Johns Hopkins University.—Opportunity for extensive training in the study of diseases, surgical and psychiatric problems and medical social problems was announced, May 5, by Johns Hopkins University in connection with its study program planned for instruction in social service for the academic year, beginning October 2. Fifteen new courses of training will be available to social economics students, embracing social law, child welfare, social service organization, delinquency and probation, social statistics, immigrant peoples and the history and development of social work. The new courses will lead to the degree of master of arts, but special students will be admitted without reference to attaining a degree. The following staff of instructors was announced: Dr. Richard A. Bolt, general director of the American Child Hygiene Association; Francis Lee Dunham, psychiatrist of the Maryland Child Labor Commission of the state industrial schools; Courtney Dinwiddie, executive secretary of the National Child Health Council; John W. Lewis, director of Americanization of the Baltimore School Board; Elmer V. McCullon, Ph.D., professor of biochemistry, Johns Hopkins School of Hygiene and Public Health; Dr. Adolf Meyer, professor of psychiatry, Johns Hopkins Medical School; Dr. Esther L. Richards, associate professor of psychiatry at Johns Hopkins Medical School; William O. Weyforth, Ph.D., and Broadus Mitchell, Ph.D., of the Johns Hopkins University, department of political economy.

MASSACHUSETTS

Physician Wins Suit.—In the suit for $20,000 damages brought by Peter Kos against Dr. Robert R. Brault, New Bedford, alleging negligence in treating an infant child of the plaintiff, the jury brought in a verdict for the defendant.

Mental Hygiene Unit Organized.—A New Bedford unit of the Massachusetts Society for Mental Hygiene was organized, May 9. Dr. Frank M. Howes, secretary of the medical staff of St. Luke's Hospital, was elected president. A mental hygiene clinic was opened six weeks ago in New Bedford, in charge of Dr. Samuel Tartakoff.

New Chemistry Building at Harvard.—Edward Mallinckrodt, St. Louis, president of the chemical works of that name, has donated $500,000 toward the construction of new chemical laboratories for Harvard University, Boston. The building, which will be erected between the new lecture hall and the university museum, will be known as the Mallinckrodt Laboratory.

Personal.—Dr. Oscar M. Schloss has resigned from the Children's Hospital, Boston, to occupy the position of professor of pediatrics in the Cornell University Medical School, and to take charge of the New York Nursery and Child's Hospital, New York.——Dr. Edward Waldo Emerson, Concord, son of Ralph Waldo Emerson, unveiled a marble bust of his father in the Hall of Fame of New York University, May 22.

Public Health Conference.—At the public health conference held in Springfield, April 26-28 (THE JOURNAL, April 14, p. 1081) the following officers were elected: president, Dr. Edward O. Otis, Boston; vice president, Dr. Parker M. Cort,

Springfield; honorary presidents, Major-Gen. Clarence R. Edwards, Westwood, Dr. Eugene R. Kelley, Boston, and Cardinal O'Connel, Boston, and Robert V. Spencer, Newton. Sixteen organizations interested in public health participated in the conference.

History of Medical Society to Be Published.—A 400 page, illustrated book, entitled "History of the Massachusetts Medical Society, 1781-1922," compiled by the secretary, Dr. Walter L. Burrage, Boston, will be published in October. Brief biographies of the founders and of those who have been chiefly concerned in promoting the interests of the organization during its 142 years are some of the important features. The illustrations include some of these men, the chief meeting places, and reproductions of old documents.

James Marsh Jackson League.—The Tide Over League with headquarters in Boston will hereafter be known as the James Marsh Jackson League, Inc., in honor of the late Dr. J. M. Jackson. The organization cares for convalescents who, upon leaving the hospital, are not physically able to resume at once their former occupation. It gives convalescents light work in their homes. A school of applied arts is maintained, where individual instruction is given to students in the various handicrafts; the league also cares for convalescents from chronic disease who need both money and occupation for longer periods.

MICHIGAN

Sanatorium Destroyed by Fire.—The Otter Lake Sanatorium, Otter Lake, which was about to be taken over by the American Legion to be used as an orphanage, was destroyed by fire, recently, the loss approximating $80,000.

Chiropractor Fined.—It is reported that Ward F. Miller, chiropractor, of Shepherd, was recently found guilty of violation of the state medical registration law and was sentenced to forty-five days in the county jail and fined $150.

Veteran Physicians Honored.—The Lapeer County Medical Society tendered a dinner at Imlay City in May to Drs. George W. Jones of Imlay City, and William Blake of Lapeer, in recognition of their long years of practice in the county. Both physicians are Canadians. Dr. Jones is more than 85 years of age and has served as village postmaster for several term. Dr. Blake located in Lapeer County about forty-five years ago and served as mayor of Lapeer.

MISSOURI

Hospital Dedicated.—The new Lloyd Building, one of the three additions to the Missouri State Sanatorium, Mount Vernon, was dedicated, May 12.

"Doctor" Arrested.—The health department of St. Louis caused the arrest, May 4, of C. Edward Barnett on a charge of practicing medicine without a license. Barnett styled himself a doctor of naprapathy.

Personal.—Dr. James H. Parker of the East Louisiana Hospital for the Insane, Jackson, La., has been appointed superintendent of Hospital No. 4 at Farmington, to succeed Dr. Ethan E. Brunner, recently appointed superintendent of the Colony for Feebleminded, Marshall.——Dr. Francis E. Cullen, senior physician at the City Hospital, St. Louis, has been appointed superintendent of the Isolation Hospital, to succeed Dr. Eugene A. Scharff, who was recently appointed superintendent of the City Hospital.——Dr. Robert M. Wilson, superintendent of the Kwangju Leper Hospital, Korea, gave an address at the Washington University School of Medicine, St. Louis, May 9.

NEBRASKA

State Medical Meetings.—The annual meeting of the Nebraska State Medical Association was held in Lincoln May 15-17. The following officers were elected to serve from next January 1, as is the custom of the association: president, Dr. Morris Neilsen, Blair; vice presidents, Drs. Frank Tornholm, Wahoo, and William J. Douglas, Atkinson, and secretary, Dr. Roy B. Adams, Lincoln (reelected). The next convention will be held in Omaha.——Dr. Emelia H. Brandt and Dr. Reisa G. Wohl, both of Omaha, were elected president and secretary-treasurer, respectively, of the Nebraska Women's Medical Association, at the annual meeting in Lincoln.

NEW YORK

State Medical Meeting.—At the one hundred and seventeenth annual meeting of the Medical Society of the State of New York in New York City, May 22-24, Dr. Orrin S. Wightman, New York City, was elected president for the ensuing year. Dr. Edward Livingston Hunt was reelected secretary.

Hospital News.—St. Christopher's Hospital for Babies has been absorbed by the Brooklyn Hospital, and its resources have become the St. Christopher's Foundation for Babies at the latter institution.

Society News.—At the annual dinner of the Flatbush Medical Society in Brooklyn, May 16, Dr. George A. Merrill was elected president; Dr. Samuel L. Fisher, vice president, and Dr. William F. C. Steinbugler, secretary.——At the annual meeting of the New York Surgical Society, April 29, Dr. Eugene H. Pool was elected president, and Dr. Fordyce Barker, St. John, secretary, for the ensuing year.——Owing to the conflict of dates with the meeting of the house of delegates of the state medical society at the New York Academy of Medicine, the regular May meeting of the Medical Association of the Greater City of New York will be omitted, and a special meeting will be held jointly with the Queens County Medical Society, June 5, at Flushing, L. I. ——The section of laryngology and rhinology of the New York Academy of Medicine advanced its meeting date to May 22 for the same reason, when it entertained the members of the nose and throat section of the state society.——At the annual meeting of the Women's Medical Society of New York, in New York City, May 21, Dr. Mary E. Dunning Rose, New York, was elected president; Drs. Julia K. Qua, Amsterdam, Grace A. B. Carter, Rochester, and Julia G. McNutt, Albany, vice presidents; Dr. Anna H. Voorhis, Yonkers, secretary, and Dr. Florence A. Sherman, Albany, treasurer.

New York City

Deaths from Tuberculosis.—The New York Tuberculosis Association stated that since January 1 there have been 1,613 deaths from tuberculosis in various forms in the city, as against 1,590 for the corresponding period in 1922.

James Buchanan Brady Foundation.—Several hundred patrons of the Society of the New York Hospital were guests, May 12, of the urological department of the New York Hospital, which occupies one floor in the private patients' building. This department was founded by the late James Buchanan Brady, who left in his will about $800,000 for that purpose.

Physician Charged with Homicide.—Dr. Henry Russell was held in $10,000 bail in the homicide court, May 10, on the charge of having performed an illegal operation. The charge had previously been dismissed by Magistrate Oberweger in the West Side Court. The complaint, entered by the Presbyterian Hospital authorities, claims that Dr. Russell performed the operation at his office, and that the condition of the patient became such that she was taken to the hospital, where a second operation was required.

Personal.—Dr. William V. P. Garretson has resigned as attending neurologist to the Reconstruction Hospital, New York.——Dr. Fred H. Albee sailed for Europe, May 16, to attend a congress of surgeons meeting in Amsterdam. ——Dr. S. Josephine Baker has resigned as director of the bureau of child hygiene, after twenty years' service in the health department, on account of ill health.——Dr. Fred Wise and Dr. Isadore Rosen have been appointed assistant professors of dermatology and syphilology at the College of Physicians and Surgeons, Columbia University.

Hospital News.—Work will start in the near future on a building for the new Samaritan Hospital on the present site. The new structure will cost about $250,000, and accommodate 250 patients. The building will be six stories in height, will contain four operating rooms, a maternity department and sun parlors. The committee plans to maintain an ambulance service equal to that of the larger institutions in Manhattan. ——The new neurologic wards of Mount Sinai Hospital (forty beds), endowed by Messrs. Samuel and Harry Sachs, were opened, May 1.——Beth Israel Hospital held its annual meeting on May 15. In addition to the presentation of the annual report and the election of officers, Dr. Lewellys F. Barker delivered an address.

OREGON

Personal.—Dr. Richard B. Dillehunt, dean of the University of Oregon Medical School, has been elected surgeon-in-chief of the Portland unit of the Shriners' hospitals for crippled children.

Junior League Aids Clinic.—The Portland Junior League has raised $11,000 for the support of the children's orthopedic clinic at the University of Oregon School of Medicine, Port-

land. The clinic is held in the patient department of the medical school at the Portland free dispensary. The Junior League purchased all the necessary equipment for the clinic.

PENNSYLVANIA

Personal.—Dr. Franklin E. Sass, Boswell, has been appointed medical director of Somerset County, to succeed Dr. Charles P. Large.——Drs. Jacob P. Frantz, John H. Woolridge, George E. Mauk and Harry A. Woodside were injured in an automobile accident while returning to their homes in Clearfield from a medical meeting, May 10.——Dr. J. S. Fraser, Edinburgh, Scotland, addressed the section on otology and laryngology of the College of Physicians of Philadelphia, May 18, on "The Route of Infection in Cases of Meningitis Associated with Middle Ear Suppuration in Which Neither Labyrinthine Suppuration nor Extradural Abscesses are Present."——The Camden County Medical Society tendered a testimonial dinner to Dr. Daniel Strock, Camden, May 9, at Delair, on his retirement as secretary of the society, following twenty-five years of service.——Dr. W. P. Nolan, Jeannette, has resigned as chief of the State Tuberculosis Clinic at Greensburg.

Philadelphia

Smallpox Quarantine Extend.—A police quarantine of the section bounded by Ontario, Venango, Broad and Sixteenth streets was established as a result of two more cases of smallpox therein reported to the department of public health. ——Extension of the quarantine following discovery of a number of smallpox cases in a tenement near Ninth and Vine streets was ordered for a time, May 21, while physicians, working under Dr. A. A. Cairns, chief medical inspector of the bureau of health, vaccinated more than 700 persons in the district bounded by Tenth, Twelfth, Vine and Callowhill streets.

Changes at Woman's Medical College.—Additional appointments to the faculty of the Woman's Medical College of Pennsylvania (THE JOURNAL, May 19, p. 1463) have recently been announced: Dr. Alice E. Johnson, clinical professor of psychiatry; Drs. Mabel H. Pearson and Miriam Bell, instructors in pediatrics; Dr. Catherine Barnaby, instructor in clinical neurology. Dr. Martha Tracy has been reappointed dean of the medical school. It was decided to reduce the major faculty from twenty to sixteen members. The incorporators, instead of the faculty, will appoint the dean. A joint committee of faculty and incorporators on promotion and tenure of office has been established.

TENNESSEE

Society News.—At the annual meeting of the Middle Tennessee Medical Association in Lebanon, Dr. Dave R. Pickens, Nashville, was elected president; Dr. Byrd S. Rhea, Lebanon, vice president, and Dr. H. H. Shoulders, Nashville, reelected secretary-treasurer.

Personal.—Dr. Herbert Acuff, Knoxville, was recently elected president of the Tennessee Antituberculosis Association.——Dr. Fenton L. Husbands, Memphis, has been appointed superintendent of the Blytheville Hospital, Blytheville, Ark., which will open this month.——Dr. J. B. Bond, Martin, formerly superintendent of the West Tennessee Asylum for the Insane, Bolivar, has been appointed superintendent of the bureau of vital statistics of the state board of public health.

VIRGINIA

Memorial to Physician.—A drinking fountain will be erected in Winchester as a memorial to the late Dr. Godfred L. Miller. The fountain will be erected in front of the courthouse. The cost will be about $2,000, of which $1,400 has already been raised.

Improvements at Tuberculosis Sanatorium.—Extensive improvements are being made at Pine Camp, the municipal tuberculosis sanatorium for the city of Richmond. An appropriation of $125,000 from the city and a gift of $15,000 are available. There will be accommodations for ninety-two patients instead of thirty-six, as at present.

Personal.—Dr. John W. Dunn, Richmond, has tendered his resignation as professor of otology, rhinology and laryngology at the Medical College of Virginia, to become effective at the end of this session. He has been made professor emeritus of this branch. Dr. Joseph A. White, now professor of ophthalmology, will have charge of the combined chairs of ophthalmology, otology, rhinology and laryngology, it is announced.——Dr. Louis L. Williams, Jr., Richmond, engaged in malaria control work with the state department of health, has been appointed to represent the United States on the epidemic committee of the League of Nations. Dr. Williams sailed, May 1, for Italy, where he will spend four months studying malarial problems.——Dr. Warren T. Vaughan has resigned as attending physician to St. Elizabeth's Hospital, Richmond. Dr. Vaughan will assume the editorship of the *Journal of Laboratory and Clinical Medicine*.——Dr. William H. Higgins has been appointed head of the medical department, St. Elizabeth's Hospital, Richmond.——Dr. Hack U. Stephenson, Toano, has resigned as a member of the board of governors of state hospitals.——Dr. Samuel E. Weymouth has resigned as president of the Callao State Bank.

WEST VIRGINIA

Personal.—Dr. Almon P. Goff, of the U. S. Public Health Service, arrived in Logan recently to take charge of the Logan County Health Bureau, succeeding Dr. Duvall, who resigned.——Dr. C. W. Kidder, Grafton, has been appointed county health officer of Taylor County.

WISCONSIN

Physicians' Licenses Revoked.—The state board of medical examiners reports that the licenses of Dr. William G. Wheeler and Dr. Frank L. Fancher of Racine have been revoked, both having been convicted of criminal abortion.

Hospital News.—The new 200 bed addition to St. Elizabeth's Hospital, Appleton, will be ready for occupancy this month.——St. Mary's Hospital, Milwaukee, commemorated the seventy-fifth anniversary of its founding, May 15. This hospital was originally established as St. John's Institute and Infirmary, but the name was later changed to St. Mary's.

CANADA

Tuberculosis Resort Burned.—Seventy residences were destroyed, $250,000 damage done, and 400 people made homeless, May 26, by a fire at St. Agatha, a tuberculosis resort in the Laurentian Mountains.

Radium Institute Opened.—The premier of the province of Quebec formally opened the new radium laboratory at the University of Montreal, recently. A demonstration was held in the amphitheater of the university. The institute was made possible by a grant of $100,000 by the government.

Public Health News.—The board of control, Toronto, Ont., recently voted an appropriation of $5,000 to the Ontario division of the Canadian Red Cross Society, to be used in relief work among typhoid fever sufferers in the town of Cochrane, Ont.——The Ontario division of the Red Cross Society recently shipped a carload of provisions to Cochrane for the relief of seventy-five families rendered homeless by the recent fire and in many cases by the death of the head of the family.

Personal.—Dr. Bruce W. Cannon has been appointed health officer for Coquitlam, B. C.——A banquet was tendered Dr. Francis J. Shepherd, April 14, on the occasion of his fiftieth year of practice, by his former demonstrators of anatomy of McGill University, and his house surgeons in Montreal General Hospital. Dr. Frederick G. Finley, Dr. Shepherd's first house surgeon, presided.——Sir Henry M. W. Gray, surgeon to the Aberdeen Royal Infirmary, Aberdeen, Scotland, has accepted the appointment of chief of the surgical staff of the Royal Victoria Hospital, Montreal.

Hospital News.—The War Memorial Hospital for Sick Children, London, Ont., which is to be operated in conjunction with Victoria Hospital, was informally opened recently, when numerous boys and girls who have been patients at the General Hospital were transferred to the new building. The hospital was financed to a substantial degree with funds raised by the Daughters of the Empire in various parts of western Canada.——The Montreal Hospital for Incurables was destroyed by fire, March 14. There were 350 patients at the time, and all were removed in safety.

University News.—Dr. J. C. Connell, for twenty years dean of Queens Medical College, at Kingston Ont., in his report to the board of trustees of the university, is reported as saying that with the present medical curriculum the study of medicine is practically impossible for financial reasons, for many students who would be otherwise attracted to the profession. He claims the period of training is too long. He believes that medical education in Canada has suffered for lack of cooperation between the medical schools. There has

been no opportunity for conference, and no attempt made to secure a reasonable degree of uniformity in the alteration of requirements. It is now proposed to establish a medical society of the university conference, to meet once a year.

Insulin Instruction in Canada.—Under the auspices of the Alberta Medical Association, the University of Alberta Medical School gave a three day clinic, May 21-23, at Edmonton, to assist physicians in the selection of cases for insulin treatment and in methods of administration, and to familiarize them with effects of overdosage and their treatment. Two lectures and one demonstration were given daily, and all clinics were free of charge. Prof. James B. Collip, professor of biochemistry at the university, codiscoverer of insulin and discoverer of glukokinian, has received an additional $2,000 from the College of Physicians of Alberta to enable him to continue this work. The college previously gave Professor Collip $5,000 for this purpose.——In order to provide additional facilities for the short courses of instruction in the administration of insulin, the University of Toronto Faculty of Medicine is remodeling the old university Y. W. C. A. building, which will be used as a plant for the manufacture of insulin. The courses will be given in the Toronto General Hospital. Only forty physicians can attend each course. About 600 physicians have made applications for the course so far, it is announced.

GENERAL

Narcotic Registration Expires June 30.—Registrations of physicians under the Harrison Narcotic Act expire June 30. Physicians must reregister with the collectors of internal revenue in their respective districts on or before July 1. Members of the Association who are going to the San Francisco meeting will do well to register before leaving home.

Meeting of Subsidiary Examining Boards.—A meeting of the National Board of Medical Examiners will be held, June 26, at 4 p. m. at the Civic Auditorium, San Francisco, for all those who are members of the Subsidiary Board of Examiners in attendance at the session of the American Medical Association, for the purpose of discussing matters with which the subsidiary boards are concerned.

American Gynecological Society's Election.—At the forty-eighth annual meeting of the society in Hot Springs, Va., May 21-23, the following officers were elected for the ensuing year: president, Dr. Barton C. Hirst, Philadelphia; vice presidents, Drs. John O. Polak, Brooklyn, and Herbert M. Little, Montreal; secretary (reelected), Dr. Arthur H. Curtis, Chicago, and treasurer (reelected), Dr. Charles C. Norris, Philadelphia.

Mammalogists Favor Vivisection.—The American Society of Mammalogists, at its fifth annual meeting, May 15, in Philadelphia, unanimously adopted the following resolutions:

"Whereas, It is a fact known to all thinking people that most of the great advances in medicine and surgery have been made as a result of experiments on living animals, especially mammals, and

"Whereas, It is the belief of our eminent physicians, surgeons and veterinarians and all others having great responsibility for the health of human beings and of animals, that future advances in these fields will be made chiefly as the result of similar experiments, and

"Whereas, It is known that these experiments almost invariably are conducted humanely and with a minimum of discomfort to the animals used, and

"Whereas, there is an organized movement being carried on by certain misinformed and misguided individuals who seek to prevent or seriously interfere with such experiments, be it

Resolved, That we, members of The American Society of Mammologists, in annual convention assembled in the City of Philadelphia, on the 16th day of May, 1923, are of opinion that, in the best of interests of real humanity, animal experimentation, including vivisection, as practiced in our laboratories today, should continue unhampered."

Commissioner Haynes Warns Against "Moonshine."—A warning to the public regarding the dangerous character of moonshine whisky has been issued by Prohibition Commissioner Haynes. It is based on a statement by chief chemist H. M. Lampert of the department of Wisconsin. The commissioner said:

"The most practical distiller cannot make drinkable whiskey in small amounts, for it is impossible. Even the expertly-made whiskey is at first colorless, nauseating and deleterious. If whiskey made from only the choicest of materials under the most sanitary conditions is raw, crude, harsh in taste and flavor and distinctly unpalatable, what can be expected of whiskey made over night in filthy, unsanitary surroundings, which are especially favorable to wide fermentation and the formation of organic acids, acetone and butyl alcohol, known to be deadly poisons? A small amount of present day moonshine whiskey poured on a varnished surface will work wonders, and it does not take much imagination to picture what it will do to the lining of the human stomach. The moonshiner's primary object is to make and sell his illicit product in the shortest possible time, desiring quantity rather than quality, and he is not interested in the welfare of the consumer, who, if he could see some of the stuff made, would never touch a drop of it."

International Opium Commission Delegates Disagree.—The second meeting since January of the International Opium Advisory Commission of the League of Nations opened in Geneva, Switzerland, May 25. Congressman Stephen Porter Dr. Rupert Blue, Mr. Neville and Bishop Brent represented the United States. China, France, Great Britain, Portugal and Germany accepted the proposal of Mr. Porter that all drug-producing countries reduce their production to strictly medicinal needs, or to one tenth of their present output, but India, Japan and Holland rejected this proposal. The representative of the India office stated that his government would not consider a reduction of its opium production. He asserted that it was impossible to wipe out the opium eating and smoking habit in India, and that the Indian revenue from opium amounted only to $20,000,000 yearly and only 28,000 chests were exported annually. Dr. Blue and his associates will not participate in the work of the league committee unless it accepts the American suggestions, but they will sit several days more in the hope that an agreement will be reached.

LATIN AMERICA

New Hospital in Colombia.—The Hospital Bernett, with twenty beds, was recently opened at Cartagena. Its superintendent and director is Dr. R. Bernett Córdova.

Colombia Surgeon Returns Home.—Dr. J. E. Cavelier, former consul of his country in Chicago, has returned to Colombia after visiting a number of American clinics, and taking postgraduate courses in roentgenology and surgery.

Personal.—Dr. Sanchez Mosquera of Montevideo has left for a visit to his former home in Spain.——Drs. E. Saldaña, J. S. Belaval and R. Soto Rivera have returned to Porto Rico from long stays in the United States.——Dr. P. Gutiérrez Igaravídez of Porto Rico has left for the United States, and likewise Dr. Jacinto Avilés, treasurer of the Porto Rico Medical Association, which is a constituent branch of the American Medical Association.——Dr. P. Palma, professor of surgery at Buenos Aires, has resigned his chair, on account of his health, after seventeen years of incumbency.——The Academia de Ciencias Médicas of Havana has elected Dr. J. A. Presno president, to succeed the late Dr. Santos Fernández. Dr. Presno is professor of surgery in the university and is the founder and director of the *Revista de Medicina y Cirugía,* now in its twenty-eighth year.——The *Brazil-Medico* relates that the government has appointed, as official delegates to the international congresses at Paris and Strasbourg in May and June, Drs. Carlos Chagas, E. Rabello, G. Riedel, E. Borges da Costa, E. Villela and Gastão Cruis.

FOREIGN

Medical Relief in Russia.—The central medical warehouses of the American Medical Relief Administration in Moscow were closed, May 19, after having distributed $7,600,000 worth of medical supplies.

Fund for Gynecologic Research Work.—A fund has been opened in commemoration of the Dutch gynecologist, Hector Threub, to support investigations in gynecology and obstetrics. Subscriptions should be sent to the president of the fund, Dr. C. C. Delprat, 98, Jan Luykenstraat, Amsterdam.

Drug Firm's Licenses Revoked.—Investigation of illicit traffic in dangerous drugs lead the home secretary of Great Britain to cancel the licenses held by Whiffen and Sons, Limited (also trading under the name of J. A. Wink and Company). They will not in the future be allowed to buy, manufacture, sell, or have any dealing in the drugs to which the Dangerous Drugs Act, 1920, applies.

Women's Medical School for India.—The foundation stones were laid, March 26, for a group of four buildings to be erected on vacant ground beside the Queen Mary's College for Women, Madras, India. One of the buildings will be a medical school for women and one a children's hospital. The present Victoria Caste and Gosha Hospital will be replaced by a new hospital, which will be erected alongside the new medical school.

British Otolaryngologists in Sweden.—The section of Oto-Laryngology of the Swedish Society of Physicians invited several representatives of Great Britain to deliver lectures in Stockholm in May. Arthur Cheatle, London, Sir St. Clair Thomson, London, Logan Turner, Edinburgh, and Brown Kelly, Glasgow, attended the session, accepting an invitation from the Dutch Oto-Laryngological Society to attend their meeting at The Hague, May 12-13, on their way to Sweden.

Anthrax Bacilli on Boxes of Oranges.—The medical officers of health for Cardiff, Wales, recently reported that, for the second time, anthrax bacilli have been found in hides bound around orange boxes reaching that city from Spain. The Spanish authorities had previously been requested to stop binding orange boxes with hides. The hides had been forwarded to Spain from India. The Indian government promised that, if the old procedure was not interfered with, the hides would be rendered sanitary, and with that understanding hides were again used.

The Memorial Book of Honor.—At a meeting of the British Medical Association in London, April 18, the committee in charge of the Memorial Book of Honor to members killed in the World War announced that quotations had been selected for the book. Before the list of names it was proposed, by Sir Jenner Verrall, to insert these lines from *Samson Agonistes:*

"Nothing is here for tears, nothing to wail
Or knock the breast; no weakness, no contempt,
Dispraise or blame; nothing but well and fair,
And what may quiet us in a death so noble."

New British Medical Periodicals.—*Ambulance,* a new quarterly magazine intended as a link between people at home and abroad who are interested in first aid, hygiene and public health, has recently been published by the College of Ambulance, London. The first number contains an article on the origin of ambulance work, by Sir James Cantlie, and one on the use and abuse of tourniquets, by Dr. W. Salisbury Sharpe. ——The first number of the *Journal of Helminthology,* edited by Prof. R. T. Leiper, has recently been received. This journal is published by the helminthology department of the London School of Tropical Medicine, and will appear bimonthly.

Neighbors Complain of Roentgen-Ray Clinic.—Persons living near roentgen-ray clinics in Paris complained that their health is impaired by the far-reaching effect of the rays. An investigation is being conducted under the auspices of the ministry of hygiene by Dr. Béclère of the Paris Academy of Medicine, Dr. Vaillant, Dr. Becquerel, Madame Curie and others as to how far roentgen rays extend, and whether the powerful light beams continue indefinitely, injuring persons in their path at a considerable distance away. Suits were recently started against a physician conducting a roentgen-ray clinic by neighbors who declared that the rays had given them cancer.

League of Nations Health Committee Meets.—The fifth annual session of the hygiene committee of the League of Nations opened in Paris, May 26. The United States is unofficially represented by Surg.- Gen. R. H. Cumming, chief of the U. S. Public Health Service. The principal business of the committee will be to hear reports on tuberculosis, opium, and general health conditions in all countries. The International Health Board of the Rockefeller Foundation is giving the hygiene committee $60,000 a year for a period of three years, and an additional $30,000 a year for five years, for the development of an international office for distributing information regarding epidemics.

Australian University News.—Two bequests, one of £30,000 and one of £20,000 (approximately $140,000 and $95,000, respectively), have been donated to the University of Melbourne Medical School. The council of the university has not yet decided whether the money will be used for research, for the foundation of additional chairs, or for medical units. ——Sir Joseph Verco, Melbourne, represented the University of Melbourne at the octocentenary of St. Bartholomew's Hospital, London.——The Listerian ovation was delivered by Dr. Rothwell Adam, emeritus lecturer on obstetrics and gynecology at the University of Melbourne, before the Australian Branch of the British Medical Association, recently.

Personal.—Dr. Henry H. Dale, London, delivered the Oliver-Sharpey lectures at the Royal College of Physicians of London, May 1 and 3 on the "Activity of the Capillary Blood Vessels and Its Relation to Certain Forms of Toxemia." ——Dr. Thomas J. Mackie, Cape Town, South Africa, was awarded the Straits Settlements gold medal for thesis for M.D. on tropical medicine.——Dr. P. A. Maplestone, lecturer of protozoology at the Liverpool School of Tropical Medicine, has been appointed assistant director of the research laboratory at Sierra Leone.——Professor Bakule of Prague, Czechoslovakia, has arrived in America with a group of handicapped children, whom he has trained to become adept at some gainful occupation. He is giving lectures and demonstrations throughout the country. Under the auspices of the St. Louis School of Occupational Therapy he lectured at Washington University School of Medicine, May 1.——The fifteen Spanish professors who spent four days in Paris recently delivered a number of addresses at the medical school and at society meetings. Among others, Recasens spoke at the Faculté de médecine on the "New Radiotherapy in Gynecology"; Aguilar on "General Infection of Dental Origin"; Goyanes on "Surgery of Vessels," and Hernando on "Action of Drugs on Gastric Secretion." A number of receptions and entertainments were crowded into the busy days before the party left for Bordeaux.——Dr. C. da Costa, professor of histology at the University of Lisbon, recently delivered an address at the Bordeaux Faculté de médecine, his theme being, "The Rôle of Histology in Our Knowledge of the Internal Secretions."——Prof. Fernando Magalhães of Rio de Janeiro, president of the Sociedade de Medicina e Cirurgia, has been decorated by the French government as officer of the Legion of Honor.

Government Services

The Navy Needs Physicians

Unusual opportunities in the form of salary and intern experience are offered to graduate students from Class A medical colleges in the Medical Corps of the Navy. Medical colleges and recent medical graduates are not taking full advantage of opportunities in the Navy Medical Corps. The Navy Department has, for some time, had difficulty in filling the Medical Corps. Under the existing policy of the department, graduates from Class A medical colleges may enter the corps, on passing an examination confined entirely to medical subjects, and immediately be commissioned and receive an annual salary of approximately $3,000 as interns at any of the large base hospitals of the Navy. Interns are not sent on sea duty the first year. They have the advantage of unusual hospital experience and an immediate income greater probably than that which most young physicians just out of college have. At this time of year when students are graduating from medical colleges, the opportunity in the Navy should have its strongest appeal. Information in detail on this subject can be had on application to the Surgeon General of the Navy, Washington, D. C.

Army Medical School Graduation

The Surgeon General announces that the closing exercises of the Army Medical School and the Army Dental School session of 1923 will be held in the auditorium of the New National Museum, Washington, D. C., June 8.

Hospital Authorized

Pursuant to instruction of the Secretary of War, the organization of a hospital, organized reserves, to be known as General Hospital No. 28 (Christian Church Hospital Unit, Kansas City, Mo.) has been authorized.

Veterans' Bureau Course in Tuberculosis Completed

The U. S. Veterans' Bureau Post-Graduate School of Tuberculosis at Hospital No. 41, New Haven, Conn., has completed its first session which began in March of this year. The course was attended by a selected group of physicians of the regular staff of the Veterans' Bureau from different parts of the country. The lectures were delivered by specialists in tuberculosis. The school was established to increase the clinical knowledge of tuberculosis among physicians treating ex-service men. Its administration was in charge of Dr. Stanley M. Rinehart, clinical director of tuberculosis in the bureau. The plan of the school and the intensive course which has been given has been generally approved. Dr. Eugene L. Opie of St. Louis comments:

After a week spent at the Post-Graduate School of Pulmonary Tuberculosis at New Haven, I have come home with the conviction that the plan of the school is excellent and that it has been carried out with success. I do not know of any plan that would offer better promise of giving men qualified for general practice an accurate knowledge of a complex special subject such as tuberculosis. The intensive course which was given furnished both a fundamental scientific insight into the subject and a practical understanding of the methods of handling the disease. I do not believe that one without the other would have been successful.

Foreign Letters

PARIS

(From Our Regular Correspondent)

May 4, 1923.

A Visit of Spanish Physicians to France

A party of Spanish physicians visited recently the medical schools of the universities of Paris and Bordeaux. The delegation, which was conducted by Professor Recasens, dean of the Faculty of Medicine of Madrid, was composed of Professors T. Hernando, F. Aguilar, L. de la Peña and Márquez of Madrid; Dr. Goyanes, director of the Cancer Institute of Madrid; Dr. José Madinaveitia, chief editor of *Los Progresos de la Clinica,* Dr. Coca, director of the *Medicina Ibera,* and others. The party was welcomed, on arriving in Paris, by Professor Roger, dean of the Faculty of Medicine, together with Professors Bar and Hartmann, and Dr. Cheinisse, of the staff of the *Presse médicale.* The Spanish physicians were later received by the Association générale des médecins de France, where they were greeted by Dr. Chapron, vice president of the association.

During their four days' sojourn in Paris, a number of the Spanish professors delivered addresses, among which those of Professor Recasens and Professor Goyanes attracted particular attention. Recasens spoke at the Faculty of Medicine on the new applications of roentgenotherapy in gynecology, and said in conclusion that, just as, thirty years ago, one could no longer represent himself to be a gynecologist if he was not a surgeon, so today, for a gynecologist to be in the forefront of his specialty, he must understand the physiologic and therapeutic properties of roentgen rays. After his address, Recasens projected on the screen a series of interesting roentgenograms of pregnant women, showing that the positions of the fetus in the uterus are entirely different from what they are represented to be in classic treatises. Professor Goyanes gave a lecture on vascular surgery before the Société de chirurgie of Paris.

Typhoid Fever in Paris

Every year, from July to October, a recrudescence of typhoid is noted in Paris. In explanation of this recrudescence, it is not necessary to assume a seasonal contamination of the drinking water of Paris. The cases, for the most part, develop in Parisians who spend their vacations in rural communities where the drinking water may be badly polluted. But, in addition to the imported cases, there are some that originate in Paris, and thus point to the existence of a permanent source of contagion. We may doubtless assume the presence of germ carriers and also the use of vegetables coming from sewaged land.

When the city of Paris decided to purify the contents of its sewers on an area of land outside the city, it was assumed that the land thus fertilized would be used for pastures or orchards, in order to avoid the contamination of edible products growing on the top of the soil. But the proximity of a large city, easy irrigation, and the brilliant results secured by the Chinese method of employing liquid fertilizers, caused the sewaged land to be used for market gardening. Now it is quite evident that sewage water containing typhoid bacilli cannot without danger be applied to vegetables that are to be eaten, without previous cooking, by persons susceptible to this virus. Clauditz found germs, after several days, on green herbs thus treated which a thorough washing could not remove. The Conseil supérieur d'hygiène also commissioned Dr. E. Marchoux to make an inquiry into the modes of fertilization employed on the sewaged land near the city of Paris. This inquiry showed that, while the larger part of the sewaged area was planted to peas, beans, potatoes, artichokes, leek, celery, cauliflower, carrots, turnips, sorrel and spinach, all of which are cooked before they are eaten, there was a portion of the land where grew certain vegetables and culinary plants that are frequently eaten raw, such as lettuce, dandelions, endive, onions, parsley and radishes. Marchoux recommended that the kinds of herbs and vegetables that may be grown on sewaged land be established by law.

Consequences of the Acquittal of a Charlatan

I referred in previous letters to the career of the "healer" Béziat, who was brought before the court for the illegal practice of medicine and who was acquitted by the correctional tribunal of Villefranche-en-Rouergue and by the Court of Appeals of Toulouse (THE JOURNAL, April 15, 1922, p. 1141, and April 21, 1923, p. 1160). The healer, of course, lost no time in letting the public know of these decisions, concerning which he expressed himself thus:

> It is, in fact, the equivalent of a diploma, with this important difference, that, in order to secure these decisions, actual proofs of efficiency had to be furnished, for it is certainly true that, if numerous and unmistakable cures had not been effected, the correctional tribunal and Court of Appeals would not have acquitted me. The judgment of a tribunal, the opinion of judges who put their conscience above everything, is worth as much as the decision of a medical faculty, it would seem to me. For a court decision it is proofs that count. To secure the approval of a medical faculty, often all that is required is to have spent five years in residence at a medical school while pursuing a life of pleasure.

Fortunately, the Court of Cassation, by reversing the decision of the court of Toulouse, put an end to the insolent triumph of the healer.

An Error in Diagnosis

A few months ago, the correctional tribunal of Evreux acquitted Dr. Vallet of Vernon, who was summoned to appear in court for an error in diagnosis committed in operating on a woman for fibroma when, in reality, the manifestations were due to pregnancy (THE JOURNAL, Dec. 16, 1922, p. 2099). The decision of the court was to the effect that Dr. Vallet was guilty of the crime covered by Article 319 of the Penal Code (homicide through imprudence). A fine of 2,000 francs, payable to the father of the woman operated on, and a further fine of 9,500 francs, payable to the three children of the deceased, were imposed.

Statistics on Public Assistance

From the bureau of the minister of labor has just appeared a pamphlet containing a statistical report on public assistance covering the period from 1914 to 1919. Dec. 31, 1919, the list of those receiving public assistance bore the names of 267,816 aged persons who were either infirm or incurable, 88,022 children and 42,118 mentally defective persons. During the year 1919, public assistance was given also to 616,523 patients, 203,502 puerperants, and 236,207 large families. The bureaus of public charity in forty-one departments gave aid to 254,319 persons. The total amount of gifts and bequests to public institutions and to public welfare was, in round numbers, 17,269,000 francs, from a total of fifty departments.

LONDON

(From Our Regular Correspondent)

May 8, 1923.

The Control of Infectious Diseases in New South Wales

The government of New South Wales has issued a new and elaborate series of regulations for the control of infectious diseases. Every "contact" or carrier must submit to medical examination at such time and place as a health officer, or a physician authorized in that behalf, directs. He may be placed under medical surveillance, or may be isolated and detained in isolation in his own home or in any place, if the health officer deems this necessary to prevent the spread of infection. Any person who has been informed in writing

by the health officer that he is a carrier shall not take part in or be employed in any business connected with the manufacture, preparation, storage, handling or delivery of food or drugs for human consumption, or handle any vessel, receptacle, package, utensil, instrument or thing used in connection with food. The body of a person who has died of an infectious disease shall be enveloped in a wrapper wet with a 1:20 solution of phenol (carbolic acid) or other approved disinfectant. The body shall be placed in a coffin, and the lid of the coffin fastened down within twenty-four hours after death. The joints of the lower part of the coffin must be water-tight. The body must not be conveyed in any other public conveyance than a hearse without previous notification to the owner that the person has died from an infectious disease, and the owner must have the conveyance disinfected after use. The body shall not remain unburied elsewhere than in a mortuary approved by the board of health, longer than thirty-six hours in a municipal district, or longer than forty-eight hours in another district.

Cocain Substitutes Committee

The ministry of health has under consideration the possibility of using substances that might serve the same therapeutic purpose as cocain, but be free from its deleterious properties. It has appointed a committee consisting of anesthetists, surgeons, dentists and pharmacologists to investigate the comparative value of various substitutes for the therapeutic purposes for which cocain is used, and the evidence as to the risk, if any, of such substitutes becoming drugs of addiction.

The Need for Vaccination

The danger that has arisen from the relaxation of the vaccination laws out of consideration for the antivaccinators has been pointed out before. Though we have not suffered from an epidemic of smallpox, local outbreaks are of constant occurrence. Dr. Parkinson, health officer to the Basford Rural District (Nottinghamshire), from which as many as fifty-six cases have recently been admitted to hospital, reports that the disease shows no sign of abatement, and that he does not think that it will for some time, unless more stringent methods of control are taken. The disease is gradually picking out the unvaccinated part of the population. Everything possible is being done to stop its spread, but unless vaccination is made compulsory and the government issues a quarantine order for "contacts," nothing can stamp it out. In certain of the northern and midland counties, outbreaks which began last autumn have not yet abated, and it is exactly in these places that the greatest prejudice against vaccination exists.

No Signs of a Race of Supermen

Lecturing at the Royal Institution, Sir Arthur Keith discussed the question whether mankind was still evolving. He held that changes were taking place more rapidly now than at any former period. The evolution of man could fairly be compared with the evolution of automobiles. In the early days, local makers conformed to local needs, but after a certain period, special standardized types ousted local types. So, too, with man. Certain local types spread across continents and suppressed others, which might have been excellent from an engineering or esthetic point of view, but, through the working of natural selection, they disappeared because they did not meet the needs of the place and time. Twenty years ago, Metchnikoff accused Nature of bungling in her workmanship as regards modern man. He protested against thirty-two teeth as being too many. He resented the existence of the appendix, the cecum and the colon. From his standpoint, these charges could be extended. Every industrial nation had a large "C 3" population. In 20 per cent. of adults, the teeth were so bad as to be useless for mastication. More than 5 per cent. required spectacles, and the same number had chronically diseased ears. Metchnikoff's charge to many sounded justified, but it was only necessary to consider the time required to teach the young, untrained dog that the home was not run to satisfy its particular needs, to realize that the discords of modern life might not be due to Nature's blunderings but to man's stupidity. Five thousand years ago there was not a patch of corn grown in Great Britain; today the poorest child is better fed and sheltered than the best-off child then. We give our digestive tract no rest, either whipping it up with patent sauces or seeking to treat its rebellion with patent pills. It is not Nature that has gone too slow, but man too fast. There is definite evidence that changes are taking place in the human body. Remains in the Museum of the Royal College of Surgeons show that there have been modifications in the formation of the human jaw, of the placing of the front teeth, and of the character of the nose, with the result that the tendency is toward the production of a long, narrow face. As to whether the brain is or is not increasing, no definite answer can be given, because sufficient skulls are not available. The fact is that today not one person in fifty uses his brain to half its capacity, most people having more brains than they know what to do with. There is no sign of a race of supermen appearing in this or any other country, and such evolutionary changes as are taking place are only in matters of detail. It is possible, however, that evolutionary changes are silently at work in the brain, favoring the men and women who have the power to replace the wild inheritance of the jungle by the well-ordered instincts essential to the welfare of modern communities.

VIENNA

(From Our Regular Correspondent)

April 24, 1923.

The Congress of the German Society for Internal Medicine, Vienna, April, 1923

The German Society for Internal Medicine, which meets every two years in Wiesbaden, has arranged to hold its meeting every alternate year in another large German town, and Vienna was chosen for this year. Professor Wenckebach organized the convention. More than 1,400 physicians took part in the proceedings, including visitors from northern Europe, Asia, Italy and the New World, so that this meeting was really international, the first of its kind in Vienna since 1913. The proceedings were grouped under three heads: (1) epidemic (lethargic) encephalitis; (2) hypertension and (3) internal secretion. Two eminent men were asked to give an introductory report on each of these subjects, one dealing chiefly with the anatomic or physiologic, the other with the clinical side of the problem.

In connection with the congress, an exhibition of the latest achievements of chemistry, electrotherapeutics and medical technic was opened, in which the changes brought about by these factors in the medical armamentarium were well illustrated. The blood pressure apparatus, the microscope, the fluoroscope, the roentgenogram and the metabolimeter are now indispensable, and ready made pills and hypodermics are always at hand.

The scientific program was carried out in magnificent surroundings in the reception hall of the former emperors of Austria, which was selected and adapted for the purpose. The municipality of Vienna and the president of the republic gave receptions in honor of the guests; and social gatherings and excursions to neighboring watering places and health resorts in the Alps served to relieve the sober work of the convention. The scientific proceedings lasted from April 9 to 12, with Professor Wenckebach in the chair. As a large

number of papers and reports were presented, with the exception of the introductory papers, ten minutes was allowed for each paper, and discussion was limited to four minutes.

NEED FOR CHANGES IN MEDICAL TEACHING

The proceedings were opened by the president, who, after welcoming the guests, discussed the need for changes in medical teaching. Students, like children, at first are likely to see the characteristic traits of an object and to draw them, but later they lose this ability, because their faculty for observing is hampered by cramming. The medical student must obtain the utmost of knowledge in the shortest possible time, and thus ceases to "observe" without becoming able to form a judgment of his own. He is taught for the examination and not for the purpose of forming his own opinion. Wenckebach therefore emphasizes the necessity for increasing the study of the chief subjects in a more intensive way, with less attention to the manifold specialties. The basis of teaching should be sought in exact observation of the human individual.

EPIDEMIC ENCEPHALITIS

The validity of these remarks was brought home to the audience by the next paper, which showed how careful observation enabled Professor Economo (Vienna) to throw light on a dark problem. He presented a report on epidemic encephalitis, giving the history of previous epidemics (1872 in Germany and 1890 in Italy); he then explained how, after the epidemic of influenza in 1916-1917, he saw about fifty cases of a drowsiness that lasted for weeks and months, which he at once recognized as a separate entity; squint was marked in all cases. One third of the patients recovered, one third died, and the remaining patients drifted into chronic invalidism. Anatomic investigations revealed inflammation of the brain of infective type. Levaditi in Paris, and Doerr in Vienna, discovered simultaneously that the virus is filterable; it can be transmitted to the cornea of a rabbit, where it produces lesions identical with those of herpes febrilis. It must be assumed that the causative agent is the same in the two diseases, but that, for some unknown reason, the virus at times becomes more active and produces encephalitis. Contagiousness is not marked; only in 4 per cent. was contact demonstrated. The contagion seems to be chiefly airborne, and the portal of entry is probably the nasopharynx. Since the first systematic observation, seven years ago, similar reports have been received from all over the world, and it may be stated that the disease is closely associated with grip. Intravenous injections of iodin in large doses control the disease in the acute stage; but against chronic cases we have no remedy. The latter cases show a tendency to sleep, to choreiform movement, to tics or to cataleptic conditions.

Especial interest has been aroused by the last, in which there are disturbances of voluntary innervation or of "will" and "intention" movements (parkinsonian type). These conditions have thrown new light on the function of sleep and intentional movement. We have learned that sleep (and wakefulness) is controlled by a center situated between the optic thalamus and the hypothalamus; lesions there cause a change in the type of sleep: day sleep, protracted sleep or fits of sleeping. Cataleptic conditions, previously associated only with severe mental disease, also have been traced to encephalitic lesions in the ganglions of the diencephalon. Sane persons may show symptoms of a neurosis, previously explained as suppressed or repressed thoughts or desires; these symptoms, however, have an organic basis. It means that "will" is quite outside our psychic processes.

The clinical report on this subject was presented by Professor Nonne (Hamburg). He stated that, in a large number of the 262 chronic cases observed in his clinic, there intervened a stage of comparative normality between the acute and the chronic manifestations, which at times lasted months or even years. Prognosis must therefore always be guarded. Slight attacks of acute encephalitis are also mild in their chronic stage, mostly progressing very slowly. The serious acute cases are more rapid in their later manifestations. Nonne attributes the various symptoms to the presence of a special toxin that affects the nervous centers very much like the metasyphilitic toxin; he also suggests the possibility that all metabolic disturbances are due to toxic lesions of a special center controlling the function of the liver. He divides the chronic cases into three groups: those with a predominance of psychic disturbances; those with changes in the mechanism of movements, and those with metabolic disturbances. A change in character or sentiments is often noted early, and may remain the only symptom. Nonne said that our conception of will has received a severe shock as the result of studies of the lesions in the chronic form of epidemic encephalitis. All that we subsume under the term tonus of muscles, which is paramount in the execution of movements and the assumption of attitudes, takes place in the ganglions of the brain stem, and is beyond the control of consciousness. Tics, spasms, contractures and cataleptic conditions are caused by encephalitic lesions, and are now open to study by pathologists. The parkinsonian complex is explained by these lesions, and we have learned much of the functions of the deep ganglions. Cooperation of muscle groups is necessary for intentional movements, which are impossible if the brain coordination is interfered with. Trophic disturbances, so common after epidemic encephalitis, are due to lesions in the centers for the regulation of metabolism. We observe sudden obesity combined with nervous disorders, and marked emaciation without serious disease; diabetes insipidus, as well as mellitus, are produced by encephalitic lesions in the vicinity of the third ventricle. An animated discussion ensued, in which nearly all speakers agreed with the ideas brought forth in the two reports.

HYPERTENSION

The report on hypertension was delivered by Durig (Vienna) and Vollhard (Halle). The former discussed the problem chiefly from the physiologic side. Normal blood pressure varies with: sex, age, condition of work or rest, psychic factors and numerous other influences; it may be as low as 90 mm. of mercury in sleep, or as high as 160 or even 180 mm. during work. Only permanently high readings of pressure constitute hypertension; routine measurements give only a means of comparison and not absolute figures; we are not in a position to diagnose hypertension simply from a few pressure readings with variable figures. Durig calls hypertension a condition in which the blood pressure is essentially above the normal; it is caused by a disproportion between the blood volume ejected into the circulation and the volume of the outflowing blood, if the capacity of the heart and its muscular force is sufficient. It is not the heart's force that produces high pressure, but the conditions prevailing in the blood vessels, chiefly in the arterioles and capillaries where the fall in pressure principally occurs. If the elasticity of these vessels or their lumen is seriously disturbed, loss of efficiency takes place, for these two factors are chiefly responsible for the normal circulation in the blood vessels. Loss of elasticity means more work for the heart against higher resistance, i. e., more pressure is required. The changes of the lumen are due chiefly to arteriosclerotic processes, functional narrowing or occlusion. In normal cases, the capillary network acts like a suction pump, causing the blood pressure to remain normal. But there exists a hereditary disposition to functional high pressure. Thus far,

however, we cannot say what conclusions should be drawn from high arterial pressure. We cannot give a definite opinion as to the actual conditions prevailing in the total circulation or in the heart.

Vollhard expressed the opinion that blood pressure regulation is intimately connected with the contraction of the blood vessels, and that arterial hypertension is due to spasmodic conditions in the circulatory system. We see two types of patients with high pressure; one is pale, the other, ruddy. This difference cannot be explained by a difference of the force of the heart beat. Vollhard says that in pale patients there is a general spasm of the blood vessels which is absent in the "red" patients. Practically speaking, only renal disease is associated with high blood pressure; but, in a high percentage, the kidney trouble is the cause and not the consequence of high blood pressure. For, in these cases, spasm-producing substances are present in the blood (epinephrin) and only in patients with high pressure and pale face; injection of blood serum from patients with nephritis into the circulation of a guinea-pig causes increased epinephrin action; and we know that nephritic blood contains peptones. Acute nephritis is characterized by spasm of the kidney vessels, which can be cured by adequate treatment. Vollhard quoted the experiment of Dr. Bornstein of Hamburg on himself. He caused a small dose of epinephrin to be injected into his arterial system; syncope followed, artificial breathing had to be maintained for over an hour, albumin appeared in the urine, and the pressure went up to more than 220. Months elapsed before all consequences of this experiment passed away. Chronic nephritis is due mostly to age and perhaps to psychic conditions. In advanced age, the blood vessels lose in elasticity, but increase in capacity. The diminishing force of the heart cooperates with these factors to regulate the blood pressure and keep it at the normal level. If, therefore, the heart continues to work with its former force while the blood vessels lose elasticity, high pressure occurs.

An interesting contribution was the paper by Professor Pal, proving that the chief region for the regulation of blood pressure in the capillaries is the intestinal circulation. Spasmodic conditions there tend to produce acute hyperemia in other parts, especially in the brain. In advanced arteriosclerosis, such a sudden strain thrown on this delicate system of blood vessels may easily produce a hemorrhage. High pressure is often observed in patients suffering from constipation, mental worry or as an hereditary trait. Careful attention to digestion is one of the chief factors in prophylaxis.

ENDOCRINE DISTURBANCES

Disturbances of endocrine glands commanded special attention. An afternoon was set apart for demonstrating interesting cases, and patients from all clinics were placed at the disposal of those interested. Of the large number of papers dealing with this subject, the following may be mentioned: Professor Singer on sclerodermia (with demonstration of cases); the experience of gynecologists and pathologists seems to prove that a disturbance in the function of the ovary and the thyroid combine to bring about this clinical entity. Treatment by internal exhibition of thyroid and ovarian substance, with later subcutaneous injections, brought about a most satisfactory result in a case of Singer's (diffuse sclerodermia in a woman, aged 29). The patient is not cured, but her skin is now mobile, she can eat and has gained 10 pounds (4.5 kg.); Dr. Liechtenstern reported a series of twenty-eight transplantations of sexual glands (ovaries and testes). In six cases treated after complete castration, the result was very good even after from three to eight years. The abdominal skin is a good place for testing such grafts.

Remarkable cases of pathologic growth were demonstrated by Dr. Bauer: a case of gigantism after encephalitis; a dwarf, aged 23, who stopped growing after the removal of a tumor at the base of the tongue, when myxedema set in; a few other dwarfs with unknown histories, all of the type of hypothyroidism; a case of a man, aged 53, with arthritis deformans that started at the age of 7 and stopped further growth; a woman with spondylitis, and a woman who within three months lost 30 kg., or 50 per cent. of her weight and all her hair. Abnormalities of the distribution and growth of hair were discussed by Professors Redlich and Falta; a few cases of pathologic loss of hair were shown, in which hypofunction of thyroid, pineal and pituitary glands was present. Treatment with extracts of these glands was satisfactory in some cases. In acromegaly, roentgenotherapy had proved useful. The trophoneurotic disturbances after epidemic encephalitis were discussed by Wagner Jauregg, who also demonstrated a case of adiposity belonging to that group. Eppinger and Pineles read a paper on increase of blood pressure in tuberculosis of the suprarenals and other affections. A series of women suffering from pathologic conditions due to disturbances of menstruation were demonstrated by Dr. Aschner. He differentiates types of endocrine change in women into: chlorotic anemia, plethora, infantilism, adiposity, and masculine habit with abnormalities of hair growth; he strongly recommends the use of ovarian substance, with thyroid extract. Professor Pirquet showed children with trophoneurotic and endocrine disturbances; among them a boy, aged 3½, with fully developed secondary sexual characters; and a girl born with a weight of 790 gm., who is now 10 years old and perfect in every respect.

MISCELLANEOUS TOPICS

Among other papers presented to the congress, Dr. Stern showed how patients with total laryngectomy are taught to speak by using the stomach as a reservoir for air. The air is easily swallowed and the voice, produced after the fashion of ventriloquists, is sufficient for ordinary conversation. Drs. Molnar and Friedrich (Budapest) demonstrated their investigations of the motility of the stomach in connection with mastication. Roentgenograms were shown to prove that the contents of the stomach are emptied into the duodenum according to their chemical composition, the rapidity being increased by lessened consistency; fats remain longer than other substances, and carbohydrates are emptied most rapidly. Gaseous osmosis and gas metabolism, the output of urea and psychic influence on digestion, were commented on by physicians from Belgrade and Prague.

A sensation was caused by a preliminary report by Wenckebach on the treatment of angina pectoris by dividing the nervus depressor cordis branch of the vagus that supplies the aorta with sensory fibers. Acting on a theory of Eppinger, Dr. Hofer performed this operation in six cases, with excellent results. As the depressor nerve has several roots, the operation is difficult, but the division causes the disappearance of the pains; it is not yet clear whether the favorable result is due to the fall in blood pressure, or the loss of sensibility of the aorta.

A large number of papers dealt with the problems of tuberculosis. While many experienced physicians advocated artificial pneumothorax, Jötze (Frankfort) and many surgeons resort to phrenicotomy; the operation is simple, and its results are permanent. A combination of the two methods was advocated by Kraus. The latest method of applying tuberculin by inunction (percutaneous) encountered strong opposition from the majority of those discussing the problem. Thoracoplasty and other surgical methods of treatment are still much in favor, especially in pleuritic complications, while the use of fillings is now out of date.

The Vienna school presented a series of papers on pathology of the heart and materia medica. Dr. Pick discussed the rôle of the liver as a preliminary organ for the kidney, and Edelmann explained the clinical symptoms and pathology of aortitis and aortic pain. Torrey proposed the injection of cardiac remedies directly into the aorta, instead of into the heart, in cases of syncope, and Spiegel discussed the problem of conduction of pain sense, chiefly of vascular pain. Pick discussed heredity in disease and constitution. He studied the problem especially in twins (one-egg twins preferably), and showed that it is important to obtain the family history in cases of goiter, asthma and diabetes to permit an estimate of the possibility of changing the dominant symptoms. Pedigrees from numerous families are required to settle the question; a central board for this important factor of national and racial development might be instituted with the cooperation of family physicians.

The papers and demonstrations mentioned form only a part of the extremely large number presented to the congress, the transactions of which will not be published before July.

BERLIN

(From Our Regular Correspondent)

April 21, 1923.

Hereditary Transmission of Talent for Music

Up to the present time, very little statistical evidence has been collected bearing on the question of hereditary transmission of talent for music. To be sure, a survey of the family history of famous musicians sometimes permits the recognition of general hereditary principles, but the extensive statistical material which is needed for the solution of the problem, owing to the fact that experimentation is impossible, is entirely lacking. In view of this fact, a new book by the Halle Professors Haecker and Ziehen must be regarded as especially significant. Haecker is an instructor in the field of mechanics, and Ziehen is a psychologist. The new work deals in a scientific, statistical manner with the hereditary transmission and the development of talent for music. By means of ample questionnaires, they investigated the family histories of several thousand persons, gleaning all the data possible pertaining to talent for music. They do not claim that their data are absolutely reliable in all respects, but they give the results of their investigations for what they may be worth.

In marriages in which one of the parents is musical and the other is not, marked musical talent is found more frequently in the male offspring than in the female; this is especially true if it is the mother, rather than the father, who is musical. In such mixed or discordant marriages the positive load seems more effective than the negative. They found that the transmission of talent for music follows the mendelian laws of heredity. In so-called concordant marriages; that is, in which both parents are musical, about 40 per cent. of the offspring have marked talent for music, and almost a further 40 per cent. are musical. But there are also offspring (which finding agrees with common practical experience) that have little talent for music and some that have virtually no talent at all. This finding is not at all surprising when we examine into long lines of inheritance. Two main deductions may be drawn from the statistics. Male offspring are, in general, somewhat more susceptible to an hereditary bent than are female offspring, and an hereditary bent derived from the mother's side is, in general, somewhat stronger than on the father's side. The development of talent for music shows two peaks. In persons with marked talent for music, their special gift often shows itself before the end of the second year; especially is this true if the talent is inherited. Musical talent in children is usually discovered more readily and earlier in case the parents are musical than is otherwise the case. In an environment given to music, musical talent is more readily discovered. The statement was frequently made that talent for music in the form of correct singing appeared in a child before it began to talk. Shortly before puberty, talent for music often comes out more strongly and is more likely to attract attention. It is remarkable to note that of forty-six composers, whose statements may be relied on, thirteen, or 28 per cent., had no opportunity to hear music in their younger days, which shows that talent for musical composition may develop independent of musical stimulation in childhood.

Haecker and Ziehen were unable to demonstrate with the statistical material at their disposal that there is any definite correlation between talent for music and talent for mathematics. The percentage of males who, lacking in talent for music, have a talent for mathematics is surprisingly high, so that one is almost tempted to assume that the presence of the one talent compensates for the absence of the other. Further evidence for this assumption is found in the fact that, among males with marked talent for music, only a small percentage have talent for mathematics. In males, according to the material on which the research was made, there seemed to be a correlation between talent for music and talent for drawing, and an even greater correlation between talent for music and poetic talent. In females these correlations are not well marked, but receptive talent for drawing appears to predominate over poetic talent.

Birth and Mortality Statistics in the Large Cities of Germany in 1922

The year 1922 was marked by a very low ebb in the birth rate. The average birth rate in forty-six German cities classified as having over 100,000 population was, in 1921, 20.1 per thousand inhabitants, whereas in 1922 it dropped to 17.3 per thousand, a decrease of 13.9 per cent., or 2.8 per thousand. It would appear that the influence of the present-day factors that tend to lower the birth rate (as the most important of which I may mention the uncertainty of the economic conditions, which, with the depreciation of the mark, is becoming progressively worse, and the bad housing conditions) was so great that the usual seasonal variations in the birth rate were compensated and eliminated by these factors; for the fall in the birth rate, with the exception of a short period of a few weeks, has proceeded uninterruptedly. The maximal increase in the number of marriages entered into in the period immediately following the war does not seem to have exerted any noticeable influence on the birth rate. However, the death rate of the large cities for 1922 (13.4, or, if the foreign population is included, 12.6, per thousand inhabitants) cannot be regarded as unfavorable. The higher death rate of the first six months, which must be ascribed to the influenza epidemic, at the beginning of the year, and to the harmful effects of the severe winter, was almost counterbalanced by the marked decrease in the death rate in the third and fourth quarters, during which the death rate registered 10.9 and 12.7, respectively, the lowest mortality rates so far recorded for this season of the year. It thus happens that the annual death rate for 1922 (13.4) was only 0.8 higher than that of 1921, which showed the lowest death rate recorded. The infant mortality rate for 1922 (13.8 deaths for each thousand living births) was very little higher than the rate for 1921 (12.2). A peculiar fact in 1922 was the absence of the summer peak and the appearance of a winter peak in the infant mortality curve. The tuberculosis mortality rate increased again somewhat in 1922. However, this increase was confined mainly to the second quarter, and may be regarded, therefore, as chiefly due to the long, severe winter. The bad weather conditions last year exerted an

unfavorable influence also on the pneumonia mortality rate during the first nine months of the year, especially at the time of the coal famine resulting from an industrial strike. On the other hand, the mortality from scarlet fever, measles, diphtheria, typhoid, dysentery and catarrh of the gastro-intestinal tract reached a previously unknown low level, which finding is in direct accord with the marked decrease in the number of cases of these diseases, reported in 1922, and may be due to the cold, wet summer. The mortality from puerperal fever, which, during the war period, increased considerably and constantly up until 1919, appears now to have reached its height and to be on the decrease; for, in 1922, there were only 3.9 deaths, from such a cause, per thousand new-born, as compared with 4.3 deaths the previous year.

Conflict Between the University of Jena and the Ministry of Public Instruction

For the newly created chair of psychology in the University of Jena, the university authorities proposed to the Thuringian ministry of public instruction the names of three men for the selection of one. The ministry of public instruction, however, without consulting the university further in the matter, appointed Professor Peters of the *Handelshochschule* at Mannheim, whose name had not been proposed by the university, to the chair. The University of Jena has sent a vigorous protest to the ministry of public instruction for its action in completely ignoring the names proposed by the university. Also the Deutsche Hochschulverband (national association of German universities) and the authorities of the individual universities condemn most sharply the action of the ministry and will take the necessary steps to see that their protests are heeded.

PRAGUE

(From Our Regular Correspondent)

May 4, 1923.

Health Demonstration in Kladno

A health demonstration was opened at Kladno, April 28, under the auspices of the national council of social hygiene for the Czechoslovak Republic. It was considered a prime function of the council to make clear the mutual relationship of the different organizations associated in the council. This could not be done in the central headquarters of the organizations, and it was necessary to go into the field where a cooperative plan could be developed. At the meeting of the delegates of the National Council of Social Hygiene, February 7, it was decided to select for this purpose the district of Kladno. According to the census of 1921, this district has a population of 81,034 inhabitants. In the district are the cities of Kladno and Krocehlavy, which are among the largest centers of the coal and iron industry. There are seven towns in the district, with a population that lives mostly under rural conditions, while the 29,476 inhabitants of the cities live under urban conditions. The district was selected because of its mixed urban and rural character, and because the interest of the local authorities in social and public health questions is very deep. Kladno is operating one of the best health centers in the country, and many other local activities put the city in the front rank of communities interested in social and public health questions. Originally it was intended to conduct the demonstration entirely with private resources, but, in the course of negotiations, the ministry of health offered the cooperation of its division for study and reform of health activities. The cooperative plan, which was worked out between the ministry of health and the committee of the national council of social hygiene that is in charge of the demonstration, will guarantee the advantage of experience gained by the ministry of health in conducting a demonstration in the community of Kvasice. The demonstration at Kladno was officially inaugurated in the presence of delegates from national organizations as well as of central and local authorities. Dr. Alice G. Masaryk, daughter of the president of the republic, emphasized in her address the importance of the demonstration for training all kinds of public health workers, who will thus have an opportunity to acquire practical experience. The demonstration will be carried out locally by a committee consisting of representatives of local private social and health agencies and all city and town health officers. This local committee will cooperate with the national committee in Prague.

Health Campaign Finances

An interesting analysis of the financing of the health campaign in the Czechoslovak Republic was recently published in the local medical press. The budget of the ministry of health for 1922 contains 149,172,097 Czechoslovak crowns (approximately $4,387,000). In addition, other ministries contribute large sums of money to health purposes. The ministry of national defense has a sum of 42,041,360 crowns ($1,236,500) in its budget for health purposes; the ministry of railroads, 2,000,000 crowns ($58,800), and the ministry of posts and telegraphs, 2,220,000 crowns ($65,000). To these sums should be added the health appropriations in the budget of the provincial governments which amount in Bohemia to 205,564,196 crowns ($6,000,000), in Moravia to 77,266,320 crowns ($2,272,000) and in Silesia to 21,116,099 crowns ($621,000). The money paid by the provincial governments is largely for fees in hospitals for patients who cannot pay for themselves. The total of these appropriations, which do not include the appropriations of towns and cities, amounts to 497,380,072 Czechoslovak crowns ($14,630,000) which is about 37 Czechoslovak crowns ($1.10) per capita annually.

Specialization in Medical Practice

The question of specialization in medical practice is being discussed in the medical press of the country. Up to date, the chambers of physicians have regulated the right to use the title of specialist in a certain group of diseases. The members of the chambers of physicians are elected by the practicing physicians. Such chambers exist in Bohemia, Moravia and Silesia, but there were none in Slovakia or Carpathian Russia. These chambers adopted certain standards for specialists, and the physician was not supposed to use the title specialist unless he had been granted that right by the chamber of physicians, after his special qualification had been examined. The standards of the different chambers were not uniform. The Bohemian chamber granted the right to use the title to those who prove that they have spent at least two years practicing in a special department of a medical faculty or of a general hospital. In Moravia, the chamber granted the title only to those who have spent at least two years as assistant or first intern in a special department of a medical faculty or a general hospital. Silesia used similar standards. The title of specialist gives the physician the right to ask higher minimal fees from his patient than the general practitioner; and the same is true of the fees paid to physicians by insurance companies. In spite of these regulations, a considerable number of physicians have assumed all the rights of specialists, although they have not been approved by the chamber of physicians. Therefore, it seems necessary to revise the whole question of specialization of medical practice, to make the standards uniform throughout the republic and to enforce the regulation more strictly than has hitherto been done. This will probably be effected through a special medical practice act which is now being prepared and which will regulate not only the question of specialization, but also advertising practical postgraduate experience and kindred problems.

Marriages

LAWRENCE M. RIORDAN, St. Louis, to Miss Caroline Robinson Hardy of Waterloo, Ill., May 10.

ROBERT STANLEY KEMP, Boston, to Miss Kathryn B. Youse of Sandusky, Ohio, May 24.

ALBERT WOLDERT, Tyler, Texas, to Miss Elva Buford of Henderson, May 6.

CARSON K. GABRIEL, Payson, Ill., to Miss Mabel Miller, of Chicago, April 28.

Deaths

David Webster, New York; Bellevue Hospital Medical College, New York, 1868; died, May 26, following a long illness. Born in Cambridge, Nova Scotia, Canada, July 16, 1842, Dr. Webster served as professor of ophthalmology at the New York Polyclinic Medical School; Dartmouth Medical College, Hanover, N. H.; as clinical assistant in ophthalmology and otology at the Columbia University College of Physicians and Surgeons, New York, and on the staffs of the Manhattan Eye, Ear and Throat Hospital, Hospital for Ruptured and Crippled, New York Skin and Cancer Hospital, New York, Brooklyn Eye and Ear Hospital, Brooklyn, and the Hackensack Hospital, Hackensack, N. J. He was a member of the American Academy of Ophthalmology and Oto-Laryngology, the New York Ophthalmological Society, the international societies of ophthalmology and otology, and was formerly president of the Medical Society of the County of New York.

James Wallace Van Dusen ⊕ Lieutenant-Colonel, U. S. Army, Fort Benning, Ga.; University of Michigan Medical School, Ann Arbor, Mich., 1896; died, May 2, at the Walter Reed General Hospital, Washington, D. C., of ileus paralyticus. Dr. Van Dusen was born in Ohio in 1871. He entered the regular army as assistant surgeon, July 15, 1901, and was commissioned lieutenant-colonel, May 15, 1917. During the World War he held the temporary rank of colonel.

Lamme Steele Givens ⊕ Cynthiana, Ky.; Medical College of Ohio, Cincinnati, 1887; member of the American Academy of Ophthalmology and Oto-Laryngology; formerly president of the Harrison County Medical Society; at one time county coroner; aged 57; died, May 5, of cerebral hemorrhage.

Wallace E. Newark, Charlotte, Mich.; Toledo Medical College, Toledo, Ohio, 1888; member of the Michigan State Medical Society, and the Radiological Society of North America; formerly proprietor of the Charlotte Sanatorium; aged 62; died, May 5, following a long illness.

Henry Clay Kerrick, Brocton, Ill.; Louisville Medical College, Louisville, Ky., 1887; Rush Medical College, Chicago, 1891; member of the Illinois State Medical Society; aged 62; died, May 11, at the Paris Hospital, Paris, of a stab wound in his chest, self-inflicted.

James H. Taulbee, Lexington, Ky.; Louisville Medical College, Louisville, 1894; member of the Kentucky State Medical Association; served in the M. C., U. S. Army, during the World War; aged 51; died, May 3, of pneumonia, at West Point, N. Y.

Benjamin I. Poland, Danville, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; Atlanta (Ga.) Medical College, 1895; member of the Illinois State Medical Society; on the staff of St. Elizabeth's Hospital, where he died, May 12.

Thomas Edward Bruce, Clinton, Ind.; Vanderbilt University Medical Department, Nashville, Tenn., 1893; aged 60; died, May 15, at Augustana Hospital, Chicago, following an operation for carcinoma of the kidney.

Amanda Helen Miller, Cleveland; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1892; member of the Ohio State Medical Association; aged 61; died, April 28.

Richard Hazlewood Moss, Hodgenville, Ky.; University of Louisville Medical Department, Louisville, 1874; member of the Kentucky State Medical Association; aged 74; died, March 15, of cerebral hemorrhage.

Charles Adam Leathers, Lawrenceburg, Ky.; University of Louisville Medical Department, Louisville, 1882; formerly president of the Ohio State Pharmaceutical Association; aged 63; died, May 7, of tuberculosis.

Charles Andrew Mackey, Truro, Iowa; Barnes Medical College, St. Louis, 1902; member of the Iowa State Medical Society; served in the M. C., U. S. Army, during the World War; aged 55; died, April 28.

Charles Ross Lightfoot, Cloverport, Ky.; St. Louis College of Physicians and Surgeons, St. Louis, 1902; member of the Kentucky State Medical Association; aged 48; died suddenly, May 10, of heart disease.

Royal Hart Gerard, Crawfordsville, Ind.; Medical College of Indiana, Indianapolis, 1899; aged 48; died, May 12, at St. Anthony's Hospital, Terre Haute, of injuries sustained in an elevator accident.

William S. Ogle, Knoxville, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1900; formerly professor of hygiene and orthopedic surgery at his alma mater; aged 59; died, May 8.

William Holland Heron, Washington, D. C.; Howard University School of Medicine, Washington, 1887; Hahnemann Medical College and Hospital of Philadelphia, 1888; aged 56; died, May 12.

Jacob R. Lehman ⊕ Mountville, Pa.; Jefferson Medical College of Philadelphia, 1882; formerly president of the Lancaster County Medical Society; aged 68; died, May 9, of heart disease.

Edgar Henry Knittle, Waterloo, Iowa; State University of Iowa College of Medicine, Iowa City, 1897; member of the Iowa State Medical Society; aged 49; died, May 17, of heart disease.

Andrew Jackson Bostater, Montpelier, Ohio; University of Michigan Medical School, Ann Arbor, Mich., 1869; Civil War veteran; formerly a druggist; aged 88; died, April 21, of senility.

Benjamin H. Rogers, San Diego, Calif.; Jefferson Medical College, Philadelphia, 1888; member of the Medical Society of New Jersey; aged 61; died, May 2, following a long illness.

Thomas Sargent Roberts, Chicago; Jefferson Medical College, Philadelphia, 1887; aged 67; died, May 12, at the Cook County Hospital, of heart failure due to an overdose of drugs.

Thomas Anderson Drake, Prairieton, Ind.; Rush Medical College, Chicago, 1890; aged 55; was drowned, May 15, when the automobile in which he was riding plunged into a creek.

Robert Lee Combs, Cooper, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1890; member of the State Medical Association of Texas; aged 58; died, May 6.

James Sylvester Collins, Carlinville, Ill.; Rush Medical College, Chicago, 1880; member of the Illinois State Medical Society; formerly mayor of Carlinville; aged 66; died, May 7.

Andrew Jackson Robinson, Denver; Rush Medical College, Chicago, 1878; formerly on the staff of the Citizens' Hospital, Aspen; aged 76; died, May 10, of paralysis.

Edgar S. Thompson, Wisner, Neb.; Creighton Medical College, Medical Department of the Creighton University, Omaha, 1911; aged 41; died suddenly, April 27.

Salathiel Watts Williams, Gallipolis, Ohio; Miami Medical College, Cincinnati, 1881; member of the Ohio State Medical Association; aged 67; died, May 11.

Paul Charles Rietz ⊕ Evansville, Ind.; Rush Medical College, Chicago, 1898; on the staff of the Deaconess Hospital; aged 48; died, May 10, of chronic nephritis.

Frederick Edmister, Detroit; Bellevue Hospital Medical College, New York, 1883; member of the Michigan State Medical Society; aged 61; died, May 12.

William Walter Glenn ⊕ Hillsboro, Ohio; Starling Medical College, Columbus, 1879; aged 69; died, May 5, of peritonitis, following an appendectomy.

⊕ Indicates "Fellow" of the American Medical Association.

William Le Grand Suggett, Flora, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1884; aged 71; died, April 28, of cerebral hemorrhage.

William H. Wilson, Lenoir, N. C.; Louisville Medical College, Louisville, Ky., 1885; aged 60; died, April 15, at Morgantown, of cerebral hemorrhage.

M. Hubbard Ferguson ✠ Biddeford, Me.; Dartmouth Medical School, Hanover, N. H., 1880; aged 68; was killed in an automobile accident, in May.

Joseph Benjamin Blouin, St. Francois Montmagny, Que., Canada; Laval University Faculty of Medicine, Quebec, 1872; aged 77; died in March.

Marshall Ney Smith, St. Louis; Bennett College of Eclectic Medicine and Surgery, Chicago, 1881; aged 63; died, May 14, of cerebral hemorrhage.

George W. Graham, Charlotte, N. C.; New York University Medical College, New York, 1870; aged 75; died, May 9, of cerebral hemorrhage.

Silas W. Arrowood, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1888; aged 64; died, April 22, at a local sanatorium.

William L. B. McKelvy, Drumright, Okla.; Memphis Hospital Medical College, Memphis, Tenn., 1889; aged 61; died, May 11, of pneumonia.

Edgar D. Kerr ✠ Westervelt, Ill.; College of Physicians and Surgeons, Chicago, 1894; aged 57; died suddenly, May 10, of heart disease.

William D. Alford, Murfreesboro, Ark.; American Medical College, St. Louis, 1878; aged 87; died suddenly, May 12, of heart disease.

John Storer Chiles, St. Louis; St. Louis University School of Medicine, St. Louis, 1907; aged 46; died, March 6, of heart disease.

Edward Yarnall Rich ✠ Hershey, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1901; aged 45; died, May 6.

Charles R. Snell ✠ Tecumseh, Neb.; John A. Creighton Medical College, Omaha, 1907; aged 49; died, May 7, of pneumonia.

Laura M. Fairchild Plantz, Columbus, Ohio; Penn Medical University, Philadelphia, 1860; aged 94; died, May 24, of senility.

Charles S. Cope, Tacoma, Wash.; Cincinnati College of Medicine and Surgery, Cincinnati, 1875; aged 73; died, April 23.

Thaddeus H. Woodward, Lincoln, Neb.; University of Tennessee College of Medicine, Memphis, 1883; aged 76; died, May 10.

William Kirnan Van Kirk, McKeesport, Pa.; Jefferson Medical College of Philadelphia, 1873; aged 74; died, May 9.

George Langtry Crockett, Rockland, Me.; Boston University School of Medicine, Boston, 1893; aged 53; died, May 20.

Alfred Schirmer, Chicago; University of Erlangen, Germany, 1876; aged 71; died, May 21, of cerebral hemorrhage.

Alvin Francis Story, Natick, Mass.; Boston University School of Medicine, Boston, 1882; aged 61; died, May 4.

Axel Kristmus Olsen ✠ Ettrick, Wis.; Rush Medical College, Chicago, 1897; aged 57; died, April 8, of influenza.

J. C. Wood, Bardstown, Ky.; Kentucky School of Medicine, Louisville, 1866; aged 88; died, March 6, of senility.

Fred A. Shute, Boulder, Colo.; Texas Medical College and Hospital, Galveston, 1869; aged 79; died, April 20.

R. S. Byers, Trafalgar, Ind.; Medical College of Indiana, Indianapolis, 1880; aged 71; died, April 6.

James Duffield Toy, De Ridder, La.; Rush Medical College, Chicago, 1905; aged 46; died, May 2.

Israel W. Cunkle, Madison, Kan.; Rush Medical College, Chicago, 1869; aged 75; died, April 17.

Elias Wells Kellogg ✠ Milwaukee; Rush Medical College, Chicago, 1889; aged 64; died, May 20.

Edward J. Hoag, Ridott, Ill.; Rush Medical College, Chicago, 1884; aged 63; died, May 3.

Washington L. Lee, Petal, Miss. (licensed, Mississippi, 1882); aged 71; died, May 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

PROGRESS AND CONSERVATISM IN THERAPEUTICS

A Report of the Committee on Therapeutics of the Council on Pharmacy and Chemistry

The Committee on Therapeutics of the Council on Pharmacy and Chemistry of the American Medical Association prepared the communication which appears below for the purpose of calling to the attention of physicians two books, published by the Council, which are of great value to all who are actively engaged in the practice of medicine.

W. A. PUCKNER, Secretary.

We, the undersigned, constituting the Committee on Therapeutics of the Council on Pharmacy and Chemistry of the American Medical Association desire to call to the attention of physicians the two books "New and Nonofficial Remedies" and "Useful Drugs." For eighteen years the Council has done its utmost to bring before the medical profession the truth concerning the new proprietary medicinal preparations which are being offered to the profession.

In addition to its permanent secretary and the editor of THE JOURNAL of the American Medical Association, the Council consists of a group of clinicians, pharmacologists and chemists appointed by the Board of Trustees of the American Medical Association, because of their individual fitness to investigate the problems of drug therapy. The purpose of the Council is to disseminate the truth in matters pertaining to the use of drugs and thereby improve drug therapy. In this connection it has been operating a chemical laboratory in charge of the permanent secretary and manned by a personnel especially trained in the field of drug analysis. In addition, through its committee on therapeutic research, it has fostered and financed many investigations in the fields of pharmacology and therapy.

While, as stated above, the Council was organized primarily to put a stop to the exploitation of proprietary medicines under false claims and to the use of secret preparations, its activities have broadened until its work may now be characacterized as "a propaganda for the rational use of drugs." Evidence of this broader policy is seen in the publication of these two books.

NEW AND NONOFFICIAL REMEDIES

In New and Nonofficial Remedies are listed and described such new preparations as, in the opinion of the Council, give promise of being of more or less value in the practice of medicine and are ethically presented to the medical profession. While many of the preparations described in the book are on trial, and no doubt will ultimately be discontinued or replaced by better products, a considerable proportion of the preparations are of unquestionable value and in the course of time will be found to be permanent and necessary acquisitions to our therapeutic resources.

The acceptance of a preparation for New and Nonofficial Remedies is governed by a set of rules formulated by the Council. The rules require in effect that the quantitative composition of the product be declared; that no undue or grossly exaggerated therapeutic claim be made for it; that the method of exploitation shall not be contrary to the best interests of the public and the medical profession, and that it should possess or give promise of having therapeutic value. Acceptance by the Council carries with it admission to the advertising columns of the Association's Journals, while rejection debars the product from such privileges.

New and Nonofficial Remedies constitutes a ready reference book in which can be found the description of new preparations of an ethical character, their composition, indications and uses and the dosage to be employed. Opinions of the

Council also appear, expressed in the discussion of the various classes of remedies. This opinion should be worthy of consideration since it is based on a thorough study of the drug in question and is expressed with frankness. In cases in which physicians should be put more than usually on guard in the use of a given new article reference is made to any question that impresses itself on the Council in connection with the history or probable outlook for any preparation.

The Council is so constituted that cooperation enables it to investigate the literature as no individual could possibly do. The secretary with the cooperation of the editorial staff of THE JOURNAL assists the individual members by securing the necessary literature, and by references to reports which have been made on proprietary articles in the past. This is important, for these proprietary preparations go through stages of development, and thus a clear estimate of the value of drugs may be found in the book. The book is revised yearly. Those products which fail to live up to expectation or to the claims of the proprietors are omitted, while new ethical preparations meeting the requirements of the Council are added. Therefore the book represents the current opinion of the Council. It is the ambition of the Council that New and Nonofficial Remedies shall become the accepted guide for physicians in the recognition of new remedies.

USEFUL DRUGS

In order to improve the instruction in medical schools in pharmacology and materia medica and to aid the practicing physician in the choice of remedial agents, the Council has selected a list of drugs which is the basis of the book "Useful Drugs," which is now the guide for the selection of drugs for instruction in many medical schools. Many state licensing boards confine their questions in pharmacology, materia medica and therapeutics to the drugs therein listed.

This book, also, undergoes frequent revision, taking into account the recent important advances in pharmacology and therapeutics. The needs of the practicing physician are kept in mind and the book should prove of special value both in the practice of medicine and in the teaching of pharmacology and therapeutics.

"Useful Drugs" and "New and Nonofficial Remedies"[1] together furnish information concerning all drugs, old and new, which are at present essential to, or give promise of value in, the practice of medicine. They have been compiled with a special object in view, namely, to meet the needs of the student and practitioner of today.

Respectfully submitted,

C. W. EDMUNDS, M.D.,
Professor of Materia Medica and Therapeutics, University of Michigan, Ann Arbor.

JOHN HOWLAND, M.D.,
Professor of Pediatrics, Johns Hopkins University, Department of Medicine, Baltimore, Md.

ERNEST E. IRONS, M.D., PH.D.,
Associate Professor of Medicine, Rush Medical College, Chicago.

W. T. LONGCOPE, A.B., M.D.,
Professor of Medicine, Johns Hopkins University, Department of Medicine, Baltimore, Md.

G. W. McCOY, M.D.
Director Hygienic Laboratory, U. S. Public Health Service, Washington, D. C.

W. W. PALMER, B.S., M.D.
Bard Professor of Medicine, College of Physicians and Surgeons, Columbia University, New York.

FRANCIS W. PEABODY, M.D.
Professor of Medicine, Medical School of Harvard University, Boston, Mass.

L. G. ROWNTREE, M.D., SC.D.,
Professor of Medicine, Mayo Foundation, Rochester.

1. "Useful Drugs" sells for 60 cents; "New and Nonofficial Remedies" for $1.50. The two books may be had for $2.00 from the American Medical Association, 535 North Dearborn Street, Chicago.

Value of Reflex Signs in the Neurotic.—In neurotic individuals, and especially in the postoperative neurasthenic, little or no reliance can be placed on the reflex signs. Here, as always in medicine an estimation of the general physical and mental "make-up" of the patient is essential before the utility of symptoms and indirect signs can be assessed, and the psychologic effects of long continued pain or ill health must always be taken into account. Universal hyperesthesia and rigidity are commonly present in these unfortunates, though the rigidity is usually of that intermittent type which can be differentiated readily from the true reflex hypertonus of peritoneal or visceral inflammation.—J. A. Ryle, *Clin. J.* **52**:142 (March 21) 1923.

Correspondence

CHAULMOOGRA OIL IN LEPROSY

To the Editor:—So much has been written of the results of the ethyl esters of chaulmoogra oil that I feel that I should report on our experience with the oil itself. We used our first chaulmoogra oil here about fourteen years ago by mouth, but about 1911 we began to use it by intramuscular injections, and have continued to do so since. Several preparations and combinations were used until finally we used the oil with 1 per cent. camphor intramuscularly.

This month (July, 1922) we are discharging ten cases as arrested or probable cures with instructions that the patients return every six months for examination. From all appearance and as far as we can tell they are cured, though time only will tell us whether they are permanently cured.

The method of administration is as follows: Every Saturday afternoon each leper in the Kwangju Leper Home gets an injection of from 3 to 8 c.c. of hot chaulmoogra oil with 1 per cent. camphor. We start on 3 c.c., and in three months reach to from 5 to 8 c.c., according to the size and strength of the patient, or giving them about all they can well bear, the patient himself being the judge. The injection is made into the buttocks and not very deep. We found that occasionally a deep injection becomes infected, and a deep abscess is far worse than a shallow one. Since the lepers have learned to be more careful, we rarely ever get an abscess these days, though in their early days of doing this work they were not so careful and had some trouble. There is no excuse for an abscess.

The oil is heated on a water bath; then enough camphor is added to make 1 per cent. camphor. The camphor should first be macerated, and then added. In cold weather this solidifies, and must be heated and melted before injecting. Just after the injection, the lepers must bathe, and then they are to rest until Monday morning. Usually Monday they are ready to take up their various duties again and suffer no inconvenience. No other treatment is given except as some other condition requires.

The response to treatment is more prompt in the young and in early cases; and, vice versa, elderly persons and very advanced cases are much slower to respond. A boy came with bloated face, maculae, tubercles, and swollen hands and feet, presenting in all a most distressing appearance. In four months under treatment he looked like another person.

We now have seventy-five patients on the ethyl ester with 2 per cent. iodin as a trial, and as this began only six months ago I am not yet able to report results. However, this is the preparation that has given such marked results in Hawaii and made it possible to discharge more than 100 patients on parole.

Some cases that we get are quite advanced; and while these patients improve and have generally good health, they do not seem to be able to throw off the condition entirely as do others. About two thirds of our 500 patients are able soon to take an active part in the daily work about the institution, and this regular work is a great thing in bringing about a cure. To sit and be idle is not good in most diseases, and less good in leprosy. Every leper is given a small patch of garden and required to prepare some of his vegetables. Even though a limb has been lost, he can hobble out and scratch in the dirt, and this is very beneficial.

We find that after a leper has been on treatment a year or so, he can then take the oil in capsules three times a day with very good results. Our men such as masons, brick makers and those doing harder labor, prefer this. I believe that by giving large doses of the chaulmoogra oil we can

get as good results as that with the ethyl esters, though my tests have not been in progress long enough to make a comparison. I am quite sure of this, though, that when we inject 8 c.c. of the plain chaulmoogra oil we get into the body the equivalent of the ethyl esters and every other product there is in the drug. In the making of the esters there is quite a loss, about four fifths being lost; and in this portion there are very likely other things that are of benefit to the leper.

Our experiment for the coming year will be to keep a close record and compare the results of the seventy-five on the ester and the rest of the colony on the other preparation—the oil and camphor.

R. M. WILSON, M.D., Kwangju, Korea.

"MEDICAL EDUCATION; PAST AND PRESENT"

To the Editor:—While agreeing with most of the views expressed by Dr. Witherspoon (THE JOURNAL, April 28, p. 1191), I think some comment should be made in regard to his third objection to the employment of full-time teachers:

> There is no place in the actual practice of medicine for sustained medical research. It is condemned by law, and, according to all moral standards, is a reprehensible practice. No man employs a physician to advance science at his expense and risk. No man would knowingly tolerate it. If a student is taught to do research work on his patients in the university hospital and is complimented on something great or small in connection with it, he might become convinced that that was a proper or permissible course—convinced, in a word, that the patient is only a sort of advanced laboratory animal. Could he then reasonably be expected to disgorge his mind of all these impressions and become an honest servant of his patrons on graduation? Would he not feel justified in trying out his new ideas on them?

I doubt whether Dr. Witherspoon meant it quite so strongly as that, especially as he goes on to argue that, to be a good teacher of medicine, a man must learn something from years of private practice which he cannot get from books. Unfortunately, as the statement stands, it sounds like a severe indictment of the medical profession; and it must come as a shock and a discouragement to those who are doing valuable research work in the clinic and in the office.

We will all agree that no one should experiment on any human being without his consent or to his detriment; and I do not believe that there are many men in the profession so callous, or so unmindful of the legal consequences, as to do such a thing. We can, however, think of many types of research work which a thoughtful practitioner can do in the clinic, the hospital or the office without causing the slightest inconvenience or injustice to his patients.

It is really unfortunate that so many men leave college with the idea that medical research can be done only in laboratories with microscopes, test tubes and guinea-pigs. That is not true. Every man who has been born with a curiosity about things, and who will carry it with him into old age, past all those explanations that do not really explain; every man who will study disease as it appears in his patients and not only in his books; every man who will keep records of histories, findings and the after-results of treatment, and who will later analyze those data critically and open-mindedly, can do research of incalculable value to humanity. As classical examples of such work I may mention that of Sir James Mackenzie in the field of heart disease, or that of Beaumont on the physiology of the stomach. Peering into the future, I venture to say that as we recover somewhat from our present preoccupation over bacteria and their effects, we shall begin to study also the individual and familial peculiarities of the soil in which they grow. We shall learn more about the diseases that are due to the contractor's having put in poor materials; we shall study the course of the disease in individuals from childhood till death, and shall compare the manifestations of a "diathesis" in different members of the same family. Such work will be done best by the family physician in small communities where people do not scatter. Other physicians will greatly advance our knowledge by the use of modern statistical methods; others will be trying out new drugs, such as insulin and the new modifications of arsphenamin. But why elaborate? I think my point is made.

WALTER C. ALVAREZ, M.D., San Francisco.

SUCCESSFUL RESULTS OF INTRACARDIAC EPINEPHRIN INJECTION

To the Editor: — At a confinement in the Sacred Heart Hospital to which I was called in consultation by Dr. J. M. Casey, May 13, I delivered the patient of twins. The first infant fared normally, but the other did not breathe, and after ten minutes of futile effort on our part, was believed dead by a sister, who baptized it. Thereupon I injected 2 minims of 1/1000 epinephrin solution into the heart. Within fifteen seconds the infant began to breathe, and in five minutes was lying beside its brother, both twins crying lustily. When I saw them next day, they were in perfect condition.

D. L. NEWTON, M.D., Fort Madison, Iowa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF IVY POISONING WITH RHUS TOXICODENDRON AND RHUS VENENATA

To the Editor:—What is the accepted teaching about the use of the tincture of rhus toxicodendron or rhus venenata in the treatment of ivy poisoning? What is the dosage? Where can these drugs be obtained? H. M.

ANSWER.—Schamberg reported in THE JOURNAL (Oct. 18, 1919, p. 1213) that the administration internally of tincture of rhus toxicodendron in small but increasing doses will confer temporary immunity to the poison of poison ivy, and that such doses are useful in the treatment of rhus dermatitis. His paper was discussed in THE JOURNAL, Nov. 1, 1919, p. 1382. The tincture of rhus toxicodendron may be obtained from homeopathic pharmacies, such as that of Boericke and Tafel of Philadelphia, and from manufacturers of eclectic pharmaceuticals, such as Lloyd Brothers of Cincinnati. The dosage should begin with a few minims and gradually be increased to 60 minims (3.75 c.c.) a day. The treatment is discussed by Strickler in THE JOURNAL, this issue, p. 1588.

SPINAL PUNCTURE TECHNIC

To the Editor:—It is said that spinal puncture should never be done with the patient in a sitting posture. Under Queries and Minor Notes, will you kindly tell why not? Please omit name.

———, M.D., Calif.

ANSWER.—The principal reason for the recommendation against making a lumbar puncture with the patient in a sitting position is the increased danger of sudden movements of the patient, that may result in breaking the needle. When the patient lies on the side, he is more readily controlled by assistants and has not the same leverage for straightening his back that he has when seated. Fainting or dizziness will have little effect on the person lying on his side, but will cause swaying and possible alteration in the curve of the back if he is seated.

DOSAGE OF SEROBACTERIN

To the Editor:—Should a fourth dose of serobacterin be given if, in administering the three dose prophylactic typhoid treatment, the second dose is partially lost because of back leakage in the syringe, the resultant reaction from the second dose being no greater than the first, if as great, or will immunity be fairly probable as it is? Treatment is given not against present but possible future exposure.

ELLA MARX, M.D., Toledo, Ohio.

ANSWER.—It is quite probable that immunity would be produced by the three doses, even if a part of the second dose was lost.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chrm., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, July 3. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, July 9-12. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.

COLORADO: Denver, July 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 10. Sec. Eclectic Board, Dr. James E. Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT: Hartford, July 10-11. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford.

DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.

DISTRICT OF COLUMBIA: Washington, July 10-12. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.

FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.

GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.

INDIANA: Indianapolis, July 10. Sec., Dr. Wm. T. Gott, Crawfordsville.

KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.

KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.

LOUISIANA: New Orleans, June 7-9. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MAINE: Augusta, July 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MARYLAND: Baltimore, June 19-22. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

MARYLAND: Baltimore, June 12-13. Sec. Homeo. Bd., Dr. E. H. Wilsey, Chesapeake City.

MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.

MISSISSIPPI: Jackson, June 13-14. Sec., Dr. W. S. Leathers, University.

MISSOURI: St. Louis, June 6-8. Sec., Dr. Cortez F. Enloe, Jefferson City.

NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, June 18. Sec., Dr. R. E. McBride, Las Cruces.

NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.

NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

OKLAHOMA: Oklahoma City, July 10-11. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, July 3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Preliminary Examiner, Mr. C. D. Koch, 422 Perry Bldg., Philadelphia.

RHODE ISLAND: Providence, July 5-6. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Memphis, Nashville and Knoxville, June 15-16. Sec., Dr. Alfred B. DeLoach, 1230 Exchange Bldg., Memphis.

TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg.

UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.

VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.

WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.

WEST VIRGINIA: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

Ohio January Report

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports that 16 candidates were licensed by reciprocity at the meeting held at Columbus, Jan. 2, 1923. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University		(1921)	Illinois
Rush Medical College		(1918)	Illinois
University of Illinois		(1918)	Illinois
Hospital College of Medicine, Louisville		(1897)	Kentucky
College of Physicians and Surgeons, Baltimore		(1899) (1906)	Maryland Pennsylvania
University of Minnesota Medical School		(1916)	Minnesota
Meharry Medical College		(1894) (1917)	Missouri Mississippi, (1921) Louisiana
St. Louis University		(1911)	Illinois
Eclectic Medical Institute, Cincinnati		(1895)	Minnesota
Jefferson Medical College of Philadelphia		(1902)	Penna.
Temple University		(1917)	W. Virginia
University of Pennsylvania		(1916)	Minnesota
Medical College of Virginia		(1908)	Virginia

Oklahoma January Examination

Dr. James M. Byrum, secretary, Oklahoma Board of Medical Examiners, reports the written examination held at Oklahoma City, Jan. 9-10, 1923. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. Eight candidates were licensed by reciprocity, 1 candidate was granted a reregistration license, and 3 received duplicate licenses. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Barnes Medical College		(1900)	1
University of Nashville		(1907)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College		(1912)	Texas
Atlanta College of Physicians and Surgeons		(1910)	Georgia
Eclectic Medical University of Kansas		(1908)	Kansas
Tulane University		(1915)	Louisiana
George Washington University		(1908)	Sask'wan
John A. Creighton Medical College		(1911)	Washington
Memphis Hospital Medical College		(1883), (1912)	Arkansas

New Mexico January Report

Dr. R. E. McBride, secretary, New Mexico State Board of Medical Examiners, reports that 9 candidates were licensed on diploma and 1 candidate received a license by reciprocity at the meeting held at Santa Fe, Jan. 8-9, 1923. The following colleges were represented:

College	LICENSED ON DIPLOMA	Year Grad.	Number Licensed
College of Medical Evangelists		(1920)	1
Georgetown University		(1903)	1
George Washington University		(1920)	1
University of Georgia		(1919)	1
Tufts College Medical School		(1918)	1
John A. Creighton Medical College		(1917)	1
Jefferson Medical College of Philadelphia		(1899)	1
Starling Medical College		(1890)	1
University of Vermont		(1897)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Louisville		(1893)	Oklahoma

Michigan Reciprocity Report

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration in Medicine, reports that fourteen candidates were licensed by reciprocity from Jan. 2 to March 5, 1923. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1912)	Illinois
Northwestern University		(1920), (1921)	Illinois
University of Illinois		(1915)	Illinois
University of Louisville		(1905) Vermont, (1911)	Kentucky
Johns Hopkins University		(1901) Missouri, (1911)	Maryland
Columbia University		(1916)	Wisconsin
Long Island College of Medicine		(1906)	New York
Ohio State University College of Medicine		(1915)	Ohio
University of Nashville		(1899)	Tennessee
Medical College of Virginia		(1921)	Virginia
Marquette University		(1922)	Wisconsin

Iowa January Report

Dr. Rodney P. Fagen, secretary, Iowa State Board of Medical Examiners, reports that 11 candidates were licensed by reciprocity at the meeting held at Des Moines, Jan. 18, 1923. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1902) Wisconsin, (1919) (1922, 2) Illinois	Minnesota
University of Minnesota Medical School		(1922)	Minnesota
St. Louis University School of Medicine		(1916) (1921) Illinois	Missouri
John A. Creighton Medical College		(1921)	Nebraska
University of Nebraska College of Medicine		(1922)	Nebraska
University of Buffalo		(1889)	California
Vanderbilt University		(1914)	Tennessee

Book Notices

HISTORY OF THE PSYCHOPATHIC HOSPITAL, BOSTON, MASSACHUSETTS. By L. Vernon Briggs, M.D., and Collaborators. Cloth. Price, $3. Pp. 222, with illustrations. Boston: Old Corner Book Store, 1922.

The history of the Boston Psychopathic Hospital is of the greatest interest, as it marks almost a new departure in American psychiatry. This book by Dr. Briggs, to whose energy and persistence the final successful accomplishment was largely due, is therefore well worth reading; but it is unfortunate that Dr. Briggs has allowed personal feelings to enter so largely into the story, especially in regard to the conflict between himself and the state board of insanity, which appears to have been largely over methods of procedure. The first part of the book gives an outline of the history of the care of the insane in Massachusetts; and in the second part is an account of the organization for administration and of the work that has been accomplished during the first ten years of the existence of the hospital, written by past or present officers of the institution. It is a record well worth while and a fitting tribute to Dr. E. E. Southard, the first director, to whose memory the book is dedicated. The difficulties that were encountered and the solutions found will prove of the greatest value to other states in planning similar ventures, and the accomplishments should go far to demonstrate the vital importance of psychopathic hospitals to a community in meeting one of its greatest problems.

BRAIN ABSCESS: ITS SURGICAL PATHOLOGY AND OPERATIVE TECHNIC. Wells P. Eagleton, M.D. Cloth. Price, $7.00. Pp. 297, with 40 illustrations. New York: The Macmillan Company, 1922.

"If all were frankly to record their thoughts and experiences, even of one day, humanity would be advanced centuries." With the memory of this teaching of his father, Dr. Eagleton has here set forth a considerable experience in operating on conditions within the skull, the results of original experiments on animals, and careful postmortem observations of cases in which death resulted from intracranial lesions. The author is a firm advocate of the technic in operating for intracranial suppuration elaborated by Professor Harvey Cushing. The greatest emphasis is laid on the pathologic and mechanical changes brought about by the conditions discussed.

As has been said, the work is a record of fifty cases of adjacent brain abscess which have been treated by Dr. Eagleton. Many of the case reports have appeared in periodical literature but are here assembled as a unit, and additional material and new cases have been added.

The work begins with a philosophical consideration of the attitude of the surgeon who is to undertake this type of surgery, "a peculiar mental attitude which will render him sensitive and attentive to the minute details of diagnosis and surgical procedure." The importance of adequate history taking and some elementary points in general technic are carefully stressed. Classification is made from the point of view of the pathologist and of the surgeon. In each instance significant points are emphasized by the citation of illustrative cases.

The author next considers brain abscess in relation to the part of the brain concerned: middle fossa, metastatic abscess, cerebellar abscess, frontal lobe abscess, etc. The importance of detailed consideration is obvious from a careful study of any one of these sections. As is well known, these cases are not frequent in the practice of the average surgeon. As Dr. Eagleton shows, the route of infection, the attempts of the tissues to resist the pathologic changes and the amount of tissue involved are important as guiding the operative procedure. In fact, a special chapter is devoted to the protective mechanism by which the brain resists infection. Several chapters follow in which detailed consideration is given to the diagnosis of brain lesions, and to complications and results after proper operative procedure. In several appendixes are a guide for detailed neurologic examination and an exhaustive record of the literature of the subject. Complete indexes to authors and subjects round out the book.

In considering Dr. Eagleton's special treatment of the subject, the method of dealing with intracerebral abscesses without surface evidence of the infection may be emphasized; the prime object here is to avoid traumatism to the brain and the spread of infection to the meninges. The recommendation to establish a track through which it is safe to eradicate the abscess, comparable to that which nature establishes as a means of evacuating such an abscess, is well worthy of thought and consideration. Practical difficulties in actual experience are also frankly recorded and the lessons to be learned therefrom discussed. The book is well illustrated and the author has been at great pains to avail himself of the experience of others and to credit them properly for it. Among some minor errors which may be corrected in future editions is the inclusion of the Babinski reflex and the Kernig sign under the head of deep reflexes, and some slight variation in the relation of circulation and blood supply to the brain to the formation of abscess. Surgeons who may be called on in emergency to meet the exceedingly difficult problems associated with lesions of the brain will find in this book an excellent collection of past work and the records of an extensive first hand experience.

PRÉCIS DE PARASITOLOGIE. Par E. Brumpt, Professeur a la Faculté de Médecine de Paris. Third edition. Cloth. Price, 50 francs. Pp. 1,215, with 741 illustrations. Paris: Masson et Cie, 1922.

The appearance of a third edition of this well-known work will be greeted with approval by those who are familiar with the value of the Collection de Précis Médicaux of which it forms a number, and especially by such as have known and used the earlier editions of the work. In one sense, the book hardly deserves to be called a compendium, for it covers more than 1,200 pages, and with its numerous illustrations presents one of the best surveys of the field of parasitology available. A review of the text shows significant additions to the older editions consonant with the progress made in parasitology since 1913. The most striking are naturally among the protozoa, in which the spirochetes, the hemogregarines and Leishmania have been given special consideration in the light of important recent researches. The work on these items is generally up to date, so that one is surprised to find the interesting form from a nasal polyp, generally known as *Rhinosporidium*, still retained among the protozoa in the order designated *Haplosporidia*. Several recent studies on this group seem to show, beyond question, its relationship to the lower plants and its lack of affinities with the protozoa. It would be wrong, even in a brief review, to leave a possible impression that the only elaboration of the older edition was to be found within the protozoa. While the most far reaching changes were made in that group because of the remarkable discoveries of recent years, yet a considerable number of new trematodes have been added to the list of human parasites, and are each of them duly considered in their appropriate place. In the cestodes, the development of the fish tapeworm, and, among the nematodes, the life history of the ascarids and of the trichocephalids is presented in accordance with important recent investigations. Among the arthropods, the agency of the blood-sucking ticks and insects in previously unsuspected relations as transmitters of disease has been given adequate attention. Finally, it is perhaps worthy of note that this work embraces not only the animal parasites but also, with the exception of the bacteria, the plant parasites and the diseases that they produce. In the section devoted to these organisms, the author has given a better review of the group than is readily available anywhere else. On the whole, the work may be highly commended for its clarity of presentation, so characteristic of French literature, and especially for the admirable illustrations. They are numerous, and more than 300 of them absolutely new. One rejoices at the omission of some time-honored and inadequate sketches that have graced the pages of so many manuals. The original illustrations are so good that one wishes the author could be persuaded in later reprints to go even farther in the direction of replacing sketchy and distinctly misleading illustrations that are all too general in this field. The publishers are to be congratulated on the printing and the paper, which has permitted them to present a volume of this size in a form that is both convenient and attractive.

Medicolegal

Use of Name Other Than Own—Board and Agent

(Berry v. Alderson et al., Board of Medical Examiners (Calif.), 211 Pac. R. 836)

The District Court of Appeal of California, First District, Division 1, in affirming a judgment that affirmed the action of the board of medical examiners in revoking petitioner Berry's license to practice medicine, says that he was charged with having violated the provision of the medical practice act which authorizes the revocation of a license for unprofessional conduct when the holder of the license uses in any sign or advertisement in connection with his practice any fictitious name, or any name other than his own. There was evidence that on a certain date a representative of a medicine company and the petitioner gave a free open-air show, part of which was a lecture by the petitioner on some medical subject; that on the platform there was a large sign which read "K. B. Bloodless Surgeons"; and that the performers distributed cards on which was printed: "This card entitles the holder to one free consultation and examination by the physicians and surgeons of the K. B. Medicine Co. Not good after ———. Corner P and Merced streets." The location indicated was the place of residence of the representative of the company and the petitioner, the latter occupying one of the rooms as an office or consultation room. On this building was also exhibited the sign "K. B. Bloodless Surgeons," but on the window and the door of the petitioner's consultation room appeared only his name. The profit, if any, to be derived by the petitioner from this enterprise was to come from fees received for medical treatment given by him to persons coming to his office, although, as stated on the cards distributed, the first consultation was gratuitous. The court thinks that the evidence showed that the petitioner did use in connection with his practice, in an advertisement thereof, the designation or name "K. B. Bloodless Surgeons," a name other than his own, bringing him within the provisions of the medical practice act relating to unprofessional conduct.

It was contended that the use by a physician of a name other than his own referred to in the statute must be of such a nature and under such circumstances as to amount to a fraud on the public—must be a fraudulent concealment of identity; otherwise this provision of the law is too vague to be given any effect. But this construction the court thinks is entirely too narrow. This provision is aimed at conduct much less reprehensible than fraudulent misrepresentation. The view of the court is that the legislature intended that a person to whom the privilege has been granted of practicing medicine and representing himself to the world as qualified and worthy of the confidence of the sick should, when offering his services by advertisement or announcement, do so under his own name. This simple requirement, so easily complied with, was not aimed particularly at the person who is willing to incur the odium of actual fraud, but was designed to offer a much wider protection to the public by assuring to it a reasonable certainty of knowing in every case precisely with whom it is dealing. The importance of the relation of physician and patient, and the very serious consequences which may follow unskilful or negligent treatment, render such openness and candor particularly desirable. That the provision of the law in question is neither vague nor indefinite is obvious.

Another contention was that because the charge against the petitioner was filed by a special agent appointed by the board, who also appeared as a witness, the board was at once prosecutor and judge; that the hearing was therefore a mere formality, and the result a foregone conclusion, in violation of the provision of the federal constitution requiring due process of law. But the court does not think that provision was violated by reason of the proceeding for the revocation of the petitioner's license having been initiated by an agent of the board. No direct or immediate interest on the part of the board could be predicated on such fact, nor could any fair inference be drawn from it that the board in its hearing of the charges was biased against the accused thereby. The medical practice act provides for the appointment of such agent, and it was in the discharge of his duties that he filed the charges. Under these circumstances, the petitioner's contention appears to have little weight.

Hearing denied by the Supreme Court of California.

Two Decisions Regarding Operations for Hernia

(Houston Electric Company v. Schmidt (Texas), 244 S. W. R. 1110. Sun Coal Company v. Wilson (Tenn.), 245 S. W. R. 547)

The Court of Civil Appeals of Texas, in affirming a judgment in favor of Mary Schmidt for $10,000 damages for a double inguinal hernia and spinal trouble that were caused by a collision of one of the defendant electric company's cars with an automobile in which she was riding, says that she was 4 years old at the time of the accident, which accident was attributed to the defendant's negligence. The defendant contended that she should have submitted to an operation for the hernia; but the court does not think that the defendant's position was well taken. The rule is well settled that a person injured is required to exercise reasonable prudence to keep down the damage caused by the acts of the wrongdoer, but no person is required to risk his life on the operating table for any such purpose. Furthermore, as a matter of law, one who has been injured by the negligence of another is not bound to undergo a serious and critical operation which would necessarily be attended with some risk of failure and of death, but must be permitted to exercise the liberty of choice in the matter, and his refusal to submit to the operation, although under the evidence it would probably lessen the effects of the injury, cannot be considered in mitigation of the damages recovered therefor. The test is: Would a person of ordinary prudence, under all the circumstances, have done so, and this is a question for the jury. The plaintiff in this case was suffering from a double inguinal hernia. Several physicians testified that an operation for such a hernia is a major operation, and dangerous, involving the risk of life. A physician who was a witness for the defendant said that a normal man would shrink from such an operation. The question was submitted to the jury whether, under all the circumstances, an ordinarily prudent person would have submitted to an operation, and the jury answered, "No." The court thinks that the evidence supported this finding.

The Supreme Court of Tennessee, on the other hand, reduces a decree which allowed claimant Wilson $4.73 a week for 300 weeks on account of his having, while in the employ of the Sun Coal Company, received an injury which produced hernia, the reduction being to $4.73 a week for thirteen weeks, or the period from the date of his injury to the time he refused to be operated on. The court says that the evidence showed that a person so injured can never do efficient work; that the injury will likely become greater as time passes; that the earning capacity of the claimant had been reduced one third; that the only cure for a hernia is a surgical operation; that it is not a serious operation attended with unusual danger or pain, and can be successfully performed under a local anesthetic; that such an operation usually restores a man to his former earning capacity; that, when performed by skilled surgeons, virtually all such operations are successful; that the claimant in this case was physically able to undergo the operation, and that an operation was recommended by the several physicians who examined him. Under these facts, the court is of the opinion that the employer was within its right in demanding that the claimant submit to the operation. Under the undisputed evidence, the court is impressed with the idea that any reasonable man, under such circumstances, would have submitted to an operation. The workmen's compensation act of Tennessee is broad, and provides that the employer shall furnish medical and surgical treatment for thirty days following the service of notice, and that he may furnish it thereafter, which the employee must receive. However, the court does not wish to be understood as holding that, under all circumstances, a claimant should submit to an operation when so requested by the employer.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.

American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.

American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.

American Psychiatric Association, Detroit, June 19-22. Dr. C. Floyd Haviland, Drawer 16, Capitol Station, Albany, New York, Secretary.

American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.

American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.

American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.

American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.

Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.

Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.

California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.

Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.

Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.

Montana, Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.

National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.

New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.

New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.

Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.

Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.

Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.

Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.

Southern Minnesota Medical Association, Faribault, June 11. Dr. H. T. McGuigan, Redwing, Secretary.

Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.

West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.

Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.

Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., April 30, 1923

The President, DR. ELLIOTT P. JOSLIN, Boston, in the Chair

Clinical Observations on Insulin Hypoglycemia and the Carbohydrate Equivalent of Insulin in Man

DRS. WALTER R. CAMPBELL and A. A. FLETCHER, Toronto: When normal, nondiabetic and diabetic persons are placed on a nonnutrient diet and given a sufficient amount of insulin, there is a marked tendency, whatever the percentage of initial blood sugar may be, for the blood sugar to fall to a barrier level which lies in the range of normal blood sugar percentage. This is a protective mechanism. With considerable excess of insulin, the blood sugar becomes unduly depressed and gives rise to the symptom-complex of hypoglycemia. Various substances relieve this condition. In order of decreasing efficiency these are: glucose, maltose, galactose, lactose, sucrose, levulose and glycerin. Starches may also be used. Epinephrin is rapidly, but temporarily, effective. Raffinose, rhamnose and nonnutrient substances are not effective. The carbohydrate equivalent of insulin is the number of grams of carbohydrate properly metabolized per unit of insulin, and is a measure of its therapeutic efficiency. Units from different batches of insulin give approximately the same carbohydrate equivalent in the same person. In suitable cases this lies between 2 and 2.5 gm. per unit of insulin. Considerable differences in carbohydrate equivalent occur in different patients, and are associated with various disturbing factors.

The Use of Insulin in Diabetes

DRS. D. M. COWIE and J. P. PARSONS, Ann Arbor, Mich.: Clinical observations seem to show that the person with so-called mild diabetes needs insulin as much as the person with severe diabetes, and that the condition is much more easily controlled and may possibly be overcome if treatment is instituted early enough. It is too early to say that there is actual evidence that in the average case of diabetes longevity can be increased by insulin. On the other hand, results thus far obtained by insulin treatment almost compel us to expect that the length of life will be increased greatly, particularly if beginning cases are carefully watched, and if skilful treatment with insulin is instituted. It is a mistake to be content with keeping a patient sugar free on a carbohydrate intake that is insufficient to overcome his natural, normal cravings and to keep his weight below the minimal normal weight necessary to enable him to carry on his daily duties with comfort when, perhaps, even a small amount of insulin daily will accomplish this. The old methods secure certain beneficial results by keeping a man's nutritive processes at the lowest possible level by forcing on him food which, perhaps not in a direct way but in a roundabout way, must ultimately be utilized by his diseased pancreas; thus his improvement is only apparent, not real. Our observations lead us to believe that there is never a time when the diabetic process is checked by these methods or when the curve of tolerance deviates from the line that leads to fatal coma within a well known and narrow space of years. Insulin seems to offer a means of at least staying an advancing process, of the true nature of which we are still ignorant. Observations on the symptomatology developing during the stage of hypoglycemia, which we prefer to call hyperinsulemia, because it seems to us that there is more than hypoglycemia in this condition, lead us to believe that this and many other phenomena are the result of this condition about which we shall know more as investigations continue. The symptoms of hyperinsulemia seem to differ in different subjects. Some seem to react more sensitively than others. Some will consume large amounts of glucose without its "spilling over" in the urine, or without spilling for many hours, while others spill on very much smaller amounts. It seems that little danger can come from the administration of insulin to babies with diabetes, because the usual method of spacing feedings can easily be taken advantage of to insure sufficient carbohydrate coming into the blood stream at a time when hyperinsulemia might otherwise develop. In children no longer bottle fed, danger might very easily arise because of the inability of the child to announce developing symptoms. However, averting danger in such cases is only a matter of careful management and meal spacing which will insure a carbohydrate income at these times. The patient should not be allowed to pass from under control until the lowest level of insulin intake is established.

The beneficial effect of insulin on coma is marked and quite rapid. Infections, such as boils, infected eczema, impetigo, infected wounds, contagious diseases, such as chickenpox, and respiratory infections occurring in the course of diabetes, are overcome more rapidly and without apparent harmful effects by insulin. Insulin intake should be increased at these times. The evil effects of surgery and anesthesia in cases of diabetes we believe can be overcome completely by proper administration of insulin. Any evil effects that may occur should be attributed to our lack of knowledge of the proper amount to administer, which will be overcome in the course of time, as our knowledge continues to accumulate. Insulin induces complete anesthesia when the stage of marked hyperinsulemia is reached. This state can be induced in nondiabetic persons almost as readily as in diabetic patients without untoward results.

The use of insulin will enable us greatly to simplify the diet of the patient with diabetes. Enough carbohydrate can

always be ingested and utilized to supply the normal carbohydrate demand for the complete and proper metabolism of the other food principles desired by the patient, provided, of course, that this demand is not excessive. Our experience has been that patients frequently ask whether it is necessary for them to eat all of the diet prescribed. It will, therefore, only be necessary to teach the patient how to select his quota of carbohydrate foods. We have observed in a number of patients studied thus far a demand for a large amount of insulin to cover a given amount of carbohydrate in the beginning of treatment, and a gradually lessening demand for insulin as time goes on. For example, a man required in the beginning of his treatment 60 units of insulin a day to metabolize 70 gm. of carbohydrate. At present he metabolizes 85 gm. of carbohydrate on 2 units of insulin a day, 1 unit before breakfast, and 1 unit before supper. This is almost an insignificant amount: in quantity, only 0.2 c.c. We are inclined to interpret this as the reaction of an increased tolerance on the part of the patient. In a case of renal glycosuria, insulin had no effect either in lowering the already low blood sugar perceptibly or in altering the glycosuria. Therefore, no deleterious effect resulted. If insulin were pushed it would probably react the same as it does in a normal person. At first we feared that danger might come from the use of insulin in such a case. While our observation negates this fear, it supports the general feeling that no diabetic should be given routine insulin treatment before a careful study of the blood sugar content is made by a reliable method. Insulin has changed the mental attitude of patients with diabetes from one of melancholy and depression to one of cheerfulness, happiness and satisfaction. If insulin will save a man in coma from death, what may it do for a man in the early stages of diabetes? Should this not be the most important question to settle? This being the case, all diabetic patients should receive insulin treatment.

The Excretion of Organic Acids in the Urine of Patients with Diabetes

DRS. REGINALD FITZ, A. V. BOCK, M. P. STARR and HENRY FIELD, JR., Boston: Isolated cases of fatal diabetic coma have been reported in which death seemed to be caused by acidosis but without ketosis. Van Slyke and Palmer reported a case of diabetes in which, as the excretion of organic acids increased, the fraction not accounted for by the acetone bodies also increased. In a case of diabetic coma in which insulin was administered, we observed that while the concentration of acetone bodies and sugar in the blood diminished rapidly, yet acidosis, as estimated by the alkali reserve, did not diminish proportionately. These facts led us to compare the excretion of organic acids and of acetone bodies in a series of cases of diabetes, and to look for other acids than the ketones as sometimes playing a part in diabetic acidosis. In most instances the increased organic acid excretion observed was closely paralleled by the excretion of acetone bodies. In one instance, however, severe acidosis, as measured by the blood carbon dioxid, persisted in the presence of a urine that was acetone free, and this urine contained a large amount of unidentified organic acid. In most cases of diabetes, the quantitative excretion of acetone bodies in the urine can be estimated with sufficient accuracy for ordinary clinical work by the very simple method of Van Slyke and Palmer. Alkali therapy for diabetic acidosis may be required urgently in those cases in which the acidosis is due to other acids than the ketones.

Relation Between the Fatty Acid Glucose Ration and the Excretion of the Acetone Bodies in Diabetes

DR. EDWARD H. MASON, Montreal, and DRS. HENRY B. RICHARDSON and WILLIAM S. LADD, New York: By means of the respiration calorimeter, we determined the quantities of protein, fat and carbohydrate oxidized by diabetic patients at rest. These data were used to compute the fatty acid glucose ration, using the formula of Woodyatt. A close parallelism was found to exist between this ratio and the threshold of excretion of the acetone bodies. Ketosis was defined as the elimination in the urine per twenty-four hours of 1 gm. of acetone bodies expressed as acetone. At the threshold of ketosis, the ratio was about 1.5, the level at which, in theory, one molecule of glucose is oxidized for every molecule of keto-acid present. Diabetic patients can often take, without ketosis, diets containing a much larger proportion of fat than this ratio would allow. This is because a high ratio in the diet is often accompanied by a much lower one in the foodstuffs oxidized. The undernourished patient with diabetes tends to draw on his own tissues for extra amounts of protein and carbohydrate, and to store a good deal of the fat that he eats. Safety in the use of high fat diets depends on the patient's having an endogenous supply of utilizable carbohydrate, and on his being able to store fat. It is evident that these factors cannot be predetermined, and that close observation of the patient is required when he is taking a high fat diet. The fall in ketosis often observed in fasting patients with diabetes results from a change in the proportion of the foodstuffs oxidized, such that the fatty acid glucose ratio is diminished. The constancy of the relation mentioned is evidence that the quotient is a true measure of the relative quantities of foodstuffs oxidized.

Ketogenic-Antiketogenic Balance in Diabetes and the Therapeutic Use of Glycerol

DRS. WILLIAM S. MCCANN and R. R. HANNON, Baltimore: Calculations of the ketogenic-antiketogenic balance were based on daily estimates of the foodstuffs actually metabolized by diabetic patients. These estimates were made as follows:

1. Basal heat production plus 10% = requirement at rest in bed.
2. Urine N gm. × 6.25 = protein gm. metabolized (P).
3. Carbohydrate utilized = carbohydrate intake minus sugar of urine (C).
4. Fat metabolized, gm. $= \frac{\text{total heat produced} - 4.1\ (P + C)}{9.3}$
5. Woodyatt's factors for fatty acid and glucose.
6. Shaffer's factors for molecular amounts of ketogens and antiketogens.

There is a parallelism between FA:G ratios and acetone body excretion in urine on corresponding days in diabetic patients. Ketonuria disappears generally when FA/G = 1.5, or K/A = 1, but this is not always true.

Tables are given showing the ratios of K′:A. K′ = estimated millimols of ketogens completely oxidized. A = estimated antiketogens utilized. During periods of excessive ketonuria, the ratios vary from 0.9 to 2.8.

Glycerin, gram for gram, is as antiketogenic as glucose. Glycerin is not quantitatively converted into sugar (about 40 per cent.). In severe cases of acidosis, the maximum antiketogenic effect can be obtained from glycerin with less hyperglycemic and glycosuric effects than an equivalent weight of glucose or other carbohydrate. On a diet of 40 per cent. cream and glycerol, recovery occurred though the carbon dioxid combining power had been only 12 per cent. by volume.

Action of Insulin in the Utilization of Sugar in the Body

DRS. RUSSELL M. WILDER and H. D. KITCHEN, Rochester, Minn.: Experiments have been designed to throw light on the rapidity and effectiveness of the utilization of different sugars with varying concentrations of antidiabetic hormone in diabetic patients; *d*-glucose, *d*-fructose, *d*-galactose, *d*-mannose and glycogen have thus far been investigated. The carbohydrate has been fed by mouth; in some experiments insulin has been simultaneously injected subcutaneously. The patient has in each case been prepared by a preliminary standard regimen so that the effects of the ingested carbohydrate on the blood sugar, on the urine, on the heat production and on the respiratory quotient could be compared with a common standard established with glucose. With antidiabetic hormone known to be present, that is, in mild cases of diabetes or cases of diabetes in which insulin is injected, ingested fructose gives evidence from its effect on the blood sugar and on the urine, but especially from its effect on the respiratory quotient, that it is utilized better and more rapidly than glucose. Under such circumstances, glucose often causes an initial drop in the respiratory quotient, and the rise of the respiratory quotient which follows is always appreciably delayed as compared with events fol-

lowing the ingestion of fructose. Under similar conditions, galactose gives evidence of better utilization than glucose, as judged from its effect on blood sugar and urine, and its action resembles that of fructose, as judged by the behavior of the respiratory quotient. Mannose and glycogen behave like glucose.

When the supply of the antidiabetic hormone is much reduced, the effect of glucose on the respiratory quotient may be inconspicuous while that of fructose is still appreciable. The more severe the diabetes, that is, presumably, the less the supply of antidiabetic hormone, the less appreciable is the effect of both glucose and fructose on the respiratory quotient. From this it appears probable that fructose, as well as glucose, is dependent on the antidiabetic hormone for its oxidation, and in the absence of any hormone, neither sugar would be used. The specific dynamic action is affected by all the sugars studied and seems to be little influenced by the presence or absence of the antidiabetic hormone. No explanation is offered of the significance of this.

The Retention and Elimination of Lead

DRS. J. C. AUB and ANNE MINOT, Boston: After lead has been absorbed through the gastro-intestinal or respiratory tracts, it is stored nearly completely in the calcareous portion of the bones. Here it remains normally for long periods, with the gradual release of only small amounts. In one group of animals the esophagus was tied and lead carbonate was introduced directly into the lungs. The animals were given physiologic sodium chlorid solution intraperitoneally. When the animals were killed, within eighty hours after the injection, nearly all of the absorbed lead was found in the bones. In animals allowed to live between 80 and 160 hours, only about 81 per cent. of the lead was found in the bones. When sodium bicarbonate instead of salt solution was injected intraperitoneally, the amount of lead found in the bones did not diminish, but remained at 94 per cent. of the total absorbed lead. This strongly suggested that the reduction of the alkali reserve allowed the liberation of lead from the bones. We next found that in leaded cats starvation will cause the lead to become distributed throughout the organism and be excreted with increased rapidity. Ingestion of large amounts of phosphoric acid has a similar but more marked effect. Using these observations in treating lead poisoning in man, we have found that ingestion of acid causes a markedly increased excretion of lead by the urine and feces. Phosphoric acid is the most effective method so far found. It is more efficient than potassium iodid, and causes a fourfold increase in the rate of lead excretion over that occurring without treatment.

These experiments explain how distortion of the acid-base equilibrium may liberate lead from the bones long after its absorption; they explain why lead poisoning is a chronic disease with possible late acute manifestaitons, and they offer a new method for increasing or decreasing the excretion of lead.

Action of Iodids on the Nonprotein Nitrogen of the Blood

DRS. G. P. GRABFIELD and B. J. ALPERS, Boston: Potassium iodid in small doses (from 0.3 to 0.6 gm., three times a day) caused an average increase of 30 per cent. in the total nonprotein nitrogen of the blood. The rise occurs on the first and second days after administration has been started, and on the third day the figure falls to the previous level. About 70 per cent. showed at some time a pathologic value (more than 40 mg. per hundred cubic centimeters), and in five cases the rise surpassed 70 mg. Sodium iodid causes a rise of only 10 per cent., and in none of the ten cases studied were pathologic heights reached. The average variation of controls under similar conditions is through a range of about 7 per cent. In cases in which potassium iodid was given, there was no change in the level of urinary nitrogen during the period in which the drug was administered (three days); but, following the return of the blood to the normal level, an increase in the output of nitrogen occurred, which, by the rough calculation possible, almost exactly corresponded with the amount that had been retained previously. Sodium iodid was followed by an immediate increase in the total nitrogenous output in the urine. The basal metabolic rate under similar conditions increased very slightly on the day after iodid administration was stopped, but only very little in excess of the limits of error of the method used. Similarly, the phenolsulphonephthalein excretion apparently fell very slightly during the period of iodid administration, but hardly outside the limits of error.

The Rôle of Allergy in Pneumococcus Immunity

DR. G. M. MACKENZIE, New York: Guinea-pigs rendered allergic by repeated intracutaneous injections of pneumococcus antigen have little or no alteration in their susceptibility to infection by the homologous organism. The animals in a state of allergy to the pneumococcus antigen are not anaphylactic, but show a marked cutaneous hypersensitiveness. If the intracutaneous injections are continued over a period of thirty or forty days, the skin allergy disappears. In this postallergic state the susceptibility to infection by the homologous organism likewise differs little, if at all, from the susceptibility of normal controls. In the course of immunization of guinea-pigs with pneumococcus, anaphylactic reactions may be obtained at several stages of the immunization, either with the pneumococcus antigen or with a filtrate from a fresh culture. The existence of such specific sensitization does not appear either to interfere with or to further the development of active immunity. Results indicate that under the conditions of the experiments allergy may exist as a parallel phenomenon without any essential rôle in the development of immunity.

Treatment of Lobar Pneumonia with Kyes' Chicken Serum

DR. J. A. CAPPS, Chicago: During the last three years, and in 1916, Kyes' serum was used in one ward as routine treatment in lobar pneumonia. In all, 305 pneumonia patients were treated with serum. There were seventy-seven deaths, or a mortality of 25.2 per cent. In five control wards, in which no specific therapy was used, during the same period 1,406 patients were treated, with a mortality of 41.2 per cent. The clinical effect of the serum seems to be one of detoxication without materially affecting the course of the disease or the rate of resolution.

Experimental Production of Streptococcus Endocarditis

DRS. R. A. KINSELLA and C. C. SHERBURNE, St. Louis: In human patients, subacute streptococcus endocarditis is a fatal disease. No authentic report of a recovery has ever been published. The mechanism of production of this disease in human beings displays two constant factors—injury of the valve and later infection. The injury is usually represented by either congenital valvular heart disease or rheumatic valvular heart disease. The later implantation of *Streptococcus viridans* on this injury usually takes place through the medium of an infection of the middle ear or throat or some other locality where green streptococci normally breed. Our work consisted in injuring the aortic valve by inserting an appropriate instrument into the left carotid and then, after recovery, the animal is infected by intravenous inoculation of *Streptococcus viridans*. The inoculated bacteria became implanted at the site of the valve injury and there set up a bacterial vegetation identical with that of human patients. Dogs were used in these experiments. Dogs living twelve, thirteen and fourteen days failed to show any kidney lesion of the glomerular type, although larger infarctions were common. A longer survival of the animal seemed essential for producing the kidney picture. In a dog that lived seventeen days, the glomerular lesion consisted of partial thrombosis of the tuft, with hyaline degeneration and with hemorrhage and infiltration with polymorphonuclear leukocytes. One of the most important results of this work is that we have reproduced a bacterial infectious disease which is of sufficient duration to permit thorough study of many of the unknown factors of infection and immunity.

Physicochemical Studies of Calcium Chlorid Diuresis

DRS. D. W. ATCHLEY, R. F. LOEB and E. M. BENEDICT, New York: We have compared the diuresis produced by calcium chlorid in an edematous diabetic man, otherwise normal, with a subsequent spontaneous diuresis following adequate caloric intake under insulin therapy. From 20 to 35 gm. of calcium chlorid a day were given without discomfort to the patient. Marked diuresis began at the end of twenty-four hours. Calcium was eliminated in large part extrarenally. The chlorin of calcium chlorid was excreted mainly by the kidney as ammonium chlorid, with marked increase of ammonia excretion. The p_H of the urine was decreased. Sodium excretion

was increased markedly, whereas potassium and calcium excretion was only moderately increased. In the blood there is approximately molecular replacement of carbonate by chlorid with little change in total base. There is slight increase in the serum protein percentage, but no consistent change in the conductivity. In spontaneous diuresis, the urinary excretion of electrolytes showed no striking difference from that produced by calcium chlorid, except for the absence of the changes caused by such ingestion, the increased ammonia and chlorin output. There was a marked increase in sodium excretion. There was little change in the blood during spontaneous diuresis. The serum protein percentage increased somewhat. Twenty grams of calcium chlorid was then given to a normal person following a period of study. It was found that sodium, chlorin, potassium and ammonia excretions were markedly increased, particularly the sodium and chlorin. Sodium retention was present for three days after calcium chlorid ingestion. The water output was doubled. The blood showed decided increase in the serum protein percentage, great decrease in conductivity, and no change in calcium or chlorin, but a decrease in concentration of sodium and carbon dioxid. Severe gastric disturbance and depression followed the administration of calcium chlorid to this subject.

Contents of Glomerular Urine

DRS. J. T. WEARN and A. N. RICHARDS, Philadelphia: Using the potassium ferrocyanid-acetic acid test, it was found that the glomerular urine from eleven frogs was protein free. The bladder urine collected during the same period was also protein free. During November and December, the blood of frogs was virtually sugar free; the glomerular urine and bladder urine were also sugar free. Dextrose was injected subcutaneously, and with the blood sugar below 0.05 or 0.07 per cent., sugar appeared in the glomerular urine, but was absent in the bladder urine collected during the same period. Later observations showed the sugar content of frog's blood during March to be from 0.01 to 0.3 per cent., and the glomerular urine from these frogs contained sugar while the bladder urine contained none. Tests for chlorid showed chlorid to be present in the glomerular urine and absent in the bladder urine collected during the same period.

Studies on the mode of elimination of several dyes were made. Indigocarmin, methylene blue and phenolsulphonephthalein were injected into the circulation while the kidney was being observed with the microscope. The blue dyes appeared in the afferent vessels immediately after injection, and in rapid succession the glomerular tuft became blue and then the dye was observed passing through the capillaries into the glomerular space. Fluid collected from the glomerulus after the injection of the dye invariably contained the dye. Phenolsulphonephthalein behaved in the same way.

Relation of the Pulmonary Gas Diffusion Constant to Mountain Sickness

DR. GEORGE HARROP, New York: The physiologic effects of high altitudes on twenty-eight persons living at altitudes between 14,000 and 16,000 feet were determined by measuring the amount of carbon monoxid taken up by the lungs, as a whole, per unit of time and per millimeter of pressure difference existing between the alveolar air and the blood in the pulmonary capillaries. The results indicate that almost without exception every person whose diffusion constant, measured at the mean capacity and calculated for oxygen (Do_2), was above 40 did not suffer from the acute symptoms of mountain sickness and generally was free from the chronic discomforts due to prolonged life at high altitudes. On the other hand, those whose value Do_2, was 30 or less had marked, often very severe symptoms of the acute type, and the chronic symptoms frequently caused constant, often marked disability. The measurement of the diffusion constant indicates the limit of the rate of diffusion for gases through the lungs. When the factors tending to readjustment have not had adequate time to come into play, the diffusion alone, with the physiologic mechanism still adjusted to high barometric pressures, is of first importance in determining the adequacy of the response at low barometric pressures, that is, the occurrence of the acute symptoms and of their probable severity. On the other hand, a sharp distinction must be made between these acute symptoms, suffered to a varying degree by the majority of persons who climb in a short space of time to an altitude of 12,000 feet or more, and the more chronic indications of the lack of physiologic adjustment manifested by some of those who live there. The question of susceptibility to the more chronic form is complicated by the uncertain efficiency of the physiologic factors tending to readjustment in a given person. Probably of chief importance in this readjustment is the increased tolerance of the central nervous system to lowered oxygen tensions, and the improved oxygen utilization. Of less importance are increased pulmonary ventilation and increased hemoglobin.

The Relationship of the Chlorid Content of Red Corpuscles to Their Percentage Volume

DRS. T. E. BUCKMAN and H. T. EDWARDS, Boston: Our observations are not in accord with those of Norgaard and Gram. In a series of forty cases including normal subjects, cases of anemia of various types and cases of polycythemia, we found a definite increase in the sodium chlorid content of the red corpuscles, proportionate to the increase in the volume percentage of red cells. No depression of the chlorid content of the red corpuscles peculiar to pernicious anemia was observed. We obtained low values, from 150 to 250 mg. of sodium chlorid per hundred cubic centimeters of red corpuscles in all types of anemia, with very low cell volumes, from 6 to 15 per cent. The elevation of the sodium chlorid content was found to be not in any way peculiar to polycythemia vera but was observed also in cases of increased cell volume due to other causes, such as congenital heart disease, chronic carbon monoxid poisoning, and emphysema. With cell volumes as high as 70 per cent. we found the sodium chlorid content to be as high as 440 mg. per hundred cubic centimeters of red corpuscles.

The Electrocardiographic Changes Following the Occlusion of the Left Coronary Artery

DR. F. M. SMITH, Chicago: An electrocardiographic study was made of eleven patients. In one case the descending branch of the left coronary artery was ligated in the repair of a stab wound of the heart. In two cases the clinical diagnosis of coronary thrombosis was verified at necropsy. In the remaining eight cases the character and duration of the cardiac pain and the subsequent clinical course was as characteristic of coronary closure as in those cases in which the diagnosis was checked by necropsy. Changes in the T-deflection and a decrease in the amplitude of the Q-R-S group were the most constant electrocardiographic findings. In six patients there was a decrease in the amplitude of the Q-R-S group. These changes in the T-deflection and the amplitude of the Q-R-S group resemble very closely those of the dog following the ligation of the branch of the left coronary artery. These observations indicate that the electrocardiograph may be employed to advantage in the diagnosis of a thrombosis of the left coronary artery in man.

Electrocardiographic Evidence of Myocardial Involvement in Rheumatic Fever

DRS. H. F. SWIFT and A. E. COHN, New York: Electrocardiograms were taken regularly of all patients with rheumatic fever. In a large number, distinctly abnormal electrocardiograms were obtained. The changes consisted not only of heart block and prolonged auriculoventricular conduction time, but also of other types of altered auriculoventricular mechanism, as well as changes of a transient nature in the form of the ventricular (Q-R-S) complex. Changes such as the last are interpreted as indicating the development or presence of lesions in those structures of the heart on the functioning of which the electrocardiogram depends. At the time of the appearance of these abnormal complexes there are usually clinical signs of cardiac abnormality, such as cardiac pain, precordial hyperesthesia, disturbed rhythms, or alteration in the character of the heart sounds. In certain cases, abnormal electrocardiograms are the only evidences of myocardial derangement.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

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*Technic of Treatment of Carcinoma of Cervix Uteri with Combination of Roentgen Rays and Radium Rays. H. Schmitz, Chicago.—p. 219.
New Radium Chart. L. A. Pomeroy, Cleveland.—p. 229.
Treatment by Radium of Cancer of Rectum. H. H. Bowing and F. W. Anderson, Rochester, Minn.—p. 230.
Possible Dangers in Connection with Use of Roentgen Rays and How to Avoid Them. J. S. Shearer.—p. 240.

Effect of Small Doses of Roentgen Rays in Certain Forms of Impaired Hearing.—Jarvis reports the case of a man, aged 40, who was treated by means of the roentgen rays for an enlarged lingual tonsil. One week later, the patient reported that the right ear, which had been "stuffy" for ten years, was clear, and that hearing was improved. One month later, having a patient who had appeared at varying intervals for inflation of both ears by means of the eustachian catheter, and not succeeding readily in restoring the hearing by means of the usual inflations, a trial of the roentgen rays was suggested, the area exposed for treatment being that recommended by Witherbee in treating tonsils. Two days later, the patient stated that his hearing was restored, the sensation of stuffiness in his ears was relieved, and that he experienced no difficulty in hearing while waiting on customers. As other cases were treated, it became apparent that all patients complaining of impaired hearing were not improved. As observations were continued, it was noticed that the patient whose throat symptoms were usually a prominent part of the clinical picture, responded best to the use of the roentgen rays. A study of these subjects disclosed the fact that the inferior and middle turbinates were often increased in size, that lymphoid nodules were present on the posterior pharyngeal wall, and often a prominent band of lymphoid tissue ran up either side of the pharynx just posterior to the posterior tonsillar pillar. A study of the lymphoid tissue present in the throat following the use of the roentgen rays showed that in forty-eight hours it markedly decreased in size and redness, and with it the catarrhal discharge from the throat. It was concluded that the results obtained were due to the effect of the roentgen rays on lymphoid tissue. There is another effect of the use of small doses of the roentgen rays, and that is its effect on head noises. In the type of patient mentioned the treatments so far have not failed to give relief. When head noises occur in the elderly type of patient, relief does not seem to be so often accomplished.

Treatment of Defective Hearing by Small Doses of Roentgen Rays.—Using Stokes' method of applying the roentgen rays in turn to the regions of the right ear, left ear, the occiput and the open mouth in a direction toward the pituitary gland in forty-five cases of chronic catarrhal, purulent and residual otitis media and otosclerosis, McCoy has achieved satisfactory results. In only nine cases was there no improvement whatever.

Glass Retained in Hand and Foot.—In one of Risser's cases an irregular piece of glass, measuring 1¼ by ⅝ inches, was removed from beneath the deep plantar fascia nineteen years after the patient had stepped into a box of glass. In the second case a large triangular fragment of glass was removed from between the third and fourth metacarpal bones twenty months after its entrance. In neither case had any symptoms been manifested until just before seeking medical advice.

Treatment of Carcinoma of Cervix Uteri with Roentgen Rays and Radium.—Methods for the determination of the intensities of roentgen rays and gamma rays are described by Schmitz and a definition is given of the biologic unit of the radiation dose. It is designated as a 100 per cent. erythema skin dose (E. S. D.). This dose is measured with an iontoquantimeter, that is, it is standardized. The same dose, therefore, may be reproduced for all qualities of rays. The lethal carcinoma dose has been determined. It is, on an average, from 110 to 130 per cent. of an E. S. D. A technic has been developed by Schmitz, based on these investigations, which he says enables any one to solve the problem of the successful treatment of cervical carcinomas with the combined use of roentgen rays and gamma rays of radium.

Journal of Bone and Joint Surgery, Boston

5: 180-396 (April) 1923.

Importance of Correct Furniture to Assist in Best Body Function, as Recognized by Massachusetts Institute of Technology and Smith College. J. E. Goldthwait, Bostor.—p. 180.
Study of Gaits. C. L. Lowman, Los Angeles.—p. 185.
*Clinical Study of Thirty Cases of Muscular Dystrophy. R. V. Funsten, Iowa City, Ia.—p. 190.
Types of Tubercle Bacilli Concerned in Surgical Tuberculosis. G. R. Girdlestone, Oxford, England.—p. 204.
*Abnormalities of Fifth Lumbar Transverse Processes Associated with Sciatic Pain. B. H. Moore, Chicago.—p. 212.
*Operative Treatment of Hallux Valgus. D. Silver, Pittsburgh.—p. 225.
*Operation for Relief of Flexion-Contracture in Forearm. C. M. Page, London.—p. 233.
Concerning Diagnosis of Lesions of Lateral Process of Fifth Lumbar Vertebra and of Its Removal. J. T. Rugh, Philadelphia.—p. 235.
Fracture of Neck of Femur Without Shortening. H. L. Taylor, New York.—p. 237.
Obturator Dislocations. Report of Four Cases. J. T. Watkins, San Francisco.—p. 243.
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Results of Tendon Transplantation for Intrinsic Hand Paralysis. (Ney's Operation.) J. G. Johnstone, London.—p. 278.
*Treatment of Flail Ankle; Panastragaloid Arthrodesis. A. Steindler, Iowa City, Ia.—p. 284.
Electrical Treatment of Infantile Paralysis and Other Lower Neurone Lesions. G. M. Levick, London.—p. 295.
Congenital Radio-Ulnar Synostosis. Treatment. A. Gibson, Winnipeg, Man.—p. 299.
Bone Block at Hip Joint. W. Truslow, Brooklyn.—p. 305.
Pathology and Treatment of Tuberculosis of Hip-Joint. J. K. Young, Philadelphia.—p. 313.
Value of Roentgen Ray in Diagnosis and Prognosis of Sarcoma of Long Bones. H. W. Meyerding, Rochester, Minn.—p. 323.
*Unusual Case of Congenital Asymmetry of Pelvis and Lower Extremities. G. Peremans, Boston.—p. 331.
Physiotherapy in Back Sprains. A. Gottlieb, Los Angeles.—p. 339.
Case of Myositis Ossificans Progressiva, with Bibliography. J. J. Nutt, New York.—p. 344.

Muscular Dystrophy.—Of the thirty cases analyzed by Funsten four were of the juvenile form, coming on at the ages of 12, 15, 18 and 21 years, respectively, and usually starting as the upper girdle type. The other twenty-six were

of the infantile form, and more frequently started as the girdle type, the weakness being noticed in the lower limbs, with difficulty in getting up from the floor and in going upstairs. Stumbling, lordosis, waddling gait, and loss of reflexes were the characteristic symptoms. Twenty-four cases were of the infantile type, either the hypertrophic or atrophic form. There were two cases of the facio-scapulo-humeral type. Seven cases were beyond the walking stage and had various contractures. Twelve cases were treated for from two weeks to three months with various glandular extracts without any appreciable effect. Seven cases were treated with calcium lactate and eleven with massage and exercises (either with or without glandular treatment). It is felt that calcium lactate is of some benefit. Wassermann tests made in fourteen cases were negative. The microscopic blood picture was normal in six cases examined. The reflexes were either absent or greatly diminished in all cases, with the exception of the cremasteric and abdominal reflexes, which, as a rule, were present. Microscopic examination of muscle, made in four cases, showed the fibers to be pale, with diffuse areas of granular degeneration and vacuolization. There were also areas of fat infiltration between the muscle fibers. The striations were present, except in a few places where complete degeneration had taken place. Of the thirty cases, twenty-three patients are known to be living, three are dead from intercurrent diseases, and four have not recently been heard from. In none of the cases was there any tangible connection between the onset of the disease and acute infectious diseases. In no case was the onset acute.

Sciatic Pain Associated with Abnormalities of Lumbar Vertebrae.—The clinical picture in the nine cases cited by Moore was that of irritation of the sciatic nerve, combined usually with some deviation of the spine from the vertical. It does not differ materially from the picture presented by arthritis of the lower lumbar spine associated with sciatic pain, except that there is less general rigidity of the spine and more localized limitation at the lumbosacral junction. The roentgen ray is the determining factor in the diagnosis, but one plate is not a safe guide. Several roentgenograms should be made at varying angles, or stereoscopically, to determine completely the relations of the process to the sacrum and ilium. Furthermore, in cases with a marked list of the spine, the roentgen ray may not show the process in contact with the ilium, yet at operation these structures are found in close contact. The list of the spine is apparently an attempt to draw the process away from the ilium. The mechanism of the production of the pain is an open question. By amputation of the affected processes the pains have been relieved and the motion of the spine improved. None of the patients were put in plaster or braces, and they were gotten out of bed in from ten to fourteen days. Back-bending exercises were begun as soon as they could be done with comfort. In two cases, the process was not completely removed, yet the symptoms were relieved. In these cases the removal of a portion of the ilium was probably the effective part of the operation.

Operative Treatment of Hallux Valgus.—Silver describes a method of operating in these cases which differs from other methods mainly in the manner of treating the internal and the external portion of the capsule and the definite attempt to restore muscle balance.

Muscle Sliding Operation to Relieve Flexion-Contracture.—Rather than to shorten both bones of the forearm, or elongate the individual tendons which have become shortened, Page has carried out in six cases a muscle-sliding operation. The attachments of the whole flexor group of the forearm are systematically detached from their origin, the supracondylar ridge is cleared and the common tendon of origin of the flexors is cut close to the internal condyle and stripped away from the lateral ligament (the elbow joint is usually opened at this stage). The aponeurosis on the ulnar side of the subcutaneous aspect of the ulna is then cut through in its whole length close to the bone. The muscle mass so loosened is raised from the surface of the bone with a raspatory, any definite tendinous origins below the coronoid process of the ulna are divided with the knife, the insertion of the brachialis anticus being fully exposed. If the flexor longus pollicis is contracted the process of muscle-stripping is carried across the interosseous membrane so that the attachment of the thumb flexor to the front of the radius can also be raised. Lastly, the bicipital fascia is cut through if it appears to offer any opposition to the descent of the muscle group. The whole muscle group will be made to descend an inch or more from its origin. This procedure is but the first stage toward the restoration of the use of the hand. Careful splintage and the usual physiotherapeutic measures must be employed in order to complete the cure.

Panastragaloid Arthrodesis for Flail Ankle.—The method used by Steindler is essentially a modification of the technic devised by Goldthwait, but with the extension of the fusion to all joints of the whole ankle excepting the articulation between the cuboid and the calcaneum. The cases which have been largely selected for the use of this method were those of drop and drop dangle foot. Most of the cases of the cavus and calcaneocavus deformity were reserved for Whitman's operation. Clinical experience has convinced Steindler that the resulting arthrodesis is equal in stability to that obtained by other methods, and in addition to this it may be argued that the method described is not mutilating and that it is extremely simple in execution.

Congenital Asymmetry of Pelvis and Leg.—Peremans' patient presented an asymmetrical pelvis, a small, shortened femur with some atrophy of the shaft. The left tibia was narrower than the right, with some atrophy also; the left fibula medially rotated, without narrowing; there was no bone destruction, but a marked decreased density throughout these bones. There was a visible atrophy of all muscles between the anterior superior spine and the ankle, but principally marked in the buttock and the mesial region of the lower third of the thigh. All the motions of the joints were normal in both legs, except that extreme abduction of the right thigh was prevented by some contraction of the adductors, and except, also, total extension of the left knee, which remained flexed to about 25 degrees, because of the contraction of the inner hamstrings, combined with the lessened power of the quadriceps. The back showed a slight total left dorsal curve. The patient walked with the pelvis tilted downward toward the left side, with the left knee slightly flexed. There was a double genu valgum, adduction of both legs and a left equinus.

Journal of Experimental Medicine, Baltimore

37: 431-600 (April) 1923

Distribution of Rickettsia in Tissues of Insects and Arachnids. E. V. Cowdry, New York.—p. 431.
*Determination of Lung Volume Without Forced Breathing. D. D. Van Slyke and C. A. L. Binger, New York.—p. 457.
*Experimental Studies of Nasopharyngeal Secretions from Influenza Patients. XII. Effects of Subcutaneous Injections of Vaccines of Bacterium Pneumosintes in Man. P. K. Olitsky and F. L. Gates, New York.—p. 471.
*Relation of Tetanus Bacilli in Digestive Tract to Tetanus Antitoxin in Blood. C. Tenbroeck and J. H. Bauer, Peking, China.—p. 479.
Relation of Antibody to Rate of Disappearance of Circulating Antigen. G. M. Mackenzie and E. Frühbauer, New York.—p. 491.
*Experimental Studies on Inflammation. II. Experimental Chemical Inflammation in Vivo. E. P. Wolf, Chicago.—p. 511.
*Prophylaxis and Treatment of Syphilis. H. J. Nichols and J. E. Walker, Washington, D. C.—p. 525.
*Mechanism of Bacteriostasis. J. W. Churchman, New York.—p. 543.
*Influence of Sodium Salicylate on Arthritis of Rabbits Inoculated with Nonhemolytic Streptococci. H. F. Swift and R. H. Boots, New York.—p. 553.
*Influence of Calcium Chlorid on Experimental Botulism. I. C. Hall and N. C. Davis, Berkeley, Calif.—p. 585.

Determination of Lung Volume Without Forced Breathing.—The method described by Van Slyke and Binger determines total capacity and its subdivisions coincidently. The maximum error of the method is estimated at ± 3 per cent. of the lung volume determined. Considerably greater variation from the mean may be encountered, however, because of inconstancy in the lung positions assumed by the subject.

Effect of Injection of Bacterium Pneumosintes Vaccines.—Thirteen volunteers were injected subcutaneously with a vaccine prepared from two strains of *Bacterium pneumosintes*. Three doses were given corresponding, by capacity tests, to 1,000, 2,000 and 2,000 million staphylococci. The intervals between the several injections were five and eight days.

Local reactions of mild and transitory character only were noted. Constitutional reactions also mild and transitory, consisting of headache, depression and generalized muscular pains, were infrequently observed. None of the men was prevented by the vaccine from pursuing his ordinary duties. The vaccinations induce a transitory leukocytosis and lead to the appearance of specific agglutinins in the blood serum.

Relation of Tetanus Bacilli in Digestive Tract to Tetanus Antitoxin in Blood.—The serums of twenty-six persons who carried tetanus bacilli in their digestive tracts were examined by Tenbroeck and Bauer and all were found to contain appreciable amounts of antitoxin. The serums of thirty persons in whose stools no tetanus-like organisms were found were, with two exceptions, free from tetanus antitoxin. Although the authors have been unable to measure accurately the antitoxin content of these human carriers of tetanus bacilli, 0.1 c.c. of serum neutralizes ten or more M. L. D. (minimum lethal doses) of toxin and it is evident that they have acquired an active immunity due to the bacilli in the intestinal tract. These results are said definitely to prove that tetanus bacilli grow in the intestinal tract of man. Many of the subjects who have no tetanus bacilli in their intestinal tracts and whose serum is free from antitoxin show agglutinins to tetanus bacilli. It is probable that they have been carriers of the bacilli in the past and that the agglutinins have persisted longer than the antitoxins. It seems likely, therefore, that these persons are potentially immune to tetanus. If tetanus bacilli can be established in the digestive tract of man, there is a means of immunization which might be useful in armies or in regions where tetanus infections are common, though the authors do not recommend this method of immunization at present.

Experimental Chemical Inflammation.—All substances tested by Wolf which produced marked and rapid inflammation on injection were positively chemotactic, but not all strongly positive chemotactic substances produced inflammation; i. e., calcium compounds, sodium phosphate, etc. Only substances which were positively chemotactic and also soluble in oil seem capable of producing inflammation in animals.

Prophylaxis and Treatment of Syphilis.—By inoculating the scarified surface of both sides of the scrotum of rabbits with suspensions of *Spirochaeta pallida*, 100 per cent. infections were obtained by Nichols and Walker on one side or the other. Infection through the unbroken skin could not be produced. By gland transfers from animals with positive local inoculations, 87.5 per cent. of takes were produced. These two methods were used by Nichols and Walker to test the prophylactic value of 30 per cent. calomel ointment. (*a*) Calomel ointment proved efficacious up to eight hours after inoculation with syphilis. (*b*) No marked difference appeared between the action of calomel in a base of lanolin and petroleum and in a base of benzoinated lard and wax. (*c*) Death from mercurial poisoning was produced in rabbits by a single application of a large amount of calomel ointment. The method of gland transfers was used to test the sterilizing effect of arsphenamin and neo-arsphenamin on old infections in the rabbit. The infection was completely abolished in every instance, whether by one, two or four intravenous doses.

Mechanism of Bacteriostasis.—Churchman observed that between gram-positive and gram-negative organisms gentian violet exhibits the same type of selective activity whether the dye be added to the medium on which the bacteria are planted unstained (extrinsic bacteriostasis), or the organisms be stained with it before being planted on plain agar (intrinsic bacteriostasis). In both instances the gram-positives are inhibited and the gram-negatives remain unaffected. Between gram-positive spore bearing aerobes and the commoner gram-negative bacteria, acid fuchsin, related sulphonic substances, and the flavines exhibit one type of selective activity when the dye is added to the medium (extrinsic bacteriostasis) and the opposite type when it is added directly to the bacteria (intrinsic bacteriostasis). In the former case, the gram-positive spore bearers are inhibited and the gram-negatives remain unaffected; in the latter case the gram-negatives are inhibited and the gram-positive spore bearers remain unaffected. Selective bacteriostasis is not necessarily conditioned by selective penetrability. Stained organisms may grow, and dyes which do not stain well may inhibit reproduction. Churchman says there is evidence that the phenomena of bacteriostasis may be due to changes effected by the dye at the surface of the organisms.

Sodium Salicylate in Arthritis.—Rabbits inoculated intravenously by Swift and Boots with nonhemolytic streptococci, while under the influence of full therapeutic doses of sodium salicylate, developed almost as many inflamed joints as the untreated controls similarly inoculated. The salicylated rabbits, on the other hand, had a much higher proportion of mildly inflamed joints than did the controls. This anti-inflammatory action was most evident in the animals inoculated with streptococci of the lowest virulence, and could not be demonstrated in animals inoculated with hemolytic streptococci.

Influence of Calcium Chlorid on Experimental Botulism.—Hall and Davis state that calcium chlorid given subcutaneously, intraperitoneally, or intravenously has been found to have no effecet on the production of botulism following the injection of *Bacillus botulinus* (strain 80B) into the peritoneal cavity of guinea-pigs.

Journal of Infectious Diseases, Chicago

32: 247-314 (April) 1923

*Immunologic Significance of Vitamins. I. Influence of Lack of Vitamins on Production of Specific Agglutinins, Precipitins, Hemolysins and Bacteriolysins in Rat, Rabbit and Pigeon. C. H. Werkman, Ames, Ia.—p. 247.
*II. Influence of Lack of Vitamins on Resistance of Rat, Rabbit and Pigeon to Bacterial Infection. C. H. Werkman, Ames, Ia.—p. 255.
III. Influence of Lack of Vitamins on Leukocytes and Phagocytosis. C. H. Werkman, Ames, Ia.—p. 263.
Gas Production by Bacteria in Symbiosis. H. J. Sears and J. J. Putnam, Portland, Ore.—p. 270.
*Intestinal Flora in Diarrhea. L. E. Hines, Chicago.—p. 280.
*Variations in Streptococcus Hemolyticus on Animal Passage. J. E. Walker, Washington, D. C.—p. 287.
Incidence and Classification of Staphylococci in Throats of Normal Persons and Persons with Common Colds. Influenza Studies. XII. N. P. Hudson, Chicago.—p. 297.
Study of Bacterial Products by Means of Excised Mammalian Heart. I. Endotheliotoxin of S. Cholerae. W. H. Manwaring, W. H. Boyd and S. Okami, San Francisco.—p. 307.
*II. Subhemagglutinin, Endotheliotoxin and Myotoxin of Streptococcus Hemolyticus. W. H. Manwaring, W. H. Boyd and R. C. Chilcote, San Francisco.—p. 309.

Immunologic Significance of Vitamins.—The results of Werkman's experiments lead him to conclude that cataphylaxis in animals suffering from the lack of vitamins is not the result of the destruction or paralysis of the antibody forming mechanism that produces agglutinins, precipitins, hemolysins, or bacteriolysins.

Lack of Vitamins and Bacterial Infection.—In this series of Werkman's experiments, rats, rabbits and pigeons suffering from pronounced vitamin deficiencies suffered a marked break in their resistance to infection. Rats and rabbits lacking vitamin A became less resistant to infection with the anthrax bacillus and the pneumococcus. As rats suffering from the lack of vitamin B likewise developed an increase in susceptibility to the anthrax bacillus and pneumococcus, the cataphylaxis is not peculiar to vitamin A deficiency. The results are similar to starvation susceptibility. Pigeons fed on a diet lacking vitamin B only, and pigeons fed on a diet of polished rice, readily succumbed to infection with the anthrax bacillus and the pneumococcus, while the control pigeons survived.

Intestinal Flora in Diarrhea.—The intestinal flora in eight cases of diarrhea, connected with intestinal lesions, studied by Hines was proteolytic, while in two cases of fermentative diarrhea the flora was aciduric; but in another similar case, the flora was proteolytic. Spores of *B. welchii* were present in great numbers in stools with a proteolytic flora and absent in those with an aciduric flora.

Effect of Animal Passage on Streptococcus Hemolyticus.—Evidence is presented by Walker that tends to show that the "moist" type of colony, characteristic of the so-called *Streptococcus epidemicus*, is but a temporary character, and may be acquired by an ordinary *Streptococcus hemolyticus*. The

virulence of a strain having acquired this "moist" type of growth is greatly increased, and the virulence decreases with the loss of these special characteristics. The confirmation of the fact that an ordinary strain of *S. hemolyticus* may acquire the properties of *S. epidemicus* is believed to have an important bearing on the epidemiology of "septic sore throat." It is suggested that, analogous to observations on other bacteria, the antigenic properties of hemolytic streptococci may possibly also vary along with these variations in the character of the colony.

Toxic Products Produced by Streptococcus Hemolyticus.—*Streptococcus hemolyticus* grown in 10 per cent. defibrinated rabbit blood in Locke's solution gave products producing the following toxic reactions on the excised rabbit heart: (*a*) intravascular hemagglutination; (*b*) marked capillary vasoconstriction; (*c*) slightly increased capillary permeability; (*d*) auriculoventricular dissociation (heart block); (*e*) marked loss of ventricular tone, and (*f*) reduction in the strength of the ventricular contractions, leading to cessation of recordable movements in from twenty-five to thirty minutes. These reactions are in line with clinical observations and necropsy findings.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

21: 161-224 (April) 1923

Detection of Benzene in Cadavers. A. O. Gettler, New York.—p. 161.
Rate of Deposition and Paths of Absorption of Strontium in Rat. E. M. Kinney and E. V. McCollum, Baltimore.—p. 165.
*Action of Camphor, Menthol and Thymol on Circulation. R. St. A. Heathcote, Oxford, England.—p. 177.

Action of Camphor, Menthol and Thymol on Circulation.—Heathcote found that camphor, thymol and menthol depress the isolated heart of both the frog and the rabbit directly, acting on the cardiac muscle. All three agents dilate the coronary vessels. In anesthetized animals, camphor, however given, does not cause a rise of blood pressure, if the dose is not sufficient to cause convulsions. Similarly, after the cerebral hemispheres are removed, no rise of blood pressure occurs even with doses up to 1 gm. per kilogram. There is no convincing pharmacologic evidence that camphor possesses any value whatever as a cardiac or circulatory stimulant. Its value, if any, for this purpose in man should be established or disproved by more exact clinical observations. The unpleasant results which sometimes follow the administration of thymol can readily be explained.

Journal of Radiology, Omaha

4: 105-146 (April) 1923

New Technic for Positive Identification of Sphenoid Sinus and Ethmoid Cells. A. Granger, New Orleans.—p. 105.
Roentgen Rays and Roentgen Ray Apparatus; An Elementary Course. J. K. Robertson, Kingston, Canada.—p. 112.
Bone Tumors Sarcoma. Periosteal Group. Ossifying Type Benign Ossifying Periostitis and Myositis. J. C. Bloodgood, Baltimore.—p. 119.
Relative Value of Roentgen Ray Evidence in Diagnosis of Duodenal Ulcer. C. D. Enfield, Louisville.—p. 127.

Laryngoscope, St. Louis

33: 161-234 (March) 1923

Transatlantic Development of Rhinolaryngology. H. S. Birkett, Montreal, Canada.—p. 161.
Deaf-Mutism. J. S. Fraser, Edinburgh.—p. 177.
Aerocele of Brain; Report of Cases. A. D. McCannel, Minot, N. D.—p. 189.
Value and Ultimate Fate of Bone and Cartilage Transplants in Correction of Nasal Deformities. W. W. Carter, New York.—p. 196.
Diagnosis of Subacute and Chronic Inflammatory Lesions of Mucosa Lining Antrum of Highmore. W. Spielberg, New York.—p. 203.
Conclusions Concerning So-Called Connellan-King Diplococcus. J. J. King, New York.—p. 207.
Safety-Pin in Trachea. R. S. Moore, Syracuse, N. Y.—p. 212.
Removal of Wire Ring in Esophagus. E. G. Gill, Roanoke, Va.—p. 213.
Cresatin. M. D. Lederman, New York.—p. 214.

Michigan State Medical Society Journal, Grand Rapids

21: 177-218 (April) 1923

Visual Changes Due to Sinusitis. Report of Two Cases. W. R. Parker, Detroit.—p. 177.
Civilian Gunshot Wounds of Abdomen. C. F. Vale, Detroit.—p. 183.
Nontuberculous Bronchial Gland Infections in Children. T. B. Cooley, Detroit.—p. 186.
Difficulty of Early Diagnosis of Tuberculosis in Infancy and Childhood. G. L. Bliss, Kalamazoo.—p. 188.
Diagnostic Value of Artificial Pneumoperitoneum in Sterility in Women. B. Friedländer, Detroit.—p. 195.
Paralysis Agitans. F. R. Starkey, Detroit.—p. 199.

Military Surgeon, Washington, D. C.

52: 343-454 (April) 1923

Management of Common Complaints of Ear, Nose and Throat in Troops on Active Service; Relationship Which Should Exist Between Specialist and Medical Officer. P. G. Goldsmith, Washington, D. C.—p. 343.
Functional and Nervous Heart Disorders. A. Hoffmann, Düsseldorf, Germany.—p. 361.
Acute Catarrhal Jaundice. H. C. Michie.—p. 390.
Parliamentary Procedure. A. N. Tasker, Washington, D. C.—p. 422.
Hydrochloric X of Bovine Parathyroid. A. M. Hanson, Faribault, Minn.—p. 434.

Minnesota Medicine, St. Paul

6: 211-278 (April) 1923

Practical Application of Local Anesthesia to Major Surgery. R. E. Farr, Minneapolis.—p. 211.
*Use of Delayed Flap in Secondary Operations on Palate and Antrum. G. B. New, Rochester, Minn.—p. 214.
Heart in Certain of Severe Exhausting Infections. C. L. Greene, St. Paul.—p. 220.
Diagnosis and Treatment of Ureteral Calculi. G. J. Thomas, Minneapolis.—p. 226.
*Training of Laboratory Technician. W. E. King, St. Paul.—p. 233.
Value and Importance of Blood Chemistry in Clinical Medicine. M. Barron, Minneapolis.—p. 238.
Painful Shoulder. A. E. Wilcox, Minneapolis.—p. 245.
Present Status of Medical Opinion Concerning Nature, Diagnosis and Prognosis of Epidemic Encephalitis. C. R. Ball, St. Paul.—p. 248.
*Uterine Fibromyomas Complicating Pregnancy. R. D. Mussey, Rochester, Minn.—p. 256.
Foreign Bodies (Dental Crown, Dental Plate, Granuloma) Removed from Air Passages. P. P. Vinson, Rochester, Minn.—p. 260.
Heliotherapy in Infectious Diseases of Bones and Joints. E. S. Geist, Minneapolis.—p. 263.

Use of Delayed Flap in Secondary Operations for Cleft Palate.—The method which New has found most successful in the closure of both the large and the small openings is the application to cleft palate surgery of the principles employed in using the delayed flap in plastic surgery of the face and neck. The flap is outlined on one side of the opening with the pedicle posterior, and then elevated and placed back in its original bed. At the same time, the opposite side of the opening is elevated from its mesial margin and allowed to fall back. In a week's time the flap is again elevated, the mesial margin trimmed and sutured across the opening to the freshened and elevated margin of the opposite side. During the week of the delay, the blood supply to the flap is improved a great deal and the flap becomes thicker. In the second stage, minute areas of slough, if present, are trimmed off as the margins are freshened. In case the original opening is very large, or the postoperative complete cleft palate is very wide, with marked scarring, the closure may have to be accomplished in two stages. That is, the anterior part of the palate may be closed by delayed flaps from each side in the first stage. The aponeurosis of the palate is not freed at this time. Three months later the closure is completed by the two-stage Langenbeck operation.

Training of Laboratory Technician.—King feels that under present conditions rigid insistence on the maintenance of definite prerequisites for those desiring to become laboratory technicians, would be ill advised. Student technicians should receive a defined, carefully planned course in theory. A certain portion of time should be devoted to textbook assignments, quizzes, lectures and demonstrations. The course should include proper allowance of time for the interpretation of laboratory findings, the elements of medical ethics and the suggestions of specialists who place dependence on different phases of clinical laboratory work. The minimum period for such a course, including theory and didactic teaching is six months. A definite course of studies for such a six months' course is submitted by King.

Uterine Fibromyomas Complicating Pregnancy.—Sixty-six of the 101 patients reported on by Mussey were treated expectantly. Ten had cesarean sections at or near term. Twenty-four patients, on three of whom an abdominal-pelvic

exploration was made, had operations prior to the period of viability. One of these patients, on whom a myomectomy was performed, had a vaginal cesarean section done elsewhere at term. Of the group of sixty-nine patients, including those treated expectantly and those having explorations, seventeen had miscarriages, ten had premature labor, and forty-two had labor at term with thirty-six living children. This shows a slight increase above the normal incidence of miscarriages and a decrease in the number of living children. Following delivery, seventeen of these patients had operations for the removal of the tumor. Twenty-five of the remaining fifty-two reported that they were well; but some had symptoms attributed to the tumors, and twelve among those reexamined were advised that removal of the tumor was not necessary. Four have died, one following hysterectomy for the tumor and three from other conditions. One patient returned five years after confinement with an inoperable carcinoma of the cervix. There were fifteen myomectomies, seven hysterectomies, and eleven cesarean operations in this group.

Nebraska State Medical Journal, Norfolk

8: 117-152 (April) 1923

*Transposition of Viscera (Situs Viscerum Transversus). Report of Case without Transposition of Usual Abdominal Reflex. J. E. Summers, Omaha.—p. 117.
Vitamins. H. M. McClanahan, Omaha.—p. 120.
Surgical Study in Vienna Today. J. W. Duncan, Omaha.—p. 122.
Lumbar Spinal Puncture and Cisternal Puncture. J. J. Keegan, Omaha.—p. 129.
Chronic Endocervicitis. M. W. Flothow, Omaha.—p. 132.
Factors Influencing Safety of Ether Anesthesia. R. M. Waters, Sioux City, Ia.—p. 136.
Syphilis of Upper Air Passages. B. M. Kully, Omaha.—p. 138.
Intussusception. Points in Diagnosis and Plea for Earlier Recognition. F. Clarke, Omaha.—p. 142.
Importance of Pathologic Laboratory in a Hospital. M. G. Wohl, Omaha.—p. 143.

Dextrocardia and Normal Abdominal Reflex.—Summers' case of dextrocardia came to his attention because of pain over the right lower quadrant of the abdomen. Finger pressure over McBurney's point not only produced a characteristic right rectus reflex but also a drawing-up of the right thigh. A diagnosis of subacute recurrent appendicitis was made and operation advised. A right rectus incision disclosed the sigmoid flexure transposed to the right side of the abdomen, the cecum, with its attached appendix, freely movable, transposed to the left side of the abdomen. The pelvic organs were normal. There was also in this case transposition of the spleen, the liver and the heart. The direction of the stomach was from right to left.

New Jersey Medical Society Journal, Orange

20: 109-144 (April) 1923

Asthma. A. Vander Veer, Jr., New York.—p. 109.
Correction of Nasal Deformities Associated with Harelip and Cleft Palate. W. B. Davis, Philadelphia.—p. 113.
Observations in Treatment of Pulmonary Hemorrhages by Artificial Pneumothorax. M. J. Fine, Newark.—p. 119.
Some Newer Methods of Infant Feeding. H. R. Mixsell, New York.—p. 122.
Importance of Sleep in Infancy and Early Childhood. J. H. Marcus, Boston.—p. 127.
Diagnosis and Treatment of Cardiac Irregularities. M. J. Raisbeck, New York.—p. 128.
Elimination of Arsphenamin in Urine. L. Koppel and A. V. St. George, Jersey City.—p. 129.

New York Medical Journal and Medical Record

117: 385-446 (April 4) 1923

Pathogenesis and Treatment of Exophthalmic Goiter in Light of Our Present Knowledge. A. Gordon, Philadelphia.—p. 385.
Physiologic and Pathologic Importance of Thyroid Secretion. H. Stanley-Jones, Southampton, England.—p. 389.
Probable Normal and Pathologic Physiology of Thyroid. J. Rogers, New York.—p. 393.
Results of Treatment in One Hundred Consecutive Cases of Hyperthyroidism. H. A. Freund, Detroit.—p. 395.
Comparison of Basal Metabolic Rate with Histopathology in Thyroid Dysfunction. J. B. Rucker, Toledo, Ohio.—p. 398.
Goiter of Adolescence. J. Selinger, New York.—p. 399.
Endocrines in Gynecology. J. T. Schell, Philadelphia.—p. 401.
Present Day Considerations of Thyroid. J. B. Haeberlin, Chicago.—p. 403.
Relation of Spleen to Metabolism. Review of Literature. J. Rosenbloom, Pittsburgh.—p. 406.
Enlarged Thymus Gland from Viewpoint of Laryngologist. L. Hubert, New York.—p. 410.
Recent Developments in Parathyroid Therapy. H. W. C. Vinew, Cambridge, England.—p. 412.
Some Neurologic and Therapeutic Aspects of Hypophyseal Tumors. I. H. Pardee, New York.—p. 415.
Pituitary Tumors. F. C. Grant, Philadelphia.—p. 419.
Endocrines in Uterine Hemorrhage. W. Lintz, Brooklyn.—p. 422.
Endocrines in Otolaryngology. S. M. Wilson, Philadelphia.—p. 425.
Relation of Endocrines to Internal Medicine. A. H. Hopkins, Philadelphia.—p. 426.

Rhode Island Medical Journal, Providence

6: 51-66 (April) 1923

Atrophic Arthritis. L. T. Swaim, Boston.—p. 51.
Schick Test and Toxin Antitoxin Immunization. H. J. Connor, Providence.—p. 55.

South Carolina Medical Association Journal, Greenville

19: 451-482 (April) 1923

Value of Hospital Standardization to Medical Profession. F. M. Routh, Columbia.—p. 460.
Clinical Results Following One Thousand Nonsurgical Drainages of Pathologic Gallbladders. G. M. Niles, Atlanta, Ga.—p. 463.
Leukocyte Count in Diagnosis and Prognosis of Appendicitis. H. W. Rice, Columbia.—p. 467.

Southern Medical Journal, Birmingham, Ala.

16: 237-326 (April) 1923

*Diagnosis of Abdominal Adhesions. C. W. Strickler, Atlanta, Ga.—p. 237.
*Ileocecal Delay and Vagus Reflex as Etiologic Factors in Bronchial Asthma. J. T. Wolfe, Washington, D. C.—p. 244.
*Malaria in Children and Abuse of Quinin. E. Rosamond, Memphis, Tenn.—p. 252.
Family Group of Typhoid Simulating Meningitis. H. G. Beck and F. A. Ries, Baltimore.—p. 257.
Development of Malaria Control Work in Alabama on County-Wide Basis. S. W. Welch, Montgomery, Ala.—p. 260.
*Methods for Determining Malaria Prevalence. Spleen Rate of School Boys. K. F. Maxcy and C. P. Coogle, U. S. P. H. S.—p. 269.
"Man Made" Malaria. H. R. Carter, Washington, D. C.—p. 279.
Acute Gangrenous or Perforative and Suppurative Retrocecal Appendicitis. J. N. Jackson, Kansas City, Mo.—p. 282.
Transference of Crest of Ilium for Flexion Contracture of Hip. W. C. Campbell, Memphis.—p. 289.
Treatment of Carcinoma of Bladder. W. Neill, Jr., Baltimore.—p. 292.
Problem of Obscure Nose and Throat Affections. E. A. Looper, Baltimore.—p. 298.
Direct Intubation in Neglected and Desperate Cases of Tracheal and Bronchial Diphtheria. C. E. Purcell, Paducah, Ky.—p. 301.
Teaching of Physical Diagnosis and Its Position in Curriculum. I. I. Lemann, New Orleans.—p. 305.
Use of Dispensary in Teaching of Clinical Medicine. L. Hamman, Baltimore.—p. 309.
Use of Dispensary in Teaching of Clinical Surgery. I. Cohn, New Orleans.—p. 312.
Teaching of Surgical Specialty. M. F. Arbuckle, St. Louis.—p. 317.

Diagnosis of Abdominal Adhesions.—Strickler is satisfied that many of the bad results following abdominal operations have been due to the fact that the patients were dismissed too early and did not receive the after-care they should receive. The operation is only the first step toward the cure. All these patients should, following the operation, be placed under the care of a competent internist until they are fully restored to health. In certain instances a rest cure is indicated, followed by a change of scene and environment and an abundance of outdoor exercise. In addition, these patients must be taught the right attitude toward life, its duties and responsibilities.

Ileocecal Delay and Vagus Reflex as Causes of Bronchial Asthma.—Wolfe contends that asthma can be relieved by locating and removing the cause of the hypertonic state of the vagus nerve, and that a majority of the causative pathologic factors will be found within the peritoneal cavity, and that adhesions will constitute a large majority of these intraperitoneal conditions. The production of intestinal toxemia must always be considered as a factor in keeping the patient's health below par. For two years Wolfe has been employing slowly distending enemas daily to distend the colon, following abdominal operations, to prevent the colon from being bound again by adhesions. Under this method no case has given trouble with adhesions following operation. Also he refrains from feeding the patient till the third or fourth day.

Abuse of Quinin in Malaria in Children.—The abuse of quinin in its overdosage to children according to Rosamond,

is almost universal throughout the South. The giving of quinin in surgary syrups to infants and children with gastro-intestinal diseases is deprecated as it may aggravate the existing condition. The giving of overdoses of quinin may account for many nervous phenomena not otherwise explicable.

Spleen Rate for Determining Malaria Prevalence.—In certain areas of high malaria prevalence in the United States, Maxcy and Coogle have found the spleen rate of school boys to be a satisfactory index of this disease. One half of the boys in whose peripheral blood parasites were demonstrated, had enlarged spleens. Of the boys with palpable spleens only 20 per cent. were shown to be positive by a single blood smear. If every boy, or even most of these boys, were potential carriers of malaria infection, the examination of blood smears revealed only about one fifth of the actual chronic malaria.

Tennessee State Medical Association Journal, Nashville

15: 513-552 (April) 1923

Hydrocephalus. T. D. McKinney, Nashville.—p. 513.
Diagnosis and Treatment of Renal Tuberculosis. O. S. McCown, Memphis.—p. 521.
Splinting. Its Principles and Relation to Function. R. W. Billington, Nashville.—p. 524.
Pellagra. M. B. McCrary, Woodbury.—p. 529.
Kidney Surgery. G. R. Livermore, Memphis.—p. 534.
Cesarean Section. J. L. Crook, Jackson.—p. 539.

U. S. Naval Medical Bulletin, Washington, D. C.

18: 291-390 (March) 1923

Mosquito Control in St. Thomas. E. Peterson and F. D. Walker.—p. 291.
Diagnosis and Treatment of Gastric Syphilis. W. A. Brams, Washington, D. C., and E. Antoine, Paris, France.—p. 303.
Scope of Roentgen-Ray Therapy in Naval Practice. E. L. Whitehead, Washington, D. C.—p. 309.
Composition, Equipment, Organization and Operation of Medical Department for Spring Exercises of Marine Corps Expeditionary Force, 1922. C. A. Costello, Washington, D. C.—p. 330.
Samoan Tattooing. D. Hunt and L. Humphreys, Washington, D. C.—p. 346.
Manipulation of Wax for Inlay Patterns. H. E. Harvey, Washington, D. C.—p. 348.
Postoperative Treatment. L. Martin, Washington, D. C.—p. 351.
Fatal Case of Nephritis with Special Reference to Nitrogen Retention. G. A. Alden and C. F. Behrens, Washington, D. C.—p. 365.
Pappatacilike Fever Occurring in Cuba. E. A. Stephens, Washington, D. C.—p. 368.
Case with Symptoms of Motor Aphasia Following Neo-Arsphenamin Injection. A. J. Desautels, Washington, D. C.—p. 370.

West Virginia Medical Journal, Huntington

17: 409-450 (April) 1923

Acute Intestinal Obstruction. C. S. Hoffman, Keyser.—p. 409.
West Virginia's Progress with Model Vital Statistic Law. C. F. Raver, Charleston.—p. 419.
Potter Method of Version. D. A. MacGregor, Wheeling.—p. 422.
Focal Infection in Relation to Diseases of Eye. W. F. Beckner, Huntington.—p. 429.
Modern Treatment of Bronchial Asthma and Hay-Fever. O. Biern, Huntington.—p. 433.
Growth within Spinal Canal Comprising Cord and Roots Localized: Operation: Recovery. T. A. Williams, Washington, D. C.—p. 437.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

20: 1-64 (Jan.-March) 1923

*Treatment of Congenital Hypertrophic Pyloric Stenosis. Medicine Versus Surgery. L. Findlay.—p. 1.
Hereditary Tylosis. J. D. Rolleston.—p. 16.
*Rubella without Rash (Rubella Sine Exanthemate). G. Flöystrup.—p. 20.
*Case of Extreme Recurrent Drowsiness in Child, Apparently Due to Hepatic Disturbance. J. Thomson.—p. 23.
Raynaud's Syndrome in Nonsyphilitic Infant, with Remarkable Family History. F. P. Weber.—p. 25.
Case of Congenital Aneurysm of Pulmonary Artery. G. A. Sutherland. —p. 27.
Sudden Death from Blocking of Air Passages by Caseous Gland in Boy Aged Nine Years. F. J. Poynton and W. Williams.—p. 28.
Albuminuria in Family of Children. H. H. C. Gregory.—p. 29.

Treatment of Congenital Hypertrophic Pyloric Stenosis.—Spasm of the hypertrophied pylorus is regarded by Findlay as the most important factor in causing the symptoms in congenital pyloric stenosis. In his experience results of treatment are invariably better in private than in hospital practice. He is convinced that medical measures give as good, if not better, results than operation. Many figures are cited to uphold this assertion. Operation should, he says, probably be reserved for the youngest patients and for those seen soon after the onset of the symptoms. The great danger to be avoided in any form of treatment is underfeeding. The infant with congenital hypertrophic pyloric stenosis requires constant and individual care. In Findlay's opinion it is the absence of this individual care which is such a serious drawback to hospital treatment of disease in infancy.

Rubella Without Rash.—Flöystrup reports what he believes to be a unique case, the first on record, of rubella without a rash. The adenitis and the transient catarrh are pathognomonic symptoms. Flöystrup suggests that such cases may explain an apparent immunity to rubella.

Extreme Recurrent Drowsiness in Child.—Shortly after being weaned, Thomson's patient, aged 5 years, had his first attack of drowsiness. He was apparently in good health at the time. The drowsiness set in suddenly, without any warning. At the onset, the child's hands were noticed to be hot and his face cold and clammy, but there was no rise of temperature, no quickening of the pulse, and no sweating. On a few occasions vomiting occurred, but usually there was none. Wherever he was, he would suddenly say "I am tired," lie down on the floor or on the road, and fall sound asleep. He was put to bed, and generally slept for three days on end, waking once, or sometimes twice, in twenty-four hours to ask for a drink of water and to empty his bladder. He would then fall sound asleep again within a minute or so. His sleep seemed to be of an ordinary healthy character. The second attack occurred three months after the first. Later the intervals became gradually shorter, till when the boy was 3 years old he was having one about every three weeks. Thereafter the attacks decreased in frequency. The only abnormal points found on examination were a thick brown fur on the tongue, a definite increase of the cardiac dulness to the right, with visible epigastric pulsation, and an enlargement of the liver (3 fingers' breadths), which was quite soft. A mixture of sodium bicarbonate, nux vomica, infusion of gentian, and calomel, was given for six months. In the following year the boy had two or three attacks, and then they ceased altogether. He is now aged 21.

Calcutta Medical Journal

27: 49-96 (Feb.) 1923

Coliform Organisms Found in Carbuncles and Open Ulcers. C. C. Basu.—p. 49.
Main Principles of Cardiologic Practice. S. C. Bose.—p. 56.
Case of Anthrax. S. N. Ghosh.—p. 69.
Eye Cases. S. K. Ganguly.—p. 74.
"Anaerobe Edematogene" in Ulcerated Appendix. A. C. Ukil.—p. 76.

Edinburgh Medical Journal

30: 133-188 (April) 1923

Edinburgh Medical School and Its Professors in My Student Days. B. Bramwell.—p. 133.
True Congenital Dislocation of Shoulder. D. M. Greig, Edinburgh.—p. 157.
*Intestinal Obstruction by Unusual Form of Enterolith. B. S. Simpson, Edinburgh.—p. 176.

Intestinal Obstruction by Mass of Twigs.—The obstructing mass in Simpson's case, which measured 4½ inches long by 2¾ inches at its broadest part, was composed of heather roots and twigs wound tightly together till the whole was of almost stony hardness. The patient, aged 16, had for a long time been in the habit of chewing heather while herding cattle. The mass had lodged in the ileum, 16 inches from the ileocecal valve.

Irish Journal Medical Science

5: 1-48 (March) 1923

*Types of Pneumococci Causing Acute Lobar Pneumonia in Dublin. H. F. Moore.—p. 1.

Diagnosis and Treatment of Gastric and Duodenal Ulcers. W. I. De C. Wheeler.—p. 12.
Thrombus of Aortic Valve Infected with Pneumococci. J. H. Pollock. —p. 18.
Application of Radium to Gynecology as Practiced by Vienna School. D. Cannon.—p. 20.

Pneumococcus Types in Dublin.—An analysis made by Moore of the types of pneumococci in 110 cases of pneumonia showed that the incidence of the four types of pneumococci causing acute lobar pneumonia is not very different in Dublin, the London area, or in America. As regards mortality, however, the case is somewhat different: in Type 1 cases, 16.66 per cent. mortality in Dublin as against 25.2 per cent. in America, and no mortality in Type 3 cases as against 56 per cent. in America. The total Dublin mortality was 18.18 per cent. as against 26 per cent. in America.

Journal of Laryngology and Otology, Edinburgh

38: 173-228 (April) 1923

Aim and Use of Special Hospitals. S. Russell-Wells.—p. 173.
*Uncommon Tonsillar Appendage. Its Relationship to Cartilage Formation in Tonsil. A. L. Turner and T. Sprunt.—p. 179.
Oculovestibular Coordination as a Biologic Survival Factor. J. D. Lithgow.—p 187.
Mesothelial Growth of Left Vocal Cord. B. S. Jones.—p. 191.
Three Cases of Zygomatic Mastoiditis. N. Rankin.—p. 192.

Tonsillar Appendage Containing Cartilage.—Turner records a case in which a fingerlike process, attached apparently near the lower pole of the left tonsil posteriorly and hanging free, passed downward into the pharynx. The appendage was removed. Under the low power, the specimen was seen to consist of a central core of loose connective tissue of a vascular adipose type. At the attached end of the appendage the core passed into the tonsil to unite with the connective tissue at its base. Many blood vessels were distributed in the fibro-adipose core, and several irregular islets of cartilage lay in a broken chain extending from the upper to the lower pole of the appendage. Turner inclined to the view that, in this case, either cartilage cells from the second branchial arch or primitive chondrogenetic mesenchyme cells have become included during fetal life in the fibro-adipose tissue situated toward the lower part of the base of the tonsil. The growth of the cartilage cells or the development of the primitive chondrogenetic cells produced a prominence toward the lower tonsillar pole. This became elongated by the act of swallowing and the passage of food aided by the action of the pharyngeal constrictors. The process would be analogous to the formation of polypoid adenoma of the bowel or uterine polypi. The case, apart from the peculiar character of the appendage, seems to correspond in every way with the cases which have been recorded by Mantchik, Ruckert and others, who support the embryonic inclusion theory of origin of the cartilage areas.

Journal of State Medicine, London

31: 151-200 (April) 1923

Influence of Temperature on Antigens and Antibodies. T. Madsen.—p. 151.
Arsenobenzol Treatment of Syphilis. L. W. Harrison.—p. 177.
"Dyscratic Index"; Suggestion for New Method of Feeling Public Health Pulse of Towns or Nations. G. E. Brooke.—p. 183.
Ambulance Department of Order of St. John of Jerusalem as Civic Welfare Auxiliary. H. V. Miller.—p. 187.

Lancet, London

1: 779-832 (April 21) 1923

Psychology of Courage. J. L. Birley.—p. 779.
Cultivation of Tissues and Tumors in Vitro. A. H. Drew.—p. 785.
*Considerations of Sacro-Iliac Joint. C. S. L. Roberts.—p. 787.
Peptone Immunization in Asthma and Other Allergies. A. G. Auld.—p. 790.
*Case of Erosion of Rectum by an Ectopic Placenta. J. A. C. Forsyth. —p. 795.
Treatment of Flail Elbow Joint with a New Operation of Arthrodesis. W. Mercer.—p. 796.
Case of Hypertrophic Peripheral Neuritis. F. G. Hobson.—p. 798.

Mechanics of Sacro-Iliac Joint.—The sacro-iliac joint is considered by Roberts under the following headings: (1) Morphology, (2) gross anatomy, (3) movements, (4) the commoner pathologic conditions of relaxation and strain. In order to understand the mechanics of the sacro-iliac joint, it is necessary to make a brief comparison between the conditions obtaining in pelves of pronograde and orthograde animals. Of the last named he says: Relaxation arranges itself under three headings: (1) The physiologic relaxation associated with menstruation; (2) that associated with pregnancy, being an exaggeration of the normal physiologic condition; (3) that due to trauma, general weakness, or some known pathologic process in which various conditions predispose to joint trouble. Sacro-iliac strain may be of the following types: (*a*) Subacute; (*b*) acute; (*c*) chronic. The symptomatology of sacro-iliac strain and relaxation may be: (1) subjective, as pain; (2) objective, such as abnormal mobility, abnormal attitudes and postures, and abnormal limitation of movements. The danger of diagnosing sacro-iliac disturbance too often is emphasized.

Erosion of Rectum by Ectopic Placenta.—Severe hemorrhage from the rectum was one of the initial symptoms of ectopic pregnancy in Forsyth's case. The illness commenced with a sudden attack of colicky pain in the hypogastrium. The pain was so acute that the patient had to rest in bed for a few days and, on getting up, it returned with increasing severity. Obstinate constipation supervened, and with it intense pain in the rectum, causing a false desire to go to stool. Without the help of enemata the bowels refused to act, and when they did the agony was excruciating. At no time during the illness had any blood or pus been passed per rectum. On examination, a hard swelling about the size of an orange could be felt projecting above the pubes. It was slightly mobile and not tender. Per vaginam, the cervix was found to be high and tightly pressed against the symphysis. The posterior fornix was bulging from the presence of a hard rounded swelling which, per rectum, appeared to be about the size of an egg. No fluctuating point could be detected. Three days after admission the patient had a severe hemorrhage from the bowel and became very pale and collapsed. In the bulging wall of the rectum, just within reach of the finger, was an umbilicated depression. It was decided that most probably the case was one of ruptured tubal gestation with erosion of the rectum by the placental trophoblast. When the abdomen was opened no free blood was found. The suprapubic swelling proved to be the fundus uteri, occupied by a fibroid the size of the closed fist. Signs of old inflammatory trouble were evident in the left tube, which was converted into a small retort-shaped hydrosalpinx, and in the left ovary, which was firmly embedded in the mesosigmoid. The right tube turned sharply down behind the uterus and entered Douglas' pouch, the mouth of which was closed by adhesions. These were separated and the tube traced downward; it was found to terminate in a ruptured tubal gestation. The ectopic gestation had evidently occurred in the ampullary end of the tube, and the gestation sac had been extruded by tubal abortion rather than by tubal rupture, for the ostium, although expanded, was intact, except for a small tear in its upper edge. Part of the mole remained within the cornucopia-like end of the tube. Dissection of the mole revealed a small amniotic cavity containing the crushed remains of a tiny fetus a few millimeters long.

Tubercle, London

4: 289-336 (April) 1923

Advantages and Disadvantages of Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. L. S. T. Burrel.—p. 289.
*Association of Bronchitis with Pulmonary Tuberculosis. J. C. McClure. —p. 293.
Advantages and Disadvantages of Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. G. E. Soltau.—p. 297.

Better Treatment for Tuberculosis Patients with Bronchitis.—McClure stresses the point that the consumptive who is prone to bronchial catarrh requires much more careful climatic treatment than the one who does not exhibit this tendency, and that a serious attempt to cure recurrent catarrh, even of the nasopharynx, is advisable in all cases of pulmonary tuberculosis. This is important not only in view of the possibility of immediate complications, but in view also of the establishment of a chronic condition which may invalid a patient whose pulmonary tuberculosis has reached the stage of complete arrest, and who might have looked forward otherwise to years of usefulness and comfort.

Archives des Maladies du Cœur, Paris

16: 97-160 (Feb.) 1923

Complete Heart Block from Disturbance of Excitability. Laubry and Doumer.—p. 97.
*Physiologic Dilatation of Heart. E. Bordet.—p. 108.
Arrhythmic Paroxysmal Tachycardia. Gallavardin.—p. 117.
Partial Branch Block. Lutembacher.—p. 120.

Physiologic Dilatation of Heart.—Bordet studied roentgenologic changes of the heart. The supposed diminution of the heart volume after moderate exercise is probably due to the fact that a person asked to hold his breath does it in maximal inspiratory position if he is out of breath after exercise. It is always necessary to compare the height of the diaphragm and not merely measure the heart. Another point which should not be forgotten, is the amplitude of the pulsations of the heart. Exertion easily doubles the amplitude.

Bulletin de l'Académie de Médecine, Paris

89: 331-356 (March 13) 1923

Osteoperiostosis of Bones in Lepra. Delamare and Said Djémil.—p. 345.
Artificial Pneumothorax in Children. F. Armand-Delille.—p. 347.
*Preventive Serotherapy in Whooping Cough. R. Debré.—p. 348.
*Treatment of Wounds. S. Mercadé.—p. 352.

Preventive Serotherapy.—Debré has been applying to scarlet fever, mumps and whooping cough Nicolle's method of prophylaxis with convalescents' serum. He decided by the complement fixation test that the fourth week of whooping cough is the best time for obtaining the serum. Injected after the disease was under way, no effect was apparent, but it prevented the development of the disease when injected during the incubation, except at the very last; even then it materially attenuated the disease. These results were constant in the forty infants and other children thus immunized after prolonged exposure in three separate epidemic foci. The immunization—like that with measles—is probably only transient, but it answers the purpose. The incubation period of whooping cough is so long that ample time is available. He used a mixture of from four to eight serums, kept on ice for several days, injecting 2 or 3 c.c. in children under 3.

Treatment of Wounds.—Mercadé says that asepsis is not enough; material should be supplied the tissues for their regeneration, as the normal supply from within is shut off. Normal tissues do not take up substances supplied from without, but an inflammatory focus seems to absorb them with avidity. He has thus been treating all wounds since 1917, war and peace wounds, burns, chronic ulcers, etc., first gently rinsing the surface. The substance found most effectual is peptone mixed with manganese. Whether it acts by supplying elements from without or by attracting them from within, or both, healing proceeds exceptionally rapidly. Young cells develop by the second day, and the dressings over this powder do not stick to the surface.

Bulletin Médical, Paris

37: 327-414 (March 24-April 7) 1923

*A World-Wide War Against the Venereal Peril. Bayet.—p. 333.
*Hysteria. P. Kahn.—p. 363.
Pithiatism. J. Jumentié.—p. 366.
Hysteria and Mythomania. B. J. Logre.—p. 369.
Hysteria and Psychanalysis. R. Laforgue.—p. 372.
*Syphilis and Tuberculosis in Children. J. Génévrier.—p. 393.
Cancer of the Larynx. F. Bonnet-Roy.—p. 395.

A World War Against the Venereal Peril.—This address on the venereal peril was delivered in a private drawing room at Brussels. Professor Bayet said that circumstances now justify the hope of the complete extinction of the endemic of syphilis in time by sterilization of the contagious. Belgium is peculiarly adapted for this as it is compact and closely settled, and the task was undertaken with energy immediately after the war. The government promptly proceeded to provide the drugs and subsidize clinics and the entire medical profession of the country rallied to the work. Rich and poor are given the drugs without charge and, if unable to pay for treatment, they are treated gratuitously, the state reimbursing the physicians who give the treatment. The expense has been very small, and 17,000 persons were thus given sterilizing treatment last year. "As each syphilitic infects at least two others, on an average, this represents 40,000 preserved from syphilis in one year." This work has been effectively supplemented by a national antivenereal disease league which aims to unite all the social, moral and scientific forces of the country for intensive propaganda on the necessity for therapeutic sterilization of the contagious and avoiding of contagion. The social prominence of the leaders in this movement aided in carrying it to rapid success. Already the proportion of "new" cases of syphilis in his service has dropped to 20 per cent. from the 85 per cent. recorded in 1905 and 1906 in 2,500 cases. He added that a similar movement for concerted international action is the next step. The endemic of syphilis in Belgium is approaching extinction, and the same policy should be applied to all the great seaports of the world as the first measure. He insists that this is feasible. Another pressing measure is the repression of adulteration of the drugs used in the sterilizing treatment of syphilis. The extent of this adulteration, he declared, surpasses all belief. "There should be a central headquarters for the world war against syphilis, to which each nation could apply for advice and counsel."

Hysteria.—Kahn defines hysteria as a psychopathy characterized by three kinds of functional disturbances: morbid suggestibility; hyperemotivity linked to excessive excitability of the sympathetic nervous system, rendering possible organic trophic lesions as a consequence of emotional trauma, and an instinctive preferring of imagined lies to true facts.

Syphilis and Tuberculosis in Children.—Génévrier denies that syphilis induces a predisposition to tuberculosis, or imprints a special character on it, and cites statistics to sustain this view.

Journal de Chirurgie, Paris

21: 273-400 (March) 1923

*Surgical Correction of Crooked Limbs. F. Cadenat.—p. 273.
*End-to-Side Entero-Anastomosis. J. Bloch.—p. 294.
*Rupture of Iliac Arteries from Contusion. G. Jean.—p. 303.

Surgical Correction of Crooked Limbs.—Cadenat gives an illustrated description of the gage and compass which he has devised for precision in wedge resection of the bone in genu valgum or other crippling deformity of the members. His thirty-two illustrations show the technic and the ideal outcome whether the broad end of the wedge faces the concave or the convex side.

End-to-Side Entero-Anastomosis.—Bloch's method seems to combine the advantages of both the end-to-end and end-to-side methods. The anastomosis is made like a stove-pipe; both have the same axial direction until the smaller bowel turns abruptly at a right angle to enter the larger. The junction is made so close to the sutured stump that there is no room for a blind pouch to form. The peristalsis is all in the same direction, and the parts stretch in time until the passage is continuous as with an end-to-end junction.

Rupture of Iliac Artery from Contusion.—Jean adds another case to the six he has found on record of isolated rupture of the common or external iliac artery. Only one of the seven patients survived. The prognosis would be better if the aorta could be compressed at once. In his case he applied the Momburg method of hemostasis, and ligated the external iliac artery and the vein, which was torn at three points. The man died fifteen minutes later.

Journal d'Urologie, Paris

15: 81-160 (Feb.) 1923

*Kidneys with Double Ureters. J. Guyot and Jeanneney.—p. 81.
*Roentgen Ray Treatment in Urology. Nicolich.—p. 89.
*The Ureosecretory Constant. S. Rolando.—p. 95.
*Eosinophilia with Hypertrophied Prostate. M. Negro.—p. 99.
Pyonephrosis from Congenital Hydronephrosis. A. Boeckel.—p. 105.
*Improvised Urinal After Cystostomy. Jeanbrau.—p. 109.
*Calcium Chlorid in Conservation of Catheters. M. Bonnet.—p. 111.
*Renal Crepitation with Calculi. A. G. Casariego.—p. 112.

Kidney with Two Ureters.—Guyot and Jeanneney discuss the great importance of the discovery that with two ureters the kidney is practically a double kidney. This makes it possible to resect one half in case of a circumscribed lesion, and leave a well functioning half. The two ureters may have only a single opening into the bladder. Legueu's patient is still in good health after removal of one kidney for tuber-

culosis and removal of half of the other kidney, which had two ureters. He resected the half kidney first, and waited until complete recovery from this operation before the complete nephrectomy on the other side. In the case illustrated here, one kidney had been removed and the double ureter on the other side had been sutured to the skin, as a vesicovaginal fistula and recurring pyelonephritis had entailed complications. Legueu has encountered double ureters in twenty-two cases, and in five was able to induce a clinical cure by partial resection of the kidney.

Roentgen-Ray Treatment from the Standpoint of an Old Urologist.—Nicolich's rather derogatory remarks have been summarized already, as they were published elsewhere last year. He says of Wetterer's "splendid results" with roentgen-ray treatment in 956 cases of prostatitis, that if the results are so "splendid" why does Wetterer follow the roentgen exposures with systematic daily massage of the prostate, when massage alone is enough to cure prostatitis? After thorough catheter treatment of disturbances from enlargement of the prostate, conditions may improve to such an extent as to simulate a cure. This is the explanation of the alleged "cures" after castration, vasectomy, roentgen-ray treatment and other measures that have been applied for hypertrophied prostate. The benefit from the systematic catheterization and general measures was ascribed to the local measures that had happened to be applied at the time. In Nicolich's experience with 486 tumors of the bladder, the majority malignant, only two instances of perforation of the rectum were observed, and in both of these cases roentgen treatment had been applied.

The Ureosecretory Constant.—Rolando relates that in the Genoa hospital the urine is examined with the Ambard and van Slyke formulas in every case of kidney disease, and the van Slyke formula has proved more reliable and instructive than the Ambard.

Diagnosis of Cancer of the Prostate.—Negro gives the data from twenty-five cases of hypertrophied prostate and eleven of cancer. In 75 per cent. of the first group the number of eosinophils was above normal while the neutrophil polynucleosis was almost invariably normal. With cancer of the prostate, the eosinophils were much below normal and the neutrophil polynuclears much above normal.

Improvised Urinal After Cystostomy.—Jeanbrau slits the upper end of an inner tube from a bicycle and ties the slit ends to tapes around the waist. The tube reaches nearly to the ankle; it is tied to the leg below the knee. It thus serves as a urinal with the patient up and around, the tube from the bladder, or the retention catheter, extending into the gaping top. He adds that rinsing the tube with vinegar water removes all odor of urine, as from rubber goods in general.

Calcium Chlorid for Conservation of Catheters.—Bonnet has found a shallow dish of calcium chlorid in the sterilizers very useful to insure continuous dehydration. It absorbs the moisture completely; by calcining the calcium chlorid occasionally, it can be used over and over again.

Renal Crepitation.—Casariego calls attention to a peculiar sensation felt on bimanual palpation of the kidney when it contains a calculus. The sensation is like that on palpating a bag full of snow. He calls it renal crepitation.

Paris Médical

13: 81-96 (Jan. 27) 1923

*Ocular Disturbances in Respiratory Affections. F. Terrien.—p. 81.
*Transfusion of Blood from Animals to Man. Cruchet and Ragot.—p. 82.
*Pathology of the Intervertebral Foramina. J. Forestier.—p. 86.
Coxalgia and Pseudocoxalgia. E. Bressot.—p. 89.

Ocular Disturbances in Affections of Respiratory Apparatus.—Terrien reviews the mutual relations of ocular and respiratory disturbances. Even a normal inspiration and expiration is accompanied by a slight dilatation and contraction of the pupil. This is of nervous origin and not due to changes in the blood content of the iris. In pneumonia, herpes of the cornea is comparatively frequent. The defect of the epithelium may be easily discovered by the fluorescein test. Dilatation and subsequent contraction of the pupil on the side of a pneumonia or spinal lesion has been found by Chauffard. Three weeks after pneumonia a paralysis of the ciliary muscle (not of the sphincter of the pupil) similar to a postdiphtheric palsy may occur. Sarcomas of the lung and mediastinum may lead to metastasis in the choroid. On the other hand, affections of the eye may have an influence on the respiratory tract: Compression of the eye retards expiration. Irritation of the cornea may stop spasm of the glottis. Strong light can provoke sneezing in some individuals. This is probably due to an increased flow of tears, which irritates the mucous membrane of the nose.

Transfusion of Blood from Animals to Men.—Cruchet and Ragot draw the attention of scientists to the study of transfusion of blood of animals into men. They repeated Oré's experiments, but used citrated blood. They were able to transfuse very large quantities of blood in animals usually without hurting them much. Therefore they gave injections of from 25 to 40 and even 80 c.c. of citrated sheep's blood to ten patients and horse blood to ten other patients, two of whom received it twice. Agglutination in vitro is almost the rule, though there are exceptions. The injection was usually followed by pains in the lumbar region, radiating toward the bladder, slight or severe chills, dyspnea, fever or fall in temperature. These sensations lasted only for a quarter or half an hour. Hemoglobin was found in the urine twice (after sheep's blood); albuminuria occurred frequently. The injection killed immediately only one of their patients, who had received serum before.

Pathology of the Intervertebral Foramina.—Forestier reviews the affections of the spinal nerves passing through these foramina. The most constant clinical sign is a contracture of the dorsal musculature on the opposite side. This contracture is not present if only one root (not the whole nerve) is affected, as in herpes or tabes. The contracture causes a functional scoliosis. The palpation of apophyses of the articulations is painful. The cerebrospinal fluid shows a slight increase in albumin, with a normal number of cells, while affections of the roots cause lymphocytosis. The clinical picture varies according to the region affected. Torticollis, intercostal neuralgia, and the scoliotic form of sciatica (*ischias funiculaire*) with hypesthesia of the radicular type, are different affections of these nerves. A localization in the sacrolumbar joint is indicated by pains during the change from the sitting to the standing position. Secondary neuralgia of the spinal nerves occurs in tuberculosis, cancer, infections and injuries of the vertebrae, in *spondylose rhizomélique*, osteophytic vertebral arthritis, and especially in the preankylosis stage of vertebral rheumatism. One very tenacious form of lumbago is a bilateral affection caused perhaps by hypertrophy of the epidural fat. Five such cases recovered after laminectomy. The differential diagnosis must eliminate visceral troubles (aneurysms, renal calculi), affections of the roots and of peripheral nerves. Epidural injections, colloidal metals, roentgen rays and physical treatment act favorably.

Presse Médicale, Paris

31: 141-152 (Feb. 14) 1923

Physiologic Bases for Intrathoracal Surgery. E. A. Graham.—p. 141.
*Beta Rays of Radium. P. Degrais.—p. 145.
*Pregnancy and Nephrectomy in Renal Tuberculosis. Favreau and Querrioux.—p. 146.

Beta Rays of Radium.—Degrais draws attention to the importance and therapeutic action of the beta rays of radium. The gamma rays constitute 4.8 per cent. of the radiating energy; the beta rays, 3.2 per cent. It is regrettable that the 92 per cent. consisting of alpha rays cannot be utilized. The disadvantage of beta rays lies in the difficulty of measuring the exact amount. The thickness of the filter plays an enormous part in the dosage, while it is almost negligible with gamma rays. The action of beta rays is comparatively superficial, but they have a great repressive action on living cells. They are excellent in some very superficial squamous epitheliomas, eczemas, pyodermias, nevi, lupus and angiomas. The cosmetic effect is very good.

Pregnancy and Nephrectomy in Tuberculosis of Kidneys.—Favreau and Querrioux found a normal development of pregnancy in women who had been nephrectomized for renal

tuberculosis. The prognosis is good for mother and child in unilateral cases.

31: 153-164 (Feb. 17) 1923

*Oxidases in Mechanism of Fever. G. Marinesco.—p. 153.
Periodicity of Atomic Weights of the Main Constituents of Higher Organisms. C. Strzyzowski.—p. 156.
*Sugar in Cerebrospinal Fluid and Blood. W. Mestrezat.—p. 157.
*Liver Cells and Protein Metabolism. R. Noel.—p. 158.
*Sun Rays and Rachitis. P. F. Armand-Delille.—p. 159.

Oxidating Ferments in Mechanism of Thermogenesis and Fever.—Marinesco examined histologically the amount of oxidating ferments under different conditions in animals and in men. He found a remarkable parallelism between function, temperature and the amount of these ferments. The heart of birds contain more of them than the heart of mammals, and much more than of frogs. He found them even in the glomeruli of kidneys, where they are present in mammals only in the embryonic stage. Hibernating frogs do not have much oxidase in muscles. This content increased if he kept these animals at a higher temperature. A very remarkable fact is that he could never find any trace of oxidases in the liver of frogs, while they abound in the liver of warmblooded animals. Hypothyroidism and avitaminosis cause diminution of them; certain islands in the liver lack them entirely in such cases. Embryos have a large amount of oxidases, even in organs whence they disappear later (peripheral nerves, nucleated red corpuscles, etc.). He believes that leukocytosis is an important factor in the mechanism of fever, because leukocytes are filled with oxidating ferments. He found a parallelism between the number of leukocytes and the fever in fatal cases of apoplexy. He believes that oxidases are the instrument with which the organism maintains or varies its temperature. The nervous system serves only to coordinate the vascular reactions which play a part in the distribution of cells containing oxidases.

Sugar in Cerebrospinal Fluid and Blood.—Mestrezat found in twenty normal cerebrospinal fluids from 0.055 to 0.065 per cent. of glucose. The average in twenty-five cases was 0.06, with variations from 0.048 to 0.070.

Liver Cells and Protein Metabolism.—Noel found in mice, without regard to diet modifications, mitochondria of the liver cells, which he considers as protein material in the process of elaboration ("proteoplasts").

Sun Rays and Rachitis.—Armand-Delille surveys the preventive and therapeutic effects of sun-rays in rachitis.

Schweizerische medizinische Wochenschrift, Basel

53: 161-184 (Feb. 15) 1923

Heredity in Diseases of Eyes. A. Vogt.—p. 161. Conc'n p. 188.
Atypical Course of Primary Carcinomas of Lung. Hedinger.—p. 165.
*Associated Phenomena with Extrapyramidal Rigidity. Bing.—p. 167.
Epidemic of Pemphigus. H. Schultheiss.—p. 171.
Two Cases of Rare Malformation of Heart. H. Trenkel.—p. 173.

Associated Phenomena in Extrapyramidal Rigidity.—Bing found among sixty-two patients with a postencephalitis parkinsonian syndrome, two patients who were not able to sit still (Haskovec's akathisia). Sixteen patients were able to dance and make other rapid movements, though they were otherwise rigid (paradoxic kinesia). He found frequently in the writing of these patients a tendency to make the letters progressively smaller (micrography).

53: 209-256 (March 1) 1923

*Annual Meeting of Swiss Surgical Society.—p. 209.
Multiple Hemangiomatous Tumors in Thorax. R. Schweizer.—p. 243.
Prophylaxis of Goiter. H. Eggenberger.—p. 245.
*Duodenal Tube with Automatic Stopper. Baer.—p. 250.

The Constitution from the Surgical Standpoint.—This was the main subject discussed at the annual meeting of the Swiss Surgical Society, addressed by Askanazy, Vulliet and Kocher, opening the discussion.

Duodenal Tube with Stopper.—Baer gives illustrations of his double, fused tube, terminating in a rubber bulb. The inflated bulb plugs the outlet to the duodenum, and the contrast suspension, injected through the side opening in the metal olive, fills up the duodenum. He suggests that a second bulb might be added, to plug the pylorus, and the suspension or air might then be forced into the bile passages.

Riforma Medica, Naples

39: 145-168 (Feb. 12) 1923

*Absorption Experiment in Diagnosis. A. Fragomele.—p. 145.
*Cholesterol Content of the Tonsils. L. Maffeo.—p. 146.
*Busacca's Intracutaneous Reaction in Tuberculosis. Palmieri.—p. 148.
*Relation of Erythrocytes to Blood Pressure. Lenaz.—p. 152.
Infectious Diseases in Province of Lecce. G. Candido.—p. 157.
Helminthiasis. G. Molinari.—p. 158.

Absorption Experiment in Diagnosis of Some Infectious Diseases.—Fragomele recommends Castellani's experiment (specific absorption) in cases where the agglutinin titer of the patient's serum is low or where it is high because of the presence of co-agglutinins.

Cholesterol Content of Pharyngeal and Palatal Tonsils.—Maffeo found a very low cholesterol content (0.0091 to 0.087 per cent.).

Busacca's Intracutaneous Reaction in Tuberculosis of Skin.—Palmieri examined a large number of patients suffering from tuberculous lesions of the skin, using also controls, with Busacca's intracutaneous injections of 0.2—0.3 c.c. of normal horse serum. The reaction is of no practical value.

Relation of Number of Erythrocytes and Blood Pressure.—Lenaz believes that the relation between the blood pressure and the number of erythrocytes is of diagnostic and prognostic significance, especially with regard to decompensation of heart and of kidneys.

Gaceta Médica de Caracas, Venezuela

29: 283-304 (Dec. 31) 1922

*The Pasteur Centennial. L. Razetti et al.—p. 284.
The Fight Against Malaria in Venezuela. R. Medina Jiménez.—p. 294.

The Pasteur Centennial in Venezuela.—This entire special number of the *Gaceta* is devoted to a tribute to Pasteur for which the profession of Venezuela had been preparing for more than a year. A public subscription was organized, a prize offered for the best work on national hygiene, and Pasteur's portrait was placed in the hall of the Academia de Medicina with much ceremony and historical surveys. The prize was awarded to Dr. R. Medina Jiménez for his work demonstrating the necessity for a vigorous campaign against malaria in Venezuela, and outlining ways and means to carry it out.

Siglo Médico, Madrid

71: 201-224 (March 3) 1923

*Mental Disease of Endocrine Origin. A. Fernandez-Victorio.—p. 201.
*Mucomembranous Colitis. C. Jiménez Díaz.—p. 203.

Endocrinopsychopathies.—Fernández-Victorio relates that a youth, of good family and a brilliant student, suddenly lost interest in his studies and family and developed a paranoid schizophrenic state. A tendency to adiposogenital dystrophia was pronounced and the young man was abnormally tall. This suggested that the pituitary was responsible for the endocrinopsychopathy, but pituitary treatment alone and thyroid treatment alone failed to benefit. Under mixed organotherapy, marked improvement was realized.

Mucomembranous Colitis.—Jiménez Díaz protests against this term, saying that proper treatment requires us to distinguish between stercoraceous mucous colitis and vagotonic mucous colitis. The latter is an actual myxoneurosis of the colon. It may be of primary constitutional origin, or secondary to acquired overstimulation of the vagus nerve, modifying the constitution. The expulsion of membranes merely signifies the coexistence of mucus and fat acids.

71: 249-276 (March 17) 1923

*The Teeth in Relation to Chronic Rheumatism. G. Marañon.—p. 249.
*Gumma of Inner Canthus. M. Marín Amat.—p. 254.
Spirochetal Diseases from Immunologic Standpoint. W. H. Hoffmann.—p. 256. Begun p. 225.

Rheumatism of Dental Origin.—Marañon says that the idea of an infectious focus in the teeth as responsible for chronic rheumatism is still in embryo in Europe, and he urges the profession in Spain to listen to the Americans on the subject. Although he accepts infectious conditions in the teeth as an important factor in a certain group of cases of chronic

rheumatism, he insists that a predisposition in the way of disturbance of metabolism and body juices is always the primary factor.

Gumma of the Inner Canthus Simulating Malignant Disease.—In Marín Amat's case the tumor developed in the lacrimal region. He assumed at first that it was a furuncle, having had a number of cases of furuncles in the inner canthus. But the rapidly destructive course suggested tentative treatment as for syphilis, although the serologic tests were negative. No benefit was observed under mercury, but on supplementing this with an arsphenamin preparation, the lesion promptly retrogressed. The patient was a woman, aged 33. No other manifestations of syphilis were detected.

Archiv für Kinderheilkunde, Stuttgart

72: 161-240 (Feb. 6) 1923

*Influence of Phosphates on Excretion of Chlorids. W. Röckemann.—p. 161.
Therapeutic Action of Mercury and Arc Lamps. Hermann.—p. 172.
*Tendency to Edema in Infants. E. Slawik.—p. 178.
*Respiratory Stridor, Especially in Goiter. F. Wiltschke.—p. 189.
*Schick Test in Diphtheria. J. Geissmar.—p. 194.
*Histophysiology of Irradiation with Quartz Lamp. A. Eckstein and W. Möllendorff.—p. 205.

Influence of Phosphates on Excretion of Chlorids.—Röckemann found retention of chlorids in children during periods of ingestion of primary sodium phosphate.

Tendency to Edema in Infants.—Slawik reviews edema in infants. He believes that scleredema is only a species of the comparatively frequent edema of new-born children. The difference lies in the subnormal temperature of infants suffering from scleredema, in which the subcutaneous fat becomes hard.

Respiratory Stridor, Especially in Goiter. — Wiltschke emphasizes the significance of goiter for the genesis of respiratory stridor in infants. He never found stridor in infants in whom necropsy showed the presence of a hyperplastic thymus. Iodin cures the stridor, because the goiter disappears.

Schick Test in Diphtheria.—Geissmar gives the history and technic of Schick's test. She recommends that it be adopted in Germany more extensively in the fight against diphtheria.

Histophysiology of Irradiation with Quartz Lamp.—Eckstein and Möllendorff injected rats with trypan blue and irradiated them with a mercury quartz lamp. They found in the irradiated animals a very strong accumulation of the dye in the kidneys in the first hours, while the controls did not show at the time any changes. Later the controls had more dye in the kidneys than the irradiated animals.

Deutsches Archiv für klinische Medizin, Leipzig

141: 257-380 (Jan. 30) 1923

*Atrioventricular Automatism. W. Mobitz.—p. 257.
*Cholesterol Metabolism. S. Thannhauser.—p. 290.
Experimental Nephritis by Injection of Uric Acid. Aufrecht.—p. 312.
*Formation of Urobilin in Intestines. Kämmerer and Miller.—p. 348.
Disturbances of Conduction and of Irritability of Heart. H. von Hoesslin.—p. 348.
*Sugar in Blood and Tissues in Diabetics. Barát and Hetényi.—p. 358.
*Function of Skin Capillaries. L. A. M. van der Spek.—p. 366.

Atrioventricular Automatism. — Mobitz finds that certain well characterized dissociations between auricle and ventricle may be due to an interference of the impulses from the sinus and Aschoff's node, if the latter are more frequent. These interference dissociations are usually incomplete.

Cholesterol Metabolism.—Thannhauser found that the duodenal contents and the bile are able to split esters of cholesterol if it is dissolved (best in fat). Ingestion of fat is necessary for the resorption of cholesterol. If human blood is incubated, the amount of free cholesterol does not change. This, however, is not due to lack of a ferment splitting the esters, but simply to the already existing equilibrium between them and the free cholesterol. If esters are added to the blood, the amount of the free cholesterol increases. He publishes a method for estimating the cholesterol and bile acids in human feces, and made determinations of their metabolism. The necessary daily minimum of cholesterol is in adults approximately 0.03 gm. There were no indications as to the ability of adults to synthesize cholesterol. An increased cholesterol intake does not cause increase in the production of bile acids. They do not seem to be the end-product of normal decomposition of cholesterol, but rather a physiologic secretion of the liver.

Formation of Urobilin in Intestines.—Kämmerer and Miller found that an emulsion of almost any human stool may reduce chemically pure bilirubin and mesobilirubin to urobilin. Biliverdin was not reduced by it, nor do the feces of herbivora reduce bilirubin, probably because their fermentation is stronger than putrefaction. The optimal p_H is = 7.0. Berkefeld filtrates of the stools caused no reduction. The responsible microbes are identical or similar to the anaerobic *Bacillus putrificus*. Yet synergism with aerobic bacilli, which are without effect when used alone, is essential. Colon bacilli increase the formation of bilirubin if there is no material for fermentation. Otherwise they inhibit the reduction, as do sugar or starch.

Sugar in Blood and Tissues in Diabetics.—Barát and Hetényi found an increased amount of sugar in tissues of diabetics, but not in other hyperglycemias.

Function of Skin Capillaries.—Spek found that the blood stream in the capillaries of a constricted finger is maintained if the pressure exerted by a broad finger cuff is only 10 mm. mercury lower than the maximal actual pressure measured on the finger. In insufficient capillaries this difference is higher, especially in hypertonia. He considers this method of investigation of the circulation by means of capillary functioning as better than Weiss' because it is restricted to this small area of the capillaries, and is not so dependent on the action of the heart. He tabulates the various findings from 120 persons, healthy and with various diseases.

Deutsche medizinische Wochenschrift, Berlin

49: 175-206 (Feb. 9) 1923

*Treatment of Syphilitic Aortitis. Schottmüller.—p. 175.
Serum Treatment of Influenza and Botulism. W. Steinbrinck.—p. 176.
Different Tuberculin Preparations in Pirquet Tests. Schreiber.—p. 178.
*Diagnosis of Pancreas Stones. J. L. A. Peutz.—p. 178.
*Diagnosis of Contraction of Mesentery. E. Schill.—p. 179.
Diagnostic Trepanation of Sternum. Seyfarth.—p. 180.
Acute Osteomyelitis of Spine. A. Wagner.—p. 181.
*Phlorizin in Diagnosis of Pregnancy. P. Köster.—p. 182.
Toxicity of Methyl Alcohol. G. Reif.—p. 183.
*Comparison of Serologic Tests. H. Förtig.—p. 184.
Melting Mercury Rods for Intramuscular Injections of Insoluble Compounds of Mercury. Pinczower.—p. 185.
*Choked Disk in Syphilis. R. Baruch.—p. 186.
*Arsphenamin in Malaria. K. Surbek.—p. 187.
"Combined" Treatment of Epilepsy. Rosenberg.—p. 188.
Formaldehyd Test for Albumin in Urine. Kaufmann.—p. 190.
"Fat Splitting Function of Lymphocytes." S. Bergel.—p. 190.
The Practitioner and Pulmonary Tuberculosis. Goldscheider.—p. 191.
Hygienic Teaching of People. G. Tugendreich.—p. 193.
Tuberculosis, Legitimacy and Illegitimacy. H. Reiter.—p. 194.

Treatment of Syphilitic Aortitis.—Schottmüller considers syphilitic aortitis, especially in its first stage, as curable. He recommends intensive and prolonged treatment with arsphenamin and mercury. The treatment should be tried even in decompensated syphilitic aortic insufficiency. He has roentgenograms of a man whose ascending and descending aorta in 1913 were three times the normal diameter. The man took part in the war as artillery officer, and has no subjective disturbances now. A patient suffering from aneurysm in 1916 is still living, as well as other similar cases. The aneurysm may become smaller. Syphilitic affections of the coronaries may be very favorably influenced. He starts with weekly injections, from 0.45 to 0.6 gm. (in women 0.3 to 0.45) of neo-arsphenamin, giving a total of 5 to 8 gm. Besides this, he injects weekly calomel or salicylate of mercury (0.05 to 0.1 gm.). After this he prescribes potassium iodid for a month or two. As a rule, especially with a positive Wassermann reaction, the patient gets for two or three years one injection of neo-arsphenamin monthly, or at least two intensive treatments as above, with a total of 5 gm. in a year.

Diagnosis of Pancreas Stones.—Peutz considers repeated microscopic examination of feces, especially after the Schmidt-Kashiwado nuclei test, as a good method. The increase of bilirubin in the serum after an attack speaks for

cholelithiasis. He injected one patient with pilocarpin, after which the amount of diastase in the blood increased. Pancreatic ferments were not present in the stool. Roentgen-ray examination revealed a shadow in the pancreas region, due to calcified mesenteric glands, and not to calculi in the pancreas.

Diagnosis of Contraction of Mesentery.—In cases with free ascites giving no tympanitic percussion note at all or only low in the flanks, Schill concludes that retraction of the mesentery has taken place. It may be due to carcinosis or tuberculosis of the peritoneum. He does not mention that Thomayer thirty years ago described an abnormal distribution of the percussion sounds as a sign of retraction in tuberculosis and carcinosis of the peritoneum.

Phlorizin in Diagnosis of Pregnancy.—Köster examined 100 cases with the phlorizin test. She found that a positive result does not always prove, nor the negative disprove, pregnancy. The test may give opposite results on two successive days.

Comparison of Dold and Meinicke Reaction with Wassermann Reaction.—Förtig examined 450 serums. He objects to the Meinicke and Dold technics that they give too many false positive reactions.

Choked Optic Disk in Syphilis, Its Prognosis, and Treatment with Arsphenamin.—Baruch finds that optic neuritis in syphilis has not become more frequent since arsphenamin was introduced. Most of the patients recover after treatment.

Silver Arsphenamin, Neosilverarsphenamin and Sulphoxylarsphenamin in Malaria in Dutch East Indies.—Surbek recommends these preparations especially for carriers of gametes.

49: 207-240 (Feb. 16) 1923

Diuresis and Diuretics. F. Müller.—p. 207.
Recent Modifications of Serologic Tests. M. Schneider.—p. 209.
Treatment of Syphilis with Bismuth Preparations. Voehl.—p. 210.
*Errors in Diagnosis of Lead Poisoning. Schwarz and Hefke.—p. 212.
Paranephritic Abscess. F. Franke.—p. 214.
Osteoma of Frontal Sinus. H. Reh.—p. 216.
Diagnosis of Epidemic Encephalitis. E. Hachez.—p. 217.
Arsphenamin Encephalitis Treated with Epinephrin; Recovery. Voithenberg.—p. 217.
*Early Affection of the Auditory Nerve in Syphilis. M. Bab.—p. 218.
Examination of Speed of Sedimentation. A. Westergren.—p. 218.
Hemoglobinuria in Acute Infectious Diseases, Especially in Scarlet Fever. B. Günther.—p. 219.
Venesection. Burwinkel.—p. 221.
Jupiter Arc Light in Therapeutics. A. Hartmann.—p. 221.
The Practitioner and Pulmonary Tuberculosis. Goldscheider.—p. 222.
Dermatological Diagnosis. M. Joseph.—p. 224.
Public Health Statistics in the United States. Sieveking.—p. 226.
A Picture of Copernicus as Physician. F. Sorge.—p. 226.

Errors in Early Diagnosis of Lead Poisoning.—Schwarz and Hefke agree with P. Schmidt on the four cardinal symptoms for early diagnosis of lead poisoning: complexion, border of gums, basophilic stippling of erythrocytes, and hematoporphyrin in urine. As a preliminary examination of blood, the "thick droplet" is useful.

Early Affection of the Auditory Nerve in Syphilis.—In 15 per cent. of primary syphilitic affections Bab found changes in the vestibular nerve (tendency to nystagmus, pastpointing reaction) even if no subjective signs were present. He considers the ear function test an aid in the diagnosis of primary syphilis.

Klinische Wochenschrift, Berlin

2: 285-332 (Feb. 12) 1923

Pathology of Urination. O. Schwarz.—p. 285.
Mechanism of Tonus of Muscles. E. A. Spiegel.—p. 288. Conc'n p. 339.
*Constitutional Types in Gynecology. P. Mathes.—p. 291.
*Muscularis Mucosae in Evacuation of Stomach. K. Sick.—p. 293.
*D'Herelle's Phenomenon. W. Borchardt.—p. 295.
*Acquired Resistance of Bacillus Prodigiosus. Meyer.—p. 297.
*Boiled Human Milk. E. Martin.—p. 299.
*Serologic Tests in Internal Medicine. A. Holländer.—p. 302.
*Influence of Vitamin A on Weight of New-Born. Schlossmann.—p. 304.
*Bilirubin and Fibrinogen in Blood. P. Levi.—p. 305.
*Thymus in Parthenogenetic Tadpoles. H. Voss.—p. 306.
*Urea Content in Saliva. M. Landsberg.—p. 306.
*Decapsulation of Kidney in Anuria. A. Niedermeyer.—p. 307.
Rare Malformation of Alae of Nose. T. Liebermann.—p. 307.
Use of Hypnotics in Neurology. F. Stern.—p. 308.
Venereal Diseases and Prostitution. Tjaden.—p. 312.

Constitutional Types in Gynecology.—Mathes points to the frequency of intersexual types in women. The most important sexual differentiation is not in the sex gland, but in the preponderance of one sex chromosome throughout the body. He considers the intersexual type as identical with Kretschmer's schizoid type in psychiatry. The vegetative nervous system and its center in the base of the brain are unstable. Such women are in a continuous struggle with the dysharmonious impulses of their ambiguous sexuality. The critical exacerbations come when they are forced bodily or mentally to a sexual decision: puberty, menstruation (dysmenorrhea), choice of mate (nuptial psychoses, vaginism), pregnancy (hyperemesis, functional heart disturbances), marital troubles due to inability to fulfil the duties of wife, mother and housewife, and the menopause. More cases of sterility are due to intersexuality, than to simple hypoplasia of the uterus. Dread neuroses and hopelessness are frequent in their affective life. The sexual traumas of childhood are not the real cause of the later neurosis; they are rather its precursors, and get a strong affective value only because everything sexual is a problem to these patients. Preparations of pituitary are sometimes valuable. They act on the vegetative centers perhaps directly, perhaps through their action on the sex glands. Psychic treatment should explain the condition to the patients, and either teach them to suppress their sexual tendencies, supplanting them by other qualities, or to develop the small feminine sexuality which they have. Older patients may be castrated by roentgen rays.

Action of Muscularis Mucosae in Evacuation of Stomach.—Sick found that small waves, which he attributes to the muscular layer of the mucosa, play a part in the evacuation of the last remnant of the meals.

D'Herelle's Phenomenon.—Borchardt found that extracts of pancreas of cats with the addition of an extract of the mucosa of the small intestine start the lytic phenomenon of bacteriophagy in bacilli of the colon group and staphylococci. Extracts from pancreas or from the mucosa alone were not active. He believes that trypsin leads to decomposition of the bacilli in such a way that it frees from their bodies a similar tryptic ferment. The results were negative with other micro-organisms.

Acquired Resistance of the Prodigiosus Against Roentgen Rays.—Meyer found that a culture of *Bacillus prodigiosus* can be made resistant, by irradiation, against subsequent applications of roentgen rays. These roentgen resistant strains were not resistant to ultraviolet rays. The acquired resistance lasted for about four weeks.

Boiled Human Milk.—Martin had excellent results with the use of boiled human milk in infants.

The Sachs-Georgi and Dold Reactions in Internal Medicine.—Holländer concludes from a study of 2,763 serums with the Sachs-Georgi reaction and 415 of them with the Dold reaction, that they are valuable as controls of the Wassermann reaction.

Influence of Vitamin A on the Weight of the New-Born.—Schlossmann publishes the average monthly weights of 13,805 infants from one clinic in eighteen years. He does not find any marked influence of the season. He declares that it would be dangerous to try to influence the weight and hardness of the skull by lack of vitamins in the food of the prospective mother.

Bilirubin and Fibrinogen in Blood.—Levi found that addition of proteolytic ferments to a serum giving the indirect reaction of Hijmans van den Bergh changes it quickly to a direct. He believes that physiologically the cells of the liver split bilirubin from a protein rest of hemoglobin. The indirect reaction is due to the binding of bilirubin to protein. The presence of proteolytic ferments in the blood can split this complex, and makes thus a safe differentiation between hematogenous and hepatogenous icterus with Bergh's test impossible.

The Thymus in Parthenogenetic Tadpoles.—Voss found in parthenogenetic tadpoles a very small thymus, resembling the cases of accidental involution due to lack of food. The alimentary canal and liver were abnormal in these animals, and the sex glands underdeveloped.

Urea Content in Saliva.—Landsberg found approximately the same amount of urea in saliva as in urine.

Recovery After Decapsulation of Kidney in Case of Uremic Anuria.—Niedermeyer's patient suffering from anuria and uremia recovered after decapsulation of one kidney.

2: 333-380 (Feb. 19) 1923

*Pathology of Growth in Childhood. H. Aron.—p. 333.
*Surgery of Angioneuroses. C. Kreibich.—p. 337.
*D'Herelle's Phenomenon. E. Putter and S. Vallen.—p. 339.
*Mechanism of Tonus of Striated Muscles. E. Spiegel.—p. 339. Conc'n.
*Action of Phlorizin on Sugar in Blood. M. Rosenberg.—p. 342.
*Question of Neurogenous Heterochromia of Iris. Heine.—p. 345.
*"Mitral Form" of Healthy Hearts. G. Német.—p. 348.
Formation of Bilirubin Outside of Liver. Papendieck.—p. 350.
*Specificity of Focal Reaction. C. Mau.—p. 351.
New Agglutinoscope. A. Korach.—p. 352.
Reaction Energy of Organic Arsenic and Antimony Compounds in Relation to Their Biologic Action. H. Schmidt.—p. 352.
*Action of Ultraviolet Rays in Avitaminosis. B. Ishido.—p. 353.
Epithelization with Roentgen Rays. H. Haberland.—p. 353.
Trauma as Factor in Syringomyelia. M. Zielaskowski.—p. 354.
Use of Hypnotics in Neurology. F. Stern.—p. 355. Conc'n.
School and Tuberculosis. S. Samelson.—p. 358.
Cultivation of Pure Strains of Cells. R. Erdmann.—p. 362.

Pathology of Growth in Childhood.—Aron deals with the causes of growth with special regard to over-tall children. In judging children, neither the weight nor the length is as important as harmonious proportions. "Sufficient muscular exercise can act against a disproportionate growth in height."

Surgery of Angioneuroses.—Kreibich agrees with Cassirer, who considered angioneuroses as irritative and not paretic phenomena. He believes that the cells die because of a vasomotor anemia and not from disturbances of trophic nerves. He found with Polland that a blister contains approximately blood serum (more proteins than an inflammatory exudate). He does not much believe in the existence of trophic nerves. Leriche's periarterial sympathectomy may act also centripetally, and should be tried in Kaposi's pigment sarcoma and other affections of the skin. It is possible, that a unilateral operation would be sufficient. He cites a case of psoriasis which disappeared on the side of the body on which the ulnar nerve was injured by a bullet, and other cases showing that there may be centripetal action.

D'Herelle's Phenomenon.—Putter and Vallen filtered bile, bouillon cultures, killed by heat, through de Haen's membrane filters, and found that the filtrates showed bacteriophagy.

Mechanism and Innervation of Tonus of Striated Muscles.—Spiegel finds that the tonus of striated muscles is due to the same changes in the fibrils (acid formation) as the quick contractions. The mechanism of both actions is centrad to the cells of the anterior horn of the spinal cord.

Action of Phlorizin on Sugar in Blood and Urine in Diabetes and Nephritis.—Rosenberg found frequently a stronger reaction to phlorizin in diabetics than in healthy subjects. It depends on the severity of the process. He believes that the action of phlorizin is not limited to the kidneys in these cases. In severe insufficiency of kidneys, the glycosuria is smaller and hyperglycemia occurs. He attributes it to an osmotic decompensation and not to the lack of glycosuria.

Question of Neurogenous Heterochromia of Iris.—Heine is very skeptical on the question of neurogenous heterochromia.

"Mitral Form" of Healthy Hearts.—Német found in healthy subjects that the outline of the heart sometimes resembled that in mitral stenosis. He believes that it may be due to a rotation of the heart from the right, dorsad, to the left, centrad.

Specificity of Focal Reaction.—Mau found a positive focal tuberculin reaction in forty-eight cases among 178 surgical patients. A typical focal reaction may also follow an injection of tuberculin in certainly not tuberculous lesions. The probability of tuberculosis in a positive focal reaction is about 80 per cent.

Compensatory Action of Ultraviolet Rays on Avitaminotic Disturbances of the Bone Marrow.—Ishido found that ultraviolet rays prevent the atrophy which would otherwise occur in the bone marrow of rats in avitaminosis.

Medizinische Klinik, Berlin

19: 163-194 (Feb. 11) 1923

*"Rheumatic" Infection. J. Wiesel.—p. 163. Conc'n p. 197.
Swedish Gymnastics. M. Kaufmann.—p. 165.
*Diseases of the Abdomen in and After Influenza. Esau.—p. 168.
Sugar Injections in Diseases of Heart and Vessels. Moewes.—p. 169.
Indications for Digitalis and Adonis. J. Citron.—p. 170.
Neo-silver arsphenamin. Nolten.—p. 171.
Stomach Function Test with Fluid Material. H. Galewski.—p. 174.
Diuretic Action of the Sulphur Thermal Water of Baden. J. Schütz.—p. 176.
Agglutination of Tubercle Bacilli. E. Christensen.—p. 177.
Estimation of Disability. Wulsten.—p. 178. Conc'n.
Sickness and Complaints of Schoolchildren. K. Blühdorn.—p. 181.
Recent Works on Cardiovascular Disease. E. Edens.—p. 183.

"Rheumatic" Infection.—Wiesel emphasizes the great frequency of a hypoplastic constitution in cases of acute polyarthritis. Heredity is almost always present.

Diseases of the Abdomen In and After Influenza.—Esau observed several cases of serous peritonitis in soldiers during the epidemic of influenza. The men fell sick suddenly with chills, vomiting, high fever and pains in the abdomen, but the abdominal muscles were not rigid. All the men recovered in ten to fourteen days. Influenza may also cause spasms of the intestine and pains in the musculature. Many such cases have been wrongly diagnosed and eventually operated on as appendicitis.

19: 195-230 (Feb. 18) 1923

Anesthesia in Surgical Operations. F. König.—p. 195.
Acute Rheumatic Arthritis. Wiesel.—p. 197.
*Determination of Virulence of Streptococci. C. Ruge. II.—p. 200.
Moral Depravity After Injury of Head. Rad.—p. 201.
Symptomatology of Pleuritis. L. Hess.—p. 203.
Temporal Crescent in a Scotoma in Migraine. O. Sittig.—p. 204.
Treatment of Angina Pectoris. G. Rosenfeld.—p. 205.
Periarteritis Nodosa. W. Löwenberg.—p. 207.
Lymphangioma of Small Intestine. E. Schnebel.—p. 208.
Estimation of Mental Fatigue in Children. Strauch.—p. 209.
*Instability of Serum Proteins in Syphilis. Krömeke.—p. 210.
Sarcoma of Left Kidney Not Due to Injury. A. Wilde.—p. 211.
Anodynes. C. Bachem.—p. 212. Cont'n.
Gynecology of Practitioner. E. Runge.—p. 214.

Determination of Virulence of Streptococci.—Ruge, in obstetric and gynecologic infections, takes 2 or 3 loopfuls of the genital secretions containing cocci, and mixes them with 0.5 c.c. of the defibrinated blood of the patient. He observes one drop of this mixture on a warm stage. Usually the cocci disappear gradually. If they start to multiply within the first four hours, the prognosis is unfavorable. This simple reaction serves to estimate the relation between virulence of the germs and resistance of the organism. If the germs are in the blood, an analogous method devised by Phillipp is useful: Serial plate cultures are made from the incubated blood every one or two hours. With very virulent germs, the number of colonies increase in the later portion. Ruge used his test in 111 women—usually infections in childbirth or miscarriage—and the test was done at a time when the clinical symptoms did not give a certain prognosis. Two cases were failures and five were doubtful. In all others its value was confirmed by the results, even when they contradicted the clinical expectations. The test may give valuable indications for operative proceedings.

Colloidal Lability of Serum Proteins in Syphilis with Regard to Darányi's Reaction.—Krömeke recommends Darányi's alcohol flocculation as a good indicator of the amount of toxins formed. He does not consider the Wassermann reaction an absolute indication for repeated treatment if Darányi's reaction is negative. The Wassermann reaction is much more frequently nonspecifically positive than is generally assumed.

Monatsschrift für Kinderheilkunde, Leipzig

24: 401-761 (Jan.-Feb.) 1923

Transactions of German Pediatrics Congress, Leipzig, 1922.

Münchener medizinische Wochenschrift, Munich

70: 197-228 (Feb. 16) 1923

*Some Basic Problems of Nutrition. A. Bier.—p. 197.
*Nutrition After Injections of Blood of Animals. E. Kisch.—p. 199.
Shock Treatment of Chronic Affections of Joints and Muscles. A. Zimmer and E Schulz.—p. 202.

*Endocrine Lesions of Genitals. Kämmerer and Lorber.—p. 203.
Protein Treatment of Septicemias. R. Koch.—p. 206.
Tabes from Practitioner's Standpoint. Curschmann.—p. 213.

Some Basic Problems of Nutrition.—Bier finds that vitamins, iron, arsenic and phosphate have no certain effect on nutrition. Exercises are more effective. Other measures are injections of foreign proteins, especially of animal blood. He attributes their action to the stimulating effect of products of their decomposition. This is the reason why he prefers to inject small quantities of animal rather than human blood. Hopeless cases of tuberculosis, severe exophthalmic goiter and chronic arthritis were favorably influenced. In one diabetic woman, cutaneous gangrene and carbuncle followed the injection of 0.2 c.c. of swine blood. Large and frequently repeated injections caused loss in weight. Psychic nutritive stimuli (more appetizing food) should not be neglected. Gymnastics should not be confined to one line; the whole body must be developed harmoniously.

Amelioration of Nutrition of Tuberculous Patients After Intravenous Injections of Blood of Animals.—Kisch made 300 intravenous injections of blood of different animals to test Bier's theory, mentioned in the preceding abstract. He chose the severest cases of tuberculosis. Collapse occurred rarely and there was no death. He injected small (5 c.c., decreasing to 1 c.c.) amounts of blood from different animals into the same patient. The weight of many patients started to increase after this treatment was instituted. Swine blood was most active. The injections caused a rapid but brief decrease in the number of erythrocytes (to 50 per cent.) with unchanged hemoglobin. Regeneration was rapid.

Cerebral Irritation in Endocrine Lesions of Genitals.—Kämmerer and Lorber point to the possibility of the localization of some cerebral sensory phenomena (headache, dizziness, even syncope) in the diencephalon, especially if other symptoms caused by its affections (disturbances of sex organs, obesity, polyuria) are present.

Wiener klinische Wochenschrift, Vienna

36: 121-138 (Feb. 15) 1923

*Surgery of Gallbladder. P. Walzel-Wiesentreu.—p. 121.
*Pyocyaneus Bacteriophages. S. Okuda.—p. 125.
Paresthesias and Edema Due to Roentgen Injury. L. Haas.—p. 128.
Treatment of Acute Roentgen Intoxication with Hypertonic Solutions. Mahnert and Zacher.—p. 129.
Influenza in Children. K. Dietl.—p. 130.
*Births and Miscarriages. E. Waldstein.—p. 131.

Surgery of Gallbladder.—Walzel-Wiesentreu does not recommend early operation except in urgent cases. One must not wait, however, too long. He dilates the papilla Vateri and introduces a rubber drain, which usually passes by the bowels after a short time. He considers this sufficient drainage. Primary suture of the abdominal wall is done only exceptionally in Eiselsberg's clinic.

Pyocyaneus Bacteriophages.—Okuda confirms Cancik's discovery of pyocyaneus bacteriophages. He found them in several cultures and preparations of these bacilli. They contain two specific types of bacteriophages.

Births and Miscarriages.—Waldstein finds that those who are worried about the supposed lack of will to procreate forget the spontaneous miscarriages. As long as the mortality of children has not been lowered at least to 7 per cent. and as long as poor women are exposed in a higher degree to spontaneous abortion, it is not fair to talk about a decrease in the will to procreate. He found that of the thirty-two children of one woman, repeatedly quoted as an example, only one child reached the age of 19; he prefers a smaller more valid progeny. He is opposed to artificial abortion, except when medically indicated; yet, he agrees with Grotjahn that preventive means are the best way to stop dangerous abortions. More of Waldstein's statistics were quoted in the Vienna Letter, p. 1328.

Zeitschrift für Kinderheilkunde, Berlin

35: 1-66 (Feb. 14) 1923

Hemopoietic Foci in Prostate and Skin of Soles in New-Born and Fetus. A. J. Weils.—p. 1.
Saliva of Infants. H. Davidsohn and A. Hymanson.—p. 10.
Weight of Thymus in Infants and Children, and Its Relation to the Suprarenal Capsules. K. Keilmann.—p. 25.
*So-Called Idiosyncrasy for Cow's Milk in Infants. Holstein.—p. 38.
Periodic Vomiting of Children. Gehrt.—p. 51.
Feeding with Boiled Human Milk. E. Wülffing.—p. 56.
Speed of Development and Constitution of Infants. Salge.—p. 59.

So-Called Idiosyncrasy Against Cow's Milk in Infants.—Holstein believes that the supposed idiosyncrasy of some infants against cow's milk is due to disturbance of the ion equilibrium. Cow's milk contains only a little more potassium than human milk, but too little chlorin to balance the excretion. Other foods containing too much potassium caused similar effects in a case described.

Zentralblatt für Gynäkologie, Leipzig

47: 417-464 (March 17) 1923

The Mechanics of Childbirth. A. Mueller.—p. 418.
*Combined Mercury and Arsphenamin in Sepsis. H. Kiehne.—p. 429.
*Albuminuria of Pregnancy. D. Fuchs and A. v. Fekete.—p. 433.
Torsion of Fallopian Tube. K. Laemmle.—p. 436.
Effect on Fetus of Morphin Given Mother. J. Brock.—p. 437.
Treatment of Leukorrhea by Continuous Irrigation. R. Kuhn.—p. 439.

Combined Use of Mercuric Chlorid and Neo-Arsphenamin in Puerperal Sepsis.—Kiehne reports good results, much better than had been formerly secured with silver salts, etc. If the patient does not improve under this treatment, placental remnants should be sought. From 1911 to 1921 the death rate from puerperal sepsis in the Halle clinic had ranged from 13 to 30 per cent. Since the introduction of the combined mercury-arsphenamin treatment, in 1922, the mortality has fallen below 10 per cent. Kiehne dissolves 0.3 gm. of neo-arsphenamin in 5 or 6 c.c. of tap water and adds 2 c.c. of a 1 per cent. solution of mercuric chlorid. The mixture is injected intravenously. After two or three days a second injection may be required. In some cases as many as five injections were given, the intervals being progressively longer.

Albuminuria of Pregnancy.—Fuchs and Fekete, in studying diseases of the kidneys during pregnancy, considered the question to what extent the changed body attitude in pregnant women might be the cause of albuminuria. It is well known that in certain constitutions, without pathologic changes in the kidneys, orthostatic or postural albuminuria occurs, which passes away when the position of the body is changed. It was therefore thought that possibly the changed attitude of the body in pregnant women might play a part in the genesis of albuminuria. Their experiments showed that the position of the body in the pregnant has no bearing on the presence of albuminuria; at the most, it may increase slightly an albuminuria already present.

Zentralblatt für innere Medizin, Leipzig

44: 81-128 (Feb. 10-17) 1923

*Hypertension with Hyperglycemia and Hyperuricemia. E. Kylin.—p. 81.

Hypertension with Hyperglycemia and Hyperuricemia.—Kylin divides hypertensions into a pure arterial form (in benign sclerosis of kidneys) and into a form in which the pressure in the capillaries is also increased (in acute glomerulonephritis). The morphologic changes, increased permeability and pressure in the capillaries make a diffuse affection of the capillaries in acute glomerulonephritis more than probable. These changes are not present in essential hypertension, and edema occurs in the latter disease, only if the heart is decompensated. The lability of blood pressure is here more characteristic than its height. This speaks, besides other reasons, for vasoconstriction due to nervous influence. The blood sugar is slightly increased, the carbohydrate tolerance lowered. Subcutaneous injection of 1 mg. epinephrin usually lowers the blood pressure in essential hypertension, but increases it in acute glomerulonephritis, as in healthy persons. Epinephrin usually does not increase the glycemia much in essential hypertension. He concludes that it indicates a disturbance of the vegetative nervous system—probably vagotonia. One form of diabetes characterized by hyperglycemia, hyperuricemia and hypertension belongs to this group of essential hypertension.

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THE ELICITATION AND EVALUATION OF PHYSICAL SIGNS

IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS *

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A skilful technic and sound judgment in appraising symptoms are the essentials of good surgery. The importance placed on the former is evinced by the numerous articles that appear in the medical journals each year, describing in great detail how various operations are performed. On the other hand, discussions of technic in conducting physical examinations are very uncommon—yet a skilled neurologist may detect a nerve palsy or elicit a reflex not previously noted because of his superior technic in conducting the examination.

There can be no doubt that the failure to remove the clothing and lack of familiarity with the technic necessary to elicit the physical signs that accompany early tuberculous disease result in many incipient cases being unrecognized. Mistakes in diagnosis are about equally divided between the failure to detect the physical signs and the erroneous interpretation placed on the signs elicited. The former results in missing the early cases; the latter frequently causes tuberculosis to be incorrectly diagnosed.

There is not time, nor is it necessary, to describe in minute detail all the steps of the complete physical examination. Only certain points that seem of special importance will be considered. It is desirable, I believe, to ascertain the position of the apex beat of the heart before proceeding with the examination of the lungs, as the examination of the heart is apt to be rather cursory, once pathologic changes are discovered elsewhere. Not infrequently, patients are seen in whom tuberculosis has been diagnosed because of a cough associated with dulness, distant bronchial breathing and râles over the lower part of the chest, in whom the true condition of pleural effusion might have been recognized had it been noted that the apex beat was displaced several inches from its normal position.

INSPECTION

In examining for tuberculosis, inspection, if properly carried out, often gives information of considerable value. It is essential, however, that the patient directly face the light so that both sides of the chest are equally illuminated. It is desirable to have the subject sit on a revolving stool, erect but with the shoulders relaxed.

Unilateral apical retraction suggests an old process that has undergone fibrosis. It may or may not be active. The motion of the chest with inspiration should be closely observed, as very commonly the diseased side or the side presenting the more active lesion, if both are involved, will lag as inspiration begins. The delay in the initiation of the inspiratory act can be graphically seen by means of the fluoroscope, which enables one to see not only a momentary delay in the descent of the diaphragm on the diseased side as inspiration begins, but also a similar delay at the onset of expiration. This attempt of nature to diminish the amplitude of the respiratory act as much as possible is a lesson all of us may well take to heart. Clinically, the movement with inspiration can be best seen when one is standing behind the patient, who is seated on a stool facing the light and looking downward over the front of the chest.

As an aid in training the eyes to observe the two sides at the same time, I have found the ingenious method suggested by Dr. Roy D. Adams of Washington, D. C., helpful. With a skin pencil, dots are placed in exactly corresponding areas directly below each clavicle about opposite the middle third, in such a position that they are not evident when one is standing behind the patient after he has breathed out (Fig. 1 *A*). If the spots are of the same size and are placed with care, one observes in the normal subject that, as inspiration proceeds, the dots appear synchronously. With unilateral tuberculosis, however, the dot on the side of the lesion appears later (Fig. 1 *B* and *C*).

The inspiratory lag, however, is, I think, best elicited by a method demonstrated to me a few years ago by Dr. Lawrason Brown:

> The patient stands erect with his back against the wall, but with the shoulders relaxed. The examiner, standing directly in front, places his right hand below the clavicle over the left upper lobe, and the left hand in a corresponding position on the right side, and exerts slight pressure as the patient inspires. In the normal person the inspiratory lift of the two sides is synchronous and equal. A well-marked delay of either side in getting under way is suggestive of a pathologic process on that side.[1]

PERCUSSION

In the detection of early tuberculous lesions, percussion is much less trustworthy than auscultation. The physician who is not fortunate in having a quiet

* Read before the Hartford Medical Society, Feb. 19, 1923.

* The illustrations, with two exceptions, are from the motion picture "The Diagnosis of Tuberculosis," prepared for the Surgeon General during the World War, and are reproduced by his permission.

1. Dr. R. S. Starr of Hartford, Conn., told me the following, as illustrating the value of inspection: As he was a member of one of the heart boards in the army, cases were frequently referred to him because of tachycardia. In many of these cases unilateral inspiratory lagging was evident. Subsequent reexamination of the lungs almost invariably showed tuberculosis on the side of the lag. In a few instances in which the physical examination was negative, roentgen-ray examination showed the lesion to be present.

examining room would do well to spend the time commonly devoted to percussion in studying the symptoms and in searching for râles, as the heavy blow necessitated by distracting noises is quite valueless. Not only must the blow be a light one, but the pleximeter finger must be closely applied to the chest wall and the pressure at all times be constant. Moreover, unless one compares the note in exactly corresponding areas on the two sides, unwarranted deductions may be made.

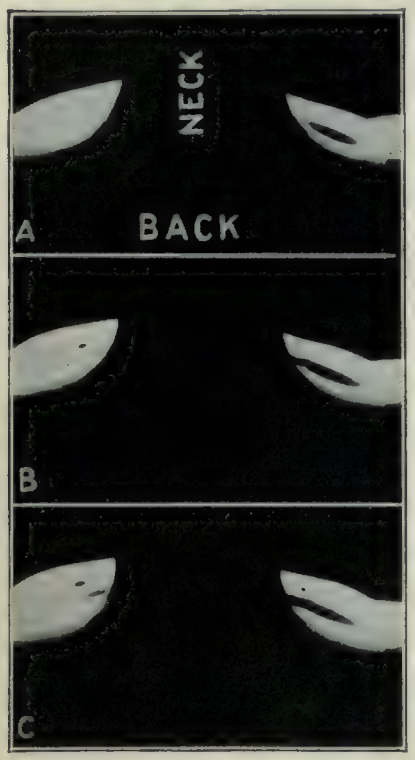


Fig. 1. — View of inspiration as one stands behind patient and looks down on front of chest: *A*, retraction and flattening of right chest apparent; photograph at end of expiration; dots not visible; *B*, inspiration begins, and as the right side lags, the dot appears first on the left; *C*, toward the latter part of inspiration the dot appears on the right side.

The descent of the lower lobes with quiet and deep breathing should always be ascertained. Failure to do this is the most common reason for missing small pleural effusions at the base. Percussion of the supraclavicular space is somewhat simplified, and comparison of corresponding areas on the two sides is made easier if the space is divided into two or three sections, depending on the size, by lines going anteroposteriorly. If then one stands behind the patient, who is seated, it is very easy to compare the note in the corresponding segments (Fig. 2). This is much easier of performance than the percussion of the apexes after the manner of Kroenig.

AUSCULTATION

Two children at play, one tapping the end of a long beam while the other listened with the ear applied to the farther end, suggested the stethoscope to Laënnec and there dawned a new era in medicine. The stethoscope furnishes us with the most trustworthy signs of pulmonary disease. In the detection of early tuberculous lesions, the study of the breath sounds alone is of little value. Slight diminution of the respiratory murmur sometimes appears early; but, unsupported by other evidence, it may be disregarded.

The overzealous and inexperienced examiner not uncommonly interprets the slight prolongation of the expiration at the right apex as evidence of tuberculous disease, overlooking the fact that the trachea inclines toward the right and is intimately in contact with the inner aspect of the right apex. Then, too, the right apex contains slightly less pulmonary tissue; and this fact, together with the position of the blood vessels at the right apex, causes the percussion note to be slightly less resonant.

The most significant auscultatory findings, however, are râles. It is surprising and most unfortunate that, though râles were described a hundred years ago and have been much discussed ever since, an agreement in terminology has never been attained. Fortunately, it is the interpretation placed on them that counts, though it would greatly facilitate in the exchange of ideas if some common language could be spoken. Crepitant and subcrepitant, dry and moist, large, medium, small and indeterminate are the terms used by various clinicians to describe what they hear.

TECHNIC OF RÂLE ELICITATION

In order to understand why in certain cases a special technic is necessary to elicit râles, a brief consideration of their probable method of production is necessary. They are produced in the air vesicles and smaller bronchioles, presumably in the following manner: When there is a great deal of increase in the bronchial secretion, the mere passage of air in and out of the bronchioles and air vesicles with ordinary respiration is sufficient to set in motion the mucus on their walls, which results in the vibrations we interpret as râles. In the early case of tuberculosis there is not enough secretion to be set in motion by quiet breathing. The vesicles are more or less expanded at all times because of the reserve air in the lung (Fig. 3 *A*).

It is not difficult to see why the common admonition, "Now take a deep breath," so often fails to elicit râles (Fig. 3 *B*). The normal lung tissue expands so readily and so greatly exceeds in amount the early tuberculous lesion that the inspired air, following the line of least resistance, finds it much easier to expand the normal vesicles than those that are more or less collapsed and occluded. Furthermore, while deep breathing increases the amplitude of inspiration, it does not materially affect the amount of reserve air in the lung.

If the reserve air is expelled, however, by a forced expiration terminating in a cough, the air vesicles will be compressed and their mucus-coated surfaces approximated (Fig. 3 *C*). With the succeeding inspiration, these walls are suddenly torn apart, and râles are produced (Fig. 3 *D*).

It is therefore important not only that the patient expire but that he conclude the expiratory act with a short cough, or, better still, with two short coughs. Now there are two reasons for this cough: Not only does it aid in getting rid of the reserve air and thus inducing a maximum air vesicle collapse, but, owing to the fact that with the act of coughing, the intrabronchial pressure is suddenly increased to a considerable degree, certain air vesicles may be expanded that would otherwise remain collapsed and "silent" (Fig. 3 *D*). So it is that râles are sometimes heard only during the act of coughing, and it is for this reason that two short coughs are preferable to one.



Fig. 2.—Division of supraclavicular fossa into equal spaces by anteroposterior lines; compare note in corresponding areas; same position used to detect lagging.

The importance of expiration and cough has been shown by Bray. He found that while only 23 per cent. of incipient cases exhibit râles on deep breathing alone, it was possible to demonstrate them in 76.5 per cent. if expiration and cough were employed. Even in advanced cases, only 27 per cent. show râles without cough. It

is unfortunate that the optimum time for cough is following expiration, because the natural time to cough is at the end of inspiration. It is, therefore, important to explain to the patient at the beginning of the examination exactly what is desired. Most patients will grasp what is wanted if told to "breathe out and cough all with one breath," but much time can be saved by illustrating just how it should be done. When all

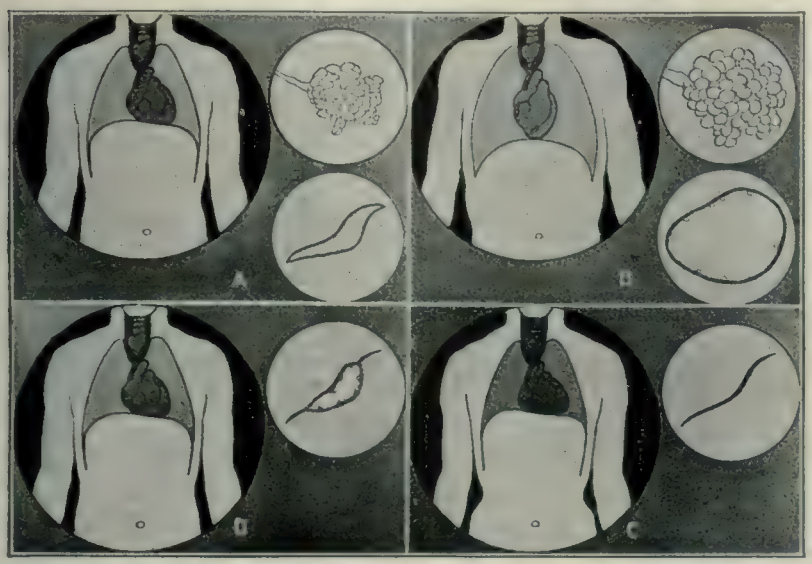


Fig. 3.—Why the common admonition, "Now take a deep breath," fails to elicit râles: *A*, air vesicle just prior to inspiration, at the end of a natural expiration; the cross-section of air vesicle shows the secretion on the walls of the air vesicle which are not in contact; *B*, with forced inspiration the air vesicle fills up but does not set in motion the small amount of viscid secretion present, and the walls are still separated; *C*, forced expiration followed by a cough results in the approximation of the walls of most of the air vesicles; *D*, occasionally the act of coughing suddenly and momentarily opens up collapsed and occluded vesicles, and râles are heard; more often the sudden inspiration following the cough separates the moistened surfaces, and râles are produced.

methods of instruction fail, if the patient is instructed to cough two or three times consecutively, the lungs are pretty thoroughly emptied with the last cough.

It does not seem that enough attention has been given to the part of inspiration that râles occupy. Textbooks are rather apt to be vague or to ignore it entirely. In the advanced case, if râles are heard without expiration and cough, they occupy chiefly the middle and latter part of inspiration. Now, if this patient breathes out and coughs, the râles are heard either with the act of coughing or the moment inspiration starts, and they continue throughout. As the activity lessens, the râles become fewer in the latter part of inspiration, though present at the beginning, and finally they may be heard only with cough. Accordingly, not only is it important to have the patient expire and cough, but one must have the bell of the stethoscope in place before the cough, and listen during cough and especially throughout the first half of the inspiration following. The movement of the stethoscope should be so timed that it takes place during expiration. In this manner the whole chest should be ausculted, especial care being given to the area adjacent to the spine of the scapula, from the second to the fourth thoracic spines, the supraclavicular and infraclavicular regions, and laterally the region under the lower edge of the pectoralis major muscle. More will be said concerning the last region later on.

The râles of an early case of tuberculosis are slightly moist in sound, relatively "small," and for the most part of the same size. In the more chronic case the size is not constant, large and small râles being intermingled ("indeterminate").

SOUNDS SIMULATING RÂLES

Various sounds of extrapulmonary origin, such as muscle snaps, and sternoclavicular, scapular and sternal sounds, are sometimes mistaken for râles. With the possible exception of sternal sounds, they do not, as a rule, occur as early in inspiration following expiration and cough as the râles due to parenchymal change. Atelectatic râles are heard at the end of forced inspiration and disappear on deep breathing.

A nervous patient may swallow after each cough, and a clicking sound is produced that sometimes closely simulates an air vesicle râle. In the lateral and anterolateral aspects of the chest, especially in long, slender persons, showers of fine, crepitant râles are often heard in the latter part of inspiration below the level of the transverse mammary line. Several deep inspirations superimposed on one another will cause them to disappear, while several forced expirations will cause their reappearance. They are always heard on both sides of the chest, are relatively drier than the râles of pulmonary disease, and are always heard toward the middle and latter part of inspiration. If a stethoscope with two bells is used, they appear first in the upper bell (Fig. 4). The râles originating in the air vesicles and smaller bronchioles, however, appear in the two bells synchronously.

Whether the sounds are due to the expansion of compressed air in the lower part of the lung or to the stripping off of the diaphragmatic pleura from the parietal pleura, as Bushnell believes, the practical point is that they are not indicative of a pathologic condition. Many an unwarranted diagnosis of tuberculous pleurisy

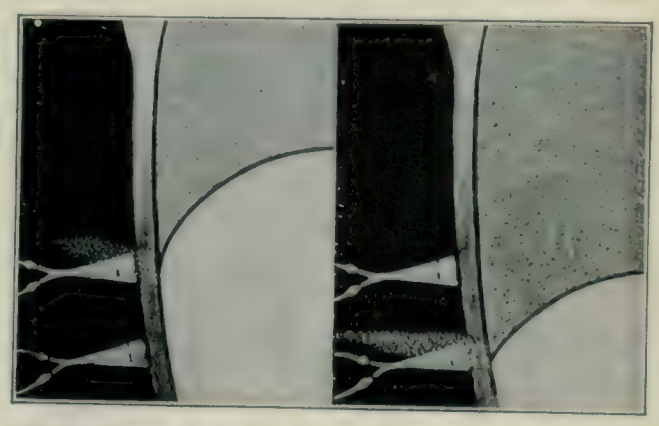


Fig. 4.—Marginal sounds are heard as the diaphragm descends—first in the upper bell, then in the lower; on the left, about the middle of inspiration; on the right, at the end of inspiration.

has been made in persons presenting vague symptoms on the strength of these marginal râles. The crepitant râles of early lobar pneumonia also appear during the middle of inspiration, and attain their maximum at the end. They would scarcely be confused with marginal râles. Expiration and cough do not materially alter their appearance in inspiration; but when resolution is under way and the secretion is less viscid, the

râles begin early in inspiration following expiratory cough.

Some years ago, I sent a man who I suspected might have tuberculosis to the hospital for observation and roentgen-ray examination. I had examined him once in my office and found no definite signs, yet the roentgen ray showed a tuberculous process in the outer part of the upper lobe below the apex, though the apex itself was clear. I then reexamined him, and when the stethoscope was placed well up under the lower edge of the pectoralis major muscle (Fig. 5) in about the anterior axillary line, many râles could be heard following cough. Many times since then I have discovered a lesion in this area. Sometimes it is impossible to demonstrate it clinically even when the roentgen ray reveals well marked pathologic changes. There is apt to be an inspiratory lag on that side, however, even when râles are not evident. A study of Figure 6 shows how inaccessible a lesion in this region is. Posteriorly, the interposition of the scapula renders the examination unsatisfactory; approach from above is prevented by the shoulder joint, while in front a well developed pectoralis major muscle obscures the signs. The most satisfactory access is secured if the arm is held in a position that relaxes the pectoralis major muscle, thus enabling the bell of the stethoscope to be pushed up under its lower border.



Fig. 5.—It is high up under the pectoralis major muscle that one often finds a lesion.

THE IMPORTANCE OF IMMEDIATELY RECORDING PHYSICAL SIGNS

That the significance of the physical signs may be determined, they must be studied together—they must be "added up," as it were. As few are skilled in mental arithmetic, it is desirable to record signs as soon as discovered rather than at the conclusion of the examination, as some important bit of evidence may be forgotten. This can be done quickly if symbols are used and a diagram of the chest is employed. After using a variety of rubber stamps of different sizes and a cut that I had incorporated in my history chart, I have found that a simple diagram drawn at the time of each examination has much to commend it (Fig. 7).

Now let us assume that our patient has been correctly inspected, properly percussed and skilfully auscultated, and that certain incriminating signs have been legally recorded. What are we to tell him? What justification have we for considering the process tuberculous—and if tuberculous, is it clinical tuberculosis that needs treatment or anatomic tuberculosis that does not require treatment? Failure to make this differentiation has resulted in the unnecessary breaking up of many homes, and during the war robbed Uncle Sam of many a soldier.

It is generally recognized that physical signs limited to the upper part of the lung are as a rule indicative of tuberculosis, and that those confined to the base, with no evidence of old trouble at the apex, are in most instances nontuberculous. Yet exceptions occur, and one must be ever on the alert to recognize them.

A middle aged woman, who complained of fatigue and cough, on several examinations exhibited a few râles above the right clavicle. The sputum and the roentgen-ray examination were negative, however, and her cough was cured by the removal of polypi from the right naris.

A young woman who for the last two years, since her recovery from a very early tuberculous lesion, had been in excellent health, developed a "cold" and cough a few months ago. Physical signs were very indefinite, and confined wholly to the extreme right base. The roentgen ray revealed a new tuberculous area just above the diaphragm, and bacilli were found in the sputum.

SYMPTOMS, NOT RÂLES, DETERMINE ACTIVITY

We may determine with reasonable accuracy from physical signs that tuberculous infection has occurred; but no physical sign—not even râles—can be accepted as an indication of activity. In fact, râles may not make their appearance till months after improvement has begun. A careful study of the symptoms is very necessary in every case.

As is well known, the so-called constitutional symptoms—anorexia, rapid pulse, loss of weight, easily induced fatigue, digestive disturbances, sweats and fever—are an evidence of toxemia, the cause of which may be the tubercle bacillus; but an almost identical symptomatology may accompany other conditions, as, for example, neurasthenia, syphilis and hyperthyroidism. If, in addition to the constitutional symptoms mentioned above, a persistent cough is complained of, especially if followed by vomiting, the suspicion of tuberculosis is strengthened; but, it should be noted, it is only a suspicion. Unless supported by a history of hemoptysis or pleurisy with effusion, or accompanied by persistent râles in the upper third of the lung, a parenchymatous roentgen-ray lesion or bacilli in the sputum, a definite diagnosis of tuberculosis is unwarranted.

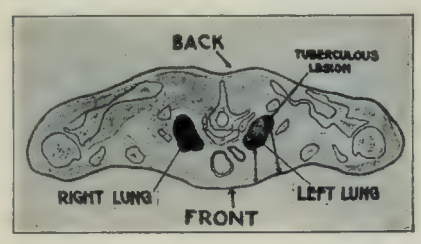


Fig. 6.—Cross-section, from above, at about the level of the third thoracic vertebra, showing inaccessibility of a lesion in this region.

Only recently has it been appreciated that cough, the most common of all symptoms, may be due to extrapulmonary conditions:

A woman, aged 34, consulted me a year ago because of a cough of four years' duration. It varied in severity, and of late had been much worse, interfering with sleep. Tuberculosis had recently been diagnosed, and she had been urged to take the cure. I was unable to substantiate the diagnosis, and the roentgenogram of the lungs was negative. A roentgenogram of the head, however, showed both antrums and the ethmoid cells filled with pus, the evacuation of which brought prompt gratifying relief of the cough.

In some instances, the infection of the sinuses seems to "spill over," as it were, from time to time, causing bronchitis of the larger tubes. In such cases it sometimes happens that, though the cough may be very loose and accompanied by profuse expectoration, thorough examination of the lung may demonstrate very few râles. This combination, loose productive cough with no physical signs, was the picture presented by

three cases of syphilitic bronchitis observed during the last few years.

During the early days of the late war, France lost two divisions, about 86,000 fighting men, by classing them as tuberculous. Of the soldiers returned to Canada suspected of being tuberculous, 33 per cent. were found to be nontuberculous. In this country, nearly one quarter (23 per cent.) of 18,713 soldiers admitted to tuberculosis hospitals were found to be nontuberculous [Bushnell].

During the year that I was chief of the tuberculosis division of the Walter Reed General Hospital in Washington, 426 cases were referred as tuberculosis suspects. As the result of combined clinical and roentgenologic examination 47.6 per cent. were found to be nontuberculous, and 30 per cent. had active lesions. The remainder had old inactive processes. In eighty-five, the lesion was disregarded and they were returned to full duty.

Hypertrophied tonsils are sometimes responsible for a persistent cough, but the throat specialist who operates without first excluding a pulmonary lesion is assuming a grave responsibility. In one such case in which the underlying tuberculosis was not recognized, a rapidly progressive faucial tuberculosis developed.

Several years ago, a young man came to me for examination who presented extensive disease of the larynx. He had been sent by his family physician to a throat specialist, and a diagnosis of tuberculosis had been made. Immediate departure for the Southwest had been advised, and a bad prognosis had been given. I could find no sign of pulmonary disease, a very rare thing with extensive laryngeal involvement. A chancre was admitted, and the Wassermann reaction was positive.

Hemoptysis, not associated with mitral stenosis, should always be considered due to tuberculosis, even though occurring in a robust person who is apparently in the best of health. At the Adirondack Cottage Sanatorium, a definite roentgen-ray lesion was found in 90 per cent. But let no one deduce that the remaining 10 per cent. were not tuberculosis because of the negative roentgen-ray examination. Concerning such cases, Baetjer says: "We find lungs which are absolutely clear; yet six or eight months later we begin to see slight changes which at that time we can say are tuberculous, when during the period of hemorrhage the lungs were absolutely clear." Insidious pleurisy with effusion should be considered tuberculous and so treated:

Recently I saw, in consultation, a boy, aged 16, because of a recent hemorrhage. He had had a serous pleuritis eight years before, but it was made light of by his physician, and no treatment for tuberculosis was instituted. The greater part of one lung is now involved.

A young married woman was referred to me who, when a child, had been very ill with pleurisy, but recovered and for a number of years appeared to be in good health. When about 22 and while seemingly very well, one morning she suddenly had a hemoptysis of about 1 ounce. She was at once examined and assured that her lungs were "as strong as a coal heaver's." There was never any recurrence of the bleeding, and except for rather frequent colds she has enjoyed good health till about two months before. When I saw her the right upper lobe was quite extensively involved, and invasion of the lower lobe had already begun.

In view of the fact that municipal and state laboratories throughout the country make sputum examinations, it is surprising that recourse to this valuable diagnostic procedure is not more frequently made. Only 267 tests were made in our city laboratory during 1922, and from personal observation during the time I was assistant bacteriologist it was very uncommon to have a second specimen sent if the first was negative. A physician once told me that, as the patient's family seemed very well pleased with the single negative report, he thought he would leave good enough alone. We should accustom ourselves to think that sputum examinations are performed in several stages, and have specimens sent in on several consecutive days or until a positive finding is reported. And let it be said that a careful examination cannot be performed quickly. Extensive physical signs and repeatedly negative sputum almost certainly exclude tuberculosis.

Individuals who can ill afford the expense are too often referred to the roentgenologist when an examination of the sputum would settle the diagnosis.

The roentgen ray is of great help, not only in revealing lesions that escape detection by physical examination but also in accurately determining the extent of the lesion and, to a certain extent, the activity. The roentgenologist who combines a skilful technic with

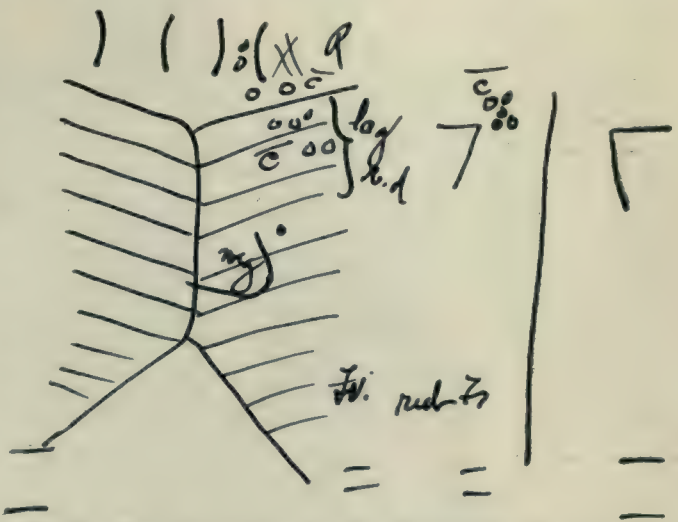


Fig. 7.—Simple diagram drawn at time of examination. Interpretation: Retraction above left clavicle. Left upper chest lags with inspiration. Kroenig's isthmus on left narrowed, owing to inward displacement of outer border. Expansion at left base, both anterior and posterior, is diminished. On the right there is good expansion. The breath sounds are somewhat distant below left clavicle. Râles are heard only following expiration and cough, and are present above the left clavicle and below in the outer part of the first and second spaces; also posteriorly in the inner part of the superspinous fossa just above and to the level of the spine of the scapula. A friction rub is heard over the left lower lobe. The heart is normal in size, and no abnormality is detected. It took one and one-half minutes to make this diagram and record the findings. When one is familiar with the symbols, the diagram can be "read" in a few seconds—almost instantly. Rapidly writing these findings in long hand took four and one-half minutes. Reading them a month later would require at least as long.

sound judgment based on a large experience is of great assistance to the clinician. He will, however, be led into error from time to time if he considers only the roentgenologic aspect of the case.

We have considered the methods of eliciting physical signs and have discussed their significance; but whom shall we examine? There can be no difference of opinion as to the necessity of carefully examining the lungs of all young adults irrespective of their complaint. But is it essential to make a similar examination of persons who are well past middle life?

A stonemason, aged 65, consulted me because of sores in his mouth. Although his radial arteries were very markedly beaded, he did not look his age. The right half of the lower lip was somewhat swollen and red. On each side of his tongue and on the inner aspect of the lower lip were ulcers

having the same characteristic. They were about 1 cm. long, not indurated, and covered with only a small amount of exudate. They appeared to be rather shallow; but, when put on tension, they presented numerous rather deep sulci suggesting a cauliflower. The adjacent lymphatics were not enlarged. Syphilis at first seemed the most probable cause. During the complete physical examination, the left upper lobe was found to be extensively infiltrated. The sputum was loaded with tubercle bacilli, and Dr. J. C. Rowley, who examined a specimen removed from the ulcer, reported it to be tuberculous. The Wassermann reaction was negative.

A man, aged 62, was referred to me because of a persistent sore on the side of his tongue. He had a single ulcer that resembled in all particulars the ulcers in the case previously described. Aside from the ulcer he felt perfectly well. He was working daily, and had lost neither in weight nor in strength, though he had a cough. Both upper lobes were extensively involved, and the sputum contained large numbers of tubercle bacilli. A specimen from the ulcer was examined by Dr. Rowley, who reported "tuberculoma."

These two very unusual cases demonstrate that tuberculosis is not confined to middle life. In fact, the death rate, when based on the number of those living for various age groups, shows fully as high a rate for those past 60 as during earlier periods.

CONCLUSION

There is no divining rod for detecting tuberculosis. Valuable as the diagnostic aids are, it is the clinician who must assemble and carefully weigh the various and at times conflicting bits of evidence. Irrespective of the patient's age or the presenting symptom, the possibility of tuberculosis should always be considered. The diagnosis does not consist merely in the detection of breath changes, the elicitation of râles, or the discovery of suspicious roentgen-ray findings. It is only by the consideration of all available data that diagnostic accuracy can be obtained.

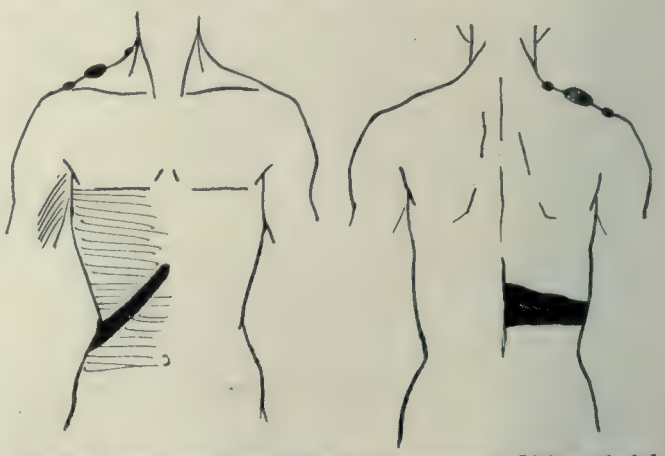
179 Allyn Street.

DIAPHRAGMATIC PLEURISY *

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One of the most trying and difficult symptoms to interpret is pain. When the pain is not felt by the patient at the site of its origin but is referred to other and perhaps distant parts of the body, the difficulty obviously increases. Such pain is referred pain and is found in diaphragmatic pleurisy.

Capps,[1] by means of a series of ingenious experiments on man, demonstrated, in 1911, that the visceral pleura is not endowed with pain sense and that the parietal pleura is richly supplied with sensory fibers from the intercostal nerves; that irritation of the parietal pleura produces pain that is accurately localized by the individual over the spot irritated. He demonstrated, at the same time, that the diaphragmatic pleura receives its nerve supply from two sources, the phrenic nerve and the lower six intercostal nerves. The intercostal nerves supply the peripheral rim of the diaphragm anteriorly and laterally, as well as the posterior third of the diaphragm. The phrenic nerve supplies the central segment of the diaphragm; and when this portion of the pleura is irritated, the pain is referred to the skin and tissues supplied by the third and fourth cervical nerves, from which part of the phrenic nerve originates. Irritation of that portion of the diaphragmatic pleura supplied by the seventh to the twelfth intercostal nerves produces pain over the lower thorax, epigastrium and, at times, the abdomen, extending almost to Poupart's ligament. These pains are referred pains, since the patient localizes them at some distance from the site of the irritation.



Heavily shaded areas show points of tenderness. Lighter shaded area, possible area of hyperesthesia.

Recently, Capps and Coleman[2] demonstrated on patients that irritation of the diaphragmatic peritoneum produces referred pains almost identical with those produced by irritation of the diaphragmatic pleura. They state that stimulation of the diaphragmatic peritoneum produces pain which is never felt in the diaphragm itself but is localized in the neck, especially in the trapezius muscle and over the lower chest and portions of the abdomen. Their explanation of the referred pain from the diaphragm is that the impulses are carried by afferent fibers of the phrenic nerve to the cervical cord, and referred to the neck by sensory cutaneous nerves of the fourth cervical segment.

Mackenzie[3] believes many pains, especially those originating in irritation or disease of a viscus, are referred pains. He feels that irritation of a viscus produces a group of stimuli traveling along a reflex arc, which, in turn, produce a sensation of pain in certain referred areas, often more or less distant from their point of origin.

Clinically, the onset of a pneumonia with severe pain in the abdomen, either upper or lower portions, has been noted innumerable times and reported,[4] especially in children. We have found that with the onset of pneumonia in adults pain will frequently be present in the abdomen, a shoulder or one side of the neck, as well as in the chest. Careful examination of the patient may not reveal any abnormal physical findings in the chest even at the site of pain except a possible hyperesthesia of the skin or some tenderness of the subcutaneous tissues or of the muscles beneath the skin, but tenderness may be elicited in various remote areas, as in the neck, the back and abdomen. In the neck

* From the medical clinic of the Cincinnati General Hospital and the department of internal medicine of the University of Cincinnati.

1. Capps, J. A.: An Experimental Study of the Pain Sense in the Pleural Membranes, Arch. Int. Med. **8**: 717 (Dec.) 1911.

2. Capps, J. A., and Coleman, G. H.: Localization of Pain Sense in Parietal and Diaphragmatic Peritoneum, Arch. Int. Med. **30**: 778 (Dec.) 1922.

3. MacKenzie, Sir James: Symptoms and Their Interpretation, London, Shaw & Sons, 1920.

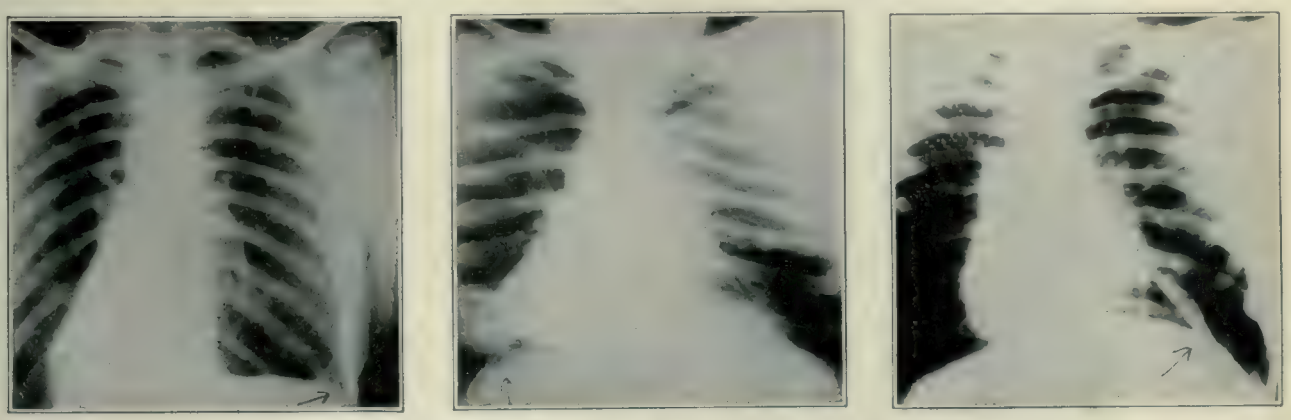
4. Griffith, J. P. C.: Pneumonia and Pleurisy in Early Life Simulating Appendicitis, J. A. M. A. **41**: 531 (Aug. 29) 1903. Herrick, J. B.: Abdominal Pain and Pleurisy in Pneumonia, J. A. M. A. **41**: 535 (Aug. 29) 1903.

and shoulder, the tenderness is usually elicited by pinching the skin overlying the ridge of the muscle, as the trapezius; more often, by pinching the muscle edge itself. The middle third of the trapezius edge is the most frequent segment involved, though the upper and lower segments are tender almost as often as the middle third. At times, the entire muscle edge or a great part of it is tender to pressure. This symptom was the commonest evidence of referred pain, being present eighty-five times in 126 patients, or in almost 70 per cent. The tender areas were found on the affected side, though at times the trapezius edge of the opposite side was involved without any other evidence of involvement of that side of the diaphragmatic pleura. Tenderness may be elicited in other parts of the neck and shoulder, though infrequently, as in the supraclavicular and infraclavicular fossae, at the tip of the shoulder, over the scapula and in the interscapular region.

The area of tenderness second in point of frequency (68 per cent.) was in the abdomen. The most frequent location was a rim several centimeters wide below the costal margin on the affected side. The tenderness may commence at the xiphoid region and extend into the flank. The pain elicited was rather sharp, and as a rule there was only moderate muscle spasm and rigidity. The tenderness was usually more severe in the flank than below the ribs anteriorly. The entire half of the abdomen on the affected side may be involved, as determined by the extent of the diaphragmatic pleural irritation. In five patients, there was marked pain and tenderness over the right lower quadrant, associated with muscle spasm and rigidity. The entire side of the abdomen in two patients was rigid throughout and exquisitely tender to pressure. There may also be tenderness localized in the epigastrium.

In 60 per cent. of the patients studied, tenderness was elicited beneath the twelfth rib posteriorly. This area of tenderness is in reality a continuation of the tender zone beneath the ribs anteriorly and in the flank. There is actually a rim of tenderness along the rib margins from spine to xiphoid. This area beneath the ribs in the back is usually broader than the involved region beneath the ribs anteriorly. The pain elicited here may also be severe, but is usually not as sharp as in the flanks and is of about the same intensity as the pain in front. In the back, tenderness has at times been elicited along the spinous processes or to each side of the spine of the lower six dorsal vertebrae, and less frequently below the angles of the scapulae. Additional regions in which tenderness was elicited were present, though not constantly. Some of these regions were the supraclavicular and infraclavicular fossae, shoulders, axillae, anterior surface of the chest, spinous processes of the vertebrae, the pectoralis major and the lower scapular region.

A very dramatic symptom, when present, is hyperesthesia and hyperalgesia of the skin. This symptom was present in almost 20 per cent. of the patients. Its extent varied from a small area which the patient could localize with his finger to involvement of the skin from above the nipple to below the umbilicus and extending from the midline anteriorly to the vertebral column. Usually, the hyperesthesia is not extensive, and it has been found especially localized in the lower chest and axilla and the upper abdomen. In three patients, the upper arm was involved; and in one of these three, the pain extended to the finger tips. Several other areas were involved at times. These regions were the interscapular spaces, flanks, lower abdomen, lower half of the breast and various scattered areas of the back, usually in the neighborhood of the angle of the scapula and once to the thigh.



Adhesions distorting the diaphragm in chronic diaphragmatic pleurisy.

Any portion of the skin supplied by the lower six intercostal nerves may be involved as well, though rarely, as the skin of the arms, shoulders and neck. In several patients, this hyperesthesia was so marked that the pressure of the gown was almost unbearable. At times, pain is elicited on percussion and again it may only be detected by pinching the skin.

In the majority of the patients, the onset was acute, as was to be expected. Just as we have acute costal pleurisy occurring alone or associated with pneumonia, so we have diaphragmatic pleurisy. Kelly and Weiss [5] reported, in 1918, a small series of patients with diaphragmatic pleurisy, and in this series of patients one of the first observed was a man in whom most of the symptoms were referred to the abdomen. Later, he slowly developed consolidation in the affected side. The increase of the infiltration could be watched from day to day, until the entire lower lobe was involved. Frequently, with the onset of pneumonia with pleurisy, the patient does not come under the physician's care until there are definite signs of consolidation. This is especially true of patients seen in hospital practice. In the last few years, diaphragmatic pleurisy has been detected many times in association with pneumonia when there was no definite evidence of costal pleurisy.

5. Kelly, T. H., and Weiss, H. B.: Am. J. M. Sc. **156**: 808 (Dec.) 1918.

With the acute onset, the areas of tenderness and hyperesthesia, as described, were almost always present. In the patients with chronic involvement, all of the characteristic signs were not present. Usually one, rarely two, of the distinctive areas of tenderness were absent. In this type of patient, the history of respiratory infections is a great aid in the diagnosis.

In a few of the chronic cases, there have been acute exacerbations giving all of the characteristic physical findings. In the series of 126 patients, thirty were classed as chronic and four of these presented an acute exacerbation. In only 18 per cent. of the patients studied were friction rubs heard. These sounds were due to the involvement of the costal pleura. It is evident that the pleural involvement can be so extensive as to affect both the costal and the diaphragmatic portions. The friction rubs were usually localized over small areas, most frequently over the axillae, rarely extending into the front or back of the chest.

The onset of pneumonia was heralded in 20 per cent. by symptoms of diaphragmatic pleural disease. As the consolidation increased, the characteristic findings of pleurisy were dissipated, as usually occurs when there is only a costal involvement. Nausea occurred in only 5 per cent. of the patients; vomiting was present in 7 per cent. Only three patients of the 126 had hiccup. This is much less than one would expect with diaphragmatic disease. One patient with involvement of the right side had contraction of the entire right rectus muscle. The entire muscle would move upward about one half inch with each contraction, while the left rectus muscle was almost stationary.

The diagnosis in the majority of patients with diaphragmatic pleurisy is not difficult. In the acutely ill patients, there is usually a history of respiratory symptoms, as sudden onset, pain in the side, cough; perhaps a chill. Soon, there appears the characteristic areas of pain localized in the neck, upper abdomen and back, with the tender regions along the trapezius edge and beneath the rib margins in the affected side, perhaps associated with areas of hyperesthesia and hyperalgesia. Usually, all the noted areas of pain and tenderness will be present. The difficulties arise when the pain in the abdomen is sharp and is associated with varying degrees of muscle spasm and rigidity. In abdominal disease, deep pressure increases the pain over the affected area. Other symptoms, such as constipation or diarrhea, and frequently nausea and vomiting, without symptoms of respiratory disease, usually are present. Again, in abdominal disease, tenderness beneath the ribs posteriorly and along the edge of the trapezius is quite infrequent. Most of the difficulty will lie in the differentiation of disease in the upper abdomen, and such a patient can usually be observed for twenty-four hours or more, when other findings will have developed, clinching the diagnosis of disease above or below the diaphragm. An increased white blood cell count, with an increase in polymorphonuclear neutrophils, will usually be present in both pleural and abdominal disease.

The greatest difficulty will present itself when there is irritation of the diaphragmatic peritoneum. In such instances, a careful history and repeated physical examinations while the patient is under observation should aid in determining the diagnosis.

In pericardial disease, there may be pain referred to the epigastrium and shoulder, but examination of the heart will usually allow one to determine the nature of the disease producing the symptoms. In angina pectoris, when pain is referred to the neck, shoulder and arm and at times to the abdomen, the history of the onset of the disease, together with the examination of the circulatory system, will usually aid in differentiating the condition from diaphragmatic pleural disease.

In patients suffering from chronic forms of the disease, there are remissions in the severity of the symptoms, and occasional acute exacerbations; and most of the time, all of the characteristic findings will not be present. In one, the pain in the shoulder may be present; in another, the pain beneath the ribs, either anteriorly, posteriorly or in the flanks will not be present. Hyperesthesia is infrequent in this form of the disease. Early in the study of this syndrome, it was felt that the roentgen-ray examination would be of great aid, but recently it has been felt that less information has been obtained than had been hoped. In the acutely ill patients, there is often a lagging of the diaphragm on the affected side, as seen under the fluoroscope, though many patients with all of the characteristic physical findings did not have this symptom. In the chronic cases, distortion of the diaphragm due to adhesions is frequently seen, the distortion depending on the type and extent of the adhesions.

The treatment has been that of any other form of pleurisy. Patients who have had the disease for some time will find great relief when the upper abdomen and lower chest is tightly strapped, the diaphragm thus being splinted.

In patients with marked pain in the side or with hyperesthesia, iced packs, usually kept on the chest, for from one to two hours, gave great and often permanent relief of the pain.

4 West Seventh Street.

ACUTE INTESTINAL OBSTRUCTION

WITH SPECIAL REFERENCE TO PARALYTIC ILEUS FOLLOWING ABDOMINAL OPERATIONS

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In 1909 and again in 1913 I [1] published two papers on the subject of acute intestinal obstruction. Since that time I have been keenly interested in the clinical phase of this subject as it has arisen in patients coming under my own observation, and also in the voluminous published reports on this subject.

In reviewing the literature, one is amazed at the conflicting reports pertaining to the fatal factor in acute intestinal obstruction. This is strikingly illustrated in the extensive review by Ellis.[2]

Nesbitt,[3] in 1899, in a study of the content above the occlusion, found that food rich in lecithin resulted in cholin and neurin, and he believed that neurin was the responsible fatal factor in acute intestinal obstruction.

Buchbinder,[4] in 1900, showed that the intestinal wall is not permeable to bacteria until a severe degree of gangrene develops, or until injury is produced in the intestinal wall.

1. McKenna, Hugh: Paralytic Ileus, J. A. M. A. **52**: 1239-1241 (April 17) 1909; Drainage of the Upper Intestinal Loop for the Relief of Ileus, Surg., Gynec. & Obst., 1913, p. 674.
2. Ellis, J. W.: Cause of Death in High Intestinal Obstruction, Ann. Surg. **75**: 429-448 (April) 1922.
3. Nesbitt: J. Exper. Med. **4**: 1, 1899; quoted by Ellis (Footnote 2).
4. Buchbinder: Deutsch, Ztschr. f. Chir. **55**: 458, 1900; quoted by Ellis.

Kukula,[5] in a study of intestinal contents from an occluded bowel, divided the toxic substances into two groups: (*a*) an excessive breakdown of the carbohydrates, and (*b*) putrefaction of proteins. He says that this toxic substance is obscure, but may be extracted with amyl alcohol. This extract is as toxic as the first filtrate of the intestinal content, so the toxin is unchanged by the method of extraction.

Borszeky and Generisch[6] say the toxin is due to *Bacillus coli,* and that *Bacillus coli* is found in the blood and peritoneum before there is any injury to the intestinal wall.

Albeck[7] tested the intestinal wall as to permeability, and concludes that death is due to a toxin found at necropsy, and that the intestinal mucosa is ecchymotic. He says that this toxin is soluble in water, resists boiling, and passes through a Chamberland filter. In backing up his theory, he cites intestinal strangulation without peritonitis.

Wizosck[8] made bouillon cultures under aerobic conditions and obtained the same result as in the original intestinal content. He states that the toxin possesses hemolytic, cytolytic and heat-resisting properties. He thinks that the toxin is bacterial in origin, that there are different toxins from different bacteria, and that bacteria may develop under symbiotic conditions.

Magnus-Alsleben,[9] after feeding meat and apparently after feeding bread, fats and starches, produced a toxic substance from the upper intestinal content and its mucosa which he did not get when he fed milk protein only. He concludes that the toxic agent does not come from the pancreas, as tests made from a pancreatic fistula gave trypsinogen but no trypsin. He thinks that the intact mucosa and liver are retoxifying agents.

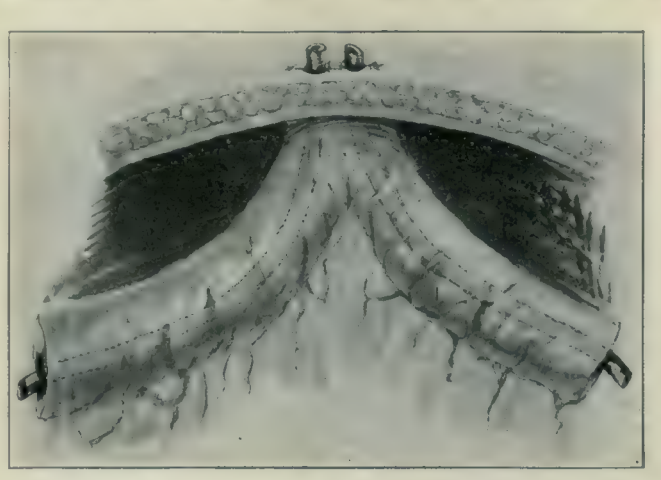


Fig. 1.—Plan of jejunostomy made through small opening in abdominal wall, with two catheters in place.

Von Khautz[10] says that death in mechanical or paralytic ileus without simultaneous peritoneal infection is not due to bacteremia. It is assumed that the toxic substance comes from the intestinal content.

Stone, Whipple and Bernheim say that the toxin is derived from the mucosa of the obstructed small intestine, and that this agent is not destroyed by heat.

Gerard[11] says that a combined histamin derivative is also present in obstruction fluid. Evidence is presented that this is of peptid nature. This article refers frequently to the work of Hanke and Koessler. Koessler[12] writes:

> The intestinal content contains normally, as proved in the last two years, toxic amins of the type of histamin and tyramin. Histamin has a constrictor action on the smooth muscle fibers of the bronchi and the intestinal wall. Normally, these toxic substances are not absorbed from the intestinal mucosa. When the mucosa is injured, absorption will take place and might lead to symptoms of severest intoxication. Histamin or a similar amin might play an important rôle in producing spastic constriction of the intestine with a fall of blood pressure and symptoms of general shock. We found enough histamin in the content from the ileum (ileac fistula) to kill the patient if it had been absorbed. In the normal person, it is stored in the liver, where it is gradually catabolized to harmless derivatives. It seems that injury of the normal blood supply, leading to ischemia and necrosis of the mucous layer of the intestine, is probably most frequently the first cause of the ileus, owing to absorption of the toxic material.

Embryologically, the duodenal wall has an extensive network of glandular tubules in striking contrast to any other part of the intestinal tract, although some glands are found in other parts of the canal. These embryologic duodenal tubules are the anlage of the glands of Lieberkühn and Brunner. If the theory respecting the toxic origin of the intestinal content is correct, then there is a scientific basis for the well-established clinical fact that high intestinal obstruction, unrelieved, leads early and rapidly to a fatal termination.

CAUSES

The causes of intestinal obstruction are well known and will not be enumerated here. Interest centers chiefly in one cause, namely, paralytic ileus following abdominal operations. I will deal here, therefore, with this phase of acute intestinal obstruction. It is interesting to note the relative infrequency with which the surgeon sees this condition, as compared even with the relatively short time since the publication of the earlier communications. The explanation of these beneficent results lies chiefly in two factors: (*a*) an earlier diagnosis of acute abdominal lesions with the institution of immediate surgical intervention, and (*b*) a more refined surgical technic in the management of abdominal operations that permit the surgeon to perform the most extensive operations with a minimum of insult to the abdominal viscera. There still remains, however, an appallingly high mortality rate in high intestinal obstruction, and it is toward the solution of this grave problem that my efforts here are directed.

DIAGNOSIS

The clinical picture is so well understood that I will direct attention only to certain salient features that would appear to corroborate the theory of a rapid absorption of a powerfully toxic intra-enteric substance. This reaction gives expression in a rapidly lowering blood pressure, a quickened thready pulse, a pinched face, a cold clammy skin. The patient, in addition to having distention, reversed peristalsis and intestinal vomiting, has the appearance and symptoms resulting from a profound poisoning.

5. Kukula: Arch. f. klin. Chir. **63**: 773, 1901; **65**: 773, 1901; quoted by Ellis.
6. Borszeky and Generisch: Beitr. z. klin. Chir. (Bruns') **36**: 448, 1902; quoted by Ellis.
7. Albeck: Arch. f. klin. Chir. **65**: 569, 1902; quoted by Ellis.
8. Wizosck: Virchows Arch. f. path. Anat. **78**: 82, 1904; quoted by Ellis.
9. Magnus-Alsleben: Beitr. z. chem. Physiol. u. Path. (Hofmeister's) **6**: 503, 1904-1905; quoted by Ellis.
10. Von Khautz: Arch. f. klin. Chir. **88**: 42, 1908-1909; quoted by Ellis.
11. Gerard, R. W.: J. Biol. Chem. **52**: 11 (May) 1922.
12. Koessler, K. K.: Personal communication to the author.

If these patients are seen early, examination of the abdomen by auscultation may be of some value; but I must say that I have paid but little attention to this means of diagnosis. To the experienced surgeon, the most important factors in diagnosis are: (1) history; (2) abdominal distention; (3) intestinal vomiting; (4) heart action and blood pressure; (5) facial expression; (6) leukocytosis, and (7) elevation of temperature. As I enumerated in a previous paper, there are many other diagnostic points, but those outlined are the cardinal symptoms on which to base a radical type of treatment.

TREATMENT

Before the institution of surgical treatment for the relief of obstruction, it is presupposed that all sane methods of medical treatment have been exhausted.

In considering the surgical treatment of high intestinal obstruction, it is gratifying to note the fact that high enterostomy is coming to be more frequently recognized as a logical surgical procedure in the treatment of this condition. Because of the discussion occasioned, chiefly by inexperienced clinicians, respecting the value of treating these patients by passing a duodenal tube by mouth, I will quote from a previous communication:

> Can the duodenal secretions be drained off per os by means of the stomach or duodenal tube? I believe not.
>
> (*a*) Clinical experience in these cases with duodenal lavage has not given good results.
>
> (*b*) Anatomically, it would be difficult to remove all secretions from the duodenum, and particularly so in cases of acute paresis of this portion of the intestinal tract.
>
> (*c*) Drainage of the duodenum must be permanent until the paresis of the bowel has completely subsided.



Fig. 2.—Diverticulum produced by performing type of enterostomy described.

Permanence of drainage of the duodenum can most effectively be established by an enterostomy, preferably high up in the jejunum. However, I do not recommend as high a jejunostomy as I did in a previous communication; first, owing to the disturbance with pancreatic digestion resulting in rapid emaciation of the patient if closure of the fistula is not early established, and secondly, because of the rapid digestion of the skin around the enterostomy produced by the trypsin from the pancreatic secretion. It is my opinion that if the operation be performed early enough, enterostomy in any part of the small intestine may give relief. I cannot urge too strongly the necessity of preventing trauma and shock to the abdominal viscera by noninterference with any but the very small loop of distended intestine in which you wish to establish enterostomy. For this reason, I have always maintained that consultation should be arranged in all cases, so that a definite plan of action may be laid down which will enable the surgeon to understand precisely what he intends to do before the operation. I have seen failures of this operation, and have had others reported to me, in which an abdomen was opened in an acute ileus, where the operator, after traumatizing large portions of the viscera and finding no organic obstruction, performed enterostomy. It is needless for me to tell you that with a patient in the extreme degree of shock in which we find them in acute ileus, this extra amount of manipulation of the abdominal viscera is enough per se to produce death.

Any surgeon of experience would recognize the futility of attempting the passage and maintenance of a duodenal tube in the presence of acute distention, reversed peristalsis and practically continuous vomiting. I believe that clinicians will be pretty generally agreed that if by chance the tube were inserted, there would be no likelihood of keeping it in the duodenum, and therefore the procedure would be of no therapeutic importance in this consideration.

I am even more strongly of the opinion that high enterostomy should be performed than I was in my previous discussions. As I have repeatedly emphasized, enterostomy, which is always performed under local anesthesia, is made well above and to the left of the umbilicus, as this location gives entrance to the abdominal cavity at a point at which the upper portion of the jejunum can be picked up most accurately. The first loop of small intestine that presents itself is picked up at the site of the opening. In a large percentage of cases, this will give a loop of small intestine well up in the jejunum.

In my early experience in the postoperative treatment of some of these patients, I was agreeably surprised to note that, within a short time after the performance of enterostomy, normal evacuations began to take place by rectum. This fact was somewhat puzzling until intestinal resection was performed for the closure of the enterostomy. Figure 2 represents the fistulous diverticulum of the intestine at the time of secondary operation, and explains the anatomic arrangement of the bowel which permits the intestinal current to pass in the normal way.

In a recent patient, a boy, aged 7 years, admitted to St. Joseph's Hospital suffering with a desperate condition of general peritonitis following a delayed diagnosis of acute perforative appendicitis, in which an immediate operation of incision and drainage of the abdomen was performed, paralytic ileus was so advanced at the time of admission that, under the most painstaking care, the distention remained, and on the tenth day the obstruction became complete. High enterostomy was performed under local anesthesia, and the patient recovered.

I present this brief history for two reasons, as aside from these there was nothing unusual about this case: (1) the obstruction became complete at a late date, and (2) the enterostomy remained open for only a few days. During this critical period, however, it served a twofold purpose: (1) allowing a direct and immediate escape of gas, and (2) permitting the lavage of the toxic duodenal content by means of the instillation of salt solution. Within a week, practically no intestinal secretion passed out through the artificial stoma. The bowels began moving in the normal way, and the enterostomy opening closed of its own accord, and Figure 3 is a photograph of the abdomen of the patient as it has remained since, with no apparent intestinal

disturbance because of this self-closing enterostomy and its fixed attachment into the abdominal wall.

I present these facts because I have always been of the opinion that enterostomy for acute obstruction should be performed in a precise and definite way. I laid definite stress on this point in a previous paper, and still do so. For this reason I shall review briefly cer-



Fig. 3.—Enterostomy that has automatically closed.

tain points in connection with the technic that seem imperative to me:

1. The anatomic location should be such that it will permit picking up the upper jejunum with a minimum amount of trauma.

2. The incision through the abdominal wall should be small, as this arrangement prepares the way for the early formation of a diverticulum of the intestine, which anatomic condition early permits at least a part of the intestinal current to pass in the normal way, after enterostomy has relieved the acute obstruction. This plan is of paramount importance, especially in badly weakened patients in whom, if the entire intestinal content passes out of the enterostomy opening for more than a week, absorption is so interfered with that emaciation swiftly ensues. Moreover, when the enterostomy is high, the pancreatic secretion pouring out on the skin becomes very distressing because of its digestive action. It is therefore of much importance to divert as much of the intestinal content to its normal course as early as possible. This is particularly true in those patients who will not stand early secondary operations for the enterostomy closure.

3. In performing enterostomy, I follow the plan of using one row of Lembert's sutures to approximate closely the serosa of the intestine to the cut edges of the skin. This arrangement invites the early formation of an intestinal diverticulum. Mayo [13] presents what appears to be a rather ideal scheme of performing enterostomy by passing a catheter through the omentum and then invaginating it in the wall for some distance before entering the lumen of the intestine. This plan is worked out with the idea of avoiding a secondary operation for the closure of the enterostomy opening.

Whatever type of enterostomy is performed, I am of the opinion that the procedure having a minimum of intra-abdominal manipulation, with the maximum security against peritoneal contamination, will be considered the operation of choice, irrespective of whether or not a secondary operation will be necessary to close the intestinal fistula. I have always followed the plan of picking up the loop of distended small intestine with rubber mounted forceps, rarely, if ever, introducing the fingers or other instruments into the abdominal cavity; and I wish to place special stress on the point of minimizing the amount of intra-abdominal manipulation in the management of these grave cases.

13. Mayo, C. H.: Acute Intestinal Obstruction, J. A. M. A. **79**: 194-197 (July 15) 1922.

CONCLUSIONS

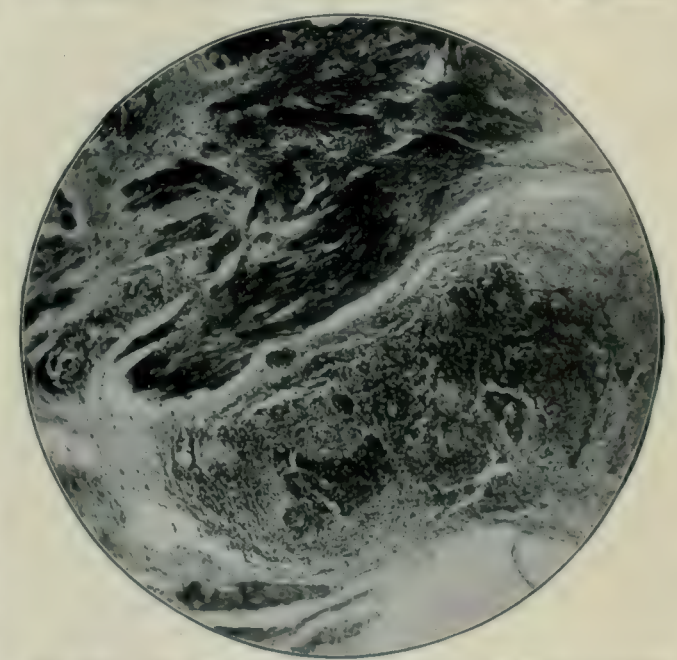
It would appear that a diverticulum may be produced in the formation of the jejunostomy, an anatomic arrangement which permits the enterostomy to perform a dual function: (*a*) the immediate introduction of salt solution into the upper intestine permitting the escape of the intra-enteric toxins and gases; (*b*) the early establishment of the enteric current, a condition which produces normal intestinal absorption and digestion, thereby preventing rapid emaciation of the patient.

104 South Michigan Avenue.

CANCER OF THE URINARY BLADDER CURED BY RADIUM

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Justification for the report of a single case is, in this instance, furnished by two distinct features: 1. An infiltrating bladder cancer was healed and has not returned in more than seven years. 2. This heal-



The upper left half shows the normal bladder wall, the lower right half, the invading carcinoma. The solid strands can be observed.

ing was accomplished by transabdominal radium radiation. One mild intravesical topical application of radium was made, but a review of the record shows that its influence, if any, was insignificant. The case was observed from October, 1914, to March, 1923.

REPORT OF CASE

History.—W. C. C., a white man, aged 56, American, whose family history was unimportant, and in whose personal his-

tory only an attack of cystitis, in 1911, was of any importance in the present connection, had suffered for two months with intermittent hematuria, frequency of micturition and pain in the pelvis, all increasing.

Physical Examination.—There was a general appearance of robust health. The heart and lungs were normal. The blood pressure was 150 systolic, 100 diastolic. The abdomen was normal except for tenderness and a little muscle spasm over the bladder. The urine contained red blood cells and albumin. The prostate gland was a little enlarged. The seminal vesicles felt normal.

Cystoscopic Examination.—Cystoscopy revealed an ulcer with raised edges and a necrotic ground or base the size of a 10-cent piece, on the anterior bladder wall. The remainder of the bladder was normal except for a slight general injection. After an interval of waiting, the symptoms increased, and cancer was diagnosed.

Operation.—Under general anesthesia, the usual suprapubic incision revealed a small mass on the anterior bladder wall, penetrating the wall and involving the adjacent peritoneum. The entire growth, with a liberal margin, was excised. The bladder and abdominal walls were closed down to a small drain in the customary manner.

Convalescence.—After a week of nausea and intestinal distension, there was an uninterrupted recovery, which was complete except for an increased frequency of voiding, attributed to reduced bladder capacity.

Recurrence.—In the summer of 1915, the symptoms set in anew, rapidly increasing until the loss of blood, and more particularly the loss of sleep, due to the necessity of painful voiding every ten minutes, caused great exhaustion.

After several unsuccessful trials, due to vesical irritability, a satisfactory cystoscopic examination was made. An irregular, angry-looking growth, about 3 cm. across, was found on the site of the scar of the previous operation. The remainder of the bladder was injected but not ulcerated. Palpation revealed an induration in and below the abdominal suprapubic scar.

Microscopic Examination.—Recurrent cancer was evident, as the original tissue removed presented the ordinary solid flat cell carcinoma invading the normal bladder in strings, columns and nests, as shown in the accompanying illustration.

Radium Treatments.—August 25, 1915, 230 millicuries of radium emanation in a brass tube 1 cm. long and having walls 1 mm. thick was placed in the end of a silver catheter and held directly against the tumor for fifteen minutes. The application was difficult; and following it, there was for a number of days increased bleeding, pain and frequency. On account of the unfavorable effects of this treatment, it was decided to treat transabdominally. The tumor lay favorably for this kind of treatment, about 1½ inches beneath the skin surface. The radium in the form of emanation in many 1 mm. thick brass tubes 1 cm. long was distributed in a 3½ inch square lead box, 2 mm. thick. This was covered with rubber and placed on a block of gauze 2½ inches thick for the first four treatments, while in the fifth a distance of 4½ inches was employed. The dates and dosages were:

September 16, 1,829 millicuries for five hours; October 9, 1,632 for two hours each, of two areas; November 18, 1,371 for two hours; Jan. 19, 1916, 632, over each of three areas for one hour and thirty minutes; May 11, 2,780 for eleven hours and forty-five minutes.

There was almost immediate improvement following the first external treatment in September. On the fourth day, the urine had lost its red color, and by the end of two weeks all microscopic evidence of blood had disappeared. On only one or two occasions subsequently was blood noted, and after Jan. 1, 1916, bleeding did not recur. From the beginning, the frequency and pain diminished. At the end of a month and a half, the patient was still voiding every hour at night. At the end of four months, tenesmus and pain disappeared. At the end of a year and a half, he had no symptoms and had gained 52 pounds (23.6 kg.) in weight.

Following the first two treatments, there was a severe erythema of the skin. This cleared up completely in two months.

It is now nearly seven years since the last treatment. The patient refuses cystoscopic examination, and so a description of the present intravesical condition is impossible. His general health and the complete absence of any disability of the bladder warrant the assumption of a cure.

CONCLUSIONS

The inference from this case, and it does not stand alone, is that in the treatment of cancer of the bladder the employment of gamma radiation from the exterior of the body is very valuable. It is also susceptible of wide application, as it can be combined with surgical operation and with topical application of radium, as well as with implantation of bare emanation tubes. It is possible, if adequate radium is available and proper use is made of it, to bring any desired amount of radiation to any part of the bladder without serious injury to the skin.

1418 Eutaw Place—Charles and Centre streets.

SUPRACLAVICULAR DEPRESSIONS IN THE DIAGNOSIS OF EARLY PULMONARY TUBERCULOSIS*

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Supraclavicular depressions, particularly if unequal or unilateral, are generally regarded as suggestive evidence of tuberculous disease at the apex of the lung. In the recent classification of pulmonary tuberculosis adopted by the American Sanatorium Association,[1] a slight depression above the clavicle is mentioned among the physical signs of early or minimal tuberculosis. In attempts to estimate the value of this sign, however, observers apparently have failed to recognize the significance of similar depressions occurring in healthy persons. This is an important fact to establish, because the relative value of a sign in disease is decreased proportionately with the frequency of its occurrence in health. With this point in mind, we made a comparative study of the incidence, distribution and depth of the supraclavicular depressions in 153 healthy adults and 150 patients with incipient pulmonary tuberculosis.

At the same time, an attempt was made to discover methods of differentiating the depressions found in health and in disease.

In the healthy series, comprising 153 adults between the ages of 18 and 50 years, mostly between 18 and 35 years, the proportion of men and women was approximately the same, and the clinical history and the physical and roentgen-ray examinations failed to reveal evidence of pulmonary disease. Persons presenting definite evidence of chest asymmetry due to spinal curvature, injury, occupation, etc., were excluded, because these conditions may occasion depressions and so lead to confusion in a comparative study of this nature.

Although the number of persons here examined is too small to form a basis for any conclusive opinions, still it is large enough to warrant the following impressions:

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* From the New York State Hospital for Incipient Pulmonary Tuberculosis.

1. Classification of Pulmonary Tuberculosis, Am. Rev. Tuberc., September, 1922.

1. The depressions are more evident in the lean than in the well-nourished. In the same subject we have noticed them appear with loss of weight, and again disappear with gain in weight, owing probably to a temporary variation in the amount of subcutaneous fat occupying the fossae. Changes in the depressions due to varying nutrition are generally more marked in women, because with them the deposit of fat in this region is normally greater than in men. In some persons the accumulation of supraclavicular adipose tissue is excessive, forming a fatty pad which obliterates all evidence of depressions.

2. The depressions are usually deeper when the muscles about the region of the lung apex are well developed, a fact that probably explains in part the greater depth of the depressions in men than in women, in laborers than in those following a sedentary occupation, and on the right side in right-handed persons and on the left side in left-handed persons.

3. The contraction of these muscles also tends to deepen the depressions.

4. The depressions are notably influenced by the size and shape of the clavicle and the different positions which it may assume.

The study of the clavicle in this respect is both interesting and significant. If the clavicle conforms to the long, heavy, straight type, and if its outer head is on the same line with the inner head, the bone is usually prominent, the supraclavicular space is large, and the depressions are more or less marked (Fig. 1). Conversely, the short type of clavicle, with accentuated curves, the outer head above and well posterior to the inner head, is generally inconspicuous, the supraclavicular space relatively small and the depressions absent or negligible (Fig. 2). There are many gradations between these two extreme types of clavicle, and these partly explain the variations in the depth of the fossae



Fig. 1.—Straight horizontal type of clavicle in healthy person. The outer head of the bone is forward and about on the same line with the inner head. The supraclavicular spaces are relatively large. With this type and position of the clavicle, depressions more or less marked are frequently encountered in health.

encountered in health. A notable difference in the shape of the clavicles in the same individual may cause definite inequalities in the depressions (Fig. 3). A change in the position of the clavicle also exercises an important influence on the depressions. For instance, if its outer head is elevated and brought forward, depressions will appear, or existing depressions become accentuated; while, if the outer head is drawn well backward, existing depressions will be partially or completely effaced. Thus, in a person standing erect, the shoulder girdle, of which the clavicle is an integral part, is thrown backward, and existing depressions



Fig. 2.—Accentuated curves of the clavicle in a healthy person. The outer head is well posterior to and above the inner head, and the supraclavicular spaces are relatively small. In health, depressions are often absent with this type and position of the clavicle.

diminished or effaced; while, when the person is seated, the shoulders tend to fall forward, thereby deepening the depressions.

Even during the examination of a healthy person, the depressions at times may be seen to come and go, or be temporarily accentuated on one side and then on the other, and such changes may be observed to be intimately related to alteration in the position of the clavicle. This point is illustrated in the three views of the same subject reproduced in Figure 4. The bilateral depressions shown in Figure 4 *A* are effaced in Figure 4 *B* when the shoulders are thrown backward, and in Figure 4 *C* the relative depth of the depression on the left side is increased because of the forward position of the left shoulder. In other words, these changes, hinging on clavicular movement, frequently account for the disappearance of a depression previously noted, and vice versa. Consequently, in confirming observations on supraclavicular depressions, the position of the clavicle should always be identical. To attain this end, it has been suggested that the person assume a posture of rélaxation. One must remember, however, that for every individual there are several postures of equal relaxation, each of them influencing the position of the clavicle and the depth of the depression.

Because of the influence of the previously mentioned factors on the depressions, it is obvious that the statistical data on the incidence and depth of supraclavicular depressions in health, presented in Table 1, are only approximately accurate. However, as these factors also play a similar rôle in disease, the data may be helpfully employed in appraising the sign in the diagnosis of early tuberculosis.

Among the 153 healthy individuals included in Table 1, the depressions were absent or negligible in approximately 25 per cent. Unilateral depressions occurred in

approximately 21 per cent., and of this group the right side showed 18 per cent. as compared with 3 per cent. on the left. In the remaining 54 per cent., bilateral depressions were found. These were equal in 28 per cent., while the right side showed a greater depth in 14 per cent. and the left, in 12 per cent.

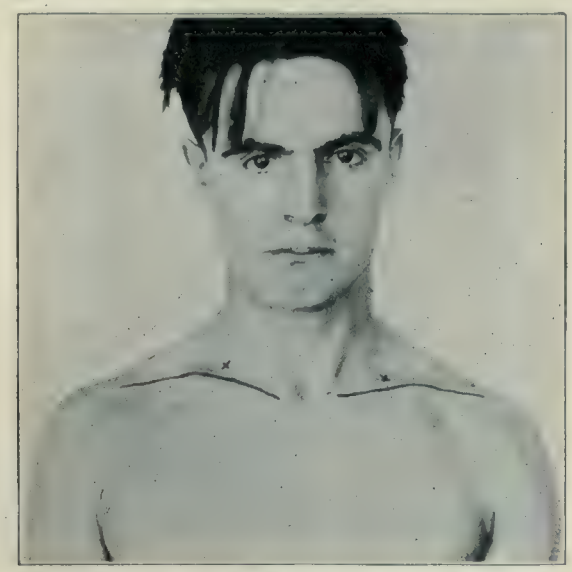


Fig. 3.—Healthy person. Note the difference in the shape of the clavicles, which in part at least explains the inequality in the depth of the depressions.

TABLE 1.—*The Incidence and Depth of Supraclavicular Depressions in One Hundred and Fifty-Three Healthy Persons*

Supraclavicular Depressions *			
Right	Left	Number	Per Cent.
—	—	39	25.4
+	—	27	17.6
—	+	6	3.9
+	+	27	17.6
++	+	15	10.0
+	++	9	5.9
++	++	15	10.0
+++	+	6	3.9
+	+++	3	1.8
++	+++	6	3.9
		153	

* Symbols: —, depression absent; +, depression slight; ++, depression moderate; +++, depression marked.

From a study of Table 1, it is obvious that depressions occur frequently in health; they may be slight or marked, and in distribution, unilateral or bilateral. The incidence and relative depth of the depressions are greater on the right than on the left side.

The supraclavicular fossae were studied in 150 cases of incipient pulmonary tuberculosis. The lesion was confined to the region of the apexes. The term "incipient" as here employed is not used in its strictest sense, but more broadly to include lesions distributed over an area not greater than that represented by the upper third of one lung as revealed by the physical and roentgen-ray examinations. Patients with definite chest deformity due to extrapulmonary conditions, or patients presenting tumors or defacing scars of the neck, were not included. The sputum was positive for tubercle bacilli in approximately 32 per cent. of the cases. The difference in nutrition between these patients and the healthy group apparently was not sufficient to cause any appreciable alteration in the sign.

TABLE 2.—*The Incidence and Depth of Supraclavicular Depressions in One Hundred and Fifty Patients Suffering from Incipient Pulmonary Tuberculosis*

Supraclavicular Depressions		Location of Lesion						
		Unilateral Disease		Bilateral Disease				
Right	Left	Right Apex	Left Apex	Greater on Right	Greater on Left	Equally Distributed	Total	Per Cent.
—	—	9	6	6	6	3	30	20.0
+	—	9	8	5	5	4	31	20.6
++	—	0	1	2	1	0	4	2.6
+++	—	1	0	0	0	0	1	0.6
—	+	5	1	1	1	1	9	6.0
—	++	1	0	0	0	0	1	0.6
+	+	4	6	3	3	3	19	12.6
++	+	10	8	5	2	3	28	18.6
+	++	5	6	3	1	1	16	10.6
++	++	0	1	0	6	1	8	5.3
+++	+	0	0	0	0	1	1	0.6
+++	++	0	0	1	0	0	1	0.6
++	+++	1	0	0	0	0	1	0.6
		51	37	26	19	17	150	

In Table 2 are shown the distribution of the pulmonary lesion, and the incidence and distribution of the supraclavicular depressions in 150 cases of incipient pulmonary tuberculosis. In thirty, or approximately 20 per cent., the depressions were absent; in seventy-four, or approximately 49 per cent., they were bilateral, and in the remaining forty-six, or approximately 30 per cent., they were unilateral.

Attempts to correlate the depressions with the site of lesion proved unsuccessful. This is best illustrated in the thirty-seven patients presenting a lesion confined to the left apex. Here the incidence and depth of the depressions were greater on the right (healthy) side. In six of the thirty-seven, the depressions were absent; in nine, confined to the right (healthy) side; in one, confined to the left (diseased) side; in seven, bilateral and equal; in eight, bilateral but deeper on the right (healthy) side, and in six, bilateral but deeper on the left (diseased) side. More or less similar results were obtained in attempts to correlate depressions and



A B C

Fig. 4.—Healthy subject: *A*, depressions bilateral, equal and of moderate depth; *B*, the shoulders are thrown backward and the depressions effaced; *C*, the left shoulder has been brought slightly forward, a position which has increased the relative depth of the depression on this side.

lesions when the disease was confined to the right apex or distributed bilaterally. These conflicting results are explained, (1) by our inability to differentiate depressions in health from those in early tuberculosis, and



Fig. 5.—The pulmonary disease is moderately advanced, bilaterally distributed, confined to the upper lobes and greater on the right side. The depressions are bilateral and of equal depth. From our studies we would be inclined not to attach diagnostic significance to the depressions here present. They occur with the pulmonary lesion but are probably unrelated to it.

(2) by the striking similarity in their incidence and depth in health and in early tuberculosis.

Even in patients suffering from tuberculosis in the moderately advanced stage, it apparently is not possible to establish satisfactorily in most instances any definite relation between the distribution of the disease and the depressions.

TABLE 3.—*The Incidence and Depth of Supraclavicular Depressions in One Hundred and Sixty-Nine Patients Suffering from Moderately Advanced Pulmonary Tuberculosis*

Supraclavicular Depressions		Location of Lesion: Unilateral Disease		Bilateral Disease				
Right	Left	Right Apex	Left Apex	Greater on Right	Greater on Left	Equally Distributed	Total	Per Cent.
—	—	2	2	19	15	2	40	23.6
+	—	2	0	14	9	5	30	17.7
++	—	0	0	3	0	0	3	1.7
—	+	0	0	4	6	0	10	5.9
+	+	3	0	13	4	4	24	14.2
++	+	2	1	18	7	3	31	17.8
+	++	0	1	6	2	1	10	5.9
++	++	1	1	7	3	0	12	7.1
+++	+	0	0	0	1	0	1	0.5
+++	++	0	0	0	2	0	2	1.1
++	+++	0	0	1	0	2	3	1.7
+++	+++	0	1	1	1	0	3	1.7
		10	6	86	50	17	169	

Thus, in Table 3, which presents the depressions and site of lesion in 169 patients suffering from moderately advanced disease, the depressions, notwithstanding the extent of the pulmonary involvement, were absent in no less than approximately 24 per cent., findings similar to those obtained in health and in early tuberculosis.

The moderately advanced cases admitted to Ray Brook are a selected group in good nutrition, which may account for the relatively large number showing no depressions. In the patients who did present depressions, no definite relation could be established in most instances between them and the site and extent of lesion. For instance, in Figure 5, although the depressions are of equal depth, the pulmonary disease, in the moderately advanced stage, is definitely greater on the right side. In Figure 6, although the right lung is apparently healthy, and the left extensively diseased, the greater depression is on the right (healthy) side.

COMMENT

The earlier observers found supraclavicular depressions a constant sign in pulmonary tuberculosis. At that time, the diagnosis was usually delayed until the pulmonary lesion was advanced and the patient emaciated. They apparently attributed the depressions entirely to the underlying lung disease, whereas the major rôle in their production was probably played by the tilting forward of the shoulders from weakness and the associated emaciation. This view is supported by the fact that depressions invariably appear with emaciation, irrespective of its cause. Anatomists and even dressmakers have long recognized this relationship. On the other hand, in well nourished patients suffering from advanced pulmonary tuberculosis, the depressions may be absent.

When depressions have their origin in disease of the underlying lung, they are due to loss of lung volume associated with local retraction of the chest wall. Local retraction of the chest wall sufficient to influence the depressions occurs for the most part with extensive pulmonary disease and marked loss of lung volume. Even here the presence or absence of depressions depends on the extent to which the individual compensatory factors participate.[2]

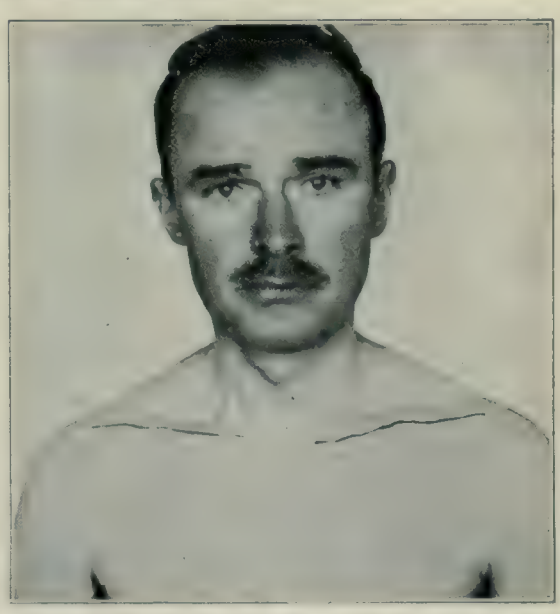


Fig. 6.—Bilateral depressions, slightly greater on right; massive involvement of left lung with antrum formation at the apex; right lung apparently healthy. In tuberculosis, it is not uncommon to find the greater depression on the right side when the lesion is confined to the left lung.

In early disease, the loss of lung volume is slight, and is usually compensated by emphysema or hypertrophy of the lung contiguous to the focus, and there is

2. Bray, H. A.: The Mechanism of Compensation in Pulmonary Tuberculosis, and Its Relation to Physical Signs, Am. Rev. Tuberc. 6: 1008 (Jan.) 1923.

neither local retraction of the chest wall nor change in the soft structures above the clavicle. Therefore, on purely pathologic grounds, one would not expect to find any material change in depressions in early disease.

Although depressions above the clavicle have been regarded as one of the traditional signs for the detection of early tuberculosis, the present study suggests that their value in this respect is open to question.

SUMMARY

1. There is a definite relation between nutrition and the presence and absence of supraclavicular depressions.

2. The depressions are influenced by the size, shape and position of the clavicle.

3. There is a striking similarity in the incidence, distribution and depth of supraclavicular depressions in health and in early tuberculosis.

4. No method was discovered for differentiating depressions in health from those in early tuberculosis.

5. Attempts to correlate depressions with the site and extent of the lesion in early disease have proved impracticable.

6. Although depressions occur with early disease, they are probably not due to the pulmonary lesion.

7. Except possibly in rare instances, supraclavicular depressions are of questionable value in the diagnosis of early pulmonary tuberculosis.

BACILLARY DYSENTERY

REPORT OF CASE, WITH A STUDY OF THE INTESTINAL BACTERIOPHAGE *

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An opportunity recently presented itself to study a case of bacillary dysentery caused by a laboratory accident. The case seems to justify report, since (*a*) the infecting organism was known; (*b*) the time of infection and therefore the incubation period was known; (*c*) the carrier state followed, and (*d*) a study of the intestinal bacteriophage was made.

REPORT OF CASE

On the afternoon of Oct. 25, 1922, while filtering a culture of *B. dysenteriae* (Flexner), my hands became badly contaminated. The hands were washed thoroughly and rinsed with 5 per cent. compound solution of cresol and the incident forgotten until after the onset of the disease. There were no symptoms until the next evening, twenty-eight hours after the accident. At this time, chilly sensations suddenly developed and persisted throughout the evening. There was no rigor. Extreme weakness and a severe throbbing headache set in and became increasingly more marked throughout the night. During the night there were seven movements, which became increasingly more fluid and showed more and more mucus. There was no blood. Abdominal distress was not marked.

A clinical diagnosis of bacillary dysentery was made, and transfer to the New Haven Hospital was advised. The subsequent course of the disease at the hospital was very brief. At the time of admission, the temperature was 102.2 F.; pulse, 120; respiration, 22, and leukocyte count, 14,000. *B. dysenteriae* (Flexner) was isolated from the stool.

The pulse and temperature remained elevated for only thirty-six hours, at which time there was a marked clinical improvement.

There had been twelve stools the first day and six the following night. After this time, the diarrhea ceased entirely, and the stools became normal. Cultures of the stools, however, except for one on the seventh day after the onset, continued to show *B. dysenteriae*. On the tenth day after the onset, permission to go home under quarantine restrictions was granted. On the eleventh and twelfth days, stool cultures were reported negative for *B. dysenteriae*, and because of this, quarantine was discontinued on the thirteenth day. The special precautions that had been observed while quarantined were neverthless continued, and the stools were examined at weekly intervals for the next two months. One week after I had been discharged as cured, *B. dysenteriae* was again isolated from the stool. All other examinations were negative.

The finding of *B. dysenteriae* a week after two consecutive negative cultures emphasizes that this arbitrary test, too often accepted as final, is not satisfactory evidence of the nonexistence of the organism in the intestine, and that neither the patient nor the physician should be led to a false sense of security by it. This observation is not new, attention having been directed to it many times, especially in connection with typhoid fever. The isolation of organisms of the typhoid-dysentery group from stools of carriers is necessarily attended with more or less of an element of chance, and the failure to find organisms even in heavily infected material on two consecutive trials is a coincidence not at all outside the bounds of possibility. In order to prevent the dissemination of *B. dysenteriae*, the patient released from quarantine on the strength of two negative tests should be kept under observation; the stools should be examined over a period of weeks, and he should be instructed in methods for caring for himself in a sanitary way.

THE AGGLUTINATION REACTION

The agglutination reaction of the blood was followed. On the eighth day it agglutinated a stock culture of *B. dysenteriae* (Flexner) treated with formaldehyd, in dilutions up to 1:80, while the recovered strain was agglutinated only in the lowest dilution, 1:20. A month and a half later, there was frank agglutination with the formaldehyd-treated strain in 1:20 dilution only, with loss of whorl in the 1:40. Both the infecting and recovered strains showed loss of whorl in the 1:20 and 1:40 dilutions. Four months after the onset, the only sign of agglutination was a loss of whorl in the first tube with the infecting strain.

These results are summarized in Table 1. The gradual loss of agglutinins from the blood is evident.

TABLE 1.—*Agglutination Reaction with B. Dysenteriae (Flexner)* *

	1:20	1:40	1:80	1:160	Control
11 Days after Onset:					
Antigen treated with formaldehyd..	++	++	+	±	—
Recovered strain.....	+	—	—	—	—
44 Days after Onset:					
Antigen treated with formaldehyd..	+	±	—	—	—
Recovered strain.....	±	±	—	—	—
Infecting strain.....	±	±	—	—	—
124 Days after Onset:					
Antigen treated with formaldehyd..	—	—	—	—	—
Recovered strain.....	—	—	—	—	—
Infecting strain.....	±	—	—	—	—

* In the tables, + indicates growth; —, no visible growth; I, presence of irregular colonies; 1 and 2, separate tests, made at different times.

CARRIER STATE

During the time that I was quarantined in my home, and for a month or so more while I continued to take precautions to avoid contamination, I became more and more impressed with the difficulties involved. Mention of the precautionary measures used will indicate what is necessary.

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In general, it should be borne in mind that the anal region is contaminated, and that everything that might possibly come in contact with it should be burned, boiled, or soaked in an antiseptic solution. The simplest and best way of avoiding clothes contamination

TABLE 2.—*Presence of Bacteriophage in Stools*

Days After Onset	Infecting Strain	Bacteriophage Present	Recovered Strain	Bacteriophage Present
Control	1 +++++ 2 +++++	No	+++++ +++++	No
4	1 +++ 2 ++	Yes	+++ I ++	Yes
6	1 — 2 —	Yes	+++ I +++ I	Yes
7	1 ++ I 2 +	Yes	+++ I ++ I	Yes
8	1 ++++ 2 ++++	Yes	+++ I ++++	Yes
9	1 ++ I 2 +	Yes	++ I ++ I	Yes
21	1 +++++ 2 +++++	No	++++ I (?) +++++	No

is the wearing of a napkin, night and day, which may be burned. A covered container should be provided in which to soak undergarments, night clothes, towels, etc. It is desirable to have a receptacle with a relatively strong antiseptic solution in which feces should be kept for a few hours before being flushed into the sewerage system. This also avoids contamination of the toilet seat. The only type of bath allowable is a sponge bath, as a tub or shower bath contaminates not only the bath tub or shower room, but the whole body as well.

While it is obvious that it is useless to expect a patient to carry out these measures unless he is of average intelligence and at the same time willingly cooperative, nevertheless, there is no reason why an intelligent, responsible person taking these precautions should not be allowed freedom from prolonged quarantine restrictions.

STUDY OF THE INTESTINAL BACTERIOPHAGE (D'HÉRELLE'S PHENOMENON)

A 5 gram specimen of each stool for bacteriologic examination was inoculated into 50 c.c. of alkaline peptone water and, after incubation over night, set aside in the refrigerator. Later, these cultures were examined for filtrable bacteriolytic agents (the bacteriophage), according to the method of d'Hérelle; namely, filtration through infusorial earth, Berkefeld filters and testing this filtrate by adding it to alkaline peptone water cultures of the organism to be tested against; then, after overnight incubation, subculturing on agar slants. The presence of the bacteriophage is manifested by a clearing of the liquid culture and by sparse growth, even to apparent sterility, when the bacteriophage is very active, by irregular, moth-eaten appearing colonies, or by plaques or bare areas on heavy bacterial growths on agar subcultures. Each test was controlled by a culture treated in the same way, except that no filtrate was added.

The filtrates from the stools of the fourth, sixth, seventh, eighth, ninth and twenty-first days after the onset were tested for bacteriophage action with both the infecting and the recovered strains, these strains being identical except that the recovered strain had had one human passage. The results are shown in Table 2. It will be seen that bacteriophage against the Flexner organism was present in the filtrates of stools from the fourth to the ninth days, but was not present twenty-one days after the onset. In stool filtrates examined occasionally since then, there has been no bacteriophage action demonstrable. On the whole, the bacteriophage seemed to attack the infecting strain more heavily, but produced more irregular colonies in its reaction toward the recovered strain.

The filtrate from the stool of the eighth day after onset of symptoms was found to act on *B. dysenteriae* (Shiga) and *B. coli*, as well as on *B. dysenteriae* (Flexner). It did not attack the stock strains of *B. typhosus*, *B. paratyphosus* A, or *B. paratyphosus* B. The other filtrates were not tried with these organisms.

SUMMARY

A study was made of a laboratory infection with *B. dysenteriae* (Flexner). The incubation period was twenty-eight hours. The duration of the disease was thirty-six hours. The carrier state lasted at least two weeks. Examination of only two consecutive negative stools is unreliable as a criterion for release from quarantine. Study of the intestinal bacteriophage showed lytic action present in the stool filtrates from the fourth to the ninth day after onset, but no longer demonstrable by the twenty-first day.

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AGGLUTINATION TEST FOR THE PRESENCE OF BACILLUS DIPHTHERIAE IN FIELD (MIXED) CULTURES

PRELIMINARY NOTE *

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The problem of differentiating true *B. diphtheriae* from diphtheroids and other morphologically similar species of micro-organisms is one of constant interest and often of considerable difficulty to bacteriologists and public health laboratory workers. The criteria ordinarily applied in the routine examination of throat cultures are typical morphology and virulence. These satisfy the requirements in the great majority of instances when the cultures are taken from the exudate in well-marked cases of diphtheria when very little doubt could possibly arise as to diagnosis. In the examination of smears from such cultures, every field of the microscope, as a rule, presents great numbers of granular and beaded forms of *B. diphtheriae*, chiefly Types C and D in Wesbrook's classification. It is not difficult in these circumstances to isolate *B. diphtheriae* in pure culture, to perform virulence tests and to determine the carbohydrate fermentation reactions. If any doubt whatever exists, protection experiments with mixtures of known diphtheria antitoxin and toxin produced by the strain of micro-organism under investigation may be made and identification finally established with certainty. There seems to be general agreement that micro-organisms presenting the morphology of any of Wesbrook's types, fermenting glu-

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cose, lactose, mannite, dextrin, saccharose or glycerol, and yielding diphtheria toxin as shown by positive subcutaneous or intracutaneous tests are *B. diphtheriae*.

Since 1906 very considerable advances have been made in the matter of simplification of technic in the determination of virulence of strains of *B. diphtheriae*, largely as a result of Römer's [1] demonstration of the specific reaction following the intracutaneous injection of minute amounts of diphtheria toxin. Neisser [2] employed living cultures of *B. diphtheriae* instead of the filtrates of such cultures, and Zingher and Soletsky [3] have modified Neisser's method in such a fashion that diphtheria antitoxin is given to a control animal before or at the time of the test, and small amounts (0.15 c.c.) of saline suspensions of several cultures to be tested are injected intracutaneously into one guinea-pig. This, of course, results in a considerable saving of animals. Eagleton and Baxter [4] have quite recently standardized the procedure of Zingher and Soletsky.

These methods all require the isolation of *B. diphtheriae* in pure culture from the original mixed field culture, and there are certain very serious disadvantages in such methods. Not at all infrequently the isolation from the field culture of the strain of *B. diphtheriae* in pure culture for virulence testing is difficult or impossible. This, of course, is particularly likely to be the case when the slant of Löffler's blood serum medium on which the original field culture has been made is covered with colonies of many other micro-organisms and relatively few colonies of *B. diphtheriae*. This may happen when cultures are improperly taken or in cultures from mild clinical cases of diphtheria or in convalescent or contact carriers harboring perhaps but few diphtheria bacilli. A method recently described by Force and Beattie [5] of testing field cultures directly by intracutaneous injection of the whole mixed culture is without such disadvantages and marks a decided step in advance in the determination of virulence of cultures of *B. diphtheriae*. It would appear, further, that the intracutaneous method of Force and Beattie, employing whole field cultures, is superior to the subcutaneous method proposed by Wayson.[6] Havens and Powell [7] have confirmed the work of Force and Beattie.

There is one additional criterion in identification which, until recently, has received little consideration; that is specific serum agglutination. Various early workers, Landsteiner (1897), Nicolle (1898) and others were unable to demonstrate agglutinins for *B. diphtheriae* in antitoxic serums. Graham-Smith has reviewed the literature dealing with agglutination of *B. diphtheriae* down to 1906 in the monograph by Nuttall and himself.[8]

In the course of other experimental work we have made certain observations on the agglutination of field cultures which may have considerable practical importance, and for that reason we have dealt with them in this preliminary communication. As a result of the work of Durand,[9] Mason,[10] Havens,[11] Park, Williams and Mann,[12] Paxson and Redowitz,[13] Bell,[14] Baxter and Eagleton [15] and others, it has been abundantly established that there exist several serologic types of *B. diphtheriae*, and that these can be differentiated by means of the reaction of agglutination and absorption of agglutinins (Durand and Bell). Furthermore, both Durand and Mason have shown that it is possible by means of serum agglutination to distinguish very definitely and clearly cultures of *B. diphtheriae* from various strains of diphtheroids. Durand carefully investigated sixty cultures of diphtheroids and was able with a diphtheria-agglutinating serum in every instance to distinguish them from true *B. diphtheriae*. Mason, in a study of ten strains of micro-organisms "morphologically diphtheroids" isolated from various sources, found that they were inagglutinable with diphtheria agglutinating serum. We have been able to confirm and extend Durand and Mason's results. In no instance have we obtained agglutination of a diphtheroid strain (by diphtheroids are meant solid or barred types, not fermenting any carbohydrate tested and giving negative intracutaneous virulence tests) with diphtheria agglutinating serum. For the purpose of investigating the relationship existing between virulence and agglutinability, we have examined a large series of pure cultures of *B. diphtheriae*. The results of these and other studies will be communicated later. During the progress of this work, we were led to investigate the possibility of specific serum agglutination of mixed field cultures of *B. diphtheriae*, and our results are presented herewith.

Thanks to the courtesy of Dr. Wilfred H. Kellogg, director of the State Hygienic Laboratory of the California State Board of Health, we were able to obtain 104 field cultures received in the laboratory for diagnosis. These cultures were examined in smears stained by acetic toluidin blue by members of the staff of the state hygienic laboratory and reported in the usual way, on the basis of smear examinations, as positive or negative. The cultures were received from clinical cases, from convalescent carriers and from contacts. When the smears had been made from the field cultures, after from eighteen to twenty-four hours of incubation they were then given to us for agglutination experiments.

METHOD OF PROCEDURE

The cultures were again placed in the incubator for from eighteen to twenty-four hours. They were then taken out, and the growth on the surface of the slant of Löffler's blood serum was washed off with 2 c.c. of sterile physiologic (0.9) sodium chlorid solution. The emulsions of mixed cultures so prepared were used as antigens, and macroscopic agglutination tests were carried out with two monotypical diphtheria agglutinating serums in dilutions ranging from 1:10 to 1:640. Each macroscopic agglutination tube contained 1 c.c. of serum dilution and 0.1 c.c. of antigen (emulsion of field culture). The tubes, after being set up, were placed in a water bath at 56 C. for two hours, then left in the icebox and read the next day, usually after from sixteen to eighteen hours. The emulsions used as antigens were thus forty-eight hour cultures of the colonies of micro-organisms contained in the original field culture. This is, we believe, a point of considerable importance.

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RESULTS

Of fifty-two cultures which on smear examination were reported positive, forty-seven gave a positive agglutination with one or both type serums in dilutions up to 1:640. The remaining five cultures were not agglutinated with either serum. This was probably due to the fact that they were representatives of other agglutinative types of *B. diphtheriae*. Of the cultures reported negative on smear examination, fifty-two in all, forty-seven also gave negative agglutinations. The remaining five cultures, reported negative from smear examination, gave positive agglutinations. These discordant results are of considerable interest. The first culture was sent to the laboratory for examination for release from quarantine and was taken from a convalescent carrier, from whom twenty-three cultures in all had been taken. Agglutinations were positive in dilutions of 1:640 with both type serums. The second positive agglutination test obtained when a negative smear was reported was with a culture for first diagnosis. This culture was taken from a student who had had a mild sore throat for several days and had received local treatment. A second culture taken from this man some days later was negative by both smear examination and agglutination.

A third positive agglutination with a culture on which a negative smear report was given was a culture for first diagnosis. The history of the patient from whom the culture was obtained was as follows: The child had had a sore throat for four days. A physician was called, and on examination found a small spot on one tonsil. He diagnosed diphtheria. A second physician who was called said the case was not diphtheria, but he took a throat culture. This culture was negative in smear but positive by agglutination. The physician reported that the spot on the throat was easily rubbed off without bleeding, and the child recovered without the use of diphtheria antitoxin.

Positive agglutination tests were obtained in two other instances in which negative reports on smears were made. These cultures were taken to test for release and were from convalescent carriers.

COMMENT

There is a certain amount of presumptive evidence in these five cases that the agglutination reactions which were positive though smears were negative may have more correctly reflected the true clinical condition. Spontaneous agglutination may occur in dilutions of 1:10 with field cultures agglutinated with specific diphtheria agglutinating serums. This has not been encountered in higher dilutions. Inhibition of agglutination, the so-called prezone phenomenon, was not observed in the agglutination of field cultures. This has been noted, however, in agglutination of pure cultures of *B. diphtheriae* by monotypical serums. Field cultures taken twenty-four hours previously have been employed as antigens, but the growth, as a rule, is less luxuriant and the preparation of satisfactory emulsions for antigens is difficult. Rapid agglutination tests by the centrifugalization of mixtures of agglutinating serums and emulsions of field cultures have been tried, and the results have corresponded with those obtained, the technic described above being employed.

When the rapid method is used, results can be read about thirty minutes after the mixtures of antigen and agglutinating serums are made and then centrifugalized for five minutes. This, of course, means that the entire procedure may with this method be completed within twenty-four hours after the original field culture has been taken.

Cultures have been made from four definite clinical cases of diphtheria, and the results of smear examinations, intracutaneous virulence tests and specific serum agglutination have been correlated. In these few instances there was complete correspondence in results obtained. Agglutination of (artificially prepared) mixtures of *B. diphtheriae*, staphylococci and streptococci have also been observed. These observations will be described more fully later.

Considerable difficulty may be encountered in the preparation of satisfactory agglutinating serums. This has been noted by many who have endeavored to utilize rabbits for the production of diphtheria agglutinating serums. By repeatedly washing emulsions of *B. diphtheriae*, even twelve times if necessary, as recommended by Moloney and Hanna,[16] we have obtained emulsions which, on injection intracutaneously into guinea-pigs, have given negative virulence tests. Not all strains of *B. diphtheriae* can be thus washed free of toxin. This is the procedure followed at present, however, and Dr. Ruth L. Stone, working in this laboratory, has recently obtained a diphtheria-agglutinating serum in a rabbit in less than three weeks after the first series of injections, having a titer of 1:3,200 complete and 1:6,400 partial agglutination. The method of giving injections intravenously on three successive days, originally proposed by Gay and FitzGerald[17] for the rapid production of hemolysins, was followed in this instance.

In order to determine whether this method of agglutination of field cultures may be substituted for intracutaneous virulence tests in guinea-pigs, and also whether it may be desirable to employ it as a routine procedure before cultures are reported negative, further work is contemplated.

It is proposed to prepare widely polyvalent agglutinating serums by the immunization of horses with a number of different serologic (agglutinative) types of *B. diphtheriae* and to use this in a parallel series of virulence and agglutination tests of field cultures. It will also be necessary to ascertain whether avirulent diphtheria bacilli give positive agglutination tests. We have no evidence on this later point as yet.

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Eugenics, Heredity and Tuberculosis.—Our keenest interest and perhaps the most practical problems center not about unit-character differences in man but about those more complicated types of heredity expressed in continuous and irregular variation. Considering such human characteristics as resistance and susceptibility to disease, variations in physical and mental endurance, initiative, industry and ambition, emotional stability and power of application, capacity for accurate or abstract thought, what we most want to know is not the exact nature of the hereditary mechanism, but simply to just what extent these conditions are dependent on heredity and to what extent they may be controlled by environment. From a eugenic point of view, the question as to the exact number and linkage relationships, of factors responsible for susceptibility to tuberculosis is of no great practical value. It is sufficient to know to just what extent heredity is actually responsible.—P. W. Whiting: *Nation's Health* **5**:136 (March) 1923.

SIMULTANEOUS LIGATION OF VEIN AND ARTERY

AN EXPERIMENTAL STUDY *

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Makins called attention to the possible advantage of simultaneous ligature of the accompanying vein if an artery is occluded. In his Hunterian Oration, Makins [1] makes the following statement:

> These considerations lead me not only to regard obligatory simultaneous occlusion of a main artery and vein as a negligible factor in the risk of gangrene of the limb, but to hold further that the procedure is preferable whether the vein be wounded or not, the result of the combined procedure being to maintain within the limb for a longer period of time the smaller amount of blood supplied by the collateral circulation.

Oeppel [2] ascribed the good results which sometimes follow operative arteriovenous anastomosis (the operation also known as reversal of the circulation) to the fact that such a procedure obstructs the vein, and he was led to substitute simple occlusion of the vein to accomplish the same result. La Roque [3] has reported a case of successful simultaneous occlusion of the femoral artery and vein. In this report is an excellent summary of the prevailing opinion as regards this question. Halsted [4] has expressed the opinion that simultaneous ligation of the vein is probably the preferable procedure in certain instances in which it is necessary to occlude the artery, but he states that it would seem advisable to wait until ligation of the vein is clearly indicated. Neuhof and St. John [5] have recommended simultaneous ligation of the vein when it becomes necessary to occlude a primary artery for hemorrhages due to infection.

THREE SERIES OF EXPERIMENTS

In order to study the changes in an extremity which follow obstruction of the primary artery alone and the simultaneous occlusion of the vein and artery, three series of experiments were done:

1. Experiments in which the effect on the temperature of the tissues distal to the ligatures was studied.
2. Experiments in which the blood pressure distal to the ligature was measured.
3. Experiments to test the comparative frequencies of gangrene from simultaneous ligature of artery and vein, and ligature of the artery alone.

Dogs and rabbits were used for the experiments. All experiments were carried out under complete anesthesia, and every effort was made to prevent any unnecessary pain or suffering. Only one experiment in each series will be described in detail. The experiments were repeated sufficiently often to demonstrate the constancy of the observations described.

1. *Experiments to determine the changes in temperature of the tissues of the extremity distal to ligature of the primary artery alone and the simultaneous ligature of artery and vein.*

In general, the maintenance of the temperature of the tissues of extremities above that of the surrounding air is an index of the amount of blood flowing through those extremities.

If the temperature of one extremity falls and the temperature of the body and surrounding air remains constant, it can be assumed to be due to a decreased flow of blood through this extremity.

Large dogs were used for these experiments. The animals were anesthetized by the administration of paraldehyd. Thermometers were inserted into the tissue of both feet and thighs of the posterior extremities, and into the rectum. The room temperature was recorded.

The abdomen was opened in the midline. The left common iliac vein and the left iliac artery were exposed. Suitable clamps for obstructing these vessels were provided. After this preparation, the temperature in the extremities was observed until it became constant. The left iliac artery was then clamped, and temperature readings were recorded until the temperature of the left thigh and left foot became constant. The common iliac vein was then clamped, and the readings were again recorded until a constant was reached. In some experiments, the vein was clamped first and the artery second. In other experiments, the effects of removal of the clamp from one or the other vessel or both vessels were observed. In some experiments, the observations were continued for four hours. Thirteen experiments were done. The results of these experiments were the same in all instances. Table 1 and Chart 1 show the results of a typical experiment.

From these experiments it was evident that ligation of the primary artery of the extremity resulted in a fall in the temperature of all the tissues distal to the

TABLE 1.—*Temperature Changes at Fifteen Minute Periods*

Room	21.6	21.6		21.4	21.4	21.3	21.3	21.2		21.2	21.2	21.1
Rectal	38.0	38.0		38.0	37.8	37.6	37.5	37.4		37.4	37.3	37.0
Right thigh	37.6	37.6	Artery ligated	37.6	37.6	37.5	37.5	37.5	Vein ligated	37.6	37.5	37.5
Right foot	35.0	35.0		35.0	35.0	35.0	34.9	34.8		34.8	34.4	34.4
Left thigh	37.5	37.5		37.2	37.0	36.6	36.0	35.8		35.0	34.8	34.5
Left foot	35.0	35.0		31.0	29.8	29.5	29.0	28.9		27.4	27.0	27.0

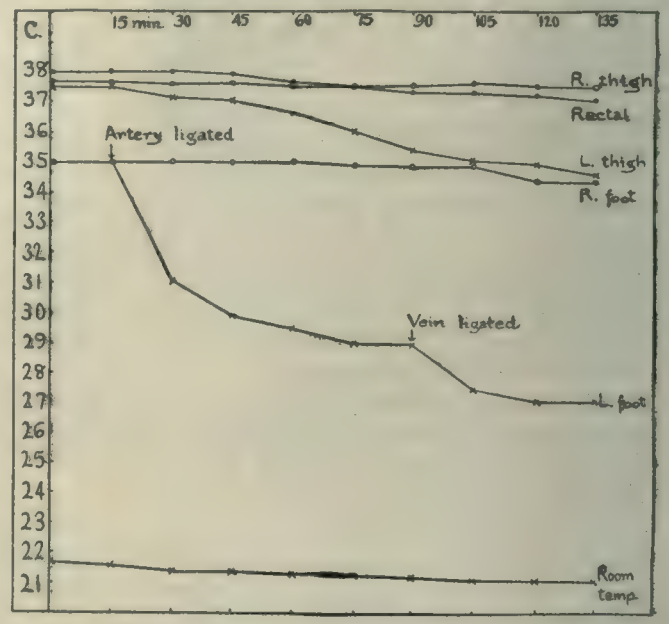


Chart 1.—Temperature changes of the extremities following ligation of the primary artery of an extremity and a subsequent ligation of the corresponding vein.

* From the Department of Surgery, Washington University Medical School.

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2. Oppel: Zentralbl. f. Chir. **2**: 1241, 1913.
3. La Roque, G. P.: Ann. Surg. **73**: 265 (March) 1921.
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5. Neuhof, H., and St. John: Surg., Gynec. & Obst. **29**: 130 (Aug.) 1919.

ligature. The fall in temperature was progressively greater, the more distad the tissue temperature was measured. The temperature of the tissues was immediately restored if the arterial obstruction was removed. If the artery was obstructed and the temperature of the tissues distal to the ligature became constant at a level below normal but still above room temperature, then occlusion of the vein resulted in a further fall of tissue temperature. Furthermore, this fall of temperature took place in all tissues of the extremity. Occlusion of the vein alone caused a fall in tissue temperature of the entire extremity distal to the occlusion.

These experiments show that simultaneous ligature of the vein and artery results in a greater reduction of volume flow of blood through the entire extremity than ligature of the artery alone.

2. *Experiments in which the changes in blood pressure in the veins and arteries distal to the ligatures were measured, after ligature of the artery alone and after simultaneous occlusion of the vein and artery.*

Large dogs were used for these experiments. The animals were anesthetized with paraldehyd. The abdomen was opened in the midline. The left iliac artery and vein were exposed. The left iliac artery was divided near its origin. Cannulas were inserted in both the proximal and distal stumps, and the blood pressure in each was determined by mercury manometer, maximal and minimal value, and recording tambour methods. The venous pressure was determined in the common iliac vein by inserting a hollow needle into the vein (without occluding the vein) and measuring by a mercury manometer the lowest pressure that would cause physiologic sodium chlorid solution to flow into the vein. The vein was then clamped proximal to the needle cannula and the pressures again measured in both stumps of the artery and vein. The effects of removal of the occlusion of the vein alone were also observed. Six experiments were carried out. The results of a typical experiment are shown in Chart 2.

These experiments demonstrated that the intravascular pressure in both the arteries and veins of an extremity is decreased by ligature of the primary artery alone. If the artery is ligated and the intravascular pressure in both arteries and veins becomes constant at a level lower than normal, then obstruction of the vein results in a rise in intravascular pressure in both arteries and veins distal to the ligatures. The blood pressure in the veins rises proportionately more than in the arteries, so that the difference in arterial and venous pressures is less after ligation of both artery and vein than if the artery alone is occluded. The marked increase in intravascular pressure within the veins would indicate an increased resistance to outflow of blood from the extremity, and consequently a decrease in the amount of blood flowing through the extremity.

3. *Experiments to test the frequencies of gangrene after ligature of the artery alone and after simultaneous ligature of the artery and vein.*

Rabbits, rather than dogs, were used for these experiments, because the terminal branching of the aorta is more suitable for the constancy of the operative technic. Also, the ligature of the vessels can be accomplished with less trauma in rabbits than in dogs. The aorta in the rabbit terminates very much the same as in man. This is not true in dogs, in which a common iliac artery is not usually found. The operative technic was the same in all instances. All of the operations were performed by one of us, and the two types of operation were performed alternately in order that there should be no difference resulting from the facility of performing the operation acquired by its frequent repetition.

The animals were anesthetized with ether. The abdomen was opened in the midline. The right common iliac artery was exposed at the site of origin of the hypogastric artery. The right common iliac vein was then freed from the surrounding tissue. The isolation of the vessels was done with the least possible trauma. In one series of experiments, the common and external iliac arteries were ligated just proximal and distal to the origin of the hypogastric artery. This procedure resulted in complete obstruction of both the external iliac and hypogastric arteries at their origin. It had been found from preliminary experiments that this procedure resulted frequently in gangrene. In the other series of experiments the same technic was followed in ligation of the arteries, and the right common iliac vein was ligated.

All animals were carefully observed after operation for the manifestations of disturbed circulation of the extremity. In all instances there was evidence of a marked deficiency of circulation. In every instance, in the right extremity there was marked ischemic muscular weakness. In those experiments in which gangrene did not appear, there was no noticeable difference in the results of the two operative procedures. All animals that did not develop gangrene and did not die from some other cause completely recovered from all symptoms of circulatory disturbance. These animals were subsequently killed, and the arterial circulation was studied by means of barium sulphate injections and roentgenograms.

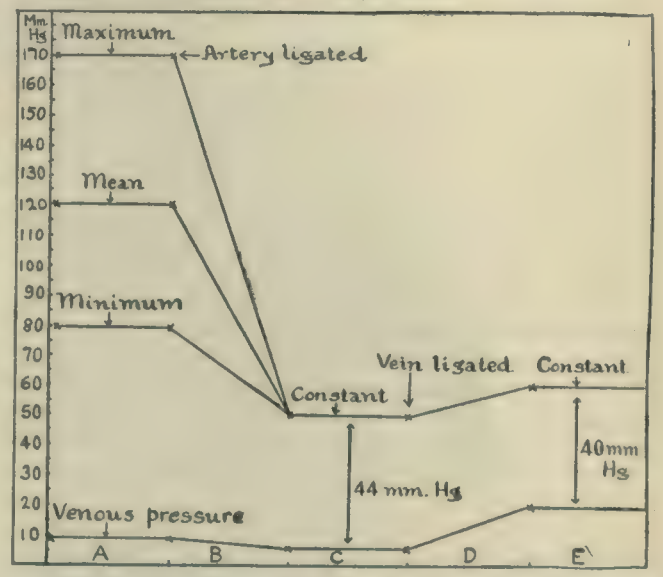


Chart 2.—Changes in the pressure in the arteries and veins distal to the occlusion of the primary artery and subsequent occlusion of the vein: *A*, normal maximal, minimal and mean arterial pressures of the external iliac artery and the normal pressure in the common iliac vein; *B*, effect of ligation of the external iliac artery alone on the pressure in the artery and vein distal to the occlusion; it will be noted that the pulse pressure completely disappears, and the intra-arterial pressure falls; there is a slight fall in the venous pressure; *D*, effect of subsequent occlusion of the common iliac vein; it will be noted that both the arterial and venous pressure rises; the arterial pressure rises to a point almost as high as the minimal pressure in the unobstructed artery, and the venous pressure higher than the normal.

Thirty-nine experiments were carried out. The results of these experiments as regards the relative frequencies of gangrene following ligation of the artery

alone and following simultaneous ligature of artery and vein are shown in Tables 2 and 3.

These two series of experiments show a very striking difference in the frequency of gangrene. The operative technic in all the experiments was as nearly identical as it could be made, except that in one series the right common iliac vein was ligated. In order that

TABLE 2.—*Ligation of the Right Common and External Iliac Arteries*

Number	Day of Occurrence of Gangrene	Condition of Leg	Condition of Animal	Day after Operation
1	2d	Gangrene	Died, gangrene	8th
60	19th	Gangrene	Died, gangrene	21st
51	14th	Gangrene	Died, ?	16th
63	30th	Ulcer	Healed, alive	68th
17	4th	Gangrene	Killed	5th
96	....	No gangrene	Died, ?	7th
13	2d	Gangrene	Died, gangrene	4th
81	....	No gangrene	Condition good	47th
47	....	No gangrene	Died, ?	9th
73	2d	Gangrene	Died, gangrene	4th
8	2d	Gangrene	Died, diarrhea	10th
74	35th	Ulcer	Died, ?	42d
75	2d	Gangrene	Died, gangrene	9th
14	....	No gangrene	Died, infection	17th
42	2d	Gangrene	Died, gangrene	9th
94	....	No gangrene	Died, ?	3d
77	5th	Gangrene	Killed	8th
100	3d	Gangrene	Died, gangrene	3d
16	24th	Gangrene	Died, ?	71st
67	....	No gangrene	Condition good	36th
89	2d	Gangrene	Died, gangrene	3d

SUMMARY

No. of Animals	With Gangrene		Without Gangrene		Animals Alive after 10th Day	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
21	15	71.5	6	28.5	10	47.5

any possible influence of trauma of the sympathetics should be the same in the two series of experiments, in those experiments in which the artery alone was ligated the vein was isolated just as it was in the series of experiments in which it was ligated. In the experiments in which the artery alone was occluded, 71.5 per cent. of the animals developed gangrene of some degree. In the experiments in which both artery and vein were occluded, only 33.3 per cent. of the animals developed any manifestation of gangrene.

COMMENT

From these experiments, therefore, it is evident that gangrene following arterial obstruction is dependent on some other factor than the amount of blood flowing through the vessels distal to the obstruction; for, if the primary artery of the extremity was occluded, the amount of blood flowing through the extremity was decreased, and if the primary vein and the artery were obstructed, the volume flow was further decreased, but gangrene was less frequent. The statement that gangrene is less frequent after simultaneous ligature of the vein because this procedure results in a retention of blood in the tissues is not an adequate explanation, for tissues require not blood but an exchange of certain substances from blood to the tissues. Tissues require circulation of fluids, not stagnation; movement rather than mass.

It was at one time thought that the simultaneous occlusion of the vein might bring about a wider distribution of the smaller quantity of blood. It seemed possible that, after obstruction of the common iliac artery, the blood reaching the thigh through the collateral circulation might pass through the capillary bed of the thigh and return through the veins of the thigh without reaching the foot, and that occlusion of the common iliac vein might prevent this easy return and thereby force a circulation through the vessels of the leg and foot. The experiments, however, in which the temperature of the tissues was measured was contradictory to this theory. These experiments demonstrated that after venous occlusion the temperature of both the foot and the thigh was decreased by occlusion of the vein. This indicated that the volume flow of blood was decreased in both the proximal and the distal portions of the extremity.

It is possible, however, that the distribution of blood in respect to small areas of tissue may be changed by simultaneous ligature of the vein. The temperature of tissue is determined by the temperature of adjacent tissues, and a small area of tissue with no circulation of blood would not differ in an appreciable amount from the temperature of adjacent tissue with a circulation adequate to maintain life. The distribution of circulation as regards small areas of tissue is a matter of blood pressure rather than of volume flow. If the intravascular pressure on both the arterial and the venous side of the capillary circulation is very low, it is probable that the blood filters through only those communicating channels that remain open on account of the rigidity of their own walls. Capillaries that do not remain open from the rigidity of their own walls collapse, and no blood flows through them. This would result in some areas of tissue receiving no nutrition. Simultaneous ligature of the vein would result in a greater intravascular pressure in all the capillaries. This would help to prevent collapse of the vessels in any particular area, and thus result in a more homogeneous distribution of blood.

Another beneficial influence of increased intravascular pressure is to be considered. It is possible that

TABLE 3.—*Ligation of the Right Common and External Iliac Arteries and the Right Common Iliac Vein*

Number	Day of Occurrence of Gangrene	Condition of Leg	Condition of Animal	Day after Operation
4	....	No gangrene	Died, abdominal abscess	10th
55	....	No gangrene	Died, ?	4th
95	....	No gangrene	Killed	63d
12	....	No gangrene	Died, ?	8th
82	2d	Gangrene	Died, gangrene	4th
88	8th	Gangrene	Died, gangrene	11th
49	....	No gangrene	Good condition	50th
45	7th	Gangrene	Killed	9th
21	....	No gangrene	Good condition	65th
55	....	No gangrene	Good condition	73d
72	....	No gangrene	Died, ?	17th
50	....	No gangrene	Good condition	66th
76	....	No gangrene	Died, ?	43d
94	....	No gangrene	Killed	68th
89	....	No gangrene	Killed	60th
92	31st	Gangrene	Died, ?	53d
22	2d	Gangrene	Died, gangrene	5th
93	2d	Gangrene	Spontaneous amputation, died	56th

SUMMARY

No. of Animals	With Gangrene		Without Gangrene		Animals Alive after 10th Day	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
18	6	33.3	12	66.6	17	76.5

intravascular pressure below a certain level is not compatible with the exchange of nutrient substances from within the vessels to the tissues. If the artery alone is obstructed, the intravascular pressure may fall below this level at which tissues may acquire adequate nutrition. Simultaneous ligature of the vein may increase the intravascular pressure so that even though it diminishes the amount of blood flowing through the vessels, it may make it possible that the tissue exchange is adequate for preserving life.

The relation of the results of the experiments described in this paper to the results of some previous experiments reported by one of us[6] should be mentioned. In the previous experiments it was found that complete occlusion of the vein of a muscle which had been isolated from all vascular connections except a single artery and vein led to the development in the muscle of a marked inflammatory process and the transformation of the muscle into fibrous tissue. This change did not follow the occlusion of the artery alone or occlusion of both the vein and artery. It was believed that the pathologic process in the muscle which followed complete venous stasis was the result of raising the intracapillary pressure to the point of completely disrupting the entire capillary bed. In the discussion of these experiments, it was stated that gangrene was more likely to follow arterial obstruction if there was an existing venous obstruction. This statement was based on some experiments in which a much more complete venous obstruction was produced than in the experiments described in this paper. In these previous experiments it was found that, if one common iliac vein of a dog was ligated and the distal stump of the vein injected with barium sulphate paste sufficient to cause an extensive venous thrombosis, and that this procedure was followed by persistent edema of the extremity, then occlusion of the abdominal aorta led to gangrene only of the extremity with the venous occlusion.

It would therefore seem true that if an arterial obstruction exists, simultaneous occlusion of the vein brings about two distinct changes in the circulation, distal to the obstruction, one of which may be beneficial and the other harmful. The magnitude of these changes is determined by the degree of venous obstruction of the entire extremity. The more complete the venous obstruction, the more nearly the intravascular blood pressure is raised to that in the artery proximal to the arterial obstruction. But the more complete the venous obstruction, the more nearly the volume flow of blood is diminished to nothing. Ligature of the vein accompanying the obstructed artery results in only a relative venous obstruction, since the collateral veins are not obstructed. The degree of venous obstruction that would follow ligation of a single vein would certainly vary widely in different veins and, no doubt, in the same vein in different individuals. The ligation, then, of a vein or veins would be beneficial or harmful accordingly as the venous obstruction produced would cause to predominate the beneficial effect of elevation of the intravascular pressure or the harmful effect of the decrease in volume flow of blood.

This discussion has referred only to the immediate consequences of arterial obstruction with and without simultaneous venous obstruction. The late results must also be considered. It is possible that simultaneous ligature of the vein might decrease the frequency of gangrene and yet produce a condition of chronic venous stasis that would make this procedure inadvisable. In other words, the saving of the extremity from gangrene would be accomplished by the risk of the establishment of a condition more intolerable than the effects of the gangrene avoided. In the experiments described in this paper, all animals that did not develop gangrene or die from some other cause recovered completely, and there was no difference noted in the function of the extremities of the animals in which the common iliac vein had been occluded. In fact, it has been found experimentally impossible to produce edema by ligating all of the larger veins of an extremity.

A complete discussion of the possible clinical applications of the results of the conclusions from this experimental study would, of necessity, include an extensive review of a large number of different varieties of arterial obstruction. It may be briefly stated, however, that intentional venous occlusion would benefit those conditions in which arterial obstruction leads to low intra-arterial pressure and a volume flow which is in excess of that necessary to maintain viability of the tissues. The same procedure would be harmful in any condition in which the volume flow was decreased to an amount insufficient to maintain adequate nutrition. The former condition would undoubtedly most often be found after a sudden localized occlusion of an artery such as would result from ligation. Also, ligation of a vein would certainly be expected more likely to be beneficial in a condition in which the arterial circulation is seriously obstructed for a relatively short time, and relatively rapidly improves by the establishment of a collateral circulation.

The advisability of ligating any vein for improvement of the circulation of an extremity would also be determined by the relative amount of venous stasis which would be expected to follow. If there is no existing venous stasis, it is probable that ligature of only the vein accompanying the occluded artery would result in merely a relatively small amount of venous stasis and would be beneficial. If, however, there was evidence of obstruction in the collateral veins, it would be inadvisable. In other words, if there is no evidence of any venous obstruction existing and an artery is to be occluded, it would seem best to occlude the vein also; and if there is evidence of an existing venous obstruction at the time at which the artery is occluded, then further venous obstruction would probably be harmful.

The idea of the ill effect of a lack of a certain balance between the arterial and venous circulations is well expressed by Halsted in a discussion of arteriovenous fistula. He writes:

> We are compelled, I believe, to subscribe to the view that some degree of equilibrium of the arterial and venous systems must be maintained. Granting this, there vanishes any difficulty that there may have been in accounting for the very high percentages of gangrene observed to follow ligation of the artery in cases of arteriovenous fistula. There is in these cases not only a great enlargement of the venous bed but also a curtailment of the arterial tubage—a shrinkage or hypoplasia of the arteries distal to the fistula. Thus, even before the artery is ligated the limb is handicapped by this lack of balance. When, now, the artery above a fistula is tied, irrigation with arterial blood is suppressed on one side of the capillary bed; and on the other side of it the mixed blood is deprived of a share of the pressure by virtue of which the life of the limb was partly sustained. It seems permissible to conjecture that in some instances the limb distal to the fistula may have been hardly less dependent on the pressure from the venous than from the arterial side, and if so we can more readily comprehend the ensuing gangrene than the frequent absence of it after ligation of the fistulated artery.

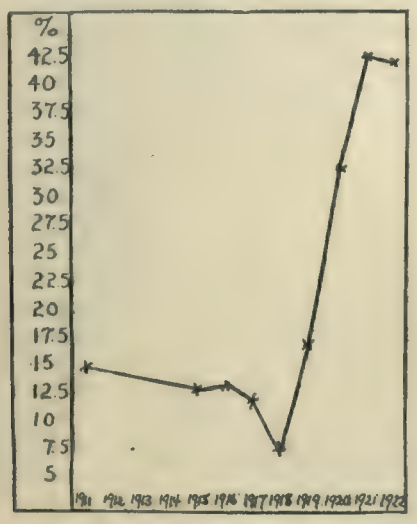
6. Brooks, Barney: Pathologic Changes in Muscle as a Result of Disturbances of Circulation: An Experimental Study of Volkmann's Ischemic Paralysis, Arch. Surg. 5: 188 (July) 1922.

Incontrovertible Evidence.—Finding tubercle bacilli in material from human sources, excluding the possibility of contamination from outside, is the one incontrovertible piece of evidence establishing a diagnosis of tuberculosis. Many cases, though without question clinically tuberculosis, fail to reveal the bacillus—Freed and Black: *Am. Rev. Tuberc.*, May, 1923.

THE NEED FOR POSTMORTEM EXAMINATIONS AND METHODS OF SECURING THEM *

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The value of postmortem examinations, both as a means of advancing our knowledge of disease and as a necessary step in the complete study of a case, is widely recognized even in these antimorphologic days when the study of function is put at such a premium over the study of structure. What a common occurrence it is for a medical man of any hospital experience to lose the fruits of a most painstaking and alluring clinical study by the inability to secure from an ignorant or misguided relative the necessary necropsy permission. While this state of affairs is bound more or less to continue as long as the right to make such an examination depends on the volition of the next of kin, nevertheless, those sufficiently interested can do much to increase materially the number of permissions



Necropsy percentages, Philadelphia General Hospital

granted. The high necropsy percentages secured at the Mayo Clinic (95 per cent. in 1915) and at the Johns Hopkins Hospital are too well known to require further comment; but it is just as well recognized that such high figures can be approached or maintained only by unremitting effort, and at best they cannot hope to be equaled in the larger general hospitals. In fact, one of the best and largest hospitals in the country has recently pointed with satisfaction to the fact that it has raised its necropsy percentage from 8 to 12.

Dr. J. C. Doane,[1] medical director of the Philadelphia General Hospital, in discussing recently the questionable value of present-day civilian mortality statistics, mentioned the relatively high percentage of necropsies that was being secured in this hospital. As we have had since then numerous requests for more information as to how this improvement was obtained, I am here considering the methods which have produced results, in which, for a general hospital, I think we may take pardonable pride.

Broadly, it might be said that every avenue of approach to the securing of necropsies is cultivated assiduously by the medical director and his staff, and that the curve of necropsy percentage is very sensitive to laxity in any particular.

The interns are impressed at every opportunity with the importance of securing necropsy permissions, and a monthly tabulated record is published, through the hospital, of each individual's results. (Tables arranged according to chiefs and services are also exhibited). It is understood that success in this field is an important item in determining the intern's standing for certification. It is well known that the number of necropsy permissions secured can be greatly increased by the sympathetic handling of relatives at an opportune moment, and preliminary training in how to approach the matter is given the new intern on more than one occasion. The chief objections on the part of the family are nearly always sentimental—natural, to be sure—but usually not insuperable if the reasons for the request are put in a sufficiently tactful and convincing manner. There are many valid, powerful arguments, well known in hospital circles, that may be used, and special ones for the individual case must be readily forthcoming. Euphemism in terms must be carefully followed by the young medical officer, prone to forget how the opposite grates on bereaved relatives. Objections on religious grounds are made chiefly by Jews, but I have been told more than once, by rabbis well versed in Hebrew laws, that such objections are based only on customs. Mount Sinai Hospital in New York, for instance, with mostly Jewish patients, has attained an enviable necropsy record of 56 per cent.[2]

I understand that, in Pennsylvania, at least, legal opinion has been given that, as the law compels the physician to give a certificate of the cause of death, in the absence of any law to the contrary it presupposes that the physician has the right to take necessary measures to ascertain such cause. Acting on this opinion, therefore, the superintendent, under proper authority, may authorize an examination, if the medical attendant has stated that he cannot certify the cause of death. If safeguarded against abuse, this method may occasionally be resorted to and has, in fact, in one hospital that I know of, proved to be a valuable help in just the type of case in which necropsy is apt to be most needed. It has also been found that a proper explanation by the ambulance intern at the time the patient is being brought to the hospital is very productive of the necessary signature, and if only a partial necropsy can be obtained, this is much better than none at all. The intern in charge of the patient at the time of death, is, of course, notified of the time of necropsy, and is given a copy of the "front sheet" of the necropsy record for his own information and record within forty-eight hours of the performance of the necropsy. If it has been a particularly interesting case, he will be asked to present the clinical side at the weekly clinicopathologic conference. He knows that his turn will come during his laboratory service to perform twenty or thirty necropsies, at which time particular attention is paid by the pathologist in charge to the instruction of the intern in pathologic technic.

The interest of the "chief" is important and constantly sought. A word from an older physician, or perhaps a note from him, to the intern emphasizing the need for a postmortem examination is often enough to turn the tide in the mind of the partly convinced

* From the Laboratory of Postmortem Pathology of the Philadelphia General Hospital.

1. Doane, J. C.: The Questionable Value of Present-Day Mortality Statistics, J. A. M. A. **79**: 1868 (Nov. 25) 1922.

2. Bluestone, E. M.: Mod. Hosp. **18**: 423 (May) 1922.

but undecided relative. The "chief" also receives a copy of the "front sheet" of the necropsy record, the full record being available later, either in the laboratories or bound with the history in the hospital record room. The necropsy percentages, tabulated according to the individual "chief's" record, are posted each month, and usually good or bad records are not infrequently commented on by personal communications.

One of the most important items in raising necropsy percentages we have found to consist in increasing cooperation with the undertakers. Under the conditions existing in a large hospital, a hostile undertaker, seeing the family shortly after the patient's death, can easily prevent a permission or get one revoked that has already been granted; whereas we have now found more than once that our efforts have been aided by a broadminded and sympathetic undertaker. This cooperation has been secured in a number of ways. Students in the local school of embalming are invited to the necropsy room to see how carefully and respectfully a necropsy is performed, the amount of work entailed and the uses made of the findings. Conferences are held with the officers of undertakers' associations, or an occasional talk is given at an undertakers' meeting, to promote better mutual understanding and to clear away unnecessary points of conflict. We have constantly found that the better grade of men in charge of these organizations are not only willing to cooperate themselves, but also anxious to bring the more poorly equipped members of their profession into line.

In the necropsy room, our pathologists and morgue officers are urged to take every precaution that no unnecessary extra trouble is caused the undertaker through the performance of a necropsy and that proper respect for the dead is exhibited. Thus unusual incisions are limited to the necessity of the case; if the aorta is entirely removed, string is attached to the carotid stump so that it can easily be secured when retracted into the neck; if the brain is removed, the cavity is filled with plaster of Paris and the skull cap securely attached to prevent future displacement and embarrassment, and so on with many details, which, if not observed, may cause considerable trouble and bad feeling.

A special room is maintained, in which the undertaker may embalm the body if so desired, even before the postmortem incision has been sewed up, and we hope soon to have a set of embalming instruments and some fluid for special cases. In the rare event of a contagious disease, an altar and benches provide a makeshift chapel for a religious service.

Finally, in special cases, we may advance the time of performance of necropsy to suit the family or undertaker, and we strive particularly to live up to any arrangement made. If, for instance, a body is promised at a certain hour, we always are sure to have it ready at that time, instead of keeping the undertaker waiting perhaps two or three hours, as is sometimes unfortunately the case in other hospitals. By such means, we have found that the mental eyes of the undertaker and the family will usually respond either to light or in accommodation (to pharaphrase Dr. Bluestone's remark), and surely it is worth the while of the hospital and laboratory staff to utilize such simple methods as here described if they can succeed in raising the voluntary permissions in a general hospital, as they have here, from 10 to 51.3 per cent. (September, 1922).

Thirty-Fourth and Pine streets.

CARDIAC DISORDERS ACCOMPANYING EXOPHTHALMIC GOITER

SOME FACTORS IN THEIR PATHOGENESIS *

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Many theories have been suggested to explain the development of the cardiac disorders that so frequently accompany exophthalmic goiter, but none of them are adequate. The most generally accepted belief is that toxic substances, which are related to the increased activity of the thyroid gland acting through the cardiac nerves or directly on the myocardium, are responsible for the tachycardia and the heart lesions that develop. Support for this view has been sought from the pathologic findings.

At necropsy, the heart in exophthalmic goiter usually exhibits moderate hypertrophy and dilatation of both chambers, with fatty infiltration of the heart muscle cells. In some cases, small scars with interstitial or perivascular round cell infiltration are found scattered through the heart muscle. These, however, may be found as well in the hearts of patients with simple goiter.[1] Several observers have experimentally produced similar lesions by feeding desiccated thyroid to animals.[2] Recently, Goodpasture [3] described two cases of exophthalmic goiter in which there was extensive myocardial necrosis, unaccompanied by inflammatory reaction or by coronary artery disease. He pointed out, however, that this is an uncommon finding.

Chiari [4] has emphasized the fact that constitutional cardiovascular anomalies, such as the dropped heart and narrow fragile arteries, as well as vasomotor instability, frequently determine the intensity of the cardiac symptoms in exophthalmic goiter. He recalls that functional heart symptoms may precede the onset of exophthalmic goiter and may continue after the disease has become arrested.

I wish to call attention to two additional factors which have not, to my knowledge, received proper emphasis. In exophthalmic goiter, as in the early stages of simple goiter, there is a tremendous increase in the vascularity of the thyroid gland. The thyroid arteries and veins are greatly dilated; indeed, the vascular dilatation often includes the carotid arteries and the large neck veins. It has been shown that the maximum blood flow through the normal thyroid gland is 100 c.c. per minute, and that in the gland of exophthalmic goiter it ranges from 500 to 1,000 c.c. per minute. Clinical evidence of this increased blood supply is found in the pulsation of the gland, as well as in the palpable bruit and in the dilated thyroid veins found at operation. The dilated blood vessels of the thyroid gland act as a shunt which short circuits a large part of the blood from its usual course to the head and brain and returns it immediately to the heart. To maintain an adequate circulation, a larger amount of blood must be thrown into the carotid arteries per unit of time, thus entailing

* From the Medical Division of Montefiore Hospital for Chronic Diseases.

1. Fahr, T., and Kuhle, J.: Zur Frage des Kropfherzens und der Herzveränderung bei Status thymicolymphaticus, Virchows Arch. f. path. Anat. **233**: 286, 1921.

2. Hashimoto, H.: The Heart in Experimental Hyperthyroidism, with Special Reference to Its Histology, Endocrinology **5**: 579 (Sept.) 1921.

3. Goodpasture, E. W.: Influence of Thyroid Products on Production of Myocardial Necrosis, J. Exper. Med. **34**: 407 (Oct.) 1921.

4. Chiari, R.: Sind alle bei Morbus Basedowii vorhandenen Herz und Gefässerscheinungen Basedowsymptome? Ztschr. f. ang. Anat. u Konstit. **1**: 280, 1913-1914.

an increased minute volume output from the heart. There is no evidence that the increased blood supply to the thyroid is compensated for by a lessened supply to other organs. This persistently increased load on the heart must result in dilatation and hypertrophy, and, if long continued, in myocardial insufficiency. Marine and Lenhart [5] have suggested that the goiter heart is primarily the result of a work hypertrophy.

The mechanism seems analogous to that determining the hypertrophy and dilatation of the heart observed in arteriovenous aneurysms, in which, too, a short circuit is interpolated in the circulation.[6] Another analogy between the two conditions is the high systolic and low diastolic pressure that is found in patients with exophthalmic goiter, as well as in those with arteriovenous aneurysms. The resultant high pulse pressure suggests an increased systolic output of the heart.

The increased basal metabolism so constantly observed in the active phase of exophthalmic goiter, and particularly the close correlation between the pulse rate and basal metabolism, point to another factor that must affect the heart. With the heightened metabolism, there is a greater consumption of oxygen and an increased elimination of carbon dioxid by the tissues. Since there is no change in the hemoglobin or red cell content of the blood in exophthalmic goiter, this necessitates an increased minute volume flow of blood through the tissues. This may be attained by an increased systolic output of the ventricles or by an accelerated heart rate, or by both. This increased load, continuous twenty-four hours every day for months at a time, must place a great strain on the heart and result in cardiac dilatation and hypertrophy, as well as greater susceptibility to other noxious factors that may exist during the disease.

In order to obtain some quantitative concept of the increased work thrown on the heart, the oxygen consumption was studied in fifty-five unselected patients who had been referred to the laboratory division of Montefiore Hospital for the determination of their basal metabolic rate. I am indebted to Dr. Marine for placing the records at my disposal. Of the fifty-five patients, twenty-three exhibited a basal metabolism above + 10, three, a rate below — 10, and twenty-nine, a rate between — 10 and + 10. The patients with high rates all suffered from exophthalmic goiter. In all, 102 estimations were available on these fifty-five patients. In each case, the oxygen consumption per minute, corrected for temperature, barometric pressure and tension of water vapor, the metabolic rate, the pulse rate and the weight of the patient were noted.

The oxygen consumption varies with the size of the patient, and the readiness with which it is transported from the lungs to the tissues depends on the blood volume circulating in a unit of time, provided the oxygen-carrying power of the blood and the rate of oxygen absorption by the tissues are constant. Since the total volume of blood in the body is a function of the body weight (approximately 7.5 per cent.), the oxygen consumption was calculated in cubic centimeters per kilogram for each subject in order to make the figures comparable. In fifty-seven readings in which the metabolism ranged from + 12 to + 80 (average + 41), the average oxygen consumption was 5.1 c.c. per kilogram of body weight per minute. In thirty-one cases in which the metabolism ranged from + 10 to — 10 (average 0), the average oxygen consumption was 3.8 c.c. per kilogram of body weight per minute. Assuming that the blood volume in these subjects varies with the body weight, the patients with exophthalmic goiter had to transport one quarter again as much oxygen from the lungs to the tissues by means of the same amount of blood as the normal controls. The chief means of accomplishing this is by a circulation rate which is one quarter again as rapid as the rate in normal persons.

Theoretically, a greater abstraction of oxygen from the blood by the tissues, in other words, a greater oxygen unsaturation of the venous blood, might compensate for the increased tissue demand for oxygen. Lundsgaard [7] has shown that a retarded blood flow through the capillaries as well as bodily exercise will cause an abnormally great reduction of oxygen saturation in the capillary blood. Although this may play a small part, Plesch [8] has definitely proved that there is an increased minute volume flow in exophthalmic goiter. Indeed, in the cases which he studied, the figures correspond rather closely to mine. The patients with exophthalmic goiter consumed, on the average, 6.47 c.c. of oxygen per kilogram per minute, while the controls consumed 3.52 c.c. per kilogram per minute. He further found that the minute volume flow per kilogram in the patients with exophthalmic goiter was 97.43 c.c., while in the normal persons it was 61.62 c.c. per kilogram. Further investigation revealed that the systolic output per beat was not increased in exophthalmic goiter, and that, therefore, the greater minute volume was due to the rapid heart beat accompanied by little reduction in the systolic output per beat. Studying his material from a different angle, he showed that although the heart work per beat is not increased in exophthalmic goiter, the work per minute is considerably greater because of the factors discussed above.

SUMMARY

The current theories of the cause of the cardiac disorders that accompany exophthalmic goiter are inadequate. Evidence is presented that two mechanical factors may play a part in overloading the heart in exophthalmic goiter, thus making it more susceptible to secondary noxious influences. 1. The tremendous dilatation of the arteries and veins of the thyroid short-circuit the blood flowing to the neck and increase the load on the heart in the same manner as do arteriovenous aneurysms. 2. The heightened oxygen consumption causes an increased minute volume flow of the blood, which may be from 25 to 60 per cent. greater than normal.

The increased work thus thrown on the heart is the chief cause for cardiac dilatation, hypertrophy, and insufficiency in exophthalmic goiter.

5. Marine, David, and Lenhart, C. H.: Pathological Anatomy of Exophthalmic Goiter, Arch. Int. Med. **8**: 265 (Sept.) 1911.

6. Reid, M. R.: The Effect of Arteriovenous Fistula upon the Heart and Blood Vessels, Bull. Johns Hopkins Hosp. **31**: 43 (Feb.) 1920. Cazamian, P.: Le retentissemente cardiaque et circulatoire d'un anévrysme arteriovéneux d'origine traumatique des vaisseaux fémoraux profonds, Bull. et mém. Soc. méd. d. Hôp. de Paris **41**: 46, 1917.

7. Lundsgaard, C.: Studies in Cyanosis, J. Exper. Med. **30**: 271 (Sept.) 1919.

8. Plesch, J.: Haemodynamische Studien, Ztschr. f. exper. Path. u. Therap. **6**: 395, 1909.

Vitamins as Important Factor in Treatment of Pulmonary Tuberculosis.—F. Gardey remarks that many symptoms of pulmonary tuberculosis resemble those of deficiency diseases. He pleads to have the dietary in different countries investigated in relation to the prevalence of pulmonary tuberculosis and the influence of food, with and without vitamins, on the course of the disease. The organism of the tuberculous acts as if it were void of vitamins.—*Semana Médica* **27**:759, 1920.

PROTEIN AND PELLAGRA

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I have followed the discussion on pellagra and its causes in the American scientific periodicals with great interest. Here I shall simply discuss the question: Is the cause of pellagra the lack of animal food? Goldberger and Tanner,[1] from their observations, conclude that "the dominating rôle of diet in the prevention and causation of pellagra must be referred primarily to the character of the protein (animo-acid) supply, this being the only other dietary factor at present known to be necessary to physiological well-being."

Is this conclusion correct? In my opinion, it is not. While I have not experimented with pellagra, the question of protein has been, in a way, my specialty. I was born and brought up in the country among farmers in the western part of Jutland. In my childhood—fifty years ago—the food consisted chiefly of bread, porridge, potatoes and milk, to which was added a little fat corned pork and dried fish. Fresh meat was for the most part known only during the butchering season. On this diet my countrymen were healthy and able-bodied. We did not know anything of the now so fashionable neurasthenia. To be sure, the working hours numbered eight, but they were eight hours in the morning and eight hours in the afternoon.

I came to Copenhagen in my sixteenth year and turned to the ordinary town food. But my health diminished on this food. My interest in the question of nourishment was roused. I experimented on myself, and, later, on my whole family. The Danish state, in 1910, on account of the Danish farmers, gave me a laboratory and three assistants, since which time I have devoted myself to the study of diet. When the war and the blockade came, as a result of which Denmark was cut off from more than half her supply of nourishment, I exerted a substantial influence on our scheme of rationing, which was founded on the new nourishment theories.

While others experiment with rats, rabbits and pigs, I experiment with men. I insist on a supply of the best experimental subjects in the world. It is well known that when the officers go at the head, the soldiers follow them. My soldiers have walked a long distance in front of me. My assistant, Frederik Madsen, lived (1) for one year on potatoes and margarin;[2] (2) for six months on whole rye-bread, margarin, prunes, sugar and starch;[3] (3) for six months on barley-meal porridge made with water, margarin and sugar,[4] and (4) for two years on bread, potatoes, cabbage soup and fruit soup without fat.[5] The object was to find the protein minimum and the fat minimum. Madsen was not the only test subject. I have always had at least two on the same experiment, and the results were always exactly the same.

THE PROTEIN AND THE FAT MINIMUM

By Experiment 1 we found that the protein minimum for a grown-up strong man is about 20 gm. of digestible potato protein.[2] The test subjects found that this diet agreed very well with them. But a condition is that the water in which the potatoes are boiled and which contains important substances (salt and vitamins) be ingested as well. Therefore, the potatoes ought to be peeled before they are boiled, out of regard to cleanliness. The experiments were later controlled by Abderhalden and other physiologists. The result was the same.

By Experiment 2 we found that the protein minimum by bread diet is about 20 gm.[3] In other words, protein in potatoes, bread, meat and milk has the same biologic value.

By Experiment 3 we found that barley groats form an excellent article of food, which, unlike polished rice and sieved oatmeal, contains sufficient vitamins. This agrees with several practical experiences. In the old days in Denmark, barley-meal porridge was eaten two or three times a day in the country.

By Experiment 4 we found that fat is not necessary. Vegetables can replace it.[6]

Our second experiment, on bread, opposes, it is true, the results of other investigators. Thomas found that bread protein has only one-third the value of meat protein. But his experiments were of too short a duration. While my experiments extended over six months, he contented himself with three days. In addition, Thomas seems rather biased. I once critically examined the experiments. I ended by declaring:[3]

> The fact is that Thomas, by selecting all the big figures for the nitrogen secretion in the urine, in the bread experiments, while he selected all the small and rejected all the big figures in the meat experiments, succeeded in reducing the value of the bread protein to one-third that of the meat protein. Is such a method scientifically allowable? If Thomas had acted conversely and chosen the small figures for bread and the big for meat, he might just as well have found the value of bread protein to be two or three times that of meat.

It is undoubtedly true that some proteins in cereals lack certain amino-acids. But when we eat bread, we do not isolate the single protein. The aggregated sum of proteins in corn has full value. Even the two men who especially have isolated and experimented with the deficient proteins say so. I will quote:[7]

> Hence a misconception of the possible value of the cereals as sources of protein has developed in the minds of some persons owing to their failure to realize that, in the form in which these grains are most commonly fed, the sum total of their various proteins must be taken into account.

The same men, to their surprise, have found that bran contains not only the vitamins, which the endosperm lacks, but also protein substances that supplement the deficiencies in the proteins of the endosperm. They write:[8]

> The "crude protein" of bran appears to be quite as efficient as that of the combination of wheat flour with egg, milk or meat, under the condition of this experiment.

The bran can replace meat and milk. In other words, it is one of our most valuable articles of nourishment. It has certainly been believed that bran is

1. Goldberger, Joseph; and Tanner, W. F.: Pub. Health Rep. **37**: 462 (March 3) 1922.
2. Hindhede, M.: Skand. Arch. f. Physiol. **30**: 97
3. Hindhede, M.: Skand. Arch. f. Physiol. **31**: 259.
4. Hindhede, M.: Skand. Arch. f. Physiol. **35**: 294.
5. Hindhede, M.: Skand. Arch. f. Physiol. **50**: 78.
6. In 1918 I wrote to Prof. Lafayette B. Mendel, New Haven, Conn.: "Two men have now lived one and one-half years without fat. No sign at all of any hurt. It would be of interest if you would try whether vegetables can replace fat." Eleven months later Mendel published researches showing that spinach, alfalfa, etc., really can replace fat (Mendel, L. B.: Vitamines in Green Foods, J. Biol. Chem. **37**: 187 [Jan.] 1919).
7. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **41**: 275 (March) 1920.
8. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **37**: 557 (April) 1919.

indigestible for man, but our thorough experiments have—to our own surprise—shown us that man, as well as the domestic animals, can digest bran. The correctness of these results has been confirmed by Johansson [10] in Stockholm and Wiegner in Zürich.[11] The Danish war rationing was largely based on the value of the bran. Therefore I do not deny the possibility that pellagra is due to the absence of protein; but in that case it is not necessary to take to animal protein. The compensation is much nearer. However, I am most inclined to think that the question of pellagra is not a question of protein but of vitamin.

TABLE 1.—*Food Consumption in South Carolina, 1916* *

	Nonpellagrous		Pellagrous	
Group 1:	Highest Intake	Lowest Intake	Lowest Intake	Two or More Cases
Bread, flour, grits, sugar, syrup, jams	689	647	546	675
Lard, salt pork fat	92	88	102	100
Group 2:				
Butter	27	30	16	11
Group 3:				
Meat	128	42	38	40
Eggs	70	39	31	31
Milk	379	554	187	127
Group 4:				
Fruits	90	45	36	36
Vegetables	239	112	98	124
CONTENT OF PROTEIN AND CALORIES				
Protein in all groups	128	105	84	85
Animal protein	50	35	24	21
Calories	4,267	3,836	3,288	3,310

* In Tables 1, 2 and 3, the figures represent grams for each adult male, daily.

In Table 1, I give some of Goldberger's [12] results.

I have collected the articles of food into four groups, according to the content of vitamins. Group 1 is practically free from vitamins; Group 2 contains vitamin A; Group 3 represents vitamins from the animal kingdom and Group 4 from the vegetable kingdom. Group 1 contains only imperfect nourishment (chemically pure substances or artificial products; in bread and flour the bran is lacking). But this group represents, for the pellagrous families, under Group 4 2,800 of the 3,310 calories, and consequently more than 90 per cent. of the nourishment. When nine tenths of the food consists of such defective articles of food, is it surprising that illness increases? We have often tried to live on white bread and butter as the main source of sustenance, but we soon became listless and ill. When one considers that the greater part of the meat and half of the fruits and vegetables were not fresh, but salted, dried or preserved, one might—with present knowledge—predict that such a diet would not work in the long run.

In fact, there is only a slight difference in the food in Groups 2, 3 and 4. Therefore the families are either just on or under the border. It is likely that it is the large milk consumption that saves Group 2, but the same result would probably have been reached—and virtually is reached—by the addition of more fresh fruit and vegetables. A factor that speaks decidedly for the part of the vitamins is the seasonal appearance. Goldberger's [13] figures are: January, 0; February, 1; March, 4; April, 13; May, 20; June, 37; July, 18; August, 8; September, 10; October, 3; November, 1; December, 0.

According to this, pellagra rises in the springtime, when there are virtually no fresh vegetables, and decreases in the course of the summer, when there are plenty of vegetables and fruits available. But Goldberger's investigations are made only in periods of fifteen days in April and May, and consequently at a time when the food is most deficient. Why have investigations not been made in July and August, when the food evidently is satisfactory? Investigations at this time would probably have readily unearthed the cause. Is it probable that people in the hot summer use more meat and milk? Hardly. But it is likely that they use more vegetables.

EXPERIMENTS AT EDEN

I will report some of the results of our experiments in the garden settlement Eden, at Oranienburg, 20 miles north of Berlin. About 100 families, twenty-eight years ago, bought a piece of land, which they parceled out in lots of two-thirds acre. Each family has one or more lots. These people are nearly all vegetarians. The slogan is: Away from the towns, away from culture, back to nature; live in fresh air and sunshine, and support yourself as much as possible by the products of your own garden. Throughout the war they had sufficient nourishment. The state of health was perfect. The mortality of children under 1 year of age is only one fourth in proportion to that of the neighboring villages, and in the twenty-eight years not one school child has died.[14] I have followed this colony for a number of years and have made a series of investigations concerning which a more extensive report will soon be published. The composition of the food is given in Table 2.

If the theory of the necessity of plentiful animal protein were right, it would look bad for these Eden families, with absence of meat and insignificant consumption of eggs. Several families use hardly even milk. Families 9 and 10, who have a scientific understanding of the problem of nourishment, use the smallest quantity of animal products. Family 10 consists of husband, wife and four grown-up children, who are all uncommonly healthy.

TABLE 2.—*Food Consumption in Eden, 1921*

	Families*										
Group 1:	1	2	3	4	5	6	7	8	9	10	Average
Bread, flour, grits, sugar, jams	342	557	550	406	464	480	665	364	613	370	481
Margarin	51	48	34	45	53	50	63	29	75	3	45
Group 2:											
Butter	4	..	..	..	..	..	..	..	..	..	0.4
Group 3:											
Meat, eggs	5	8	1	..	14	1	12	5	..	..	5
Milk, cheese	321	158	479	229	65	153	318	232	19	23	200
Group 4:											
Fruits	1,354	658	1,908	899	708	613	1,502	618	821	1,605	1,071
Vegetables	285	102	207	199	173	367	302	438	61	380	251
Potatoes	685	366	771	346	669	582	686	777	1,067	911	686
CONTENT OF PROTEIN AND CALORIES											
Protein in all groups	64	63	63	56	66	59	81	59	80	56	65
Animal protein	11	7	15	9	4	6	11	9	5	1	9
Calories in all	2,945	2,871	3,917	2,591	2,881	2,910	3,998	2,710	4,296	2,760	3,189

* 1, teacher; 2, rector; 3, artist; 4, judge, retired; 5, musician; 6, director; 7, gardener; 8, engineer; 9, physician; 10, teacher in agricultural college, retired.

The food lacks animal protein, but it does not lack vitamins. Whole bread is eaten, and there are plenty of fruits, vegetables and potatoes.

I could continue indefinitely along this line, did space permit. I shall content myself with the comparison

9. Skand. Arch. f. Physiol. **33**: 59, 263.
10. Johansson: Svenska Läk. Sällsk. Förhandl., 1917, p. 302.
11. Wiegner: Mitt. d. Gesellsch. Schweiserisch. Landwirte, 1918, No. 5.
12. Goldberger, Joseph; Wheeler, G. A., and Sydenstricker, Edgar: Pub. Health Rep. **35**: 648 (March 19), 1650 (July 9) 1920.
13. Goldberger, Wheeler and Sydenstricker (Footnote 12, second reference).
14. Eden 25 Jahre Obstbausiedlung, Oranienburg bei Berlin, 1920.

given in Table 3, and for further explanations refer to my books and reports.[15]

Column 1 represents two or more cases of pellagra in 1916, which, with the ten families at Eden, 1921, in Column 5, have been mentioned before. Column 2 represents six families of Danish farm laborers in 1880, at which time they had a comparatively low death rate. Column 3 represents ten families of English farm laborers in 1910 on a low income; with

TABLE 3.—*Food Consumption in Poor Families*

	1	2	3	4	5
	South Carolina,	Denmark, Farm	England, Farm	Germany	
Group 1:	Pellagrins	Laborers	Laborers	Weavers	Eden
Bread, flour, grits, sugar, syrup, jams	675	797	682	724	481
Margarin	...	...	8	...	45
Lard, salt pork	100	41	22	8	...
Group 2:					
Butter	11	42	5	33	0.4
Group 3:					
Meat, fish	40	...	52	20	...
Eggs	31	...	...	1	5
Milk, cheese	127	322	105	132	200
Group 4:					
Fruits	35	...	12	1	1,071
Vegetables	124	...	84	9	251
Potatoes	73	458	477	678	686
CONTENT OF PROTEIN AND CALORIES					
Protein in all	85	86	72	65	65
Animal protein	21	19	12	11	9
Calories	3,310	3,430	2,785	2,706	3,189

the exception of the clergymen, these had the lowest death rate in England. Column 4 represents twenty-eight families of Saxon weavers in 1885, who almost all grew old, and who lived as did a great part of the German population forty years ago. The people represented in Columns 2 to 5, according to the old protein theory, should be undernourished, but evidently they were not. Why? The Danish working men ate only whole rye bread. The German weavers also ate chiefly whole bread. All had a large consumption of potatoes.

SUCCESSFUL RATIONING DURING THE BLOCKADE

Our great experiment of rationing during the war blockade was instructive. The situation was critical when it began, in February, 1917, because we were accustomed to import about half of the grain and feed that we used for men and animals. Moreover, the drought in 1917 took one third of our crop. When the government requested me to be one of the two physiologic advisers, the result was that the rationing, in large part, was based on the results of our experiments. At the annual meeting of the British Medical Association in Glasgow in July, 1922, I gave a short summary,[16] from which I shall quote:

Our chief measures were:

1. All bread cereals and most of the barley and potatoes were requisitioned by the government to be used as food alone for the people.

2. As a result of this measure, the raising of pigs was reduced to one fifth. The small amount of pork which was available was eaten by the farmers. The city folk got hardly any pork.

3. The rye was ground out to 100 per cent., and thus rye bread contained all the bran. In addition to this, 12 to 15 per cent. bran of wheat was mixed into the baking of rye bread—that is to say, all the bran which was left over in making white bread was made use of in this way. Because of this the domestic animals had no bran in their feeds while the ration system was in force.

4. All production of alcoholic liquors for general consumption was prohibited. All supplies on hand were seized, and of the supply only 100,000 bottles (each containing 750 c.c.) were given out every month, which meant 25 c.c. of alcoholic drink for each person a month. In order to avoid any special fight for this dram, there was placed so high a tax on spirits that the price went up to an amount twenty times higher than was normally paid.

5. The production of brewing beer was reduced to one-half the ordinary output, and the amount of alcohol contained therein was not allowed to exceed 3 per cent.

6. In addition to these regulations, all export of fruit and vegetables was prohibited.

The main result of the rationing on the state of health was that the death rate from all cases of death (infectious diseases excepted) in the age group 25-65 went down 34 per cent. for men and 19 per cent. for women. With regard to the men, the main cause may be looked for in the restriction of alcohol. But the great decrease, even with the women, cannot be explained in this way alone.

Most illuminating in that respect are the figures for the old people past 65. The three main causes of death are: diseases of the heart; bronchitis and bronchopneumonia, and senility. Deaths from these causes occurred as set forth in Table 4.

Owing to the fact that the death rate among women from these causes is larger than that among men, the consumption of alcohol cannot be of any essential consequence. Then what can be the cause of the conclusive and regular decrease during the rationing, and the just as punctual rise afterward? During the rationing we had less meat, less coffee and less white bread, but more potatoes, large quantities of barley-meal porridge and unusually coarse bran bread.

TABLE 4.—*Deaths per Ten Thousand from Heart Disease, Bronchitis and Bronchopneumonia, and Senility*

	1910-1914	1918	1919-1921
Men	334	255	352
Women	343	279	369
	RATIO		
Men	100	76	105
Women	100	81	105

TABLE 5.—*Food of Japanese Farmers*

	Gm.	Protein	Fat	Calories
Animal:				
Fish, eggs	19	6.1	0.9	36
Vegetable:				
Rice, bran, beans, fruits and vegetables	2,270	75.3	17.7	2,734
Total	2,289	81.4	18.6	2,770

According to what has been said about the worth of potatoes, barley groats and bran, the good results are not surprising. The rationing became a control trial on a large scale. The results of our experiments passed the test with flying colors.

BERIBERI

The pellagra situation is strikingly reminiscent of the Japanese beriberi situation thirty-eight years ago. The typical food of Japanese farmers, according to Suto's researches, is presented in Table 5. On such food, which contains only ⅓ per cent. of animal nourishment, the Japanese have lived thousands of years,

15. Hindhede, M.: Protein and Nutrition, London, Edward Seymour & Co., 1913; Die neue Ernährungslehre, Dresden, Emil Pahl, 1922; Engelske Landarbejdere (English farm laborer) 12. Beretning fra Hindhedes Kontor for Ernæringsundersøgelser, Copenhagen, 1919.

16. Hindhede, M.: Alcohol Restriction and Mortality, Brit. M. J. 2: 248 (Aug. 12) 1922.

and they are extraordinarily energetic and enduring.[17] With the introduction of European culture into Japan, however, there occurred, almost at the same time, epidemics of beriberi, in which 33 per cent. of the soldiers were affected. Occidental science surmised that the cause was the rice diet, poor in protein. The European meat diet was introduced, and beriberi disappeared as if by magic.

Do you realize that it was the meat protein? science asked.

In Norway, in 1894, the opposite experiment was made. The food on board ship was improved, rye bread being exchanged for white bread, and salt pork for preserved meat. The result was many cases of beriberi, which before had been unknown. Therefore, in Japan, meat was introduced, and beriberi disappeared; in Norway, meat was introduced, and beriberi came. Accordingly, the cause cannot be the meat. People did not remember that the population in Japan exchanged rice for bread together with the meat, and introduced large quantities of potatoes and vegetables. Now everybody knows the cause of beriberi: It was the polished rice. The Americans have now—as far as I know—prohibited the import of polished rice from the Philippines. But perhaps they have not reached the point of prohibiting the use of sifted Indian meal

TABLE 6.—*Number of Deaths per Thousand Population, 1840-1870*

	Men			Women		
Age	Iceland	Denmark	Ratio 100:	Iceland	Denmark	Ratio 100:
From 35 to 45	19.3	11.0	175	13.2	10.8	122
From 45 to 55	28.0	18.3	153	18.6	13.8	135
From 55 to 65	48.0	34.0	141	38.8	26.6	146

and wheat flour in South Carolina. If they would do that and introduce whole wheat bread and give large quantities of potatoes and vegetables, then I suppose that there would not be a lack of amino-acids.

CONDITIONS IN ICELAND AND IN INDIA

It is notable to see the great agitation for more meat in Chittenden's country. McCollum has here taken the lead. His experiments with rats are very interesting, but he is a bad historian. The historical chapter in his last book seems to me to be agitation, without one strong verified proof. As he gives no dates, it is impossible to control most of his statements. But where I am able to do this, it shows that the statements run quite contrary to the reality. Concerning the nutrition of the people of Iceland, he writes:[18]

> A most interesting experience is that of the people of Iceland. The island was settled in the ninth century by colonists from Scandinavia and Ireland. The colonists took with them cattle and sheep, but no poultry. The latter were not introduced until about a century ago. Their diet was practically carnivorous in character for several hundred years. Since agriculture did not prove profitable, they subsisted on milk, mutton, fish, and in some parts of the island during the summer, eggs were added to the fare. Very little vegetable food was eaten. The health conditions on this regimen were good, and dental caries was unknown until after about 1850.

Let us examine "the good health conditions" about 1850. The figures are given in Table 6. It will be seen that health conditions in Iceland were very bad as long as people chiefly lived on animal food. On the whole, it has not been possible for me to find during my searches and studies one single class of people who lived on a strong meat fare and who had a low death rate. The low death rate is always to be found in the classes of people who live on Spartan food. One, of course, can also find a high death rate among people who live frugally, but it is always caused by unhygienic circumstances (bad housing, alcoholism, and so on).[19] The death rate in the lower class of the towns is far larger than in the upper class, but the higher death rate is due to epidemic diseases, tuberculosis and other diseases of the lungs; on the other hand, the death rate of diseases of the brain, heart and digestion is largest in the upper class.[20]

McCollum refers to McKay's studies regarding the nourishment of the different classes of people in India, from which it appears that the meat-eating races are by far the strongest. Some of McKay's investigations are the most curious I have ever seen. If one goes through his works one finds that his data prove just the opposite of what the author means them to. McKay's ideal is the meat-eating Sikhs. But what is the food of the ideally trained Sikh soldiers? According to McKay, it consists of: milk, 16 ounces daily; flour (wheat), 24 ounces daily; ghi (butter), 2 ounces daily; dhall, 4 ounces daily; vegetables (potatoes), from 4 to 6 ounces daily; meat, 16 ounces two or three times a month, and rum, 3½ ounces daily. Meat two or three times a month gives, then, the ideal food. I can subscribe to this, as it is much like my own manner of living.[21]

INFLUENCE OF TRADITION

The conclusions of Goldberger, McCollum and McKay do not seem reliable. Of course, it is not the intention of these observers to mislead. They are the victims of dogmas that have been impressed on their minds. Nobody understands this better than I. It took me a long time to break with the traditions. What caused me to lose faith in them was my experience in 1895, when I lived for a month on new potatoes, butter, strawberries and a very little milk, all of these being eaten three times a day. This food, which contained only about one fourth of the normal amount of protein, gave me an increased feeling of well-being.

No one ought to be permitted to appear as a food expert until he has experimented on himself for a long time. This is the only thing that will cause dogmas to fall. But it is not enough to try to live as a vegetarian. It will not do to eat too much food made of flour, white bread and sugar. Another point is to refrain from eating until one is really hungry, and to stop "when the food has the best taste." It should be remembered that the years between 20 and 30 are the dangerous age for tuberculosis, and that the length of life is in inverse proportion to the weight, as demonstrated by the statistics of the forty-three life insurance companies.

VARYING NEEDS OF DIFFERENT SPECIES

Although the statement may be superfluous, I am going to remark that I am not a vegetarian on principle. As a scientist I am not allowed to insist on that which I cannot prove. And although I take it as demonstrated that one can easily live on a purely vegetable diet, it can hardly be proved that a small consumption

17. Hindhede, M. (Footnote 15, first reference, pp. 38-47).
18. McCollum: The Newer Knowledge of Nutrition, Ed. 2, p. 394.
19. Eden 25 Jahre Obstbausiedlung, pp. 147-177.
20. Hindhede, M.: Protein and Nutrition, p. 110.
21. Eden 25 Jahre Obstbausiedlung, p. 85.

of meat does any harm. I consider milk a good article of food, but I do not believe it is necessary for adults. When McCollum places milk higher than vegetables as "protective food," one may be certain that he experimented with pigs and rats. Especially regarding the question of protein, I do not think it is permissible to draw conclusions from rats and pigs to men. McCollum gives the figures in Table 7 for the rate of growth.

TABLE 7.—*Rate of Growth*

	Weight at Birth	Weight at Age of 280 Days	Weight at 1 Year	Weight Doubled
Man	7 pounds	.....	21 pounds	3 times
Rat	4.83 gm.	280 gm.	.....	55 times
Pig	2 pounds	300 pounds	.....	150 times

It is a matter of course that such rapidly growing animals have a comparatively larger requirement of protein. It is also evident from the fact that the percentage of protein in the milk follows the growth rate. But he gives the figures reproduced in Table 8.

TABLE 8.—*Growth Rate, and Protein in the Milk* *

	Time for Doubling Growth, Days	Protein in Milk, per Cent.
Man	180	1.6
Ox	60	3.5
Sheep	15	4.9
Pig	14	5.2
Cat	9.5	7.0
Rabbit	6	10.4

* For rats, no figure for the protein content is given, but it may be assumed to be high.

It is always hazardous to draw conclusions from one species of animal to another. The nourishment of men requires experiments with men as a foundation.

PRODUCTION OF ADEQUATE NOURISHMENT

Physicians certainly should not agitate for a dietary rich in meat. We can leave that to the farmers and the big slaughter houses. They have some reason for fear. I once calculated that if people lived only on products of the earth—corn, potatoes, fruits and vegetables—seven grown-up men, or nine persons (men, women and children), could get nourishment enough from 1 hectare (2½ acres). From the cultivated acreage, it can be calculated [22] how many million people it would be possible to support in the different countries.

TABLE 9.—*Present Population and Possible Increase*

	Area, Hectares, Millions	Millions of Population		Number of Times Population Can Increase
		Possible	Present	
Denmark	2.5 × 9 =	22.5	3	7.5
Norway	0.64 × 9 =	5.8	2.5	2.3
Sweden	3.5 × 9 =	31.5	6	5.3
Germany	26.4 × 9 =	238	65	3.7
Austria-Hungary	26.4 × 9 =	238	52	4.6
France	28.5 × 9 =	256	40	6.4
England	8.1 × 9 =	73	46	1.6
Italy	17.8 × 9 =	160	35	4.6
Russia	123.0 × 9 =	1,107	130	8.5
All Europe	272 × 9 =	2,448	450	5.4
United States	168 × 9 =	1,512	100	15.1

When we consider how the people in the greater part of central Europe have been starving and are still starving because not enough nourishment can be produced, these figures look a bit curious. But the solution of the riddle is simple enough when it is remembered that the production of pork and milk gives a loss of nourishment of 80, and of beef even 95 per cent.[23] The central powers are starving only because the people require too many animal products. They believe in the necessity of a greater use of these products and are in that supported by the scientists. For that reason it is an irresistible necessity for Europe that the populations begin to realize that science here has committed a fatal mistake.

The experiences of Denmark during the rationing showed how easy it is to procure nourishment enough if people only limit sufficiently animal production. It would, of course, be foolish to abolish this production. What would it avail if we in Denmark produced food for twenty-two million people when we have only three million? In that case six sevenths of the food would have to be wasted, provided, of course, the other countries acted in the same way, so that nothing could be exported.

Frederiksburg Allé 28.

22. Conditions have been considered as they were before the war.

23. Report to the minister of the interior from the Committee of April 4, 1917, p. 107.

ISCHIORECTAL ABSCESS FOLLOWED BY GAS GANGRENE; GAS GANGRENE FOLLOWING TRAUMA

REPORT OF TWO CASES *

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AND
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In the five days from February 27 to March 4, 1923, there were two deaths from gas gangrene at St. John's Long Island City Hospital. The first infection was of the scrotal, perineal and ischiorectal regions and followed ischiorectal abscess; the second gas infection followed a crushing injury to the left leg. In each case the diagnosis was substantiated by bacteriologic and postmortem examination.

In the traumatic case, the patient entered the hospital three days after our first patient succumbed, and occupied an adjoining bed. Since there is no other case of gas gangrene on record in this institution, the possibility of cross-infection having occurred must be considered. And yet a review of the literature reveals a remarkable paucity of reported cases of gas gangrene in civil practice. Christopher [1] asserts that "a careful search of recent medical literature revealed only seven writers who reported nine cases of gas gangrene in civil practice." Such infrequency of occurrence is certainly inharmonious with our conception of communicability. But can the rarity of incidence be more readily reconciled with the known prevalence of the organisms responsible for gas gangrene?

REPORT OF CASES

CASE 1.—F. M., a tailor, aged 54, entered St. John's Hospital, Feb. 24, 1923, at 4 p. m., complaining of pain and swelling in the region of the anus and scrotum. The previous history was entirely negative. The bowels had always been regular. February 18, the patient first experienced a mild pain in the region of the anus. The next morning the pain increased, and the patient noticed a swelling in the perineal region. The

* From the surgical service of Dr. F. C. Keller; pathologic service of Dr. Carl Boettiger, St. John's Long Island City Hospital; operations by Dr. William Lavelle; technical assistance of Miss Mary E. Barrow.

1. Christopher, Frederick: Gas Gangrene in Civil Surgery: Report of a Case, Internat. Clin. 1: 129, 1922.

swelling became red and extended anteriorly, reaching the scrotum, February 22. He was now unable to sit, and could not defecate because of the pain and swelling. A physician was summoned, and hot and cold water bags were applied, but without relief. He was advised to enter the hospital.

The patient was admitted to the male general surgical ward. A large, red, indurated area was noted in the ischiorectal region, extending to the left buttock. Fluctuation was present, and bulging and redness of the perineum. The scrotum was only slightly enlarged. A provisional diagnosis of ischiorectal abscess, and periurethral abscess was made.

February 25, at 9 a. m. the scrotum was the size of a coconut, was very tense and painful, and there was bluish discoloration of the skin. The veins were dilated. This had apparently occurred within the preceding fifteen hours. The mass in the left ischiorectal region and perineum was larger and more painful. At 2:15 p. m., ethyl chlorid being used locally, multiple incisions and drainage of the ischiorectal region and scrotum were performed. At that time, the scrotum was enormously swollen, was bluish in places and the veins were prominent. When the scrotum was incised, dark blood, gas bubbles and foul odor were noted.

Digital examination revealed the scrotal tissues to be thickened and crepitant, and a dark, foul smelling, bloody fluid was expressed. The operative record stated that the swelling of the scrotum seemed to be due to general infiltration, rather than to a collection of fluid; gas bacillus infection was suspected.

After operation, the patient was isolated.

At 4 p. m. the patient was drowsy, as he had been since the operation. At 6 p. m., skin crepitation was present just above the pubis, and the skin was becoming red and very tender. At 7 p. m., the patient voided some urine voluntarily. At 11 p. m., he was doing badly. The chest was filled with loud, coarse râles. The suprapubic region was very painful. The skin was indurated and crepitant.

On the morning of February 26, the patient complained of great pain in the lower abdomen. Crepitation and induration were present to about 4 inches above the symphysis pubis. At 5 p. m., he became somewhat irrational. The redness and crepitation extended to the flanks. The skin of the scrotum became black and dry. From the wounds came a thick, bloody, foul-smelling discharge.

February 27, the patient was irrational. Breathing was rapid and stertorous. The induration seemed to be spreading upward. Axillary temperatures had to be resorted to, as oral and rectal temperatures could not be taken. Later in the day, crepitus was noted at the umbilicus. Pulmonary edema developed. At 11 p. m. the patient died.

The admission temperature was 99 F. In thirty-six hours, the temperature rose to 101.2. Thereafter, the temperatures were axillary. None was above 99, the last temperature recorded (February 27, 5 p. m.) being 98. The pulse was 108 on admission. It rose to 128 in thirty-six hours; then decreased to 100, and was 110 on the last day. The respirations were 30 a minute on admission, and gradually rose to 40 a minute on the last day.

The first culture (February 25) was an agar stab covered with melted agar. No growth was obtained (ten days). Direct smear showed gram-positive bacilli of variable length (some almost coccoid) and a few short chains of long, thin gram-negative bacilli. Another sample of the scrotal discharge was taken at 10 a. m., February 27. A culture of part of this was taken in tubes of agar covered with petrolatum, and in these, too, no growth was obtained. The remaining cultures were also deep stabs in agar tubes, with oxygen exhausted by pyrogallic acid and sodium hydroxid (Wright's modification of Buchner's method). In these tubes, gas formation was noted after twenty-four hours' incubation at 37.5 C. Smears and subcultures were made. The smears showed a profusion of short, rather thick gram-positive bacilli. The subcultures produced gas, and smears looked the same as above, except that a few gram-negative bacilli were present; further subcultures showed marked pleomorphism.

A further portion of the discharge (1 c.c. of discharge and 1 c.c. of saline solution) obtained, February 27, was injected into the marginal ear vein of a rabbit. Five minutes later, the rabbit was killed and placed in the incubator at 37.5 C. After eight hours, the rabbit was removed and a necropsy was performed. Gas bubbles were found, and crepitus in the subcutaneous tissues of the abdominal wall, and in the omentum, spleen and properitoneal fat. No gas was seen or felt in the liver. Direct smears and cultures were made from gas-containing areas. The gram-positive organism previously described was seen, and cultures were made, resulting in gas formation in twenty-four hours. Aerobic cultures were made, and no growth was obtained.

Case 2.—A. K., aged 54, a truckman, was brought to St. John's Hospital at 8:15 p. m., March 2, 1923, from a lumber yard. A pole, hit by an automobile truck, had fallen and struck the patient's left leg in the region of the popliteal space. The previous history was negative. When examined the patient was tossing about in bed. His face was pale, the skin cold and clammy. The pupils reacted to light and in accommodation. There was a severe laceration of skin and muscle tissue of the lateral surface of the left leg below the knee. A false point of motion was obtained below the knee (?). There was bleeding from the lacerated wound. A tourniquet was applied, and routine treatment (including the injection of 1,500 units of tetanus antitoxin) was administered. The diagnosis on admission was (1) shock; (2) severe contusion and laceration of the left leg, and (3) possible compound fracture of the left tibia.

The patient was sent to the male genital surgical ward, and placed in a bed adjoining the one which had been occupied by the man with the ischiorectal abscess on the night of the latter's admission, six days before.

Next morning, the patient was still pale. His left foot was white with a bluish tinge over the dorsum, and cold to the touch. No pulsation was felt in the dorsalis pedis or posterior tibial arteries. There was absence of sensation to about 3 inches above the knee. A slight amount of oozing was still present. A roentgenogram of the left hip, knee and leg was made.

During the night, the patient was restless and did not sleep. March 4, crepitation was elicited about the ankle, leg, knee, thigh, and in the left groin. At this time, the possibility of a gas bacillus infection was first entertained, and agreed on. The roentgen-ray report was negative. At 8 a. m., the patient vomited; at 3 p. m., he was delirious. The amputation of the lower extremity through the upper third of the thigh was performed at 5 p. m. At the time of the operation, the patient was distinctly in shock. He died during the course of the operation.

Several pieces of tissue were taken at necropsy. Deep stabs were made into glucose-blood broth, covered with sterile petrolatum. Gas formation was noted in the tubes after incubation at 37.5 C. for three hours. Smears showed the short, fairly thick, straight, gram-positive rods.

The patient's temperature was 96 on admission. The temperature did not go above 99.2 for twenty-four hours. It then took a sharp rise, and was 102.6 at death (within forty-eight hours after admission). The pulse was 120 on admission, and did not go above that rate until just before expiration, when it was 160. Respirations were 22 a minute until just before death, when they were 50 a minute.

NECROPSY FINDINGS IN FIRST CASE

The necropsy on the first patient revealed marked local and general changes. The abdomen was markedly discolored from the umbilicus to the symphysis on the right, and half that extent on the left. The penis and scrotum were very much discolored and edematous; and, when opened, the entire area was necrotic and gangrenous. No fistula was found between the ischiorectal abscess and rectum. Microscopically, there was moderate polymorphonuclear infiltration, with wide separation of muscle fibers and large, irregular spaces in the tissue. The gangrenous areas contained many gram-positive bacilli.

The spleen was about twice normal size, very soft, with marked crepitation on pressure. On section, the splenic tissue was dark, very soft, with loss of markings; and on pressure, it exuded a frothy, gaseous fluid. Microscopic section showed mainly connective tissue, blood vessels and a few areas of

lymphoid tissue. The pulp was almost completely destroyed. No bacilli were present in gram-stained sections.

There was biliary cirrhosis and parenchymetous degeneration of the liver. The kidneys showed chronic and acute toxic nephritis. In the cranial cavity, the blood vessels of the circle of Willis and small cerebral vessels contained small, irregularly distributed gas bubbles. The cortex showed distention of the capillaries, with slight polymorphonuclear and more marked mononuclear infiltration. No organisms were found in gram-stained sections of the tissues previously mentioned.

Cultures, aerobic and anaerobic, were taken from the abdominal wall muscle, heart, lung, liver, spleen, and from gas bubbles in the circle of Willis. The anaerobic cultures from the brain were "shot to pieces" by gas formation, in twenty-four hours. Smear showed gram-positive bacilli of the same morphology as the previous positive cultures. Cultures from the remaining tissues gave no growth.

TREATMENT

The first patient was treated by multiple wide incisions and drainage, followed by continuous flushing with hydrogen peroxid. The second patient was treated by amputation of the affected limb. Further treatment consisted of the routine measures against shock.

COMMENT

There are four strains of gas-producing organisms: *B. aerogenes-capsulatus* (bacillus of Welch); *B. perfringens; B. phlegmonis-empysematosae* and *B. enteritidis-sporogenes.* Stitt [2] maintains that all of these are possibly a single group of organisms. *B. perfringens* is very abundant in fertilized soil. *B. enteritidis-sporogenes* is constantly present in feces.[2]

Greeley [3] writes: "As the organism is a recognized common inhabitant of the intestinal tract and of distinct pathogenic abilities, it would be expected that lesions of the abdominal organs would, not infrequently, be followed by inflammation directly caused by this bacillus."

In view of these facts, we assume that the route of the ischiorectal infection was through the gastro-intestinal tract, by way of a fistula communicating with the ischiorectal region.

Our second case is of value in that it is evidence for the existence of contagion in gas-bacillus infections. It must be remembered that, while the second patient occupied the adjoining bed three days after the first patient with gas-bacillus infection had died, the organism responsible is spore bearing and resistant to ordinary routine hospital disinfection.

What explanation of the nature of the process do clinical observation and pathologic findings suggest? Of the many diverse opinions, those of Bull and Pritchett and of Kenneth Taylor seem to fit best.

Bull and Pritchett [4] assume "that soluble chemical substances entering the circulation from the local lesion bring about the severe symptoms and the fatal termination." Taylor [5] conceives that "the real action of the toxic principle is . . . that of converting healthy muscle tissue adjacent to the wound into favorable medium for growth and gas production by bacteria." He [6] suggests that the gas bacillus is a saprophyte, and that the purely mechanical action of the gas produced from the carbohydrate-containing tissues (hence muscle) on the blood vessels of the part causes necrosis with invasion of the dead tissue by bacteria, producing "putrefactive, autolytic and colliquative necrosis," which "induces rapid and profound toxic symptoms."

These two views are divergent. There is in them, however, a common element, the correctness of which is attested by our observation of a rapid spread, from the local focus, of gangrene preceded by crepitus; the low temperature and pulse rate throughout the course of both cases, and by the macroscopic and microscopic pathologic changes. Especially confirmatory is the fact that while internal organs—spleen, kidney, liver and brain—showed marked changes, the organism was seen only in the muscle tissue of the local focus. On this basis, the presence of the bacilli in gas bubbles in the brain vessels, as demonstrated by culture, must be explained as a terminal affair.

It may be noted that in neither case was the antitoxin, or serum of Bull and Pritchett, administered. Of this serum, Bull [7] writes: "In the light of the results obtained in treating the infection in guinea-pigs, it is reasonable to hope that antitoxin will be of value as a therapeutic agent. The indications are that early infectious cases can be readily arrested and the more advanced and severe ones ameliorated, if not wholly checked, so that surgical interference may be resorted to with greater probability of effectiveness." The serum, moreover, is not readily obtainable.

The question has previously been raised: Why is gas bacillus infection rare, when the causative organism has a widespread distribution and is communicable? It may be suggested that the organism is not virulent except under special conditions, of which the devitilization of carbohydrate-rich tissues—especially muscle—seems to be the most noteworthy. Under ordinary circumstances, then, the organism may be communicated, but not the disease. When the necessary conditions are met, it may be not only that the gas bacillus becomes virulent through mechanical or chemical action, but also that its intrinsic virulence is raised, so that the infection can be transmitted.

Of interest is the fact that a case [8] of gangrene of the scrotum from anaerobic infection reported in the French literature of 1919 is the only other case of gas bacillus infection of this region that we could find on record.

CONCLUSIONS

1. Lesions of the gastro-intestinal tract or adjoining tissues may be the seat of gas bacillus infection.
2. Gas bacillus infection is probably communicable through fomites.
3. The gas bacillus is demonstrable in the "exploded" muscle tissue of the local focus.
4. Extensive acute changes occur in the spleen, kidneys, liver and brain; but the organism is not demonstrated in these tissues.
5. Proper measures must be instituted for the protection of patients with traumatic wounds when gas bacillus infection is present or suspected in a hospital.

2. Stitt, E. R.: Practical Bacteriology, Blood Work and Animal Parasitology, Ed. 6, 1920, p. 109.
3. Greeley, Horace: Idiopathic Bacillus Aerogenes Capsulatus Infection, Bull. Johns Hopkins Hosp. **29**: 231 (Oct.) 1918.
4. Bull, C. G., and Pritchett, Ida W.: Toxin and Antitoxin of and Protective Inoculation Against Bacillus Welchii, J. Exper. Med. **26**: 119 (July) 1917.
5. Taylor, Kenneth: Gas Gangrene—Its Course and Treatment, Bull. Johns Hopkins Hosp. **26**: 297 (Oct.) 1916.
6. Taylor, Kenneth: Gas Gangrene, p. 297.
7. Bull, C. G.: Prophylactic and Therapeutic Properties of Antitoxin for B. Welchii, J. Exper. Med. **26**: 603 (Oct.) 1917.
8. Thibault, Albert; and Schulmann, Ernest: Gangrene foudroyante des bourses par infection anaerobie, Bull. et mém. Soc. méd. d hôp. de Paris **43**: 70 (Jan. 31) 1919.

Hybridization.—Kolreuter made the first systematic investigation of hybridization, which is the first stage resulting from the crossing of parents with different inheritable characters.—Buchanan, *Am. J. M. Sc.*, May, 1923.

Clinical Notes, Suggestions, and New Instruments

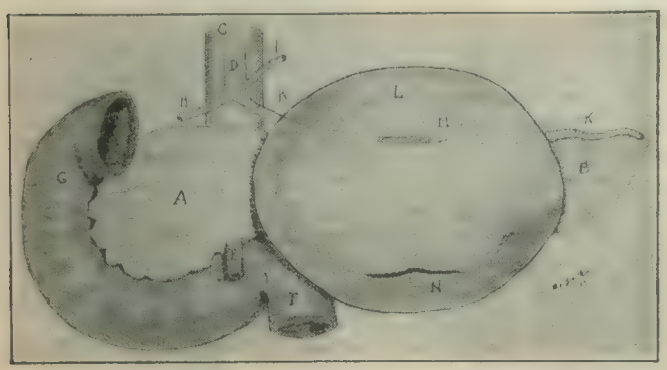
A CASE OF RUPTURED ANEURYSM OF THE SPLENIC ARTERY

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The rarity of a ruptured aneurysm of the splenic artery, coupled with several interesting features presented by this case, prompts me to report it.

History.—A colored woman, aged 38, had been in fairly good health up to the day of admission to the hospital, but for several years had been troubled with "indigestion," and had obtained some relief at times by using large amounts of soda. Menstruation had always been regular and normal in every way; the last period occurred one week prior to admission. While walking along the street, she was seized with a sudden sharp pain in the epigastrium, and immediately thereafter lost consciousness. She was brought directly to the hospital, and by the time she was placed in bed, consciousness had returned. She vomited just after admission.

Examination.—The patient was of moderate size, and was in a condition of severe shock. Her extremities were cold;



Schematic drawing of aneurysm: *A*, head of pancreas; *B*, tail of pancreas; *C*, aorta; *D*, celiac axis; *E*, superior mesenteric artery; *F*, jejunum; *G*, duodenum; *H*, hepatic artery; *I*, left gastric artery; *K*, splenic artery; *L*, aneurysmal sac; *M*, opening of aneurysm from artery to sac; *N*, ruptured portion of sac.

the pulse was imperceptible at the wrists; the heart rate was 130 beats a minute by auscultation; and the respirations, about 28 a minute. The mucous membranes were very pale and slightly cyanotic; the rectal temperature was 99 F.; the chest was normal. The abdomen seemed slightly full, symmetrical, and soft; no spasm was found anywhere; there was moderate tenderness all over the abdomen, but most marked in the left epigastric and umbilical regions; no masses were felt; the abdomen was dull to percussion everywhere except over the cecum anteriorly, where it was tympanitic; there was a definite fluid wave. Pelvic examination showed a pale vaginal mucous membrane, with no evidence of bleeding; the cervix was slightly soft, and was displaced toward the symphysis. The cervix admitted the finger tip. The posterior fornix was bulged downward by a mass that seemed to be continuous with the cervix and had the outline, consistency and size of a uterus from six to eight weeks pregnant; the lateral fornices were soft; the pelvis was moderately tender throughout. In view of these findings, a diagnosis of severe intra-abdominal hemorrhage was made; a ruptured left ectopic pregnancy was suspected.

Operation and Result.—Under light ether anesthesia the abdomen was opened through a long, left split rectus incision. It was filled with fluid blood and clots. The uterus was small, firm, retroverted, and bound in the pelvis by adhesions, presumably from an old pelvic infection. Both tubes were the site of a hydrosalpinx, and both ovaries were cystic, the left one being about 4 inches (10 cm.) in diameter. There was no evidence of any bleeding point in the pelvis. A striking feature of the case, noted at this point, was the presence of hemorrhage between the layers of the great omentum. This suggested the lesser sac as the seat of the trouble. A rapid exploration of the abdomen was then made, and a mass was felt in the lesser sac, through the gastrocolic omentum. This mass was then exposed. It was roughly oval, and about 3 inches (7.5 cm.) in its longest diameter. It seemed to arise from the midportion of the pancreas. Along its outer surface was a ragged tear about 1 inch (2.5 cm.) in length, plugged by a blood clot. This mass felt cystic, and through its wall could be felt plaques of firm, calcific-like material. The first impression of this mass was of an aneurysm that had ruptured and later become plugged with a portion of organized clot. An attempt to invert a portion of the sac and suture it over was made. The tissue, however, was too friable. It therefore was opened widely. The sac contained blood clots and some fresh arterial blood, but did not bleed after evacuation. This led to the belief that it was possibly a ruptured hemorrhagic cyst of the pancreas. The patient's condition did not warrant a very careful examination of the mass, which was therefore packed with gauze and marsupialized. The abdomen was rapidly closed. The patient lived about two hours.

Necropsy.—The cyst proved to be a ruptured aneurysm of the splenic artery. The aneurysm arose from the splenic artery opposite the midportion of the pancreas, and the wall of the aneurysm had become firmly attached to the anterior surface of the pancreas. Pressure from the aneurysm had produced a marked thinning of that portion of the pancreas to which it was attached.

CERVICAL SYMPATHECTOMY FOR ANGINA PECTORIS: REPORT OF A CASE WITH DEXTRAL RADIATIONS OF PAIN

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History.—J. D., a special officer, entered the Southern Pacific Hospital, Dec. 11, 1922, in a state of collapse with marked cardiac decompensation, auricular fibrillation and dyspnea. Aug. 29, 1922, at 8 p. m., he came home worn out from a long day's work. He had been on a twelve-hour shift since July 1, with gradually increasing weakness and shortness of breath. He would have to stand outside his front door after climbing eleven stairs and get himself in hand before entering the house. He felt that he could not keep on much longer. At 9 p. m., August 29, after going to bed without supper, he had a sudden pain in the region of the heart and out to the right shoulder, vicelike and piercing. In a few minutes the pain radiated to the left shoulder, down the right arm to the elbow and across the lower chest. The daughter poulticed the chest with mustard, and a physician gave digitalis. The pain lasted five or six hours, and was severe. The patient could not move, and screamed for relief. For three days the pain continued, but by the morning of the first day, eleven hours after the onset of severe pain, he had relief enough to allow him to doze. The chief pain during the latter part of the attack was in the heart region, radiating to the right shoulder. These pains came and went without being very severe.

Three weeks later, he took short walks of one block, but not without pain; and nine weeks after the first attack he had a sudden attack of shortness of breath and a period of choking, with the same pain he had been having, only more severe. There was a spasm-like attitude for thirty or forty seconds before he could breathe and then he began to breathe rapidly (Cheyne-Stokes?). Eight breaths would then be taken, whereupon there was another half minute without breath. From this time on he never was able to lie down until he entered the Southern Pacific Hospital, December 11. There were, in all, three severe attacks during the fourteen weeks, but from eight to ten minor ones a day. His main complaint on entering the hospital was his waking suddenly, gasping for breath; this had happened nearly every night since August. In his past history there were only two factors of interest. He had typhoid fever forty-five years before, and during his waking hours he used tobacco constantly.

Examination.—The patient had a clear skin and good color, and was well nourished. His respiration was labored. The pulse was 72, full and regular. The systolic blood pressure was 160; diastolic, 98. The reflexes were all normal except for absent knee jerks. The arteries were palpable everywhere and tortuous in the forehead. There were crackles at the bases of both lungs behind. The heart was enlarged laterally. The apex beat in the fifth space was 12 cm. to the left of the median line. The rate and rhythm were normal. There was a coarse systolic murmur heard chiefly at the base, but heard clearly everywhere. The liver was not enlarged, and there was nothing else of moment about the patient except the evidence of an enlarged aorta with high substernal

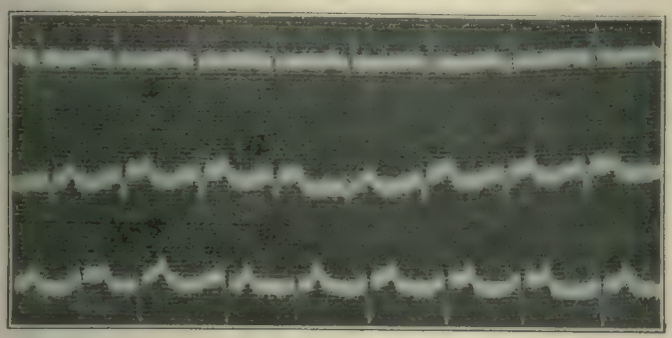


Fig. 1.—Before operation: inverted T in Lead I, with evidence of left ventricular preponderance.

dulness. The amount of urine eliminated in twenty-four hours was nearly 750 c.c., with a few hyaline casts and a trace of albumin. The Wassermann test was negative.

There was a disposition on the part of the patient to remain absolutely quiet on his back in bed, which he explained by saying that it caused him pain if he moved at all. He was very restless and unable to sleep.

Treatment and Course.—The general care of the patient was directed toward making his heart action more efficient with digitalis, and giving him an exceedingly light diet with ½₄ grain (0.0027 gm.) of morphin by hypodermic to make him sleep.

His pulse was found to show a tendency to be quite irregular at times, there being periods of extrasystoles after eating. He was at his best with small doses of sodium nitrite with the digitalis. He was gradually persuaded to get up from bed. The urine elimination was brought to between 1,000 and 1,500 c.c. in twenty-four hours. The pains he experienced on making any physical effort were all in the upper heart region and in the right shoulder.

A roentgen-ray examination showed a marked congestion of both bases of the lungs. The heart outline was difficult to make out on account of this congestion, but the transverse diameter was figured at 22 cm., and the diagonal diameter, 20 cm. The aorta was thickened and broadened, and measured 9 cm. in width. There was a slight residue in the stomach six hours after a barium meal.

The last of December, an examination by Dr. A. W. Hewlett of Stanford University School of Medicine disclosed a very large heart and many extrasystoles. The electrocardiogram showed an inverted T in Lead I, with evidence of left ventricular preponderance. One premature beat was an auricular extrasystole (Fig. 1). The vital capacity was 2,150 c.c., which was about 49 per cent. of the normal average, according to the standard employed. It seemed to Dr. Hewlett that, August 29, there was a blocking of one of the coronary branches, and that the second attack, which occurred six weeks later, was probably due to a pulmonary infarct. Dr. Hewlett did not think him a very good surgical risk.

As the patient was having only a few minor attacks a day, controlled easily by nitroglycerin, he was put on the pension list, and was to be discharged from the hospital. Then, at his own request, in spite of the severity of the heart and aortic condition, I obtained the consent of Dr. W. B. Coffey to remove the right superior cervical sympathetic ganglion. My reason for this was that all the mild attacks and the chief pain in the severe ones was right-sided, and I was convinced by previous experience[1] that spasm of the aorta in angina was controlled by the cervical sympathetic system and that it was safer to remove the ganglion than to try to cut the main trunk and the superior cardiac branch below the ganglion. It is certainly necessary to use the ganglion as a landmark in the operation, and the eye symptoms in the cases in which Dr. Coffey had removed it before were not in the least disturbing. The pupils contracted each time, but there was no such receding of the eyeball as described by Jonnesco.[2]

The operation was done under gas oxygen with a small amount of ether. The ganglion was exceedingly large and easily removed. Convalescence was uneventful, and the patient left the hospital two weeks later. Dr. Hewlett thus interpreted the second electrocardiogram (Fig. 2).

The electrocardiogram of the patient two and one-half weeks after operation shows some left ventricular preponderance. The negative T reported on the first examination is not visible on the present records. It is possible that a normal T would be due to the administration of digitalis, and this point should be cleared up. If one cannot account for the negative T of the first occasion in this manner, I shoulid say that the disappearance of this feature of the electrocardiogram is a matter of considerable interest in itself, indicating either an improvement in the heart muscle or a direct effect of the removal of the sympathetic ganglion. The vital capacity is 2,500—57 per cent.

Following his discharge from the hospital, the patient continued free from distress of any kind, and had no subjective symptoms referable to his heart. He continued well until February 23, when he had an attack of influenza, beginning with signs of bronchitis in the lungs, a severe sore throat and general aching. As was characteristic of the epidemic then at its height, he was very apathetic. He developed a double bronchopneumonia, but was afebrile on the fifth day, although markedly prostrated, and the bases of both lungs behind were full of râles. The blood pressure remained about normal (systolic, 140; diastolic, 80), and the pulse was of good quality, with a rate of about 90. The signs in the lungs remained stationary. The patient was given stimulation with caffein by hypodermic injection because the kidney condition was not satisfactory. After two days of normal temperature, he was still without appetite and very listless. The

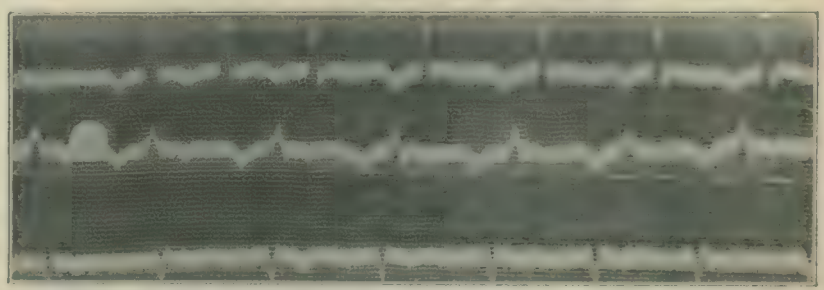


Fig. 2.—After operation: some left ventricular preponderance; negative T no longer visible.

kidney secretion grew less, and the pulse weaker in spite of further stimulation. Suddenly, the pulse rate dropped to 45 and 55, and was almost imperceptible. The heart tones were so feeble that they could not be heard above the noise of the râles, and in spite of medication every two hours, with caffein, strychnin and camphorated oil, there was no heart response, and the patient died two days later. Only two doses of digitalis were given during the weakness, because of the fear of heart block. A diagnosis of advanced coronary sclerosis was made. A necropsy was refused.

Prior to this illness, the patient had been exceedingly comfortable, walking four or five blocks a day with neither shortness of breath nor pain. He said that he felt like a young man, but his daughter's watchful care prevented his overexerting himself at any time.

1. Coffey, W. B., and Brown, P. K.: The Surgical Treatment of Angina Pectoris, Arch. Int. Med. **31**: 200 (Feb.) 1923.
2. Jonnesco, T.: Bull. de l'Acad. de méd. **84**: 93 (Oct. 5), 1920; Presse méd. **29**: 193 (March 9) 1921.

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SATURDAY, JUNE 9, 1923

SIMPLE GOITER AS A PREVENTABLE DISEASE

"The old notion of 'diathetic diseases' is now giving place to the more definite concept of disorders of metabolism, many, perhaps all, of which are bound up with some *bouleversement* of hormonic equilibrium or some disturbance of function in the ductless glands." [1] Laboratory research and experimentation are making this pronouncement of Dr. Fielding H. Garrison, medical historian, more evident each day; but the regrettable fact remains that our prophylaxis does not altogether keep step with our knowledge. The studies of Marine and Kimball with regard to simple goiter, which were made possible under research grants from the American Medical Association, emphasize the prevalence of simple goiter and point to a method of prevention. Hypertrophy of the thyroid has been recognized from early centuries as a definite disease. Aëtius of Amida, who lived in Byzantium in the sixth century A. D., gives an interesting chapter on goiter in his book the "Tetrabiblion," and it was discussed by Ruggiero Frugardi of the Salernian school.[2] Moreover, that very brilliant charlatan Paracelsus was the first to establish a correlation between cretinism and endemic goiter.

While simple goiter may develop sporadically in almost any locality, even at sea, as it did during one of Cook's voyages, its strongholds have been in the plateaus and mountain regions, as in contradistinction to seacoast countries. McCarrison [3] reports, for the year 1912, 4,869 cases in the district of Monghyr and 3,142 in Bhagalpur in India, both of which districts lie in the Himalayan altitudes. In France alone there were 500,000 cases of goiter in 1874; in Switzerland, 12,207 men were exempted from military duty for this cause in the period from 1875 to 1881, and in Italy, from 1859 to 1864, 3 per cent. of the conscripts were excused from service on account of this affection.[4] In spite of the recognition of the prevalence of goiter, it is only recently that any systematic attempt has been made toward its prevention. As early as 1820, Dumas and Coindet [5] demonstrated the value of iodin treatment; in 1896, iodothyrin was isolated by Baumann, who indicated its relation to iodin metabolism, and in 1916 Kendall definitely determined this content as triiodo-indol-propionic acid. Kimball,[6] in his report, assembles collected data to show that there is truth in Marine's dictum that "simple goiter is the easiest known disease to prevent." He thus summarizes the conclusions of Marine and Lenhart: 1. Iodin is necessary for normal thyroid function. 2. The iodin content varies inversely with the degree of hyperplasia. 3. The percentage of iodin present in individual thyroids is variable, but there is a quite constant minimum percentage which is necessary for the maintenance of normal or colloid gland structure. If the iodin content falls below 0.1 per cent., active hyperplasia begins.

In a series of experiments from 1909 to 1911, Marine and Lenhart showed that goiter, which had virtually ruined the fish hatcheries at Shady Grove, Pa., could be eliminated by the addition of a small amount of iodin to the food. This was the basis of Marine's dictum, referred to above.

In the work of Marine and Kimball, which has been referred to repeatedly in THE JOURNAL, nearly 10,000 girls in Akron, Ohio, were examined in the course of three years. In the first examination, 56 per cent. were found to have goiters. The method of prevention was the administration of 3 grains of sodium iodid in the drinking water once a day for two weeks each spring and fall. Of those taking this prophylactic dose, no normal girl developed goiter, while 27.6 per cent. of those not taking it, and who had been without goiter at the beginning, developed either goiter or enlargement of the thyroid. The goiter disappeared in 60 per cent. of those who had goiter at the beginning and took the prophylactic doses. Kimball says, in comment on these experiments, "From our experience in Akron we know that if a girl's thyroid is kept saturated with iodin during the years of adolescence, a goiter will not develop; and when we remember that the total storage capacity of the normal thyroid is approximately three fourths of 1 grain of iodin, we appreciate that a small fraction of a grain of iodin at weekly intervals is sufficient to assure the full normal iodin content of the gland."

The findings of Marine and Kimball as to this method of prevention of goiter were forwarded to Switzerland in 1917, where they were employed with some slight modification as to the form of iodin. A report of the health commission of the canton of St. Gall shows that in January, 1918, the incidence of goiter among school children of that canton was 87.6

1. Garrison, F. H.: History of Medicine, W. B. Saunders Company, 1921, p. 732.
2. Garrison: History of Medicine, pp. 112 and 141.
3. McCarrison: The Distribution of Goiter in India, Indian J. M. Res. **2**: 778, 1914-1915.
4. Clark, T., and Pierce, C. C.: Endemic Goiter: Its Possible Relation to Water Supply, Reprint 184, U. S. P. H. S., May, 1921.
5. Coindet: Ann. de chim. et phys. **15**: 49-50, 1820.
6. Kimball, O. P.: Pub. Health Rep., April 27, 1923.

per cent., and in January, 1922, after iodin administration, 13.1 per cent.

This prophylactic administration of iodin has been extended in Ohio and has also been taken up in Michigan, but has not as yet found the extended application that it seems to merit. Kimball states that the possible harm from the dosage of iodin employed is absolutely negligible; that in the work in Akron a mild rash appeared in one per thousand cases treated, and that neither in this country nor in Switzerland has a single case of exophthalmic goiter been produced. His report ends with a plea for the administration of iodin as a routine prophylactic to girls during adolescence, and, in endemic goiter districts, to women during pregnancy. Since girls are six times as susceptible as boys, he believes that cases among the latter may be treated as they arise, especially since it is demonstrated that in them it disappears if treated promptly and properly.

SOME ASPECTS OF VITAMINS AND RADIANT ENERGY

The discovery by Osborne and Mendel, some years ago, that cod liver oil is rich in one of those essentials of nutrition now designated as vitamins, has given a new scientific dignity to a product long used in an empiric way for therapeutic ends. This interesting finding has naturally led to more intensive investigation, not only of cod liver oil itself, but also of many other animal and vegetable oils since demonstrated to be carriers of such physiologic potencies. There is considerable evidence already accumulated to show that the property currently designated as vitamin A is not entirely destroyed by saponification of the oils, whereby the fats lose their identity as such. Several investigators have already separated from cod liver oil nonsaponifiable fractions in which some, at least, of the effective component is concentrated in very small bulk. The sources of potent fish oils and the factors that affect the potency through their origin or modifications by commercial processes are being considered in various laboratories, so that one may confidently expect a helpful accumulation of knowledge in respect to a substance recently designated as a veritable specific against rickets.

Meanwhile there are growing indications that cod liver oil is even something more than is expressed by a wholesome nutrient fat and an antirachitic food. Its vitamin potencies are beginning to appear manifold in character. Experiments have made clear that cod liver oil will help to avert the nutritive disaster that comes about on diets devoid of vitamin A; that it will help to cure the experimental xerophthalmia which various species develop on such defective diets, and that it will protect against the onset of rickets, or cure the latter under certain dietary conditions. It was, of course, easily conceivable that all beneficial results might be the outcome of supplying a single missing food factor present characteristically in cod liver oil. Clinical observation and investigation have disclosed that radiant energy, as it occurs in sunlight and certain artificial forms, is also capable of preventing rickets from developing, or from continuing, if it is already established.[1] Neither the potent food factors in cod liver oil nor the light appear to bring new processes into operation, rather permitting the organism to have full use of processes that were natural to it all the time, but were not effective. Park has remarked that radiant energy is a powerful oxidizing and reducing agent in the case of the simpler chemical compounds, and probably exerts an influence of some such general nature in man and in animals. It communicates to the organism energy in some form that is apparently essential for normal metabolic activity, in particular in the growing organism. Park adds that cod liver oil operates in some such general way.

Of late, however, it has also become clear that, apart from their influence on rickets, cod liver oil and sunlight cannot be considered to have an equivalent action. The recent studies of Powers, Park and Simmonds [2] indicate that, whereas cod liver oil prevents the appearance of xerophthalmia in animals even more easily than it helps to avert rickets, the same cannot be said of either sunlight or the ultraviolet radiations from the mercury vapor quartz lamp. The latter seems to have little effect on the eye disorder. In other words, cod liver oil completely prevents the development of both rickets and xerophthalmia; light prevents completely the development of rickets, but does not always prevent the development of xerophthalmia. Radiant energy seems to contain the equivalent of the unknown factor in cod liver oil that prevents the development of rickets, but not to contain at all or only to a very slight degree the equivalent of the other factor in cod liver oil that prevents the development of xerophthalmia. The observations of Powers, Park and Simmonds thus suggest by analogy that there are in cod liver oil at least two distinct factors: one preventive and curative of rickets, and the other preventive and curative of xerophthalmia. Sunlight can compensate for the absence of the one, but not completely for the absence of the other.

The physiologic potency of direct sunlight and of various types of radiant energy has been made the subject of much speculation in recent years, and it has secured a practical application in therapy to a degree almost unwarranted by the present limitations of our knowledge. Under such circumstances, there is always danger of quackery. Sometimes medical charlatanism is comparatively harmless, except to the purse of the person who is duped. Not infrequently, as in the unintelligent use of radium or the roentgen rays, it may be seriously menacing. It is interesting to be

1. The subject is reviewed by Hess, A. F.: Influence of Light in Prevention and Cure of Rickets, Lancet **2**: 367 (Aug. 19) 1922. Park, A. E.: The Etiology of Rickets, Physiol. Rev. **3**: 106 (Jan.) 1923.

2. Powers, G. F.; Park, E. A., and Simmonds, Nina: The Influence of Radiant Energy upon the Development of Xerophthalmia in Rats: A Remarkable Demonstration of the Beneficial Influence of Sunlight and Out-of-Door Air upon the Organism, J. Biol. Chem. **55**: 575 (April) 1923.

reminded by Powers, Park and Simmonds, therefore, that no experiments involving sunlight have demonstrated that the effective agent has been sunlight alone. It is possible that the factors associated with exposure to direct sunlight outdoors have been responsible in whole or in part for the results usually attributed to the influence of the sun's rays. In their experiments there are no available data as to the exact nature of the operative factors. For the present, we should remember that exposure to sunlight outdoors makes the person subject to possible change—chemical, physical or both—by solar radiation and perhaps other unsuspected agencies that could not be operative in the laboratory. Whether these or unknown factors (acting singly or in combination with one another or with sunlight) or sunlight alone brought about the striking results remains to be ascertained.

As these investigators [2] have indicated, there is evidence that cod liver oil includes at least two distinct factors, one antirachitic and the other antixerophthalmic. Sunlight and fresh air can compensate for the absence of the one, but not completely for the absence of the other. However, to quote their words, these imperfections in our knowledge do not detract from the remarkable fact brought out in bold relief by their experiments, namely, that sunlight and outdoor air, with such factors as may be associated with them, have wonderful health and life giving powers which enable the animal to adapt itself with a considerable degree of success to adverse environmental conditions. Some day, let us hope, light and radiant energy in general will have been evaluated at their correct worth and in their proper meaning with respect to the problems of heliotherapy and health.

THE ORIGIN OF SERUM PROTEINS IN THE BODY

The recent development of the physiology of nutrition has placed the significance of the blood proteins in a new light. Before the period when the amino-acids acquired their dominance as the primary nitrogenous nutrients of the organism, a comparable importance was assigned to the blood proteins. It was assumed—for, assuredly, it was not proved—that the products of the digestion of protein were somehow converted during their passage through the alimentary wall into serum proteins. Thus it seemed as if the tissues drew on the blood proteins for their nitrogenous nutrients and that the supply of serum proteins became replenished after each meal containing albuminous substances. All of this edifice of hypotheses was shattered by the demonstration that the amino-acids are apparently not immediately synthesized into blood proteins after their absorption from the gastro-enteric tract. The physiologist, furthermore, has now found himself face to face with the problem of ascertaining the real function of the blood proteins. As Macleod has recently summarized the existing knowledge, the blood proteins are radically different from the tissue proteins. Substances that retard or accelerate nitrogen metabolism do not alter the relationship existing between the protein bodies of the blood. This fact, he adds, indicates that the serum proteins have a function quite independent of the nitrogenous metabolism of the body. They undoubtedly maintain the viscosity of the blood, and assist in preserving its neutrality. Attempts to localize the site of formation of the blood proteins have not been successful.

Extensive investigations in recent years [1] at the Hooper Foundation for Medical Research at the University of California have substantiated the conclusion that plasma proteins do not necessarily represent a transition stage between food protein and body tissue protein. When the content of serum protein is depleted by large hemorrhages with restoration of the withdrawn erythrocytes—so called plasmapheresis—regeneration seems to be a slow and difficult matter. It has been shown that this depletion presumably is the maximal stimulus for body production of serum protein, yet there is a marked delay in regeneration. It seems that the body can produce serum proteins only in small amounts, even in an emergency. Serum proteins can be regenerated when there is no protein intake in the food; therefore, the serum proteins must be formed from the body proteins under such circumstances. The California investigators found that regeneration of blood protein following plasma depletion may be delayed by simultaneous liver injury, such as is produced by intoxication with phosphorus or chloroform. This, they believe, points to the liver as being concerned in the maintenance of a normal level of blood serum proteins. The evidence here, they add, is not so convincing and striking as is the case in the plasma protein fibrinogen, which has such an intimate relationship to liver injury and disappears almost completely with acute liver injury.

Recently, however, German investigators [2] at Wurzburg have questioned to what extent the genesis of the serum proteins should be identified with the liver. In experiments on lower animals, regeneration has followed hemorrhage even in cases in which the liver was extirpated and part of the musculature excluded from possible participation in the new formation of circulating protein. Consequently, it is assumed that restitution of the latter is not characteristic of or associated with a single organ, even one of the physiologic dignity of the liver. Regeneration of serum proteins, in the view of these students of the problem, is a property of many rather than a few specific types of cells. The

1. Kerr, W. J.; Hurwitz, S. H., and Whipple, G. H.: Regeneration of Blood Serum Proteins, I, Influence of Fasting upon Curve of Protein Regeneration Following Plasma Depletion, Am. J. Physiol. **47**: 356 (Dec.) 1918; II, Influence of Diet upon Curve of Protein Regeneration Following Plasma Depletion, ibid., p. 370; III, Liver Injury Alone: Liver Injury and Plasma Depletion: The Eck Fistula Combined with Plasma Depletion, ibid., p. 379.

2. Gottschalk, A., and Nonnenbruch, W.: Untersuchungen über den intermediaren Eiweisstoffwechsel, I Mitteilung: Die Bedeutung der Leber und Muskulatur für den Wiederersatz zu Verlust gegangener Serumproteine, Arch. f. exper. Path. u. Pharmakol. **96**: 115, 1923.

correct answer is, therefore, still debatable. So long as severe hemorrhage constitutes a menace to human life, the importance of the question at issue should not be overlooked.

CANADIAN CHIROPRACTIC LEGISLATION: A PARADOX

By an act to regulate the practice of chiropractic, assented to, April 21, 1923, the legislative assembly of the province of Alberta provided for the licensing of chiropractors, and for that purpose defined chiropractic as "the method of treatment of human beings for disease and the causes of disease by means of adjustments by hand of the articulations of the spinal column and other adjustments by hand incidental thereto." But in thus putting its seal of approval on the chiropractic cult, the assembly seems to have been seized with some misgiving as to the wisdom of its course, for it proceeded to hedge, and enacted that "no registered chiropractor shall prescribe or administer drugs or medicinal preparations or treat any venereal disease, or any communicable disease, as defined by the *Public Health Act,* nor shall he perform any surgical operation, or practice obstetrics or any branch of medicine or osteopathy." The definition of chiropractic adopted is that of the school of so-called "straight" chiropractors, who teach that communicable diseases, in common with all others, are the result of displacements of vertebrae; that the germs and other living organisms found in connection with such diseases are merely scavengers, removing tissue dead because of such displacements, and that the reduction of the displacements in any case will cure the disease. The Alberta legislature clearly recognizes that the chiropractic claim is unsound and dangerous to the public health; for it refuses to allow patients suffering from syphilis or gonorrhea or from other communicable diseases—such as tuberculosis, typhoid fever and smallpox—to jeopardize their future welfare and the future welfare of their families and of the public, by trusting to the chiropractor for the cure of the disease. Why the legislature blinds itself to the jeopardy to the individual and to the social and economic loss to the community that result from the treatment, according to the chiropractic formula, of patients suffering from noncommunicable diseases, such as cancer, appendicitis, heart disease and even apoplexy, is beyond understanding. The pretensions of the chiropractor are as unsound and as fraudulent in the one case as in the other, and no legislative enactment can alter the fact.

In considering the limitations imposed on the chiropractor by the act with respect to surgery and obstetrics, one's mind is led into further mazes of logic and of sophistry. The chiropractor may treat a depressed fracture of the skull, by manipulation of the spine and other manipulations incident thereto, but he must not operate. He may treat a patient already badly septic from appendicitis, but unless by manual adjustments of the articulations of the spine and other incidental adjustments he can prevent rupture of the appendix, the patient has slight chance of recovery. He may treat, according to chiropractic doctrine, hemorrhage resulting from duodenal ulcer, but not the hemorrhage that sometimes complicates childbirth. The convulsions incident to pregnancy he may not treat, but the convulsions incident to diseases of the kidneys are within his field. This legislative attempt to define and limit the field of chiropractic activities seems at first glance to be without any clearly conceived purpose. It looks like an attempt on the part of the legislature to yield to the chiropractic demand, while limiting as much as possible his opportunities to do harm. But no one knows better than the chiropractors the end aimed at. The nose of the camel has wedged its way under the wall of the tent, and if the people of Alberta are not on the alert they may soon find the entire beast within, treating venereal and other communicable diseases and surgical and obstetric cases, and using drugs, just as if the chiropractor had the knowledge necessary to enable him to do so.

Posterity, as it reads this act—and the similar acts, no better and no worse, in force in the United States—will probably see in the background an ill concealed chiropractic lobby directing the actions of the legislature, while the legislators struggle to convince themselves that they are acting solely in the interest of the people and have at heart only the public health. Is it not possible for the present generation to do as much and to protect itself against the fraud?

Current Comment

STATE UNIVERSITIES AND POLITICS

Educators will view with much apprehension the statement that Governor Walton of Oklahoma has ousted several of the regents of the state university of Oklahoma, and also made conditions so uncomfortable that President Stratton D. Brooks, under whose administration the university has made excellent progress for several years, has resigned and accepted the presidency of the University of Missouri—an offer which he had recently rejected because of his deep interest in the University of Oklahoma. President Brooks had accepted the presidency of this institution, it is stated, under the definite understanding that it would be exempt from political influences, and without such freedom no state university can make satisfactory advancement. When it is subject to upheavals with each change of administration, there is bound to be a constant unrest in all departments, and instead of having a constant and steady growth from the educational point of view, the institution from necessity becomes a political machine in which the merits of its faculty will depend more on their work and influence as politicians than as educators. It is difficult to secure and retain competent and self-respecting

teachers under such circumstances. So far, little protest has been noted from the people of Oklahoma against the governor's action, and perhaps they do not realize the serious position in which their state university is now placed. In Texas, several years ago,[1] when former Governor Ferguson attempted to remove President Vinson and certain regents and teachers of the University of Texas, the result to himself was disastrous. So great was the furor that arose from educators throughout the state that he was promptly impeached by the legislature and suspended from office. So prompt and decisive was the reaction that any future governor of Texas will indeed be brave who makes a similar attempt. It is high time that all our state universities should be left free to develop as educational institutions, unhampered by interference from politicians.

A CLINICAL STUDY OF ECTOPIC PREGNANCY

Since Lawson Tait operated on a patient with ruptured tubal pregnancy in 1883, our knowledge of ectopic gestation has advanced almost to completion. The successful application of that knowledge, however, in making a diagnosis still varies with the number of atypical cases encountered. It appears to be impossible to diagnose correctly a considerable percentage of ectopic pregnancies. Fortunately, operative interference is indicated by the erroneous diagnoses as strongly as it is by the real pathologic condition. Under ideal hospital conditions, therefore, these errors are not necessarily serious. In the gynecologic clinic of the Johns Hopkins Hospital and University,[2] fifty cases of ectopic pregnancy came to operation between 1917 and 1922. Correct diagnoses were made in 72 per cent. of these cases. No pathognomonic symptom was present. A pelvic mass was not palpable in six cases, pelvic tendereness was absent in seven, there was no history of pain in two. There was a history of missed menstrual periods in only twenty-four of the cases, and of irregular menstrual bleeding in thirty-seven. The cervix was normal in thirty-eight, the fundus enlarged in only five, and in no instance was a bluish discoloration of the umbilicus noted; in view of many reports as to the value of this sign, its absence in such a series seems significant. The average hemoglobin content was 61 per cent. That a maximum quantity of blood had been lost by some patients in this series is evident. There were, in all, twelve infusions and seven transfusions. Convalescence was uneventful in forty cases, and stormy in ten. All of the patients made a complete recovery.

1. Politics Endangers a Great University, Current Comment, J. A. M. A. **68**: 1916 (June 23) 1917; University of Texas Freed from Politics, ibid. **69**: 1086 (Sept. 29) 1917.
2. Brady, Leo: A Clinical Study of Ectopic Pregnancy, Bull. Johns Hopkins Hosp. **34**: 152 (May) 1923.

Rheumatism and Heart Disease.—Rheumatism ranks with tuberculosis in its mortality and disabling effects, and from the economic aspect alone the problem is not receiving the attention it deserves. The early recognition of rheumatism in young life and full and thorough treatment of its effects in convalescent hospitals would be of far-reaching importance in the amelioration of heart disease.—I. J. Davies, *Clin. Jour.* **52**:166 (April 4) 1923.

Association News

THE SAN FRANCISCO SESSION

Hotel Reservations for Delegates

All members of the House of Delegates who wish to have accommodations at the Palace Hotel at San Francisco and who have not already made reservations should write *immediately* to the Palace. As has been repeatedly stated in The Journal, 150 rooms have been tentatively reserved for members of the House of Delegates, in order that every delegate might be assured of hotel accommodation. These rooms cannot be held until the very last moment. Those not wanted or not needed must be released in order that they may be available for members.

THE "M.D. SPECIAL" TRAIN

Reservations on the "M.D. Special" of the Northern Pacific Railway returning from San Francisco are rapidly being made. This trip with the various stop-overs, including four days spent in Yellowstone Park, is one that will long be remembered. Dr. A. W. Ide of St. Paul will personally conduct the tour and any information relative to the plans made will be gladly supplied by addressing him at 914 Northern Pacific Building, St. Paul.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALASKA

Influenza Epidemic.—Officers of the U. S. Coast Guard cutter *Haida* reported recently an epidemic of influenza among natives on the western Alaskan coast. They stated that several natives on Sannak Island had died from the disease, that at Morzhoivs, practically every person was sick and that the food supply was very low. The *Haida* landed food, medicine and coffins, and assisted in burying the dead. A medical officer was left in charge.

CALIFORNIA

Physician Wins Malpractice Suit.—In the suit brought by Effie and Hugo Peterson against Dr. Fred H. Williams of Selma for $54,000, alleging malpractice, the jury, March 24, brought in a verdict for the defendant.

Personal.—Dr. Ralph W. Homer and Dr. Thomas E. Cunnane, both of Ventura, were elected president and secretary, respectively, of the Ventura County Medical Society at the annual meeting, May 14, at Oxnard.——Dr. Walter Lenker, county health officer and superintendent of the San Bernardino General Hospital, will resign, July 1, and be succeeded by Dr. Emmet L. Tisinger, assistant superintendent at the county institution.——Dr. Stuart Z. Peoples, Petaluma, has been appointed chairman of the newly organized board of directors of the Sonoma County Public Health Association. ——Dr. George C. Sabichi, Bakersfield, has been elected president of the Kern County Medical Society.

Hospital News.—The new Shriners' Hospital for Crippled Children, San Francisco, was dedicated, May 26.——The capacity of the Jewish Consumptive Relief Sanatorium, Duarte, will be increased by about fifty beds. The present capacity is ninety-two. Several new cottages, a new infirmary and a medical building will be erected.——The new five-story San Jose Hospital, San Jose, was formally opened, June 1. H. J. Bostwick, for many years superintendent of the Clifton Springs (N. Y.) Sanatorium, is manager of the institution. ——A four-story hospital will be erected at Santa Ana for Orange County at a cost of approximately $300,000. The new institution will be erected on a 7-acre site on Grand and East Washington avenues.——The Los Angeles County Hospital, Los Angeles, has changed its name and will in the future be known as the Los Angeles General Hospital.

CONNECTICUT

Sheppard-Towner Law Refused.—The Connecticut legislature passed an act in April directing the state department of public health to refuse the federal aid provided for under the Sheppard-Towner Law. This act was signed by the governor.

License Declared Illegal.—Dr. Stanley H. Osborn, commissioner of health of Connecticut, writes that through an oversight a certificate of license to practice medicine was issued to a Francis P. Trapani even though the college from which he claims graduation was not on the approved list. Trapani "was promptly notified within a week that he had been illegally licensed and that his license was not valid in this state." The attention of secretaries of other state licensing boards is called to this fact. The license was number E-682 and was issued April 19, 1923.

DISTRICT OF COLUMBIA

Dr. Cumming Arrives at Geneva.—Dr. Hugh S. Cumming, Surgeon General of the U. S. Public Health Service, arrived in Geneva, Switzerland, May 30, to arrange collaboration of the League of Nations' international health work with the United States.

School Medical Inspection Scored.—At a meeting of the board of education, Washington, May 2, it was decided that provisions for more extensive medical inspection in the public schools will be sought in next year's budget, if the board can obtain the support of local social service agencies interested in the work. Prof. Frank W. Ballou, Ph.D., superintendent of schools, stated that the present school medical inspection service is medical inspection in name only.

FLORIDA

State Medical Meetings.—At the fiftieth annual meeting of the Florida Medical Association in Jacksonville, May 15-16, the following officers were elected for the ensuing year: president, Dr. Herman Marshall Taylor, Jacksonville; vice presidents, Drs. John C. Vinson, Tampa, Robert F. Godard, Quincy, and Robert B. McIver, Jacksonville. Dr. Graham E. Henson was reelected secretary-treasurer. The next annual meeting will be held in Orlando, May 1924.——At the fourth annual convention of members of the Florida Railway Surgeons' Association, in Jacksonville, May 14, Dr. Henry C. Dozier, Ocala, was elected president; Dr. Julius C. Davis, Quincy, vice president, and Dr. Edmund W. Warren, Palatka, secretary (reelected).

GEORGIA

Personal.—Dr. Victor H. Bassett, acting health officer of Savannah, has been elected health officer of Tybee.——Dr. T. L. Anderson, Dalton, celebrated his one hundredth birthday, recently.——Drs. Albert L. Crittenden, Shellman, and Frederick D. Petterson, Culbert, have been appointed members of the state board of health for six year terms.——Dr. Elijah L. Connally, Atlanta, celebrated his eighty-sixth birthday, May 6. He was chairman of the first board of health of Atlanta.

ILLINOIS

Illegal Practitioner Arrested.—According to reports, Clifton G. Stone, River Forest, with offices in Chicago, was arrested, June 4, on a charge of practicing surgery without a license.

Personal.—The Decatur Medical Society presented Dr. Ellen F. T. Grimes of that city with a purse of gold, May 15, in recognition of nearly fifty years' practice of medicine.—— Dr. Samuel C. Crispin, Danville, has been appointed county physician.

Legislature Would Cripple Health Service.—The lower house last week adopted an amendment to the omnibus bill which lowers the health department budget by $80,000 a year. If the senate sustains the amendment, the result will be a disorganization of the medical field service, and a crippling of the department's plans for constructive work during the next biennium, according to Dr. I. D. Rawlings, state director of public health. The funds contemplated under the item stricken from the bill were to employ district health superintendents. The budget provided for a maximum of twenty-five superintendents, while the amendment, which allows $20,000 annually, would provide for five.

Chiropractor Recalled from Board of Health.—A field physician of the state department of public health recently persuaded a newly elected mayor of a down-state municipality to recall a chiropractor appointed on the local board of health. Two physicians who had been appointed on the same board declined to serve with the chiropractor. The state department of public health took the position that it neither had nor sought to secure the power of dictating the color of local boards of health but that it looked with distinct ill favor on the official participation of chiropractors in public health matters and that in case of untoward communicable disease development under the administration of chiropractic boards of health the department would promptly exercise its legal power to take charge of the situation at local expense.

Physicians Fined.—It is reported that Drs. Charles S. Mellen, Lewis A. Whipple, Charles S. Zeigler, Charles M. Noble, Perry F. Jones and W. G. Bonny of Peoria; Warren T. Heaps, Kewanee, and Hubert Miller, Wyoming, were fined $500 and costs, each, by Federal Judge Fitzhenry at Peoria, May 17, when they pleaded guilty to violating the national prohibition law.——Dr. Henry L. Davis, West Frankfort, was fined $200, on a charge of violation of the Volstead act, by Judge English, in East St. Louis, May 17. Dr. Mae H. D. McInnes, also of West Frankfort, according to report, was fined $150 on the same charge.——Dr. Joseph D. Vertin, Oak Park, was fined $1,000, May 28, by Federal Judge Cliffe, according to reports, when he pleaded guilty to violation of the Harrison Narcotic Law.

Chicago

Dr. Springer Resigns.—Dr. Joseph Springer, coroner's physician for twenty-six years, resigned, June 1. Dr. Irving Porges will succeed Dr. Springer.

"The Battle of Cook County."—It is reported that since January 1 there have been 284 deaths due to automobiles in Cook County, ninety-seven due to "moonshine," and ninety-five due to gun-shot wounds.

Chicago Society of Internal Medicine.—At the eighth annual meeting of the society at the City Club, May 28, the following officers were elected for the ensuing year: president, Dr. Robert H. Babcock; vice president, Dr. Solomon Strouse, and secretary-treasurer, Dr. Newell C. Gilbert.

Annual Baby Week.—The annual "Baby Week" occurs this year, June 3-10, during which time a drive for funds will be conducted. In addition to twenty-eight infant welfare stations in the city maintained by the Infant Welfare Society, the department of health has twenty-one devoted to infant welfare work. Last year, it is said, the welfare society cared for 12,000 babies at its stations.

Chicago Medical Society "on Vacation."—No further meetings of the society will be held until October, but the official bulletin of the society will be published as usual during the summer months. The society has agreed to operate a bureau for the purpose of informing physicians in advance of the financial reliability and pay propensities of a new patient before he renders expensive or extensive services.

New Court to Examine Druggists.—A second whisky permit revocation court was created in Chicago, May 28, at the prohibition office by a special staff of inquiry from Washington, D. C. The duties of the new court will be to examine druggists charged with filling bogus liquor prescriptions and to investigate illegal withdrawals of liquor. Judge Elmer Little has been ordered to Chicago from Washington to establish this second revocation court.

American Association for Thoracic Surgery.—The sixth annual meeting of the association was held in Chicago, May 29-30. Dr. Ralph Boerne Bettman, Chicago; Dr. Rudolph Matas, New Orleans, and Dr. William Lerche, St. Paul, were among the physicians who gave addresses. The following officers were elected for the ensuing year: president, Dr. Carl A. Hedblom, Rochester, Minn.; vice president, Dr. Nathan W. Green, New York, and secretary-treasurer, Dr. Charles Gordon Heyd, New York (reelected).

Plans at the University.—At the annual alumni banquet of the University of Chicago, President E. DeWitt Burton stated that he hoped to see a group of eight or ten colleges after the manner of Oxford and Cambridge universities, England, in the near future: also a great medical school growing out of the affiliation with Rush Medical College. Dr. Burton said that work on the new medical school, which has been delayed on account of high building costs, will soon be started; $5,000,000 has been raised for this purpose; it is said the medical school will eventually have behind it nearly $25,000,000.

INDIANA

General Vaccination at South Bend.—In the face of a smallpox epidemic, the board of health of South Bend has ordered all factory executives, school principals, and heads of all institutions, municipal, industrial and commercial, to see that all persons in their employ are vaccinated, within ten days, unless they have been successfully vaccinated within the last seven years. The isolation hospital is filled with smallpox patients; tents are being used to house the overflow of new arrivals. Vaccination will be without charge for persons unable to pay.

IOWA

Physicians Win Malpractice Suit.—The suit brought by Lillian Skelton against the Park Hospital Clinic, Mason City, to recover $7,500 for alleged malpractice in the treatment of a fractured clavicle, closed, May 23. Judge Kepler directed the jury to find for the defendant. Dr. George M. Crabb and Mathew J. Fitzpatrick are in charge of the clinic.

Hospital News.—Contracts have been awarded and work will start at once on a hospital building for epileptic children at Woodward, which will house 200 children from the state colony. The building will cost $124,000.——A home for the Sisters of St. Joseph's Mercy Hospital, Dubuque, is nearly completed. The building is three stories high and was erected at a cost of $90,000.

KANSAS

Child Welfare Conferences.—A series of seventeen child health conferences have been arranged by the Ottawa County Health Department for children of preschool age. These conferences will be held in strictly rural communities.

Medical Laboratory Association.—At the annual meeting of the Kansas Medical Laboratory Association, in Lawrence, Prof. L. D. Bushnell, Manhattan, was elected president; L. C. Hill, Emporia, vice president, and Dr. William Levin, Topeka, secretary-treasurer.

MASSACHUSETTS

Appointments at Harvard University.—John H. Mueller, Ph.D., associate professor at Columbia University, New York, has been appointed assistant professor of bacteriology at the Medical School of Harvard University, Boston, and Dr. Hilding Berglund has been appointed assistant professor of medicine.

Boston Roentgenologist Receives Medal.—The Sir James MacKenzie Davidson medal was presented to Dr. Ariel W. George of Boston, at a joint meeting of the Roentgen Society of London and the electrotherapeutic section of the Royal Society of Medicine, in London, England, May 17. Sir Humphry Rolleston, president of the Royal College of Physicians, presided. Dr. George, the first American to receive this medal, addressed the meeting on "The Pathological Gallbladder."

Gift for Cancer Research.—The Hancock Life Insurance Company, Boston, has made an additional gift of $20,000 to the Harvard Cancer Commission; $5,000 to be used for purchase and installation of a diagnostic apparatus and $15,000 to be placed in the permanent fund. The insurance company previously gave $30,000 toward the building of the Huntington Hospital, which is devoted exclusively to cancer cases. The new gift will be used in the biophysical laboratory, which is also under the direction of the commission.

MICHIGAN

Wayne County Medical Society.—At the annual meeting of the organization in Detroit, May 21, Dr. Frank A. Kelly was elected president; Dr. George E. Frothingham, vice president, and Dr. Bruce C. Lockwood, secretary.

Dr. Novy at "Old Bart's."—Dr. Frederick G. Novy, professor of bacteriology, University of Michigan Medical School, Ann Arbor, presented an address of congratulation to the Prince of Wales at the celebration of the eight hundredth anniversary of St. Bartholomew's Hospital, in London, June 7-9.

Chiropractor on Probation.—According to reports, Miss Erma F. Parker, chiropractor of Hillsdale, was convicted of practicing medicine without a license, recently, and put on one year's probation on condition that she refrain from practicing her profession. The judge said "as I understand your profession of chiropractic, it is held in the decisions of the supreme court to be the practice of medicine; but that the law does not preclude you from taking such studies as will enable you to pass the examination and then practice your chiropractic profession. And the prosecution here is only for the purpose of requiring people who do practice medicine in the state of Michigan, whether that practice is drugless or otherwise, to take such a course of studies as equips them to be able to distinguish the difference between diseases and ailments."

NEBRASKA

New Hospital Opened.—St. Catherine's Hospital of Sienna, recently completed at McCook, was formally opened to the public, May 16. The building was erected at a cost of $100,000.

State Radiological Society Organized.—The Nebraska Radiological Society was organized, May 14, at a banquet of physicians held in Lincoln. Dr. Roscoe L. Smith, Lincoln, was elected president; Dr. Rolland C. Woodruff, Grand Island, vice president, and Dr. Roy W. Fouts, Omaha, secretary-treasurer.

NEW HAMPSHIRE

Personal.—Dr. William Holt, assistant superintendent of the Providence City Hospital, Providence, R. I., has been appointed director of the Lamont Infirmary, Exeter.

New Hampshire Medical Society.—At the one hundred and thirty-second annual meeting of the society at Concord, May 23-24, the following officers were elected for the ensuing year: president, Dr. Howard N. Kingsford, Hanover; vice president, Dr. Louis W. Flanders, Dover, and secretary-treasurer, Dr. Dennis E. Sullivan, Concord. The 1924 meeting will be held at Manchester. Resolutions protesting against the government paying for the training of ex-service men as chiropractors and in favor of the establishment of a four-year medical course in a New Hampshire medical school were adopted at the closing sessions. Dr. Herbert L. Smith, Nashua, presided.

NEW JERSEY

Health Exposition Succeeds.—More than 200,000 tickets were issued for the health exposition held in Newark, June 4-9. The city community and industrial welfare organizations occupied twenty-two of the sixty-seven "booths" assigned to the city. A parade through the streets of Newark opened the exhibition.

Illegal Practitioners Fined.—The following fines have been reported by the state board of medical examiners for individuals guilty of practicing medicine without a license: Alfred C. Pedrick, Passaic, whose license was revoked, Feb. 15, 1921, $200; Michael Lisena, druggist of Newark, $200 and costs; Thomas and Emma Di Santi, unlicensed chiropractors, of Newark, $200 and $500, respectively. This was Thomas Di Santi's second offense.

NEW MEXICO

Memorial to a Physician.—Plans have been practically completed for the Gilbert Memorial Hospital, which is to be erected at Alamagordo, in memory of the late Dr. Jesse R. Gilbert. The project is being financed by the citizens of the community and will cost approximately $15,000.

NEW YORK

Memorials to Physicians.—The medical staff of the Hospital for Joint Diseases, New York, will erect a tablet to the late Dr. David Heine Levy, because of his services on behalf of crippled children. Dr. Levy was assistant surgeon at that institution.——A statue of the late Dr. John A. Wyeth has just been completed by the sculptor, Gutzon Borglum, "the gift of a grateful patient of the lamented surgeon."

New York City

Medical Alumnus Meeting.—The Association of the Alumni of the College of Physicians and Surgeons in the City of New York held a meeting, May 21. Dr. Karl M. Vogel, assistant professor of clinical pathology of Columbia University, spoke on "Around the World in a Sailing Ship."

Memorial to War Dead.—The Jewish Memorial Hospital at Dyckman Street and River Road was formally dedicated on May 27 to the memory of soldiers, sailors and marines who died in the World War. A bronze tablet was unveiled, which bears a bas-relief of a battlefield, and the names of the officers and directors of the hospital and the ladies' auxiliary. The hospital has 100 beds.

Weekly Journal Project Fails.—At the recent annual meeting of the state medical society a plan for a weekly journal for the organization was presented to the house of delegates by a committee, headed by Dr. Orris S. Wightman. The necessity for such a journal was conceded, but the matter was laid on the table to be taken up at some future time because of lack of funds to finance the proposition at the present time.

OHIO

From Ohio to California.—B. E. Swem and Glenn L. Potter, chiropractors of Lima, were found guilty of practicing medicine without a license by Justic Guyton, May 18, according to reports. Swem was fined $25. Sentence was suspended on condition that he discontinue practice in Ohio. He stated that he would move to California.

OKLAHOMA

State Association Requests Investigation of Prices.—The Oklahoma State Medical Association at its thirty-first annual meeting, held at Tulsa, recently, called on Governor Walton to make an investigation of the prices of vaccines and serums in their state. It was shown that the people of Oklahoma pay almost twice as much for such products as do the people of Tennessee. A package of typhoid vaccine, for example, that sells in Oklahoma for $1.20, sells in Tennessee for 80 cents; antitetanic serum selling in Oklahoma for $2.50 sells in Tennessee for $1.67. The association directed its secretary to place before the governor all available evidence in this matter. It is said the secretary was able to show that a certain wholesale serum house sent monthly, to the office of the state commissioner of health, a check for $50. The governor, as well as the public, was advised that the present commissioner, Dr. A. E. Davenport, was in no way involved, since checks were received prior to his administration, and since he, on taking office, returned "the present" with the advice that all checks pertaining to his department should be made payable to the state of Oklahoma.

OREGON

Southern Oregon Medical Association.—At the annual meeting of the association in Ashland, May 8, the following officers were elected for the ensuing year: president, Dr. Charles B. Wade, Roseburg; vice president, Dr. Bertram R. Shoemaker, and Dr. William W. P. Holt, Medford, secretary, to succeed Dr. Alvane C. Seely who had served in that capacity since 1908. Roseburg was selected for the 1924 convention of the association.

PENNSYLVANIA

Chiropractic Licensing Bill Defeated.—For the second time this session, the house voted down the Dunn bill which would require licensing chiropractors and providing them a board of examiners.

Children's Hospital Burns.—The Children's Hospital of Pittsburgh was destroyed by fire, May 31. More than 100 patients, most of them crippled, were moved to the Magee Maternity Hospital nearby. There was no loss of life. The main building, many years old, was the center of a number of wings. The fire started in one of the wings and spread rapidly.

Philadelphia

Jefferson Medical College Commencement.—The ninety-eighth annual commencement was held at the Academy of Music, June 1. Dr. Edward H. Hume, dean of the Hunan-Yale College of Medicine in China, who received the honorary degree of doctor of laws, delivered the address. One hundred and forty-seven men graduated, and twenty-three members of the class received commissions as first lieutenants in the Medical Officers' Reserve Corps of the army. This is the first group of students to receive army commissions from Jefferson Medical College, as the result of having satisfactorily completed a course in military science and tactics.

RHODE ISLAND

State Medical Meeting.—The annual meeting of the Rhode Island Medical Society was held in Providence, June 7. Dr. Arthur T. Jones was elected president for the year 1923-1924; Drs. William F. Barry and Halsey DeWolf, vice presidents; Dr. Jesse E. Mowry, treasurer, and Dr. James W. Leech, secretary.

Making Veterans Chiropractors Opposed.—The Rhode Island Medical Society has adopted resolutions pointing out that the training of veterans at public expense as chiropractors is not for the best interest of the veteran or of the public, and commending the director of the Veterans' Bureau for action taken by him looking toward its discontinuance. (Note.—Unfortunately, the U. S. Veterans' Bureau seems to have reinstated chiropractic as an approved calling for disabled veterans.)

TEXAS

Cornerstone of Rice Laboratory Laid.—Dr. Edgar Fahs Smith, emeritus professor of chemistry at the University of Pennsylvania Medical School, Philadelphia, laid the cornerstone of the new chemical laboratory of the Rice Institute, Houston, June 4. The laboratory, which will be erected at an approximate cost of $1,000,000, will be ready for occupancy by the opening of the school in September, 1924, it is stated.

Hospital News.—The new Homan Sanatorium which will be erected on Mount Franklin, El Paso, several blocks above the present institution, will be five stories high and have 128 rooms. There will be departments for roentgen-ray, Alpine lamp and pneumothorax treatments, and a solarium for heliotherapy. It will cost approximately $150,000, and be ready for occupancy about November 1.

VIRGINIA

County Medical Meeting.—At the first meeting held since 1919 of the Accomac County Medical Society, May 3, at Onley, Dr. Joseph L. DeCormis was elected president; Dr. William M. Burwell, vice president, and Dr. John W. Robertson, secretary-treasurer.

WASHINGTON

Prisoner a Leper.—All prisoners in the federal penitentiary at McNeil's Island, Seattle, were examined for leprosy, May 22, following the discovery that one of them was an advanced case of that disease.

WISCONSIN

Physician Fined.—It is reported that Dr. Friedrich C. Liefert, West Allis, was fined $50 in the district court recently for failure to report a birth.

Diabetes Clinic.—A diabetic clinic was held by the Five County Medical Society, consisting of physicians from Barron, Polk, Sawyer, Burnett and Washburn counties, at Rice Lake, May 22. Dr. Harold E. Marsh, Madison, was the principal speaker.

Licenses Revoked.—Appeal to the Supreme Court has been taken by Dr. Argo M. Foster, Racine, whose license was recently revoked. The court also revoked the licenses of Drs. Frank L. Fancher and William G. Wheeler, of Racine, on charges of unprofessional conduct, it is reported.

Tuberculosis Sanatoriums.—The state board of control is now issuing a weekly report giving the number of patients in the various state and county tuberculosis sanatoriums, and the waiting list and number of entrants. There are at present 405 males and 352 females in the various institutions. There are forty-six on the waiting list and there are 100 vacancies. Some of the sanatoriums are filled but some are not and this accounts for the vacancies.

CANADA

Ontario Health Officers Association.—At the ninth annual conference of the association, held in Toronto, May 21-23, the following officers were elected: president, Dr. Theodore A. Lomer, Ottawa, Ont.; vice presidents, Drs. Charles N. Laurie, Port Arthur, Ont., and Fred Adams, Windsor, Ont., and secretary, Dr. J. J. Middleton. Dr. Frederick G. Banting read a paper on insulin.

Society News.—The Western Ontario Academy of Medicine held its final general session for the term of 1922-1923, May 25, in London. Dr. William Goldie, Toronto, spoke on "Hypertension"; Dr. Hugh Cabot, Ann Arbor, Mich., on "Small Renal and Urethral Calculi," and Dr. Thomas H. Morgan, New York, on "The Anatomy of the Pelvic Floor in Relation to Gynecology and Obstetrics."

GENERAL

American Otological Society.—At the annual meeting of the society in Atlantic City, N. J., May 23, Dr. John B. Rae, New York, was elected president; Dr. David Harold Walker, Boston, vice president, and Dr. Thomas J. Harris, New York, secretary-treasurer.

American Urological Association.—At the annual meeting of the association in Rochester, Minn., May 21-23, the following officers were elected for 1923-1924: president, Dr. James A. Gardner, Buffalo; vice president, Dr. Herman L. Kretschmer, Chicago; treasurer, Dr. James B. Cross, Buffalo, and secretary, Dr. Homer G. Hamer, Indianapolis.

American Pediatric Society Elects.—At its thirty-fifth annual meeting held in French Lick Springs, Ind., May 31-June 2, the American Pediatric Society elected the following officers for the ensuing year: president, Dr. David Murray Cowie, Ann Arbor, Mich.; vice president, Dr. Charles A. Fife, Philadelphia, and secretary-treasurer, Dr. Howard Childs Carpenter, Philadelphia.

Laryngologists Elect Officers.—At the annual meeting of the American Laryngological Association in Atlantic City, N. J., May 16-18, the following officers were elected: president, Dr. Joseph Payson Clark, Boston; vice presidents, Drs. Hubert Arrowsmith, Brooklyn, and Joseph B. Greene, Asheville, N. C.; secretary, Dr. George M. Coates, Philadelphia, and treasurer, Dr. George Fetterolf, Philadelphia.

Directory of Full-Time County Health Officers.—The U. S. Public Health Service has compiled a directory of all the whole-time county health officers of the United States from data furnished by state health officers. In the questionnaire sent for the purpose of obtaining the necessary information a "whole-time" county health officer was defined as "one who does not engage in the practice of medicine or any other business, but devotes his whole time to official duties." There are 233 health officers in all listed.

Society News.—The twenty-eighth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology will be held in Washington, D. C., October 16-18. Sir William Lister, London, England, will be the guest of honor. Fellows are invited to contribute papers for the scientific sessions.——The annual meeting of the Association of Women in Public Health will be held in Boston, June 18.——The annual New York State Conference of Health Officers and Public Health Nurses will be held in Saratoga Springs, N. Y., June 26-28.

Health Statements Discontinued.—The bi-weekly statements on national health legislation have been discontinued until after the present recess of Congress, it is announced from the Washington, D. C., office of the National Health Council. Mr. James A. Tobey, formerly Washington representative, has been appointed administrative secretary, with headquarters at Three Hundred and Seventy-Seventh Avenue, New York, after June 1. Through an arrangement with the American Child Health Association, Miss Lyne of that organization will temporarily serve as Washington representative of the council.

"Storm" at International Opium Conference.—At the opium conference in Geneva, Switzerland, May 30, the British delegate Sir Malcolm de Levigne introduced a resolution recommending that the League of Nations adopt the American plan to restrict the production of opium to strictly medicinal needs. A league council was decided on to work out the details to carry out the American proposals. It is expected that an international commission will be summoned to meet during the league assembly. A later report, however, stated that on June 1 the four members of the American delegation left the meeting, when the delegate from India insisted that the American proposal be made more precise.

Supreme Court Declines to Pass Judgment on Sheppard-Towner Maternity Act.—Neither of the two cases brought before the U. S. Supreme Court to determine the constitutionality of the Sheppard-Towner Maternity Act were properly before the court, and the court, therefore, dismissed them for want of jurisdiction. This leaves the constitutionality or unconstitutionality of the act undetermined and undeterminable until a case is presented in which there is evidence that constitutional rights of a citizen have been impaired, so as to present a direct issue under the act. When such circumstances arise, a citizen may appeal to the court on his own behalf. The right of a state to appeal on behalf of its entire body of citizenry was denied.

Veterans' Bureau Modifies Rule on Chiropractic Training.—Reference was made in THE JOURNAL, May 5, p. 1323, to an order of the U. S. Veterans' Bureau to the effect that ex-service men undergoing rehabilitation would not be permitted to take vocational training in chiropractic. This position has been reversed by an order issued May 18, which permits beneficiaries to be entered on a course of training in chiropractic, but only when, prior to original induction, they had the "educational preparation and qualifications as shown by satisfactory credits and evidence required for entrance into a Class A medical college." Even then they can be entered in only those chiropractic schools located in states where the practice of chiropractic is legal, and shall be required to sign a statement of intent to practice only in a state or states where such practice is legal.

"Have a Health Examination on Your Birthday."—A nation-wide movement for yearly health examinations for everybody has been launched by the National Health Council. The campaign slogan is "Have a health examination on your birthday." The goal of the council is the examination of 10,000,000 persons in the year which starts July 4. Dr. Donald B. Armstrong, executive officer of the council, states that more than $3,000,000,000 is the annual loss to this country from preventable diseases and deaths. It is believed that the carrying out of the proposed plan will be a factor in increasing the span of life, that if the attention of these 10,000,000 people is called to preventable physical defects and they profit by hygienic advice and medical attention given them, there is no reason why the average length of life in this country cannot be increased at least five years in the next decade.

Annual Report of Rockefeller Foundation.—The activities of the Rockefeller Foundation during 1922 are stated as follows in the president's report:

Pledged $1,125,000 toward new buildings for the College of Medicine of the State University of Iowa.

Contributed to the current maintenance of two medical schools in Canada.

Endowed chairs of medicine and of surgery in Hongkong University.

Completed the buildings, strengthened the faculty, and wholly financed the Peking Union Medical College.

Agreed to appropriate $300,000 toward laboratories and premedical teaching in two Chinese institutions and in one missionary university in Peking.

Helped nineteen hospitals in China to increase their efficiency in the care of patients and in the further training of physicians and nurses.

Promised to cooperate in the rebuilding and reorganization of the medical school of Sao Paulo, Brazil, and of the medical school of Siam, in Bangkok.

Made a survey of medical schools in Austria, Czechoslovakia, Germany, Hungary, Poland and Switzerland, and studied English and Scotch methods of clinical teaching.

Sent medical men as visiting professors or consulting officers to China, the Philippines, Brazil and Salvador.

Arranged for a commission of medical scientists from Strasbourg to visit the United States and England.

Gave emergency aid in the form of medical literature, laboratory supplies and apparatus, fellowships and stipends to promising investigators and teachers in the Pasteur Institute of Paris and in many other European centers.

Pledged $2,000,000 toward the site, building and equipment of a school of hygiene in London.

Cooperated with state boards of health in maintaining institutes and instruction for health workers.

Shared in malaria control in thirty-four county and thirty-two town demonstrations in ten southern states, and continued field studies and surveys in the United States, Porto Rico, Nicaragua, Brazil, Palestine, Australia and the Philippines.

Cooperated with the Mexican and other governments in steadily restricting the prevalence of yellow fever.

Resurveyed centers of hookworm infection in four southern states, and carried on control work in twenty-one foreign governmental areas.

Took part in promoting full-time health service in 163 counties in eighteen states of the United States, and in several counties in Brazil.

Agreed to support for five years the disease-reporting service, and for three years the international exchange of health personnel program of the health section of the League of Nations.

Provided fellowships in public health, medicine, nursing, chemistry and physics to 237 advanced students from twenty-three countries.

By consultation and the providing of personnel aided public health administration in the United States, Australia, Brazil, Canada, Central America, Czechoslovakia, France and the Philippines.

Contributed to mental hygiene projects, demonstrations in dispensary service, hospital information service, surveys of nursing education and hospital management, the organization of tuberculosis work in France, the training of French health visitors, and other undertakings in the fields of public health and medical education.

LATIN AMERICA

Society Elections.—The Sociedad Argentina de Pediatría recently elected Drs. M. Santas, president; J. M. Obarrio, vice president; A. Casaubón, secretary; E. A. Beretervide, recording secretary; R. Iribarne, librarian; C. S. Cometto, treasurer, and A. Segers and J. P. Garrahan, members of the board.

Personal.—The government has appointed, as official delegates to represent Argentina at the scientific congresses to be held at Paris and Strasbourg between May and October, Drs. Fernando Pérez, N. Lozano and J. A. Gabastou, all of Buenos Aires.——The medical students of San Salvador recently presented the gold medal of their society to Dr. J. Llerena on his retirement from his connection with the medical school. It was stated that more than twenty generations of students had been trained by him in obstetrics. *El Salvador Médico* for April reproduces the addresses at the

presentation celebration.——Prof. E. Rabello of Rio de Janeiro has been appointed the representative of the medical faculty at the scientific congresses and exposition of hygiene at Strasbourg. The government has sent by Prof. Borges de Costa a collection of radio-active minerals, films, casts and other data to represent the public health service of Brazil at the Strasbourg exposition.——Dr. A. da Cunha of the Brazilian delegation to the recent Pan-American Conference at Santiago, described with moving pictures the work of the public health service in Brazil and of the state serum institute.

FOREIGN

First Graduates of Keio College.—The first sixty-nine medical students of the Keio University Medical College, Tokyo, graduated in April. The college was established four years ago by Dr. S. Kitasato, the bacteriologist.

Antiopium Pills Forbidden in Shanghai.—The city magistrate of Shanghai has forbidden the importation and sale of "red pills" (antiopium pills) on the ground that they contain various drugs and are worse, in their effects, than morphin.

Insanity in Holland.—According to the official statistics, the thirty-three psychiatric institutions in the Netherlands had 15,811 inmates, Jan. 1, 1921 (7,842 men and 7,969 women), against 15,080 (7,583 men and 4,797 women) on the corresponding date in 1919. The population of the Netherlands is said to be 6,831,231.

German Physicians in New Danish Provinces.—Our exchanges state that the Danish government has granted permission to practice medicine in North Schleswig to duly qualified German physicians who were born in Schleswig or had lived there before 1918 and been admitted to practice in Germany before 1923.

Prize for Anthropologic Research.—Dr. Kleiweg de Zwaan, of the University of Amsterdam, has instituted a triennial prize of 2,500 francs to be awarded to the man or woman irrespective of nationality, who, in the course of three years, publishes the results of meritorious research in anthropology, prehistoric or otherwise.

Death from Thyroid Tablets.—The *Hygienisk Revy* relates that a child, aged 3 years, died, and another, aged 2, is seriously ill from eating thyroid tablets at Domsjö. The children were brought to the hospital immediately, but one died the same day. This is said to be the first direct fatality from thyroid tablets known in Sweden.

Centennial of the Geneva Medical Society.—The Société médicale de Genève was founded in 1823, and its centennial was celebrated, May 12, with much ceremony. The organized pediatrists and radiologists of Switzerland held their annual meetings there the same week, besides the inauguration of the national photography exposition with its special section devoted to medicine and surgery.

Union of Chinese Medical Schools.—The North China Union Medical College for Women and the School of Medicine of the Shantung Christian University have merged. Ground has been purchased and funds are already in hand for new buildings to be erected at Tsinanfu. The Shantung Christian University is contemplating opening the premedical departments to women students also.

Renting the Home of the Berlin Medical Society.—The Langenbeck-Virchow Haus was built for the headquarters of the German Surgical Society and the Berlin Medical Society. Its upkeep has been such a burden that the officials have rented the building to the Siemens and Halske firm for a period of ten years, with the provision that the societies shall continue to have the use of the building for meetings.

Special Classes for Feebleminded in Japan.—Following investigation by a committee appointed by the department of education, special classes for feebleminded children in all primary schools of Japan will be established. Among nearly 5,000,000 primary school children, 150,000 are said to be mentally deficient. As they show improvement in the special classes, these children will be transferred to the regular grades.

Gullstrand Prize Endowment.—To further ophthalmologic research and honor Professor Gullstrand, the Swedish Medical Association in 1922 founded a prize fund to award a gold medal. It is to be called the "Gullstrand Medal" in honor of Dr. Alvar Gullstrand, professor in physiologic and physical optics at the Upsala University. This prize will be awarded for the first time in 1932 and thereafter each tenth year, without regard to nationality.

Venereal Disease in Iceland.—Up to 1890 there were, according to official reports, no venereal diseases in Iceland. Gonorrhea became endemic soon thereafter, and syphilis followed in 1900. The period 1911 to 1920 shows a yearly average of from 130 to 160 cases of gonorrhea, and about twenty-three cases of syphilis and seven or eight of soft chancre. Puerperal fever is common, attributable to the fact that physicians assist at only 4 per cent. of all births. The population was 47,000 in 1800, but is now 98,000; the general death rate has averaged 14 per thousand since 1910.

The Law Against Quackery in Sweden.—The law of 1688, which was in force in Sweden up to 1916, ordered fines of from 12.50 to 25 kronor (about $3 to $6) for persons convicted of quackery. The fines being so small, the quacks paid and continued their business. By the law of 1916 the fines were raised to from 50 to 1,000 kronor, or one year's imprisonment in certain cases for not duly licensed physicians undertaking to cure any of a certain specified list of diseases, if the treatment is dangerous to the life and health of the patient. But there is nothing to prevent any one from administering sugar, for instance, for a period during which the diseases may become incurable. An editorial in the *Hygienisk Revy* protests against this law which aims at regulating, rather than abolishing, quackery.

Course on Medical Hydrology.—The University Extension Board of the University of London has arranged a course of lectures for medical practitioners and senior students on medical hydrology in cooperation with a joint committee of the International Society of Medical Hydrology and the Section of Balneology and Climatology of the Royal Society of Medicine. The course will begin May 29 and end June 4. It is intended for those who are engaged, or propose to engage, in spa practice, for medical officers of hydrotherapeutic institutions and sanatoriums and for others interested in the subject. Demonstrations of various forms of bath will be given at the Special Surgical Hospital, May 29, and of the recording kata-thermometer and other methods of controlling open-air treatment, at the National Institute for Medical Research, May 30.

Society News.—The French Association of Pediatrics will hold its next congress in Brussels in September, under the presidency of Dr. M. Péchèvre. Pneumococcal infections in infancy; diagnosis and treatment of intestinal obstruction, and the treatment of abnormal children, are the subjects that will be discussed.——The congress of the Association of French Gynecologists and Obstetricians will be held in Geneva, August 9-11.——The National Association for the Prevention of Tuberculosis will hold its ninth annual meeting in Birmingham, England, in July.——The National Association for the Prevention of Infant Mortality and the National Baby Week Council will hold a joint conference on infant welfare, July 2-4, in London. The Right Hon. Neville Chamberlain, minister of health, will preside.——The annual session of the Sectional Congress of Medicine was held in Tokyo, March 31-April 4. The societies for tuberculosis and roentgenology, recently established, held their first meeting during the session. About 1,200 papers were read before the sections.——The third annual congress of German otorhinolaryngologists was held at Kissingen, May 17-19.——The twenty-fifth anniversary of the Dutch Orthopedic Society was held at the University of Amsterdam, May 25-26, under the presidency of Dr. Murk Jansen.

Personal.—Dr. Polybius N. Coryllos, Athens, Greece, has accepted the appointment as professor of clinical surgery at Cornell University Medical College, New York. Dr. Coryllos was formerly a chief surgeon of the Greek army.——Dr. Arnold Chaplin has been nominated president of the section of the history of medicine of the Royal Society of Medicine.——Dr. S. J. Clegg, deputy health officer of Newcastle-on-Tyne, England, has been appointed medical officer of health for Durban, South Africa.——The Swedish Medical Association has recently elected to foreign membership Profs. L. Bianchi of Naples, G. Mingazzini of Rome, F. Samberger of Prague, and Dr. K. Hübschman of Prague.——A fund is being collected for the purpose of presenting a medal to Professor Menetrier of Paris. A bronze replica of the medal will be given to each person subscribing 50 francs. Subscriptions are being received by the publishing firm of Baillière et Fils, 19, rue Hautefeuille, Paris.——Prof. J. Teissier of Lyon having recently been elected to membership in the Rome Academy of Medicine, went in person to be installed, and tell of his latest research on nephritis.——Professor Lafora of Madrid has left for Buenos Aires, where he has been invited to deliver a course of lectures in the med-

ical school.——Eighteen physicians left Copenhagen in May for a two weeks' trip to the Czechoslovakian watering places. Eight of the party are the guests of the Czechoslovakian government.

Deaths in Other Countries

Sir Shirley F. Murphy, first medical officer of health for London, England; aged 74; died, April 27, of influenza. Dr. Murphy was awarded the Jenner medal by the Royal Society of Medicine, and the Bisset Hawkins medal by the Royal College of Physicians.——Dr. **Charles J. S. Hancock,** surgeon major, Indian Medical Service, at Leytonstone, England, May 8.——Dr. **Charles Niven,** professor of natural philosophy, Aberdeen University, Scotland, May 11.——Dr. **George H. Hume,** at Newcastle-on-Tyne, aged 77.——Dr. **H. Luce,** director of the internal medicine department of the General Hospital at Hamburg, aged 56.——Dr. **Mewes,** director of the Anatomy Institute at Königsberg, aged 54.——Dr. **E. F. Polito,** a dermatologist and urologist of Buenos Aires.——Dr. **V. Remedi,** professor of surgery at the University of Siena, author of works on hernia and the surgery of the pancreas.——Dr. **J. Fein,** professor of laryngology at the University of Vienna.——Dr. **J. Furth,** an officer of the Vienna Medical Society.——Dr. **Dumoulin,** a medical officer of the Belgian army in the occupied region in Germany.——Dr. **Repelin,** formerly professor of gynecology at Lyon.

Government Services

Bandits Release Major Allen

Major Robert A. Allen, M. C., U. S. Army, who was captured by Chinese bandits and held for ransom on Paotzuku Mountain for several weeks, was released, May 30, it is reported.

Citizens' Military Training Camp

The Secretary of War and the Citizens' Military Training Camps Association of the United States announce that from August 1 to September 1 the Red, White and Blue Courses of the Sixth Corps Area (Illinois, Michigan and Wisconsin) will camp at Camp Custer, Mich. Employers are requested to select five picked men in their employ between the ages of 17 and 24, and give them two weeks' additional vacation with pay, on condition that they take the month's training at Camp Custer. Every man is required to be vaccinated against smallpox and typhoid fever before reporting at camp. Vaccine will be sent, on request, to the family physician.

Assistant Director of Veterans' Bureau Appointed

Capt. O. W. Clark, Cincinnati, has been named assistant director in charge of the Rehabilitation Division of the Veterans' Bureau. The position was formerly occupied by Col. R. I. Rees, detailed from the War Department; but has been vacant nearly five months. Captain Clark will assume his duties immediately and will aim to effect many changes in this division. Accompanying the announcement was a message that there will be a saving of approximately $7,500,000, as a result of the activity of the new director in reorganizing the rehabilitation work.

Veterans' Bureau Tuberculosis Course Repeated

A second course in tuberculosis, at New Haven, Conn. (The Journal, June 2, p. 1627), began, June 1, and was attended by a large number of physicians of the Veteran's Bureau staff. It is expected that this course will be repeated from time to time until all physicians in the bureau have received tuberculosis training. A similar course has heretofore been in operation at the Fitzsimons Hospital, Denver.

To Be Commissioned in the Navy

The following physicians have been examined and found qualified for commission as lieutenant (junior grade) in the Medical Corps of the U. S. Navy: Rob Roy Doss, South Boston, Va.; Claude S. Mumma, Chicago; Frederick C. Greaves, Duluth, Minn.; H. L. Pugh, Charlottesville, Va.; Caldwell J. Stuart, University, Va.; Oliver A. Smith, Atlanta, Ga.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 14, 1923.

International Congress of Refrigeration

The fourth International Congress of Refrigeration will be held in London about June, 1924. The subjects to be discussed will be verification of experiments undertaken before the war by the Russian scientist, Bakhmetieff, relating to the action of cold on living organisms; cryotherapy in the treatment of certain skin diseases; use of refrigeration in anatomy; biologic study of milk preservation by refrigeration; bacteriology of ice cream; biologic study of chilled and frozen foods; use of frozen eggs in food preparation; refrigeration by the circulation of defibrinated blood; refrigerating installations in hospitals and dwelling houses; operation and maintenance of refrigerating installations from the point of view of health and hygiene; handling of frozen produce; molds in cold stores, and the means of combating them; and molds in meat and other frozen produce. D'Arsonval proposes to contribute a report on the preservation of serums and vaccines by refrigeration. As will be seen, many of the subjects are of medical interest. The organizers of the congress desire to get in touch with members of the medical profession who would be willing to contribute papers on the uses of artificially produced cold with regard to medical research and practice. The secretary is Mr. John D. Farmer, Dartford Iron Works, Dartford, Kent, England.

The Mental Treatment Bill

As the result of a conference between administrative authorities, medical superintendents of mental hospitals and specialists, a bill has been read a second time in the House of Lords permitting, without certification, mental treatment in institutions. The bill was introduced by the Earl of Onslow, who pointed out that the present law was defective, as scientific knowledge as to treatment was not sufficiently advanced when it was passed. The importance of the subject was shown by the fact that there are now 120,000 certified lunatics costing $30,000,000 a year. To these are added 22,000 fresh cases every year, of whom 32 per cent. are discharged as recovered. Besides certified lunatics there are 150,000 feebleminded persons, and a portion of the population (which some have estimated as high as 10 per cent.) are dull and backward mentally. Lastly, there are the cases of neurasthenia and psychoneurosis. Much of this might be prevented by early treatment. As the law stands, it is very difficult to provide for treatment of incipient mental disease without certification, and there is a strong feeling against certification. At present, voluntary boarders can be received in private licensed houses but not in public institutions. The present bill is surrounded with every safeguard against misuse: 1. The institution in which the patient is received must be approved by the board of control (the body appointed by the government to supervise lunacy administration) and under frequent inspection by that body. 2. There must be a recommendation from two physicians. 3. The patient must be admitted only at his own request, unless he is incapable of volition. Then the recommendation of the two physicians must be countersigned by a magistrate or clergyman personally acquainted with the patient. The patient will be admitted for a maximum period of six months, which may be extended for the same period. If he has not recovered within a year, the ordinary provisions of the law as to lunacy can be applied, but at any time during the year he can leave the institution by giving forty-eight hours' notice, or he may

be discharged by the superintendent or the board of control. Patients may be admitted into either mental hospitals or general hospitals. The latter have the great advantage of keeping them from contact with the certified insane.

Regulations for the Sale of Condensed Milk

The ministry of health has issued regulations providing for a uniform method of labeling all tins containing condensed milk or condensed skimmed milk, whether sweetened or unsweetened, and for specifying the composition in terms of milk solids. All condensed milk must be labeled with one of four declarations:

Condensed full cream milk, unsweetened. This tin contains the equivalent of (*a*) pints of milk.
Condensed full cream milk, sweetened. This tin contains the equivalent of (*a*) pints of milk, with sugar added.
Condensed machine-skimmed milk (or condensed skimmed milk), unsweetened. Unfit for babies. This tin contains the equivalent of (*a*) pints of skimmed milk.
Condensed machine-skimmed milk (or condensed skimmed milk), sweetened. Unfit for babies. This tin contains the equivalent of (*a*) pints of skimmed milk, with sugar added.

The declaration must be printed in dark block type of prescribed size on a light ground with a surrounding line, and must bear no other printed matter. The label must also bear the name and address of the manufacturer or the dealer in the United Kingdom for whom the milk is manufactured. It is forbidden to place on the tin any comment, explanation or reference in regard to the statement of equivalence, or to the words "machine-skimmed," "skimmed" or "unfit for babies," or any instructions as to dilution unless they clearly specify that the resultant milk is not of equivalent composition to milk or skimmed milk, or unless the resultant fluid correspond in milk solids to milk of the standard set by the regulations. Whenever the word "milk" appears on a tin containing condensed skimmed milk, it must be qualified with the words "machine-skimmed" or "skimmed." The regulations prescribe these standards:

Description of Condensed Milk	Percentage of Milk Fat	Percentage of All Milk Solids, Including Fat
Full cream, unsweetened	9.0	31.0
Full cream, sweetened	9.0	31.0
Skimmed, unsweetened	...	20.0
Skimmed, sweetened	...	26.0

Humane Slaughtering: The Jewish Method

A movement is on foot for the enforcing of humane methods of slaughtering animals, and incidentally the Jewish method of slaughter has come under the denunciation of the reformers as anything but humane. The evidence is quoted of two eminent physiologists, the late Sir Michael Foster and Professor Starling, that cattle may remain conscious for a short time after the cutting of the carotid arteries. In a letter to the *Times*, Prof. Leonard Hill states that this view was based on a mistaken supposition that the vertebral arteries supplied the brain of these animals as they do in man, and that these arteries, shielded by the bone and not severed by the cut, might convey blood to the brain for a few seconds after the cutting of the carotids. But Professor Hill has pointed out, in a report which he made on methods of slaughter, that the vertebral arteries in cattle supply the muscles of the neck and not the brain. He holds that the evidence that stoppage of the carotid arteries causes loss of consciousness is overwhelming; and also that a big injury is not felt at the moment of infliction. The casting of the animal before the severing of the carotids has also been described as inhumane, but Professor Hill says that it is no more inhumane than the roping down before the application of the "humane killer."

Recent Advances in Medical Education in England

Sir George Newman, chief medical officer of the board of education, and also chief medical officer of the ministry of health, has addressed an important report to the minister of health on recent advances in medical education in England. He insists on the importance of the preliminary sciences, and says that, as the center of knowledge is forever shifting, we are in need of a closer association between physics and chemistry, on the one hand, and biology and medicine on the other. When the student enters the professional part of his course, physics and chemistry must be deeply integrated into physiology, pharmacology and pathology, and practically applied in his clinical studies. Anatomy is the foundation of the science and art of medicine, but it became a restricted subject neither biologic in setting, nor physiologic in purpose. The student was overburdened with detail and could pass examinations only by cramming. The anatomy was that of the dead, not the living, body. The subject should be taught from the point of view of its applications. Lecturing on physiology has been overdone, but now has been much reduced, and the student needs less if previously well grounded in biology, physics and chemistry. Physiology is now being taught more adequately, and the student is learning to think of disease as disordered physiology. In some schools, he is being taught in his second year to study cases in the hospital as illustrative of physiologic principles. Professor Dixon of Cambridge says: "To state that the future of medicine lies in pharmacology may sound fanciful, but the most hopeful of all signs of the progress of medicine is the progress of the science of treatment." In this country, synthetic chemistry has not been widely developed, and we have relied on the continent for new anesthetics, hypnotics, vasodilators, antipyretics, diuretics and synthetic purgatives. As a remedy, there is urged the establishment of an institute of experimental therapeutics, which should comprise all branches of pharmacology—chemical, experimental and clinical. The British method of the clinical study of medicine and surgery is described in the new regulations as consisting of (*a*) clerks and dressers, (*b*) bedside teaching, (*c*) clinical lecture demonstrations, (*d*) clinical teaching in the outpatient department, (*e*) clinical work in the special hospitals and (*f*) junior house appointments. Sir George Newman holds that this system has made English medical education the most practical in the world. Much importance is attached to the recent introduction into our hospitals of university clinics (clinical units). On the question of whole-time staffing, the view is expressed that the head of the clinic should be permitted to undertake such outside practice as would not interfere with his official duties. For the rest of the staff, the object should be not only the setting apart of one or more whole-time clinicians for educational work, but the creating of a team of clinicians who are also laboratory workers under the control of a professor, so that the education of the student may be conducted on lines that will produce the best treatment for patients and advance knowledge. In conclusion, four requirements are emphasized: 1. Integration is needed in the medical course to avoid overburdening the student with details, so that he may "reflect, comprehend and grow." 2. Clinical study must remain the sheet anchor of education; instruments and apparatus should be only supplementary to observations by the organs of sense. 3. The load of examinations must be lightened; the present system remains a shackle on education. 4. Postgraduate courses are necessary to keep the practitioner informed of new medical knowledge and its applications. In London, a central scheme is necessary for the graduates of the twelve schools, and for physicians from the colonies and foreign countries.

PARIS

(From Our Regular Correspondent)

May 11, 1923.

Laying the Corner Stone of the "University City"

The corner stone of the "University City" was laid, May 9, in the presence of M. Léon Bérard, minister of public instruction; M. Paul Strauss, minister of public health; Prof. Paul Appell, rector of the University of Paris; the deans of all the faculties of the University of Paris; Dr. de Lobinière-Harwood, dean of the Faculty of Medicine of Montreal; Dr. Rousseau, dean of the Faculty of Medicine of Quebec, and many university professors. The men and the women students were represented by the respective presidents of the general associations. A student, M. Kauck, read an account of the origin of the University City, which had been engrossed on parchment and which was afterward enclosed in the corner stone of the edifice, together with a number of coins of this year's mintage, to perpetuate the memory of the establishment.

This is the first of a group of buildings intended to provide healthy and economical lodgings for 350 men and women students of limited means. They are to be erected on the leveled fortifications of Paris, at the southern extremity of the Latin Quarter, on a plot of ground deeded by the city to the University of Paris. The funds for the buildings themselves were secured through the liberality of M. Emile Deutsch de la Meurthe, who made for this purpose a gift of 10 million francs. The hope is entertained that the foundation established by M. Deutsch de la Meurthe will be followed by others, all destined to provide for the needs of students and due to the initiative of generous minded persons, whether they be French or foreigners, who are friends of France. This group of buildings will form the University City so called, and will constitute a suburb for students, located between the Montsouris Park and another park to be specially laid out for them through the solicitude of the city of Paris. As is impressively stated in the parchment roll deposited in the corner stone, "Thus will have been established a new focus of French and human culture, where three thousand students, coming from all countries of the world, provided with books, sunlight and fresh air, brought together in affectionate emulation and reflecting honor on the oldest university of Europe [founded in the second half of the twelfth century], will work together in concert to bring about a harmonious development of their minds and bodies, which will redound to the progress of science and to an understanding among the nations they represent."

Progress of Physical Education in France

The law of Dec. 21, 1922, assigned to the budget of public instruction an appropriation of 700,000 francs to provide for the expense of physical education in the school curriculum. A considerable sum was appropriated for the organization in the several departments of short courses in physical education intended for the training of personnel to give instruction in the primary public schools. To assure the carrying out of these measures, the minister of public instruction has issued an order the purpose of which is to prepare the teachers for the task that has been imposed on them by organizing short courses of intensive training for the men and women teachers already on duty, thus completing their preparation and giving them the necessary instruction to secure unity of method and action.

Respects Paid by Japanese Scholars to Pasteur

Count Matsuda, ambassador from Japan, accompanied by the high officials of the Japanese embassy, came recently to deposit two beautiful vases, representing Japanese art, in the crypt of the tomb of Pasteur, at the Institut de la rue Dutot. The ambassador has also turned over to Dr. Roux, director of the Pasteur Institute, the sum of 108,000 francs, collected by the scholars and scientists of Japan. In a short presentation address, Count Matsuda gave expression to the admiration and gratitude felt by his compatriots for the work of Pasteur. Dr. Roux, in turn, expressed his thanks in the name of his colleagues and emphasized the fact that Japan was one of the nations which had understood how best to apply the discoveries of Pasteur, not only for the protection of public health but also for the progress of their industries, especially the raising of silkworms, which is of such great economic importance for the country. He also referred to the valuable contributions to science made by Japanese scientists, several of whom had worked in the laboratories of the Pasteur Institute at Paris.

The League Against Cancer

The Franco-Anglo-American League against cancer has just held its annual general assembly under the chairmanship of M. Paul Strauss, minister of public health, assisted by M. Justin Godart, president of the league; the duchess of Uzès; Professors Hartman and J. L. Faure, and others. Minister Strauss delivered the first address, in which he emphasized that in this combat which we must wage with energy against cancer, the ravages of which are on the increase, there is room for various types of activity, but that it was important that all good endeavors be directed by one idea and a common program. M. Justin Godart announced the creation in Spain of an organization similar to the Franco-Anglo-American League, and expressed his satisfaction at seeing evidence of an awakened internationl interest in the movement. The final address of the conference was given by Professor J. L. Faure, who spoke on the surgical treatment of cancer.

BELGIUM

(From Our Regular Correspondent)

May 3, 1923.

Reorganization of Public Health Service on the Congo

With a view to securing a larger number of physicians for the Congo colony, the minister for the colonies has recently completely reorganized the public health service on the Congo. In accordance with the new royal decree, the direction of the public health service has been placed in the hands of the governor general, and in the several provinces the responsibility rests on the vice governor generals. The personnel of the public health service comprises the physicians, pharmacists and the native and European assistant physicians. The physicians are divided into three classes: the directing physicians, public health physicians and laboratory physicians, some of the physicians having a fixed residence, others being itinerant. As the essential condition of appointment, candidates must have successfully passed the final examination of the Ecole de médecine tropicale or must hold a diploma of a school of tropical medicine. In order to be in line for advancement, a physician must give evidence of special knowledge in matters pertaining to public health in the tropics. Medical assistants are, in part, Europeans and, in part, native physicians. In order to secure an appointment, a native must be the holder of a diploma issued by a medical school in the colony.

Industrial Diseases

I have on several occasions called attention to the activities of public health and labor organizations in the campaign against industrial diseases, which, up to the present time, have not received the same official recognition as industrial accidents.

Before the Society of Legal Medicine of Belgium, Dr. de Laet has developed a plan that he recommends for the study of industrial diseases and for the organization of the campaign to combat them: (1) the institution of observations on the ground, which may be entrusted to the factory physician; (2) the creation of institutions for thorough examinations, treatment and the centralization of studies, which will give rise to the clinic of industrial diseases, and (3) the establishment by legal enactment of the factory physician and the clinic for industrial diseases, the provision of modes of indemnification, and a division of the burden, which would result in legislation protecting workmen against industrial diseases.

An advance draft of a law, published in 1920, provides for the indemnification of the workman who is the victim of a recognized industrial disease, according to the degree to which he is temporarily or permanently incapacitated from work. It regulates the details of payment, and states the conditions that give rise to a claim. It provides for the creation, under the name of Caisse d'assurance contre les risques de maladie professionelle, of a fund for the purpose of providing for the payment of allocations due in connection with cases of recognized industrial disease. The fund, according to the draft, will derive its resources in part from the state and in part from the heads of the establishments in whose industries recognized industrial diseases are wont to arise.

Unfortunately, in these times of financial stress this proposed law runs the risk of being deferred indefinitely. For this reason, Dr. de Laet, in face of the danger which is becoming more and more threatening, has a proposal that he thinks will effect a prompt solution of the problem. Since the workmen cannot hope, within the immediate future, to obtain any considerable aid from the public authorities, they might possibly do well to establish a mutual aid system. Their large unions have preferred to establish *cliniques de travail* (industrial clinics) themselves rather than wait for the authorities to create them. In the same manner, why cannot the *caisse d'assurance* (the insurance fund), provided for in the proposed law, derive its resources from the labor unions and the employers, together with a very moderate subvention from the state? Even though this solution were only temporary, it would have at least the great advantage of furnishing adequate care and compensation to sufferers from industrial diseases.

Belgium as a Radium Center

Since Belgium has become one of the foremost radium-producing countries, it was only natural that the Société médicale du radium should be formed. This society was founded for the purpose of supplying its members with radium in the most up-to-date form of applicators and in sufficient quantities so that it can be applied according to the actual indications.

Since the handling of radium requires special scientific training, with the view to contributing by mutual instruction to the avoidance of all mishaps that are liable to occur in the application of this new method of treatment, and, for the purpose of demonstrating what this new therapeutic weapon can accomplish, the society has organized a series of lectures, and it proposes also to collect and to publish from time to time the various articles written by its members. The first number of this publication, the *Annales de la société médicale belge,* has just appeared in excellent format, as put out by the Imprimerie médicale et scientifique.

The Treatment of Trypanosomiasis on the Congo

From previous accounts, it is well known that trypanosomiasis is the principal scourge with which the people living in the Belgian Congo region have to contend. This affection, which is not only of human but also of animal origin, plays a considerable part in the progress of colonization. The campaign undertaken against the disease, to which frequent reference has been made, continues to be carried on in a methodical manner and with increased success as experience grows. Speaking before the Société des sciences médicales at Brussels, Dr. Broden gave recently some interesting details in regard to this campaign on the Belgian Congo. It consists primarily in mechanical prophylaxis directed against the agent of transmission, *Glossina* and other hematophagous flies, and in chemical prophylaxis: sterilization of virus carriers, both man and animal.

Under present conditions, the fight against *Glossina* can be only indirect and strictly local. All efforts must be directed toward chemical prophylaxis: sterilization at one sitting is not possible as yet, but sterilization in several stages can be carried out.

Attempts at active vaccination have not as yet given practical results. However, in certain cases, a natural or acquired resistance to certain trypanosomes may be noted in certain animals and in some persons.

Pulmonary Collapse Therapy in Tuberculosis

Recent discussions which had their origin more especially in Germany, as the result of communications by Sauerbruch on the subject of extrapleural rib resection, have found an echo in Belgium, where M. Olbrecht has made a special study of "pulmonary collapse therapy." Comparing it with the pneumothorax method of Forlanini, he holds that it is indicated in (1) cases of tuberculosis sufficiently grave to justify the assumption that a cure will not be effected by the usual treatment, and (2) cases of unilateral tuberculosis with cavitation, with torpid lesions progressing slowly. Certain writers consider the caseation as a contraindication. One begins by performing a pneumothorax. If the pneumothorax does not bring about the desired compression, thoracoplasty is indicated; it is also indicated when, in pursuing a waiting policy, one has put off the institution of a pneumothorax or has neglected to maintain it. In such cases the pleura is adherent, and nothing short of thoracoplasty can effect a collapse of the lung. The same is true in case there are cavities and a purulent discharge following pneumothorax, for, in that case, the pleural wall of the cavity may ulcerate and a communication may be established between the cavity and the empyema. The results of this method are still characterized by uncertainty, and it would be well to note carefully that by means of this intervention one may secure approximately 30 per cent. of successful results, 30 per cent. of ameliorations, 25 per cent. of negative results and 25 per cent. of aggravations.

Nonmedical Productions of Physicians

The Cercle médical of Antwerp, of which Dr. Tricot Royer is president, took an original step recently, on the occasion of the conference of the Société internationale d'histoire et de médecine, when it collected an exhibit of works of art and of literary and musical productions of which Belgian physicians were the authors. All these works are exhibited in the salons of the Maison des Médecins at Antwerp.

The Red Cross Society of Belgium

The activities of the Red Cross Society have not died down since the war, but, on the contrary, through the energy of its president, Dr. Depage, it is multiplying its efforts in all the branches of public health work and hospital organization. As evidence of its vitality, it has just begun the publication of a new review which is to serve as a connecting link between the various local and provincial branches

throughout the country. This monthly review bears the title *La Croix-Rouge de Belgique*. Various interesting articles show the different branches of its activity. The program of the society in time of peace is discussed by Dr. Depage himself. The Union internationale de secours aux enfants gives an account of the efforts put forth in Russia in combating the famine. The bulletin also enumerates the different services of the Red Cross that are functioning at the present time: (1) the excellently equipped surgical clinic at Brussels; (2) the radium institute reserved exclusively for the indigent and for persons of moderate means who would be unable to stand the expense of radium treatment; (3) a manufacturing establishment for prosthetic apparatus for the benefit of disabled soldiers and those who meet with industrial accidents; (4) a *laiterie* (dairy) containing a complete equipment for the sterilization of milk by steam; (5) training courses for nurses and ambulance assistants; (6) an auto-ambulance service for the transportation of patients and wounded, and finally (7) a lingerie shop where refugee Russian women are given employment.

The White Lead Menace

The conference organized by the Belgian Red Cross Society with a view to supporting the universal adoption of the resolutions proposed by the third international conference of labor at Geneva for the protection of workmen against the grave dangers presented by the use of white lead has just adjourned. The conference was honored by the presence of the king, the minister from Switzerland and several other ministers. All the speakers expressed themselves energetically, and demonstrated the absolute necessity of prohibiting the industrial use of this poison.

BERLIN

(From Our Regular Correspondent)

April 28, 1923.

German Surgical Congress

The Deutsche Gesellschaft für Chirurgie held its forty-seventh annual meeting in April. In spite of the very unfavorable economic conditions, the attendance at the congress was good—almost up to normal. The speakers on anatomicopathologic problems were Professor Aschoff, Freiburg; Professor Enderlen, Heidelberg, and Professor Hotz, Basel. According to Aschoff, cholelithiasis is an affection of the extrahepatic biliary passages—mainly of the gallbladder. To understand the pathogenesis, a knowledge of the anatomy and the function of the gallbladder is essential. We must distinguish carefully between the gallbladder proper, whose function it is to inspissate the bile by resorption, and the conduction system, which begins at the neck of the gallbladder. The gallbladder, as compared with the bile ducts, is characterized by its abundance of muscle tissue and its lack of elastic tissue. The cystic duct, which leads from the neck of the gallbladder, may be divided into a proximal narrow portion and a distal wider portion. Similarly, the common bile duct, formed from a union of the hepatic duct and the cystic duct, may be divided into an antrum and the sphincter proper. The passage of the bile from the gallbladder into the cystic duct takes place solely through reduction of pressure. The influence of the nerves on the biliary system must be taken into account. Stimulation of the vagus nerve causes, at first, an increased flow of bile; further excitation of the vagus causes bile stasis. Stimulation of the sympathetic system lessens the tonus of the gallbladder, and causes, therefore, no flow of bile. The essential cause of bile stasis doubtless lies in congenital anomalies of the biliary system, whereas the conditions that are usually incriminated as the cause are only chance causes. Pseudocholelithiasis is without doubt more frequent than true gallstone disease. In the absence of the Stockholm pathologist Berg, Aschoff presented Berg's theory in regard to the purely dysfunctional origin of cholelithiasis, which he himself, however, refuses to accept, inclining rather to Naunyn's theory of the infectious nature of the disease. Enderlen, professor of surgery at the University of Heidelberg, discussed the indications and the technic of the operation for gallstone, and Professor Hotz of Basel recounted the results of this operation. According to the principles that both speakers have agreed upon, the internal treatment of cholelithiasis, extending over a long period, is ordinarily ill advised. For patients in their younger years, an early operation (cholecystectomy) is indicated. An operation should be resorted to after the first attacks. In patients of more advanced years, an operation is indicated only after conservative treatment has failed. An early operation for younger patients is based partly on the fact that a patient has more resistance at the beginning of the disease, and also on the circumstance that the disease process is then confined to the gallbladder, without additional complications. The course of healing takes place under favorable conditions, and the results are correspondingly good. The mortality from the operation is only 4 per cent. As far as possible, the operation should be performed in the interval between attacks; that is, after an acute attack has subsided, unless earlier urgent indications for intervention are noted. During the interval, the mortality is lower and there is a better assurance of complete removal of the gallbladder and the stones. Hydrops of the gallbladder, chronic cholecystitis and gallbladder bile stasis should always be treated surgically, as the apparently benign picture may change suddenly. The loss of the diseased gallbladder is, moreover, not very keenly felt. On the other hand, in the case of patients in advanced years, especially in men, surgical intervention should be based on some urgent indication. After internal treatment has been continued for years, the mortality in cholelithiasis that has begun to affect the deeper tissues is two or three times as great as at the start. As to the operative methods, the speakers held that cystendesis is only rarely indicated; for example, for the occasional removal of lodged stones. Cystotomy is, in general, insufficient on account of the fistulas and the frequency of recurrences, which make a difficult radical operation necessary later. It is, therefore, to be regarded generally as an emergency operation, but, in the presence of difficult anatomic conditions and in the case of weakened patients, it may sometimes be indicated, as it saves some patients from the baneful effects of a forced cystectomy. Cystectomy, however, is sometimes indicated. In cholecystitis and cholelithiasis, the earlier cystectomy can be carried out, the better the results. Choledochotomy is indicated if the diagnosis "stone occlusion of the common bile duct" is made, or if at cystectomy concretions are demonstrated in the choledochus. One should never wait longer than three weeks for the spontaneous passage of the stones. The common bile duct should be opened, if possible, in the supraduodenal portion; only when access to this part is difficult may entrance be gained through the cystic duct. Transduodenal choledochotomy is advisable only in the case of incarcerated stones in the region of the papilla. Unfortunately, the mortality is rather high. Drainage of the hepatic duct is no longer considered as important as it was. Under satisfactory conditions, primary closure of the bile ducts may be used to advantage; but if the walls of the bile ducts are weak and unsound and an ichorous, crumbly mass is found therein, drainage may still be needed. Choledochoduodenostomy, though frequently recommended, is superfluous if the common bile duct is patent. In case of stenoses in the lower portions and at the papilla, choledocho-

duodenostomy may be resorted to. However, it does not protect the patient against recurrences any more than does drainage of the hepatic duct. As Enderlen and Hotz view the matter, the bad results or failures of gallbladder surgery are caused by (1) disturbances that are referred to under the general term "recurrence"; as such we may designate stone recurrence and repeated attacks of cholangeitis; complications of the gastro-intestinal tract and carcinoma are the results of a metastatic stone affection; (2) peritonitis as the most frequently fatal complication; to avert this, it is advisable, as already stated, to perform the operation during the interval between attacks; subserous cystectomy; cystotomy in place of cystectomy in case of difficult removal of the gallbladder, and ample evacuation of the secretion or tamponing in cases in which infection is suspected, and (3) postoperative insufficiency of the vital organs in an organism that is impaired by a long continued infection or through old age.

Professor Küttner of Breslau gave his observations on a peculiar type of disease, hepatargia, or hepatic autointoxication. Prominent symptoms are somnolence and high temperature, occasionally the occurrence of anuria. The manifestations seldom appear as a postoperative clinical picture, provided care is taken. The ingestion of an ample fluid intake and a 3 per cent. infusion of glycogen have been shown to have therapeutic value.

Several speakers recommended anastomosis of the bile ducts with the duodenum, in order to prevent recurrences of cholangeitis. Walzel of Vienna recommends, for the location of stone in the common bile duct, primary suturation of the choledochus with dilation of the papilla. Kirschner of Königsberg emphasized that in every case of operation for gallstone it was important not merely to palpate the common bile duct but to pass the sound through it as well. Floercken reported that he had examined subsequently fourteen patients on whom an operation for stenosis of the duodenal orifice had been performed and had found most of them capable of earning a living.

Medical Films

At the recent congress of the Deutsche Röntgengesellschaft, held in Munich, Groedel of Frankfort-on-the-Main exhibited a film in which the contraction of the human heart was demonstrated in excellent fashion with roentgen rays. Another film that attracted considerable attention was shown at the German surgical congress by which Fedor Krause of Berlin demonstrated an operation on the cerebrum. The operation was performed under local anesthesia on a man, aged 39, suffering from epilepsy, and resulted in complete recovery. The film was taken in the Institute for Medical Cinematography, which is located in the Berlin Charité Hospital and is equipped according to the method introduced by the Berlin surgeon Rothe. In the film could be seen the details of the operation by which the surgeon removed with the chisel that portion of the skull over the left central region of the brain. Then the dura mater was incised, faradic stimulation was applied to the brain, whereby the seat of the affection was exactly determined. The diseased portions were then excised. After the operation, the patient's right arm, right leg and right side of the face were paralyzed, but after four weeks all disturbances had subsided. The film that was taken four months after the operation showed that the general condition of the patient was excellent. As general anesthesia was not employed for the intervention, the patient could note and report his observations during the operation. According to his statement, he felt no pain during the operation on the brain; all he noticed was that something was the matter with his fingers—that they moved without any voluntary action on his part.

Marriages

CHARLES YOUNG BIDGOOD, Baltimore, to Miss Mary Taylor Carrington, of Danville, Va., April 21.

WILLIAM M. JERMAIN, Milwaukee, to Miss Catherine Schmitt of Fox Point, Wis., April 22.

HOWARD A. LA MOURE to Miss Josephine Mary Fortier, both of Pueblo, Colo., recently.

ROBERT S. HARWOOD, Oak Park, Ill., to Miss Lillian Feurlicht of Chicago, May 23.

LESTER W. MCDEVITT to Miss Doris Tietig, both of Cincinnati, May 17.

Deaths

Richard Hall Johnston, Wilson, N. C.; University of Maryland School of Medicine, Baltimore, 1894; formerly clinical professor of laryngology at his alma mater; member of the Medical Society of the State of North Carolina, and the Medical and Chirurgical Faculty of Maryland; at one time on the staffs of the University of Maryland, St. Joseph's, South Baltimore Eye, Ear, Nose and Throat, Children's, and James Kernan hospitals, Baltimore, and Havre de Grace Hospital, Havre de Grace; aged 52; died, May 13, of chronic nephritis, at a local hospital.

Sidney Johnston Meyers ⊕ Louisville, Ky.; Kentucky School of Medicine, Louisville, 1898; professor of medicine and clinical medicine, University of Louisville Medical Department; veteran of the Spanish-American War; served during the World War as lieutenant-colonel, M. C., U. S. Army, in France; on the staffs of the Louisville City, St. Anthony's and Jewish hospitals, and Norton Infirmary; aged 50; died, May 28, at St. Joseph's Infirmary, following an operation.

Frederick William Smith ⊕ New York; Syracuse University College of Medicine, Syracuse, 1903; member of the American Urological Association; on the staffs of the New York, New York City and St. Bartholomew's hospitals, New York, Northern Westchester Hospital, Mount Kisco, and the New Jersey State Hospital, Trenton; aged 46; died suddenly, May 24, at Sulphur Springs, W. Va., of pneumonia.

George Vincent Voorhees, Royal Oak, Mich.; Bellevue Hospital Medical College, New York, 1870; formerly vice president of the Michigan State Medical Society, and a member of the judicial council of the American Medical Association, 1892-1895; at one time corresponding member of the Detroit Medical and Library Association; aged 77; died, May 12.

William Harris Cook, Los Angeles; Rush Medical College, Chicago, 1876; served in the Philippine Islands during the Spanish-American War and later as deputy health officer; established boards of health throughout the provinces; formerly surgeon to the National Home for Disabled Volunteer Soldiers, Sawtelle; aged 68; died, May 9.

Joseph Smith Pigall ⊕ Chicago; Rush Medical College, Chicago, 1891; Jefferson Medical College of Philadelphia, 1892; formerly professor of internal medicine, Illinois Post-Graduate Medical School, Chicago; for fifteen years on the staff of the West Side Hospital; aged 54; died, May 30, of cerebral thrombosis and arteriosclerosis.

Rufus S. Rice, Rogers, Ark.; St. Louis College of Physicians and Surgeons, St. Louis, 1901; member and at one time vice president of the Arkansas Medical Society; past president of the Benton County Medical Society; for many years served as local health officer; aged 60; died, March 21, of uremia and chronic nephritis.

James Alfred Rawley ⊕ Brazil, Ind.; Illinois Medical College, Chicago, 1904; served in the M. C., U. S. Army, during the World War; member of the school board; aged 53; proprietor of the Rawley Hospital, where he died, May 17, of injuries received when struck by a train.

William Henry Coleman, Louisville, Ky.; University of Louisville Medical Department, 1896; member of the Kentucky State Medical Association; formerly adjunct professor and lecturer of materia medica at his alma mater; aged 53; died, May 17, of cerebral hemorrhage.

Arthur Hazelwood, Plainwell, Mich.; St. Louis Medical College, St. Louis, 1866; Civil War veteran; for eighteen years member of the board of health; formerly on the staff of the Butterworth Hospital, Grand Rapids; aged 84; died, May 22, of senility.

William P. Whery, Fort Wayne, Ind.; L.R.C.P.S., Ireland, 1860; formerly emeritus professor of hygiene, state medicine, and gynecology at the Fort Wayne College of Medicine; aged 83; died, May 13, at the Hope Methodist Hospital, of senility.

James Samuel McClellan ⊕ Bellaire, Ohio; Medical College of Ohio, Cincinnati, 1880; for twenty years served as secretary of the Belmont County Medical Society; aged 67; died, May 16, at the City Hospital, of chronic nephritis.

Michael Joseph Ready, Washington, D. C.; Georgetown University School of Medicine, Washington, 1905; formerly on the staff of the Georgetown University Hospital; aged 44; died, May 19, following a long illness.

Alfred Poirier ⊕ Woonsocket, R. I.; Montreal School of Medicine and Surgery, Montreal, Que., Canada, 1898; formerly on the staff of the Woonsocket Hospital; aged 52; died, May 13, at St. Gabriel, Canada.

Louis Weinstock, Brooklyn; University and Bellevue Hospital Medical College, New York, 1920; aged 25; died, at the Coney Island Hospital, May 23, of a skull fracture, received when trampled by a horse.

Arthur B. Ancker ⊕ St. Paul; Medical College of Ohio, Cincinnati, 1882; for forty years served as superintendent of the City and County Hospital, where he died, May 15, of heart disease, aged 72.

James Roane ⊕ Yankton, S. D.; Georgetown University School of Medicine, Washington, D. C., 1882; city health officer; aged 63; was found dead in his office, May 17, of heart disease.

John Adam Gault, Lancaster, Wis.; Rush Medical College, Chicago, 1898; member of the State Medical Society of Wisconsin; aged 60; died, May 15, of cerebral hemorrhage, at Milwaukee.

Robert Warren Colquite Green, College Park, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1884; aged 72; died, March 20, of chronic nephritis.

Joseph De Stefano, Chicago; Rush Medical College, Chicago, 1889; aged 58; died, May 31, from the effects of carbolic acid, presumably self-administered.

Benjamin Dobson Rupp, Wahoo, Neb.; Bellevue Hospital Medical College, New York, 1881; also a druggist; aged 64; died, May 18, of cerebral hemorrhage.

A. A. Eddy, Coalcreek, Colo.; Chicago Medical College, Chicago, 1880; aged 80; died, May 13, at a hospital in Canon City, of hemorrhage of the stomach.

Laban Lindley, Paoli, Ind.; Detroit (Mich.) Medical College, 1870; Civil War veteran; also a druggist; aged 77; died, May 5, of heart disease.

Frank Jeter, Indianapolis; Eclectic College of Physicians and Surgeons, Indianapolis, 1891; aged 56; died suddenly, May 20, of heart disease.

R. B. Dodson, Cherry Valley, Ark. (licensed, Arkansas, 1903); aged 67; died, May 19, of heart disease, at St. Joseph's Hospital, Memphis, Tenn.

George Russell Clarke, Atlantic City, N. J.; Temple University Department of Medicine, Philadelphia, 1921; aged 34; died, April 23.

Neva Grosch Mott, Rawlins, Wyo.; Loyola University School of Medicine, Chicago, 1918; aged 30; was shot and killed, May 13.

Albert P. Mitchell ⊕ Bolivar, Mo.; Missouri Medical College, St. Louis, 1884; aged 62; died, May 16, at a hospital in Springfield.

Eli Snow Hannaford, Readfield, Me.; Medical School of Maine, Portland, 1869; aged 75; died, May 15, in Springfield, Mass.

Philip H. Leibrock, Mascoutah, Ill.; St. Louis Medical College, St. Louis, 1883; aged 63; died, May 13, of heart disease.

Edmund P. Banning, Dayton, Ohio; Homeopathic Hospital College, Cleveland, 1892; aged 78; died, May 18.

Ulysses Hutson, Christopher, Ill.; American Medical College, St. Louis, 1878; aged 75; died, May 13.

John W. Huffaker, Denver; Pulte Medical College, Cincinnati, 1898; aged 71; died, May 15.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

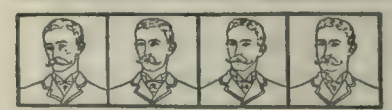
MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Woods V. Tabules.—A number of boxes of "Woods V. Tabules" were shipped by Edward J. Woods of New York City to Louisiana in March, 1919. Many physicians will remember Edward J. Woods as the quack who exploited an alleged cure for alcoholism and another alleged cure for the tobacco habit, both sold on the mail-order plan. Both of these frauds were exposed in THE JOURNAL in 1912 and in 1921 the "tobacco habit cure" fraud was denied the use of the United States mails. Even as long ago as 1912 Woods also had a line of nostrums for rheumatism, catarrh and asthma and a "cure" for blushing, some complexion wafers, wrinkle removers and pile remedies. The government seized a quantity of "Woods V. Tabules" on the ground that they were misbranded. Analysis by the federal chemists showed that the tablets contained zinc phosphid, strychnin and plant extractives, including a laxative drug. The claims made for the tablets were those common to the "weak men" nostrums. For example:

Wonderful Strengthener

Woods' Vigor Tabules



"WORTH THEIR WEIGHT IN GOLD"

See What a Box of Woods' Vigor Tabules May Do!

There are mighty few men in this hustling, progressive age who are not sometimes strained or even overstrained, mentally or physically. This may come through study, business details, worry, "burning the candle at both ends," excitement, bereavement, illness, tobacco, alcohol, coffee, tea, coca cola, too many social

"When there is inability to think clearly . . . use Woods V. Tabules. For nervous debility . . . lack of enthusiasm . . . inability to look others in the eyes, feeling of being conspired against or followed and hounded by enemies, enervation of mind or body, inability to conduct oneself cleverly enough to gain and maintain the affection of one of the opposite sex . . . for these or any other mental or physical condition where real stimulation and energy are required—try Woods V. Tabules."

"An effective aphrodisiac and general stimulant."

These and similar claims were declared false and fraudulent and in May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10990; issued Jan. 13, 1923.*]

Lukosine.—The National Drug Company of New York City shipped in May, 1921, a quantity of "Lukosine" which government officials declared misbranded. Analysis of a sample of the article by the Bureau of Chemistry showed that it consisted of a powder containing approximately 80 per cent. of boric acid and small proportions of zinc sulphate, alum, and a salicylate, and with traces of alkaloid, phenol, thymol and menthol, the entire material colored pink. It was labeled as a remedy for gonorrhea, leucorrhea, etc. These claims the government declared were false and fraudulent since the article contained no ingredient or combination of ingredients capable of producing such an effect. In Decem-

ber, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed. —[*Notice of Judgment No. 10972; issued Jan. 13, 1923.*]

Eckman's Alterative.—In August, 1922, the United States attorney for the Northern District of Illinois filed a libel for the seizure and condemnation of 150 dozen large-sized bottles and 120 dozen small-sized bottles of "Eckman's Alterative" that had been shipped in April by the Burrows-Little-White Co., of Philadelphia. The government chemists reported that analysis of "Eckman's Alterative" showed that it consisted essentially of 94.4 per cent. water, flavored with clove oil, 3.3 per cent. of calcium chlorid and 2.3 per cent. of plant extracts. The product was falsely and fraudulently labeled so as to create in the minds of the purchasers the belief that it was an effective remedy for bronchial asthma, catarrhal bronchitis and pulmonary troubles, stubborn coughs and colds, etc., whereas "in truth and in fact it contained no ingredients or combination of ingredients capable of producing the effects claimed." In October, 1922, the Burrows-Little-White Co. admitted the allegation of the libel and judgment of condemnation and forfeiture was entered. The court then ordered that the product be released on the payment of the costs and the execution of a $1,000 bond requiring the product to be relabeled under the supervision and to the satisfaction of the Department of Agriculture.—[*Notice of Judgment No. 11049; issued January, 1923.*]

"Eckman's Alterative" may be remembered as a fraudulent "consumption cure" that was exposed in THE JOURNAL, April 27, 1912. It may also be remembered as the nostrum whose exploiters attacked the constitutionality of the federal Food and Drugs Act after they had been found guilty of making false and fraudulent claims. The Eckman concern declared that they wanted "to call in question the power of Congress to prevent a person from making statements or claims concerning the virtue of drugs, whether modest or extravagant" and they expressed the opinion that "an owner, when advertising his drugs, has a right to exploit them and advance opinions concerning the curative properties thereof, notwithstanding the fact that such opinions may be objected to by others, and that he may make claims . . . which to some may appear unreasonable. . . ." The Eckman concern carried its contention up to the Supreme Court of the United States which august body made short shrift of the pernicious doctrine put forward by the "consumption cure" outfit.

Gombault's Caustic Balsam.—The Lawrence-Williams Co., Cleveland, Ohio, shipped in March, 1919, a quantity of "Gombault's Caustic Balsam" which was misbranded. The government chemists reported that analysis showed the product to be a mixture of a fatty oil with approximately 20 per cent. by volume of oil of turpentine. It was falsely and fraudulently represented as an effective treatment, remedy and cure for diphtheria, cancer, corns and bunions in humans and for spavin, founder, broken wind and various other ailments of horses. In December, 1922, the defendant entered a plea of *nolo contendere* and was fined $100 and costs.—[*Notice of Judgment No. 11182; issued April 20, 1923.*]

McGraw's Oil of Life.—A quantity of "McGraw's Oil of Life," shipped by the McGraw Remedy Co., of Little Rock, Ark., in February, 1922, was declared misbranded. The federal chemists reported that analysis showed the product to consist approximately of 95 per cent. kerosene ("coal-oil") and small proportions of turpentine oil, tar oil and camphor, the mixture being colored. The product was falsely and fraudulently advertised as a remedy for kidney and bladder disease, diphtheria, piles, headache, colic, asthma and a number of other conditions. In June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11059; issued Feb. 21, 1923.*]

Vital Sparks.—In April, 1920, and May and July, 1921, the Hollander-Koshland Co. of Baltimore, Md., shipped a quantity of "Vital Sparks" which were misbranded. The Bureau of Chemistry reported that analysis showed the preparation to consist of gelatin capsules, each containing a fatty oil, colored red, and a sugar-coated pill of zinc phosphid, damiana and strychnin. Vital Sparks were falsely and fraudulently advertised as a powerful nerve stimulant of value in producing normal functioning of the sexual organs. In May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed. —[*Notice of Judgment No. 11183; issued April 20, 1923.*]

Mydyl Antiseptic Wafers.—Charles S. Ruckstuhl, St. Louis, Mo., shipped in January, 1922, a quantity of "Mydyl Antiseptic Wafers" which were declared misbranded. The Bureau of Chemistry analyzed the sample and reported that the wafers were composed of borax and starch. Claims made on the trade package were:

". . . of great value in the treatment of Vaginitis, Urethritis, Menorrhagia, Endometritis, Parametritis, Cervicitis and Gonorrhea."

These and similar claims were declared false and fraudulent and in November, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11105; issued March, 1923.*]

Syrup Leptinol.—The Balsamea Co., of San Francisco, shipped in July, 1920, from California to Missouri a quantity of "Syrup Leptinol" which the federal authorities declared misbranded. When analyzed by the Bureau of Chemistry the product was found to consist of *Leptotaenia dissecta* (a plant belonging to the parsnip family), sugar,



glycerin, alcohol and water. The nostrum was labeled in part:

"Indicated In Epidemic Influenza . . . Bronchial Asthma, Whooping Cough;"

"Indicated in Pulmonary Tuberculosis, Influenza, Pneumonia, Bronchial Asthma . . . Whooping Cough, Laryngitis."

These claims were declared false and fraudulent since the product contained no ingredient or combination of ingredients capable of producing the effects claimed. In January, 1923, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11193; issued April 20, 1923.*]

Readers of THE JOURNAL will remember that "Syrup Leptinol" was the subject of a report of the Council on Pharmacy and Chemistry that appeared in this department, June 5, 1920—nearly three years before the publication of the government's report.

Sangvin.—Dr. M. Spiegel & Sons, Albany, N. Y., shipped in January and June, 1922, a quantity of "Sangvin" which was misbranded. Analysis of a sample of the article by the Bureau of Chemistry showed that Sangvin was composed essentially of plant drugs including a laxative drug, sugar, alcohol, glycerin and water. The claims made for Sangvin were many and various and falsehoods regarding its alleged virtues ranged from the vicious to the picturesque. Sangvin was said to purify the blood, strenghten the nerves, overcome lack of ambition and loss of appetite, cure eczema and pimples, overcome sleeplessness, la grippe, kidney disorders and carbuncles and, altogether, "makes you well and strong." Because of the false and fraudulent claims, judg-

ment of condemnation and forfeiture was entered in November, 1922, and the court ordered that the product be destroyed. —[*Notice of Judgment No. 11119; issued March, 1923.*]

Peterson's Ointment.—Peterson's Ointment Co., Inc., Buffalo, shipped in September, 1920, a quantity of "Peterson's Ointment" which was misbranded. Analysis by the Bureau of Chemistry showed this preparation to be a vaseline ointment containing zinc oxid, tannin, carbolic acid and camphor. It was falsely and fraudulently recommended as an effective remedy and cure for eczema, ringworm, broken breasts, scald heads, old sores, ingrowing nails, frostbites, catarrh, ulcers, croup, chilblains, poison ivy, piles and all scalp disease. In November, 1922, the defendant entered a plea of guilty and was fined $25.—[*Notice of Judgment No. 11214; issued May 8, 1923.*]

Correspondence

ETHYLENE AND ACETYLENE AS ANESTHETICS

To the Editor:—In the editorial on the use of ethylene and acetylene as general anesthetics (The Journal, May 12), mention is made of the early works of Lewin, Rosemann and others, who reported marked anesthetic effects obtained by using acetylene on animals. It would be well to point out, however, that these men were working with impure acetylene from crude carbid, which now is known to contain poisonous impurities, particularly phosphin and hydrogen sulphid. In fact, Chuard (*Bull. Soc. chim.* **17**:678, 1897) attributes its effectiveness as an insecticide in certain cases to the phosphin it contains. In view of these facts, we cannot look on the work of these men as a reliable test of acetylene as an anesthetic.

For some months, work has been carried on in the laboratories of physiologic chemistry at the Kansas State Agricultural College on the effects of purified acetylene as a general anesthetic for animals. This work was based on some observations I made about two years ago while preparing purified acetylene in order to study some of its derivatives. As our work here was begun before any announcements had been made of the work of Gauss, and as it bears out his statements in most respects, but differs in some, I wish to call attention to our results.

In the first place, we have used acetylene from calcium carbid only after it has been thoroughly purified by being passed through a sufficient train of wash flasks containing chromic acid and copper sulphate solutions to remove phosphin and hydrogen sulphid. Acetylene from the compressed cylinders also was used, in this case precautions being taken to remove acetone. The oxygen employed was the commercial product obtained by the Linde process.

Mixtures of oxygen acetylene were administered to the animals through a gas-mask arrangement. Our mixture contained from 10 to 25 per cent. of oxygen, the intention being to let the animal have the normal amount of oxygen. In this respect our mixture differs from that of Gauss, who uses 40 per cent. oxygen. In fact, we have positively shown that this high percentage of oxygen cannot be used effectively with some ordinary animals. Most animals quickly show sensitiveness when the percentage of oxygen goes much above 25. This is particularly true of the dog. Animals show varying degrees of insensibility during operations on them, depending on the percentage of oxygen administered with the acetylene. For a prolonged effect, a steady stream of the oxygen-acetylene mixture is administered. As noted by Gauss, breathing is more rapid than usual.

One unusual property of this anesthetic has been noted, and that is the rapid recovery when an animal has been removed to the air. Seldom does it take five minutes for an animal to gain its complete equilibrium, and more often in less than two minutes an animal will be up and around.

The most striking result, however, that we obtained was the entire absence of any after-effects, and it is on this point alone that acetylene most likely will gain ground. After months of work along this line, we have never yet found a case in which even prolonged exposure to the mixture has affected animals of any age. An animal recovers after being under four hours with the same ease as if it had been under four minutes, and with no signs of injurious effects that can be detected.

To those who desire to experiment in this field, it can be said that it seems promising. Some precautions are in order, however. In the first place, the acetylene must be purified. Should the demand call for it, manufacturers would place a pure acetylene on the market. It is hardly necessary to add that, in administering the acetylene mixture, the rate of flow of gas should be fast enough to sweep out the products of respiration. Also, that fire (either spark or flame) must be kept away from the mixture of oxygen and acetylene, as it is more dangerous than ether.

Charles N. Jordan, M.S., Manhattan, Kan.

IDIOSYNCRASY AND ANAPHYLAXIS

To the Editor:—Is idiosyncrasy the same as anaphylaxis? This question is asked often in consultation or by students in the lecture room. Can we interchange these words, using one when we mean the other whether we speak of food, drugs, animal emanations or hypersensitiveness in general? Richet writes:

> Since the effect of a given poison on different individuals cannot be the same, the real difference between individual susceptibility and true anaphylaxis cannot be strictly defined, but there are certain instances of exceptionally marked individual susceptibility or a state of increased sensitivity, which we have no right, as yet, to include in the term of anaphylaxis. Indeed, it is possible by physiologic methods to modify the reaction of an animal in such a way that immediately after the injection of a poison it reacts like an anaphylactized animal.

Dr. Robert A. Cooke writes (The Journal, Sept. 6, 1919, p. 759):

> Given a normal person, any drug exhibited in therapeutic doses manifests a certain normal action, a side action and, in larger amounts, a toxic action, both the normal and the toxic action being more or less definitely fixed, symptomatically, for all individuals of the same species. On the other hand, there are individuals within any species that manifest exaggerated normal and side action for many such reasons as alterations, in rate of absorption, excretion or destruction within the organism, or instability of the mechanism through which some drugs act. . . . These exaggerated normal and side actions and lessened action (or tolerance) should be included under the general heading "idiosyncrasy."

Concluding his article, Cooke insists that "idiosyncrasy" should be distinguished from the word "allergy."

Widal (*Presse méd.* **30**:189 [March 4] 1922; abstr., The Journal, April 22, 1922, p. 1235) also differentiates between anaphylaxis and idiosyncrasy. He describes a few cases, and one case in particular that he had under long observation in which a woman had paroxysmal itching, eruptions, urticaria, febrile periods, spasmodic coryza, hay-fever and asthma, which developed from exposure to pollen, chilling of the skin, ingestion of antipyrin or acetylsalicylic acid, or from an irritation of a polyp in the nose. The chilling of the skin on stepping out of a warm bath was enough to bring on the whole set of symptoms to which she was susceptible. These cases, Widal thinks, demonstrate and prove that the underlying cause of both anaphylaxis and idiosyncrasy is the instability of the colloid balance in the plasma; but he further remarks that while anaphylaxis may be incriminated for some of the manifestations, we must ascribe the others to idiosyncrasy.

It may be that anaphylaxis and idiosyncrasy can be present in the same individual but still, the phenomena which these

terms imply should be distinctly differentiated. The following may serve as an illustration: The physiologic effect of digitalis is to slow down the pulse by its action on the heart muscle, etc. All clinicians of wide experience have undoubtedly noticed that the total amount of digitalis required to produce its effect in some cases is much less than in others; let us say that, on an average, it may take from 2 to 4 drams (7.5 to 15 c.c.). If one encounters a subject whose pulse will slacken at the first dram of the digitalis administration; or if one encounters a reverse case in which the ingestion of 4 or even 6 drams (15 to 23 c.c.) will not bring the pulse down, other things being equal, we consider such types as having an idiosyncrasy toward digitalis, there being no anaphylaxis about it.

Similar differences are seen with belladonna, magnesium sulphate, strychnin and calomel. In general, we have the effect of each drug for every individual to a normal action, enhanced or exaggerated normal, a retarded normal and a toxic action. The quickened normal and the retarded normal physiologic effect when observed would best be expressed by the term idiosyncrasy, while an anaphylactic reaction is altogether an abnormal or a foreign action.

I would like to hear the opinion of our medical authorities on this subject. In the medical literature for the last few years the words anaphylaxis and idiosyncrasy, or allergy and idiosyncrasy have been used synonymously.

It should not be understood that we have no drug anaphylaxis or allergy. Anaphylactic reactions have been produced in animals with different drugs, such as the reports of Bruck with iodoform and antipyrin; of Naniloff with sodium bromid and quinin, and of others with iodids, copaiba and atropin. All the laboratory investigators have proved that a great variety of substances, not only protein, but also alkaloids, as mentioned above, are capable of producing anaphylactic phenomena.

ALEXANDER STERLING, M.D., Philadelphia.

METHOD OF STATING BLOOD SUGAR DETERMINATIONS

To the Editor:—I should like to suggest that an effort be made to change the method commonly used of expressing blood sugar as percentage values.

In discussion with several men, I find that the tendency has been to change into the form used for other blood chemical determinations, milligrams per hundred cubic centimeters. This would make the matter easier to write out and would make blood sugar conform with blood urea and other nitrogenous constituents of the blood.

SOLOMON STROUSE, M.D., Chicago.

"THE SIZE OF DROPS"

To the Editor:—In prescribing tincture of digitalis, a simple way of getting around the drop difficulty is to order a 30-minim vial so that each dose, if large, may be measured, or a day's dosage may be bottled in the vial by the patient, and divided as directed.

H. B. AITKENS, M.D., LeSueur Center, Minn.

State Boards of Health.—New Orleans having lost 8,000 victims by cholera in 1832 and in 1849-1850, out of a population of about 55,000, and anxious to maintain a quarantine, secured the enactment of a law in 1855 for the establishment of a state board of health. In 1869 a more comprehensive board was established in Massachusetts, followed in 1870 by California. Now nearly all the states have followed the example.—Kober: *Pub. Health Rep.* **38**:725 (April 6) 1923.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PREPARATION OF ANTIGEN

To the Editor:—I am anxious to know the method for preparing the antigen used in the precipitin test for syphilis. J. E. S., China.

ANSWER.—Beef or pig hearts are freed from fat, fiber and blood vessels, and passed several times through a meat grinder. The ground muscle is spread on a platter and dried at room temperature by being placed in front of a revolving fan. The dried material is broken up into small pieces and passed several times through a coffee grinder, or ground in a mortar until very fine. A given quantity of this material (about 50 gm.) is placed in a 500 c.c. Erlenmeyer flask, and sufficient ether is added to make a layer of about 1 inch above the dried muscle. Extraction is permitted for about twenty-four hours at icebox temperature, when the supernatant ether is poured off and replaced with fresh ether. This process is repeated several times, until the supernatant ether is water clear. The ether is then filtered off and the heart muscle dried at room temperature (by being spread on a paper) until free from the odor of ether. The ether is discarded. Twenty-five grams of dried material is placed in a 250 c.c. Erlenmeyer flask, and 125 c.c. of 95 per cent. alcohol is added. This is extracted nine days in icebox, and one day at room temperature. The alcohol is filtered off, and 25 c.c. is cholesterinized by the addition of 100 mg. of cholesterin. It is dissolved by being warmed in a water bath and shaken. The cholesterinized antigen is allowed to stand twenty-four hours before being used. The noncholesterinized antigen may be used at once.

The cholesterinized antigen is highly sensitive; the noncholesterinized one is less sensitive, particularly in treated cases.

IRRADIATION IN ACNE ROSACEA

To the Editor:—What is the present status of light or ray therapy in the treatment of acne rosacea? How effective is it and how best applied? M.D.

ANSWER.—One can get rid of the folliculitis of acne rosacea with roentgen rays, but not of the hyperemia. The agent is not nearly so useful in acne rosacea as it is in ordinary acne. Light therapy is of little or no use in acne rosacea, and roentgen rays are not to be particularly recommended in it. It is better treated by measures described in the textbooks for its treatment. If roentgen rays are used, small doses should be given at intervals of several days, depending on the dose, until one or two erythema doses have been given, the number depending on the time of exposure. For example: Using the MacKee and Remer measurement, a safe treatment would be by giving ¼ skin unit once in five days or a week until 2 units are given; or ½ skin unit once in two weeks until 2 units are given. This should not be undertaken unless a man knows how safely to give small doses of roentgen rays.

SENSITIZATION TO ARSPHENAMIN

To the Editor:—Why is it that after eighteen injections of neoarsphenamin without a reaction, a patient broke out with large red blotches on the chest, back and thighs, swelling of the hands, and itching at the site of eruption? This all took place twenty-four hours after the giving of the nineteenth, twentieth and twenty-first injections. The eruption usually lasted from four to seven days, but it persisted for fifteen days after the twenty-first injection. The appetite was markedly increased for two days following, and then dropped to normal. The itching lasted only for a day; there was no nausea or vomiting. The patient felt well throughout the eruption stage. The urine, blood pressure and heart were normal. Q. T. O.

ANSWER.—The reason is that the patient had acquired a sensitization to arsphenamin or neo-arsphenamin and was getting a toxic dermatitis from it, as occasionally happens. This is a warning of danger. These attacks of erythema are not infrequently followed by a general exfoliative dermatitis, and by a general intoxication which may prove fatal. Unless the necessity for the use of arsphenamin is very insistent, symptoms of this sort should cause the discontinuance of the drug; and its use later, if at all, should be only with great caution. It is safer in such cases to make further treatment consist of mercury and the iodids.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chrm., Dr. Samuel W. Welch, Montgomery.
ARIZONA: Phoenix, July 3. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: San Francisco, July 9-12. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.
COLORADO: Denver, July 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: New Haven, July 10. Sec. Eclectic Board, Dr. James E. Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. E. C. M. Hall, 82 Grand Ave., New Haven.
CONNECTICUT: Hartford, July 10-11. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford.
DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.
DISTRICT OF COLUMBIA: Washington, July 10-12. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.
FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.
INDIANA: Indianapolis, July 10. Sec., Dr. Wm. T. Gott, Crawfordsville.
KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
MAINE: Augusta, July 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.
MARYLAND: Baltimore, June 19-22. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.
MARYLAND: Baltimore, June 12-13. Sec. Homeo. Bd., Dr. E. H. Wilsey, Chesapeake City.
MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
MISSISSIPPI: Jackson, June 13-14. Sec., Dr. W. S. Leathers, University.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW MEXICO: Santa Fe, June 18. Sec., Dr. R. E. McBride, Las Cruces.
NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.
NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.
OKLAHOMA: Oklahoma City, July 10-11. Sec., Dr. J. M. Byrum, Shawnee.
OREGON: Portland, July 3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Preliminary Examiner, Mr. C. D. Koch, 422 Perry Bldg., Philadelphia.
RHODE ISLAND: Providence, July 5-6. Sec., Dr. B. U. Richards, State House, Providence.
SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
SOUTH DAKOTA: Deadwood, July 17. Dir., Dr. H. R. Kenaston, Bonesteel.
TENNESSEE: Memphis, Nashville and Knoxville, June 15-16. Sec., Dr. Alfred B. DeLoach, 1230 Exchange Bldg., Memphis.
TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg., Dallas.
UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.
VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.
WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.
WEST VIRGINIA: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.
WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

THE NORTH CAROLINA EXTENSION PLAN

An Experiment in Postgraduate Medical Teaching

F. DENNETTE ADAMS, M.D.
Lecturer in Medicine, University of North Carolina Extension Division
WASHINGTON, D. C.

In an effort to determine whether it might be of any value to the medical profession in the state to make it possible for a large number of physicians to obtain postgraduate instruction without leaving their own communities, the state of North Carolina, in the summer of 1916, conducted postgraduate courses in pediatrics in twelve of its larger centers. The plan was devised by Dr. W. S. Rankin, the state health officer, and was carried out through the combined efforts of the state board of health and the medical department and extension division of the University of North Carolina. Pediatrics was the field chosen, because at that time there were but few trained pediatricians in the state, the infants and children being mostly under the care of general practitioners, and it was felt that instruction of these men in the refinements of diagnosis and treatment of diseases peculiar to the young might be of assistance in the board of health's statewide campaign for the reduction of infant mortality. In addition, since the project was an innovation and an experiment, it was believed that just how much benefit had been derived from the work could be more readily determined from the physicians themselves than would have been the case had a more generalized subject been chosen; for practically all were admittedly weak in pediatrics, whereas there were all degrees of ability and training in the general fields of medicine and surgery.

DETAILS AND DEVELOPMENT OF THE PLAN.

Two instructors were appointed. Each was assigned to a circuit of six centers, which he covered in rotation every week for four months, a class thus being held in each city once a week. The classes were composed of physicians residing in these centers and their surrounding rural communities. The work in the eastern part of the state was conducted by Dr. Lewis Webb Hill of Boston, and in the western section, by Dr. J. R. Gerstley of Chicago. The first part of an exercise was devoted to a talk on some phase of pediatrics, the second part to clinical teaching, the subjects being patients who were brought in by members of the classes for suggestions as to diagnosis and treatment.

From the standpoint of the physicians who had attended the meetings, the state authorities and the instructors, the results of the experiment seemed to justify its repetition, and, at the close of the summer, plans were under way for renewal of the work elsewhere in the state the following year. The war intervened, however, and it was not until the fall of 1921 that definite steps were taken toward further experimentation along similar lines. Since the problem was one primarily of education and only secondarily of public health, it was considered to be more the concern of the state university than of the board of health, and, as a result, it was undertaken entirely by the university. The actual organization of the classes, and the planning of the instructors' routes and other executive work was carried out by the university extension division, while the more strictly medical problems, notably the selection of the instructors and the outline of the work, were in the hands of the dean of the medical school, Dr. I. H. Manning.

In a state in which the population is largely rural, or in relatively small communities, as is the case in North Carolina, it is obvious that by far the greater number of physicians are general practitioners, and that, of necessity, with the exception of one or two of the larger cities, medicine has not reached the degree of specialization that obtains in the states farther north. At present, there is no school of clinical medicine in the state. There has been none since 1914, when the Charlotte Medical School closed its doors. Students of medicine can obtain the first two years of the accepted four-year course at the medical school of the state university, or at Wake Forest College, and, although plans are being formulated for the installation of a four-year course at the former institution, students from both schools are now forced to seek their last two or clinical years outside the state. General public hospitals are rare, making the teaching of clinical medicine difficult. As a result, clinical teaching centers do not exist. There has been no stimulus for their development—and there have been no funds. Medical progress has suffered accordingly. The practicing physicians have no large clinic within reach to which they can refer their more complex cases for study and treatment, and they themselves have no center toward which they can readily migrate for postgraduate instruction. It is next to impossible for them, under such circumstances, to keep pace with the trend of medical thought.

Of course, those who are fortunate enough to be able to leave their practices find it to their advantage to devote a few weeks each year to visiting clinics or taking postgraduate

courses elsewhere in the country. These men are able to keep well posted. But for the majority, particularly those in the rural communities, such a practice is well-nigh out of the question. It is the aim of the University of North Carolina to reach these men—to bring to them instruction which they cannot go out and seek; and it was with this purpose in mind that the postgraduate extension work was reinstituted last summer.

The opinion prevailed that a general subject would have a wider appeal and would be a more logical choice for a renewal of the experiment than would one of the specialties, and internal medicine was consequently selected. The plan of work was similar to that used in 1916. Two circuits of six cities each, one in the eastern and one in the western part of the state, were selected, and an instructor was assigned to each. The towns composing a circuit naturally had to be within a relatively small area in order to minimize travel time for the instructor. The first group, comprising Durham, Selma, Goldsboro, Wilson, Rocky Mount and Tarboro, was in charge of Dr. Frank A. Chapman of Chicago; the second, composed of Ashboro, Greensboro, High Point, Lexington, Salisbury and Charlotte, was assigned to me. The instructors were brought on from distant cities (I was residing at the time in Boston), because of the fact that the university was unwilling to expose itself to charges of exploiting an individual by bringing in as a teacher a man from a nearby center who, conceivably, might later be in a position to attract patients away from their own physicians.

The organization of the classes, as stated above, was undertaken by the University Extension Division. Although this type of work represented a new departure in medical teaching, it might nevertheless be supposed that there would have been a ready response on the part of physicians to avail themselves of the opportunity offered. As the university wished to reach as many men as possible, and had to consider finances, it was decided to hold classes only in localities in which an enrolment of at least twelve could be guaranteed in advance.

The expense incurred in organizing the courses—approximately $300—was met by the University Extension Division, and not charged to the physicians, whose tuition fees were used only to cover actual salaries and traveling expenses of the instructors. This was made clear in advance. Nevertheless, difficulty was experienced in some quarters in obtaining enrolments sufficiently large to make the work possible. The idea was new; the field was unexplored, and the members of the profession seemed unwilling to invest in an unknown quantity. I am indebted to Mr. Chester D. Snell, director of the University Extension Division, who personally organized the classes, for the following outline of his part in the work:

"In the fall of 1921, I sent a letter outlining our scheme to the secretaries of all the county medical societies in the state, with the request that they bring our proposition up for discussion at their meetings, and report back to me. The best responses came from the societies which had taken the work in 1916. In the spring of 1922, I obtained a list of all the doctors within 50 miles of the six selected cities, in the two sections, and sent to each an explanatory letter and an application blank. About forty were enrolled in this way. Next, I interviewed personally a large number at the annual convention of the state medical society, which occurred later in the spring, and, following this, I made a personal office-to-office canvass, eventually signing up enough to make the total for the two circuits 180. Just before the first meeting, I sent letters to all of the doctors who had been on the former mailing list, reminding them of the dates on which the first meetings were to be held and again soliciting their cooperation. Exactly 198 physicians enrolled, out of a total of about 450 approached. About 85 per cent. of the general practitioners could be classified as interested or enthusiastic when first seen. The main difficulty in getting an early response was due to the fact that when I made my field trip, I could not announce the names of the instructors, as they had yet to be selected. Difficulty was occasionally experienced in overcoming, on the part of the more skeptical, a tendency to believe that the university was attempting to 'put something over'; but we were usually able to meet this attitude successfully by a thorough explanation of our plan. As further evidence of good faith, we promised a refund to those enrolled, in case our receipts more than covered the instructors' expenses. Each physician paid $30 for the series and later received a refund of over $3. I believe that, in the future, less difficulty will be experienced in organizing similar classes, for the work is now so firmly established that it should sell itself."

CHOICE OF SUBJECTS

The university stipulated that each exercise should approximate two hours in length and that it should comprise a lecture and a clinical demonstration. It was suggested that "practical, every-day medicine" would be most acceptable, but otherwise the instructors were given absolute freedom in the conduct of their courses. The problem, therefore, which confronted me on my arrival in North Carolina was not simple. I was to attempt to carry out a type of postgraduate instruction as yet almost untried. I was to have in my classes physicians of all ages, of all grades of training and varying degrees of experience, from those recently graduated from some of the best schools in the country, to those whose actual medical education had been received in schools of less exacting standards, or who, since graduation, had had but little opportunity of obtaining further instruction. I was to meet, in the larger communities, men who were devoting themselves to some particular field and doing highly specialized work and, at the same time, in both larger and smaller places, general practitioners, the exacting requirements of whose practices had cost them the opportunity of keeping pace with present-day medicine. Quite obviously, lectures which might be of value to one group would be well-nigh worthless to another. Instruction in the fundamentals of history-taking and physical examination was needed by some; to others, time spent in listening to discussions of this nature would be wasted. The men doing specialized medicine, most of whom make frequent trips to the best clinics and otherwise keep pace with advances in medicine, would prefer discussions of recent investigative work and its relation to diagnosis and treatment. But instruction along such lines would be of little value to the average practitioner, whose laboratory and hospital facilities are limited. Anything more than a mere outline of the uses of basal metabolism determination, of blood chemical findings or pneumococcus typing, for example, would be of interest to but few listeners. Certain physicians would prefer to have most of the time devoted to diagnosis, others to therapeutics. In other words, the problem which presented itself was that of addressing six classes, totaling more than a hundred physicians, of diversified interests and varying degrees of ability and skill, and having each individual, at the end of the course, feel that his time had not been ill-spent.

Under such circumstances, it seemed to me that the best results could be obtained by selecting a number of common medical conditions and discussing them from the standpoint of etiology, pathology, diagnosis and treatment. In this way a certain amount of time could be devoted to the fundamentals of history, physical examination and laboratory diagnosis, and the more intricate diagnostic methods and special forms of treatment could be worked in as occasion demanded. The greater part of each talk was devoted to fundamentals, for the course was planned, as has been previously pointed out, especially for the benefit of those who had been unable to keep in touch with medical centers and consequently felt the need of "brushing up."

The subjects selected and the order in which they were presented were: (1) Lobar pneumonia; (2) chronic nontuberculous lung diseases; (3) epidemic (lethargic) encepha-

litis; (4) endocarditis and allied conditions; (5) angina pectoris and syphilitic aortitis; (6) cardiac irregularities and effort syndrome; (7) gastric ulcer and carcinoma; (8) constipation and visceroptosis; (9) nephritis; (10) diseases of the blood; (11) diseases of the endocrine glands, and (12) empyema and other complications of pneumonia.

This program, no doubt, is open to criticism, but it must be borne in mind that only a fraction of medicine can be touched on in a series of twelve talks, and that an effort was made to pick out subjects in which mistakes in diagnosis not infrequently occur. Furthermore, other common diseases were discussed incidentally in connection with the differential diagnosis of some of those listed. Typhoid fever, for example, came up for discussion in connection with lobar pneumonia, encephalitis, endocarditis and empyema; tuberculosis in connection with the same diseases, and the various types of meningitis in connection with pneumonia and encephalitis. It might be suggested that empyema should have been omitted, as it is primarily a surgical condition; but it was introduced into the series because the diagnosis usually lies with the medical man and because, while resident physician in charge of the pneumonia service at the Boston City Hospital, I had been impressed by the frequent failure of practitioners to recognize this common complication of pneumonia.

As time went on and I had the opportunity, by means of the clinics, to observe the work of the physicians in the groups, I found that I was automatically devoting more of each lecture to pathology and diagnosis at the expense of treatment. There was a weakness in pathologic training, or, at least, in the application of knowledge of pathology, and in the ability to arrive at a diagnosis by deduction based on knowledge of this subject, once the important features in history and physical examination had been worked out. Stress was laid on the importance of obtaining a careful history, of following out leads which on the surface seemed of little significance, of bringing to light recollections of past symptoms, long since forgotten, and of seeking out facts which might have a bearing on the solution of the problem at hand. The same held true with regard to physical examination, the advantage being constantly pointed out of searching for signs of a condition which, on the basis of history, might conceivably be present, as, for example, the small area of dulness and diminished breathing in early lobar pneumonia, or the short diastolic murmur in early aortitis. There also arose the necessity of frequently laying stress on the fact that disease often varies in its manifestations and is seldom in exact accord with the so-called "typical textbook picture." Efforts were made to focus attention not on the typical, but on the atypical; not on the obvious, but on the obscure. And, finally, there was the endeavor to rationalize the conception of the value of roentgenologic and laboratory examinations by showing how they should be taken into consideration along with history and physical findings and by pointing out that their results are rarely adequate unless interpreted in the light of information acquired by the other methods.

CLINICAL WORK

The original plan outlined by the university for the clinical part of the program was that cases should be shown, after each lecture, which would demonstrate points under discussion. The subject of each week's talk having been announced in advance, certain physicians would be called on to bring in, for clinical purposes, patients suffering from the disease under consideration. With the end in view of having the clinics well supplied, the physicians, when first enrolled, were requested to sign agreements to supply clinical material for at least two exercises. Most of them did so, but this system failed to work out satisfactorily. Many of the physicians came from distances which made it impracticable for them to bring patients; frequently no patient suffering from the disease under consideration was available, and finally the members of the classes seemed more anxious to bring to the clinics cases concerning which they were in doubt rather than those that presented no diagnostic or therapeutic problems.

The failure of this specific plan to materialize did not, however, cause the clinical part of the work to be abandoned. A wealth of material was supplied, but the patients were brought in for suggestions as to diagnosis or treatment, irrespective of their relation to the subject of the day. Since the study of these cases was of more value to classes and instructor alike, this system worked out to the satisfaction of all concerned. The number of patients seen during a clinic varied from one to as high as ten, with an average of three or four. Unfortunately, no records were kept of the number of cases or their ailments. As a general rule, all who were brought in were seen, but occasionally an unusually large clinic, or one or two patients whose examinations were lengthy, made it necessary to postpone a few until the following exercise. In several instances, persons presented themselves for examination without having first consulted one of the local physicians. They had heard that a free clinic was in town and were anxious to avail themselves of the services of the visiting physician. These individuals were not examined for two reasons: First, such a procedure, once started, would have swamped the clinic with undesirables; second (and more important), the university took the stand that the course was for the benefit of the profession, and consequently those in charge were particularly careful to avoid having the university subjected to charges of having its representatives in competition with the local physicians. In addition to the patients studied in the clinics, a few were seen in consultation in their homes, when, for some adequate reason—usually physical condition—it was impossible for them to reach one of the clinic centers. Where indicated, all cases were followed up and reports of their progress given out from time to time.

This system kept the clinics well supplied with difficult and obscure cases, and as a result there was greater interest on the part of all concerned. In no instance did the instructor see a case prior to the initial appearance of the patient at the clinic, each being studied, as far as possible, in the presence of the class. Consequently, the members had the opportunity of observing the instructor's method of approaching a case, of noting the emphasis which he placed on a careful, complete history and painstaking physical examination, and of following him through the mental process of piecing together the facts and the line of reasoning by which he arrived (or failed to arrive) at a diagnosis.

DISADVANTAGES

The disadvantages of this type of work are quite apparent. Attempts to obtain adequate histories from patients in the presence of audiences not infrequently proved futile. Patients were naturally nervously upset at being interviewed by a stranger and the presence of audiences only intensified their mental discomfort. It caused a tendency on the part of many to supply answers which they believed the instructor was seeking, and thus made it unusually difficult to work out obscure and forgotten details in their stories. When a history was long and tedious, as so many are, the difficulty was further increased by a natural and quite excusable restlessness on the part of the listeners.

Many present needed no lessons in history-taking; those who did found repetition irksome. The same held true with regard to physical examination, especially since the size of the classes rendered individual demonstrations of abnormal findings quite impracticable. Lack of time was another handicap. Scrupulous work is seldom possible when more than two patients must be seen within an hour. Under ordinary

circumstances, shortcuts are rarely justifiable; in the classroom never. Yet instances arose when it was impossible to avoid them if all patients were to be seen. In the future, if the work is continued, arrangements must be made to limit the number of cases admitted to each exercise.

Difficulty was encountered because of lack of laboratory facilities. Urine and hemocytologic examinations were usually available, but it was sometimes difficult or impossible to obtain chemical examinations of the blood, adequate bacteriologic examinations or roentgenologic examinations.

Among the members of the classes, the attitude prevailed (and with justification) that the instructor should commit himself to a diagnosis on the evidence at hand and not attempt to bring into play diagnostic methods not available to the physicians in the community in which the cases were presented (excellent training for the instructor). There was also the disadvantage of usually seeing a patient but once and of not having at hand information relative to the previous course of his ailment. But in the cases in which a definite diagnosis seemed impossible, the instructor was sometimes able to point out and discuss further methods of study which, if carried out, should enable the physicians in charge to solve the problem.

SUCCESS OF THE EXPERIMENT

Since this method of postgraduate instruction was undertaken by the university as an experiment, the question of import at present is that of its success. Was it of value to the physicians who attended the classes and, through them, to the communities in which they practice? Do these physicians feel repaid for their expenditure of time and money? Do they believe that a course of this nature is in any way comparable, relative to results obtained, to a course in one of the postgraduate schools? What are the relative merits of these two types of instruction, when differences in expense are considered? Do the results of the experiment indicate that, if carried further and made state-wide, this extension teaching might become a factor in improving the general health of the state? Is the university justified in assuming that the work proved of sufficient value to warrant continuation and expansion in the future?

It is not my purpose to attempt to answer these questions. It lies with the physicians who took part in the exercises, the authorities in the university who followed the work, and the profession generally in the state to determine, on the basis of results obtained, whether continuance is justifiable or advisable.

The most effective way of determining the attitude of those who subscribed to the course is by means of a questionnaire. The university has already distributed a series of questions to the physicians who were enrolled, in order that their frank opinions may be obtained. It is hoped that their answers will form the basis of a later paper.

Apart from these officially expressed opinions, the results can be estimated from the attendance records and from the instructor's impressions of the physicians' reactions toward the work. Unfortunately, on only one circuit was an attendance record kept. This showed, for the twelve weeks' work, an average attendance in the six cities of 84.2 per cent. The center with the highest average for the course showed an attendance of 93.5 per cent.; the lowest was 72.7 per cent. It must be borne in mind, when these figures are considered, that the majority of the physicians attending the classes were general practitioners, always on call for emergencies; that many of them consumed a good half day in traveling to and from the clinics, and that summer vacations cut down the attendance to some extent. Furthermore, in some of the cities where the attendance was lowest, a few men, most of them specialists in branches quite remote from internal medicine, enrolled purely for the purpose of lending impetus to the project and were present at only one or two of the earlier meetings.

Open discussion predominated at all of the gatherings, and it was interesting to note that practically every member took part. The most encouraging feature, from the standpoint of the instructor, was the frequency with which patients suffering from a given condition were brought in for confirmation of diagnosis, not on the day on which that subject was discussed, but at the exercise following. Three cases of angina pectoris, for example, were seen during the week following the lecture on that ailment; not one during the week in which it was discussed.

In my opinion, this method of instruction, representing, as it does, a field virtually unexplored, presents promising possibilities for the future. The system outlined was far from perfect, but as a starter it was encouraging. It has the distinct advantage that its cost to the individual is small and that no physician is forced to leave his practice for a protracted period. If the work is continued in the future, organization difficulties will be reduced as it becomes better established; and once it becomes a thoroughly proved success, physicians will expect it and seek it. If it does become more thoroughly established, the scope of the work should expand hand in hand with the field of operations and one should see each summer an increasing number of instructors scattered throughout the state, presenting courses in a wide variety of subjects. One cannot but wonder if, for those members of the profession who cannot readily migrate to the large teaching centers, this system does not offer the eventual solution of the problem of postgraduate medical instruction.

SUMMARY

In an effort to work out a plan whereby a large number of physicians in the state can be supplied with postgraduate instruction without leaving their own communities, the University of North Carolina, in the summer of 1916 and again in 1922, instituted as experiments extension courses in postgraduate medicine. Classes were organized on two circuits of six centers each, with an instructor from outside the state assigned to each circuit. The instructors rotated about their respective circuits, meeting each group once a week and giving each a lecture and clinical demonstration.

The chief advantage of this system is that it supplies the opportunity for obtaining instruction to the physicians who, usually because of the difficulty of providing substitutes to take charge of their patients and the expenditure of time and money involved, are unable to visit large clinics outside the state. Since the only expense, exclusive of organization, is for salary and traveling expenses of the instructors, the cost of the course per physician is relatively small.

The chief disadvantage lies in the fact that physicians of varying degrees of training and skill are enrolled and it is no simple task for the instructor to arrange the work to the satisfaction of all the members of a class.

The attendance records and the interest shown were sufficiently encouraging to warrant further experimentation along the same line. It is my belief that this system should be developed further and that, if properly expanded, it might eventually be of great value to the medical profession, particularly in regions where there is a lack of medical centers.

The Rochambeau.

New York January and February Examination

Mr. Herbert J. Hamilton, assistant professional examiner, Board of Medical Examiners of the State of New York, reports the written examinations held at Albany, Buffalo, New York and Syracuse, Jan. 29-Feb. 1, 1923. The examination covered 8 subjects and included 10 questions. An average of 75 per cent. was required to pass. Of the 115 candi-

dates examined, 81 passed, and 34, including 1 osteopath, failed. Two candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Yale University		(1922)	1
Georgetown University		(1922)	1
George Washington University		(1909), (1916), (1922)	3
Rush Medical College		(1919)	1
State University of Iowa College of Medicine		(1921)	1
University of Louisville		(1921)	1
Bowdoin Medical School		(1921)	1
John Hopkins University		(1903), (1918), (1921), (1922)	4
Harvard University		(1921)	4
Tufts College Medical School		(1920)	1
University of Michigan Medical School		(1919, 2), (1921)	3
University of Michigan Homeo. Med. School		(1922)	1
University of Minnesota Medical School		(1921)	1
St. Louis University School of Medicine		(1922)	1
Columbia University College of Phys. and Surg.		(1920), (1921), 1922, 6)	8
Cornell University		(1915), (1921), (1922, 2)	4
Long Island College Hospital		(1922)	1
New York Homeo. Med. College and Flower Hospital		(1922)	1
Syracuse University College of Medicine		(1921), (1922, 3)	4
University and Bellevue Hospital Medical College		(1920)	1
Eclectic Medical College of Cincinnati		(1921), (1922, 3)	4
University of Oregon		(1914)	1
Hahnemann Medical Coll. and Hosp. of Philadelphia		(1921)	2
University of Pennsylvania		(1917)	1
Woman's Medical College of Pennsylvania		(1922)	1
Baylor University		(1921)	1
McGill University		(1918), (1921, 2), (1922, 3)	6
Queen's Univ. Faculty of Medicine		(1915), (1918), (1921)	3
University of Toronto		(1917), (1921, 2)	3
University of Vienna, Austria		(1913)*	1
University of Montpellier, France		(1920)*	1
National University of Athens, Greece†		(1921)*	1
Univ. of Budapest, Hungary		(1912), (1915),* (1917),* (1918)*	4
Univ. of Naples, Italy		(1912),* (1914),* (1919),* (1920, 2)*	5
University of Palermo, Italy		(1894), (1920)*	2
University of Berne, Switzerland		(1918)*	1
Syrian Protestant College of Beirut, Syria		(1922)*	1
	FAILED		
Yale University		(1902)	1
College of Physicians and Surgeons, Chicago		(1902)	1
University of Maryland		(1918)	1
Boston University		(1921)	1
Harvard University		(1898)	1
Columbia University College of Phys. and Surg.		(1922)	1
Long Island College Hospital		(1922)	1
New York Homeo. Med. Coll. and Flower Hospital		(1917)	1
Jefferson Medical College of Philadelphia		(1912)	1
Woman's Medical College of Pennsylvania		(1894)	1
University of Vermont		(1921)	1
Queen's University Faculty of Medicine		(1919), (1920)	2
McGill University		(1912), (1921)	2
National University of Athens, Greece		(1908)*	1
University of Budapest, Hungary		(1912, 2),* (1914),* (1915),* (1918)*	5
University of Florence, Italy		(1922)*	1
University of Padua, Italy		(1917)*	1
University of Palermo, Italy		(1921)*	2
University of Naples, Italy		(1907),* (1910),* (1911),* (1917),* (1919),* (1920),* (1921)*	7
University of St. Joseph, Beirut, France		(1910)	1
Osteopath		(1922)	1

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Tulane University		(1906)	Louisiana
Vanderbilt University		(1909)	Alabama

* Graduation not verified.

† License will be issued on receipt of M.D. degree from Greece.

Hawaii January Report

Dr. G. C. Milnor, secretary, Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Jan. 8, 1923. The examination covered 10 subjects and included 65 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical School		(1922)	85
Tufts College Medical School		(1918)	90
Chiba Special Medical School		(1919)*	80
Tokyo Charity Hospital and Special Medical School		(1916)*	75

* Graduation not verified.

Colorado January Examination

Dr. David A. Strickler, secretary, Colorado State Board of Medical Examiners, reports the written examination held at Denver, Jan. 2, 1923. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 8 candidates who took the physicians' and surgeons' examination, 3 passed, and 5, including 2 osteopaths, failed. Eleven candidates were licensed by reciprocity and 1 candidate was granted a reregistration license. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists		(1920)	82.6
Northwestern University		(1922)	83.8
University of Pennsylvania		(1921)	83.4
	FAILED		
Kansas City University of Physicians and Surgeons		(1922)	*
St. Louis Coll. of Phys. and Surgs.		(1919) 56.6, (1922)	68.8
Osteopaths			*, 47.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1888)	Missouri
Barnes Medical College		(1908) Illinois, (1909)	Missouri
Washington University		(1913)	Missouri
University of Nebraska, College of Med.		(1921), (1922)	Nebraska
Jefferson Medical College		(1900)	Penna.
University of Tennessee		(1913) Tennessee, (1914)	Arkansas
Queens University		(1887)	S. Dakota
Trinity Medical College		(1902)	Michigan

* No grade given.

Book Notices

ALLGEMEINE PROGNOSTIK. ODER DIE LEHRE VON DER ÄRZTLICHEN BEURTEILUNG DES GESUNDEN UND KRANKEN MENSCHEN. Von Prof. Dr. Theodor Brugsch. Second edition. Paper. Price, 3,240 marks. Pp. 622, with 29 illustrations. Berlin: Urban & Schwarzenberg, 1922.

The author has collected statistics of measurements of a large number of normal individuals from various sources. From these data he attempts to establish a definite relationship between the viscera and body measurement. The use of mathematical formulas in this work is perhaps carried to an extreme. This attempt of correlation is, as the author states, not new with him. A chapter is devoted to normal and abnormal function of the endocrine glands. The second part of the book takes up specifically the various influences which bear on disturbances in function of circulation, respiration, metabolism and the endocrine glands. Contrary to what might be expected in a book on prognosis, there is no discussion of any single disease in which favorable or unfavorable symptoms are pointed out; instead, various conditions are grouped together and considered in a general way. The underlying objections to this exposition are the large amount of theory and too many excursions into the field of mathematics. The latter make it too complicated for the practitioner.

OBSTETRICS FOR NURSES. By Everett Dudley Plass, M.D., Obstetrician-in-Chief, Henry Ford Hospital, Detroit. Cloth. Price, $3.50. Pp. 410, with 162 illustrations. New York: D. Appleton and Company, 1922.

This is an admirably concise textbook. The author frankly states that association with his former chief, J. Whitridge Williams, has been of signal value in the preparation of his work; the text and illustrations clearly reflect this valuable impress on his mind and the product of his endeavor. And in no manner does this detract from the value of the book; in fact, this influence of his teacher enhances the worth of the volume. Obstetricians will be pleased with the clearness of presentation of the subjects discussed: from beginning to end it appeals to one as a real contribution to obstetrics, and is what the older authors were wont to call a hand book. The title of the book shows that it was intended for nurses, but its general scope suggests that it might more aptly be dedicated to medical students: perhaps it does not cover in detail all that might be adequate for student purposes, but it is far more comprehensive than serves the needs of a nurse getting her training, or even one who has dedicated herself to obstetric nursing. The nurses' duties and knowledge should be supplemental, not complemental, to those of the physician: the specific details are more in consonance with the teaching of a prospective medical man than a nurse. However, times were when a nurse was educated to do those things for the comfort and safety of the patient under the guidance of the physician. If we must change our conception of a nurse's duties, then the present book has its place: if we continue to hold the older views of her functions, then the book is

too elaborate for her needs. For a nursing textbook on obstetrics we should like to see somewhat less of the medical man's obstetrics, and more definite and extended information on the duties of the nurse, and the methods for carrying out these details. It is sufficient to state that there is no specific mention of the giving of enemas, and the technic, which if faultily applied may be fraught with dire consequences to the obstetric woman. Nor do we find a text, or illustrations, directing a nurse how to catheterize the same woman—in a textbook of this nature the author cannot presume that the nurse has learned these procedures correctly elsewhere. It would be needless to comment in detail on all the chapters. Those on the anatomy and physiology of the pregnant woman, and the description of the mechanisms of labor are valuable in their terseness and lucidity, so that they are not alone valuable but entertaining. We would be loath to see this volume abridged to conform to our conception of what a nurse's textbook on obstetrics should be: rather we trust that Dr. Plass, in bringing out subsequent editions, will amplify the scope of the book, making it a real treatise on obstetrics for students.

THE ANATOMY OF THE HUMAN EYE AND ORBIT. By William W. Goldnamer, M.D. Cloth. Price, $7.50. Pp. 224, with 65 illustrations. Chicago: The Professional Press, Inc., 1923.

There is a well-defined place in American ophthalmologic literature for a work of this character, but, unfortunately, this book does not fill the cavity completely. In fifteen chapters, the anatomy of the eye, the orbit, and the accessory ocular apparatus is simply and concisely described. The physiology of the parts under description is too often discussed in detail, and with a positiveness that does not bear scrutiny. For example, ciliary glands are described as a positive structure "whose function it is to secrete part, at least, of the aqueous humor." Again, on page 58, it is stated that "the aqueous is a secretion of the glands of the ciliary processes and the ciliary body." In view of the investigations by Hagen, Hamburger and others, such a statement cannot pass unchallenged. Similar misstatements appear at only too frequent intervals; but, as a rule, they have to deal with the physiology and not the anatomy. Multiple mistakes in spelling abound, which seem to be due primarily to careless proofreading. There is a chapter on development, treated in an extremely stepmotherly manner. The chapter on anomalies is well written, but could have been improved with simple illustrations easy to obtain. As a whole, the illustrations are good, but they would be of more value if they were placed nearer the matter to which they refer. One of the chapters is devoted to original measurements of about 200 prehistoric skulls, and is supplemented by a final chapter containing tables of measurements of the structures described. A good glossary and a fairly compresensive bibliography fill the closing pages. The book is well worth study despite mistakes in spelling, and the indifferent printing and binding. It is to be hoped that a second edition will appear in which these mistakes have been eliminated and that there will result a book of which American ophthalmologic literature may be proud.

DIE PHYSIKALISCHEN GRUNDLAGEN DES BETRIEBES VON RÖNTGENRÖHREN MIT DEM INDUKTORIUM. Von Professor Dr. P. Ludewig. Paper. Price, 7 marks, 5 pfennigs. Pp. 130, with 151 illustrations. Berlin: Urban & Schwarzenberg, 1923.

This monograph intends to present the physical principles on which induction apparatus are built and operated, while special stress is laid on their use in connection with roentgen-ray apparatus. Particular attention is paid to the theory of the electric oscillations. The author predicts that a full understanding of the peculiarities of these oscillations will eventually make it possible to produce roentgen rays that are regulated at will in their composition. Starting from the fundamentals of electromagnetism, the power field of an electric current, he explains the magnetic circle, the magnetic qualities of the metals, especially of iron, and the various electric currents produced primarily and in the inductors. Then follows a description of the various apparatus used for determining and measuring these electric manifestations.

The third chapter is devoted to electric oscillations, and to the open and closed circle of electric vibrations. A short history of the development of the interruptors is given, leading up to a complete understanding of the most modern contrivances serving this purpose. In the same way the proposition of the inductors is handled, particular attention being paid to the interpolation of inductors for the production of electric currents of high tension, which hold such an important place in modern deep roentgen-ray therapy. The collaboration of inductor and interruptor, whether the straight or the alternating currents is used, finds full consideration. In order to make plain the reciprocity between source of current and the production of roentgen rays, the author explains the principal features of roentgen tubes. The next chapter deals with the action of the roentgen tube under the influence of the electric currents, and the methods of controlling it, with an elaborate presentation of the factors influencing the production of extremely hard rays. While the whole pamphlet is primarily written for the roentgen specialist, the text is so arranged that the mere technical and physical parts of each chapter are followed by a more popular presentation of the pertinent topics, so that any reader with only ordinary information in physics is enabled to acquire a sufficient understanding of the present status of the production of roentgen rays and of the problems involved.

ORTHOPEDIC SURGERY. By Sir Robert Jones, K.B.E., C.B., Director of Orthopedic Surgery, St. Thomas's Hospital, and Robert W. Lovett, M.D., F.A.C.S., John B. and Buckminster Brown Professor of Orthopedic Surgery in Harvard University. Cloth. Price, $9. Pp. 699, with 712 illustrations. New York: William Wood & Company, 1923.

This is a very readable and valuable work by two of the best known orthopedic surgeons of two great countries. With no intent to be facetious, we might remark that the text is truly a joint affair, the opinions of one and then the other running along smoothly throughout its pages, commonly agreeing in their ideas—else they would not have undertaken the work—but differing honestly in some things in which the opinions of each are given proper expression. The text is particularly pleasing in that the reader is given credit for knowing something about the subject, thus relieving him of much detail in nonessentials and particularly in differential diagnosis, in which no attempt is made to differentiate all the possible known pathologic conditions that might in some way vaguely suggest the condition under discussion. A few of the usual related conditions are considered, and the mind is left fresh to consider them without the diverting factors of a dozen or more rare conditions which only serve to burden the brain and confuse the judgment. Under the term of orthopedic surgery they include subjects which group themselves under the six headings: (1) joints and their affections; (2) bones and their affections (including ununited and malunited fractures); (3) disturbances of the neuromuscular mechanism; (4) congenital deformities; (5) static and other acquired deformities, and (6) the principles and details of apparatus. Sane views on all subjects characterize the pages. Fads are disposed of with brief mention or authoritative silence. Illustrations are profuse and almost always instructive. Volumes of discussion on favorite controversial points are often condensed into a single poignant statement, as in the treatment of older cases of congenital dislocation of the hip, "there is no surgical triumph in the reduction of a case 16 years old if irreparable damage is done, or if life is hazarded by shock"; or, again, under "static deformities of the feet," "the flat foot, even rigid flat foot, the low arch, the everted foot, and the foot with the short tendo Achillis should not be interfered with or treated mechanically in adults unless they are a source of trouble and discomfort." While the reader's favorite formula may receive scant attention or be left out entirely, still he will find enough good things with which he does agree to more than compensate him for the little private disappointment. A word of criticism of the proof reading may not be amiss. Dozens of examples of improperly placed letters, misspelled words and other typographic errors are unfortunately present in this edition, a reflection on the bookmaker, rather than on the authors. Another edition should clear these all up.

Miscellany

A LAY EDITOR SPEAKS OF HYGEIA

From many sources *Hygeia* has received an enthusiastic welcome. Particularly encouraging is the following statement by Llewellyn Jones, literary editor of the Chicago *Post:*

HYGEIA

Chicago is the headquarters of a new magazine, *Hygeia,* published by the American Medical Association, but intended for perusal by the layman, and a most interesting magazine it is. The subtitle, "A Journal of Individual and Community Health," shows its scope, and, needless to say, the new journal has nothing in common with the usual type of health or physical culture magazine—which is too often edited from a cranky point of view or unduly commercialized.

The editors of *Hygeia* are producing a magazine which in its make-up and lavish use of illustration stands comparison with anything issued from the offices of the national popular magazines, and in addition to this, the character of the articles they print combines popularity and dependable authority. If the editors will forgive us, we will say that their magazine has one point in common with the patent medicine: it is intended for the consumption of well people—for every one who is interested in the progress of man's battle against nature. That battle, of course, is far from won. The enemy's big battalions are on the run, perhaps, but the mosquito and the germ can still give us plenty of annoyance. In *Hygeia* we find plans of campaign against these evils. We read, too, of community campaigns for better health in the schools. And, on the side of personal hygiene, we have two classes of article, the article which reassures the more or less well man who is suffering from his own ignorance, who is under the spell of the quack or of the crank notion—there is an article, for instance, on the supposed relationship between meat-eating and cancer, and a number of warnings against certain patent medicines—and, on the other hand, the article which will appeal to the man who is not well, aiding him not by advising any attempts at self-cure, but aiding him by putting his ailment in a clear light and dispelling his superstitions about it. And of course the magazine caters, too, to our sheer desire for knowledge for its own sake—as in Julian Huxley's fine article on the chromosomes.

It is evident that the basic idea under this publication is the idea that medical service of any sort, individual or community, therapeutic or prophylactic, can only achieve the best results when the patient as well as the doctor is intelligent, when they meet on something in the nature of common ground. In that, although the public does not see it and some old-fashioned doctors have not always emphasized it sufficiently, lies the difference between scientific medicine and quackery. The quack thrives on ignorance, the medical scientist is handicapped by it. And how grotesque that ignorance may be, and how widespread! Perhaps one slight index to it is the universal habit of cartoonists of representing microbes as creatures with limbs and claws. Only a convention, perhaps, like that convention which represents a lightning flash as a zig-zag, although a zig-zag course is the one of all that a flash of lightning could not take, but undoubtedly the convention is taken seriously in many quarters. And how many otherwise intelligent people think of every disease as a distinct entity, specifically curable by some other distinct entity.

Well, *Hygeia* should be able to do much to banish such notions, and in doing so it will be performing a great service to the public and to the medical profession.

THE INDIGENT MIGRATORY CONSUMPTIVE

A study was made by J. S. Whitney of the indigent, migratory consumptive in Colorado Springs, Denver, El Paso, San Antonio, Phoenix and Los Angeles (*Pub. Health Rep.* **38**:587 [March 23] 1923). In the six cities there was a total of 7,319 tuberculous persons cared for, wholly or in part, by the municipal agencies. This means, on an average, one indigent tuberculous person to every 155 of the entire population of those cities. The proportions according to cities vary greatly, those cities having the smallest population bearing the greatest burden. Phoenix, with the smallest population, has the greatest proportionate number of indigent tuberculous persons, namely, one to every fifty-eight of the population; San Antonio has one to 264. A similar study was made in Cleveland, as a control city. There, 3,443 tuberculous persons were cared for during 1921, or one tuberculous person to every 231 of the population. In the six cities studied, 63 per cent. of all the tuberculous persons for whom length of residence was known had resided in the city less than two years at the time they applied to the agency. The proportion of nonresidents varied from 83 per cent. in Phoenix to 36 per cent. in San Antonio. Los Angeles and Denver were about even with 64 and 68 per cent., respectively. El Paso was low, with 47 per cent. In Cleveland, with its facilities for caring for tuberculous persons, only 11 per cent. of all such persons reached by social agencies were nonresidents. About one sixth of all cases occurred in the age period 25 to 29 years.

In the six cities together, one tenth of the subjects were children under 14, and 10 per cent. of these were under 4 years of age. In San Antonio and Los Angeles, nearly 15 per cent. were children under 14, whereas in El Paso only about 1 per cent. were under this age. In Denver and Phoenix, 4 per cent. were children. In the Cleveland study, 20 per cent. of all cases were in children. Only 51 per cent. of all the cases recorded were in American born, about 7 per cent. being in negroes. Twenty per cent. of the patients were Mexicans. Nearly every country of the world was represented among the remaining 29 per cent., the Russian Jews (9 per cent.) constituting the only large group. The men outnumbered the women 3:1. About 3 per cent. had tuberculosis other than pulmonary. Of the pulmonary cases, nearly one fifth were of the third stage. These were evidently those cases which were so far advanced as to be obvious at the first clinical call.

What becomes of these persons? Fifty-four per cent. were lost sight of, 13 per cent. died, 10 per cent. moved out of the city, and 23 per cent. were still in the city at the end of the year studied. The financial burden borne by these various cities cannot be exactly measured. In Phoenix, the annual tax for each member of the community, man, woman and child, was $1.75 for the support and relief of the tuberculous. In San Antonio it was 22 cents. None of these cities have anything like adequate provision—medical, relief, or institutional—for caring for the tuberculous persons, whether resident or nonresident. From what can be learned from the records, it would seem that there is nowhere any attempt at a coordinated policy or program of rehabilitation of the tuberculous. The material relief facilities of these cities are incapable of adequately meeting the problem of the indigent migratory consumptive.

THE TEACHING OF EVOLUTION*

The council of the American Association for the Advancement of Science adopted at its meeting on December 26, the following resolution:

Inasmuch as the attempt has been made in several states to prohibit in tax-supported institutions the teaching of evolution as applied to man, and

Since it has been asserted that there is not a fact in the universe in support of this theory, that it is a "mere guess" which leading scientists are now abandoning, and that even the American Association for the Advancement of Science at its last meeting in Toronto, Canada, approved this revolt against evolution, and

Inasmuch as such statements have been given wide publicity through the press and are misleading public opinion on this subject, therefore,

The Council of the American Association for the Advancement of Science has thought it advisable to take formal action upon this matter, in order that there may be no ground for misunderstanding of the attitude of the association, which is one of the largest scientific bodies in the world, with a membership of more than 11,000 persons, including the American authorities in all branches of science. The following

* Bull. Am. A. Univ. Prof., March, 1923.

statements represent the position of the council with regard to the theory of evolution:

1. The council of the association affirms that, so far as the scientific evidences of the evolution of plants and animals and man are concerned, there is no ground whatever for the assertion that these evidences constitute a "mere guess." No scientific generalization is more strongly supported by thoroughly tested evidences than is that of organic evolution.

2. The council of the association affirms that the evidences in favor of the evolution of man are sufficient to convince every scientist of note in the world. These evidences are increasing in number and importance every year.

3. The council also affirms that the theory of evolution is one of the most potent of the great influences for good that have thus far entered into human experience; it has promoted the progress of knowledge, it has fostered unprejudiced inquiry, and it has served as an invaluable aid in humanity's search for truth in many fields.

4. The council of the association is convinced that any legislation attempting to limit the teaching of any scientific doctrine so well established and so widely accepted by specialists as the doctrine of evolution would be a profound mistake, which could not fail to injure and retard the advancement of knowledge and of human welfare, by denying the freedom of teaching and inquiry which is essential to all progress.

Medicolegal

Expert Testimony Viewed as the Weakest Kind

(White v. Commonwealth (Ky.), 245 S. W. R. 892)

The Court of Appeals of Kentucky, in affirming a judgment of conviction of murder, says that three expert witnesses testified that from an examination made by them some ten days after the homicide, and from an examination at or about the time of the trial, in their opinion the defendant was of unsound mind then and at the time the shooting was done. As there was no other expert testimony on this subject, it was argued that the jurors in returning a verdict to the effect that the defendant was of sound mind at the time of the homicide ignored the overwhelming evidence on the subject, and the verdict must therefore have been returned as a result of passion and prejudice.

But it has been said by this court and many other courts that expert testimony is regarded in law as the weakest kind of testimony, because it is not only a species of hearsay, but is, from necessity, based on, in a large measure, the statements of others with reference not only to the symptoms that may have appeared in the person under investigation, but is further based on the statement of facts from others which are said to have occurred in the past, and from the very necessities of the case the opinion of the expert is often based on things said to have happened in the past, which, in fact, may never have happened.

In this case, the experts, in giving their opinion as to the sanity of the defendant, must have based it on information they got from him and his family or friends with reference to his family relations and his family history, all or part of which may have been wholly inaccurate. When this court, therefore, considers the weakness of this class of testimony and considers, on the other side, the fact that the defendant appeared before the jury and testified at great length about a great many details and circumstances covering a long period of time, and admitted on the stand that he knew exactly what he was doing all the morning of the homicide, and knew perfectly what his actions were up until he pulled his pistol and fired the first shot, the court is not willing to say that the verdict of the jury in the light of these things was palpably or flagrantly against the weight of the evidence on this issue.

Nor is this court willing to say that the trial judge abused his discretion in not stopping the trial and impaneling a jury to inquire into the insanity of the defendant. The three expert witnesses did not testify until after the defendant himself had testified. At the time they testified, the court already knew from the demeanor of the defendant on the stand, and from his going into the minutiae of many occurrences covering a period of several months, whether he had the appearance of a man of unsound mind. The court knew that he had admitted that he knew exactly what he was doing all of that morning, and that he could and did account for every act of his during that day and for a long period of time prior thereto, and that he had admitted he had full possession of his faculties, and knew exactly what he was doing until after he had fired the first shot. Under these circumstances, it was not unreasonable or unfair to the defendant for the court to be of opinion that he was in fact then a man of sound mind, notwithstanding the introduction of the expert testimony.

Failure to Make Diagnosis of Empyema

(Thorkildson v. Nicholson (Minn.), 191 N. W. R. 269)

The Supreme Court of Minnesota, in affirming an order denying the plaintiff a new trial after a verdict had been directed for the defendant, says that the defendant was called, March 21, to the plaintiff's home to attend her son, who was 18 years old. On March 23 the patient was removed to a hospital. He did not improve, and, April 11, the plaintiff called another physician. Pus was then found in the pleural cavity, and on the 13th it was drained. The patient remained under the care of both physicians until April 26, when the plaintiff had him removed to another hospital where he remained, until his death, May 22, under the exclusive care of the second physician. The negligence alleged was that the defendant first treated the patient for the grip, then for typhoid fever, and then for kidney trouble, when he was not ill from any of those diseases, but from empyema, and that the defendant negligently failed to operate on and treat him for empyema. The only evidence to support these allegations of negligence was to be found, if at all, in the statement of the second physician that the defendant refused to believe that empyema was present until pus was disclosed by the use of the trocar, April 11, and the testimony of the plaintiff that some days after the funeral, when the defendant requested her to pay the remainder of the hospital bill, there was a dispute as to its having been paid, and some accusations were made; that then the defendant admitted that he did not treat the patient right and could be punished, but said that it would cost the plaintiff and him money, while she would not get the boy back, saying, "So let's be friends." The second physician expressed the opinion that empyema might have existed for about two weeks, and that proper treatment was to drain the cavity as soon as pus was suspected. A physician, who was a medical expert for the plaintiff, testified that empyema was not likely to have existed from the beginning of the illness. In answer to the question as to how long it ordinarily takes from the time empyema begins to develop until it may be detected, he said that the time varied, depending on the condition of the patient; it might take only overnight sometimes. The evidence did not give him a basis to form an opinion as to when the empyema started; but he testified that from the plaintiff's description of the patient's condition during his illness none but a "snap" diagnosis of the ailment from which he was suffering could be made.

The evidence, taken as a whole, was too uncertain and attenuated to establish that the defendant's diagnosis was negligently incorrect, or his treatment faulty from a professional standpoint. A physician is not liable for a mistake of judgment in the making of a diagnosis. There are complications in diseases to which human flesh is often subject that may for days and weeks baffle or set at variance the most skilful diagnosticians. Empyema is a secondary disease. The second attending physician testified that it frequently develops from influenza or grip or from bronchial pneumonia; "that you hardly ever find a typhoid germ causing influenza, but the symptoms may assimilate"; and that any number of infections will cause kidney trouble. Thus, even adopting the plaintiff's version of the defendant's designation of what the patient was suffering from, there was no foundation for a finding that there was negligence or want of professional skill in the diagnosis. The same held good

as to care and treatment given. But when it came to causal connection between the alleged negligence and the patient's death, there was still more patent absence of proof. From April 11, the second physician was in charge of the patient, the defendant assisting, and after April 26 for almost four weeks he was taken from the defendant's care and observation altogether. There was no opinion whatever from any medical expert that the patient could have recovered if the defendant had diagnosed or treated him differently than was done. There must be proof beyond mere conjecture that the negligence charged caused death. The evidence must warrant the conclusion that the patient would not have died from the illness the defendant was called in to treat had he not been guilty of the negligence or want of care alleged against him. People do die even under the care of the most painstaking and skilful physicians and surgeons. It is not enough that there may be an inference that some negligent act or omission was a contributing cause.

Consideration Required for Guaranty of Results

(Wilson v. Blair (Mont.), 211 Pac. R. 289)

The Supreme Court of Montana, in reversing a judgment for $5,000 damages that was rendered in favor of the plaintiff and in directing that instead thereof one should be entered for the defendant physician, says that the plaintiff, a watchmaker and engraver, sustained an injury to one of his thumbs whereby the tendons were severed and the first joint became stiff. About six weeks after the accident, the plaintiff had a conversation with the defendant, who, the plaintiff alleged, said that a surgical operation on the thumb would cost between $25 and $50, and said that he would guarantee that after the operation the hand would be 100 per cent. efficient. An operation was performed, but it did not restore efficiency. The plaintiff then brought this action, relying on the special contract which he alleged that he had entered into with the defendant for the operation with the guaranty of results. To prevail, the plaintiff must prove that there was an agreement enforceable at law, that the defendant violated such agreement, and that damage resulted. The defendant denied that there was any agreement guaranteeing the results of the operation.

If the contract in question was merely that the defendant was to perform a surgical operation, then the law required that he possess the skill and learning possessed by the average member of the medical profession in good standing in the community in which he resided; and to apply that skill and learning with ordinary and reasonable care. He did not become a guarantor of the results of such operation. But that plaintiff contended that the defendant entered into a special contract under the terms of which he increased his responsibility by guaranteeing the results of the operation to be performed. In order that such special contract be valid, or to make it enforceable at law, it must be supported by a consideration. The only consideration for this whole transaction, passing from the plaintiff to the defendant, was the fee of from $25 to $50, and the plaintiff said that this fee was for the operation. He said that he agreed to pay this to the defendant, and that afterward the defendant warranted or guaranteed the results of the operation. It could not be maintained that the guaranty was made as an inducement to the contract to operate, for the guaranty was made subsequent to the agreement to pay for the operation. It was apparent that the warranty was made after the agreement to operate and to pay therefor, that the warranty did not become a part of the contract to operate, and that there was no consideration for the warranty. Wherefore the supreme court is of the opinion that the trial court erred in denying the defendant's motion for a nonsuit, that the verdict was against the law, and that the defendant's motion for a new trial ought to have been granted.

During the trial, counsel for the plaintiff asked certain questions and made certain statements the obvious purpose of which was to get before the jury such matter as that the jury might infer therefore that some bonding company, and not the defendant, would be called on to bear the burden of meeting any judgment rendered in this cause. Such practice is not to be commended. Such matter was without the issues, and none of it was admissible. But, having determined that this cause must be reversed on other grounds, the supreme court does not deem it necessary to determine now whether or not the action of counsel constituted, in itself, reversible error.

May Erect Residence for Physician at Hospital

(Forward et al. v. San Diego County et al. (Calif.), 211 Pac. R. 458)

The Supreme Court of California says that the defendant supervisors were about to let a contract for the erection of a residence and garage at the county hospital for the county physician in charge of that hospital, when the plaintiffs, who were taxpayers, sought to enjoin the execution of the contract. A demurrer to the complaint was interposed, and sustained. Section 4041 of the Political Code of California fixes the powers and duties of boards of supervisors, and Subdivision 7 authorizes them, among other things, to construct hospitals and almshouses "and such other public buildings as may be necessary to carry out the work of the county government." There can be no doubt that, under the power to construct and maintain a county hospital, such buildings as may be reasonably necessary for that purpose may be constructed by the board of supervisors, and if, in their judgment, the proper management and control of the county hospital requires that a residence and outbuildings be constructed for the county physician, the supervisors would have the power so to do under the statute in question. Wherefore the judgment sustaining the demurrer is affirmed.

Allowance of Expert Witness Fees for Physician

(State v. Wiebke (Minn.), 191 N. W. R. 249)

The Supreme Court of Minnesota holds, in this bastardy proceeding, that it was within the trial court's discretion to allow expert fees for a physician who in part of his testimony was called on to give his opinion as a medical expert. The supreme court says that complaint was made because of the allowance of expert witness fees for the physician who attended the prosecuting witness when the child in question was born. The physician did not merely testify to what he observed, but was also called on to give his opinion as an expert. The allowance of fees to an expert witness is largely within the discretion of the trial court, and the supreme court finds no abuse of that discretion here.

Damages for Conscious Pain Deadened by Opiates

(Wasicek v. M. Carpenter Baking Company (Wis.), 191 N. W. R. 503)

The Supreme Court of Wisconsin says that this action was brought by the plaintiff as administratrix to recover damages for the death of her husband, a city fireman, who was killed through a collision of the defendant company's automobile with a fire truck on which he was riding. A judgment for damages was entered which allowed $10,000 for compensation of the widow; for the estate, exclusive of pain and suffering, $600, and for pain and suffering, $2,625. The supreme court approves the first two items, and reduces the third one to $500. There is no yardstick, the court explains, by which either the jury or the court can accurately measure the damages in a case of this kind. The amount awarded for pain and suffering was much more difficult of approximation than that allowed for compensation of the widow. It must be manifest that $2,625 for three hours of conscious pain and suffering, deadened by opiates, could not stand, for, if so, there would be cases in which such damages would mount into hundreds of thousands of dollars, maybe millions. There is no accurate scale by which either court or jury can determine damages for pain and suffering. They must, however, exercise their judgment and discretion. But this court, having before it many cases in which juries have passed on damages for pain and suffering, is able, by considering these and the circumstances of each, to get a fairly balanced average, and concludes that $500 is the utmost that can be allowed in this case for pain and suffering. The verdict of the jury was not perverse. The jury simply had no tangible evidence on which to base it.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
American Psychiatric Association, Detroit, June 19-22. Dr. C. Floyd Haviland, Drawer 16, Capitol Station, Albany, New York, Secretary.
American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.
American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
Association of American Teachers of Diseases of Children, San Francisco, June 26.
California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
Montana, Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.
New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.
Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Southern Minnesota Medical Association, Faribault, June 11. Dr. H. T. McGuigan, Redwing, Secretary.
Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.
Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Eighth Meeting, held at Atlantic City, N. J., May 1-2, 1923

The President, DR. J. B. HERRICK, Chicago, in the Chair

Chronic Valvular Disease

DR. WARREN COLEMAN, New York: When a child or adolescent is out of sorts, anemic, tires easily, or has a low grade fever, the possibility of endocarditis should be considered, as recurrent attacks play a part in producing chronic valvular disease. Treatment includes reduction of the work of the heart to a minimum, protection of the patient from exposure, and rest in bed. As healing valves are susceptible to reinfection, plenty of time should be allowed for recovery, sometimes as long as two years. If these precautions are followed, a practically normal heart can be obtained.

DISCUSSION

DR. HARLOW BROOKS, New York: To emphasize the importance of rest in known endocarditis, in the hope that favorable results may follow, rest acts in two ways: it gives the valve a chance to repair, and it conserves the diseased muscle which is unfavorably involved.

DR. HENRY KOPLIK, New York: We should be very cautious in pronouncing a child free from cardiac disease until repeated examinations have been made over long periods of time. The first president of this association, Dr. Delafield, emphasized the point that very rigid confinement by rest in bed, especially in children, should be avoided. It may favor another condition which is as bad—the accumulation of adipose tissue. The murmur disappears, but will reappear when the patient is allowed to get up. If the period of confinement to bed is limited, it will avoid degeneration of tissues.

DR. W. S. THAYER, Baltimore: The problem is not the same in children as it is in adults. For adults, rest in bed is vital after endocarditis. The increasing amount of fat may be avoided by physical methods. The danger of allowing fat to accumulate is illustrated by the case of a young woman who was put to bed during an attack of endocarditis. She was kept in bed for three months. She gained so much weight that she developed atrophic striae all over the body. That was a catastrophe for a young and pretty woman.

Myocardial Lesions

DR. C. F. MARTIN, Montreal: Cabot has said that four out of five cases diagnosed as chronic myocarditis are incorrectly classified. We investigated sixty-five cases in which a diagnosis of myocarditis was made. Of these, twelve showed marked diffuse fibroid lesions; sixteen showed focal lesions; eleven presented fatty degeneration; fourteen showed nothing according to the pathologic reports, except that the cross striae of the muscle cells stained faintly. Two cases showed hypertrophy, but no myocardial lesion, yet the patients had died from myocardial insufficiency. Many cases showed no decompensation until shortly before death. In connection with anginal attacks: In some cases there was most severe pain with no lesion of the aorta or coronary arteries. In several cases the main lesion was near the orifice. Patients often show no disturbance on effort, although having lesions which ended fatally. A man, aged 38, with no history at all of trouble with breathing, and leading a very active life, died suddenly in his first attack. Necropsy showed very marked aneurysmal dilatation at the apex of the heart, and serpiginous dilatation of the myocardium. The functional capacity of the heart, therefore, does not depend on the lesions; it is rather an affair of dynamics than of anatomy. The efficacy of the myocardial muscle depends on the systolic discharge and on vasomotor nerve influence. Something more than anatomic change has to occur to impair the heart. The equilibrium of repletion and depletion of the cavities plays a rôle, and the muscle is adaptable in later decades to the circulatory changes by means of intraventricular anastomoses. The right preponderance shifts to the left side, and any deficiency in anastomosing mechanism might account for lack of adaptability of the heart muscle. Failure of the heart to respond to effort is caused by strain on the heart, and there is no standard to determine myocardial efficiency. Exercise tests and the electrocardiograph are not exact standards. It cannot be stated that because the electrocardiogram is abnormal the myocardium is defective, or vice versa.

Diphtheria Myocarditis

DR. A. S. WARTHIN, Ann Arbor, Mich.: I have found marked histologic changes in the heart. The patients died in from three days to three months after the onset of the disease. The heart muscle is pale, without striation, and will not take the eosin stain. There is no cloudy swelling. After the fifth day the heart muscle shows vacuolization and Zenker's necrosis of the striped muscle. The spread of degeneration follows the vascular distribution. Later, there is edema of the muscle with preponderance of hyaline cells. In from ten days to two weeks after the onset of the disease, there is mononuclear infiltration and the muscle fibers begin to liquefy. Next occurs fibroblastic proliferation throughout the heart and the bundle of His, with some evidence of regeneration changes. There seems to be much repair with myoplastic and myoblastic cells. There may be fibrosis, we do not know; but this may give rise to fibroid heart during life. The fact of muscle regeneration is of great importance, and may bear on functional improvement.

DISCUSSION

DR. K. F. WENCKEBACH, Vienna, Austria: In the study of muscle degeneration, Wieser considered that the regeneration of fibers was an important part. He found that there was

an enormous amount of muscle regeneration in tissues in which infection had been present long before. In this question of regeneration of striped muscle, it is extremely interesting to hear that the first stage of regeneration is comparable to that of smooth muscle. Large masses of smooth muscle may be regenerated in the vessel wall, but there is a difference in the structure of the regenerated portions and the original muscle structure. The whole mass of the regenerated portion appears like a foreign body when surrounded by the rest of the smooth muscle tissue, so that there is not the same arrangement of the cells as formerly, the original muscle being arranged in longitudinal layers; but the new muscle formation is active and serves very well to repair the damage done during the period of activity of the infectious disease.

DR. C. T. BUNTING, Madison, Wis.: Was there any evidence of regeneration in children?

DR. HENRY A. CHRISTIAN, Boston: In regard to the flat granules seen in two of the slides, I should like to ask what explanation Dr. Warthin has.

DR. A. S. WARTHIN, Ann Arbor, Mich.: All my cases were in young adults, from 18 to 20 years of age. In regard to the flat granules, they were due to mercuric chlorid pigment which was not entirely washed out.

Structural and Functional Involvement of the Heart, Following Acute Respiratory and Other Acute Infections

DRS. WALTER W. HAMBURGER and WALTER S. PRIEST, JR., Chicago: Three years ago a study of postinfluenzal heart lesions was begun, and these cases have been followed up to see what changes have occurred in the three year interval. The following are recorded: 1. A case of auricular extrasystoles, with bigeminal pulse on slight exercise. Present condition: regular pulse even on exercise. 2. Permanent displacement of the pacemaker. After three years: ectopic beats in Lead 1. The man feels well. 3. Originally, a case of streptococcus sore throat, then heart block, premature contractions. The man made a good recovery and is now well. 4. Influenzal myocarditis. Patient not well yet; needs frequent rest. 5. Acute streptococcus tonsillitis; gastric collapse; complete auriculoventricular dissociation and right bundle branch block. Atropin, 1/100 grain, relieved all pressure in the epigastrium; return of normal rhythm; complete recovery. Analysis shows that these patients recover after a sufficient time has elapsed. The cases may be recorded in two groups: (1) structural involvement; (2) functional involvement. In the first group there is evidence of heart failure; in the second group, there is absence of positive evidence of organic involvement, but the pain, weakness and depression are characteristic of irritable heart. The structural involvement may be only transitory in character. Basal metabolism estimations disclosed that there were slight thyroid disturbances, and many times there was concomitant disease, both structural and functional.

DISCUSSION

DR. E. B. KRUMBHAAR, Philadelphia: Were any preinfluenzal studies made in order to rule out infectious coincidence?

DR. K. F. WENCKEBACH, Vienna: In such cases the diagnosis of myocarditis has not been made. Some of the influenzal cases are cases of functional disorder of the heart, delayed conductivity, heart block. This functional disorder may be set up by toxic agents, or, perhaps, by fatigue. I have seen delayed conductivity in cases of influenza. MacKenzie has stated that there may be a complete dissociation between auricles and ventricles, but not with complete recovery. Such cases may be cases of myocarditis, but proof has to be given, and this cannot be obtained until the cases are terminated. We know that we can set up a heart block with digitalis or a prolongation of the auriculoventricular interval, but no one would say that digitalis will set up myocarditis.

DR. W. W. HAMBURGER, Chicago: We had no previous experience with these patients, but there was no history of cardiac disturbance before influenza developed. I do not want to say that auriculoventricular block is evidence of structural disease. The only case which showed other symptoms was one in which there was a large, tender liver, scanty urine, dyspnea and temporary signs of heart failure. This case cleared up, but we can conceive of a true, acute, structural involvement. I believe that it may be cloudy swelling or edema, which is a tissue change of an acute nature but susceptible of being restored to normal.

Atypical Form of Verrucous Endocarditis

DRS. EMANUEL LIBMAN and BENJAMIN SACKS, New York: Various forms of verrucous endocarditis have been described, but there is another type, hitherto undescribed, that is due to some unrecognized virus. We have studied four cases in which postmortem examinations were made. The course was subacute, running from four to nine months. The ages of the patients varied from 7 to 24 years. Three were females and one was a male. There was a large, plateau-like lesion extending from the mitral valve forward over the wall of the left ventricle, covering the anterior flap of the mitral valve. In two cases the right auricle was involved. In four cases the tricuspid valve was involved, and in two cases the pulmonary valve was involved. These lesions were never found in cases of rheumatic fever (i. e., fatal cases in which the Aschoff bodies were demonstrated). There are no bacteria in the vegetations. The blood cultures are negative. There is a tendency to involvement of the wall of the left ventricle. There may be previous valvular disease, and the lesions may be recurrent. In one case there was one small infarction of the spleen. There were no glomerular lesions of the kidney. In three cases there had been a recent pericarditis. The course was subacute, with irregular fever and anemia, but no leukocytosis. There was some pulmonary and joint involvement, with a very peculiar discoloration over the joints. In half of the cases there was lupus erythematosus. Convulsions occurred in three cases, pericarditis, in three cases, petechiae in four cases, and multiple skin necrosis.

DISCUSSION

DR. GEORGE BLUMER, New Haven, Conn.: Reports of a very large number of cases of lupus erythematosus have been published in which the disease has not run a typical course and has gone on to death by sepsis as in the cases mentioned by Dr. Libman.

DR. L. F. BARKER, Baltimore: I am very much interested in these cases of acute lupus erythematosus. In Baltimore we had one case, and the Mayos have published several cases. In some cases, lesions of tuberculosis were found at necropsy, and it was thought that the whole condition was due to tuberculosis; but, really, only about half the cases show tuberculous lesions. I should like to ask Dr. Libman whether he thinks that tuberculosis can be regarded as a predisposing factor in these cases.

DR. EMANUEL LIBMAN, New York: I do not think that there is a well delineated clinical picture of lupus erythematosus yet. I have seen a number of typical cases and also a great many which at the postmortem do not show this lesion. In atypical cases, a terminal endocarditis is found. As far as my own experience in fatal cases of lupus erythematosus goes, we did not find a tuberculous etiology. Tuberculosis can be said to be one of the etiologic factors of lupus erythematosus dermatosus, but I do not think that it plays a rôle in the cases we reported. One patient is alive and well. There were two attacks of fever, and a lung focus. There was pericarditis, but a negative blood culture. I believe that recurrence may take place, and there is some pathologic evidence in support of this view.

Use of the Roentgen Ray in the Diagnosis of Chronic Valvular Heart Disease

DR. J. A. E. EYSTER, Madison, Wis.: The factors that should should be taken into account in adopting roentgen-ray determinations of clinical cases include: (1) possible variations in the size of the heart from time to time; (2) influence of moderate exercise, and (3) influence of meals shortly before examination. Our study showed (1) a considerable variation in the frontal and in transverse diameters; (2) a variation of 5.1 per cent. after walking for fifteen minutes, and (3)

a variation of 5.1 per cent. after meals. This shows that variations of from 25 to 50 per cent. may occur from slight causes.

DISCUSSION

DR. K. F. WENCKEBACH, Vienna: The form of the orthodiagram depends on the level of the diaphragm. I compare the mass of the heart with that of a sack of peas with small horizontal diameters. If there is no base for the sack to rest on, it takes a pendant shape, but if it is supported, its base follows the shape of the base on which it is resting. It will become wider and flatter at the base with large, horizontal diameter. That occurs also with the heart. I am skeptical of the value of gaging the bulk of the heart by means of figures. I am trying to get as much as possible out of the orthodiagram, but also as much as possible out of percussion. Not everybody knows how to do percussion. Percussion may be of value in trying to gage the position of the under side of the heart, because although we may be able to trace the rest of the outline, a most important part of the figure is always lacking. I tried injecting oxygen into the abdomen to make visible this lower surface of the heart, but the attempt was not successful, although the method was a perfectly safe one as regards the patient. This led me to go back to the older method of percussion. This is difficult, especially for the apex and the left side of the heart, but by careful percussion one can follow the louder and softer sounds and make out the right side of the heart. One can get a very clear line over the liver and stomach in the normal heart. In the long heart there is a different type of line; in the high heart there is another type of line with a much more horizontal line for the base. This gives one an idea how high the heart is lying in the chest. When there is great enlargement of the left ventricle in mitral or aortic incompetence, there is an enormous increase in size of the left ventricle which cannot be detected in any other way.

DR. JOSEPH H. PRATT, Boston: I have been using the orthodiagrammatic method since 1905, and I feel convinced that there is something wrong in the conclusions drawn from the data presented. It is my experience, and that of others who have worked extensively wtth orthodiagrams, that it is of great value in the routine measures for diagnosis of heart disease. Perhaps, in some of these cases the change in the size of the heart was very little outside the normal. The size of the normal heart varies greatly, and the standards are not satisfactory. When we examine the heart with the orthodiascope it is in constant motion and influenced by respiration and by systole and diastole. There may be a slight amount of error, and it is impossible to determine very slight enlargements; but we are interested in determining definitive enlargement which is of clinical significance, and in that the orthodiascope has given definite help. The teleroentgenogram is a substitute for the orthodiagram. Fluoroscopic methods can also be used. During the last two years, as a result of the perfecting of the machine and of the technic, it has been possible to use the orthodiagram to check up the detail of the teleroentgenogram. The teleroentgenogram does not give the long axis of the heart nor does it show whether the apex is below the dome of the diaphragm. The position of the apex must be guessed at; but by using the two methods, definite enlargement of the heart, if present, will be revealed. Percussion is not an entirely exact method, and details overlooked by percussion can be checked up by the orthodiascopic methods.

DR. W. S. THAYER, Baltimore: Only constant practice for many years in percussion of hearts can teach the value of this procedure. I am surprised to hear Dr. Pratt state that he values the orthodiagrammatic methods so much. Comparing my estimate of the size of the heart by percussion, with the measurements by orthodiagram, I have never undervalued the size of the heart. There are many diagrams that do not mean much, but the physician who cannot percuss "is not there!" One of the satisfactions of getting a few years older is learning to use the fingers better.

DR. K. F. WENCKEBACH, Vienna: Percussion certainly is the most difficult art in physical diagnosis. It took many years of practice before I could be sure of being half way exact. I object to looking at the roentgenogram before percussing, because when I know its form I make a most beautiful percussion. Furthermore, it may prevent one from finding out what is the real bulk of the heart by the percussion method. The roentgenogram has undue influence on the percussion test. The percussion should be done first.

Physical Findings in Pericarditis with Effusion

DRS. ROGER S. MORRIS AND CARL F. LITTLE, Cincinnati: Large pericardial effusions, not suspected during life, have been found at necropsy. To study this question, injections were made in patients recently dead, and it was found that the cardiohepatic angle was not obtuse; it was an acute or a right angle. Also there were no roentgen-ray changes before 250 or 300 c.c. was injected into the pericardial cavity. The first change on percussion was increased dulness at the base of the heart, near the great vessels. Observations continued on patients for two and one-half years confirmed these findings on the cadaver. Percussion was done with the eyes closed, and before fluoroscopic and teleroentgenographic examination were made. Tests were made both in the recumbent and in the erect posture. In all cases we found an acute cardiohepatic angle and dulness at the base of the heart. We feel that this is useful in recognizing pericardial effusions. The roentgen ray confirmed the percussion findings in these cases.

DISCUSSION

DR. L. A. CONNOR, New York: The recognition of small amounts of liquid in the pericardium is a difficult matter. Often, even large effusions are overlooked. I want to emphasize the importance of posterior signs because they are most constant. My experience is that the cardiohepatic angle varies greatly in different cases. The roentgen ray and percussion usually show what Dr. Morris said, but there are exceptions to that rule. Another important point is that often there is preservation of the friction rub even when the effusion is very large. That is the reason frequently of failure to recognize effusion; we think that wherever there is a rub there is very little fluid.

DR. W. S. THAYER, Baltimore: One point which Dr. Morris brings out is of importance, and that is the change of dulness at the base with change of position. We have all assumed change in the shape of dulness with change of position from side to side, but the change in the amount of dulness at the base with the erect and recumbent postures is of importance.

DR. WARREN COLEMAN, New York: I think that the angle between the great vessels and the heart is one of the most important things to determine from the standpoint of percussion. If one percusses carefully over the normal heart, it can be obtained. In my experience, one of the sure signs of the presence of fluid is the straightening out of that line.

DR. F. T. LORD, Boston: Contrary to Dr. Coleman's experience, I have determined that angle with great difficulty. I think the elevation of the area of dulness of the heart above the normal position leads me to suspect effusion. Another point which Dr. Connor made is of importance; that is, compression in the back area due to atelectasis, owing to effusion. Also, in large hearts in children this sign may be present without any effusion.

Heart in Exophthalmic Goiter and in Adenomatous Goiter with Hyperthyroidism

DRS. LOUIS B. WILSON, W. M. BOOTHBY AND F. A. WILLIAMS, Rochester, Minn.: In exophthalmic goiter the heart work is so increased that the patient, lying in bed, needs four and five thousand calories a day. There is increased systolic blood pressure and slightly decreased diastolic pressure. In adenomatous goiter with hyperthyroidism, there is increase in both systolic and diastolic pressure. Cardiac murmurs occur in half the cases. Murmurs are of two kinds, the systolic blowing murmur, associated with changes in blood flow, and a systolic blowing murmur, with maximum at the apex, due to mitral regurgitation and enlarged left ventricle. Few patients die of heart failure in this disease. One death in twenty-three cases was recorded as due to cardiac failure. Difficult breathing after operation is due to anoxemia resulting from injury to the laryngeal nerve. In some patients, auricular

fibrillation develops from the stress of operation. Patients with emergency operations for other conditions have developed auricular fibrillation, owing to unsuspected thyroid conditions. In our cases, sinus auricular block occurred in one case; T-wave negativity in three cases; hypertrophy in seventeen cases, and fibrosis in two cases. Eleven of the patients were over forty-five, and in these, lipoid changes were more marked than in other women of the same age group. Our conclusions were that pronounced changes are not so frequent in goiter as is generally supposed. When they do occur, they dominate the picture; but they can be relieved greatly by proper cardiac therapy.

Insulin in the Treatment of Severe Diabetes

DRS. ALEXANDER MCPHEDRAN AND F. G. BANTING, Toronto: When we admit cases of diabetes to the Toronto General Hospital, the patients are allowed to remain for twenty-four hours on the diet they have been taking previous to admission. They are then placed on a diet requisite to satisfy their basal requirements. The next step is the taking of a careful history: complete and careful examinations are made as to the existence of foci of infection; examinations of the blood and urine are made, and the excretion of sugar is noted. The amount of sugar excreted is subtracted from the amount given to fulfil the basal requirement, and furnishes the basis for estimating the amount utilized. If the patient becomes sugar free when receiving a diet calculated according to his basal requirement, he is not at present considered a sufficiently severe case for insulin treatment. The insulin treatment consists in giving an amount sufficient to maintain a balance between the calories that cannot be metabolized by the patient's own pancreatic secretion, over and above the carbohydrates, fats and proteins that he is able to utilize. In the milder cases, insulin is administered once a day; in the more advanced cases it is given twice a day, and in the very severe cases it may be necessary three or four times a day.

The best time for the administration of insulin is from twenty to thirty minutes before meals. The insulin injected subcutaneously is absorbed by the circulation, and this tends to produce a balance between the hypoglycemia of insulin and the hyperglycemia brought about by the food intake. The patient with a very high blood sugar may stand a comparatively higher dose, because the blood sugar must be brought down to normal. Roughly speaking, one unit of insulin has the effect of utilizing 2.5 gm. of carbohydrate in the milder types of cases. In the more severe cases of diabetes one unit of insulin will take care of about 1 gm. of carbohydrate. Care must be given in studying the best time for the administration of the dose. It is sometimes necessary to give a larger dose in the morning than in the evening, because after the morning injection there is a tendency to hypoglycemia, and breakfast counteracts the downward tendency. The action of the drug lasts till noon, when another meal is taken. Some patients do better when taking 15 units in the morning and 10 units in the evening.

In the management of the case it is better to decrease the diet and increase the dosage, until the amount of food required by the patient is reached. The diet is then kept constant, and sufficient insulin is administered to keep the patient sugar free if possible. The art of treatment consists in balancing the amount of internal secretion with the amount of carbohydrate that is over and above the patient's tolerance, keeping the equilibrium between the hypoglycemia, on the one hand, and hyperglycemia, on the other. If the patient is excreting 1 or 2 gm. of glucose with a diet that is 700 calories above the requirement, one must find out the time of day at which that amount is being excreted, and administer the dosage accordingly. Insulin shock is a definite clinical entity. It is always recognizable, as the subjective sensations are pathognomonic of the lowering of blood sugar. The reactions depend on the fall of the blood sugar and the extent and rapidity of the fall. The normality of the blood sugar must be kept above the level at which the reactions occur. It has been found experimentally that the administration of calcium relieves the hypoglycemia convulsions that occur in rabbits, although without raising the blood sugar. This fact has been made use of clinically at the Children's Hospital. The patients are less likely to hypoglycemic reactions when receiving 3 gm. of calcium lactate, three times a day.

One type of diabetes that does not respond well to insulin treatment is that with diarrhea, but one patient with a severe case accompanied by diarrhea is now having fewer reactions under calcium chlorid administration, than previously. Insulin dosage means that the patient is permitted to metabolize more calories. The increase of caloric intake and maintenance of normal blood sugar relieve the symptoms of the disease.

In regard to the continuous use of insulin indefinitely, it does seem that by adding the necessary amount of pancreatic secretion, the patient's own gland is relieved of the strain and has some chance to recover. Patients showing 50 gm. excretion, can after three months' treatment take 300 additional calories and remain sugar free. The other patients who were acetone free despite starvation will get an increased tolerance after a time. The formation of acetone is prevented in patients who showed acetone from starvation, because they are now able to handle sufficient calories.

Insulin is not a cure for diabetes, it is a treatment. It allows the patient to combat infections, to keep free of acidosis and to avoid coma. It enables the diabetic patient to burn sufficient carbohydrate, so that protein and fats can be added to the diet in sufficient quantities to give him energy to carry on his work and maintain the ordinary economic burden of life.

Insulin in the Routine Treatment of Diabetes

DR. E. P. JOSLIN, Boston: In the treatment of diabetes, we must conserve all the measures that have proved useful without the use of insulin. Insulin is a powerful drug and calls for careful usage. Recovery from insulin shock is prompt when remedial measures are instituted. The juice of an orange, or two teaspoonfuls of sugar, immediately relieve the patient. Insulin dosage needs supervision and limitation, but its use can be taught the general practitioner. I have sent the drug to 127 different general practitioners, who had patients to be treated. The physician should spend two or three hours in learning how to manage the diet and how to use insulin.

The diet should be what the patient has been taking, with some modification, in the direction of reduction of calories. The protein should be 1 gm. per kilogram of body weight. The carbohydrate should be rather less than what has been taken. The first doses should be 1 unit. Proper balancing of the ration will help to cut down the amount of insulin needed. Insulin is best given in the morning, and the dosage depends on the rate of absorption from the intestinal tract and from the skin. It is better to play safe and to give too small rather than too large a dose. In the first 5,000 doses given there were only thirty-five reactions. Insulin seems to enable the pancreas to respond better, so that in very severe cases in which at first as much as 35 units is needed, the blood sugar can be kept normal with 10 units. Gain in weight is vey marked. If patients have to omit insulin for lack of supply, they must go to bed and reduce the diet one third. Neglect to do this will produce coma. Now that we understand treatment by insulin, it must be said that deaths from diabetic coma are an unnecessary accident that can be avoided by sensible treatment. If the patients die from coma at the present time, it is a disgrace to the medical profession.

Insulin in the Surgical Complications of Diabetes

DR. R. T. WOODYATT, Chicago: The most common surgical complications in diabetes are infections of the extremities. Usually these are emergency cases, and there is no time for metabolic investigations. There is usually a low alkali reserve and acid intoxication, but the surgical condition will not permit of delay. To operate on the patient courts shock and risks increasing the acidosis, but allowing infection to progress means greater injury. If we can bring the alkali reserve to a safe level, the damage stops. This should be brought up to 40 on the Van Slyke scale. Three measures are useful in bringing about this result: (1) dietary control; (2) administration of alkalis, and (3) insulin dosage. In uncomplicated cases, 1 gm. of fat, 0.5 gm. of protein and practically no carbohydrate is a safe ration and will stop acidosis and restore alkali reserve. The fat can be given

as 1 pint (500 c.c.) of cream: two eggs for protein, and 25 gm. of bread. In the complicated cases, however, tissue breakdown continues without reference to diet. Restoration of the alkali reserve by means of insulin may take from ten to twenty-four hours. If, however, acid continues its damage to the organs, the loss of one hour may mean death. Another point is that one does not know how much carbohydrate there is for the insulin to work on. Under these circumstances the administration of 20 gm. of sodium bicarbonate, by mouth, with sufficient water, every hour, till the alkali reserve returns to normal, is a safe measure. After this the administration of 5 gm. an hour is enough to hold the cases until further examinations have been made, or until sufficient time has been given to estimate the insulin dosage.

(To be continued)

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., April 30, 1923

Concluded from page 1644

The Respiratory Center in Acidosis

Drs. J. H. Austin, G. E. Cullen and Leon Jonas, Philadelphia: In our studies on the acidosis occurring in ether anesthesia, we obtained evidence of extremely rapid fluctuations in the alkali reserve as well as in other factors concerned in the acid base equilibrium. The larger part of the fall in alkali reserve that occurs with ether, chloroform and nitrous oxid anesthesia occurs during the first few minutes of the anesthesia. The fall in alkali reserve with nitrous oxid anesthesia is less than with ether and chloroform anesthesia. A fall of the same degree and rate of development can be produced by using nitrogen instead of nitrous oxid in the same concentration. Exertion, psychic disturbance and repeated bleedings, as occurring in these experiments, do not of themselves produce a fall in alkali reserve. Anoxemia alone, without exertion, lowers the alkali reserve, but less than does the administration of the anesthetics. The importance of the combination of anoxemia and exertion is suggested by these experiments. They are probably not the only factors responsible for the fall in alkali reserve in these experiments. The immediate fall in p_H associated with the fall in alkali reserve indicates that we are dealing with an uncompensated acidosis and not a compensated alkalosis.

Modification of the Folin and Wu Blood Sugar Determination

Drs. F. A. Evans, V. E. Rothberg and T. M. Mabon, Pittsburgh: We dilute the unknown in the test tube in which the reduction has been carried out and the color developed, to match the color of the standard as closely as possible, instead of to the same amount as the standard solution, 25 c.c. The unknown is then read against the standard in the colorimeter as usual, and the amount of dilution of the unknown is made a factor in the final calculation. For this calculation the formula

$$\text{Dextrose in unknown} = 80 \times \frac{\text{dilution}}{\text{colorimeter reading}}$$

has been derived. By this modification, correct values may be obtained for known sugar solutions, and a rather large error eliminated from the Folin and Wu blood sugar determination.

Studies on the Sweat and the Response of the Body to External Heat

Drs. Ralph Pemberton, F. A. Cajori and C. Y. Crouter, Philadelphia: The physiologic response of the body following from thirty to fifty minute therapeutic exposure to an electric light bake of fourteen arthritis patients and two normal persons consisted of increased alkalinity of the blood, a fall in the total carbon dioxid content of the blood and a small rise in alkali reserve. An alkaline swing of the urine, a decreased hourly ammonia excretion, and an increased alkalinity of the sweat were also observed, which are interpreted as reflecting the changes in reaction of the blood. This change in reaction of the blood would seem to be largely due to a carbon dioxid deficit resulting from a loss of carbon dioxid from the body by way of the lungs and skin. Part of the value of such bakes in nephritis may be in combating the acidosis which sometimes exists. The tendency for an alkalosis as a result of exposure to heat should be mentioned as a possible baneful effect of the extreme use of this form of treatment.

Reaction and Gas Content of the Blood in Lobar Pneumonia

Drs. C. A. L. Binger, A. B. Hastings, J. Neill and H. J. Morgan, New York: It may be concluded from our investigations that the occurrence of an abnormal acid-base balance in pneumonia patients, in the sense of an acidosis, is rarely, if ever, encountered; nor are the changes accompanying recovery greater than those occurring as the result of normal physiologic processes. In no case of our series was the administration of sodium bicarbonate indicated.

Arborization of the Right and Left Branches of the Bundle of His in the Human Heart

Dr. M. A. Rothschild, New York: The opportunity afforded itself in securing the heart of a patient dying from suppurative pancreatitis with a marked hyperglycemia. In general, it was found that the arrangements and distribution of the conducting mechanism correspond very closely to the dog's. Practically all parts of the ventricular musculature investigated showed the endocardium lined by arborization.

Infrequency of the Association of Fibrillation of the Auricles and Subacute Bacterial Endocarditis

Drs. Emanuel Libman and M. A. Rothschild, New York: It has been noted that in a series of approximately 200 cases of subacute bacterial endocarditis in the active stage, fibrillation of the auricle practically never occurs. In the healed stage of the disease, fibrillation may occur. It has also been noted that patients with fibrillation of the auricle practically never develop bacterial endocarditis. In a general way, disorders of cardiac mechanism are the exception rather than the rule in bacterial endocarditis, while in rheumatic infections disorders of mechanism are exceedingly common. These facts are of diagnostic and prognostic interest.

Basal Metabolic Rate in Untreated Exophthalmic Goiter

Dr. Leo Kessel, New York: A study of the basal metabolism in fifty unselected cases of clear-cut exophthalmic goiter is reported. Forty-six records are complete and show an average initial reading of plus 44 per cent. At the end of three months, six months and twelve months, respectively, the readings are: three months, 28; six months, 22; twelve months, 19. There is, therefore, a tendency in these patients, managed without the institution of specific therapy (spontaneous course), to a rapid, marked and progressive fall in the basal metabolism, which is accompanied by a corresponding fall in the symptoms score, in the exophthalmometer reading, in the neck circumference and by a gain in weight. Coincidently, there is a return to economic and social utility in these patients, all of whom were confronted with great economic strain. The course of the basal metabolism should serve as a normal standard by which specific therapy may be objectively evaluated.

Changes in Shape and Size of Hearts During Progress of Compensation

Drs. J. C. Friedman and Sidney Strauss, Chicago: Cardiac compensation may occur without any changes in heart dimensions, with changes only in the great vessels, especially the superior vena cava; with changes in either the right or the left border; or with changes in all diameters. Many of these changes are so slight or so situated as to escape entirely ordinary methods of examination.

Levulose and the Diabetic Metabolism

Drs. E. P. Joslin and Howard F. Root, Boston: Highly purified levulose in amounts proportional to body weight was given to diabetic patients. Levulose ingestion produced a less marked hyperglycemia than dextrose, and a marked rise in respiratory quotient and metabolism followed. Even in severe diabetes, only a small amount of sugar appeared in

the urine after as much as from 75 to 100 gm. of levulose was taken. Pure levulose, 15 gm. in portions of 5 gm., three times daily, or insulin, 15 gm., in the form of artichokes, when added to the diet of a diabetic patient for periods of from one to four weeks did not produce glycosuria.

Copper as a Constituent of Mother's and Cow's Milk: Its Absorption and Excretion by the Infant

DRS. A. F. HESS and G. C. SUPPLEE, New York: The milk of the cow, as well as mother's milk, regularly contains copper. The amount varies somewhat according to the dietary. The copper is absorbed by the infant and partly excreted in the urine. When the dietary includes cereal, larger amounts of copper are excreted.

Cardiodynamic and Electrocardiographic Studies During Various Stages of Heart Failure

DRS. W. W. HAMBURGER and STEPHEN D'IRSAY, Chicago: Measurements of the isometric and isotonic phases of the cardiac cycle were attempted by simultaneous electrocardiographic and phonocardiographic records. For the most part, cases of moderately advanced and advanced heart failure were studied from the time of admission into the hospital until compensation had been restored through rest and digitalis. Variations in heart muscle tonus paralleling variations in cardiac compensation can be detected by such measurements.

Treatment of Migraine with Peptone, and Evidence of Its Anaphylactic Origin

DRS. J. L. MILLER and B. O. RAULSTON, Chicago: Pagniez reports good results in the treatment of migraine by the intravenous injection of peptone. The results of our treatment of twenty-five patients were: nine, much improved; twelve, moderately improved, and four, not benefited.

Blood Volume Studies in Obesity

DRS. N. M. KEITH and G. E. BROWN, Rochester, Minn.: In fourteen definitely obese patients the blood volume was found to vary from the average normal to distinctly low values. Later determinations showed that loss of weight was not always associated with the same changes in blood volume.

Catabolism of Amino-Acids in the Human Organism

DR. K. K. KOESSLER, Chicago: Histidin and tyrosin are decarboxylated almost consistently in the intestinal tract to histamin and tyramin, respectively; or, in other words, histamin and tyramin are normally present in the human intestinal tract.

The Electrocardiogram in Uremia and Severe Chronic Nephritis with Nitrogen Retention

DRS. P. D. WHITE and J. E. WOOD, JR., Boston: Of thirty-seven cases of uremia and severe chronic nephritis with an increased blood nitrogen, all presenting symptoms and signs of coma or impending coma, all except three had nonprotein nitrogen amounting to 60 mg., or over, per hundred cubic centimeters. Nineteen cases showed definite variations from the normal electrocardiogram (other than axis deviation, sinus arrhythmia or tachycardia) which could not be accounted for except by the consideration of a toxic effect of the products of uremia on the heart muscle. These variations were sino-auricular, auriculoventricular and intraventricular block and abnormal T wave changes. It was not determined why these changes occur in some cases of uremia and not in others. Of four of the positive cases coming to necropsy, two presented evidence of glomerulonephritis and two of the arteriosclerotic type of nephritis. Clinically demonstrable edema was present in eight of the positive instances, and albuminuric retinitis in seven. Age and sex were not factors.

Infectious (Catarrhal) Jaundice

DRS. G. R. MINOT and C. M. JONES, Boston: A detailed study of twenty-five cases has been made. The duodenal sediment showed bile-stained pus and epithelium, mucus and inspissated bile, during the early stages of the disease. The duodenal bile pigment output was at first absent or diminished, but later rose to a level of from 100 to 500 per cent. above normal. Abnormal pigments were observed—urobilinogen frequently, cholecyanin rarely. Subsequently the duodenal pigments returned gradually to normal. Rapid clinical improvement immediately followed the peak of the pigment curve. Clinical jaundice disappeared before a normal pigment level was reached. The concentration of the serum bile pigments was practically a direct reciprocal of that in the duodenal contents. Our observations and necropsy findings lead to the assumption that in infectious jaundice there occurs a functional disturbance of the liver cells not unlike that resulting from certain chemical poisons. Such a process explains the persistence of jaundice in the severe cases. The extent of liver damage may be judged by following the pigment output. Blood studies indicate a typical leukocyte reaction characterized by a slight initial polymorphonuclear neutrophilic leukocytosis, followed by a leukopenia, with a gradual return to normal. With the leukopenia occurs an absolute rise in the lymphocytes and large mononuclears. These are most numerous during the period of most marked clinical improvement, with a moderate increase persisting for weeks thereafter. Immature forms of lymphocytes are frequent, and vacuolization of the white cells is a feature, most marked in the mononuclears. A reduction of the red cells is usually found, but the platelets definitely increase with a decrease of the jaundice.

Acute Tonsillitis

DRS. A. L. BLOOMFIELD and A. R. FELTY, Baltimore: A study made of 200 persons among whom tonsillitis is prevalent each winter has shown that acute tonsillitis is almost always an exogenous infection, and that those who are streptococcus carriers are relatively insusceptible.

Toxic Nephritis in Pyloric and Duodenal Obstruction: Renal Insufficiency Complicating Gastric Tetany

DRS. L. G. ROWNTREE and G. E. BROWN, Rochester, Minn.: Eleven patients suffering from a toxemia associated with an anatomic or physiologic stasis in the duodenum have been studied. This duodenal toxemia is characterized by a rather definite clinical picture—urinary changes, changes in the blood chemistry, decreased renal functional capacity, and pathologic changes in the kidney. The clinical picture consists of: (1) the vomiting of large amounts of thin, serous, bile-stained fluid; (2) evidence of dehydration, red, florid complexion, high hemoglobin, low blood pressure and asthenia; (3) tetany-like manifestations, and (4) features of a superimposed uremia; (5) at times evidences of shock. The blood shows (1) a low level of chlorids; (2) a high carbon dioxid capacity, and (3) a high level of blood urea and creatinin. Urinalysis reveals albuminuria and casts. Renal functional studies show high values for urea and creatinin, and a decreased excretion of phenolsulphonephthalein. In six cases, necropsy revealed a nephrosis with characteristic changes in the tubular epithelium or a diffuse nephritis. The chemical findings of the blood are of definite diagnostic and prognostic significance. The treatment is primarily surgical to establish gastrojejunal continuity. When clinical and laboratory findings indicate a poor surgical risk, medical measures are employed, drainage by stomach tube, administration of fluids, chlorids, dietary control and drug therapy.

Observations in a Case of Paroxysmal Auricular Fibrillation Over a Period of Seventeen Years

DR. F. T. FULTON, Providence, R. I.: A man, aged 80, has had these paroxysms for more than twenty years and has been observed carefully for seventeen years. He is free from any evidence of cardiovascular disease and has retained his mental faculties to an unusual degree. The paroxysms, however, have been at times so frequent as to interfere seriously with his activities, and greatly with his mental poise. The electrocardiogram verifies the diagnosis of fibrillation. Two years ago he was given 3 grains of quinidin daily in the morning. During the last eighteen months he has had only three paroxysms, and they have not been of much significance. He had previously been having them on an average of about six or eight a month. He continues to take the quinidin daily.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

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Effect of a Restricted Diet. IV. On Age of Greatest Productivity. J. R. Slonaker and T. A. Card, Stanford University, Calif.—p. 203.
Studies on Mixture of Air in Lungs with Various Gases. C. Lundsgaard and K. Schierbeck, Copenhagen, Denmark.—p. 210.
Studies on Mixtures of Air in Lungs with Various Gases. II. Quantitative Influence of Certain Factors in Producing Full Mixture of Hydrogen with Air in Lungs. C. Lundsgaard and K. Schierbeck, Copenhagen, Denmark.—p. 231.
Influence of Gonad Hormones on Seminal Vesicles. N. F. Fisher, Chicago.—p. 244.
Blood Pressures and Heart Rate, in Girls, During Adolescence. S. R. Burlage, Ithaca, N. Y.—p. 252.
*Physiologic Assay of Insulin Based on Its Effects on Hyperglycemia Following Glucose Injections and Epinephrin. G. S. Eadie and J. J. R. Macleod, Toronto.—p. 285.
Effect of a Restricted Diet. V. On Mortality, Cannibalism and Sex Ratio. J. R. Slonaker and T. A. Card, Stanford University, Calif.—p. 297.
Vasodilator Mechanisms. IV. Intra-Arterial Injection of Histamin. S. W. Ranson, L. R. Faubion and C. J. Ross, Chicago.—p. 311.
Id. V. Intra-Arterial Injection of Ether. S. W. Ranson, W. F. Windle and L. R. Faubion, Chicago.—p. 320.
*Extraction of Antidiabetic Substance (Insulin) by Perfusion of Pancreas. I. Influence of Neutral or Alkaline Perfusates on Respiratory Metabolism of Depancreatized Animals. J. R. Murlin, H. D. Clough and A. M. Stokes, Rochester, N. Y.—p. 330.
*Id. II. Influence of Acid Perfusates on Blood Sugar, D: N Ratio and Respiratory Metabolism of Depancreatized Dogs. J. R. Murlin, H. D. Clough, C. B. F. Gibbs and N. C. Stone, Rochester, N. Y.—p. 348.
Relative Stimulating Efficiency of Continuous and Intermittent Light in Tachina Fly, Archytas Aterrima. W. L. Dolley, Jr., Ashland, Va.—p. 364.
Relations Between Gastric and Duodenal Persistalsis. W. C. Alvarez and L. J. Mahoney, San Francisco.—p. 371.
*Influence of Temporary Closure of Renal Artery on Amount and Composition of Urine. E. K. Marshall, Jr., and M. M. Crane, Baltimore.—p. 387.

Effect of Insulin on Glucose Hyperglycemia.—A study of the effect of insulin on the postprandial glucose curve of the rabbit made by Eadie and Macleod showed that the hyperglycemia due to injections of glucose is affected by insulin both in degree and duration. A method for the physiologic assay of insulin based on the results is suggested. Figures are given showing the extent of the hyperglycemia produced by epinephrin administered an hour and a quarter after varying doses of insulin.

Extraction of Insulin by Perfusion of Pancreas.—Perfusates of the pancreas of cat, dog and pig were made by Murlin et al. by the method of Clark, employing Ringer's or Locke's solution containing 0.2 per cent. sodium bicarbonate and, at times glucose to 0.5 or 1.0 per cent. In several instances, which are presented in detail, there was a very perceptible increase in the respiratory quotient in animals which just previously had been wholly incapable of oxidizing glucose. This method of extraction (by perfusion with a weakly alkaline fluid) is, however, said to be incapable of withdrawing a sufficient amount of the antidiabetic substance to be of any practical importance. Acid fluids are much more efficacious.

Influence of Perfused Insulin on Blood Sugar.—Insulin is extracted by perfusion of the pancreas with acidulated Ringer's solution more readily than with the same fluid made slightly alkaline. Sufficient concentration of the antidiabetic substance is obtained in this way to show, without further treatment of the material than mere neutralization (to litmus), a precipitate fall in both the blood sugar and D: N ratio of depancreatized dogs, following a single injection of from 25 to 50 c.c. subcutaneously. Following a liberal feeding of glucose and a single injection of perfusate the respiratory quotient has been raised several times from the diabetic level to 0.81-0.85.

Influence of Temporary Closure of Renal Artery on Urine.—Marshall and Crane state that the widespread belief that an anemia of the kidney of short duration produces a prolonged anuria has been found to be untrue. Arguments that have been used against glomerular filtration based on this belief, consequently, do not hold. Certain explanations are suggested from their experiments to explain the discrepancies observed by previous workers. A cessation of the blood flow through the kidney for a short period (one to three minutes) produces no effect on the excretion of the kidney when the circulation is reestablished, except the appearance of protein in the urine. Anemia of longer duration (twenty to twenty-five minutes) produces definite changes in the urine eliminated by the kidney. These changes may be summed up as follows: The elimination of water, chlorid and bicarbonate is unchanged or may be increased, while that of urea, phosphate, sulphate, creatinin and ammonia is distinctly decreased. These results, in conjunction with other data on renal secretion, appear to be best explained by the theory of urinary secretion which embraces glomerular filtration, reabsorption of fluid and certain substances by the tubules, and the secretion of various bodies by the tubular epithelium.

Annals of Clinical Medicine, Baltimore

1: 61-139 (September) 1922

Present Status of Renal Functional Tests. N. M. Keith, Rochester, Minn.—p. 61.
Clinical Study of Cholesterinemia in Patients with Nitrogen Retention. H. B. Schmidt, Detroit.—p. 66.
*Capillary Observations in Cardiovascular-Renal Disease. G. E. Brown, Rochester, Minn.—p. 69.
Diabetes. R. M. Wilder, Rochester, Minn.—p. 80.
*Hemoclastic Shock as Test of Liver Function. T. R. Brown, Baltimore.—p. 89.
Congenital Hemolytic Jaundice. Report of Case. J. Friedenwald and W. H. Gantt, Baltimore.—p. 95.
Diseases of Biliary System. H. R. Hartman, Rochester, Minn.—p. 107.
*Left-Handedness as Educational Problem. A. Caille, New York.—p. 111.
*Food Allergy as Cause of Bladder Pain. W. W. Duke, Kansas City, Mo.—p. 117.
Therapeutic Value of Roentgen Ray. A. U. Desjardins, Rochester, Minn.—p. 127.
Esophageal Obstructions. P. P. Vinson, Rochester, Minn.—p. 138.

Capillaries in Cardiovascular-Renal Disease.—The more severe cases of cardiovascular-renal disease, in a series of fifty, studied by Brown revealed marked variation in cutaneous capillaries. The most constant changes noted were: (1) contraction or narrowing of the arterial and venous limbs, producing a small contracted type of capillary; (2) frequent invisibility of the arterial limb, producing a hook-shaped capillary loop; (3) marked disturbance of the capillary flow, with frequent disappearance of single or multiple loops.

Hemoclastic Shock as Test of Liver Function.—This test, first described by Widal in 1913, has been used by Brown in twenty-five cases of headaches of the so-called "bilious" type, as well as certain cases of migraine and other forms of periodic headache, cases with vague digestive symptoms as, for example, somnolence after meals, anorexia, lack of energy, chronic constipation often spoken of as "biliousness," in which the general and gastro-intestinal findings were not sufficient to account for the symptoms. Ten cases gave positive reactions; five gave what might be regarded as a suggestive reaction; the remaining cases were negative. The most disappointing result was that it was impossible to differentiate clinically those cases that gave positive from those that gave negative reactions. Thus, in the headache group, certain cases with negative findings presented exactly the same clinical picture in every detail as certain of the positive cases. Brown urges greater use of the test in order to establish its real value.

Left-Handedness as Educational Problem.—In view of the probability that left-handedness has a structural, atavistic basis and is not merely an acquired faulty habit, Caillé insists that the disciplinary attitude of parent and teacher toward left-handedness should be adjusted to the degree and character of its manifestations. Mild types in which the stimulus for preferential action is weak, are readily overcome by educational efforts. Conversely, it is not difficult to train the left hand when the use of the right hand is lost through injury or disease. In persistent sinistrality, particularly if combined with speech defects, right-handedness should be encouraged but never forced. Unreasonable discipline creates

an unbalanced condition akin to mental chaos. The correction of eyestrain and of nasopharyngeal obstruction must not be overlooked and hygienic living in its brodest sense is of importance.

Food Allergy as Cause of Bladder Pain.—In patients who have frequent, painful urination or constant pain over the bladder, and the severity of symptoms is frequently out of all proportion to the lesion found after careful examination, the bladder symptoms, in Duke's opinion, are frequently the result of the ingestion of foods to which the patient is sensitive.

Annals of Otology, Rhinology and Laryngology, St. Louis

32: 1-320 (March) 1923

Combined Intranasal and External Operation on Lacrimal Sac. (Mosher-Toti). H. P. Mosher, Boston.—p. 1.
Dacryorhinocystotomy; Combined Method. W. E. Sauer, St. Louis.—p. 25.
Study of Reinforcement of Sound by Means of Schaefer Resonators. J. P. Minton and R. Sonnenschein, Chicago.—p. 45.
Regional Anatomy of Tear Sac. J. M. Patton, Omaha.—p. 58.
Indications, Contraindications and Preparation for Dacryocystorhinostomy. R. A. Fenton, Portland.—p. 67.
Use of Tuning Fork Stem for Both Air and Bone Conduction in Rinne Test. R. Sonnenschein and J. P. Minton, Chicago.—p. 85.
Aural Exostosis. F. A. Burton, Denver.—p. 97.
Consideration of Radical Mastoid. C. M. Sautter, New York.—p. 118.
Case of Polyarthritis Complicating Mastoiditis. Operation. Recovery. D. Roy, Atlanta.—p. 129.
End Results of Radical Operations on Accessory Sinuses. R. H. Skillern, Philadelphia.—p. 139.
Treatment of Otitis Media with Tuberculin. G. T. Von Colditz, Chicago.—p. 149.
Practical Diagnostic Value of Tests of Vestibular Mechanism. F. L. Dennis, Colorado Springs.—p. 160.
Simple Knot for Intranasal Sutures. W. Johnston, Portland, Ore.—p. 201.
Compensatory Nasal Growth. J. A. Pratt, Minneapolis.—p. 211.
Case of Tonsillar Cyst which Protruded from Tonsil as Pedunculated Tumor. A. W. Proetz, St. Louis.—p. 223.
Case of Codein Poisoning. A. W. Proetz, St. Louis.—p. 231.
Two Cases of Salivary Calculus. A. W. Proetz, St. Louis.—p. 233.
Traumatic Facial Diplegia, with Involvement of Sixth Nerves, Portion of Left Third Nerve, Also Fifth and Eighth Nerves, with Dislocation of Atlas, Etc. F. F. Keiper, Lafayette, Ind.—p. 236.
Two Cases of Empyema of Maxillary Sinus of Dental Origin. Alveolar Fistula. Radical and Plastic Operation. J. L. Maybaum, New York.—p. 273.
Chronic Suppurative Otitis Media. H. E. Bozer, Rochester, Minn.—p. 277.
Complications of Paranasal Sinus Disease in Infants and Young Children. L. W. Dean, Iowa City.—p. 285.
Art and Technic of Bronchoscopy and Esophagoscopy. T. Hubbard, Toledo.—p. 298.
Radical Frontal Sinus Operation. Report of Cases. F. O. Lewis, Philadelphia.—p. 305.

Atlantic Medical Journal, Harrisburg, Pa.

26: 429-500 (April) 1923

Goiter: Basal Metabolism. C. E. Ervin, Danville, Pa.—p. 429.
Basal Metabolism: Its Application to Disorders of Thyroid. S. D. Conklin, Sayre.—p. 431.
Adenomatous Goiter. C. B. Noecker, Scranton.—p. 434.
Exophthalmic Goiter. L. A. Sheridan, Wilkes-Barre.—p. 435.
Colloid Goiter. M. J. Noone, Scranton.—p. 436.
Prevention and Treatment of Simple Goiter. D. Marine, New York.—p. 437.
Clinical Determination of Heart Size. J. W. Boyce, Pittsburgh.—p. 443.
*Pulmonary Tuberculosis and Appendicitis. A. Armstrong, White Haven.—p. 446.
*Nasal Diphtheria. J. D. Iams, Pittsburgh.—p. 448.
Mistaken Diagnosis in Cases of Syphilis. J. R. Elliott, Laurel, Del.—p. 451.
Some Comments on Radium Technic. W. H. Guy and F. M. Jacob, Pittsburgh.—p. 453.
Pregnancy and Labor in Very Young and Elderly Primiparas. P. F. Williams, Philadelphia.—p. 456.
Proper Depth of Ether Anesthesia. F. R. Widdowson, Philadelphia.—p. 459.
Retrograde Esophageal Bougie. G. Tucker, Philadelphia.—p. 461.

Pulmonary Tuberculosis and Appendicitis.—In looking up the records of 200 cases of pulmonary tuberculosis admitted to private sanatoriums, Armstrong found that twenty-five of these patients had had appendectomies performed, an incidence of 12.5 per cent. In some there occurred definite attacks, which did not lead to operation. Armstrong pleads for prolonging the convalescence after appendectomy, when the lung condition is not satisfactory, to avoid subsequent activation of the lung lesions if present.

Nasal Diphtheria.—Iams is of the opinion that primary infection of the nasal mucosa with the diphtheria bacillus is not infrequent. It is often exceedingly mild and is not diagnosed because the possibility of its presence is not considered. The symptoms outlined in the average textbook, with the exception of nasal discharge, either do not appear at all or are late symptoms and are evident only after some days. The theory as to the extreme toxicity of this type was derived largely from the fact that only advanced and serious cases were diagnosed. The mortality is at least no higher than in the faucial type if sufficient antitoxin be given. All cases of severe rhinitis, particularly if unilateral, should be cultured. Until importance is given to nasal culture equal to that now given to throat culture, many unexplained infections are bound to occur. Since many cases are undiagnosed, epidemics will not be controlled until more intensive nasal culturing is done and its importance recognized.

Boston Medical and Surgical Journal

188: 567-616 (April 19) 1923

*Student Form of Respiration Apparatus. F. G. Benedict and C. G. Benedict.—p. 567.
Etiology and Clinical Features of Lung Abscess. J. Homans, Boston.—p. 577.
Clinical Importance of Chronic Changes in Appendix Which Are Discovered by Roentgen Ray. F. W. White, Boston.—p. 587.
*Eventration of Diaphragm. Report of Case. A. E. Jaffin, Jersey City, N. J., and J. A. Honeij, Boston.—p. 593.
Chronic Urethritis in Women. C. R. Cote and G. G. Smith, Boston.—p. 596.

Student Form of Respiration Apparatus.—To aid in introducing to medical students the fundamentals of gaseous metabolism measurements, a simple type of apparatus is described by the Benedicts involving the breathing of a confined volume of oxygen-rich air and measuring exactly the amount of oxygen absorbed by the lungs of the subject. A can, two-thirds filled with soda-lime, a bathing cap for expansion, two "Sadd" valves and housings, with rubber hose and mouthpiece, comprise the respiration system. Dry room air is forced quantitatively by an automobile grease gun, acting as an air pump, into the can as the oxygen is absorbed. From the volume of six full strokes of the air pump, the temperature of the pump, the barometer, and the time in minutes, the actual oxygen consumption is rapidly computed. The apparatus is said to lend itself also to the determination, by students, of vital capacity.

Eventration of Diaphragm.—A patient with objective symptoms pointing to inactive upper lobe lesions in both lungs with marked pleural changes at the left base, suddenly presented tympanitic resonance from the left lung base to the second rib, with absence of vocal resonance and breath sounds from the base to the third rib. Over this area many gurgling, musical and tinkling sounds could be heard, some resembling peristaltic noises. Succussion was audible and palpable. The signs suggested a hydropneumothorax, but there was complete absence of any clinical history that might account for its development. The roentgen-ray examination disclosed a congenital deformity and displacement of the left side of the diaphragm with adherent and displaced stomach. In further support of the theory of congenital origin, Jaffin and Honeij state there was a noticeable facial asymmetry, due to a greater prominence of the left malar bone, and a strikingly increased development of the left trapezius muscle. There was a slight scoliosis from the seventh cervical to the fourth dorsal spines which was probably secondary.

188: 617-664 (April 26) 1923

*Obesity: Observations on One Thousand Cases. W. E. Preble, Boston.—p. 617.
Cancer of Prostate. G. G. Smith, Boston.—p. 621.
Convalescence: III. Chronological Review, from 1877 to 1917. J. Bryant, Boston.—p. 625.
Fracture Table and Fluoroscopy in Difficult Fractures. H. M. Clute, Boston.—p. 630.
Cholesterol Content of Bile in Health and Disease. I. Methods for Collection and Estimation in Duodenal Contents of Man. C. W. McClure and E. Mortimer, Boston.—p. 633.
Value of Treatment in General Paresis. H. C. Solomon, Boston.—p. 635.
Percentile Charts of Height and Weight of Boston School Children. W. T. Porter, Boston.—p. 639.

Heels of Boston School Children. W. T. Porter, Boston.—p. 644.
Progress in Cardiovascular Disease. Part III. P. D. White, Boston. —p. 644.

Etiology of Obesity.—Preble is convinced that obesity is almost invariably due to bad dietary habits, and not to errors in metabolism or to heredity. Overweight of 15 or more pounds is an increasingly serious condition with advancing years, conducive to heart, arterial and kidney disease, diabetes and hypertension. Obesity is easily curable, and it is the duty of the physician to acquaint his patient and the community with the gravity of the condition, and the ease with which it can be controlled. Regulation of the diet is the important thing. Only in rare cases is glandular or other drug therapy indicated. The cause of obesity may be simply too much food, but it is more apt to be an excess of carbohydrate or fat, or both, in the diet. The diet and daily habits as regards work, exercise, sleep, etc., of the individual patient must be scrutinized carefully, and excesses corrected. Care should be taken that the patient receives enough proteid, otherwise weakness will result. A rather high proteid diet, from 90 to 110 gm., is prescribed, except for nephritics, in which class the amount is regulated according to kidney function.

188: 665-710 (May 3) 1923

*The Silent Kidney. J. D. Barney, Boston.—p. 665.
*Importance of Pyelography in Recognizing the Causes of Obscure Abdominal Symptoms. R. F. O'Neil, Boston.—p. 671.
*Kinks of Ureter Due to Aberrant Vessels. A. H. Crosbie, Boston.—p. 678.

The Silent Kidney.—Barney discusses the comparative "silence" of the kidney, even in the presence of extensive and long-standing disease. The most important lesson to be derived from this study is that cystitis, hematuria and pyuria are symptoms, and not diseases. While what is apparently primary cystitis may occasionally be seen, it is probable that the underlying cause has gone unobserved owing to careless or faulty methods of examination. The same is true of pyuria and hematuria. Another important observation is that pain, and even tenderness, is often complained of only in the sound kidney, its diseased mate giving no subjective symptoms whatever. Almost any disease of the kidney may begin and end without once calling attention to the organ involved; on the other hand, localizing symptoms may be of extremely short duration.

Pyelography in Abdominal Conditions.—Pyelography is regarded by O'Neil as a very reliable diagnostic procedure and one which should be employed in all doubtful cases of abdominal tumor, or of chronic or paroxysmal abdominal pain before resorting to exploratory operations.

Ureteral Kinks Due to Aberrant Vessels.—According to Crosbie, various types of the obstruction produced by aberrant kidney vessels should always be suspected until proved not to exist. There is no cardinal symptom, except in the very acute cases. The best way to detect kinks is by taking pyelograms with the catheter partially withdrawn. Judgment must be used in cutting large vessels going to the lower pole of the kidney. A very large vessel should not be cut unless very definite obstruction can be demonstrated.

Florida Medical Association Journal, St. Augustine and Jacksonville

9: 144-159 (March) 1923

Vertigo and Ear. A. K. Wilson, Jacksonville.—p. 144.
Practical Suggestions to Health Officers in Malarial Control. A. C. Hamblin, Tampa.—p. 145.

Illinois Medical Journal, Oak Park

43: 253-332 (April) 1923

Major Infections. W. J. Mayo, Rochester, Minn.—p. 283.
*New Operation for Femoral Hernia. E. Andrews, Chicago.—p. 290.
Lipoids. H. Isovesco, Paris, France.—p. 292.
*Early Diagnosis of Chronic Cardiac Conditions. J. A. E. Eyster, Madison, Wis.—p. 297.
Intracranial Complications of Suppurative Sphenoid Sinus Disease. With Report of Seven Cases. C. F. Yerger, Chicago.—p. 304.
Perforative Appendicitis. O. L. Pelton, Jr., Elgin, Ill.—p. 308.
*Atypical Exophthalmic Goiter. I. Bram, Philadelphia.—p. 311.
Interpretation and Diagnosis of Gross Lesions Within Lungs. R. H. Hayes, Chicago.—p. 314.
Where Field of Oculist Meets That of Practitioner. B. Y. Alvis, St. Louis.—p. 319.
Salient Points in Diagnosis and Treatment of Cancer of Uterus. A. H. Curtis, Chicago.—p. 323.

Operation for Femoral Hernia.—When the ring is very large and rigid or when it has to be enlarged at operation in order to reduce the hernia, leaving a defect very difficult to close by the ordinary methods, Andrews closes the upper end of the femoral canal with a strip of the aponeurosis of the external oblique muscle, by turning it into this space and attaching it to the periosteum of the pubic bone just above the pectineal line. The upper fragment of the external oblique is sewed to Poupart's ligament. The advantages of this method are said to be: (1) the closure of the canal is made at the upper end, leaving no pouch; (2) a stronger membrane is used than in any other operation; (3) the rigid and inelastic walls of the ring are not used, but instead structures that can be sutured together without the slightest tension being put on them.

Early Diagnosis of Heart Lesions.—Eyster emphasizes, first, the importance of careful evaluation of etiology and symptomatology; second, the necessity of a general systematic routine physical examination; third, the importance of accurate percussion; fourth, the value of a comprehensive roentgen-ray examination in doubtful cases, and finally the significance of the electrocardiogram in diagnosis. The most generally neglected of the aids to diagnosis, he believes, is the roentgen ray. It is the one method which gives, imperfect as it is at present, the most accurate knowledge of the form and contour of the organ, the type of information which is of most value in leading to a correct diagnosis.

Atypical Exophthalmic Goiter.—The following definition is offered by Bram for exophthalmic goiter: Exophthalmic goiter (Graves' disease; Basedow's disease; Parry's disease, Flajani's disease) is a chronic (rarely acute) affection, apparently due to a dysfunction of the endocrine organs and of the vegetative nervous system, characterized by increased catabolism, weakness, wasting, emotional disturbances, and frequently by a varying degree of exophthalmos and thyroid swelling. From this definition it can be seen that (1) the constant evidences of the clinical picture are plus basal metabolism, weakness, wasting, emotional disturbances, afebrile heart hurry, tremor, and dermographia; and (2) the inconstant evidences are exophthalmos and goiter.

Indiana State Medical Association Journal, Ft. Wayne

16: 115-156 (April) 1923

Heart Disease: Its Modern Conception and Treatment. G. W. McCaskey, Ft. Wayne.—p. 115.
Occiput Posterior. A. M. Mendenhall, Indianapolis.—p. 121.
Thyroid Disease. A. C. Roope, Columbus.—p. 125.
*Fracture Hazards. M. A. Austin, Anderson.—p. 129.
Brief Review of Otology to Beginning of Nineteenth Century. C. H. McCaskey, Indianapolis.—p. 132.
Medical Practitioner and American Society for Control of Cancer. J. E. Rush.—p. 135.

Treatment of Fracture of Upper End of Humerus.—Austin reports three cases. One of these was a case of fracture of the right humerus, 2 inches from its upper end, with abduction of the upper fragment and upward displacement of the lower fragment. Three attempts were made to secure apposition of the bone ends, and only after the arm was placed in complete extension was approximation secured. To hold the fragments in this position and keep the arm in extension, Austin immobilized the patient in bed with the arm in complete abduction. A long straight splint was made and padded to extend from the tips of the fingers, under the back, as far as his elbow on the opposite side. The arm was bandaged snugly to the splint from fingers to axilla. In order to keep traction on the extended arm a sling was placed around the chest at the axilla and fastened to the end of the board on the side opposite to the fracture. When this sling was tightened up, it pushed the injured arm away from the body and prevented the fragments from overriding. The boy was kept flat on his back for four weeks, without any special discomfort, and the final picture, taken seven months after the accident, showed an apposition so perfect that even the fracture line could not be seen. Scudder states it is practically impossible to reduce and retain this type of fracture of the humerus without an open operation and wiring of the bone ends. Austin believes that this crucifixion splint and

putting the patient to bed, reduces the treatment of fractures of the humerus to the minimum of simplicity, and gives the certainty of a better result than any ambulatory immobilization that can be devised.

Iowa State Medical Society Journal, Des Moines

13: 121-176 (April) 1923

Diminishing Accommodation, Artificially Produced. R. F. French, Marshalltown.—p. 135.
Abscess of Lung. W. W. Bowen, Dodge.—p. 142.
Bacterial Relationship to Stone Formation. O. C. Morrison, Carroll.—p. 145.
Points in Diagnosis of Chronic Gallbladder Disease. C. D. Enfield, Louisville, Ky.—p. 148.
Traumatic Valgus with Dislocation in Lisfranc's Joint. A. F. O'Donoghue, Sioux City.—p. 151.
Doctrine of Prepared Soil: Neglected Factor in Surgical Infections. H. Cabot, Ann Arbor, Mich.—p. 153.
Physicians Who Located in Iowa in Period Between 1850 and 1860. D. S. Fairchild, Clinton.—p. 158.

Kansas Medical Society Journal, Topeka

23: 85-112 (April) 1923

Glucose Tolerance Test in Diabetes. C. F. Menninger, Topeka.—p. 85.
Goiter. J. T. Axtell, Newton.—p. 90.
Extra-Genital Chancres. H. G. Collins, Topeka.—p. 92.

New York Medical Journal and Medical Record

117: 453-516 (April 18) 1923

*Radium in Carcinoma of Breast. Necessary Preoperative Routine. G. S. Willis, New York.—p. 453.
Toxemic Aspect of Ocular Disease. P. Dunn, London.—p. 457.
Epidemic Encephalitis. Mental Symptoms, Loss of Abdominal Reflexes and Myoclonus. I. S. Wechsler, New York.—p. 458.
Etiology of Neuroses. A. Polon, New York.—p. 460.
Clinical Significance of Eosinophilic Cells of Blood. A. J. Hinkleman, Oklahoma City, Okla.—p. 465.
Influence of Local Blood Supply on Crisis and Lysis in Pneumonia. G. G. Ornstein and A. Braunstein, New York.—p. 466.
Etiology and Pathogenesis of Anal Pruritus and Pruritus Ani. J. F. Montague, New York.—p. 469.
Fracture of Head and Neck of Radius. J. Grossman, New York.—p. 472.
Indications for Transfusion of Blood. I. S. Ravdin, Philadelphia.—p. 475.
*Improved Method for Diagnosis and Localization of Duodenal and Gastric Ulcers. S. L. Cash, New York.—p. 478.
New Frontal Sinus Instrument. J. A. Hagemann, Pittsburgh.—p. 480.
Bacterial Vaccine Immunization Under Bacterial Intoxication. G. H. Sherman, Detroit.—p. 481.
Dawn of Surgery. J. Wright, Pleasantville, N. Y.—p. 483.
John Owen's Epigrams on Medicine and Medical Men. W. R. Riddell, Toronto, Can.—p. 487.
Medical Germany. M. R. Robinson, New York.—p. 491.
W. E. McGuire. B. R. Tucker, Richmond.—p. 495.

Radium Therapy of Breast Carcinoma.—Willis points out that radium, postoperatively and in recurrences, has given such results in these cases as to justify its use, but that the most successful results will be obtained when radium is used as a routine measure, preoperatively. The preoperative use of radium disintegrates the tumor mass and cell nests and forms fibrous tissue masses which block off the lymphatics and prevent the dissemination of the tumor cells. Willis uses what he terms a transfixion needle, 15 cm. long, containing 33.33 mg. of radium.

Better Diagnosis of Gastric and Duodenal Ulcers.—Cash's method is based on the Einhorn string test. To remove the objections to that test, he uses a thread made from a loosely knitted tubular silk braid. It is white, flexible, compressible and half an inch in diameter. The test consists of two parts; the upper, extending from the teeth, is a silk string, preferably No. 15 twisted silk. The lower part of the test is a section of the braid. The features of the braid are: (1) a large surface for contact, with large stains for gross, chemical, and microscopic examination; (2) size and compressibility permit contact with irregular surfaces; (3) size and texture prevent cutting of the tissues; (4) compression of the braid by the pylorus localizes this part and thereby the lesion, whether duodenal, gastric or pyloric; (5) passage through is also shown by bile stain, in conjunction with the pyloric and other markings on the braid; (6) it is useful in testing the progress of healing and for post-treatment observation; (7) elimination of the cup and bulb which, in aggravated ulceration at least, are objectionable; when the roentgen rays reveal the lesion, the braid determines whether it is acute or chronic; (8) the braid, proportioned for the stomach, has free play in contrast to the string test that extends into the duodenum with a bead or cup attached.

Northwest Medicine, Seattle

22: 115-150 (April) 1923

Recent Progress in Treatment of Chronic Empyema. C. A. Hedblom, Rochester, Minn.—p. 115.
Pleural Effusions. J. D. Sternberg and W. H. Watson, Portland.—p. 119.
Duodenal Ulcer. M. F. Dwyer, Seattle.—p. 122.
Gastric and Duodenal Ulcer, Medical and Surgical Aspects Preoperative and Postoperative Treatment. J. R. Turner, Jr., Tacoma.—p. 126.
Prostatic Obstructions. H. W. Howard, Portland.—p. 129.
Complications and Mortality Causes Following Prostatectomy. W. G. Schulte, Salt Lake City.—p. 132.
Megacolon: Two Cases. A. A. Matthews, Spokane.—p. 135.
Trachoma (Granular Conjunctivitis, Chronic Ophthalmia) Among Ute-Indians. F. C. Myers, Whiterocks, Utah.—p. 138.
Resuscitation of Asphyxiated Infants. New Use for Politzer Bag. H. Feagles, Chehalis, Wash.—p. 139.
Twin Feti Papyracei with Third Living Child. C. C. Wallin, Lewiston, Mont.—p. 140.

Philippine Journal of Science, Manila

22: 219-344 (March) 1923

Investigations Concerning Yaws. A. W. Sellards and E. W. Goodpasture and W. de Leon.—p. 219.
*Effect of Treatment on Wassermann Reaction in Yaws. E. W. Goodpasture and W. de Leon.—p. 221.
*Immunity in Yaws. A. W. Sellards and E. W. Goodpasture.—p. 233.
Public Health Aspects of Yaws. A. W. Sellards.—p. 251.
*Histology of Healing Yaws. E. W. Goodpasture.—p. 263.
Control of Yaws. A. W. Sellards and E. W. Goodpasture.—p. 285.
Woods of Philippine Dipterocarps. L. J. Reyes.—p. 291.

Effect of Treatment on Wassermann Reaction in Yaws.—Goodpasture and de Leon found the Wassermann test strongly positive in 100 per cent. of forty-five patients presenting active cutaneous lesions of yaws. Following the clinical cure of yaws by means of intravenous injection of neo-arsphenamin, the Wassermann reaction remained positive for many months, gradually weakened, and became negative in seven of twelve cases within six months after treatment. Treatment of yaws in the early secondary stage with mercury caused no noticeable improvement in the lesions. The Wassermann reaction showed an initial slight weakening in the titer, then remained constant and strongly positive. An antigen prepared from an early case of yaws containing treponemata did not fix complement with serum from yaws patients that was strongly positive with the usual cholesterinized antigen.

Immunity in Yaws.—A patient, in the well developed secondary stage of yaws, was successfully reinoculated with yaws; the lesion soon regressed spontaneously. Two patients in the stage of clavos were reinoculated with yaws. The lesions that developed disappeared very rapidly. Sellards and Goodpasture believe that the reinoculation of untreated patients suggests that a long standing infection with yaws produces a definite, though not complete resistance to reinfection. Four patients in the secondary stage of yaws were treated with neo-arsphenamin and reinoculated with yaws several months later. In one, a typical granuloma was produced; in the other, three atypical reactions resulted. The results of reinoculation of patients cured with neo-arsphenamin indicate the development of a measurable degree of active immunity in yaws. No evidence was obtained to suggest that the serum of yaws cases under treatment with neo-arsphenamin has any curative action when injected into yaws patients.

Histology of Yaws.—Goodpasture has demonstrated *Treponema pertenue* in abundance by Levaditi's method in early yaws, not only within the thickened epidermis as heretofore observed, but also within perivascular connective tissue of the papillae. The lesions studied indicate that the secondary yaw begins with a localization of treponemata, from the blood, in certain papillae, and from such points the organisms infect the epidermis, where conditions become more favorable for their growth. Within forty hours after the injection of a therapeutic dose of neo-arsphenamin all treponemes demonstrable by Levaditi's method had disappeared from early yaws. The older secondary nodular lesions have a more permanent architecture, heal less rapidly, and probably offer greater protection to treponemes; consequently, they require more care in effecting a complete cure.

Public Health Journal, Toronto

14: 147-194 (April) 1923

Pasteur and Science of Bacteriology. J. G. Fitzgerald.—p. 147.
Hydrophobia: Four Centuries Ago. W. R. Riddell.—p. 155.
Schick Campaign and Its Lessons. H. G. Rowell.—p. 168.
Some Clinical Aspects of Industrial Poisoning. N. C. Sharpe.—p. 172.
Venereal Diseases in Industry. J. J. Heagerty.—p. 175.

Surgery, Gynecology and Obstetrics, Chicago

36: 447-588 (April) 1923

*Radical Operations on Stomach with Especial Reference to Mobilization of Lesser Curvature. W. J. Mayo, Rochester, Minn.—p. 447.
*Surgical Treatment of Ulcer of Stomach and Duodenum. H. Finsterer, Vienna, Austria.—p. 454.
*Mortality in Surgery of Exophthalmic Goiter. J. de J. Pemberton, Rochester, Minn.—p. 458.
*Operative Treatment of Embolism of Large Arteries. Report of Two Cases. L. Buerger, New York.—p. 463.
*Diverticulitis of Gallbladder. G. K. Abbott, Sanitarium, Calif.—p. 466.
Angiomyoma of Urinary Bladder. F. Kidd and H. M. Turnbull, London, England.—p. 467.
Primary Carcinoma of Urethra. Report of Three Cases. H. Culver, and N. K. Forster, Chicago.—p. 473.
*Primary Retroperitoneal Sarcoma. Report of Twenty-Eight Cases. C. L. Andrews, Rochester, Minn.—p. 480.
Clinical Picture of Dilated Ducts Beneath Nipple Frequently to be Palpated as Doughy Worm-Like Mass—Varicocele Tumor of Breast. J. C. Bloodgood, Baltimore.—p. 486.
Pseudohermaphrodism or Complete Hypospadias. F. R. Hagner and H. B. Kneale, Washington.—p. 495.
*Complication of Purpura with Gestation. G. C. Mosher, Kansas City, Mo.—p. 502.
Germicides and Presentation of a New Germicide—Meroxyl. H. H. Young, E. C. White, J. H. Hill and D. M. Davis, Baltimore.—p. 508.
Cholecystitis and Its Complications. M. G. Peterman, Rochester, Minn.—p. 522.
*Traumatic Shock; Some Experimental Work on Crossed Circulation. M. A. McIver and W. W. Haggart, Boston.—p. 542.
Pathologic Study of Case of Cirsoid Aneurism. F. L. Meleney, Peking, China.—p. 547.
Compensatory Hypertrophy of Fibula. A. Gibson, Winnipeg, Man.—p. 554.
*Traction Fracture of Lesser Trochanter. J. F. Langdon, Omaha.—p. 556.
Two Kineplastic Problems Solved. G. B. Arana, D. D. Valle, Buenos Aires, Argentine, and F. Wildermuth, Frankfurt, Germany.—p. 559.
Utilization of Rubber Catheter in Intestinal Anastomosis. E. J. Horgan, Washington, D. C.—p. 565.
Device for Hemostasis and Drainage Following Suprapubic Prostatectomy. J. H. Cunningham, Boston.—p. 569.
Modification of Rubin Technic for Transuterine Inflation of Fallopian Tubes. A. Jacoby, New York.—p. 571.
Treatment of Postoperative Nausea, Vomiting and Distention in Certain Abdominal Sections by Use of Modified Duodenal Tube. C. L. A. Oden, Chicago.—p. 572.

Radical Operations on Stomach.—Proper mobilization of the lesser curvature of the stomach, Mayo says, is the most important single step in radical operations on the stomach. Experience has led him to the acceptance of the Billroth I operation as a primary procedure to be used in cases of ulcer and carcinoma situated on the lesser curvature and pyloric end of the stomach in such a manner as to permit the application of the method. After the application of the Billroth I method, there is a tendency for the stomach to drop to the left of the spine, its weight exerting an injurious strain on the suture line uniting the end of the duodenum to the gastric stump. This difficulty has been overcome in these cases and also in cases in which, following excision of gastric ulcers or a Finney pyloroplasty, there is tension due to the dropping of the stomach as a whole to the left of the spine. A point on the anterior wall of the stomach, sufficiently far to the left, is chosen, the stomach is drawn to the right and attached to the suspensory ligament of the liver by several catgut sutures in a manner to bring the entire anastomosis to the right of the spine. There has been no suture leakage and gastroduodenal drainage is greately improved.

Surgical Treatment of Ulcer of Stomach and Duodenum.—In the last seven years Finsterer has performed gastro-enterostomy only exceptionally in the treatment of gastric and duodenal ulcer, as, for instance, in the case of an acute perforation with peritonitis, or in certain cases of acute hemorrhage in a duodenal ulcer. While, up to 1914, he had performed ninety-eight gastro-enterostomies and only nineteen resections, the latter chiefly for suspected cancer, he has since performed only forty gastro-enterostomies as against 427 resections. Acute ulcer will heal spontaneously or by medicinal treatment and, Finsterer says, should be treated that way, the stomach ulcer as well as the duodenal ulcer. He operates on the chronic ulcer when repeated medical treatment fails to cure it, and when the recurring attacks with accompanying pain invalidate the patient. He has never observed malignancy in a duodenal ulcer. The mortality in resections is not larger than after gastro-enterostomy. Finsterer has now, in 407 cases, a mortality of 4.4 per cent., of which the greater portion was due to insufficient asepsis. Since 1919, he has operated in 296 cases, with a mortality of 2.3 per cent. In the gastro-enterostomy of the posterior type with a short loop, the mortality was 11.8 per cent. in 144 cases. Excluding the cases of operation for acute hemorrhage, there remain 113 cases with 4.4 per cent. mortality.

Mortality in Surgery of Exophthalmic Goiter.—The mortality rate following surgical procedures on patients with exophthalmic goiter, Pemberton states, has been reduced to 1.005 per cent. in terms of operation and 1.73 per cent. in terms of patients. The patients with visceral degenerative changes form the largest part of the mortality list in the surgery of exophthalmic goiter. The operative risk is less and the benefits derived are greatest when the patient comes to surgery early in the course of the disease before degenerative changes have occurred. The avoidance of operative and postoperative complications by painstaking care of details in the management of surgical cases is essential to a low mortality rate in cases of exophthalmic goiter.

Operative Treatment of Embolism of Large Arteries.—Buerger reports a case of successful removal of an embolus from the brachial artery about five or six hours after its lodgment, with complete restoration of the circulation through the normal vascular paths, until death, which occurred nine days after the operation. In a second similar case the patency of the arterial channels situated at some distance from the site of the removed embolus could not be restored.

Diverticulitis of Gallbladder.—The remarkable feature in Abbott's case was the presence of a markedly inflamed diverticulum arising from the neck of the gallbladder—the entire gallbladder otherwise being normal in appearance.

Primary Retroperitoneal Sarcoma.—Retroperitoneal sarcoma is seen so often, in Andrews' opinion, that the condition should be kept in mind in the diagnosis of abdominal disorders. Trauma is apparently not a factor in the cause of retroperitoneal sarcoma. Metastasis occurs in about 33 per cent. of cases; it is most often found in the liver and lungs. The most characteristic physical finding is the colon in a groove on the anterior surface of the tumor. The small round cell sarcoma or lymphosarcoma is the most common and most malignant type. The prognosis is always unfavorable. A combination of radium and roentgen-ray treatment seems to be the most satisfactory treatment thus far instituted.

Complication of Purpura with Gestation.—Purpura is a very rare complication of pregnancy; the fortieth case in the literature is recorded by Mosher. The fetal mortality is 50 per cent. Nearly all cases of purpura hemorrhagica which go to term end fatally at delivery, or soon after labor, from hemorrhage. No drug therapy is of the slightest avail. Direct transfusion of blood, keeping the platelet count over 10,000, is the only remedy. Repeated transfusion may be necessary to tide the patient over the period in which her platelet count is reduced.

Nature of Traumatic Shock.—The experimental evidence obtained by McIver and Haggart—which is fully reported here—suggests that some substance capable of producing shock is taken up by the circulation from a traumatized area.

Traction Fracture of Lesser Trochanter of Femur.—The case reported by Langdon differs in some respects from other cases hitherto published. Marked pain was conspicuous by its absence. At no time did it occupy the foreground in the clinical picture. Three days after the injury, though loss of flexion was absolute, the patient nevertheless could bear his weight on the injured limb without any evidence of pain. Passive motions were possible in all directions and not painful. Loss of flexion in this case seemed to be more marked than in the cases previously published. The probabilities are that the complete attachment of the muscle to

the shaft was torn away, together with the trochanter, resulting in total loss of flexion.

Virginia Medical Monthly, Richmond

50: 1-70 (April) 1923

Transduodenal Drainage of Gall Tract. W. B. Martin, Norfolk.—p. 1.
Factors Often Overlooked in Treatment of Disease. T. A. Williams, Washington, D. C.—p. 6.
Early Recognition of Gallbladder Disease. E. L. Kendig, Victoria, Va.—p. 15.
Vascular Occlusion of Mesenteric Vessels. Three Cases. J. W. Tankersley, Greensboro, N. C.—p. 20.
*Mesenteric Thrombosis. Report of Two Cases. S. McGuire, Richmond.—p. 23.
Diagnosis of Intestinal Parasitic Infection. T. D. Davis, Richmond.—p. 26.
Stricture of Ureter. A. I. Dodson, Richmond.—p. 28.
Urological Diagnosis from Standpoint of General Practitioner. L. T. Price, Richmond.—p. 30.
Roentgen Ray as an Adjuvant in Treatment in Advanced Cases of Carcinoma of Stomach. C. R. Robins, Richmond.—p. 33.
Progress of Malaria Control in Virginia. L. L. Williams, Jr., and C. A. Kane.—p. 34.
Case of Acute Exophthalmic Goiter Treated Successfully by Use of Roentgen Ray. M. D'Arcy Magee, Washington, D. C.—p. 37.
Case of Secondary Carcinoma of Lung with Pulmonary Tuberculosis. J. T. Scott, Colorado Springs, Colo.—p. 39.
Studies in Hay-Fever: Dates of Pollination of Anemophilous Plants in District of Columbia and Vicinity, Observed in 1922. H. S. Bernton, Washington, D. C.—p. 41.
Clinical Significance of Reductions in White Cells of Human Blood. W. B. Blanton, Richmond.—p. 43.
Eye Pathology of Dental Origin. W. W. Gill, Richmond.—p. 48.
Abscess of Temporosphenoidal Lobe Complicating Acute Mastoiditis: Operation: Recovery. E. G. Gill, Roanoke.—p. 51.

Mesenteric Thrombosis.—The diagnosis of mesenteric thrombosis, McGuire says, is extremely difficult. There is no symptom-complex of the disease, and it is rarely recognized before operation or necropsy. Fortunately, the condition is so acute and urgent that an exploratory operation is plainly indicated. When the peritoneum is opened, there is usually an escape of a considerable quantity of dark colored or bloody fluid which makes it evident that the disease is not appendicitis, cholecystitis or a gastrojejunal perforation. The distended black coils of gangrenous bowel are most commonly found in the pelvis or lower abdomen. The operation of choice is resection of the diseased bowel, followed by the restoration of the continuity of the intestinal canal by an anastomosis of the divided ends. If the general condition of the patient renders this impracticable, then the gangrenous portion of the bowel should be excised and the two cut ends drawn out of the abdomen and fastened to the edges of the wound, with the hope that a secondary anastomosis may be done later. In doing the resection, great care should be taken to divide the intestines well outside the infected area in tissue with good blood supply.

Wisconsin Medical Journal, Milwaukee

21: 483-534 (April) 1923

*Myocardial Deficiency from Surgical Standpoint. J. L. Yates, M. F. Rogers and R. E. Morter, Milwaukee.—p. 483.
Special Features of Radium Therapy in Gynecology. A. H. Curtis, Chicago.—p. 498.
*Unusual Fetal Monstrosity. M. H. Clark, Ripon.—p. 500.

State of Myocardium Is Index of Age.—Yates and his associates question the truth of the old dictum that a man is as old as his arteries without considering the more significant fact that age itself is of little moment. The real issue is total accomplishment, which is commensurate with the length and character of life and is determined largely by the functional capacity of heart muscle. The causes of cardiac incompetence or myocardial deficiency are heart muscle lesions. Their deleterious effects on function are commensurate with the acuteness and diffuseness of the process, or, when focalized, with the significance of the rôle played in cardiac function by the part affected. Influences inimical to normal heart muscle structure are: overacidity, inadequate nourishment and intoxication. They frequently operate in conjunction and are likely to initiate or aggravate progressive anatomic lesions and, therefore, to promote increasing cardiac handicaps. The requirements to be met in practice are two: (1) diagnostic means to determine the presence and degree of myocardial injuries and (2) a simplification of preoperative, operative and postoperative methods designed to safeguard the more severe lesions and to be at least harmless for the less severe. Protective methods now available are to postpone operation if possible until competence is regained, to reduce the amount of narcotics given and to administer fluids intravenously and generously and at times give digitalis before there is any evident necessity. Fluids suitable for intravenous injection are blood, hypertonic glucose and glucose and gum acacia solutions. The amount and rapidity of administration are determined by circumstances which also indicate the need of digitalis and the amount to be given. Preparation for operation cannot be made a routine. Patients with weak hearts should be given necessary rest in bed, cajoled into complacency and assured the proper quantity and quality of blood. Too little preparation, particularly of those who recently have had a severe intoxication, as from tonsillitis, or too prolonged preparation of those having chronic obstructive intestinal lesions, are to be avoided. The average patient does not need catharsis. Sleep is so desirable that soporific drugs are indicated. There is no excuse for making the morning of operation hideous by early awakening for shaving, enemas and other forms of avoidable cruelty. Quiet is to be secured after the preliminary drugs are given, and, above all, patients should, so far as possible, be made physically and mentally inactive. Postoperative care is more effective if conducted prophylactically rather than curatively. Blood, glucose, gum-glucose, with or without digitalis, provide the best means to prevent serious tachycardia. Preferably, the aftercare should be permanently under the direction of a competent internist.

Fetal Monstrosity.—There were present in Clark's specimen the following abnormalities: (1) complete hydrencephalocele; (2) spina bifida, without tumor; (3) umbilical hernia of the abdominal contents—enterocele; (4) double talipes equinovarus; (5) left knee without joint structures.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 617-666 (April 14) 1923

New Midwifery: Preventive and Reparative Obstetrics. The Late J. W. Ballantyne.—p. 617.
Sinuses and Swellings in Necks of Children. G. Morgan.—p. 621.
Man's Posture: Its Evolution and Disorders. A. Keith.—p. 624.
Venous Pulsations and Venous Tracings in General; Special Reference to "V" Wave of Polygraphic Tracing. H. Sainsbury.—p. 626.
*Chronic Intussusception Due to Carcinoma of Sigmoid. G. A. Ewart.—p. 629.
Quinin Idiosyncrasy and Cinchonin. W. Fletcher and E. A. O. Travers.—p. 629.
*Pulse Pressure in Exophthalmic Goiter. I. Harris.—p. 630.

Chronic Intussusception Due to Carcinoma of Sigmoid.—In Ewart's case, intussusception had existed for more than a year without any evidence of carcinoma other than the subjective symptom of "something inside the rectum" constantly. Ewart suggests the advisability of suspecting the presence of a growth in all cases of large intestine intussusceptions in adults.

Pulse Pressure in Exophthalmic Goiter.—In the twelve cases reported on by Harris the pulse pressure varied from 40 to 80. The lowest diastolic pressure was 50; the highest, 95. The highest systolic pressure was 170; the lowest, 120. Increase in pulse rate and at the same time a high pulse pressure, Harris says, is characteristic of these cases.

1: 667-704 (April 21) 1923

Chronic Abdomen. R. Hutchison.—p. 667.
Man's Posture: Its Evolution and Disorders. A. Keith.—p. 669.
Case of Hyperpiesia D. C. L. Vey.—p. 672
*Cutaneous Tuberculin Test (Pirquet): With Reference to Its Failure in Advanced Tuberculous Disease in Childhood. C. McNeil.—p. 673.
*Therapeutic Use of Tuberculin W. C. Wilkinson.—p. 674.
Treatment of Pneumonia. A. G. Newell.—p. 676.
*Pernicious Anemia with Foci of Infection in Alimentary Tract. V. Coates.—p. 677.
Constricting Action of Histamin on Veins: Method of Differential Perfusion: Nitrites in Prevention of Histamin Shock. O. Inchley.—p. 679.
Simple Diet Table. H. S. Pemberton.—p. 679.

*Adenocarcinoma of Appendix. A. O'D. Thomas.—p. 680.
Ebonite Poisoning. M. W. Geffen.—p. 680.
Rupture of Spleen. L. R. Lempriere.—p. 681.

Improvement in Cutaneous Tuberculin Test.—McNeil describes a technic for the performance and reading of the Pirquet test with which, he says, he has not failed to obtain a positive reaction in any case of severe tuberculous disease proved to be such by the discovery of the bacillus or by postmortem examination. He uses undiluted old tuberculin (O. T. Koch). A small circular area of skin on the front of the forearm is chafed with the sharp point of a darning needle until the epidermis is removed and the pink cutis vera is exposed. Care is taken to avoid bleeding. The eye of the needle is charged with undiluted old tuberculin, and pressed into the prepared vascular surface with a rotary motion. A small bruised pit is thus formed from which the tuberculin is rapidly absorbed. This procedure is similar to that advised by Pirquet; but it differs in the careful preliminary excoriation of the skin, and thus renders more certain the contact of tuberculin with the skin capillaries. This difference is enough to secure success in cases in which the tuberculin reaction is feeble. In seven cases in which both methods were tried side by side the reaction was positive in five with the method just recommended, and in only two cases with Pirquet's method.

Therapeutic Use of Tuberculin.—Wilkinson states that his records give him unswerving faith in large doses of tuberculin, given subcutaneously, as the best remedy for tuberculosis in all its forms.

Intestinal Lesions Precede Pernicious Anemia.—Coates cites three cases in which he believes that previous intestinal lesions were related etiologically to the later developing pernicious anemia. These lesions were: colitis, sprue and ulcers.

Adenocarcinoma of Appendix.—Thomas' patient was only 14 years of age. The first symptom manifested was abdominal pain, coming on suddenly. It was at first referred to the umbilicus, and later to the right iliac region, and was unaccompanied by vomiting or constipation. Over McBurney's point a cordlike thickening about 2 inches long was palpable. A diagnosis of tuberculous appendix was made. At operation the appendix was found to be 5 inches long, kinked, lying in the "4 o'clock" position, and bound down by adhesions. It showed signs of recent inflammation. On being removed and slit up along the lumen, which was patent, it was found to contain two small fecal concretions at the tip, and in the wall at the point where the kinking occurred were two small yellow masses, very hard, and cutting like an unripe pear. These masses proved to be adenocarcinoma.

Journal of Biochemistry, Tokyo

2: 1-180 (Oct.) 1922

Studies of Autolysis. S. Shima.—p. 1.
Chemical Studies of Corn Pollen. I. Isolation of Phytosterol and Inosite. S. Miyake.—p. 27.
Studies in Gastric Juice. IV. Pyloric Juice. M. Takata.—p. 33.
Investigations of Electromotivity of Frog's Skin. III. Researches on Effect of Narcotics on Behavior of Frog's Skin Under Electromotor Stimulation. K. Hashida.—p. 43.
Labor and Nutrition. IV. General Metabolism of Several Japanese Workwomen. J. Sakamoto.—p. 73.
Protein Combinations with Acids and Alkalies. M. Takeda.—p. 103.
Inhibitory Action of Salts of Silver and Some Other Heavy Metals on Amylase. G. Mori.—p. 117.
Glycolytic Properties of Blood. Y. Kawashima.—p. 131.
Studies on Hemoglobin. I. Advantage of Alkaline Solutions for Colorimetric Determination of Hemoglobin. H. Wu.—p. 173.

2: 181-365 (Jan.) 1923

Studies on Hemoglobin: II. Peroxidase Content of Blood. Hsien Wu.—p. 181.
Id. III. An Ultramicromethod for Determination of Hemoglobin as a Peroxidase. Hsien Wu.—p. 189.
Id. IV. Catalase Activity of Hemoglobin and Derivatives. Hsien Wu.—p. 195.
Studies on Pepsic Digestion. S. Shima.—p. 207.
Effect of Various Salts on Trypsic and Erepsic Activity. K. Nagai.—p. 229.
Difference Between Adsorptive Powers of Charcoal from Common and Glutinous Starch. T. Tadokoro and Y. Nakamura.—p. 239.
Formation of Anthra-Anilinic Acid from L-trypotophan by Bacillus Subtilis. T. Sasaki.—p. 251.
Lethal Temperature of Koji-Diastase in Aquatic Solution and Recovery of Action After Heating. K. Miyake and M. Ito.—p. 255.
Variable Relationship Between Organic Phosphorus Combinations and Inorganic Phosphates in Animal Organism. Y. Masai and T. Fukutomi.—p. 271.
Formation of Urazil from Putrefaction of Zytosin. R. Iwatsuru and M. Chikano.—p. 279.
Purin Metabolism. II. Influence of Kidney and Tissues on Urinary Purin. M. Kikuchi.—p. 283.
Biochemical Study of Ripening of Kaki-Fruit. S. Komatsu and H. Ueda.—p. 291.
Id. III. Chemical Composition of Cured Fruit. S. Komatsu, H. Ueda and M. Ishimasa.—p. 301.
Id. IV. Chemistry of Curing Process. S. Komatsu and H. Ueda.—p. 309.
Serologic Investigations of Hemoglobin, Especially the Practicability of "Hemoglobino Precipitin." S. Higashi.—p. 315.
Influence of Albumin-Fat Diet on Carbohydrate Metabolism. N. Kageura.—p. 341.
Examination of Urine of Pregnant Women. M. Honda.—p. 351.
Antagonistic Action Between Salts on Surface Tension of Organic Colloidal Solution. T. Tadokoro.—p. 361.

Lancet, London

1: 833-882 (April 28) 1923

Cultivation of Tissues and Tumors in Vitro. A. H. Drew.—p. 833.
*Hemorrhages of New-Born. J. N. Cruickshank.—p. 836.
*Tuberculosis of Sacro-Iliac Joint. H. C. W. Nuttall.—p. 839.
Open Ether for Occasional Anesthetist. A. Waters.—p. 843.
*Case of Persistent Jaundice in Infant. B. Myers.—p. 844.

Hemorrhages of New-Born.—In a series of 200 mature infants reported on by Cruickshank, hemorrhage of greater or less degree was present in 154 cases—a percentage incidence of 77. If allowance be made for certain craniotomy cases, the incidence rate of hemorrhage in this group of infants becomes approximately 80 per cent. In fifty-five instances, however, the hemorrhage consisted of capillary oozings or petechiae only, and if these be neglected, there was gross hemorrhage in ninety-nine cases—approximately 50 per cent. of the series. There were sixty-five cases which showed meningeal hemorrhage of a gross character. In forty-four of these cases meningeal hemorrhage was the only gross hemorrhage present—though capillary oozings or petechiae were noted in most instances—while in the remaining twenty-one cases the meningeal hemorrhage was associated with gross hemorrhage into the viscera. In thirty-four cases, approximately one sixth of the whole series, there was hemorrhage into the viscera without meningeal hemorrhage. This group contained eight cases of craniotomy, however, so that it would be more correctly estimated at twenty-six, an eighth of the series. Two hundred premature infants which were born during the eighth or ninth lunar months of pregnancy were examined, and it was found that in 133 cases hemorrhage was present, an incidence of 66.5 per cent. In fifty-two cases bleeding did not amount to more than capillary oozings or petechiae, so that there was gross hemorrhage in eighty-one cases, approximately 40 per cent. of the whole series. Meningeal hemorrhage, apart from other gross bleeding, was found in thirty cases, and in twenty-five cases there was meningeal hemorrhage associated with hemorrhage into the viscera. In another twenty-six cases, there was gross visceral hemorrhage without meningeal hemorrhage.

Tuberculosis of Sacro-Iliac Joint.—Nuttall does not approve of the old operations of trephining and scraping in this condition, asserting that they are not based on a sound conception of the anatomy and pathology of the joint, and the results are poor. Much better results are to be expected from more radical treatment. Nuttall commends Picque's method, which is based on the following principles: (1) an approach to the joint by cutting away the posterior overlapping portion of the ilium; (2) the resection of more or less of the sacrum, as may be necessary, for the complete evacuation of any intrapelvic abscess; (3) the methodical following up of the disease by means of the gouge or curet, so that a smooth granulating surface may be formed without pockets or sinuses.

Persistent Jaundice in Infant.—A case of persistent jaundice in an infant, aged 7 weeks, with atresia of the common bile duct and biliary cirrhosis of the liver, is cited by Myers. The jaundice had commenced two days after birth, becoming more intense during the second week, and persisted. The motions were whitish. The urine was very distinctly bile colored. The child had been taking its food (breast milk and prepared food) well. The child died, aged 14 weeks.

Bulletin de l'Académie de Médecine, Paris

87: 358-369 (March 20) 1923

Pyelotomy for Calculus in Kidney. P. Bazy.—p. 359.
The Bordet-Wassermann Test in Parturients. A. Brindeau.—p. 362.
*Determination of Sex. Alich.—p. 363.

Determination of Sex.—Reviewed editorially, May 12, page 1382.

Bulletins de la Société Médicale des Hôpitaux, Paris

47: 239-282 (Feb. 16) 1923

Subglottic Injection into Bronchi. Caussade et al.—p. 239.
Hemotherapy in Whooping Cough. H. Méry and L. Girard.—p. 243.
*Ophthalmoplegia in Pneumonia. J. Thiroloix and M. Harmelin.—p. 244.
Comparative Tests in Syphilis. Lortat-Jacob and P. Legrain.—p. 248.
*Radioscopy of Frank Pneumonia. Paisseau and Iser-Solomon.—p. 252.
*Peptone Shock Treatment in Purpura. Paisseau and Alcheck.—p. 258.
Sero-Fibrinous Pericarditis. J. Troisier et al.—p. 263.
*Tyrosin Reaction in Sputum. N. Fiessinger and G. Blum.—p. 274.
*Gastric Cancer with Erosion. Ramond and Hirschberg.—p. 278.
*Lockjaw Arrested by Blocking Nerve. Vincent and Bernard.—p. 281.

Ophthalmoplegia in Pneumonia.—Thiroloix and Harmelin recall that ocular affections are rare in pneumonia and in the course of all pneumococcus infections. They report a case of bilateral ophthalmoplegia in a young woman in the course of atypical pneumonia, with complete recovery.

Radioscopy of Frank Pneumonia.—Paisseau and Iser-Solomon confirm the adverse prognosis of Weill and Mouriquand in cases of early hepatization which shows a shadow in the radiogram immediately. They believe there may be perfect synchronism between the appearance of the general signs of pneumonia and hepatization, without leaving time for a phase of previous septicemia. The absence of the shadow in the radiogram in the early stage of pneumonia does not prove the absence of local congestion in the lungs at that time.

Peptone Shock Treatment in Hemorrhagic Purpura.—Paisseau and Alcheck used with success the peptone shock treatment in a case of purpura, with serious intestinal hemorrhage, after injections of horse serum had failed. Fourteen days of hemorrhages had produced anemia so pronounced that an early fatal termination seemed inevitable. The first intravenous injection of 2.5 c.c. of a 10 per cent. peptone solution, given slowly, at the end of an hour produced a sudden severe chill. At the appearance of this chill a subcutaneous injection of 1 mg. of epinephrin was given and this, within five minutes, relieved the shock without producing a thermic reaction. The peptone injection seems to provoke a more violent shock than that from colloidal metals, but less serious than those that may be produced by serum in anaphylactic subjects. They endorse Renaud's suggestion to add 0.25 mg. of epinephrin to the peptone solution or give 1 mg. subcutaneously. The epinephrin must be given at the onset of the chill in order to arrest the secondary shock unless anaphylaxis is feared.

Tyrosin Reaction in the Sputum, and the Leukocyte Proteases.—Fiessinger and Blum found positive reactions to tests for tyrosin in the sputum in pulmonary tuberculosis with tubercle bacilli in the sputum, but they also obtained positive reactions in cases where there were no certain tuberculous lesions and no tubercle bacilli in the sputum. For obtaining a proteolysis carried up to the point of amino-acids, it is sufficient to incubate the normal polymorphonuclears of the blood in a casein solution. The tyrosin reaction will be considerably intensified if an emulsion of purulent sputum is incubated on chloroform for twenty-four hours. Any mechanical condition promoting stagnation of sputum enhances proteolysis, but mucin checks it.

Gastric Cancer with Erosion.—Ramond and Hirschberg say that symptoms of what they call "erosive cancer" resemble those of ulcers, and it is inaccurately diagnosed in four cases out of five. In the last two years, they have treated five cases, all males between the ages of 36-56 years, in three of whom the cancer started suddenly, while in two it developed from chronic dyspepsia. The patients had cramps, with burning and tearing sensations, in from one to three hours after meals, which disappeared if an alkali or food was ingested. There was no hematemesis or melena, but in three of the cases there was a marked tendency to anemia. On radiograms the stomach appeared dilated, with pyloric spasm. Gastrectomy was performed on all five cases, four surviving.

Alcohol Treatment of Trismus from Charcot's Disease.—Vincent and Bernard treated a case of incipient Charcot's disease with severe trismus by injecting alcohol into the two inferior maxillary nerves. The patient opened her mouth immediately after the injection; she could take food, masticate and perform all normal acts. They had diagnosed the case as trismus, accompanied by clonus, from the symptoms of paralysis of the lips, tongue and palate.

47: 283-322 (Feb. 23) 1923

Tumor of Nervous Origin in Gastric Wall. De Massary and Walser.—p. 284.
Meningeal Syphilis Treated by Bismuth. Vialard.—p. 288.
Gastric Cancer of Intestinal Structure. F. Ramond et al.—p. 294.
*Intratracheal Injection of Iodized Oil. Forestier and Leroux.—p. 299.
*Tuberculous Meningitis Cured. A. Pissavy and Terris.—p. 304.
*Hemorrhages in Lethargic Encephalitis. J. Tinel and R. Dupouy.—p. 306.
*Iodized Oil in Treatment. Sicard and Forestier.—p. 309.
Elimination of Iodin in Urine. Sicard et al.—p. 315.
Arsenic-Acetyl Acid Preparation in Syphilis. Sézary and Pomaret.—p. 318.

Radiographic Study of Intratracheal Injections of Iodized Oil.—Forestier and Leroux think that the principal merit of intratracheal injection is that the fluid used, whether iodin, antiserum or vaccine, acts directly on the lesions. These should be located previously, clinically and radioscopically. Their injections have been both preceded and followed by radiography. Gravity influences the distribution of the fluid in the bronchi. They have found it impossible to place the fluid anywhere, except in the base, even with injection of from 15 to 20 c.c., when the patient was in a sitting position. Only when the patient is reclining is it possible for the iodized oil to reach other zones than the base of the lung. He is instructed to breathe calmly and the larynx must be anesthetized, as reflex coughing must be absolutely avoided.

Tuberculous Meningitis Apparently Cured for Five Months to Date.—Pissavy and Terris describe a case of tuberculous meningitis in a man, aged 24, under treatment for tuberculosis in one lung. Spinal puncture yielded a clear fluid, under high pressure, rich in lymphocytes, and with excess of albumin. It contained acid-resisting bacilli, seemingly identical with tubercle bacilli. The meningitic symptoms began to subside on the tenth day and by the fifteenth clinical recovery was practically complete. They call attention to the low degree and rapid disappearance of the excess of albumin, and also to the feeble virulence of the cerebrospinal fluid. Though the bacilli were plainly visible on the slides, intraperitoneal injection of 1 c.c. in guinea-pigs did not cause tuberculous lesions. A similar harmlessness of the cerebrospinal fluid was also found in a curious case reported by Rist and Boudet in 1908, which also referred to curable meningitis and acid-fast bacilli. They were morphologically identical with tubercle bacilli. But the bacilli, which were present in large numbers at certain times, disappeared at others, and alternated with lymphocytosis, which also was intermittent.

Hemorrhagic Syndrome in Epidemic Encephalitis.—Tinel and Dupouy report two cases of lethargic encephalitis that ran a rapidly fatal course within two days, with the clinical picture of intense infectious delirium and a terminal syndrome of profuse gastro-intestinal and other hemorrhages, in two men, aged about 35. The indication of the encephalitic origin was furnished only by the existence of diaphragmatic and abdominal myoclonus and, in one of the cases, intermittent cervicobrachial neuralgia.

Iodized Oil in Diagnosis and Therapeutics.—Sicard and Forestier are the first to succeed in radiographing a sufficiently tolerated substance in the subarachnoid sac as well as in the epidural cavity. They found the most accessible regions for radioscopic exploration to be between the first and fifth dorsal vertebrae and between the tenth dorsal and fifth sacral; 4 or 5 c.c. of the iodized oil, at room temperature, may be injected without pain. If the patient is erect, or semi-seated, the oil, obedient to the law of gravity, will have reached the lowest level in eighteen or twenty hours. In a normal patient, radiography will show the course of the iodin as a continuous dark stream. In about twenty hours it has

become attached to the epidural tissues. If the spinal cord is compressed or the epidural passage is blocked, the lower boundary of the iodized oil is more or less transverse, with accumulation of dark particles. The barrier of compression may be overcome by making an injection above and below, with a two day interval. Exploration of the subarachnoid cavity by injection of 1 c.c. into the cerebrospinal fluid can be made through a puncture at the fourth or fifth dorsal vertebra, after a little of the cerebrospinal fluid has been drained off. The iodin shadow will be about the same whether the patient is sitting or lying on his back, but different if he is lying on his side, the fluid passing along the posterior subarachnoid region. By this method they have located tumors in three cases. The injection of iodized oil not only helps in locating tumors by radiography, but it also has a healing effect on cold abscesses.

Paris Médical

13: 129-144 (Feb. 10) 1923

*Prognosis of Traumatic Shock. G. Jeanneney.—p. 129.
*Seroreaction in Syphilis. Rubinstein.—p. 134.
Osteoarticular Tuberculosis as Dry Caries. P. Wilmoth.—p. 135.
The Luteum Apparatus of the Ovary. D. Schil.—p. 138.

Prognosis of Traumatic Shock.—Jeanneney's paper deals especially with the prognostic significance of changes in the systolic and diastolic blood pressure.

Seroreactions in Syphilis.—Rubinstein reviews his twelve years of experience with the seroreactions in syphilis. He found that the flocculation (Sachs-Georgi) is neither sensitive, nor specific. The Wassermann, Hecht and Jacobsthal methods performed simultaneously give the most reliable results.

13: 145-176 (Feb. 17) 1923

*Local Causes of Cancer. P. Menetrier.—p. 145.
Slye's and Murphy's Research on Experimental Cancer. Dubois-Roquebert.—p. 152.
Neoplasms in Plants. G. Mangenot.—p. 159.
*The Body Fluids with Cancer. Loeper, Forestier and Tonnet.—p. 166.

Local Causes of Cancer.—Menetrier remarks that repeated irritation as a cause of cancer was proclaimed by Broussais long before Virchow. The cancers that follow a single severe trauma are of the sarcoma type. Instances have been published involving bones, the eye, the breast and elsewhere. Clunet witnessed the development of a sarcoma in two rats exposed to intense roentgen irradiation. With epitheliomas, there is generally a long intermediate period of chronic inflammation. Precancerous skin affections are all of the keratosis type. The influence of local irritation is particularly manifest in cancer of the biliary and urinary apparatus. A history of colic is common. Papillomatous or adenomatous hyperplasia forms the bridge between the chronic irritation and the cancer, or a metaplasia as in the epithelium lining the air passages, which assumes the pavement type. He remarks that the experience of ages is crystallized in the lay term for nevi, *noli me tangere*, citing a recent case in which a sarcoma developed in a small angioma on the tongue, exposed to excoriation. The resistance of guinea-pigs to tar cancer shows that the soil is one of the determining factors.

Modifications in Body Fluids in Malignant Disease.—The urine may reflect denutrition and cachexia but, Loeper says, study of the blood is more instructive as this reveals organic vitiation. He discusses the sugar, salts, globulin and albumin, and the hemolytic action of cancer blood. The hemolytic action may affect the subject's own erythrocytes or those of others or of animals, but cancer serum, according to Freund and Kaminer, lacks the destructive action on cancer cells which is displayed by normal serum. In the general toxic action liable to follow intense roentgen irradiation, the sugar of the blood may increase to 0.2 per cent. or more. The value of the "micro-Abderhalden" reaction is still uncertain, as also of precipitin and intradermal reactions to cancer cell extracts. The above tests are instructive only in advanced stages of cancer, but the outlook is promising with further study of the electric resistance and polarization of cancer, the catalytic power, the variations in the colloidal state, the ion concentration in the serum, and other phases of physical chemistry. The hope of diagnosing incipient cancer by any of these means is still far from realization.

13: 177-192 (Feb. 24) 1923

*Treatment of Epidemic Encephalitis. Carnot and Blamoutier.—p. 177.
*Splenomegaly in Heart Disease. M. Creyx and F. Piéchaud.—p. 179.
*Acute Peritonitis Traced to Adnexa. Bloch and Soupault.—p. 183.
Pseudomeningococcus Meningitis in a Syphilitic. Audouard.—p. 185.
Formaldehyd Preparation in Tuberculosis. Hamant and Méry.—p. 188.

Sodium Salicylate in Treatment of Epidemic Encephalitis.—Carnot and Blamoutier gave 4.5 gm. of sodium salicylate daily, by the vein, to a total of 22 gm. in a grave case of encephalitis of choreic type in a young woman. The benefit was prompt and pronounced, as also in a second case, of lethargic type, in a boy of 16. He was given a total of 50 gm. in eight days. In a 4 per cent. solution, the intravenous injection has no local irritating action, they say, and is not painful. In their first case they used such a concentrated solution that the vein became obliterated, and they did not dare to resume this treatment during a relapse eight days later, which proved fatal.

The Enlarged Spleen in Heart Disease.—The spleen enlarges when any of its functions becomes exaggerated. Congestion alone is not enough to induce splenomegaly; it requires some factor inducing hemolysis, and this can be realized by almost any infection or intoxication. The liver is always gravely affected in severe asystolia, and this entails anemia from the toxic action of bile salts.

Acute Peritonitis of Genital Origin.—This clinical picture is rare, but Bloch and Soupault report three cases, with recovery after removal of the primary focus in the adnexa. They ascribe the infection to the abdominal opening of the tube.

Presse Médicale, Paris

31: 77-88 (Jan. 27) 1923

Mechanism of Digestive Leukocytosis. Pagniez and Plichet.—p. 77.
*Vessel-Blood Shock from Ligation of Limb. J. Le Calvé.—p. 78.
New Trypanosomicidal Drugs. L. Cheinisse.—p. 81.

Vessel-Blood Shock from Ligation of Limb.—Le Calvé has been studying the phase of colloidoclasis which follows tying a cord around the upper third of the thigh or arm for ten minutes. The blood shows at once modifications suggesting an upset in the colloidal balance, even in the healthy. In persons with an unstable autonomic nervous system, the reaction is quite pronounced. The *crise vasculo-sanguine* induced in this group seems to be identical with the hemoclastic crisis which precedes the manifestations of colloidal shock, and he has been experimenting with ligation as a means to ward off shock of this kind and to desensitize in cases of angioneurosis, alimentary anaphylaxis and other manifestations of the colloidal shock. He tabulates the findings in twelve cases, and compares them with Sicard's method of injecting a very small dose of arsphenamin below a tourniquet, when he has reason to expect by-effects. He then waits four or five minutes, and then injects the rest of the drug, after slowly releasing the constricting band. Le Calvé thinks that the benefit from this topophylaxis is probably due to the vessel-blood shock which it induces.

31: 165-172 (Feb. 21) 1923

Screw Treatment of Dupuytren's Fracture. Leclerc.—p. 165.
*Urticaria and Hemiplegia. Lermoyez and Alajouanine.—p. 167.

Urticaria and Hemiplegia.—In the case reported, the woman aged 62, suddenly developed right hemiplegia with pronounced sensory disturbances on that side. The third month, urticaria developed after eating fish, but it was strictly limited to the paralyzed side. Pinching the skin at the back of the neck induced the pilomotor reflex only on the sound side, while sweating was profuse only on the paralyzed side, and the systolic blood pressure was lower on this side. Test injection of horse serum induced the appearance of the urticaria on several occasions, but it was always restricted to the paralyzed side. The shock produced by the parenteral protein thus manifested itself exclusively in the region in which other tests had demonstrated exceptionally intense disturbance in the vegetative nervous system.

31: 309-340 (April 4-11) 1923

*Sequelae of Phlebitis. R. Leriche.—p. 309
*Diagnosis of Inherited Syphilis. E. Leredde.—p. 310.
*Valve Tracheotomy. G. Zorraquin.—p. 313.
*Atypical Forms of Acute Gout. F. Bezançon et al.—p. 317.

Peripheral Venous Tension. Villaret et al.—p. 318.
*The Vagus-Sympathetic Balance. Garrelon et al.—p. 323.
*Ponndorf's Scarification Tuberculin Treatment. L. Cheinisse.—p. 325.
Curable Uremias. M. Chevassu.—p. 329.
Pigmentary Cirrhosis. F. Gallart Monés.—p. 334.
*Hemotherapy of Scarlet Fever. A. Daniel.—p. 336.
Suprapubic Retromuscular Abscess. Morlet and Rajat.—p. 337.

Treatment of Tardy Results of Phlebitis.—Leriche recently operated fifteen years after phlebitis in the femoral vein. There had been no disturbances for fifteen years, and then atypical intermittent claudication developed, with intense pains, relieved only by repose. This syndrome has been apparently permanently cured by resection of a segment of the vein and periarterial sympathectomy.

Diagnosis of Inherited Syphilis.—Leredde remarks that it would be a boon if we could be told exactly what are the affections in which it is useless to look for syphilis. To date he does not know of any such, and he declares that search for syphilis is imperative in every child that is not in normal health, since its life and, if it survives, its health throughout life may depend on an etiologic diagnosis, made in time. Aside from the superficial lesions and a few stigmas, there are no specific signs of the disease except those furnished by the laboratory and investigation of the family. But whatever the chronic disease in a syphilitic, it is liable to improve under specific treatment. When the number of red corpuscles and the hemoglobin increase under specific treatment, while the mononucleosis grows less, the presumption of syphilis is confirmed. This is even more certain when lymphocytosis in the cerebrospinal fluid declines. Tentative treatment, however, must be pushed as vigorously and perseveringly, he says, as in known syphilis: mercury every day and an arsenical every week; treatment may have to be continued for months before absolute certainty.

Acute Laryngeal Asphyxia.—Zorraquin explains that the tracheal cannula he has devised allows free inspiration, but a valve prevents expiration, and the air has to be expelled through the natural route. The advantages of maintaining the permeability of the larynx are obvious: it does away with the dangerous complications of tracheotomy and retention of secretions in the lower air passages. The valve cannula is illustrated.

Atypical Forms of Acute Gout.—Bezançon, Weil and de Gennes describe a pseudophlegmonous form of acute gout. In the dorsum of the foot it gave the impression of fluctuation, and the inguinal glands were swollen and painful, but there was a history of recurring gout in the big toe, and under colchicum the "phlegmon" vanished in three days. Another form simulates extensive phlebitis. Hydrarthrosis is an episode of acute gout liable to be misinterpreted, as also acute arthritis of the large joints simulating febrile rheumatism or white swelling. A history of an attack of gout in the big toe is often the only thing to give the clue to the prompt and effectual cure under colchicum.

The Vagus-Sympathetic Balance.—Garrelon, Santenoise and Tinel comment on the new horizons opening as we study the involuntary nervous system more closely. An upset in the balance between the vagus and sympathetic seems to be the indispensable condition for all reactions of the anaphylaxis type and intoxications. They have worked out several biologic laws governing the type of these reactions.

Ponndorf's Tuberculin Treatment.—Ponndorf introduces the tuberculin through the skin in deep long scarifications that draw blood, as he ascribes an important rôle to the skin in the method. The general verdict to date is far from favorable.

Hemotherapy in Scarlet Fever.—Daniel injects convalescents' whole blood in treatment, and reports favorable results in thirty-three cases, all but six exceptionally grave. There were five deaths.

Schweizerische medizinische Wochenschrift, Basel

53: 185-208 (Feb. 22) 1923.

Importance of Study of the History of Biology. J. Strohl.—p. 185.
*Heredity of Ocular Anomalies. A. Vogt.—p. 188. Conc'n.
*Acute Perforation of Stomach. A. Suter.—p. 193.
*Intracardiac Injection of Epinephrin. E. Baumann.—p. 198.

Heredity of Certain Ocular Anomalies.—Vogt's charts show that a consanguineous marriage in a stock with a hereditary taint, such as color blindness, does not increase the number of those affected with the anomaly except in the single family involved. Inbreeding does not produce new gens; it only affords greater opportunities for two gens of the same kind to come together. Conditions are more complex with hereditary myopia, as the length of the axis and the curvature of the cornea and possibly other factors are involved. Concomitant strabismus is another eye affection of pronounced hereditary type with numerous factors involved, some perhaps mendelian, some coupled. This article supplements one which was summarized in these columns, March 18, 1922, p. 850, the whole forming a comprehensive monograph on hereditary anomalies and sex-linked affections and the light they have thrown on biology in general, especially sex determination.

Acute Perforation of Stomach.—Suter gives a table of thirty recorded cases of acute perforation with prompt radical operation. The mortality in fifty cases he has compiled was only 16.3 per cent. He reports further a case in which he resected the stomach for supposed perforation of a simple ulcer, and removed the gallbladder on account of gallstones. The course of the case revealed the malignant nature of the lesion, the tumor recurring by the end of a year. Baumann has reported the case of a woman, aged 65, who had had gallstone colic repeatedly for ten years and finally acute perforation of the stomach, which he resected. He found it the seat of a small cancer. The gallbladder was removed at the same time, and the woman has been in good health since. The colic had probably induced the perforation. Suter discusses the reciprocal action of gallstones and stomach affections.

Intracardiac Injection of Epinephrin.—Baumann resuscitated two children recently with intracardiac injection of epinephrin. One was an infant, aged 6 months, whose heart stopped beating as chloroform was being given for herniotomy. After an interval of four minutes, 0.75 c.c. of a 1:1,000 solution of epinephrin was injected directly into the heart through the fourth intercostal space, 3 cm. from the left margin of the sternum. In seven seconds the heart contracted and again two seconds later, and the skin of the whole body turned as red as in scarlet fever. The child began to breathe about the twelfth second. The other child had suffocated in a whooping cough spasm, and was rushed to the hospital in four minutes. Four minutes after respiration had ceased and three and a quarter after the heart had stopped beating, 1 c.c. of the epinephrin solution was injected into the heart muscle. It began to contract the twenty-third second and inspiration followed the twenty-sixth. The injection was made intramuscularly in the left ventricle. This Baumann regards as the preferable technic, as he worked it out on cadavers immediately after death, trying needles of different lengths at various points. Those close to the sternum, in the fourth and fifth interspaces were all in the right ventricle. He gives the exact details in eight cadavers of different ages, all the data testifying to the advantages of making the puncture in the fourth intercostal space, at the upper rim of the fifth rib, about 5.5 cm. from the left margin of the sternum in adults. The depth is determined by the sensation as the needle enters the muscle; it is then pushed in for a few millimeters more. He advises not to inject more than 0.5 c.c. in young infants, and up to 1.5 c.c. in adults. The dose of 0.75 c.c. given the infant caused a severe general reaction, vomiting, epileptiform spasms and fever. The temperature was not normal till the seventh day.

Pediatria, Naples

31: 169-224 (Feb. 15) 1923

*Hereditary Syphilis. I. Nasso.—p. 169.
Defect in Femur: Missing Head and Neck. Scaduto.—p. 194.
Arterial Pressure in the New-Born. S. Fabris.—p. 198.
Ether in Pneumonia and Bronchitis in Children. F. L. Presti-Seminerio.—p. 206.

Hereditary Syphilis in Italy.—Nasso, basing his observations on statistics at Naples, 1914-1921, says that hereditary syphilis in children predisposes them to tuberculosis. While scarcely 14.6 per cent. of all the 26,584 children examined

were tuberculous, 24.5 per cent. of the syphilitic children were infected with tuberculosis. About 52 per cent. of the congenital malformations were in children with inherited tuberculosis, and 50 per cent. of the endocrine lesions were coexistent with this disease. It was found in 76.8 per cent. of the cases of spastic hemiplegia, and in about 80 per cent. of the bilateral cases. Of 160 cases of splenic anemia, 135 were syphilitic. In the certainly syphilitic newborn, the Wassermann reaction is not always positive. The newly born may not present syphilitic symptoms or react positively to the Wassermann test, but after a period of latency they may show such symptoms and reactions. Children of syphilitic mothers should be treated early and intensively whether they show clinical symptoms or not.

Policlinico, Rome

30: 101-164 (March 1) 1923. Medical Section

Mastix Reaction in Cerebrospinal Fluid. D. Pisani.—p. 101.
Benzoin Reaction in Cerebrospinal Fluid. A. Ferraro.—p. 127.
A Flocculation Reaction in Syphilis. A. Dalla Volta and P. Benedetti. —p. 135.
Treatment of General Paresis and Other Spirochetoses by Induced Fever and Infections. G. Santangelo.—p. 143.

Riforma Medica, Naples

39: 193-216 (Feb. 26) 1923

Treatment of Tabes. G. Arata.—p. 193.
Injury of Bundle of His in Malaria. C. Cantieri.—p. 196.
Rare Complications and Sequelae of Influenza. G. Belloni.—p. 193.
Gangrene After Piercing Ears of Young Infant. Gioseffi.—p. 201.
*Calcium Chlorid in Treatment of Eczema. G. Lampronti.—p. 202.
Combined Serotherapy, Silver Salt and Hexamethylenamin in Treatment of Typhoid. G. Pansini.—p. 202.

Calcium Chlorid in Treatment of Eczema.—Lampronti has been giving calcium chlorid a thorough trial in the treatment of eczema, according to Netter's suggestion, and has been impressed with its value. He found it extremely effectual, often after failure of all other measures, and even in the anemic and scrofulous. He applied it in a 6 per cent. ointment, and frequently many of the crusts dropped off in twenty-four or forty-eight hours after the first application, leaving a dry surface; the epidermis rapidly resumed its normal aspect. Wright has recommended calcium chlorid also in treatment of urticaria and pruritus.

Brazil-Medico, Rio de Janeiro

1: 141-158 (March 17) 1923

Hemangioma on Vocal Cord. Oswino Penna.—p. 141.
Spontaneous Luxation of Lens. Two Operative Cases. Abreu Fialho. —p. 143.
*Dermatomycoses in Bello Horizonte. Aroeira Neves.—p. 144.

Dermatomycoses in Brazil.—Aroeira Neves states that the microsporon of the cat is responsible for numerous cases of dermatomycosis at Bello Horizonte. It occurs in small familial epidemics, and he describes ten typical cases. The parasite, *Microsporon felineum*, was found in more than 81 per cent. of the cases; the scalp was involved in less than 28 per cent. Children are affected more often than adults. There were from six to eleven lesions scattered over the face and body, and the family cat and dog as a rule presented similar lesions with the children. There was more or less itching.

1: 159-172 (March 24) 1923

Staphylococcus Ciliary Folliculitis. Abreu Fialho.—p. 159.
*Dose of Antivenom Serums. R. Kraus and Rocha Botelho.—p. 160.
*Pulsating Exophthalmos from Aneurysm. J. Santa Cecilia.—p. 161.
French Otorhinolaryngology in 1922. Ramadier.—p. 163.

Standardization of Snake Venom Antiserums.—In this fifth communication on this subject, Kraus and Rocha Botelho state their conclusion that the best method for determining the proper dose is with Vital Brazil's technic, incubating for an hour. This is an index of the maximal neutralizing potency in vitro. On the other hand, Calmette's method, injecting the venom and the antiserum separately, by the vein, is the best index of the maximal avidity of the antiserum, and of the greatest curative value. They urge international agreement to decide on some such standardizing procedure.

Pulsating Exophthalmos.—The aneurysm causing the exophthalmos involved the carotid and the cavernous sinus, and was safely operated on.

Prensa Médica Argentina, Buenos Aires

9: 797-824 (Feb. 28) 1923

*Stretching of Round Ligament of Liver. Delfor del Valle, Jr.—p. 797.
Pseudomyxoma of Appendiceal Origin. Mazzini.—p. 802. Conc'n p. 825.
*Contracture of Fingers from Syphilis. Zinny and Vivaldo.—p. 806.
Percussion of the Liver. A. Navarro.—p. 809.

Pyloric Syndrome from Traumatic Stretching of Round Ligament of the Liver.—The young athlete experienced a sudden pain in the epigastrium as he was casting a quoit, and the symptoms during the following year seemed to indicate a traumatic epigastric hernia. The pyloric syndrome at the slightest effort and the complete relief when reclining were explained by the exploratory operation which revealed that the round ligament of the liver had been stretched and torn. The pyloric symptoms were reproduced by pulling on this ligament, and a permanent cure was realized by resection of the ligament. A second case is cited, the patient a physician. In both cases, raising the right arm increased the pain and brought on vomiting unless the stomach was empty at the moment. A colored plate accompanies the article. The second patient was treated medically for dyspepsia without benefit, but the symptoms finally spontaneously subsided after many months.

Contracture of the Fingers from Inherited Syphilis.—The girl's hands presented the clinical aspect of chronic rheumatism, with retraction of tendons. But under treatment for syphilis begun four months after the first pains in the hands, the pains subsided and the tendons relaxed so that by exercising them the normal play of the fingers was restored. If treatment had been delayed, the girl's hands would soon have been permanently crippled.

9: 853-880 (March 20) 1923

*The Radiologic Triad of Inherited Syphilis. J. A. Saralegui.—p. 853.
Metastasis in Choroid of Pleural Cancer. E. Adrogué.—p. 862.
Technic and Interpretation of Biopsy. S. Mazza and M. Balado.—p. 865. Cont'n.
Interpretation of Reducing Power of Carbohydrates. M. P. Raurich.—p. 868. Conc'n.

The Radiologic Triad of Inherited Syphilis.—Saralegui reproduces three roentgenograms from each of nine persons with inherited syphilis, all showing the same three anomalies. He has found them so constantly in inherited syphilis that he calls the triad the "radiologic Wassermann." The abnormal outlines of the heart in connection with the aorta, of the stomach in connection with the duodenum and cecum, and of the periosteum of the long bones, form a triad which strongly suggests inherited syphilis. The organs may be apparently normal but not quite in their normal place, with or without adhesions, especially at the cecum. The anomalies in the periosteum are found in the radius, ulna, tibia and fibula in order of frequency. They are most pronounced at the middle third of the bone and nearest the head. The abnormal outline can sometimes be felt by palpation. There is probably excessive production of fibrous connective tissue at these points, and this is not influenced by specific treatment. The epiphyses are normal.

Revista de la Asoc. Médica Argentina, Buenos Aires

35: 869-1023 (Dec.) 1922

The Antimosquito Campaign at Famaillá. Bachmann.—p. 869.
Chronic Diarrhea from Blastocystis Hominis. S. Mazza.—p. 889.
Endemic Typhoid. Causes and Prophylaxis. Bachmann.—p. 896.
Arsphenamin by Mouth in Treatment of Intestinal Affections Caused by Flagellates. Mazza and Merlo.—p. 905.
*Inherited Syphilis in Argentina. A. Casaubon.—p. 915.
Electrodialysis for Study of Antitoxin. Wernicke.—p. 927.
Triplet Trophoblasts without Embryo Found in Cow's Uterus. Widakowich.—p. 936.
*Changes in Blood During Exercise. A. Bergman.—p. 939.
*Smallpox and Vaccinia. Bachmann and Biglieri.—p. 947.
Research with Curare on Frogs. G. Pacella.—p. 950.
*Hypertension from Splanchnic Nerve. Houssay and Marconi.—p. 953.
Antiserum for Gangrene. A. Sordelli.—p. 958.
*Action of Leukocytes on Koch Bacilli. Howard.—p. 961.
*Hemoclastic Crisis in Parturients. Mazza and Iraeta.—p. 963.
Cysto-Adenoma in Parotid Region. Mazza and Cassinelli.—p. 967.
*Splenectomy. M. Torres Boonen.—p. 973. Id. Gutiérrez.—p. 981.
Remote Results of Craniectomy. Allende.—p. 988. Idem. Jáuregui. —p. 993.

Inherited Syphilis in Argentina.—Casaubon relates that inherited syphilis was unmistakable in 6 per cent. of the 6,678

children with various diseases in the pediatric clinic at Buenos Aires since April, 1919. There was coincident active tuberculosis in 2.45 per cent.

Effects of Exercise on the Circulation.—Bergman recorded the blood pressure, the pulse and the leukocyte count before and after the exercise of raising each leg alternately to a height of 30 cm. from the level of the bed, the patient reclining half an hour beforehand, and repeating the movement about forty-five times a minute for four minutes and then for ten minutes. This test was applied to patients with various diseases but with a clinically sound cardiovascular system. A second group comprised patients with grave heart disease; the third group was the same as the second after a course of digitalis. The fourth group included tuberculous patients who had recovered from 70 to 100 per cent. of their former earning capacity under the influence of artificial pneumothorax. Among the data thus recorded he notes that the greater the insufficiency of the heart, the longer the interval before the hyperleukocytosis appeared, even when the blood pressure and the pulse seemed to indicate normal conditions.

Smallpox and Vaccinia.—Bachmann and Biglieri report experiences with rabbits which confirm that the protection conferred by vaccination with one strain of vaccine virus is not always complete against vaccine virus of another strain.

Share of Epinephrin in the Hypertension Induced by Irritation of the Splanchnic Nerve.—Houssay and Marconi relate that stimulation of the splanchnic nerve in dogs induces a discharge of epinephrin sufficient to raise the blood pressure and contract the vessels of a denervated leg. These effects are observed even when the circulation has been reduced to the head, thorax, suprarenals and one hind leg. They are not observed when the suprarenal vein is clamped, but appear anew when the clamp is removed. The same effects are noted if the animal is being continuously injected with epinephrin in physiologic doses.

Action on Tubercle Bacilli of Leukocytes from Immunized Horses.—Howard witnessed phagocytosis, lysis and the loss of the acid-resisting properties of the tubercle bacilli when the latter were brought into contact with leukocytes from horses immunized by supersaturation for production of tuberculosis antiserum. His research in this line was mentioned in these columns, Dec. 18, 1920, page 1751.

Widal's Hemoclastic Crisis in Parturients.—Mazza and Iraeta recorded the blood pressure in thirty-four parturients after ingestion of 200 c.c. of milk. In 38 per cent. the blood pressure dropped, but there was leukopenia only in 38.5 per cent. in this group. Only 14.7 per cent. of the total presented a typical hemoclastic crisis.

Splenectomy.—Torres Boonen drew more than 5 liters of fluid from the hydatid cyst in the spleen of a man, aged 40, and removed the spleen, restoring the patient to complete health at once. In a second case the spleen was removed under intraspinal anesthesia on the diagnosis of Banti's disease, with equally favorable results. The man, aged 32, had had symptoms for twelve years.

Semana Médica, Buenos Aires

1: 525-576 (March 22) 1923

*Suppuration in Urinary Tract in Infants. A. Casaubón.—p. 525.
Retrovesical Hydatid Cyst. J. Nin Posadas.—p. 530.
*Specific Viscosity of the Serum. Neuschloss.—p. 532.
De Martel Clamp in Resection of Stomach. P. Jáuregui.—p. 537.
Evolution and Degeneration. L. K. Wimmer.—p. 540.
Case of Obstructing Endarteritis. Balado and Selva.—p. 548.
Alleged Instances of Grafting of Eyes. A. d'Alessandro.—p. 553.
Roentgen Treatment in Leukemia. C. Heuser.—p. 554.
Replies to Questionnaire on Syphilis. T. Padilla.—p. 555.
Annual Report on the Institute for Minors. V. Delfino.—p. 559.
Organization to Combat the Spread of Leprosy.—p. 566.
Measures Advised for Protection of Radiologists.—p. 567.

Suppuration in Urinary Passages in Infants.—Casaubón urges routine examination of the urine whenever an infant presents signs of infection that is not definitely localized. The urine can be collected by wringing out a diaper if not possible otherwise; it is best to collect the urine of several hours. The mother tells that the child cries as it urinates, or that it passes very little urine, or there is a history of chills. There is often secondary gastro-intestinal disturbance. In two of the four cases described in detail, the pyelitis recurred later. In prophylaxis, the infant should be given water abundantly, with strict hygiene of the anus and genital organs. He advises hexamethylenamin and salol, with autogenous vaccines promptly if benefit is not soon apparent. He regards breast milk as imperative in these conditions, although this was not available in one of his cases in which the pyelitis had developed in the course of whooping cough. The infant was 6 months old, recovered, and passed safely through a mild recurrence later.

Specific Viscosity of the Blood Serum.—Neuschloss gives a table showing the viscosity that corresponds normally to a given quantity of protein in the blood serum. He worked out these standards on 100 healthy subjects. He gives two other tables showing how the viscosity is increased with hypothyroidism and reduced with hyperthyroidism.

Archiv für Gynäkologie, Berlin

118: 229-444 (April 16) 1923

*Splenectomy in Treatment of Menorrhagia. J. Halban.—p. 229.
*Cellular Immunity and Cancer. A. Theilhaber.—p. 237.
Epithelium in Cancer of Body of Uterus. R. Zimmermann.—p. 273.
Mechanics of Torsion of Internal Organs. H. Sellheim.—p. 296.
The Kielland Forceps Represents Progress. H. Heidler.—p. 334.
*Hyperplastic Ulcerating Vulvitis. C. Schoenhof.—p. 363.
Branching of Umbilical Cord on Placenta. B. Ottow.—p. 378.
*Pituitary Extract in Relation to Pregnancy. Anderes and Wächter.—p. 383.
*Microscopy of the Capillaries. Linzenmeier and Hagge.—p. 398.
Idem. A. Stern. p. 410.
*Sedimentation Test for Cancer. O. Gragert.—p. 421.
*Treatment of Beginning Cancer. F. Neuhaus.—p. 436.

Splenectomy in Thrombopenic Menorrhagia.—Halban's remarkable success in the case reported justifies high hopes from treatment of excessive uterine hemorrhage on the basis of the principles that have been found effectual in hemorrhagic jaundice. In hemorrhagic jaundice, removal of the spleen seems to stop the excessive destruction of thrombocytes and the resulting fragility of the smallest blood vessels. This tendency is rendered evident by the minute hemorrhages in the skin of the forearm when a tourniquet is applied to the arm above, and by the thrombopenia in the blood. The excessive and rebellious menstrual hemorrhages of adolescents have been ascribed to chlorosis hitherto, and given only palliative treatment; but Halban, as a last resort in the case described, removed the spleen. The thrombocytes numbered only 30,000 or less, the hemoglobin was very low and the girl, aged 17, was weak from the excessive menorrhagia and epistaxis for two years.

Roentgen exposures of the spleen had no effect, but in three days after the splenectomy the thrombocytes had increased to 133,000, and during the ensuing six months, menstruation has been normal and the girl in florid health. Roentgen exposure of the ovaries has too many drawbacks for young girls, and it acts only on the genital sphere, not warding off hemorrhages elsewhere. In Halban's case, nearly every other known measure had been applied during the two years.

Cellular Immunity in the Cure of Cancer.—Theilhaber cites new experiences that sustain the views he has been proclaiming since 1909 in regard to the cancer developing only in anemic tissue, and the infiltration with blood cells, especially lymphocytes, as necessary for the cure of cancer. For this reason he insists on measures to induce infiltration as an indispensable adjuvant to removal or radiotherapy of a cancer. Sun baths and air baths, diathermy and venesection increase the lymphocyte content of the tissues and thus induce immunity to cancer, helping to cure existing cancer and ward off recurrence. He suggests that arrangements should be made in sanatoriums for a few weeks' course every year of this infiltration treatment for patients supposedly cured of cancer. He has been applying these principles for thirteen years, and the cure has been complete to date in 32 of his 44 operative cases of cancer. The interval has been over eight years in 7 and over five in 11. This latter group includes 3 in which the parametrium was known to be involved in the cancer, but it was left in place.

Chronic Vulvitis.—The three cases reported by Schoenhof confirm the value of roentgen-ray treatment. It is almost

certain to cure when applied before the stage of fibrous degeneration has been reached. Even in this stage, after excision of the redundant tissue, the almost inevitable recurrences yield promptly to roentgen exposures.

Pituitary Extract in the Pregnant.—Anderes and Wächter conclude from their research on cats and rabbits, that the pituitary function is physiologically exaggerated in gravid animals. There is a marked difference between the gravid and nongravid animals in their reaction to the first injection of pituitary extract. The gravid respond to the first injection in the same way as the nongravid respond to the second injection.

The Capillary Circulation.—Linzenmeier and Hagge noted a remarkable parallelism between stasis in the capillaries and accelerated speed of sedimentation of the blood corpuscles. They think this explains conditions in eclampsia better than the assumption of spasm of the capillaries.

Sedimentation of Blood Corpuscles in Malignant Disease.—Gragert tabulates the findings in seventy cases of operable and inoperable cancer of the female genital organs. The speed of sedimentation was recorded 258 times, before and after treatment. Sedimentation was always accelerated with malignant disease, and normal conditions were not restored for more than a year after removal of the growth. The acceleration of sedimentation does not seem to be proportional to the size of the cancer, but reflects the toxic action on the system. In combination with other blood findings, it may turn the scale in the dubious diagnosis of cancer.

Treatment of Incipient Cancer of the Cervix.—In four of Neuhaus' six cases, intensive deep roentgen-ray treatment was given the beginning cancer. It seemed to speed up the malignant disease to a fulminating course. In another case the incipient carcinoma was charred with the actual cautery, and the clinical cure has been complete during the year since. In the sixth case the malignant disease was apparently arrested by infravaginal amputation of the cervix in 1919.

Deutsche medizinische Wochenschrift, Berlin

49: 241-268 (Feb. 23) 1923

Present Conception of Inflammation. W. Gross.—p. 241.
*Vagotonia in Functional Neuroses. Glaser and Buschmann.—p. 243.
*Treatment of Tabes and Contractures. H. Lippmann.—p. 245.
Sugar Content of Cerebrospinal Fluid. A. Wittgenstein.—p. 246.
Leukocyte Count in Prognosis of Pulmonary Tuberculosis. K. Rosenthal.—p. 249.
Experiences with the Colloidal Gold Test. F. Blank and W. Restemeier.—p. 250.
Experiences with Meinicke Test in Syphilis. K. Klein.—p. 252.
Improved Gastroscope. H. Elsner.—p. 253.
Pulmonary Disease from Practitioner's Standpoint. Goldscheider.—p. 255. Conc'n.
Examination of the Throat. G. Finder.—p. 257.

Vagotonic Leukopenia in Functional Neuroses.—Glaser and Buschmann do not agree with Widal's interpretation of the hemoclastic crisis as sign of derangement of the protein-binding function of the liver. The sudden drop in the number of leukocytes after drinking 200 gm. of milk when fasting was found constantly only in patients with vagotonic functional neuroses (and in urticaria) in their tests of 160 patients. The response varied from day to day in the same patient; no reliance can be placed on it unless the sudden alimentary leukopenia occurs on at least three different days. The reaction is merely a different distribution of the blood corpuscles. The differential count is not modified.

Intraspinal Treatment of Contracture in the Legs and the Lancinating Pains of Tabes.—Lippmann has applied to the diagnosis of spinal cord tumors the injection of sodium bromid as used in pyelography, and as used by Kramer in the treatment of delirium tremens. In his forty applications of the method, he found that the reaction was not proportional to the amount injected but was determined by the local condition. In one case of tabes, 20 c.c. of a 5 per cent. solution (maximum dose) was borne without the slightest reaction. In other conditions there were symptoms indicating acute chemical meningitis, but they had always subsided by the second day. After three injections of a 1 per cent. solution, at intervals of two and three weeks, one tabetic patient has had no return of the lancinating pains which had been tormenting him daily for eight years, rebellious to all measures. The results were excellent in three of the five tabetics treated by this means; one proved refractory and one succumbed to coronary sclerosis. Great improvement was observed in three of four cases of crippling from multiple sclerosis. The fourth reacted with a severe chill to a single injection and no benefit was observed. In these cases he used a 1.6 per cent. solution. The amount at each dose in all was 10 c.c., withdrawing an equal amount of the spinal fluid. He advocates this treatment as a lesser evil than morphin addiction or a Förster operation.

49: 269-302 (March 2) 1923

Theories as to Action of Rays. W. Caspari.—p. 269.
*Hypertrophy of the Prostate. Voelcker.—p. 271.
Mesenteric and Peritoneal Appendicitis. D. Kulenkampff.—p. 274. Cont'd.
Subacute Mastitis with Nodules. E. Glass.—p. 275.
*Tuberculin Tests. A. Neustadt and E. Stadelmann.—p. 277.
*Tests for Syphilis Applied to Tuberculous Children. E. Rüscher.—p. 278.
Eosinophilia in Vincent's Angina. F. Peter.—p. 279.
Surgical-Physical Treatment of Keloids. Kromayer.—p. 280.
Lecithin and Bile Acid in Treatment of Cholelithiasis. Apel.—p. 281.
Nonabsorbent Gauze for Dressings. K. Propping.—p. 284.
Local Treatment of Throat. G. Finder.—p. 285.

Hypertrophy of the Prostate.—In the course of this postgraduate lecture, Voelcker warned that the practitioner discovering retention of residual urine, from enlargement of the prostate, must not yield to the temptation to evacuate it all at once. He must wait a few days, giving a disinfectant to sterilize the urine. When the urine has thus acquired antiseptic properties, he draws off a small amount of the residual urine, not more than 200 or 300 c.c., and repeats this on alternate days. By this means the bladder will be completely emptied in a week or two. Then a retention catheter can be introduced, or the ordinary catheter several times during the twenty-four hours. The intense thirst declines, the blood pressure becomes reduced, the appetite returns and the irritable patient becomes tranquil although it may be several weeks or months before he feels well.

Tuberculin Tests.—Neustadt and Stadelmann reiterate their warning to practitioners as to the unreliability of and the possible injury from subcutaneous tuberculin tests.

Serologic Tests in Tuberculosis in Children.—Rüscher applied the Wassermann and flocculation tests for syphilis in two series of 120 and ninety tuberculous children apparently free from syphilis. A constant positive reaction was obtained only in 1 per cent. In four other cases the reaction varied from time to time and was evidently not specific.

Deutsche Zeitschrift für Chirurgie, Leipzig

177: 289-405 (March 5) 1923

Dislocation of Semilunar Bone; Operative Correction. Sonntag.—p. 289.
*Treatment of Carbuncle. W. Rieder.—p. 300.
Inlay Graft in Tuberculous Spondylitis. R. Sträter.—p. 313.
Experimental Research on Certain Local Disinfectants. Schnitzer and Rosenberg.—p. 325.
*Treatment of Goiter with Ultraviolet Rays. Langemak.—p. 343.
Etiology of Dupuytren's Contracture. A. Schubert.—p. 362.
Abortive Form of Fetal Chondrodystrophia. M. Budde.—p. 378.
*Spinal Cord Tumor. J. Alksnis.—p. 385.
Case of Prolapse of Intestine from Contusion. G. Fischer.—p. 389.
Nephrectomy with Aplasia of Second Kidney. E. Liek.—p. 393.

Treatment of Carbuncle.—Rieder makes the usual ample crucial incision and loosens up the edges a little, but leaves the depths unmolested, and tampons the whole infiltrated area with a strip of gauze impregnated with diphtheria antitoxin or horse serum. The process is arrested at once. The necrotic mass is generally spontaneously expelled in twenty-four hours, and granulations form in the depths on the second or third day. The skin sinks down on the young cells. With a furuncle, a single subcutaneous injection of 1 c.c. of horse serum in the center, without an incision, generally induces the spontaneous expulsion of the "core." He has treated with this combined method twenty-three carbuncles, including five on lip or cheek. The action of the horse serum in loosening up and promoting expulsion of the core is still a mystery. As no vessels in the depths are opened, the micro-organisms are not forced into the circulation.

Treatment of Goiter.—Langemak reviews the experience at Erfurt with ultraviolet ray treatment in 128 cases of goiter,

with or without local or internal iodin treatment or phosphorus treatment. Not a trace of the goiter could be found on reexamination in 74.3 per cent., and in the others only the closest scrutiny showed any traces of it. He takes a photograph of the patient before treatment is begun.

Spinal Cord Tumor.—The fibrosarcoma in the cervical spinal cord had been developing for four years in the young woman. It was about 4 cm. long by 1.3 cm. broad, and there was an artery in the threadlike pedicle. By the twenty-fifth day after its removal the patient was able to sew and dance.

Jahrbuch für Kinderheilkunde, Berlin

101: 1-126 (Feb.) 1923

*Vitamins and Endocrine Glands. E. Glanzmann.—p. 1.
*Heart Disturbances in Diphtheria. W. Blacher.—p. 13.
Blood Picture in Scarlet Fever. J. v. Ambrus.—p. 81.
Acetonuria in Children Poisoned by Lye. J. v. Gaizler.—p. 87.
Calcium Treatment in Pediatrics. J. v. Petheö.—p. 93.
Osteogenesis Imperfecta (Vrolik). T. Hoffa.—p. 101.
Two Rare Malformations of Bones. T. Hoffa.—p. 105.

Vitamins of Growth (A and B) and Endocrine Glands.—Glanzmann kept rats on a vitamin-free diet until the growth stopped. Daily addition of 1 gm. of dried thymus from calves started the growth again, but it stopped as soon as the thymus was discontinued. Other glands—except the sexual—have no effect in such doses. He believes that thymus is the central organ for metabolism of vitamins in young animals. After puberty, vitamins are stored in the sexual glands and provide thus the first endowment of the progeny.

Rôle of Nervous System in the Heart Disturbances in Diphtheria.—Blacher finds increased irritability and fatigue of the whole neuromuscular cardiac apparatus in diphtheria. In the first two or three weeks progressive vagotonia is evident. Fatigue of the pneumogastric nerve becomes more apparent after this stage, and may be accompanied by irritability of the accelerans. Nevertheless the irritability of the pneumogastric may appear even in this stage, especially in attacks following very small exogenous and endogenous stimuli. This lowering of the threshold of stimulation of the vagus and accelerans is the reason why cardiac remedies should be used with great care.

Medizinische Klinik, Berlin

19: 231-264 (Feb. 25) 1923

Diagnosis of Peptic Ulcer. H. Zoepffel.—p. 231.
*Gonorrhea in the Seminal Vesicles. H. Junker.—p. 233.
*Actual Menstruation Period. H. Mühsam.—p. 236.
Paratuberculous Inflammation. Aufrecht.—p. 236.
*Suture of Nerves for War Wounds. Dieterich.—p. 237.
Plastic Correction of Nose Deformities. E. Eitner.—p. 238.
Electric Treatment of Disease of Nasal Sinuses. Nürnberg.—p. 240.
Benzyl Benzoate in Treatment of Dysmenorrhea. Quack.—p. 241.
Apparatus for Measurement of Pelvis. J. Turmann.—p. 244.
*Oxygen Insufflation in Tuberculous Meningitis. A. Reiche.—p. 244.
Test of Liver Function by Methylene Blue. Kirch and Maslowski.—p. 245.
Death from Exertion in Heart Disease. A. Wilde.—p. 247.
Recent Literature on Modern Therapeutics. C. Bachem.—p. 247.
Gynecology for the Practitioner. E. Runge.—p. 248.
Deformities of the Trunk. S. Peltesohn.—p. 249.
Recent Works on Infectious Diseases. H. Zoepffel.—p. 251. Conc'n.
The Classical Greek Works on Ophthalmology. J. Hirschberg.—p. 261.

Recognition of Gonorrheal Disease of the Seminal Vesicles and Its Importance in the Course of Gonorrhea.—Junker takes the position that in the majority of cases, gonorrhea in men, if sufficiently treated, is not infectious in subsequent marriage. For gonorrhea in women, his prognosis is less favorable. He calls attention to the fact that of seventy-six cases examined, 22 per cent. of the patients showed the gonococcus in the seminal vesicles. From his experience, he draws the conclusion that if gonorrhea in men, after supposed cure, proves infectious it is because sufficient attention has not been given to the seminal vesicles or the posterior portion of the urethra and its adnexa, and that many of those who have been considered incurable before may be cured, with due regard thereto.

The Actual Menstruation Period.—Mühsam has made observations on the basis of which he believes that most healthy and genitally sound women and girls menstruate on about the same days in the month. A week and a half or two weeks from this period there are a few days on which a smaller number of women menstruate. In order to obtain the necessary statistics to settle this matter, he asks that physicians in Germany and other countries will secure data which answer the following questions: (1) How many women begin menstruation on the first, second, third, etc., day of each month; (2) how many of these women are constitutionally and genitally sound; (3) how many menstruate irregularly; (4) how many are genitally diseased; (5) how many are constitutionally diseased? The statistics should be sent to him at Berlin, Maassenstr. 11.

Ultimate Outcome of Suture of Nerves.—Dieterich says that of 7,000 wounded soldiers, forty-six required suture of a severed nerve. Of these, seven were fully cured by the suture, and three were improved. The injuries cured were in the radial nerve, and those improved in the external popliteal and the median nerves.

Oxygen Insufflation in Tuberculous Meningitis.—Reiche has used oxygen insufflation in the treatment of tuberculous meningitis in infants and young children, always with negative results.

Zeitschrift für klinische Medizin, Berlin

96: 279-526 (Feb. 28) 1923

*Hydration of Tissues. Schade and Menschel.—p. 279.
*Liver Function in Epidemic Encephalitis. Meyer-Bisch and F. Stern.—p. 328.
Local Reaction of Vessels. Kauffmann and Kalk.—p. 349.
Action of Protein Therapy on the Blood. Weicksel.—p. 372.
Agglutination and Electric Charge of Red Corpuscles. J. Vorschütz.—p. 383.
*Differential Cell Count in Puerperium. E. M. Fuss.—p. 391.
Constitution and Pneumonia. J. Tillgren.—p. 407.
Roentgen Rays in Pulmonary Tuberculosis. Wels.—p. 414.
*Blood Pressure in Affections of Kidneys. A. Arrak.—p. 453.
*Diabetes Insipidus. E. Meyer and R. Meyer-Bisch.—p. 469.
Movements of Healthy and Diseased Stomachs. Nick.—p. 495.
Acute Micromyeloblast Leukemia. Kohn.—p. 513.

Law of Hydration of Tissues, and Its Significance for Water Exchange in Tissues, Lymph Formation and Genesis of Edema.—Schade and Menschel found an antagonism between the cells and intercellular substance with the use of changes of hydrogen ion concentration and hypertonic solutions. The edemas in alkaline treatment, stasis and inflammations are physico-chemically different.

Disturbances of Liver Function in Epidemic Encephalitis.—Meyer-Bisch and Stern found marked urobilinuria in eleven cases of chronic progressive epidemic encephalitis. Ingestion of 100 gm. of levulose was followed by levulosuria in five out of six patients examined. The urobilinuria increased after it in all of them. They do not believe that the probable lesion of the liver was caused by the central nervous process.

Complete Differential Cell Count (Hemogram) in the Puerperium.—Fuss examined the blood of twenty-one women after confinement. He found during labor a shifting of neutrophils to the left, sometimes with a very large (49.5 per cent.) number of forms with "rod shaped" nuclei. Two days after delivery, the blood has a distinct tendency to return to normal. If this does not occur, or if the blood "shifts" again to the left, it indicates a disturbance. The severity of the disturbance is proportional to the new disappearance of eosinophils, lowering of lymphocytes and especially to the increase of "rod shaped" and young forms of neutrophils, up to myelocytes.

Changes of Blood Pressure in Affections of Kidneys, and Their Causes.—Arrak found that the blood pressure in affections of kidneys varied in the same way as in healthy persons. Food had no influence. The cause of the periodicity is unknown.

Diabetes Insipidus.—Meyer and Meyer-Bisch publish two cases of diabetes insipidus, one of which occurred after an injury of the head. They also discuss the newer cases in the literature. Though they fail to find an essential difference between the hypochloremic and hyperchloremic types, they admit the more complicated features in the second. It has not only a renal disturbance of concentration of chlorids but also a similar disturbance between the tissues and the blood. Extracts of the pituitary gland had a predominant action on the tissues in their experiments.

Zentralblatt für Chirurgie, Leipzig

50: 425-456 (March 17) 1923

*Suprarenalectomy in Epilepsy. Küttner and Wollenberg.—p. 430.
Treatment of Esophageal Strictures. Lotheissen.—p. 431.
*Entrance of Air into Vascular System. Bingel.—p. 433.
Effect of Camphorated Phenol on Articular Cartilage. G. Axhausen.—p. 434.
The Surgical Anatomy of Splenic Vessels. Volkmann.—p. 436.
*Colostomy in Ileocecal Invagination. Gottesleben.—p. 438.
Stab Wounds of Liver and Duodenum and Complications. Roth.—p. 440.
*Blocking the Phrenic Nerve in Injury of Diaphragm. Báron.—p. 442.
Lymph Drainage in Elephantiasic Edema. Kondoleon.—p. 443.

Negative Effect of Extensive Suprarenal Operations in Epilepsy.—Küttner and Wollenberg report their results in four cases of epilepsy in which they removed one suprarenal completely and half of the other. The effect in all cases was entirely negative; in one case exacerbation followed the operation.

Entrance of Air Into Vascular System: Its Removal from Right Ventricle by Heart Puncture.—In Bingel's case, a man, aged 47, had had air injected, for roentgen examination, into the space left after drawing off 1,250 c.c. of encapsulated ascites, a subphrenic abscess having formed in consequence of a recurring malignant tumor in the pyloric region. Slight emphysema of the skin appeared. About 100 c.c. of air had been injected, when the patient sank back unconscious. Auscultation of the heart revealed water-wheel sounds. There was evidently air embolism in the brain and, therefore, with a 1 c.c. record syringe, the right ventricle of the heart was punctured close to the left edge of the sternum, and 3 c.c. of air was aspirated from the heart. The patient had already improved somewhat under camphor, and, following the heart puncture, he was soon restored to his previous condition. The mill-wheel sound in the heart disappeared; the pulse was full and strong, and he was again fully conscious. The patient died two weeks later. Under many different circumstances and in connection with operations on or near veins, artificial pneumothorax, pneumoperitoneum, etc., air may possibly penetrate a vein. In such cases, Bingel advises immediate auscultation of the heart. If a water-wheel sound is noted, an attempt should be made to remove by puncture the air from the right ventricle. It is possible that in this manner some patients might be saved.

Colostomy with Witzel Fistula for Ileocecal Invagination.—Gottesleben illustrates a procedure that he recommends to prevent postoperative complications after successful disinvagination, and also in palliative operations in which the condition does not allow resection. After reduction of the invagination, a Witzel fistula is made in the cecum, with a long tube introduced through a slit in the muscular band. The tube is passed through the valve into the ileum, and the abdominal incision is sutured around the tube. The advantages claimed for this method are: (1) the speed with which it can be carried out; (2) prevention of recurrence, as the tube guides the passage of feces; (3) the opportunity for influencing sluggish intestinal activity through the fistula, and (4) operative closure is unnecessary, since the slanting fistula closes spontaneously in a short time.

Blocking the Phrenic Nerve in Injury of the Diaphragm.—Báron reports the case of a young man with a nonhemorrhagic bayonet wound in the ninth left intercostal space. Symptoms of light shock were present. The patient had paroxysms of coughing and complained of severe radiating pain in the left shoulder. The local pain was insignificant. As there was no evidence of injury to the abdominal organs, a bandage was applied and the left phrenic nerve was blocked by 15 c.c. of a 32 per cent. procain solution to immobilize the diaphragm. In a few minutes the patient became calmer and the pain and the cough disappeared. Six hours later no movements of the diaphragm, as far as could be ascertained by percussion, were discernible. The pain in the shoulder did not return and in a few days the patient had recovered. It seems assured that the elimination of sensation and movement in half of the diaphragm, which was accomplished a few minutes after the injury, exerted a favorable subjective and objective influence (hemostasis, localization of eventual infection).

50: 457-504 (March 24) 1923

*Paravertebral Anesthesia in Diagnosis. A. Läwen.—p. 461.
Operation for Bile Fistula. L. v. Stubenrauch.—p. 465.
Repeated Resection of Stomach for Peptic Jejunal Ulcer. W. Denk.—p. 466.
*Exclusion of the Pylorus. K. Lutz.—p. 469.
*Dangers of Encephalography with Brain Tumor. Denk.—p. 471.
*A Method of Treating Exophthalmic Goiter. P. Pajzs.—p. 472.
Habitual Displacement of Ulnar Nerve. G. Schmidt.—p. 474.
*Operative Treatment for Tuberculous Shoulder Joint. A. Báron.—p. 477.

Nerve Blocking in Differential Diagnosis.—Läwen now has a record of 150 cases in which he injected procain to block the spinal nerve innervating a given organ. The response is instructive not only for differential diagnosis in affections of the gallbladder, stomach, kidney and appendix, but the relief from pain and the prevention of postoperative pain are further advantages of this paravertebral anesthetization.

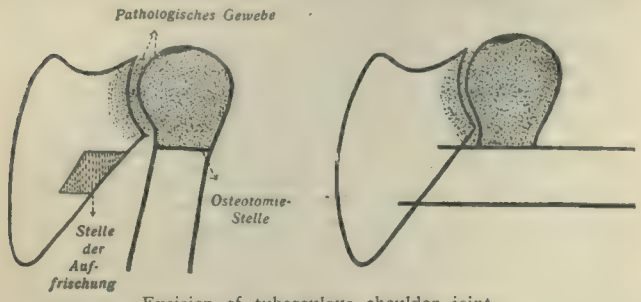
Exclusion of the Pylorus.—Lutz describes the method of pyloric exclusion that he has used with success in 24 cases of duodenal ulcer distant from the pylorus. After gastroenterostomy, a longitudinal incision about 2.5 cm. long is made in the stomach wall just above the pylorus. This small incision is kept open with four tenacula and the mucous membrane is gently mopped clean. Then the mucosa of the pylorus is painted for from six to ten seconds (with a turning motion) with a pledget of cotton, attached to a Blephaire sound, dipped in a concentrated solution of hydrochloric acid or sulphuric acid. The opening is then closed by Lembert sutures. In four weeks the stenosis from the caustic is complete. In 17 of the 24 cases, an examination was made after two to eight months. In all 17 cases the patients were free from discomfort. In 14 cases the closure of the pylorus (fluoroscopic examination) was complete; in the other 3 cases a very small quantity of chyme was passing from the stomach into the duodenum. No complications of any kind have occurred as yet.

Dangers of Lumbar Encephalography in the Presence of Cerebral Tumors.—Denk reports that, in a man, aged 26, the right lateral ventricle was punctured for the purpose of ventriculography. As no fluid could be aspirated, no oxygen was injected. Two days later, the left lateral ventricle was punctured, with the same negative result. Compression or dislocation of the ventricles by a tumor was assumed. Thirteen days later, in order to determine on which side the tumor lay, a very cautious attempt at lumbar puncture and insufflation of oxygen was made. The fluid was under high pressure; 60 c.c. of fluid was removed, 4 c.c. at a time, and after the removal of each 4 c.c. of fluid, a like quantity of oxygen was injected. No more fluid was removed because the patient showed signs of weakness. One-half hour after the lumbar puncture, the patient became apathetic, and the stupor became deeper with each succeeding hour. The next morning, general convulsions occurred, and soon after death ensued. A glioma was found in the left temporal lobe, with displacement of the lenticular nucleus and compression of the lateral ventricle.

A Method of Treating Exophthalmic Goiter.—Pajzs gives a preliminary report on a method he has employed in about fifteen cases. He injects alcohol into the diffuse parenchymatous goiter tissue. The injections are repeated until the pathologic secretion of the goiter is sufficiently reduced, which fact is measured by the general condition of the patient. At first, from 1 to 2 c.c. of 80 per cent. alcohol is injected—if possible, deep within the parenchyma, on one side. The first injections cause a marked general reaction. The tachycardia is increased temporarily; frequently diarrhea occurs, and the exophthalmos appears to be greater, doubtless due to the resorption of toxins liberated by the coagulating effect of the alcohol in the goiter tissue. The injections are then cautiously increased. At first alternating, then daily one or two injections on both sides, later two or three injections, of from 0.5 to 1 c.c. of alcohol are given until the desired result is obtained. If the general manifestations are increased or local inflammations (disappearing usually in one or two days) should appear, the injections are stopped and fomentations are employed. The injections are made at different points each time. In a week, a con-

siderable diminution of the goiter will be noted. In from three to four weeks after the injections are begun, the general condition of the patient starts to improve. In some cases, from 70 to 80 injections are required to effect a cure. As little as possible of the goiter tissue should be destroyed; otherwise, thyroprival symptoms may be produced.

Operative Method in Tuberculosis of Shoulder Joint.—Báron in Budapest describes in detail his operation which consists essentially in the resection of the tuberculous head of the humerus and implantation of the shaft—at a right



Excision of tuberculous shoulder joint.

angle to the side of the trunk—in a prepared bed in the lateral border of the scapula. Other illustrations show the almost normal functioning of the arm in time.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1298-1404 (March 31) 1923

*Polyserositis. J. L. A. Peutz.—p. 1298.
*Treatment of Certain Psychoses. H. Breukink.—p. 1321.
*Laryngeal Tuberculosis. H. Verploegh.—p. 1329.
Tuberculosis Death Rate in the Netherlands. Rietema.—p. 1351.

Polyserositis.—Peutz describes six cases in detail and discusses the etiology and symptomatology. There is no question of a rational treatment beyond that for tuberculosis in general. The special liability to infection of the serous membranes justifies a "hands off" policy. In some of his tuberculous cases the cerebral meninges and the synovial membranes of the extremities shared in the polyserositis. In one case, bilateral pleurisy and peritonitis ran their course with death in nine months but no tubercle bacilli had ever been discovered in the sputum or pleural effusion. One woman had pleurisy at 23, then pleurisy on the other side and peritonitis at 28, then a free interval of several years and pleurisy with synovitis; then after an interval of three years, synovitis and peritonitis. No tubercle bacilli have been found in the sputum, but an exploratory operation confirmed the tuberculous peritonitis. This patient now has pleurisy again. The others all died. The anamnesis in these cases is of prime importance. The temperature may suggest typhoid, or be subnormal, or with long periods of normal temperature. Each serous membrane may spontaneously return to clinical normal condition, but we must not forget that the polyserositis is a secondary affection. The prognosis is graver the shorter the intervals.

"Catharsis-Hypnosis" Form of Psychanalysis in Treatment of Certain Psychoses.—Breukink explains his method as based on both Breuer's and Freud's, but he applies suggestion to the patient in somnambulism, regarding hypnosis as an important aid in the symptomatology, the differential diagnosis and the prognosis of psychoses. When somnambulism can be induced by simple fixation and suggestion, in a case of psychosis, he has found that the psychosis is readily curable.

Laryngeal Tuberculosis.—Verploegh states that with an acute, progressive focus, complete rest is the only treatment; radiotherapy must wait until the acute phase is past. With a chronic focus, with much toxin, any irritation of the focus sends a stream of toxin throughout the system; if the resisting powers are good, this is borne without harm unless a primary focus is aggravated by it. The active laryngeal focus yields to strong vaccine or roentgen treatment, but the primary focus in the lung may become aggravated. The inactive laryngeal focus behaves differently. Even the strongest irradiation brings little or no improvement. We must first activate the focus; vaccines and diathermy are useful for this. The roentgen rays must be applied when the reaction is at its height.

1: 1406-1500 (April 7) 1923

*Active Immunization Against Diphtheria. Kramer.—p. 1406.
*Hemianopsia in Case of Epilepsy. C. T. van Valkenburg.—p. 1412.
*Tar Cancer. H. T. Deelman.—p. 1416.
Mammary Cancer and Postoperative Irradiation. J. de Smit.—p. 1425.
Sixteenth Century Anatomic Fugitive Sheets. J. G. de Lint.—p. 1429.

Active Immunization Against Diphtheria.—Kramer comments on the results of immunization of nurses in the diphtheria ward at Rotterdam. Of the total 114 tested, forty-seven responded positively to the Schick test and were systematically immunized. Of the ninety employed in the diphtheria ward, 42 per cent. were thus immunized and 58 per cent. left unimmunized on account of a negative Schick test. Two in this latter group developed diphtheria, requiring antitoxin treatment, but in both a preceding influenza had lowered the resisting powers. In a third case, however, a healthy nurse developed typical diphtheria with paralysis of the palate, notwithstanding her negative Schick test. He queries whether the skin may not react (in adults) to the Schick test even when the antitoxin content of the blood is below the safe limit. Twelve of the nurses became carriers, six with positive and six with negative Schick responses.

Focal Symptoms in Epilepsy.—The young epileptic had been under observation for ten years when suddenly hemianopia developed and persisted. The seizures were not modified by it.

Tar Cancers.—Deelman's research on experimental cancers, confirms that they often develop with multiple centers.

Hygiea, Stockholm

85: 113-240 (Feb. 28-March 31) 1923

*Widal's Test of Liver Functioning. A. Andreen-Svedberg.—p. 115.
Colloidal Metals in Therapeutics. S. Zandrén.—p. 121. Conc'n p. 147.
*Intraspinal Introduction of Fluids. I. Holmgren.—p. 130. Idem. W. Gennerich.—p. 226.
*Mechanics of the Formation of Diphtheria Toxin. K. G. Dernby.—p. 165.
*Neurologic Surgery. A. Troell.—p. 198.

Widal's Test of Liver Function.—Andreen-Svedberg found the hemoclastic crisis test accurate in sixteen cases of certain liver disease and negative in four dubious cases. Only a positive reaction seems to be instructive.

Holmgren's Technic for Single Intraspinal Introduction of Medicated Fluids.—Holmgren uses a needle with two openings close together. When it has been inserted, a manometer is connected with the side opening, and the pressure is measured. A glass cylinder is then connected with the main opening; the side valve is closed, and the main valve opened. The cylinder is lowered so that the cerebrospinal fluid can flow into it in the usual way. When the desired quantity has been drained off, the arsphenamin solution is introduced through the side opening by means of a syringe. Then the side valve is closed, the cylinder raised, the main valve opened and the cerebrospinal fluid flows back into the spinal cavity. He says that the result is the same as with Gennerich's double puncture, with less risk of leakage, and the advantage that this method requires only a single puncture.

The Mechanism of the Formation of Diphtheria Toxin.—Dernby, referring to the necessity of obtaining strong toxins in order to produce effective antitoxins, outlines a new theory, based on a number of experiments, on the mechanism of the formation of diphtheria toxin in cultures. The diphtheria toxin is formed mainly outside the cells. The bacilli grow, die and autolyze. In this process, proteolytic enzymes of a nature specific to these bacilli are set free. These enzymes act on the albumoses and peptones present in the bouillon. Certain of the first intermediary products are the toxic substances. The toxicity disappears if the proteolytic process is permitted to proceed further.

Gasserectomy.—Troell reports resection of the gasserian ganglion for trigeminal neuralgia in two cases, with successful outcome. The only by-effect was transient paralysis of the ocular muscles in one case. The patients were a woman of 38 and man of 49. Five other operations are reported.

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GASTROPEXY BY SHORTENING THE GASTROHEPATIC OMENTUM

WITH ANATOMIC AND PHYSIOLOGIC CONSIDERATIONS

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PHILADELPHIA

I cannot agree with those clinicians and roentgenologists who are so liberal in their interpretations as to say that the stomach is within its normal limits, irrespective of its size and shape or of the position it may occupy in the abdomen. Under peristaltic action, the stomach descends and elongates as well as contracts. A stomach that descends into the pelvis is not only dislocated but also markedly dilated. The anatomic changes, important as they are, may not be regarded seriously, but the functional derangement with impaired motility, altered secretion and disturbed sensation cannot be dismissed without more serious consideration.

From the clinical standpoint, practically all of the cases of gastroptosis may be divided into two groups: (1) Those cases in which the abdomen is large and pendulous, a condition most commonly found in multiparous women in whom the abdominal walls are thin, relaxed, wasted and atrophied; and (2) the so-called virginal type (Rovsing), in which the abdomen is long and narrow.

There are two fundamental principles in the treatment of gastroptosis whether the treatment is medical or surgical: (1) the support of the stomach to relieve the dragging on its ligamentary attachments, and (2) the building up of nutrition.

Medical treatment gives a measure of relief in the majority of cases of gastroptosis. When it is effective, it brings about improvement, usually within a short time. As a matter of fact, most of the patients express a feeling of well-being immediately after a well fitting abdominal belt or support has been applied. This treatment is best suited for patients with relaxed, pendulous abdomens. External abdominal supports rarely give satisfactory results in patients belonging to the second group, because in these cases the abdomen is flat and the iliac bones are prominent, so that pressure cannot be applied satisfactorily below the prolapsed stomach.

Patients who are improving under medical treatment do not consent readily to operations, and I do not know of any one who would advise an operation under these circumstances. Only those patients who do not respond to medical measures are considered for operation. It is my belief that many of these patients should be operated on unless there are contraindications to operation. It is not fair to the patient to continue medical treatment when it has been given a good and fair trial and it has been shown that improvement has not taken place—provided, however, we have something further to offer. I feel certain that surgery has much to offer in properly selected patients, who would otherwise drift from one physician or clinic, as the case may be, to another, only to receive a repetition of the treatment that has given the patient no results. As I see it, there is no competition here between medical and surgical treatment. It is a case of rescuing some of these human derelicts.

In cases of the first group, medical treatment has its field for application and usefulness. Surgery, if it is used at all in cases of this type, must be cautiously employed, because not only is there a prolapse of the abdominal viscera, but the whole gastro-intestinal tube is usually dilated; and although the abdomen is greatly increased in size, there does not seem to be room within it to hold its contents. Visceroptosis, combined with the ever present hypomotility of gastro-intestinal atony, is not a field for any form of fixation surgical procedure or short circuiting operation. These are the pathologic rocks on which both the operator and the patient come to grief.

I have operated on seven patients. The immediate and ultimate results have been very gratifying. There were six women and one man. The operation that I performed was strictly an anatomic and physiologic procedure. The stomach was not fixed, but it was placed in a position which greatly facilitated a restoration of its functions. In one of these cases I had roentgenograms taken before and after operation. In the other six cases I made the diagnosis clinically. I would not have had a roentgen-ray examination in this one case had not the patient complained of much pain and tenderness in the region of the lesser curvature. I thought that an ulcer might be present, although there was no other evidence that pointed to the existence of an ulcer. I wanted to decide before the operation whether an ulcer was present. This was decided in the negative.

CASE 1.—*History.*—Mrs. D., aged 28, white, born in the United States, a housekeeper, referred to me, May 1, 1922, by Dr. William B. Scull of Philadelphia, was the mother of one child, aged 7; there was no other pregnancy. Indigestion had been present off and on during the preceding ten years. For the last year she had complained of constant pain and distress in the epigastrium. These symptoms were made worse after eating or drinking anything, so that she tried to live on as little food as possible. There were attacks of nausea every morning, and on two or three mornings a week she would vomit several ounces of a sour, greenish liquid. There was a gnawing sensation in the stomach almost all the time. The appetite was good, but she was afraid to eat. The bowels were constipated. There was a loss of 25 pounds (11 kg.).

Examination.—The patient was tall and thin, and was of fair color and poor nutrition. The mouth and teeth were in good condition. The chest was long and narrow, with the epigastric angle acute. The lungs were normal. The heart

was accelerated, with the pulse rate 100 a minute. The abdomen was long, narrow and flat, with good muscular development. Palpation of the abdomen showed fulness in the left side, and the sigmoid flexure of the colon was palpable. Inflation of the stomach showed that the greater curvature descended into the pelvis; and the lesser curvature descended vertically to the left of the umbilicus, and crossed



Fig. 1 (Case 1).—Extension of stomach into pelvis before operation; patient in prone position.

the lower abdomen midway between the umbilicus and the symphysis pubis. Auscultation over the pylorus during digestion revealed peristaltic sounds at intervals of one minute. This was somewhat delayed. Webster's and Stiller's signs were absent. The liver was palpable below the costal margin. The kidneys were not palpable.

The gastric contents, examined after an Ewald test meal, showed a total acidity of 40; free hydrochloric acid was absent. Digestion was fair. The test for occult blood was negative. The urine was normal. The feces were negative for occult blood. A blood examination, July 6, revealed erythrocytes, 3,400,000; leukocytes, 7,000; hemoglobin, 70 per cent.

Roentgen-ray examination, made by Dr. George E. Pfahler, at the Medico-Chirurgical Hospital, June 21, disclosed a marked ptosis of the stomach, but gave no evidence of organic disease about the stomach or duodenum. The greater curvature of the stomach sagged well down into the pelvis. The stomach was hypotonic. Peristalsis was feeble and sluggish. There was a great deal of tenderness in the epigastric region, but there was no evidence of organic disease of the gastrointestinal tube. The diagnosis was gastroptosis with gastrointestinal atony.

Operation and Result.—July 8, at St. Mary's Hospital, under gas and oxygen anesthesia, an incision was made through the upper part of the right rectus muscle, and the peritoneal cavity was opened in the usual manner. The stomach was drawn up so as to relax the gastrohepatic omentum. This structure was stretched out, and in many places it was as thin as tissue paper. Retractors were placed in the wound. Only one gauze sponge was placed inside the abdomen, between a retractor and the liver to hold that organ out of the way. Three continuous mattress sutures of No. 1 chromic gut were introduced into the gastrohepatic omentum to shorten that structure by pleating it and thereby elevate the stomach. The sutures were introduced from left to right and caught with hemostatic forceps. The first suture began in the lesser curvature and near the cardiac orifice of the stomach. The suture included the serous and muscular coats of the stomach, passed in front of the vessels of the lesser curvature, and as a continuous mattress suture included the gastrohepatic and gastrophrenic ligaments up to the under surface of the liver. It was then continued downward to the stomach to the point of starting.

The second suture was introduced in a similar manner to the first, and at about the center of the lesser curvature. The third suture was placed at the pylorus. The stomach was brought close to the under surface of the liver, and the first, the second, and then the third suture was tied. The stomach was thereby elevated to practically its normal position. The sutures were tied only sufficiently tight to bring the pleated folds of the suspensory ligaments of the stomach exactly into apposition. There was no other structure that required surgical interference, and the abdomen was closed. The outer covering of the pyloric end of the stomach and the duodenum was deeply injected, and the duodenum was dilated to the size of the transverse colon. The convalescence of the patient was uneventful. She got out of bed on the twelfth day, and the next day, the thirteenth day after the operation, the second roentgenogram was taken with the patient standing (Fig. 2). This roentgenogram shows that, although the stomach was hugely dilated, it had been elevated about 4 inches



Fig. 2 (Case 1).—Position of stomach thirteen days after operation; patient standing; the dilated stomach has been elevated about 4 inches.

as compared with Figure 1, in which the roentgenogram was taken with the patient in the recumbent posture. In Figure 3, the roentgenogram shows the position of the stomach, August 21, one month after the second picture was taken, and six weeks after the operation. The stomach is shown to be elevated well up out of the pelvis, and it exhibits good peristaltic contractions, which it did not show before the operation. The patient consulted me, September 25 and again, October 15. Although she had disregarded dietetic instructions and had

eaten all kinds of food, she stated that she was entirely free from stomach symptoms. Her condition was good.

The gastrohepatic omentum was pleated or puckered and drawn together when the sutures were tightened. I believe that this procedure adds greatly to the support of the stomach. It is a simpler operation than the one introduced by my friend Dr. Henry Beyea. In Figure 6 I have compared, in a diagrammatic way, the two methods of shortening the gastrohepatic omentum. The method I used is illustrated at *a*, showing the suture before it was tightened; *b* represents the mechanical result of shortening by the Beyea method. The latter operation does not increase the strength of the omental support of the stomach. The pleated omentum lessens the likelihood of a recurrence of the gastroptosis. The stomach is elevated by its normal ligamentary supports.



Fig. 3 (Case 1).—Appearance of stomach six weeks after operation; patient in prone position; the stomach has been reduced in size.

This does not interfere with the motility of the stomach. On the contrary, the stomach is placed in a position which enables that organ to have its normal motility restored.

The sutures in the gastrohepatic omentum do not pass round or under the vessels of the lesser curvature, but they are passed in front of the vessels. The needle, when it is introduced into the stomach wall, is parallel to the long axis of the stomach. Therefore, no risk is incurred of cutting off the circulation in these vessels. It is a good idea to avoid puncturing the veins in the gastrohepatic omentum; not that it does any harm, but it saves time and trouble.

The operations of Duret and Rovsing are fixation operations. In the Coffey operation, the great omentum is attached to the abdominal wall. Other operations have been devised by Hartmann, Eve, Davis and Ransohoff. Any operation that solders the stomach to the liver is almost as objectionable as an operation that solders the stomach to the abdominal wall. That is a condition which should be avoided as far as possible. The Beyea operation and the one that I have described here are anatomic and physiologic in principle.



Fig. 4.—The three sutures have been placed in the gastrohepatic omentum; the arrows *a* and *b* illustrate the direction of the sutures; the sutures were passed in front of the vessels of the lesser curvature; the inset, *b*, shows a single suture.

The first patient on whom I performed this operation was referred to me by Dr. Samuel Falls of Philadelphia:

CASE 2.—A man, aged 52, white, born in the United States, an automobile mechanician, whose height was 6 feet and 1 inch (185 cm.) and whose weight was 130 pounds (60 kg.), complained of indigestion off and on nearly all of his life. Fulness, distress, and a sense of weight in the stomach after meals caused him to eat but little. There had been a gradual loss of weight and strength. He had not been able to work during the preceding two months, and he had worked only irregularly during the previous year. The stomach descended into the pelvis. Operation was performed, July 12, 1918. The patient made a good recovery, and he returned to work in six weeks. He has remained well and at work ever since.



Fig. 5.—The first suture has been tightened slightly.

PULMONARY TUBERCULOSIS AND GASTROPTOSIS

In the dissecting room I have often seen tuberculosis of the lungs and gastroptosis associated, more particularly the association of tuberculosis with coloptosis in which the transverse part of an M or a U shaped colon rested on the floor of the pelvis. Under these conditions it was not surprising to note the presence of tuber-

culosis. This was of a comparatively common occurrence. The following observation of the development of tuberculosis in a patient with gastroptosis may be of interest, and I will give it for what it is worth:

Oct. 20, 1921, Dr. William H. Schellhamer of York, Pa., referred to me a single woman, aged 28, who had complained



Fig. 6.—The sutures have all been tied: *a*, front view of a single suture in the gastrohepatic omentum before the suture has been tightened; *b*, side view of the mechanical result of shortening the omentum by the Beyea method.

of fulness and distress in the stomach, loss of appetite and a gradual loss of weight extending over a period of several years. She had not been able to work for the previous three months. Examination showed that she had a gastroptosis, for which condition I advised an operation. To this she

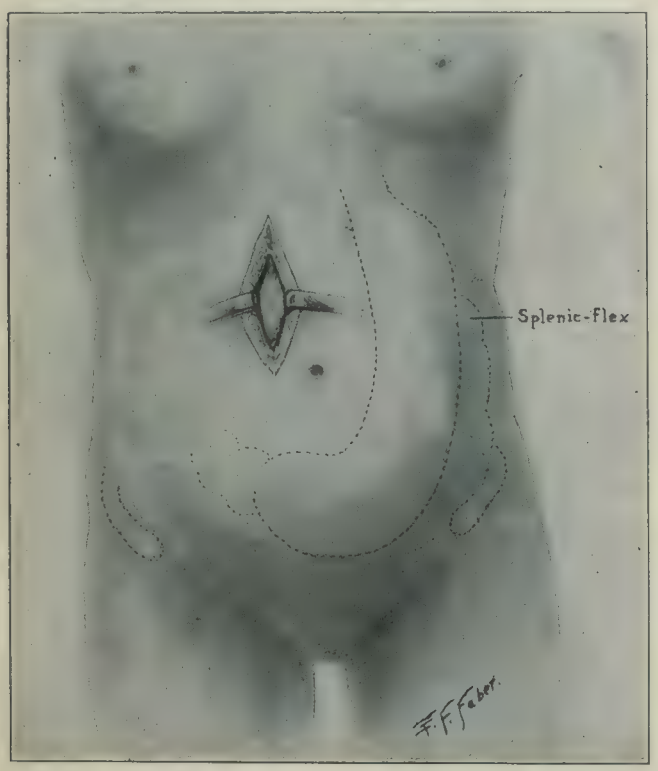


Fig. 7.—Position of stomach, and moderate ptosis of splenic flexure of colon; retractors have been placed in the abdominal incision.

refused to give her consent. There was nothing in the history nor any clinical evidence of tuberculosis of the lungs at the time. Dr. William A. Schmidt, roentgenologist at St. Mary's Hospital, made a fluoroscopic examination of the thorax and gastro-intestinal tract, which showed that the chest was clear and that the heart, lungs and esophagus appeared to be normal. The stomach filled normally, it was fish-hook in shape, and the lower border was 4 inches below the iliac crest. Peristalsis was very sluggish, and the duodenal cap filled only after manipulation. The examination showed no filling defect of the stomach or duodenum. There was a slight residue in the stomach after six hours, and the six hour barium meal was entirely in the small intestine, none of it having reached the cecum. The diagnosis was atony of the stomach and gastroenteroptosis. Dr. Schellhamer informed me several months later that the patient had developed an active tuberculosis of the lungs. She died in April, 1922. She had a long, flat, narrow abdomen, with good muscle tone.

The histories of many of these cases of gastroptosis are quite similar. However, the diagnosis is made by clinical examination and by the roentgen ray.

In the seven patients that were operated on, the right kidney was palpable in three; a moderate ptosis of the transverse colon was present in all of the cases; the splenic flexure of the colon had dropped about 4 inches in three cases. It is well not to do too much, and I believe that it is unnecessary to do anything more than to raise the stomach. Intelligent postoperative treatment is absolutely necessary to obtain the best results.

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THE MOTOR MECHANISM OF THE GALLBLADDER

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The Meltzer-Lyon test for disease of the biliary tract has aroused a renewed interest in the motor mechanism of the gallbladder. Despite the large amount of research devoted to it, this phase of the physiology of the gallbladder remains quite obscure. I was convinced of this during some experimental studies on the excretion of foreign-body dyestuffs in the gastro-intestinal tract which I carried on in Professor Bickel's biologic laboratory in the University of Berlin.

It was found that the secretion in the bile of a subcutaneously injected dyestuff, specifically indigocarmin, was entirely ended in from eight to fifteen hours in a complete gallbladder fistula dog (i. e., one with the ductus choledochus ligated), while in a normal dog, not operated on, indigocarmin-colored bile remained in the gallbladder from four to five days. At the end of two weeks, the bile in the gallbladder was found uncolored by the dye. (The exact intermediate end-point is now under investigation). This signifies that the motor activities of the gallbladder are quite slight. Furthermore, this differs so much from the usual conception, which is that of a gallbladder actively contracting and emptying itself of its bile content following the ingestion of a meal, that further experimental investigation seemed desirable. A series of studies was therefore undertaken, the conclusions of which have recently been published briefly. The experimental work done in these studies will be described here, with a short discussion of its physiologic and practical significance.

One finds in the literature [1] many contradictory statements and many conflicting results. This is probably due to inadequate and inappropriate methods of experimentation. The ideal, and perhaps the only proper physiologic method of studying the motor function of the gallbladder, would be to observe its movements in the closed abdominal cavity. Many

1. Excellent references to the literature on the physiology of the gallbladder are given by Mann, F. C., and Giordano, A. S.: The Bile Factor in Pancreatitis, Arch. Surg. **6**: 1 (Jan.) 1923. Auster, L. S., and Crohn, B. B.: Physiology of the Gallbladder, Am. J. M. Sc. **164**: 345 (Sept.) 1922. My own article embodying briefly the conclusions of the above work appeared in the Klinische Wochenschrift, Feb. 26, 1923.

previous studies may be seen to be invalid when one considers how unphysiologic is the approach through an opened abdominal cavity or an operated gallbladder.

The solution of this difficulty occurred to me in the utilization of the following technic: Four very small, light, flat disks of silver were sewed in quadrilateral arrangement on the serosa of the ventral wall of the dog's gallbladder. When the laparotomy wound was completely healed, the animal was studied roentgenologically. The accompanying illustration demonstrates the definite outline thus obtained.

With the aid of this procedure, it was found that during the fasting state, on the exhibition of food, when food was in the stomach, at the instant of entrance into the duodenum, and during the duodenal passage of food, there occurred no approximating motion of the metal buttons. In other animals, there was introduced in addition to this method a duodenal fistula opposite the papilla of Vater. Various solutions of magnesium sulphate, hydrochloric acid, sodium chlorid and peptone were then injected through the fistula. A contractile movement was, however, not seen. Furthermore, a definite decrease in the size of the outline of the gallbladder after a meal or an injection was not apparent, indicating that an appreciable emptying did not occur. The only motion seen was a definite craniocaudal rhythmic approximation of the disks with each inspiration. The importance of this hitherto unobserved phenomenon will be discussed later. Postmortem investigation revealed no adherence of the silver platelets or of the gallbladder wall to the surrounding structures. It might be mentioned at this point that, with this new technic, further studies, particularly of the action of drugs which affect the vegetative nervous system, are now being carried on.

From these observations, it seems that a contractile emptying of the gallbladder, if it occurs at all, can be only slight and so of little significance. Since, however, the dyestuff studies had demonstrated that the gallbladder sooner or later does empty, an aspirating mechanism suggested itself. But this idea was disproved by the following experiment: After the bile was colored by an injection of methylene blue into the gallbladder, a glass cannula was tied in the ductus hepaticus, and ordinary clear dog bile was forced through the duct system at different pressures. Only bile unstained by methylene blue appeared at the papilla of Vater or at the separated end of the ductus choledochus.

During this experiment it was observed that the manual pressure necessary to force bile out of the gallbladder and through the ductus choledochus into the duodenum when the papilla of Vater and its sphincter were retained was considerable, whereas it seemed quite minimal when the ductus choledochus was deprived of these structures. This, together with the foregoing observations, namely, (*a*) the eventual emptying of the gallbladder, (*b*) the failure of an aspirating mechanism, (*c*) the apparent absence of a contractile or peristaltic movement and (*d*) the change in the outline of the gallbladder synchronous with respiration, led to the following proposition: If the gallbladder has a definite elasticity (and this probably results from a tonus tension of its muscular wall about its content so as to permit distensibility changes), then the changes in the intra-abdominal pressures during respiration must influence its volume. Are these pressures sufficient to express some bile from the gallbladder? This question can be answered affirmatively, since it was found that the pressure necessary to drive bile out of the gallbladder into the duodenum when the papilla of Vater was relaxed (or its approximate equivalent, viz., a separated duct, a lateral prepapillary opening, or a glass tube in the papilla) was less than the pressure normally exerted at the height of inspiration in the immediate location of the gallbladder.

These pressures were measured in the following manner: A rubber balloon, the size of a moderately distended gallbladder, was placed in the location of the gallbladder, and connected through the closed abdominal wall wound to a water manometer. A minimal value of 20 mm., and, with moderately increased respiration, an average value of from 80 to 100 mm. water pressure, was found at the height of inspiration. The pressure at the end of expiration was zero. It may be said, then, that in the normal animal, a pressure of from 80 to 100 mm. is thrown on the gallbladder at the height of each inspiration.



Outline of the fundus of the gallbladder obtained by four roentgenograms taken successively.

Then the pressure necessary to empty the gallbladder was investigated by invaginating the gallbladder in a rubber sac, enveloped in undistensible canvas, and connected with a water manometer so arranged that various pressures could be put on the gallbladder. With the sphincter of Oddi closed, from 110 to 120 mm. pressure was needed to overcome its tonus; but when the papilla was relaxed or, rather, its equivalent substituted, 15 mm. pressure, merely, was sufficient to drive out, at each application of that pressure, a tiny amount of gallbladder bile. At 10 mm., however, none appeared.

It seems apparent, therefore, that each normal inspiration when the papilla is open is sufficient to effect a passage into the duodenum of a tiny amount of gallbladder bile. This is not true when the papilla of Vater is closed. The emptying proceeds in a most gradual and incomplete manner; hence the persistence of dye-colored bile in the gallbladder for days after the liver bile is free from the dyestuff. Peristaltic or contractile motions of the musculature, if they occur at all, can play only a very subordinate rôle in the emptying act.

What happens when the papilla of Vater is closed forms a very important problem. The relationship

existing between intraductal and gallbladder bile, and also the filling mechanism, can probably be explained, in terms of differential pressures. The possibilities are (1) a constant inflow of liver bile with or without any interchange of duct and gallbladder bile; (2) an ebb and flow again with or without interchange; (3) an inflow only at the expiration phase, or (4) merely a change in the form of the gallbladder without any interchange. These fascinating possibilities are being studied, and, together with a study of the mechanism of the sphincter papilli, will form the content of a future communication.

Many practical applications of these physiologic observations, of course, immediately suggest themselves. Among these may be mentioned (*a*) an explanation of gallbladder stasis, (*b*) some new prophylactic and therapeutic measures in cholelithiasis and cholecystitis, (*c*) a renewed study and evaluation of the Meltzer-Lyon test, and (*d*) an improved diagnostic method for disease of the gallbladder. These and other clinical applications are now being investigated.

SUMMARY

1. A definite specimen of bile can remain at least four or five days in the gallbladder. The latter is, however, eventually emptied of that definite specimen, although the act is very gradual.

2. The only movement seen roentgenologically in the closed abdominal cavity is an alternate contraction and expansion of the gallbladder outline synchronous with respiration. A contractile emptying of the gallbladder following a meal, if it occurs at all, is only of minimal character and significance.

3. The intra-abdominal pressure at the height of inspiration is insufficient to force bile out of the gallbladder into the duodenum when the papilla of Vater is closed.

4. The pressure necessary to drive bile from the gallbladder into the duodenum when the papilla is relaxed is less than is exerted in the location of the gallbladder at the height of a normal inspiration.

5. It is, therefore, concluded that the respiratory act is the chief factor in the emptying of the gallbladder; i. e., the respiration is the motor of the gallbladder.

15 West Eighty-Ninth Street.

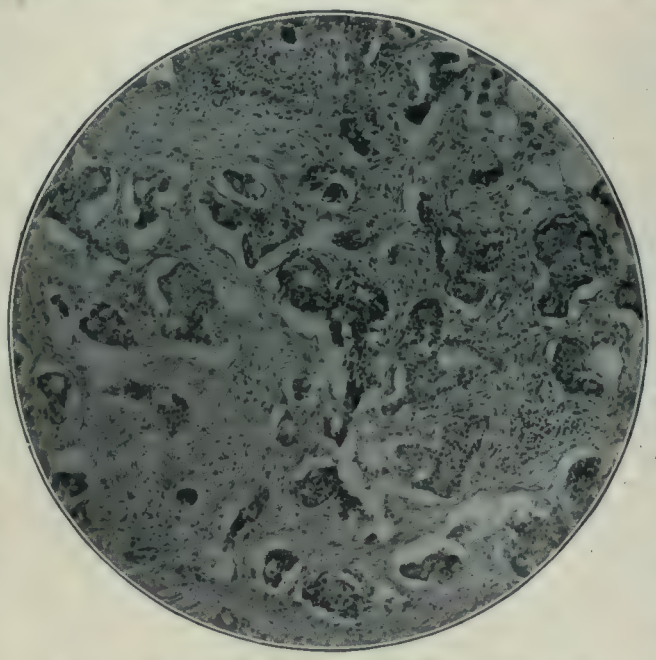


Fig. 1 (Case 1).—Section of tumor, slightly reduced from a photomicrograph with a magnification of 100 diameters.

Acute Infectious Fevers as Predisposing Causes of Tuberculosis.—Scarlet fever, influenza, colds, and all diseases which lower resistance, impair nourishment, and increase the stress of life at any age must be reckoned with as important factors in tuberculosis. The importance of typhoid fever is shown in the fact that the general death rate among survivors is more than twice that among persons who have never had typhoid. Of those who recover from typhoid but die from other causes within three years, 39 per cent. succumb to tuberculosis.—F. C. Smith, *Public Health Rep.* **38**:781 (April 23) 1923.

BREAST CARCINOMA TREATED SURGICALLY AND BY ROENTGEN RAY

CLINICAL AND POSTMORTEM FINDINGS IN TWO CASES *

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Several roentgenologists have reported a dense shadow appearing on the roentgenograms of the chest of patients who have received roentgen-ray treatment over the thorax. The exact causation of this shadow has been in doubt. Carcinoma of the lung, pleural thickening, pleural effusion, and fibrosis due to the roentgen-ray treatment have been offered as possible explanations.

In 1922, Tyler and Blackman [1] reported seven cases in which a dense shadow appeared on roentgenograms of the chest following heavy irradiation of the thorax for carcinoma of the breast, and suggested that the change might be due to a fibrous thickening of the pleura and lungs as a result of the roentgen-ray therapy. There were no necropsies in this group.

In similar cases reported by Drs. Pfahler, Groover and Case in the discussion of the article by Tyler and Blackman there were likewise no necropsies.

Dr. Pfahler was of the opinion that roentgen rays might change a malignant into a fibrotic process, or that a preexisting fibrotic process might be stimulated by the roentgen rays.

Dr. Groover felt that the roentgen rays either caused these lung changes or else had something to do with the development and spread of metastatic foci therein, and that, at least in certain instances, definite changes in the lung may be produced by the roentgen ray without a preexisting cancer focus.

Dr. Case believed that part of these changes could be accounted for by pleural irritation, and that part were of a pneumonic nature.

All agreed that without necropsies one should be careful about drawing conclusions.

In December, 1922, Case [2] mentioned pleural effusion among the "untoward results in deep roentgen-ray therapy," although he did not feel that the roentgen ray necessarily caused the effusion. Dr. E. L. Jenkinson [3] stated that in the course of the treatment of mediastinal tumors a pleural effusion may develop after moderate treatment, and sometimes clears up after more intensive irradiation.

Two cases of breast carcinoma, with clinical and necropsy findings are offered here as a contribution to

* Read before the Chicago Roentgen Ray Society, March 23, 1923.

1. Tyler, A. F., and Blackman, J. R.: J. Radiol. **3**: 469 (Nov.) 1922.
2. Case: Untoward Results in Deep X-Ray Therapy, read before the Radiological Society of North America, Detroit, December, 1922.
3. Jenkinson: X-Ray Therapy of Cancer, read before the Radiological Society of North America, Detroit, December, 1922.

the study of roentgen-ray therapy. Both cases were treated surgically and by the roentgen ray, and in both a heavy shadow appeared on the chest roentgenograms after a considerable amount of exposure.

REPORT OF CASES

CASE 1.—Mrs. M. S., aged 50, entered the Presbyterian Hospital, Jan. 28, 1918, to the service of Dr. A. D. Bevan, complaining of two small nodules in the region of the right breast. In June, 1914, she noticed a small nodule in the right breast. In eight months this tumor grew to the size of a walnut. In February, 1915, it was removed, together with the nipple. A second nodule developed in the same breast about a year later. This was removed, with the rest of the breast tissue and the pectoralis major muscle, in August, 1916.

On entering the Presbyterian Hospital, the patient was in good general health. Two bean-sized, hard, rather fixed nodules were present in the scar, and the right axillary glands were enlarged. No other pathologic changes were found.

A radical removal of all tissues down to and including the pectoralis minor muscle, together with the right axillary glands, was done by Dr. Bevan, Jan. 29, 1918. Microscopic examination of this tissue revealed mammary carcinoma (Fig. 1). February 20, after the wound had healed, roentgen-ray treatment was begun. The dosage was 50 milliampere minutes, 9-inch spark gap, 10-inch distance, 4 mm. aluminum and sole leather filter, covering one circular area 15 cm. in diameter at each treatment. Both sides of the chest, anteriorly and posteriorly, both supraclavicular fossae, and both axillae were treated. Treatments were given as indicated in Figure 2. It will be noticed that treatments were given most frequently in the first few months. Later treatments were given at irregular intervals, with rest periods up to five months.

A notation on the roentgen-ray treatment record of March 8, 1921, says: "Patient in good condition. No glands palpable. No evidence of recurrence found." The patient continued well and worked as a seamstress up to June, 1921. June 15, she complained of a cough and shortness of breath, which had been progressively increasing for about two weeks. On physical examination by Dr. F. C. Straus, there was dulness over the right side on percussion, with bronchial breathing and bronchophony on auscultation.

Roentgenograms of the chest, taken June 17, 1921 (Fig. 3) show a heavy, mottled shadow in the right lung field below the level of the fourth dorsal vertebra. This area contains evidence of thickened lung markings, which at least partly account for the mottling. The general density of this region grows a little heavier toward the lung base. The right side of the heart, and the right diaphragm outlines are indistinct. The trachea is deviated to the right. The left lung field is clear.

During July and August, the patient was considerably improved, as the result, apparently, of rest and the roentgen-ray treatment. In September, she complained of loss of appetite, frequent cough, and gradual loss of strength. Chest examination showed marked dulness over the right side, and on auscultation there was bronchial breathing and bronchophony.

Late in October, the patient overtaxed her strength nursing her son, and became bedfast. Even attempts to change her position in bed caused cough and dyspnea, so severe that morphin was given. The appetite was very poor, the color yellowish, and the breath had a very foul odor. After two weeks' rest, the patient felt somewhat better.

December 1, the right chest showed marked dulness anteriorly, with bronchophony and tubular breath sounds. There was flatness posteriorly to the seventh interspace. The left chest gave negative findings.

From September to December, the patient was brought to the hospital (by taxicab and wheel chair), at weekly intervals, for treatment, as she felt that the roentgen ray was her only hope for life.

December 13, when she came for her last treatment, she was feeling a little better, though her general complaint was the same. She had lost considerable weight, but was not extremely emaciated.

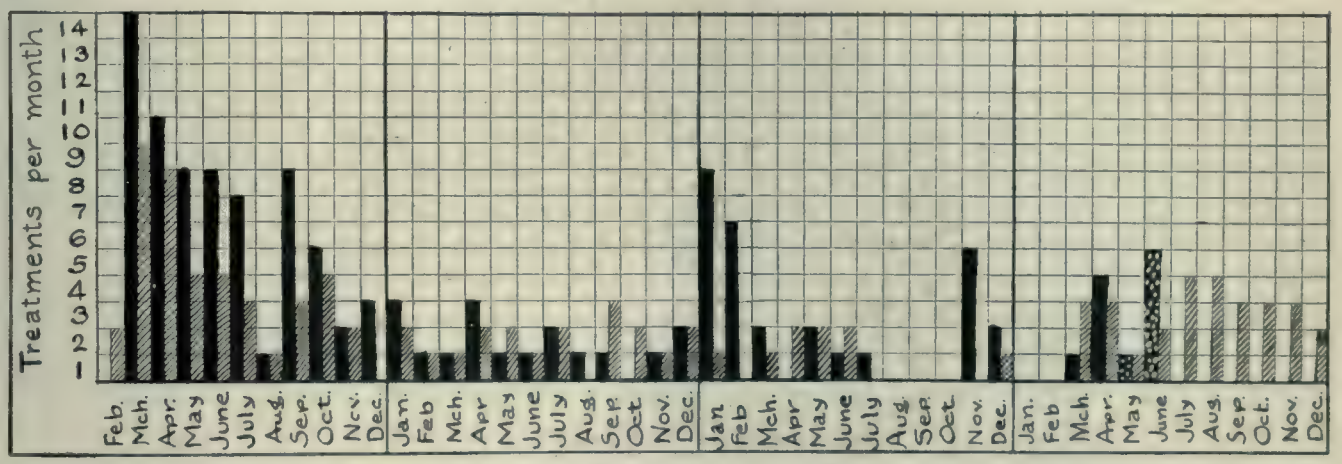


Fig. 2.—Amount of roentgen-ray treatment given each patient. Each treatment consisted of 50 milliampere minutes, 9-inch spark gap, 10-inch distance, 4 mm. aluminum and sole leather filter, covering one circular area 15 cm. in diameter. Each small square represents one such treatment. Shaded areas for Case 1; solid areas for Case 2; dotted areas indicate massive high voltage irradiation given in Case 2. The first treatment in Case 1 was given Feb. 20, 1918; the first treatment in Case 2, March 1, 1919.

December 27, a bronchopneumonia developed on the left side. The patient died, Dec. 30, 1921.

From the time roentgen-ray treatment was begun in February, 1918—to the time the chest symptoms developed, in June, 1921—the patient had received a total of 2,300 milliampere minutes over the right side, and 1,450 milliampere minutes over the left side. From June 17, 1921, after the appearance of the chest symptoms, to Dec. 13, 1921, the patient received a total dosage of 600 milliampere minutes over the right, and 450 milliampere minutes over the left side of the chest.

The necropsy was conducted by Dr. H. A. Oberhelman of the Presbyterian Hospital. The skin of both sides of the chest was brown, scaly and indurated and contained an increased amount of fibrous tissue. The intercostal muscles were almost entirely replaced by fibrous tissue on the right, partially on the left. The ribs on the right side were atrophied; those on the left were not. The right chest cavity was filled with a light yellow fluid with a few flakes of fibrin free in it. This fluid was so abundant that the right lung was compressed and pushed tightly against the mediastinum. The entire right lung was completely atelectatic, and scarcely filled a hand. The right pleura, both visceral and parietal, was covered with a very fine irregular layer of fibrin. No tubercles were present on the pleura. There was one dense adhesion at the apex of the right lung, 1 cm. in diameter. In the lung tissue, under this adhesion, was a nodule from 5 to 7 mm. in diameter, containing a cavity from 3 to 4 mm. in diameter, surrounded

by dense fibrous tissue, which extended close to the visceral pleura. There was one similar nodule, without cavity, near the apex. These were tuberculous lesions, and were the only evidence of tuberculosis found. The left chest cavity contained 500 c.c. of serosanguineous fluid. A definite bronchopneumonia was present in the lower lobe of the left lung. An acute pyelo-ureterocystitis was present. There were no other noteworthy findings.

Microscopic sections of the right lung showed marked increase of fibrous tissue around the small bronchi and blood vessels. The alveoli were almost completely obliterated, their walls being in apposition, as from compression atelectasis. There was no evidence of pleural thickening or tuberculosis on the pleura, and no round cell infiltration of the pleura.

The tracheobronchial lymph glands contained fibrous tissue, but no evidence of tumor or tuberculosis.

There was no evidence of carcinoma in any part of this body, either grossly or microscopically.

In July, 1922, another case, which had been under my observation for more than three years, came to necropsy.

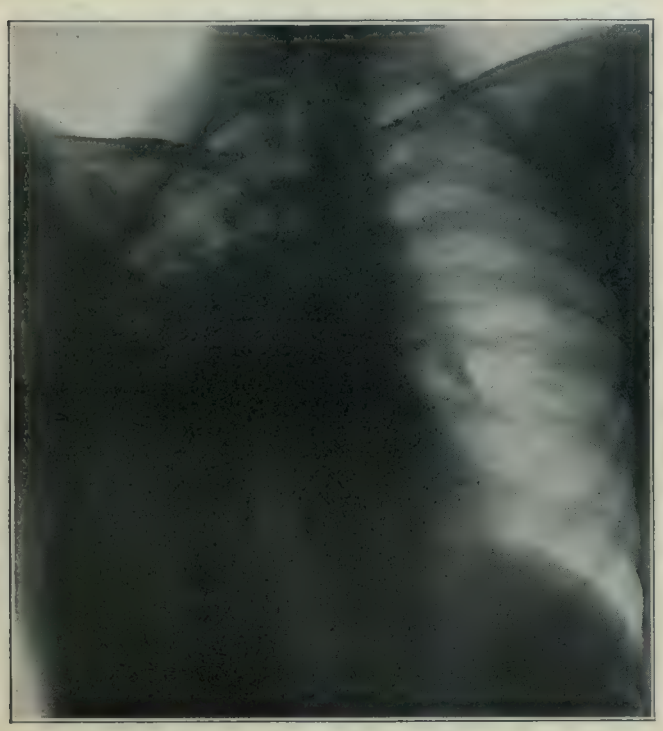


Fig. 3 (Case 1).—Appearance of chest, June 17, 1921.

CASE 2.—Mrs. E. V., aged 47, entered the Presbyterian Hospital to the service of Dr. J. B. Herrick, Feb. 17, 1919, complaining of frequent and severe paroxysmal attacks of unproductive cough, marked weakness, loss of weight, and pain in the right hip and knee. In October, 1916, a hard, painless lump was discovered in the right breast, above which the skin was retracted. A radical removal of this breast was done a week later by Dr. A. J. Ochsner.

On entrance to the hospital, the patient was not acutely ill, though having marked distress from cough. The lower right chest was dull, especially in front, and breath sounds were faint. There was also tenderness on pressure along the fourth, fifth and sixth ribs in the mammary line on the right side.

Roentgenograms of the chest, taken Feb. 18, 1919 (Fig. 4), showed moderately heavy, beaded intensification of lung markings extending well out into the parenchyma of the right lung, heaviest in the lower lobe, and especially near the hilum. A uniform haziness was present over the right lower lobe, and a line of interlobar thickening crossed the right lung field. There was moderately increased density along the bronchial markings of the left lung field. The outline of the right diaphragm was slightly nodulated; the left was normal. The heart shadow and the bones were normal.

The clinical diagnosis was fluid and tumors in the chest, and bone metastases in the ribs.

Rest and sedatives gave little relief. March 1, 1919, the patient was referred for roentgen-ray therapy. The general management and dosage were the same as in Case 1. Treatment covered the same areas of the thorax, and in addition the abdomen, right hip and right knee were irradiated (Fig. 2).

The patient improved under this treatment, was soon able to continue her work as a private secretary, gained 25 pounds (11 kg.) by October 1, and for more than a year was in good health.

Late in December, 1920, the old symptoms returned, though in moderate degree. The patient again entered the hospital, Jan. 12, 1921. Chest examination showed distant breath sounds over the right lower lobe posteriorly, with scattered crackling râles, especially posteriorly over the right middle lobe. There was tenderness on pressure over the ribs. Roentgenograms of the chest, compared with those previously taken, showed very little change in the lung fields. In the ribs there was a mottling in many places on both sides due to areas of rarefaction interspersed with small areas in which the trabeculae were increased in density. A ten-day rest in bed and increased irradiation brought relief, and the patient returned to work for nearly a year.

In September, 1921, the patient came under the clinical care of Dr. Milton Portis. The symptoms had again returned, and although the roentgen-ray treatment was continued as before, the relief was not so satisfactory. A lump found in the left breast was excised, and proved to be carcinomatous. In October, a radical removal of this breast was done by Dr. Lackner of the Michael Reese Hospital.

In April, 1922, the patient suffered from shortness of breath and pain on respiration. I examined the patient and found flatness of the left chest anteriorly to the second interspace and to the fifth rib posteriorly. Breath sounds were distant. The liver was tender, and palpable two and a half finger breadths below the costal border in the mammary line.

Roentgenograms of the chest (Fig. 5) taken, April 29, 1922, showed a little intensification of the shadows previously described on the right side, especially near the hilum. On the left, a very dense uniform shadow was present over the lower lung field, blotting out the shadows of the heart and diaphragm, and curving upward at the lateral costal margin. A similar shadow, though less dense, occupied the rest of the lung upward to the apex. Lung markings could be traced only in a small area in the midportion of the lung field. The ribs and the lower ends of the scapulae had a mottled appearance due to small areas in which the trabeculae were irregularly arranged and increased in density, interspersed with small areas of decreased bone density.

The findings in the left lung field were compatible with a large quantity of fluid in the pleural cavity. The bone findings were questionable for metastatic foci.

In June, 1922, the left pleural cavity was aspirated by Dr. Milton Portis, and 3 pints (1.5 liters) of bloody fluid removed. There was slight relief of symptoms for a week, and then the symptoms returned.

The patient had worked daily since May, 1919, except for the few days in the hospital at various times. In fact, she went to her work up to within three days of her death, although with difficulty, which had been continuously increasing in the last few months.

From the beginning of the roentgen-ray therapy to June, 1922, the patient received a total of 2,300 milliampere minutes over the right, and 2,325 milliampere minutes over the left side of the chest, 355 milliampere minutes over the abdomen, 810 milliampere minutes over the right thigh, and 340 milliampere minutes over the right knee.

May 30, at the request of Dr. Portis, I gave the patient 300 milliampere minutes over the left side of the chest, at 140 kilovolts (sphere gap) at 50 cm. distance, 0.25 mm. copper and 1 mm. aluminum filter.

From June 26 to 30, intensive irradiation for an hour a day, at 200 kilovolts, was given by Dr. E. L. Jenkinson, at St. Luke's Hospital.

July 14, the patient developed a gradually increasing afternoon fever, the temperature rising to 104 F. She died, July 16, 1922.

At necropsy, conducted by Dr. H. A. Oberhelman, the skin of the chest anteriorly and of each axilla was brown, scaly and indurated, and there was marked atrophy of the skin.



Fig. 4 (Case 2).—Appearance of chest, Feb. 18, 1919.

The intercostal muscles of both sides, when cut at right angles, showed broad streaks of white fibrous tissue. The costal cartilages were soft. The mediastinal tissues were densely adherent to the back of the sternum. The entire right pleural cavity was obliterated by dense fibrous adhesions that held the lung firmly against the chest wall, and the interlobar fissures were obliterated. The right lung weighed 815 gm., and was boggy. The upper two thirds of the left pleural cavity was obliterated by fibrous adhesions. In the lower third were 800 c.c. of turbid yellow-brown fluid, in which were a few stringy blood clots. This fluid was in a pocket between the lung and the diaphragm. The lung was pushed up to the level of the fourth interspace. The parietal pleura of the left side was adherent to the ribs and studded with tumor nodules, as was also the diaphragmatic reflection of the pleura. The left lung weighed 440 gm. The pericardial sac was also studded with tumor nodules, which could be seen from the outside. The sac was thickened and indurated, and contained 50 c.c. of fluid. No cavities or tumors were found in either lung on many surfaces made by cutting. Metastatic tumors were present in the mediastinal lymph glands, and also in the liver and biliary lymph glands, the peritoneum and ovaries.

Microscopic examination showed the tumor nodules to be carcinoma. There was a definite necrosis in the centers of even the very small tumor nodules. The nodules lay in an abundant stroma. A few nuclei lay about the margin of the necrosis, some fragmented, and some intact. There were few mitotic nuclei, and very little round cell infiltration in this zone. The fibrous thickening of the left lung substance was so marked that almost no alveolar spaces were seen. The piece of rib sectioned showed marked bone atrophy, loss of lacunar arrangement, and hyaline degeneration. There was no tumor invasion.

SUMMARY

These two cases present a great similarity in their clinical pictures, but a striking difference in necropsy findings. In each case the postmortem revealed pathologic findings sufficient to account for the shadows on the roentgenograms of the chest.

In Case 1, clinically a carcinoma of the breast with three surgical interventions, the patient died seven and a half years after the discovery of the first tumor, and four years after the last operation, which was done for metastases in the old scar, microscopically carcinoma. Postoperative roentgen-ray treatment was started immediately after the last operation, without clinical evidence of metastases other than breast nodules and axillary glands so recently removed. Postmortem examination showed a large pleural effusion, without pleural thickening, on the right side of the chest—the site of the tumor and the greatest amount of roentgen-ray treatment, 2,900 milliampere minutes. Carcinoma was absent. There was no inflammatory process of the pleura, as indicated by the absence of round cell infiltration. There were two small tuberculous foci in the apex of the right lung. A tuberculous effusion from so small a focus, without tubercles on the pleura, and in the absence of pleural thickening, is rare. That the roentgen ray lowered the patient's resistance to tuberculosis, and stimulated an effusion from even so small a focus is to be considered, in view of the statement that roentgen-ray treatment given to guinea-pigs hastens diagnostic results following the injection of tuberculous material into the peritoneum.

In Case 2, clinically a carcinoma of the breast, with two surgical interventions, the patient died five and two-thirds years after the discovery of the tumor and first operation, and eight months after the second operation, which was done for a tumor in the opposite breast, microscopically carcinoma. Palliative roentgen-ray treatment was begun two and one-third years after the first operation, for clinical evidence of metastatic carcinoma within the thorax. Prolonged improvement followed. Two later relapses also responded to this treatment, although not so completely as at first. Postmortem examination showed a pleural thickening and a large pleural effusion of the left side of the chest—



Fig. 5 (Case 2).—Appearance of chest, April 29, 1922.

the site of the second tumor and greatest amount of roentgen-ray treatment, 2,625 milliampere minutes, plus the intensive irradiation given by Dr. Jenkinson. The presence of numerous carcinomatous nodules on the pleura may well account for the pleural thickening and effusion, for, as is well known, such nodules frequently cause an effusion, often bloody, and a patchy thickening of the pleura. The presence of central necrosis in even the very small tumor nodules speaks strongly for the destructive action of roentgen rays on carcinoma cells, as is so often stated in current medical literature. The presence of an abundant stroma surrounding the tumor nodules, and the marked fibrous thickening of the pleura, speak for the stimulation of fibrous tissue by roentgen rays, as is also stated in medical literature. The extent of the fibrosis and tumor necrosis probably explains the long and satisfactory palliation. Nevertheless, in this case, all the irradiation given did not prevent the formation of carcinoma in the opposite breast.

Presbyterian Hospital.

CONGENITAL STRICTURES OF THE ESOPHAGUS *

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The literature concerning complete congenital strictures of the esophagus has been reviewed very fully by Plass,[1] Griffith and Lavenson,[2] Cautley [3] and Hirsch,[4] and I shall not endeavor to analyze the cases they have compiled. There have been numerous types of esophageal deformity, but the majority of them are represented by Figure 1 *a*, in which the upper portion of the esophagus ends in a blind pouch and the lower portion enters the trachea, or a bronchus forming an esophagotracheal or esophagobronchial fistula. Another type of stricture (Fig. 1*b*) is represented by an upper and a lower culdesac connected by a strand of tissue. A third type is similar to this, with the exception that there is no connection between the two segments.

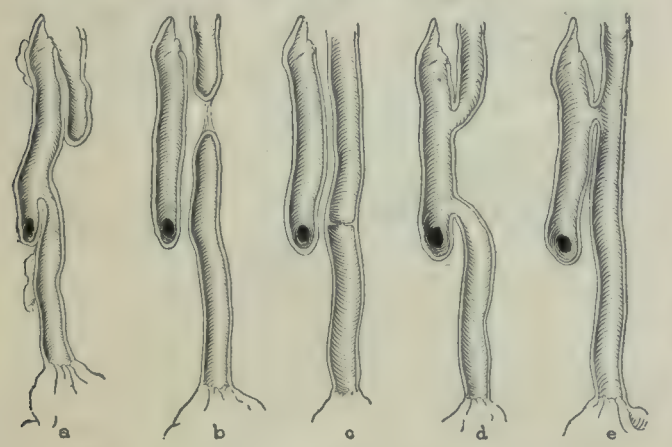


Fig. 1.—Types of congenital deformity of the esophagus.

Again there may be an upper culdesac only, sometimes connected with the stomach by strands of tissue. These strands, however, are often absent. The esophagus may be also partially or completely closed by a diaphragm-like membrane (Fig 1*c*). The organ may be completely absent or may be represented by a solid cord throughout. Partial or complete doubling of the esophagus is sometimes seen. One case has been reported by Fischer [5] in which there was a double esophagotracheal fistula, both the upper and lower segments of the esophagus being in communication with the trachea (Fig. 1 *d*). A simple fistula between the esophagus and trachea resulting from incomplete closure of the esophagotracheal partititon may be the only defect (Fig. 1 *e*). Hirsch presumed from roentgenographic evidence that there was a communication between the upper segment of the esophagus and the trachea in one of his cases, but as no postmortem examination was made, this conclusion is open to question. An overflow into the larynx of the swallowed opaque mixture may have occurred, and the outline of the bronchial tree may have been obtained without the existence of a fistula. This finding has been frequently observed when a stricture of any type is located in the upper portion of the esophagus. In 1921, Hirsch was able to compile 146 cases of complete congenital stricture of the esophagus. The case reported here adds one more to the list.

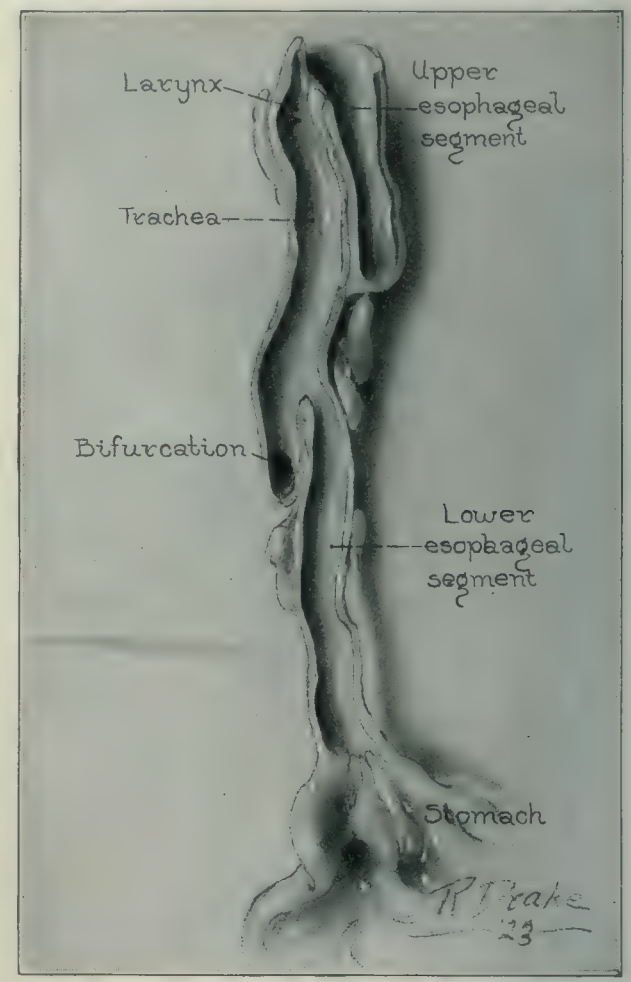


Fig. 2.—Congenital stricture of the esophagus in a child, aged 9 days.

* From the Division of Medicine, Mayo Clinic.

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3. Cautley, E.: Malformation of the Esophagus, Brit. J. Child. Dis. **14**: 1 (Jan.-March) 1917.
4. Hirsch, I. S.: Congenital Atresia of the Esophagus, J. A. M. A. **76**: 149 (May 28) 1921.
5. Fischer, B.: Ueber die Beziehungen zwischen Missbildungen und Traktionsdivertikeln des Oesophagus, Zentralbl. f. allg. Path. u. path. Anat. **16**: 1, 1905.

CASE 1.—K. K., a baby girl, born March 4, 1923, was apparently normal in every way save that she was unable to retain any of her feedings. The milk, unchanged by digestion, was regurgitated as soon as it was swallowed. Meconium was passed normally. March 9, a fluoroscopic examination of the esophagus was made, and it was observed that the opaque meal was obstructed in the upper portion of the organ. A diagnosis was made of a congenital stricture of the esophagus. The patient was referred to the Clinic, March 12, and an immediate esophagoscopic examination revealed that the upper portion of the esophagus terminated in a blind pouch a short distance below the introitus. The mucous membrane was considerably congested, and the sac contained a small amount of frothy mucus. A gastrostomy was performed. The child died, March 13, and postmortem examination revealed an upper esophageal pouch terminating blindly 3 cm. below the introitus (Fig. 2). The walls of the sac were considerably hypertrophied. The lower esophageal segment was connected with the trachea 1 cm. above the bifurcation. The fistulous opening was 1.5 mm. in diameter. A Meckel's diverticulum was present also. Extensive bronchopneumonia was the immediate cause of death.

Besides this case of complete congenital stricture of the esophagus, four cases of partial congenital stricture have been observed in the Mayo Clinic. A brief abstract of each follows:

CASE 2.—D. W., a boy, aged 4 years, examined, June 21, 1917, had never been able to swallow anything except fluids, and for two months water and milk were often regurgitated. Esophagoscopic examination revealed a congenital stricture 20 cm. from the incisor teeth. There was no evidence of scar formation. The stricture was dilated easily, and the child was allowed to go home. He returned for further treatment, December 6, and a 50 F. sound was passed through the stricture without difficulty. Immediate relief from dysphagia followed the dilations, but I have been unable to trace the patient and learn of his present condition.

CASE 3.—M. M., a girl, aged 5 years, examined in the Clinic, Oct. 17, 1917, had weighed 3 pounds (1.36 kg.) at birth. When a few days old, she began to spit up most of her food, unchanged by digestion. This continued, and at two years of age her weight was 14 pounds (6.4 kg.). With careful feeding by mouth, supplemented by nourishment administered by rectum, her weight had increased to 42 pounds (19 kg.). She had never been able to eat solid food. An esophagoscopic examination revealed a congenital diaphragm-like membrane in the lower portion of the esophagus. The stricture was dilated to 45 F., with complete and permanent relief from dysphagia. From a recent report, it was learned that the child is in perfect health.

CASE 4.—G. V., a boy, aged 20 months, brought to the Clinic, April 12, 1920, had choked on milk frequently from birth, but the condition had been disregarded until a week before, when almost complete esophageal closure had followed the ingestion of a small piece of meat. Roentgenographic examination revealed an obstruction in the upper portion of the esophagus. The stricture was dilated to 45 F., with complete relief from dysphagia.

CASE 5.—A. C., a youth, aged 17, came to the Clinic, April 22, 1920, complaining of dysphagia that had been present from birth. He had never been able to swallow solid food, and milk was the chief source of nourishment. A stricture with a very tiny opening was located 13 inches from the incisor teeth, and was dilated easily to 42 F., with complete and permanent relief from dysphagia. During the year after the divulsion of the stricture, the patient gained 46 pounds (21 kg.) in weight.

SUMMARY

The case of complete congenital stricture of the esophagus here reported brings the number of cases that have been recorded to 147. In the four cases of partial congenital stricture of the esophagus also reported, free deglutition was restored by passing sounds.

RIEDEL'S LOBE SIMULATING NEPHROPTOSIS *

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When scanning the literature for cases of Riedel's lobe of the liver, one finds amazingly few reported. I garnered from those cases that had been reported that the majority showed an error in diagnosis preoperatively; therefore I think it advisable to report these conditions when they do occur, so as to enable the operator to have them in mind when rendering a diagnosis.

The lobe was originally described in 1888, by Riedel,[1] as a linguiform lobulation, or tonguelike prolongation of the anterior margin of the right lobe of the liver. This tonguelike process is attached to the liver proper either by a small bridge of hepatic tissue, or occasionally by merely fibrous tissue. One anatomist, writing in the early eighties, said that it occurred in as high as 30 per cent. of women over 40, but in only 15 per cent. of men. At this time he ascribed the higher percentage in women to the tight lacing then in vogue. His necropsies in children gave negative findings. Today, however, we see very few cases, and in the department of anatomy at Washington University Medical School not a single case has been seen in the last five years.



Fig. 1.—Diagrammatic posterior view demonstrating lobular elongation which occurs in a Riedel's lobe, and difficulty of locating kidney by palpation or simple roentgen-ray examination.

When we enter into the etiologic entities of this anomalous condition, we are confronted with a rather moot question. As early as 1888, Riedel described eight cases. He was an advocate of gallbladder traction, and considered the condition due to the gradual enlargement of the gallbladder, which in turn pushed the liver lobule downward. A little later, Leaf [2] and Thompson [3] reported several cases of linguiform lobulation, but made no mention of gallbladder enlargement or traction at necropsy. However, the condition has been described in children,[4] and its occurrence at this age, when gallbladder disease is quite rare, would strengthen the belief that it is an anatomic anomaly [5]

* Read before the St. Louis Medical Society, Feb. 20, 1923.

1. Riedel, H.: Berl. klin. Wchnschr., July, 1888, p. 577.
2. Leaf, C. H.: J. Anat. & Phys., 1898, p. 17.
3. Thompson, Arthur: J. Anat. & Phys. **19**: 3, 1885.
4. French, Herbert: Index of Differential Diagnosis, p. 366.
5. Ruge, George: Normale und abnormale Entwicklung des Menschen. Morphologisches Jahrbuch, **42**: 397, 1911.

rather than the result of either external or internal traction.

A point worthy of note is the distinction that can be made between the elongated process found in persons guilty of tight lacing or tight jackets, and the lobular enlargements that occur from other factors, such a gallbladder traction. In the former, the right lobe is separated from the liver proper by merely a dense fibrous band, but in cases of Riedel's lobe it seems to be true hepatic tissue. In a manner, Moynihan [6] supports Riedel's theory as to the gallbladder traction on the right lobe. Eighteen months after a cholecystectomy on a woman suffering from an enlarged hepatic pedicle, he noticed that the pedicle had disappeared. He also found that the enlargements were a frequent complication of gallbladder calculi. That this condition could simulate other conditions was brought out by a



Fig. 2.—Simple roentgenogram, bringing out nicely the right lobular prolongation (Riedel's lobe); the kidney does not appear.

case, at first thought to be a kidney tumor, which later proved to be a lobular enlargement of the liver.

Again in 1920, O'Conor [7] showed in his two cases the difficulty of accurate preoperative diagnosis. The first case was diagnosed as a pyonephrosis, with possibilities of a perinephritic abscess. At operation, he found a normal kidney, but an elongated liver lobe extending to the ramus of the pubis. His second case suggested such variations in diagnosis as hypernephroma, acute obstruction and Addison's disease. After operation, however, this also showed a large Riedel's lobe extending to the superior iliac spine, with a normal kidney.

Diagnosis appears off-hand to be quite simple with our available cystoscopic and roentgen-ray apparatus, but we are often misled. A palpable notched mass below the right costal border, freely movable, will undoubtedly bring the thought of the kidney to our minds. Later, in order to check up on the tentative diagnosis, we resort to pyelography, and in all probability place the patient in the sitting posture previous to the roentgen-ray examination. As a result, the pyelogram demonstrates a kidney pelvis a little below the crest of the ilium, and shows an outline of a ptosed kidney. The thin, tonguelike process of the liver as a rule does not show up in this picture, and we are left ignorant of the actual status of affairs until the operation. In those cases in which the liver is demonstrated on roentgenograms and pyelography has been omitted, we are most likely to err in calling the unusual shadow kidney, especially after palpating a large mass in the right flank; the same error can easily be made when the picture is partially obscured by gas.

It is quite true that renal tissue [8] on palpation usually retains the kidney shape and is rounded, but often the abnormal liver lobe will simulate this so closely that the differentiation is impossible if one resorts to this method of examination alone. However, one important factor in differentiation is that renal tissue does not descend as freely on inspiration as do liver enlargements, although this observation is of little value in a floating ptosed kidney which is freely movable in the upper right quadrant.

One can usually grasp an enlarged kidney bimanually and push it down into the loin; this is an impossible feat with liver tumors. Also, renal tumors in their process of enlargement generally project downward and forward, and seldom cause the posterior prominence that liver tumors do.

The urinary findings may aid one in diagnosis. Kidney tumors, on the one hand, show such changes as frequency of urination, hematuria and deficient renal function, while a nephroptosis is apt not only to show a variance in function but also a pelvic retention with an accompanying infection. Lobular hepatic enlargements, on the other hand, seldom show urinary changes, and these changes are accidental when they do occur.

Reconsideration of the foregoing points will show that pyelography, when available, will prove the most reliable aid in accurate diagnosis.

The case of Riedel's lobe of the liver here reported demonstrates the possibility of error in diagnosis before operation, even though the roentgen ray, cystoscopy and pyelography had been resorted to previously.

REPORT OF CASE

History.—Miss K., aged 63, white, consulted me, March 9, 1922, for pain in the right epigastrium, a mass in the right upper quadrant, and frequency of urination. The family history was grossly negative. She had had occasional attacks of hay-fever and headaches. She had always enjoyed fairly good health. The pain in the right side had troubled her at intervals for the last thirty years. She imagined that the abdomen was increasing in size, and of late she had been suffering from frequency of urination and incontinence. She had felt bloated after eating.

Examination.—On account of the gastric symptoms and the feeling of bloatedness, I referred her to an internist, who reported that the patient was of rather meager build, weighing 113 pounds (51 kg.), and had a rather relaxed abdomen. Examination of the head, heart, and lungs was negative. A large movable mass was felt on the right side which appeared to be the kidney. The epigastrium was very tender, and the patient complained of pain in this region. A test meal showed but 10 c.c. of thin contents one hour after ingestion. The stomach, on inflation, ran down to within 1 inch of the pubis.

6. Moynihan, Berkeley: Gallstones and Their Surgical Treatment, Philadelphia, W. B. Saunders Company, p. 137.
7. O'Conor, V. J.: J. Urol. **4**: 97 (Feb.) 1920.
8. Cabot, R. C.: Differential Diagnosis **1**.

Free hydrochloric acid was present. No lactic acid was present. Microscopic examination was negative. The stool presented a trace of occult blood. Examination of the urine was negative for albumin but revealed a trace of carbohydrate.

The urine was acid, and its specific gravity was 1.004. Microscopic examination was negative.

Roentgen-ray examination showed no six hour residue. The stomach filled well; it lay to the left and below the navel. The resistance that one felt in the epigastrium was distinctly above the stomach, and probably was the lower edge of the liver or pancreas.

On completion of the internist's examination, the patient was referred back to me. On palpation there could be felt a very large, smooth, movable, mass extending from the costal border to within a few inches of the iliac crest. The lower border of this mass could be grasped bimanually on inspiration.

On cystoscopic examination, the cystoscope encountered no obstruction in the urethra. The bladder capacity was normal. The bladder dome was thrown into folds, and distorted, probably from extra-uterine pressure. A catheter passed into the left kidney pelvis, but was blocked 6 cm. from the right orifice.



Fig. 3.—Short distance to which catheter could be introduced in right ureter owing to ptosed kidney; light area at distal end of catheter shows indistinct kidney pelvis after pyelogram had been made.

Microscopic examination detected pus but no bacteria from the right side, and on the left side was negative.

The functional test was performed, 1 c.c. of phenolsulphonethalein being given intravenously. The time of appearance was: right, one and one-half minutes; left, one and one-half minutes; first fifteen minutes, right, 18 per cent.; left, 12.5 per cent.

A pyelogram, 18 c.c. of thorium being injected into the pelvis of the right kidney before any sensation occurred in the right side, showed a marked ptosis of the right kidney with a dilated pelvis and an accompanying hydronephrosis. The picture was partially obscured by the crest of the ilium and by gas. But on closer scrutiny, a faint, tonguelike shadow was seen extending from the right costal border downward into the right flank.

Up to the present time an internist, a surgeon and I had seen this woman and diagnosed the condition as a ptosed kidney; owing to the rarity of Riedel's cases, no suggestions had been even offered as to the possibilities of such a lobular prolongation. However, all had agreed as to the presence of a palpable liver. The point which I wish to bring out is that it was practically impossible on palpation to differentiate renal from hepatic enlargement. Since deeper roentgen-ray penetration is used for the kidney than for the liver, the roentgenologist likewise would not aid us, for the two organs would not appear on the same plate.

Operation and Result.—The patient was placed in the position for a kidney operation, with the left knee flexed and the corresponding arm and leg extended. A regular kidney incision was made, and after the muscle layers had been cut through, a large, fluctuating mass of adipose tissue was found surrounding the tumor mass and considered to be perirenal fat. On splitting this with the fingers, we found the mass to be a huge tongue of the liver which extended from the diaphragm to the crest of the ilium. The rent in the peritoneum was sewed up and the kidney was located extraperitoneally below the iliac crest posterior to the tongue of the liver. The kidney was normal in size, with an enlarged pelvis. A regular nephropexy was completed. The patient made an uneventful recovery, and was discharged from the hospital the third week.

I might add that the urinary symptoms have cleared up since the operation; that is, incontinence, frequency of urination, pain in the right flank, and pus in the urine. However, she still complains of gastric symptoms occasionally, and the tumor in the abdomen, which one would expect with the liver enlargement.

It is quite probable that all of us had been continually palpating this linguiform process of the liver and considering it kidney. It is also probable that, on change of position, we occasionally palpated the kidney, although it was rather deep in the iliac fossa to permit much palpation.

COMMENT

I would suggest that it is advisable that the urologist always keep Riedel's enlargement in mind when palpating tumors in the right flank, and always perform pyelography before any operative procedure, even though sufficient evidence apparently has been gathered, by palpation and functional tests, to warrant such procedure.

University Club Building.

PYELOTOMY, URETEROLYSIS AND EXTIRPATION OF THE KIDNEY

A SPECIAL TECHNIC

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Attending Genito-Urinary Surgeon, Michael Reese and Mount Sinai Hospitals
AND
HARRY KATZ, M.D.
Associate and Adjunct
CHICAGO

In exposing deeply seated organs, two principles are to be observed: complete exposure of the organ concerned and the least possible destruction of the covering structures compatible with such free exposure. If, in renal surgery, a flank incision is chosen, the proper position of the patient is one of the decisive factors in providing for good accessibility of the kidney.

The available space is framed by two bony structures—above, the edge of the lower costal arch, and below, the crest of the iliac bone. The farther apart these enclosures are forced, the larger the usable interstice will be. The proper widening of the bony frame will best be accomplished by placing the patient in a lateral position and by putting him on an incline in such a way as to cause bulging of the flank concerned.

Unnecessary destruction may be avoided by employing a muscle splitting procedure in lieu of the usual transverse severing of the covering muscle layers.

The skin incision is placed halfway between the last rib and the crest of the ilium, and deepened until the

fascia also is severed. Now the skin and the fascia together are stripped off the muscles until the latter are denuded upward and downward to the extent of several inches. This is most expeditiously accomplished by employing a sharp, straight edged bone chisel (Fig. 1).

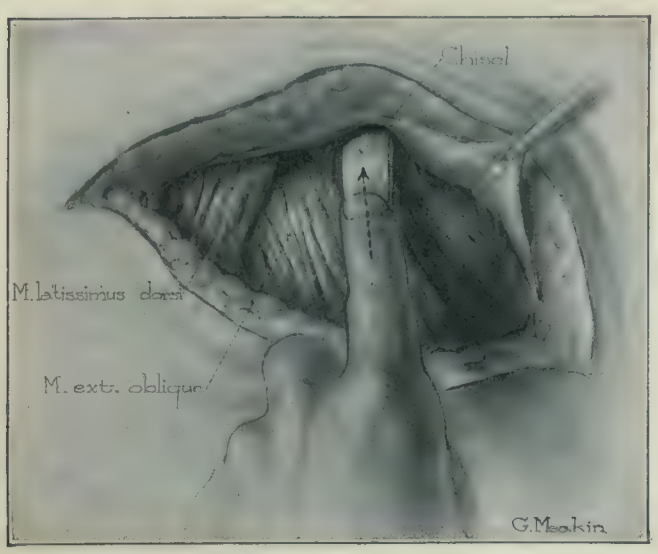


Fig. 1.—The exposed abdominal muscles are denuded by scraping motions executed by a sharp chisel.

This denuding of the muscles is an important step, because the resistance to opening the flank gap widely is offered mainly by the skin and the fascial structures. After the belly of the external oblique muscle is exposed by blunt dissection, its fibers are spread apart in its center; there now appears in the bottom of this fissure the belly of the internal oblique muscle.

This is manipulated in a similar way, leading to the appearance of the transverse muscle; the splitting of this muscle makes the renal fascia visible. The fascia is incised in its center, and the incision is spread by introducing the first two fingers of each hand (Fig. 2).

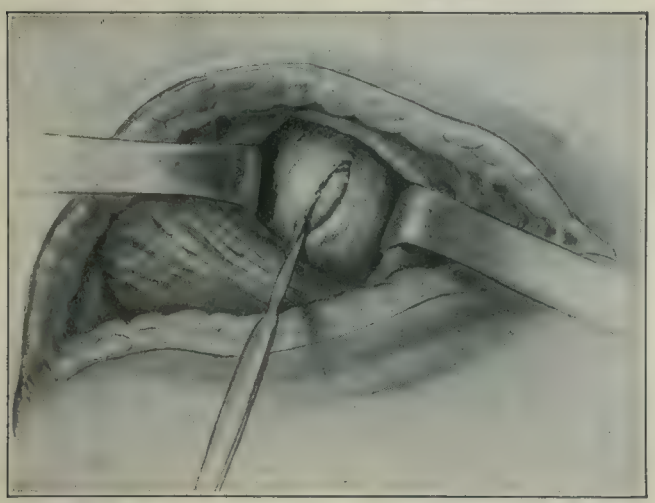


Fig. 2.—After the covering muscles have been spread, the fascia renalis is incised.

Large retractors are now inserted, and by steady traction on them the gap is widened sufficiently to admit a palpating hand. Occasionally, additional resistance is furnished by the inner lamella of the fascia pertaining to the latissimus dorsi. Nicking the anterior edge of this fascia as a rule helps to widen the gap.

A criterion of the success of the muscle splitting is the determination as to whether or not the opening permits the introduction of one hand. If it does, the dislocation of any but an extremely oversized kidney will not present difficulties. It will, of course, always lie within the choice of the operator to cut the muscles.

The advantages of the exposure by this gridiron incision are obvious. There is no hemorrhage to speak of; no muscle stumps have to be reunited, and the

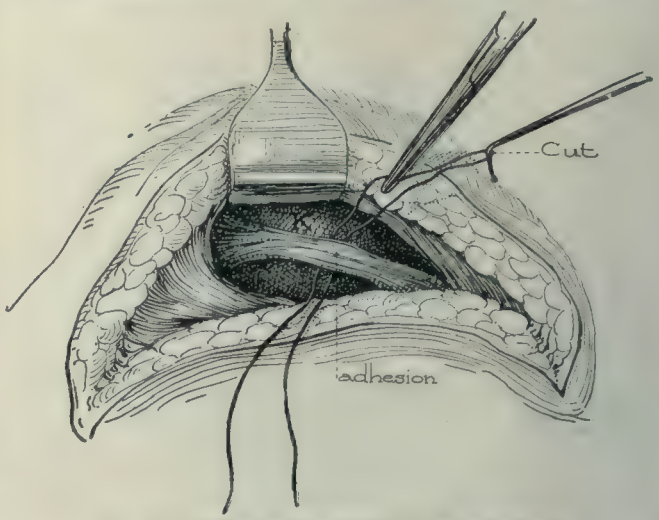


Fig. 3.—Ligating and severing of firm adhesions.

condition of the wound after the necessary renal surgery is finished is simple.

In the technic of extracting the kidney, it is always best to make sure of the topography by carefully pal-

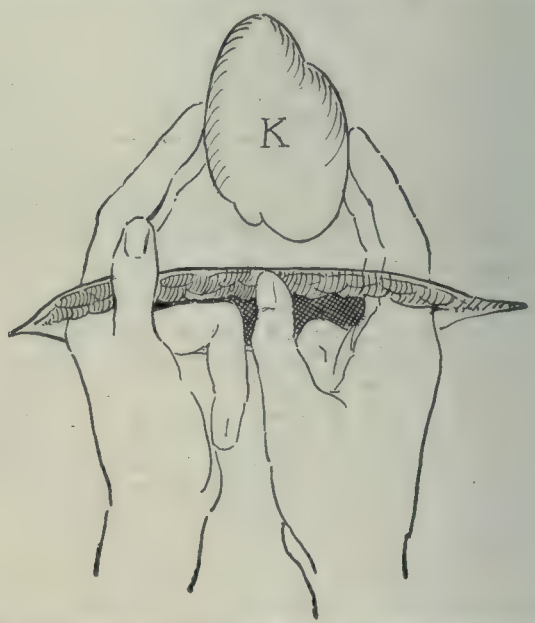


Fig. 4.—Lugging out of the kidney by bimanual manipulation.

pating for the outline of the kidney, the liver and the spleen, respectively. Then the adipose layer around the kidney is bluntly entered and wiped off the kidney by sponge dissection, always working from behind toward the front.

It is of great advantage to begin at the lower pole and to carry the dissection gradually upward. If one encounters rather firm adhesions, it is best to sever these between two ligatures, so as to avoid either tearing into the renal parenchyma or opening up large blood

vessels, which are frequently found within such strands (Fig. 3).

Occasional hemorrhage emanating from the perirenal fat is best controlled and eventually stopped by pressing gauze pads against the bleeding area and keeping them in place with the flanges of the retractors used in clearing the field of operation.



Fig. 5.—Underpadding of the kidney with gauze pads.

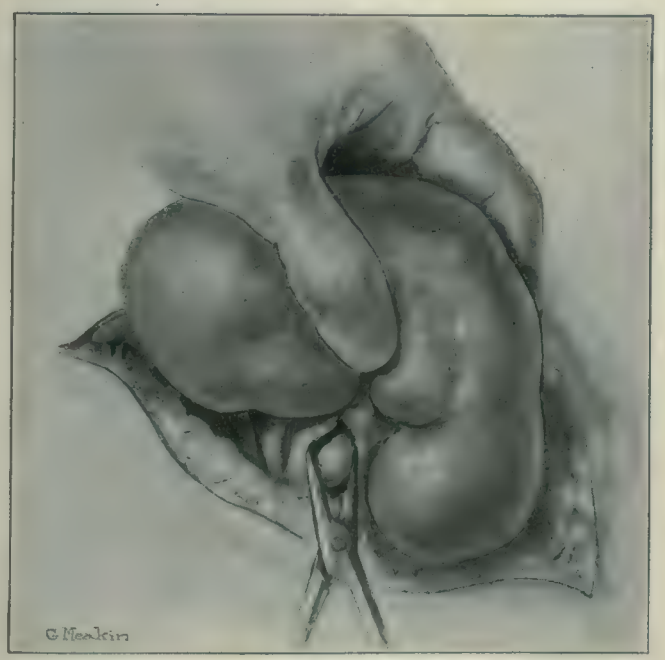


Fig. 6.—Extraction of stone from the incised renal pelvis.

When the kidney is once freed down to its pedicle, circular palpation is employed in order to locate the artery or arteries and at the same time to glean information as to the condition of the ureter and the pliability of the balance of the renal pedicle.

In infectious processes, particularly in tuberculosis of the kidney, the ureter is often infiltrated and shortened. Ligating and severing it as the first step of renal extirpation produces satisfactory results as to the mobility of the kidney.

In trying to dislocate the kidney into the upper region of the incision, it is safer to lift the kidney gradually out of its niche by placing the first two fingers of each hand on its sides and thus bring it upward by burrowing motions, than to grasp the kidney with one hand and try to pull it upward in this way (Fig. 4).

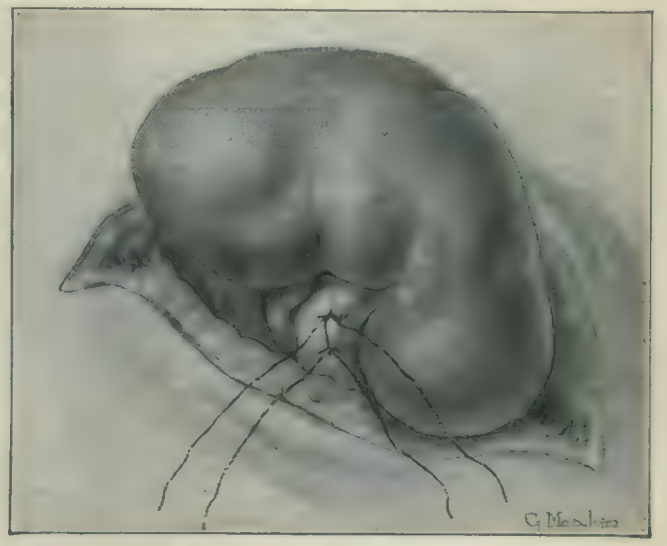


Fig. 7.—Suturing of pelvic incision.

If it is necessary to free the kidney out of a deep recess underneath the costal arch, it is helpful to stabilize the result of each step of development by padding the cavity underneath the kidney successively with large gauze pads, in order to prevent the annoying slipping back of the organ (Fig. 5). This is particularly indicated if the adipose layer is developed to a high degree.

For removal of renal concretions, pelvotomy is now generally accepted as the method of choice. After the posterior aspect of the renal pelvis has been freed, this



Fig. 8.—Interposition of perirenal fat after ureterolysis.

surface is made to bulge by digital counterpressure, and the pelvic wall is incised with a fine pointed knife. This opening is widened, if necessary, by spreading the tips of artery forceps within its edges, and the stone is extracted with slender stone forceps or a spoon (Fig. 6).

Irrigation with sterile water follows in order to flush out any débris or gravel. The pelvic incision is closed with two fine catgut sutures, care being taken not to bring the sutures within the pelvic cavity. The ends

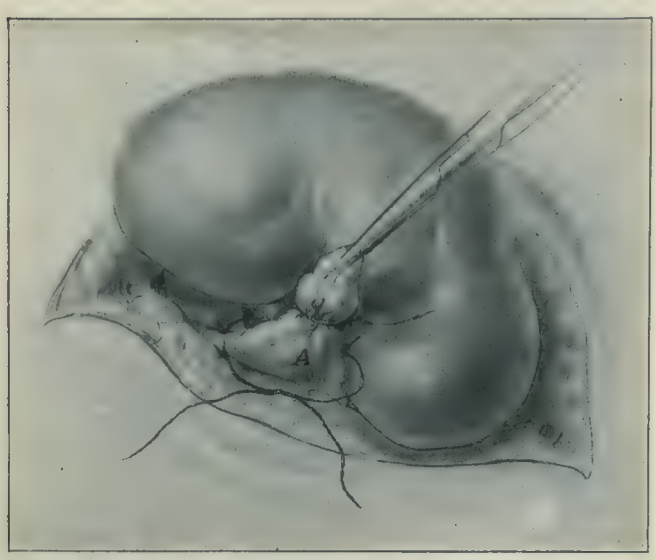


Fig. 9.—Transplantation of fat over the pelvic sutures.

of these sutures, after being tied, are left long for further use (Fig. 7).

In case it is necessary to resort to ureterolysis on account of pathologic attachment of the uppermost end

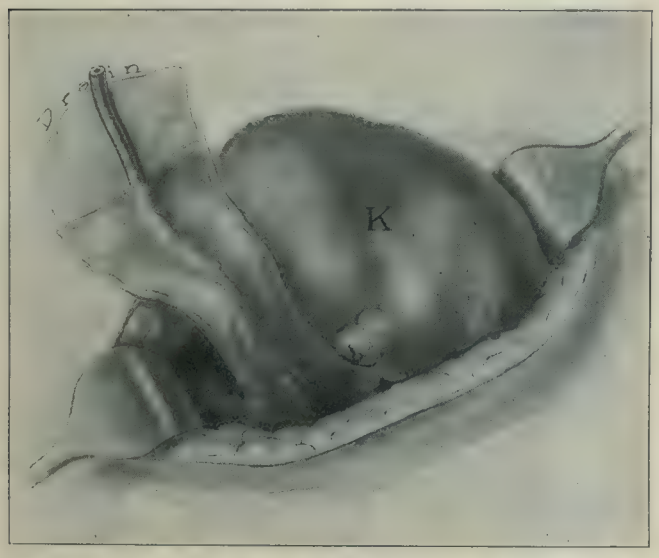


Fig. 10.—Insertion of Bullock drain previous to the replacing of the kidney.

of the ureter, a piece of perirenal fat may be drawn between ureter and kidney, and the free end of this tranpslant fixed with a catgut suture to the fibrous capsule of a renal pole (Fig. 8). Then another piece of perirenal fat is drawn in between the long ends of the pelvic sutures, and fastened over the incision by tying the suture ends over it (Fig. 9).

While it is true that in many instances the pelvis will heal without suturing and fat transplantation, the procedure as described furnishes desirable safeguards.

A Bullock drain is passed down, facing the surface of renal operation, and after this insertion the kidney is replaced. This arrangement prevents any stripping off of the transplant, which may occur if the kidney is replaced first and the drain inserted afterward (Fig. 10).

If the removal of a kidney is decided on, special technical appliances and their proper employment will facilitate matters, and at the same time guarantee definite and reliable hemostasis.

The use of a doubly fenestrated aneurysm needle makes it much easier to swing the ligatures around the isolated parts of the vascular pedicle. A blunt hook is used for pulling the threads out of the eyelets. The

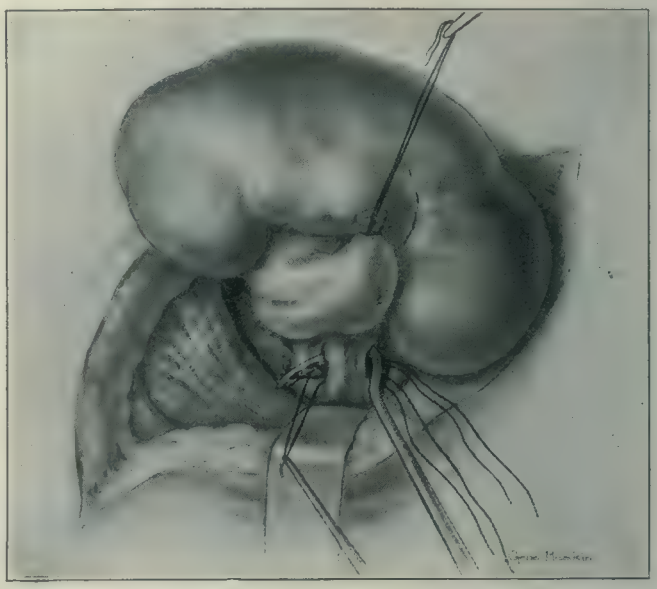


Fig. 11.—Placing of ligatures with the bifenestrated aneurysm needle.

employment of this instrument not only facilitates this procedure but also avoids damaging of the ligatures (Fig. 11).



Fig. 12.—Both sets of ligatures around the blood vessels tied; ureteral stump drawn upward.

In order to prevent any slipping of the tied loops, a double set of ligatures is applied. In this way, a bulge between the two rows of ligatures is produced, furnishing absolute safety as to hemostasis (Fig. 12).

108 North State Street.

THE DANGER OF LIQUID PETROLATUM IN PARENTERAL INJECTIONS*

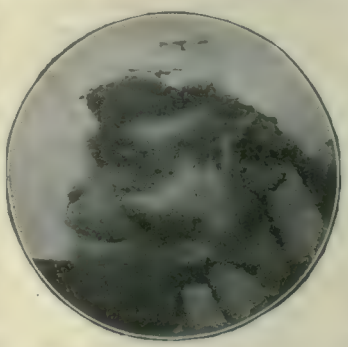
FRED. D. WEIDMAN, M.D.
PHILADELPHIA

I wish first to touch on the injection of paraffin, a substance which, while not an oil, has a similar pathologic significance, besides being closely related chemically to liquid petrolatum. Furthermore, the more recent findings in connection with liquid petrolatum injections throw a side-light on the paraffin ones which justify this digression.

PARAFFIN INJECTIONS

Every medical man is by this time aware of the untoward effects which sometimes follow the injection of paraffin for cosmetic or other purposes; so much so, in fact, that the term paraffinoma now has a familiar ring, and that the use of this substance in plastic surgery has been almost abandoned.

Davis [1] brings out that not every person thus treated develops a paraffinoma—that there must be a predisposition on the part of the patient; and, from this the final verdict for or against paraffin must depend on the frequency of the development of paraffinomas in relation to the benefit that will accrue from its use. His conclusion on this point is that "the affliction is common enough to clothe the procedure with a distinct risk," and Oppenheimer [2] likewise expresses an unfavorable opinion.



"Tumor" resulting from injection of liquid petrolatum three months previously.

Mort,[3] on the other hand, believes that he has avoided the untoward effects by carefully selecting his paraffin; i. e., using one with a high melting point. In effect, Mort has been eliminating the lower fractions from his paraffins, the ones more closely related to the liquid petrolatum which has been found both clinically and experimentally to be responsible for swellings practically identical with paraffinomas; and, in all fairness, the whole general subject of paraffin cosmetic work should be reopened, or at least we should hold our minds open in the matter until hard paraffins have been duly incriminated in their turn. I feel that ultimately the same fate will befall the hard paraffins as did the softer ones; for the tissue reaction against paraffin is that of a nonspecific foreign body, and I believe that some day it will be shown that certain individuals have a tendency to react unduly against formed foreign bodies in general, by the familiar tissue proliferation in which giant-cells are so conspicuous, in a way that other individuals do not. So that, provided the individual's tissues are thus disposed, the foreign body reaction will take place regardless of whether the foreign body is hard paraffin, soft paraffin, liquid petrolatum, celloidin or cellulose. However, this is a personal opinion and cannot stand in the way of experimental tests of the hard paraffin injections.

Let us pass now to the subject of liquid petrolatum injections, in which, in practice, the liquid petrolatum has acted, for the most part, as the vehicle for camphor and the insoluble mercurial salts.

CAMPHORATED OIL INJECTIONS

Of the "tumors" which we can charge against liquid petrolatum, the first to be described were the sequels of camphorated oil injections, liquid petrolatum having been used as the excipient instead of the official olive oil. They were accordingly denominated "camphorated oil tumors." By now, a dozen or more such misfortunes have been recorded, from France and Germany as well as the United States.[4] These "tumors," be it said at once, are not neoplasms. In substance, they are foreign body granulomas having the peculiarity of progressiveness by virtue of the labile character of the exciting agent, an unabsorbable oil, which they contain, and they even extend in more or less linear fashion along lymphatic channels quite to the regional lymph nodes. While they are not a matter of life and death, they are discommoding and disfiguring. Surgery is the only treatment, and this is often unsuccessful on account of recurrences. Of course, such recurrences may be conceivably prevented by a sufficiently radical operation, but the difficulties here may be appreciated in those cases in which the whole deltoid region is affected and extension has taken place to the axillary lymph nodes. All of this is most disconcerting in connection with a preventable disease, and one that has been produced at the hands of the profession.

Taken on the whole, the tumors that result from camphorated oil injections do not bulk large in general practice, because it is only exceptionally that liquid petrolatum is substituted as the vehicle for camphor. In one hospital, however, I found that the camphorated oil used for rubbing purposes was, as a routine, made up in liquid petrolatum, while that for injections was the official article made up in olive oil. The possibility of an interchange between the two in the wards must occur to any one. Probably the most important aspect of the camphorated oil tumors today is their identification from tuberculomas, gummas and sarcomas, but the matter of differential diagnosis does not fall within the scope of this paper.

INSOLUBLE MERCURIAL INJECTIONS

I have written this paper because this class of injections is so commonly practiced today, because liquid petrolatum continues to be used as the base for such injections, and because injections of all classes are destined to be used more and more in the future. That is, the liquid petrolatum tumor situation is calculated to become worse rather than better. There is a real issue before us. Already, in spite of the warnings that have been sounded in connection with camphorated oil injections, there are indications in the literature that tumors have developed at the site of mercurial injections.[5] And it is in the nature of medical things that tumors resulting under these circumstances should

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* Read before the Philadelphia County Medical Society, April 11, 1923.

* From the Laboratory of Dermatological Research, Department of Cutaneous Medicine, University of Pennsylvania.

1. Davis, B. F.: Paraffinoma and Wax Cancer, **J. A. M. A. 75:** 1709 (Dec. 18) 1920.
2. Oppenheimer, S.: Laryngoscope **30:** 595 (Sept.) 1920.
3. Mort, S.: Lancet **2:** 105 (July 19) 1919.
4. Bibliography in Weidman, F. D., and Jefferies, M. S.: Experimental Production of Paraffin Oil Tumors in Monkeys, Arch. Dermat. & Syph. **7:** 209 (Feb.) 1923.
5. DuBois: Abst. Schweiz. med. Wchnschr. **51:** 136, 1921. Mook, W. H., and Wander, W. G.: Camphorated Oil Tumors, J. A. M. A. **73:** 1340 (Nov. 1) 1919. Cole, H. N.; Littman, Sidney, and Sollmann, Torald: Study of Mercury Injections by Means of Roentgen Ray, **J. A. M. A. 75:** 1559 (Dec. 4) 1920.

not be widely advertised; indeed, there are good reasons why they should not be reported in the literature in addition to the reasons for unreported medical cases in general. Thus, since the injections are made intramuscularly, the tumors will be deep-seated and excite less remark than the camphorated ones. The tumor, unless it becomes very large, may be ascribed to the effects of the mercury. Again, it is the lesser of the patient's evils, and will be acquiesced in by him as part of his vice and kept secret, perhaps regarded both by him and by his physician as of syphilitic causation. We say nothing of the likelihood of medicolegal considerations. One of the most recent reports was in conjunction with Halberstädter's [6] case of liquid petrolatum tumors of the face which were induced by cosmetic injections, and it came out in the discussion which followed that mercury and paraffin injections had induced the same kind of lesion. I have had one case, that of a nurse, who had received mercurial injections ten years previously and had nodular infiltrations the size of an orange in her arms and thighs.

After the camphorated oil and facial surgery experiences, the profession should naturally look to some other base; and, as a matter of fact, the proprietary drug houses have sensed the situation, and have made mercuric salicylate available in ampules of cacao butter, goose-grease, lard oil, olive oil and oil of sweet almonds in addition to liquid petrolatum—not to mention the secret compounds, which are naturally always open to suspicion. A canvass of several of the largest drug stores in Philadelphia shows that the liquid petrolatum preparation is still very widely used: "is most popular," as the leading druggist puts it. And whereas Sutton [7] deprecates its use, another dermatologist continues to recommend it in his textbook without warning of any untoward effects.

In the end, a final opinion as to the propriety of employing liquid petrolatum and mercury preparations will depend on several considerations: 1. Proving that they continue to be frequently used today. I take it that enough has been said to cover this point. 2. Showing that, thus used, they induce tumors frequently enough to create an issue. This has also largely been covered, but I wish to add that three of the five monkeys (60 per cent.) injected with liquid petrolatum by Dr. Jefferies and myself [8] developed tumors. 3. The end justifying the means. Liquid petrolatum injections would have to stand in spite of the occasional tumor production if there were no other recourse than the liquid petrolatum base, for the benefit accruing from such injections would far outweigh the occasional tumors. It is paramount to cure syphilis. But the real point is that there is an alternative. In our experiments on monkeys, olive oil excited no such lesions, and olive oil has been injected in conjunction with camphor countless times without adverse reports that I can find; probably the numerous other oils that are susceptible of saponification and absorption would be just as bland in the small dosage necessary for mercurial injections.

Under these circumstances, I feel strongly that we are not doing our utmost for our patients when we continue to use the liquid petrolatum base. We might successfully gamble with eight, nine or ten patients, but what of the eleventh? The foregoing considerations apply with equal force to injections of other soluble substances, such as the bismuth salts which have been on trial recently.

6. Halberstädter: Abst. Arch. Dermat. & Syph. **7**: 565 (April) 1923.
7. Sutton, R. L.: Diseases of the Skin, Ed. 4, St. Louis, C. V. Mosby Company, 1921, p. 812.
8. Details of experimental results in Weidman and Jefferies (Footnote 4).

INJECTIONS INTO SEROUS CAVITIES

I find one report of injection of liquid petrolatum into the "scrotum" (which may or may not have referred to the tunica vaginalis testis). This was done to induce a lesion which would prevent conscription into the Italian army.[9] The usual liquid petrolatum tumor resulted, and final diagnosis was made from the histologic appearance.

Injected into the peritoneal cavity, oils have variable effects. It appears that whereas small quantities of various oils may be absorbed from the peritoneal cavity, larger ones connot. Thus, Schwartze [10] found that pressed peanut oil remained in the peritoneal cavity of all the commoner laboratory animals for twenty-four weeks, and that oil cysts developed within a month. If this is true for a vegetable oil, certainly the notorious liquid petrolatum would behave at least similarly. Other workers [11] have noted, in passing, the mildly irritative qualities of various oils on the peritoneal lining of animals.

In an attempt to avoid the repeated injections of air in artificial pneumothorax, Archibald [12] injected liquid petrolatum into the pleural cavities of various animals. He found that it did not produce the desired result, because it was not quite inert—only 50 per cent. of it could subsequently be withdrawn on account of inflammatory encapsulations and pocketings. Secondary infection was controlled and eliminated as a possible factor in this. Rost [13] found that liquid petrolatum, when injected into the peritoneal cavity of guinea-pigs, produced "poisonous" effects.

CHAULMOOGRA OIL INJECTIONS

Lukens [14] has been using this drug highly diluted with liquid petrolatum, by intratracheal and intralaryngeal insufflation. His methods and reports were not calculated to throw any light on the liquid petrolatum reactions.

In addition to chaulmoogra oil, Corper and Freed [15] have insufflated liquid petrolatum and olive oil into the lungs of rabbits. All three oils induced lesions which persisted for two months. Olive oil and liquid petrolatum behaved alike, inducing a mild type of proliferative bronchopneumonia. This persisted for months.

From widely separated spheres of medical endeavor, thus, come the reported experiences with liquid petrolatum—from the internist, the dermatologist, the syphilologist, the surgeon, the laryngologist and the experimenter in tuberculosis. Furthermore, the sites of injection have been various; but in all cases the results have presented the same theme; i. e., a low-grade inflammatory hyperplasia which may rise to the level of tumors. After all this, we must feel convinced that the liquid petrolatum which we have considered so inert and bland when applied to the skin or administered by mouth is by no means free from untoward effects when

9. Bivona, S.: Policlinico (sez. prat.) **28**: 854 (June 20) 1921.
10. Schwartze, E. W.: J. Pharmacol. & Exper. Therap. **17**: 115 (March) 1921.
11. Petersen, W. F., and Levinson, S. A.: Resistance to Experimental Peritoneal Tuberculosis Following Oil Injections, Am. Rev. Tuberc. **6**: 1035 (Jan.) 1923.
12. Archibald, E.: Compression of Lung by Paraffin Oil in Pleural Cavity, Am. Rev. Tuberc. **6**: 898 (Dec.) 1922.
13. Rost, E.: Med. Klin. **17**: 35-36 (Jan. 9) 1921.
14. Lukens, R. M.: Chaulmoogra Oil in the Treatment of Tuberculous Laryngitis, J. A. M. A. **78**: 274 (Jan. 28) 1922.
15. Corper, H. J., and Freed, H.: Intratracheal Injection of Oils for Diagnostic and Therapeutic Purposes, J. A. M. A. **79**: 1739 (Nov. 18) 1922.

injected into tissues, but that, on the contrary, it is capable of producing important and permanent disfigurement which may necessitate surgical interference.

I recommend, therefore, that since other oily bases are readily available, all physicians should turn from the old track and decline to use liquid petrolatum any further for medicinal parenteral injections.

INTRAPERITONEAL TRANSFUSION WITH CITRATED BLOOD*

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AND
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The difficulties encountered in the transfusion of blood in infancy and early childhood have prompted numerous investigators to attempt other simpler procedures. Consequently, the use of blood in infants and children has been confined until recently to (1) subcutaneous or intramuscular injection of blood; (2) the introduction of blood into one of the larger peripheral veins, and (3) transfusion into the superior longitudinal sinus.

The subcutaneous or intramuscular injection of blood, which is now used chiefly in the treatment of hemorrhagic disease of the new-born, was at one time considered effective in conditions in which a transfusion was indicated. That this method is not in a strict sense a blood transfusion is substantiated by Taylor,[1] who found that only a small number of the cells so injected ever reach the circulation.

Transfusion by the use of one of the larger peripheral veins has been attended in many cases with much difficulty in the hands of one not adept in blood vessel surgery. Not infrequently, after the surgeon has succeeded in exposing a vein, he finds that it is too small for practical use. The shock incident to this procedure and the local loss of blood in an already weak and puny infant may be of vital importance. We have not infrequently encountered cases in which, after the median basilic vein was exposed, little or no blood could be given on account of its small caliber.

Transfusion through the superior longitudinal sinus, which was first advocated by Tobler [2] in 1915 and popularized by Helmholz [3] the same year, has proved to be of great value in infants in whom this route is available. However, many investigators have from time to time pointed out the dangers inherent in puncturing the superior longitudinal sinus.

Under these circumstances it seemed desirable, if possible, to use a method that would be practically free from mechanical difficulties and dangers.

In a previous paper [4] we attempted to show experimentally that freshly citrated blood, when injected immediately into the abdominal cavity, is absorbed in a comparatively short time, without the formation of clots or adhesions. We found that the injected red blood cells entered the circulation without apparently undergoing any change in size, shape or structure. We concluded that this procedure acted as a true transfusion and suggested it as a therapeutic method of possible merit.

Subsequently one of us,[5] in a clinical study, substantiated further the efficacy of the intraperitoneal avenue of approach. In some of his cases he was able, apparently, to differentiate the erythrocytes of the donor in the blood of the recipient. He was unable to notice any toxicity due to the injected blood. He concluded that the intra-abdominal route could be utilized in cases in which transfusion is indicated and when other means are unavailable and impracticable.

It is our purpose now to present several other cases in which the intraperitoneal route for blood transfusion was utilized.

MATERIALS AND METHODS

The clinical diagnoses in the cases here presented are (1) malnutrition and congenital syphilis; (2) prematurity and third degree cleft palate; (3) erysipelas, and (4) fibroid uterus and secondary anemia. The hemoglobin estimations were made with the Fleischl-Miescher hemoglobinometer.

The patients were not given any breakfast on the morning of the transfusion. Both recipient and donor were grouped, and in some cases cross grouping was resorted to. Ten cubic centimeters of a freshly prepared 2 per cent. sodium citrate solution was used to every hundred cubic centimeters of the donor's blood. The donor's blood was then strained through sterile gauze, and, all aseptic precautions being observed, was immediately injected into the peritoneal cavity of the recipient with a glass syringe equipped with a blunt-pointed needle. The site of the injection is preferably lateral to the midline, one-half inch below the umbilicus. Two points which deserve emphasis in this procedure are: 1. The citrated blood must be fresh and it must be kept at body temperature. 2. The blood should be injected immediately. Details of the amounts used and results obtained are given in the protocols and in the charts.

REPORT OF CASES

CASE 1.—*Malnutrition; congenital syphilis. History.*—An infant, aged 8 weeks, admitted to the service of Dr. F. C. Rodda, at the University Hospital, Jan. 23, 1923, because of loss of weight, had been born at full term, with normal delivery, and weighed 4,000 gm. at birth. It had been breast fed from birth to two weeks before admission. The parents were syphilitic, and were receiving antisyphilitic treatment. One brother, aged 1½ years. was living and apparently well.

Examination.—The child was extremely emaciated and very dehydrated, pale and with marked loss of subcutaneous fat and turgor. It weighed 2,880 gm.; the temperature was 97, and the pulse, 88. The eyes, ears, nose and throat were normal, and there was no adenopathy. The heart and lungs were normal. The liver and spleen were not enlarged; both the upper and lower extremities were normal, as were also the genitalia.

Blood examination revealed: hemoglobin, 87 per cent.; erythrocytes, 5,720,000; leukocytes, 13,000; differential count: polymorphonuclears, 57 per cent.; lymphocytes, 40 per cent.; transitionals, 2 per cent.; eosinophils, 1 per cent.; nucleated red cells, 1.

The urine, Feb. 7, was straw colored, and acid in reaction. There was a slight sediment. There was no albumin, sugar, phosphate or pus. Subsequent urine examinations were also

* From the Department of Pediatrics, University of Minnesota Medical School.

1. Taylor, Rood: The Fate of Subcutaneously Injected Red Blood Cells, Am. J. Dis. Child. **20**: 337-340 (Oct.) 1920.

2. Tobler, L.: Zur Technik der diagnostischen Blutentnahme und der intravenose Injection beim Saugling, Monatschr. f. Kinderh. **8**: 384, 1915.

3. Helmholz, H. F.: The Longitudinal Sinus as a Place of Preference in Infancy for Intravenous Aspirations and Injections, Including Transfusion, Am. J. Dis. Child. **10**: 194 (Sept.) 1915.

4. Siperstein, D. M., and Sansby, J. M.: Intraperitoneal Transfusion with Citrated Blood, Am. J. Dis. Child. **25**: 107 (Feb.) 1923.

5. Siperstein, D. M.: Intraperitoneal Transfusion with Citrated Blood, Am. J. Dis. Child. **25**: 202 (March) 1923.

negative. The blood Wassermann reaction was negative repeatedly. The patient was found to be in Group II.

Progress.—The child on admission was fed by gavage on lactic acid milk formulas. After being in the hospital one month, it had not gained in weight to any extent. It appeared to be progressively growing weaker and more apathetic.

February 25, a severe anemia was evident. Blood examinaion showed: hemoglobin, 15 per cent.; erythrocytes, 1,340,000; leukocytes, 31,400; differential count: polymorphonuclears, 46 per cent.; lymphocytes, 46 per cent.; eosinophils, 6 per cent.; basophils, 1 per cent.; nucleated red cells, 1. The erythrocytes had definite pale centers. Anisocytosis was also present. The weight was 2,920 gm.

The child was given 50 c.c. of citrated blood intraperitoneally. There was practically no temperature reaction, and there was no abdominal distention.

February 26, the blood picture showed slight improvement. Antisyphilitic treatment was instituted; mercury with chalk, 1 grain, three times a day, and 2 minims of 1 per cent. solution of mercuric chlorid intramuscularly twice a week.

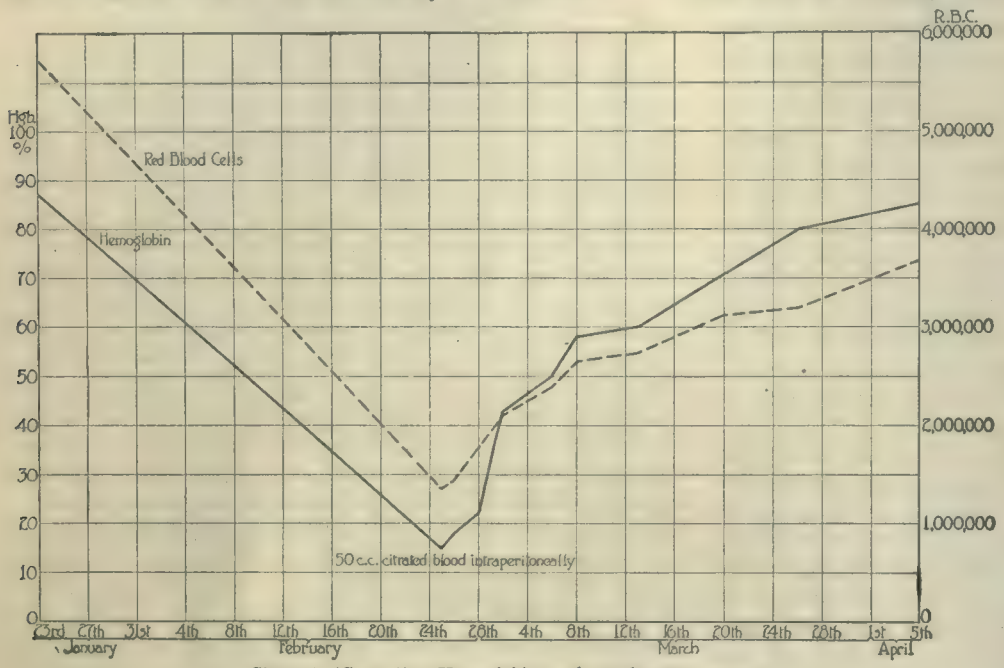


Chart 1 (Case 1).—Hemoglobin and erythrocyte curves.

March 2, the child appeared a little brighter.

March 6, it took food well.

March 10, antisyphilitic treatment was discontinued.

March 13, the child was much improved. Gavage feeding was supplemented by bottle feeding.

TABLE 1.—*Comparative Data Regarding Hemoglobin and Erythrocyte Counts in Case 1*

Date	Hemoglobin Per Cent.	Erythrocytes	Comment
1/23	87	5,720,000	
2/25	15	1,340,000	Intraperitoneal transfusion of 50 c.c. of citrated blood
2/26	18	1,440,000	
2/28	22	1,760,000	
3/2	43	2,110,000	March 1, antisyphilitic treatment instituted
3/6	50	2,400,000	
3/8	58	2,650,000	
3/13	60	2,730,000	March 10, antisyphilitic treatment discontinued
3/20	71	3,123,000	
3/26	80	3,192,000	
4/5	85	3,690,000	

March 26, the child's condition was good. It weighed 3,480 gm.

March 29, it weighed 3,600 gm.

April 5, the child was discharged.

This case is interesting because of the apparent rapid response to a single transfusion, the hemoglobin increasing from 15 to 80 per cent. in one month (Table 1, Chart 1). The patient's weight and general condition went hand in hand with the improvement in the blood picture. It is difficult to attribute such a marked change to the mercury treatment, which

TABLE 2.—*Blood Examination in Case 2.*

Date	Hemoglobin Per Cent.	Erythrocytes	Comment
3/7	80	5,000,000	
3/26	85	4,900,000	
3/27	75	4,720,000	100 c.c. of citrated blood intraperitoneally
3/29	85	5,590,000	

extended over a period of only ten days. While it appears that small doses of mercury administered over an appreciable length of time may, in some instances, influence the hemoglobin and erythrocyte count,[6] it is not at all probable that a day's treatment should account for a rise in hemoglobin from 22 to 43 per cent. This improvement persisted even after the withdrawal of mercury. It would therefore appear that the medication in this case had little effect on the blood picture and the general condition.

CASE 2.—*Prematurity; third degree cleft palate. History.*—An infant, aged 10 days, admitted, Feb. 27, 1923, to the pediatric service of Dr. E. J. Huenekens at the Minneapolis General Hospital, because of loss in weight and a third degree cleft palate, was two months premature. The birth weight was 2,500 gm. The family history was negative. Four other children were living and well.

Examination.—The child appeared markedly undernourished, and presented a number of congenital malformations. The left eyeball was not developed, and the lids of that eye were adherent. The right eye showed a mild conjunctivitis. The weight was 2,200 gm. Physical examination was otherwise negative.

February 28, the urine examination was essentially negative.

The blood examination, March 7, revealed: hemoglobin, 80 per cent.; erythrocytes, 5,000,000; leukocytes, 29,700; differential count: polymorphonuclears, 58 per cent.; lymphocytes, 36 per cent.; transitionals, 6 per cent. The blood Wassermann reaction was negative. The coagulation time was five minutes; the bleeding time, two minutes.

Progress.—The child, on admission, was fed, by gavage, casein milk formulas with increasing amounts of dextrimaltose. One month after admittance, there was very little increase in weight. During the child's entire stay in the hospital, its condition remained practically unchanged.

March 27, the child was listless; it weighed 2,060 gm.

March 28, 100 c.c. of citrated blood was given intraperitoneally.

March 30, the child died. At necropsy, 20 c.c. of thick, viscous material was recovered. No clots or adhesions were present.

CASE 3.—*Erysipelas. History.*—An infant, aged 7 weeks, admitted to the contagious service at the Minneapolis General

6. Keyes, E. L.: The Effect of Small Doses of Mercury in Modifying the Number of Red Blood Corpuscles in Syphilis, Am. J. M. Sc. 71: 17, 1876.

Hospital, March 26, 1923, because of restlessness, and a rash on the elbow and hip of one week's duration, had been born at full term, with normal delivery. The family history was negative. The past history was negative except for a slight swelling on the right side of the neck a week previous to admission. This disappeared spontaneously.

Examination.—The child was fairly well developed, but undernourished and crying as though in pain. The temperature was 103.6 F. The face and neck presented slight redness, more marked on the nose. There was slight adenopathy of the anterior cervical glands. The mouth showed a questionable stomatitis involving the palate. The eyes, ears, heart, lungs, abdomen, liver and spleen were all normal; the buttocks presented a discrete area of redness and swelling about 12 inches in circumference. The extremities were normal except for a similar redness and swelling involving both wrists and forearms.

The urine examination, March 27, was essentially negative. Repeated examinations were negative. Unfortunately, no blood examinations were made.

Progress.—The child, on admission, was fed on breast milk, complemented with casein milk and 5 per cent. dextrimaltose. Magnesium sulphate solution and alcohol-glycerin packs were applied to the inflamed areas.

March 29, the inflammation appeared to be spreading down the right lower limb.

March 30, the inflammatory process was extending toward the left axilla anteriorly.

March 31, the entire left foot was inflamed. The temperature ranged between 101.6 and 103.6. The child's condition was bad. There was marked pallor. It refused food.

April 1, the redness was spreading over the chest. The child's condition was serious. The temperature was 102. Severe secondary anemia was evident; 70 c.c. of citrated blood was given intraperitoneally. There was no temperature reaction.

April 2, the child appeared improved. It took feedings well. The fever was declining.

April 4, the redness was disappearing, the color, improving; the temperature was 99.

April 6, the inflammatory process had entirely gone; medication was discontinued; the temperature was 98.

April 7, the child was discharged.

April 18, outpatient department examination was negative; the child was in good condition.

TABLE 3.—*Comparative Data Regarding Hemoglobin and Red Blood Cell Counts in Case 4*

Date	Hemoglobin Per Cent.	Erythrocytes	Comment
3/13	38.5	3,000,000	
....	....	.....	3/16, 300 c.c. of citrated blood intravenously
3/20	35.0	2,930,000	
3/23	38.5	2,730,000	
3/26	45.0	3,200,000	
3/29	45.0	3,610,000	
3/30	42.0	3,350,000	500 c.c. of citrated blood intraperitoneally
3/31	45.0	3,950,000	
4/1	45.0	3,900,000	
4/2	52.0	4,120,000	
4/3	52.0	4,000,000	
4/4	60.0	4,320,000	
4/6	70.0	4,880,000	
4/7	70.0	4,760,000	
4/14	70.0	4,730,000	Day of operation
4/18	66.0	4,800,000	

The patient's general condition improved markedly following the transfusion. Whether or not the transfusion shortened the duration of the disease, we are unable to say.

CASE 4.—*Fibroid uterus; secondary anemia. History.*—A woman, aged 45, admitted to the service of Dr. F. L. Adair at the Minneapolis General Hospital, complained of a bloody vaginal discharge and some backache. Physical examination and laboratory evidence showed a fibroid uterus accompanied by a marked secondary anemia. In order to prepare the patient for a later operation, an intravenous transfusion of citrated blood was decided on. Owing to the patient's obesity, it was necessary to expose a vein in the elbow, and, with some difficulty, 300 c.c. of blood was injected. There was apparently no change in the blood picture.

Two weeks later, 500 c.c. of citrated blood was injected intraperitoneally, by means of a trocar. The procedure was apparently harmless. Her general condition appeared much improved following the intraperitoneal transfusion, and the change in the blood picture was also satisfactory (Table 3, Chart 2).

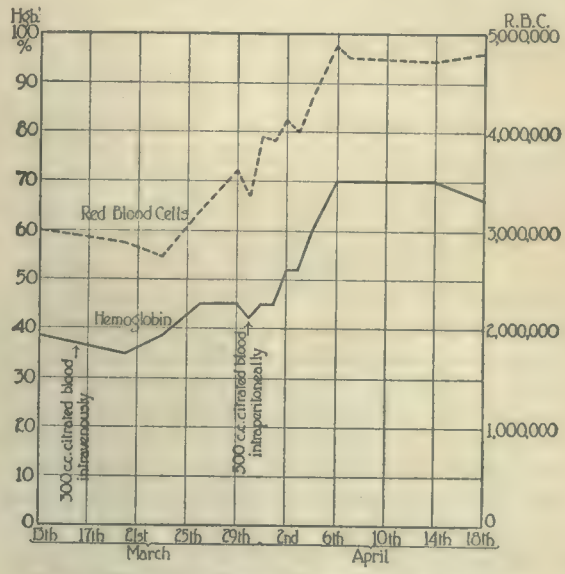


Chart 2 (Case 4).—Hemoglobin and erythrocyte curves.

At the operation, two weeks after the intraperitoneal transfusion, a few cubic centimeters of blood-stained fluid was found in the posterior culdesac. There was no evidence of peritonitis. There were no clots in the abdominal cavity. There were no adhesions. A supravaginal hysterectomy and an appendectomy were performed. The recovery was uneventful.

As far as we know, this is the first instance in which an intraperitoneal transfusion of citrated blood was given to an adult. Absorption from the peritoneal cavity, increase in blood values and clinical improvement were undoubtedly interdependent. The laparotomy afforded an excellent opportunity to observe directly what had previously been deduced only indirectly, namely, that absorption does take place from the peritoneal cavity of man.

A complete and detailed report of this case is being prepared by Dr. W. P. Sadler of the department of gynecology.

INTRAPERITONEAL INJECTION

The intraperitoneal route as an avenue for therapeusis is not an altogether new procedure. A review of the literature shows that as early as 1875 an attempt was made to apply it clinically by Ponfick,[7] Giovanni,[8] Liegl[9] and others. They injected defibrinated blood into the abdominal cavity of patients, but clinical improvement was variable.

No further application was made of this procedure until 1918, when Blackfan and Maxcy[10] called the attention of the profession to the safety of the intra-

7. Ponfick: Experimentelle Beiträge Zur Lehre von der Transfusion, Virchows Arch. f. path. Anat. **62**: 273 (Jan. 20) 1875; Berl. Klin. Wchnschr. **16**: 589 (Sept. 29) 1879.

8. De Giovanni, A.: Uno caso di gravissima anemia felicemente mediante la trasfusione di sangue intraperitoneale, Raccolt. da Marzolo, Gazz. med. ital. **24**: 39 (Nov.) 1881; abstr. Jahresb. f. d. ges. Med. **16**: 240, 1881.

9. Liegl: Ueber peritoneale Transfusion, Aerztl. Int. Bl. **31**: 33, 49, 1884.

10. Blackfan, K. D., and Maxcy, K. F.: Intraperitoneal Injection of Saline Solution, Am. J. Dis. Child. **15**: 19 (Jan.) 1918.

peritoneal route as a rapid method of giving saline solution. At present, the intraperitoneal injection of physiologic sodium chlorid solution and glucose solution in dehydrated infants is a recognized, valuable therapeutic procedure.[11]

The introduction of citrated blood into the peritoneal cavity apparently affords another opportunity to utilize the abdominal route as a therapeutic medium.

CHRONIC SPLENOMEGALIC HEMOLYTIC JAUNDICE

WITH THE ISOLATION OF A STREPTOCOCCUS FROM THE SPLEEN *

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AND
ISADORE PILOT, M.D.
CHICAGO

Chronic hemolytic jaundice with splenomegaly is a condition of obscure etiology. The disease has been ascribed by Widal to a congenital condition of the red blood corpuscles, which are destroyed in the circulation and their products taken up by the spleen with resulting splenomegaly. Minkowski and his co-workers hold that the condition is due to an increased hemolytic activity of the spleen. Rolleston [1] states that the acquired form "may occur without obvious cause, as after some infection acute, such as streptococcic or pneumococcic, or chronic, such as tuberculosis or malaria," and that he has seen it develop after measles. It is apparent that various infections act in a nonspecific way, exciting some unknown latent factors which are the true underlying causes. The observations recorded here are believed of interest because of the dominant rôle of infection in precipitating the condition; furthermore, the extirpated spleen contained considerable numbers of streptococci. A review of the literature shows few bacteriologic observations in this disease. In a report by Elliott and Kanavel,[2] cultures were made of the spleen by Kendall, who obtained short bacilli occurring singly and in pairs, which produced no effect when injected into rabbits. Cocci have not been noted in hemolytic icterus, but Sellards [3] cultivated micrococci from the spleens of three patients with pernicious anemia.

REPORT OF CASE

N. L., aged 7, seen in June, 1921, had not complained, but was "feverish," and the mother desired an examination. The child was fairly nourished and sallow, with a temperature of 102, respiration, 20, and pulse, 90. The heart and lungs were normal. The abdomen was soft and relaxed, and the spleen was palpable, extending about 1 cm. below the costal margin. No other findings were noted. The following morning the child was apparently well.

In August, the patient was suddenly seized with severe abdominal pains, and vomited. About half an hour after the attack, the pain had disappeared; there was no localized tenderness or rigidity over the abdomen. The temperature by mouth and rectum was normal. The spleen was enlarged, and was noted to be about 2 cm. below the costal arch. When asked where he had felt his pain, the child placed his finger in the region of the gallbladder. A history was now obtained that the child had had similar attacks, "due to overeating and excitement." No medication was given. The next morning, the child had no complaints, but the scleras were icteric. A diagnosis of cholecystitis was suggested.

In September, he was seen during an attack of abdominal pain and vomiting. He was taken to the hospital. A physical examination revealed an enlarged spleen and a palpable liver. The temperature was normal; the leukocyte count was 26,000 per cubic millimeter. The clinical picture did not suggest any indication for surgical intervention, but he was kept under observation. The red cell count was 4,200,000, and later, 3,800,000; the hemoglobin was 85 per cent. On fluoroscopic examination, the liver and spleen appeared enlarged, the former pressing on the stomach. The Wassermann test on the blood was negative. The presence of an enlarged spleen and liver, associated with attacks of abdominal pain and vomiting followed by a jaundice, suggested that the case might be one of splenomegalic hemolytic jaundice. A fragility test of the red blood cells was made, and it was found that hemolysis began at 0.700 and was complete at 0.500. The urine contained demonstrable amounts of urobilin. A blood culture test was negative. Inquiry now elicited the fact that the child was jaundiced at birth. There was no history of any similar trouble in the family of the father or mother. Wassermann tests of both parents were negative. The parents were advised of the condition; operation was suggested, but consent was not obtained. The child improved on a bland diet.

Seven months later, in February, 1922, the patient was seen again for what first appeared to be an upper respiratory infection. After a few days, there was severe bronchopneumonia, with local findings of consolidation in the left lower lobe. The course of the disease was one of sepsis, the temperature rising to 103 or 104, with remissions to 99 in the morning; the leukocyte count was 36,000, and the course was terminated by lysis on the tenth day. The anemia and the icterus were more marked than previously. The liver and spleen were greatly enlarged. Blood culture tests were negative. Recovery and convalescence followed.

In May, the patient developed a "sore throat," with a temperature of 101. There were no local findings of inflammation in the throat, but the child had the appearance of being sick. The following day, restlessness and irritability were noted. The child complained of various aches and pains. A marked anemia, jaundice and toxemia had developed. The enlarged liver and enlarged spleen were the only positive physical findings. The patient was again removed to the hospital. Examination of the blood showed a leukocytosis of 12,500; red count, 1,400,000; hemoglobin (Dare), 30. A blood smear revealed slight anisocytosis; blood culture tests were negative, and urobilin was found in the urine. Two days later, the child was transfused with 250 c.c. of the father's whole blood, and on the following day there was an apparent improvement in the general condition, followed by subsequent rise in temperature, which later dropped by lysis. During the course of the last attack, and preceding the operation, a systolic murmur was noted at the apex. This was associated with a tachycardia. Sodium cacodylate and ferric cacodylate were given daily. Improvement followed; the patient became afebrile on the eleventh day after admission.

One month later, the spleen was removed. It was large, soft and free, and weighed 1,000 gm. The gallbladder was normal and did not contain stones. The appendix was also removed. Histologic sections of the spleen revealed the capsule not thickened. The trabeculae were thin and far apart. The malpighian bodies were widely separated, and revealed active germinal centers and congestion. The pulp was markedly congested, and was filled with red blood cells and pigment. The sinuses were numerous, some appearing newly formed. They were dilated and filled with cells of different types, predominately erythrocytes, a few erythroblasts, many lymphycytes, and a few polymorphonuclear leukocytes, many of which were of the eosinophilic type. In addition, there occurred numerous macrophages filled with blood pigment. Bacteria were not found. No abscesses were present.

11. Marriott, W. McK.: Some Phases of the Pathology of Nutrition in Infancy, Am. J. Dis. Child. **20**: 461 (Dec.) 1920.

* From the Department of Pathology and Bacteriology, University of Illinois College of Medicine.

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2. Elliott and Kanavel: Tr. Am. Surg. A. **33**: 258, 1915.
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The patient recovered quickly after the operation. Nine months later he had gained 16 pounds (7.2 kg.); the hemoglobin was 90 per cent.; red blood count, 5,000,000.

Jan. 5, 1923, the patient was seen during an acute attack of influenza. The temperature was 103; the pulse, 100. There were no positive physical findings and no abdominal discomfort. The liver was not palpable. The urine was examined, but no urobilin was demonstrable. No jaundice, toxic symptoms or anemia appeared. The next morning, the temperature was 99; it rose to 101 in the afternoon, and the following day was normal. No jaundice or other sequelae developed, and in a few days the child was up and about.

In fragility tests of the patient's corpuscles, made April 10, 1923, hemolysis ranged from 0.350 to 0.500 per cent. sodium chlorid. Similar tests on the father's and mother's cells gave hemolysis from 0.350 to 0.400. These findings, together with an absence of clinical history, would indicate that the parents were not affected and that the boy had had the acquired form of hemolytic icterus.

BACTERIOLOGIC FINDINGS

Cultures were made by inoculating one loopful of splenic pulp of the extirpated spleen immediately into 10 per cent. blood agar. Innumerable small biconvex colonies surrounded by grayish green zones appeared as a pure growth. Smears revealed gram-positive cocci in chain formation. In dextrose broth, the organisms formed a granular sediment settling along the sides and bottom of the tube, while the supernatant fluid was clear. Dextrose was fermented, while salicin, mannite and inulin were not broken down. The cocci in broth were oval, and formed extremely long chains. The streptococci resembled *Streptococcus viridans,* and on the basis of carbohydrate fermentation, belonged to the group of *Streptococcus salivarius.*

Sediment of 15 c.c. of dextrose broth cultures was injected intravenously into a rabbit. No symptoms appeared. The animal was killed, and necropsy revealed no gross lesions. Sediment of 25 c.c. of dextrose broth was injected intravenously into a second rabbit weighing 750 gm. The animal became ill, lost weight rapidly, and died within eight days. Necropsy revealed pericardial and endocardial petechial hemorrhages, marked congestion of the spleen with a few hemorrhages, and petechial hemorrhages in the kidneys. No endocardial vegetations or arthritis were present. No icterus was apparent. The heart's blood on culture contained *Streptococcus viridans.* Microscopic sections of the lungs revealed slight bronchopneumonia. The myocardium presented diffuse round cell infiltration and swelling of the fibers. In the liver, areas of focal necrosis, together with areas of hemorrhage, occurred. In the kidneys were scattered areas of round cell infiltration about the tubules, with degeneration of some of the cells lining the tubules. The spleen showed marked dilatation of the vessels, with a few areas of hemorrhage.

COMMENT

The occurrence of a streptococcus in the enlarged spleen is of special interest in connection with its possible etiologic significance in exciting the clinical picture. From the history, the icterus each time followed infection. It is very probable that the last attack resulted from a mild tonsillitis, streptococcal in origin. The streptococci may have entered the general circulation, to be filtered out in the spleen. An endocarditis may have coexisted, although clinical findings of valvular involvement were not sufficient to indicate such a condition. Unknown factors may have been reawakened in the infected spleen and caused the reappearance of the hemolytic jaundice. The streptococcus, however, is not a specific excitant, as apparently other types of infection may initiate the symptoms of splenomegalic jaundice.

SUMMARY

A streptococcus similar to *Streptococcus viridans* was isolated from the spleen of a child, aged 7 years, who presented the clinical picture of chronic splenomegalic hemolytic jaundice. Mild and severe infections may initiate as well as aggravate the symptomatology of this disease. On removal of the spleen, recovery took place, and the subsequent development of an acute influenza was not accompanied by any evidence of hemolytic activity.

SOME ORIGINAL BLOOD PRESSURE OBSERVATIONS *

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A correct interpretation of blood pressure findings is becoming a matter of the greatest importance. The time has gone by when the mere knowledge of a patient's systolic blood pressure was all that was necessary in order to arrive at a correct diagnosis.

In the study of cardiovascular renal diseases, we find many diversified and interesting phenomena. These are each varied and distinct factors, but so closely related that they must all be taken into consideration if we are to arrive at intelligent conclusions. We have alterations (1) in the composition of the blood itself which are caused either by changes in the corpuscular content, by variations in the blood viscosity, or by circulating toxins; (2) in the venous pressure; (3) in the cardiac rhythm, and (4) of the greatest importance, and either temporary or permanent, in the caliber of the arterial venous and capillary circulation.

SAME SYSTOLIC PRESSURE IN DIFFERENT CONDITIONS

Although the systolic pressure tells us how high or how low the general blood pressure is ranging, it is to the diastolic pressure that we must go for more reliable and accurate information. A number of patients may show identically the same systolic pressure and still be suffering from entirely different conditions.

To illustrate this, I shall give three different examples.

EXAMPLE 1.—In a patient in whom the pulse rate was 72, the systolic pressure was 145; the diastolic pressure, 90, and the pulse pressure, 55.

Here the pulse rate is normal, and the pulse pressure is normal. We also have a normal cardiac load, a normal cardiac response and a normal peripheral resistance.

EXAMPLE 2.—In a patient in whom the pulse rate was 90, the systolic pressure was 145; the diastolic pressure, 110, and the pulse pressure, 35.

Although the systolic pressure is the same as in Example 1, we now have a different relationship of our parts. The pulse rate is now high; the pulse pressure is low; the peripheral resistance is high; the cardiac load is high; the cardiac response is low, and the myocardium is probably weakened.

EXAMPLE 3.—In a patient in whom the pulse rate was 58, the systolic pressure was 145; the diastolic pressure, 40, and the pulse pressure, 105.

Here, again, the systolic pressure is the same, yet we have an opposite condition from that in Example 2. The pulse rate is now low; the pulse pressure is high; the peripheral resistance is low; the cardiac load is low,

* Read before Allegany County Medical Society, April 19, 1923.

while the cardiac response is high. This condition is caused by a great cardiac exertion superinduced by a capillary and arterial dilatation.

I could go on showing other cases in which the systolic pressure, per se, has little bearing on the general condition. The same holds good in the low blood pressure cases. It is the systolic pressure, the diastolic pressure and the pulse rate, along with cardiac, arterial and venous conditions, that must guide us in making a correct diagnosis.

As my purpose is to give in a condensed form some original observations extending over a period of four years, I will have to shorten this interesting phase of blood pressure findings. In making these observations, I have not had the advantage of thousands of cases; but the several hundred coming under my personal observation have each been subjected to a great deal of study, many of them over a period of several months.

REVERSAL OF NORMAL BLOOD PRESSURE REACTION

Nearly four years ago, and quite by mistake, I found what I called "a complete reversal of the normal blood pressure reaction." It is a well recognized law of physics that a greater force is required to drive or force fluid to a height against gravity than is required to pump this fluid through the same calibered tube on the horizontal. Strangely enough, without taking into consideration the nervous rôle regarding vasoconstrictors and vasodilators, heart tone and elasticity of the blood pathways, we had applied this physical law to blood pressure, and had taken for granted the fact that blood pressure would naturally be higher with the patient standing than while lying supine.

In a large proportion of both the high and the low blood pressure cases, this law is reversed and the blood pressure is higher in the patient lying supine than when the patient is standing.

Example 4.—In my first case showing this reaction, the systolic pressure, with the patient supine, was 240; the diastolic pressure, 135, and the pulse pressure, 105. When this patient stood on her feet, the systolic pressure was 194; the diastolic pressure, 110, and the pulse pressure, 84.

This case was a reversal of an extreme type and, strangely enough, out of the next seventeen cases of cardiovascular renal disease examined, twelve showed this reversal of blood pressure. So in these cases, after the patient lies supine a certain time and then assumes a standing position, we find that the height of the systolic pressure drops, the pulse pressure drops, the peripheral resistance is lowered and the heart response is lowered, as is also the cardiac load.

In a large majority of patients with heart and kidney disease who cannot breathe well lying supine, but who feel better walking around or propped up in a chair, this phenomenon occurs. So it is that in certain patients who have a very high systolic pressure and a high peripheral resistance when supine, which drops from 20 to 40 mm. on standing so that a stroke of apoplexy is imminent, I wisely keep them standing or sitting as much as possible, and propped high on pillows during the night.

This reversal pressure is also to be found in low blood pressure cases.

Example 5.—In a patient in whom the systolic, diastolic and pulse pressures, when the patient was supine, were respectively, 100, 70 and 30, they became 86, 64 and 22 when the patient was standing.

Here we have the same condition existing in our hypotension cases as in our hypertension cases; e. g., the same lowered systolic pressure, the same lowered diastolic pressure, and lowered peripheral resistance, heart response and cardiac load.

This case is rather interesting:

Example 6.—A married woman, aged 28, previously well, became extremely weak, and finally was unable to walk. A physical examination was negative as to any organic changes. With the patient lying supine, the heart action and capillary circulation seemed fair, but the blood pressure was too low: systolic, 94; diastolic, 76; pulse pressure, 18. Every factor was too low. Then the patient was slowly lifted to her feet, when the systolic pressure became 82; the diastolic pressure, 70, and the pulse pressure, 12. This condition lasted for perhaps fifteen seconds, when the systolic pressure dropped to 76 mm., the diastolic pressure to 62 mm., and both disappeared. The patient in the meantime had turned a ghastly white, the knees gave way, and the signs were those of rapidly approaching death. Within two minutes from the time she assumed the supine position, the systolic pressure, diastolic pressure and pulse pressure had returned to their former readings. This patient made an uneventful recovery.

CAUSE OF REVERSAL PHENOMENON

To what cause or causes is this reversal phenomenon attributable? Not to one cause, I believe, but to many. In some cases, a condition of so-called splanchnic neurasthenia exists with a lowered tone in the mesenteric blood vessel walls. If this condition exists and the patient lies supine, no change is evident. However, let this patient assume a standing position, and the mesenteric vessels dilate and act as reservoirs, drawing much blood from the general circulation, and the blood pressure drops.

In most of my reversal cases, the readings obtained follow a rather general course. Whether the patient examined is a hypertension or a hypotension case, the reversal reaction is due, not to a simple lowering of the systolic pressure with a change and variation of the other factors, but to a general lowering of all the readings. Not only does the systolic pressure drop, but, along with this, we have a lowered pulse pressure, a lessened cardiac load, and a lowered cardiac response.

This has led me to believe that probably the arterial, venous and capillary systems all undergo a simultaneous dilatation; and this, coupled with a weakened myocardium which, under the extra strain of standing, does not actively respond, would seem to explain the reversal phenomenon.

What I believe is greatly needed is some standardized system of taking blood pressure. A patient who visits many physicians within a period of a week or two may be told a different reading by each, because one physician may take the blood pressure standing and another sitting, while the third may take it with the patient supine.

If all take it with the patient supine, one may get the reading as soon as the patient assumes the position, another may catch it one or two minutes later, and still another after the patient has been supine for five minutes or longer. In each of these conditions, the blood pressure may show a variation amounting to many points.

In my own blood pressure taking, I follow a standardized technic. Of course, there are nervous elements to be encountered; again, eating and exercising will cause unavoidable variations in our readings. Contrary to a common belief, sexual excitement or sexual

indulgence, in the few cases in which I have been able to obtain accurate data, has not produced a temporary increase in blood pressure.

In making accurate tests in 100 variable cases, I had some rather surprising results. Tests were taken on the patient assuming the standing posture, standing one minute and standing five minutes; when first assuming the supine position, supine one minute; supine five minutes, and supine ten minutes.

With the patient standing for different periods of time, the results were variable, and nothing characteristic was found. In the tests with the patient supine, the results were interesting and fairly constant.

CASES IN WHICH PRESSURE IS HIGHEST WHEN SUPINE POSITION IS FIRST ASSUMED

In a large percentage of cases, and especially in the reversal cases, the pressure is highest at just the time the patient assumes the supine position, becoming less after one minute, and dropping to its constant level in five minutes, as shown in the accompanying table.

Pressure Readings in Supine Position

Pressure	At Time of Assuming Position	After 1 Minute	After 5 Minutes	After 10 Minutes
Systolic	185	182	174	174
Diastolic	100	96	88	88
Pulse	85	86	86	86

Not all cases give this reaction, but a great many do, so that it is well to have the patient taken at just a certain time for each observation; otherwise, an incorrect reading may result.

A PECULIAR REACTION

I have observed an interesting phenomena many times, especially in the hypotension cases. I have some theories regarding its causes, but none of sufficient importance to put into writing. This peculiar reaction I found mostly when a low blood pressure patient first assumed the standing position.

EXAMPLE 7.—*Patient when first assuming a standing position.* The systolic pressure is 100; the diastolic pressure, 0, and the pulse pressure, 100.

Instead of a true "tunk," a loud sound resembling a carotid bruit is heard through the stethoscopic Pilling sleeve, and as the air is gradually removed from the mercurial apparatus, this apparent diastolic sound keeps on down the scale, getting louder and louder, until it reaches its greatest intensity at zero. After a period ranging from thirty to forty seconds, this sound gradually diminishes in intensity, is no longer heard at zero, ascends the scale, and in about ten seconds more ends as a straight diastolic sound at perhaps 80 mm. Then we have:

EXAMPLE 8.—*After loud bruit has disappeared and the characteristic tunk is again established.* The systolic pressure is 100; the diastolic pressure, 80, and the pulse pressure, 20.

Why the peripheral resistance should be so greatly lowered is a question to be solved later. Or is it really lowered? Possibly the true diastolic pressure ended at 80 mm., but this could not be determined because of the ever increasing extra sound, i. e., if this is an extra sound.

CONCLUSIONS

In making careful blood pressure observations, one is often confronted with strange conditions and variations, which are puzzling, to say the least. Scientific investigation has already cleared many of these difficulties, but much more work remains to be done before blood pressure reactions can be interpreted in their truest sense.

INTRA-UTERINE TRANSMISSION OF ANTHRAX

REPORT OF CASE *

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The possibility of the transmission of anthrax to the fetus of pregnant animals following the inoculation of these animals with anthrax cultures was denied for many years. Pollender, Brauell, Davaine, Bollinger, Wolff and others contended, as a result of experimental work, that the placenta of the experimental animals used afforded an impermeable barrier against this micro-organism. To Strauss and Chamberland [1] must be given the credit for proving that intra-uterine infection may be induced experimentally in animals. These investigators, by the use of modern methods (cultures and animal inoculation of these cultures), were able to prove that the placental barrier was not as impermeable as previous workers believed, and that while not constantly, yet in a good proportion of experiments, infection of the fetus could be produced. Subsequently, other writers confirmed these conclusions, using various animals (guinea-pigs, dogs, pigs) for inoculation.

There are extremely few reports in the literature of anthrax occurring during pregnancy in the human being. Morisani [2] and Romano [3] each separately observed the disease in a pregnant woman who, in each instance, succumbed to the infection, but both writers state that they could find no evidence of transmission to the fetus. Eppinger,[4] in a single observation, also fatal, found anthrax bacilli in the chorionic villi but not in the fetal organs or blood. Paltauf [5] was apparently the first to report an instance of transmission of the disease in man. This writer mentions the case of a woman who was in the fifth month of pregnancy when she was infected, and developed a malignant pustule, of which she quickly died. On necropsy, he was able to recover anthrax bacilli from the lungs of the fetus. The methods Paltauf used were not thorough enough, however, to establish the question beyond dispute, and it is to Rostowzen [6] that really must be conceded the credit of conclusively establishing the fact that human transmission may occur. In 1897 he reported three instances of placental transmission in women who were respectively four, seven and eight months pregnant, and all of whom succumbed to a malignant pustule of the face. By

* From the Kingston Avenue Hospital of the Bureau of Hospitals, Department of Health, New York City.

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3. Romano, S.: Sopra un caso di pustulo maligno, Il Morgagni **1**: 1888.
4. Eppinger, H.: Wien med. Wchnschr., 1888, No. 37.
5. Paltauf, R.: Wien. klin. Wchnschr. 1888, No. 18.
6. Rostowzen, M. J.: Ueber die Uebertragung von Milzbrandbacillen bein menschen von der Mutter auf die Frucht bei Pustulo maligno, Ztschr. f. Geburtsh. u. Gynak. **37**: 542, 1897.

careful cultural work of the blood, placenta and viscera of the fetus, including also animal inoculations of the cultures recovered and study of the tissues of the viscera in each case, he was able to prove that the anthrax bacilli were present in the organs of both mother and child in all three instances.

Subsequent to the report of Rostowzen and up to the present time, our search of the literature has not rewarded us with the finding of any further instances of placental transmission. We now add to the literature of the subject—which, in passing, one may well emphasize seems to be entirely nonexistent in the English language—another case of intra-uterine infection, making apparently the fifth on record.

REPORT OF CASE

History.—A married woman, aged 22, was admitted to the Kingston Avenue Hospital, Dec. 29, 1921, at 9 p. m., because of probable anthrax. The family history was irrelevant. The patient had had the usual diseases of childhood, but during adolescence and adult life she had been very healthy and had never had any serious illness. She had been married for one year; her menstrual history had been regular until six months before admission, but since that time she had had no menstrual flow, and had been told by her family physician that she was pregnant. Her occupation was that of a housewife.

Sunday, December 25, the patient noticed a small papule on the left cheek. She paid no attention to it, as there was a complete absence of pain.

During the ensuing two days, the papule began gradually to enlarge. December 28, the region of the face around the papule began to swell, but as no pain was experienced, she was not alarmed. She went to a druggist for advice, and he gave her an ointment, which she used.

By the evening of December 28, the swelling had advanced considerably, involving the neck and the upper portion of the chest, and difficulty in respiration and deglutition began to be experienced. It was only then for the first time that the patient began to feel that she might be really ill. On the morning of December 29, she was able to walk to the office of her physician, who, on examination, immediately made a diagnosis of probable anthrax and referred her to this hospital. The patient had no knowledge of the manner in which she might have contracted the infection. Careful questioning regarding the purchase of new fur pieces, household brushes, braid for hats, etc., were entirely negative. Her husband had not recently purchased a new shaving brush, and he did not handle hides in his occupation.

Physical Examination.—The patient on arriving at the hospital insisted on being able to walk to her room. She was unusually well developed and nourished. Mentally she was bright, and responded to questions readily, and her answers were clear and concise. She was able to give a clear history of her illness, and stated that she would not feel so sick if it were not for the great difficulty she had in swallowing and breathing, conditions that compelled her to change her position frequently in order to make her respiration easier. She was slightly hoarse and quite thirsty, asking for water to drink; but when she was given the water she was able to swallow only a little. The patient seemed to be very optimistic of her recovery, and had no idea of how gravely ill she really was. She made no complaint of any pain in the lesion on her face.

On the left side of the face just in the region of the malar prominence, there was a small elevated papule-like lesion measuring about 1.5 cm. in diameter. It was composed of tissue of a fairly uniform consistency, was reddish pink, round, and had a slightly flattened top. On probing this top portion with a scalpel, one discerned for the first time that the central portion was an eschar, very hard and tenacious, almost leathery in consistency, and that it could not be lifted from its bed; it could be cut only with the greatest difficulty. It had a slightly more yellowish tinge than the remaining portion of the lesion. The lesion was practically insensitive. While in all these points it resembled anthrax, it lacked the vesicles, being perfectly dry, and had no red areola or indurated zone, and the eschar was not a typical cherry black. Around the base of the papule was a zone of purplish red ecchymosis measuring about 1.5 cm. in diameter, and beyond this was that soft edematous swelling so characteristic of the malignant edematous form of cutaneous anthrax. This swelling, beginning immediately around the papule, extended downward to the neck and lower thorax, especially on the left side, producing an enormous soft distention of the tissues and completely obliterating the normal anatomic markings filling out the supraclavicular and suprasternal fossae. This edematous area was not painful and was noncrepitant. Gentle scraping of the margins of the minute eschar-like area at the summit of the papule caused a serous, blood-stained fluid to exude, from which cultures were taken.

The pupils of the eyes were equal, and reacted to light and in accommodation. There was a marked edematous swelling of the left eyelids. The tongue was heavily coated. The throat was considerably congested around the fauces and pillars, with a tendency to edematous swelling of the mucous membrane.

The lungs gave negative results on examination. The first sound of the heart at the apex was of impaired muscular quality, the sounds at the apex and base being rather faint. No murmurs were heard. The pulse was of poor volume and the peripheral circulation showed a tendency toward stasis. On admission, the temperature was 97.8; the pulse, 90, and the respiration, 28.

The uterus extended to the level of the umbilicus. A globular mass was felt in the uterus. Fetal heart sounds were not heard. The liver and spleen were not palpable.

Course.—While the cutaneous lesion was not absolutely characteristic, there was sufficient evidence on which to base a diagnosis of cutaneous anthrax. It was therefore decided to give treatment at once. A blood culture was first taken, and then 110 c.c. of anthrax serum was injected intravenously, 20 c.c. intramuscularly, and 10 c.c. around the local lesion by the usual subcutaneous "blockage" method. A wet dressing of chloramin-T was then applied locally to the pustule. The patient had a slight chill during the administration of the serum, but the symptoms were very transient.

She remained in about the same condition until 7:20 a. m. of the following morning, when a decided change for the worse was noticed. Light stupor alternating with periods of restlessness supervened, the extremities became markedly cyanotic, the pulse imperceptible, and she died at 8 o'clock.

Necropsy.—The uterus, enlarged and containing a fetus of about the fifth or sixth month of gestation, was removed complete. A slight excess of clear, straw-colored fluid was present. The liver presented a few depressed scars on its surface, and on section it appeared soft, friable and deeply congested. The spleen was a purplish brown or red; on section, the normal markings were obliterated, and there appeared to be hemorrhagic areas on the pulp. The pancreas was soft and light yellowish brown. The suprarenals were normal microscopically. The kidneys seemed rather congested. The thyroid was normal microscopically, except for one blackish red nodular area on the border. The stomach showed moderate congestion. The upper portion of the small intestine appeared dilated, and the mucosa was deeply congested; in places there were swollen elevated areas on which were some yellowish patches. The pleural cavities showed a slight excess of straw-colored fluid. The heart was normal, except for a nodular thickening on one of the leaflets of the mitral valve. The right lung showed a depressed scar on the pleural surface of the apex. The lung tissue pitted on pressure, and the upper, middle and lower lobe had mottled, bluish red, elevated areas on the pleural surface measuring several (8 to 10) millimeters in diameter. On section, the tissue was moist and deep red; air could be expressed from the cut surface, and a large amount of dark, venous blood exuded. The left lung presented a similar condition.

The uterus was opened with careful precautions for sterility. When the amniotic sac was incised with sterile instruments and the fluid flowed forth, cultures were taken. The fetus was removed to an entirely different building; the surface of the body was carefully flamed, and with sterilized

instruments the viscera were examined. The surface of the organs having been treated with the actual cautery, they were incised, and cultures were taken from the heart's blood and liver.

Microscopic examination of the fetal lung revealed intense congestion of the alveolar walls; some alveoli filled with red blood cells, polymorphonuclears and a little fibrin; adjacent alveoli empty. In some areas, the alveoli were filled with an exudate of serum with a few red blood cells. The picture was that of intense congestion and edema of the lungs with some consolidation. In the spleen, congestion was generalized, there being hemorrhage in places. There was a moderate increase in the number of pus cells in the splenic pulp. The malpighian corpuscles showed a large number of lymph cells. In the kidney, the condition of congestion and focal hemorrhages was repeated. The cells were swollen, and showed cloudy swelling. There was marked congestion of the suprarenals, the cortical cells being swollen. There was diminished lipoid material, and hemorrhage in the capsule. In the thyroid, the alveoli were distended with colloid, and the capillaries were swollen and filled with blood. There was a moderate amount of fibrinoid material on the villi of the placenta. A few polymorphonuclears and desquamated epithelial cells were present. The capillaries of the liver were dilated and engorged. Square-cut, large, gram-positive bacilli like anthrax were found here and there in the liver of the fetus.

Cultures and smears taken before death from the lesion show gram-positive bacilli, which in subsequent transplants were isolated pure, were nonmotile and were pathogenic for a rabbit. The same organism was found in great numbers in the blood culture.

Smears from the heart, lung, liver, kidney, spleen and placenta of the mother after death showed large gram-positive bacilli, some in chains, squares ended, and some with a narrow capsule. Cultures on plain agar from the same organs gave colonies isolated and confluent, of a rather large, dry, grayish white opaque type, with hairlike extensions at their borders. Only the cultures from the lung showed a contaminating staphylococcus. Smears from the colonies showed gram-positive bacilli, square ended, occurring singly and in chains. Transplants from these colonies to plain broth gave a growth characterized by a pellicle formation with a stringy sediment in the bottom of the tube. The hanging drop showed the bacilli in this transplant to be nonmotile.

The cultures from the heart, liver and amniotic fluid of the fetus gave similar, but few, anthrax colonies. The organism recovered from these cultures was identical with that isolated from the viscera of the mother. Inoculated into a pregnant rabbit, these cultures from the mother and the fetus (in amount of 2 c.c. of a three-day broth culture) produced death within less than seventy-two hours. The same bacilli were recovered from the heart's blood and viscera of this animal in pure culture, and from the viscera of the fetus of the rabbit.

COMMENT

In this instance, just as in the three patients of Rostowzen, it was a question of a very healthy, well-developed woman with an anthrax lesion of the face. On admission, she did not seem prostrated or dangerously ill, yet her blood stream already contained large numbers of anthrax bacilli, as the blood culture taken at the time subsequently showed. This is, indeed, a striking example of the little reliance that should be placed on clinical phenomena in this disease and emphasizes the necessity of an immediate blood culture in all cases, and the application of intensive intravenous treatment until the result is known.

The transmission of the disease to the fetus was undoubtably proved in the case we have reported, both by the cultures taken, at the necropsy of the mother, from the fetal heart's blood and liver, and by the finding of typical large, gram-positive bacilli in the microscopic sections of the fetal liver tissue. It is logical to believe that the transmission occurred through the placenta. While it is an ideal filter and barrier against penetration of bacteria, the placenta cannot be relied on to withstand the attack of certain pathogenic bacteria, and among the latter must be placed the anthrax bacillus. By no means a constant phenomena, it is nevertheless true that in certain infectious diseases, especially those in which a septicemia exists, the integrity and impermeability of the placenta is often partially destroyed, to such an extent at least as to allow the invading micro-organism to pass through. The epithelium of the chorionic villi may, for example, lose its protective power in conjunction with the general lowering of resistance of the cells in all portions of the body. In anthrax, particularly, it would seem that this protection may be interfered with mechanically by gross injury to those cells; for example, by hemorrhage and necrosis; and it is possible that the blood vessel walls may be more permeable.

It is quite probable that in a nonsepticemic case of anthrax, with recovery, the course of pregnancy might not be interfered with; but in the limited statistics available, the malady has usually assumed, as is commonly the case with all infections occurring at this time, its more severe and fatal form.

THYROIDISM COMPLICATED BY HEART FAILURE

REPORT OF A GROUP OF CASES*

BURTON E. HAMILTON, M.D.
BOSTON

The group of cases I am reporting comprises twenty-two individuals within a total of about 600 patients who have come to Dr. Lahey's clinic in the last three years because of thyroidism. In order that the small, more or less distinct, unit that this group forms within the whole mass of thyroidism cases may be clearly placed, it seems necessary to describe thyroidism cases in general.

If one considers all the cases of thyroidism, one finds that, excluding the few instances in which some complicating affection masks the picture, the patients who are most ill fall naturally into two rather distinct classes.

1. The larger class shows aggravated toxic symptoms of thyroidism alone, without signs of heart failure. When such patients die, they apparently succumb to exhaustion; they do not at any time show the true signs of heart failure. Three such patients have come to the clinic in an extremely advanced condition during the last year, and have died within a few hours of admission, not operated on, in spite of all palliative measures.

2. A smaller class shows more or less violent toxic symptoms, and, in addition, clean-cut signs of the congestive type of heart failure. And this means, not breathlessness and tachycardia alone, which all patients with thyroidism show to some degree, but gross evidences of venous congestion, such as (*a*) pulmonary congestion—orthopnea, with perhaps cough, râles, hemoptysis, and (*b*) systemic congestion—particularly engorgement of the liver, with perhaps tenderness and pain. Four such patients have come to the clinic during the last year, in an extremely advanced condition, and have died without operation.

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* From the New England Deaconess Hospital.

Between these two groups are, indeed, many cases that show absolute disorder of the heart beat (auricular fibrillation), transient or established, associated with enlargement of the heart in varying degrees—cases that seem to threaten heart failure, but that do not show or give a history of its actual occurrence.

It is generally known that the severely toxic thyroid case of the first group can, under proper conditions, be treated surgically with success. For instance, it has been more than two years since, in a case of this sort, the patient has died following operation in this clinic; and the follow-up work shows a relatively steady succession of patients relieved of disability. But I am not aware that the second group has heretofore been differentiated and discussed, or the effect of treatment studied.

Though each case within the group (namely, the second group) with which this paper deals deserves separate consideration, the cases can best be discussed as a group, with selected cases given in detail for illustration.

The patients were not young; their average age was 51, about fifteen years higher than the average age of all the patients with thyroidism; they looked about twenty years older than they were. Mentally, they appeared stupid and bewildered; they were incapable of, or disinterested in, making mental as well as physical effort. They were emaciated; they were pigmented. Some had eye signs; some had symmetrical thyroid enlargement; some had neither. A few had adenomas of the thyroid. All had significantly and persistently elevated basal metabolism rates. All had definite enlargement of the heart—usually gross enlargement—shown by movements of the thoracic cage with the heart beat, and with the left border of the heart felt an inch or more outside the nipple or midclavicular line. All (except one) had auricular fibrillation—complete and continuous disorder of the heart beat; in most of the cases it could be judged that this had been persistent for months or years (one patient apparently had had it for twelve years).

All had gross signs of the congestive type of heart failure, varying in degree, and with a history or direct evidence of aggravation of these signs under effort. And I wish to emphasize that by signs of heart failure is meant, not breathlessness and tachycardia alone, which all thyroidism cases show, but evidence of venous congestion in the pulmonary or systemic circuit, or both. In detail, nearly all patients had orthopnea, many had cough and râles at the lung bases, and a few patients spat blood at times. These symptoms were found either only after exertion, or persistently but aggravated by exertion. Nearly all had, in varying degrees, enlargement of the liver and congestion of the neck veins. Nearly all had some edema; several had gross edema of the legs and ascites. All were disabled, nearly all to the point of complete invalidism; many of them had been in bed for months, some for more than a year before they came to us. They were very miserable beings, and they clearly appeared poor operative risks.

A fair example of these cases, one of the earlier members of the group seen, was Case 1.

Case 1.—Mrs. A., aged 56, had been increasingly disabled, bedridden for part of the time, and barely about the rest of the time, for one and one-half years. She had a very large heart; auricular fibrillation; distinct orthopnea; engorged liver; edema of the legs extending up to the waist, and ascites. She was at first rejected as a surgical possibility. But after six months of watching, with medical treatment for her heart condition (during this time she also had ten roentgen-ray treatments), since she failed to die or to improve, a single superior pole ligation was successfully done, and the subtotal thyroidectomy completed six weeks later. At the end of three months, she was about, doing housework for herself and her husband, and during the last six months has also engaged in teaching. She has no complaints, and she has had no signs of heart failure since operation.

The least severe operative risk (the only man) was a physician:

Case 2.—A man, aged 38, but appearing much older, was mentally torpid, and on entrance, had edema of the legs and abdominal wall. There were definite orthopnea and slight liver engorgement, but no other gross signs of congestive heart failure. Because of breathlessness and fatigue, he was just able to walk about. The heart was clearly enlarged, and he had auricular fibrillation (the heart rate several hours after entrance was 170, and the next morning, after digitalization, from 90 to 100), which had appeared in paroxysmal attacks lasting about twelve hours each over a period of two years. These attacks came more and more frequently, and two months before entrance, the auricular fibrillation became established and persisted until two months and three weeks later, five weeks after his final operation. Since then, the rhythm has been normal, and the rate about 70 (at ordinary office examination). It is now four months since his final operation. For the last two and one-half months, he has felt perfectly well and has started practice. He has an entirely negative physical examination (basal metabolism on entrance +72, now +7) except for slight edema of the feet with pain after walking; he has flat foot and varicosities of the legs. His heart shows doubtful slight enlargement. His mental condition is normal, and he is interested in things again. He does not look much older than his age.

Perhaps the worst risk of the series was Case 3.

Case 3.—Mrs. S., aged 37, but appearing to be at least 60, had been operated on elsewhere for thyroidism twelve years previously, but without much improvement, apparently because an insufficient amount of the gland had been removed. She had had a disorderly heart beat for twelve years. The heart was huge; the liver enlarged, and she had edema of the legs and some ascites, though she weighed only 82 pounds (37 kg.). She was somewhat orthopneic. These symptoms were present in spite of little effort being made by the patient beyond lying in bed and being transported for the last three years. She had been an invalid, traveling from hospital to sanatorium and from one physician to another for twelve years. She did not appear neurotic. A few weeks before coming to us, she had been under the care of an excellent, modernly trained cardiologist, who emphatically said that she could not stand operation. After several weeks' preparation, she was operated on in two stages, with six weeks intervening. The operations were difficult because of scar tissue. It is too soon to judge the relief of her physical disability, but improvement in mental outlook, appearance, breathlessness, edema, heart rate and other physical signs was marked before she left the hospital, five weeks after her second hemithyroidectomy. She now makes more exertion than she has for several years, since she goes up and down stairs and walks about freely several hours each day.

Case 4.—Mrs. P., aged 56, had more marked heart failure, and took longer to prepare for operation, but was perhaps a little more attractive operative risk because she had had no previous operation. Her weight was 62 pounds (28 kg.), her normal weight being 140 pounds (63.5 kg.). She had a huge heart, with auricular fibrillation. She showed orthopena, edema of the lungs, a very large liver (the edge was felt at the umbilicus), and when the patient was first seen, the liver was acutely tender. After many weeks of watching and treatment directed toward her heart condition, the orthopnea improved, the lungs were cleared of râles and the liver tenderness left, though gross engorgement remained. Her final operation was five months ago. She has gained 30 pounds (13.6 kg.), and is at home and up and about, without any

sign of heart failure. She had been in bed for seven months (and had chronic heart failure with acute exacerbations throughout this time) before reporting for operation.

In brief, the other cases differ in severity, so far as this can be measured, between the second and third cases given above. All the patients have been operated on by Dr. Lahey. The first of this group had the operative procedure completed more than two years ago; she had increasing disability for two years and was in bed six months before the operation. Since three months after the operation, she has led a normal life—she does all her housework, and is very active socially. The last of the group, Case 3, had operative procedures completed a few weeks ago. Of the whole group, one died (this case will be discussed later). The others, not previously discussed, except one patient who improved until last heard from and with whom we cannot now get in touch, so far as elapsed time permits proof, have lost their disability to a surprising extent. These persons lead lives that differ widely in extent of physical strain. One does all the housework for a large family and, in addition, earns money by doing laundry work; another lives without effort in a city hotel. They are relieved of signs of heart failure. They have gained weight and show indirect evidence of improvement by lowered basal metabolism readings and heart rate.

Only a few of these cases with established auricular fibrillation have returned to normal rhythm after relief of thyroidism. It is the commoner thyroidism case that has had auricular fibrillation for a short time, or in repeated transient attacks, that permanently returns to normal rhythm after relief of thyroidism.[1]

The improvement in mental condition and evident enjoyment of life is difficult to record, but is very noticeable to me as I follow the individual cases.

It is difficult not to appear overenthusiastic in recording this group of cases. But when one is familiar with the picture of cases in which there is chronic heart failure of the congestive type in rheumatic heart disease, degenerative sclerotic conditions, etc., the contrast in what can be done for these patients with chronic failure with acute exacerbations and thyroidism is delightful. There is no similar improvement from prolonged disability to prompt and, so far as can be told, lasting relief to be hoped for in other heart diseases, save in rare instances.

Many of these patients have been told by the highest type of medical consultant, known to us and known widely, that they could not be operated on, and others have been seen and treated by them and operative measures not suggested. This sort of case is considered too far gone for surgical aid.

If not operated on, it is scarcely to be judged that they could improve, since most of these persons have for years had an irregular course tending unmistakably downward. Most of them have had prolonged rest in bed; many have had roentgen-ray treatment by well trained men, without satisfactory improvement.

It is scarcely to be expected that in this class of cases the operative risk can be as low as that of the whole clinic. The low death rate recorded here is accepted by us in part as good fortune. But, remembering the four patients mentioned in the second paragraph of this article, who came to the clinic the last year with thyroidism and heart failure and died in a few hours or days, not operated on, there is no question that, even though the risk were much greater than it is, the chance of cure of such cases by operation would still be an attractive choice. I will describe one of these four cases as an illustration.

CASE 5.—A woman, aged 50, who is known to have had thyroidism for several years, journeyed from one physician to another, because she was not cooperative. Her course was rapidly downward. She had a prolonged attack of heart failure of the congestive type, from which she improved enough to go home against advice from a hospital in another city, a few weeks before reporting to us. She promptly failed again, and came to this clinic in an extreme condition. When first seen, she was deeply cyanosed, sitting upright in bed, the lungs full of râles, the sputum bloody, the liver large and tender, gross edema from her feet to her waist, the heart very large, with a rate around 200 and absolutely irregular. Morphin gave her a reasonably comfortable night. Digitalis was given in divided doses at six-hour intervals, to give an estimated full dose in eighteen hours. Eighteen hours after admission, her condition was unrelieved; oxygen administrations and venesection, during which the blood whistled out of the proximal end of the cut vein, caused partial relief, but death occurred six hours later, with the classical symptoms of heart failure persisting.

The other three cases were essentially similar.

There is no routine treatment for cases of this group. They are given rest, in all its details, and sedatives as indicated. They are thoroughly digitalized. (All but one of the patients had auricular fibrillation; this patient had no digitalis.) They are watched, and operated on when the signs of acute heart failure have cleared. None so far has been operated on while the liver was tender, or orthopnea marked, or with persistent râles in the dependent portions of the lungs. Many have still had, when operated on, large livers, slight orthopnea or edema of some extent in the legs. Breathlessness and tachycardia are, of course, a part of the thyroidism; if one waits for these to clear before operating, one may wait out the life of the patient. We consider it wise to wait for three weeks after the evidence of acute heart failure has cleared. Heart failure of the congestive type, particularly in the presence of auricular fibrillation, would seem to offer favorable opportunity for the formation of intra-auricular thrombi, and they are known to occur. There is evidence that it takes at least three weeks for such thrombi to become firmly attached to the heart wall. The single death among the cases in this group that were operated on occurred in a woman who entered the hospital with signs and history of heart failure. These cleared promptly, and she stood a preliminary operation well, after several weeks of rest and preparative treatment. She returned six weeks later, without signs of acute heart failure, but with a story that suggested some acute failure a few days before. She was operated on a few days after entrance, but died suddenly twelve hours later. Her condition remained entirely satisfactory until she died. No necropsy was obtainable, but it seems probable to me that an embolus from an intracardiac thrombus caused death.

In these seemingly hopeless cases, the patients have stood operation very well. It is the rule for the signs of heart failure not to be aggravated after operation. Relief of symptoms occurs, as a rule, promptly. Within a week after the final operation, beginning general improvement is usually quite evident.

SUMMARY

A small group, within a large group of thyroidism cases, is found completely disabled by heart failure of the congestive type.

1. Hamilton, B. E.: Clinical Notes on Hearts in Hyperthyroidism, Boston M. & S. J. **186**: 216 (Feb. 16) 1922.

These patients as a class are oldish, have auricular fibrillation, and have severe degrees of thyroidism which has persisted for a long time in spite of attempts at palliative treatment.

As a rule, they have been considered by their medical advisers to be unfit for operative treatment.

Twenty-two such patients have been operated on in this clinic in the period extending from more than two years ago to five weeks ago. One patient died suddenly. The others are alive, and, up to the present time, show relief of disability in varying but satisfactory degrees.

19 Bay State Road.

Clinical Notes, Suggestions, and New Instruments

POLYCHROME METHYLENE BLUE USED TO HELP LOCATE MALIGNANCY IN TISSUES TO BE EXAMINED MICROSCOPICALLY *

BENJAMIN TAYLOR TERRY, M.D., NASHVILLE, TENN.

Polychrome methylene blue is successfully used at the Mayo Clinic,[1] Johns Hopkins University,[2] Vanderbilt University,[3] and other places to diagnose malignancy quickly under the microscope. When good sections through the malignant area are obtained, the diagnosis is usually easy. There remains the problem of how to find a small area of malignancy in a large mass of tissue. The observation that frozen sections of malignant and rapidly growing tissues often stain so intensely with polychrome methylene blue as to be striking even to the naked eye suggested that this stain might be applied directly to tissues to select areas of malignancy. My results show that malignancy can in this way often be picked out.

TECHNIC

A thin slice of tissue is cut and flooded for five seconds with at least ten times its volume of polychrome methylene blue No. 1.[3] At the end of this time the section is removed from the stain and rinsed in distilled water, the surface is illuminated with strong light, and the moist surface is examined carefully with the naked eye and also with a good high power magnifying glass. One should look for areas staining deep blue. Areas that are suspicious, owing either to an unusual amount or to unusual distribution of deep blue, are to be examined microscopically, preferably by the frozen section method. Fixed tissue can be examined similarly.

KNOTTING OF THE DUODENAL TUBE IN SITU *

F. T. BILLINGS, M.D., PITTSBURGH

Mrs. M. B., admitted to the Western Pennsylvania Hospital, Feb. 23, 1923, and discharged, March 12, 1923, came to the hospital complaining of "gas on the stomach," pain over the right side of the abdomen, and a vaginal discharge. The family history was unimportant. For the last two years she had experienced flatulence, accompanied by belching, but no nausea. The attacks generally followed meals, and came in definite periods of pain and indigestion. She had lost 16 pounds (7 kg.) during the last six months. At the time of admission, she complained of considerable gaseous distention of the abdomen, especially pronounced after meals, but not necessarily dependent on them. During deep inspiration, the patient experienced a feeling of "goneness" of the stomach and intestine. There was also a sore, dull, aching pain in the upper right quadrant of the abdomen, accentuated at times to a sharp knifelike intensity radiating upward to the chest. She had had a vaginal discharge for the last six years, which was profuse, white and of thick consistency.

On the day of admission, the patient was given a complete physical examination with practically negative results. In the lower abdomen, in the medium line, there was the scar of a past pelvic operation, at which time (five years before) there had been performed a double salpingectomy, removal of one ovary, and an appendectomy. There was some tenderness over the upper abdomen. A tentative diagnosis was made of gastric or duodenal ulcer, gallbladder involvement or a secondary hyperchlorhydria.

The day after admission, the stomach contents were examined in this manner: A slice of bread and a cup of water were given, and the Rehfuss tube was inserted with very little difficulty. Eight specimens of the gastric contents were recovered, at fifteen-minute intervals. The patient was then placed on the right side, and the left knee and thigh were flexed, so that the thigh rested on the abdomen. This was done in order to facilitate the passage of the metallic button from the stomach into the duodenum. Repeated specimens were taken in this position, but all proved acid to litmus. It was decided to leave the tube in place for from twenty to thirty minutes, in the hope that the evident pylorospasm would eventually be overcome.



Knotted duodenal tube

At the end of twenty minutes, the resident physician was hurriedly summoned because the patient seemed to have difficulty in breathing. She was found to be pulling at the tube, and seemed to be in great discomfort. On the assumption that the tube had induced a cardiospasm by being pulled forcibly against the esophageal-gastric juncture, the resident physician ordered the patient to swallow a glass of water, hoping that this would induce a relaxation of the spasm. During the act of swallowing, the tube was pulled taut, and quite a little force was necessary in order to pull it past the constricted orifice. The tube was felt to pass irregularly, and in a jerky fashion up the esophagus. When the whole of the tube was finally recovered, it was found to be tied in a double knot at the distal portion, close to the metal tip. The knotting had no doubt taken place as a result of the excessive peristalsis with its underlying factor, hyperchlorhydria. The chemical examination of the stomach contents proved the presence of the latter.

Other laboratory reports revealed that the urine was negative, the spinal fluid negative, as to both Wassermann reaction and cell count, and the blood Wassermann reaction was

* From the Department of Pathology, Vanderbilt University Medical Department.

1. Wilson, L. B.: J. Lab. & Clin. Med. **1**: 40, 1915.
2. Bloodgood, J. C.: J. Radiol. **4**: 46 (Feb.) 1923.
3. Terry, B. T.: J. Lab. & Clin. Med. **8**: 157 (Dec.) 1922.

* From the Second Medical Service, Western Pennsylvania Hospital.

negative. Chemical examination of the blood was negative in every respect.

The barium roentgen-ray series of the gastro-intestinal tract revealed a great degree of ptosis of the stomach and a slight dilatation of the greater curvature. The small intestine and the colon were normal. The diagnosis was gastroptosis. The accompanying illustration shows the tube immediately after it was removed from the stomach. The patient was exremely neurotic, and remained so during her stay in the hospital.

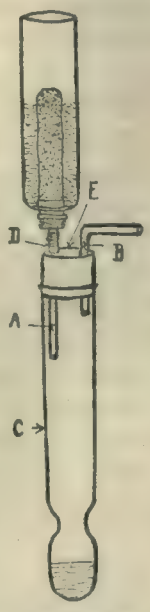
626 Union Arcade Building.

SIMPLE APPARATUS FOR FRACTIONAL FILTRATION BY GRAVITY OR SUCTION *

LELAND W. PARR, S.B., CHICAGO

It is often desirable to obtain fractions in the filtration of a bacterial culture or other material. The apparatus described and illustrated here has been found very satisfactory for this sort of work, and has the advantage that it involves no costly material or unusual technic.

The Mandler or Berkefeld filter is assembled as usual, after thorough cleaning. Then a two-hole No. 4 rubber stopper (*E*) is taken, and the stem (*D*) of the assembled filter is pushed about half way through one of the holes from the top side. Into this hole, but from the bottom, a short piece of straight glass tubing (*A*) is inserted. A second piece of glass tubing (*B*), 3 or 4 inches long and bent at right angles, is inserted through the second hole of the stopper from the top side. The stopper, so equipped with filter and tubes, is then inserted into the mouth of a potato tube (*C*) of such size that there is a snug fit of the two. A pledget of cotton can then be placed in tube *B* and the apparatus sterilized appropriately. A basket of potato tubes of the same size as the one used should be plugged, baked and sterilized at the same time.



Apparatus used in fractional filtration, either by gravity or by suction.

When it is desired to use the apparatus, it is mounted on an iron stand by a clamp which grasps the stopper above the mouth of the potato tube and below the filter mantle. The apparatus is held up clear of the table, and it is thus possible to remove the potato tube whenever one wishes, ordinary asepsis being observed, and to replace it with a new one. the cotton plug of the new one becoming the cotton plug of the old. It is thus possible to obtain fractions of the filtrate or to filter directly into the culture medium. In gravity filtration, the displaced air escapes by the way of tube *B*. In suction filtration, the negative pressure is attached to tube *B*. The justification for tube *A* is that in suction filtration it is needed to keep the liquid, as it filters in, from being sucked across to tube *B*, and out of the system.

A CASE OF PAPYRACEOUS FETUS

J. L. MILLS, M.D., WINNEBAGO, MINN.

A woman, aged 38, housewife, well developed and well nourished, now in her fourth pregnancy, gave a negative family history, with no record of multiple pregnancies on either side of the family. The youngest child was 7 years old.

The last menstruation was on July 15. For the first three months, the patient was nauseated in the morning and vomited occasionally. Other than that, she felt perfectly well during the entire course of her pregnancy. At no time did she have any bloody vaginal discharge or excessive leukorrhea. Quickening occurred, November 23, and from then on, fetal movement was felt every day.

Examination, February 5, showed the fundus half way between the umbilicus and the ensiform cartilage. The position was right occipito-anterior. The fetal heart rate was 170. The pelvic measurements were: interspinous, 27 cm.; intercristal, 29 cm.; intertrochanteric, 36 cm., and external conjugate, 22 cm. Blood pressure was: systolic, 132; diastolic, 80. The pulse was 84, and urinalysis was negative.

Labor began at 1 a. m., April 20. Dilatation was complete at 10 a. m., and the baby was born at 11 a. m. The baby was a normal girl, weighing 8¼ pounds (3.75 kg.). The placenta was delivered spontaneously thirty minutes later. Incorporated in the last part of the membranes to be delivered was a saucer-shaped mass that proved to be a papyraceous fetus. It was 16 cm. long, 6 cm. wide at its broadest part, and 1.5 cm. at the point of maximum thickness. The integument was firm and grayish brown. The soft tissues had been practically all absorbed, and I was unable to distinguish any of the viscera. The skeletal structures were well preserved. From the size of the fetus, I estimated its age at about 4 months.

The cord was hard and fibrous, and attached to a small fibrotic placenta about 6 cm. in diameter. It was embedded in the membranes of the normal fetus. The entire placenta was so fibrous throughout that I was unable to find any spot that I could call an infarct. I was also unable to find any cause for the separation of this placenta.

* From the Department of Hygiene and Bacteriology, University of Chicago.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ARSPHENAMINE (See New and Nonofficial Remedies, 1923, p. 46).

Arsphenamine-Mallinckrodt.—A brand of arsphenamine-N. N. R.

Manufactured by the Mallinckrodt Chemical Works, St. Louis.
Arsphenamine-Mallinckrodt Ampoules, 0.1 Gm.
Arsphenamine-Mallinckrodt Ampoules, 0.2 Gm.
Arsphenamine-Mallinckrodt Ampoules, 0.3 Gm.
Arsphenamine-Mallinckrodt Ampoules, 0.4 Gm.
Arsphenamine-Mallinckrodt Ampoules, 0.5 Gm.
Arsphenamine-Mallinckrodt Ampoules, 0.6 Gm.
Arsphenamine-Mallinckrodt Ampoules, 1.0 Gm.

BARBITAL (See New and Nonofficial Remedies, 1923, p. 62).

Barbital-M. C. W.—A brand of barbital-N. N. R.

Mallinckrodt Chemical Works, St. Louis, distributor. No U. S. patent or trademark.

CINCHOPHEN (See New and Nonofficial Remedies, 1923, p. 90).

Cinchophen-M. C. W.—A brand of cinchophen-N. N. R.

Mallinckrodt Chemical Works, St. Louis, distributor.

MERCURIC CYANIDE (See New and Nonofficial Remedies, 1923, p. 194).

Mercuric Cyanide-M. C. W.—A brand of mercuric cyanide-N. N. R.

Manufactured by the Mallinckrodt Chemical Works, St. Louis. No U. S. patent or trademark.

Universal Gas Mask.—A gas mask that will give protection against all poison gases, including carbon monoxid, has been perfected by the Department of the Interior as the result of experimental work performed by the Bureau of Mines. The new mask, which is described as an "all purpose cannister," is particularly valuable for firemen and men engaged in fumigating ships or buildings. With these masks, workers in many metallurgical and chemical plants may encounter a variety of gases. The masks are smaller and lighter than others that have previously been developed.

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SATURDAY, JUNE 16, 1923

WHAT CAN VITAMINS DO?

Students of the physiology of nutrition have been assiduously engaged during much of the last decade in securing facts with respect to the rôle of the vitamins. Varied manifestations of so-called avitaminosis have been recognized, and in several types the probable interrelations of cause and effect have been discovered. Probably scurvy, beriberi and rickets stand out as the most conspicuous instances in which the effect of the lack of certain food factors is almost universally admitted. It is a natural further stage in the evolution of knowledge to find interest in the question of how the protective vitamins act, now that the probability of their existence has been put on a more secure experimental basis. Do they supply an essential component in the active cells of the body—a building stone in the complex structure of an organism ever subject to change and therefore to reconstruction? Are they analogous to those organic catalysts that are recognized under the name of enzymes, and do they, like them, merely facilitate the natural reactions of the organism? Are they physiologic stimulants or inhibitory substances comparable with natural hormones or artificial drugs? These are some of the inquiries that command the attention of the thoughtful student.

On the answers must eventually depend some of the therapeutic possibilities that vitamins may or may not unfold. Park [1] of Yale University has not hesitated to say that cod liver oil—a veritable treasure of certain vitamin potencies—may act as a regulator of the mineral metabolism, at least so far as the calcium and inorganic phosphorus are concerned; and one may infer that a function of cod liver oil and also of radiant energy is to maintain the normal salt equilibrium of the body in the presence of salt combinations of different complexities which are continually being absorbed from the food. Without supplying either phosphorus or calcium, the potent factor in cod liver oil causes the organism to respond as if a requisite or almost requisite quantity of phosphorus or calcium had been supplied. Something is furnished which, in the words of Park, makes the metabolism more effective or causes the organism to operate with increased economy. Histologic studies of the bones and chemical examinations of the blood indicate that cod liver oil and light, instead of bringing new processes into operation, rather permit the organism to have full use of processes which were natural to it all the time, but were not effective.

With respect to vitamin B, or the "antineuritic factor," one sometimes reads nowadays that it "stimulates metabolism"—assuredly a rather vague definition of function. Is the oxidative capacity of the body promoted or protected by such a food factor? Or is there derangement of some other phase of energy metabolism? Mattill [2] of the University of Rochester, N. Y., has put the question to a test experimentally with esentially negative results. From his data on the respiratory quotients of rats on rations with and without vitamin B, it appears that this substance is not related specifically to the metabolism of carbohydrate, since after the feeding of sucrose or glucose the quotients rose in both cases, slightly less rapidly in the vitamin-deprived group, owing probably to delayed absorption. Basal quotients were alike in the two groups; nonfasting quotients were slightly lower in the vitamin-deprived animals, thus reflecting their semifasting condition. It will be wise, therefore, for the present to avoid reference to the "stimulating" or "energizing" effects of vitamin B (which yeast claims so prominently as a characteristic component), so long as no better evidence than is now available can be offered in support of a much advertised claim.

1. Park, E. A.: The Etiology of Rickets, Physiol. Rev. **3**: 106 (Jan.) 1923.

PERIARTERIAL SYMPATHECTOMY

The results recently achieved with the operation of periarterial sympathectomy—the cutting of the nerves about the arteries—have aroused the hope of successfully attacking a group of extremely painful and disabling disorders (causalgia, trophic ulcers, vascular spasms and vasomotor neuroses) which, heretofore, have proved extremely intractable to treatment. The technic of the operation has recently been described by Halstead and Christopher [3] in THE JOURNAL. Jaboulay,[4] basing his action on the discovery by Claude Bernard that section of the sciatic nerve caused hyperemia of the foot, performed arterial sympathectomy in 1899, with excellent results in the treatment of trophic ulcers. The operation was repeated in several cases with varying success. Leriche, in 1914, with the object of more completely destroying the nerve fibers, modified Jaboulay's operation of cutting the nerves as they enter

2. Mattill, H. A.: The Utilization of Carbohydrate by Rats Deprived of Vitamine B, J. Biol. Chem. **55**: 717 (April) 1923.

3. Halstead, A. E., and Christopher, Frederick: Periarterial Sympathectomy, J. A. M. A. **80**: 173 (Jan. 20) 1923.

4. Jaboulay: Le traitement de quelques troubles trophiques du pied et de la jambe par la dénudation de l'artère fémorale et la destruction des nerfs vasculaires, Lyon méd., Aug. 6, 1899.

the sheath, and stripped off the adventitial coat of the artery, thus removing the terminal twigs of the postganglionic sympathetic nerves.

Leriche observed, at the time of the operation, extreme contraction of the artery, which he at first thought to be a pathologic condition of the vessel, followed a few hours later by hyperemia, with a rise in temperature of 1 or 2 degrees C., and in arterial pressure of as much as 40 mm., in the parts of the limb distad to the site of operation. This secondary hyperemia, however, is temporary and disappears at the latest in thirty days. These observations have been confirmed by some [5] and denied by other surgeons,[6] and most efforts to produce them in lower animals, especially in dogs,[7] have proved futile. Leriche [8] asserts that he has observed them in rabbits and once in a dog. He points out that the small size of the arteries renders the operation difficult, and also suggests that in hair covered animals the need for arterial regulation is not so great as in man.

The results are difficult to explain, for, as Callander has emphasized, the sympathetic fibers enter the arterial sheath from the spinal nerves throughout its course; the operation destroys the constrictor fibers only in the segment of artery that is actually denuded. Whatever the explanation, there is no question that the operation is followed in many cases by marked improvement in local nutrition—sores heal, pains disappear, partially atrophied muscles improve, and thickened skin becomes more pliable. Yet these results are not uniform, even in cases of apparently identical nature, and the measure must at present be regarded as largely empiric; much study is necessary before it will be possible to state the exact indications for its performance.

The failure to secure relief from other methods of treatment, and the painful and disabling character of the afflictions in question, however, seem to justify the experimental application of periarterial sympathectomy in properly selected cases. Skilfully performed, the operation seems to be devoid of serious danger, and there can be no question that it sometimes affords marked relief. Due consideration must be given to the warning of Leriche against attempts to decorticate arteries that are grossly diseased, especially in cases of senile gangrene. It is also important that every case be studied with the greatest detail in order to assist in furnishing data from which it may be possible to define the indications for and against the operation, and to explain the discordant results in apparently similar conditions.

5. Halstead and Christopher (Footnote 1). Brüning, Fritz: Der Angiospasmus in der Pathogenese der vasomotorisch-trophischen Neurosen, Deutsch. med. Wchnschr. **48**: 1572 (Nov. 24) 1922.

6. Callander, C. L.: Arterial Decortication, Ann. Surg. **77**: 15 (Jan.) 1923. Carter, H. S.: On Causalgia and Allied Conditions Due to Lesions of Peripheral Nerves, J. Neurol. and Psychopath. **3**: 1 (May) 1922.

7. Lehmann, E. P.: Periarterial Sympathectomy, Ann. Surg. **77**: 30 (Jan.) 1923.

8. Leriche, René: Sur l'étude expérimentale, la technique et quelques indications nouvelles de la sympathectomie périartérielle, Presse méd. **30**: 1107 (Dec. 23) 1923.

"THE CHRONIC ABDOMEN"

Of all of the medical slang that has insulted the ear of the carefully speaking physician, no term has been seized on by the surgeon with such avidity as has the "acute abdomen." It is this term, in part, that prompts Dr. Robert Hutchison of the London Hospital to write on the "chronic abdomen," and he says of it that if the "acute abdomen" is, as we are told, a catastrophe, the "chronic abdomen" is certainly a conundrum. The patient suffering with this disease is usually a woman, generally a spinster or, if married, childless and belonging to what is commonly termed, rather ironically, "the comfortable class." The degree to which her condition seems to trouble her life permits the author, indeed, to term her an "abdominal woman." She complains of vague aches and pains of various sorts and in various places, but especially in the right iliac fossa. The reader will note that the patient is described as "she," for such cases are rather rare in men, and it has been Hutchison's experience that when the condition does occur in a man he is either a Jewish neurotic or a physician. These patients complain of "a raw feeling inside," or of a "dragging" pain. They are usually constipated, and have feelings of general weakness and torpor; headaches and insomnia occur, and frequent colds. In order to demonstrate the process by which the condition is developed, Dr. Hutchison cites several cases in his experience, and the reader will readily concur with him that "the road to chronic abdominalism is paved with operations." The first operation is usually the removal of the appendix, followed by slight improvement; and it is characteristic of such patients that almost any new treatment, especially a surgical operation, produces benefit for a time. When the symptoms return, they are credited to "adhesions," and another operation is performed to remedy this condition. "Warming to his work," says Hutchison, "the surgeon undertakes bolder and yet bolder proceedings: a complete hysterectomy is probably carried out or some short-circuiting device, or the colon is fixed, or even partially removed; but still the patient is not cured of the pains, whilst the state of the nervous system has steadily worsened." This consideration leads Dr. Hutchison to the interesting observation that Sir Clifford Allbutt, in his Goulstonian lecture, delivered in 1884, described the "abdominal woman" of that day in terms which might well be applied to the type that prevails today. The difference was merely that in 1884 the gynecologist was the operator and the uterus the organ incriminated, whereas today it is the surgeon who must bear the responsibility, and the appendix, teeth or tonsils that are the criminals accused. Said Sir Clifford Allbutt:

> She is entangled in the net of the gynecologist, who finds her uterus, like her nose, is a little on one side, or again, like that organ, is running a little, or it is as flabby as her biceps, so that the unhappy viscus is impaled upon a stem, or perched upon a prop, or is painted with carbolic acid every week in the year except during the long vacation when the gynecol-

ogist is grouse-shooting or salmon-catching, or leading the fashion in the Upper Engadine. Her mind, thus fastened to a more or less nasty mystery, becomes newly apprehensive and physically introspective, and the morbid chains are riveted more strongly than ever. Arraign the uterus and you fix in the woman the arrow of hypochondria, it may be for life.

With a vitriolic pen Dr. Hutchison attacks the treatment accorded to these "abdominal patients." It would appear that our English colleagues have also met the problem of the group diagnostic clinic, and it is amusing to read this picture of a typical procedure:

The patient has been thoroughly "investigated"—possibly at a "team-work" clinic; she has certainly been provided with an x-ray picture-book of her entire alimentary canal; her teeth have been extracted and her tonsils excised; her motions have been analyzed by a biochemist and her mind by a psycho-analyst; she has had several rest cures; she has been given prolonged courses of vaccines, of intramuscular tonic injections, of intestinal antiseptics and of endocrines; she has been fed on sour milk or minced beef or raw vegetables; she has experienced various forms of massage, has been subjected to the latest kinds of electrical current, and has had her colon repeatedly washed out at Plombières or Harrogate.

Strangely, the sympathy of Dr. Hutchison is not so much for the patient or even for her family, but particularly for the physician who must give such patients not only the ordinary consideration granted to those who wish advice but even more than the usual attention. Such patients demand sympathy and understanding, and yet the demand is so constant, so incessant, that Dr. Hutchison calls the "abdominal woman" a "veritable vampire, sucking the vitality of all who come near her. . . . Half an hour with her," he says, "reduces her doctor to the consistence of a piece of chewed string, and is more exhausting to him than all of the rest of his daily visitors put together; for she has emotions, discovers fresh symptoms, will not admit any improvement in her condition, and has an objection to everything that is proposed."

What is to be the physician's course in the care of such patients? No doubt, continued study will reveal that the chief source of attack must be from the psychologic side and from the standpoint of the relation of the vegetative nervous system to the emotions. There is great hope when the patients are seen early, for at that period it is possible to halt the gradual sliding into a slough of despond, perhaps to build up the patient's morale as well as her physical system, and to call a halt on the innumerable operations which may tend to augment complaints rather than to inhibit them. From the mental side, all sorts of remedies have been attempted. The war aided a few by giving them a dominating interest apart from themselves. Feminism, with the necessity for suffrage campaigns, provided another interest. "Marriage, and the advent of a child, even an adopted one, are often potent remedies," "and the fancy religions, Christian science, Theosophy, Spiritualism, etc., may be ways of escape." On the whole, Dr. Hutchison has a feeling of despair as regards the treatment of more advanced cases of this condition, and he is inclined to think that the less one has to do with them the better, both for one's peace of mind and one's professional reputation. "It is a bleak prospect," he concludes.

The patients described by Dr. Hutchison are a prolific source of income and nourishment to the cultists, who derive their chief support from chronic invalidism. There is a vast body of patients who are not seriously ill, who are hopeful and who seem for a time to improve under any new treatment. They pass from physician to physician, from cultist to cultist, from chiropractor to osteopath, to Abramsite, to Eddyite; and they return ever, in the words of Omar Khayyam, by the same door wherein they went. The service which scientific medicine may render them is education in health and a knowledge of their disease, that they may not be so readily the subjects of exploitation by unprincipled cultists.

Current Comment

COD LIVER OIL IN TUBERCULOSIS

There was a time, in the not far distant past, when forced feeding was regarded as an essential to good results in the therapy of tuberculosis. Krause [1] has sanely remarked, however, that the days of pride in fat, flabby, overfed patients have passed and have been replaced by a policy of attaining a gradual improvement in nutrition to a normal weight and a firm, healthy body tone. Nevertheless, recent studies in nutrition have placed in a new light some of the food materials that have long had an empiric vogue for specific efficiency in certain disorders. The reputed potency of cod liver oil in chronic wasting diseases is a case in point. In rickets its unique remedial potency has been assigned of late to some chemical factor, perhaps a typical vitamin not represented by the fats proper which constitute the bulk of the product. Does it have a comparatively beneficial effect on the progress of tuberculosis? The question has been approached experimentally in the Hygienic Laboratory of the U. S. Public Health Service at Washington by Smith.[2] Although cod liver oil appears to have a definite, though slight, effect on the nontuberculous guinea-pig, especially when the latter is maintained on a diet deficient in vitamin A, the results of the experiments are negative so far as concerns the action of cod liver oil on tuberculosis of the guinea-pig. This substance has not shown itself definitely beneficial, as regards weight curve, length of life or extent of the disease process, in experimentally infected guinea-pigs kept on a normal or deficient diet. There has been no evidence of deposition of calcium in tuberculosis of the guinea-pig when this element was administered along with the cod liver oil. These investigations are, perhaps, far from sufficient to lead to a complete negation of beneficial

1. Krause, A.: Tuberculosis, in Nelson's Loose Leaf Living Medicine **1**: 380.

2. Smith, M. I.: Studies on Nutrition in Experimental Tuberculosis, I, The Effect of the Fat-Soluble A Vitamine on Tuberculosis of the Guinea Pig, with Especial Reference to the Value of Cod Liver Oil in Experimental Tuberculosis, Am. Rev. Tuberc. **7**: 33 (March) 1923.

therapeutic possibilities from the agents under consideration; yet they warn against unwarranted optimism, and justify critical investigation whenever calcium or cod liver oil is lauded as a specific in tuberculosis.

PASTEUR AND THE CHILDREN

In view of the intimate relationship between the discoveries of Louis Pasteur and the prevention of infant disease and the protection of child health, it is interesting to have attention called, as Dr. John Foote has recently done in "Mother and Child," to the special philosophy of Pasteur as related to children, and to the manner in which France has recognized this aspect of the great investigator's life. France has perpetuated this relationship in virtually all of the monuments raised to its greatest citizen. At Dôle, where Pasteur spent his boyhood, a mother and two sick children symbolize grateful humanity. At Arbois nearby, where Pasteur passed his boyhood, is a bronze statue looking up the street on which Pasteur walked on his way to school. At Lille, Pasteur stands on a pedestal, holding a flask, while below a peasant woman holds up to him a child in token of her gratitude. And before the Pasteur Institute stands the well known figure of the courageous shepherd boy holding off a mad dog. In the life of Pasteur, as told by Vallery-Radot, are the beautiful letters which he wrote to his children, emphasizing his humane regard for child life. Dr. Foote wisely suggests that the story of Pasteur and his work be told to every child, for in this manner may we hope for a future generation firm in its support of true science and ready to assist in the prevention of disease.

THE GOVERNMENT WOULD BUY BRAINS

At various times THE JOURNAL has called attention to the lack of judgment used in the United States Patent Office in the issuance of patents of a medical or quasimedical character. The patent that was issued for the special tapeworm trap, that which was granted for "Perkins' Metallic Tractors," the one given to Quack Sanche for his fraudulent "Oxydonor," the one, called attention to a few months ago, on a preposterous combination as an alleged cure for consumption—these and many other cases could be cited showing the lack of brains in the Patent Office. One of the reasons for this lack becomes apparent. Within the last few days the United States Cicil Service Commission has sent out a notice advising the public that on June 20 there will be held an open competitive examination for assistant examiner, Patent Office. The applicants for this position will be examined on the following subjects: physics, mechanical drawing, technics, mathematics and language, with an optional subject to be chosen from the list of chemical engineering, civil engineering, electrical engineering, electrochemistry, general chemistry and mechanical engineering. The applicant must know enough mathematics to be able to answer questions in algebra, plane and solid geometry, plane trigonometry, analytics and differential calculus. He must know enough about mechanical drawing so that when given photolithographic copies of drawings of pieces of machinery he can describe the views, the construction and the operation of the machine represented in such technical terms as would be used by a skilled draftsman in preparing an application for a patent. Further, he must have a knowledge of the grammar and idiomatic construction of both French and German. In technics he must show familiarity with the applied sciences in the field of mechanics, mechanic arts, industrial arts and processes and applied chemistry, and should have "a broad, general knowledge of these subjects." If he passes the examinations in these various subjects he will get the job of assistant examiner at the Patent Office, and be paid the magnificent salary of $1,500 a year (less than $29 a week), with a bonus of about $4.50 a week additional if his services are satisfactory. Is it any wonder that the Patent Office fails to attract the brains of the nation? Some things, however, it seems, the examiners in the Patent Office do not have to know. There is nothing to indicate that even an elementary knowledge of the medical or biologic sciences is necessary—which may explain the weird conception that the Patent Office exhibits of what constitutes "new and useful" inventions in the medical sciences.

THE MILKMAN CARRIER

Within the last year THE JOURNAL has published reports of two epidemics due to milkmen who were carriers. Fifty-two persons acquired diphtheria in Austin, Texas,[1] from milk sold by a dairy, one of whose employees had a chronic diphtheric ulcer of the nose. None of these died, because antitoxin was promptly administered in effective doses. In Portland, Ore., 487 persons recently became ill with septic sore throat due to milk from a dairy in which an employee carried hemolytic streptococci in his throat. Twenty-two of these patients died, because there is no effective preventive measure for this type of infection.[2] These epidemics were not the first of the kind to be reported; they probably will not be the last. It seems, however, that sufficient evidence in the way of sickness and death has accrued to show the importance of the milkman and to indicate that he of all persons on whom the public depends for food should be the cleanest and the healthiest. A simple method of control would be to require him to undergo a physical examination every two or three weeks, or at least as often as once a month. Legislation to this end would be unnecessary if those who supply us with milk realized their responsibility in the matter and adopted this or some such method of eliminating carriers.

1. Graham, Malcolm; and Golaz, E. H.: Milk-Borne Diphtheria, J. A. M. A. **79**: 1300 (Oct. 14) 1922.
2. Benson, R. L., and Sears, H. J.: A Milk-Borne Epidemic of Septic Sore Throat in Portland, Oregon, J. A. M. A. **80**: 1608 (June 2) 1923.

Control of Venereal Diseases.—The diagnosis and treatment of syphilis and gonorrhea is a medical problem, but the control of the spread of these diseases is a public health problem demanding the cooperation of health officers, nurses, social workers, and all other persons and agencies interested in the health of the public, as well as the physicians. In order to cooperate intelligently with the medical profession, the lay social worker must understand the principles of diagnosis and treatment of syphilis and gonorrhea.—A. J. Casselman, *Public Health Rep.* **36**:851 (April 22) 1921.

Association News

THE SAN FRANCISCO SESSION

Program on Cancer

A public meeting will be held in Polk Hall, Civic Auditorium, San Francisco, on Sunday evening, June 24, at which the subject of cancer will be discussed. Dr. T. C. Edwards, president of the Medical Society of the State of California, will preside over this meeting. Dr. Ray Lyman Wilbur, President-Elect of the American Medical Association, Dr. T. W. Huntington and Dr. J. E. Rush will be the speakers of the occasion.

Handbooks Mailed to Delegates

The Handbook of the House of Delegates, containing the reports of officers and councils of the American Medical Association, was mailed on June 8 to all delegates whose names and addresses are known. It is hoped that before the meeting in San Francisco all delegates will study carefully the reports printed in the Handbook.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Milk Grading Ordinance Popular.—The state health department recently sent out 4,000 questionnaires explaining the proposed milk grading ordinance for Montgomery and requesting a post card vote. Of 1,200 answers received 99 per cent. favored the ordinance. Montgomery dairymen have organized the Montgomery County Milk Grading Association to cooperate with the state and city health departments in their effort to reduce infant mortality.

COLORADO

Personal.—Dr. Aller G. Ellis, Colorado Springs, will leave August 1, for Bangkok, Siam, to spend five years as visiting professor of pathology in the medical department of Chulalongkorn University, under the auspices of the Rockefeller Foundation which is aiding in the reorganization of the school.——Dr. George William Carter, Boulder, celebrated his ninety-sixth birthday, April 18. Dr. Carter is a graduate of the University of Michigan Medical School, Ann Arbor, 1853.——Dr. Florence R. Sabin, professor of histology, Johns Hopkins Medical School, Baltimore, gave an illustrated lecture before the Medical Society of the City and County of Denver, June 14, on "Some Results of the Newer Methods of Studying the Living Blood."

Colorado Congress of Ophthalmology and Otolaryngology.—The congress will be held in Denver, July 30-31. An intensive graduate course in ophthalmology and otolaryngology will be given for two weeks prior to the congress, the instructors to be from different parts of the United States. Drs. Edgar S. Thomson, New York; Harry W. Woodruff, Joliet, Ill.; Wolff Freudenthal, New York; Harold M. Hays, New York; Warren B. Davis, Philadelphia; Isaac H. Jones, Los Angeles; Henry J. Prentiss, Iowa City; Lee Cohen, Baltimore, and Harry S. Gradle, Chicago, are scheduled to deliver addresses. Registration for the course will be limited; those interested should apply to Dr. Edward Jackson, Imperial Building, Denver.

CONNECTICUT

Illegal Practitioners Fined.—The medical examining board reports that Sante Capacelatro and Ettore Capacelatro of New Haven were recently fined $200 for practicing medicine without a license. Both men are said to have been unsuccessful in repeated attempts to pass the examinations for licensure in Connecticut, and it is thought that they may eventually try the examinations of some other state board.

DELAWARE

Wilmington's Municipal Laboratory.—A city laboratory was opened, June 1, which will be available to the physicians of Wilmington for all kinds of bacteriologic work. In connection with the laboratory there will be a clinic for the examination and treatment of suspected cases of venereal disease in charge of Dr. John B. Rutherford. This clinic and laboratory will also take care of the juvenile court work.

DISTRICT OF COLUMBIA

Fifty Years of Service.—Commemoration exercises in honor of the fifty years of service of Dr. Daniel Smith Lamb in Howard University School of Medicine, Washington, were held in the Rankin Memorial Chapel, June 7-8. The honorary degree of Doctor of Science was conferred on Dr. Lamb, who is professor of anatomy at the university. Drs. Kober, Williston, Lewis, Terry and Morton addressed the assemblage.

FLORIDA

Memorial Tablet to Physicians.—The Marion County Medical Society formally dedicated a tablet at the Marion County Hospital, Ocala, May 25, erected in memory of five members of the society, who had died: Drs. S. Potts Eagleton, W. H. Powers, John M. Thompson, William V. Newson and Erastus Van Hood. The president of the county medical society, Dr. L. H. von Engelken, presented the tablet to the hospital.

Sheppard-Towner Bill Rejected.—The senate, May 25, killed Senator Butler's bill which would have brought Florida within the provisions of the Sheppard-Towner Law. The state department of health several months ago took up the maternity and child welfare work under an initial appropriation made available by the congressional act, to be used until such time as the various state legislatures could either accept or reject the provisions of the Sheppard-Towner Law.

GEORGIA

Fund for Outdoor Clinic.—An initial contribution of $21,000 has been made by Jacob Alsas of Atlanta, to the Grady Hospital, for an outdoor clinic. The institution, which will be erected at a cost of $50,000, will adjoin the present structure.

IDAHO

Hospital Discontinued.—The Gooding Deaconess Hospital, affiliated with the Methodist Church, at Gooding, has been discontinued.

ILLINOIS

Chicago

League for the Hard of Hearing.—The fourth annual meeting and banquet of the Chicago League for the Hard of Hearing will be held at the Congress Hotel, June 18, under the presidency of Mrs. A. L. Drum. Dr. James Kerr Love, Glasgow, will be the principal speaker. He will discuss "The Difference Between the Hard of Hearing and the Deaf Child." Dr. Max A. Goldstein, St. Louis, and Dr. Joseph C. Beck, Chicago, will also be among the speakers. This organization is one of the twenty-seven branches of the American Federation of Organizations for the Hard of Hearing, Washington, D. C.

INDIANA

Heart Disease Clinic Established.—The board of public health has established an outpatient clinic in Indianapolis, for the treatment of persons having heart disease who are unable to engage a physician. The clinic will be held every Monday morning. Drs. Charles J. McIntyre, Robert M. Moore, Edgar F. Kiser and James A. Wynn have been selected as examiners by the health board. Dr. Herman G. Morgan, city health commissioner, in announcing the establishment of the clinic pointed out that there were 720 deaths from heart disease in Indianapolis in 1922, 330 from cancer, and 292 from tuberculosis.

Hospital News.—Dr. Simon P. Scherer bought the New Highland Mineral Springs Sanatorium at Martinsville, May 26. A clinical laboratory and a diet kitchen will be added at once. Dr. Scherer was formerly professor of gastrointestinal diseases in the Central College of Physicians and Surgeons and the Indiana University School of Medicine, Indianapolis, and is associate editor of the *Indianapolis Medical Journal*.——The three new buildings of the Sunnyside Sanatorium, near Oaklandon, were dedicated, May 13. The institution, of which Dr. Harold S. Hatch is superintendent, has a total capacity of 200.

KANSAS

State Board of Health Involved in Political Dispute.—Following the resignation, on request of Governor Davis, of Dr. S. J. Crumbine, secretary of the Kansas State Board of Health, the newly appointed board, meeting in Topeka, June 7, elected Dr. W. G. Patton, Fort Scott, president; Dr. J. A. Connor, Waverly, vice president, and Dr. L. Matassarin, Wichita, secretary, for the ensuing year. The former Republican board also met and elected Dr. N. O. Neiburg, Wichita, secretary, to succeed Dr. Crumbine. It contends that the governor cannot dismiss a board except for cause. According to newspaper reports, the board of health offices have been closed by order of the state executive council and will remain closed until a court decision is rendered as to who constitute the board.

MARYLAND

Tuberculosis Clinic for Children.—The Baltimore City Health Department, in addition to the five tuberculosis dispensaries already established, has opened one entirely devoted to the care of children up to the age of 15. This clinic is located in West Baltimore and is in charge of a physician especially interested in children's diseases. The clinic is open on Tuesday and Friday of each week.

Additions to Orthopedic Clinic.—The Maryland University has recently opened special clinics which will be held on Tuesdays from 12 to 2 p. m. for arthritis, and on Saturdays from 12 to 2 p. m. for scoliosis and posture, in connection with the orthopedic clinic of the department of surgery. The staff consists of Drs. Robert Tunstall Taylor, Compton Riely, John Albert Key, William H. Daniels and Howard L. Wheeler.

Personal.—Dr. William Walter Cort, associate professor of helminthology in the School of Hygiene and Public Health of the Johns Hopkins University, has sailed from San Francisco for Peking, where he will serve as exchange professor in parasitology in the Peking Union Medical College during the next academic year. Dr. N. R. Stoll, graduate student in the School of Hygiene and a research fellow under appointment by the Rockefeller Foundation, has accompanied Dr. Cort.——Dr. Chester P. Woodward has introduced an ordinance in the Baltimore City Council authorizing the West Baltimore Medical Association to establish a general hospital at the old Hebrew Orphan Asylum. The institution will be known as the West Baltimore General Hospital. A drive for $200,000 to equip the building will be held in September. The Elks have already pledged $50,000 to establish a ward for the order.——Dr. Adolf Meyer, psychiatrist-in-chief, of the Johns Hopkins Hospital, has gone to Europe to visit his old home in Zurich, Switzerland, and to inspect psychiatric clinics in England, France and other European countries.——Dr. Thomas P. Sprunt and Dr. Frank S. Lynn have been appointed by Col. Claude B. Sweezey, warden of the state penal institutions, to be medical consultants for the Maryland Penitentiary and the Maryland House of Correction. The two physicians will visit each institution weekly.

MASSACHUSETTS

Violations of the Harrison Narcotic Law.—According to information recently received two practicing physicians of Boston, Dr. Ensang W. Chang, a Chinese, and Dr. Benjamin E. Robinson, a negro, were brought before the U. S. District Court on a charge of violating the Harrison Narcotic Law. A plea of nolo was accepted. Dr. Chang paid $200 in lieu of costs and Dr. Robinson's case was continued.

Personal.—Dr. Mark Hopkins Ward, Boston, has been appointed supervisor of the American Board of Foreign Missions, with headquarters in Boston. His work will be to conserve the health of the board's missionaries, at home and abroad. Dr. Ward served with the American Red Cross at Constantinople until the United States entered the war, when he became a captain in the Medical Corps of the U. S. Army.

MICHIGAN

Chiropractors Lose Damage Suit.—According to reports, Joseph Synowski, infant plaintiff in the $50,000 damage suit against James and Margaret Connell, chiropractors of Jackson, for alleged malpractice, May 25, was awarded judgment for $7,000 in the circuit court. The suit was the outgrowth of fifty chiropractic treatments given the child about a year ago.

Annual Clinic Week at Detroit.—The annual clinic week of the Detroit College of Medicine and Surgery was held at Detroit hospitals, June 11-15. Among the visiting physicians who conducted clinics were: J. Bentley Squier, Jr., New York; Arthur C. Morgan, Philadelphia; Charles L. Scudder, Boston; Jennings C. Litzenberg, Minneapolis; W. Wayne Babcock, Philadelphia, and Emil Novak, Baltimore.

Society News.—At a special meeting of the Wayne County Medical Society, June 11, Dr. Arthur C. Morgan, Philadelphia, gave an address on "My Views of Tuberculosis."——Dr. George Van Amber Brown delivered the oration on surgery before the Illinois State Medical Society at its annual meeting in Decatur, May 15-17. His subject was "Practical Points in Embryology and Their Relation to Kidney Surgery."

Personal.—Dr. George W. Palm, Detroit, was shot and wounded, May 10, following a false telephone call to attend a patient.——Dr. Augustus W. Ives, professor of neurology and psychiatry, Detroit College of Medicine, has been appointed superintendent of the state public school, Coldwater, to succeed Dr. J. B. Montgomery, who has filled the position for twenty-five years.——Dr. Max Ballin, Detroit, spoke on "Spinal Cord Tumors" before the section on surgery of the Academy of Medicine of Toledo and Lucas County, at Toledo, May 25.——Dr. William T. Dodge, Big Rapids, president of the Michigan State Medical Society, gave an address on "The Relation of the Profession to the Public" before the Kent County Medical Society at Grand Rapids, May 9.

MINNESOTA

Personal.—Dr. Nels Westby was recently reelected mayor of Madison.——Drs. Kenelm H. Digby, dean and professor of medicine, Hongkong (China) Medical College, and Oskar Frankl, professor of gynecology, University of Vienna, gave Mayo Foundation lectures, May 10, before the staff and fellows of the Mayo Foundation, Rochester. Dr. Digby's subject was "The Functions of the Tonsils and Appendix," and Dr. Frankl spoke on "The Relation of Cancer of the Stomach to the Female Sexual Organs."——Dr. John C. Staley has been named as successor to Dr. Arthur B. Ancker (who died recently) as superintendent of the St. Paul City and County Hospital, which has been renamed the Ancker Memorial Hospital.——Dr. Nels G. Mortensen, St. Paul, has been appointed by the governor as a member of the state board of health.

MISSISSIPPI

Hospital Destroyed.—Fire destroyed the State Penitentiary Hospital, Parchman, May 27. The patients were removed without injury. The loss was estimated at $68,000. A new building will be erected immediately.

MISSOURI

Personal.—Dr. C. R. Harrington, lecturer in pathologic chemistry, University College, London, was the guest of the department of biochemistry, Washington University School of Medicine, St. Louis, during May.——The Saline County Medical Society recently gave a banquet to Dr. John R. Hall, Marshall, in commemoration of the completion of his fiftieth year of practice in Saline County. Dr. David F. Manning was toastmaster.

NEW HAMPSHIRE

Health Week in Manchester.—A very successful health week was conducted in Manchester, May 21-27. Health Sunday was celebrated in all the churches, May 20. Tuberculosis Day, Merchants' Day, Mothers' Day, Clean-Up Day and Inspection Day were other attractions. An open forum meeting was held at which Dr. Timothy Leary, Tufts Medical College, Boston, gave an address. Dr. Howard A. Streeter was in charge of the week's activities.

NEW JERSEY

Chiropodists Fined.—The state board of medical examiners reports that L. J. Weiner, Red Bank, who advertised as a "Dr.," and Mrs. Mary Cox, Millville, each paid the penalty of $200 for practicing chiropody without a license.

NEW MEXICO

Health Officers Appointed.—Dr. Frank E. Mera has been appointed as health officer of Sante Fe County, to succeed Dr. Douglas Brown, and Dr. Henry J. Abernathy, Hot Springs, fills the vacancy made by the resignation of Dr. James A. Steel, Hillsboro, as health officer of Sierra County.

NEW YORK

Aged Physician Sentenced.—According to reports, Dr. Samuel S. Kennedy, Buffalo, was sentenced, June 1, to serve from two to five years in prison for shooting his office girl, Virginia Wardinsky, in August, 1921. Dr. Kennedy is 68 years old.

Measles Prevalent This Year.—According to figures recently made public by Dr. Edward S. Godfrey, Jr., director of the division of communicable diseases of the state health department, during the first four months of this year, 16,383 cases of measles were reported in the state outside of New York City, compared with 6,238 cases for the corresponding months of last year. The average for that period for the past five years has been 14,158.

"Doctor" Arrested in Cocain Raid. — Seventy thousand tubes of cocain were seized at the Associated Pharmacy Company, Brooklyn, May 31, according to official reports. Several men were arrested, including a man who gave the name of Dr. John Harrison, charged with violating the Harrison Narcotic Law. Assistant U. S. District Attorney Burke stated that the government considered the capture one of the most important in years, as business was being done on a large scale throughout the United States.

New York City

Indian Medical Equipment Exhibited.—The equipment used by the medicine man of the Navajo Indians in the "healing" ceremony has just been added to other collections from that tribe at the American Museum of Natural History. It is the gift of the widow of the late Dr. John C. Graffin of New York, who died in Shiprock, N. M., while government physician to the Navajo Indians.

City Ready to Treat Cancer.—Bird S. Coler, commissioner of public welfare, announces that by June 15 the city will be giving radium treatment for cancer. Last year 5,495 persons died in the city from cancer. Approximately 200 beds have been set apart for the treatment of cancer in the City Hospital, while a clinic will be established in the dispensary of Fifty-Ninth Street near Third Avenue. Dr. Max Levine of Montefiore Hospital will serve gratuitously as the head of the city's clinic.

Municipal Educational Exhibit. — The Municipal Educational Exposition, commemorating the twenty-fifth anniversary of the formation of Greater New York City will be kept open for four weeks from May 28, at the Grand Central Palace. The department of health has a comprehensive exhibit showing its method of keeping records, the work of various bureaus, models of the institutions which it controls, and exhibits demonstrating phases of public health education, and its laboratory work. It is the most complete health exhibit which the department has ever opened.

Roentgenologists Must Be Licensed.—The recent amendment to the Sanitary Code requiring that all those using roentgen-ray machines be licensed by the department of health seems to have been misunderstood. According to a statement by the health department, certain physicians and dentists thought this regulation applies only to commercial and other laboratories offering facilities to the general public. To make the matter clear the editor of the *Weekly Bulletin* of the department of health asked the opinion of the corporation counsel. He states that it is evident this section of the Sanitary Code applies with equal force to individual physicians and dentists who do not hold out or advertise to the public that they maintain or conduct a roentgen-ray laboratory. Therefore all physicians and dentists using roentgen-ray machines are required to hold the board of health license permitting the use of such apparatus.

Hospital News.—Governor Smith has signed a bill recently passed by the legislature which provides "home rule" for the hospitals of New York City in the matter of reports and records. This bill amends the state charities law by leaving to the state board of charities the determination of the annual period for which reports shall be rendered by institutions subject to its visitation.——The Hospital Service of the New York Tuberculosis Association has been organized to furnish recreational diversions among tuberculous patients, and to assist in their health education. The extension of occupational therapy, the gathering of statistical information, and the arrangement of technical demonstrations for the medical staffs and of special lectures for the nurses, will also be arranged by this new auxiliary service.——The trustees of the Reconstruction Hospital have indefinitely postponed the contemplated erection of an eleven-story building to cost $1,500,000, work on the foundations of which has already been started.——The 100 bed Jewish War Memorial Hospital at Dyckman Street and River Road was formally dedicated, May 27. Plans are made for additional wings to increase the capacity of the institution to a 400 bed capacity ultimately.

NORTH DAKOTA

Hospital Reopened. — The Lidgerwood Hospital, Lidgerwood, which has been closed for about a year, has been reopened to the public with Dr. Ernest G. Sasse as superintending physician.

State Medical Meeting.—At the annual meeting of the North Dakota State Medical Association at Grand Forks, May 31-June 1, the following officers were elected for 1923-1924: president, Dr. James Grassick, Grand Forks; president elect, Dr. William C. Fawcett, Starkweather; vice presidents, Drs. John H. Rindlaub, Fargo, and Hugo O. Altnow, Mandan; secretary, Dr. Hezekiah J. Rowe, Minneapolis, Minn., and treasurer, Dr. William W. Wood, Jamestown.

OHIO

Society News.—At the annual meeting of the Cincinnati Academy of Medicine, May 28, Dr. John C. Oliver was elected president for the ensuing year; Dr. Alexander G. Drury, vice president, and Dr. F. Merrick McCarthy, secretary.

Vital Statistics Bureau Issues Warning. — Dr. E. J. Schwartz, chief of the state division of vital statistics has issued a warning to all physicians of the state that they must register all births within ten days. Every mother is requested to insist on a certificate from the health commissioner showing the birth has been recorded.

Chiropractors Fined and Imprisoned.—According to information received May 25, C. J. Mills and R. F. Hahn, both of Napoleon, and L. M. Nesmith, proprietor of the Nesmith Chiropractic College, Dashler, were fined $150 each by Judge Bretz on charges of practicing medicine without a license. Mills and Hahn refused to pay and will serve a jail sentence.——O. L. Knechily and his wife, Hazel, and D. D. Owens, chiropractors of Portsmouth, were sentenced to serve terms in the county jail in default of paying fines of $50 each, according to reports, and Dr. P. D. Parks, Portsmouth, was fined $50, May 28.——Seven Akron chiropractors, G. H. Bellinger, L. D. Wheeler, W. J. Wenger, W. A. Ball, E. G. Whitzel, Fred F. Raulfs and D. A. Brown, were sentenced to 184 days each in the county jail, in default of paying fines of $100 each, for practicing medicine without a license.

PENNSYLVANIA

Philadelphia

Nathan Lewis Hatfield Lecture.—Dr. Frederick G. Banting, Toronto, Canada, delivered the fifth Nathan Lewis Hatfield lecture at the College of Physicians, Philadelphia, June 6, on "The Use of Insulin in the Treatment of Diabetes Mellitus."

Personal.—Dr. James A. Irwin sailed for France, May 26, and will return to Philadelphia in October.——Dr. James H. Mason Knox, Jr., Baltimore, chief of the bureau of child hygiene of the state of Maryland, spoke on "Child Hygiene Work in Central Europe," at a meeting of the Philadelphia Pediatric Society and the Child Hygiene Association of the Children's Hospital in Philadelphia, recently.

SOUTH DAKOTA

Public Health Drive Launched.—During the forty-second annual convention of the state medical association, the South Dakota Society for Community Health and Public Instruction was organized for the purpose of promoting public health and giving information on matters of health preservation. Dr. Robert L. Murdy, Aberdeen, was elected chairman and Dr. Nelson Hopkins, Arlington, secretary-treasurer. The society will launch a campaign to have school children, whose parents cannot afford the expense, given medical and surgical attention.

South Dakota State Medical Association. — At the forty-second annual meeting of the association in Watertown, May 22-24, the following officers were elected for 1923-1924: president, Dr. Francis E. Clough, Lead; vice presidents, Drs. Robert L. Murdy, Aberdeen, William R. Ball, Mitchell, and Theodore F. Riggs, Pierre, and secretary-treasurer, Dr. Robert D. Alway, Aberdeen (reelected). One of the features of the convention was the unveiling of a portrait of the late Dr. Frederick A. Spafford, formerly of Flandreau. The picture was presented to the state and will be hung in the capitol building at Pierre.

UTAH

Utah State Medical Association.—The twenty-ninth annual meeting of the association will be held at the University of Utah, Salt Lake City, June 20-22. Among the visiting physicians who will give addresses are: John F. Erdmann, New York; Henry S. Plummer, Rochester, Minn.; Vilray P. Blair, St. Louis, and Albert J. Ochsner, Chicago.

Banquet for Dean Snow.—A farewell banquet was tendered Dr. Perry G. Snow, retiring dean of the University of Utah School of Medicine, Salt Lake City, by the students of the medical association of the University, May 24. Prof. L. L. Daines, Ph.D., acted as toastmaster. Dr. Snow, who will be succeeded as dean by Dr. Ralph O. Porter, Logan, will make a tour of the eastern medical schools.

WISCONSIN

Society News.—At a meeting of the Milwaukee Academy of Medicine, June 12, Dr. Victor C. Vaughan, Chicago, chairman of the National Health Council, gave an address on "The Future of Medicine." S. A. Barrett, director of the Milwaukee Museum, spoke on "Some Medical Practices of the Indians." This was the last meeting of the academy until October 9.

Sanitation at Summer Resorts.—The state department of health has sent letters to all summer resort owners, advising, that, because of remoteness from municipal sanitary facilities, resorts are health hazards for tourists. Methods for thoroughly cleaning and repairing all equipment on these premises were outlined. Owners of resorts are advised to send samples of water to the local health officer for analysis by the state laboratory. Persons having any communicable disease are not to be employed at summer resorts especially those who have had typhoid fever within three years, until it has been definitely determined that they are not typhoid carriers. This is a mandatory provision.

GENERAL

American Surgical Association.—At the annual meeting of the American Surgical Association in Rochester, Minn., May 31-June 2, Dr. George W. Crile, Cleveland, was elected president to succeed Dr. Lewis L. McArthur, Chicago.

American Proposals on Opium Win.—Following acceptance of the American plan to curb the traffic in opium at the meeting of the League of Nations' opium commission in Geneva, it is said the next stage in the campaign of the American government to end the narcotics menace will occur in the council and in the assembly of the league. Acceptance of the American proposals, after a bitter fight by India, who insisted that the "semi-medical usage" of opium was necessary, is regarded in official circles as a long step forward.

Southern Baptists Hospital Convention.—At the recent convention in Kansas City, Mo., it was announced that the Southern Baptists now have twenty-one hospitals with a bed capacity of 2,659. During the last year nearly 48,000 patients were treated in these institutions. The value of hospital property now in operation is $8,300,268. New institutions are planned and others are under construction, which will raise the number to thirty-two hospitals. Five of the hospitals carry on research work.

Society News.—The semi-annual meeting of the Sioux Valley Eye and Ear Academy will be held in Omaha, July 9. ——The Tri-State Hospital Association of Minnesota, North and South Dakota, Wisconsin and Iowa, met in Minneapolis, May 17-18.——A dinner conference for cancer workers will be given at the Fairmont Hotel, San Francisco, June 28, under the auspices of the American Society for the Control of Cancer, following the open forum on cancer to be held, June 24, under the joint auspices of the American Medical Association and the California State Medical Society. Dr. A. R. Kilgore is in charge of the dinner conference arrangements.

Fund to Aid German-Austrian Scientists. — Dr. Graham Lusk, treasurer, reports that the aggregate receipts of the German-Austrian Fund amounted to $2,660, subscribed to by eighty-eight American scientists in sums ranging from $5 to $450. The money was distributed among thirty-three German-Austrian medical laboratories which were designated by the donors in sums ranging between $25 and $300. The account has been closed and has been audited by Dr. Rufus Cole. The following letter is a typical response: "Please accept my most grateful thanks for your most generous gift. Almost daily I think with gratitude of the help which my department has received from America. I am fully aware of the fact that, but for this help, it would have been impossible to continue our classes and scientific investigations."

Bequests and Donations. — The following bequests and donations have recently been announced:

University of Michigan, Ann Arbor, Mich., for the first unit of the University Hospital, $650,000, by Mayor Couzens of Detroit.

Lewis A. Mason Memorial Hospital, West Chester, Pa., $600,000, by Pierre S. DuPont of Wilmington, Del.

Hospital for Joint Diseases, New York, $200,000, by the directors.

Chicago Federation of Aged and Adult Charities, $76,025, the result of a tag day.

Overall Memorial Hospital, Coleman, Texas, $75,000, for the erection of the institution by Mrs. M. Tye Overall.

St. Francis Hospital, Waterloo, Iowa, $36,800, from the estate of John Corton of Waterloo.

Homeopathic Hospital, Reading, Pa., $15,000 by William H. Luden, and $5,000 each, by S. D. Bausher and C. E. Leippe.

Nicholasville, Ky., for a hospital building, $10,000, and a site by Melancthon Young.

Jewish Hospital Association and the Jefferson Medical College of Philadelphia, each, $10,000; Federation of Jewish Charities, $2,500, and the Pennsylvania Hospital, $1,000, by the will of Judge Mayer Sulzberger.

Johns Hopkins Medical School, Baltimore, for the department of syphilis, $9,000, by the Interdepartmental Social Hygiene Board, and for the cardiographic laboratory, $5,000, by Mrs. William Bingham of Cleveland.

Christ Hospital, Jersey City, N. J., $5,000; New York University, $1,000, by the late Dr. Henry S. Drayton of Jersey City.

Jefferson County Tuberculosis Sanatorium, Birmingham, Ala., $2,500 each by Major E. M. Tutwiler and Richard W. Massey, and $1,000 each, by Leo K. Steiner and W. H. Hassinger.

Beth Israel Hospital, Montefiore Hospital, and the Mount Sinai Hospital, New York, $500 each by the will of Charles Kohlman.

St. Louis Medical Society, $250, to defray expenses for care of indigent crippled children of the city. from proceeds of the Health Show, by Dr. Max C. Starfloff

Hospital Commission of Winston-Salem, N. C., 100 milligrams of radium by Mr. and Mrs. Bowman Gray of that city.

CANADA

Summer School Clinics.—The fourth annual meeting of the summer school of the Vancouver Medical Association will be held in Vancouver, July 3-6, at the same time as the annual meeting of the British Columbia Medical Association. Dr. Henry A. Christian, physician in chief, Peter Bent Brigham Hospital, and Hersey professor of medicine, Medical School of Harvard University, Boston; Dr. Carl B. Davis, associate professor of surgery, Rush Medical College, Chicago; Dr. Andrew Hunter, professor of biochemistry, University of Toronto, Ont., and Thomas C. Routley, assistant secretary of the Canadian Medical Association, will be among the lecturers. The registration fee for the course is $10. Intending members should register at the Vancouver General Hospital, June 30 or July 1, and at the Normal School, July 3.

LATIN AMERICA

Practice of Medicine in Peru.—In order to keep better control over the practice of medicine, the government has placed the matter in charge of the national public health department. A commission has been appointed, headed by the director of public health, to issue regulations governing the practice of medicine.

Institute for Infant Welfare Planned at Montevideo.—The *Archivos Latino-Americanos de Pediatria* relates that the recent visit of Professor Cacace of Naples, the apostle of nipiology, to South America has inspired the Italian colony in Montevideo to plan the foundation of a complete Instituto de Nipiologia. It is proposed to have it ready to present to the state in 1925, in commemoration of the independence of Uruguay. The term nipiology is from a Greek word signifying a very young infant.

Social Economy Exposition.—The Museo Social Argentino, an organization for the promotion of social and political studies and reforms, plans to hold an international exhibition of social economy in Buenos Aires during the first six months of 1924. There will be a congress of social museums and similar institutions at the same time. Delegates and exhibits from practically every country of the world are expected to attend. The Argentine Government is helping to promote the meeting and exposition.

Personal.—Dr. Fred A. Miller has returned to Bogota after a four months' trip to the United States. He has charge of the hookworm campaign in Colombia.——The "Instituto Médico Sucre" has elected as corresponding member Prof. A. Navarro of the University of Montevideo. Dr. E. L. Osorio is editor in chief of the *Revista*, published quarterly by the institute.——The Museo Social Argentino of Buenos Aires has elected, as corresponding member, Prof. E. Levi, founder and director of the Italian Istituto di Previdenza ed Asistenza Sociale.——The *Folha Medica* states that the

French government has decorated Prof. Fernando Magalhães of Rio de Janeiro, president of the Sociedade de Medicina e Cirurgia, as officer of the Legion of Honor.

FOREIGN

The Campaign Against Cancer in Italy.—Medical and scientific notables assembled from all parts of the country for a meeting in Bologna for the purpose of effecting the organization of a national federation against cancer. Professor and Senator Foa is president; Profs. M. Ascoli and R. Bastianelli are vice presidents, and Prof. G. Lusena of Genoa is secretary.

Orthopedics Congress in the Netherlands.—The Netherlands Orthopedic Society celebrated in May the twenty-fifth anniversary of its foundation with a three-day meeting at Amsterdam. Among the foreign speakers were Lorenz, Albee, Calot, Spitzy, Biesalski and Putti. Murk Jansen presided at the meeting, and one day was devoted to discussion of rehabilitation of the disabled as practiced in France, England, Italy, Germany and the Netherlands.

Medal Awarded to Eijkman.—The *Nederlandsch Tijdschrift voor Geneeskunde* congratulates Prof. C. Eijkman and the Netherlands on the honor conferred by the awarding to him of the John Scott medal and money prize by the American Philosophical Society, founded in 1727 by Benjamin Franklin. Eijkman's pioneer work on deficiency diseases is well known. The editorial adds that the recipients of the other medals awarded at the same time were Sir Joseph John Thompson and Professor Aston of Cambridge, recipient of the Nobel prize in chemistry for 1922.

University News.—The new building for the bacteriologic department of the University of Durham College of Medicine, Newcastle-on-Tyne, was dedicated, May 25.——Dr. John S. B. Stopford has been appointed dean of the Victoria University Medical School, Manchester (England), to succeed Dr. Robert B. Wild.——A short course for the diploma in psychologic medicine will be held at the University of Cambridge, England, from July 10-August 17, if a sufficient number apply. The subjects covered will be the physiology and anatomy of the nervous system, psychology, psychopathology, mental deficiency and practical psychiatry.

Society Proceedings.—The fourth annual International Neurologic Reunion convenes at Paris, June 8-9, 1923. The subject appointed for discussion is "Compression of the Spinal Cord." The secretary is Dr. H. Meige, 35 rue de Grenelle, Paris.——An International Conference of Day Nurseries was held in London in May for two days. Delegates from France, Holland, Belgium, Italy, Sweden, Egypt, India, Japan, Canada and the United States attended the conference. ——The second session of the International Association for the Promotion of Child Welfare will be held in Geneva in July. The agenda includes questions of a juridical, hygienic and general nature.——The British Medical Women's Federation held its annual meeting and first annual banquet in London, May 10, under the presidency of Lady Barrett, M.D. The membership of the federation is now 800. The constitution of the International Medical Women's Federation, which was drawn up last year at Geneva and at which Dr. Esther Lovejoy of New York presided, has been approved by the medical women of eighteen countries.

Protest Against Alcohol in Germany.—Our German exchanges publish an appeal to the authorities from the professors of hygiene in the universities, which warns of the dangers from the increasing consumption of alcohol. During the World War, the number of cases of alcoholism dropped to one sixth of the prewar figure which is now being rapidly regained. The present measures to restrict the use of foodstuffs for production of spirituous beverages and the regulations against production of strong beer, they say, are not enough. They declare that it should be forbidden to use any foodstuffs in the production of alcoholic drinks, and that the importation of liquor should be prohibited. The most effective measure would be the prohibition of production and sale of brandy and liqueurs. Until this is done, they advise strict control of drinking places, and advocate an improved Gothenberg system. The circular calls attention further to the evil effect on the mind and will power of alcohol: "In these grave times, the peoples need more than ever clear minds and resolute wills."

Personal.—Dr. Thomas S. Higgins, London, has been appointed medical officer of health for Cape Town, South Africa, to succeed Dr. Alfred J. Anderson, who resigned recently.——Dr. E. D. Wiersma, professor of psychiatry and neurology in the University of Groningen, delivered a lecture on the "Psychology of Epilepsy" before the Royal Society of Medicine, London, May 24.——Sir Arthur Keith will deliver the twelfth biennial Huxley lecture on "Recent Advances in Science" at the Charing Cross Hospital Medical School, London, June 27.——Professor Mühlens of Hamburg has been asked by the Jugoslavakian government to aid in fighting malaria in Dalmatia, and has left for that country. ——The Italian government has decorated three Belgian physicians, Dr. Lecrenier of Huy and Drs. Closset and Lambinon of Liége for services rendered during the war to Italian prisoners.——The French government decorated Prof. E. Malvoz of Liége on the occasion of the Pasteur centennial celebration at the University of Liége.——Dr. Luis del Rio y Lara was the guest of honor at a banquet recently at Zaragoza. He has been called to the chair of histology and anatomy at the University of Madrid vacated by Ramón y Cajal. Del Rio has been professor at the Zaragoza University for thirty years.

The Strasbourg Pasteur Celebration.—As bacteriology originated at Strasbourg, when Pasteur was professor, 1848-1854, the professors of bacteriology the world over have contributed with others to the Pasteur monument which was unveiled there May 31. The *Presse médicale* states that Belgium presented for the monument 5,000 francs; Denmark, 57,000; Great Britain, 55,000, the Netherlands, 16,000, Norway, 4,000; Peru, 6,000; Sweden, 3,000, and Switzerland, 2,000. The city of Buenos Aires donated 125,000 and the sum was raised to 200,000 francs by private subscriptions throughout Argentina. The United States was inscribed for 12,000. As already mentioned, congresses are scheduled on tuberculosis, June 2; ophthalmology, June 9; cancer, July 23; dermatology, July 25; the third international conference on leprosy, July 28, and a congress on puerperal fever, August 1. The last international conference on leprosy was held at Bergen ten years ago. In addition to these medical gatherings there will be congresses on inexpensive homes, municipal hygiene, heating and ventilation, refrigeration, milk supplies, pomology and, finally, in September, the congress of the Alliance de l'hygiène sociale. The *Presse médicale* for May 16 gives the full program of the four months' celebration in honor of Pasteur and international exposition, and of the various congresses, accommodations, etc.

Deaths in Other Countries

Dr. **Mark Style,** in London, May 14.——Dr. **Arthur Looss,** former professor of parasitology and biology at the University of Cairo; died, May 4, at Giessen, Germany, aged 62.

CORRECTIONS

The following paper was inadvertently omitted from the index of the *Journal of Experimental Medicine,* New York, 37:303-428 (March) 1923, published in THE JOURNAL, May 12, p. 1411:

Studies on Total Bile. II. Relation of Carbohydrates to the Output of Bile Pigment. P. Rous, G. O. Broun and P. D. McMaster, New York.—p. 421.

Urea Content in Saliva.—The abstract under the foregoing head (THE JOURNAL, June 2, 1923, p. 1657) should have read: "Landsberg found approximately the same amount of urea in saliva as in the blood serum."

Government Services

Army Medical School Graduation

Commencement exercises of the Army Medical School were held at the National Museum Auditorium, Washington, D. C., June 8. Thirty-one officers, majors or captains, who had successfully completed the army medical course of six months' technical and clinical graduate training at the Walter Reid Hospital and the Army Medical School in Washington, and four months' training at the Medical Field Service School, Carlisle, Pa., comprised the graduating class. The Surgeon-General plans to have all medical officers take this course, which plan will require several years to complete. The Assistant Secretary of War presented the diplomas. Capt. William D. Gill received the Hoff Memorial medal, having attained the highest standing in the class. Major Frank S. Matlack was presented with the Sternberg medal for the highest proficiency in preventive medicine by Dr. George M. Kober, dean of the Georgetown University School of Medicine, Washington.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 21, 1923

The Group Clinic

A group clinic in private practice, such as has existed in the United States for some years, has been started in London at Brook Street. The group consists of fourteen specialists, with whom are associated some experts in special subjects who are available when required. Patients are first interviewed by a general practitioner, who decides the particular consultants that the patient is to see. A roentgen-ray and a pathologic department are provided in the house. The patients are charged a flat rate for the consultation and investigation required, but the amount varies to some extent according to the requirements of the case and the necessity for prolonged pathologic examination. When the investigation is completed, the members of the group concerned meet for discussion, and the patient's own physician is invited to attend. The necessity for the group clinic was first pointed out by Sir Thomas Horder in an address to the Abernethian Society of St. Bartholomew's Hospital, in January, 1922. He considered that the conditions for which "group diagnosis" was particularly suitable were chronic toxic processes, whether microbic or metabolic, arthritis and fibrositis, many gastro-intestinal disorders, and a large group of neurasthenias. He thought that in the United States some of the clinics were too large, so that the process became mechanical and the patient was sent on a "circular tour" from which he emerged with a voluminous *dossier,* but no considered judgment as to the nature of his malady.

The School of Hygiene

In February, 1922, the Rockefeller Foundation made the munificent offer of $2,000,000 for the building and equipping of a school of hygiene in London. The government accepted the offer and promised to furnish the upkeep. Land was acquired for the purpose in Bloomsbury. A proposal has been made to appoint provisionally a director for the school, and the foundation undertook to provide a sum not exceeding $20,000 a year toward his salary and expenses. The minister of health, with the concurrence of the trustees of the Rockefeller Foundation, has appointed a transitional executive committee in connection with the school. The functions of this committee will be to appoint the director, arrange for amalgamation or coordination between the school and other institutions working in similar or closely related spheres, prepare plans for the school, and begin building, unless in the meantime it has been possible to set up the permanent governing body.

Crisis in the Insurance Service

The approaching revision of the terms of service of insurance physicians seems likely to result in a crisis. A good deal of dissatisfaction with the working of the system has been expressed in the press, but though the faults found are susceptible of remedy, there is one proposal that may lead to an acute struggle. During the war, the remuneration of insurance physicians, like other rates of pay, was raised in correspondence to the increased cost of living. Now there is a downward movement of prices and a general tendency to reduce salaries and wages, which is always opposed by the persons concerned if they are organized. The panel physicians have already submitted to one reduction, but their remuneration is still above the prewar level, and the increase corresponds to an additional government subsidy of about 50 cents in the capitation fee. The government is bent on economy, and has intimated that it can no longer continue the subsidy. If this is to continue it must be paid by the insured, and the friendly societies, which represent them, have expressed unwillingness to do this. The British Medical Association is convinced that, in spite of exceptions, the present service is a good one, securing medical care for a large section of the population, such as was never previously obtainable, and under conditions, on the whole, not inferior to those of private practice. It holds that the economic value of the service is represented by a capitation fee of $2.75, the amount fixed in 1920, and that the insurance fund in the aggregate is in the position to meet this cost without requiring any increased contribution from insured persons or subsidy from the government beyond that originally fixed. Dealing with the various complaints that have been made as to the service, it thinks that in the case of "lock-up surgeries" (offices) arrangements should be such as would enable a caller to get in touch with the physician or his deputy with promptitude. This would entail either a resident caretaker and telephonic communication with the physician's house, or, when the physician lives within a limited distance, notice visible by day and night indicating where he or his deputy can be found, or, when he lives at a distance, so that only his deputy is available at certain hours, the giving of a written notice of the arrangement to the patients. On the question of limitation of the number of insured on the physician's list, it advises that a proposal to reduce the present one of 3,000 to 2,500 should be accepted. It also favors the proposal to widen the freedom of choice of the patient, so that he can change his physician at any time.

Dr. Edwin Smith, a London coroner who is also a physician, has raised a storm by an attack on the insurance system. He described it as "a disastrous blunder and a miserable failure which puts a premium on scamped work." At a typical panel consultation, said he, the patient announced what seemed to him the most prominent symptom —a cough or a pain or the like—and instantly was given a prescription. There was no time for anything but the most perfunctory investigation, for the waiting-room was full of patients, and he was hurried from the surgery almost before he had entered it. The underlying cause of the symptoms must be missed in an immense number of cases, and a vast amount of disease overlooked, such as various forms of tuberculosis and disease of the heart or kidney. The human machine out of order did not lend itself to this lightning diagnosis and penny-in-the-slot style of treatment. Apologists for the system pointed to the infrequency of complaints, but only rarely would a patient go to the length of making a formal protest. On the whole, the worst work was done by the men drawing the largest incomes. He admitted that there were many physicians striving to do good work in the irksome and difficult conditions of panel work. As a remedy for the present system, he suggested one under which the physician was paid for actual work done and the patient freed from restrictions both in choosing and in changing his physician. Dr. Cox, medical secretary of the British Medical Association, replied to the coroner by pointing out that the majority of general practitioners were panel physicians, and therefore that he had attacked the profession at large. All the evidence that the British Medical Association had was that the system had greatly improved in the last two or three years, and that evidence of dissatisfaction was based on a few individual bad cases. The coroner was wrong in suggesting that the panel physician necessarily had a large number of cases. The average was less than 1,000 and in many districts the highest allowed was 2,500 or 2,000. The average number of attendances for each insured person yearly was 3.6. Therefore a physician with 1,000 would on an average see ten insured perons daily, and those with the

largest lists, thirty. As to the coroner's two proposals, the first had been considered by the council, which represents insured persons, and rejected, and the second had been proposed by the medical profession itself.

The Training of the Physician in Psychiatry

In a memorandum to the minister of health on medical education, Sir George Newman, principal medical officer, points out that the practitioner's approach to mental disorder should be through a twofold training, in psychology and psychopathology. The former should belong to physiology in its widest sense; the latter falls within the clinical years. Between the two, or as a part of either, may well come a brief course of a few lessons in medical psychology, with particular reference to psychoneuroses, instruction as to the examination of the patient, the practice of suggestion and persuasion, psychologic analysis and mental testing. To these courses should be added clinical work, first in a mental hospital and then in the outpatient clinic for nervous and mental disorders at the general hospital. He suggests a curriculum consisting of (1) a short course of lectures (from five to ten) in normal psychology, preferably as part of the course in physiology (reflexes, habit, instinct, emotion, intelligence, the conscious and the unconscious mind, Binet tests and investigational methods); (2) six explanatory discourses in abnormal psychology concurrently with clinical work in mental disease; (3) ten or twelve systematic lectures on mental disease concurrently with clinical work at a mental hospital, pronounced cases and the usual types of insanity, and (4) a series of demonstrations in the outpatient clinic for nervous and mental disorders at the general hospital.

MADRID

(From Our Regular Correspondent)

April 25, 1923.

Postoperative Complications—Rupture of Colon Following Injection of Pituitary Extract

Recasens, professor of gynecology and dean of the Madrid medical school, has presented to the Royal Academy of Medicine an interesting paper on "Complications Following Gynecologic Operations." He was led to write it by a truly extraordinary case. The patient was a woman with uteroadnexal inflammatory lesions. The uterus and adnexa were removed. For a few days, things progressed favorably, but on the eighth or ninth day, as the bowel movements, which had never stopped, seemed rather small, a routine injection of pituitary extract was given. In less than half an hour, the patient stated that she felt as if something had burst inside. Two hours afterward, she was dead. At necropsy, the colon was found enormously distended and "exploded," with a large quantity of hardened fecal matter, true coproliths, in the peritoneal cavity. Recasens stated that he had not found a similar instance in the literature, and while not positive as to its being due to the action of pituitary extract on the muscular fiber of the intestine, he felt compelled to report the case, as being one more addition to postoperative complications in abdominal surgery. He regretted the absence of the old cooperation between general physicians and the specialists. Nowadays the former pay too little attention to cases that require operation, and the latter disregard entirely too much the opinion of the family physician. He reported two cases of gastro-intestinal hemorrhages following gynecologic operations. In one, seven days after the operation, the patient vomited an enormous amount of blood, with much melena. This patient eventually recovered. The other patient died three days after the operation, through the loss of blood caused by the erosion of a large vessel in a duodenal ulcer.

He recalled the death of a patient with mumps, and pointed out that when he visited the Virchow Hospital in Berlin, he noted at each bedside the necessary equipment for mouth washing and disinfecting. He was told that many patients in this way acquired the habit of cleansing their mouths. He has introduced this practice in his ward. Recasens then referred to mouth hygiene as practiced in the Mayo Clinic, where in all cases roentgenograms of the mouth are made and all teeth with focal infections are extracted.

Dr. Vital Aza stated that in his operations, better results have been obtained by following Döderlein's advice of not giving cathartics to patients before making a laparotomy, as catharsis is followed by intestinal paralysis. Professor Hernando advised that patients to be submitted to a laparotomy should not receive cathartics as a routine measure, and whenever indicated, to omit catharsis the day preceding an operation. Starvation on the operation day should be condemned, as it favors acidosis. Large amounts of starchy foods and sugar should be given to prevent acidosis and build up hepatic defenses. Alkaline waters should be administered. He warned against the use of liver extracts. A healthy liver prevents intoxication, but hepatic extracts increase it.

Malaga Against International Sanitation

At Malaga, the beautiful Andalusian city, there occurred four cases of bubonic plague which were duly diagnosed by the local sanitary inspector. As soon as the outbreak was reported, pursuant to law, the national health department declared the port infected, as required by international conventions, and reported the fact to foreign health authorities. Sanitary measures were immediately applied with sufficient vigor to eradicate the disease. What seems strange, although typical of conditions in Malaga, is the fact that all classes, including the physicians, and headed by the business element, signed a protest against the sanitary authorities of Malaga itself; the provincial sanitary inspector, who had to be transferred elsewhere, and finally, the director general of public health himself. In their eagerness to secure a statement that there had been no such disease as plague at Malaga, a committee was sent to Madrid, which even had the audacity to threaten the secretary of the interior. The secretary, however, impressed energetically on the committee the fact that Spain must fulfil its international duties.

PARIS

(From Our Regular Correspondent)

May 18, 1923.

The League of Nations and the Regulation of the Traffic in Narcotics

The opium advisory commission of the League of Nations has just met at the headquarters in Geneva of the general secretary of the league. M. Bourgeois, the French delegate, who was elected chairman, communicated to the commission a letter from a delegation sent by the government of the United States to take part officially in the work of the opium commission. In this document, the American delegation, which expressed the desire to keep in touch with the work of the commission, elucidated the point of view that it expected to take. The government of the United States holds that, in order to combat effectively the illicit traffic in narcotics, it is necessary to limit production. It will doubtless propose to the League of Nations opium commission that serious consideration be given to reduction of the amount manufactured in the various producing countries; namely, for opium, Great Britain, Turkey and Persia, and for cocain, Peru, Bolivia and Holland.

Immediately after receiving the communication from the government of the United States, the opium commission

instructed its chairman to invite the American delegation to take part in its deliberations. This will be the first time that the United States will have been officially represented on any commission of the League of Nations. The delegation of the United States is composed of Mr. Stephen G. Porter, chairman of the committee on foreign affairs of the House of Representatives; Bishop Charles H. Brent, who, in 1919, directed the work of the Shanghai conference on the opium traffic, and Dr. Rupert Blue.

Geographic Distribution of World Disasters

Among the questions with which the League of Nations had to deal at the Genoa Conference was the draft of a constitution and by-laws for the proposed Oeuvre internationale de secours et d'assistance aux populations frappées de calamités. This project, which is fostered by Senator Ciraolo, president of the Italian Red Cross Society, is an endeavor to induce the signatory powers of the Geneva Convention to enter into a new agreement which would give further recognition to the Red Cross in its peace rôle, and, more particularly, in its function as an aid in great public calamities. The international organization, according to Ciraolo's plan, must be "one and universal, and must remain neutral in all matters pertaining to politics, religion and race."

Since, as a rule, great catastrophes and public calamities come suddenly, taking their victims unawares, it seems rational to establish an international society so organized as to be able to render immediate aid in case of need. The representatives of the international society will need to study the history of different peoples and the catastrophes to which they are exposed, in order to be prepared to provide adequate assistance in time of need. It has, therefore, occurred to the international committee of the Red Cross that it might be advisable to publish a map of the world showing the distribution of the various types of calamities that overtake, from time to time, different regions of the globe. This task has been undertaken by M. Raoul Montandon, president of the Société de géographie of Geneva, who has just published an important article on the subject in the Revue internationale de la Croix-Rouge. It has been found that the expense of publishing such a map in colors would be too great; for this reason M. Montandon has found it necessary to confine himself to the publication of a series of smaller maps in black and white. There will be separate maps showing the distribution of earthquakes, tornadoes, cyclones and typhoons, droughts, floods, famines, bubonic plague, cholera and yellow fever, and other calamities.

The Centenary of Pasteur at Strasbourg

In view of the fact that Pasteur was professor at the University of Strasbourg from 1848 to 1854, and recalling that here he made his first discovery in crystallography and molecular dissymmetry, it is only natural that the celebration of the centenary of the famous scientist should have assumed in this city an impressive and imposing character. May 31, the unveiling of the monument to Pasteur, erected on University Square, will take place. Later, the Hygienic Museum, intended to perpetuate the memory of Pasteur and his discoveries, will be dedicated. The same day, in the presence of the president of the republic, an international exposition, which has for its purpose the demonstration of the results of Pasteur's work in the fields of medicine, hygiene, industry and agriculture, will be opened. The exposition will last four months, and during this period there will be held in Strasbourg a large number of national and international congresses: notably, the fifth National Congress of Tuberculosis, the thirty-sixth Congress of the French Ophthalmologic Society, the second Congress of French-Speaking Dermatologists and Syphilologists, the International Congress of City Management and Municipal Hygiene, and the third International Conference on Leprosy.

Reforms in the Medical Curriculum

The secretary of public instruction is at present working out a new plan of study preparatory to the degree of doctor of medicine. In the *Progrès médical*, Dr. J. Vanverts, professor at the Faculté de médecine of Lille, recently published some interesting ideas of his own on the subject. He regrets especially that purely theoretical instruction has been retained in the new curriculum. He holds that manuals and treatises on various theoretical subjects are numerous and well edited, so that the student can find discussions on all questions with which he needs to be familiar. The university professor should never be content to lecture on a field that is already well covered in the ordinary manuals. He has a more useful task to perform. During the course of his instruction, he should endeavor to establish direct relations with the student; give explanations; direct the study of anatomic and pathologic specimens, drawings and photographs, and illustrate experimental and operative procedures. The elimination of purely theoretical courses, Vanverts holds, would allow more time for personal work and preparation for the competitive examinations (externship, internship, etc.). The truth of this statement becomes evident when we read in the circular letter by the secretary that accompanied the proposed new curriculum, when it was submitted to the medical faculties, the complaint as to the excessive number of courses, and the opinion that it is impossible for the student to keep up all the drills and exercises in which he is supposed to participate.

Vanverts regrets that the new plan of study eliminates practical operative work on the cadaver. It substitutes instead compulsory service as hospital orderlies during the third, fourth and fifth years, and a demand is made that the medical faculties make some agreement with the hospital administrations whereby the students are given an opportunity to take part in emergency surgical operations in the services to which they are attached. But it may be questioned whether the student will really have an opportunity, while serving as an orderly, to perform many operations, for the reason that minor operations are usually assigned to the interns and externs, who will not willingly renounce this privilege. Under these circumstances, Vanverts thinks that it is a mistake to abolish operative work on the cadaver, which, from the standpoint of knowledge of topographic anatomy, complements dissection and gives the student practice in performing most of the simpler operations.

Privileged Communication and Declaration of Death

In most cities of any size there is a municipal medical service whose duty it is to investigate and verify reports of death. When a death occurs, the attending physician reports his diagnosis of the cause of death, in a sealed envelop, and the municipal physician, after verifying the fact of death, is usually content to transfer the diagnosis of the attending physician to his death certificate, which alone is accepted by the civil authorities as evidence. This system has several advantages. In the first place, it constitutes a protection against premature burial in certain cases of apparent death; secondly, in cases in which foul play may be suspected, it allows the inspecting physician, who is not bound by the right of privileged communication, to mention in his certificate his doubts as to the cause of death. The city of Marseilles has no medical inspectors, and it is the duty of the attending physician to make out the death certificate; he may thus find himself in an embarrassing situation. Dr. Dufour recently communicated a case of this kind to the Société de médecine légale of France. A young man, who was wounded

in the stomach by a shot from a revolver in the hands of a friend, was conveyed to a hospital. Before operation, the wounded youth enjoined on the surgeon the strictest secrecy, irrespective of the outcome of the surgical intervention. Laparotomy revealed four perforations of the small intestine, which were sutured. Acute peritonitis developed, and the young man died. It was the duty of the surgeon to furnish a death certificate, and he entered "peritonitis" as the cause of death. This certificate was accepted, and the body was buried. One month later, the authorities were informed of the homicide; the perpetrator of the act was arrested and confessed. The surgeon, when called as witness, stated that, by reporting in the death certificate "peritonitis" as the cause of death, he deemed that he was upholding the right of privileged communication and, at the same time, was telling the truth. If, after the word "peritonitis," the surgeon had added the words "resulting from a bullet wound of the abdomen," he would have violated the right of privileged communication.

After discussing the communication of Dr. Dufour, the Société de médecine légale declared that the lack of systematic verification of deaths by physicians acting under municipal authority, in Marseilles and a number of other large cities, was regrettable and sometimes placed attending physicians in impossible situations.

A Pavilion for Argentinian Students in Paris

In my preceding letter (THE JOURNAL, June 9, 1923, p. 1706) I referred to the construction of the so-called "University City." Argentina has taken a great interest in the plan, and has appointed Dr. E. V. Segura, professor at the Faculté de médecine in Buenos Aires, to inquire into the matter. The latter has already secured the cooperation of M. Otto Bemberg, former Argentinian consul in Paris, who has decided to take on himself the construction of a pavilion and rooming house combined, which will be called the "Maison des étudiants argentins." The building will be erected on ground ceded by the university to the Argentinian Foundation, to which the donor has agreed to give 1,000,000 francs. It is thought that, through an official appropriation of the Argentinian government, aid furnished by the Franco-Argentinian committee, and contributions from private individuals in Argentina, it will be possible to erect other such pavilions.

A Regional Inquiry on Goiter

Dr. Léon Bérard, professor at the Faculté de médecine in Lyons, who has been asked by the Conférence internationale du goitre (to be held in Basle in the spring of 1924) to present a report on the present distribution of goiter in the region of Lyons, recently addressed a pressing appeal to all physicians in the departments of Saône-et-Loire, Ain, Jura, Haute-Savoie, Savoie, Isère, Hautes-Alpes, Basses-Alpes, Drôme, Ardèche, Haute-Loire and Loire, begging them to investigate within their territory as to (1) the relative frequency of endemic, epidemic, familial and sporadic goiter today as compared with fifty years ago; (2) the present relative frequency of exophthalmic goiter and ordinary goiter; (3) the apparent causes of endemic goiter and the varying aspects of such endemics during the last fifty years: nature of the soil, the general conditions pertaining to public hygiene, living conditions, food, drinking water, and various infections, and (4) the action of iodin administered as a prophylactic to children of goitrous parents and to adults and goitrous adolescents before marriage.

A Memorial to Charles Infroit

A memorial plaque in honor of the roentgenologist Charles Infroit, who died, in 1920, after a long period of suffering, the victim of roentgen rays, has just been placed in the Salpêtrière Hospital, Paris.

BERLIN

(From Our Regular Correspondent)

May 5, 1923.

German Surgical Congress

To continue the report on the forty-seventh annual meeting of the Deutsche Gesellschaft für Chirurgie: (See Berlin letter, THE JOURNAL, June 9, 1923, p. 1708).

Professor Kümmell, who is recognized as one of the foremost German authorities in the field of surgery of the kidney, discussing "The Surgery of Tuberculosis of the Kidney," stated that this is a chronic, slowly developing, usually unilateral affection, which gradually begins to affect the bladder and the other kidney, often becomes stationary and then later presents severe exacerbations, progresses steadily and ends in death, amidst great suffering to the patient. Through early diagnosis and operation a fatal issue can be prevented. Suspicious early symptoms are: frequent desire to urinate, not yielding to rational treatment; sudden appearance of incontinence of the urine in adults; pain in the ureter, especially in women, and sudden hematuria in younger persons. The manifestations on the part of the kidney are slight. Characteristic is acid urine which contains pus but is sterile. The demonstration of tubercle bacilli in the urine cannot be taken as proof, since tubercle bacilli may be excreted by those who are suffering from pulmonary tuberculosis but not from tuberculosis of the kidney. The subcutaneous tuberculin reaction to large doses (from 5 to 10 mg.) is convincing. Cystoscopy and catheterization of the ureter (the danger from infection is usually considered slight), which may be replaced by the indigocarmin test, may be used to strengthen the diagnosis. Before the operation, the operator must convince himself that the other kidney is reasonably sound; a slight involvement is not necessarily a contraindication. The determination of the freezing point of the blood has always proved a reliable test. Kümmell is an opponent of conservative treatment, as he has not seen any good results from it, nor from tuberculin treatment. The operative removal of the diseased kidney, if the other kidney is sound and the bladder is only lightly involved, furnishes a good prognosis. Also, though the other kidney is slightly affected, if its function is preserved, the operation is indicated. In far advanced cases, nephrotomy or other palliative operations are to be considered. Of 188 unilateral nephrectomy operations, fourteen resulted fatally. Of the 174 remaining patients, 9.2 per cent. died in from six months to ten years. The late mortality up to five years was 5.8 per cent. In a number of cases, pregnancy followed nephrectomy and progressed normally without mishap.

In the discussion, Professor Küttner of Breslau reported on 103 further cases of tuberculosis of the kidney. In 90 per cent. of the cases the bladder was involved; in 40 per cent., the male genitalia, and in 2 per cent., the female genitalia. The immediate mortality from nephrectomy was 8.5 per cent., while the remote mortality, after three years, was 21.8 per cent. A number of lasting cures extending over a period of fifteen years were recorded. Thirty-five per cent. presented completely normal micturition. In half of the cases, after the operation, the tuberculous condition of the bladder cleared up completely. One woman operated on passed through three pregnancies later. Wossidlo of Berlin has of late interpreted the indications for tuberculin treatment more strictly. It is, he contends, indicated only in the early stages (with exact control of cases treated) and in bilateral tuberculosis, with a view to bringing about an operable stage. According to Professor Barth of Danzig, the lasting results are impaired by the fact that tuberculosis of the bladder frequently persists. Only about 25 per cent. of the patients remained cured over a period of nineteen years, but 50 per

cent. were improved. Twenty-five per cent. died the first year. If nephrectomy is performed in time, pregnancy is well borne. Professor Voelcker of Halle warns against exploratory splitting of the kidney. In two of his cases death resulted from miliary tuberculosis. Even though one does not at first find any evidence of disease at the time of the operation, one should have the courage to extirpate the kidney and not look for concealed foci. Professor von Haberer of Innsbruck pointed out that some cases of tuberculosis of the kidney develop and progress under the form of true nephralgias, in which the examination of the function and catheterization of the ureter leave one in the lurch. Professor Casper of Berlin performed extirpation in 170 out of 700 cases of tuberculosis of the kidney and in the last seventy cases the mortality was only 2 per cent. The cases in which no operation was performed progressed usually to a fatal issue. In cases in which, on account of a markedly contracted bladder, catheterization of the ureter is not possible, one can expose the kidneys and apply clamps to the ureters, in order to secure a specimen of the secretion from each kidney. Kümmell warned against exposure of the kidney for the purpose of diagnosis. Severe tuberculosis of the bladder, he stated, is hard to handle. In a large number of cases, however, a cure is effected by extirpation of a kidney. Internal administration of potassium iodid, or local treatment with phenol (carbolic acid) solution, iodoform or mercuric chlorid often alleviate the condition. The general therapy of tuberculosis and the use of tuberculin should also be considered. Finally, resection of the bladder and transplantation of the ureters may need to be performed.

Following these two papers, the functional diagnosis of the kidney in relation to kidney surgery was discussed, the topic being introduced by Professor Rehn of the Lexer clinic in Freiburg. On the basis of extensive animal experimentation and clinical observation, Rehn has worked out a method which makes use of modern colloidochemical researches. It consists of two parts: the determination of the acid and the alkali excretion. To ascertain the acid excretion, 20 drops of hydrochloric acid in 30 c.c. of water are given in the morning fasting. To estimate the alkali excretion, he injects intravenously 50 c.c. of a 4 per cent. solution of sodium bicarbonate. According to the results, Rehn distinguishes five different types, which lack of space prevents describing in detail. During the discussion, Renner was the only one who expressed himself on Rehn's new method. He regarded it as quite usable for the recognition of incipient renal insufficiency.

The third paper was by Professor Küttner, who discussed the subject of prostatic surgery. In hypertrophy of the prostate the formation of the tumor begins in the rudimentary portions of the gland. He distinguishes two types, endovesical (hypertrophy of the middle lobe) and subvesical (hypertrophy of the lateral lobes). In atrophy of the prostate there is no tumor formation. The mortality of the prostatic operation ranged formerly between 13 and 22 per cent., but it is now from 6 to 8 per cent. In establishing the indications for operation, age, social position, rate of enlargement of the prostate, and behavior of the kidney and bladder are to be considered. In case of total retention of the urine, the prostate should not be removed at once but a bladder fistula should first be established, after which the renal function often improves (water test and concentration test for the determination of the kidney function). As to operative methods, Küttner prefers the suprapubic operation as being technically more simple and easier in its after-treatment as compared with the technically more difficult perineal operation, although he admits the latter has its good features. With the perineal operation, rectal injuries and formation of fistulas are more common. He therefore regards the suprapubic operation, in either one or two stages, as the routine procedure. However, if a tumor is suspected, the Voelcker method should be employed. In the two-stage method, the dilation of the bladder fistula is often very difficult; laminaria tents often cause great pain, so that the operator is sometimes compelled to choose the perineal route. A combination of the two methods is to be considered in cancer of the prostate. As compared with prostatectomy, the other operative methods, such as division of the vasa deferentia, are little used. In atrophy of the prostate, the diagnosis of which is reached only by exclusion, we are often concerned with valve formation. Here the Bottini operation, external urethrotomy and division of the obstructing buttress, as practiced often successfully by Küttner, is to be considered. Carcinoma of the prostate, which is often not discovered until the operation, is difficult to remove radically. The lasting results are unsatisfactory. Here radiotherapy enters into the problem. According to Professor Kümmell of Hamburg, the earlier the operation is done, the better the results. A great many deaths are due to renal insufficiency. In order to exclude these cases from operation, one must not rely on one method of examination but must have recourse to several. If kidney function is normal, the one-stage operation may be used. In the two-stage procedure, he was always able to dilate the bladder fistula with laminaria tents. After-treatment consisted of drainage and the application of a self-retaining catheter for twenty-four hours. The perineal method has the disadvantage of frequently causing incontinence of the urine. Professor Voelcker of Halle emphasizes the importance of the blood pressure for the prognosis of the operation. Intestinal injuries, fistulas and incontinence of the urine have never occurred in connection with his operations. He emphasized that there are cases in which the prostate is not to be extirpated from the bladder. Professor Perthes of Tübingen stressed the importance of the clinical picture of atrophy of the prostate, which may often develop a long time before the onset of senescence. The cause of the discomfort is often due to a valve in the neck of the bladder, which prevents the evacuation of the urine. Treatment consists in excision and enucleation of the atrophic prostate, or in dividing the valve, which he successfully carried out in four instances. Professor von Haberer of Innsbruck called attention to the favorable effect of vasotomy as applied to the vasa deferentia; it eliminates the danger of postoperative epididymitis and in some cases the prostatic hypertrophy will retrogress, so that prostatectomy can be dispensed with; it also causes the blood pressure to fall and the patient's general condition improves. He has not lost a case since this preliminary operation was introduced. Against the operation may be urged the fact that the patient is rendered impotent. For the after-treatment of prostatectomy he recommends drainage over a forty-eight hour period.

Marriages

ELMER FORREST MERRILL, Ann Arbor, Mich., to Miss Helen Gertrude Cliff of Jackson, June 4.

THOMAS ARTHUR JOHNSON to Miss Myrtle Elizabeth Swanson, both of Rockford, Ill., June 6.

NICHOLAS ANTON HERRMANN, Equality, Ill., to Miss Margaret Woods of Chicago, May 12.

CECIL W. CLARK, Newton, Mass., to Miss Sara C. Schlechter of Reading, Pa., April 28.

DANIEL F. HAYES, Chicago, to Miss Marie Keefe of Oak Park, Ill., June 2.

YNGVE JORANSON to Miss Irene Johnson, both of Chicago, June 9.

Deaths

William Gage Erving ⊕ Washington, D. C.; Johns Hopkins University Medical Department, Baltimore, 1902; died, May 13, in Gravenhurst, Ont., Canada. Dr. Erving was born in Hartford, Conn., in 1877. In 1904 he was appointed professor of orthopedic surgery at the Georgetown University School of Medicine and the Howard University School of Medicine, Washington, D. C. With Prof. Hiram Bingham, of Yale University, now lieutenant governor of Connecticut, he went to Peru in 1911 as surgeon to the expedition that discovered the Inca city on Machu Picchu. During the World War, Dr. Erving served in the M. C., U. S. Army, in France, with the rank of major. He was on the staffs of the Children's, Providence and Georgetown University hospitals, and a fellow of the American Orthopedic Association, the Washington (D. C.) Surgical Society, the Interurban Orthopedic Club and the Royal Geological Society of England.

Hiram Eugene McNutt, Huron, S. D.; Dartmouth Medical School, Hanover, N. H., 1872; for many years secretary of both the state and county medical societies; member of the state board of health; at one time member and secretary of the state board of medical examiners; aged 74; died suddenly, May 24, of heart disease.

Thomas R. Wright ⊕ Augusta, Ga.; University of Georgia Medical Department, Augusta, 1876; professor of surgery, and at one time dean at his alma mater; proprietor of the Margaret Wright Hospital; on the staffs of the University Hospital, and the Georgia State Sanatorium, Milledgeville; aged 68; died, May 25.

Nelson W. Bodenbender, Buffalo; Cleveland University of Medicine and Surgery, Cleveland, 1887; member of the Medical Society of the State of New York; on the staffs of the Deaconess and Homeopathic hospitals; aged 59; was drowned in Seneca Lake, near Waterloo, N. Y., May 26.

Charles Putnam Pruyn, Chicago; Rush Medical College, Chicago, 1886; founder, and at one time professor of operative dentistry, Northwestern University Dental School; past president of the Illinois Board of Dental Examiners; aged 68; died, June 10, of paralysis agitans.

LaWilla Mott Cornelius, Brooklyn; Bellevue Hospital Medical College, New York, 1891; member of the Medical Society of the State of New York; formerly on the staffs of the Long Island College and Kings County hospitals; aged 64; died, June 3, of chronic nephritis.

Alice Margaret Fasold, Pittsburgh; Woman's Medical College of Pennsylvania, Philadelphia, 1920; member of the Medical Society of the State of Pennsylvania; aged 27; was killed, May 31, when the automobile in which she was driving went down an embankment.

William Thomas Barger, Cleveland; Starling Medical College, Columbus, 1894; physician to the American Hospital of Paris, France, during the World War, and served in Siberia with the American Red Cross for two years; aged 53; died, May 28.

Charles M. Hollister ⊕ Pierre, S. D.; University of Pennsylvania School of Medicine, Philadelphia, 1895; physician to the Indian Service Pierre School; aged 56; died, May 18, at the Presbyterian Hospital, Chicago, of pyonephritis.

Frank Eugene Sleeper, Sabattus, Me.; Medical School of Maine, Portland, 1870; at one time member of the state legislature; formerly on the staff of the Central Maine General Hospital, Lewiston; aged 76; died, May 2.

David Heine Levy ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1901; attending surgeon to the Hospital for Joint Diseases; aged 46; died, May 22, of septicemia and nephritis.

Arthur U. Williams ⊕ Hot Springs National Park, Ark.; Missouri Medical College, St. Louis, 1878; member of the American Urological Association; aged 67; was found dead in his office, May 21, of heart disease.

Edward Canizares, Havana, Cuba; University of Havana, 1918; member of the New York City Department of Health; on the staff of the Riverside Hospital, New York, where he died, April 21, aged 28, of scarlet fever.

George W. Endicott ⊕ Plainfield, N. J.; Jefferson Medical College of Philadelphia, 1875; for ten years member of the board of health; on the staff of the Muhlenberg Hospital; aged 70; died, May 31.

William Suvard Blunt, Waupun, Wis.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1897; aged 51; died, May 25, at St. Agnes' Hospital, Fond du Lac, following an appendectomy.

Hiram K. Worden ⊕ Westmoreland, N. Y.; Albany (N. Y.) Medical College, 1874; city health officer; for many years member of the school board; aged 73; died suddenly, May 20, of heart disease.

C. L. Washburn, Marion, Ill.; Missouri Medical College, St. Louis, 1882; formerly member of the school board; aged 70; died, May 18, at the Holden Hospital, Carbondale, of heart disease.

John Henry Costello, Jr., Boston; Medical School of Harvard University, Boston, 1897; member of the Massachusetts Medical Society; aged 49; died, May 24, following a long illness.

Gustave Henry Douglas, Crescent City, Calif.; Harvey Medical College, Chicago, 1904; member of the state legislature; aged 59; died suddenly, March 27, at Sacramento, of heart disease.

Robert Bruce Johnstone, Hyattsville, Md.; Hahnemann Medical College and Hospital of Philadelphia, 1887; served as city health officer for several years; aged 68; died, June 1.

John Thomas Sullivan, Milwaukee; Marquette University School of Medicine, Milwaukee, 1913; member of the State Medical Society of Wisconsin; aged 41; died, May 26.

Ledra Heazlit ⊕ Auburn, N. Y.; University of Pennsylvania School of Medicine, Philadelphia, 1897; on the staff of the City Hospital; aged 49; died, May 2, of nephritis.

Endell N. Leake, Fremont, Neb.; New York Homeopathic Medical College, New York, 1880; member of the Nebraska State Medical Association; aged 66; died, May 25.

Lewis Cass Hormell, Casselton, N. D.; Rush Medical College, Chicago, 1874; Civil War veteran; aged 76; died, May 8, in Chicago, on his way home from Florida.

John Lawrence May ⊕ Westerly, R. I.; College of Physicians and Surgeons, Baltimore, 1901; aged 50; died suddenly, May 30, of heart disease.

Charles H. Ayling, Gridley, Ill.; Northwestern University Medical School, Chicago, 1893; aged 53; died, May 23, of cerebral hemorrhage.

Hiram Smiley, Chicago; Pulte Medical College, Cincinnati, 1885; Civil War veteran; aged 83; died, May 25, at Clinton, Iowa, of carcinoma.

A. Fletcher Haynes, Huntington, W. Va.; University of Louisville (Ky.) Medical Department, 1891; aged 63; died, June 1, of influenza.

George Henry Cairnes ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1864; aged 85; died, May 28, of senility.

Ernest Schorr ⊕ Detroit; Medical Department of the University of Wooster, Cleveland, 1882; aged 62; died, May 21, of heart disease.

Edwin Grant Ogden, Chicago; New York Homeopathic Medical College and Hospital, New York, 1891; aged 55; died, June 4.

Henry E. Eldridge, Richmond, Va.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1895; aged 49; died, May 14.

Charles Nelson Hart, Marshfield, Mass.; Homeopathic Medical College of Missouri, St. Louis, 1876; aged 63; died in May.

Frederick Selden Bloss, Troy, N. Y.; Albany (N. Y.) Medical College, 1884; aged 65; died, April 7, of cerebral hemorrhage.

James L. Clark, Denver; Missouri Medical College, St. Louis, 1886; aged 58; died, May 20, of cerebral hemorrhage.

George S. Silljacks, Baltimore; University of Maryland School of Medicine, Baltimore, 1886; aged 63; died, June 1.

Benjamin F. Hudson, Montezuma, Ind.; Miami Medical College, Cincinnati, 1857; aged 97; died, May 10, of senility.

Allen Parker, Warrensburg, N. Y.; Bellevue Hospital Medical College, New York, 1880; aged 66; died, April 28.

Albert E. Teague, Indianapolis; Eclectic Medical Institute, Cincinnati, 1892; aged 65; died, May 23, of heart disease.

Joseph M. Thurston, Richmond, Ind.; Physio-Medical Institute, Cincinnati, 1866; aged 82; died, May 23, of senility.

Jabez John Bagshaw, Centerville, S. D.; Barnes Medical College, St. Louis, 1895; died, May 1, of heart disease.

Effenger R. Kline, Philadelphia; Jefferson Medical College of Philadelphia, 1882; aged 69; died, May 8.

Correspondence

"THE DANGER OF PITUITARY EXTRACT"

To the Editor:—Through an abstract that appeared in THE JOURNAL (May 12, 1923, p. 1418) our attention has been directed to the article of Pouliot and Truchard, criticizing our article: "The Dangers of Pituitary Extract" (THE JOURNAL, May 21, 1921, p. 1390). Unfortunately, we have not yet been able to secure a copy of the journal containing Pouliot and Truchard's paper; but, assuming that the abstract correctly represents it, we feel that the statements contained in it create an incorrect impression and should not be passed unchallenged.

In the abstract, it appears that the entire basis for the criticism of Pouliot and Truchard consists of the inadequacy of our "case reports" of clinical rupture of the uterus following the employment of pituitary solution. As a matter of fact, the mention of such cases in our paper was merely incidental, and constituted only a portion of the argument against the obstetric use of pituitary solution; consequently, it seems unfair for Pouliot and Truchard to ignore the remainder of our argument. Nevertheless, even if this point is disregarded, our mention of cases of uterine rupture has been so presented, in the abstract at least, as to give an entirely different impression from what was intended.

Many of the cases that we included in our paper were reported in discussions at medical meetings; the details concerning them were meager in the extreme. By their analysis, Pouliot and Truchard arrive at the conclusion that pituitary solution was contraindicated in all but one instance; and they sapiently remark: "Pituitary extracts are dangerous only in the hands of those who do not know how to use them." But who possesses this all-important knowledge? One authority believes that the drug should be used only in the case of multiparas; another contends that only the primiparous uterus can weather the storm; one holds that pituitary solution should be used to force the head into the pelvis and enable the application of low forceps; another believes that it should never be injected until the head is on the perineum. With the constantly changing views regarding indications and contraindications, it is indeed difficult to discover the report of a pituitary catastrophe where, according to some "authority," a contraindication did not exist. Whatever the present accepted contraindications are, the fact remains that, in the hands of supposedly qualified medical men, the obstetric use of pituitary solution has been attended by catastrophe on numerous occasions. Those who, with singular clarity of vision, discern the obvious contraindications after the catastrophe or who evolve new "contraindications" as a result of the catastrophe argue the safety of the drug with as much force as the Christian science healer defends his position by claiming that a "lack of faith" was responsible for the death of a patient with diphtheria.

Since the appearance of our paper, two additional cases of uterine rupture have come to our attention. One of these was reported by Langrock (*Am. J. Obst. & Gynec.* **3**:656, 1922), 1 c.c. of the solution being injected after the expulsion of the placenta. At a recent staff meeting of the Retreat for the Sick in this city, Dr. A. S. Brinkley (this case will be reported in detail in the *Virginia Medical Monthly* by Drs. Brinkley and Martin) reported the case of a quadripara who was attended in labor by a capable and experienced practitioner. When the child's head had actually appeared at the vulva, the patient was given an injection of 5 minims of pituitary solution; the head disappeared and the patient went into collapse. Opening the abdomen revealed that the uterus had performed an almost complete supravaginal amputation on itself.

Doubtless, pituitary enthusiasts will discover "contraindications" in these cases, as they would discover contraindications in the number of unreported cases (and we believe this number is not small) in which uterine rupture and death occur after the use of pituitary solution, but when, in the absence of necropsy, the unfortunate outcome is attributed to some "act of providence."

It would be interesting to secure the views of Pouliot and Truchard on the use of ergot in the early stages of labor. This practice, formerly endorsed by the leading obstetricians, is now almost universally condemned, but we have shown (*Am. J. Obst. & Gynec.* **4**:608 [Dec.] 1922) that pituitary solution is much more likely than ergot to cause persistent uterine contraction, both experimentally and clinically.

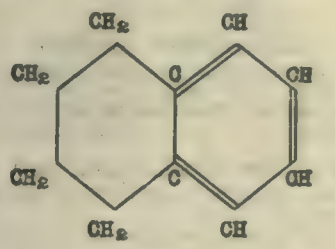
Differing from our French colleagues, we believe that we are justified in renouncing "the *benefits* of organotherapy" obstetrically, not on the basis of a single case, but because it may be shown both experimentally and clinically that pituitary solution is more likely than ergot to cause uterine tetanus, and because the obstetric use of the drug by licensed physicians has been followed by many instances of uterine rupture with fetal and maternal death.

CHARLES C. HASKELL, M.D.,
M. PIERCE RUCKER, M.D., Richmond, Va.

FORMULA OF TETRAHYDRONAPHTHALENE ("TETRALIN")

To the Editor:—In the editorial on the Wassermann tuberculosis reaction (THE JOURNAL, May 19, p. 1456), "tetralin" is stated to be "a naphthalene with four molecules of water of hydration."

"Tetralin," or tetrahydronaphthalene, is produced by the hydrogenation of naphthalene; that is, it is made by the catalytic reduction of naphthalene. It possesses the structural formula:



I hope that this information will make clear that "tetralin" is not a naphthalene hydrate.

W. A. HAMOR, Pittsburgh.
Assistant Director, Mellon Institute of Industrial Research, University of Pittsburgh.

FOCAL INFECTION—THE SEMINAL VESICLES

To the Editor:—During the last two years I have seen a number of men who suffered from toxic fibrositis, patients who obtained temporary relief from acetylsalicylic acid, but who failed to get the expected permanent relief from removal of infected teeth and tonsils, or from the clearing up of other evidently infected areas.

For some years I had recognized that my finger was not long enough to enable me to elicit satisfactory findings concerning the condition of the seminal vesicles, and I had been in the habit of depending on the well recognized genitourinary specialists for this information. It finally occurred to me that perhaps the physical limitations of these specialists

might similarly be a bar to their efficiency in this respect, and so I sent a number of these patients to a surgeon whom nature had endowed with unusually long fingers. The results have been highly gratifying, many patients who previously had been examined with negative results by different well-trained urologists thus obtaining drainage of hitherto unrecognized pent up infected material, with consequent relief from their fibrositis.

The conclusions I would draw from my experience are that:

1. In quite a number of men patients in whom the removal of recognized focal infections does not give the expected results, a nidus of infection exists in the seminal vesicles.

2. In many instances the physical limitations of even well trained urologists prevent them from recognizing the vesicular infection, and from properly and gently massaging these structures should they discover the infection.

CHARLES MINER COOPER, M.D., San Francisco,

NEW POLISH PERIODICAL

To the Editor:—I have received a letter emanating from the State Epidemiological Institute in Warsaw, Poland, in which I am informed of the creation of a new medical publication, the *Journal of Experimental Medicine,* which will provide a medium for original publications for the Polish scientists, which is now completely lacking. In order to provide a financial basis for the undertaking, one thousand subscribers are required, of which number only 240 are available at present. It is hoped that Polish physicians in the country and also libraries will subscribe to it. Those interested should forward their names and exact addresses to Dr. Casimir Funk, 437 West Fifty-Ninth Street, New York. Medical publications which have Polish physicians among their subscribers please copy.

CASIMIR FUNK, M.D., New York.

Queries and Minor Notes

PARATHYROID GLANDS

To the Editor:—Please give me all of the available information about the parathyroid glands, their function, and especially their action, if any, on calcium metabolism. Please also tell me how one may recognize parathyroid insufficiency. J. C. BURCH, M.D., Alto, Ga.

ANSWER.—A number of significant facts regarding the parathyroid glands have been established during the last two years. The facts are these:

1. Normal dogs, including pregnant females, can be kept alive indefinitely following complete parathyroidectomy. Complete loss of the parathyroid glands is therefore compatible with life.

2. The treatment necessary to prevent fatal parathyroid tetany early after extirpation of the glands can be discontinued after from forty to sixty days.

3. On the appearance of the estrual cycle, however, all the symptoms of acute tetany usually recur.

4. Between the periods of "heat" the animals appear perfectly normal. Under special conditions (e. g., muscular exercise and excitement), such animals may suddenly develop convulsions indistinguishable from grand mal attacks of idiopathic epilepsy.

5. The best evidence available points to the view that parathyroid tetany is due chiefly to toxins elaborated in and absorbed from the gastro-intestinal tract.

6. Two measures have been devised to prevent the tetany or rapidly control it should it occur: The dietary treatment prevents the elaboration of the toxic products in the bowel; the drug calcium lactate, when ingested in large doses, certainly preserves life. Its mode of action is not known with any degree of certainty. For the rapid control of alarming symptoms in an emergency, preparatory to either one or both of the treatments mentioned, nothing excels the free use of Ringer's solution intravenously injected, particularly if preceded by soap-suds enemas.

7. It is not certain at this time whether the low blood calcium in tetany is a cause or an effect of the tetany.

Tetany due to parathyroid deficiency or insufficiency, seen most commonly after operations on or partial resection of the thyroid gland, is characterized by intermittent clonic spasms of the skeletal muscles. Spasticity first of the hands and then of the feet, with clonic twitchings of the individual muscles, precede the spasms. Fibrillations of the skeletal muscles can always be felt and often seen. Tetanic spasms of short duration may occur in severe cases. A tetanic spasm of the diaphragm at the time of a generalized tetanic convulsion usually leads to death from asphyxia in experimental animals. In the intervals between clonic and tetanic seizures (as well as in latent tetany), one finds a marked increase in the electrical excitability of the peripheral motor nerves to a galvanic current (Erb's test); a tetanic spasm in a limb whose main motor nerves are compressed (Trousseau's phenomenon); a spasm or clonic twitching of the facial nerve (Chvostek's sign).

RECENT ARTICLES

Luckhardt and Rosenbloom: The Presentation and Control of Parathyroid Tetany, *Proc. Soc. Exper. Biol. & Med.* **19**: 129, 1921.
Dragstedt: The Relation of the Parathyroid Tetany to Intestinal Bacteria, *Am. J. Physiol.* **59**: 483, 1922.
Luckhardt and Rosenbloom. The Control and Cure of Parathyroid Tetany in Normal and Pregnant Animals, *Science,* July 14, 1922.
Luckhardt and Rosenbloom: The Control and Cure of Parathyroid Tetany in Completely Parathyroidectomized Animals During the Oestrus Cycle, *Science,* Sept. 1, 1922.
Dragstedt, L. R.: The Pathogenesis of Parathyroid Tetany, THE JOURNAL, Nov. 4, 1922, p. 1593.
Luckhardt, A. B., and Goldberg, Benjamin: The Preservation of the Life of Completely Parathyroidectomized Dogs by Means of the Oral Administration of Calcium Lactate, THE JOURNAL, Jan. 13, 1923, p. 79.
Salvesen: Studies on the Physiology of the Parathyroids, *Proc. Soc. Exper. Biol. & Med.* **20**: 204, 1923.
Dragstedt: The Pathogenesis of Parathyroid Tetany, *Am. J. Physiol.,* February, 1923.
Luckhardt and Blumenstock: Additional Observations on Completely Thyroparathyroidectomized Dogs, *Am. J. Physiol.,* February, 1923.

KLIEG, OR CINEMA, EYE

To the Editor:—Can you give references to the literature or any information on "Klieg eye" (a condition of inflammation in the eye following the exposure to bright lights in the taking of moving pictures)?

M. W. PERRY, M.D., Washington, D. C.

ANSWER.—The so-called "Klieg eye" or "cinema eye" results from repeated continuous exposure to the intense lights used in photographing interiors in the moving picture industry. Originally, the main lights used were the Klieg lights, a twin arc using 25 amperes, encased in a tin shield lined with aluminum paint, and manufactured by Kliegel Brothers of New York. In these lights, the so-called ultraviolet carbons are used with the claim that they produce a light rich in photographic rays. We do not know whether any measurements have been made to determine whether or not such light is richer in the ultraviolet content than the light from the ordinary carbon arcs. Certain it is that the same ophthalmic picture is produced by the other lights used in the industry, such as the Cooper-Hewitt.

The condition of the eye that results from continued exposure to the light is apparently one of burn, edema of the lids, some superficial conjunctival injection, and a sensation of heat, accompanied by lacrimation and photophobia. Elimination of the light and rest are followed by complete relief of the condition in from two to four days.

This subject was discussed rather fully about two years ago at a meeting of the Berlin Ophthalmologic Society, and again in an article by Chappe (*Ann. d'ocul.* **157**:425, 1920; *Arch. d'opht.* **5**:37, 1920). It has never been completely determined whether the irritation is due to the excess of ultraviolet rays, or to an excess of infra-red rays, or to an excessive intensity. In all probability, the former is the exciting cause.

SEVENTEEN YEAR LOCUSTS

To the Editor:—In this section of southwest Virginia, we are having a visitation of the seventeen year locusts. Is there any basis for the popular belief that these locusts poison, by their excretions, vegetables, fruits, berries, etc., and that the drinking of water coming from exposed reservoirs, where their dead bodies may contaminate the supply, is dangerous? I see that locusts are used as a food.

THOMAS J. TUDER, M.D., Exeter, Va.

ANSWER.—Apparently there is no justification for the belief that the excretions from the seventeen year locust (*Cicada septemdecim*) render foods poisonous. At least we do not find any records of poisoning from such sources. Drinking water contaminated by the bodies of dead locusts is not more poisonous than that from other decaying animal matter.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chrm., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, July 3. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, July 9-12. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.

COLORADO: Denver, July 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 10. Sec. Eclectic Board, Dr. James E. Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT: Hartford, July 10-11. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford.

DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.

DISTRICT OF COLUMBIA: Washington, July 10-12. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.

HAWAII: Honolulu, July 9-12. Sec., Dr. G. C. Milner, 401 Beretania St., Honolulu.

ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.

INDIANA: Indianapolis, July 10. Sec., Dr. Wm. T. Gott, Crawfordsville.

KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Augusta, July 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MARYLAND: Baltimore, June 19-22. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.

NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, July 10-11. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, July 3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Preliminary Examiner, Mr. C. D. Koch, 422 Perry Bldg., Philadelphia.

RHODE ISLAND: Providence, July 5-6. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 17. Dir., Dr. H. R. Kenaston, Bonsteel.

TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg., Dallas.

UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.

VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.

WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.

WEST VIRGINIA: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

Arizona January and April Report

Dr. Ancil Martin, secretary, Arizona Board of Medical Examiners, reports that five candidates were licensed by reciprocity at the meeting held at Phoenix, Jan. 2, 1923. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Keokuk Medical College of Physicians and Surgeons		(1907)	New Mexico
University of Michigan Medical School		(1899)	Michigan
Washington University Medical School		(1908)	Oklahoma
Medical College of South Carolina		(1919)	S. Carolina
National School of Medicine, Mexico		(1917)*	Mexico

* Graduation not verified.

Dr. Martin also reports the written examination held at Phoenix, April 3, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the two candidates examined, 1 passed, and 1 failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Nebraska College of Medicine		(1921)	87.5
	FAILED		
Hahnemann Medical College and Hospital of Chicago		(1921)	66.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University Medical School		(1903)	Oklahoma
Keokuk Medical College		(1908)	Iowa
Louisville Medical College		(1905)	Texas
St. Louis University School of Medicine		(1905)	Missouri
University of Nebraska College of Medicine		(1910)	Nebraska
Albany Medical College		(1909)	New York
Medical College of South Carolina		(1906)	S. Carolina

Connecticut March Examination

Dr. Robert L. Rowley, secretary, Connecticut Medical Examining Board, reports the written examination held at Hartford, March 13-14, 1923. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 14 candidates who took the examination, 7 passed, and 7 failed. Four candidates were licensed by special exemption. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University		(1922)	84.8
Indiana Medical College		(1907)	84.2
Harvard University		(1921)	85.6
Tufts College Medical School		(1922)	79.4
Columbia Univ. College of Physicians and Surgeons		(1914)	76.6
University and Bellevue Hospital Medical College		(1920)	90
University of Vienna, Austria		(1920)*	78.8
	FAILED		
College of Physicians and Surgeons, Boston		(1908)	55
University of Vermont		(1899)	42.3
National University of Athens, Greece		(1918)*	69.6
University of Budapest, Hungary		(1912)	55.8
University of Naples, Italy		(1920)*	67.1
University of Moscow, Russia		(1917)*	65.3
University of Valencia, Spain		(1916)*	62.8

College	SPECIAL EXEMPTION	Year Grad.
Johns Hopkins University		(1920)
Harvard University		(1918)
Columbia University College of Physicians and Surgeons		(1911)
McGill University		(1905)

* Graduation not verified.

Idaho January and April Report

Mr. Harry L. Fisher, director, Bureau of License, Idaho State Board of Medical Examiners, reports the written examination held at Boise, April 4-5, 1923. The examination covered 11 subjects and included 86 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Four candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Barnes Medical College		(1904)	76

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists		(1920)	California
Cooper Medical College		(1884)	Montana
Northwestern University Medical School		(1906)	Oregon
Harvard University		(1921)	Utah

Wisconsin January Examination

Dr. J. M. Dodd, secretary, Wisconsin State Board of Medical Examiners, reports the written and practical examination held at Madison, Jan. 9-11, 1923. The examination covered 19 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Eleven candidates were licensed by reciprocity, and 9 candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bennett Medical College		(1915)	76
Chicago College of Medicine and Surgery		(1915)	79
Harvard University		(1919) 85, (1921)	88
Detroit College of Medicine		(1891)	75
University of Pennsylvania		(1922)	84
University of Innsbruck, Austria		(1919)*	83
University of Odessa, Russia		(1915)*	86

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1917), (1922, 2)	Illinois
University of Illinois		(1922)	Illinois
University of Minnesota Medical School		(1922, 2)	Minnesota
Washington University		(1919)	Missouri
Columbia University		(1919)	Minnesota
Woman's Medical College of Pennsylvania		(1920)	Ohio
Meharry Medical College		(1921)	Arkansas
University of Berlin, Germany		(1890)	Illinois

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Loyola University		(1916, 2)	U. S. Army
Rush Medical College		(1914), (1917)	U. S. Army
Harvard University		(1900)	U. S. Army
University of Minnesota Medical School		(1916)	U. S. Army
John A. Creighton Medical College		(1916)	U. S. Army
University of Oregon		(1914)	U. S. Army
University of Pennsylvania		(1914)	U. S. Army

* Graduation not verified.

Book Notices

DER KÜNSTLICHE PNEUMOTHORAX. Von Ludwig von Muralt. Second edition. Paper. Price, $2. Pp. 150, with 53 illustrations. Berlin: Julius Springer, 1922.

This describes von Muralt's technic, his successes and failures, and his philosophical considerations of the subject of artificial pneumothorax. As far as we are aware, few works have attempted to cover this field. The great part of our written knowledge lies scattered in divers articles, and has not been collected and classified. This book, therefore, fills a need. The author has attacked his problem with scientific care for accuracy, and with an energy that spares no detail. From the review of the literature in the first chapter —which is not a review in the usual sense of the word because von Muralt, being a pioneer, could record rather than be forced to review—to the index, which is much more complete than we are accustomed to see in German literature, a conscientious effort has been made to note whatever might be of practical interest in relation to pneumothorax. Von Muralt fills with nitrogen. He first explores with his apparatus containing oxygen, and, when satisfied that the pleural cavity has been entered, changes to nitrogen. In America, air is generally used. This is somewhat simpler than gas, and seems about as effective. Von Muralt's technic may appear more complicated than necessary. While the book is to be commended, we should prefer, for transplantion, a work a little less detailed in some parts and a little more forceful in the emphasis of the salient features.

EXERCISE IN EDUCATION AND MEDICINE. By R. Tait McKenzie, M.D., LL.D., Professor of Physical Education and Physical Therapy and Director of the Department of Physical Education, University of Pennsylvania. Third edition. Cloth. Price, $5 net. Pp. 601, with 442 illustrations Philadelphia: W. B. Saunders Company, 1923.

Those familiar with the previous editions of this book will welcome the new edition, in which the work has, indeed, been "thoroughly revised." The chief differences between the present and previous editions will be found in connection with exercise as a test, and in the treatment of diseases of the circulation, in which an extensive experience during the war with the so-called "soldier's heart" has given the author still greater confidence in the value of exercise in these conditions than he dared to express before. It has been found that "murmurs, especially systolic, were almost valueless as a basis for prognosis. . . . Displacement of the apex was an untrustworthy guide. . . . Reliance was placed on distress, rapid action with slow return to normal, and precordial pain after exercise. Exercise proved to be the only sound clinical test of the heart's ability to perform its work. It was shown that irregularities and intermittence are not signs of heart disease and do not incapacitate, except in that very disorderly type which does not disappear when the heart is accelerated during or immediately following exercise. This is due to the fibrillation of the auricles and is a serious condition happily rare [in military practice, no doubt, but not in that of the internist or general practitioner] and easily recognized. . . . It was found that digitalis has a constantly adverse effect on the symptoms, and it was discontinued." The latter statement is in line with the modern view regarding the special efficiency of digitalis in auricular fibrillation, in which vigorous exercise is not well borne and digitalis very helpful. For very sane and sensible advice regarding the exercise treatment of heart patients, even when they are confined to bed, the reader must be referred to the book. Another addition, occasioned by the pathetic contribution of the war maimed and crippled, has been the development of new and simple devices for muscular reeducation; and those that have proved their value in the great hospitals of the army and navy are described and pictured. The only criticism that can be found is that already stated in the review of the first edition (THE JOURNAL, Jan. 8, 1910, p. 154), that there is danger of the lay physical culturist considering himself competent to prescribe and apply exercise in the treatment of various conditions or diseases. That this is not the case is not sufficiently stressed by the author. However, physicians have themselves to blame when, because of their lack of interest in this important branch of therapeutics, lay enthusiasts invade this field, helping many and harming a few. The remedy for this condition is to institute courses in physical therapy in our medical schools in which medical students can at one and the same time be given the educational and hygienic benefits of gymnastics, while being taught their therapeutic application. Such a department in a medical school might also train nonmedical teachers in physical education, of whom there exists a dearth in this country, occasioned by the rapidly growing appreciation of the value of physical training as a result of the revelations of preventable disability brought out by the draft.

INVESTIGATIONS INTO THE OCCURRENCE AND CLASSIFICATION OF THE HAEMOGLOBINOPHILIC BACTERIA. By Martin Kristensen, Chief of Department at the State Serum Institute, Copenhagen. Paper. Pp. 272, with illustrations. Copenhagen: Levin & Munksgaard, 1922.

This monograph contains an excellent historical review of work on the hemoglobinophilic bacteria, and a detailed account of the author's investigations of these organisms. There is an extensive bibliography. In the section on comparison of the Pfeiffer bacillus with other hemoglobinophilic bacteria, the author has missed the important differential character of nitrate production, discovered by Jordan and confirmed by Stillman and Bourne. River's work, pointing to the occurrence of a definite variety in meningitis, is also overlooked. On the whole, however, the review contains a very fair and complete statement of our knowledge of the Pfeiffer bacillus and related organisms at the present time. The author concludes, from his own work, that there are some strains that must be classed as Pfeiffer bacilli, although the satellite phenomenon is poorly developed, or completely absent. In accordance with the work of several observers in this country, identical agglutinative varieties were rarely found in cases of fatal influenzal pneumonia in the same epidemic. The author concludes: "From my own experience and that of others, . . . in all probability Pfeiffer's bacillus is not to be looked upon as the primary specific virus of influenza."

A TEXT-BOOK OF OBSTETRICAL NURSING. By Alice Weld Tallant, A.B., M.D., Professor of Obstetrics, Woman's Medical College of Pennsylvania. Cloth. Price, $2.25. Pp. 291, with 116 illustrations. Philadelphia: Lea & Febiger, 1922.

This small volume should prove to be enjoyable as well as helpful to all nurses who practice this branch of their profession. Dr. Tallant has stated the subject matter in a clear and concise manner, and in her brevity has emphasized the important points in each subject. The book is logically divided into ten chapters. The paper is of good quality, the print fairly large, and the text free from errors. It is amply supplied with illustrations which have been judiciously selected from standard works, such as those of Bumm and Cragin. Each subject is epitomized, and for the most part represents the accepted views of the day. The description of sterilization must be criticized. On page 222, under the caption of cesarean section, the author properly states the occasional necessity of sterilizing the patient after the delivery. "This is usually done by tying each tube in two places with linen thread and cutting between the ties." The foregoing quotation from the text should be stricken out, as all obstetricians know that pregnancy has occurred shortly after such treatment. The accepted procedure today is cornual excision of the tubes.

CUNNINGHAM'S TEXT-BOOK OF ANATOMY. Edited by Arthur Robinson, M.D., F.R.C.S., Professor of Anatomy, University of Edinburgh. Fifth edition. Cloth. Price, $11. Pp. 1,577, with 1,111 illustrations. New York: William Wood & Co., 1923.

This textbook has long been a standard guide for students in anatomy. In the present edition several sections have been rewritten, notably those on the ductless glands and on the peripheral nervous system. Many of the sections have been entirely recast, and there are numerous new illustrations. One of the especially noteworthy features is the extensive index of more than 100 pages, which makes reference to the vast amount of anatomic knowledge contained in the book relatively simple.

Miscellany

THE MAKING OF WILLS BY PERSONS IN EXTREMIS*

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The active professional man has always found that some knowledge of other callings is essential to obtaining a good measure of success in his own work. The physician, the lawyer, the engineer all find the points of contact, the instances when it is useful to have at least some general idea of the underlying principles and the accepted practices of the other professions.

The drafting of wills is a function of the lawyer, but this is one of the contact points on which the physician should have general knowledge. In this paper I shall consider the general knowledge which a physician should have to enable him to draft a will in emergency and to enable him to determine whether he will witness a will of a moribund person and, having done so, be able to justify his act.

With respect to the average patient, there is sufficient time for the physician to recommend that a lawyer be called, if the making of a will is deemed desirable or necessary. There are, however, the so-called deathbed cases, which require prompt action and which do not permit of obtaining the advice that otherwise would be secured. Such a situation may confront the physician practicing in a country district, and it may as readily present itself to the city physician while on vacation in a remote and sparsely settled section. Blackstone says in this connection, "It would be useful if the medical attendant were acquainted with at least the formal part of executing wills; in the moment of danger and distress when all around the bed of death are confused with fear or overwhelmed with affliction, the physician, probably a confidential friend, whose duty and habit insures self-possession, may be the only person competent to advise."

While the knowledge on the part of the physician should extend, as just quoted from Blackstone, to "at least the formal part of executing wills," it is highly desirable also that the physician have a general idea as to the requirements entering into the making of a valid last will and testament. So many cases are constantly arising which involve the construction of wills and the mental capacity of testators that the physician may at first blush regard the requirements of a valid last will and testament as highly technical. It is probable that such an understanding is due to the use of legal phraseology. These requirements, however, are not highly technical, and, indeed, they can be understood very readily by men outside the legal profession.

By far the largest number of will contests turn on questions of fact, such as whether or not there was undue influence and whether or not there was mental capacity; and do not grow out of any alleged informality in the preparation or execution of the will. The number of wills, however, which are found to be improperly drawn or improperly or insufficiently executed, is larger than it should be. Accordingly, the physician who advises in the execution of a will or who witnesses one should be somewhat conversant with the general essentials of such a document. Moreover, he should endeavor to satisfy himself that there has been no undue influence and that there is testamentary capacity. As a usual thing, the witnesses to a will do not, at the time, concern themselves with the question as to whether or not undue influence has been exercised. The medical man who acts as such witness will do well, for reasons which will be elaborated as we proceed, to satisfy himself on this point.

*Read before the Medical Society of the District of Columbia, April 25, 1923

ESSENTIAL REQUIREMENTS

Let us, then, first consider what a will is and the essentials that go to make a valid last will and testament. A will is a disposition of property to take effect on or after the death of the person making the will. The right to make a will of real estate is not a common law right, but has grown up under the statutes of the various states and, of course, the requirements in each jurisdiction are fixed by the statutes of such jurisdiction. The fundamental requirements do not vary. The testator or testatrix must be of sufficient age. This, in the District of Columbia, for the purpose of will making, is 21 years for a male and 18 years for a female. The instrument must be signed by the testator or by some other person by his request and by his direction, and it must be so signed in the presence of the attesting witnesses and they must affix their signatures in the presence of the testator and in the presence of one another. The instrument must be dated on the date of its execution and it must be read by or to the testator. As to the number of witnesses, the general requirement is for two, but some jurisdictions require three witnesses. The person named as executor in the will should not act as an attesting witness, nor should any person act as witness who may be a beneficiary or legatee under the will. The testator must not be under duress, must not be subject to undue influence, and must have sufficient mental capacity to understand the full nature of the instrument and its contents; and he should inform the witnesses that it is his last will and testament and that he wishes them to sign as attesting witnesses.

TESTAMENTARY CAPACITY

Having described, in brief, the essential requirements for the making of a valid last will and testament, we proceed with a discussion of the particular question on which the medical man should satisfy himself with respect to the wills of persons in extremis. The medical man need have no great difficulty as to the general requirements as just discussed. His real difficulty will be with the question whether the testator has what the law calls "testamentary capacity." It has been said that testamentary capacity means the ability to make *a* will, not the ability to make a particular will in question. This means, of course, that the testator must have a somewhat comprehensive idea of the essentials which enter into the making of a disposition of his property to become effective after death. He should know, for example, that an attempt to disinherit a wife cannot bar her of dower rights. He should be able, on being questioned, to defend and justify the disposition that he is undertaking to make in the will as against other seemingly reasonable and plausible dispositions. Every testator has the opportunity to leave his estate to a variety of persons in various amounts and under an almost endless number of conditions if he so desires. His will is an indication and a mandatory expression of the selection that he has made, both with respect to who shall be the beneficiaries of his estate and in what amount and manner they shall inherit. The explanation that he gives as to the selections he has made and as to the amounts and conditions may at once strike the questioner as logical and in every way reasonable; on the other hand, they may create a suspicion, if not clearly indicate a mental condition which has been imposed on by designing persons.

In the making and execution of the average will, its terms are known to only the testator and the counselor who drafts the instrument. It is not required nor is it usually the fact that the witnesses have any knowledge as to the disposition of the estate as directed in the instrument. However, for the reasons more fully set forth in this paper, if a physician

entertains doubt as to testamentary capacity, he can very properly decline to witness the document until he has read its contents. With respect to a will made in extremis, the surrounding circumstances are such that it is highly essential that medical men, when asked to witness such a paper, interrogate the testator, not only for the purpose of ascertaining his mental condition and of ascertaining whether there is undue influence, but also to determine the extent to which the testator can justify the disposition of his estate as provided by the will. To do this, the careful medical man will possess himself of as much information as to family history as is available and he will privately interrogate the testator with respect to the contents of the will about to be executed. No one is obliged to witness a will simply because he has been asked to do so, and the physician, if he is wise, will thoroughly satisfy himself along the lines as indicated before he will witness such a paper.

Numerous so-called "tests" for testamentary capacity have been laid down from time to time. In Hadfield's case, Lord Erskine, in 1800, held that the "delusion test" was the proper method of determining sanity or insanity of a testator. It was said that if the testator had a delusion he lacked testamentary capacity; otherwise he was competent. This has long since passed into the discard. Other tests have arisen and from time to time have been followed.

Clouston, one-time medicolegal authority, advised that the physician ascertain: "First, 'Is the patient free from the influence of drink or drugs and in his usual state?' Then, 'Does he know the nature of the act that he is to perform and the effect of the document he is to sign?' The next thing is to find out that he is not influenced in the doing of it or in regard to any of its provisions by insane delusion or by an insane, morbidly enfeebled state of mind. Then ascertain if there is infacility of mind from bodily weakness or any other cause or undue influence being exercised from without. The next thing is to make the intending testator go over the particulars of the disposition he wishes to be made, without prompting or suggestion or leading questions. And he should be made to do this twice, with certainly a quarter of an hour's interval between the two statements."

The Supreme Court of the United States has said that "one may be insane to the extent of being dangerous if set at liberty and yet have sufficient mental capacity to make a will."

I make bold to advance another test to be used by the physician in seeking to determine whether one possesses testamentary capacity. Mercier said, a number of years ago, that "the highest faculty of mind is the ability to choose." In making a last will and testament, a testator is simply undertaking to record in legal form his choice with respect to the disposal of his wordly goods. If the physician is given a clear statement of facts and then applies to such facts the choice as indicated by a testator, he will be able to arrive at an independent conclusion which will be based on his own best judgment. In other words, he may then determine, at least to his own satisfaction, whether the choice as made by the testator appears to be a rational one.

In the last analysis, it boils down to this: The physician must make such a test as takes into consideration the normal mental condition and habits of the particular individual who is about to make a will and then determine to what extent, if any, the illness of this particular individual has influenced him in the making of this particular will and whether in the making of the will he has been subjected to undue influence.

The fact that a patient is desperately ill will naturally make the subscribing witnesses cautious, but too much weight must not be given to the mere fact that the patient is in extremis. A recent New York case (*In re Cohen*, 176 N. Y. S. 689) distinctly held that there was no presumption against a deathbed will. Likewise it has been held in Georgia (*Hall* v. *Hall*, 18 Ga. 40) that one in a dying condition has testamentary capacity if, when his attention is aroused, his mind acts clearly and with discrimination. The particular form of disease does not seem to be of itself a controlling factor. For instance, in the matter of Kiedaisch (13 N. Y. Sup. 255), a paretic was held to have testamentary capacity; and in the matter of Loewenstine (2d Misc. N. Y. 323), which, it will be noted, is also a New York case, a paretic was held not to have testamentary capacity. Of course, the distinguishing factor was the individual characteristics of the particular cases, and so we find epileptics declared both competent and incompetent, the decision in one case (*Matter of Rapp Lee*, 66 Hun N. Y. 558) indicating that great weight was apparently given to the fact that the testator, though an epileptic, did not execute the will "during a fit."

In the case of *Robinson* v. *Duvall* (27 D. C. Appls. 535), in which the decision of the trial court was affirmed by the court of appeals, and the latter was in turn affirmed by the Supreme Court of the United States, the court of appeals discussed at some length the particular weight to be given to the evidence of a subscribing witness to a will. The trial court had instructed the jury that "the testimony of such witnesses, other things being equal, is entitled to more weight" than that of other persons not present at the execution of the will. In endorsement of this, the court of appeals said, "The attesting witnesses are considered in the law as placed round the testator to protect him against fraud in the execution of his will and to judge of his capacity, and it is their duty to inform themselves of his capacity at the very time he was executing the will." The court further pointed out that the subscribing witnesses had opportunity to form an opinion of the testator's capacity "at the moment when he executed his will."

In view of this language of an appellate tribunal, some consideration should be given to the desirability of having a family physician act as a witness to a last will and testament, and it would certainly seem that such a witness might form a more favorable opinion as to the testator's capacity at the moment when he executed his will than a nonprofessional witness. It can be conceived that a testator can go too far in this direction; for example, should a testator deliberately invite three alienists to be the witnesses to his will, it is likely that on the will's being offered for probate, the question would be raised as to why three such experts appeared as witnesses. Contention might be made that a person admittedly of sound and disposing mind would not adopt such a course and that the alienists had been used as witnesses because of the questionable mental condition of the testator and because of an anticipated attack on the instrument. It can be readily understood that such objection would have little basis with respect, for example, to the will of a physician employed in a hospital for the insane who asked some of his brother physicians to act as witnesses. The contention might be made, however, with considerable force respecting the will of a layman or one not immediately or intimately associated with the witnesses.

THE MEDICAL WITNESS

We come now, very naturally, to a consideration of the prohibition placed by statutes of many jurisdictions on the medical witness. In the District of Columbia, this prohibition is contained in Section 1073 of the Code, which reads:

> In the Courts of the District of Columbia no physician or surgeon shall be permitted, without the consent of the person afflicted, or of his legal representatives, to disclose any information, confidential in its nature, which he shall have acquired in attending a patient in a professional capacity and which was necessary to enable him to act in that capacity: Provided, That this section shall not apply to evidence in criminal cases where the accused is charged with causing the death of or inflicting injuries upon a human being, and the disclosure shall be required in the interests of public justice.

In substantially the same form, this prohibition is very generally incorporated into the statutes of the various states.

It will be observed that this prohibits a physician from testifying as to information gained in a professional capacity and which was necessary to enable him to act in that capacity. The single exception is that such testimony can be given with the consent of the patient or his legal representatives. The question arises whether, the patient being dead and no legal representative of his estate having been appointed, a physician who witnessed the will of the deceased can give his testimony as to the execution of the instrument. It has been said on good legal authority (*In re Mullin,* 110 Calif. 252) that the physician is competent to testify in such a case. This is perfectly logical, as the patient undoubtedly waives his privilege and gives his implied consent to such testimony when he asks his physician to witness a will.

There is in the District of Columbia and also in many of the states a statute providing that bequests to ministers, public teachers and religious sects or orders are invalid unless they be made more than one month (and in some instances a longer period) prior to the death of the testator. The reason for such statutes is clear, as it is readily recognized that one approaching death is apt to entertain feelings toward persons of the classes described which he would not entertain or be influenced by were he in good state of health. It is not usual that such statutes include the testator's physician or medical advisers. It is important, however, that the physician in attendance on a patient, particularly a patient in extremis, have very clearly in mind the advantageous position that he occupies and that he give heed to the fact that a bequest to him from such testator will be under suspicion. While such a gift is not bad per se, nevertheless the burden in such a case is on the physician to show that he did not take advantage of his position and that the bequest was made without the patient's being subjected to influence from any source; that it was a reasonable bequest and was not due to any sentimental idea of the patient growing out of his relations with one in attendance on his severe illness.

It will be recalled that, at the outset of this paper, attention was called to the desirability of calling a lawyer for the making of a last will and testament whenever time would permit. It is important that emphasis be given to this feature. It has been commonly believed by many persons that anyone of intelligence can draft a will. Many small stationery establishments still continue to sell blank forms of wills. So far as some of these printed forms apply to a particular situation, they can safely be followed. The folly of the use of such forms by persons not trained in drafting wills lies in the fact that no general form can meet any considerable number of cases. Physicians know that, with respect to two patients showing identical symptoms, the treatment in one case is not necessarily the precise treatment in the other case, and this is due to the differences in the general organic make-up of the individuals. These differences are always considered by the physician, and his treatment is dictated not only by the symptoms of a sick man, but also by an intelligent appreciation of the condition of the particular individual under treatment. In the drafting of a last will and testament, the lawyer must know the provisions of law with respect to the descent of property in every jurisdiction in which the will may be operative; he must know the rights of dower and curtesy; he must know the provisions of law with respect to trusts, and it is of the highest importance that he should know the United States estate tax laws and the estate and inheritance tax laws of all the states in which the property of the testator is located and in which corporations in which he holds stock or registered bonds are incorporated. It will readily be seen that this makes necessary the consideration of a particular state of facts as applied to a particular estate, just as the facts pertaining to the physical condition of a particular individual must guide the physician in any treatment that is prescribed for that particular individual.

A testator who, for reasons of economy, prepares his will on a blank form or prepares it with the advice of an unqualified person simply invites trouble for his widow and children or such others as may be designated as his beneficiaries. Such a practice, however, is not always dictated by reasons of economy, for many persons surround the making of such an instrument with the very highest degree of secrecy. Such an individual believes that he is the only person who should have any knowledge concerning its provisions. Such persons, however, must consult physicians from time to time, and on such occasions make known their physical condition. They must know that such information as their physician receives is protected in confidence; and, by the same token, the information imparted by client to lawyer is guarded with the same professional secrecy. As a matter of fact, information given to a lawyer for the drafting of a will usually is forgotten after the will is made and executed, and it is the experience of many lawyers when later called on by a client for the purpose, for example, of making a codicil to a will previously executed, to find that they have entirely forgotten the provisions of the original instrument.

However, as was pointed out in the beginning of this paper, there are occasions when a lawyer cannot be called for the drafting of a will, and if in the course of the professional experience of a medical man he finds it necessary to assist in the drafting of such an instrument, he should at least have a comprehensive idea of the service which he is to perform. And with respect to wills drawn by legal men for persons in extremis, the physician who witnesses such a paper will do well to give some attention to the requirements of the situation in order that he may in the future justify and defend his course.

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OSTEOPATHS HELD TO BE "REGULAR PRACTICING PHYSICIANS" AND AS SUCH EXEMPT FROM PODIATRY LAW

In *Howerton* v. *District of Columbia,* the court of appeals of the district has just decided that an osteopath is a regular practicing physician and as such is exempt from the provisions of the law governing podiatry. The plaintiff in error, Howerton, who was not a licensed physician nor an osteopath (there being no provision in the laws of the district for licensing osteopaths), and who apparently admitted that he had practiced osteopathy in the district for twelve years, was charged with unlawfully practicing podiatry. Podiatry is defined by an act to regulate the practice of podiatry, approved May 23, 1918, as "the surgical, medical or mechanical treatment of any ailment of the human foot, except the amputation of the foot or any of the toes; and also the use of an anesthetic other than a local one." Howerton claimed that as an osteopath he had treated the feet of his patients in the District of Columbia since 1909, whenever he found it necessary to do so. In the case at bar he had treated a "sprained foot" by manipulation with his bare hands, and later by using a rubber nodule held in the palm of the hand by means of a leather band. The court found that the method used was one common among osteopaths, and that in using it Howerton was practicing osteopathy, not podiatry. The court pointed out, however, that if Howerton could be said to have practiced podiatry in the present instance, then his practice of the same methods before the passage of the podiatry act was likewise the practice of podiatry, and as such it entitled him to continue without a license in the practice of podiatry, under that provision of the act that exempted from its operations podiatrists practicing prior to its passage.

The court stated, further: "The science of osteopathy has become sufficiently established to justify the classification of

its practitioners within the exception of the [podiatry] act, 'regular practicing physicians.' . . . Plaintiff in error was merely pursuing the practice of his profession within the lawful limits and was guilty of no infringement of the law." The phrases "lawful limits" and "the law," used in that portion of the decision just quoted, have been looked on by some persons outside the legal profession as referring to all law whatsoever, including the medical practice act; but inasmuch as the case at bar was brought under the podiatry law, it is probable that they are to be construed as relating to that law alone. The decision can hardly be looked on as authority for the statement that osteopaths practicing medicine in the District of Columbia are exempt from the provisions of the medical practice act.

Medicolegal

Validity of Food Ordinance Requiring "Medical Examination"

(Ex parte Vaughan (Texas), 246 S. W. R. 373)

The Court of Criminal Appeals of Texas, in refusing the relator's application for a writ of habeas corpus, and in remanding him into custody, says that he called in question the validity of his conviction for a violation of an ordinance of the city of Dallas. The complaint charged that he was the proprietor of a meat market, in which he worked more than five days "without a certificate from some reputable physician of the city of Dallas attesting that the bearer had been examined at any time within the last six months before the filing of this complaint and had been found free from infectious and contagious diseases." Many grounds were specified in the application for the writ of habeas corpus, but the court thinks that none need be adverted to except such as were necessary in deciding whether there was a valid ordinance of the city of Dallas on which the complaint could be lawfully based. The ordinance in part reads:

> Hereafter it shall be unlawful for any person, firm, organization or corporation, operating a food products establishment, to work, employ or to keep in their employ, any person infected with or affected by any infectious on contagious disease. It shall be unlawful for the proprietor to work in such an establishment, if he is infected with or affected by any infectious or contagious disease, and all proprietors shall be subject to the medical examination hereinafter provided for.
>
> It shall be unlawful for any individual, firm, corporation or organization operating any food establishment to employ any person to work in such establishment who, at the time of their employment, had not in his or her possession a certificate from some reputable physician attesting the fact that the bearer has been examined by such physician within one week prior to the time of employment, and that such examination discloses the fact that such person to be employed was free from any and all infectious or contagious diseases.

In its charter, the city is given "the power to enact and enforce ordinances necessary to protect health, life, and property, . . . to protect the lives, health, property of the inhabitants of said city, . . . and it shall have and exercise all powers of municipal government not prohibited by this charter, or by some general law of the state, or by the provisions of the constitution of the state."

That the enactment of suitable legislation to protect the public health against the use of impure food is within the general scope of the police power is not an open question.

The use of the term "medical examination" in the ordinance does not vitiate it on account of the rule against indefiniteness in criminal laws. The ordinance says that "all proprietors shall be subject to the medical examination hereinafter provided for." In interepreting the words "medical examination," it would be proper to consider the language "examined by such physician within one week prior to the time of employment, and that such examination discloses," etc. It would seem, taking the ordinance complete, that it would not be indefinite or confusing, but that its fair interpretation is that by the term "medical examination" is meant "an examination by a reputable physician disclosing that the person in question is free from all infectious or contagious diseases."

It was suggested that the ordinance is in conflict with the state law on the same subject. If so, it must be confessed that the court has been unable to discover it, and that it was not pointed out.

Power to Prescribe Qualifications for Examinations

(State ex rel. Bond v. State Board of Medical Examiners (Ala.), 95 So. R. 295)

The Supreme Court of Alabama says that the relator applied to the circuit court for mandamus to the state board of medical examiners to compel that board and its members to permit her to register and make application for and to take the examination for a certificate of qualification to treat diseases of human beings or to practice medicine. The reason assigned why she was not permitted to register and take the examination in question was that she was not a graduate of a medical college of the grade or class prescribed by the rules of the medical association of the state. These rules, so far as pertinent, required that the class of applicant of which the relator was should be a graduate of a medical college which required two years' college work in addition to high school work—of a college having the facilities required by the rules and regulations of said medical association. The relator demurred to the answer, and, her demurrer being overruled, took a nonsuit and an appeal. Her counsel admitted that under the Code of 1896 the medical association had the right to prescribe the standard of qualification for admission to practice medicine and "the method or system of practitioners of medicine"; but the act passed in 1907 to regulate the practice of medicine did not contain Sections 3261-62, as they were embodied in the Code of 1896.

It is established on unquestioned authority that a state may regulate the practice of medicine, using that word in its most general sense. The legislature may also by statute delegate to agencies of government or officers thereof the authority to perform administrative functions, which the legislature might perform, and may authorize such officers in such administration to exercise "legislative discretion."

The supreme court has examined carefully the statutes in question (Code of 1907, Section 1627 and following sections) as constituting the system provided by legislative sanction and authority, for the subject and objects in view, and the court is of the opinion that the authority exercised by the medical society and its board of examiners was a reasonable exercise of the discretion and authority reposed in it and them by law. Neither the statute nor any provision of the code attempted to deprive the medical association or its state board of examiners of any right or power to prescribe reasonable rules and regulations for the examination of applicants; and the statute and its codification recognize such authority and power by declaring that applicants for license must conform to such rules and regulations. Nor, as was insisted by the relator, is the allowance by the legislature of the express power to pass on the moral qualification of applicants a denial to the medical association, or to its duly constituted boards, of the right to prescribe other reasonable rules, qualifications, or requirements governing the admission of applicants for the certificate of qualification to practice medicine and surgery. The history and purpose of the statutes regulating and safeguarding the practice of such professions, the importance of this branch of science, and the agency and duty of the state in relation thereto and to the general public to be served and affected thereby, require that a liberal construction be given the statutes having application to attain the purpose of the enactment. This is done without violating fundamental or statutory rights. No right guaranteed to the relator under the Fourteenth Amendment to the federal Constitution has been abridged. She has not been deprived of her property right to earn a living in her chosen avocation or profession, without due process of law; nor does the reasonable regulation to which she has been compelled to conform deny to her the equal protection of the law. The supreme court is of the opinion that the act of the medical society and its board of examiners was within legislative authority, and that the judgment of the circuit was without error. The judgment is affirmed.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.

American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.

American Psychiatric Association, Detroit, June 19-22. Dr. C. Floyd Haviland, Drawer 18, Capitol Station, Albany, New York, Secretary.

American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.

American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.

American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.

American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.

Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.

Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.

Association of American Teachers of Diseases of Children, San Francisco, June 26.

California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.

Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.

Montana, Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.

National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.

New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.

New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.

Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.

Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.

Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.

Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.

Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.

Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Seventeenth Annual Meeting, held in New York, May 22-24, 1923

DR. WILLIAM D. ALSEVER, Syracuse, in the Chair

SYMPOSIUM ON DIABETES

The Routine Treatment of Diabetes with Insulin

DR. ELLIOTT P. JOSLIN, Boston: This paper was published in THE JOURNAL, June 2, p. 1581.

Clinical Use of Insulin

DR. JOHN R. WILLIAMS, Rochester: I began to use insulin one year ago. To whom should insulin be given? Obviously only to patients with diabetes. As many as 150 persons have been sent with a conjectural diagnosis of diabetes, simply because there was slight trace of reducing substance in the urine. These are not true cases of diabetes and are not suitable for insulin treatment. The fundamental requirement is that there should be hyperglycemia. A person may be suffering from diabetes with normal blood sugar and no glycosuria, yet there may be evidence of acidosis in the expired air. In another patient there may have been a great ingestion of sweets, and temporary high blood sugar, so these cases call for careful examination. Can insulin be given by mouth? It has been given by mouth, by rectum and by duodenal tube, but there is no effect at all from the drug unless it is given subcutaneously or intravenously. How should insulin be administered? A complete examination of the patient is made, and his basal requirement estimated. Thirty calories per kilogram of body weight are allowed. We give 1 gm. of protein per kilogram, and 50 gm. of carbohydrate, and make up 8 calories with fat. Before giving insulin clinically, we give a very small test dose to see if there are any anaphylactic phenomena. One unit of insulin is given for every 5 gm. of urine sugar excreted. The first day, 15 units is given, 10 before breakfast. The blood sugar is low for four hours, showing the duration of the effect of the drug. It is necessary to know the variations of the blood sugar curve in each patient, the highest point, and the lowest point. The normal blood sugar level is 0.11 per cent. After the first treatments, patients usually go home improved. At this time it is necessary to (1) increase the diet; (2) decrease insulin dosage, or (3) redistribute the doses. The family physician should watch for reactions, or for excretion of sugar, and note the time these occur. This will give a basis for redistributing the dose so as to forestall these occurrences. In some patients the blood sugar curve is high in the morning, and in some it reaches its height at midnight. The insulin should be given in accord with this individual curve of the patient. Must dietary regulations be continued? I would say, Yes. We have had twenty cases of coma. One patient died. Patients should be treated at the earliest possible moment, no matter how severe the cases. Insulin will not affect infection or gangrene, but it will control the diabetes. We had three fatal cases with complete anuria. I do not know whether the extract administration had anything to do with that, but if the patient is dying one must try something. An intravenous dose of 50 units is the best measure in extreme cases. In cases of gangrene, the possibility of more conservative operations is opened up by the use of insulin. We had ten cases with eight recoveries. After a few months, it appears that the pancreas regains some tendency to natural secretion. There are no bad effects if necessary care is taken. The general practitioner can regulate the cases at home by regulation of the food, observing the renal threshold, and teaching the diet to the family and the patient. Quantitative examinations of the urine for sugar should be made to determine glucose utilization, and the patient's weight must be charted. In answer to the question, Is this an economic necessity? I will say that one man, a skilled mechanic, is able by spending $2 a day to work full time and earn $45 a week. He is ahead $30, and the price of the drug is coming down, while he is advancing in his work. I think that is sufficient answer.

DISCUSSION

DR. HERMAN O. MOSENTHAL, New York: Treatment by insulin is not easily and smoothly accomplished. The knowledge of what has gone before is as necessary as treatment by insulin. An incredible amount of work has been done in the last ten years and we cannot discard this or do without the knowledge thus gained. We can distinctly say that acidosis is caused by faulty carbohydrate metabolism and that certain mixtures of carbohydrate, fat and protein have helped our patients. Dr. Joslin knows how to manage carbohydrates and proteins, so that he can manage very small doses of insulin, but the rest of us cannot do it so well. I believe if we discard the proper proportional ratios of carbohydrates and proteins, it is only a question of time before we come to grief. I shall have to disagree with Dr. Joslin in one thing: diabetes is not a mild disease. The mortality figures show that it is not mild, and it consequently deserves all the thought and study that can be given to it, in regard to diet as well as in regard to insulin. Insulin shock is brought about in different individuals at different levels. Some patients can get severe symptoms with apparently normal sugar levels. When the blood sugar is rapidly reduced, the osmotic processes in the blood are changed, and symptoms are produced. The same can be said of the renal threshold. It is not constant. In starvation it is lower, and sugar will go through. We cannot be iconoclastic in this matter and we cannot judge from urinary sugar alone and yet be perfectly safe. Another point is that after a little time in which insulin has been used, the blood sugar is reduced, and yet the diet is about the same. We would either increase the diet or decrease the insulin. We may get careless about this and get a hypoglycemic reaction in the patient. In regard to acidosis: the treatment of glycosuria and of hyperglycemia is the same as before insulin was used. Whether

we can reduce this to normal level is still an open question. In children who have a renal threshold of 110 to 120 mg. blood sugar we cannot always keep the urine free with the use of insulin. In adults with a figure of 250 mg., insulin can be used with a certain degree of impunity. Another point is that the patient must cooperate with the physician. There is no routine treatment. Each individual must be treated for himself and himself alone. In regard to pruritus vulvae, the sugar containing urine is the irritating factor. If sugar is eliminated, this symptom disappears. Whether the general itching is a specific symptom of diabetes, I do not know, but I do not think it is. The polyuria tends to cause a dry scaly skin, which is cured with relief of symptoms. Sometimes sodium chlorid administration does away with the dry skin and consequent itching. In children there is a more pronounced reaction with a unit of insulin, per pound of body weight, than with adults. The effect is proportionately greater, and caution should be the watchword.

Problem of the Leukemias

DR. THOMAS ORDWAY, Albany: The general conception of the leukemias and leukocythemia is that it is a disease of the blood-forming tissues, manifested by marked hyperplasia, showing, when fully developed, a great increase in white blood cells, accompanied by splenic and glandular enlargement. The white blood cells are pathologically immature cells which gain access to the blood stream, and it is their immaturity that distinguishes the condition from leukocytosis. This classification needs some modification because leukemias have been seen without abnormal blood pictures, so that cellular hyperplasia is a more exact criterion of leukemia than the blood picture. Further, the blood pictures in purpura hemorrhagica, in scurvy, and in acute and chronic leukemia may look very much alike. There is no special staining differentiation. Leukemias have been classed among tumors, but experimental work does not bear out this theory. Chicken leukemia has been produced experimentally by regulated doses of the bacillus of fowl typhoid, which suggests that leukemia is an unusual response of the blood to infective agents. It is difficult to separate acute and chronic leukemias, as there are many intervening stages. The former is rapidly fatal. When the course is longer, it tends to become subacute or chronic. Acute myelogenous leukemia and acute lymphatic leukemia are difficult of differentiation, and need careful staining investigations. The embryonic cells of both types look much alike. Metabolism is above normal, as shown by intolerance for heat. In treatment radium has been used with better success than other agents, although results are not permanent. The urine shows marked changes from autolysis of abnormal tissue. The phagocytic power of the white cells is feeble, though more marked in the polymorphonuclears. As it has been suggested that complement is due to white blood cells, it was thought that this function would be perverted in any abnormality of the cells. The serum was studied in regard to complement content in both lymphatic and myelogenous leukemia, but was not found to be increased. A leukolytic serum has been produced in rabbits by injecting plasma from myelogenous leukemia. The degree of specificity has not been determined. A proteolytic ferment capable of digesting fibrin is shown. There is an enzyme in the leukocytic cells which is absent in the lymphogenous cells, thus giving an important differentiation for these cell groups. This is essential in the distinction between myelogenous and lymphatic leukemia. The term leukemia, or mixed leukemia, should be discarded. The types should be differentiated by careful staining methods. There are atypical types approaching pernicious anemia, which represent unusual response to infection. Chloroma seems to bear a close relation to leukemia, as oxidase and peptic ferments have been demonstrated in the cells in this disease as well as in leukemia. Radium is the best means of therapy at present. The results of irradiation of the spleen are of varying duration, sometimes lasting for months only, sometimes for years. The results obtained after splenectomy do not justify the supposition that the spleen is the most important organ in the production of leukemia. The more primitive the white blood cells, the greater their destruction by radium. The least dose used was 25 mg., the optimal dose 100 mg.

Treatment of Anemia by Transfusion

DR. W. W. G. MACLACHLAN, Pittsburgh: The whole blood method of transfusion has no great advantage, while both donor and recipient profit by the ease of the citrated mode of transfusion. Any untoward reactions which arise in the latter are due to poor technic and too rapid introduction. In regard to tests, blood matching is more exact, but is time consuming. Typing is quicker, but we cannot be sure that there are not more than four types of blood. If all the reactions from transfusion are attributable to agglutinin reactions, we should return to individual matching, as being safer, but some of the phenomena seen, pain in the lumbar region, constriction of the thorax, flushing of the face, rapid pulse, and hemoglobinuria, remind us of anaphylactic phenomena when seen at second transfusion. Benefit from transfusion is less when the reaction is severe, but this is not proved. Data on this question would be interesting and useful. Another point is that sometimes a blood of different type has been given in emergencies, without any ill effect. The question of the value of transfusion in pernicious anemia may be raised. Does it do more than nature does in this disease? If given when a remission is due it seems to hasten it. There is often appearance of general improvement, with disappearance in symptoms and steady increase in the red cells; but how much of this is due to transfusion we cannot say. In cases with nervous system involvement it is practically useless. Vital staining with careful counting will give some idea of improvement. Increase of reticulated red cells after transfusion indicates likelihood of a remission. These cells are a more reliable sign of bone marrow activity than nucleated reds. If they are not increased, further transfusion will not benefit. Sometimes just before death the nucleated reds go up to 30 or 40 per cent., which represents the last crisis of bone marrow activity. It would seem wiser to give small amounts of blood, thus imitating Nature's method in causing a remission. It is certain that transfusion has a far more definite value in secondary anemias, in which there is a definite and marked response than in primary anemias in which its value is theoretical.

DISCUSSION

DR. NELSON G. RUSSELL, Buffalo: Dr. Ordway's paper leads one to think that the diagnosis is not often in question, although he states that the cells are usually abnormal. I could cite instances in which diagnosis was not so easy. The association of Vincent's organisms with leukemia cannot be ignored. Cases of acute mononucleosis are often overlooked and a high leukocyte count is disregarded. As to treatment, our success has not been great with radium, perhaps on account of different technic. The mental effect of treatment on the patient has some bearing in these cases. In regard to pernicious anemia: We are all trying to do something, and if one man does not use transfusion, another will. The patient wants us to make some effort, and giving small amounts of blood is about as harmless as anything one can do. Remissions do follow transfusions in some cases, and the patient's peace of mind is worth considering. When, however, the blood is destroyed and very rapidly eliminated, there is no use going on. The use of hydrochloric acid certainly makes the patient more comfortable.

DR. H. R. BROWN, Rochester: There are some subordinate groups of the four types. I use individual matching, with minimal bad effects. The sodium citrate used should be chemically pure; if it is, there will be no ill effects from citration of the blood.

DR. BALDWIN MANN, Buffalo: Whole blood is superior to the citrated blood. I used the citrated method for a year, but discarded it. While the reactions were not serious enough to affect the final result, they were more numerous after citrated blood. One point that is important is to strain the citrated blood before introducing it into the recipient. If this is done, a good deal of fibrin will be caught which might block the apparatus or go into the recipient. A certain amount of skepticism is justified in considering the benefit of transfusion in pernicious anemia. Some men have questioned whether there is not an earlier exhaustion of the bone marrow from repeated transfusions. I believe, however, that

in properly selected cases it is of benefit, especially when the patient is exhausted and discouraged.

DR. E. G. STILLMAN, New York: In the tests for compatibility of the blood, possibly both direct and indirect methods should be used, by matching and by typing. There is practical advantage in the blood grouping in the management of professional donors; on the other hand, the universal donor group cannot be used indiscriminately without getting some disagreeable reactions, and direct matching is advantageous in some cases. Another point is that when the patient is in very bad condition, direct matching may fail to show incompatibility, because the agglutinins may be so few that they do not show clumping of the donor's corpuscles. We had one fatal result following transfusion, owing to this difficulty. No matter what methods we follow, I think we shall not be able entirely to avoid reactions after transfusion, certainly not until our knowledge of the processes entailed is much increased. I do not think the new groups suggested by Guthrie would upset our present grouping of donors so that this method can still be used.

DR. THOMAS ORDWAY, Albany: In regard to Dr. Russell's remarks concerning the diagnosis of leukemia, there is no difficulty in the great majority of the cases; but in certain instances of acute mononucleosis there is considerable doubt. It is sometimes impossible to make a diagnosis unless by special histologic staining methods which bring out the presence of leukocytic hyperplasia in the tissues, which is the final criterion. As to the presence of Vincent's organisms as an etiologic factor, these are so frequent in ulcerative and hemorrhagic conditions of the mouth that one would hesitate to say that they play a part in the etiology. In regard to radium, it is important not to overirradiate. I have seen rapidly fatal termination in Hodgkins' disease because irradiation was carried on till the glands in the neck entirely disappeared. We should be satisfied with moderate reduction of the size of the glands. In regard to prognosis: These patients do not seek advice until enlarged abdomen or glands call their attention to the disease, and this is a late stage; therefore our reports on frequency and results rest on insecure data.

(To be continued)

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Eighth Meeting, held at Atlantic City, N. J., May 1-2, 1923

(Continued from page 1727)

Insulin in Diabetic Coma

DR. N. B. FOSTER, New York: No cases of diabetic coma developed under our supervision, but forty-five cases have come to us from other hospitals. Eight patients recovered completely, and five are still living. We have used insulin to combat acidosis, combined with alkalis to protect the tissues from acid intoxication. The first dose of insulin was given in the emergency ward. The primary object in giving insulin is to start the combustion of glucose by interrupting the abnormal catabolism. We do not know the blood sugar figures or the amount of insulin necessary, but we give a large dose and watch for the first signs of insulin shock (seen only in one case). The glucose can be administered by the rectal drip. As soon as the patient recovers consciousness, glucose and orange juice can be administered by mouth. The amount of insulin needed was very variable: the smallest quantity given within twelve hours was 70 units, and the largest amount, 240 units. In one case, 300 units was not sufficient. One important factor is the treatment of the desiccation of the tissues and the dryness of the pharynx. Even if acidosis is overcome, desiccation may lead to death, so that it is necessary to give fluids by every avenue of approach: by rectum—using a solution with 5 per cent. glucose and 3 per cent. sodium bicarbonate—by mouth, and, if the latter is impossible, by hypodermoclysis. In two cases fluid was administered peritoneally with apparent success. Alkalis are given intravenously, but only in small quantities. Large quantities of fluid are absorbed by rectum. Death is often due to cardiac failure in these cases, and the patient should be watched carefully. If signs of heart failure intervene, digitalis and caffein should be given to support the failing heart.

Insulin in Diabetes in Children

DR. H. RAWLE GEYELIN, New York: Insulin can be used in the severest forms of diabetes that we see clinically, especially those in children. We have treated seventeen cases. Nutrition was allowed to the extent of 2 or 3 gm. of protein per kilogram of body weight, and carbohydrate equal to or above the protein intake. Fat is given to bring the total caloric intake up to 50 per cent. over and above the basal requirements. Unfortunately, our insulin supply has been restricted. On an average, the amount of insulin required to oxidize 2 gm. of carbohydrate was 1 unit. This was not constant in all cases, but tended to become so over a long period of time. It was noted that the children required less insulin for a given amount of carbohydrate after long treatment than when first under observation, thus showing evidence of less strain on the pancreas. The amount of insulin required was determined by blood sugar and urine sugar examinations. The glycosuria amounted to excretion of from 1 to 10 gm. of an intake of 125 gm. of carbohydrate. The patients gained in weight and height. Before insulin was started, some of them were so weak that they could not stand without being supported. They are now able to go to school and lead the life of a normal child.

Experiments with Insulin

DR. F. M. ALLEN, New York: It seems that we are inclined to work out the problems of insulin entirely with reference to carbohydrate metabolism. We have now to learn whether the internal secretion of the pancreas is related to glucose metabolism alone, or whether there is any connection with protein metabolism. The tests will vary according to blood sugar and glycosuria, but any test will serve if time enough is allowed. The tests will be quicker in result if carbohydrate is allowed, and will take longer in the case of ingestion of fat, alcohol, etc. A high proportion of fat in the diet raises the insulin requirement. Glycosuria is affected most by carbohydrate, nex by protein and lastly by fat; but if enough fat is added, more insulin will be needed to handle it. Protein does not act quickly in preventing hypoglycemia. Sugar or starch act more powerfully in preventing hypoglycemia collapse. Carbohydrate is thought responsible for glycosuria resulting from too high fat, but there is not enough carbohydrate derived from 100 gm. of fat to correspond to 7 units of insulin. Experiments with high additions of fat (150 gm.) showed that it required 22 units of insulin to handle the fat. These results confirm the findings in the undernutrition treatment. If the body weight is kept low, less insulin is required.

DISCUSSION

DR. RUSSELL WILDER, Chicago: The problem of balancing diet in young children calls for careful handling, especially when complicated by infection. The balance between hypoglycemia and hyperglycemia in a child is so narrow that it is easily upset either way. I believe that it is as well to interpose a buffer in the way of some glycosuria and hyperglycemia in children under 8 years, which leaves a margin of safety, rather than keep them sugar free. This may mean large doses of insulin, but I think it is safer. Dr. Allen fails to take into account the total calories of food in the experiment. The ideas are not justified unless one takes into consideration the food requirement. He knows what the patient is getting but he has no idea at all of what the patient is burning.

DR. REGINALD FITZ, Boston: In dealing with hospital patients, the disease is a severe economic drain on the patient and on his family, necessitating, as it does, special equipment and food, and meaning progressive loss of strength. What are we to advise these patients? Is insulin to mean to them a luxury or a necessity? Are they to mortgage their farms and possessions to procure enough insulin to bring them back to a normal economic status? This is a very serious practical problem.

DR. ALFRED STENGEL, Philadelphia: I believe that when the patient has been greatly reduced in weight, an increase of diet to the point of a little spilling over of sugar might

be advantageous; but it is as well generally to reduce the blood sugar and keep the urine as sugar free as possible. In regard to Dr. Allen's observations, I think that there is a possibility of considerable digestive upset in suddenly throwing large quantities of fat into the diet. To raise 800 calories suddenly to 2,000 calories is not a very fair test of metabolic processes. In a series of fifty cases, in the adolescent types, we have put the patients on a diet 50 per cent. above maintenance requirement, so as to regain strength, and then have taken up the problem of gradual restriction so as to be able to send them home sugar free with a minimal dose of insulin necessary to keep them at that status.

DR. E. P. JOSLIN, Boston: Infection is the worst risk to the patient with diabetes. If he gets to the hospital alive, we can take care of him. If the surgeon thinks the patient can stand operation, it is done that night. In regard to coma, I agree with Dr. Foster in every detail. It is important to treat the dryness of the patient. Coma is a terribly serious disease, and we should not lose any time. The patients should have liquids right away. This can be done by injection of 1,000 c.c. of salt solution and then gradually working in fluids. The first hour is worth more in treatment than the next twenty-four hours. In regard to hyperglycemia and glycosuria, these patients in middle life die from the complications, and if we prolong their lives only to get complications later from high blood sugar, we are not doing the best for them. I believe in keeping them sugar free not only by insulin, but by proper dietary restriction and slow improvement of the patient. In regard to insulin as a luxury versus a necessity, that is a very important point. School teachers can work with insulin, when they cannot without it, so that is an economic benefit to them. We should all collect data on this question. I have not been giving alkalis since 1917. If I have had results without insulin and without alkalis, it is interesting to look forward to what will happen with the help of insulin.

DR. N. B. FOSTER, New York: In regard to the economic questions arising in connection with the use of insulin, patients are able with its help to work and support their families, while without it they could not work at all. In regard to raised diet and insulin, a man on 1,000 calories was reduced to 110 pounds (50 kg.). He is now receiving 15 units, and can take 2,200 calories and weighs 140 pounds (63.5 kg.).

DR. H. R. GEYELIN, New York: In regard to the cost, with continued dosage, a smaller amount of insulin is necessary to oxidize the same amount of carbohydrate. The cost of insulin does not equal the cost of the special diabetic diet and its burden on poor families. I believe, therefore, that we can regard insulin not as a luxury, but as an absolute necessity from an economic standpoint. In the poorer families the added cost of special food is eliminated, and the patient can live on the same ration as the rest of the household; moreover, adults are brought back to increased earning capacity, and the burden of illness and unemployment is removed. In regard to allowing sugar to show in the urine, most of the high peaks of glycosuria were concomitant with some minor infection, and control was kept when there was no such process going on. In a series of experiments in which urines were analyzed both during the day and at night, there were cases in which the urine and the blood sugar were normal during the day and began to go up at night and until 4 a. m.; but the period over which hyperglycemia and glycosuria existed was not very long. There is no positive evidence that hyperglycemia is conducive to concomitant infections, but we have assumed that it is so. Another point of human interest is that of the expression of joy on the faces of these kids when they are at last allowed to eat bread and mashed potato. It shows that insulin is worth while.

DR. F. M. ALLEN, New York: This is a question of tolerance. If the patient's tolerance rises, one can increase the diet. With increased weight he needs more insulin because it is burning his own body fat as well as the increased diet. There are no digestive troubles when the patients get this increased fat diet. If the protein was not absorbed, the results were even more striking. In regard to the economic question, the patients get insulin and can increase the diet; then they go back to work. I believe in keeping the patients sugar free, and blood sugar normal. Those with high blood sugar are likely to develop arteriosclerosis and gangrene as they get older.

Case of Myelogenous Leukemia

DR. SOLOMON SOLIS COHEN, Philadelphia: I have studied three cases of acute leukemia showing early and transitional cells. These cases show that it might be well to give serious consideration to the classification of Caillot. The first patient, a woman, aged 36, came with a diagnosis of bronchopneumonia, but routine blood examination revealed a different condition. Hemoglobin was 79 per cent.; red blood cells, 4 million, white blood cells, 30,000, 90 per cent. being of a special mononuclear type. Some authorities call these primary cells, but I prefer to designate them "early cells." They are round or oval cells, staining more deeply than myelocytes with the oxydase stain, and showing many granules. There were many transitional forms. Clinically, the case was characterized by fever and mouth infection. The patient died three months after the onset of the illness, and at necropsy myeloid infiltration was found in the spleen and in the femora. In the second case, a woman, aged 56, the blood count showed 90 per cent. of basal cells. Bacteriologic examination of the mouth disclosed three strains of streptococci. The third patient, a middle aged woman, came with a diagnosis of uterine hemorrhage. Her blood count showed 80 per cent. lymphocytes. I believe from a study of these cases that we must make three divisions of the acute leukemias: (1) the early cell acute leukemia; (2) that with transitional forms and Türck cells, and (3) that with cells tending toward lymphocytes, or lymphatic leukemia.

The Hemolytopoietic System

DR. E. B. KRUMBHAAR, Philadelphia: This system is as definite in its function as the respiratory system, and I have named it the hemolytopoietic system. The spleen is the only organ of this system which can be removed, although various tissues take part in the activity of this function, i. e., bone marrow, spleen, liver and lymph nodes. The reticular endothelial system is very closely related. Sudden changes in this system are met promptly, as when removal of the spleen is soon balanced by other factors of the system. Various parts have different functions: The bone marrow forms erythrocytes; the spleen forms blood cells in embryo, stimulates the bone marrow and aids in blood destruction; the liver forms blood cells in embryo and aids in destruction of the blood cells; the lymph nodes aid in blood destruction; the reticulo-endothelial cells, or Kupffer cells, are found in the liver, spleen, bone marrow and suprarenals, and aid in destruction by phagocytosis. Thus, in dogs made plethoric by repeated transfusions, the Kupffer cells are engorged with red blood cells and broken down cells. Under stress, the organs can take up the work of forming blood cells. Islands are found in the spleen and liver when the bone marrow is destroyed, and the bone marrow can take on lymph formation after splenectomy. It is believed that in selected cases splenectomy is very valuable in cases of hemolytic jaundice, and good results can be obtained thereby.

DISCUSSION

DR. A. S. WARTHIN, Ann Arbor, Mich.: The reticular endothelial cells of the hematopoietic system have a scavenger function and will take up anything in the blood or lymph stream. The Kupffer cells have been found loaded with broken down lymphocytes. It is well known that these cells take up pigment. I think that their function is a protective one, and that the rôle of scavenger is only part of their activity. It is misleading to ascribe the greatest prominence to this, which is only one of their functions.

DR. G. B. WEBB, Colorado Springs, Colo.: In regard to the marrow producing lymph elements, many years ago it was noted that at high altitudes lymphocytosis was increased on account of the hyperplasia of the marrow. Hyperemia would bring about the same result. Even putting on garters would cause an enormous lymphocytosis—about 80 per cent. We were never able to describe these cells. Ehrlich hesitated to give a name to them; they appeared like transitional cells.

It is interesting to know that the bone marrow takes part in the lymphoid elements.

DR. E. B. KRUMBHAAR, Philadelphia: I quite agree that these cells have a broader function than that of hemolysis. I think that applies to the Kupffer cells. Collargol-stuffed animals failed to get jaundice because the cells were already stuffed with collargol. There are many functions that are known, and I hope by this introduction to stimulate interest in this system in regard to the activities of the cells.

Massive Collapse of the Lung

DR. NORMAN GWYN, Montreal: It is said that massive collapse of the lung occurs so rarely as to be of little clinical interest, but I believe that it is found in proportion as it is looked for. I have found eleven cases in one year, and seven cases during another. The symptoms are usually obscured by some other diagnosis. If a pneumonia patient has dyspnea, cyanosis and rapid pulse, we think of heart failure; but a careful analysis will show some particular features which will differentiate the case from other cases. The etiology is still very obscure, and no one cause can be cited. Emboli have been suggested, and also tracheal and bronchial obstruction. In a child that died under operation for papilloma of the larynx, both lungs were found collapsed. In another case, necessitating ligation of the facial artery, the man had bronchitis with acute dyspnea and collapse of the lung. In these cases there is a pushing in of the side of the chest from atmospheric pressure. In pneumonia cases and also after abdominal operations, the patient sometimes shows acute respiratory distress, and disappearance of breath sounds, and the roentgen ray shows disappearance of the heart into the shadow. This occurs very suddenly, and the emphysema on the sound side is so extreme that pneumothorax is frequently diagnosed. No exact cause can be stated for this condition, but it may be due to vasomotor disturbance of the pulmonary circulation.

DISCUSSION

DR. F. T. LORD, Boston: These cases have generally been reported as rarities; but if all cases were recognized, they would not be so very infrequent. I believe that this condition is not uncommon in suppurative lesions of the lung. There are signs of atelectasis at the base, with diminished whisper, voice and breathing. There is also displacement of the heart toward the affected side. Some cases are more insidious than the obvious cases described by Dr. Gwyn. In pneumonia they occur at the base, coincident with atelectasis. In 558 cases of pneumonia, there was displacement of the heart toward the side of the pneumonia in fourteen cases, in spite of effusion toward the affected side, probably by collapse of the lung in this region. The roentgen ray gave evidence of the displacement and subsequent return of the heart to its normal position. It may be an inflammatory process. There is developed of exudate in the bronchi, with absorption of air into the passages, and then inflammatory reaction with consequent atelectasis.

Abscess of the Lung

DRS. JAMES A. MILLER and ADRIAN VAN S. LAMBERT, New York: Abscess of the lung may occur without previous pneumonia. The interstitial tissues may become infected and break down. A secondary abscess may develop in the opposite lung. This problem was originally approached from the surgical standpoint, but the results of opening and draining the abscess were so poor that rest and postural drainage were substituted, with great improvement in results. Pneumothorax was established in seven cases. Bronchoscopy and lavage were tried in one case, which was exceedingly trying to the patient. It is not free from risk, and we believe that it is indicated only in foreign body cases. The mortality in surgical treatment was 55 per cent.; under medical treatment it was 38 per cent.

DISCUSSION

DR. C. P. HOWARD, Iowa City: What do you think as to the advisability of aspiration of the abscess?

DR. THOMAS MCCRAE, Philadelphia: I should like to emphasize the value of bronchoscopy and drainage. I have seen a series of cases treated by this method, and it has revolutionized my ideas. The results are marvelous.

DR. F. T. LORD, Boston: Formerly we operated in all lung cases, and now we are treating them medically. Seven patients recovered spontaneously. In our hands, operative mortality proved to be so high that we were induced to try medical treatment, and we have found that a very much larger proportion of the patients have recovered.

DR. JAMES A. MILLER, New York: Aspiration of the lungs is a difficult procedure. The pleura is very resistant to infection. As far as bronchoscopy and drainage are concerned, perhaps we have not given this procedure a fair trial. A man who has undergone bronchoscopy once would rather submit to any sort of operation than go through it again.

The Pathologic Lesions in the Various Organs Occurring in Epidemic Influenza

DRS. S. BURT WOLBACH and CHANNING FROTHINGHAM, Boston: Certain pathologic lesions seem to be characteristic of epidemic influenza, such as: (1) congestion of the upper respiratory tract; (2) the lesion in the muscles known as Zenker's degeneration, sometimes with abscess formation; (3) lesions of the cortex of the suprarenals with degeneration of glandular tissue; (4) disease of the testes with disappearance of spermatazoa; and (5) lesions in the lung, consisting of desquamation of epithelium, dilatation of air spaces and hemorrhage into the air spaces of the bronchi with formation of hyaline membrane in the air spaces, caused by the air meeting with exudate under certain physical conditions of pressure. These lesions are due to the virus of the disease or to complicating organisms in the lung. There is a definite type of bronchopneumonia in the clinical picture. The characteristic lesions of influenza are recognizable at necropsy.

DISCUSSION

DR. W. G. MACCALLUM, Baltimore: These pictures correspond very precisely with my own. There is nothing especially characteristic of infection of the lung by pneumococci, but there is of influenza infection. The interstitial bronchopneumonia is associated exclusively with infection by the influenza bacillus, and is almost exactly the same form as that by *Streptococcus hemolyticus* after measles. That gave rise to the question whether the measles epidemic was really influenza. Some workers said that it was. I think that measles is often followed by a streptococcus infection of the lung. I do not think that the pathologic picture is a precise one or that it is exclusively recognizable as one of influenza, with, perhaps, the exception of the hyaline deposit in the bronchioles.

DR. CHANNING FROTHINGHAM, Boston: It would be skating on rather thin ice to base a diagnosis on the lung picture. The dilatation of the air spaces and the hyaline line are characteristic, however.

The Therapeutic Effects of Visible and Ultraviolet Rays of Various Wave Lengths

DR. ALFRED F. HESS, New York: Ultraviolet rays possess remarkable therapeutic power in tuberculosis and in rickets of both human beings and animals. Cod liver oil can be given as a specific in rickets, and with the addition of ultraviolet ray therapy it seems certain that rickets can be rooted out from our large cities before many years have passed. It does not matter whether the ultraviolet rays proceed from natural sunlight or from the carbon arc lamp or other sources. Experiments have been made to discover the particular radiation that brings about this result. The dosage with the carbon arc lamp is given at a distance of 3 feet for three minutes. Black material absorbs more ultraviolet light than white material, and window glass placed in front of the rays prevents them filtering through, so that a child might just as well be in a cellar as behind window glass when exposed to sunlight. In winter, a very much smaller amount of protective rays is received, so that it does not make so much difference whether the child is kept outside or not. Rickets is more or less of a seasonal disease, and reaches its peak in March, gradually diminishing during the summer. New York receives twice as much sunlight as London for every month of the year.

DISCUSSION

Dr. Haven Emerson, New York: We have no estimations on the actual amount of sunlight in this country, but it is calculated that, in English cities, 50 per cent. of sunlight is obscured by smoke. In Pittsburgh, 40 per cent. of sunlight is excluded on account of smoke. There must be a similar prevention, to a lesser degree, in New York and Cleveland. In regard to the amount of soot fall in large cities, this varies from 300 tons to 1,300 tons yearly to each square mile, in five of the largest cities. Forty-six tons is represented as finely divided tar. So far there have been no studies made bearing on the incidence of disease in relation to the amount of smoke cloud. City health authorities should make some study of the specific relationship between disease and pollution of the air. The air must be cleaned out as we clean out the water supply. That is the only utility that we have not cleaned out.

Hyperglycemia and Hypertension

Dr. W. W. Herrick, New York: In the average case of diabetes mellitus, the blood pressure is low; but in the elderly obese patient with arteriosclerosis, the blood pressure is high. From 10 to 25 per cent. of these people show a definite hyperglycemia, and constitute the borderline between hypertension and diabetes. They have a high sugar threshold. These are different from the essential hypertension cases. I have been impressed with the fact that these cases of obesity with hyperglycemia have often arisen from an ill balanced diet. These patients have been told that they must have diminished protein, and consequently they ingest more starchy foods. The effect on elderly persons with poor tolerance for glucose is dangerous. A condition of arteriosclerosis arises, with overstrain of the pancreas. These people are usually ambulatory office patients with circulatory embarrassment on account of obesity. If they are put on the diet that maintains the blood sugar at a normal level, loss of weight will result and there will be lowered blood pressure and less cardiovascular strain. An interesting point in blood chemistry is that the concentration of crystalloids in the blood is related to blood pressure. In plotting the curves of glucose and chlorid content of the blood, there is a definite relation between the two. There is a precise inverse concentration of chlorids and of sugar. Protein has heretofore borne all the odium in hypertension cases, but the possibility of overfeeding with carbohydrate in a certain class of cases has not been mentioned.

DISCUSSION

Dr. H. O. Mosenthal, New York: We are gradually getting to the point of view that there may be an effect on the nervous system which stimulates the heart and arteries to increased action, thereby producing increased blood pressure. There is a tendency in diabetes to increased blood pressure. The question of compensatory rise and fall in the crystalloids of the blood, so that when the sugar declines, the salt content rises, is a fascinating field for study. A careful study of the crystalloids of the blood may show that control of the blood sugar may have far-reaching effects.

Dr. W. S. Thayer, Baltimore: The problem that confronts the clinician, when these overfat, hypertonic people come to him, is to get them in the best possible physical condition, with reduction of weight and improvement of muscles. Most of them say that they have had all red meats cut out of the diet. If this person is rubbed, massaged and exercised, and the diet cut down till he loses weight, he feels much better. We are likely to think too much in terms of one article of food. We do not know everything about any one article of food.

Dr. Solomon Solis Cohen, Philadelphia: I had a woman under my care from her sixty-eighth to her seventy-sixth year of age. Her complaint was sciatica. Examination showed that she had glycosuria and hyperglycemia and a very high blood pressure: systolic, 250; diastolic, 125. The woman was very obese. The blood sugar and glycosuria were controlled by diet. The blood sugar was never less than 13, however. The glycosuria disappeared. This woman was subject to recurrent attacks of pulmonary edema, controllable only by powerful doses of aconite. The minute the drug was withdrawn, the attacks returned. At the age of 72, she had acute bronchopneumonia, from which she recovered, and for two years the pressure remained at 150. It then went up to 200, and she finally died. The interesting point is the effect of the pneumonic poison in reducing the pressure, and the continued reduced pressure after the pneumonic poison had been withdrawn.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

165: 469-624 (April) 1923

Histologic Changes in Lymph Glands Following Exposure to Radium. J. C. Mottram, London.—p. 469.
Permeability of Intestinal Mucosa to Certain Types of Bacteria, Determined by Cultures from Thoracic Duct. C. S. Williamson and R. O. Brown, Rochester, Minn.—p. 480.
*Study of Bile Obtained by Nonsurgical Biliary Drainage, with Especial Reference to Its Bacteriology. G. M. Piersol and H. L. Bockus, Philadelphia.—p. 486.
*Experiences with Nonsurgical Biliary Drainage (Meltzer-Lyon Test). E. Hollander, New York.—p. 497.
*Studies of Exophthalmic Goiter and Involuntary Nervous System. II. Clinical Manifestations of Disturbances of Involuntary Nervous System (Automatic Imbalance). L. Kessel and H. T. Hyman, New York.—p. 513.
*Spontaneous Variability of Blood Pressure and Effects of Diet on High Blood Pressure, with Special Reference to Sodium Chlorid. H. O. Mosenthal and J. J. Short, New York.—p. 531.
Diabetes Insipidus Following Epidemic Encephalitis with Enormous Polyuria. G. W. Hall, Chicago.—p. 551.
Disfiguring Scars. Prevention and Treatment. G. M. Dorrance and J. W. Bransfield, Philadelphia.—p. 562.
*Trichiniasis, Endemic and Sporadic; Review of Present Status of Treatment of Disease. M. E. Alexander, Waterbury, Conn.—p. 567.
*Blood in Myxedema. E. S. Emery, Jr., Brookline, Mass.—p. 577.
Cancer of Colon. R. P. Sullivan, New York.—p. 583.

Nonsurgical Biliary Drainage Valuable Diagnostic Aid.—Piersol and Bockus believe that the method of biliary drainage instituted by Lyon and based on the hypothesis of Meltzer is a useful and practical procedure, and that there is every reason for the belief that the bile obtained in this way is derived from the common bile duct, the gallbladder, the hepatic duct and the biliary capillaries in the order given. The diseased condition of the gallbladder and the bile ducts can be recognized in this way by a microscopic and bacteriologic study of the bile, which under pathologic conditions shows significant alterations. However, the information obtained by nonsurgical biliary drainage is only a diagnostic adjunct, and in no sense should take the place of a careful history and complete physical examination.

Value of Meltzer-Lyon Test: Nonsurgical Biliary Drainage.—The practicability of the test is presented by Hollander in seventeen operative cases. He believes that in many cases the definite diagnosis of gallbladder disease cannot be made by any other method. Since gallbladder disease, with its protean clinical manifestations, is a frequent cause of intra-abdominal symptoms (second only to disease of the appendix), this test should be included as a routine in the study of gastro-intestinal cases. Because of its bland action on the duodenal mucosa, 5 per cent. peptone is suggested for diagnosis in preference to strongly hypertonic magnesium sulphate solutions. Attention is drawn to the condition of "ampullospasm" in relation to gallbladder stasis.

Autonomic Imbalance.—A study of the clinical manifestations of autonomic imbalance is presented by Kessel and Hyman. The symptoms are strikingly similar to those in exophthalmic goiter. In autonomic imbalance there is never a distinct and continuous elevation of the basal metabolism. This serves as a crucial differential point from exophthalmic goiter. Autonomic imbalance can rarely be arrested permanently. Usually the symptoms may be alleviated, but the diathesis persists.

Spontaneous Variability of Blood Pressure.—According to observations made by Mosenthal and Short, marked "spon-

taneous" variations occur in the blood pressure of all persons. In cases of hypertension a very great diminution of arterial pressure usually occurs during periods of mental and physical relaxation. Protein foods do not increase blood pressure. Starchy foods may increase blood pressure indirectly by bringing about obesity. There is no definite evidence in the lierature that sodium chlorid raises blood pressure. The level of the blood chlorids bears no relation to blood pressure. In a series of experimental observations, the ingestion of 10 gm. of salt failed to raise the blood pressure in cases of hypertension.

Trichiniasis Epidemic.—A small outbreak of trichiniasis is reported by Alexander, affecting thirty-five persons. A clinical analysis is made of fourteen of the more severely ill patients. Blood and other laboratory findings are given with tabulations. High eosinophil blood counts and free, unencysted trichina embryos were found in persons who had partaken of the trichinous pork and yet presented no clinical symptoms of the disease. The author draws attention to the comparative frequency of the disease and to the absolute importance of thorough cooking of pork.

Blood in Myxedema.—Fourteen cases of myxedema, in which the history and basal metabolic rate leave no doubt as to the diagnosis, are analyzed by Emery. Of the eleven cases in which red blood cell counts were done, three had essentially a normal number of red cells. Of the eight cases with anemia, the red blood cell count varied from 4,070,000 to 2,280,000, of which seven had a count of about 4,000,000 cells. The hemoglobin was reduced in all the cases, varying from the highest value of 96 per cent. to the lowest value of 65 per cent. In four cases the color index was 1 or over; in six cases it was less than 1. The white cell count varied from 18,000 cells per c.mm. to 4,850 cells. The polymorphonuclear neutrophilic cells fell slightly below the normal values in nine cases. The lymphocytes were normal in number in four cases and decreased in two cases. Eight cases showed both a relative and absolute increase in the small lymphocytes. The eosinophils and basophils seemed to be about normal. Slight anisocytosis and slight poikilocytosis were also reported. There was no relationship between the degree of anemia and the metabolic rate, nor between the degree of anemia and the duration of the disease.

American Journal of Public Health, Detroit

13: 355-440 (May) 1923

Recruiting of Sanitarians for Future Service of State. C. E. A. Winslow, New Haven, Conn.—p. 355.
Medical Profession and Laity from Standpoint of Health Officer. W. S. Rankin, Raleigh, N. C.—p. 360.
Albert's Toluidin Blue as Routine Stain for Diphtheria Bacilli. C. A. Palmerlee, Battle Creek, Mich.—p. 363.
Identification of Bacillus Botulinus and Its Toxin in Culture and Canned Foodstuffs by Serologic Methods. R. A. Kelser.—p. 366.
Decline in Infant Mortality in United States Birth Registration Area, 1915 to 1921. R. M. Woodbury.—p. 377.
Value of Milk Powder Agar in Bacteriologic Laboratory. H. F. Zoller. —p. 384.

American Journal of Roentgenology and Radium Therapy, New York

10: 259-342 (April) 1923

*Pneumoperitoneum. H. H. Carelli, Buenos Aires, Argentine.—p. 259.
*Case of So-Called "Marble Bones"; Review of Literature. W. G. Alexander, Evanston, Ill.—p. 280.
Errors in Interpretations of Lesions of Sinuses. F. M. Law, New York.—p. 301.
Standardization of Roentgen-Ray Exposure Identification. E. S. Blaine, Chicago.—p. 303.
Biologic Coefficient for Aluminum Filter. F. B. Sheldon, Fresno, Calif. —p. 307.
New Device for Retubing Radium Emanation. W. Stenstroem, Buffalo. —p. 311.
*Principles of Radiotherapy of Carcinoma, Especially of Uterine and Mammary Carcinoma. E. Opitz. Freiburg, I. B., Germany.—p. 312.

Pneumoperitoneum of Great Diagnostic Value.—Carelli relates his experiences in more than 800 cases of pneumoperitoneum. He has found the method of great diagnostic value and entirely harmless when performed with an appropriate technic, including the procedure adopted in making the pneumoperitoneum and the manner of taking the roentgenograms.

Marble Bones.—Alexander's patient is the oldest (43 years) of the eight cases of this disease now on record. In fact, all but two of the eight cases have occurred in children.

So-Called "Carcinoma Dose" of Roentgen Rays.—A "carcinoma dose," according to the definition of Seitz and Wintz, that is to say, a curative action on every variety of cancer by a dose of rays of from 90 to 100 per cent. of the erythema skin dose, Opitz asserts, does not exist. However, in the majority of cases of mammary and uterine cancers, retrogression may be expected from the administration of this dose. Experience teaches that frequently repeated irradiations with a dose which does not quite reach the amount of the carcinoma dose are productive of the best permanent results. The most favorable results are observed from a combination of radium and roentgen rays. Over dosage is especially dangerous because it weakens the local as well as the general defensive forces of the body. The best results are only obtainable if the method of irradiation is adjusted to the particular conditions of each individual case.

Annals of Clinical Medicine, Baltimore

1: 141-210 (Nov.) 1922

Diseases of Spleen. W. J. Mayo, Rochester, Minn.—p. 141.
Pathology of Spleen. W. C. Chaney, Rochester, Minn.—p. 146.
Clinical Lecture on Diseases of Blood. H. Z. Giffin, Rochester, Minn. —p. 151.
Radium in Treatment of Leukemia. M. B. Bonta, Rochester, Minn.— p. 155.
General Aspects of Early Diagnosis of Pernicious Anemia. T. L. Szlapka, Rochester, Minn.—p. 157.
Neurologic Aspects of Early Diagnosis of Pernicious Anemia. H. W. Woltman, Rochester, Minn.—p. 159.
Wassermann Reaction. A. H. Sanford, Rochester, Minn.—p. 161.
Primary Carcinoma of Liver: Report of Three Cases. J. A. Lichty and D. G. Richey, Pittsburgh.—p. 164.
Advantages of Examining Fasting Stomach in Gastro-Intestinal Diagnosis. E. G. Gaither, Baltimore.—p. 170.
Specific Hypersensitiveness as Common Cause of Illness. W. W. Duke, Kansas City, Mo.—p. 178.
Antenatal Care of Pregnant Women. W. N. Rowley, Rochester, Minn. —p. 196.
Significance of a Routine Examination of Eye Grounds. W. L. Benedict, Rochester, Minn.—p. 200.
Breasts of Mothers of Newly Born. L. R. DeBuys, New Orleans.— p. 204.

1: 273-335 (March) 1923

*Human Botulism: Studies in Outbreak of Twenty-Nine Instances. B. R. Corbus, M. Wells and F. P. Currier, Grand Rapids, Mich.— p. 273.
Palpation in Outlining of Organs and Determining Pathologic Conditions Causing Different Degrees of Density in Same Organ: Light Touch Palpation. F. M. Pottenger, Monrovia, Calif.—p. 294.
Mongolism. Importance of Early Recognition and Treatment. N. P. Barnes, Washington, D. C.—p. 302.
Paroxysmal Angiospasm Dolorosa. J. H. Comroe, York, Pa.—p. 313.
*Auricular Flutter in Case of Mitral Stenosis. W. J. Wilson, Detroit. —p. 322.
*Life Expectancy with Mitral Stenosis. F. A. Willius, Rochester, Minn. —p. 326.

Epidemic of Botulism.—There is reported by Corbus et al. an outbreak of twenty-nine cases of botulinus intoxication among persons who had eaten canned spinach in which type A botulinus toxin was present. A brief historical account of the occurrence of symptoms, and a rather detailed report of the onset and duration of the principal symptoms is made, including systematic neurologic examinations. A contribution to knowledge of the pathology of botulism in man is made in the report of the pathologic findings in the brains of the three fatal cases. The use of polyvalent botulinus antitoxic serum and also of the type A serum is described, with the conclusion that this specific agent is of definite value in the treatment of such cases. The use of pituitary extract hypodermically is reported as a valuable adjunct in the treatment of the severe constipation occurring in many of these cases, which is seemingly not relieved by castor oil and other usual procedures. The mortality in this group of cases was 10.3 per cent.

Auricular Flutter in Mitral Stenosis.—A case of auricular flutter is reported by Wilson which occurred in a patient suffering from mitral stenosis, who presented voice changes evidently due to engorgement of the pulmonary artery and consequent impingement on the left recurrent laryngeal nerve. The value of squills was demonstrated in this case, when

digitalis, unaided, failed to alter the rhythm after 120 minims had been given for five days, for, on addition of 3 drams of squills, the ventricular rate dropped to 72, and hereafter the rate was controlled by smaller doses of digitalis. No period of auricular fibrillation was observed during the course of treatment. Both percussion and roentgen-ray study demonstrated that during the period of flutter, the heart area as a whole was markedly reduced.

Life Expectancy with Mitral Stenosis.—The cardiac mortality with mitral stenosis in Willius' series of cases was as follows: Complete series, 470 cases, cardiac mortality, 36.8 per cent. after an average of 15.7 months. Mitral stenosis with auricular fibrillation, 116 cases, cardiac mortality 56.6 per cent. after an average of 22.8 months. Mitral stenosis with presystolic or diastolic apical murmur, 253 cases, cardiac mortality 29.0 per cent. after an average of 17.1 months. Mitral stenosis with presystolic or diastolic and apical systolic murmur, 197 cases, cardiac mortality 45.5 per cent. after an average of 13.7 months. Significant T wave negativity, fifty cases, cardiac mortality, 62.5 per cent. after an average of 12.1 months.

Annals of Surgery, Philadelphia

77: 385-512 (April) 1923

Lymphangioma of Neck. Report of Two Cases. J. E. Thompson, and V. H. Keiller, Galveston, Texas.—p. 385.
Ligation of Inferior Thyroid Artery. J. L. De Courcy, Cincinnati.—p. 397.
Empyema Thoracis. H. P. Brown, Jr., Philadelphia.—p. 401.
*Experimental Production of Peptic Ulcer. F. C. Mann, and C. S. Williamson, Rochester, Minn.—p. 409.
Relationship Between Certain Forms of Intestinal Obstruction, Chronic Peritonitis and Chronic Multiple Serositis. C. N. Dowd, New York.—p. 423.
Case of Gastrocolic Fistula. G. P. Pratt, Omaha.—p. 433.
Sliding Hernias of Cecum and Appendix in Children. V. C. David, Chicago.—p. 438.
Massive Ventral Hernia with Fecal Fistula. H. S. Villars, Washington, D. C.—p. 445.
Double Kidney. D. N. Eisendrath, Chicago.—p. 450.
*Sarcoma of Uterus. P. J. Reel and P. H. Charlton, Columbus, Ohio.—p. 476.
Case of Separation of Upper Epiphysis of Tibia. A. Gibson, Winnipeg, Canada.—p. 485.
Spondylolisthesis. Report of Case. S. Kleinberg, New York.—p. 490.

Experimental Production of Gastric Ulcer.—Experiments were devised by Mann and Williamson for diverting the secretions which neutralize the gastric juice as it leaves the stomach to another portion of the intestine removed from the point of emergence of the acid. Under such conditions typical subacute or chronic peptic ulcers, quite comparable pathologically to that found in man, developed in the intestinal mucosa just adjacent to the gastric mucosa in a high percentage of cases.

Sarcoma of Uterus.—Of the eleven cases forming the basis of Reel and Charlton's study, nine presented grossly the picture of definite multiple fibroids. The gross section of these revealed in the majority of instances an area of apparent sarcomatous change enclosed within one of the fibroid masses. It was not uncommon to find a multinodular uterus with but one nodule showing sarcomatous transformation. This would tend to strengthen the contention that a sarcoma may arise in a preexisting fibroid. One of the remaining two was found to be a distinct globular mass, protruding into and occupying most of the cavity of the uterus. The consistency of this tumor was soft, friable, and on gross section it presented the typical yellowish color which seems to be characteristic of the endometrial or mucosal type of sarcoma. The remaining specimen presented a diffuse growth involving the anterior and lateral walls of the uterus, with a marked invasion of the peri-uterine structures, which was of the above-mentioned yellowish hue.

Archives of Occupational Therapy, Baltimore

2: 87-170 (April) 1923

*Occupational Therapy for Men in Convalescent Period. F. Brush.—p. 87.
Form of Occupational Therapy Chart. J. S. Plant, Boston.—p. 99.
Workshop in a General Hospital. W. Brainerd, Chicago.—p. 109.
Ward Work in a General Hospital. E. Hassenstein, Chicago.—p. 115.

Occupational Therapy for Convalescents.—Brush's report is based on the convalescent treatment of nearly 20,000 men and boys in a country institution for a term of seven years. The kind of patient grades from the moderately defective up to persons of high breeding and ability. Almost every ailment and subnormal condition is represented. The average stay is under twenty days, and varied from one to ten weeks, as determined by frequent study of the individual, and to some degree by his preferences, home calls, etc. A preliminary rest reduces the average application time of this therapy to about two weeks only. All regular occupation is for one hour only, from 10:30 to 11:30 a. m. Cottage routine adds another half hour. The prescription is for one of five details—"out," "light out," "sitting," "shops," or as "aides." "Out" means work about the gardens, grounds or buildings. "Light out" is picking up of litter, vine and grass trimming, some gardening, weed digging, and the like. "Sitting" refers to basketry, small cement ware, library, studio, toy making, vegetable preparation, etc. The "shops" are for carpentry and general repair, toys, painting, cement goods, canvas hammocks, tailoring, cobbling and barbering. The patient aides are carefully chosen for cottage helping, policing, athletic and group leadership, mail handling, assistance in the surgery and offices, errands, etc. Pay occupation, of from three to five hours daily, is given (often urged or prescribed) to a few for special curative reasons.

Arkansas Medical Society Journal, Little Rock

19: 205-222 (April) 1923

Mobilization of Stiff Joints. W. C. Campbell, Memphis, Tenn.—p. 205.
Rational Vaccine Therapy in Ear Infections. L. H. Lanier, Texarkana.—p. 207.
Peptic Ulcer. J. H. Phipps, Clarendon.—p. 211.
Constipation Treated by Excitation of Anal Reflex.—p. 213.

California State Journal of Medicine, San Francisco

21: 97-144 (March) 1923

Pasteur's Contribution to Chemistry. C. Alsberg, Washington, D. C.—p. 97.
Some of Fundamental Contributions of Pasteur to Bacteriology. W. L. Holman, Palo Alto.—p. 99.
Pasteur's Contribution to Anthrax, Vaccination and Evolution of a Principle of Active Immunization. J. G. Fitzgerald.—p. 101.
Pasteur's Discovery of Preventive Treatment for Rabies. W. H. Kellogg, Berkeley.—p. 104.
Necessity for More Accurate Data in Surgeon's Permanent Disability Report. F. E. Raynes, San Francisco.—p. 109.
*Alienist and Expert Testimony. E. H. Williams, Los Angeles.—p. 111.
Gonorrhea in Women. G. K. Herzog, San Francisco.—p. 113.
So-Called Chauffeur's Fracture. P. Stephens, Los Angeles.—p. 115.
Removal of Pus Tubes and Saving of Ovaries, and Suspension of Uterus. F. P. Canac-Marquis, San Francisco.—p. 117.
Preoperative Examination. F. F. Gundrum and J. B. Harris, Sacramento.—p. 121.
*Epigastric Tug. M. L. Emerson, Oakland.—p. 123.
Suicide. J. T. Fisher, Los Angeles.—p. 126.

Alienist and Expert Testimony.—Williams urges as a remedy for the present inadequate, ineffectual procedures in presumably insanity cases that a law be passed, as suggested repeatedly by legal, medical and lay organizations, providing that in cases of suspected insanity, criminal or otherwise, the actual condition of the patient is to be determined, not by a jury of laymen, but by a commission of trained observers who are competent to judge in such matters and who are appointed by a judge to determine the one point as to whether or not the patient is insane. The physicians would receive the same remuneration, whatever their decision, so that there could be no question about their opinions being influenced by a monetary consideration. Williams says that there seem to be four very explicit reasons why such a law always gets clogged and sidetracked in the legislative machinery and fails to get through. These four reasons are: (1) The opposition of certain influential criminal lawyers who would be deprived of an opportunity to show their skill and oratory if such a law were passed; (2) the sensational physician, who is in effect a professional witness, and who would lose the glamour and publicity of a court trial if his statements were confined to an unobtrusive report, confided to a judge; (3) a certain class of judges in the criminal courts who glory in the publicity given by the newspapers in public trials; and (4) the general indifference of the public at large to anything that concerns insanity, except on those sporadic occasions when insanity is the defense in some notorious trial.

Epigastric Tug.—Epigastric tug, according to Emerson, is not uncommon but frequently it is unrecognized. Neither the patient's symptoms nor the physical findings fit the more commonly thought of surgical pictures. The pain and discomfort are entirely disproportionate to what sometimes can be demonstrated, yet the lesions disclosed at operation, and the subsequent relief, are sufficient proof that epigastric tug on the falciform ligament may be responsible for pain more often than one might imagine. Examination reveals only a small subcutaneous tumor in the linea alba, between the umbilicus and ensiform cartilage. These small tumors are sometimes spoken of as epigastric hernias, or preperitoneal areolar tumors, or simple lipomas. The condition, however, is not an epigastric hernia. It is a small areolar tumor coming through the linea alba between the umbilicus and the ensiform cartilage. The fibers of the linea alba run longitudinally, obliquely and transversely. The transverse fibers are the strongest, and not infrequently have gaps between them. The openings, or gaps, between the transverse fibers of the linea alba are the site of the type of hernia responsible for the tug, and they allow the subperitoneal fat to escape but not always to return. At operation the herniated fat is found to have a constricted pedicle firmly grasped by the fibers of the slit in the linea alba. The peritoneum does not protrude and is separated from the linea alba by the transversalis fascia, but between the two is a certain proportion of fat, and it is this, the next adjacent tissue to the weak spots in the linea alba, that forces its way through and becomes entrapped. Emerson is of the opinion that the first cause of the small areolar tumor in the upper linea alba is encouraged by the blood vessels passing through the transversalis fascia and aponeurosis of the linea alba. Prolongations of the fascia follow these blood vessels, later followed by small globules of fat from the areolar tissue which, gradually accumulating in number, sooner or later become a recognized mass. As this mass of fat globules increases in size, it then becomes organized with either cicatricial or semifibrous bands, often forming a glistening capsule and simulating a true hernial sac. The mass flattens out in a button-like or mushroom shaped head, causing resistance to the constant tugging of the flexible falciform ligament, and this, under the strain of the more violent intra-abdominal stress, causes the so-called epigastric tug, with more or less severe or intermittent pain referred to this region.

Endocrinology, Los Angeles

7: 225-378 (March) 1923

*Absence of Prostate Associated with Endocrine Disease, Notably Hypopituitarism; Histories of Eighteen Cases. H. Lisser, San Francisco.—p. 225.
*Diagnosis and Treatment of Thyroid Disease as Controlled by Metabolic Rate. A. H. Rowe, Oakland, Calif.—p. 256.
Experiments on Endocrinology of Sexual Glands. K. Sand, Copenhagen.—p. 273.
Biologic and Anatomic Studies of Nuptial Excrescence and Bidder's Organ of Toad (Bufo Bufo Japonicus-Schlegel). N. Takahashi, Japan.—p. 302.
*Pilocarpin and Atropin Tests in Functional Exploration of Visceral Nervous System. P. Escudero, Buenos Aires.—p. 305.
*Calcium Content of Blood of Thyroidectomized Animals. M. Parhon, Jassy, Roumania.—p. 311.
Correlation Between Creatinin and Total Nitrogen Elimination in Dystrophia Adiposo-Genitalis. J. W. Rauth, Washington, D. C.—p. 313.

Absence of Prostate with Endocrine Disease.—Lisser reports eight cases of preadolescent hypopituitarism of the Levi-Lorain type of infantilism; five cases of preadolescent hypopituitarism of the Froehlich type—dystrophia adiposogenitalis; two cases of dyspituitarism (gigantism and infantilism, Neurath-Cushing Type), and three cases of eunuchoidism in which the prostate was either absent or very small. Lisser states that the prostate is large enough normally in childhood to be easily felt, and pediatricians especially are urged to make rectal examinations in boys who show stigmata of infantilism.

Metabolism in Thyroid Disease.—After the constant use of basal metabolic rate determinations for a period of more than three years, Rowe is convinced of their value in the diagnosis and treatment of both hyperthyroid and hypothyroid states. The borderline cases especially can be diagnosed, and the etiology arrived at, far earlier than would be possible without its aid. As a guide for medical, surgical, or roentgen-ray treatment in hperthyroidism, the metabolic rate is indispensable. As a means of determining the advisability of thyroid treatment in cases of obesity and in hypothyroid states, as well as regulating the amount of thyroid given, indirect calorimetry has given an invaluable guide. Finally, in investigation, it already has yielded much information about thyroid secretion and disease which is of great aid.

Action of Pilocarpin on Nervous System.—Escudero summarizes his observations as follows: Pilocarpin acts on both sections of the autonomic nerve system; it provokes increased salivary secretion through parasympathetic and sweating through sympathetic nerve fibers. Sweating provoked by the injection of 0.01 gm. pilocarpin is no proof of parasympathetic innervation of the sweat glands. Parasympathetic irritability must be examined by injecting only 2 mg. pilocarpin; it is considered increased when this dose provokes 50 c.c. or more salivary secretion. Subcutaneous injection of 0.001 gm. atropin does not modify the pulse rate in normal cases. An increase of pulse rate from 10 to 40 per minute is observed in cases of diminished vagus tone. Paradoxical reaction is evidenced in cases of vagotonia.

Calcium Content of Blood of Thyroidectomized Animals.—Parhon investigated the calcium content of the blood of three sheep thyroidectomized at the age of 6 weeks. The blood for analysis was taken one year after operation. The calcium was determined according to Neumann's method. It was found that the calcium content of the blood in the thyroidectomized animals is less than that of the normal controls. This calcium diminution in the blood of the thyroidectomized animals may explain in part the tendency to hemorrhage in thyroidal insufficiency. Likewise, one can attribute to calcium deficiency such disorders as urticaria, pruritus and eczema which have developed on a hypothyroid terrain. These disorders disappear on thyroid opotherapy, which apparently regulates the calcium, or the organism in determining its retention, a result also attained by treatment with calcium salts.

Florida Medical Association Journal, St. Augustine and Jacksonville

9: 160-175 (April) 1923

Vaginismus. G. H. Edwards, Orlando, Fla.—p. 163.
Endocrines. W. C. Box, Graceville, Fla.—p. 164.

Johns Hopkins Hospital Bulletin, Baltimore

34: 109-140 (April) 1923

*Experimental Surgery of Thoracic Esophagus. R. T. Miller, Jr., and W. D. W. Andrus, Baltimore.—p. 109.
*Closure of Granulating Wounds with Reverdin-Halsted Grafts. K. Schlaepfer, Baltimore.—p. 114.
Observations on Total Lung Volume and Blood Flow Following Pneumectomy. W. D. W. Andrus, Cincinnati.—p. 119.
Changes in Fallopian Tube During Ovulation Cycle and Early Pregnancy. F. F. Snyder, Baltimore.—p. 121.
Examination of Spinal Accessory Nerves from Case of Bilateral Acquired Spasmodic Torticollis. C. M. Byrnes, Baltimore.—p. 125.
*Existence of More Than Four Iso-Agglutinin Groups in Human Blood. C. G. Guthrie and J. G. Huck, Baltimore.—p. 128.

Experimental Surgery of Thoracic Esophagus.—The work reported on by Miller and Andrus demonstrates (*a*) the feasibility of sutures of the esophagus in the dog, (*b*) a fairly satisfactory substitute for at least the lower two-thirds of the tube, and (*c*) the presence of a well developed submucosa in the human esophagus. With these facts at hand it would seem that efforts to develop the obvious surgical possibilities are to be encouraged and that persistence may well be rewarded by success in the management of cancer of the human esophagus.

Use of Reverdin-Halsted Grafts.—Schlaepfer asserts that every infected wound not suitable for secondary closure can be successfully covered with a very resistant, elastic skin by means of the Reverdin-Halsted transplantation. A thorough preliminary treatment with surgical solution of chlorinated soda, persisted in until relative sterility is obtained, is followed by grafting with small, deep grafts. This method is the technic of choice in treating defects following extensive

laceration of the soft parts with secondary necrosis and suppuration, the grooves resulting from sequestrotomy for chronic osteomyelitis, and some cases with granulating areas after unsuccessful plastic operations for empyema. This method has also proved efficacious in the treatment of roentgen-ray burns and of trophic nonspecific ulcers of long standing which have proven refractory to all other measures.

Third Iso-Agglutinin and Iso-Agglutinogen.—Guthrie and Huck present evidence that the popular belief concerning the existence of four, and only four, iso-agglutinin groups is incorrect. The presence of only two iso-agglutinins and two iso-agglultinogens in human blood is inadequate to explain their findings. By direct tests and by absorption experiments, the existence of a third iso-agglutinin and a third iso-agglutinogen has been demonstrated. Although recognizing the possibility that there may be stilly other iso-agglutinins and iso-agglutinogens in human blood, the authors have found nothing thus far to indicate their existence; their observations have shown, however, that there are at least three of each. With three iso-agglutinins and three iso-agglutinogens, twenty-seven combinations are biologically possible. It is believed that these findings have a practical bearing on transfusion and furnish a plausible explanation for some of the hitherto unexplained posttransfusion reactions.

Journal of Industrial Hygiene, Boston

4: 501-536 (April) 1923

Therapeutic Use and Toxicity of Picric Acid: Report of Two Toxic Cases. G. T. Pack, New Haven, Conn.—p. 501.
Effect of Aniline Black Dyeing on Factory Workers. R. Williamson, Manchester, Eng.—p. 507.
Treatment of Constipation. F. W. Dershimer, Cleveland.—p. 518.
Jet Dust Counting Apparatus. J. S. Owens, London.—p. 522.

Journal of Laboratory and Clinical Medicine, St. Louis

8: 425-492 (April) 1923

*White Mice and Assay of Insulin. D. T. Fraser, Toronto, Can.—p. 425.
Clinical and Laboratory Procedures in Pediatrics. A. Levinson, Chicago.—p. 429.
*Safety of Local Anesthetics: with Particular Reference to Cocain and Butyn. C. Nielsen and J. A. Higgins, Chicago.—p. 440.
*Atresia of Pulmonary Artery in Congenitally Defective Heart. W. B. Stewart, Rochester, Minn.—p. 454.
Increase in Virulence of Nonpathogenic Micro-Organism by Chemical Substances. R. H. Lee and L. Arnold, Chicago.—p. 462.
*Influence of Intravenous Administration of Mercury Benzoate on Wassermann Reaction of Apparently Normal Persons. A. Strickler, Philadelphia.—p. 465.
Diagnostic Value of Kahn Test for Syphilis. M. S. Grant, Ft. Wayne, Ind.—p. 468.
*Large Mononuclear Index in Chronic Appendicitis. L. O. Dutton, Memphis, Tenn.—p. 473.
Employment of Vegetable Extracts in Wassermann Reaction. E. Weiss, Chicago.—p. 476.
Wassermann Systems. A. Faller, Cincinnati.—p. 480.

Assay of Insulin.—The correlation of the unit as determined by the use of rabbits with the unit as determined by the use of mice has been attempted by Fraser; 0.0025 c.c. is approximately the equivalent of 5 (rabbit) units per c.c.

Treatment of Poisoning by Local Anesthetics.—Various drugs were investigated by Nielsen and Higgins for their detoxication action in the treatment of poisoning by the local anesthetics of the so-called "cocain group" (alkamin esters of aromatic acids). Pituitary solution appeared to be superior to the other drugs investigated, and holds out promise both as a preventive of undesirable symptoms from sublethal doses as well as an antidote in poisoning by fatal doses of these local anesthetics. Judging from the experiments, small therapeutic subcutaneous doses of pituitary solution, injected simultaneously with the local anesthetic, are sufficient to eliminate the fall in blood pressure from therapeutic doses as well as the convulsions from higher doses, and death from fatal doses. Used as an antidote when convulsions had already set in, it was effective only when administered intravenously. It should, of course, not be used in pregnant women or in high blood pressure cases.

Case of Congenitally Defective Heart.—A case of congenital atresia of the pulmonary artery, pulmonary valve, and infundibulum of the right ventricle is described in conjunction with other developmental anomalies: origin of the aorta from the right ventricle; presence of a patent ductus arteriosus, and defective ventricular and auricular septums; complete cleft palate and right harelip. The ascending aorta, as far as the opening of the ductus arteriosus, thus served as both a pulmonary artery and an aorta, the ductus arteriosus conveying blood from the aorta to the lungs through the widely patent right and left branches of the atretic pulmonary artery. The child lived four and one-half months in fairly good health, and died only after a plastic operation. Prior to operation she had shown intermittent cyanosis and attacks of strangulation.

Effect of Mercurials on Wassermann Reaction.—It is Strickler's belief that the intravenous administration of the mercurials does not influence the Wassermann reaction. As many as thirty-seven injections were given to a patient without producing a positive complement fixation test. In one instance, in which the Wassermann reaction was 4 plus before treatment was instituted, the administration of twenty intravenous mercurial injections failed to influence the Wassermann reaction. A patient suffering with psoriasis, developed a 4 plus reaction after the fourth mercurial injection and this reaction persisted after eighteen injections of the remedy. The hypothesis offered by Strickler in explanation of his findings is as follows: It is generally admitted that the arsenicals have an affinity for the liver. It is also generally believed that whatever the nature of the substance which causes a positive Wassermann may be, it is probably a substance of lipoidal nature. It would appear probable that the arsenicals in their action on the liver cells may so alter their functions, as to cause either a change in the lipoids, or the lipoidal substance may flood the blood stream so that the serum, when examined at that particular time, produces a positive complement-fixation test. On the other hand, it has definitely been established that the mercurials have a great affinity for the kidney structure. The mercurials do not profoundly influence the liver structure. As a result, the administration of the mercurials does not influence the Wassermann reaction of normal persons in a positive manner.

Diagnostic Value of Mononuclear Count in Chronic Appendicitis.—A series of cases of chronic appendicitis were studied by Dutton to determine the value of an increased mononuclear count as a diagnostic aid. In 47.5 per cent., or perhaps 55.9 per cent., of these cases, the large mononuclears were increased in number, whereas only 15 per cent. of acute cases showed a mononuclear increase. To determine the possibility of a mononuclear increase being selective for a chronic infection of any site, rather than of the appendix only, two series of cases were studied (one of salpingitis and one of cholecystitis), revealing that 30.5 per cent. and 46.6 per cent., respectively, of these cases showed a mononuclear increase of more than 5 per cent. In these series of cases the large lymphocytes were studied. In one series (cholecystitis) it was found that ten, or 58.8 per cent., of the seventeen chronic cases showed high large lymphocyte counts, and this suggested the possibility of a significance of some kind. However, none was established in the other conditions as the lymphocyte count was too variable.

Journal of Parasitology, Urbana, Ill.

9: 109-180 (March) 1923

Normal and Pathologic Histology of Ventriculus of Honey Bee, with Special Reference to Infection with Nosema Apis. M. Hertig.—p. 109.
Morphology and Life Cycle of Crithidia Gerridis Patton in Water-Strider, Gerris Remigis Say. E. R. Becker.—p. 141.
Intestinal Flagellate of Trout. H. S. Davis.—p. 153.
*Effects of Bite of Latrodectus Mactans Fabr. W. J. Baerg.—p. 161.
Limberneck of Fowls Produced by Fly Larvae. F. C. Bishopp.—p. 170.
Telosentis, A New Genus of Acanthocephala from Southern Europe. H. J. Van Cleave, Urbana, Ill.—p. 174.
Degenerating Cestode Cysts in Mackerel. E. Linton.—p. 176.
Skate Trypanosome from Woods Hole. R. Kudo.—p. 179.

Effect of Spider Bite.—Personal experience in the treatment of this spider bite, has convinced Baerg that the hot water bath, as hot as the patient can endure, is by far the best measure in treatment. He recommends a hot bath, from three to four times in twenty-four hours, even if the patient must have assistance to get to and from the bathroom. It is important that the region where the bite took place be kept in hot water during the bath. If the bite is on the hand or foot, it might be well to bathe in hot water much oftener.

The treatment with potassium permanganate had no perceptible effect. The evidence presented shows that the bite of the Black Widow is likely to cause decidedly unpleasant, and under certain circumstances, dangerous results.

Journal of Social Hygiene, New York

9: 193-256 (April) 1923

Marriages of Unmarried Mothers. M. D. Mudgett, Minneapolis.—p. 193.
International Efforts for Prevention of Traffic in Women and Children. B. Johnson.—p. 200.
Community Education in Social Hygiene. T. W. Galloway.—p. 216.
Social Service Ward for Women and Children: Partial Solution of Problems of Venereal Diseases. V. C. Pedersen, New York.—p. 227.

Journal of Urology, Baltimore

9: 289-395 (April) 1923

*Renal Counterbalance. Significance of Disuse Atrophy. F. Hinman, San Francisco.—p. 289.
Megalo-ureter: Importance of Ureterovesical Valve. J. R. Caulk, St. Louis.—p. 315.
*Grave Renal Hematurias Due to Blood Vessel Changes in Papillae. Report of Unusual Case Requiring Nephrectomy. G. MacGowan, Los Angeles.—p. 331.
*Bone Suppuration the Basic Cause of Renal Calculus Following War Wounds. H. E. Paul, Toronto.—p. 345.
Pyonephrosis. I. Simons, Nashville.—p. 367.

Significance of Renal Disuse Atrophy.—Three points are emphasized by Hinman: (1) It is useless to attempt preservation or repair of an unilateral injury, in the face of a healthy and complete compensatory hypertrophy on the opposite side. Therefore, attempts to repair must be made before anatomic compensation is complete, and in distinctly unilateral lesions the outcome is always questionable because even a partial compensation of a healthy kidney may, in time, become complete through the competitive elimination of its less efficient repair mate. It is only in those conditions in which the competition between the two sides is equalized qualitatively by the conservative repair procedure on the diseased side that a cooperate counterbalance can be expected. (2) In bilateral conditions conservation of renal tissue should always be given the greatest consideration. (3) In a case of bilateral injury with a successful unilateral repair, but in which there has been delay in the second operation, the problem may closely simulate that of unilateral injury with opposite compensatory hypertrophy, and in place of a conservative procedure, as originally planned, radical nephrectomy may be to the best interest of the patient.

Hematuria Due to Renal Papillary Varix.—MacGowan reports a case of unilateral exhausting and painful hematuria, in which the kidney was removed. The lesions were very similar to those reported as renal papillary varix, following chronic inflammation of the pyramids.

Bone Suppuration as Cause of Renal Calculus.—In the twenty cases reported by Paul, there was a very definite etiologic relationship between an existing bone suppuration and the formation of renal calculi. Approximately 90 per cent. of these cases showed definite signs of infection in the urine from the affected kidney, which in Paul's opinion, is fairly good presumptive evidence that infection is a definite contributing cause, if not the most important cause, of renal calculi. Lack of drainage in the upper urinary tract is seemingly not an important primary cause of the formation of renal calculi following such a systemic infection as osteomyelitis. Sedentary habits of life, have direct relationship to calculus formation, when such formation follows a systemic infection such as osteomyelitis. If every case of nephrolithiasis could be investigated with sufficient thoroughness, Paul is convinced that a history of a preceding systemic infection could be elicited.

Laryngoscope, St. Louis

33: 241-327 (April) 1923

Radical Operation in Chronic Suppurative Otitis Media. E. B. Dench, New York.—p. 241.
Blood Transfusion for Otologic Diseases. L. J. Unger, New York.—p. 250.
Id. H. Hays, New York.—p. 253.
Case of Tumor of Cerebellum that Gave Negative Results to Tests of Labyrinth and Labyrinthine Tract. B. Rosenbluth, New York.—p. 257.
Nicotin Poisoning of Inner Ear; Preliminary Report from Animal Experimentation and Microscopic Findings. O. Glogau, New York.—p. 262.
Chronic Catarrh of Nasopharynx. D. J. G. Wishart, Toronto, Ont.—p. 267.
After-Results of Different Methods of Tonsillectomy, with Special Reference to La Force Operation as Compared with Ordinary Dissection with Snare. Critical Review of 200 Cases. R. Patterson, Knoxville, Tenn.—p. 280.
Two Cases of Descending Retro-Esophageal Abscess with Phlegmon of Neck and Threatening Medastinitis. External Operation Through Vascular Route. Prophylactic Collar Mediastinotomy. Recovery. O. Glogau, New York.—p. 290.
Iowa Pitch Range Audiometer and Its Uses. C. E. Seashore, Washington, D. C.—p. 295.
New Septal Chisel. S. L. Olsho, Philadelphia.—p. 308.
Study of Tonal Ranges in Lesions of Acoustic Nerve and Its End Organ. L. W. Dean and C. C. Bunch, Iowa City.—p. 309.

New York Medical Journal and Medical Record

117: 517-584 (May 2) 1923

Mitral Stenosis. J. Barr, London,—p. 517.
Minimum Symptoms and Signs Necessary to Make Diagnosis of Organic Heart Disease. W. S. Thayer, Baltimore.—p. 525.
Morphology and Function of Capillaries. E. P. Boas, New York.—p. 528.
Present State of Our Knowledge of Quinidin Therapy in Treatment of Fibrillating Auricle. L. F. Bishop, New York.—p. 532.
Blood Pressure in Angina Pectoris. A. Blackhall-Morison, London.—p. 535.
Factors Concerned in Production of Heart Sounds and Murmurs. E. I. Fogel, Cincinnati.—p. 536.
Cardiospasm Associated with Esophageal Diverticula. P. P. Vinson, Rochester, Minn.—p. 540.
Circulatory System in Tuberculosis. F. M. Pottenger, Monrovia, Calif.—p. 541.
Use of Digitalis in Hearts with Regular Rhythm. L. T. Gager, New York.—p. 543.
Heart Disease in Relation to Marriage and Pregnancy. W. W. Herrick, New York.—p. 546.
Quinidin in Auricular Fibrillation. D. Felberbaum and O. Brenner, New York.—p. 548.
Control of Paroxysmal Tachycardia by Quinidin Sulphate. C. C. Wolferth, Philadelphia.—p. 552.
Myocardial Degenerations and Their Treatment. A. E. Roussel, Philadelphia.—p. 554.
Examination of Heart for Life Insurance. F. W. Price, London.—p. 559.

Oklahoma State Medical Association Journal, Muskogee

16: 109-137 (May) 1923

Study of Records with Special Reference to Cause of Death. L. J. Moorman, Oklahoma City.—p. 109.
Inoperable Carcinoma of Cervix; Report of Three Cases in Which Radiotherapy Arrested Disease. S. D. Neely, Muskogee.—p. 113.
Cancer Metastasis. A. L. Blesh, Oklahoma City.—p. 121.
Case of Renal Hematuria Apparently Cured by Distension of Kidney Pelvis. J. Z. Mraz, Oklahoma City.—p. 122.
Case of Reflex Vomiting. Large Cystic Ovary. D. D. Paulus, Oklahoma City.—p. 123.

Rhode Island Medical Journal, Providence

6: 67-82 (May) 1923

Biologic Aspects of Hay-Fever. H. S. Bernton, Washington, D. C.—p. 67.
Chiropractic Philosophy. M. W. Thewlis, Providence, R. I.—p. 78.

West Virginia Medical Journal, Huntington

17: 465-520 (May) 1923

*Abdominal Pregnancy with Living Child. J. E. Rader, Huntington.—p. 465.
Radium in Inoperable Carcinoma of Uterus. J. E. Hubbard, Huntington.—p. 473.
Premature Labor. H. G. Steele, Bluefield.—p. 478.
Focal Infections and Systemic Disease. A. Arkin.—p. 480.
Diagnosis and Treatment of Stomach Diseases from Standpoint of General Practitioner. O. F. Covert, Moundsville.—p. 486.

Abdominal Pregnancy with Living Child.—In Rader's case a full term live baby was delivered by abdominal section. The placental attachment was extensive and widespread over the intestines and pelvic organs. The membranes had not ruptured. The mother had had slight bleeding once or twice, at about the first and second months. Cramplike pains caused her to call her physician at about the eighth month, and he diagnosed "abdominal pregnancy." Rader saw the woman in consultation and advised immediate operation but she would not consent. About ten days later, when the patient finally consented to operation, and all arrangements had been made to transfer her, she was in what appeared to be labor. The laparotomy was performed in her home.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

27: 289-320 (March) 1923

Association of Surgeon and Radiologist in Bone Grafting. S. J. D. Buston.—p. 289.
Method for Opaque Meal Examination of Stomach. S. G. Scott.—p. 304.
*Pathologic Changes Produced in Those Rendered Unconscious by Electrical Shock and Treatment of Such Cases. B. Spilsbury.—p. 316.
*Id. S. Jellinek.—p. 316.

Cause of Death in Electric Shock.—The most reasonable explanation of deaths occurring from electric shock, Spilsbury says, is that they are due to a sensory stimulation causing paralysis of the respiratory center. This justifies the use of artificial respiration. Certainly, there must be some cases—and there might be many—in which death is only apparent, and in which real death only supervenes from the lack of some means of carrying on the essential function of the body.

Id.—From the point of view of time four types of death are recognized by Jellinek: (1) instant death (décès instantané); (2) slow death (décès lente); (3) interrupted death (décès interrompu); (4) retarded death (décès retardé). From the point of view of mechanism, or succession of disturbances that follow on the electric shock, four types can again be recognized: (1) death by shock; (2) death by excessive irritation or paralysis of nervous system; (3) death by paralysis of the heart; (4) death by paralysis of the respiratory system. Many victims, rendered unconscious and apparently dead for the longest time, make a recovery, showing that the lesions are not so severe as to make recovery impossible. Artificial respiration should be resorted to at once as it is of the greatest importance, not only for the lungs, but also for the heart and its circulation.

British Journal of Medical Psychology, London

3: 81-152 (April) 1923

"Reality-Feeling" in Phantasies of Insane. H. Devine.—p. 81.
Ontogenesis of Introvert and Extrovert Tendencies. A. G. Ikin.—p. 95.
Reliability of Psycho-Analytic Findings. G. Bose.—p. 105.
Psychoneurotic Aspects of Miners' Nystagmus. H. W. Eddison.—p. 116.

British Medical Journal, London

1: 705-746 (April 28) 1923

*Pancreatitis and Association with Cholecystitis and Gall Stones. G. Barling.—p. 705.
*Treatment of Diabetes Mellitus. O. Leyton.—p. 707.
*Influence of Insulin on Normal Metabolism in Man. C. H. Kallaway and T. A. Hughes.—p. 710.
*Some Problems of Diabetes Mellitus. L. B. Winter and W. Smith.—p. 711.
*Administration of Insulin by Inunction. S. V. Telfer.—p. 715.
Subcutaneous Rupture of Intestine. Two Cases. R. P. Rowlands.—p. 716.
*Case of Intestinal Stasis. C. D. Maitland.—p. 717.
Treatment of Strangulated Obturator Hernia. A. R. Short.—p. 718.
Meningitis Due to Pfeiffer's Bacillus. E. N. Butler.—p. 719.

Catarrhal Jaundice Caused by Pancreas Inflammation.—The condition which occurs not infrequently in young people and which is spoken of as catarrhal jaundice and is ascribed to plugging of the common duct by inspissated mucus, Barling believes to be caused by an inflammation of the head of the pancreas compressing the common bile duct.

Treatment of Diabetes Mellitus.—Leyton says that man can live fairly comfortably on 30 gm. of carbohydrate with unlimited protein and fat. If a person with severe diabetes be given enough insulin to ensure his utilizing 30 gm. of carbohydrate he will escape the symptoms of diabetes mellitus, but his blood sugar will be above 0.15 per cent. during the greater part of the twenty-four hours, which will cause overstimulation of the small amount of pancreas which he still possesses and gradual deterioration. The final stage will be total destruction of the pancreas; then the patient will have to rely for all the sugar burning material on supplies from the outside. In case these fail, life would be extremely short. This is the danger which should be avoided by strictly correlating the diet with the amount of insulin available from the pancreas of the patient together with that injected.

Influence of Insulin on Normal Man.—Kallaway and Hughes contend that the rise in respiratory quotient is due, in part at least, to transformation of glucose into some complex poorer in oxygen, and that the metabolic rate, as calculated from the oxygen used and the respiratory quotient, is much above its real value.

Yeast Extract in Diabetes Mellitus.—Experimental evidence has convinced Winter and Smith that extract of yeast has an effect similar to that produced by insulin, when tested on animals and on diabetic persons. Insulin convulsions in rabbits may be relieved, and the animals restored to normal, by injection of epinephrin.

Administration of Insulin by Inunction.—The chief conclusion reached by Telfer appears to be that insulin can be introduced into the blood stream by means of inunction, but this method of administration necessitates the use of much larger quantities of the drug than those required to produce comparable effects by subcutaneous injection. It is worthy of note, however, that in estimating the effects produced account must be taken chiefly of the duration of the hypoglycemia. A sudden reduction, followed by an abrupt rise in the blood sugar, indicates a transient effect. The ideal method of utilization would appear to be indicated by a prolonged period of hypoglycemia maintained by slow absorption. The results also suggest that advantage might be taken of this method to utilize crude insulin extracts. At the present time, the cost of isolating the drug in a pure and active state for the purpose of hypodermic medication is such as to restrict seriously its application on a large scale. It is possible that more liberal use of cruder materials might, with advantage, be made by means of inunction.

Intestinal Stasis.—The points of special interest in Maitland's case were: (1) an unduly long and mobile pelvic colon; (2) Lane's "last" kink; (3) a descending mesocolon; (4) proptosed dilated cecum and ascending colon with mesocolon; (5) Jackson's membrane, and its remarkable density; (6) inability of the cecum and ascending colon to propel their contents.

Journal of Laryngology and Otology, Edinburgh

38: 229-284 (May) 1923

Meat and Fish Bones Impacted in Esophagus. T. Guthrie.—p. 229.
Operative Procedures in Treatment of Stenosis of Larynx Caused by Bilateral Paralysis of Abductor Muscles. I. Moore.—p. 236.
Treatment of Chronic Middle Ear Suppuration by Electric Ionization. S. Young.—p. 245.
Two Cases of Injury to Ear Following on Operation for Acute Mastoiditis. F. G. Wrigely.—p. 252.

Journal of Obstetrics and Gynæcology of the British Empire, Manchester

30: 1-116 (Spring No.) 1923

*Improved Method of Prophylactic Treatment of Eclampsia. Stroganoff.—p. 1.
Sounds of Fetal Heart. G. A. Stephens.—p. 32.
Food Deficiency Disease Simulating Pregnancy Toxemia. J. P. Maxwell.—p. 34.
Primary Carcinoma of Vagina Treated by Hysterovaginectomy. D. Dougal.—p. 38.
Case of Primary Carcinoma of Vagina. E. Holland.—p. 40.
Squamous Epithelioma of Vagina. T. G. Stevens.—p. 42.
Adenoma of Vagina Fornix Simulating Cancer of Cervix. H. R. Spencer.—p. 44.
Occlusion of Lower Part of Rectum Due to Administration of Simple Enema During Labor. W. F. Shaw.—p. 47.
Case of Abdominal Pregnancy. A. E. Pinniger.—p. 49.

Prophylactic Treatment of Eclampsia.—The fundamental idea of Stroganoff's method, which he first described in 1897, is that the spasmodic fits play a preeminent part in the results of the disease, that the number of the fits must be decreased, and that every possible thing must be done to prevent their repetition, since every successive fit brings the patient nearer death. The greater the number of fits the greater the mortality. Assuming that eclampsia is the result of the reciprocal

action of two factors—(1) the appearance of toxins in the blood of a woman which act on the nervous system, (2) the reaction to them by the nervous system—treatment must be directed to lessening the toxins in the blood, and to diminishing the irritability of the nervous system. Stroganoff recommends the removal, if possible, of all sources of irritation from the patient, or reducing them to the minimum. To reduce the fits gradually, or if possible to prevent their recurrence altogether, he applies narcotics, morphin hydrochlorid, chloral hydrate, and chloroform, in the following order: At the beginning of the treatment, hypodermic injections of 0.015 gm. morphin hydrochlorid under chloroform. In one hour's time: 2.0 gm. chloral hydrate in addition to from 200 to 250.0 c.c. of saline solution per rectum, and, when conscious, by mouth, with from 100 to 110 c.c. of milk. In three hours' time from the beginning of treatment, hypodermic injections of 0.015 gm. morphin, usually under chloroform. After seven hours from the beginning of treatment: 2.0 gm. chloral hydrate. After thirteen hours from the beginning of treatment: 1.5 gm. chloral hydrate without chloroform if there have not been fits for twelve hours and there are no prodromata. After twenty-one hours from the beginning of treatment: 1.5 gm. chloral hydrate without chloroform if there have not been fits for twelve hours and there are no prodromata. Thus during one day the patient receives from 5.0 to 9.0 gm. chloral hydrate, and from 0.02 to 0.04 gm. morphin under the skin and repeated administration of chloroform together with 500 c.c. of milk and 500 c.c. of saline solution. In exceptional cases, if the patients were very strong, such quantities were given for twelve hours if the fits continued, or if there were symptoms of them. In the majority of cases failures are due to insufficient dosage at the beginning of treatment.

Journal of Physiology, London

27: 113-252 (March) 1923

Influence of Carbon Dioxid on Interchange of Ions Between Corpuscles and Serum of Blood. J. Mellanby and C. C. Wood.—p. 113.
*Pituitary Secretion. W. E. Dixon.—p. 129.
Variations in Carbon Dioxid Content of Blood Constituents in Relation to Meals. E. C. Dodds and J. McIntosh.—p. 139.
*Effect of Lactation on Ovulation. M. Ross-Johnson and E. E. Hewer.—p. 143.
*Nature of Histamin Action. R. J. S. McDowall.—p. 146.
Respiratory Centers in Cat. T. Lumsden.—p. 153.
Studies in Muscle Activity. I. Static Effort. E. P. Cathcart, E. M. Bedale and G. McCallum.—p. 161.
Photographic Kymograph. J. B. Haycraft.—p. 175.
Situation and Extent of Purely Yellow Zone in Spectrum. G. Fr. Gothlin.—p. 181.
Simple Apparatus for Producing Mechanical Hemolysis and Its Practical Use. D. J. de Waard.—p. 195.
Effect of Concentration of Red Blood Corpuscles on Dissociation Curve of Blood. J. Barcroft and K. Uyeno.—p. 200.
Studies of Respiration and Circulation in Cat. III. Effect of Rise of Body Temperature. K. Uyeno.—p. 203.
Analysis of Production of Heat in Certain Muscles of Hedgehog. W. Hartree and R. J. S. McDowall.—p. 210.
Part Played by Ducts in Pancreatic Secretion. L. K. Korovitsky.—p. 215.
*Change in Nature of Blood Sugar of Diabetics Caused by Insulin. W. D. Forrest, W. Smith and L. B. Winter.—p. 224.
*Influence of Nutritional Condition of Animal on Hypoglycemia Produced by Insulin. N. A. McCormick, J. J. R. Macleod, E. C. Noble and K. O'Brien.—p. 234.

Pituitary Secretion.—The conditions which cause secretion of the pituitary gland to meet the needs of the animal economy are discussed by Dixon. He summarizes as follows: The pituitary gland secretes into the cerebrospinal fluid. Pituitary extract injected into the circulation causes the gland to secrete. Pituitary extract injected into the cerebrospinal fluid rapidly causes the ordinary systemic effects by passing into the general circulation. A balance is struck between the amount in the blood and cerebrospinal fluid. Ovarian extract specifically excites the gland to secrete. The effect is immediate and lasts only two or three minutes. The active substance is not in the corpus luteum. Duodenal extract causes a secretion after one hour, but neither so much nor so constant as that caused by ovarian extract; the effect, however, is more prolonged. Some suggestions as to its significance are offered. Pituitary extract increases tone in the small intestine, and diminishes tone in the large intestine.

Effect of Lactation on Ovulation.—Johnson and Hewer are convinced that ovulation does occur during lactation in the albino rat. In all their experiments the mother was allowed to suckle her young, and was killed three weeks after the birth of the litter. The appearance of the ovaries was very constant, and in all, young corpora lutea were found. Some old corpora lutea were found, more or less well preserved, some vacuolar; these probably originated from the ovulation directly following labor.

Nature of Histamin Action.—The parallelism between the disappearance under deep anesthesia of the rise of pressure in the pulmonary artery and the rise of venous pressure which occurs as the result of the injection of a small dose of histamin, McDowall believes suggests that they are both due to the same cause, namely, pulmonary constriction which is effected by the anesthetic. Other results are given which support this view.

Change in Nature of Diabetic Blood Sugar by Insulin.—The lowering of the blood sugar of diabetics caused by injections of insulin is held by these authors probably to be due to a change in the equilibrium between alpha-beta and gamma glucose in the blood tending to increase formation of glucose which can then be stored or utilized. Forrest, Smith and Winter have made some observations to determine how far this reactive form of glucose can be detected in diabetic blood after injections of insulin. The insulin used was prepared by Collip's method. Owing to the difficulty of obtaining sufficient pancreas of any one animal, those from the ox, sheep, and pig were mixed. All cases were of a severe type, and in every case the sample taken before administration of insulin showed that the polarimetric value of the final sugar solution was in excess of that obtained by the copper reducing method, thus confirming previous results. With one exception, determinations after insulin show that this ratio has been reduced materially. While the ratio is by no means comparable to that obtained from normal persons, it shows that there must be considerably more normal blood sugar present after the administration of insulin. As was previously found, the curve of polarimeter readings in the cases before the insulin tended, if anything, to fall; after insulin injections the curve rose definitely in three cases. A possible explanation of the action of insulin advanced by the authors is that it causes shifting of the equilibrium in the direction of increased gamma glucose formation. The increased amount of gamma glucose available is then stored or utilized. The increased utilization of sugar by the diabetic after injection of insulin may be put down to the increased formation of gamma glucose. The difference in the ratio polarimeter to copper reduction of the sugars of diabetic blood which the authors found after insulin is in support of this view. The severity of diabetes is probably inversely proportional to the amount of gamma glucose which the body is capable of forming. When excessive amounts of insulin are administered the lowering of the blood sugar may take place to an excessive degree. That a continual supply of insulin is necessary for the working of the enzyme is shown by the fact that the blood sugar invariably rose between the insulin injections.

Influence of Nutrition on Insulin Hypoglycemia.—The features of the results of the experiments made by the authors that stand out most prominently are: the immediate onset in the decline in blood sugar, its practical constancy during the half-hour following the injection of insulin, and the variability, both in the time of onset and in the rate of recovery, which afterward occurs. Facts are cited which show that it is impossible to make a precise physiologic assay of insulin by determining the percentage of blood sugar at varying periods following its injection. An approximate assay can best be arrived at by measuring the blood sugar ninety minutes and three hours following the injection in animals from which food has been withheld for twenty-four hours. When considerable doses of insulin are given, toxic symptoms (convulsions) may not appear until the percentage of blood sugar has fallen considerably below the level of 0.045 at which they most frequently occur with weaker doses. The occurrence of convulsions cannot, therefore, be depended on as an exclusive method of physiologic assay.

Lancet, London

1: 883-938 (May 5) 1923

*Diagnosis and Treatment of Angina Pectoris. C. Allbutt.—p. 883.
*Some Gynecologic Operations in Relation to Life Assurance. A. E. Giles.—p. 885.
Treatment of Clavicle Fracture by Indirect Violence. F. Romer.—p. 889.
*Renal Function in Patients with Retinitis and High Blood Pressure. A. W. M. Ellis and J. R. Marrack.—p. 891.
Germicidal Qualities of Sodium Di-Iodosalicylate (Diosal). W. M. Crofton.—p. 893.
*Etiology of Bakers' Dermatitis. O. De Jong.—p. 894.
Effect of Detoxicated Vaccines on Persistence of Diphtheria Bacillus. W. T. Benson.—p. 895.

Angina Pectoris.—The chief postulates advanced by Allbutt are: (1) that in the very large majority of cases, say 90 per cent., angina pectoris is due to disease of the thoracic aorta, and especially of its outer investment wherein lie the sensory end-organs that regulate blood pressure; (2) that death in angina pectoris is due ordinarily to vagus inhibition; that is, to the shock of the pain; (3) that the coronary arteries and the myocardium have nothing to do with the pain of angina, but much to do with its mortality. In younger persons, in whom the myocardium is healthy, the heart usually survives the inhibition, so that in them angina, as often as in the case of syphilitic aorta, for example, may be a terrible, if not a fatal, disease. Angina proper is rare in women. On the other hand, the so-called "pseudo-angina" is frequent among women, more frequent by far than in men. It seems to be a storm in the brachial plexus, intercosto-humeral, Wrisberg and phrenic nerves. The angina patient again is generally, though not always, pallid or pallascent; the pseudo-anginose are flushed in the face. And these patients are for the most part young, or not elderly, under middle age, or but little beyond it, and the attacks may be determined by annoyance, the catamenial period, or other upset. The heart and pulse are not, as in angina proper, tranquil, but throb rapidly, often with an irregular rhythm. The heart may be felt as if leaping out of the body. Palpitation in angina proper does not occur. Between the attacks, the physician will fail to detect any sign of disease or degeneration, or none, at any rate, suggestive of cardio-arterial disease. If such signs can be detected the diagnosis must be revised. It is more difficult to distiguish between simulations of angina and its slighter degrees (angina mitis), or eccentric manifestations of a true angina. Allbutt's principle of cure in angina is to treat the case as if it were one of aneurysm—by absolute rest proportionate to the severity and stubbornness of the case, with due modification of diet as may be required for the healing of the injured vessel.

Gynecologic Operations in Relation to Life Insurance.—In view of the extension of the practice of life insurance and of sickness insurance among women, and of the great increase of gynecologic operations during the last thirty years, it is natural that medical referees of insurance companies should wish to know the influence of such operations on subsequent health and expectation of life. Giles' inquiry as to the state of health after operations, in about 800 women on whom he has operated, has shown that about 70 per cent. of patients regain normal health. The highest proportion is found in cases of conservative procedures and of complete removal of organs. Unilateral operations on the uterine appendages show the lowest proportion of complete recoveries, the chances of complete cure being subordinate to the preservation of the functions of womanhood. There is a disturbance of the nervous system, shown especially by the affection of memory, and in most cases temporary, in a proportion varying from 18 per cent., of cases in which the operation was of short duration, to 50 per cent. in the case of long operations. There is a risk that further operations may be required, which may be put down as a 10 per cent. risk, comprising direct sequelae of the operation and independent conditions in about equal proportions. The risk is greatest after operations for inflammatory disease of the tubes and after unilateral operations on the tubes and ovaries; and it is lowest after the operation of hysterectomy for benign conditions. Expectation of life, as to cases of operation for malignant disease must be regarded as bad, the risk of recurrence varying from 10 to 75 per cent. After operations for inflammatory disease the expectation of life is fairly good, but it is impaired by the liability to sequelae. Patients who have had benign tumors removed may be considered as good risks, as the chance of complications that may lead to a fatal result is negligible. Lastly, patients who have had operations that prevent further pregnancy have had an adverse factor in the expectation of life eliminated.

Retinitis Associated with High Blood Pressure and Renal Disease.—An analysis of nineteen cases of retinitis associated with high blood pressure and renal disease was made by Ellis and Marrack. In this series of cases, nine were patients with chronic interstitial nephritis, and ten were patients with hyperpiesis. The cases suggest that hyperpiesis is a more common cause of retinitis than chronic interstitial nephritis. The authors believe that hyperpiesis is the more common disease of the two. Whether the cause of retinitis is the same in both conditions and what is its nature they are unable to say. The only common factor in the two conditions would appear to be the high blood pressure. All of the first group died and five of the second group died.

Salt Is Cause of Bakers' Dermatitis.—DeJong suggests that salt may justifiably be regarded as the direct cause of bakers' dermatitis, but the patient must display an idiosyncrasy for the salt as the condition is not found in all bakers. It is interesting to note that dermatitis occurs in people other than bakers who are habitually engaged in the handling of salt—for example, herring salters and packers, and rock salt workers. A man suffering can be cured under simple treatment on being removed from his work if there are no secondary symptoms, but on his return to work he will relapse.

Medical Journal of Australia, Sydney

1: 309-336 (March) 1923

*Bacillus Coli Vaccine Intravenously in Rheumatoid Arthritis. H. Laurie.—p. 309.
*Behavior of White Blood Corpuscles After Intravenous Bacillus Coli Communis Therapy. G. E. Foreman.—p. 314.
*Diagnosis of Pulmonary Syphilis. S. W. Patterson.—p. 316.

Colon Bacillus Vaccine in Rheumatoid Arthritis.—Laurie has used colon bacillus vaccine intravenously in various types of cases of rheumatoid arthritis and ascribes good results to its use. In cases of acute rheumatoid arthritis, recovery from the attack was more or less rapid and complete and the patients were finally discharged without any disability. Of eleven cases of subacute rheumatoid arthritis, eight cleared up entirely. Three could be classed as merely improved. Fifteen patients with chronic rheumatoid arthritis improved so far as pain, stiffness and range of movement were concerned, the acute and subacute conditions clearing up. The method of treatment was used in a few cases of uncomplicated osteo-arthritis with little or no result. In this series of cases, 426 injection were given and in only one case were there any alarming symptoms. In this case there were cyanosis and dyspnea at the height of the reaction.

Effect of Colon Bacillus Therapy on Leukocytes.—The effect of injections of colon bacillus vaccine, as shown by a study of the blood cells, according to Foreman, are: (1) diminution of polymorphonuclear cells; (2) consequent reaction in the shape of a leukocytosis, the predominant cells being of an embryonic type. This suggests a rapid response by the hematopoietic system to the introduction of the vaccine into the blood stream.

Syphilis of Lung.—In a series of patients with symptoms of intrathoracic disease suspected to be hydatid, Bryce and Patterson found that the serum, while failing to react to the hydatid complement fixation test, reacted to the Wassermann test. This led to an analysis of the ultimate diagnosis. One case proved to be hydatid disease in a syphilitic, in which "hydatid antibody" in the blood was not detected. Three were probably cases of aneurysm of the aorta. Four were cases of tuberculosis of the lungs in syphilitic patients. Further studies were then carried out on patients in hospital and at postmortem examination. A brief account of the pathology and symptomatology of pulmonary syphilis is given, based on an analysis of a series of eighteen cases coming to postmortem examination and of the clinical histories of fourteen other patients; all of these showed evidence of dis-

ease of the lung and their blood serum reacted to the Wassermann test. Five patients who were subjected to intensive antisyphilitic treatment, showed considerable improvement.

Medical Journal of South Africa, Johannesburg

18: 191-222 (March) 1923

Review of Some New Landmarks in Public Health. A. J. Orenstein.—p. 192.
Use of Simple Cow's Milk Mixtures in Infant Feeding. E. P. Baumann.—p. 197.
Epidemiology of Malaria and Blackwater Fever in Portugese East Africa Between 1901-1920. L. Soromenho.—p. 201.
*Suppression of Bladderworm and Tapeworm Disease. W. Watkins-Pritchford —p. 207.

Treatment of Tenia Infestation.—The following routine treatment has always proved successful in Pitchford's experience, both with *Tenia solium* and *T. saginata.* Ninety mimims of liquid extract of male fern, not more than 12 months old, are stirred into 1½ ounces of milk and placed by the patient at his bedside in readiness to be taken on the following morning. No food is eaten after 8 p. m. Calomel, 1 grain, is taken at bedtime. One third of the male fern draught is taken at 5 a. m., one at 6 a. m. and one at 7 a. m. Calomel, 1 grain, is taken at 8 a. m. A light breakfast may be taken at 9 a. m.

Annales de l'Institut Pasteur, Paris

37: 229-328 (March) 1923

*Vaccination Against Sheep-Pox. J. Bridré and A. Boquet.—p. 229.
Culture Media for Pyocyaneus Bacilli. A. Liot.—p. 234.
*Atoxyl in Treatment of Sleeping Sickness. Ouzilleau and Lefrou.—p. 275.
Idem. Lefrou.—p. 294.
Research on the Streptococcus Equi. Brocq-Rousseu et al.—p. 322.

Ten Years of Vaccination Against Sheep-Pox.—The sensitized virus has been used to vaccinate 8,000,000 sheep in Algeria and half a million in France and Spain. Italy and Greece have also adopted this method of vaccination against sheep-pox. It confers immunity in forty-eight hours which lasts for a year. Its action is solely preventive, but has proved reliable and harmless. Any epizootic of sheep-pox can thus be stamped out in two weeks, the authors reiterate.

Treatment of African Sleeping Sickness.—Ouzilleau and Lefrou have found most effectual atoxyl in large doses, given during the first stage of the disease. If the disease has reached the second stage, there is little hope from any treatment. Conditions then are analogous to those with general paralysis. The essential point is to cure the first stage and not allow the second stage to develop. In the six cases of injury of the eyes from the atoxyl, the patients were all in the second period, that is, they already showed the dreaded meningeal reaction.

Annales de Médecine, Paris

13: 189-288 (March) 1923

Blood Pressure Sign of Old Injury to Head. Villaret and Théodoresco.—p. 189.
*Treatment of Pleurisy with Effusion. Krummenacher.—p. 204.
Flexion Paraplegia of Cerebral Origin. Alajouanine.—p. 243.
Charcot's Crystals in Eosinophilia. De Jong and Romieu.—p. 276.

Calcium Chlorid in Treatment of Pleurisy with Effusion.—Krummenacher has confirmed Blum's statements in regard to the remarkable action of calcium chlorid in inflammatory affections of the serous membranes. It hastens resorption of the effusion and reduces the temperature promptly while promoting diuresis. In acute cases of pleurisy, it sometimes restored conditions to clinically normal in twenty-four hours. The ten cases described in detail show that the drug has to be given in large doses: 15 gm. of the dry calcium chlorid in twenty-four hours, repeated the second day if the fever persists, and reduced by one half if the fever subsides. This treatment should not be kept up for more than five or six days; if kept up too long, the general condition suffers, the mineral balance becoming too much upset. The taste is disguised by giving two spoonfuls of the concentrated solution (30 gm. of the dry salt in 100 gm. of water) in coffee, and drinking a little coffee afterward. The effect does not seem much better when given by the vein except when there is a very large effusion. For intravenous infusion, the dose has to be more than 2 or 2.5 gm. in a 5 per cent. solution. In one case an intravenous infusion of 3 gm. had a remarkably prompt and permanent curative action, but in a case of septic bronchopneumonia, thrombosis in the brachial vein developed two days after the injection by the vein. Otherwise none of the patients presented any by-effects, and the general condition improved. There was no flaring up of any tuberculous process in the lung. It is important to have salt dropped entirely or partially from the diet during the calcium treatment, and for two or three days thereafter.

Annales des Maladies Vénériennes, Paris

18: 177-256 (March) 1923

*Deforming Spondylitis of Gonorrheal Origin. E. Ramel.—p. 177.
Bursitis of Olecranon from Sleeping Embraced. Belgodère.—p. 214.
Fistulas from Soft Chancres. Goubeau.—p. 217.

Gonorrhea and Spondylitis.—Ramel believes that ankylosis of the vertebrae and even rhizomelic spondylosis are very frequently caused by gonococcus infection. It is necessary to think of this possibility since the prognosis depends on early and intensive treatment.

Archives Franco-Belges de Chirurgie, Brussels

26: 193-310 (March) 1923

Technic for Detaching the Duodenum. Vautrin and Fourche.—p. 193.
*Reconstruction of Fractured Olecranon. A. Hannecart.—p. 199.
Fractures of Head of Radius. G. Ferry.—p. 201.
*Tardy Ulnar Paralysis. P. Guibal.—p. 207.
*Surgical Physiology of the Large Intestine. C. Lefebvre.—p. 215.
General Anesthesia with Ethyl Chlorid-Alcohol. R. Reding.—p. 223.
Armless Woman: Ectromelia and Phocomelia. Verdelet and Forton.—p. 236.
Obstetric Depression of Parietal Bone. A. Marique.—p. 242.
*Cicatricial Contracture. M. van Neck.—p. 245.
Bilateral Fracture of the Patella. Bourgom.—p. 258.

Fixation of Fractured Olecranon.—Hannecart, in three cases, has successfully applied a wire loop to hold the fragments of the olecranon in place, the wire passing through the triceps tendon and around the radius below the coronoid process. Roentgenograms show the technic.

Tardy Paralysis of Ulnar Nerve After Fracture of the External Condyle of the Humerus.—The roentgenograms in a typical case demonstrated that the ulna had become displaced, like the astragalus in a Dupuytren fracture, and in consequence the ulnar nerve was stretched and irritated. Shifting the nerve to the front of the condyle leaves it exposed to further irritation. The simplest and most effectual treatment is by resection of a wedge from the humerus above the condyle. This corrects the valgus deformity, restores practically normal conditions for the ulnar nerve, and the paralysis subsides.

Surgical Physiology.—Lefebvre contends that the cecum, and the ascending and the right half of the transverse colon are needed in digestion, a kind of extension of the stomach. They should not be sacrificed except as a last resource. The distal colon is much less important; it serves chiefly as a receptacle.

Cicatricial Contractures.—Van Neck discusses the mechanical principles involved in correcting deformity from cicatricial retraction, saying that it requires patience and perseverance on the part of both patient and surgeon. If no benefit is apparent after a month of elastic traction, the cicatricial tissues must be excised. But it is remarkable how many apparently rigid contractures, especially of the fingers, yield to the devices for elastic traction which he illustrates.

Archives des Maladies du Cœur, Paris

16: 161-240 (March) 1923

*Examination of Nervous System of Heart. Daniélopolu and Carniol.—p. 161 and 181.
*Electrocardiogram in Gallop Rhythm. Bordet et al.—p. 205.
Survey on Ligation and Suture of Arteries. Heitz.—p. 216.

Atropin Test and Orthostatic Tachycardia in Examination of Nervous System of Heart.—Daniélopolu and Carniol use atropin by intravenous injection, repeated until the subject shows no increased tachycardia. They determine the orthostatic tachycardia, then inject a small amount (0.5 mg.) of atropin to see its action. After this they establish the dose that is necessary to paralyze the vagus, and finally they study the orthostatic tachycardia in this condition. They find val-

uable information regarding the state of both vagus and sympathetic. The method permits classification of disturbances of the vegetative nervous system into six groups: The increased or decreased tonus of one of the cardiac nerves and the more frequent changes of both (amphotony and hypamphotony), are the criteria. Many patients usually classified as pure sympathicotonics or vagotonics belong in reality to the amphotonic group with predominance of one or the other nerve.

Electrocardiograms in Some Cases of Cantering Rhythm.—In six patients with cantering rhythm, Bordet, Yacoel and Giroux found a slower auriculoventricular conduction and a shortening of diastole. Electrocardiography allows a more correct prognosis and gives hints for treatment. In severe disturbance of conduction, strophanthin should be preferred, while in modifications of rhythm, digitalis is indicated.

Bulletin Médical, Paris

37: 417-444 (April 14) 1923

*Treatment with Whole Blood or Serum. G. Lyon.—p. 423.
Surgery of Goiter. V. Pauchet.—p. 427.
Bulbar Paralysis After Viper Bite. A. Alexinsky.—p. 430.
Ovarian Extracts. C. Bru.—p. 430.

37: 445-474 (April 21) 1923

Psychotherapy. P. E. Lévy.—p. 445.
Chronic Intestinal Stasis. A. C. Guillaume.—p. 463.

Serotherapy and Hematotherapy.—Lyon reviews the many indications for treatment with whole blood or blood serum. It may succeed in desensitizing, in hemorrhagic conditions, infections and certain skin affections after other measures have failed. The reason why it succeeds in some cases and fails in others apparently identical, is still a mystery.

Encéphale, Paris

18: 73-144 (Feb.) 1923

*Condition of Sex Organs in Dementia Praecox. F. W. Mott.—p. 73.
Postencephalitic Parkinsonian Syndrome. Claude and Schaeffer.—p. 85.
*Dysthymia in Children. S. de Sanctis.—p. 88. Cont'n.
*Applied Experimental Psychology. J. Abramson.—p. 94.
Senile General Paralysis. Riser and Gay.—p. 101. Conc'n.
*Melancholia with Asthenia and Melanoderma. H. Damaye.—p. 111.
Splanchnic Neurosis; Psychoanalysis and Cure. Martin-Sisteron.—p. 114.
Oculocardiac and Solar Reflexes. H. Claude et al.—p. 127.
The Vegetative Nervous System in Respect to Intoxications. Garrelon and Santenoise.—p. 134.
Study of Nitrogen Differences in Melancholia. Aubel and Badonnel.—p. 135.
Cholesterolemia in Mental Diseases. R. Targowla et al.—p. 138.

Conditions of the Sex Organs in Dementia Praecox.—Mott has been studying since 1910 the findings in the reproductive organs in mental disorders, particularly dementia praecox. In thirty-four cases of general paralysis, spermatozoa were found nearly always present, while in thirty-seven cases of dementia praecox, spermatozoa were found in only two cases out of three. The reproductive organs are closely connected with other endocrine glands and his research on suprarenal glands has demonstrated that the medulla of these glands in dementia praecox shows vast deficiency in the genetic formative impulse.

Dysthymia in Children.—De Sanctis says that typical melancholia is never present in growing children. On the contrary, it is entirely absent from this period because these symptoms are proper to the third, fifth and sixth decades. Manic-depressive psychoses in a fully developed stage are also rare in children, but simple depressive and agitated conditions, symptomatic of epilepsy, of infectious diseases, etc., are frequent, as are also phrenasthenia and psychasthenia.

Applied Experimental Psychology.—Abramson says that teachers are apt to confound two very different things: comprehension and memory, the automatic function. In visiting schools in Germany she noted that there were more boys in the classes for defectives, and more girls in those for the specially gifted. This is not due to greater intelligence on the part of the girls, but to greater application. All agree on the advantages of individual education, but it exists only in theory. Dependence on memory—automatism—is the chief enemy of the abnormal child. The segregation of the backward children has been a great gain for the normal children, to say nothing of the backward themselves. Setting aside clinical causes for the deficiency, which are highly important, she analyzes the features that the teachers can hope to modify. She charts the mental functions for the purpose of discovering the cause for the retarded development. Those occupied with the care of abnormal children complain of their lack of judgment. The automatic memory which stores images without assimilating them is well developed. In some backward children, the lack is not in the intelligence but in the character. In Germany, backward children are often educated by manual training and mathematics, subjects requiring the greatest exactness, which may be termed a treatment of causes instead of symptoms. Binet calls training of this kind "mental orthopedics." It allows children to be grouped by their capacity for development.

Depressive Melancholia with Asthenia and Melanoderma.—Damaye's necropsy on the body of a woman who had had melancholia and who had died from pulmonary tuberculosis, showed an adenoma and some tubercles in the suprarenals.

Gynécologie et Obstétrique, Paris

7: 193-272 (March) 1923

Tuberculosis of Ovaries and Pregnancy. Vautrin.—p. 193.
*Prevention of Tuberculosis of New-Born. R. Debré.—p. 199.
Pelvic Varicocele. G. Cotte and D. Jezditch.—p. 205.
*Diagnosis of Tubal and Angular Pregnancy. Douay and Rochat.—p. 216.
*Pulmonary Tuberculosis Associated with Pregnancy. L. Cleisz.—p. 224.

Prevention of Tuberculosis in the New-Born.—Debré publishes five observations on infants who were only a short time (thirteen to forty-two days) with their tuberculous mothers. Though the contact was not very intimate, all of these babies died from tuberculosis. He emphasizes the importance of absolute separation from birth.

Diagnosis of Tubal and Angular Pregnancy.—Douay and Rochat admit the difficulty of diagnosis between tubal pregnancy and cases with the fetus in an angle of the uterus. The flexion of the normal pregnant uterus, which might simulate it, disappears in the Trendelenburg position. This is more advisable than to attempt a diagnosis by straightening the uterus. An important sign of angular pregnancy is the lateral or anterolateral position of the pregnant side, while in tubal pregnancy the tube falls backward into the retrouterine cavity. The differences in the consistency of the pregnant corner and the rest of the uterus do not occur in tubal pregnancy. If the woman can be kept at the clinic, one should wait and observe; otherwise exploratory laparotomy is advisable.

Therapeutic Indications in Pulmonary Tuberculosis Associated with Pregnancy.—Cleisz gives an extensive review on this question, which was the topic of discussion at the Academy of Medicine.

Médecine, Paris

4: 405-480 (March) 1923

Recent Progress in the Pathology of Heart, Vessels, Kidneys and Blood. P. Ribierre.—p. 405.
*Auricular Fibrillation. A. Clerc.—p. 414.
Affection of Aortic Valve in Syphilitic Aortitis. Gallavardin.—p. 419.
*Prognosis of Angina Pectoris. Ribierre and Leconte.—p. 422.
*Obesity and Hypertension. C. Aubertin.—p. 431.
*Early Radiologic Diagnosis of Aortitis. E. Bordet.—p. 434.
*Pathogenesis of Musical Murmurs. A. Hanns.—p. 438.
Benign Form of Mercuric Chlorid Poisoning. Achard and Rouillard.—p. 444.
*Chronic Nephritis without Albuminuria. F. Rathery.—p. 450.
*Phenolsulphonephthalein Test. P. Merklen.—p. 455.
*Banti's Disease. J. Rieux.—p. 458.
*Sudden Variations of Leukocyte Formula. J. Tinel.—p. 463.
Hemostatics. M. Perrin.—p. 467.
Action of Deep Roentgen Radiation on the Blood. Mouquin.—p. 473.

Pathogenesis and Treatment of Auricular Fibrillation.—Clerc agrees with Lewis in attributing the manifestations of complete arrhythmia to a "circus movement" of the excitation in the muscular fibers of the auricle. This phenomenon requires: (1) a sufficiently long circular road; (2) a shortened refractory period, and (3) comparatively slow speed of propagation of the stimulus, because otherwise the stimulus would fail to find, on its return, a tissue ready to respond.

Quinidin diminishes the excitability of the heart muscle, and lengthens the refractory period. Hence its beneficial action on auricular fibrillation. It should always be preceded by cardiotonics. Strophanthus may be preferable to digitalis, because it tends to diminish the number of auricular oscillations.

Prognosis of Angina Pectoris.—Ribierre and Leconte point out that the severity of subjective symptoms is not proportional to the severity of the prognosis. Even slight symptoms are important. Angina following exertion is a sign of aortitis. Its prognosis, especially in syphilitics, is less serious than in angina in the supine position, which indicates dilatation and insufficiency of the strained heart. Some patients have no other clinical symptoms, but a change in the depth of the aortic shadow may be found by radioscopy. The distinction between a true angina and a pseudo-angina is inexact and dangerous. Its only use is to calm the patient, whose condition might be seriously impaired if he should hear the diagnosis of "true angina pectoris." A sudden change of position during the examination (from standing to lying) may provoke an attack, and should be avoided.

Obesity and Hypertension.—Aubertin has frequently found hypertension in stout persons. It is a complication, not a sequela of obesity, and may be the cause of severe incidents (apoplexy, sudden death).

Early Radiologic Diagnosis of Aortitis.—Bordet sometimes found changes in the opacity of the aorta the earliest sign of aortitis, preceding even subjective symptoms.

Pathogenesis of Musical Murmurs.—Hanns finds that anatomic lesions are not the cause of the musical murmurs of the heart which resemble the cheeping of chickens. These murmurs depend only on tachycardia and equalization of the pressure on the two faces of the vibrating body.

Chronic Nephritis Without Albuminuria.—Rathery warns against declaring the kidneys healthy because of absence of albuminuria. Even a severe nephritis may exist without it. Albuminuria is of little value for diagnosis and prognosis.

Phenolsulphonephthalein Test.—Merklen recommends the phenolsulphonephthalein test in nephritis and cardiac disturbances.

Actual State of the Problem of Banti's Disease.—Rieux reviews the diagnosis of Banti's disease, and believes that late hereditary syphilis plays an important part in the etiology.

Sudden Variations of Leukocytic Formula from Physiologic Causes.—Tinel emphasizes the influence of local conditions on the number and differential count of white cells. Refrigeration of a finger lowers the number; heating increases it. Position of the hand may be an important factor, as also vasomotor changes. Electric stimulation of the ulnar nerve, inhalation of amyl nitrite, compression of the veins, change the number and differential count of white cells. With Santenoise he found a typical hemoclastic crisis produced in a vagotonic by compression of the eyes.

Paris Médical

13: 193-224 (March 3) 1923

Survey on Venereal Diseases in 1923. Milian and Brodier.—p. 193.
*Bone and Joint Manifestations of Syphilis. P. Gastou.—p. 200.
Subcutaneous and Intramuscular Injections of Arsphenamins. Petges.—p. 205.
*Syphilis in the Beginning of Pregnancy. M. Pinard.—p. 206.
Bismuth in Conjugal Syphilis Resistant to Arsenic. Gougerot and Geray.—p. 209.
Aminoarsenophenol Intramuscularly in Syphilis. Sézary and Pernet.—p. 212.
*Treatment of Syphilitic Hemiplegia. G. Milian.—p. 218.
*Hyperalbuminosis in Cerebrospinal Fluid. Bloch.—p. 221.

Manifestations of Syphilis in Bones and Joints.—Gastou describes the osteo-articular manifestations of syphilis, and emphasizes the necessity for testing serologically patients with osteophytes and thickening of the periosteum of the long bones and joints.

Recognition of Syphilis in the Beginning of Pregnancy.—Pinard demonstrates by clinical histories the frequent mismanagement of "syphilis of decent women." Unexplained natural miscarriages are due to syphilis. The serologic examination should be extended to the husband and even to the parents. Hydramnion, premature delivery, univitelline twins, large babies with large placentas, hypertrophy of the placenta over one sixth of the body weight of the infant should make the physician suspect syphilis. "If a baby nursed at the breast of the mother cries day and night, if it has green diarrhea, habitual vomiting, convulsions, or loses in weight in spite of sufficient milk, look for syphilis and you will find it." The pregnant woman stands mercury and bismuth less well, but arsenic better than other patients. She should receive a series of eight weekly intravenous injections, increasing to 0.6 gm. of arsphenamin. After a rest of two to three weeks a second and after another rest a third series. Less vigorous treatment, especially mercury by mouth, is only a concession to conventional hypocrisy and a menace to the outlook for the infant.

Treatment of Syphilitic Hemiplegia.—In spite of Ehrlich's warning, Milian considers energetic treatment with arsphenamin, starting with 0.3 gm. of neo-arsphenamin, and increasing every fifth day by 0.015 gm. up to 1.05 gm. of neo-arsphenamin, the treatment of choice. No time should be lost. To avoid nitritoid crises, he injects 1.5 mg. of epinephrin subcutaneously half an hour and five minutes before the injection of arsphenamin.

Monosymptomatic Hyperalbuminosis in the Cerebrospinal Fluid of Syphilitics.—Bloch finds an increase in the protein content of the cerebrospinal fluid above 0.03 per cent., without other signs, not infrequently in syphilis. It can be considered as a symptom only if all other possible causes are excluded. In syphilis, it may be simply a remnant of a cured disease, but such cases should be kept under observation. If the syphilis is recent, the treatment should endeavor to banish the anomaly.

Presse Médicale, Paris

31: 341-352 (April 14) 1923

Eczema of Scalp. R. Sabouraud.—p. 341.
*Meningitis of Otitic Origin. H. Aboulker.—p. 342.
Nonparasitic Cysts of Biliary Apparatus. Sénèque.—p. 346.

Meningitis of Otitic Origin.—Aboulker warns that the fate of the patient with ear disease is in the hands of the general practitioner. In his own experience, of 21 cases in which the cerebrospinal fluid was sterile, 6 patients succumbed, while among the 18 recoveries there were 3 septic cases. In some cases the meningitis proved fatal although the spinal fluid was free from micro-organisms, leukocytes and albumin. The findings in the spinal fluid may be entirely different three hours later, demonstrating anew that a biologic reaction is a fragile basis on which to build solid conclusions. Clinical examination will distinguish between a straw fire and a true conflagration. He has had cases in which a large intracranial abscess had persisted for a year at least without interfering with the occupation, and cases of meningitis and phlebitis may be ambulant for months. The clinical picture of Menière's disease is sometimes traceable to a diffuse chronic meningitis of the cerebellopontine angle, and this can be cured by a retromastoid decompression operation. He has found it practicable in dogs to "rinse out the meninges" by leaving the lumbar puncture needle in place and withdrawing small amounts of the fluid at intervals, replacing it with a suitable isotonic solution. He has published a clinical case in which this procedure was applied. There are many reasons, as he explains, why the decompression operation should be at some distance from the infectious focus, preferably in the squamous bone.

Revue Franç. de Gynécologie et d'Obstét., Paris

18: 65-112 (Feb. 10) 1923

*Uterine Fibroma as a Cause of Death. L. Dartigues.—p. 65.
Sedimentation of Blood Corpuscles in Gynecology. P. Gaifami.—p. 87.

Fibroma of the Uterus as Cause of Death.—Dartigues, differing from a number of authors who refer to fibroma of the uterus as a benign tumor, says it is a serious affection which, through its complications, may cause death without timely surgical intervention. Death may result through such complications as hemorrhage, cachexia, cardiopathy, fibroma-

tous emboli, local and general infections, sloughing, compression and occlusion, cancerous degeneration, or various complications in pregnancy, and obstetric accidents. Cardiac symptoms, from simple palpitation to fatal syncope, have been observed in 40 per cent. of fibroma patients. Whether radium or surgery should be used in treatment is at this time an open question, but after the great number of successful hysterectomies he has seen performed in cases where radium had failed, he thinks surgery the safest method. The surgical intervention should be preceded and followed by a course of medical treatment.

Pediatria, Naples

31: 289-352 (March 15) 1923

Inaugural Lecture of Pediatrics Course. G. Caronia.—p. 289.
*Syphilis in Four Generations. C. Martelli.—p. 305.
Cutis Laxa. R. Vaglio.—p. 321.
*Rectal Treatment with Arsphenamin in Syphilitic Children. E. Modigliani and V. Castana.—p. 324. Conc'n.

Syphilis in Four Generations.—Martelli describes several well founded observations in syphilis in grandchildren and their progeny.

Rectal Treatment with Arsphenamin in Syphilitic Children.—Modigliani and Castana report extensively on their favorable experiences with rectal administration of neo-arsphenamin in children.

Policlinico, Rome

30: 265-327 (Feb. 26 and March 5) 1923

*The Doll's Eye Phenomenon. O. Cantelli.—p. 265. Conc'n p. 302.
*Three Cases of "Eruptive Fever." P. Filippella.—p. 270.
Punctures to Reveal Spirochete of Syphilis. Podestà.—p. 273.
Chronic Appendicitis without Acute Stage. C. Romiti.—p. 297.
*Syphilitic Diabetes Mellitus. P. A. Meineri.—p. 307.

The Doll's Eye Sign.—Cantelli says that the doll's eye sign in diphtheric paralysis, described in 1921 by Widowitz, is not the same sign described by this name earlier in the same year by himself. The Widowitz sign consists in protrusion of the eyeballs and sluggish movements of the eyeballs and eyelids accompanying them. Cantelli used the term in almost the opposite sense, namely, to express a dissociation between the movements of the head and eyes: As the head is raised the eyes are lowered, and the reverse. He claims that only his sign is new. In cases where the dissociation is between the vertical movements of the head and eyes, the lesion is located in the voluntary muscles, and the sign can be elicited only in voluntary movements of flexion and extension of the head. On the other hand, if the phenomenon is visible only during passive movements, this suggests that the lesion is located in the motor innervation of the muscles of the neck. If it is evident both in voluntary and passive movements, there is reason to suppose that the lesion is located in the posterior longitudinal bundle. From what is known and what can be deduced from theories, it appears probable that only a lesion of this tract can produce the pure doll's eye sign.

Research in Three Cases of Eruptive Fever.—Filippella reports further research on the clinical condition to which Carducci, in 1920, gave the name "eruptive fever," an infectious disease of the nature of measles, scarlet fever and typhus. It seems to have the closest analogy with Brill's disease. In the last of his three cases, the response to *Proteus* X 19 was beyond anything yet witnessed with typhus. This he regards as highly significant. Examination of blood showed neither leukocytosis nor leukopenia.

Syphilitic Diabetes.—Meineri relates an unusual case of diabetes mellitus of syphilitic origin in a man, aged 46, the fifth year after infection with syphilis. He had taken courses of calomel during these years, but then symptoms of diabetes developed, with symptoms of neurosyphilis. Under intensive arsenical-mercurial-iodid treatment the whole subsided. Treatment as for diabetes had no effect, but under the specific treatment the glucose in urine dropped from 88 to 44 gm. and finally disappeared entirely during the last week of the course. He cites Villaret's recent case in which symptoms of diabetes appeared a few days after the primary chancre. The glycosuria of 422 gm. and the acetonuria rapidly subsided under mercurial treatment. In his case he ascribes the diabetes to syphilitic lesions in the central nervous system. The cerebral symptoms disappeared first, then the glycosuria, but the Wassermann reaction was still strongly positive two months later.

Riforma Medica, Naples

39: 169-192 (Feb. 19) 1923

*Biologic Demonstration of Paternity. L. Lattes.—p. 169.
*Tracheal Displacement in Pulmonary Tuberculosis. A. de Martini.—p. 173.
Bacteremia with Pseudo-Diphtheria Bacilli. C. Ninni.—p. 177.
Poisoning from Carbon Monoxid in Miners. A. Jona and A. Lusso.—p. 180.
Removal of Tumors from the Colon. E. Aievoli.—p. 181.

Biologic Demonstration of Paternity.—Lattes and his collaborator Mino, on the basis of later experiments, confirm the value of Ottenberg's theory that if the child's blood has the correct grouping for the alleged parents, then the child may (but not necessarily must) be their offspring. The latest Italian research has shown that the exceptions to this rule amount to only 1 per cent. The discovery can therefore be used in a practical way to settle medicolegal questions of heredity.

Displacement of the Trachea in the Course of Pulmonary Tuberculosis and Its Clinical Symptomatology.—De Martini found lateral anterior or posterior displacement of trachea in 36 per cent. of his cases of chronic pulmonary tuberculosis. It is due to the force of the cicatricial contraction after a process of hyperplastic pleuritis. The obliquity of the laryngotracheal axis, Williams' tracheal tone, and the tracheal respiration are the most important clinical symptoms of such displacement.

Brazil-Medico, Rio de Janeiro

1: 187-200 (April 7) 1923

*Bacillary Dysentery at Rio. Gomes de Faria and Genesio Pacheco.—p. 187.
*Ethyl Chlorid in Treatment of Myiasis. Antonio Pedro.—p. 190.
Influenza and the Micro-Organisms of the Air. S. C. da Silva.—p. 190.
Recent French Work on Gastro-Intestinal Pathology. Antoine.—p. 194.

Bacillary Dysentery at Rio.—In seventy-seven cases of diarrhea in children, bacilli of the dysentery group were found in 16.8 per cent., and in 32 per cent. of twenty-five cases in adults.

Treatment of Myiasis.—Pedro relates the prompt action of ethyl chlorid in clearing the nose, ear or other passage from the larvae of flies. Myiasis is common in Brazil. The myiasis in the nose in one man had induced violent delirium, but four applications of ethyl chlorid resulted in a complete cure. In infested wounds the cure is instantaneous.

Archivos Latino-Amer. de Pediatría, Buenos Aires

17: 81-160 (Feb.) 1923

*Asthma, Tuberculosis and Syphilis. M. Acuña and Garrahan.—p. 81.
Error in Diagnosis of Hydatid Cyst of Lung. Navarro.—p. 90.
Infant Welfare Work at Montevideo. J. A. Bauza.—p. 96.
Emphysema in Child with Tuberculous Bronchopneumonia. Pelfort.—p. 115.
*Toxic Paralysis of Leg. J. M. Jorge and M. Gamboa.—p. 119.
*Desquamating Erythrodermia. R. Berro.—p. 122.
Pneumococcus Meningitis; Four Cases. N. Leone Bloise.—p. 129.
Acquired Syphilis in Children. M. A. Jáureguy.—p. 139.

Relations Between Asthma, Tuberculosis and Syphilis.—Acuña and Garrahan conclude from five years of research that tuberculosis has no causal connection with asthma. Only 28.8 per cent. of 59 children with asthma responded positively to tuberculin tests, while the general average of positive responses in the apparently healthy was 49.4 per cent. A positive Wassermann reaction was noted in 21 of 31 children with asthma, but specific treatment had a curative action on the asthma only in a very few cases. Inherited syphilis may prepare the soil for the development of asthma.

Toxic Paralysis of the Leg.—The boy, aged 7, took a spoonful of a solution of mercuric chlorid, and after two days of anuria the right leg became paralyzed. Under massage, electricity and heliotherapy the use of the leg was regained toward the ninth month, but the muscles still give the reaction of degeneration. Toxic poliomyelitis seems the probable explanation.

Desquamating Erythrodermia.—In Berro's four cases, the Leiner-Moussous syndrome in the young infants had developed suddenly but seemed to be subsiding after a few days. Then suddenly the symptoms became aggravated, with a septicemic course. The affection finally yielded to treatment, but the appearance of this series of four cases all within a few days, and all in private homes, was peculiar.

Prensa Médica Argentina, Buenos Aires

9: 881-906 (March 30) 1923

Case of Suprapubic Varices. R. A. Marotta.—p. 881.
Hydatid Cyst of Lung in Boy. Jacinto Moreno.—p. 883.
Right Pleural Effusion with Heart Disease. Alessandrini.—p. 886.
*Cholesterol in Eye. E. Adrogué.—p. 889.
*Adenoids and Physical Development. A. Levene.—p. 890.
Biopsy. S. Mazza and M. Balado.—p. 899. Cont'n.
*Treatment of Vagotonic Vomiting. Raul Ortega Belgrano.—p. 904.

Cholesterol Crystals in Anterior Chamber of the Eye.—Adrogué gives a photomicrograph showing the numerous flat, square crystals moving around in the anterior chamber with the two currents in the vitreous humor. The patient was a man, aged 51; the eye showed a cataract with atrophy of the iris.

Adenoids and Physical Development.—Levene has been able to follow for years the physical development of 100 children who had had adenoid vegetations or enlarged tonsils removed. He gives data for thirty-two of the children: all had developed remarkably after the operation, gaining more in height and weight than the average for their years. Among the 3,896 children entering the children's clinic for any cause, adenoids were found in 41.27 per cent., but only 50 per cent. have had their adenoids removed. Among 7,800 recruits examined, 25 per cent. were exempted on account of physical defects, and 33.5 per cent. in this group presented constitutional debility. Much of this is undoubtedly due to the evil effects of adenoids in childhood. In the school for weakly children, 43 per cent. were found to have adenoids. These gained only 1 kg. in weight during the year while the others gained 2 kg. Adenoids were found in 35 per cent. of the general school population.

Treatment of Vagotonic Vomiting.—Ortega Belgrano reports two cases presenting an array of symptoms indicating excessive irritability of the vagus center. A period of intense headaches and uncontrollable vomiting, with pulse of 52, was arrested at once on inhalation of amyl nitrite. The action of this drug was prolonged with belladonna, and the hypertension was combated with 30 per cent. solution of glucose. Another patient developed uncontrollable vomiting and bradycardia of 40 after excesses. Both were syphilitic, but the vomiting was not influenced by specific treatment. It yielded at once to the drug that inhibits vagus action.

Revista Médica del Uruguay, Montevideo

26: 93-124 (March) 1923

*Hydatid Cysts of the Liver. G. Arrizabalaga.—p. 93.
Appeal for Coordination in Medical Education and Production in Latin America. J. Pou Orfila.—p. 104.
Intra-Urethral Simple Chancre. J. May.—p. 119.

Hydatid Cysts in the Liver.—Arrizabalaga injects a solution of formaldehyd to sterilize the cyst and then aspirates the contents. The walls of the empty sac collapse, aided by pressure on the abdominal wall. Then he fastens the wall of the sac to the parietal peritoneum, and keeps the patient under observation for two months. If the sac fills up again it is thus easily tapped, and if suppuration occurs, the sac can be fastened to the skin. Marsupialization became necessary in only 15 per cent. of his seventy cases; 60 per cent. promptly recovered after a single puncture, and 25 per cent. after repeated punctures.

Semana Médica, Buenos Aires

1: 577-620 (March 29) 1923

*Diathermy in Treatment of Sterility. Castaño and Gómez.—p. 577.
Fracture of Supernumerary Bone in Tarsus. C. P. López.—p. 580.
Prophylaxis of Venereal Disease in the Navy. A. B. Ribeyrolles.—p. 584.
Coma from Acute Insufficiency of Liver and Kidneys. L. Goldemberg.—p. 600.
*Hernia of Brain in Wound of Frontal Bone. C. Fernicola.—p. 603.
Splenomegaly with Cirrhosis of Liver. H. Eppinger.—p. 604.
The Faenza Group of Paratyphoid Food Poisoning Cases. A. Lama.—p. 608.
Hygiene for Wage-Earners. V. Delfino.—p. 610.

Diathermy in Treatment of Sterility.—Castaño and Merlo Gomez apply diathermy for thirty or forty minutes on alternate days. The course is twenty sittings, and it is repeated if necessary after an interval of a month in treatment of hypoplasia of the uterus, the most common cause of sterility. They regard inherited syphilis as responsible for hypoplasia of the uterus and cystic sclerosis of the adnexa; the diathermy should be supplemented by appropriate treatment. In every one of their ten cases the cavity of the uterus increased by 2 cm. in length and one woman has since borne a healthy child.

Hernia of Brain Tissue in Wound of Frontal Lobe.—The boy, aged 10, had a smooth clinical recovery after resection of the soiled brain tissue that protruded after a kick from a horse.

Deutsche medizinische Wochenschrift, Berlin

49: 335-368 (March 16) 1923

Exophthalmic Goiter. Goldscheider.—p. 335.
Surgical Treatment of Exophthalmic Goiter. O. Hildebrand.—p. 338.
*Pluriglandular Insufficiency. H. Zondek.—p. 339.
Oral, Conjunctival and Nasal Infection of Guinea-Pigs with Tubercle Bacilli. B. Lange.—p. 343.
Enhancement of Bactericidal Remedies by Intravenous Injections of Hypertonic Solutions of Glucose. S. Silberstein.—p. 345.
Combined Treatment of Psoriasis. Hübner.—p. 348.
"Transmigration Peritonitis." N. Müller.—p. 351.
General Principles of Balneotherapy. F. Muller.—p. 352.
General Principles of General Anesthesia. Fessler.—p. 353.
Free Medical Treatment and the Future of the Health of the German People. Stier-Somlo.—p. 357.

Pluriglandular Insufficiency.—Zondek publishes several observations on pluriglandular insufficiencies with the necropsy findings. He finds two opposite types: obesity and cachexia, which may be due to opposite disturbances of the same endocrine organs. Cachexia may follow the obesity. He found high metabolic figures in the obesity and low in the cachexia. The endocrine glands play an important part in the accommodation of different animals to seasonal changes, especially hibernation. He finds a similarity in human pathology: Persons with disturbances of the endocrine glands, especially of the thyroid gland and vegetative nervous system, may have sudden changes in weight and deposition of fat without changing their diet, coincident with the seasons. He quotes the history of a young vagotonic girl with distinct degenerative stigmata, who deposited fat regularly with the beginning of the hot season and lost it in winter.

Klinische Wochenschrift, Berlin

2: 429-476 (March 5) 1923

*Etiology of Epidemic Encephalitis. A. Schnabel.—p. 429.
Pathogenetic Problems of Epidemic Encephalitis. F. Stern.—p. 433.
*Bile and Purin Metabolism. K. Harpuder.—p. 436.
*Skin Reactions in Children to Cerebrospinal Fluid. G. Usbeck.—p. 438.
Action of Normal Serum in Experimental Diphtheria. Ratnoff.—p. 440.
Malaria in Germany in Relation to Arsphenamin. Gordon.—p. 442.
Affections of Epiphyses in Growth Period. Engel.—p. 444. Conc'n.
Superinfection in Experimental Syphilis of Rabbits. Steinfeld.—p. 446.
Noiseless Inductorium for Alternating Currents. F. Scheminzky.—p. 448.
*Experimental Typhoid in Guinea-Pigs. Friedberger and Meissner.—p. 449.
Changes of Blood in Anaphylaxis. E. Wittkower.—p. 450.
Separation of Bodies Producing and Inhibiting Fibrinolysis and Their Relative Amounts in Body Fluids and Extracts of Organs. M. Rosenmann.—p. 450.
Pathogenesis and Treatment of Retroflexion of Pregnant Uterus. E. Vogt.—p. 451.
Periodic Examination of Apparently Healthy. Weiss.—p. 456. Conc'n.

Etiology of Epidemic Encephalitis.—Schnabel reviews the etiology of epidemic encephalitis and deals especially with his and Doerr's hypothesis on its identity with the virus of herpes. He inoculated himself with encephalitis virus after passage through the brains of rabbits. The virus produced a lethal encephalitis in rabbits, but only herpetic vesicles in the author.

Bile and Purin Metabolism.—Harpuder found uric acid in some bile samples examined. He does not think it justifiable

to attribute any part in purin metabolism to the bile. Similar traces may be found in sweat and saliva.

Cutaneous Reactions in Tuberculous Children with Cerebrospinal Fluid from Tuberculous and Nontuberculous Meningitis.—Usbeck confirms the usual absence of cutaneous reaction to their own cerebrospinal fluid in children with tuberculous meningitis. This fluid injected in other tuberculous children caused local reactions, which however were produced also by other cerebrospinal fluids. They are therefore nonspecific and without practical value. The same considerations apply to Wildbolz' reaction with urine.

Pathogenesis of Experimental Infection of Guinea-Pigs with Typhoid Bacilli.—Friedberger and Meissner believe that the only sign which is lacking to prove the etiologic action of Weil-Felix' *Proteus* X 19 for typhus fever is the impossibility of cultivating the bacilli from guinea-pigs infected with the virus of typhus fever. Their working hypothesis was that the bacillus changes in the animals into an invisible and uncultivatable form. To strengthen this hypothesis by showing that the phenomenon is not limited to typhus, they inoculated guinea-pigs with organs of a patient who had died from typhoid fever. The organs of these animals (especially the brain) were inoculated in others. The passage animals showed only an increase in temperature about ten or fourteen days after inoculation. Beginning from the second passage, no typhoid bacilli were cultivated from the animals. The inoculation protected them against intraperitoneal injections of typhoid bacilli, and the organs of the guinea-pigs taken during fever induced in rabbits the formation of agglutinins against typhoid bacilli. They conclude that the antigen of typhoid bacilli appears in two forms: a phanero-antigenic, which may be seen and cultivated, and a crypto-antigenic form of the virus.

2: 477-524 (March 12) 1923

Significance of Vegetative Nervous System in Heat Regulation and Metabolism. E. Toenniessen.—p. 477. Conc'n p. 525.
Significance of Eye Movements for Orientation. Koellner.—p. 482.
*Glycolysis in Blood. Rubino and Varela.—p. 484.
*Hay's Sulphur Test as Liver Function Test. H. Simon.—p. 488.
*Constitution and Convariability. S. Bondi.—p. 490.
Needle Electrodes for Electrocardiography. R. Stahl.—p. 492.
Significance of Placenta for Term of Confinement. A. Seitz.—p. 493.
Suprapubic Prostatectomies: Eighty Cases; One Fatal. Oppenheimer.—p. 496.
Treatment of Laryngeal Tuberculosis by Paralyzing Recurrent Nerve. Leichsenring.—p. 498.
Observations on Wassermann's Reaction. R. Strempel.—p. 499.
Reticulo-Endothelial System and Trypsin Poisoning. H. Pfeiffer and F. Standenath.—p. 499.
Intravital Deposits in the Reticulo-Endothelial System. Boerner-Patzelt.—p. 500.
Central Mechanism of Tetany and Its Relation to Decerebrate Rigidity. Spiegel and Nishikawa.—p. 500.
Otogenous Abscess of Cerebellum. T. Szász and H. Richter.—p. 501.
Thoracoscopy and Laparoscopy. Unverricht.—p. 502.
Noetic Sources of the Physician. H. Plessner.—p. 503.
Innervation of Sweat Glands. E. Schilf.—p. 506.

Action of Hydrogen, Calcium and Mercuric Ions on Glycolysis in Blood.—Rubino and Varela found that addition of calcium chlorid in certain amounts increases the glycolysis in blood. Further addition inhibits it. Removal of free calcium from the blood did not inhibit glycolysis. Very small amounts of mercuric chlorid increased, larger amounts inhibited glycolysis. In defibrinated blood of dogs, after a marked fall in reducing power in the first hour, they observed a rise in the second hour which they consider as due to other substances formed. The glycolysis continued in the third hour.

Clinical Use of Hay's Sulphur Test as Liver Function Test.—Simon finds that Hay's test with flowers of sulphur is practically as useful as stalagmometry for determination of the presence of surface-active bodies. Yet it has no value as a liver or heart function test, because it is very frequently due to substances other than bile salts.

Constitution and Convariability.—Bondi defines convariability as the change of qualities in an individual that come with increasing age. A physician who based a prognosis on a "habitus phthisicus" may be surprised a few years later to find his patient a "broad type."

Medizinische Klinik, Berlin

19: 299-332 (March 11) 1923

*Puerperal Infection and Its Treatment. W. Sigwart.—p. 299.
Significance of Smoking for Diseases of Throat. Terbrüggen.—p. 304.
*Tonsils as Portal of Infection. Fein.—p. 306.
Attempted Abortions in Extra-Uterine Pregnancy. Hellendall.—p. 311.
Disinfecting Action of Heavy Metals on Urogenital System. Frank.—p. 313.
Pituitary Treatment in Constipation and Meteorism. J. Krausz.—p. 314.
Technic of Ponndorf's Cutaneous Inoculations. Koester.—p. 314.
Intravenous Injections of Concentrated Arsphenamin. Schlesinger.—p. 315.
Hemoclastic Crisis in Internal Diseases. Rösler.—p. 315.
Gynecology of Practitioners. E. Runge.—p. 318. Cont'n.
Results of Cancer Research. O. Strauss.—p. 319.

Puerperal Infection and Its Treatment.—Sigwart emphasizes the dangers of active procedures. Even bimanual palpation of the uterus may disturb the equilibrium between the streptococcus and the resistance of the organism. Only if the uterine smears show a mixture of bacilli practically without streptococci, and if the whole findings speak for a simple retention of lochia, should the uterus be washed out. Otherwise, expectant treatment with hot applications is indicated. The possibility of retention of remnants of placenta should be well founded before trying to remove them, once the fever is established. The removal is dangerous, and no curet should be used. After it, rinsing the uterus does no further injury, since there has already been an intrauterine operation. Serum treatment gives results if started early. A further important point is to watch out for a beginning diffuse peritonitis, which can be ascertained if necessary by punctures. Infusions of ether into the infected peritoneal cavity reduce the mortality.

Tonsils as Portal of Infection, and Indications for Radical Operations.—Fein considers it impossible for an acute infectious process, capable of inducing septicemia, to remain for weeks or months in the tonsil without causing visible signs of inflammation or subjective symptoms. He quotes Schottmüller, who states that even alveolar abscesses or infectious foci in the pulp of teeth have not the properties of a septic focus. This applies still more to accumulations of detritus in the tonsils, which are sometimes mistaken for abscesses. The recovery from distant symptoms that sometimes follows removal of tonsils is not as frequent as recovery without operation. Therapeutic failures after extirpation of tonsils are the rule. Proof of causal relation between a general disease and the tonsils (except in real inflammations) is not yet at hand. He recalls a similar fad for nasal operations for "reflex neuroses," which flourished not so long ago. The tonsils should be extirpated only if they are too large, if they are really diseased, or in cases of recurrent tonsillitis.

19: 333-370 (March 18) 1923

Varices and Phlebitis of Lower Extremities. K. Büdinger.—p. 333.
*The Antianaphylactic Stage. J. Caspari.—p. 338.
Significance of Uric Acid for Diffuse Nephritis. Aufrecht.—p. 340.
Diagnostic Curettement in Extra-Uterine Pregnancy. Hellendall.—p. 341.
Treatment of Cachectic Conditions. H. Hirsch.—p. 344.
Necessity of Rational Breathing Gymnastics. Ide.—p. 346.
Action and Use of Santal Oil on Male Sexual Organs. A. Perutz.—p. 348.
*Retention of Inorganic Iron in Perfused Liver. Matsuoka.—p. 351.
No Influence of Fracture of Femur on the Development of Pulmonary Tuberculosis. H. Engel.—p. 352.
Review of Psychotherapy and Sexology. W. Stekel.—p. 355.

The Antianaphylactic Stage.—Caspari examined daily the speed of sedimentation of the erythrocytes of children who had serum sickness. He found interesting changes in the stability of blood colloids, which may be of value for the explanation of the action of injections of proteins.

Retention of Inorganic Iron in Perfused Liver.—Matsuoka found that a perfused liver is able to retain a large proportion of inorganic iron.

Münchener medizinische Wochenschrift, Munich

70: 229-258 (Feb. 23) 1923

What is Meant by Constitution? P. Mathes.—p. 229.
*Pigment Production in Addison's Disease. Bittorf.—p. 230.
Variation in Hydrochloric Acid Content After Test Breakfast. Spiethoff.—p. 232.
Silica in Shock Treatment. G. Zimmer.—p. 233.
Serous Meningitis of the Brain. H. Pette.—p. 236.

Tuberculosis with Picture of Spastic Hemiplegia. O. Herz.—p. 238.
Leukemia Simulating Anemia Infantum Pseudoleukemic. Reichmann.—p. 239.
Cystic Enlargement of Vesical End of Ureter. Baumann.—p. 240.
*Question of Preventive Arsphenamin Treatment. A. Poehlmann.—p. 241.
*Parathyroid Treatment of Parkinson's Disease. Bergmann.—p. 243.
Treatment of Relapsing Fever and Malaria. M. Kireeff.—p. 244.
History of Discovery of Circulation of Blood. W. v. Brunn.—p. 245.
Advice in Neurologic Diagnosis. H. Curschmann.—p. 247.

Pigment Production in Addison's Disease.—Bittorf maintains that the production of pigment in bronzing is due to increase of the oxydases in the skin. Vitiligo is the result of deficient oxydase.

The Question of Preventive Arsphenamin Treatment.—Poehlmann reports a singular case in which the wife of a syphilitic with a mixed chancre had been infected by streptobacilli but not with spirochetes.

Parathyroid Treatment of Parkinson's Disease.—Bergman says that Lundborg's theory of a connection between the parathyroids and paralysis agitans has not been supported by experiments. The inoculation of parathyroid substance in two cases of genuine paralysis agitans and in four cases of parkinsonian symptoms—sequelae of epidemic encephalitis—all proved negative.

70: 321-352 (March 16) 1923

*Plight of German Children. M. Pfaundler.—p. 321.
*Rheumatic Endocarditis. A. Krogius.—p. 325.
Diagnosis of Malaria. W. Strakosch.—p. 327.
*Ambulatory Treatment of Pulmonary Tuberculosis. K. H. Blümel.—p. 327.
Life, Stimulus, Disease and Inflammation. Ranke.—p. 330. Cont'n.
Migration of Bullet from Thorax into Pelvis. Steichele.—p. 334.
*Generalized Psoriasis Following Injection of Formic Acid. Malten.—p. 336.
Case of Endometritis After Abortion. Goebel.—p. 336.
Daily Hour of Gymnastics. L. Hoeflmayr.—p. 337.
Multiple Sclerosis. H. Curschmann.—p: 338.

The Plight of German Children.—Pfaundler deals objectively with both the alleged and the real distress of German children. He sees the need to "mobilize money abroad," but emphasizes the importance of keeping to the truth—which is bad enough—in the attempt to get it. Unfounded assertions, like the alleged 50 per cent. tuberculous morbidity of Berlin children and 80 per cent. of severe undernutrition hurt the cause. Not all Germans have lost by the war: the number of those who have gained by it, especially among the farmers, must not be underestimated. Exportation of foods, especially of milk products, which he says is being carried on—should not be tolerated. The dictatorship of organized producers of food and utilities is the real cause of the distress of the children of the unorganized minorities.

Is Rheumatic Endocarditis a Complication of Acute Rheumatism or the Primary Disease?—Krogius demonstrates the advantages of assuming the endocarditis in real acute polyarthritis to be primary. The peculiar recurrence and other features are explained by this assumption.

Causes of Failure of Ambulatory Treatment of Pulmonary Tuberculosis, and Their Remedy.—Blümel finds that part of the responsibility lies in the lack of special training of physicians. The greater part is in the patient, who neglects treatment as soon as he feels better. "The tuberculous man dies from his character." Most of the money of working men goes for pleasure and luxury. The tuberculous should be taught to spend it for food.

Generalized Psoriasis Following Injection of Formic Acid.—Malten's patient received an injection of formic acid for gout. The injection was followed the next day by urticaria and in a few days by a generalization of the old, localized psoriasis.

Wiener klinische Wochenschrift, Vienna

36: 139-156 (Feb 22) 1923

*Treatment and Prophylaxis of Goiter. J. Wagner-Jauregg.—p. 139.
Intraspinal Arsphenamin Treatment of Syphilis. K. Schreiner.—p. 142. Cont'd.
Roentgen Diagnosis of Duodenal Ulcer. A. Plenk.—p. 145.
Treatment of Syphilis with Bismuth. F. Mras.—p. 146
Growth of Dry Seeds After Exposure to Roentgen Rays. F. Weber.—p. 147.
*Treatment of High Blood Pressure by Purgatives. F. Kisch.—p. 148.

Treatment and Prophylaxis of Goiter.—Wagner-Jauregg observed four children treated for goiter by adding from 4 to 8 mg. of potassium iodid per kg. to the salt they consumed. All were cured. On the basis of 10 gm. salt per day for an adult, less for children, the child had received less than 0.04 mg. of potassium iodid a day. Bayard tried feeding a population of 1,200 in two Swiss villages with 0.004 gm. of potassium iodid per 1 kg. salt, with favorable results. In one of the villages the trial was continued during a year, the dose being increased from 0.01 during the first six months, to 0.02 per 1 kg. salt during the second half of the year. The goiters which had not reacted to the small dose, disappeared after the large, without unfavorable consequences. This iodized salt is prepared by spreading 400 kg. of salt from the Rhine fields in a shallow receptacle and shoveling it, while 200 c.c. of a 1 per cent. solution of potassium iodid is sprayed on it from an apparatus. He predicts that cretinism will disappear.

Systematic Purging in Treatment of Permanently High Blood Pressure.—Kisch has used systematic purging with success in 147 cases of what he calls the "cardiac-intestinal symptom-complex." This, he says, though rare in women, is so frequent in men after the age of 40, that it should have a special designation. The symptoms are: permanently high blood pressure; constipation; abnormal collection of gas in the digestive tract, forcing up the diaphragm and pushing the heart into a more transverse position; precordial oppression, frequent skipping of a heart beat, and tendency to angina pectoris. He has also found this treatment effective in arteriosclerosis, particularly of the coronary, cerebral and peripheral vessels, but only occasionally in atheroma of the aorta. He uses neutral mineral salts, in the form of alkaline-saline carbonated mineral water, or sodium sulphate, or artificial Carlsbad salts. Sodium sulphate facilitates individual dosing; it causes no irritation to the intestines, as its action depends on physical molecular characteristics, and it acts quickly. He uses the purgatives even when there is no constipation, but much gas.

36: 177-194 (March 8) 1923

*Present Status of Metasyphilis. E. Redlich.—p. 177. Conc'n p. 197.
*Urea in Blood in Diphtheria. Glesinger-Reischer and Glesinger.—p. 181.
*Specific and Nonspecific Action of Proteins. Hayek and Wieser.—p. 183.
*Pathogenesis and Treatment of Cardiac Asthma. S. Peller.—p. 184.
Perforative Peritonitis from Excessive Eating of Asparagus. H. Lorenz.—p. 185.
Endemic Goiter in Austria. J. Geringer.—p. 186.

Metasyphilis.—Redlich reviews the history of research on the etiology of tabes and general paralysis which has been cleared up by the Wassermann reaction and Noguchi's investigations. He believes that the Jahnel method will allow the finding of spirochetes in the brain of every person with general paralysis. The old question as to whether the changes in general paralysis are inflammatory or degenerative has been decided in favor of both theories. The changes are chiefly due to the toxic influence of the spirochetes. The main difference between general paralysis and other syphilitic affections of the nervous system lies in the different tissues that are affected. General paralysis is an affection of the brain proper (ectodermal), which gives no specific reaction. Neurosyphilis affects the mesodermal structures, especially the vessels, and injures the brain only secondarily. Tabes presents conditions similar to general paralysis though there are marked differences. Pathogenesis and especially the significance of the Obersteiner-Redlich area in the posterior roots are discussed. It is established that spirochetes invade the central nervous system early, as Fournier suspected long ago. Treatment does not seem to prevent metasyphilis.

Urea in Blood in Diphtheria and Its Changes in Specific Treatment.—Glesinger-Reischer and Glesinger found a moderate increase in blood urea in three quarters of their twenty-one cases. Antitoxin injections were followed by a decrease in the blood urea in diphtheria, but not in four patients with tonsillitis of other origin.

Specific and Nonspecific Action of Proteins.—Hayek and Wieser emphasize the large quantitative differences between

reactions of tuberculous subjects to tuberculin and to nonspecific proteins. There are also qualitative features in the course of the reaction. Nonspecific proteins never cause revival of previous cutaneous specific reactions, while tuberculin may do so even after months.

Pathogenesis and Treatment of Cardiac Asthma.—Peller recommends inducing venous stasis in one or more extremities. The action of this "bloodless venesection" seems to consist partly in the direct resistance in the ligated extremity, as Eppinger, Papp and Schwarz demonstrated, partly in a reflex general vasoconstriction.

Zeitschrift für urologische Chirurgie, Berlin

12: 403-516 (April 14) 1923

*Contents of Seminal Vesicles Just After Death. Brack.—p. 403.
Diagnosis and Treatment of Diverticula of Bladder. Rosenberg.—p. 449.
Traumatic Rupture of Both Kidneys. M. Rehbein.—p. 455.
*Transplantation of Testes. Brandt and Lieschied.—p. 460.
*Surgical Treatment of "Nephritis." E. Wehner.—p. 467.

Seminal Vesicle Contents in the Cadaver.—Brack relates that no spermatozoa were found in 57.7 per cent. of 26 male cadavers under 25, nor in 56.5 per cent. of 26 between 36 and 45, nor in 36.5 per cent. of 52 between 65 and 75. He examined a total of 200 cadavers in 1920 and 300 in 1922. No spermatozoa were present in 47 per cent. of the total. He classifies the cases under different headings, and emphasizes the instructive findings for the diagnosis and prognosis during life when the secretion massaged from the seminal vesicles shows pathologic characteristics. One important practical conclusion from his research is that spermatozoa may be absent from the sperm, even in the young, much more frequently than hitherto supposed; this has a medicolegal bearing.

Transplantation of Gonads.—Brandt and Lieschied report four cases in which a testis was transplanted. No influence was apparent in two of the young men and the man, aged 52, but the fourth man, aged 29, was improved, but only transiently. Experiments on dogs confirmed degeneration of the testis into a cicatricial tissue.

Surgical Treatment of Nephritis.—Wehner gives ten pages of bibliographic references, set solid, on the surgical treatment of nephritis and more than two pages of titles on the surgical treatment of the kidneys in eclampsia, and summarizes the authors' views. Rovsing, among others, has been converted to the advantages of decapsulation in chronic nephritis: some of his patients have been free from kidney symptoms for ten years and more, and Kummell, in 1920, reported 11 apparently cured in 34 cases of Bright's disease. Rovsing now has a record of 37 women and 40 men: All of the 26 with interstitial nephritis with pain and hematuria, but no albumin in the intervals, and 19 of the 32 with albumin were cured; also 4 of the 8 with diffuse parenchymatous nephritis and the 2 unilateral cases in the 3 of glomerulonephritis. Others are reporting a few equally favorable results, but Wehner declares that surgical treatment of chronic nephritis is still in the experimental stage. Karo asserts that 4 of his 5 patients with severe uremia, anuria and extreme edema from Bright's disease, owe their lives to decapsulation. In 2 of 7 other cases, the cure seems complete; the urine is now free from albumin and tube-casts; four have regained full earning capacity. In one young woman with 1.2 per cent. albumin, fatal anuria followed bilateral decapsulation. The main task, he says, is to overcome the prejudices of the internists.

Zentralblatt für Chirurgie, Leipzig

50: 553-584 (April 7) 1923

Köhler's Disease and Perthes' Disease. Axhausen.—p. 553.
*Inguinal Route to the Bladder. K. Mermingas.—p. 558.
Tumors of True Pelvis with Femoral Hernias. Bardenheuer.—p. 560.
*Two-Stage Resection in Gastric Cancer. Ziegner.—p. 562.
Apparatus for Bolstering Patients in Operations on Gallbladder and Bile Ducts. H. Simon.—p. 563.
The Rammstedt Operation Applied to Infants. W. Merkens.—p. 565.
Pointed-Oval Windows for Drainage. Nölle.—p. 566.
"A Substitute for Kehr's Drainage of Hepatic Duct." Flörcken.—p. 566.

The Inguinal Route to the Bladder.—Mermingas recommends the inguinal route for prostatectomy and other operations in the region of the bladder (lithotomy, fistula, tumor excision). He has followed the inguinal route in four cases. He makes the incision a fingerbreadth above and parallel with the middle third of Poupart's ligament. The aponeurosis of the external oblique muscle is divided in the same direction (the spermatic cord is not exposed). Blunt dissection upward of the lowest fibers of the internal oblique and the transverse abdominal muscle is done. Retraction outward of the inferior epigastric artery, notching of the insertion of the rectus muscle, division of the transversalis fascia, and removal of the preperitoneal fat tissue follow. The bladder is brought up from its position and the operation is completed. If it should prove necessary to operate again on the bladder, the incision may be made on the opposite side.

Two-Stage Resection of the Pylorus in Advanced Carcinoma of Stomach.—Ziegner recommends a two-stage operation in advanced conditions of carcinoma of the pylorus: first a vertical posterior retrocolic gastro-enterostomy, and a few weeks later the final resection. Results show that the reasoning that prompted the application of this method was, on the whole, well founded. Nearly all patients, after the enterostomy, gained, in a short time, from 14 to 20 pounds, though the carcinoma was still present. The main advantages of the two-stage procedure are: (1) the primary mortality is reduced, and (2) in many apparently inoperable cases an operation may still be performed.

Hospitalstidende, Copenhagen

66: 185-224 (March 7 and 14) 1923

*Pulmonary Tuberculosis in Greenland. S. Rohleder.—p. 185. Begun p. 169.
Expulsion of Tenia After Neo-Arsphenamin. Lundsgaard.—p. 190.
Experimental Optic Nystagmus. G. V. T. Borries.—p. 201.
*Tests of Kidney Functioning in Prognosis. J. Riising.—p. 210.

Tuberculosis in Greenland.—Practically the same article was summarized on page 1549 when published elsewhere.

Functional Tests in Prognosis of Kidney Disease.—Riising relates that all his patients with retention of water (output of 450 c.c. or less from half an hour to four and a half hours after drinking 1 liter of water, fasting) died in a few months afterward, only two surviving for two years. He tabulates the findings with various tests applied to numbers of kidney patients. None of the other tests showed any constant connection with the outcome.

Svenska Läkaresällskapets Handlingar, Stockholm

49: 1-72 (March 31) 1923

Instruction in the History of Medicine. E. Nachmanson.—p. 1.
*Systematization of Kidney Diseases. H. Bergstrand.—p. 26.

Nephrosis and Glomerulonephritis.—Bergstrand agrees with Volhard and Fahr in dividing diffuse kidney diseases into nephrosis, glomerulonephritis and nephrosclerosis, but objects to the division of nephrosis into four stages. Under their system the so-called genuine nephrosis, formerly included with parenchymatous nephritis, would be ranked with such kidney changes as those due to phosphorus and diphtheria toxin, and would be called the second stage. Nephrosis should be a collective term, not corresponding to any particular pathologic picture. Acute glomerulonephritis has not generally been differentiated from acute embolic nephritis. Herxheimer recently published twelve cases of glomerulonephritis of which only two deserved this name. Embolic nephritis, including Fahr's focal glomerulonephritis, appears principally in ulcerative endocarditis, but also with other septic conditions. The main stress should not be laid on the mechanical embolic changes, but on the fact that bacteria are carried into the kidneys, and there cause glomerulitis, resembling glomerulonephritis. True glomerulonephritis, on the other hand, is nonbacterial diffuse disease. The pathologic anatomy in glomerulonephritis must be based on uncomplicated cases and not on examinations of kidneys in ulcerative endocarditis, erysipelas, purulent meningitis, etc., which have shown clinical kidney symptoms.

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RECENT PHASES OF THORACIC SURGERY *

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The development of the surgery of the thorax has been slower than that of any other field. Although operations for drainage in cases of empyema were carried out by the ancients, it is only in very modern times that any extensive surgical procedures have been undertaken within the thorax. The newness and the present undeveloped state of the surgery of this region are reflected not only in the high mortality of some of the procedures, but also in the lack of any sort of uniform agreement as to what constitute operative indications in many of the conditions. Thoracic surgery is now passing through the period of high mortality and indifferent results which characterized the field of abdominal surgery twenty-five years ago, and of the surgery of the brain even more recently. In the future it will unquestionably be made safer by a better understanding of the physiology and pathology involved, by a more precise drawing of operative indications, and by a closer cooperation between the internists and surgeons, which will permit the carrying out of operative procedures at a time when they may prove of real benefit with a minimum risk instead of being last resorts in patients who are already nearly dead.

Physiology and pathology must always be the foundations on which surgical progress will be developed. Perhaps no other factor has retarded the development of thoracic surgery so much as a misconception of the physiologic principles which underlie an opening into a pleural cavity, regardless of whether that opening is a surgical one or an accidental one. The old fear that death would almost inevitably follow a surgical incision into a free pleural cavity led to the invention of various cumbersome appliances to permit the surgeon to carry out an intrathoracic operation without losing his patient on the table from asphyxia. The very complicated nature of the contrivances predicated little development for this kind of work, for successful surgery must be simple surgery. Then came the war, and to the confusion of previous conceptions vast numbers of men were seen with wounds that caused extensive pleural openings; but, *mirabile dictu*, they did not all die of asphyxia. The logical conclusion was therefore drawn that a man could withstand a relatively large surgical opening into his chest without a fatal asphyxia.

The lack of harmony between these observations and the previous conceptions of the dangers of an open pneumothorax led to much confusion. Was it actually possible that the pleural cavity could be opened with impunity? This was a frequently recurring question to any one whose experience preceding the war had led him to observe in some cases alarming disturbances in respiration following an incision into the pleural cavity. But notwithstanding the apparent disagreement between these observations, it is possible to reconcile both in the light of newer work.

In 1918, R. D. Bell and I,[1] while members of the U. S. Army Empyema Commission, attempted to find out by direct experiment what actual changes are produced when a free opening is made into a pleural cavity. Recourse to the simple expedient of recording the pressures in both pleural cavities after air had been injected into one sufficed to demonstrate that the usually accepted ideas of the mechanics of open pneumothorax were incorrect; for these ideas had been based on the conception that a more or less rigid partition exists between the two pleural cavities. Instead of a rigid partition, however, the mediastinum in a normal subject is actually so mobile that any alteration in pressure on one side of it is accompanied by an alteration in pressure on the other side to almost the same extent. With a slight alteration of pressure in one pleural cavity, the pressure in the opposite pleural cavity becomes practically the same, differing only by 0.5 or 1 cm. of water (0.4 or 0.8 mm. of mercury).

In the case of a great alteration of the pressure, however, the agreement between the pressures of the two sides becomes less close, as a result, doubtless, of the fact that, as the mediastinal pleura becomes stretched, its resistance becomes greater. Thus, for example, if air is forced into the left pleural cavity until a pressure of 5 cm. of water exists in that cavity, the pressure reading of the opposite pleural cavity will be practically the same, differing only by about 0.5 cm. of water pressure. If the injection of air is continued until a pressure is obtained equal to that of 10 cm. of water on the injected side, the pressure in the opposite pleural cavity will differ by only 1 or 2 cm. of water. If, however, the injection is continued until the very great pressure of 27 cm. is obtained, then the pressure in the opposite pleural cavity will register only 18 cm. In these respects, the thorax of the dog does not differ materially from that of man. The dog seems, therefore, to be a suitable animal for experimental work in pneumothorax, contrary to the state-

* From the Department of Surgery, Washington University Medical School.

* Read before the California Academy of Medicine, San Francisco, Feb. 10, 1923.

1. Graham, E. A., and Bell, R. D.: Open Pneumothorax: Its Relation to the Treatment of Empyema, Am. J. M. Sc. **156**: 839 (Dec.) 1918.

ments of Matas,[2] Duval[3] and Yates,[4] who, for some unexplained reason, have stated that in the dog a communication exists between the pleural cavities. I have carefully examined twenty-five dogs to see whether such a communication exists, and I have tested most of these with injections of air or water into one pleural cavity to see whether it would pass to the other side. In not a single dog have I been able to find the alleged opening. The accompanying roentgenograms clearly demonstrate that an artificial pneumothorax in the dog remains unilateral if it is properly made.

It is to be strongly emphasized that the conditions just discussed hold true only in the normal thorax. Obviously, if adhesions are present, or if there is thickening of the mediastinal pleura, different relationships exist.

As a development from the fundamental principle previously discussed, it was possible for us to derive a mathematical expression which permitted an approximate calculation of the maximum opening of the chest wall which could occur in the normal subject without causing death from asphyxia. For the details of this, reference may be made to some of my former publications. One of the most important factors in the expression was the vital capacity. Individuals with large vital capacity determinations could theoretically withstand much larger openings in the chest wall than those with small vital capacities.

The importance of these experimental results lay in what seemed to us to be their wide applicability to the whole field of thoracic surgery. They seemed, for example, definitely to establish on a rational basis the importance of avoiding an open drainage in cases of empyema during the acute pneumonic stage, a period in which not only is the vital capacity of the patient low, but in which there is also likely to be an absence of stabilizing adhesions, conditions which therefore would make even a small, free opening in the chest likely to result in a fatal asphyxia. I believe that this principle is now universally accepted in this country. Moreover, these results seemed to provide a sound basis for harmonizing all the conflicting conceptions relative to whether or not a free opening in the pleura is a source of immediate danger to the patient; for it at once became clear that the differences in danger in this respect in different patients must be very great. Obviously, young athletic individuals with large vital capacities can withstand much larger openings than those whose vital capacities are low. The rabbit cannot withstand a pleural opening so large as that of a dog chiefly because, since it is a smaller animal, its vital capacity is very much less than that of the dog. Obviously, also, a healthy young soldier who suddenly receives a wound in the chest can withstand a larger opening than a patient who, from a long illness, has a low vital capacity. Moreover, it becomes apparent that, if adhesions exist, or if the mediastinum is stabilized by induration, the individual may have no effects whatever from an enormous opening.



Fig. 1.—Lungs of dog, showing unilateral pneumothorax on the left side with the heart pushed over to the right side; this indicates clearly that there is no communication normally between the two pleural cavities of the dog.

In our first publication on this subject, on the basis of what was then considered to be the average vital capacity (3,700 c.c., as given by Howell[5]), we calculated that the maximum nonfatal opening of the chest wall in an average normal human being would be 8 square inches, or 51 square centimeters. Later work, however, by Peabody and his associates[6] has shown that the average vital capacity is much greater than 3,700 c.c., and that in some persons it may be so high that, on the basis of our formula, a theoretical calculation of the maximum nonfatal opening of the chest would be 15.6 square inches, or 101 square centimeters. Unfortunately, we apparently failed to make clear in our various publications that these mathematical calculations were intended to be only approximately correct. Some subsequent writers (for example, Lockwood,[7] Richter[8] and Duval[9]) have seized on the actual figures in our first publication, calculated as giving a maximum nonfatal opening of the chest in an average normal adult, and have misinterpreted the whole principle which the work carried with it. This attitude has been due chiefly to the fact that they feel sure that they have seen life continue with openings which were actually larger than the figures given. I wish to reply that:

1. It was distinctly stated that the original calculations of 8 square inches, or 51 square centimeters, were given as representing the maximum nonfatal opening in an average normal adult, based on what was incor-

2. Matas, Rudolph: The Value of Artificial Aids to Respiration in Acute Operative Collapse of the Lungs, Arch. Surg. **5**: 110 (July) 1922.

3. Duval, P.: Les données actuelles de la chirurgie intrathoracique unilatérale en plèvre libre, Presse méd. **30**: 409 (May 13) 1922.

4. Yates, J. L.: Effects of Acute and Chronic Pneumothorax: A Preliminary Report, Am. J. M. Sc. **165**: 1 (Jan.) 1923.

5. Howell: Textbook of Physiology, Philadelphia, 1911, p. 646.

6. Peabody, F. W., and Wentworth, J. A.: Clinical Studies of the Respiration, IV, The Vital Capacity of the Lungs and Its Relation to Dyspnea, Arch. Int. Med. **20**: 443 (Sept.) 1917.

7. Lockwood, A. L.: Developments and Possibilities of Thoracic Surgery, S. Clin. N. Am. **1**: 1425 (Oct.) 1921.

8. Richter, H. M., in discussion on Eggers, Carl: The Relative Value of Various Operative Procedures Employed in Acute Empyema, J. A. M. A. **75**: 1000 (Oct. 9) 1920.

9. Duval, P.: Les données actuelles de la chirurgie intrathoracique unilatérale en plèvre libre, Presse méd. **30**: 409 (May 13) 1922.

rectly given in textbooks of physiology as the normal average vital capacity; the fact that some individuals can withstand openings larger than these figures really has not very much to do with the question.

2. The size of an incision and the size of an opening are not synonymous terms if there is anything in the incision, whether it be the operator's hand, gauze packs, a delivered lung, or what not; it is astonishing how this simple discrepancy has led to confusion in the minds of many; is a hole that is filled up any longer a hole, or can an opening in the chest wall into which gauze has been inserted be as large as the area of the original incision?

3. It becomes really a matter of minor importance whether the actual nonfatal maximum opening is 8 square inches or 18 square inches: the important points to remember are that a unilateral opening may be made of sufficient size to kill the patient, and that some persons whose vital capacities are low will not be able to withstand an opening of any appreciable size unless adhesions are present or unless the mediastinum has been made rigid by induration.

4. Finally, any one whose experience in thoracic surgery in civil life has been at all extensive knows only too well that the statements made by overenthusiastic war surgeons about the innocuousness of open pneumothorax in all cases should be completely discredited. It is a curious fact, psychologically, that many of these enthusiasts, while denying the dangers of open pneumothorax, themselves unconsciously resorted to measures which minimized these dangers. Thus, when possible, they would deliver the lung out of the incision; they would pack gauze into the opening, and frequently they would have one or both hands in the incision; moreover, there was unanimous agreement that an open sucking wound should be closed as soon as possible.

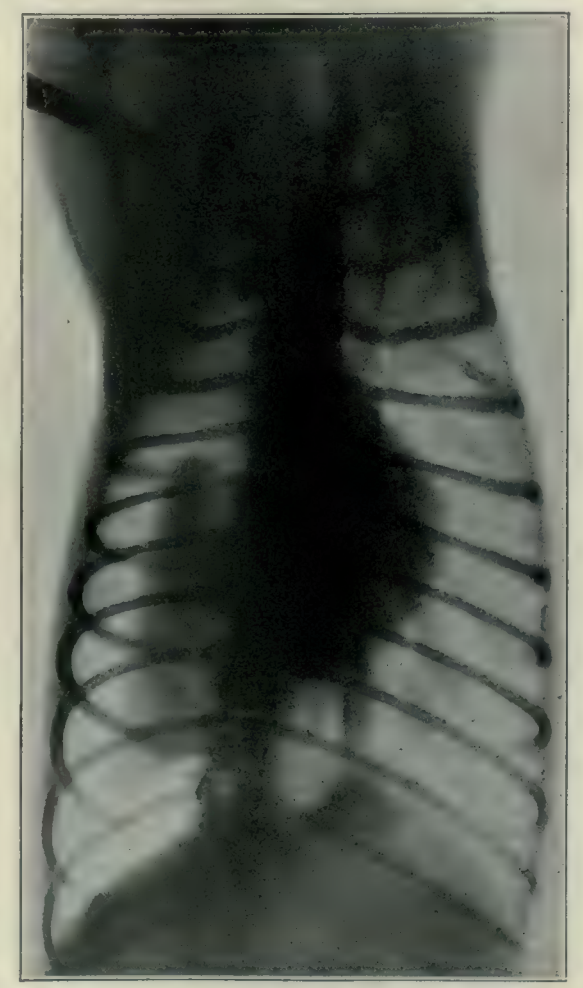


Fig. 2.—Lungs of another dog, showing left-sided pneumothorax with the heart pushed over to the right.

The fundamental principles of the work on pneumothorax which I have discussed above have been corroborated by several recent investigators. Thus, for example, Stivelman, Hennell and Golembe [10] state, from their extensive experience with artificial pneumothorax, that "Graham and Bell touched the heart of the subject, when they came to the conclusion that: 'From the standpoint of pressure relations, the thorax may be considered as one cavity instead of two. Any change in pressure in one pleural cavity will affect also the other one almost equally.' . . . The results of our own experiments . . . also support this view. . . . In the presence of a flexible mediastinum, the intrathoracic equilibrium in pneumothorax is very delicately adjusted, and any disturbance in the intrathoracic pressure on the treated side will have a proportionate effect on the intrathoracic pressure on the untreated side." Experiments both by Simon [11] and by Betchov [12] on animals have likewise corroborated the truth of our fundamental conclusions. Lenhart,[13] from experiments on rabbits, came to the same conclusion, and he states that his results tend to confirm the conclusions drawn by us.

It is unfortunate that it seems necessary to become so controversial on the various points concerning open pneumothorax. My reason for assuming a controversial attitude is merely that the importance of having a clear understanding of the mechanics of open pneumothorax is so great that it seems advisable to call attention to certain misunderstandings and misquotations of our work on this subject. A better theory of the mechanics of open pneumothorax than that which has been summarized here will be very welcome. Up to the present time, however, this has seemed not to have been offered.

When one considers the question of acute empyema, it seems to me that nothing explains so simply the remarkable reduction of mortality accomplished by the avoidance of an open drainage during the acute pneumonic stage. Can any one now doubt the wisdom of this plan of treatment? From a statistical standpoint, the evidence seems overwhelming. At Camp Lee, the Empyema Commission saw the mortality drop from a rate of more than 40 per cent. to one of less than 5 per cent. when early open drainage was given up. Stone, at Fort Riley, showed a correspondingly remarkable reduction in mortality after the abandoning of open drainage during the pneumonic stage. He divided his cases as follows:

1. First series: Early operation (Oct. 20, 1917, to Jan. 21, 1918), eighty-five cases; mortality, 61.2 per cent.
2. Second series: Early aspirations and late operation (Jan. 12 to Aug. 10, 1918), ninety-six cases; mortality, 15.6 per cent.
3. Third series: Early aspirations and late operation (Oct. 18, 1918, to Feb. 14, 1919), ninety-four cases; mortality, 9.5 per cent.

10. Stivelman, B. P.; Hennell, Herman, and Golembe, Harry: Clinical Significance of Altered Intrathoracic Equilibrium in Pneumothorax, J. A. M. A. **78**: 1450 (May 13) 1922.

11. Simon, S.: Effect of Artificial Pneumothorax on Collateral Lung, Am. Rev. Tuberc. **5**: 620 (Oct.) 1921.

12. Betchov, N.: Ueber den Einfluss des einseitigen Pneumothorax auf die Spannungsverhaltnisse in der anderen Lunge, Schweiz. med. Wchnschr. **51**: 15 (Jan. 6) 1921.

13. Lenhart, C. H.: Open Pneumothorax: An Experimental Study of the Functional Pathology of Sucking Chest Wounds, Arch. Surg. **1**: 336 (Sept.) 1920.

At the St. Louis Children's Hospital, since September, 1919, eighty-three cases of acute empyema have been treated by a plan of repeated aspirations during the pneumonic stage to be followed by free drainage. In this series there have been ten deaths, but not a single case has been fatal which was not accompanied by serious complications, such as suppurative mastoiditis or meningitis. This mortality of 12 per cent. compares very favorably with that quoted by Holt [14] of a mortality of 54 per cent. in 126 cases of acute empyema in children. Holt's report was made before the war, and it represents, therefore, a plan of treatment based on the older ideas.

A subject of great discussion at the present time concerns the question of the necessity for apparatus for differential pressure in performing intrathoracic operations. Some of the overenthusiastic war surgeons have claimed that the experience with war wounds has shown that it is never necessary, forgetting that "never" is a dangerous word to use in surgery. It is beyond argument that intrathoracic operations can be performed on many patients with a disregard of any form of apparatus for differential pressure. These are the patients who have extensive adhesions or rigid mediastinal pleurae or those whose vital capacities are high. Others, however, notably those whose vital capacities are low and who have no adhesions, will go through intrathoracic operations much more safely if some auxiliary agent is present to assist in inflating the lungs if necessary. For this purpose, I have found that Gwathmey's suggestion to use an ordinary nitrous oxid machine with a tightly fitting inhaler is eminently satisfactory. As a general rule, I believe that the anesthesia of choice in thoracic work is local anesthesia combined with nitrous oxid and oxygen. At any time that may be necessary during the operation, the lungs can then be inflated. Also in children, even in cases of empyema, much of the fright and terror which accompany an operation under local anesthesia can be avoided in this way. In any event, whether or not apparatus for differential pressure is used, it is wise for the surgeon to remember that too large an opening may cause death, and that the surest way to avoid a fatal asphyxia is to close the opening, by plugging it with a lung delivered out of the incision, with gauze compresses or in any other way.

THE MECHANISM OF FORMATION OF PLEURAL EXUDATES

The rapidity with which fluid accumulates in cases of infection of the pleura with the hemolytic streptococcus suggested the idea that, with a very edematous pleura, fluid may actually be sucked out by the negative pressure during the act of inspiration. In cases of dyspnea in which there is increased depth of inspiration, the intrapleural pressure is correspondingly reduced (made more "negative"), and, accordingly, more fluid is likely to be aspirated into the pleural cavity. In cases of pneumonia due to the streptococcus, dyspnea is often marked; the patient makes a maximum respiratory effort to get air into his lungs, and it is not surprising, therefore, that a large amount of fluid should collect rapidly in the pleural cavity, because the conditions are right for a markedly negative intrapleural pressure. This idea was put to the test of experiment by the construction of an artificial thorax with a bell-jar and a pair of lungs. When the air in the bell-jar around the lungs was aspirated, the lungs would inflate in a manner similar to an ordinary inspiration. When edematous lungs were used, either those from a case of pneumonia in the human being, or dogs' lungs made edematous by pouring into the trachea water containing a little dilute acetic acid, pleural exudate could be seen to pour from the lung surface with each imitated act of respiration. Contrary to the expectation, however, the fluid poured out more rapidly during the act of expiration than during inspiration. The explanation seemed to be that during inspiration the pleura became saturated, and then with the sudden decrease of surface produced by the act of expiration, the fluid was literally squeezed out. So far as I know, this is the only attempt that has been made to study the actual mechanism of the production of pleural exudates. The problem needs more study.

PROGRESS IN CLINICAL CONDITIONS

A note of decided pessimism is expressed by Robinson [15] in his recently published address before the American Association for Thoracic Surgery. It is to be regretted, of course, that progress in this branch of surgery has not been more rapid, but yet I cannot fully agree with Robinson in his pessimistic attitude. There are many hopeful signs, of which the great advance in the treatment of empyema is only one.

PULMONARY SUPPURATION

Possibilities of an early and an accurate diagnosis of lung abscess have enormously advanced in recent years, chiefly as the result of progress in the use of the roentgen ray. Likewise, we have learned of the definite etiologic relationship of tonsillectomy and other operations in the mouth. The combination of these two facts will unquestionably lead to the earlier recognition and the more prompt treatment of the pulmonary suppuration. The tonsillectomy patient who develops a cough and a fever will be regarded with more suspicion as possibly having a lung abscess than would have been the case even a few years ago. Increasing development in the art of bronchoscopy and an increase in the number of skilled bronchoscopists have, by permitting the removal of foreign bodies in this way, prevented many lung abscesses and have led to the prompt healing of many cases which otherwise would have become chronic.

Surgical drainage is not necessary in all cases of acute lung abscess. Proper postural drainage and artificial pneumothorax in certain cases will give results just as satisfactory as surgical drainage. An important problem, at present, is to define more accurately the indications for surgical drainage. Postural drainage will be of value only in those cases in which the abscess communicates with a bronchus. Artificial pneumothorax should be reserved for relatively small abscesses without adhesions. It should be emphasized, furthermore, that this method is not without danger; Wessler [16] has reported two deaths from artificial pneumothorax.

Surgical drainage should certainly be employed in large acute abscesses, and probably in any abscess with increasing toxic symptoms. If the lung is not adherent to the chest wall, a two-stage operation is to be preferred. The aspirating needle should be used only at the time of operation and under conditions that insure against the infection of the

14. Holt: The Siphon Treatment of Empyema in Infants, Am. Med. **19**: 381, 1913.

15. Robinson, Samuel: The Present and Future in Thoracic Surgery, Arch. Surg. **6**: 247 (Pt. 2) (Jan.) 1923.

16. Wessler, Harry: Suppuration and Gangrene of the Lung; a Study of One Hundred Cases, J. A. M. A. **73**: 1918 (Dec. 27) 1919.

pleural cavity by the escape of pus along the needle track from the lung. Let me strongly emphasize that under no circumstances should the aspirating needle be used unless one is prepared to go ahead with the operation immediately. Lockwood [17] has proposed a method of free intrapleural exploration followed by delivery of the affected portion of lung out of the incision; after the lung has been sutured to the chest wall, the whole abscess-containing portion of lung is then excised. This method seems very attractive for the handling of some cases, but its applicability must be exceedingly limited and out of question in those cases in which the abscess is near the hilum.

Abscess of the lung constitutes one of the most difficult conditions to treat satisfactorily that occur in the category of nonmalignant affections. The unfortunate victim of pulmonary suppuration may survive the period of danger while the abscess is acute, only to become a chronic invalid subject to frequent attacks of fever, with offensive breath and sputum, and more or less frequently recurring pulmonary hemorrhages. If he does not die of pulmonary hemorrhage, he may end his unhappy existence with a brain abscess or meningitis. The present undeveloped state of thoracic surgery is clearly shown not only in the wide differences of opinion that exist concerning the best methods of dealing with acute lung abscesses, but also in the inadequacy of the measures for coping with the late results of abscess. The ease with which a rib may be resected and an opening made into an adherent lung has made the treatment of lung abscess appear as a simple matter to the uninformed. Fortunately, there are some cases that respond to this treatment in a gratifying manner. But there are many others, on the contrary, in which the patients pass into a condition of chronic invalidism, even although they have been relieved of a large collection of pus. Any one who follows up patients on whom operation has been performed is aware of the full truth of this statement.

In the chronic lung abscess, surgical drainage with a tube is usually of little avail, because of the pathologic condition that is present. There no longer exists a single cavity of pus which can be drained off. Instead, the lung may be honeycombed with several collections of pus, some of which may not communicate with either a bronchus or with a previously established drainage channel. The portion of lung involved is fibrotic. The bronchioles are dilated and thickened; their lumina contain granulation tissue that bleeds easily. The whole lobe may be contracted as a result of nature's unsuccessful attempt to obliterate the suppurating cavities.

In most of these cases, the patient must either be content with a life of chronic invalidism, or submit to a radical surgical procedure. The only procedure that will be effective in most cases is removal of the diseased lung tissue. But the operation of lobectomy is still a most formidable undertaking. I would suggest that any one who has never performed it should read Robinson's vivid account of its difficulties before attempting it. Lilienthal [18] has had the most extensive experience of anybody in the world with resection of the lung. In twenty-four cases, he has removed one or more lobes. Of fourteen cases in which one lobe was removed, six patients died, a mortality of 42.8 per cent. Of ten cases in which more than the removal of a single lobe was accomplished, seven patients died, a mortality of 70 per cent. In his series, therefore, there has been a total mortality of 54 per cent.

Bronchiectasis is the condition for which a resection of the lung has been done most frequently. In twenty-one of Lilienthal's cases, resections were performed because of this diagnosis. Of this number, seven patients (33 per cent.) were reported as well; twelve (57 per cent.) died, and, of the remaining two patients, one was reported as convalescent and the other as still having cough and expectoration, although his wound was healed. Also, one of the patients classified as well still had a small fistula. Six patients, therefore, of Lilienthal's series of bronchiectasis may be considered as having had completely satisfactory results, by which I mean complete relief from symptoms and complete healing of the wound. I [19] recently reported my own experience of lobectomy in bronchiectasis, consisting of one completely successful result and two deaths. A study of the literature which I reviewed showed that, including my own three cases, there were reports of forty-eight cases of bronchiectasis in which lobectomy had been performed. Of this number, twenty-five patients have died, presumably as a result of the operation, a total operative mortality, therefore, of 52 per cent. Probably, however, isolated fatalities have occurred here and there which have not been reported, so that the operative mortality has perhaps been actually higher than 52 per cent. Furthermore, not all of the pateints who have survived the operation can be considered as being well. In 1917, Smith and Mudd [20] carefully analyzed the cases reported up to that time, and they considered that only three could be regarded as complete successes, two of Lilienthal's and one of Robinson's. It would appear now, however, that in six cases of Lilienthal's complete series, and in one of my own, there have been perfectly satisfactory results. This, then, would make eight complete successes out of forty-eight cases in which resection has been performed. In other words, in only 17 per cent. have complete successes occurred.

The natural query, therefore, is: Should the operation be considered a justifiable one? Until some other more satisfactory method of treating these patients is found, I believe that it is justifiable in properly selected cases, because the misery of many of those afflicted with the condition is beyond description. In most of the advanced cases, the patients are social outcasts, unable to find employment or to enjoy ordinary human associations. To many of them death would come as a welcome relief from their misery, and, indeed, some of the patients threaten suicide if they cannot be given relief. In a series of twenty-seven cases of bronchiectasis studied by Dr. J. J. Singer and myself, no less than six patients have implored us to perform a resection in spite of being fully informed as to its dangers. In three of the cases we refused because we felt that the proper indications were not present.

In an attempt to avoid the heavy mortality of lobectomy, we have recently tried in two cases of chronic lung abscess a procedure which promises much hope and which seems to be well tolerated by the patient. From a modest series of two cases, however, we cannot state what its dangers may be, but the results have been particularly gratifying in view of the fact that

17. Lockwood, A. L.: Abscess of the Lung, Surg., Gynec. & Obst. **35**: 461 (Oct.) 1922.
18. Lilienthal, H.: Resection of the Lung for Suppurative Infections, with a Report Based on Thirty-One Operative Cases in Which Resection was Done or Intended, Ann. Surg. **75**: 257 (March) 1922.
19. Graham, E. A.: The Surgical Treatment of Bronchiectasis, Arch. Surg. **6**: 321 (Pt. 2) (Jan.) 1923.
20. Smith, E., and Mudd, H.: A Modification in Method of Pneumotomy for Bronchiectasis, Tr. A. Am. Phys. **32**: 313, 1917.

both patients were middle-aged and would have been poor risks for an ordinary type of lobectomy. The method consists, briefly, of freely exposing the diseased portion of lung and burning it out with an actual cautery heated to a dull red heat. To be effective, the whole diseased part must be burned away. The procedure amounts to a lobectomy performed with a cautery. It is not at all comparable with the well-known use of the cautery merely to open an abscess cavity. Further details of the operation will be published later in another article. The advantages of this procedure over the usual methods of performing lobectomy seem to lie in the ease with which it is tolerated, as compared with the usual stormy postoperative course in a case of lobectomy. It will be applicable, however, only to cases in which strong adhesions exist between the lung and the chest wall, but it seems possible that it may be as effective in cases of bronchietasis as in those of chronic lung abscess. There will exist the danger of late hemorrhage, but this complication has not occurred in my first two cases; and, moreover, I doubt whether the danger in this respect is any more real than after lobectomy performed in the usual way. Only additional experience will decide this point. In the first case, that of a patient referred to me and studied by Dr. J. J. Singer, the result has been very gratifying. Within a few days after operation the patient was entirely relieved of cough and sputum, her fever and pain disappeared, and her appetite and strength returned. On the tenth postoperative day, she was up and walking around. During the course of the operation, two abscesses were encountered, each of which contained about 10 c.c. of foul-smelling pus. Neither one of these communicated with the existing drainage track. The second patient, who also had a chronic abscess, referred to me by Dr. Singer, was operated on only a few weeks ago, but the result so far is gratifying.

CARCINOMA OF THE ESOPHAGUS

Cancer of the esophagus continues to be one of the most baffling therapeutic problems in the whole field of medicine. The possibility of the accomplishment of successful results by radiotherapy, of which there seemed to be some hope a few years ago, seems now not to exist. Likewise, the optimism that followed the report of the patient successfully operated on for a carcinoma of the thoracic portion by Torek [21] of New York, in 1913, who is still alive and free from recurrence, which optimism was still further encouraged by the successful result of Zaaijer,[22] rapidly faded with a succession of failures. Hope has been revived again, however, by Hedblom's [23] gratifying result, and also by Lilienthal's [24] case. In the latter, apparently a successful operative result was obtained, although the man died several weeks later. The points of particular interest in Lilienthal's case were that he used the approach through the posterior mediastinum, one which had already been developed somewhat by Rehn [25] and Kirschner, and that he tried to guard against infection of the mediastinum by using a cuff of skin to restore the lumen of the resected esophagus. The principal danger in these operations has always been that of infection of the mediastinum. A method that seems to be a great improvement over Lilienthal's "skin cuff" is one worked out recently in our laboratory by Dr. Duff S. Allen.[26] He has used a double cuff of fascia lata in a two-stage method. The first stage consisted of the isolation of the esophagus and the placing of a double cuff round the portion to be excised. Two weeks later, the portion of the esophagus to be excised, with the inner layer of fascia lata, could be readily removed. The outer layer of fascia lata had become vascular, could be promptly sutured over, and, in a series of fourteen experiments on dogs, only two died with evidence of leakage. Of this series, there were five thoracic resections, with one death. The rest were resections of the cervical portion. The method has not yet been tried in man, but it seems to be a feasible method for attacking a carcinoma of the thoracic portion of the esophagus. The recent experimental work on this subject has been summarized by Fischer.[27]

SURGERY OF THE HEART VALVES

The possibility of extending surgical relief to those who suffer from stenotic lesions of the mitral and other valves of the heart has recently been opened up by a new method, which has been described by Dr. Allen and myself.[28] An instrument has been devised which permits the cutting of one or more leaflets of a heart valve under direct vision. At first thought, it would seem impossible to be able to see within the heart because of the presence of the opaque blood. On the contrary, however, if the convex lens of the cardioscope is in contact with a leaflet of a valve or with the heart wall, the blood is pushed away and a clear vision is possible. It is fascinating to watch the functioning of the valves through the instrument. The heart is entered through an auricular appendage, the rhythm is not impaired, there is no hemorrhage, and there is no need of great haste. Up to the present time, we have used the method only on dogs, but its application to the dog is so simple and so free from shock that it seems as if it might well be possible to extend its use at some time in order to convert a mitral stenosis in the human into a regurgitation. At least, we feel that the method will permit a new type of physiologic experimentation on animals which may be of value. At first we were afraid that perhaps a valve that was cut might heal again so promptly that the cutting of it would be of little permanent value. We are convinced now, however, that the healing over of an artificially made cut in a valve leaflet is not likely to occur, since we have several dogs alive now whose mitral valves were cut nearly a year ago. These dogs still have regurgitation murmurs which are clearly audible. Other dogs which have been killed and examined at postmortem several months after the operation have also shown that the cut valves have not healed over again.

I regret that, because of lack of space, I cannot discuss other interesting new features of thoracic surgery, particularly the work on pulmonary tuberculosis, tumors of the mediastinum and of the lungs, and mediastinal suppuration. I hope that I have made it clear that the surgery of the thorax is making definite progress. Its future will depend to a considerable

21. Torek, Franz: The First Successful Resection of the Thoracic Portion of the Esophagus for Carcinoma, J. A. M. A. **60**: 1533 (May 17) 1913.
22. Zaaijer: Erfolgreiche transpleurale Resektion eines Kardiakarzinoms, Beitr. z. klin. Chir. **83**: 419, 1913.
23. Hedblom, C. A.: Combined Transpleural and Transperitoneal Resection of the Thoracic Oesophagus and Cardia for Carcinoma, Surg., Gynec. & Obst. **35**: 284 (Sept.) 1922.
24. Lilienthal, H.: Carcinoma of the Thoracic Oesophagus; Successful Resection, Ann. Surg. **74**: 259 (Sept.) 1921.
25. Rehn: Operationen an dem Brustabschnitt der Speiserohre, Arch. f. klin. Chir. **57**: 733, 1898.
26. Allen, D. S.: Experimental Reconstruction of the Oesophagus with Autogenous Fascia Lata Transplants, Ann. Surg. **76**: 157 (Aug.) 1922.
27. Fischer, Hermann: Surgical Treatment of the Esophagus, Arch. Surg. **6**: 256 (Pt. 2) (Jan.) 1923.
28. Allen, D. S., and Graham, E. A.: Intracardiac Surgery—A New Method, J. A. M. A. **79**: 1028 (Sept. 23) 1922.

extent on an encouraging attitude of mind on the part of the internists toward those who, by pioneer work in this field, are trying to make life more pleasant for posterity.

7 West Madison Street.

CALCAREOUS DEGENERATION OF THE DORSAL AND LUMBAR AORTAE AS A CAUSE OF BACKACHE

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Within the last few years, much attention has been given to the disabilities and painful conditions of the feet as a result of disturbance of the circulation in them, which has been termed intermittent claudication. Much has also been written and said about various etiologic factors in the production of backache. Pain in the back as a result of pathologic conditions arising from disease or from traumatic factors is easily explained to the clinician, but in certain cases in which there is no evidence of pathologic change to be found in the roentgenograms of the bones and joints, it is more difficult to explain the cause of the symptoms. In most of the literature on this subject, the writers have devoted most of their time to explaining the cause of the so-called idiopathic backaches on the basis of some abnormalities within the pelvic viscera in the female and of sacro-iliac disturbances in both the male and the female.



Fig. 1.—Calcified aortic walls in Case 1. The arrows were supposed to indicate osteo-arthritic changes in the vertebral column.

Since it has become generally recognized that discomfort in the feet is due to an impaired circulation, we have thought it fair to assume that discomforts in other parts of the body as well may be due to impaired circulation in the muscles of the particular part.

The factors entering into the cause of pain and stiffness in the back are many, and far from easily recognized. We trust that the addition of one more factor will not add to the confusion, but will, on the contrary, let into the darkness one small ray of light.

For years, we have known that circulatory disturbances were associated with muscular pain and stiffness. For a few years, we have understood the significance of the so-called "intermittent claudication." But only comparatively recently have several orthopedic surgeons, working independently, recognized calcareous degeneration of the arteries in the feet as a cause of pain in the feet, and, recognizing the cause, they have been able to relieve the sufferers from the additional painful burden of metal arch-supports and flat-foot plates. We recognize the relation between arthritic spurs on the bones of the feet and calcareous arteries in the feet. Bone spurs are a cause of sensitiveness to pressure, and, when in close relation to joints, to movement; but they are not a cause of pain: pain is due to the circulatory changes. In the same way in the back, bone spurs and bridges cause sensitiveness and stiffness, but it is the circulatory changes that are responsible for the pain. This is not a new thought, but we believe that heretofore it has not been demonstrated that the calcified arteries are connected with back pain, although it was suggested as a possibility by J. R. Hunt.[1] This is what we have to show in this paper.

From the beginning, we were very skeptical of "slipped" and "strained" sacro-iliac joints as a cause of low back pain, but we rocognized, of course, arthritic changes in those joints. We have long recognized congenital malformation at the lumbosacral junction as a local element of weakness and a basis for complaint particularly following muscular and ligamentous strains from traumatism; but there are very large numbers of painful backs for which one is unable to account satisfactorily, except by such vague terms as "rheumatic" and "arthritic." We have known that bone spurs during the process of formation, and before they can be demonstrated by roentgenograms, may be more sensitive to pressure and to movement than after they are readily demonstrable; but there is no reason to suppose that they are a cause of pain unless impinging on some nerve, a fact to be inferred from the distribution of pain.

Pain, then, must arise mainly from circulatory changes; changes that give loss of expansibility and contractibility, and hence to ischemia of the musculature. Seeking diligently for the cause of pain among our cases, we have been able to demonstrate, at least to our own satisfaction, calcareous degeneration in both the thoracic and the abdominal aorta without other roentgen-ray evidence of pathologic conditions of bone or joint as a cause of backache. We present herewith three cases.

REPORT OF CASES

CASE 1.—Mrs. R. M., aged 58 years, Jewish, had had backache for twelve years. It came on without known cause. Several months previously, she had been under the care of Dr. Maury of Memphis, Tenn. She had never had rheumatism or tonsillitis. She had five children, and had never had trouble after childbirth. All of the teeth had been extracted a year previously. A roentgenographic report of

1. Hunt, J. R.: M. Rec., 1905.

June 7, 1921, by Dr. Conley of Memphis, Tenn., read: "Region requested: The lumbar, lower dorsal and sacro-iliac regions. There is a chronic osteo-arthritis involving the spine from the lower dorsal region down including the sacro-iliac. You will note a distinct loss of bony salts. In the lower lumbar segment there are areas of increased bone density. Exostoses are present in quite a number of regions being seen as high as the eleventh dorsal. There is decided displacement of the fourth lumbar vertebra on the fifth toward the left, with a distinct rotation causing quite a sinistral scoliosis. The sacro-iliac joints present fairly definite evidence of disease, more decided, perhaps, on the right. There appears to be some enlargement of the right kidney."

Our reading of the roentgenogram (Fig. 1) does not entirely agree with this interpretation. We do not see any bone spurs typical of osteo-arthritis, and areas indicated by arrows made by the roentgenologist do not, to us, confirm his opinion. We do, however, observe calcification of the aorta to a marked degree.

Examination. — There was no deformity of the vertebral column except a little bowing to the left in the lower lumbar region. The lower portion of the spine was somewhat stiff to voluntary bending forward. There was no discomfort on raising either limb with the knee straight or bent.

We advised consultation with an internist, to whom we reported our findings.

CASE 2.—*History.*—An unmarried woman, aged 68 years, examined for Dr. Wilbur E. Post, April 2, 1922, at the Presbyterian Hospital, Chicago, and who was so extremely deaf that it was not possible to get a satisfactory history of her condition, had stumbled and fallen about a year and a half before, and since that time had suffered from pain and stiffness in the lumbosacral region.

The record at the hospital reads: "Prior to October, 1919, she had been perfectly well, but at that time had entered the hospital on account of weakness. The diagnosis was 'arterial hypertension and secondary anemia.' In September, 1920, she twisted her back, when she stumbled. She was in bed four or five months, after which she became quite well, except that on one occasion, on reaching to the floor for a handkerchief, she was unable to straighten up. During 1921, she became worse and, following a 'cold' in January, 1922, the pain in the back became aggravated."

Examination.—When the patient stood, there was no spinal deformity. The back was quite stiff, making it difficult to bend in any direction. The patient could sit up in bed only when the legs were hanging over the side. Lying face downward was difficult, and in this position the spine was rigid and there was resistance in the psoas muscles on both sides. Roentgenograms show two vertebrae, one apparently the sixth dorsal and the other the upper lumbar, and possibly the second lumbar, somewhat wedged, being thinner in front. Nothing abnormal was seen in the lower lumbar region. The transverse view showed the aorta calcareous throughout the entire length of the region (Fig. 2).



Fig. 2.—Calcification of the aorta in Case 2.

CASE 3.—*History.*—A man, aged 31, a fireman, referred by the Drs. Blim, Chicago Heights, Ill., Dec. 9, 1922, for about four years, had had backache, which was steadily growing worse. No pain was present when the patient was at rest, but it developed on movement. The patient had typhoid prophylaxis in 1918; and the back began to give him trouble about two months later. No history of venereal disease or any other diseases since childhood was elicited. The tonsils were removed four years previously. Nine teeth were extracted one year previously without relief of the back symptoms. The patient was not constipated.

Examination.—The patient was a large, muscular man. No real deformity of the spine could be seen when he was standing, stripped. Voluntary bending from side to side was restricted one half. When he lay face downward, the dorsal spine was bowed somewhat backward. This we believed to be due to his occupation. Neither thigh could be hyperextended freely, and the entire spine was quite rigid to passive bending.

Roentgen-Ray Report (Dr. Hollis E. Porter.)—"There are slightly decreased interspaces, but no great sign of arthritis between the vertebral bodies. Looking through the bodies at the lateral articulations, however, the bone bordering all joint surfaces is very ragged as if the arthritis involved these joints only. The lateral film of the neck gives one the same impression. The sacro-iliacs show a very pronounced melded appearance, particularly on the right side. The joint is unusually visible and ragged."

In addition, we observe the calcareous degeneration of the thoracic aorta, as shown in Figure 3.

COMMENT

Etiology. — Etiologic factors predisposing to arteriosclerotic changes are: (1) syphilis; (2) advanced age; (3) alcoholism; (4) gouty diathesis; (5) nicotinism, and (6) diabetes.

Pathology.—Any condition which tends to diminish the caliber of the blood vessels and thus diminishes the volume of blood supply to the muscles is a predisposing factor. The more important changes in the vessels, which diminish the lumen are: (1) obliterating endarteritis; (2) periarteritis; (3) vasculomotor disturbances with spasm of the arterioles, and (4) senile calcification.

Symptomatology of Intermittent Claudication.—The onset of the condition is insidious and intermittent, with periods of freedom from discomfort. There is a general weakness of the part involved, with associated paresthesia. Pain is not present when the affected part is at rest, but is gradually increased to such a degree of severity with use that the patient is compelled to rest. The characteristic feature of pain in the muscles from ischemia is that it rapidly

disappears with a few minutes' rest, only to return again with the use of the muscles.

The symptomatology in cases of ischemia of the musculature from calcareous blood vessels is somewhat different, the patient complaining of stiffness, muscular



Fig. 3.—Calcareous degeneration of the thoracic aorta in Case 3.

weakness, paresthesias, aches, soreness and pain of the part involved. This pain is somewhat exaggerated with use, but it is constantly present over longer periods of time, weeks or months, when it may disappear and the patient be comfortable for a long time.

These periods of freedom from discomfort may be due to the establishment of a better collateral circulation.

CONCLUSIONS

No examination of a painful back is complete and conclusive without an examination of the circulatory system.

The treatment of many painful backs ought to be directed by the internist and not by the orthopedist.

The routine employment of girdles, braces and plaster jackets and extension in bed is worthy of our earnest skepticism in the treatment of painful backs.

7 West Madison Street.

Reflex Symptoms in Chronic Appendicitis.—Pain and tenderness in the right iliac fossa do not necessarily mean appendicitis. Constipation, nervous apprehension of appendicitis in a half-educated public, too solicitous, and deep palpation on the part of conscientious medical men, and pyelitis are common causes of these symptoms. An actually inflamed "chronic appendix" is, in fact, a rare condition, though even thickened and pus containing organs may be present for long periods and give rise to dyspepsia and colic attacks, often with slight fever. Careful examination for reflex signs during or just after these attacks may be helpful in deciding the diagnosis.—J. A. Ryle, *Clin. Jour.* **52**:139 (March 21) 1923.

HEMORRHAGIC OSTEOMYELITIS

REPORT OF CASE

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This case has a direct bearing on the differential diagnosis of joint diseases. Though excellent surgeons attended the patient, a correct diagnosis was not made for at least half a year. In the meantime the patient not only suffered from the excruciating pain and lameness in the knee as incidents of the disease, but also suffered from the indifferent diagnosis and the empiric treatment.

REPORT OF CASE

History.—A woman, aged 30, in good health, fell off a street car and struck her knee with considerable force on the car rail. She felt at the time that she was seriously hurt; but, after a short period of rest, the swelling subsided and apparently she fully recovered. She remained perfectly well for two months. One day she felt a pain in the knee. This continued to grow worse. She also noticed that she was tilting her body instinctively to favor the affected limb. This made her walk lame. She consulted, as it happened, a number of excellent surgeons. One of them placed the limb in a plaster case for about six weeks. When the cast was removed, she found that the pain recurred, and that during the interval the limping grew worse. She then went to another surgeon, who gave her a course of antisyphilitic treatment. This proved futile. Finally, she applied for treatment to an institution, where she was treated with baking, massage and the high frequency current. In spite of faithful treatment with physiotherapy, however, she was rapidly growing worse. At this stage she began having paroxysms of pain in addition to the deep, burrowing, gnawing but remittent pains she described as having had before. When these paroxysms seized her, she

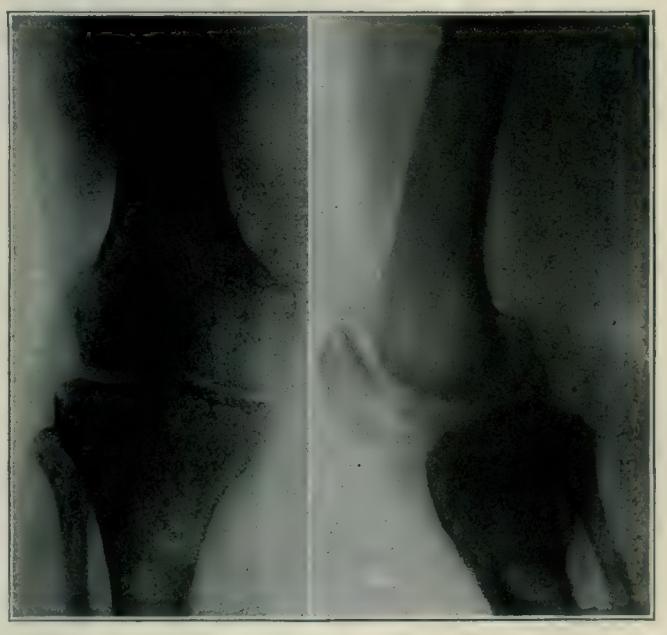


Fig. 1.—Hemorrhagic osteomyelitis occupying entire upper part of tibia.

suffered cruelly. As she was obliged to put less weight on the affected limb, her lameness grew worse. This became especially manifest when she attempted to walk up the stairs, which she could do only by clutching the banister with both hands and dragging herself up by the aid of her arms and the sound leg. Walking down the stairs was impossible.

Examination.—At this stage, I saw her. I was able to elicit few physical signs, in spite of the pitiful complaint by

the patient. The body examination was negative. The knee was not enlarged, looked normal, and had good motion. Were it not for the subjective symptoms, the knee could have been pronounced normal. In fact, the patient said that on several occasions the knee was declared normal by physicians. On closer examination, however, a fulness and a sense of tenseness on the inner and upper part of the tibia were noticed. The roentgenogram showed a cavity occupying the entire upper part of the tibia. In some parts of the wall of that cavity the cyst wall was ballooned, undoubtedly because of the intracystic pressure on the frail wall, while in other parts the cyst wall was worn to thinness. Malignancy was excluded by the fact that the cavity was circumscribed and that there was no break in the periosteum.

Operation and Result.—April 10, 1920, an incision was made on the upper and inner part of the tibia. At that point the tibia was trephined. A large cavity filled with viscid degenerated, bloody material was revealed. By the aid of a large curet, the contents were scooped out. Later the curettage was continued with gauze, as it was feared that an instrument would penetrate the walls, which were found to be very thin. The cavity was so large that I could have easily inserted two fingers. The cyst was swabbed with iodin and alcohol. The incision was then enlarged over the entire length of the tibia. With the circular Albee saw, parallel cuts were made and the entire crest of the tibia removed. Then the graft was cut into fragments and dropped into the cavity.

In spite of the large portion of bone removed, only about one third of the cavity was filled. The crest of the tibia of the healthy side could easily have been made use of, and even then the cavity would not have been filled; but this was not thought advisable. Besides a few skin stitches getting loose, a slight hemorrhage and oozing of serum, the subsequent history was uneventful. At no time was there pus formation. The patient's pain gradually wore off, and she was able to put more weight on her limb. It took eighteen months for the complete regeneration of bone. At the end of that time the patient recovered entirely. She felt well, and walked and ran as well as ever.



Fig. 2.—Eighteen months after operation: Cavity converted into bone, though numerous spaces still persist; crest of tibia regenerated.

COMMENTS

1. Undoubtedly, some surgeons will disagree with the radical manner in which the operation was done. The late Dr. George Berrie, who witnessed the operation, told me that I uselessly sacrificed the crest of the tibia, and that the patient would have recovered with a less radical operation. However, the action of each individual is influenced by his own experience. I have observed a number of failures from conservative surgery in this disease. A typical case was that of a man with osteomyelitis of the radius. The operation performed on him was the cutting of a window into the cyst, curettement of the contents, traumatization of the wall of the cyst and the swabbing of the cavity with iodin and alcohol. Then the incision was enlarged, and with an instrument especially devised for the purpose, bone shavings were cut and dropped into the cavity. Either the bone shavings were too thin and were easily washed away by the blood current, or for some other reason the expected osteogenesis failed to take place. The roentgenogram of the cyst taken eight months after the operation was about the same as the one taken just before the operation. The same cavity persisted. This case and a number of other cases, and the fact that the bone cyst was an unusually large one, perhaps the largest osteomyelitis case affecting the tibia on record, impelled me to decide on the more radical procedure.

2. This is purely of academic interest, and relates to the behavior of the bone fragments in the cavity as studied by a series of roentgenograms taken at intervals throughout convalescence. In this case the fragments acted as a bridge over which new bone grew. Furthermore not only did the fragments retain their original shape and contour, but their position had not changed the slightest from the chance position they occupied at the time they were first thrown haphazard into the cavity, except that new bone grew over and around the fragments. There is a difference in density between old and new bone, and this made the lines of the original fragments stand out in broad relief. Osteogenesis, even at the end of two years, did not completely fill the cavity. There were still empty spaces left, and a number of interstices between the fragments persisted. Clinically, however, the patient recovered entirely, much before the osteogenesis converted the cyst into bone. It took about one fourth of the time to regenerate the tibial graft as compared with the cyst itself.

I discovered a roentgenogram taken about a year before I saw the patient. Besides showing a slight atrophy of bone, this certainly gave no hint of the gross pathologic changes which the roentgenogram taken of the same parts only a year later was destined to show.

Many hemorrhagic osteomyelitis lesions exist without symptoms. Their discovery is often purely accidental, being brought about when a patient sustains a fracture caused by a comparatively slight trauma. The roentgen ray shows that the reason for this disproportion of trauma and damage is a cyst which has thinned

the walls of the bone to such an extent that even an insignificant injury causes a fracture of the bone at the weakened point. My patient belonged to another variety, in which the symptoms preceded the roentgenologic appearance of the lesion. The old roentgenogram which I discovered and which gave no hint of such a lesion was taken of the patient when she limped and had pain in the knee for about six months. At that time the plaster-of-Paris cast had already been discarded; antisyphilitic treatment had already been given a thorough test, and the patient was being treated with physiotherapy. How much longer it took before the roentgenographic evidence of this lesion became positive is only speculative in the absence of more roentgenograms. Omitting the various theories to explain such an occurrence, the fact remains that the symptoms in this case preceded for some time the roentgenologic appearance of bone liquefaction and absorption. At present it is the roentgen ray that is relied on not only for the diagnosis of bone lesions, but also for their classification of kind and variety. The negative roentgenogram rules out this entity, with the result that the patient is treated for another, often for a minor disease. Unless the lesion is small, a favorable prognosis in osteomyelitis in the formative stage is inconsistent with bone liquefaction and absorption. For such a patient to get well he must sustain either a pathologic fracture which has the power to whip into life the osteogenic process, thus repairing the bone defect, or he will face the second alternative of being compelled to undergo a surgical operation. The warning to keep this entity in mind, especially to those who treat accident cases, is another reason for reporting this case. One should be on guard when trauma is followed by an apparent recovery and followed again by symptoms.

236 West Seventieth Street.



Fig. 1.—Large area of angioneurotic edema which appeared in five and one-half minutes after exposure of the skin to sunlight for two and one-half minutes. The irregularities in the figure were due to a shadow cast by the hands holding three pieces of square colored glass in contact with the skin. The shape of the shadow cast by the hands was modified slightly by the artist to illustrate better how closely the edema followed the outlines of the colored glass.

The Hospital and the Family.—Of the greatest importance in this scheme of education will be the acceptance by the hospital of the family as its unit of responsibility. The fact that the hospital wards represent but one piece of the machinery in any health program, that the dispensary, the health station and all their scientific equipment, with their varied and adequate personnel, even the home, the occupation, and the recreation of the individual case are part of this project, will insure that case technic not less than case experience shall be included, throughout the professional preparation of the nurse. There must be such provision of paid staff for the care of the patients as will enable each student to secure a complete cycle of experience and a reasonably close correlation of theory and practice as expressed in nursing procedures, problems of nutrition, etc.—A. W. Goodrich, *Hospital Social Service* **7**:172 (March) 1923.

URTICARIA CAUSED BY LIGHT

PRELIMINARY REPORT

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This case of urticaria caused by exposure to light is reported because of its minute resemblance to the urticaria that occurs as a result of allergy. It is not reported as a case of allergy because of doubt as to whether it is actually an example of altered reactivity in the stricter sense of the word. It is possible that it is a case of normal reactivity toward a substance not ordinarily produced in the skin under the influence of light.

Examples of sensitiveness to light are well known in medical literature, especially in relation to the diseases hydroa vacciniforme, xeroderma pigmentosa, and pellagra. The reaction has been attributed by many observers (Pfeiffer,[1] Betz and others) to the presence in the blood or tissues of photodynamic substances, such as hematoporphyrin.[2]

It was discovered accidentally by Raab that many fluorescent substances, such as eosin, fluorescein and hematoporphyrin, are photodynamic; that is, under the influence of light, they possess certain remarkable qualities that they do not possess in the absence of light. Photodynamic substances, harmless in the absence of light, may be highly toxic to human beings or animals under the influence of light, and may destroy bacteria or protozoa, modify the activity of enzymes, or even alter the structure and reactions of proteins. As an interesting illustration of the latter action, Dr. W. H. Howell reports that a solution of fibrinogen, if mixed with eosin or hematoporphyrin and exposed to the light, becomes incoagulable with heat at 90 C., and incapable of forming fibrin, after the addition of thrombin to the solution.

The type of case that I report, although very rare, is not unknown in medical literature, and on account of the striking peculiarity of the illness, I do not doubt is described in the very early literature. The earliest description which I found, however, after a casual search, is that of Ward,[3] who, in 1905, reported the case of a patient who, during a period of four years,

1. Pfeiffer, H.: Der Nachweis photodynamischer Wirkung fluorescierender Stoffe am lebenden Warmbluter, in Abderhalden's Handbuch der biochemischen Arbeitsmethode **5**: 563.

2. An excellent review of the literature is given by Senear, F. E., and Fink, H. W.: Hydroa Vacciniforme, Arch. Dermat. & Syph. **7**: 145 (Feb.) 1923.

3. Ward, S. B.: Erythema and Urticaria with a Condition Resembling Angioneurotic Oedema Caused Only by Exposure to the Sun's Rays, New York M. J. **81**: 742, 1905.

became increasingly sensitive to sunlight and whose skin reacted with the formation of itching hives similar to my case, even in the detail that she was sensitive only to rays at the violet end of the spectrum. A similar case was reported by Ochs,[4] in 1910.

Interesting in this connection is a report by Betz, who, in studying hydroa vacciniforme, sensitized himself to light by the intravenous injection of 0.2 gm. of hematoporphyrin. Immediately afterward he found himself so sensitive to light that he dared not expose himself to direct sunlight for more than a few moments at a time. Shortly after the injection, typical absorption bands of hematoporphyrin were found on spectroscopic examination of the blood serum and urine. Hematoporphyrin disappeared from the blood serum and urine after a few days, so that, to account for his sensitiveness to light, which persisted for several months longer, he assumed that a portion had remained in the tissues.

Immediately after the injection, Betz exposed a small area on his arm to the Finsen ray. A marked reaction followed shortly, which ended eventually in a deep ulcer, which healed slowly and produced a scar. This reaction he thought analogous to the eruption of hydroa vacciniforme. Shortly afterward he exposed his face to sunlight, with the result that an itching, edematous eruption appeared which almost obliterated his features, and did not subside for several hours. For several months after this, exposure of his skin to sunlight invariably caused edema and itching, the duration of which varied according to the length of exposure to the light. His sensitiveness to light disappearing during the winter, several months after he had given himself the injection.

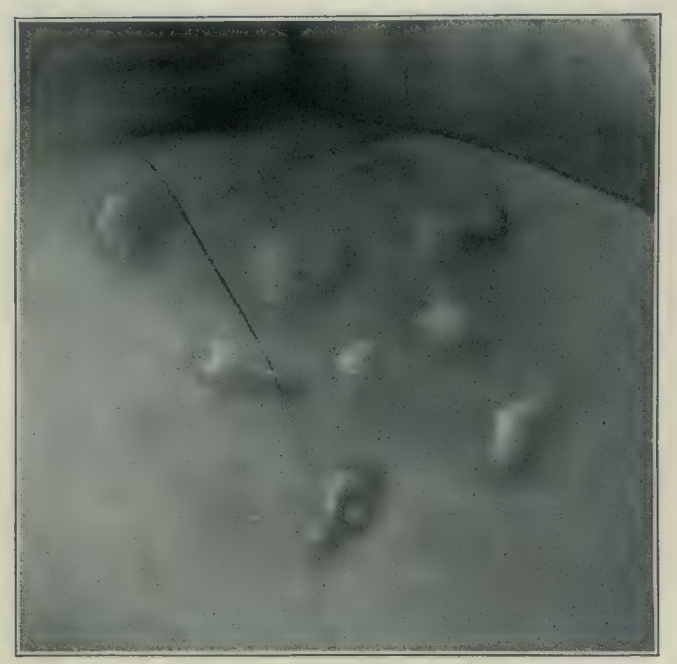


Fig. 2.—Hives which appear after short exposures of the skin to sunlight; these became confluent on longer exposure, resembling the area illustrated in Figure 1.

My patient became sensitive to light without apparent cause; but the case seemed similar in other respects to that of Betz, produced artificially with hematoporphyrin, and, as previously mentioned, resembled closely the urticarial reaction of allergic individuals occurring as a result of contact with substances to which they are hypersensitive. In view of Betz' report, however, one might object to this illness being considered allergic in origin, for in his case hypersensitiveness to light appeared in an apparently normal man immediately after treatment with hematoporphyrin.

REPORT OF CASE

History.—A woman, aged 43, married, had always been robust and well until four years before I saw her, when she noticed that she was sensitive to sunlight. This condition became worse each year until now she cannot stand one minute's exposure to summer sunlight without paying a penalty.

Two of seven brothers and sisters of the patient are subject to seasonal hay-fever. Several nieces and nephews are subject to hives, to the patient's knowledge. The family history is otherwise of no interest. The father died when the patient was young, and the mother had no marked evidence of allergy so far as the patient knew. The past history was negative except for scarlet fever as a child, and slight arthritis.

At about the time of onset of the patient's illness, her face, neck and arms were exposed to sunlight for several minutes when she was swimming. Severe itching, redness and edema of the exposed parts caused her to seek shade as quickly as possible. The swelling persisted through the night and through the following day, and was associated with chilly sensations, marked weakness and malaise. After she remained in the house forty-eight hours, the skin became natural again in every respect, and she felt well. She had a similar experience later, after answering the telephone when thinly clad. She had not noticed at the time that the sun was shining on her. For the last two years she has protected herself with the greatest care from light, wearing black gloves and a heavy black veil whenever she goes out of the house. In spite of this care, some of the more thinly clad parts of her body are often sufficiently exposed to cause itching, redness and swelling, which often persist for several hours. She has noticed that after the skin has been exposed and reacted to sunlight, further exposure on the same day causes less or little ill effect in the areas previously exposed. On one occasion, after exposure of the face to sunlight she was momentarily blinded, and following this all objects appeared yellow for several minutes.

Examination. — This was negative except for a slight grade of obesity, a slightly enlarged thyroid gland, and bad tonsils. Urinalysis was negative. Neither the color nor the absorption spectrum of alkaline hematoporphyrin was found in the urine on several examinations. Blood examinations were negative. The Wassermann reaction was negative. No hematoporphyrin was found in the serum on several examinations. Roentgen-ray examination of the teeth, sinuses and gastro-intestinal tract were negative.

Intracutaneous tests with all the common meats, vegetables, dairy products, fruits, sea foods, nuts, condiments, grains, bacteria, pollen and extracts from animal hair and feathers were negative.

The application of mechanical irritants (rubbing, scratching and intracutaneous injections) and chemical irritants (even chloroform applied to the skin and covered with the hand until it caused pain) produced no perceptible effect on the skin.

Exposure of the skin to sunlight over any area which was usually covered by clothing gave rise in two and one-half minutes to marked itching and erythema. This progressed without additional exposure to a typical itching hive covering the entire area exposed in five and one-half minutes (Fig. 1). The redness and edema would appear with almost clocklike regularity if the time of exposure was sufficient (two and one-half minutes or more of afternoon sunlight during the month of March). The reaction differed from a hive only in the lack of a tendency to spread indefinitely The edema never spread over areas not exposed to light. In this respect the reaction resembled dermographia more than it did urticaria.

4. Ochs, B. F.: Case of Urticaria Caused by the Sun's Rays, M. Rec. **78**: 193, 1910.

Exposure of the skin to the light of a 500 watt nitrogen lamp gave rise to a similar reaction, but more time was required. Sunlight filtered through colored glass, except violet glass, had no perceptible effect on the skin after ten minute exposures. Sunlight, filtered through violet or colorless glass, produced a hive in the same manner as the unfiltered light, except that a little more time was required. Exposure of the skin to heat, roentgen ray, or ultraviolet ray as produced by a mercury vapor quartz lamp, and sunlight filtered through Wood's nickel oxid glass, produced no visible effect on the skin after exposures of from three to five minutes.

An application of sunlight to the skin for two and one-half minutes produced a wheal which would disappear after one or two hours. Application of light to the skin for ten minutes produced a wheal which would not disappear sooner than from six to eight hours. The foregoing data applied to skin areas which were covered by clothing and for this reason were not ordinarily exposed to light. Exposure of the face and neck and arms and hands gave a little different reaction. Exposure of the forearm, for example, gave rise first to discrete hives which, on further exposure, would become confluent (Fig. 2). Exposure of the face for one minute gave rise to a red, blotchy appearance which was very disagreeable to the patient and which was followed for forty-eight hours by small, painful spots. She did not allow us to repeat this experiment. I believe that a longer exposure of the face to light would give an eruption analogous to hydroa vacciniforme.

Tolerance for Light.—To determine whether or not tolerance for light could be increased by repeated exposure, several skin areas were exposed to light for varying periods of time on successive days. Light was applied over two areas in doses too small to have an effect on the skin; that is, for one minute and for two minute exposures on three successive days. This gave rise to slightly increased tolerance for light so that on the fourth day an exposure of three minutes produced no perceptible effect on these particular areas. The skin surrounding them, however, was sensitive as before. The tolerance gained in this way was completely lost after several days, so that future exposures of two and one-half minutes gave rise to the usual reaction. Ten minute exposures on three successive days gave rise to an erythema and a hive in each instance. The hive, however, was delayed in its time of appearance after the last exposure, and the reaction, on the whole, was much less intense and disappeared more quickly.

An area of skin on the left arm was exposed during a period of twenty-four days thirteen times, varying from five minutes to twenty-five minutes. The reaction became successively less intense. The erythema and itching appeared at the usual time, however, in two and one-half minutes. Discrete hives appeared even after the last exposure, but did not give rise to the same confluent area of brawny edema as caused originally by an exposure of three minutes, and also disappeared much more quickly. The arm became slightly eczematous after these repeated treatments, and the study was discontinued. After a period of two months, the tolerance thus gained was completely lost.

In view of the fact that exposure of the face for one minute gave rise to a painful reaction instead of the usual erythema, edema and itching, and in view of the fact that repeated exposures on the arm did not give rise to more complete tolerance, it seemed rather a useless and possibly a harmful experiment to carry this study further. We were actually fearful that repeated long exposures might give rise to a condition similar to hydroa vacciniforme. We concluded that, although relative tolerance for sunlight could be obtained through repeated exposure to light, the tolerance gained in this way was not sufficient to be useful to the patient.

Serum Studies.—Defibrinated blood, untreated blood serum, and serum to which was added eosin, quinin and methylene blue was allowed to stand in the sun for periods of time varying from two hours to twenty-four hours. Each preparation was then injected intracutaneously into normal individuals, the patient, and patients with pollen allergy, with no noteworthy reaction resulting.

To the patient's serum, normal serum, and the serum of a patient with pollen allergy, and to solutions of pollen, horse dander and egg albumin was added hematoporphyrin to a strength of 1 : 10,000. Each was allowed to stand in the sunlight for from one minute to twelve hours, and, after different intervals of exposure, was injected intracutaneously into the patient, normal patients, and patients with pollen allergy. No noteworthy reaction was produced in normal individuals. Small, itching hives followed the injection of the treated serums (not the other proteins) in the patient. The degree of reaction was not constant. The cause of this has not as yet been worked out. Small hives were obtained by similar injections into several but not all of the other allergy patients. They were not comparable in size, however, with reactions produced with other substances to which they were sensitive. This study is as yet incomplete.

Hematoporphyrin in 1 : 1,000 dilution was injected intracutaneously into myself, two normal assistants, a number of patients with pollen allergy, and into the patient reported above. No noteworthy effect was observed in any instance except after the area injected was exposed to sunlight. In the case of normal subjects and pollen cases, an intense intermittent stinging sensation followed a two and one-half minute exposure, which became very marked and disagreeable at the end of six minutes. In the case of the patient described above, no noteworthy reaction was observed until the skin was exposed to dim diffuse light. After an exposure of three minutes, a small hive (1 cm. in diameter) appeared at the site of injection. The surrounding skin was not affected by this exposure to light. This reaction, tried many times, was quite constant.

The foregoing two experiments—that is, the ones made by the intracutaneous injection of hematoporphyrin followed by exposure to diffuse light, and the intracutaneous injection of serum after treatment with hematoporphyrin and sunlight, were the only ones in which I succeeded in producing anything in the patient which resembled a hive except by exposure to light as described in the previous paragraphs.

The patient was studied carefully for fluorescence by the use of light from a 500 watt nitrogen light filtered through a Wood's nickel oxid glass filter in a dark room. This filter allows the penetration only of near ultraviolet light, and makes most objects fluoresce. The crystalline lens, sclera, teeth, nails and skin of the patient were observed, and their fluorescence compared with the same tissues of normal subjects. Whereas there was some difference in fluorescence noted, the difference was not striking, and, in several instances, normal persons showed greater fluorescence than the patient.

The patient's blood serum and urine were also studied for fluorescence and compared with those of normal subjects. No constant noteworthy increase was observed. The fluoroscence of the patient's serum was not nearly so great as normal serum to which was added a trace of hematoporphyrin, quinin or eosin.

Exposure of the skin to sunlight under a glass slide pressed on the skin so firmly as to render the skin almost bloodless gave about the same reaction as that produced in the uncompressed area surrounding the glass slide.

It was concluded that, although the blood might possibly contain some photodynamic substance that could render it toxic, the chief source of the reaction probably resided in the tissues.

This condition seems to be a clinical entity, and for it the name "solar urticaria" is suggested.

SUMMARY AND CONCLUSIONS

The case here reported is interesting in that a woman with a family history of allergy spontaneously became so sensitive to light that on exposure of the skin to the direct sunlight of a winter month for two and one-half minutes typical itching hives, associated with erythema of the skin, invariably appeared over the entire area exposed. The reaction differed from the urticaria of allergic individuals after contact with substances to which they are hypersensitive only in the fact that it had no tendency to spread with pseudopod formation

beyond the area exposed to the irritating agent. This reaction was produced only by the blue violet rays of light.

Constitutional symptoms were felt on two occasions when a large area of skin was exposed to light.

A considerable degree of tolerance was developed by repeated exposure of the small areas of the skin to light. The tolerance gained in this way, however, was lost after a comparatively short time, so that this method of treatment did not appear a rational remedy for the condition.

Efforts to produce hives in this patient by agents other than direct exposure to light failed except in two instances, namely, by the intracutaneous injection of serum which had been treated with hematoporphyrin and exposed to sunlight, and by the intracutaneous injection of hematoporphyrin followed by exposure of the injected area to diffuse light for a short time.

This case may be an example of allergy caused by specific hypersensitiveness to a substance produced in the tissues under the influence of light. Further study will be directed toward clarifying this point.

Waldheim Building.

LATE RESULTS IN THE TREATMENT OF SYPHILIS

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The literature contains very few references to the late results obtained in handling syphilitic cases. An article by Irvine [1] is practically the only one that occurs in the American literature. It would seem worth while to trace our cases and find out exactly what the results have been.

Up to the time when this study was begun, 230 syphilitic patients had been under treatment in my office for a considerable space of time. Patients coming in for one or two visits are not included. Table 1 shows during what stage of the disease the patients were first seen, the number which were lost sight of, and the cases which were followed. A considerable number of patients are still under active treatment or observation, and these, of course, cannot be referred to in this article.

TABLE 1.—*Condition of Syphilitic Patients Seen*

	Number of Cases	Chancre	Secondaries	Late	Central Nervous System	Congenital
	230	29	60	103	25	13
Lost sight of.....	109	16	23	54	7	9
Followed.....	77	8	24	32	12	1

The results in these cases are shown in Table 2. Some explanation of the headings is demanded. By cured is meant that for two years since the last treatment the patient has been asymptomatic, with the Wassermann reaction negative, and that the spinal fluid is negative. By clinically and serologically well is meant the same thing except that the spinal fluid has not been examined. The patients considered as clinically well are those who have not had Wassermann tests of the spinal fluid or the blood. Clinically arrested is the term applied to patients suffering from syphilis of the central nervous system, and simply means that the disease process has been stopped, although, of course, the old damage to the central nervous system has not been repaired. A number of patients have died from diseases other than syphilis, and it is impossible in some instances to say whether or not this disease is indirectly responsible. It is, of course, realized that the word "cure" is misleading, for at present there are no satisfactory criteria as to a real cure. Fordyce has told

TABLE 2.—*Results*

Stage of Disease	Cures	Clinically and Serologically Well	Clinically Well	Clinically Arrested	Progressive	Dead from Syphilis	Dead from Disease Other Than Syphilis
First.....	3	...	...	...	...	1	...
Second.....	10	7	1	...	...	...	...
Third.....	4	3	3	...	...	3	6
Central nervous system.....	...	...	1	6	2	2	1
Congenital.....	...	...	...	...	...	...	1

me of one patient who remained asymptomatic and Wassermann negative for seven years, only to relapse at the end of that time. Even while this paper was being prepared, one of my late cases, in which the patient had apparently been both clinically and serologically well for six years, has serologically relapsed.

It will be noted that out of eight chancres treated, only three were cured. In seven instances, the patients suffering from an initial lesion were treated with: (1) eight injections of arsphenamin, or, much more rarely, a few scattered injections of neo-arsphenamin at three-day intervals; (2) mercury in the form of weekly intramuscular injections of mercuric salicylate; (3) from six to eight injections of arsphenamin at intervals of from five to seven days, and (4) intramuscular injections of mercury or inunctions for four months. The three patients who were cured had this treatment. Four of the patients who were not cured also had the same treatment. In two instances, there was both a clinical and a serologic relapse within one month after discontinuance of treatment. This may be assumed to be due to the fact that the arsphenamin was started before the patients had a chance to build up any natural immunity, and that when the spirocheticidal drugs were withdrawn, latent organisms promptly developed without any resistance on the part of the hosts. In the third case, a speedy serologic relapse was discovered to be due to an infection in the central nervous system. This patient received his first treatment within three days after the appearance of the chancre. This proves that infections of the central nervous system can take place by the time the initial lesion is manifest, and that early spinal puncture is imperative in order to discover such a condition. In the fourth instance of failure, the patient suffered a serologic relapse eighteen months after her last treatment. The fifth instance of failure is especially interesting. The patient's chancre was diagnosed within two weeks of its appearance, and the patient received, by way of treatment, seven injections of arsphenamin at weekly intervals, and mercury, for one year. For the following two years, he gave neither clinical nor serologic signs of the disease. A provocative Wassermann test was then done and found negative; however, a luetin reaction was suggestive. Within three weeks, he suffered from an attack of neurosyphilis consisting of a sixth nerve paralysis. Under intravenous and intraspinal treatment he completely recovered from this, but six months after treatment was discontinued, he suddenly fell dead, and

1. Irvine, H. G.: Two Hundred and Fifteen Cases of Syphilis After Five Years, J. A. M. A. **77**: 1620 (Nov. 19) 1921.

necropsy showed that death was due to a ruptured cerebral vessel. This case will illustrate the need for routine spinal puncture, and not only the fallibility, but also the positive danger, of a provocative Wassermann test.

The results of the treatment of early secondary syphilis are surprisingly good. Out of our twenty-four cases, there are ten which have filled the criteria of cure; seven in which the patients are clinically and serologically well, and one in which the patient is clinically well, while there are up to the present time six known failures. All of the cured or well patients, save two, received treatment which was practically identical with that described under chancre, except that the second course of arsphenamin consisted of eight instead of six arsphenamin injections, and that a third course of mercury was given two months after the cessation of the second course. Two cured patients were treated only with arsphenamin. One patient received ten injections of neo-arsphenamin at weekly intervals, and in the second case the patient received one monthly injection for eight months. Of the six failures, only one patient received a full course of treatment. The other five received only a single course of arsphenamin and a course of mercury varying from three to twelve months in duration. This would seem to show that arsphenamin is more important than mercury in the cure of syphilis; that patients can be cured by arsphenamin alone, and that those who received two full courses of arsphenamin did much better than those receiving but one.

None of the cases of late syphllis were treated with the idea of radical cure; hence, many different methods of therapy were employed. A few were treated with mercury alone, while the majority were handled by alternating courses of arsphenamin and mercury, from four to six injections of the former being given in a course at weekly intervals. The results of treatment were extremely discordant. Some of the patients who received a very limited amount of treatment did extremely well, and some who were thoroughly and persistently treated speedily relapsed. Four patients are listed as cured. One of these received four injections of arsphenamin and three months of mercury injections. He has been well five years. Another received two injections of arsphenamin and six months of mercury. He has been well for eight years. Another received but one injection of arsphenamin, and yellow mercurous iodid pills for three months. She has been well for nine years. A fourth patient was treated six months with mercury injections, and has been well for nine years. Among the clinical and serologic cures, it may be found that three patients received six injections of arsphenamin, and that they have been well for four years. However, these results must not be taken too seriously, for another case which was to be included in this category, after being followed for six years, has just shown a serologic relapse. Among the sixteen failures, we find that one patient was treated only with mercury, that two received only arsphenamin, and that the remainder received both mercury and arsphenamin. The only conclusion that can be drawn from this group of cases is that it is apparently possible to cure certain cases of late syphilis, and that in a few instances a cure can be effected by almost any type of treatment, whereas in many other cases, the most thorough treatment will be followed by a more or less speedy relapse. Apparently, however, the more thorough the treatment, the longer the asymptomatic and Wassermann-negative period.

In the handling of the central nervous system infections, the principles laid down by Fordyce have been followed. A number of cases have been seen which refused to respond to intravenous therapy and which were speedily cured by Swift-Ellis treatment, the cure being evidenced by the return of the spinal fluid to normal, and a freedom from clinical disturbances, although, of course, certain changes in the reflexes usually persisted.

In view of the fact that only one case of congenital syphilis was followed, it is naturally impossible to discuss the results of treatment in these cases.

DEATHS

The deaths from syphilis naturally demand analysis. Of seventy-seven patients, fourteen are dead, which is considerably more than one would naturally expect. Table 3 shows the causes of death.

Two of the cases of the central nervous system and one with syphilis of the mediastinum were greatly advanced when the diagnosis was first made. The patient with an aneurysm lived for four years after the treatment was instituted. The death of one patient who was first seen with a chancre has already been discussed.

Four patients died as the indirect result of syphilis. One of these had arteriosclerosis, and died from a mercurial nephritis; the second died from cancer of the tongue secondary to a syphilitic glossitis; a third committed suicide shortly after learning that he was suffering from syphilis; the fourth patient died from a meningitis occasioned by a lumbar puncture.

TABLE 3.—*Causes of Death*

Stage of Disease	Ruptured Aneurysm	Cirrhosis of Liver	Cerebral Hemorrhage	Mediastinal Pressure
First	...	...	1	...
Second	...	...	...	1
Third	1	1	...	1
Central nervous system	...	...	2	...

Four patients died from intercurrent disease; two from myocarditis; one from a probable lymphosarcoma, and one baby with congenital syphilis, from pneumonia.

Only one patient who died from syphilis had anything like adequate treatment. Not one of the others received more than two injections of arsphenamin, and two or three months of mercury. Hence overtreatment can hardly be said to be responsible for any of these deaths.

CONCLUSIONS

There are no satisfactory criteria as to the cure of syphilis. The relapses may occur after a patient has remained asymptomatic and Wassermann negative for six or seven years.

Not all cases of early chancre are cured by modern methods of treatment. In certain instances it is possible that the early and intensive administration of arsphenamin may prevent a patient from developing a natural immunity, and a relapse will occur very shortly after treatment is discontinued. From this it might be argued that treatment should not be begun within the first few days of the appearance of a chancre, but the majority of syphilologists would undoubtedly contend that treatment should be instituted at once, with a view of preventing the possible spread of the disease.

Cerebrospinal syphilis can develop by the time the chancre is manifest.

Every patient should have a routine spinal puncture done, preferably just before the second course of arsphenamin is administered.

A provocative Wassermann reaction may be misleading. It may be distinctly dangerous to the patient, in that a relapse may follow it. It is certain that insufficient treatment could produce the same results.

A luetin reaction done under proper precautions may be of some value as a criterion of cure.

The results of treatment in early secondary syphilis are surprisingly good.

Arsphenamin alone may effect a cure.

Apparently arsphenamin is more important than mercury in effecting a cure, for there has been a much higher percentage of cures when two courses of arsphenamin were employed than when but one course was used.

A few cases of late syphilis can be cured, occasionally by a small amount of treatment.

In the vast majority of instances, late syphilis cannot be cured.

Apparently, in some instances, syphilis is a mild infection and is readily cured; in other instances, it is a severe infection and cannot be cured.

Intraspinal therapy will often yield results when intravenous therapy fails.

Syphilis is not a benign disease. Many deaths are due to it either directly or indirectly.

1912 R Street.

INTRACUTANEOUS REACTIONS IN PERTUSSIS *

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The reports of Modigliani and de Villa [1] and of Orgel [2] in the diagnosis of pertussis by intracutaneous reactions encouraged the medical world to hope that progress was being made in the control of this disease.

Modigliani and de Villa made intracutaneous injections of a suspension containing a loopful of pertussis culture in 1 c.c. of distilled water. No reaction was obtained in diseases other than whooping cough, while an inflammatory reaction formed constantly in thirty-eight children with pertussis. Normal children gave negative reactions. Three children who had been exposed to the disease, but as yet showed no symptoms, gave a positive intracutaneous reaction, and a few days later developed whooping cough.

Orgel used a suspension of pertussis bacilli in salt solution, 2,000 million organisms per cubic centimeter.

Among twenty-five children in various stages of pertussis, all but one reacted positively, this one being in the incubation period. Among thirty children suffering with other troubles, including bronchitic coughs, no positive reactions were obtained. Readings were taken within six hours, and daily thereafter for a week.

Recently, Riesenfeld [3] reported the results of investigations covering a period of four years. Using pertussis vaccine containing 8,000 million organisms per cubic centimeter for the test material, and salt solution for the control, he obtained in fifty-two whooping cough patients positive reactions, while among 112 children apparently immune (either exposed and not developing the disease, or having had the disease), sixty-five reacted positively. Several other test materials were likewise used—vaccines containing 4,000, 8,000, 16,000 and 32,000 million organisms per cubic centimeter, solutions of pertussis "toxin," autolyzed pertussis cultures, and pertussis antigen extracts. In all, 464 children were tested. The author concludes:

> No specific reactions were obtained by the use of various preparations of Bordet-Gengou bacilli injected intracutaneously to prove the presence of the disease or a natural or an acquired immunity. Positive and negative results alike were obtained in children having the disease, in children with an immunity, and in children developing the disease after the injection.

TABLE 1.—*Results After Administration of Freshly Prepared Pertussis Vaccine, Heat Killed*

	A		B	
	Positive	Negative	Positive	Negative
Whooping cough	4	0	3	1
Recovery from whooping cough	8	0	6	2
Recovery from bronchitis	10	1	9	2
Normal subjects	4	1	6	0

In the investigations undertaken by us, nine different preparations were used and 341 injections made intracutaneously. The work was done at an institution housing about 2,000 patients, at which an epidemic of whooping cough was at the time developing. The ages of the children tested in most instances were from 8 to 12 years.

Preparation A consisted of freshly grown strains of pertussis bacilli containing both of Krumwiede's serologic types. The preparation was killed by heat at 60 C. for one hour, and preserved with 0.1 per cent. tricresol. The dosage was 0.5 minim.

Preparation B was likewise a freshly prepared product, being but 3 weeks old. It contained seven strains of pertussis bacilli, killed by heating at 53 C. for thirty minutes, and preserved with 0.5 per cent. tricresol. The strength was 2,000 million organisms per cubic centimeter, the dosage being 1 minim. In Table 1 are shown the reactions obtained with these two materials in definitely known cases of whooping cough, in cases of recovery from whooping cough, in cases of recovery from bronchitis, and in normal children just admitted to the institution and still in the receiving ward. In most instances, the reactions were strongest at the end of five hours, decreasing slightly in twenty-four hours and rapidly disappearing in forty-eight hours. There was no uniformity of results. Nearly all of the children showed positive reactions, but some of the whooping cough cases were negative.

TABLE 2.—*Results After Administration of Preparations C and D* *

	Test C		Control D	
	Positive	Negative	Positive	Negative
Whooping cough	4	0	2	2
Normal subjects	6	0	1	5
Recovery from whooping cough	7	1	6	2
Recovery from bronchitis	8	0	7	1

* Pertussis and influenza bacilli killed without heat.

Preparation C consisted of freshly grown pertussis bacilli killed by the use of chemicals, no heat being

* From the Illinois Department of Public Health, Springfield, Ill.

1. Modigliani, E., and de Villa, S.: The Intracutaneous Reaction for the Early Diagnosis of Pertussis, Pediatria **29**: 337 (April 15) 1921; abstr. J. A. M. A. **77**: 74 (July 2) 1921.
2. Orgel, S. Z.: A Method for the Early Diagnosis of Pertussis, J. A. M. A. **79**: 1508-1509 (Oct. 28) 1922.
3. Riesenfeld, E. A.: Intracutaneous Reactions in Pertussis, J. A. M. A. **80**: 158-160 (Jan. 20) 1923.

employed. The dosage consisted of 1 minim containing 3,000 million organisms per cubic centimeter. As a control, preparation D was obtained from the same manufacturers, consisting of influenza bacilli prepared after the same manner as C.

In Table 2 are given the results of the tests on twenty-six persons. As a rule, the C pertussis material gave a distinct reaction in five hours, still continuing for twenty-four hours, but much lessened in forty-eight hours. The D influenza material gave its strongest reaction in five hours, disappearing in most instances in twenty-four hours. It will be noted that only one person was negative with the C preparation, while ten were negative with the D. Furthermore, the reactions with D, when they did appear, went away much more quickly than with C.

Two more preparations were used, consisting of vaccines that had been killed by heat and allowed to stand for a considerable period and autolyze. The first preparation, E, consisted of a single strain of the pertussis bacillus killed by heating for one hour at 60 C., and preserved with 0.1 per cent. tricresol. It was more than a year old when used. The second preparation, F, contained five strains of pertussis bacilli killed by heating at 54 C. for thirty minutes, and preserved with 0.4 per cent. tricresol. It was 3 years old when used.

In Table 3 are given the results of tests made with F on patients with whooping cough, and on suspects, as

TABLE 3.—*Results After Administration of Preparation F**

	Positive	Negative
Whooping cough	7	0
Whooping cough suspects	16	1
Bronchitis	0	12

* Old pertussis vaccine killed by heat.

well as on other subjects with cough. In this experiment, all of the bronchitis cases were negative. The reason for this apparent discrepancy with tests in other nonwhooping cough cases that gave a high percentage of positive reactions cannot at present be explained. In Table 4 are the results of both of the old vaccines E and F. Some of these subjects are the same as those included in Table 3. Whether there is the possibility of sensitization, as suggested by Riesenfeld, which would cause a higher percentage of positives in the second test, cannot be stated. However, since practically all of these were positive the first time, this factor can be ruled out. In fact, the one negative test with F in the whooping cough case (Table 4) had given a strong reaction previously with F.

In order to determine what factor in the pertussis vaccine was responsible for the skin reaction, some of the old vaccine (the same as used in F) was heated at 100 C. for thirty-five minutes (Preparation G). The results as shown in Table 5 would indicate no thermolabile material in the product, at least so far as skin reactions are concerned. Some of the same original material was then centrifugated at high speed to clear it of organisms, and the supernatant fluid, which was in reality an autolysate of pertussis bacilli, was injected (Preparation H in Table 5). The results were identical with the inactivated whole vaccine G. Some of this autolysate was then inactivated by heating at 100 C. for twenty minutes, and centrifugated at high speed to throw down any precipitate (I). Only a few patients were given Preparation I, but the results in Table 5 show that practically all subjects reacted. It is apparent, therefore, that whatever substance in the vaccine was responsible for the skin reaction, it was in solution and was not destroyed by heat.

All of the tests described so far were made on children of from 6 to 10 years of age. It was desirable to determine whether adults also reacted similarly to pertussis vaccine, such adults being in a normal state of health. Of six adults so tested with Preparation F, four were entirely negative, while two gave reactions

TABLE 4.—*Comparison of Results After Administration of Preparations E and F (Old Pertussis Vaccines)*

	Test E		Test F	
	Positive	Negative	Positive	Negative
Whooping cough cases	11	0	10	1
Whooping cough suspects	11	0	10	1

persisting for ten days. Two of the adults were retested with the same material, F, G (the same material inactivated) being used as a control. One of the subjects who was positive previously reacted this time also with both materials, while the other one who was negative previously, did not react with either material.

This adult reactor then was tested with Preparations B, C and D, and typhoid-paratyphoid vaccine. In every instance, a distinct reaction took place promptly, and persisted for several days. It would seem, therefore, that the reaction is due to an idiosyncrasy of the individual to bacterial substances in general, children showing a greater percentage of reactions than adults.

CONCLUSION

It can be stated that the results of the investigations here recorded do not indicate that preparations of pertussis bacilli can be used intracutaneously to diagnose whooping cough. Freshly prepared suspensions, suspensions 3 years old, suspensions killed by heat and suspensions killed by chemicals gave results that were quite conflicting. Nearly all children, whatever their ailments, gave positive reactions to the material mentioned above. Whooping cough patients at times were

TABLE 5.—*Preparation F (Old Pertussis Vaccine) Compared with G (F Inactivated), H (Autolysate of F) and I (Autolysate of F Inactivated)*

	F	G	H	I
Whooping cough cases (positive)	3	6	6	5
Whooping cough cases (negative)	0	1	1	0
Whooping cough suspects (positive)	2	3	3	1
Whooping cough suspects (negative)	0	0	0	0
Normal subjects (positive)	7	7	7	0
Normal subjects (negative)	1	1	1	0

negative, however. The few adults tested would indicate that they were less susceptible to such materials when injected intracutaneously.

Principle of Selection Is Educational, Not Genetic. — The application of the principle of selection is an educational, a social and economic, perhaps even a political rather than a genetic question. What may be called the negative phase, the prevention of the most degenerate types from reproduction is quite clear. Whether this is to be brought about by isolation or sterilization is a purely technical matter depending on expediency. The result eugenically in either case is the same. But eugenic progress would be painfully slow, if this negative aspect alone were practiced. Positive methods of encouragement of superior types to the greatest possible extent is the only method which will result in any perceptible advance.—P. W. Whiting, *Nation's Health* **5**:136 (March) 1923.

THE ELECTROCOAGULATION METHOD OF TREATING DISEASED TONSILS

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Various writers in this country, and, more particularly, in Germany, have recently been advocating the removal of the faucial tonsils by means of electrocoagulation. The virtues ascribed to this method, if they were true, would cast into discard the traditional methods of tonsillectomy. The application of the high frequency current to the tonsil, thereby coagulating it, is a simple office procedure. It is a bloodless operation, quickly performed, requiring no skill, dexterity or experience on the part of the operator. The high frequency current is readily controlled. Under suitable local anesthesia, the procedure can be carried out almost painlessly.

With such obvious advantages, it is easily understood why this method should appeal so strongly to the general practitioner, and, perhaps, also to the specialist. One need but consider the tremendous interest aroused by the recent advocacy of the roentgen-ray treatment of diseased tonsils to understand why any plan which offers certain marked advantages in its administration should immediately find numerous adherents everywhere. Especially is this true when one reviews some of the unfortunate and disagreeable results encountered with tonsillectomy. With perfect technic and the utmost in skill and equipment, tonsillectomy is occasionally a difficult operation. Operative and postoperative hemorrhages are not uncommon, and not infrequently, also, does one experience the chagrin in finding a remnant of tonsil after operation. It is no wonder, then, that any surgeon, specialist or general practitioner is willing to adopt any new procedure which would obviate these well recognized disadvantages.

For some time past, I have employed surgical diathermy in the treatment of malignant growths of the pharynx and larynx. In a large series of patients operated on at the Cook County Hospital, I have so familiarized myself with the technic that I felt qualified to apply the method to the tonsils. One hundred cases were selected for this purpose. The first group of the series consisted of seven cases. The usual local anesthesia was administered. Points to be observed were: (1) the immediate effects of the operation; (2) the extent of the postoperative inflammatory reaction, i. e., the amount of extra tonsillar tissue involved; (3) the degree of inflammatory reaction, and (4) the early postoperative symptomatology.

Then, before the next set of cases were to be treated, the following observations were to be made: (1) the extent and degree of cicatrization within and outside of the tonsillar fossa; (2) the damage, if any, to the palatopharayngeus and palatoglossus muscles; (3) the impairment, if any, of the function of the soft palate; (4) the frequency of otitic complications due to possible damage to Rosenmueller's fossae; (5) the effect on the voice and deglutition, and (6) the thoroughness of the destruction of tonsillar tissue.

TECHNIC EMPLOYED

After a topical application of 4 per cent. cocain solution, the peritonsillar tissue was injected in the usual manner with a solution of 1 per cent. procain. A flat electrode 12 by 12 inches, well moistened with tap water, was applied to the patient's back. This so-called indifferent electrode, because no heat is generated at its place of application, is connected with a high frequency apparatus, generating the d'Arsonval current with a frequency rate of a million or more oscillations per second, and delivering an amperage of from 1 milliampere to 4,500 milliamperes. The active electrodes were of two types, namely, the needle, and a flat button electrode of a diameter of 7 mm. The needle was used in one case, penetrating into the substance of the tonsil, and carrying an amperage of 400 milliamperes. It was inserted into three portions of the tonsil, and the current turned on for fifteen seconds in each place, or, in other words, just sufficient to blanch the tonsil. The other cases were treated with the button electrode and with currents for the respective tonsils of from 400 to 1,500 milliamperes, and for the periods of time sufficient to coagulate the tonsils. This time varied from 50 seconds to 10 seconds, respectively. The greater the amperage, the shorter the period of application.

The patients in general were comfortable during the operation. No bleeding whatever occurred. The technical skill and dexterity for the operation was no greater than that required to apply a swab of silver nitrate solution to a tonsil, assuming a knowledge of the technic of electrocoagulation.

RESULTS

Without exception, the patients embarked on a stormy experience within a few hours after operation. The pain was uncontrollable save by the administration of liberal doses of morphin. All experienced extreme difficulty in swallowing, much greater than that usually looked for after tonsillectomy. The palate was extremely edematous, and speech was impossible. The intensity of this reaction persisted through the sixth day, and then gradually subsided.

The types of reactions recorded were: swelling of neck, pain on swallowing, difficulty of speech, unusual amount of discharge and sloughing of tissue, marked edema of the pillars, intense edema of the pharynx, uvula, pillars and soft palate, and trismus; and, in a few of the cases, the lower poles of the tonsils were still present.

CONCLUSION

Assuming that electrocoagulation of the tonsils is a simple, bloodless operation, and assuming, moreover, that the ultimate results of this operation might be satisfactory, the very severe reaction, the great pain, the toxemia and the extreme discomfort of the patient almost immediately following operation are sufficient reasons for condemning the method. Furthermore, there is no accurate way of determining the dosage to be applied. Nor is it possible to apply the heat with sufficient accuracy to insure the destruction of only the tonsillar tissue. There is no gage by which the penetration of heat, through the tonsil and up to the capsule only, can be measured. The heat necessary to destroy the tonsil is great enough to penetrate and damage the surrounding tissues. If the aim is merely to obliterate a single crypt, then there is no assurance that a purulent pocket in the fundus of the crypt is not sealed in by a covering of resulting scar tissue. Whatever logical basis electrocoagulation of diseased tonsils may have, or appear to have, from a theoretical standpoint, is far overshadowed by the unfortunate and unsatisfactory results obtained in actual practice.

I realize fully that a small series of cases is ordinarily insufficient for a clinical test; but in this instance

it is, in my opinion, conclusive evidence that the method is entirely inadequate, inaccurate and unsatisfactory, both from the standpoint of the surgeon and from that of the patient, and, therefore, cannot in any manner compete with the accepted present-day methods of tonsillectomy.

30 North Michigan Avenue.

HIGH GRADE CHOKED DISKS IN EPIDEMIC ENCEPHALITIS *

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The diagnosis of epidemic encephalitis may in some instances be difficult; the symptoms may resemble those of brain tumor, and this difficulty may be greatly increased when choked disks are present. Some physicians believe that choked disks do not occur in epidemic encephalitis, but I have had at least three cases in which the diagnosis of encephalitis seemed to me definite, and yet choked disks were present. It is singular that all three cases were in boys, two 16 years old and one 17. I have made some investigation of the literature to determine what is published concerning choked disks in epidemic encephalitis.

Holden [1] reported on the eye symptoms noted in 100 consecutive case histories of epidemic encephalitis at Mount Sinai Hospital. It is not stated whether the eyegrounds were examined in every case. There was noted in four patients a blurring of the optic disks, and in one a definite papilledema. True papilledema was also found in one of the twenty cases studied at the Neurological Institute; in this case, the elevation of each disk was 2.5 diopters. Holden refers to another case with papilledema. He concludes: "True papilledema is a very rare symptom of encephalitis, and seems to occur only when there are unusual complications. It is doubtless the result of increased intracranial pressure in most cases, although in some cases it may be due directly to meningitis." He refers to a few cases of optic neuritis in encephalitis reported by Symonds.

In a recent report on 1,250 cases of encephalitis notified in England and Wales during 1919 and 1920, references were given to other cases in the literature, and it was stated [2] that:

> The fundi were examined in 234 cases, and in 80 per cent. of these, it was reported that no changes were seen. In the other 20 per cent., optic neuritis, including papillitis, was reported in twelve cases; in two or three others, the condition would seem to have been well marked; while in the majority of the remaining cases, the several signs which were observed form part of the ophthalmoscopic picture of optic neuritis. This means that in 5.5 per cent. of the cases in which the fundi were examined, optic neuritis was present, while in 19 per cent. of the cases, there were present one or more signs portending the same. In only two was the condition called choked disk. It was acknowledged that these figures were high and that some doubt may be held as regards some of the cases.

Pette,[3] in a recent paper from Nonne's clinic, states that 120 cases of encephalitis were seen in this clinic from 1919 to April, 1922. He says it is shown that changes in the eyegrounds occur occasionally in the acute stage of encephalitis, and Economo and Löhlein have observed atrophy of the optic nerve, but this had not been seen in Nonne's clinic. He does not speak of choked disks.

Smith [4] presented before the Philadelphia Neurological Society, Feb. 28, 1919, a patient from my service at the University Hospital who had epidemic encephalitis with: right eye, disk + 3 diopters, fundus + 1.5 diopters; left eye, + 2 diopters, fundus + 1 diopter. Later, the right disk was + 5.5 diopters, and the left disk, + 5 diopters.

REPORT OF CASES

Two more cases of high grade choked disk in epidemic encephalitis have come under my observation:

CASE 1.—H. R. C., a boy, aged 16 years, previously in perfect health, referred to me by Dr. V. D. Holloway of Knoxville, Tenn., April 25, 1922, in March had had a general convulsion with unconsciousness, but seemed well later in the same day. He had not had another attack. A month later he began to have general headache, and this persisted with remissions and severe exacerbations. About a week after the headache began, pain in the back of the neck and vomiting developed and persisted. About May 15, he began to complain of diplopia, drowsiness and fever. Ptosis of the left eyelid developed, the lower jaw dropped, speech became thick and monotonous, and he could not swallow. He was confined to bed. The temperature rose as high as 101. He vomited frequently. When he came to me, April 25, he had not had diplopia for three days. He was drowsy, but was readily aroused. He had well marked choking of the disks and edema of the retina. Each external rectus muscle was weak, and convergence was poor. The left side of the face was weak, especially in the lower part; the tongue deviated slightly to the left when protruded, and the masseter and temporal muscles were so weak that he could take only soft food. The right soft palate was a little paretic. The tendon reflexes were weak. The limbs were not weak, but Babinski's sign was distinct on the left, and uncertain on the right. There was some albumin in the urine, and from fifteen to twenty dark and light granular casts. The diagnosis seemed to me to be epidemic encephalitis with some nephritis, not an uncommon occurrence, but the kidney elimination test showed good function. The spinal fluid was clear and somewhat yellowish, and contained two lymphocytes to the cubic millimeter; pressure was low, but had been high when the boy was at home. Dr. T. B. Holloway, April 27, found impairment of ocular rotation in all directions, most evident in the right eye; vision, right eye, 2/9??; left eye, 2/6??. Height of each disk, 7 diopters; macular, 2 diopters.

By June 1, the boy was less lethargic, the ocular palsies were less, the facial paresis of the left side had disappeared, the temporal and masseter muscles contracted almost normally, and the tongue was protruded straight. June 6, Dr. Holloway found the right disk, 4 diopters, the left disk, 6 diopters. Beginning June 1, magnesium sulphate (a half ounce at the dose) was given frequently by mouth to lessen the optic nerve swelling, and several lumbar punctures with withdrawal of a small quantity of fluid were performed for the same purpose. June 21, Dr. Holloway found the left disk 4.5 diopters, and the right, 3.5 diopters. The disk margins were distinctly clearer than they had been. The boy was allowed to go home, June 26, in good condition, aside from the swelling of the disks mentioned. A letter from Dr. V. D. Holloway, October 28, stated that Dr. Potter found the patient's eyes in such condition that "time should clear them up entirely."

CASE 2.—O. B., a boy, aged 17 years, referred to me by Dr. P. H. Dale of State College, Pa., was well until December, 1922, at which time he had a "cold," followed soon by

* Read before the Philadelphia Neurological Society, April 27, 1923.

1. Holden, W. A.: Acute Epidemic Encephalitis, Tr. A. Res. Nerv. & Ment. Dis., 1921.
2. Reports on Public Health and Medical Subjects, No. 11, 1922, p. 84.
3. Pette: Die epidemische Encephalitis in ihren Folgezustanden, Deutsch. Ztschr. f. Nervenh. **76**, Nos. 1-4, 1923.
4. Smith, D. E.: Encephalitis Simulating Brain Tumor; abstr. Arch. Neurol. & Psychiat. **1**: 796 (June) 1919

diplopia and lethargy, and the latter became more and more pronounced. At first he could be aroused readily; he would answer questions and then fall again immediately into lethargy, but later it was difficult to arouse him. He was confined to bed, though not paralyzed in his limbs. He was in profound lethargy most of the time, and paid no attention to his physical needs. A blood Wassermann test was negative.

When admitted to the hospital, Feb. 7, 1923, he responded to the examination when aroused, but not sufficiently for tests of sensation. The tendon reflexes were diminished, and Babinski's sign was present on each side. Dr. de Schweinitz, February 8, found the light reflex preserved. He had choked disks of between 5 and 6 diopters on each side. Hemorrhages were above the right disk. Diplopia was present, probably from oculomotor nerve involvement. There was noticeable divergence of the eyeballs.

The blood and urine were about normal, although an occasional light granular cast was found in the urine. Lumbar puncture gave a pressure of 28 mm., whereas the normal should be about 10. The fluid contained five lymphocytes to the cubic millimeter. The Wassermann test was negative. Repeated lumbar puncture with the removal of 5 c.c. of fluid was employed to reduce the choking of the disks, and March 1, Dr. B. F. Baer, Jr., found that each disk measured 3 diopters. The lethargy diminished temporarily. March 21, Dr. Baer found: right eye, 2 diopters; left eye, 1 + diopters.

High rectal injections of magnesium sulphate, 3 ounces (90 c.c.) in 6 ounces (180 c.c.) of water with 1 dram (3.75 c.c.) of camphorated tincture of opium, in the technic elaborated by Fay, were begun, February 26, in place of lumbar puncture, and given frequently almost every other day. This procedure accomplished much in reducing the swelling of the disks. It was more satisfactory than repeated lumbar puncture.

The boy became profoundly stuporous and died, April 5. The temperature was normal most of the time, but at one period while he was in the University Hospital, it reached 100 to 101 for a short time. A necropsy was not permitted.

3600 Walnut Street.

THE ANTITHESIS OF UROGENITAL TUBERCULOSIS IN A TABETIC PATIENT

REPORT OF CASE

VICTOR F. MARSHALL, B.S., M.D.
AND
GUY W. CARLSON, B.S., M.D.
APPLETON, WIS.

This case of tuberculosis of the bladder in a patient affected with tabes is reported, because the symptoms of the tabetic bladder are antithetical to those of tuberculous cystitis.

A search through the files of the Surgeon General's Index Catalogue fails to disclose a report of a similar case. Similarly, no such case was noted in other indexes, or the Index Medicus of 1916. It may be that such a condition is frequently present but overlooked by the physician, owing to his hesitancy in doing a complete examination when a diagnosis of tabes is evident.

Ockerblad [1] states that 30 per cent. of tabetic patients have disturbance of micturition at some time, and that 80 per cent. have bladder symptoms. The normal bladder capacity is from 300 to 400 c.c., while the tabetic bladder tolerates from 600 to 1,000 c.c. without discomfort. When a cystitis is present, however, we may have, instead of an enervated bladder, one that is hypersensitive; and, instead of being relaxed, it becomes contracted and of small capacity. The mucosa, then, instead of being pale and trabeculated, is inflamed and velvety in texture between the trabeculae.

SYMPTOMS

The physician often encounters this important and troublesome disturbance. At the onset, vesical disturbance may be the first warning of an organic disease. It is difficult, when such a case presents itself, to know definitely whether or not the vesical symptoms, which appear to be independent of disease of the bladder itself, are the danger signal of a latent tabes. The symptoms experienced by the average patient are usually those of pain about the bladder region, hyperesthesia about the neck of the bladder, the troublesome dribbling, dysuria and the retention. Dillingham [2] states that the capacity of the tuberculous bladder at the beginning of treatment varied from 1 teaspoonful to 3 ounces. The bladder gradually regained normal size as the ulceration and inflammation diminished. The symptoms are usually those of frequent urination, pain and tenesmus. Hematuria may often be a symptom of this condition. Many authors believe that the frequency may be only slight, and no pain or hematuria present unless the bleeding is from the kidney. The degree of severity of the symptoms depends usually on the location of the tubercles, their proximity to the urethral orifice and whether or not a secondary infection is present. This is not the rule, however, and, in the vast majority of cases, frequent urination and pain are present to some degree, depending on where the ulceration is located. The average patient urinates from eight to ten times a day, and three or four times, or more, at night. The advent of cystitis, however, aggravates the symptoms mentioned above.

When the ulcerations are found about the urethral orifice, the frequency of urination is at times almost constant. Those patients who are hospitalized require a urinal at all times. The pain is usually referred above the symphysis pubes, about the neck of the bladder or at the glans penis. Any distention of the bladder with urine causes pain over the pubic arch. On voiding, pain is experienced in the glans penis, and at the end of urination, pain is felt in the region of the neck of the bladder. A frequent feeling that more urine remains in the bladder at the termination of the act is often experienced.

Hematuria is present, according to some authors, in from 15 to 20 per cent. of cases, which they say may be due to kidney involvement, or to a cystitis. The urine under these conditions contained both pus and blood. The general belief is that such cases are due to tuberculosis. One may easily err when one set of symptoms masks those of another.

REPORT OF CASE

History.—H. S., a man, aged 50, a bank cashier, slight, thin chested and of medium build, was admitted to St. Elizabeth's Hospital, Appleton, Wis., March 24, 1923, on account of urinary retention which had been present five days, necessitating catherization. On further questioning, a history of difficulty in urination previous to the retention was present. There was pain and burning on urination, hematuria, a bilateral sciatica, the pains shooting in character, poor vision, diplopia, areas of hyperesthesia about the lower

1. Ockerblad, N. F.: Tabetic or Neurogenous Bladder, J. Kansas M. Soc. **20**: 42 (Feb.) 1920.

2. Dillingham, F. S.: Cases of Tuberculous Kidney and Bladder, California State J. M. **15**: 70 (March) 1917.

extremities, atonic impotence and constipation. The onset of the symptoms mentioned had begun about eight years before, at which time the patient experienced burning on urination, and the urine was distinctly cloudy.

During the past year he had experienced pain at the beginning of the act of micturition, and great difficulty in starting the stream, with, at intervals, complete retention. He never had any dribbling, but had been catheterized frequently before admittance to the hospital for the relief of the retention. The bilateral sciatica had been present for about four years, and the patient complained of sharp, shooting pains in the lower limbs, which were usually sore and tender to the touch, the pain being most noticeable along the course and distribution of the sciatic nerves. It seemed to attack either side similarly. He had never experienced any numbness or tingling in the lower extremities. Poor vision and diplopia developed about four years before admission, at which time the patient began having some difficulty in reading fine print. He stated that, on looking at objects at a distance, he saw double. No nystagmus was present. The hematuria had been present off and on for eight years, and streaks of blood with mucus was oftentimes seen at the end of urination. Atonic impotence had been present for several years. He had had grip two or three times during the last fifteen years, and a supposedly peptic ulcer in 1922, with tarry stools and hematemesis. He was put on ulcer treatment with apparent relief.

The patient's wife died at the age of 40, following the delivery of a premature macerated fetus, complicated by tuberculosis of the kidney. One daughter died at the age of 22 of pulmonary tuberculosis, having been confined in a sanatorium for one year previous to her death. Two daughters and one son were living and well. The patient had gonorrhea at 18 years of age, but no history of chancre was elicited. He stated that he did not recall having had a chronic cough, night sweats or afternoon rise in temperature. He had lost 15 pounds (7 kg.) during the last year. The history was otherwise negative.

Physical Examination.—A bilateral Argyll Robertson pupil and diplopia were present. There was a dulness of the right apex in the lungs, with increased vocal fremitus, probably that of an old healed apical tuberculosis. A small, hard nodule was felt in the head of the right epididymis. The prostate was soft and boggy. A small, palpable nodule, the size of a pea, was felt in the right seminal vesicle. The reflexes were apparently normal, except for a slight, sluggish knee reflex on the left side. There was also a positive Romberg sign. The blood pressure was: systolic, 130; diastolic 80. The physical examination was otherwise negative. A blood Wassermann test was ++; spinal fluid Wassermann, ++++; colloidal gold test, 1233310000, and Ross-Jones and Noguchi tests, positive. The urinalysis previous to cystoscopy of catheterized specimens revealed cloudy urine. The specific gravity was 1.011; albumin, ++; pus cells, ++; blood, ++. There were no casts. The urine centrifugated and stained with Ziehl-Neelson's stain revealed no tubercle bacillus. The patient was catheterized, March 25, at 9:30 a. m., and 40 ounces of urine was obtained; at 6:30 p. m., 27 ounces, and, March 26, at 9 a. m., 38 ounces.

Cystoscopic Examination.—The patient was catheterized with a metal curved catheter, and 32 ounces of urine was withdrawn. After the urethra was anesthetized with alypin through an endoscope, a McCarthy cystoscope was passed into the bladder with difficulty. The prostatic urethra was noticeably inflamed. Inspection of the bladder wall revealed three well-defined tubercles below and to the side of the right ureter, several at the bas-fond, and one in very close proximity to the left ureteral opening. The mucosa was edematous and reddened, with pronounced trabeculous formation. Following the cystoscopic examination, the ureters were catheterized by the use of a Brown-Buerger No. 2 cystoscope, and no difficulty was encountered in passing the catheters to the kidney pelvis. Urine specimens were taken from each kidney for microscopic examination and for inoculation of guinea-pigs. The urine from the left kidney was amber and clear; that from the right kidney was bloody. A kidney functional test with the intravenous injection of 1 c.c. of phenolsulphonephthalein was performed. The time of appearance from the left ureter was three and one-half minutes; that from the right ureter, seven and one-half minutes; first fifteen minutes, left, 1 per cent.; second fifteen minutes, left, 2.5 per cent.; total, 3.5 per cent; first fifteen minutes, right, 10 per cent.; second fifteen minutes, right, 4 per cent.; total, 14 per cent. Pyelograms were then made by injecting the renal pelvis with 12.5 per cent. sodium iodid, the right kidney holding 22 c.c, and the left, 9 c.c. Roentgenographic findings revealed a dilated right pelvis with the absence of cali elevations, and a left normal contour. The case was diagnosed as genito-urinary tuberculosis with tabes dorsalis.

Treatment.—The patient is being treated by the usual combined specific therapy of neo-arsphenamin, mercurial inunctions and massive doses of potassium iodid. Hygienic measures combined with heliotherapy were advised and instituted.

COMMENT

Cabot [3] says:

The bladder symptoms of tabes may simulate prostatic enlargement, and occasionally a useless operation has been done. In tabes the bladder is generally trabeculated, holds a large amount of urine, and is usually markedly free from pain on instrumentation. When a cystitis occurs due to poor bladder drainage, the patient is often unable to void his urine.

In trabeculous cystitis, the patient is usually intolerant of instrumentation, and apt to suffer pain on examination and react badly afterward.

Smith [4] says:

In tabes at first, retention occurs due to spasm of external sphincter, which may be followed by dribbling from an overdistended bladder. In latter tabes, true incontinence occurs from paralysis of the sphincter.

Corbus and O'Conor [5] believe that many patients retain large quantities of residual urine with a fair degree of general health and comfort. The urea nitrogen estimation of blood in a number of tabetic patients with appreciable amount of residual urine has been mainly within normal limits. In no instance did it compare with the nitrogenous content that accompanies a like quantity of urine retained by mechanical obstruction. The pains are not due to any uremia but to the syphilitic process.

In the uncomplicated tabetic bladder, even with the residual urine of from 900 to 1,000 c.c., and blood urea nitrogen normal, the bladder should be undisturbed, and treatment limited to systemic management. Local treatment should be reserved only for imperative complications.

Burns [6] says:

The most effective form of treatment in tabes has consisted in intravenous and intraspinous therapy combined with dilatation of urethra. Of twenty-one cases, incontinence occurred in twelve; entire relief in five; improvement in six, and same condition in one.

Care should be exercised in the examination of patients on account of the presence of concomitant severe lesions. The symptoms which prompt the patient to seek medical aid are often complicated, as in the case just cited.

3. Cabot, F.: Disorders of Bladder, New York, Treat & Co., 1909.
4. Smith, G. G.: Bladder Disturbances Due to Nerve Lesions, J. A. M. A. **69**: 1323 (Oct. 20) 1917.
5. Corbus, B. C., and O'Conor, V. J.: Tabetic Bladder from Standpoint of Urologist, J. A. M. A. **79**: 1750 (Nov. 18) 1922.
6. Burns, J. E.: Bladder Changes Due to Lesions of the Central Nervous System, Surg., Gynec. & Obst. **24**: 659 (June) 1917.

Clinical Notes, Suggestions, and New Instruments

APHONIA FROM PARALYSIS OF THE LEFT VOCAL CORD *

NICHOLAS LUKIN, M.D., NEW YORK

History.—A woman, aged 23, whose family history is unimportant, had had diphtheria, scarlet fever, and complicating nephritis in childhood; also sore throat a few times later on. As she grew up and went through school, her health was considered good. About eight years ago, she came under my observation through her mother, who was not satisfied with her frequently "feeling tired," and her worried appearance. An altered mitral first sound, coupled with her past history, suggested the possibility of a developing mitral stenosis. It did not permit her to finish school, and she rested during a long period of time. Gradually, definite cardiac signs of a mitral stenosis developed. In appearance, however, she improved; she gained some weight, went dancing, and assisted her father in his office. About two years ago, a mild attack of appendicitis laid her up for a week. She had apppendicular pains since on several occasions, but operation was delayed because of the danger to her heart from the anesthetic. Finally, about six months ago, the operation was performed under the most careful anesthesia. Recovery took place in three weeks. A remittent temperature, varying between 100 and 103, ending by lysis, lasted for seven days during the first week. A slight cough, which brought up some blood-stained mucus on several occasions, and intermittent hoarseness also complicated convalescence.

Two weeks after she left the hospital, her hoarseness, which was previously intermittent, became continuous for three months. Her general condition improved, but she spoke only in a whisper. Two eminent throat specialists were consulted, who found the left vocal chord in a cadaveric position while the right moved normally.

Physical Examination.—The patient was a pleasing brunette of the chlorotic type, weighing 105 pounds (48 kg.), and 5 feet 2 inches (158 cm.) in height. The mucous membranes were somewhat pale. The tonsils were of normal appearance; the teeth were in good condition, and the tongue was not coated. The complexion was sallow. Some dilated veins were visible on the chest.

The apex impulse of the heart was seen and felt in the fifth interspace in the nipple line. The pulse was normal in rhythm, but varied in frequency, being between 78 and 96. A diastolic murmur with a presystolic thrill was heard in the region of the apex. The sounds were of good quality; the pulmonary second sound was accentuated.

The liver was not enlarged; the spleen was not felt.

Roentgen-Ray Examination.—Dr. J. J. Landsman reported that the diameter of the left heart was 8 cm.; of the right heart, 4.5 cm.; of the whole heart, 12.5 cm., and of half of the chest, 11 cm. The auricular bulge was unusually enlarged, obliterating the auricular ventricular angle. The structures at the base of the heart were narrow.

Etiology and Prognosis.—For the sake of convenience, the etiology and prognosis must be considered here together, because the latter depends on the first. The throat specialists could not offer any positive opinion as to the etiology of the condition in this case, nor would they suggest a prognosis; but both agreed independently that a dilated left auricle may, by pressure on the left recurrent laryngeal nerve, cause paralysis of the vocal chord. A prognosis was withheld by the specialists, because neither one of them had seen a well authenticated case. Evidence of other mediastinal conditions was absent. Hysteria was excluded by the previous history of the patient and by the fact that the paralysis of the chord was unilateral. Dr. William Osler relates the possibility of a paralysis of the recurrent laryngeal nerve due to the dilatation of the left auricle. He states that he has encountered two instances of it. He also quotes Ostner and Herrick, who described such a condition.

The prognosis in this case was particularly desirable, because the patient was taking singing lessons before her last illness, and her parents, therefore, continually insisted on an answer—whether the voice would ever come back.

Course.—In about two months after the onset of the aphonia, some evidence appeared that the voice was becoming clearer, and by the end of the third month, the aphonia entirely disappeared, to the great satisfaction of all concerned. The only medication the patient received was tincture of digitalis, which she is still taking in small doses.

Examination by the throat specialist revealed that the chord was functioning. The patient submitted also to a reexamination by the roentgenologist who reported a smaller cardiac outline and the auricular bulge diminished in size.

CONCLUSIONS

The report of this case is made:

1. Because relatively sufficient evidence is present to class it clinically as a true case of aphonia resulting from paralysis of the recurrent laryngeal nerve due to the dilatation of the left auricle.

2. As a sequel to anesthesia on a patient with mitral stenosis.

3. As a guide to prognosis in similar conditions.

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* Read before the Bronx County Medical Society, Feb. 21, 1923.

SEPTICEMIA FOLLOWING PASSAGE OF CALCULUS THROUGH URETHRA

ABRAHAM NELKEN, M.D., NEW ORLEANS

J. L., aged 39, a native of Finland, admitted to the urological service of Touro Infirmary, Feb. 2, 1923, had been sick for ten weeks with an attack diagnosed as dengue, the symptoms of which were severe pain in the right lumbar region, accompanied by fever. Following cessation of pain, the patient developed urinary frequency, voiding as often as thirty or forty times in twenty-four hours. This continued for two weeks. Then he had difficulty in urinating, and, after two weeks more of suffering, he applied at the Touro outclinic for relief. The morning he first was seen, he had not been able to urinate for twenty-four hours. Catheterization was made without difficulty, and gave immediate relief. For the next two weeks, he visited the clinic daily, with the exception of two days, but until the day of his admission, he did not again have retention. My assistants in the clinic thought that they were dealing with an acute condition of the prostate, and the patient was treated accordingly.

When my attention was called to the case, I advised that the patient be admitted to the ward for observation. The day of admission, he again had retention. He was put to bed and voided without effort for two days. The morning of the third day, he had a severe chill, and the temperature rose to 103. He complained of something having "broken loose" in the bladder, which stopped up the canal. The resident house officer, Dr. Williamson, was called. Examination showed a stone about the size of a large bean, just back of the anterior scrotal attachment. After injecting procain solution, followed by liquid petrolatum, Dr. Williamson was able to dislodge the stone and force it to the meatus. Here it was crushed and removed. The patient was in agony until this was done, but, on removal of the obstruction, he voided urine freely and without effort. Following this, he was given a precautionary injection of mercurochrome-220 soluble.

He continued to have chills and high fever, and two days later, I put in a retention catheter, thinking to protect the traumatized urethra from the passage of septic urine. The following day, his maximum temperature was 100. However, the day after this, with the catheter in place and draining freely, the temperature rose to 102.6, and the second day after, to 104. I then did a cystoscopy and found pus in the slightly turbid urine from the right kidney. Cultures on agar slants showed staphylococci on the right side, the left being sterile after forty-eight hours. The patient looked so ill that, in spite of the presence of pus in the right kidney pelvis, I requested a blood culture. This proved positive, showing a luxurious growth of *Staphylococcus aureus* and colon bacilli

after twenty-four hours. The patient's condition grew rapidly worse, the temperature ranging between 104 and 105, and he died in coma fourteen days after admission and twelve days after the passage of the stone through the urethra. In spite of every effort, we were unable to secure permission for a postmortem.

The history of this case, as outlined, contains several interesting points that I shall refer to briefly. It is evident that the so-called attack of dengue was really renal colic due to the passage of the stone through the right ureter. Infected urine would account for the fever, and the presence of the stone in the bladder for the frequency. Retention was evidently due to the blocking of the urethra as the stone engaged in its lumen. Invasion of the blood stream by the infecting organisms would appear to be coincident with the passage of the stone through the anterior urethra. It is only fair to point out that the first chill and subsequent rise of temperature preceded the instrumental removal of the stone. The trauma of the urethra by the stone in the presence of a septic urine can explain the invasion of the blood stream in sufficient dosage to induce a fatal septicemia. Here, the culture showed both staphylococci and colon bacilli. I have had a recent case of colon bacillus septicemia complicating pyelitis in which recovery ensued.

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ELEVEN CASES OF BLACKWATER FEVER WITH ELEVEN RECOVERIES

ERNEST BALL, M.D., EBANO, SAN LUIS POTOSI, MEXICO

I treated eleven cases of blackwater fever in 1918 in the republic of Panama. All of these patients were negro or a mixture of negro and Spanish, and ranged in age from 28 to 45 years. The temperatures ranged from 102 to 105 F. Severe headache, pain in the loins, vomiting, jaundice and insomnia were marked features, and estivo-autumnal malarial parasites were found in the blood of all patients.

My worst case was that of a young native physician, aged 32. When I was called in to see him, his temperature was 103, and he had a severe headache, pain in the loins, nausea and vomiting, with slight jaundice. Urine examination revealed a large amount of hemoglobin.

The treatment in all the cases consisted of dosages of quinin, calomel and coconut water. The calomel was given in 5 grain doses as soon as the patient was first visited, and before and after the blood picture was made. Quinin was administered in 15 grain doses, given intramuscularly twice daily, with a large glass of coconut water, every two hours.

Pain in the loins, hemoglobin in the urine, jaundice, vomiting, insomnia and malarial parasites were marked diagnostic features of all cases; the temperature was no index as to the severity of the disease. All the patients were natives of the tropics, and all responded to what appears to be big doses of quinin. Every one of them remained free from malaria for more than one year from the date of recovery, had no further attack of hemoglobinuria after more than three years and gained in weight and are enjoying good health. These cases seem to indicate that, at least in my cases, blackwater fever was caused by a malarial infection.

Exhaustion as Factor in Etiology of Tuberculosis.—Dancing at the end of a day's work and indulged in until late hours may have serious effects upon general health. Even outdoor sports, which are certainly to be encouraged, may defeat their chief end if indulged in immoderately or to the exclusion of proper resting periods. Child labor, either in factory or at home, excessively long working hours, occupations which can not be interrupted for Sunday rest, or which tempt, or drive, to excessive effort or "speeding up," all tend to weaken resistance and predispose to tuberculosis. Night schools, overtime, excessive amusements, overindulgence, and asceticism are all important predisposing causes.—F. C. Smith, *Public Health Rep.* **38**:780 (April 23) 1923.

Special Article

INSULIN: ITS ACTION, ITS THERAPEUTIC VALUE IN DIABETES, AND ITS MANUFACTURE*

BY THE INSULIN COMMITTEE, UNIVERSITY OF TORONTO

TORONTO

Carbohydrates, such as the starches, taken in the food, are converted into simple sugars, such as glucose. The glucose or other sugar is absorbed by the intestine and carried to the liver, where much of it is stored as glycogen. The remainder is carried to the muscles and other tissues, where some of it is oxidized and some stored as glycogen. Prior to these changes, glucose in some way becomes altered in chemical structure so as to change it from an inactive into an active form. In diabetes mellitus it is probable that the sugar absorbed from the intestine is no longer properly changed into the active form so that it cannot be stored in the liver as glycogen, or oxidized in the tissues, but circulates in increased quantities in the blood (hyperglycemia) and is excreted in the urine (glycosuria). It therefore becomes lost to the body as a source of energy. As a result, the store of glycogen is rapidly exhausted, and protein is attacked as a source for glucose. Further, as carbohydrate is necessary for the normal metabolism of fat in the body, incomplete combustion of fat occurs in diabetes mellitus, resulting in diabetic acidosis and coma. Diabetes mellitus must, therefore, be considered as a disease of metabolism in which carbohydrate is not efficiently utilized by the body, thereby causing a derangement of the normal metabolism of proteins and fats as well as carbohydrates. This derangement of metabolism is recognized by voracious appetite, hyperglycemia (increase in the percentage of sugar in the blood), and glycosuria (sugar in the urine).

DISCOVERY OF INSULIN

As a result of the experiments of von Mering and Minkowski, in which they showed that extirpation of the pancreas in dogs was followed by persistent glycosuria and other symptoms of diabetes, the important relation between this gland and diabetes was established. The pancreas consists of two types of tissue—the acinous portion secreting the pancreatic juice (the external secretion) which reaches the intestine through the pancreatic duct, and groups of cells scattered throughout the gland known as the islands of Langerhans. These cells possess a rich supply of blood vessels. As the islands of Langerhans show pathologic changes of varying degree up to complete destruction in the majority of patients dying of diabetes mellitus, Opie and others have considered that the insular portion of the pancreas is the one related to diabetes mellitus. They believed that it probably furnishes an internal secretion necessary to normal carbohydrate metabolism. Several investigators attempted to prepare extracts of pancreas containing this internal secretion but with uncertain results, probably because the active substance was destroyed by the powerful digestive ferments also present in such extracts. It remained for Banting, working in collaboration with Best in the

* Certain portions of this article are appearing in a medical bulletin of the University of Toronto.

Department of Physiology, under the direction of Professor Macleod, to demonstrate that such an internal secretion really exists, and thereby to determine the exact relationship of the pancreas to the disease diabetes mellitus.

It had been shown previously that, if the duct of the pancreas was ligated, degeneration occurred much more rapidly in the acinous portion than in the islands of Langerhans. Banting conceived the idea that, if an extract was prepared from the pancreatic tissue remaining some time after ligation of the ducts, it should contain the supposed internal secretion of the islands of Langerhans because there would not be enough of the digestive ferments to destroy it. In 1921, Banting and Best prepared an extract of the degenerated pancreas and injected it into diabetic dogs. Following the injection, a definite lowering of the blood sugar, and a decrease in the amount of sugar excreted in the urine, were found to occur. They also showed that, if sufficient extract was injected at proper intervals, completely depancreatized dogs could be kept alive and free of symptoms for a long period of time. These experiments support the view that the islands of Langerhans in the pancreas contain a substance which lowers the blood sugar and diminishes or abolishes the excretion of sugar in the urine of diabetic dogs. Later, by extracting the fetal or adult normal pancreas with alcohol, they prepared an extract which contained the antidiabetic substance or hormone, the alcohol evidently preventing the destruction of the active principle by the digestive ferments. This extract was injected subcutaneously into a boy suffering from severe diabetes mellitus. A definite lowering of the blood sugar and of the amount of sugar excreted in the urine resulted. The extract contained other substances which caused considerable local irritation, making repeated injection impossible. With the assistance of J. B. Collip, an extract was prepared in a purer form, suitable for repeated injection in man. The active principle of these extracts has been called insulin, a name previously suggested by Sir E. Sharpey Shafer.

PHYSIOLOGIC ACTION OF INSULIN

At this stage, intensive investigation was conducted in the physiologic laboratory of the university to determine the effects of insulin on normal and diabetic animals. By excellent team work, in which the previously mentioned investigators and E. C. Noble, John Hepburn, J. K. Latchford and others participated, it was possible in a comparatively short time to show, among other things, that:

1. Insulin lowers the blood sugar in normal rabbits; characteristic symptoms supervene when a certain low level is reached, and these symptoms are specifically antidoted by glucose.
2. It may prevent the hyperglycemia due to piqûre, asphyxia, epinephrin and ether.
3. It increases the sugar consumption by the isolated mammalian heart.
4. It causes glycogen to be deposited in the liver of diabetic animals fed with sugar.
5. It raises the respiratory quotient of diabetic animals fed with sugar.
6. It affects the migration of fat in diabetic animals.
7. It causes the acetone bodies to disappear from the urine of diabetic animals.

THE DOSAGE OF INSULIN

A physiologic unit of insulin was originally defined as that amount which lowers the percentage of sugar in the blood of a normal rabbit, weighing 2 kg. and starved for twenty-four hours, to 0.045 per cent. within three hours. Because this amount of insulin is said to be greater than that required in the treatment of certain cases of diabetes in man, it has been found advisable to designate as one clinical unit one third of the foregoing physiologic unit. This clinical unit has been adopted on the labels of all preparations of insulin manufactured for use on man. In carrying out the actual assays on rabbits, considerable variations are found in the extent to which different animals react to equal doses of insulin. It is necessary, therefore, to use many animals for the assay of each sample of insulin, and to take the average of the highest results obtained. Much work is being done, using various other animals than the rabbit (mouse, diabetic dog) in an endeavor to improve the method of assay. In large diabetic clinics, a valuable assay can be obtained by determining how many extra grams of carbohydrate can be metabolized per unit of insulin. For this purpose, "pedigree" patients must be used; i. e., patients that have been under observation for a long time, and in whom the carbohydrate balance is precisely known.

THE THERAPEUTIC ACTION OF INSULIN AND ITS VALUE IN THE TREATMENT OF DIABETES

As a method for the preparation of insulin in suitable form had been found, it became possible to test its value in the treatment of diabetes mellitus. This has been done partly in the medical clinic of the University of Toronto, under the direction of Dr. Duncan Graham, and partly in various clinics in the United States and Canada. Further investigation on the administration of insulin in diabetic dogs, and in severe cases of diabetes mellitus, have shown that the injection of insulin restores to the body the lost ability to oxidize carbohydrates, and that glycogen is again stored in the liver. This it evidently does by converting glucose into the active form; and if insulin is given in sufficient quantity and at proper intervals, the blood sugar is maintained at a normal level and the urine remains free of sugar. Fat is also completely burned. As a result of this, acetone bodies disappear from the urine, and diabetic acidosis and coma are prevented. In brief, the artificial administration of insulin restores to the body a normal metabolism of carbohydrates, fats and proteins.

Although the administration of insulin is capable of relieving the cardinal symptoms and signs of diabetes mellitus, *one must not conclude that insulin can replace the dietetic treatment of the disease.* In diabetes there is a decreased production of insulin, owing to the weakened function of the islands of Langerhans. As all patients with diabetes mellitus are capable of metabolizing a certain amount of carbohydrate, the degree of damage to the islands and their capacity to produce insulin may be ascertained by estimating the tolerance of the patient for carbohydrate. The etiologic factor or factors causing this damage to the pancreas have not been discovered. It is known, however, that diets containing excessive quantities of carbohydrates, or proteins, fats and carbohydrates in improper proportions or quantities, as well as infections, further weaken the function of the already damaged pancreas. The object of treatment should be to give rest to the damaged islands, and conserve their power to produce insulin. Before the introduction of insulin, this was accomplished best by the dietetic treatment as outlined by Allen, Joslin and others. By marked restriction in diet, combined with periods of fasting, Allen demonstrated that, even in severe cases of diabetes, the urine could

be kept free of sugar, and the blood sugar maintained at a normal level for long periods of time. Later, many patients remained aglycosuric without the necessity of fasting. This method of treatment gave a maximum of rest to the damaged pancreas, and allowed it to maintain, or even increase, its power to produce insulin. The lives of patients suffering from severe diabetes were definitely prolonged, whereas in mild cases sufficient tolerance for carbohydrates was regained to allow the patients to take a more liberal diet and yet remain free of symptoms. Unfortunately, the extreme undernutrition resulting from the prolonged use of the restricted diet with fasting caused a marked loss of weight and strength, and made the continuation of the treatment difficult.

The introduction of insulin in the therapy of diabetes makes it possible to begin the treatment of even severe cases with a palatable diet of protein, fat and carbohydrate in adequate quantities to meet the requirement of the body at rest in bed, or with moderate exercise, and at the same time afford adequate rest to the damaged islands of Langerhans. After the glycosuria and ketonuria have disappeared, and the blood sugar level has returned to normal, the diet may be gradually raised until the patient is receiving sufficient food to maintain the body weight slightly below normal, and sufficient calories are being supplied for the body to perform the ordinary duties of life. In some cases the pancreas has so regained its power to produce insulin that the daily dosage need not be increased; in others, in which the damage to the pancreas is more permanent, sufficient additional insulin must be given to keep the urine of the patient free of sugar on the increased diet.

Overdosage of insulin is followed by the development of serious signs and symptoms demanding immediate treatment. The patient complains of a sense of weakness and fatigue, associated with sweating, a feeling of tremulousness, and sometimes pallor and flushing. In the more severe forms there is acute distress, with mental disturbances and even unconsciousness. These reactions are due to a fall in the blood sugar below the normal level of 0.1 per cent. When the blood sugar falls to 0.07 per cent., symptoms develop, and if it falls to 0.035 per cent. the patient becomes unconscious. The symptoms, though alarming both to the patient and to those in attendance, are completely relieved if glucose is given immediately.

INDICATIONS FOR THE USE OF INSULIN

The indiscriminate use of insulin in the treatment of diabetes mellitus is a real source of danger. At the beginning of treatment, all patients with diabetes mellitus, except those suffering from severe acidosis and coma, should be put to bed and given a basal maintenance diet. This diet contains protein sufficient to replace the daily wear and tear of the tissues of the body, approximately 0.3 gm. per pound of body weight. Additional calories in the food are supplied by carbohydrate and fat in proper proportion to prevent the production of acetone bodies, and in adequate amount for the height, weight and sex of the patient. If the urine of the patient becomes free of sugar on this diet, it should be gradually raised until he is receiving an adequate diet for the performance of the ordinary duties of life. Should the patient remain aglycosuric on this diet, insulin treatment is not indicated. Approximately 75 per cent. of diabetics may be controlled by dietetic treatment.

If, at the end of a week's treatment on a basal diet, the urine is not free of sugar, the patient requires insulin. The amount of insulin to be injected daily is dependent on the total amount of glucose found in the urine at the end of the preliminary period of observation. It is given in divided doses, injected subcutaneously, usually before breakfast and supper or, in more severe cases, before each meal. Under combined dietetic and insulin treatment the patient rapidly improves. As the body is supplied with an adequate amount of insulin, carbohydrates are properly metabolized, sugar and acetone bodies disappear from the urine, and the blood sugar returns to a normal level. The patient enjoys his food, and feels stronger, and the mental depression so characteristic of patients with severe diabetes is replaced by cheerfulness. Some patients have been able to resume their former occupations after a months' treatment.[1]

Probably the most brilliant results obtained with insulin have been in the *treatment of diabetic acidosis and coma.* In these cases insulin must be given immediately. In all cases of acidosis and threatened coma there is a favorable reaction to combined dietetic and insulin treatment. In uncomplicated cases of advanced coma the majority of patients—four out of six—have recovered after being given repeated intravenous injections of insulin combined with an adequate amount of glucose to prevent the blood sugar from falling to a dangerous level. In all the other fatal cases of coma in which treatment was given, there was an associated infection sufficiently severe to cause death apart from the diabetic condition.

The susceptibility of the diabetic patient to infection has long been recognized. The effect of a developing infection or a surgical operation on the future course of a case of diabetes was feared by the physician. These, combined with acidosis and coma, constituted danger points in the life of the diabetic patient. If infection develops, or an operation becomes necessary in a case of diabetes adequately controlled by diet, sufficient insulin should be given to keep the urine free of sugar and acetone until the patient recovers. In more severe cases of diabetes already under insulin treatment, the daily dose must be increased. Under combined dietetic and insulin treatment, diabetic patients have recovered from mild infections in a normal period of time; teeth have been extracted, tonsils removed, and amputations performed with safety.

Diabetes mellitus can be successfully treated in the less severe form by the giving of a properly balanced diet; in the more severe, by proper diet and by an adequate daily dosage of insulin. The success of treatment is dependent on the physician for the institution of proper treatment, and on the patient for the continuation of the treatment prescribed. A prescription of a properly balanced diet is of as much importance for a case of diabetes melltius, or even of greater importance, than is one of drugs in the majority of the diseases the physician is called on to treat. In the beginning of treatment, the value to the patient of a month's or six weeks' stay in an institution with proper facilities for the investigation and dietetic control of cases of diabetes mellitus cannot be overestimated. The case can be more fully investigated and the effect of an accurate diet carefully controlled. The patient appreciates more readily the value of proper diet in the treatment of his condition, and becomes familiar with the character, amount and preparation of the various foodstuffs con-

1. Further details of clinical experiences with insulin will be found in the articles by Banting, Campbell and Fletcher, and by Allen, Joslin, Fitz, Geyelin, Wilder, Williams and others in the Journal of Metabolic Research, May, 1923.

stituting his diet. In an institution the tuberculous patient learns how to live; the diabetic, what to eat.

THE MANUFACTURE OF INSULIN

Since the method for the manufacture of insulin from slaughter-house material demands the greatest of care and the strict observance of certain principles of extraction, and since it has been found that toxic symptoms are readily caused by excessive dosage, steps have been taken by the University of Toronto to insure the proper manufacture of insulin, and to provide for some measure of control over its distribution among physicians. The history of the various steps is briefly as follows: After it was discovered that an active nonirritating preparation of insulin could be prepared on a small scale by extraction of the pancreas with weak alcohol and subsequent purification of the extract by fractional precipitation with stronger alcohol, attempts were made to expand the scale of production so as to yield sufficient material for clinical use. Great difficulties were encountered in this work, and for more than two months scarcely any insulin could be obtained. When the difficulties were at last overcome and a reliable large scale procedure had been definitely elaborated in detail, the question of publication of the method came to be considered. It was pointed out, however, that such publication of the method would probably result in some commercial firm modifying the process sufficiently so as to obtain a patent which would give it a monopoly in manufacture, and that the only satisfactory way to prevent this was for the chief originators of the method to apply for such patents in their own names and to assign these, when granted, to some noncommercial organization to administer in such a way as to prevent commercial exploitation of the product. Application for process and product patents were, therefore, filed in Canada and the United States, and the board of governors of the University of Toronto was requested to accept these patents and to assume responsibility for their administration on the basis, first, that the "patent is not to be used for the purpose of restricting the preparation of this or similar extracts elsewhere, or by other persons," and, second, "that the university holds the patent for the sole purpose of preventing any other person from taking out a similar patent, which might restrict the preparation of such extract."

The Board of Governors accepted the trust and created a body known as the Insulin Committee to advise the Board in matters of administration. The personnel of the Insulin Committee is as follows: Col. A. E. Gooderham, convener; Sir Robert Falconer, president of the university; Mr. T. A. Russell; Sir Joseph Flavelle, and an advisory committee consisting of: Dr. H. J. R. Macleod, secretary; Dr. F. G. Banting; Mr. C. H. Best; Dr. R. D. Defries; Dr. J. G. FitzGerald; Dr. Duncan Graham, with Mr. C. H. Riches as legal adviser.

One of the first questions to be considered by the committee related to further expansion in the manufacture of insulin. Since, however, a large scale method had not yet been sufficiently evolved to insure a product of constant potency, it was decided before issuing licenses to manufacturers to develop the details of such a method. At the same time it was realized that adequate facilities for doing this on a practical manufacturing scale could not be provided for unless by collaboration between the committee and some highly organized firm or firms engaged in the manufacture of animal extracts of a similar nature. And since it was also evident that such collaboration could not be carried out satisfactorily with several firms at one and the same time, it was decided after careful consideration to invite the Eli Lilly Company of Indianapolis to send representatives to Toronto to confer on the question. As a result of this conference, an agreement was entered into by which this firm was granted an exclusive license in the United States for the manufacture of insulin for an experimental period set provisionally at one year, under the conditions that:

1. The firm utilize all of its available facilities and personnel for the manufacture of the product and pay all expenses entailed in its large scale manufacture in their plant.
2. The firm submit samples of its product to the University of Toronto for approval before distribution to physicians for use on patients.
3. The approved product be distributed either gratis or at cost price only to such physicians as may be chosen in consultation with the University of Toronto.
4. A certain percentage of the approved product be given gratis to the University of Toronto for use in its experimental laboratories, and for clinical purposes in its associated hospitals.
5. After the expiration of the experimental period, the firm be licensed by the University of Toronto to manufacture the product under the same favorable terms as may be granted to other firms operating in the same territory.

In consideration of the acceptance of these conditions, contained in an agreement between the firm and the University of Toronto signed, May 31, 1922, all known details of the method of manufacture of insulin were given to the Eli Lilly Company, and work was immediately started by it on a large scale.

Having made these arrangements for a gradual expansion in the manufacture and clinical use of insulin in the United States, the Committee now took up the question of its control along similar lines in Great Britain, and it was decided to apply for patents in that country and to recommend to the board of governors that these, when granted, should be assigned to the Medical Research Council of Great Britain on the same general terms as they had been assigned to the University of Toronto; namely, to administer as they deemed best for the purpose of preventing commercial exploitation and uncontrolled manufacture in that country.

During the latter part of 1922, intensive work on the manufacture of insulin, both in Indianapolis and in Toronto, resulted in the gradual increase of the output, so that it became possible to offer insulin for clinical trial to a larger number of physicians, whose reports on its therapeutic value have proved to be of great value in guiding the committee and the manufacturers in questions of suitable dosage, possible risks from overdosage, and the elimination of irritating impurities. This insulin was distributed free of cost by the Eli Lilly Company.

The large expenses incurred by the collaborating firm up to this stage made it necessary for it early in 1923 to put a cost price on its product. With the approval of the committee of the University of Toronto, the number of collaborating physicians was also increased so that there might be in each large center of the United States at least one clinic in a position to undertake treatment of emergency cases of diabetes by the use of insulin. Arrangements were also made through the Connaught Laboratories to undertake a similar expansion of distribution in Canada.

Through the whole-hearted collaboration of the university and the Eli Lilly Company, and the valuable assistance of its scientific adviser, Dr. G. H. A. Clowes, large scale production of insulin has been carried forward at a satisfactory speed, and it is hoped that it will be possible at an early date to terminate the experimental period.

That the policy as outlined above has been justified is exemplified by the fact that several firms have exploited, for the treatment of diabetes, entirely worthless preparations to which they have given names so closely similar to "insulin" as to convey the impression that they contain the antidiabetic hormone. While no other harm may come of this than that useless medicine is taken, it indicates that deaths from overdosage might have occurred in practice, had the method for the manufacture of potent preparations of insulin been made available without any control, and without some supervision over its distribution. Under such conditions the market would by now be flooded with preparations of unknown potency and durability, and serious accidents would inevitably have resulted because of overdosage.

The method of gradual expansion in the clinical application of insulin has eliminated the risks of such accidents. That these would certainly have occurred had insulin been made freely available to the profession will be sufficiently clear from the description of its use which is given in a preceding part of this article. Even at the risk of repetition, it should be pointed out that the symptoms of hypoglycemia due to an overdose of insulin may come on while the patient is asleep, and also that they are sometimes not unlike those of the late stages of many cases of coma. When insulin is used for the treatment of diabetic coma, therefore—and its value here is unquestioned—the physician must see to it that the blood sugar is not lowered to the level at which hypoglycemic symptoms supervene. Experience has shown how these symptoms can be recognized and antidoted so that their occurrence is no longer to be feared as a risk.

It is expected that insulin will be available in general practice within the next few months, and in anticipation of this, it is strongly urged by the Insulin Committee that physicians who may desire to employ this useful antidiabetic remedy in practice should visit some clinic in which it has been in use. This is advisable, not only that they may become familiar with questions of dosage, and the treatment of cases showing symptoms of overdosage, but also that they may learn to recognize the type of case for which it should be prescribed. It should be remarked in this connection that many, if not most, cases of diabetes can be adequately treated by dietetic measures alone, and that the necessity for insulin treatment can be determined only by careful clinical study.

FUTURE POLICY OF THE UNIVERSITY OF TORONTO

Now that a satisfactory process has been worked out for the manufacture of insulin on a large scale, the Insulin Committee considers that, at the expiration of the temporary agreement with the Eli Lilly Company, licenses to manufacture insulin should be granted to other firms who are able and willing to comply with certain conditions imposed by the committee. The Eli Lilly Company agrees to assign to the committee patents covering certain improvements in the manufacture of insulin that have been elaborated by it. All information in the possession of the committee, including the various methods involved in the manufacture of insulin, whether patented or not, will be conveyed by the committee to the licensed manufacturers, it being understood, however, that they on their part agree to put at the disposal of the committee any new processess they may devise, whether patentable or not, and that the committee may then transmit this information to other manufacturers. In other words, the policy is to be that all patents already applied for and all information concerning the manufacture of insulin will be interchanged and made available for such manufacturers as satisfy the Insulin Committee that they are in a position to undertake the manufacture of this substance. By this arrangement it is considered that the purposes for which the University of Toronto holds the patent rights will be fulfilled, and that the medical profession will be assured of the most satisfactory product at the lowest cost.

The Insulin Committee desires to express its appreciation of the whole hearted manner in which the Lilly research laboratories have cooperated in working out the problems of large scale production of insulin. Without this collaboration it is unlikely that a nonirritating product of such satisfactory potency and durability could have been produced in adequate amounts to meet the demand of the medical profession, in this comparatively short time.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

Iletin (Insulin-Lilly).—A brand of insulin (see THE JOURNAL A. M. A., June 2, 1923, p. 1617).

Manufactured by Eli Lilly & Co., Indianapolis, Ind., under license from the Insulin Committee of the University of Toronto. U. S. trademark applied for.

Iletin (Insulin-Lilly) H-10: 5 Cc. ampules containing 10 units in each cubic centimeter.

Iletin (Insulin-Lilly) H-20: 5 Cc. ampules containing 20 units in each cubic centimeter.

Fresh pancreatic glands of animals, from which fat and connective tissue have been removed, are ground, and extracted with 1½ volumes 95 per cent. alcohol, containing 0.11 per cent. absolute sulphuric acid. The mixture is agitated during two hours and then filtered. The residue is again extracted using an equal volume of 70 per cent. alcohol containing 0.11 per cent. absolute sulphuric acid. This is filtered, and the filtrate added to the first filtrate. The combined filtrates are chilled to 0 C. and filtered. The filtrate is concentrated to about one-twenty-fifth its original volume, filtered, and the filtrate added to 5.3 times its volume of 95 per cent. alcohol. This mixture is allowed to stand for several hours, and then filtered, and the filtrate made up to contain 93 per cent. alcohol. After standing several days, the precipitate formed is collected and dissolved in distilled water. The insulin preparation is further purified by precipitation at the isoelectric point, the hydrogen ion concentration being adjusted to approximately *p*H 4.7, after which the solution is allowed to stand in the icebox. The precipitate formed is dissolved in acidified water (*p*H 2.5), filtered, reprecipitated and redissolved if necessary for further purification. The solution is then diluted to approximately the desired potency, filtered through a Berkefeld filter, and submitted to standardization and sterility tests.

On account of the extraordinary variation exhibited by rabbits, standardization is carried out on a very large number of animals, and it is required that not less than 60 per cent. and not more than 70 per cent. of the animals employed exhibit pronounced convulsive symptoms in a period of from two to five hours. The number of rabbit units having been approximately estimated, the solution is diluted to approximately the desired strength and is then submitted to the University of Toronto laboratory for further control tests which employ a somewhat different procedure.

In addition to standardization by means of animals, the experimental lots are tested in human cases in a number of diabetic clinics. So far as possible, each experimental lot is tested in two or more cases in each clinic. The results reported are compared with the animal tests. If the results show considerable variation from the results of the animal tests, the lot is retested, both on animals and in human cases.

For final distribution, a series of lots which have been tested are mixed on the basis of their unity, adding sterile water if necessary to bring the product to the desired strength. The product is then again submitted to unity tests and to tests of sterility.

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SATURDAY, JUNE 23, 1923

REPORT OF COMMISSION ON BOTULISM

Outbreaks of food poisoning led the canning industry of this country in 1919 to propose and finance a thorough investigation of botulism. Original plans for the study covered only the state of California, but subsequent changes included the entire United States. In the report of the commission,[1] recently issued,[2] it is pointed out that ninety-one outbreaks of botulism have occurred in this country and Canada since 1899, and that 345 persons have been affected, 213 of whom died. Plant foods were proved or assigned as the cause in sixty-three of these outbreaks, and animal food products in nineteen. Home canned string beans head the unfortunate list with seventeen outbreaks to their credit; home canned corn is second with nine; commercially pickled and bottled ripe olives are third with seven; then come commercially packed spinach six, home canned asparagus five, commercially canned string beans three, and so on to a total of fifty-one outbreaks accredited to home preserved products, and thirty-one to commercially canned goods.

Although forty-five of these outbreaks occurred in California and thirteen in Washington, botulism is by no means a problem of these states alone. Botulism, either human or animal, has occurred in all states of the union except fourteen. Agricultural products in certain areas are unquestionably more heavily contaminated with *B. botulinus* spores than in others, but the organism seems to exist in nearly all parts of the earth. The California investigation disclosed information that is not ordinarily accessible. It is possible that botulism would be discovered where it has not yet been reported if similar investigations were made in those states.

The prevailing idea that food must be visibly spoiled to be toxic is not entirely supported by this investigation. In some instances, botulism developed from eating canned food which by odor, taste and sight presented no evidence of being spoiled. In a majority of instances, however, the canned products were spoiled so as readily to attract attention, and were said to be "a little sour" or with "odor unpleasant," "taste not right," "no odor but tastes metallic," and "top of jar moldy; lower portion tastes bitter." A mere taste of the infected food in some instances led to fatal botulism, while the same food when cooked was harmless. Botulism from ordinary commercially packed fruits, and such vegetables as tomatoes, was not disclosed by this investigation, although numerous persons probably ingest *B. botulinus* spores on raw vegetables and fruits. There is therefore strong evidence that botulism is always preceded by the consumption of preserved food that contains *B. botulinus* toxin. Otherwise, cases of botulism with no history of eating canned food, none of which were discovered in this investigation, would be numerous.

The recorded case mortality rate of botulism in the United States is 61.7 per cent., and is surprisingly uniform. It varies, however, in different group outbreaks from zero to 100 per cent., and apparently depends on the amount of toxin ingested. In 85 per cent. of 173 fatal cases, symptoms of botulism appeared within forty-eight hours after the food was consumed.

Antitoxin has been administered in eleven outbreaks of botulism. In two instances, Type B antitoxin was injected in what was later shown to be a Type A intoxication. In three other instances, details of administering the antitoxin have not been published. There have been six outbreaks of botulism in which homologous antitoxin was used, and these afford the only reliable data concerning its effectiveness in combating the disease. In these outbreaks, thirty-one persons became ill and twenty-three died, seventeen before antitoxin could be obtained, and six after its administration. One person recovered without any antitoxin, and six after it was used. In none of these cases was the antitoxin available until at least four days after the toxic food had been ingested.

For the prevention of botulism, cleanliness, sound materials and thorough processing of food are indispensable. Spoiled canned food is not safe until all parts have been at the boiling point from thirty to forty-five minutes. The time depends somewhat on the bulk, the size of the container, the altitude and other variable factors. Present regulations of the California state board of health require that ripe olives be processed at 240 F. for at least forty minutes. The temperatures employed in home canning are usually inadequate. Commercial processing was formerly also inadequate. Weinzirl [3] and Cheyney,[4] before outbreaks of botulism were reported, showed that certain commercially canned goods on the market were not sterile,

1. This commission consisted of J. C. Geiger, epidemiologist, U. S. Public Health Service; E. C. Dickson of Stanford University Medical School, and K. F. Meyer of the George Williams Hooper Foundation for Medical Research, University of California, and the California State Board of Health.

2. The Epidemiology of Botulism, Pub. Health Bull. 127, Washington, D. C., September, 1922.

3. Weinzirl, J.: Bacteriology of Canned Foods, J. M. Res. **39**: 349 (Jan.) 1919.

4. Cheyney, E. W.: Study of Micro-Organisms Found in Merchantable Canned Goods, J. M. Res. **40**: 177 (July) 1919.

and that the proportion of cans containing viable spores might be in some products as high as 25 per cent. It is not surprising, therefore, that occasional outbreaks of botulism have occurred. It is evident, however, that the commercial methods have been generally efficient, and that, with the exception of pickled olives and spinach, understerilization for the spores of *B. botulinus* has been rare. This danger, it appears, has been fully recognized, and scientific canning methods are replacing empiric standards. *B. botulinus* spoilage will probably be entirely eliminated in commercially canned goods in the near future.

A SUMMARY OF OUR KNOWLEDGE OF RICKETS

Following the close of the war, information began to reach London that rickets was extremely prevalent in Vienna as a result of deficiency in diet. The Medical Research Council, which had been carrying on special investigations of this disease, appointed a committee to carry on investigations in Vienna jointly with the Accessory Food Products Committee. The committee found at once that war edema had been prevalent, but was no longer so, and that scurvy was common among infants. Moreover, rickets had increased both in incidence and in severity.

As is pointed out in the report just issued,[1] the problem of the cause of rickets is approaching solution, but the interplay of the various factors influencing the satisfactory digestion of calcium phosphate in the growing skeleton is still obscure. As has been indicated in THE JOURNAL, certain investigators were of the opinion that rickets is an infectious disease, whereas others were definitely committed to the view that the disease bears a certain relationship to diet. In his foreword to the present report, Professor Pirquet, in whose clinic Dr. Harriette Chick and her colleagues carried on the work, states that he himself believed that rickets was of an infectious origin, but following their three years of conscientious work, he now has been convinced that the disease is definitely associated with a diet poor in fat soluble vitamins and with the absence of sunlight. The British workers, he says, succeeded with the accuracy of a laboratory experiment in maintaining a large number of artificially fed babies free from the disease, and, further, were invariably successful in healing children with rickets already developed.

This extensive clinical investigation completes the final establishment of views regarding the cause and therapy of rickets which mark an epoch in the control of this disease. In their summary of the results, the workers outline for us a history of the research which completes the record and assigns to each of the workers a correct share in the success. It has been shown that the following factors play a part in the etiology of rickets: (1) an organic factor in diet concerned with the calcification of bone; (2) light, and (3) an adequate amount and correct balance in the diet of the salts of calcium and phosphates. To Mellanby is given the credit of having discovered the importance of the organic factor and having stressed the influence of the balance between this factor and the energy bearing constituents of the diet, particularly the amount and nature of the cereal element. MacCollum, Hess, Unger and others have extended these investigations, and have shown that other factors also have an influence. In 1890, Palm suggested the importance of sunlight following study of the epidemiology of the disease, and in 1919 Huldschinsky showed the curative effect of radiation from the mercury vapor lamp, which was shortly confirmed by Hess and others. The study of the conditions in Vienna indicated well the importance of all these primary factors, and it now remains only to show the extent to which each of them operates.

Of special interest is the mutual congratulation and satisfaction of the Austrian and English scientists in having arrived at such satisfactory conclusions as the result of their cooperation in this work. The English committee is profuse in its appreciation and thanks to the Austrian clinic for the great helpfulness and good will in reaching satisfactory conclusions. Professor Pirquet says: "I can only say that our good will was ideally reciprocated by our guests. What clinic would not be glad to receive such pleasant colleagues with so much energy, such keen scientific interest and so high a standard of scientific accuracy as our recent visitors?"

1. Studies of Rickets in Vienna, 1919-1922. Report to the Accessory Food Factors Committee Appointed Jointly by the Medical Research Council and the Lister Institute, His Majesty's Stationery Office, London, 1923.

EPINEPHRIN AND THE REVIVAL OF THE HEART

The widespread interest with reference to the use of epinephrin as a life-saving drug, because of its apparent power to revivify the human heart under certain untoward conditions, is a natural consequence of some of the publicity that the subject has received. There is something uniquely dramatic in the response of a heart, which has apparently ceased its action, under unexpected circumstances. It presents the possibility of successful restoration of life when death seems already to have been ushered in. Thus, the fear of the end may become replaced by the hope of survival in many instances in which untoward conditions presage the interruption of life through failure of the circulation. The outstanding facts in regard to what has actually been accomplished in an experimental way and has been reported from clinical sources were reviewed in a recent issue of THE JOURNAL.[1] They stress the long known observation that a heart which has ceased to beat may often be revived by the injection of epinephrin; and when this is done with the circulation still intact, a renewal of the flow of blood may ensue, with consequent restitution of tissue functions.

1. The Intracardiac Injection of Epinephrin, editorial, J. A. M. A. 80: 1314 (May 5) 1923.

In almost all of the discussions on this subject, certain aspects of fundamental importance seem to have been overlooked or forgotten. It is one thing to promote restoration of contraction in a quiescent cardiac muscle, and quite another problem to secure restitution of function in the organism as a whole—even when the entire circulation and the respiratory activities are satisfactorily established. The foremost reason for this seeming contradiction lies in the now well established consequences of lack of circulation in different organs and tissues. All of them are sure to suffer severely sooner or later from the anoxemia due to an interrupted circulation. Some structures, however, are damaged far more easily than others in this respect. Above all is the high susceptibility of the nervous tissues to permanent damage as a result of even temporary deprivation of oxygen.

The central nervous system exhibits a difference in the nutritive requirement of its various parts. Different groups of nerve cells show unlike ability to resist complete anemia without losing their ability to revive. Macleod has summarized the existing knowledge by pointing out the varying periods of time beyond which anemia cannot be extended without producing changes in the nerve cells that place them beyond recovery. For the cerebrum, eight minutes may suffice; for the cerebellum, medullary centers and spinal cord, thirteen, thirty and sixty minutes, respectively. The great susceptibility of the cerebral cells to lack of oxygen explains the ease with which consciousness is lost as the result of respiratory failure or asphyxia. It also emphasizes the all too little recognized fact that restoration of the circulation must be exceedingly prompt if permanent damage is to be averted. Every minute literally counts in any effort to resuscitate an asphyxiated nerve cell, in contrast with a muscle, for example. And so it happens, unfortunately, that permanent mental defects sometimes ensue in cases of poisoning with carbon monoxid from coal gas, water gas or automobile exhaust fumes—a condition leading to virtual anoxemia because of the reduced oxygen-carrying power of the blood. Similar mental disturbances are said to have been observed for similar reasons in cases of severe pernicious anemia.

It is sometimes taught that the heart, lungs and kidneys represent the three legs of the tripod of life. Their function may at times be restored after a cessation. But life without the participation of the higher nervous system is at best the expression of a set of mechanical reflexes—a veritable brainless existence. Discriminative features are lost. Consequently, the hope engendered by the stories of revival of the heart by means of epinephrin will be futile unless it carries along a realization of the importance of quick action to save the nervous system as well as the other functions. Otherwise resuscitation, if it does occur, means little more than the temporary survival of a mere automaton rather than an intelligent sentient creature. There need be no utter discouragement or rejection of the favorable response which a potent drug can elicit in critical circumstances, but it will be a futile response unless it is secured speedily. Herein lies the greatest limitation of the much lauded proposals for reviving the moribund; from here, too, arises the scientifically valid warning that precious seconds, not to say minutes, should never be wasted when resuscitation is at stake. This applies most emphatically to every condition in which, for any reason, the master tissues of the body are deprived of a well oxygenated circulation.

YAWS IN THE TROPICS

The gratifying success that has been attained by preventive medicine in almost completely eradicating certain diseases of infectious origin has acted as a spur to renewed efforts in many directions. The mere knowledge of the mode of infection and the life cycle of the infectious agent will not of itself always suffice to promote the desired ends. If it did, the control of malaria would prove to be more easy than it has been found to be. Sellards and Goodpasture [1] have lately made the pertinent comment that, from a psychologic standpoint, the disease it is proposed to eradicate must be instinctively very objectionable to the patient. In addition to this, the effective measures for its control must be of a nature that will appeal to all the persons concerned, or at least be inoffensive to them. From the standpoint of obnoxiousness, the tropical disease yaws meets this requirement, for few maladies produce more loathsome lesions. Furthermore, the efficacy and availability of neo-arsphenamin as a drug applicable to the treatment of yaws brings the possibility of its eradication still more prominently into consideration.

In another respect also, recent studies [2] of yaws bring added encouragement. Recurrence or reinfection after treatment occurs in only about 5 per cent. of the cases. According to Sellards and Goodpasture, sufficient immunity is developed in longstanding cases to afford some degree of protection; and a certain proportion may be put in the category of "chronic self-limited disease." It is a distinct advantage, as these investigators have pointed out, to be working with a type of infection of this character, which can produce a substantial immunity. The lack of immunity results in the production of many chronic cases of disease, and these serve as reservoirs of the infecting agent. For this reason, malaria has been brought under imperfect control only in the same geographic areas in which yellow fever, likewise conveyed by the mosquito, has been eliminated; and it is even tending to die out spontaneously in some of its endemic zones.

These circumstances are highly important in relation to yaws. Sellards and Goodpasture, who have studied

1. Sellards, A. W., and Goodpasture, E. W.: Summary Concerning the Control of Yaws, Philippine J. Sc. **22**: 285 (March) 1923.
2. Sellards, A. W.; Goodpasture, E. W., and De Leon, W.: Investigations Concerning Yaws, Philippine J. Sc. **22**: 219 (March) 1923.

it in various parts of the world, have no hesitation in selecting yaws, without reservation, as the outstanding disease of the tropics through which the immediate confidence and enthusiasm of the people can be secured in public health work. They regard it as reasonable to suppose that systematic effort, sustained over a period of a few years, would accomplish even the eradication of yaws from a given locality. The Philippines offer abundant opportunity to our authorities to test the feasibility of the proposed program. If, as Sellards and Goodpasture further aver, efforts at the control of one spirochetal disease, like yaws, may be properly regarded as a step in the direction of the infinitely more difficult problem, the control of syphilis, likewise of spirochetal origin, their suggestion deserves most serious consideration.

Current Comment

IDENTIFICATION OF BACILLUS BOTULINUS BY SEROLOGIC METHODS

Isolation of *Bacillus botulinus* from suspected food is somewhat difficult; this is evidenced by the fact that only 19 per cent. of the outbreaks of botulism in Germany, and 35 per cent. of those in this country,[1] have been proved bacteriologically and toxicologically. Peculiarities of the food products themselves may be responsible in part for the difficulty, but, in some instances, the immunologic and bacteriologic methods employed have been inadequate. Success has apparently followed a recent serologic attack on this problem. Kelser [2] has shown that the complement fixation test may be used to identify whole bouillon cultures of *B. botulinus,* filtrates of pure and contaminated cultures, and saline suspensions of toxin-free spores, and that in the case of canned food it may be used to demonstrate *B. botulinus* and its toxin in asparagus, spinach, corn, string beans and sausage. The technic employed is similar to the routine method in use in the veterinary department of the army. The sheep hemolytic system, fresh guinea-pig serum for complement, glycerized antisheep amboceptor and a 3 per cent. suspension of sheep erythrocytes are used. Positive and negative control serums are represented by antitoxic serum from hyperimmune horses, and serum from normal horses, respectively. The suspected canned food or culture is titrated as antigen. When the organism examined is in pure culture, a 48 hour broth culture is simply autoclaved, diluted from one to three times with physiologic sodium chlorid solution, and then titrated against a known positive serum. When the broth culture is contaminated, it should be at least five days old. It is then filtered, first through asbestos wool and then a Berkefeld filter, autoclaved, and titrated against a known positive serum. Such filtrates, says Kelser, give "exceedingly good results." In vegetables undergoing examination, the fluid in the container is drawn off, filtered through paper, autoclaved and titrated. If there is too little, it may be expressed with a spatula. The controls for the antigens prepared from canned foods consist of titrations with sound, uninoculated similar food. These were consistently negative. When the antigenic value of the fluid from canned food appeared slight, it could be increased by desiccation or evaporation. A stable antigen was prepared from washed spores of *B. botulinus* that had been killed in the autoclave. This method of identification seems to have been successful under experimental conditions. It will doubtless be of value in outbreaks of botulism.

1. Dubovsky, B. J., and Meyer, K. F.: J. Infect. Dis. **31**: 501 (Dec.) 1922.
2. Kelser, R. A.: Am. J. Pub. Health **13**: 366 (May) 1923.

THE NATUREOPATHIC COMPLEX IN CONNECTICUT

An Act Concerning the Practice of Natureopathy (Chapter 245, Acts of 1923) was recently enacted by the Connecticut legislature. That body recognized the obscurity of the term "natureopathy," and in order that there might be no mistake concerning the matter, for its own guidance, and for the guidance of the people and the courts, defined the cult in the following terms:

> For the purpose of this act, the practice of natureopathy shall be held to mean the practice of the psychological, mechanical and material sciences of healing as follows: The psychological sciences, such as psycho-therapy; the mechanical sciences, such as mechano-therapy, articular manipulation, massage, corrective and orthopedic gymnastics, neuro-therapy, physio-therapy, hydro-therapy, electro-therapy, thermo-therapy, photo-therapy, chromo-therapy, vibro-therapy, concussion, pneumate-therapy and zono-therapy; and the material sciences, such as dietetics, histolo-therapy and external applications; but shall not be held to mean internal medication.

Unfortunately, the definition does not define. Not only is it tautological, having been expanded for the apparent purpose of lending dignity to the cult, but it is in part in words even more obscure than the word defined. What is vibro-therapy as distinguished from mechano-therapy, massage and physio-therapy? What is neuro-therapy? Or zono-therapy? Or pneumate-therapy? Or histolo-therapy? If the Connecticut legislature knows or can find out the meaning of the terms used in its definition of natureopathy, it is to be hoped that it will pass an amendatory act embodying such definitions. Until it does so, one can but speculate as to what was in the legislative mind when the law was passed. As remarkable as the definition embodied in the law are its provisions regarding the qualifications of natureopaths. Any boy or girl—for there is no minimum age limit prescribed for licentiates—having a high school education or its equivalent, and devoting 108 weeks to the study of natureopathy in a school approved by two members of the board of natureopathic examiners, may be admitted to examination. If in those 108 weeks he has mastered anatomy, physiology, histology, psychology, chemistry, hygiene, public health, dietetics, jurisprudence, natureopathic pathology, diagnosis and theory and practice of natureopathic therapeutics, as demonstrated by examination before three natureopathic "physicians," there will be issued to him a certificate that will turn him loose, with the approval of the sovereign state of Connecticut, as a person qualified to treat the sick, to prey upon the lives and health of its people.

MEDICAL EDUCATION FOR NEGRO STUDENTS

A statement issued recently by the Department of the Interior calls attention to the seriously inadequate facilities for the education of negro physicians, as well as of negro dentists, pharmacists and nurses. It is shown that while there is one white physician for every 553 white people, there is only one colored physician for every 3,194 colored people in the United States, or in proportion to the population about one colored physician to every six white physicians. The disparity in dentists is even greater, there being only one colored dentist to every ten white dentists in proportion respectively to the colored and white populations. There are only two medical schools which are moderately well equipped to furnish instruction in medicine, dentistry and pharmacy. These are the Howard University School of Medicine at Washington, and Meharry Medical College at Nashville. The two schools at present are handicapped from the standpoint of teaching staff, laboratory facilities and equipment so that they are enabled to admit to their classes only one fourth or one third of the qualified students who apply. It is evident, therefore, that the shortage of negro physicians is bound to become more serious unless these institutions are given sufficient financial aid to enlarge their staffs and to secure additional equipment and teaching facilities. Although medical schools for white students are open to negro students also, few attend those schools, scarcely a dozen each year being graduated from these institutions. For both Howard University and Meharry Medical College, the great Foundations are at present offering large funds on condition that each institution from its friends and alumni shall raise a corresponding sum. Both these institutions are securing excellent results from such funds as are available, and are well worthy of consideration by those who have money to give for extending the opportunities in medical education to larger numbers of negro students.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—A four-story addition, containing seventy-five rooms, will be erected at the Florence Ward Hospital, San Francisco.——A new forty-bed hospital will be erected in Lodi, on which construction work will be started, about July 15.

"Herbalist" Sentenced.—According to reports Henry Ching, a Chinese herbalist of Los Angeles, was recently sentenced to five years in Fort Leavenworth Penitentiary, for violation of the Harrison Narcotic Law. It was stated by federal authorities that previous to 1919 Ching had been arrested twenty-two times for violating drug laws, but had never been convicted. In that year he pleaded guilty and was fined $250 on each of two indictments.

CONNECTICUT

Yale University News.—The two hundred and twenty-second commencement of Yale University, New Haven, was held June 16-22. The association of Yale men in medicine held its annual meeting, June 18, at the New Haven Medical Association. Dr. Lewis A. Conner, professor of medicine at Cornell University Medical School, New York, and Dean M. C. Winternitz were the principal speakers. The university conferred 716 degrees in course and fifteen honorary degrees. Thirty-one students graduated in medicine. The honorary degree of doctor of science was conferred on the following: Dr. Walter B. Cannon, professor of physiology, Harvard University Medical School, Boston; Dr. Jacques Loeb, head of the department of experimental biology, Rockefeller Institute for Medical Research, New York, and Henry Fairfield Osborn, Sc.D., formerly professor of comparative anatomy at Princeton University, and president of the American Museum of Natural History, New York. The honorary degree of doctor of laws were conferred on Dr. Livingston Farrand, president of Cornell University Medical School, New York.

DISTRICT OF COLUMBIA

Dr. Kober Receives Honorary Degree.—Dr. George M. Kober, dean of Georgetown University School of Medicine, Washington, for the last thirty-two years received the degree of doctor of letters at the one hundred and twenty-fourth annual commencement exercises of the university, June 4. This was also the "golden jubilee" anniversary of Dr. Kober's graduation from the Georgetown Medical School in 1873.

FLORIDA

Addition to Hospital.—A new building will be erected at the Pine Ridge Hospital, West Palm Beach, at a cost of $36,000, for the exclusive use of negro patients.

Decision on Sheppard-Towner Bill Reversed.—The senate, May 25, killed the bill which would have brought the state within the provisions of the Sheppard-Towner Law (THE JOURNAL, June 16, p. 1780). On May 29, however, the senate reversed its decision and passed the measure. The change of attitude on the part of the upper house will make it possible for the state board of health to continue work started several months ago, if the measure is signed by the governor. Following the action of May 25, the senate was flooded with appeals to reconsider its action by various women's clubs of the state.

ILLINOIS

New Medical Practice Act.—The fifty-third general assembly at its closing session, June 19, passed a new medical practice act to replace the 1917 law and the old practice act of 1899 under which the state now operates. The bill now awaits the governor's signature.

Personal.—Prof. Madison Bentley, Ph.D., head of the department of psychology at the University of Illinois, Urbana, is lecturing on psychology during the summer at the University of California.——Dr. Roy W. Johnson has resigned as health officer of Shelbyville. Dr. Adolph G. Mizell has been appointed to succeed him.

Legislative News.—The senate passed a bill, June 15, providing for a home for the rehabilitation of World War veterans at Elgin and for appointment of the staff necessary to insure care for the service men. House bill No. 715 appropriates $60,000 to purchase about 320 acres of land near or adjacent to the Elgin State Hospital and bill No. 474 appropriates $200,000 for the construction of the necessary buildings and plant.——An amendment to senate bill No. 128 provides that any soldier or sailor of the World War, and also the wife of any soldier or sailor of the Civil, Mexican and Spanish-American wars, if 50 years of age, may be admitted to the State Soldiers' Home, Quincy.—— The senate passed several bills, June 15, in the interest of child welfare. One of the bills legitimatizes children born of marriages declared void; another provides that the state shall pay the cost of educating crippled children, but not to exceed $300 a pupil yearly; another house bill passed provides that the county court may order the county to pay for the care of neglected or abandoned children who have been taken in by charitable institutions.——A bill passed the house, June 15, by 104 to 0, which provides that any one selling poisonous liquor that causes death shall be guilty of murder.

Chicago

Physicians Fined for Negligence.—Drs. Jacob B. Stogol and Jay Riley Gardner, were each fined $25, by Judge O'Connell, May 18, for failure to report cases of ophthalmia neonatorum, it is reported.

Banquet for Dr. Norman Bridge.—The faculty of Rush Medical College gave a banquet to Dr. Norman Bridge at the Auditorium Hotel, June 13, the fiftieth anniversary of Dr. Bridge's appointment to the faculty of the college.—— Northwestern University conferred the honorary degree of doctor of science on Dr. Bridge at the annual commencement exercises, June 18.

Sanitary District Loses Fight.—The right to divert more water from Lake Michigan through the drainage canal than is authorized by the Secretary of War was forbidden the sanitary district by Judge Carpenter, June 18. At present the district is allowed to take 4,167 cubic feet a second, but contending that that amount is not sufficient to safeguard the health of Chicago, it has been taking 10,000 cubic feet. The district will carry the case to the Supreme Court. This decision comes fifteen years after litigation of the question began. The district contended that under the police powers of the state the state had the authority to take as much water from the lake as was required for the purposes of health and sanitation.

Undertakers and Necropsies.—The Chicago Medical Society recently passed the following resolution:

Whereas a real obstacle in the way of obtaining permission to make autopsies is the more or less open opposition by many undertakers who advise against granting permission for various pretended reasons, a favored one being that the body cannot be embalmed after autopsy; and

Whereas certain other undertakers offer willing and helpful cooperation with physicians in securing autopsies, and announce that they can assure the relatives that the body will look just as life-like and be preserved just as long as though no autopsy had been held;

It is resolved, that the council of the Chicago Medical Society records its hearty approval of this enlightened policy in favor of autopsies, recommends its prompt adoption by undertakers in general, and urges on the members of the Chicago Medical Society to insist on their inherent right, in the interest of the advancement of medical knowledge, to receive cooperation, and not antagonism, from undertakers in seeking permission to make autopsies.

League for the Hard of Hearing.—At the fourth annual conference of the American Federation of Organizations for the Hard of Hearing, Inc., in Chicago, June 18-20, Dr. H. O. Jones of the department of health, Chicago, spoke on "Medical School Inspection"; Dr. Gordon Berry, Worcester, Mass., on "Deliberately Deaf"; Dr. Carl A. Menninger, Topeka, Kan., "Mental Effects of Deafness," and Dr. Harry Mock, Chicago, on "Industrial Rehabilitation Service Through Federal and State Acts." Dr. Harold Hays presided. A lip reading symposium was held Wednesday afternoon. The conference closed with a banquet at the Congress Hotel, June 20. The following constituent bodies were represented: Boston Speech Readers Guild; Chicago League for the Hard of Hearing; Lip-Reading Club of Cleveland; Speech Readers Guild of Cleveland; Dayton League for the Hard of Hearing; Houston Club; Kansas City League for the Hard of Hearing; Los Angeles League for the Hard of Hearing; Minneapolis League for the Hard of Hearing; Newark League for the Hard of Hearing; New York League for the Hard of Hearing; Speech Readers Club of Philadelphia; Pittsburgh League for the Hard of Hearing; Rochester League for the Hard of Hearing; Toledo League for the Hard of Hearing; San Francisco League for the Hard of Hearing, and the Speech Readers Club of Washington.

INDIANA

Society News.—The ninth district convention of the Indiana State Medical Association held a joint meeting with the Boone County Medical Society in Lebanon, May 24. Dr. Lincoln J. Baldwin, Westfield, was elected president; Dr. Stanley M. Cotton, Goldsmith, first vice president, and Dr. Alvin R. Kerr, Attica, secretary-treasurer. Attica was chosen for the 1924 meeting.

IOWA

Personal.—Dr. Julia F. Hill, Des Moines, was elected president, and Dr. Florence D. Johnston, Iowa City, secretary of the Medical Women of Iowa at the twenty-sixth annual convention, Ottumwa, May 10.——Dr. L. R. Wilhite, formerly connected with Dunning State Hospital, Chicago, has been named superintendent of the U. S. Veterans' Hospital No. 57, Knoxville, to succeed Col. Charles A. Barlow, who has been transferred to Fort Sheridan, Wyo.——The State University of Iowa College of Medicine, Iowa City, conferred the honorary degree of doctor of laws on Prof. Ernest Hiram Lindley, Ph.D., chancellor of the University of Kansas School of Medicine. Dr. Lindley delivered the commencement address at the State University of Iowa, June 5.

MAINE

Maine Medical Association.—At the seventy-first annual meeting of the Maine Medical Association, held conjointly with the New Brunswick Medical Association, at Houlton, June 5-7, the following officers were elected for the ensuing year: president, Dr. Charles A. Moulton, Hartland; president-elect, Dr. Fred W. Mann, Houlton, and secretary-treasurer, Dr. Bertram L. Bryant, Bangor. Among the speakers were Drs. Eugene R. Kelley, health commissioner of Massachusetts; David W. Mackenzie, Montreal; Walter W. White, St John, N. B.; William D. Rankin, Woodstock, N. B., and the Hon. William F. Roberts, M. P., M.D., St. John.

MARYLAND

Personal.—Dr. Henry R. Slack, Jr., associate in laryngology at Johns Hopkins University Medical School, Baltimore, who has been exchange professor in Peking Union Medical College, China, for the past year, sailed, June 20, from Shanghai, for Europe, to visit clinics at Vienna and Paris before returning to the United States in October.——Dr. Ralph G. Bleachley, Hagerstown, has been appointed county health officer for Dillon, S. C. Dr. Bleachley recently completed a course in hygiene and public health at Johns Hopkins University, Baltimore.——Raymond Pearl, Ph.D., biometrist of Johns Hopkins School of Hygiene and Public Health, has also been appointed to the chair of biology in Johns Hopkins Medical School, Baltimore.——Dr. J. Howard Brown, Europa, Miss., and Dr. William L. Holman, San Francisco, have been appointed associate professors in bacteriology at Johns Hopkins Medical School, to succeed Dr. Stanhope Bayne-Jones, who resigned to become head of the department of bacteriology in the University of Rochester (N. Y.) Medical School.——At the commencement exercises at the University of Maryland, Baltimore, June 9, the honorary degree of doctor of science was conferred on Dr. Samuel T. Darling of Baltimore.

MINNESOTA

Pathologists Elect.—At the annual meeting of the Minnesota Pathological Society, held at the University of Minnesota, Minneapolis, May 15, the following officers were elected for the ensuing year: president, Dr. Horatio B. Sweetser, Minneapolis; vice president, Dr. Paul D. Berrisford, St. Paul, and secretary-treasurer, Dr. Elexious T. Bell, Minneapolis.

Association of Physicians of the Mayo Clinic.—The annual meeting of the Association of Resident and Ex-Resident Physicians of the Mayo Clinic was held in Rochester, June 4-6. Dr. Thomas M. Joyce, Portland, Ore., was elected president for the ensuing year: Dr. Raymond A. P. Sullivan, New York, vice president; Dr. Harold L. Foss, Danville, Pa., general secretary, and Dr. Robert D. Mussey, Rochester, secretary-treasurer.

MISSOURI

Physicians Charged with Cruelty.—Health Commissioner Starkloff, St. Louis, has recommended to the board of public service that the license of Dr. Marguerite A. Vorbeck and her son, Dr. Joseph C. Vorbeck, to conduct the Marguerite Non-Sectarian Old People's Home be revoked. Complaints have been made to the health commissioner charging that inmates had been cruelly treated.

MONTANA

Medical Association of Montana.—The forty-fifth annual meeting of the state medical association will be held in Butte, July 11-12. Dr. Glenn O. Dayton, Butte, president of the Silver Bow Medical Society, will deliver the address of welcome, and Drs. Walter Williamson, Portland, Ore., and Verne C. Hunt, Rochester, Minn., will also deliver addresses.

NEVADA

New Hospital for Lincoln.—The contract will be let in the near future for the new building to the Lincoln Hospital for which about $300,000 is available.

NEW MEXICO

State Board of Medical Examiners.—Governor Hinkle appointed a new state board of medical examiners, June 5, at Santa Fe. The members are: Drs. William T. Joyner, Roswell; James A. Massie, Santa Fe; Harry T. Watson, Gallup, for four year terms, and Harry A. Miller, Clovis, and Lucien G. Rice, Albuquerque, for two year terms.

Health Officers' Association.—The third annual conference of the New Mexico Health Officers' Association was held in Albuquerque, June 22, at the University of New Mexico. Dr. Oscar C. West spoke on "Control of Milk Supplies in Albuquerque." The afternoon session, which was held jointly with the state public health nurses' association, was given up to the discussion of "Maternal and Child Hygiene and Welfare in New Mexico."

NEW YORK

Origin of the Model Milk Ordinance.—At the annual conference of mayors in 1922, a resolution was adopted inviting the state department of health to join the conference in creating a committee to study the best protective measures for milk sold at retail and to make recommendations based on the study. The committee was appointed, with Dr. Hermann M. Biggs as chairman, and a model milk ordinance formulated, which was recommended for adoption by every city in the state. Copies of this ordinance may be obtained from the state department of health on request.

New York City

Insulin Instruction.—Commencing July 2, a series of biweekly courses on the use of insulin will be offered at the Presbyterian Hospital. Both morning and afternoon courses will be given throughout the summer. The cost of these courses is to be met by the recent gift of Mr. John D. Rockefeller, Jr., a nominal registration fee of only ten dollars being charged to cover the incidental expenses involved. Circulars of information and application forms may be obtained from Dr. George A. Harrop, Presbyterian Hospital, New York.

Dr. Lambert's Injunction Sustained.—Judge Knox, May 29, denied the motion by the government to dismiss the temporary injunction granted to Dr. Samuel W. Lambert, May 8, against Edward G. Yellowley, Acting Prohibition Director; David H. Blair, Commissioner of Internal Revenue, and U. S. Attorney Hayward (in the case questioning the authority of prohibition officials to apply the quantitative limitations of the Volstead act to physicians prescribing liquor) and at the same time granted a stay of the injunction pending an appeal which the government plans to take to the Circuit Court of Appeals.

Fellowships in Psychiatry.—As the result of a gift from the Commonwealth Fund to the National Committee for Mental Hygiene, the Division for the Prevention of Delinquency is able to offer certain fellowships in psychiatry. Those securing fellowships will be placed under training in the clinic now being conducted by this division. The object of the fund is to prepare properly qualified psychiatrists for positions in connection with permanent clinics that are now being organized through the activities of the demonstration clinics conducted by the National Committee for Mental Hygiene. Those interested in these fellowships may address Dr. V. V. Anderson, National Committee for Mental Hygiene, 370 Seventh Avenue, New York City.

Cornell Clinic Raises Its Fee.—A letter from the budget committee of the Cornell Pay Clinic has recently been sent to every physician whose name appears in the medical directory of Greater New York, explaining that the principal object of the experiment set up at the Cornell Clinic was to learn whether or not sound medical service could be rendered at cost to persons unable to pay the current charge for such service in the private office, and to render it at rates which these persons can afford. At a fee of $1 for each visit, plus special charges for roentgen-ray work and laboratory examinations, it has been found that the patient has paid approximately 75 cents on the dollar. The average visits have cost the patient $1.52, and the clinic $2. This does not include 30 cents per visit, which is the approximate cost, to the college of rent, insurance and other matters in the overhead expense. Thus far, of every 100 applicants, twenty have been rejected; of these, only one was excluded because he was able to pay private rates. Within the last few months the clinic has studied to effect every possible economy, and still a deficit remains. To meet this it has been decided to increase the admission fee from $1 to $1.50. This new rate went into effect, June 1. No other fees will be increased.

NORTH CAROLINA

Sanatorium Closed.—The Wilson Sanatorium, Wilson, operated by Drs. Albert F. Williams and Elyal T. Dickenson, was closed, June 1.

Personal.—Dr. Charles S. Norburn, U. S. Naval Reserve, Asheville, has been appointed surgeon to President Harding for his trip to Alaska aboard the transport *Henderson*.——Dr. Carl V. Reynolds, health officer of Asheville has resigned. He will be succeeded by Dr. Daniel E. Sevier.——Dr. Amzi J. Ellington, Goldsboro, health officer of Wayne County, has resigned and gone to New York to reside.——Dr. Blanche N. Epler, Hatteras, has been appointed by the U. S. Public Health Service as contract physician to furnish professional services to Coast Guard Stations Nos. 181-185, inclusive.

OHIO

Reorganization of Health Bureau.—Radical rearrangement of some of the most important bureaus in the state department of health became effective June 15, according to reports from Dr. John E. Monger, state health commissioner. Irvin C. Blummer, formerly chief statistician, has been appointed chief of the division of vital statistics to succeed Dr. Edward J. Schwartz who will become chief of the new bureau of epidemiology in the division of communicable diseases of which Dr. Frank G. Boudreau is chief. The post of chief satistician will be abolished. The bureau of venereal diseases has been detached from the division of hygiene, and Dr. Chandler P. Robbins, Columbus, has been appointed its head. The section for the prevention of blindness is being taken from the division of hygiene and consolidated with the bureau of trachoma, with Dr. Ralph B. Tate, Cincinnati, in charge. Assignment of nurses to the various bureaus will be made from the new division of public health nursing instead of, as heretofore, by nurses directly attached.

PENNSYLVANIA

Hospital Superintendent Resigns.—Dr. Jonathan C. Biddle, surgeon-in-chief and superintendent of the State Hospital, Ashland, has tendered his resignation to Governor Pinchot.

Hospital News.—The Children's Hospital, Pittsburgh, of which a wing was recently destroyed by fire, is still operating with sixty beds and with the dispensaries running as usual.

The Annual Clinic.—The annual clinic of the Dauphin County Medical Society was held at the Harrisburg and Polyclinic hospitals, Harrisburg, June 5. The clinic took the place of the society's June meeting.

Quarantine on Vice Withdrawn.—The health department has withdrawn its quarantine , established a week ago, on fifty disorderly houses in Philadelphia. Two hundred policemen were stationed in front of the houses day and night to enforce the quarantine, but the occupants of most of the buildings fled. Dr. Norman H. Taylor, acting health director, stated that the assistant city solicitor advised that the health department could only quarantine a person and not a house. The physicians assigned to this quarantine duty have been returned to their regular work.

Philadelphia

Medical Society to Prepare Radio Talks.—The board of directors of the Philadelphia County Medical Society has appointed a committee, of which Dr. John F. Roderer is chairman, to prepare suitable articles on medical, hygienic and sanitary topics to be broadcasted by radio through the Strawbridge & Clothier WFI station. As a rule, these talks will be given on Saturday evenings at 8 o'clock during the month of June.

Vaccination of Negroes.—On behalf of the City of Philadelphia, Dr. James Cumming, chief of the bureau of health, has asked the U. S. Public Health Service to vaccinate negroes migrating to Philadelphia from the South. Dr. Cumming attributes at least part of the recent spread of smallpox in Philadelphia to the presence of unvaccinated negroes from southern states. Lack of money was said by the Assistant Surgeon-General, with whom Dr. Cumming conferred, to be the reason why the service could not undertake the vaccination proposed.

The Dr. Spencer Morris Prize.—The board of trustees of the University of Pennsylvania decided that beginning with June 30, 1923, the Dr. Spencer Morris prize, established by a bequest under the will of the late Dr. Spencer Morris, shall be awarded to the student in the Medico Chirurgical College and Hospital Graduate School of Medicine in the University of Pennsylvania, who receives the degree of master of medical science at the annual commencement, and who shows the highest scholarship among those receiving that degree and who will continue his studies in the graduate school of medicine as a candidate for the degree of doctor of medical science. The prize will be paid in ten equal monthly instalments from the time the third year candidacy actually begins.

TENNESSEE

Medical Society to Reorganize.—The Chattanooga Academy of Medicine and Hamilton County Medical Society, which was recently disrupted, has surrendered its charter to the state society and is now being reorganized, preparatory to asking for a new charter.

Physician Sentenced.—According to reports, Dr. John W. Simmons, Nashville, was sentenced, June 9, to ten years in the government penitentiary at Atlanta, Ga., when he was found guilty of violation of the Harrison Narcotic Law. Motion for a new trial was overruled by Federal Judge Gore.

VIRGINIA

Food Handlers to Be Examined.—The health department has announced that all persons engaged in handling foodstuffs at Norfolk must submit to a physical examination every ninety days. This measure becomes effective, July 1. Certificates of good health will be given those who pass the examination; others will be excluded as food handlers.

WEST VIRGINIA

Physicians Get New Trials.—Dr. Edward R. Pendleton, Clarksburg, convicted in the district court at Elkins for violation of the Harrison Narcotic Law and sentenced to a term of five years in the Atlanta Penitentiary, won a reversal, May 25, in the U. S. Court of Appeals. Dr. Thomas L. Nutter, Clarksburg, also convicted on a similar charge, won a reversal in the appeal court at Richmond, May 20, according to reports.

PHILIPPINE ISLANDS

School for Sanitary Inspectors.—The first class at the School of Sanitary Inspectors, organized by the Philippine Health Service, graduated in February. There were twenty-three graduates. Dr. S. V. del Rosario, assistant director of health, is dean of the school.

Philippine Board of Medical Examiners.—The newly organized board of medical examiners consists of the following: Dr. Francisco Oñate, chief surgeon, Philippine Constabulary; Dr. Pedro Apacible; Dr. Florentino Herrera; Dr. Manuel Arguelles, bacteriologist of San Lazaro Hospital, and Dr. Martin Baltazar.

CANADA

Vancouver Medical Association.—At the annual meeting of the Vancouver (B. C.) Medical Association recently, Dr. Frederick J. Buller was elected president; Dr. Thomas H. H. Milburn, vice president; Dr. James A. Sutherland, secretary, and Dr. Stanley Paulin, treasurer.

Hospital News.—Mr. John D. Rockefeller, Jr., has recently donated the sum of $10,000 each to the Toronto General Hospital and the Hospital for Sick Children, for research work with insulin to be conducted by Dr. Frederick G. Banting, also $5,000 to the University of Toronto, to be added to the Banting-Best Fund, recently established by the Ontario Provincial Legislature. This will also be at the disposal of Dr. Banting for further research study of insulin.——The Calydor Sanatorium, Gravenhurst, Ont., has erected an addition to increase its accommodation.——The Muskoka Free Hospital for Consumptives, Sanitarium, Ont., has replaced the buildings recently destroyed by fire.——The Essex County Health Association has replaced the building destroyed by fire at the sanatorium, Kingsville, with a modern building accommodating sixty beds.——A legacy of $100,000 from the will of the late Senator Richardson has made possible increased facilities for the Medical Faculty of Queen's University, Kingston, and the erection of a diagnostic clinic at the General Hospital. Fifty or more beds for the treatment of tuberculosis will be installed.

GENERAL

American Physicians Must Pass Examination in Mexico.—According to an order issued, June 13, by federal health authorities, American physicians will be barred from practice in Lower California until they have filed applications and passed examination at Guadalajara. This order goes into effect immediately.

Fund for Insulin Treatment.—It was announced, June 19, by John D. Rockefeller, Jr., that a gift of $150,000 will be distributed among fifteen hospitals in the United States and Canada for the purpose of promoting the use of insulin in the treatment of diabetes. The hospitals will be selected from all sections of the country.

The Ship's Physician May Have Liquor.—Foreign ship physicians will be the official heads of those vessels in matters of liquor after June 10. A ship's physician may demand of a port health officer a permit for such liquor as he believes necessary as an emergency stock against sickness on board, it was announced by the U. S. Treasury Department, June 4. It is believed this wide latitude allowed foreign ship physicians will avoid conflict with governments under which the foreign vessels operate.

Medical Rules on Liquor Relaxed.—Relaxation of prohibition rules regulating liquor supplies of hospitals and retail druggists was announced by Commissioner Haynes, June 15. State prohibition directors have been given new orders to expedite application of hospitals and druggists to the full limit of their yearly and quarterly allowances, and state directors are reminded that if hospitals and drug stores do not use their entire quota in one quarter they may draw the difference in a later period.

Two Years of Prohibition.—In reporting on two years' accomplishments under the National Prohibition Act, the federal prohibition commissioner made special reference in enumerating the factors operating for good to the treasury decision, first suggested by the American Medical Association, which limits withdrawals of whisky for medicinal use to that which has been bottled in bond. In 1920, whisky withdrawals aggregated 12,389,529 gallons; in 1921, 3,243,845 gallons, and in 1922, 1,819,888 gallons. In discussing narcotics, the commissioner calls attention to the fact that the Harrison Narcotic Act was not intended to be a revenue-creating measure, but that, in 1922, collections turned in to the United States Treasury amounted to $610,311.13 in excess of actual expenditures. Notwithstanding this large cash balance, the appropriations provide for a bureau force of only eighty-two clerks, and a field force of only 182 officers and twenty-nine clerks. These employees cover the entire United States, and, in 1922, had under their supervision 268,258 permittees.

LATIN AMERICA

Health Progress in Salvador.—Health conditions in Salvador, according to the last report of the public health department, are relatively good. Smallpox and yellow fever have been eradicated and the campaign against hookworm disease is being continued. A state laboratory has been opened, the equipment of which was donated by the Rockefeller Foundation. A total of 137,450 vaccinations and revaccinations were made during the year. A total of 51,747 persons were examined, 33,454 of whom were found infected with hookworms, 26,883 with ascaris, 8,913 with trichuris, 44 with strongyloides, 145 with oxyuris, 611 with tapeworms and 10 with amebae, making altogether a total of 43,620 infected persons. A total of 75,290 hookworm and 10,716 ascaris treatments were given. Latrine construction is being pushed in the country districts. The Salvador health department is now directed by Dr. L. V. Velasco.

FOREIGN

New American Hospital in France.—Myron T. Herrick, United States ambassador to France, laid the cornerstone of the new American Hospital at Neuilly, June 18. This institution, which has a capacity for 100 patients, replaces the old building of thirty beds.

Honor for Rome Surgeon.—With much ceremony, a monument was unveiled, May 13, at Letojanni, in Messina, in honor of Prof. Francisco Durante. An imposing bronze bust is supported by a group of four large bronze figures on a granite base, representing Surgery helping a cripple to throw away his crutches, Science and Charity.

Prizes for Essays on Depopulation in France.—The National Alliance for the Increase of the French Population has awarded the first prize of 50,000 francs to M. Paul Haury for the best popularly written pamphlet on the decreasing birth rate and the tragic consequences to the nation. A prize of 6,000 francs was given to Dr. Cattier of Paris. Forty-four other prizes for essays on depopulation, ranging from 1,000 to 8,000 francs, were distributed. Half a million copies of Haury's booklet are to be printed at once.

Institute for Research on Physiology of Altitudes and Tuberculosis.—The *Medizinische Klinik* announces that the institute at Davos is now completed. It is in charge of Pro

fessor Loewy, collaborator of Professor Zuntz of Berlin for many years. The bacteriologic-pathologic department cannot be opened until more funds are available. According to the statutes, five of the nine members of the board must be physicians, and there is a corps of consultants among professors in Swiss universities. The institute is open to research workers of all nations. It is planned to offer free places to a few workers from countries with much depreciated currency. The subjects to be studied can be selected by the workers themselves, subject to the approval of the board. The Swiss government is to aid the institution when pending legislation on tuberculosis is completed. Professor Dorno is in charge of the physical-meteorologic observatory. His "Climatology in the Service of Medicine" is well known. There are places for twenty workers.

Deaths in Other Countries

Dr. Julio F. Arteaga, Havana, bacteriologist and medical inspector of the public health service of Cuba and editor of the *Revista de Medicina y Cirugía* of Havana, aged 47. He was a graduate of Bellevue Hospital Medical College of New York and served as intern in three New York hospitals before settling in Havana in 1902. Many of his works have been summarized in THE JOURNAL, and he was the official delegate from Cuba to several international medical congresses.——Professor **Boruttau,** Berlin, the physiologist, aged 54.——**Dr. Marcial V. Quiroga,** professor emeritus of pathology at the University of Buenos Aires, and of epidemiology and of hygiene in the army medical school, president of the Círculo Médico Argentino and member of the lower house. ——Dr. **R. Salillas,** Madrid, founder and president of the school of criminology and a noted writer on medical jurisprudence and penology.——Dr. **Luis Ortega Morejón,** Madrid, senator, president of the local medical chamber and chief of the Beneficencia Municipal.——Dr. **C. Godon,** founder of the dental school at Paris and honorary president of the International Dental Federation.——Dr. **A. Billinghurst,** Buenos Aires, the secretary and one of the organizers of the Asistencia Pública, medical chief of the isolation hospital, and founder and director of the Pirovano Hospital.——Dr. **F. Woithe,** director of the Museum of Hygiene at Dresden, author of works and chemotherapy, disinfection, laboratory technic and biology, aged 45.——Dr. **H. Palm,** Berlin, director of the maternity at Schöneberg.——Dr. **F. de Cérenville,** Clarens, Switzerland.——The Revista del Instituto Médico Sucre of Bolivia mentions the death by accident of Dr. **Adolfo Tufino, Jr.**

Government Services

Field Hospital in Potomac Park

A field hospital was established by the Surgeon General of the Army in Potomac Park, Washington, D. C., for the emergency treatment of visitors and others during the Shrine Convention period. The Unit was part of the first medical regiment stationed at Carlisle Barracks, Pa., and its strength was ten officers and 120 men. The troops marched to Washington. The hospital comprised twelve ward tents, a surgical ward, operating room and roentgen-ray equipment. Its capacity was 150 patients. Twenty ambulances operated from collecting stations along the route of the parade, and several hundred cases but none of a very serious nature were evacuated to this or other hospitals in the city. Majors J. E. Bastion and J. P. Fletcher, M. C.; Capts. T. G. Tousey and J. H. Blackwell, M. C., and other officers from Carlisle, were in charge of the hospital.

Purchase of Hospital Sites

It has been announced by Director Hines of the U. S. Veterans' Bureau, Washington, D. C., that no more hospital sites will be purchased by the bureau at present, the chief reason being a lack of funds. However, further work in this line would not have been undertaken, pending reports on various surveys now under way. The hospital at Dwight, Ill., will be opened immediately for mild mental cases. Two hundred beds have been added to the Maywood (Ill.) Hospital. The two institutions, together with the Great Lakes establishment, will be able to care for all veterans in that region, it is believed. Hospital No. 30, Chicago, which was unsuited because of its proximity to the business district, has been ordered closed.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 28, 1923.

New Campaign Against Cancer

A new campaign against cancer has been inaugurated by a joint letter to the press from leaders of the profession and from philanthropic workers. It is pointed out that, in spite of advances in diagnosis and treatment, cancer is still the most common single cause of death in persons over 30, and is so in an increasing degree. During 1920, in England and Wales, nearly 43,000 persons over 30 died of cancer. In 1921, the last year for which the figures are available, the number was 45,328, more than one in every seven deaths of persons from the age of 30 onward being due to this cause. We are still ignorant of the cause and cure of cancer, but there is no reason to suppose that the problem will not ultimately be solved. The first step is to find the cause, and, for this, every line of research must be diligently explored. Impressed by the need for immediate action, the signatories have joined together to coordinate and support cancer research throughout the British Empire. The new movement will be called the British Empire Cancer Campaign. It will be directed by an executive council, the members of which will act as chairmen of small working committees, each dealing with a separate aspect of the cancer problem. Medicine, surgery, human pathology, chemistry, physics, radiology, animal and plant pathology, hygiene and vital statistics will be represented by committees whose work will be coordinated by the executive council acting as a central clearing house. Individuals and institutions now working on the cancer problem will be helped and encouraged and, when practicable, financially assisted. In this way, investigation can be carried out simultaneously along many lines and the results brought to a common stock of knowledge. The British Red Cross Society has placed its organization and machinery at the disposal of the council of the campaign. A large sum of money is needed, and an appeal is made with confidence to the British public in the United Kingdom, dominions and colonies.

The increase of cancer is shown by the figures of annual mortality from the disease per million living: 1838-1842, 173; 1881, 520; 1891, 692; 1901, 842; 1911, 992; 1921, 1,215. These furnish an interesting contrast with those for tuberculosis of the lungs, which has declined during the same period. Thus, in the period 1838-1842, while the mortality per million for cancer was 173, that for tuberculosis was 3,782. In 1911, the tuberculosis mortality approached closely that of cancer, being 1,062, and in 1921, the position was reversed, the tuberculosis mortality (884) having fallen below that of cancer. Cancer research has been going on for some time in this country. In 1902, the Imperial Cancer Research Fund was founded. Its work has been chiefly experimental—the transplantation of mouse cancer, the production of cancer by the application of tar, and the relation of the growth of cancer to diet. In 1900, laboratories were opened for the investigation of cancer at the Middlesex Hospital. Much work has been done there on roentgen rays and radium. Attempts are now being made to cause experimental animals to develop an immunity toward cancer. Sufficient success has been obtained in the case of transplanted tumors in rats to apply the principle to man. It is too early to speak of results. At the Cancer Hospital, there is a research institute where much experimental work has been done on substances suspected of producing cancer. The fact that arsenic, tar and paraffin can do this has been confirmed.

The Relation of Health to Psychic and Physical Characters in School Children

Prof. Karl Pearson has completed, for the Drapers' Company Research Memoirs, a statistical investigation in which he reaches some interesting conclusions. Quoting Kipling's reference to "the flanneled fool" and "muddled oaf" (in a poem written during the war, denouncing our too great addiction to sport), Pearson says that he felt uneasy at the time about these lines, and endeavored to ascertain what, if any, was the relation between intelligence and success in athletics. The answer given by statistics is that the relation of athletic power to intelligence, if not intense, is significantly marked, and that it is the intelligent rather than the slow or dull children who exhibit athletic power. His other conclusions are not very encouraging to the schoolmaster. He finds that general intelligence and a variety of psychic characters remain unchanged throughout the whole range of school life. It is not possible for the teacher to modify them. It is not he, but the parent, who provides the metal; all the teacher can do is to give an edge and temper to it. General health changes very little during the whole school period. Health and intelligence are correlated, though not markedly. While recognizing this association, it does not seem feasible in the present state of medical knowledge to improve intelligence by modifying health. We are forced to recognize that, on broad lines, health and intelligence are innate characters chiefly controlled by inheritance. There appear to be no grounds for the widespread opinion that health is a governing factor in temperament. It is associated, but only in a minor degree, with certain psychic characters.

The Injustice of Socialistic Legislation

In a letter to the *Times*, Dr. H. B. Brackenbury, chairman of the Insurance Acts Committee of the British Medical Association, points out this anomaly: Two patients require insulin. For one, an insured person, the physician can obtain any necessary supply, free of cost either to the patient or to himself. The other, a professional man of small means, must pay for the drug alone $900 a year—a large part of his income—to keep himself alive, or else he must die. Meanwhile, as an employer, he is contributing to the fund by means of which the other man's supply is obtained, and as a taxpayer, he is paying his share of not less than two ninths of the cost. Turning from this injustice, which in this case is a service to one of the persons concerned, a wasteful one might be added to the doctor's example. Pharmacists often remark that the quantity of dressings ordered by panel physicians is excessive. The panel physician, no doubt, has no desire to waste the money of the taxpayer, for he is one himself. But the direct and much greater stimulus to economy of having to pay for the article is removed, by the Insurance Act, from both him and the patient, with natural consequence. Thus, a panel patient will bring to the pharmacist's shop an order for 4 ounces of cotton wool. The next customer, a woman, whose needs may be the same or greater, will ask for the same quantity, and, on hearing the price, will say, "I will take only 1 ounce." Yet it is she or her husband who helps to pay for the waste which often occurs in the other case. Another example is the Employer's Liability Act, which makes an employer responsible for compensation to an employee, even though the accident is the fault of the latter. If the employer is a small man with some modest savings made for his family, that employee has a prior claim on such savings. It may be said that the employer can and does insure against this liability for a small annual sum. The reply to this is that his liability still exists, for if the insurance company were to fail, he would be mulcted to the full amount.

Vital Statistics

The registrar-general, in his statistical review of England and Wales for 1921, gives some interesting information on marriages. The rate was 16.9 per thousand persons living, a rate higher than any since 1874, excepting the war years. The ages of marriage varied enormously, but twenty-four for men and twenty-one for women were the most usual ages. This does not accord with the popular belief that men and women are tending to marry later in life. However, the marriages included those of sixty men and twelve women who had reached the age of 80 years. Divorces were more numerous than ever before; they numbered 3,522. The largest number formerly recorded in a year was 3,090, for 1920. In the British dominions, the highest marriage rate was 18 per thousand, in Natal; the lowest, 13.4, in Saskatchewan. The birth rate was 22.4 per thousand, the lowest recorded, except for the war years. For every thousand girls born, there were 1,051 boys. Illegitimate births amounted to forty-five in every thousand births. The excess of births over deaths, or natural increase of population, was 390,185, or 10.3 per thousand of population.

PARIS

(From Our Regular Correspondent)

May 25, 1923.

The Formal Opening of the Medicolegal Institute

The medicolegal institute has just been formally opened by the general council of the department of the Seine. The ceremonies were presided over by M. Paul Strauss, minister of public health and social welfare, who was accompanied by the presidents of the general council and the municipal council, the dean of the faculty of medicine, and a large number of distinguished judges and medical men. Addresses were delivered by Dr. Balthazard, professor of medical jurisprudence at the Faculté de médecine of Paris, who explained in detail the rôle of the institute; by Professor Roger, dean of the faculty of medicine, and by others.

This institute was created by the general council of the department of the Seine, not only to replace the morgue proper, but also to become an important center for research work and special study. It was constructed in accordance with the suggestions of Professor Balthazard, and comprises an administrative and a medicolegal service. In the administrative department are the offices and the archives; the room in the morgue in which bodies may be inspected through a glass panel for identification; the necropsy room, and the room reserved for the judicial establishment of identity. The medicolegal service comprises a research laboratory, a museum and library, a large hall for students, and an amphitheater containing 200 seats, to which bodies can be brought on the demonstration table directly from the basement. In the basement is machinery for refrigerating bodies down to a temperature of from 0 to —5 C., and apparatus for the washing and disinfection of clothing. The bodies are stored in separate compartments, of which there are ninety-four. Two small rooms furnished as chapels, each opening into a large reception room, are provided for funeral services.

The Centenary of Pasteur and the American Societies of Paris

The American societies of Paris celebrated the centenary of Pasteur, in the grand amphitheater of the Sorbonne. The ceremonies were presided over by Hon. Myron T. Herrick, United States ambassador. Others present were: M. Paul Strauss, minister of public health; Mr. Selden Palmer Spencer, senator from Missouri; Dr. William Sydney Thayer, professor at the Johns Hopkins University, and Dr. Pasteur Vallery-Radot, physician to the hospitals of Paris. Mr.

Herrick opened the meeting by an address in which he thanked the French government and the rector of the University of Paris for having accorded the American societies permission to take part in the celebration of this centenary, a participation which acknowledges that Pasteur belongs as much to America as to France, that his work knows no limits, and that the most humble, from Paris to Peking, have the right to consider him as a benefactor. Professor Thayer, who is foreign correspondent of our Academy of Medicine, pointed out the reasons America has to honor Pasteur, the great benefactor of humanity and world citizen, whose memory the entire world must revere. Dr. Pasteur Vallery-Radot expressed his thanks to American scientists for their repeated expressions of admiration for his illustrious grandfather, and closed his address with the words uttered by Pasteur on the occasion of his jubilee:

> You afford me the greatest joy that a man can feel who holds the deep-rooted conviction that science and peace will eventually triumph over ignorance and war, and that the peoples of the earth will come to an understanding and will no longer seek to destroy one another but to confer benefits on each other, and that those who shall have the greatest love for suffering humanity will be the heirs of the future.

Celebration of the Centenary of Pasteur in Schools of Paris

The city of Paris wanted the school children to take part in the ceremonies organized in celebration of the centenary of Pasteur, and desired that, on this occasion, they should become familiar with the principal facts in the life of the great scientist and learn the importance of his discoveries. With this purpose in view, more than 3,000 children were assembled to see a motion picture that had been prepared with the collaboration of the heads of the various services of the Pasteur Institute, for the most part in the laboratories in which Pasteur worked, and with the identical instruments that he used. The film consisted of three parts. Part 1 traced the principal events in the life of Pasteur. Part 2 gave a general idea of micro-organisms, the phenomena of fermentation, anthrax and inoculations, and depicted the circumstances of the treatment and cure of young Meister, who was the first to profit by the discovery of antirabic inoculation. Part 3 showed the significance of Pasteur's immortal researches for public health, industry, agriculture and the prosperity of the country in general.

In both the primary and the secondary schools, a period was devoted to the study of Pasteur and his work. May 30, coincident with the arrival at Strasbourg of the president of the republic, a collection will be taken in all the classes of the public schools for the benefit of the scientific laboratories. All pupils in the primary schools who subscribe to this fund will receive a picture of Pasteur.

In Honor of Pasteur and Lister

In the presence of high officials; among others, the British ambassador, British delegates to the centenary of Pasteur, members of the university council, and representatives of the Franco-British Association, there was hung, in the main amphitheater of the Sorbonne, a marble tablet bearing this inscription:

> On this spot, December 27, 1892, the date of the Pasteur Jubilee, the great Frenchman and the great Englishman Lister greeted each other with an embrace.
>
> This 25th day of May, 1923, on which was celebrated the centenary of Pasteur, the University of Paris erected this tablet in commemoration of this fraternal embrace, a symbol of the friendship that exists between the two peoples.

Commemoration of Pasteur's Anthrax Discovery

Ceremonies in honor of Pasteur were held in the department of Seine-et-Marne, under the chairmanship of M. Henry Chéron, minister of agriculture. The celebrants proceeded in a body to Pouilly-le-Fort, the spot where, on a farm that today bears the name Clos-Pasteur, the scientist carried out, in May, 1881, his conclusive experiments on the immunization of animals against the bacillus of anthrax. A tablet commemorative of this event was erected at the farm.

The Pasteur Postage Stamp

M. Paul Laffont, head of the postal and telegraphic systems of France, has issued an order that postage stamps of certain denominations (10, 30 and 50 centimes) and postal cards of 30 centimes shall, from May 25 on, bear the likeness of Pasteur.

VIENNA

(From Our Regular Correspondent)

May 23, 1923.

The Prohibitionist Movement in Austria

During the past year, the anti-alcohol movement has gained in momentum and influence in this country. Statistical data have been brought forward to show that the entire debts of this republic amount to less than is spent by the population in one year on alcoholic drinks, and that its financial straits could be easily overcome by making the population contribute as much to the state loans. In the army, as well as in the schools, total abstainers are already preferred, and the government is urged to bring into force a bill prohibiting the manufacture, import and sale of intoxicating beverages. A few days ago, a meeting of the Austrian Antialcohol Society took place in Vienna. In this a prominent part was played by the young people's organizations which, for the first time in this country, took a leading place in the movement. Although many of the speakers differed as to the methods to be adopted, there was general agreement on securing absolute abstinence. Chief stress was laid on the value of imbuing school children with the idea that alcohol is a poison for the organism, and for this purpose a resolution was drawn up by Professor Smola which was adopted unanimously. This recommended that all school children be instructed both orally and in books on the dangers involved even in moderate drinking of alcohol. All persons engaged in teaching must be total abstainers, and in all teachers' schools, thorough-going instruction on this subject must form part of the curriculum. No alcoholic drinks should be allowed in any school or educational institution, even on exceptional occasions. The regular meetings of parents (compulsory for the past two years) must devote at least one hour each term to a lecture against alcohol. Excursions arranged under the patronage of a school board or by teachers must be absolutely prohibitionist, and lectures, aided by films showing the evil effects of alcohol on the normal individual, should be encouraged. Books for adolescents, both of the school book and the belles lettres type, should be prohibited if they contain paragraphs praising or glorifying the use of alcohol. Drs. Kruz and Trier showed that industries engaged in the manufacture of alcohol could, without much difficulty, change their working methods so as to produce alcohol-free beverages with an increase of profit both to themselves and to the state, for the duties on alcohol amounted to less than 5 per cent. of the total budget income, while the nonalcoholic products from the same factories could bring 10 per cent. Our present legislative measures directed toward diminution of the use of alcohol are of little value. The next step must be to decrease the number of licenses to sell alcoholic drinks, diminish the hours of sale in public houses and "saloons," and prohibit all sales between Saturday afternoon and Monday morning. It will interest American readers to learn that Mr. Hohenthal of New York was present, and reported on the results of prohibition in the United States. He laid stress on the remarkable drop in the incidence of tuberculosis and of violent deaths by 50 per cent. since the law has been strictly enforced.

The Antituberculosis Campaign in Austria

In the course of a discussion on modern methods of fighting tuberculosis (part of the transactions of the fifth meeting of the Austrian Tuberculosis Society), Professor Durig gave some details of present conditions in this country. Since the return of order in the country, things have improved considerably. Chief attention centers around prophylactic measures. Austria, however, is far behind in this respect. Whereas in Germany one "Welfare Center" is active for each 20,000 inhabitants, in our country the ratio is 1:120,000. This is due, not so much to lack of funds, as to lack of recognition by municipalities and health insurance clubs of its fundamental importance. The attitude of general practitioners is also inimical, as they seem to fear a loss of income. Of the fifty-three "centers" in Austria, two belong to "sick-clubs" and seven to municipalities; all others depend on voluntary contributions by charitable societies. The number of beds available for tuberculous patients is absolutely inadequate. We have about 11,000 such beds, and 10 per cent. of these have been lost recently by the closing down of smaller sanatoriums and hospitals owing to the restriction of the state budget. At present it is difficult to find a bed for an advanced case. It has become necessary to call into existence a central board to control all tuberculosis beds, so that the distribution of cases can be regulated. The city of Vienna is much better off. The municipality possesses two special institutions with 2,000 beds for this purpose, and the numerous wealthy sickness clubs have also a number of beds in their own sanatoriums. But patients who do not belong to these clubs or to the municipal officials are badly off unless they can pay. These middle classes, who are in the greatest danger, must be the object of the welfare work; and, in them, prophylactic enterprise must be chiefly centered. An interesting contribution to the pathology of this disease was offered by Dr. Bielzke of Graz, who thus described the course of tuberculosis: The primary affection begins in the lung with an exudative inflammation (caseous pneumonia), which is soon surrounded by a mantle of granulation tissue. This is already a sign of tuberculous allergy. Metastatic foci in the lungs produced by small quantities of virus cause small tubercles, if larger quantities of the virus enter the lungs; or, if the resistance falls quickly, the exudative component—the inflammatory stage—is more prominent. If this resistance of the organism is overcome, primary caseation occurs. Reinfection follows a different course. By the cure of a primary focus, a high degree of specific resistance is acquired by the organism. The formation of tubercles and metastatic affections of glands as well as hematogenous infection are almost entirely excluded. As soon as the resistance is diminished, we again get caseous pneumonia and also miliary tuberculosis, meningitis and glandular caseation (hematogenous metastasis) or a relapse into the condition of primary infection. The so-called phthisis of puberty is an intermediate stage. Professor Tandler explained the prophylactic measures adopted by the city of Vienna to combat the so-called "morbus Viennensis" in children; chief stress is laid on the treatment of adolescents and children. Thus, for instance, a sum of one billion kronen ($15,000) has been devoted to the purpose of sending children suffering from tuberculosis of the joints, bones or glands to the seaside during the summer months. Altogether, it may be stated that the necessity of beginning the fight very early in life is now well understood by the community. Professor Moll, who has had a large experience with the disease among nurslings and infants, showed how by rigid separation of babies from infected mothers—or other members of the family—by rearing them with reliable milk and a generous supply of air and light, more than 50 per cent. of the children, formerly doomed to death before reaching the second birthday, now are saved. The resistance acquired soon after birth seems even to be useful in later life.

Comparative Statistics of the Weight and Size of School Children

In the early spring of 1923, 1,836 children from various institutions and schools, between the ages of 6 and 14 years, were examined by Dr. Nobel with a view to ascertaining their relative weight, size and general appearance, for comparison with the data for previous years. The figures were all taken by the same person, based on the relation between height when sitting and standing, and weight. In the spring of 1920, the average relation, as expressed by Pirquet's method was 92.4 for boys and 92.6 for girls, only 19 per cent. being above 95 pelidisi; in the spring of 1921, the figures were 93.4 for boys and 93.9 for girls, with 32 and 36, respectively, over 95 pelidisi; in 1922, the figures were about the same; but in March, 1923, the averages were 94.3 and 94.7, with 50 per cent. above 95 pelidisi. This means that the general condition of nutrition in 50 per cent. of those examined is about normal this year. The children reared at home are a little taller than those living in institutions, while the latter are a little broader and heavier. The reasons for this peculiar fact have not yet been elucidated. Dr. Nobel thinks that the vitamin A in the food of the latter children is deficient, and suggests a liberal dose of cod liver oil as a means to promote growth. Altogether, it is regarded as satisfactory that a constant improvement is noticeable in the general physical appearance of the nation's youth.

BERLIN

(From Our Regular Correspondent)

May 12, 1923.

Mortality in Germany

The official reports to the effect that the mortality rate in Germany at the present time is surprisingly low were discussed recently by the ophthalmologist and social hygienist Dr. C. Hamburger, at whose suggestion a committee on demography has been appointed by the Berliner medizinische Gesellschaft. The year before the war, 1913, presented a mortality lower than had ever been previously recorded in Germany. This favorable condition was apparently dut to readily discernible causes: a high degree of general prosperity, better housing conditions, more and better health insurance societies, tuberculosis sanatoriums, more and better hospitals, and improvement in hygienic conditions. Then came the war, and the mortality increased. The victims of tuberculosis grew in number until they reached a figure that had not been known for many decades. Since the war, high prices have prevailed in all lines; there has been an increasing scarcity of suitable dwellings, and a downward trend in public hygiene; yet, the mortality has decreased, until of late it has been less than in 1913. And this in spite of the narrow quarters. It is true that the workman has been able to spend more for food—at least, so far—than he could before the war. At that time, a Berlin metal worker had to work a whole week to earn enough to pay the monthly rent, whereas in December, 1922, an hour sufficed. In view of the high prices and the scarcity of many articles of food, it does not follow that actually more food could be consumed. We are inclined to doubt whether such is the case, when we read the figures showing the minimal cost of existence at present. It is to be noted also that certain social groups, including millions of people, such as owners of rented buildings, the professional classes and the students, do not live as well as they did before the war. It is true, their numbers are not so great, when compared with the whole population, that they influence materially the total result. The eight-hour day,

which signifies a shorter work period and more leisure time, must necessarily exert a favorable influence; also the fact that workmen have demanded and secured, for the most part, an annual vacation for rest and recreation. In marked contrast with this, one observes the increasing misery in the hospitals and among the school children, thousands of whom have not a whole shirt to their backs. There seems to be only one explanation for the low mortality. The mortality rate for the whole population is markedly affected by infant and child mortality, which is decreasing because fewer children are being born. As always after a war, so after the World War, the number of marriages increased considerably, the last quarter of 1920 showing the highest number. The birth rate reached the lowest level during the third quarter of 1921. This explanation for the lowering of the mortality rate is not exactly pleasing. Hamburger demands, therefore, increased protection for infants, especially those born out of wedlock. He recommends also limitations on the activities of wetnurses, an increase in the charges for children boarded out, and limitation of the practice of giving unmarried mothers a lump sum settlement. Women should be given increased protection, and every measure that will allow the children more time in the open air should receive support.

Sanatorium for Combating Tuberculosis in Children

The Therapeutikum, an institute connected with the Children's Hospital of the Karl Zeiss Foundation, was recently dedicated in Jena. Its purpose is to combat, on a large scale, tuberculosis in children by employing all the therapeutic means known to science, including quartz lamp radiations, salt-water baths, inhalation treatment and general hygiene. In the Therapeutikum an attempt has been made, with considerable success, to combine the beautiful with the useful. While the demands of hygiene have been strictly observed, the cold, hospital-like appearance of everything has been overcome by bright and gay colors, pictures of groups of merry children, and a fine collection of children's playthings. The decorating and furnishing of the wards was carried out by skilled artists, and the general effect is that of a genuine children's home instead of a hospital. The nucleus of the funds to establish the Therapeutikum, which constitutes a model piece of work, was received from Germans living in foreign countries, and the sums thus contributed were augmented by energetic support from public and private sources at home. Dr. Duken, assistant physician in the Jena Children's Hospital, contributed in no small measure of his time and energy toward the creation of the institution. The management of the Therapeutikum has been placed in the hands of Professor Ibrahim.

The Importance of Tuberculosis Sanatoriums

Prof. F. Reiche of Hamburg has issued a report on the lasting result of the treatment received by sanatorium patients examined by him, in 1911, for an insurance company. On the basis of reexamination of the patients he had examined between 1895 and 1904, he comes to the definite conclusion that, in 1,726 cases of pulmonary tuberculosis (selected cases, adapted to the therapeutic measures in question), the earning capacity of patients was restored or firmly established to a surprising extent by the special course of treatment, which extended over several months and was not infrequently repeated. Of the entire number of pulmonary patients, after the lapse of at least seventeen or an average of twenty-two years, almost half (46.9 per cent.) were strong and easily able to earn their living, while only a little more than a third (35.2 per cent.) had died in this long period, and not more than 8.2 per cent. might be regarded as invalids. These results are for cases 52 per cent. of which belonged in the first and 48 per cent. in the second and third stages, according to the Turban-Gerhardt classification. These highly satisfactory and encouraging results are in sharp contrast to the doleful reports made by Cornet.

Health Record Books for Public School Pupils in Saxony

According to an order issued by the office of public instruction, a health record book must be opened for every pupil in a public or private school, immediately on entering the primary class. All data pertaining to the health of the pupil must be carefully recorded by the class teachers during the whole school period. The introduction of the record book system marks a distinct advance, in that it will be of great value for vocational guidance. However, as it has been observed that physicians, when called on for an opinion with reference to definite vocational aspirations, are not sufficiently informed in regard to industrial conditions and the prospects in a given trade or profession, and that many who profess to give vocational guidance are not able to make practical use of the findings recorded by medical examiners, it is recommended that the advice of physicians with respect to the choice of a trade or profession be confined to calling the attention of aspirants to certain weaknesses or defects which would militate against them in the pursuit of a given calling. The main idea is to dissuade young people from entering on lines of work for which they are not suited.

Marriages

HARRY BALDWIN GANTT, JR., Captain, M. C., U. S. Army, to Mrs. Florelle Edson McKie, both of Washington, D. C., June 2.

ALBERT EUGENE BULSON, JR., Fort Wayne, Ind., to Miss Memory Edith Breeden of Jackson, Mich., May 29.

KEMP PLUMMER BATTLE BONNER, Raleigh, N. C., to Miss Clara Bell Martin of Beaufort, June 4.

ROBERT ALLEN POWERS, Palo Alto, Calif., to Miss Helen Marie Holt of San Francisco, June 7.

FRANK F. STIVERS, Stockton, Kan., to Miss Edythe Lucile Stone of Warrensburg, Mo., June 11.

FRED WHARTON RANKIN, Louisville, Ky., to Miss Edith Mayo of Rochester, Minn., June 12.

WILLIAM A. FOWLER, Oklahoma City, to Miss Virginia Tolbert of Hobart, Okla., April 29.

CHARLES S. DUTTENHOFER, New Holland, Pa., to Miss Mary Hyman of Churchtown, April 25.

JOHN J. RICHSTEIN, San Francisco, to Mrs. Agnes M. P. Pasley of Los Angeles, April 29.

JOSEPH EVANS SANDS, Philadelphia, to Miss Mary C. Fiero of Newton Square, Pa., June 12.

CARROLL COLBY BURPEE, Malden, Mass., to Mrs. Adelaide M. Cannell of Everett, May 4.

HAHNEMANN VOSS HARRELL to Miss Florence M. Lassaline, both of Detroit, June 2.

ISRAEL E. RUDMAN, Bangor, Me., to Miss Anna B. Strom of Norwich, Conn., June 10.

WILLIAM S. KERLIN to Miss Ruth Knighton, both of Shreveport, La., May 31.

CHARLES EDWARD LAWRENCE to Miss Helene Johnson, both of Atlanta, Ga., June 6.

R. EMMET KANE, St. Louis, to Miss Grace Cantwell of Madison, Wis., May 1.

WILLIS H. CORSON, Seattle, to Mrs. Anna Z. Wickland of Everett, Wash., May 3.

GLADYS GIRARDEAU to Mr. Edmund M. Henderson, both of Philadelphia, June 5.

LEE PETIT GAY, St. Louis, to Miss Ruth Bradfield, Abilene, Texas, April 22.

JOHN HENRY WEBER to Miss Helen Bartles, both of Akron, Ohio, May 2.

Deaths

William Cuthbertson ⊕ Chicago; University of Toronto Faculty of Medicine, Toronto, and Victoria University Medical Department, Toronto, Ont., Canada, 1883; died, June 18, at the Wesley Memorial Hospital of pancreatitis following a cholecystotomy. Dr. Cuthbertson was born in Winterbourne, Ont., in 1860. He was attending gynecologist to St. Luke's Hospital, and associate in gynecology at Northwestern University Medical School, 1900-1912, and a member of the Physicians' Club of Chicago.

William Prendergast Baldwin, Stephen, Minn.; University of Minnesota Medical School, Minneapolis, 1901; member of the Minnesota State Medical Association and past president of the North Dakota State Medical Association; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 47; died, May 17, at Oconomowoc, Wis., of cerebral hemorrhage.

Eugene Alphonse Frechet ⊕ Albuquerque, N. M.; Medical Department of the Tulane University of Louisiana, New Orleans, 1902; member of the State Medical Association of Texas; served in the M. C., U. S. Army, during the World War, with the rank of captain; formerly surgeon to the U. S. Veterans' Bureau; aged 45; died, May 28, following a long illness.

William Earl Beatty ⊕ San Diego, Calif.; Detroit (Mich.) College of Medicine and Surgery, 1917; past assistant surgeon lieutenant, U. S. Navy, stationed at the Naval Air Station; served in the M. C., U. S. Navy (air service division), in France, during the World War, and as health officer of Brest; aged 31; died, May 28, of food poisoning.

Ira Joseph Magee ⊕ Waterloo, Iowa; Northwestern University Medical School, Chicago, 1913; member of the Illinois State Medical Society; specialized in ophthalmology, otology, laryngology and rhinology; served in the M. C., U. S. Army, in France, during the World War, with the rank of captain; aged 34; died, June 1, of pneumonia.

James William Hadley ⊕ Frankfort, Ind.; Illinois Medical College, Chicago, 1902; member of the American Academy of Ophthalmology and Oto-Laryngology and the Indiana Academy of Ophthalmology and Oto-Laryngology; aged 49; died, June 1, of injuries received, when he plunged from a seventh story window.

Henry Carroll Bailiff, Beaumont, Texas; University of Texas Department of Medicine, Galveston, 1917; member of the State Medical Association of Texas; served in the M. C., U. S. Army, during the World War; aged 35; died, May 28, at a local hospital, of septicemia, following a tonsillectomy.

Frank Lane Nichols, Sutherland, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1895; served in the M. C., U. S. Army, during the World War, with the rank of lieutenant; aged 58; died, May 30, at the Aurora (Ill.) Hospital, of cerebral hemorrhage.

Joseph Turner Steele, Hastings, Neb.; Rush Medical College, Chicago, 1883; member of the Nebraska State Medical Association; formerly superintendent of the Nebraska State Hospital, Ingleside; died, May 25, at Rochester, Minn., following an operation.

Harold Hayes Crane ⊕ Dexter, Me.; Jefferson Medical College of Philadelphia, 1903; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 45; died, May 26, at the Central Maine Sanatorium, Fairfield.

Albert Stevens Cunningham, Goldfield, Iowa; Rush Medical College, Chicago, 1889; member of the Iowa State Medical Society; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 68; died, May 25.

Eduardo Diaz y Perez, Manila, P. I.; University of St. Thomas Medical Department, Manila, 1882; professor of gynecology at his alma mater; aged 62; died recently, of cerebral hemorrhage, at the San Juan de Dios Hospital.

Frederick D. Grant Harvey, Lawrence, Kan.; Meharry Medical College, Nashville, Tenn., 1892; member of the Kansas Medical Society; aged 57; died, May 25, at the Wheatley-Provident Hospital, Kansas City, Mo., of heart disease.

Harrison Ross Rogers, Rockford, Ill.; Rush Medical College, Chicago, 1909; served in the M. C., U. S. Army, during the World War, with the rank of lieutenant; aged 38; died, May 30, of acute nephritis and pneumonia.

Richard O. Smith ⊕ Pittsfield, Ill.; Missouri Medical College, St. Louis, 1884; for several years served as county physician; formerly mayor of Pittsfield; aged 62; died, May 29, of angina pectoris and pneumonia.

Samuel Saunders, Jr., Binghamton, N. Y.; University of Virginia Department of Medicine, Charlottesville, 1915; on the staff of the Binghamton State Hospital, where he died, May 7, of peritonitis, aged 35.

Edwin Albert Porter, Pittsfield, Me.; New York University Medical College, New York, 1881; member of the Maine Medical Association; formerly member of the state legislature; aged 67; died, May 23.

Franklin Pierce Hoover, Jacksonville, Fla.; University of Maryland School of Medicine, Baltimore, 1884; member of Florida Medical Association; aged 61; died, April 22, of angina pectoris.

Horace Clark, Wheatland, N. D.; Medical School of Harvard University, Boston, 1888; member of the North Dakota State Medical Association; aged 60; died, April 5, of acute indigestion.

Conrad Howard Czarra, Chicago; College of Physicians and Surgeons, Chicago, 1899; aged 48; died, June 10, at the Baptist Memorial Hospital, following an appendectomy.

John M. McBride ⊕ Albuquerque, N. M.; Dartmouth Medical School, Hanover, N. H., 1901; health officer of Valencia County; aged 55; died, May 19, of cerebral hemorrhage.

Harold Wilbert Street, Owen Sound, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1918; aged 36; died, April 24, in Constantinople, of typhus fever.

Stephen Casper Burton, Pittsfield, Mass.; Albany (N. Y.) Medical College, 1880; member of the Massachusetts Medical Society; aged 73; died, May 17, at Lanesboro.

Fremont W. Frankhauser ⊕ Reading, Pa.; Jefferson Medical College of Philadelphia, 1880; Medico-Chirurgical College of Philadelphia, 1888; aged 66; died, May 24.

Anson Levi Raymond, Alexandria, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1909; aged 45; died, May 4, of pulmonary tuberculosis.

Adam Thomson, Galt, Ont., Canada; Trinity Medical College, Toronto, 1887; served as mayor of Galt for two years; aged 56; died, April 19, of pneumonia.

James Wesley Crofford, Denver; Northwestern Medical College, St. Joseph, Mo., 1887; Barnes Medical College, St. Louis, 1898; aged 69; died, March 23.

John Walter Vandolah, Kansas City, Mo.; Keokuk (Iowa) Medical College, 1892; also a pharmacist; aged 53; died suddenly, May 22, at Kahoka.

John William Grady, Lowell, Mass. (licensed, years of practice); aged 61; died, May 24, at St. John's Hospital, of wounds received in a fight.

Harry H. Jones ⊕ York, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1896; aged 50; died, May 18, of chronic nephritis.

Thomas C. McKinney, Carbondale, Ill.; Eclectic Medical Institute, Cincinnati, 1867; aged 83; was killed, May 29, when struck by a train.

Charles Dansereau, Woonsocket, R. I.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1869; aged 78; died, May 24.

Jerome Sunday, Harrisburg, Pa.; Cleveland (Ohio) Medical College, 1879; aged 70; died, May 22, of cerebral hemorrhage.

Charles Sohn ⊕ Pittsburgh; Bellevue Hospital Medical College, New York, 1890; aged 62; died, May 22, of pneumonia.

George Allen Shannon, Galt, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1891; aged 57; died, April 22.

William L. Rukenbrod, Sidney, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 68; died, May 27, of angina pectoris.

Liberty Crawford McLain, St. Louis; Long Island College Hospital, Brooklyn, 1879; aged 73; died, May 24, of senility.

Thomas Burke Smith ⊕ Lowell, Mass.; Medical School of Harvard University, Boston, 1894; aged 52; died, May 21.

Munroe Plumlee, Poteau, Okla. (licensed, Oklahoma, 1908); aged 57; died suddenly, May 22, of angina pectoris.

William Wallace Bruce, Casey, Ill. (licensed, Illinois, 1880); aged 79; died, May 19.

Correspondence

PROTEIN AND PELLAGRA

To the Editor:—Permit me to comment briefly on Hindhede's interesting paper "Protein and Pellagra," which appeared in The Journal, June 9, 1923, p. 1685.

In this contribution Hindhede undertakes, he tells us, to "discuss the question: Is the cause of pellagra the lack of animal food?" From his discussion it appears, however, that by "animal food" he really means "animal protein." It also appears that he considers Goldberger and his associates as reprehensible advocates of the view that pellagra is caused by lack of animal protein. Just why Goldberger and his associates are charged with this view of the cause of pellagra he does not state, unless it is because "Goldberger and Tanner, from their observations, conclude that 'the dominating rôle of diet in the prevention and causation of pellagra must be referred primarily to the character of the protein (amino-acid) supply, this being the only other dietary factor at present known to be necessary to physiological well-being.'" But why he should interpret this as meaning lack of animal protein we fail to see, all the more as we have repeatedly warned against precisely this interpretation. Thus, in 1915 (*Pub. Health Rep.* **30**:3129 [Oct. 22] 1915), Goldberger, Waring and Willets, in order to prevent misapprehension of their position on the cause of pellagra, pointed out that they were "not to be understood as meaning that pellagra is necessarily due to a lack or deficiency of fresh animal or leguminous protein food," or that the pellagra-causing dietary "fault" was susceptible of correction or prevention by such foods only. Indeed, they expressed the belief that the possibility existed that other foods might be capable of serving the same purpose, and suggested that "barley, rye and millet may have this power in some degree."

In 1916 (The Journal, February 12, p. 475), in 1918 (The Journal, September 21, p. 949, footnote) and again in 1920 (*Pub. Health Rep.* **35**:690, footnote) substantially the same warning is repeated. Furthermore, in the paper last cited (p. 703) we have:

> With respect to protein, the evidence which has already been considered seems to us to indicate that from the point of view of quantity alone a deficiency in this factor cannot be considered as essential to the development of pellagra; considering protein as a combination of amino-acids, however, the possibility of a deficiency in some one or more of these, already suggested by Voegtlin in 1914, cannot be excluded.

It therefore seems to us little short of absurd to charge Goldberger and his associates with advocating the view that pellagra is caused by a "lack of animal protein."

Since, so far as we are aware, no student has in recent years seriously advanced this view of the etiology of pellagra, Hindhede's effort to disprove it is, to say the least, utterly superfluous and, thus, his argument loses most, if not all, of its validity and force. Notwithstanding this, however, it seems worth while to consider briefly one or two points in his argument in order, if possible, to prevent further misunderstanding of our view of the cause of pellagra, all the more as some other writers (notably Jobling, The Journal, Feb. 10, 1923, p. 368) appear similarly confused as to our position.

Although not a matter of vital importance, it seems desirable to point out an error in Hindhede's Table 1 which, as he states, is a rearrangement and condensation of data presented in a table published by Goldberger, Wheeler and Sydenstricker (*Pub. Health Rep.*, March 19, 1920). In this table, as Hindhede presents it, the consumption of the foods of his "Group 1" in pellagrous households with two or more cases is given at the rate of 675 gm.; it should be 583 gm. per person, so that this represents not 2,800 but 2,100 calories, and therefore 64 per cent. and not (as Hindhede states) 90 per cent. "of the nourishment" of the members of such households. We have not thought it worth while to attempt to verify the data presented in the other tables.

In discussing our published studies of the diet of pellagrous households, Hindhede correctly points out that they were made in April and May, "and consequently" he remarks, "at a time when the food is most deficient. Why have investigations not been made," he asks, "in July and August, when the food evidently is satisfactory? Investigations at this time," he adds, "would probably have readily unearthed the cause. Is it probable," he continues, "that people in the hot summer use more meat and milk? Hardly. But it is likely that they use more vegetables."

We must confess that earlier in our studies we were disposed to regard the problem in very much this simple light ourselves, so that in the continuation of the study to which Hindhede refers we actually did make just such an investigation, the results of which are in preparation for publication. We may here anticipate this report so far as to say that we actually did find, as we had anticipated and as Hindhede suggests as likely, that much more vegetables were eaten in July and August than in April and May but, quite unlike what presumably obtains in Denmark, we also found that in South Carolina, cows give (or did give) more milk in July and August and, to complicate matters, the people drank it. Thus, as can readily be seen through a complication arising from a peculiarity or perversity of South Carolina cows, this investigation did not enable us to unearth the cause.

Proceeding to another phase of Hindhede's discussion, we note that he does "not deny the possibility that pellagra is due to the absence of protein" (we assume that by "absence" he means deficiency), but he is "most inclined to think that the question of pellagra is not a question of protein but of vitamin." In support of this view, he presents data tending to show that excellent health may be maintained on diets lacking in animal protein but, by reason of the inclusion of "whole bread" and "plenty of fruits, vegetables and potatoes," not lacking in vitamins. This, it seems, Hindhede regards as proof of his contention in favor of vitamin.

In view of our position with respect to animal protein, it must be obvious that, if the problem were the simple alternative between animal protein and vitamin, as Hindhede seems to consider it, we should logically have to agree with him as to vitamin. Unfortunately, in our view the matter is not so simple, for to us it is a question not of a lack of animal protein but of a faulty protein (amino-acid) supply as against (perhaps, indeed, in combination with) some as yet unknown factor which may or may not be a vitamin. (It is believed that the evidence already adduced by us excludes the known vitamins as the essential factors.) Accordingly, it follows that before either possibility can be accepted the other must be excluded. Hindhede seems to believe that the evidence he adduces showing that good health may be maintained on a low protein, with little or none from animal sources, proves that the protein in diets associated with pellagra is biologically complete and adequate, and that this factor is thus excluded.

He seems to believe also that the inclusion of "whole bread" and "plenty of fruits, vegetables and potatoes" in a diet makes the diet so enriched satisfactory solely by reason of the vitamins thus supplied.

We regret to be unable to share either of these views. The results of the studies of the last few years, notably those of McCollum and of Osborne and Mendel on the dietary properties of our natural foodstuffs, even though very lightly

esteemed by Hindhede, prevent it. In the light of these studies, it seems to us possible that the protein of "whole bread" and of "fruits, vegetables and potatoes," even though small in amount, may be adequate in itself or, more likely, may serve as an efficient supplement.

In closing we desire to state that we feel no prejudice either against vitamin or in favor of faulty protein in relation to pellagra. It is simply a question of the weight of evidence against or for. In our judgment, the weight of available evidence (*Pub. Health Rep.* **35**:648 [March 19] 1920; **37**:462 [March 3] 1922; THE JOURNAL, Dec. 23, 1922, p. 2132) supports the view that a faulty protein (amino-acid) supply is the primary etiologic factor in pellagra, although at the same time we fully recognize that some as yet unrecognized dietary factor, possibly a vitamin, may be concerned either alone or in combination with the amino-acid factor. More evidence is needed to settle this point conclusively.

JOSEPH GOLDBERGER, M.D., Washington, D. C.
Surgeon in Charge, Hygienic
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"THE INTRACUTANEOUS GUINEA-PIG TEST FOR HUMAN SUSCEPTIBILITY TO DIPHTHERIA"

To the Editor:—The communication in THE JOURNAL, May 12, by Dr. Kellogg, answering my criticism that he had devised a "new" method for the determination of diphtheria immunity of human beings by testing out their serums in guinea-pigs makes one believe that Dr. Kellogg is wrong in assuming undue credit.

The impression that Dr. Kellogg's letter conveys to an observer familiar with serum tests for antitoxin is well characterized by a statement in his own communication, i. e., that it consists of "quibbles as to differences or resemblances in technic."

I had occasion to refer to this matter before the American Society of Immunologists at the the annual session in Boston, March 29, and was much interested to note that these very serologists, whom Dr. Kellogg calls in as witnesses, could not see the justice of his claims to originality of a laboratory test that had been carried out by different investigators for more than ten years and fully described by me in a publication seven years ago (*J. Infect. Dis.* **19**:557 [Oct.] 1916).

Dr. Kellogg claims "that his modification was the first application of a skin test in guinea-pigs for the detection of natural immunity in the human subject." I modified Römer's test with this very purpose in view, i. e., to separate the naturally immune from the nonimmune, so as to be able to immunize the latter with toxin-antitoxin. Then, by a reapplication of the serum test I could determine not only the development of an active antitoxic immunity, but also in an accurate way find out the exact amount of antitoxin that had been produced.

The second statement, "that Zingher perpetrated the same fault as Römer in his modification" is not correct. Through these serum tests Dr. Park and I have been able to make studies in natural and active immunity against diphtheria, which have been fully corroborated by many observers, both here and abroad. Moreover, in using the same principle in the dilution of the test toxin (Dr. Kellogg uses $\frac{1}{30}$ L plus toxin in each cubic centimeter, and I had originally recommended for purposes of more accurate determination $\frac{1}{100}$ L plus toxin in each cubic centimeter), Dr. Kellogg continues to perpetrate the same fault.

The third statement, that my test has not been used by anybody anywhere, as far as Dr. Kellogg is aware, whereas his so-called "new" test is being used in three other laboratories, is also not correct. In several state and municipal laboratories, as well as in several research laboratories, my modification has been used with complete success for a number of years.

Fourth, Dr. Kellogg's statements as to the unreliability of the Schick test are sufficiently contradicted by the results obtained by the many thousands of physicians and investigators who have adopted and used the test all over the civilized world. In their hands it has given significant and far-reaching results in spreading the progress of diphtheria control, and through their efforts the hope is raised that we shall soon see the end of this disease wherever the Schick test and the immunization with toxin-antitoxin are carefully practiced.

Finally, Dr. Kellogg's claim for the intradermal guinea-pig test, that it has "simplicity, practicality, accuracy and originality of merit" is correct only with modifications. The intradermal guinea-pig test (as I described it in 1916, or as Dr. Kellogg rediscovered it in 1923), is "simple" enough in the hands of a carefully trained laboratory worker, who must have at his disposal not only a standardized toxin, but also guinea-pigs that are expensive and not always easily obtainable. It is "practical" only to the extent that he assumes that physicians would rather draw blood from a person to be tested for diphtheria immunity than learn how to do a careful Schick test and thus depend on their own results. This could only be true of physicians who rarely would want to do a Schick test. It is "accurate" in proportion as great care is taken in the laboratory in making these tests on guinea-pigs. But it falls down almost completely on "originality."

ABRAHAM ZINGHER, M.D., New York.
Assistant Director, Bureau of
Laboratories, New York City
Department of Health.

CONCERNING THE DIETETIC AND HYGIENIC TREATMENT OF CANCER

To the Editor:—In a recent circular, evidently sent to a large number of physicians, Dr. L. Duncan Bulkley has invited those interested in the treatment of cancer by purely medicinal and dietetic measures to join him at the San Francisco session of the American Medical Association, in forming a society to promote these methods. The injury that will be done to the public by the spread of such doctrines needs no emphasis; and this attempt to give such methods an apparently scientific "regularization" and basis should meet with the same decisive opposition as would other forms of cancer quackery.

In order that there may be no misconception as to the position of the New York Skin and Cancer Hospital in this matter, I have been directed by the Medical Board to send you this communication and the following resolution:

> The Medical Board of the New York Skin and Cancer Hospital states that the views concerning the treatment of cancer expressed by Dr. L. Duncan Bulkley do not represent the opinions of the Medical Board or the policy of the Hospital; that the New York Skin and Cancer Hospital has no medical officer who bears the title "Senior Physician," and has never had such an officer; that Dr. Bulkley's official position in the Medical Staff is "Dermatologist Emeritus"; and that it regrets the attempt of Dr. Bulkley, by the use of the title "Senior Physician," to create an obviously incorrect impression as to the authority of his views concerning cancer.

GEORGE H. SEMKEN, M.D., New York.
Secretary, Medical Board, New York
Skin and Cancer Hospital.

Biologically Speaking.—Any characters appearing in man that can be proved hereditary are normal, biologically speaking, regardless of how the characters may unfit their bearer for harmonious cooperation in the economical and social programs of civilization.—Buchanan, *Am. J. Med. Sc.*, May, 1923.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF BILHARZIASIS

To the Editor:—Is there any efficient treatment for bilharzia disease (*Schistosoma haematobium*)?

E. H. MCMILLAN, M.D., Pasadena, Calif.

ANSWER.—Christopherson introduced and placed on a sound basis the treatment of schistosome infestations. He reported the cure of seventy cases by the intravenous injection of antimony and potassium tartrate (tartar emetic), and his work has been confirmed by Taylor, Fairley, Low, Newham, Madden and Day.

The injections are given on alternate days over a period of from fifteen to thirty days. The first dose is ½ grain (0.03 gm.) of antimony and potassium tartrate dissolved in 90 minims (6 c.c.) of sterile physiologic sodium chlorid solution. The injection is repeated every other day and increased by ½ grain up to a maximum of 2½ grains (0.16 gm.) at a single sitting. In giving the larger doses, the total amount of an injection is made up to 10 c.c. with the diluting fluid. The total amount of the drug injected may amount to between 20 and 30 grains (from 1.3 to 2 gm.). Manson says that this amount may be shown by further observation to be too large. A rapid improvement occurs in the condition of the urine, and after about 15 grains (1 gm.) has been injected, all traces of blood usually disappear. Care must be taken that none of the solution escapes into the surrounding tissues, as an abscess may result. It is advisable to have the patient lie down for a few hours after an injection. A total of 10 grains (0.6 gm.) appears sufficient for children.

Emetin also has recently been given with apparent success. It is advocated for patients who are intolerant of antimony. It may be given intramuscularly, but whenever possible should be given intravenously in a 3 per cent. solution in sterile water, the dose being 2 c.c. containing 1 grain (0.06 gm.) of emetin hydrochlorid. The maximum single dose is 3 grains (0.2 gm.) for an adult. Generally one commences with ½ grain doses. A total of from 15 to 20 grains (1 to 1.3 gm.) may be given altogether.

LOCAL ANESTHETIC FOR TONSILLECTOMY

To the Editor:—1. What is the now commonly used local anesthetic for tonsillectomy, and how much could be used of it? 2. How much epinephrin should be added to a 0.5 per cent. procain solution for a local anesthetic? 3. How much epinephrin do I have to add to 8 ounces of a 0.5 per cent. procain solution to make the right composition?

G. V. WOHLLEBEN, M.D., Herreid, S. D.

ANSWER.—1. The most commonly used local anesthetic for tonsillectomy is procain in 1 per cent. solution. Two or three fluidrams may be safely used on each side.

2. If epinephrin is used, its action is sufficient if one drop is added to each dram of anesthetic. The use of epinephrin is not essential.

3. One fluidram to 8 ounces of 0.5 per cent. procain solution will give the proper effect, but it is wrong to prepare so great a quantity at one time. The epinephrin should be added before each operation, so that the preparation is fresh.

TREATMENT OF ARTHRITIS DEFORMANS

To the Editor:—Please give your latest judgment and opinion concerning the therapeutics of arthritis deformans. There seems to have developed a metabolic imbalance of a chronic nature in one of my patients of one year's standing. There is no ascertainable cause beyond a suspicion of mild gastro-intestinal stasis.

FRED W. BARGER, M.D., Salem, Va.

ANSWER.—Arthritis deformans, being in the great majority of all cases of infectious origin, requires for its proper treatment: (1) the thorough removal of all foci of infection; (2) the building up of the natural defenses of the body by optimal hygiene, including a general mixed diet, and (3) the correcting of the local malnutrition of the affected joints by hydrotherapy, dry hot air or diathermy, by active and passive exercises, and by orthopedic apparatus or operation. Vaccine therapy, even with autogenous vaccine, has not produced evident benefit.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chrm., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, July 3. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, July 9-12. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.

COLORADO: Denver, July 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 10. Sec. Eclectic Board, Dr. James E. Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT: Hartford, July 10-11. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford.

DISTRICT OF COLUMBIA: Washington, July 10-12. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.

HAWAII: Honolulu, July 9-12. Sec., Dr. G. C. Milner, 401 Beretania St., Honolulu.

INDIANA: Indianapolis, July 10. Sec., Dr. Wm. T. Gott, Crawfordsville.

MAINE: Augusta, July 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.

NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, July 10-11. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, July 3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Preliminary Examiner, Mr. C. D. Koch, 422 Perry Bldg., Philadelphia.

RHODE ISLAND: Providence, July 5-6. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 17. Dir., Dr. H. R. Kenaston, Bonsteel.

UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.

WEST VIRGINIA: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

South Dakota January Examination

Dr. H. R. Kenaston, director, Division of Medical Licensure, South Dakota State Board of Health and Medical Examiners, reports the oral, written and practical examination held at Pierre, Jan. 16-17, 1923. The examination covered 15 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University		(1922)	79.1
Northwestern University Medical School		(1901)	88.4
Rush Medical College		(1882)	82.2
State University of Iowa College of Medicine		(1920)	81.1
Medical School of Maine		(1904)	83.2
Jefferson Medical College of Philadelphia		(1920)	87.7
University of Vermont		(1914)	87.2
University of Toronto		(1893)	87.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1920)	Minnesota
Johns Hopkins University		(1919)	Minnesota
University of Kansas School of Medicine		(1915)	Kansas

North Carolina January and April Report

Dr. Kemp P. B. Bonner, secretary, Board of Medical Examiners of the State of North Carolina, reports that four candidates were licensed by endorsement of credentials at the meeting held at Raleigh, Jan. 31, 1923. The following colleges were represented:

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Emory University		(1915)	Georgia
University of Louisville		(1911)	S. Carolina
Columbia University College of Phys. and Surgs.		(1896)	New York
Medical College of the State of South Carolina		(1911)	S. Carolina

The report shows, also, that one candidate who graduated from the Medical College of Virginia in 1916 was registered by endorsement of his Virginia license at a special session held at Raleigh, April 30, 1923.

Book Notices

VORLESUNGEN ÜBER DIÄTBEHANDLUNG INNERER KRANKHEITEN. GEHALTEN VOR REIFEREN STUDIERENDEN UND ÄRZTEN. Von Dr. H. Strauss, Prof. e. o. an der Universität Berlin. Mit einem Anhang Winke für die diätische Küche von Elsie Hannemann, fr. Vorsteherin des Haushaltungs-Lehrerinen-Seminars und der Kochschule des Lette-Vereins in Berlin. Fourth edition. Paper. Price, 7 marks. Pp. 471. Berlin: S. Karger, 1922.

To physicians interested in dietetics, Strauss needs no introduction. Previous editions of this book have been favorably received, and this edition is an improvement over the others. Perhaps the most interesting feature of the volume is the constant recurrence of references to the lessons of the war. It would seem that never before has such an opportunity for the study of mass action of food been obtained. An interesting contrast to this point of view is noticed in the repeated warnings as to necessity of individualization in the treatment of patients with diabetes. One need not agree with the author's point of view to appreciate the generally sound common sense which is the keynote of the volume. The discussion of obesity is particularly interesting. Diabetes is handled practically, as it was in earlier editions; we miss the newer American studies, yet we wonder which will stand the test of time. The diet tables and recipes are practical and helpful. The book is well printed; the German language as written by Strauss is easy to read.

CLINICAL SYMPTOMATOLOGY OF INTERNAL DISEASES. PART II: GENERALIZED PAIN. By Prof. Dr. Norbert Ortner. Translated by Francis J. Rebman, with an introduction by Thomas Webster Edgar, M.D. Cloth. Price, $5. Pp. 596. New York: Medical Art Agency, 1922.

The arrangement of the subject matter is similar to that of the first volume, on abdominal pain. The inherent value of this book consists not alone in the completeness of the subject, but also in clear, concise and descriptive presentation. Nothing seems to be left out. Any reader, baffled by a pain of apparently unknown origin, and in doubt as to the various causes of pain in the particular region in question, will find here a concise differential diagnosis of all causes of pain appearing in this locality. A careful history, a complete examination and discriminating use of laboratory methods are no more important than a thorough analysis of the results of these examinations. The translation is fairly well made, although at times a happier selection of words could have been made. The book can be recommended as a valuable aid to the student and to the practitioner.

LEXIKON DER GESAMTEN THERAPIE DES PRAKTISCHEN ARZTES MIT EINSCHLUSS DER THERAPEUTISCHEN TECHNIK. Unter Mitarbeit zahlreicher Fachgenossen. Herausgegeben von Walter Marle. Second edition. Lieferungen I, II and III. Paper. Price, 90 marks. Pp. 480, with 190 illustrations. Berlin: Urban & Schwarzenberg, 1923.

These are the first three instalments of an index of treatment in German, which, when finished, will consist of perhaps fifteen such instalments, or three volumes. The diligence and thoroughness characteristic of German literature of this kind is evident throughout. By the frequent use of asterisks, the reader is referred to other portions of the lexicon, in which the technic of the various remedial measures is discussed in detail. In this manner, repetition is avoided; and, at the same time, very complete information may be obtained. Handicaps to American use of this handbook are, besides the unavoidable use of the German and Austrian pharmacopeia, numerous references to German proprietary preparations, many of which would probably not be acceptable under the rules of the Council on Pharmacy and Chemistry. The lack of an analogous institution in Europe is making itself strongly felt here.

NERVE EXHAUSTION. By Maurice Craig, C.B.E., M.D., F.R.C.P., Physician for and Lecturer in Psychological Medicine, Guy's Hospital. Cloth. Price, $2.25. Pp. 148. Philadelphia: Lea & Febiger, 1922.

According to the preface, this book is written with the object of rendering knowledge of the subject more general in the hope that this will lead to efforts to prevent the disease. The descriptions of symptoms, diagnosis, prognosis and treatment are written in simple language, but with textbook formality. The subject of causation is equally formal; and though there are some excellent, but very brief, suggestions on care in training children, especially hypersensitive children, there is nowhere any consideration of psychodynamics. Probably the author, a psychopathologist of note, considers this field too complex for the general medical reader; but it is difficult to understand how preventive work is to be fostered without such considerations. Altogether, there seems little justification for the book.

TEXT-BOOK OF OPHTHALMOLOGY. By Hofrat Ernst Fuchs. Authorized translation by Alexander Duane, M.D., Surgeon Emeritus, Knapp Memorial Hospital. Seventh edition. Cloth. Price, $9. Pp. 997, with 445 illustrations. Philadelphia: J. B. Lippincott Company, 1923.

The last American edition of this textbook appeared in 1919. The present edition has been entirely rewritten and rearranged with a view to a more logical consideration. Dr. Duane points out that he has been guided in the arrangement by the thirteenth German edition just prepared by Professor Salzmann. However, he himself has modified the arrangement in the section on the anatomy of the eye, physiology, refraction and many other subjects. Throughout the entire book there are numerous revisions and additions on technic and pathology, with particular relation to new apparatus that has been made available for ophthalmologists. The Fuchs textbook has been for long an outstanding guide in this field; the constant revision and issuing of new editions is a commendable effort.

PUBLIC RELIEF OF SICKNESS. By Gerald Morgan. Cloth. Price, $1.50. Pp. 195. New York: The Macmillan Company, 1922.

The author discusses, first, the problem of sickness and poverty. Much of the information bearing on this phase of the subject is taken from the report of the health insurance commission created by the state of Illinois in 1917. That sickness is a very important factor in the causation of poverty is certain, but it is by no means the only factor, and its influence in this direction is often overestimated by enthusiastic supporters of some form of compulsory health insurance, just as overzealous prohibition advocates frequently overestimate the influence of drink in the production of poverty. The health insurance acts of Denmark, Germany and England are then briefly discussed, and their shortcomings pointed out. He then takes up two methods of legislation proposed in New York State for the public relief of sickness—the so-called "health center" and the "compulsory health insurance" bills. He believes that cash benefits and medical relief should be separated and not contained in the same act. It is a comparatively simple matter to provide for cash benefits, but it has not been possible satisfactorily to provide adequate medical service by compulsory governmental regulations. The author favors the establishment of health centers built and maintained by state aid and local taxation, and controlled and managed by state and local officers, much after the general plan of the bill presented in New York State but which was not passed.

LEHRBUCH DER GEBURTSHILFE. Von Prof. Dr. Rud. Th. v. Jaschke, Direktor der Universitätsfrauenklinik in Giessen, und Prof. Dr. O. Pankow, Direktor der Frauenklinik an der Akademie für Praktische Medizin in Düsseldorf. Second and third edition. Cloth. Price, $7.20. Pp. 789, with 501 illustrations. Berlin: Julius Springer, 1923.

This textbook of obstetrics covers its field in much the same manner as the Döderlein-Krönig textbook covers the field of gynecology. The work, as built up by Runge, was in its eleventh edition. The present is the third edition issued under the editorship of Jaschke and Pankow. As with most German textbooks, one of the most important features is the illustrations. There are numerous excellently colored lithographed reproductions of both gross appearances and microscopic sections that are not available in other textbooks. The authors call attention to the fact that the sections on physiology of the new-born and on the pathology of pregnancy have been especially revised. The literary references apparently do not cover literature later than 1920, and there are virtually no references to American work.

Miscellany

OPTICAL SERVICE IN INDUSTRY

A Report from the New England Conference of Industrial Physicians

The New England Conference of Industrial Physicians, through a committee[1] appointed for that purpose, has investigated the question of optical service as a part of the general medical service in industry. The committee considered the technical procedures employed in examining the eyes of industrial workers, the question focusing particularly on a comparison of the cycloplegic and noncycloplegic methods of refraction, and the relationship of ophthalmologists and optometrists to this work.

In pursuit of reliable information bearing on the subject, questionnaires were submitted to a number of ophthalmologists and optometrists. In framing this questionnaire, the difference in the qualifications and points of view of the two groups was kept in mind. An analysis of replies received from seventeen ophthalmologists and thirteen optometrists elicited the following information.

The majority of ophthalmologists consulted regard the routine use of a cycloplegic as essential in determining the refraction of the eyes of persons under 40 years of age. A few feel that in properly chosen cases a cycloplegic may be dispensed with. All use cycloplegics in difficult cases.

On the other hand, the majority of optometrists reported that an alkaloidal cycloplegic was not essential for the proper refraction of the eye. For the most part they advocate the fogging method, modified fogging method, repression and suppression, and dynamic skiametry. Some use prisms to relax convergence.

The ophthalmologists were practically unanimous in asserting that the inability of a skilled optometrist legally to employ alkaloidal mydriatics would lessen his efficiency as a refractionist in an industrial plant. They were nearly unanimous in their unwillingness to concede a satisfactory substitute for alkaloidal cycloplegics. The majority of them consider the optometrist not educationally qualified to cope with questions that may arise in connection with the physics and physiology of refraction, although it is admitted by some that a well qualified optometrist could deal with questions relating wholly to refraction. The optometrist's lack of knowledge of diseases of the eye is stressed by the majority of ophthalmologists as a serious handicap to his interpretation of cases in which an unsatisfactory refraction is obtained, claiming that this knowledge is necessary to the attainment of ideal efficiency as a refractionist. Ophthalmologists and optometrists are in practical agreement as to the necessity for combining retinoscopy with the subjective examination in the majority of cases.

Most of the optometrists consider that, for all practical purposes, their methods enable them to determine the degree of refractive error. They also consider that the method of dynamic skiametry yields more practical and satisfactory information than the static method.

Almost all the replies contained the suggestion that, before undertaking the examination of workers, the examiner should spend sufficient time in the work rooms to acquaint himself with the working conditions, including illumination and the visual requirements of the work. The advisability of occasional simple lectures to employees on the relation of eyestrain to health and occupation was also suggested.

An excellent optometric opinion is voiced by this quotation from one of the replies:

> As an optometrist, and in view of the great majority of refractive cases as compared with pathologic ones, which are encountered during such examinations, I quite naturally feel that the optometrist is the logical practitioner to be engaged for such purposes. However, wherever possible, I believe it advisable to engage both an oculist and an optometrist, the oculist in an advisory and consulting capacity, and the optometrist to conduct the routine examination. If thought advisable, the oculist might make the ophthalmoscopic examination in the suggested superficial examination, although all competent optometrists can detect pathologic conditions and could then refer these to the company oculist.

In defining the attitude of the American Medical Association on this question, the late Secretary of the Association wrote:

> The Principles of Medical Ethics of the American Medical Association declare that "in every consultation, the benefit to be derived by the patient is of the first importance."
>
> An optometrist is one who is skilled in, or practices "the employment of subjective or objective mechanical means to determine the accommodative and refractive states of the eye and the scope of its functions in general." In a number of states the laws defining and regulating the practice of optometry especially exclude from the means which optometrists may employ "the use of drugs." In many instances, drugs afford a valuable means for determining abnormal eye conditions, but these are rightly denied to optometrists because they have no, or at best rudimentary, knowledge of pathology and of therapeutics. Optometrists are skilled technicians rather than especially qualified practitioners of medicine.
>
> On the other hand, an oculist or an ophthalmologist is a physician who specializes in treating diseases of the eye and is in a position, both under the laws and because of his knowledge, to consult with the attending physician as freely as could a laryngologist, a neurologist, a surgeon or any other specialist. It is manifest, therefore, that the interests of the patient can better be served by an oculist or an ophthalmologist, than by one who is qualified merely as an optometrist.
>
> If the services of a specialist in diseases of the eye cannot be made available to the patient, the attending physician himself must be responsible for the care of a patient suffering from an eye condition, when his patient is refracted by an optometrist, just as the attending physician is responsible for the welfare of his patient when the physician is assisted in the treatment of the patient by a pharmacist, a nurse, a lay laboratory technician or any other partly qualified lay technician whose services are employed under the direction of the attending physician.

CONCLUSIONS

As to the use of cycloplegics, the majority of ophthalmologists consulted, all of whom have access to all methods of refraction, consider the use of homatropin or atropin essential in determining the refraction of the eye. On the other hand, the majority of optometrists consulted, who for the most part are not legally qualified to use cycloplegics, claim that their use is not essential in determining the refraction of the eye.

If refraction is regarded merely as one part of industrial eye service, the better eye service, as a whole, which it is possible for an ophthalmologist to render is indisputable—even by optometrists.

It is believed that an optometrist can render useful service in industry if he will acknowledge that he is not legally qualified to refract all eye cases satisfactorily, and will be on the alert to seek adequate medical aid when his refractive resources are unavailing or when independent eye disease seems at all likely. In addition, and in accordance with the attitude of the American Medical Association and of some optometrists, he should be willing to act under suitable medical supervision and responsibility.

The best interests of industry in the examination and treatment of the eyes of workers would appear to be served by the following alternatives, presented in the order of their value:

1. Employ a full-time or part-time ophthalmologist to handle practically all the eye service.
2. Employ a part time ophthalmologist, who will do all or part of the refraction work, or who will be available for consultation by the full-time or part-time optometrist who is doing the work.
3. Employ a full-time or part-time optometrist, who will act under suitable medical supervision and responsibility.

1. This committee consisted of Dr. H. S. Reynolds, Cheney Bros., South Manchester, Conn., Chairman; Dr. N. G. Monroe, American Optical Company, Southbridge, Mass., and Dr. H. G. Murray, Dennison Manufacturing Company, Framingham, Mass.

NATURAL GAS HEATERS

The U. S. Bureau of Mines has issued a warning on the dangers of carbon monoxid poisoning from the improper combustion of natural gas in heating appliances, founded on experience and a series of tests. The specific suggestions offered to avoid such accidents are: 1. A radiant gas heater should not be operated so that the radiants glow more than three quarters the distance from the bottom to the top. 2. Adjustments should be made from the needle valve rather than the gas cock, which should be as far open as possible when the adjustment is made. 3. Oversize orifices should not be used for low gas pressures. 4. Stoves adjusted for arti-

ficial gas are not suitable for natural gas without the substitution of a smaller orifice. 5. Manufacturers should stamp on the heater whether it is for use with natural or artificial gas. 6. Heaters should be of sufficient size to avoid the danger of operating at excessive rates. 7. Flues are always desirable. 8. One should never sleep in a room in which a flueless heater is burning without at least one window wide open.

Medicolegal

Malpractice Not Shown in Tearing of Ligaments

(MacKeown v. Baldwin (Calif.), 211 Pac. R. 477)

The District Court of Appeal of California, First District, Division 2, says that, in her seventh amended complaint, the plaintiff alleged that on July 12 she strained the ligaments of her right leg, and about September 1 employed the defendant to treat and cure the leg; that the defendant instructed a nurse who was in his employ to bend the leg backward and forward a great many times—instructed her to bend the leg as aforesaid to the right and left, which bending caused the leg to tear the ligaments at a point near the knee, and caused the ligaments to become broken and torn from the flesh; that the twisting and bending of the knee by the nurse was so done by the expressed orders of the defendant, and that the latter was negligent in that he told the nurse to bend the right leg of the plaintiff to the right and left, backward and forward, as aforesaid; that such bending, twisting and exercising of the leg caused the tearing of the ligaments, which would not have been torn if the defendant had not instructed the nurse to treat the leg as stated; and that the defendant was negligent and careless in prescribing the treatment. A demurrer was sustained to this seventh amended complaint, without leave to amend, and later a judgment was entered in favor of the defendant for his costs, which judgment is affirmed.

It is patent from the charging part of the complaint that the defendant's instruction to his assistant was "to bend the right leg of plaintiff backward and forward a great many times." It is true that the pleader in the next sentence charged that the defendant instructed the nurse "to bend the leg as aforesaid to the right and the left, which bending caused said leg to tear the ligaments." But further down such expression was clarified as showing that the pleader did not mean to state that the leg was to be bent sideways to the right and sideways to the left, but the bending to the right and left was to be backward and forward. It is clear that the pleader did not aver that the leg was to be twisted, although the pleading contained language from which that inference might be drawn. The pleader evidently thought that he was within his rights in averring that a ligament was torn by reason of the operation, but he evidently overlooked the fact that in many proper operations it is an essential part of the operation to tear ligaments. In other words, the mere matter of the tearing of a ligament is not actionable. If, by reason of a spraining or some other injury, an adhesion has taken place, it would seem to be elementary that relief can be had only by forcibly and with more or less violence tearing the ligament loose. It is not, therefore, malpractice to tear loose a ligament, but many other factors must be considered to constitute such an act malpractice.

In this pleading there was no averment of any fact or facts showing that the defendant did anything which under the particular circumstances he should not have done, nor was there any averment that under certain circumstances he omitted to do something which he should have done. These omitted circumstances should have been enumerated (if, in fact, they existed), and thereon the pleader should have predicated his contention that under such circumstances, naming them, the alleged bending was not the act of a person reasonably skilful in his profession. Thereafter, on the trial of the case, experts could be called to give testimony for and against such contention. In no other way can some cases sounding in malpractice be proved.

Taking the plaintiff's pleading by and large, and supposing that she should take the stand and prove every single word which she directly alleged, her proof would not constitute a cause of action to go before the jury, for there would be nothing to guide the jury as to whether the defendant had skilfully prescribed a bending, or whether his prescription was not reasonably skilful. But the court does not want to be understood as stating that a physician may prescribe a violent bending of the leg from side to side, and that such bending, if alleged, must be followed by additional averments; for the court does not understand that the plaintiff by her complaint made any such allegation, and, besides that, the defendant's demurrer was directly addressed to that subject and to the subject of twisting.

Untrue Answer by Physician Applying for Insurance

(Cunningham v. Penn. Mut. Life Ins. Co. (La.), 95 So. R. 110)

The Supreme Court of Louisiana, in affirming a judgment in favor of the plaintiff on a policy of life insurance issued in January to her husband, a physician, who died in the following November, says that the insured in answering the question in his application for insurance as to when he was last attended by a physician or consulted one, and for what, answered: "About ten years ago. Malaria." It appeared, however, that less than two years before he made application for the insurance, he had visited a firm of specialists in genito-urinary diseases, who diagnosed his trouble as slight nongonorrheal prostatitis and vesiculitis. The net result was that they considered his case "chiefly psychic" or imaginary, and, in the light of these facts, at that time did not think that the complaint should have affected his health to any appreciable extent and he was so led to understand by them.

It is entirely possible for answers to such questions to be knowingly untrue from a literal standpoint, and yet not fraudulent, for the applicant may, in good faith, have considered the facts not of sufficient importance to report, especially in view of the law, as announced by the decisions of this court and sustained by the jurisprudence of the other states, to the point that inconsequential illnesses do not have to be disclosed, even though they may have occasioned the attendance of a physician. Nothing was charged to show that, if the information in question here was material, the insured knew of it, or that his action was not due to honestly mistaken judgment. Fraud must be specially pleaded, and because the company's answer did not aver that the incorrect replies were given with a fraudulent purpose, the court thinks the pleading fell short of the requirement of the law to raise the question of fraud.

The examination blanks of the defendant inquired of the applicant with respect to many diseases, symptoms, etc., but nowhere did they directly or indirectly ask if he had had prostatitis or vesiculitis, by those technical names or otherwise. The insured was shown to have been a country physician, with a practice scattered over considerable territory, which necessitated his doing a great deal of riding in buggy and on horseback, and that he had had very little rest for the three years preceding his examination by the specialists. The fact that he was also a physician, and also an examiner for life insurance, and knowing the common character of his trouble, could and doubtless did cause him to consider it not of sufficient importance to be reported in his examination; and, since bad faith is never presumed, the court concludes that this was the consideration which actuated him in answering the interrogatories as he did.

It seems to the court that the best evidence on whether or not the defendant would have considered such a complaint sufficient to refuse the policy was that, notwithstanding the common nature of the trouble from which the insured was said to be suffering in men of his age, and notwithstanding the detailed inquiries about numerous other diseases and symptoms, nowhere did it ask a question that was calculated to disclose such a condition. The court takes it that the interrogatories on these blanks were deliberately prepared by experts with long experience in such matters, and, if such information was important, it would have been called for.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.
Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
Association of American Teachers of Diseases of Children, San Francisco, June 26.
Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter. First National Bank Bldg., San Diego, Calif., Secretary.
Montana, Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.
Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Seventeenth Annual Meeting, held in New York, May 22-24, 1923

(Continued from page 1801)

Treatment of Certain Cardiac Irregularities with Quinidin

DR. ROBERT L. LEVY, New York: Quinidin is suitable in about 50 per cent. of cases of auricular fibrillation, the primary requisite for therapy being an efficient myocardium. The heart muscle must be competent. Cases of mitral stenosis do better than those with combined valvular lesions; but patients with no valve lesions and comparatively small hearts do best. Cases of hyperthyroidism do well if the heart muscle is not badly damaged. Rheumatic and arteriosclerotic cases do fairly well with quinidin. Hypertrophic hearts obtain only temporary relief. The technic of administration is important. The patient should be in bed, under careful observation; preferably hospitalized and controlled by the electrocardiogram. Patients can be treated at home, in charge of a good nurse, but ambulant treatment should be discarded. An interval of four or five days should elapse between digitalis therapy and quinidin treatment. The dose is given in capsules at two hour intervals to insure concentration. The first day a test dose of 0.1 gm. is given, to test for drug idiosyncrasy. The following doses are 0.4 gm., as follows: first day, once; second day, twice; third day, three times; fourth day, four times; fifth day, five times, and not more than 2 gm. in the twenty-four hour period. The first course is not continued for more than a week, and if normal rhythm is not established, a second course may be given later with good effect. The duration of effect varies from one day to more than a year. If the fibrillation is of long standing, usually the patient relapses. If prolonged quinidinization is needed, no bad effects are noted. In paroxysmal fibrillation, daily small doses can be given. Unpleasant or dangerous symptoms from the use of the drug have been noted. These may occur in cases in which the drug is contraindicated. Quinidin causes a rise in the ventricular rate, and where this is naturally rapid, palpitation may occur. Some patients are specially sensitive to quinidin, for which reason a small probatory dose is necessary. The occurrence of ectopic ventricular beats during quinidin therapy indicates cessation of the drug. There is an idea that clots are apt to appear in the appendixes of the ventricles, but emboli are not more frequent in quinidin patients. Sudden unexplained death has occurred after taking quinidin, but electrocardiographic tracings were not procured just before death, so that the mechanism is in doubt. The drug belongs to the cinchona group of alkaloids. Quinidin depresses excitability and conductivity, but not contractility of the myocardium. The ventricular output is therefore increased. Its therapeutic value is limited to a small group of patients. In the limited group, some may be helped and in some there is a real therapeutic triumph. Premature contractions and extrasystoles may disappear spontaneously; but if they do not, they may be controlled by small doses of quinidin. I must emphasize the fact that a competent myocardium is requisite before attempting quinidin therapy.

DISCUSSION

DR. LOUIS FAUGERES BISHOP, New York: No one should attempt to appraise the value of quinidin without a thorough knowledge of the natural history of the case. If the paroxysms become more frequent, they become finally established. I do not think that the dictum "Once a fibrillator, always a fibrillator" is to be considered as true. One point I consider of importance is that this idea that 70 is the normal heart rate is all wrong. Many people average a much higher rate all their lives, while some have a rate of 40, and that is normal for that particular person. Each individual has his own normal rate. McKenzie stated that 90 was an optimal pulse rate in the treatment of fibrillation. I believe that failure in treating fibrillators with digitalis is often associated with clinging to this old idea of 70 as the goal to be attained. I am satisfied when I can reduce the pulse rate to 90. I try to maintain this as nearly as possible. This is a very practical point because we want to get therapeutic results with a minimal amount of the drug. It requires a good deal of clinical acumen to judge of results.

DR. T. STUART HART, New York: In my own experience, the most suitable field for quinidin therapy is in paroxysmal cases of auricular fibrillation. We do not want to keep these patients continuously on digitalis. The cases are puzzling, and the patients are much more uncomfortable than in continuous fibrillation. The latter become accustomed to the arrhythmia and do not mind it very much; but if the attack comes out of a clear sky, the patient is very unhappy and uncomfortable. In regard to the heart rate, I differ with Dr. Bishop on that point: the cases best kept under control by digitalis were those in which the patient, while resting in bed, had a heart rate of from 60 to 70, and when they moved around, it naturally increased slightly, but they can be kept below 80 all the time. To return to quinidin, there is another class of patients that receive considerable benefit—the class with the tachycardia of exophthalmic goiter, those with neurocirculatory asthenia and other rhythmic tachycardias of which we cannot explain the cause, but which give a great deal of discomfort and sometimes approach cardiac insufficiency because the efficiency of the heart sometimes depends more on the rate than on the rhythm. The drug is very useful in these cases.

DR. C. S. DANZER, Brooklyn: The requirements in regard to quinidin are difficult to satisfy. Dr. Levy emphasized that a competent myocardium must be present, but this is difficult to determine; he also said that unfortunate reactions have occurred even when probatory doses have been given. I have known patients with fibrillation who reached old age, and they never suffered very much harm. Therefore, taking all these points into consideration, would it not be wise to use quinin, which is less toxic than quinidin, in intravenous injection to stop tachycardia? This is not so dangerous and would serve to stop disturbance of rhythm or rate which does not produce embarrassment of the circulation. We should not use quinidin unless we are forced to it.

DR. H. E. B. PARDEE, New York: The question of selection of cases is the most difficult, because we have so few reliable criteria on which to go. Patients with much enlarged hearts do not tend to revert to normal rhythm. Patients with valvular disease do not get benefit. Fibrillators of long standing do not get benefit. But there are notable exceptions to all these things in patients who have everything to predispose against the drug. Two thirds of the patients revert to normal rhythm, and four tenths can be maintained at normal rhythm, so that it seems wise to give all patients who have auricular fibrillation, with the exception of those showing signs of cardiac failure, a chance with quinidin treatment. We can treat the patients with digitalis until we

get compensation and maintain this for two weeks; then we can try quinidin. One such patient, when put on digitalis, and waiting for quinidin, returned to normal rhythm spontaneously. There is a tendency to revert to normal rhythm, and quinidin may push it along. Quinidin may be tried for a week, and if it does not have effect, then it is not worth while to continue as the effect produced will not be permanent.

DR. W. D. ALSEVER, Syracuse: Is the patient put in better shape to do his work by changing the cardiac mechanism with the use of quinidin?

DR. ROBERT L. LEVY, New York: I must also take issue with Dr. Bishop regarding the optimal ventricular rate. He said the normal rate was supposed to be about 70; there is no such thing as a normal rate. There are no "normal" biologic phenomena. I think, however, that patients with auricular fibrillation are much more comfortable with a ventricular rate of from 60 to 70, than one above 80. The fibrillator's response to effort is out of proportion with the demands made on the heart. The question raised about the difficulty of ascertaining whether or not the myocardium is competent is a just one. We all know the difficulty of estimating myocardial function, but there are certain clinical criteria which adequately serve our clinical needs. Clinical experience and judgment must be utilized. In regard to administration of quinin intravenously, Dr. Wenckebach spoke of this in his Harvey lecture. This is not an entirely innocuous procedure. Certain graphs showed ventricular tachycardia, a very serious disorder, and I would not urge giving a cinchona alkaloid in such a disturbance of the cardiac mechanism. In dogs, it gives a very marked fall in blood pressure. In regard to the use of quinidin in extrasystoles, small doses can be used with no untoward symptoms. I do not believe that quinidin is any more toxic than quinin, and it is a very much more effective drug. Dr. Pardee expresses the opinion that every person with auricular fibrillation may be given the benefit of a trial with quinidin. It has been our practice rather to eliminate those persons who might be supposed to be harmed by it. Of the remainer treated, not all will be benefited. It is difficult to predict those in whom success will be achieved. We have not been uniformly successful, but we have done no harm. I cannot answer Dr. Alsever as to what percentage of patients have their working capacity increased by the use of quinidin, but it is a considerable number.

DR. SOBEL, Rochester: What effect has quinidin dosage on hypertension, with or without arteriosclerosis?

DR. LEVY: In the presence of a competent myocardium, even with hypertension, I would not hesitate to use quinidin.

(To be continued)

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Eighth Meeting, held at Atlantic City, N. J., May 1-2, 1923

(Continued from page 1804)

Infectious Jaundice in the United States

DR. GEORGE BLUMER, New Haven, Conn.: This disease was noted first in 1812. From 1812 to the present time, the outbreaks can be divided into three groups: 1. From 1812 to 1886 there were isolated epidemics in the Southern states; (2) from 1886 to 1920 there were fifty-one reports of more or less scattered cases, never more than seven in one year, occurring in all parts of the country, with the exception of the Pacific states. From 1920 to 1923 there have been 208 epidemics, 113 of which occurred in New York State. I have been able to get reports from every state, except nine, and I do not believe that the disease has not been present there, but it has not been recognized and reported. The type of outbreak varies very much. There are the (1) family outbreaks, occurring in closely associated families or in such institutions as schools, colleges, jails or asylums; (2) city outbreaks, confined to certain districts, and (3) country outbreaks, in which the disease involves large areas. There was one state wide outbreak involving New York State. The disease has seasonal incidence, 72 per cent. of cases occurring in the fall and winter months. The age incidence is important, 72 per cent. of 3,700 cases occurring in children and young adults. The method of spread is by contact; it may be by fomites. Rats are suggested as carriers, but there are large areas in the country where no rats are found, and yet the disease is present. The disease occurs most when other rodents are hibernating. Some writers have assumed that it is a form of Weil's disease and caused by spirochetosis, but there is no foundation for this assumption. There is no relation to the typhoid-paratyphoid group, as tested by agglutination reactions. It is believed that the causative organism is at present entirely unknown.

Exceptional opportunities have been found in New Haven for the study of the disease. It begins with a definite upper respiratory tract infection, coryza and sore throat. The incubation period is from a week to ten days, but sometimes as long as four weeks. Symptoms are severe headache, pain in the back, marked gastric symptoms, anorexia, nausea, distressing vomiting and fever (the temperature is not high, except in children); jaundice appears on the fifth day, or later, the latest date being 102 days after onset. The jaundice varies in intensity; the liver is enlarged and tender. There is severe abdominal pain. The clinical picture is one of catarrhal jaundice, but jaundice is not always present. Complications are rare; recovery is slow; fatalities are few. If fatalities occur, they are in infants or pregnant women, and are associated with abortion. The postmortem picture is that of acute yellow atrophy of the liver. The disease is hard to differentiate from catarrhal jaundice; indeed, the ordinary catarrhal jaundice may be a sporadic form of this disease, although there are clinical differences. I am not certain whether this disease is related to acute yellow atrophy or not. Many of us do not regard acute yellow atrophy as a clinical entity, but rather as a reaction of the liver to various poisons. There is a difference in the number of acute yellow atrophy cases coming to necropsy at one time and at another. In Alabama, the mortality statistics are usually about 23. It suddenly rose to three times that number and fell again later. This variation is suggestive.

DISCUSSION

DR. JOSEPH MILLER, Chicago: In one case the disease failed to clear up after six weeks. The man had acute abdominal pain. He was operated on, and a normal gallbladder was found. He discharged a great amount of colorless fluid for two weeks, and later normal bile, which continued, and the case cleared up. The bile ducts were open, but no bile ever reached the biliary ducts.

DR. N. E. BRILL, New York: As Dr. Blumer said, it has been supposed that catarrhal jaundice was a spirochetal condition, but there is no pathologic basis for this. Catarrhal jaundice is not catarrhal at all. The stools in many of these cases are full of blood and mucus. There is necrosis of the cells of the liver, and an eruption in the liver, and the capillaries take up bile, which appears in the urine. It is likely that catarrhal jaundice has a seasonal relationship. In the spring and fall cases are seen, starting with vomiting, pain and nausea, followed by jaundice in a few days. These are called catarrhal jaundice. Some of these cases terminate in atrophy of the liver.

DR. HIDEYO NOGUCHI, New York: These cases are often reported as Weil's disease. The lesions in the liver and kidney are very definite. I have had experience from a serologic standpoint. Two or three years ago there was an outbreak in Indiana, and Dr. Symmers sent met there to investigate. We obtained several specimens of blood of recovered patients to test out with the spirochetes of Weil's disease. Most of the tests were negative. The transmission experiment failed. We were unable to get positive results from the serum in many cases in a school outbreak, and also in a family outbreak.

DR. W. W. FORD, Baltimore: Our impression of the outbreak which occurred in Virginia is different from that of Dr. Blumer. We felt that the portal of entry was the gastro-

intestinal tract; no cases suggested respiratory infection. The incubation period was very much extended in some instances. There were well marked cases with an incubation period of from thirty to forty days. Our results coincided with those of other laboratories. In one case we did get paratyphoid organisms from the duodenum, but I believe that this was really a paratyphoid infection. The parasite seems to attack primarily the gastro-intestinal tract. Dr. Dowell has records of cases in Nova Scotia which occurred as a summer outbreak.

DR. NORMAN GWYN, Montreal: I agree with Dr. Blumer that the disease may simulate catarrhal jaundice and may show a picture of acute yellow atrophy. At the necropsy it was difficult to think we were not dealing with acute yellow atrophy. In milder cases we were able to transmit the disease to guinea-pigs. We might have been dealing with a very active type of infection. The cases came in with a diagnosis of cholelithiasis. The first attack was over in a few days; later, pain and fever developed, and we suspected more than ordinary gallbladder lesions. There was little trouble in centrifugalizing the serum. We took twelve spirochetal organisms out of the fresh serum, and we thought we could follow these parasites through the blood very definitely. After the first two or three days, the chances of finding the organism are remote. After infecting guinea-pigs, we could find spirochetes in the blood of the ear. The clinical symptoms are definite and yet indefinite, varying from those of acute catarrhal jaundice to rapidly fatal acute yellow atrophy. In one case there was occlusion of the bile duct. The most interesting thing in the clinical picture is the acute myositis. It was debated whether muscles should be incised for supposed collection of pus. About the time of occurrence of this epidemic there were one or two unexplained deaths from myositis in which the patients had not had jaundice. Shortly afterward it was reported definitely that spirochetes had been demonstrated by the infection of guinea-pigs from a case of myositis without jaundice.

DR. HENRY KOPLIK, New York: The impression is that jaundice is a distinctly toxic affair. In some cases certain foods, not fresh, such as fish, caused infection in several children. There is enlargement of the liver, some temperature elevation, abdominal pain and an enlarged spleen. There is bile pigment in the urine. In some cases, infection in children has been reported, due to the water supply; but, though the cases were evidently toxic, no bacteria were discovered.

DR. GEORGE BLUMER, New Haven, Conn.: In regard to catarrhal jaundice, I agree that the medical profession has been dominated by Virchow's statement, up to the time of Eppinger's work. There does not seem to be obstruction of the ducts, but there is an enlarged and tender liver. In these outbreaks there are many cases in which jaundice does not occur at all. There is plenty of evidence that this disease is seasonal. That can be found in the records of the Japanese investigators. In a great majority of the reported cases in which mention is made of the urine, the urine contains not only bile but a definite amount of albumin, although not more than would be associated with other infectious cases. In the literature, a few cases are complicated by nephritis. Hemorrhagic jaundice is lacking in the vast majority of reports, differing, thus, from Weil's disease. In a certain proportion of cases there was nosebleed, but hemorrhagic tendencies were lacking. This looks as if the cases were not of a spirochetal nature. We are at a great disadvantage as to the pathology because there were few fatal cases and no necropsies, or very few. In the European literature a few necropsies were reported, and the findings in young subjects were the same as those of acute yellow atrophy of the liver. The upper air passages were evidently the portal of entry in a certain proportion of cases, but I do not wish to give the impression that this was the only mode of infection. In some instances it probably takes place through the gastro-intestinal tract. There are epidemics in which duodenal washings have been investigated. At the Mayo Clinic this was done, but the result was negative. I feel that cases seen in France were hemorrhagic icterus, or Weil's disease. In the European form it is more difficult to isolate spirochetes than in Japan. I cannot answer Dr. Koplik's question definitely. Some of the cases may be toxic in origin, but I do not think that we can explain widespread epidemics as being of toxic origin, because the patients are not under the same food conditions.

Pathogenesis of Epidemic Encephalitis

DR. SIMON FLEXNER, New York: This study on the etiology of epidemic encephalitis was commenced in 1919 by Dr. Amos and myself, and has been carried on ever since. There has been a recrudescence of the disease, both here and in Europe, thus affording further study. Credit is due to the Mount Sinai Hospital workers who succeeded in communicating the disease to rabbits and monkeys from material from patients suffering from epidemic (lethargic) encephalitis. Dr. Amos and I have worked with washings of the nervous tissue and with cerebrospinal fluid taken from persons showing typical microscopic lesions of the disease, and have never had a successful transmission, but lately we did get a successful transmission with the cerebrospinal fluid from a case of syphilis of the central nervous system. Having failed ignominiously with material from patients, we took cerebrospinal fluids indiscriminately for the work. In one case we got transmission from the contents of an herpetic vesicle. The monkey is not susceptible to inoculated material. The guinea-pig can be inoculated. Rodents are the most useful animals for this purpose. I believe that the results we have obtained by our experiments are these: We have disclosed a new variety of pathogenic organism, or, perhaps, a new group, which we shall speak of as viruses because they have not been seen. It is virulent material, up to the present unrecognizable by the usual means of identification. The material is very active, but under the conditions of the experiment is destroyed very quickly. The symptoms are those of nervous system lesions, and if successful transmission is accomplished there should follow high temperature, paralysis, convulsions and rapid death. Movements of the jaws and excessive salivation are pronounced. These symptoms are stressed, because necropsy material is not conclusive. Rabbits are very apt to show lesions of the nervous system, so that this cannot be regarded as something experimentally produced. I believe we are at the beginning of a study of a new variety of infecting organism; it is an open question whether this is the cause of epidemic encephalitis. I believe that epidemic encephalitis is separate from influenza, but probably associated with it in the same way that pneumonia may be associated. The two diseases may be coincident, but independent. These results of four years of study are not wholly negative if we have widened our horizon with reference to pathologic infective agents, although we may not have established a specific etiologic agent in epidemic encephalitis.

DISCUSSION

DR. HANS ZINSSER, New York: Dr. Flexner has shown great conservatism in his conclusions. A great deal of confusion has resulted from the fact that in dealing with herpes virus we have concluded that it was the same substance as the virus of encephalitis. There is also a filtrable virus of fowl pox. So little is known of filtrable viruses that it is unsafe to draw conclusions. We easily infected a rabbit on the cornea with herpetic virus from a common cold. We kept the strain running along, and have had one strain from March, 1922; but we have discontinued the work, as regards herpetic virus. In human beings, the virus may be present in the saliva when there is no herpes. We had the same unsatisfactory results as Dr. Flexner did when we tried to transmit encephalitis. We had to throw out a great many rabbits on account of mixed infection, even after two or three passages. Merely planting a piece of brain was not enough to give inoculation. The brain must be mashed up and an emulsion made. We have three cases valid at present, one at the third generation, and one at the fifth generation. There is a tremendous irregularity in individual rabbits. I agree with Dr. Flexner that these viruses are a new group of organisms, but I don't believe that encephalitis and herpes are the same.

DR. EMANUEL LIBMAN, New York: Further study will decide whether these viruses are the cause of the disease or whether they are associated. In the transmissions done by our workers from nasal secretions, they took controls from the surgical side where there were no contacts. We did not use herpes virus longer than six weeks. It is possible that encephalitis may or may not have direct relation to the disease. Dr. Loewy has been successful in getting organisms from the virus of encephalitis, from the brain and nasal secretions of patients. That organism creates lesions in the rabbit, but it acts differently from influenza. Introduced intratracheally, it does not produce the same lesions as encephalitis. Dr. Loewy implanted the organisms from influenza intratracheally into rabbits and produced thrombosis of the capillaries and arterioles, but the organism introduced intradurally did not produce encephalitic lesions in the brain. Thus we have not produced encephalitis with organisms from influenza cases.

Pathologic Physiology of Botulism

DRS. C. W. EDMUNDS and PUTNAM C. LLOYD, Ann Arbor, Mich.: The symptoms of this disease are entirely motor—the dysphagia, weakness of the legs and respiratory difficulty, marked constipation, dryness of the mouth. The patient dies of respiratory failure. My theory is that central symptoms are not essential to the botulism intoxication, which is entirely a peripheral affair caused by paralysis of the motor nerve endings in the muscles. Experiments on guinea-pigs and cats by inoculation of botulinus poison produced weakness of the hind legs, great respiratory difficulty and paralysis of the abdominal muscles. The chest is pulled up in the effort to carry on respiration. The whole vasomotor system is normal; the circulatory system is normal. The difficulty is in the respiratory system entirely from paralysis of the pharyngeal muscles. Animals kept on artificial respiration for eighteen hours recovered. The condition reminds one of curare paralysis, except that it is not so complete. I believe that these findings alter the clinical point of view and give us a much more hopeful prognosis.

A New Classification of Mycetismus or Mushroom Poisoning

DR. W. W. FORD, Baltimore: It was formerly supposed that about a dozen varieties of mushrooms contained the poisonous substance muscarin. Now we know that about eighty species are poisonous. During the food shortage of the war the fields were searched for edibles, with the result that in Germany and Austria, particularly, many cases of mushroom poisoning occurred. There are certain main types of mushroom intoxication: (1) entirely gastro-intestinal, in which the attack ceases when the stomach is empty; (2) general catharsis, which is painless; (3) violent vomiting and pain, but no involvement outside the gastro-intestinal tract; (4) a choleriform type producing widespread degeneration of the cells. There is an incubation period for twenty hours after ingestion, followed by a violent, painful gastro-intestinal crisis. The patient appears to recover, but gets a relapse, with violent intestinal pain, collapse and death in a few days. In this type, the cells of the liver and spleen, and the voluntary and involuntary muscles show degeneration. There are evidences of attempt at repair on the part of the liver and kidney. The first symptom is a severe nephritis. Treatment in California, which has been successful, has been mainly directed to the kidney, and with emptying of the intestinal tract and irrigation of the bowel with potassium permanganate solution. The last type is that of nervous system intoxication by muscarin, which comes on half an hour after eating the mushrooms. There are pin-point pupils; the eyes water; there are salivation and diarrhea. Patients die of the effect of the muscarin on the heart. The heart dilates and stops in diastole. Atropin is the physiologic antidote, given subcutaneously. There are two other rare types which may be mentioned, one caused by the morels, or helvella, which produce helvellic acid. These resist the action of the gastric juice and produce hemolytic intoxication. The patient voids chocolate-colored urine. Another kind, which looks like the meadow mushroom, produces an intoxication similar to ethyl alcohol. The patient is hilarious, has staggering gait, sees variation in the size of objects, and finally collapses in a stupor. The patients recover in these two types, but in weak persons and children, mushroom poisoning of any kind may produce death from heart failure.

Chylous and Chyliform Ascites

DR. M. A. BLANKENHORN, Cleveland: It has been supposed that, after centrifugalizing chylous fluids, in the remaining nonchylous portion the turbidity is due to abnormal proteins, such as mucin and lecithin. I have found that the turbidity in nonchylous fluids is due to fat in the form of fatty acids or nonsaturated fat. I have been successful in making a nonchylous fluid experimentally from an emulsion of proteins and fat, by using nonsaponifiable fat in the form of liquid petrolatum and distilled water. The unusual behavior of the finely divided fat is because of the colloid properties taken on by particles in minute suspension. It has electric properties explainable by surface tension phenomena in relation to electrical charge. We can, therefore, have a pseudochylous fluid with fat alone. We examined the fluid from various patients with various lesions, in order to discover the source of the turbidity. Various processes—heat, coagulation, extraction, freezing, dialysis, peptonization, electrolysis—were used. We found that the turbidity of the fluid is due to fat alone, and we discarded the term pseudochylous fluid. It would seem that we must direct our attention to the lymph vessels and blood capillaries where these fluids are produced, and discard the idea of unusual proteins.

An Exceedingly Powerful Oxytocic and Pressor Substance Obtained from the Posterior Lobe of the Pituitary Gland

DRS. JOHN J. ABEL and C. A. ROUILLER, Baltimore: The posterior lobe of the hypophysis has been supposed not to have an internal secretion. Dixon, however, reports that he can find the posterior lobe principle in the spinal fluid and that, injected into an animal, it will increase the substance in the spinal fluid. Byrne also notes that the posterior lobe substance opposes the action of insulin. I believe that we have found that: (1) the posterior lobe principle raises arterial pressure and keeps it up for a long time; (2) it acts on muscle tissue, causing it to contract; (3) it has diuretic action; (4) it constricts the capillaries of warm-blooded and of cold-blooded animals, and (5) it has tonic action on plain muscle tissue. So far we have two well known active gland principles — epinephrin and thyroxin. Histamin is the most powerful plain muscle stimulant that we know of, a proportion of 1 : 200,000,000 causing contraction of the guinea-pig's uterus; but with this posterior lobe substance a proportion of 1 : 19,750,000,000 will produce the same result, that is, it is 1,250 times as powerful as histamin. We have now reached a point at which the product is 97 per cent. pure. We hope that it will be of use in the isolation of other products, such as insulin and secretin.

The Remedial Efficacy of Splenectomy in Chronic Thrombocytopenic Purpura Hemorrhagica

DRS. N. E. BRILL and NATHAN ROSENTHAL, New York: Splenectomy has been found in our hands to be a truly life-saving measure in cases of thrombocytopenic purpura hemorrhagica. This operation has been tried in twelve cases. The spleen showed the same picture in all cases, with enlarged follicles, but no attempt at fibrosis, as described by Banti. There were no platelets found in the spleen. I believe that platelets are a feature of the escape of the blood from the tissues. These platelets are very large, and look like megaloblastic cells. The bleeding occurs because of the enormous size of the platelets. In these cases, immediate improvement was noted after operation, with great regeneration of the blood picture. Up to the present time the patients remain practically cured.

DISCUSSION

DR. H. Z. GIFFIN, Rochester, Minn.: We submitted a case of this type to splenectomy in March. This patient had

hemorrhage before coming under observation, with epistaxis and ecchymoses and bleeding from the uterus lasting as long as thirty days. She had twelve transfusions to maintain her condition. The red blood cells numbered 1,600,000, with hemoglobin, 18 per cent. The coagulation test was normal, but the bleeding time was prolonged; the prothrombin time was prolonged; the platelet count varied between 40,000 and 80,000. After a series of transfusions and the use of coagulants, we got the red blood cells up to 3 million and hemoglobin to 56 per cent. The patient was then subjected to splenectomy, with the same spectacular results that Dr. Brill describes. Six hours after operation, the platelet count rose to 200,000 and then to 700,000; sixteen days after operation, it was 350,000. The bleeding time was two and one-half minutes, four weeks after operation: the red blood cells numbered 4 million, and hemoglobin was 68 per cent. The pathologic changes in the spleen were interesting. There were acute splenitis and great numbers of polymorphonuclears. This is a life-saving measure. This patient would have had recurrence and died of hemorrhage.

DR. R. MINOT, Boston: Two years ago I saw a woman who had had the disease ten years. There were always petechiae and a small amount of bleeding. The spleen was removed two years ago. It was not possible to obtain a careful count immediately after operation. Forty-eight hours afterward, the platelets numbered 300,000. They had dropped below 10,000 before operation. The patient is living and well, with normal hemoglobin, and platelets above 175,000. I think that this type may be congenital as well as acquired. In some acute cases, spontaneous cures do occur; but there are no spontaneous cures in the chronic type. The pathologic changes in our cases resemble those described by Dr. Giffin.

DR. E. B. KRUMBHAAR, Philadelphia: Very remarkable increase in platelet count follows removal of the spleen, but the rise is temporary. I do not think that we should feel that the subsequent fall of platelets has nothing to do with the disease. It is not proved that they are not a cause of the purpura. I should like to know, in the four cases that were not cured immediately, how the platelet curves compare subsequently with those in the cases that were cured. There is a relation between the platelet count and the symptoms, or the platelet rise is enough to relieve the condition for the moment. It is sufficient in some cases to prevent recurrence.

DR. N. E. BRILL, New York: The pathologic picture was one of myeloid metaplasia. There were no platelets in the spleen or in the reticulated epithelium. I think that the platelets are used in the repair, but they are unusually large. Ordinary platelets are less than a micron in diameter. Six months after operation there was an unusual rise in the platelet count, but for one week after operation it was the same as before operation. In the case of one boy, the count is 20,000, far below the number associated with bleeding. It remains for the future to decide whether these cases are permanently cured. In a few cases there were small recurrences of bleeding, which eventually disappeared.

The Etiologic Relation of Achylia Gastrica to Combined Spinal Sclerosis

DR. DOUGLAS VANDERHOOF, Richmond, Va.: In a study made of forty-five patients with achylia gastrica, twenty-nine had combined sclerosis of the spinal cord. Seven patients who received complete clinical and laboratory studies form the basis of this report. Fractional gastric analyses were made. The blood counts were done, and showed no evidence of pernicious anemia. The spinal fluid Wassermann test was negative. In regard to infective foci: One patient had infected tonsils; one a mild oral sepsis which cleared up. Attention was given to all foci of infection, and an addition of 1 teaspoonful of dilute hydrochloric acid was added to the meal. Very remarkable results followed this treatment. Not only was the achlorhydria relieved, but symptoms of spinal sclerosis, such as paresthesias of the extremities, flaccid or spastic paraplegias, or acro-ataxia, were relieved, or disappeared in the course of some months. This disease is not hereditary, and syphilis does not play a part in it. Its association with achylia has not been noted until recently. According to our studies, achylia is as constant a finding in acroparesthesia as it is in pernicious anemia. It is found that one third of the patients having combined spinal sclerosis have pernicious anemia. In my series, fourteen patients have pernicious anemia. The failure to note this association is due to the fact that the disease has been investigated entirely by neurologists, and the spinal changes in pernicious anemia have been studied by clinicians. Hearst and Bell discussed the relation of oral infection, absence of hydrochloric acid and secondary intestinal infection. It would seem that achylia, accompanying or preceding the malady, is the predisposing cause. Hydrochloric acid is nature's method of defense; without it, bacteria from the mouth and throat pass to the intestine without being digested by the gastric juice. The bacteria may affect the nervous tissues, or may influence the bone marrow unfavorably; thus, one patient may suffer from nervous lesions and another from disturbance of the blood-forming organs. This finding throws considerable light on the origin of pernicious anemia, and the presence of hydrochloric acid in the test meal is against the diagnosis of combined sclerosis in doubtful cases. In my experience, pernicious anemia has always been a fatal disease. The prognosis of combined spinal sclerosis and achylia gastrica without pernicious anemia is much more favorable. The spinal cord symptoms can be reduced greatly. There is reason to believe that every person suffering from achylia gastrica is a potential case of pernicious anemia or of combined spinal sclerosis. Patients should receive a regular amount of hydrochloric acid with each meal until the stomach renews its secreting activity.

DISCUSSION

DR. W. S. THAYER, Baltimore: We know that pernicious anemia is preceded by diarrhea, associated with anacidity of the gastric juice. This is present in almost all pernicious anemia cases. Cord changes are not infrequent in pernicious anemia, and are often the first to be noted. In the instances in Dr. Vanderhoof's series in which cord changes have been found with achylia gastrica, the fact that they have been held in abeyance or materially improved for years is a very interesting result.

DR. B. W. SIPPY, Chicago: I should like to know how much hydrochloric acid Dr. Vanderhoof gives. Our patients cannot take much by mouth because the pharynx will not tolerate it. It required 900 drops to digest a meal, and that is practically impossible to administer clinically. Would the small doses that he gives have much influence on the bacterial flora of the intestinal tract? It is very difficult to reason from cause to effect. We must be careful that we are not attributing too much effect to very small doses.

DR. H. S. PLUMMER, Rochester, Minn.: A large number of people are born with a diathesis whereby they have no hydrochloric acid. These people are naturally prone to develop certain clinical pictures—scaly skin, anacidity, and a basal metabolism 15 or 20 per cent. below normal. Perhaps, the patient's mother comes in and she shows very low basal metabolism. Arthritis and creaky joints are apt to be seen in these cases.

DR. DOUGLAS VANDERHOOF, Richmond, Va.: For fifteen years I have been giving large doses of dilute hydrochloric acid. I have given a teaspoonful at each meal, and later when the duodenal tube came into use I have been giving a dram through the duodenal tube. The acid is suspended in 6 ounces of water. I have subtracted specimens to see what happened. A dose of 1½ drams (5.6 c.c.) of dilute hydrochloric acid will make a beverage which is the same as the acidity of the gastric juice. The observations happened accidentally. I was giving these patients hydrochloric acid doses, and they happened to be cases of combined spinal sclerosis. I had never supposed that it would help the spinal cord symptoms to supply secretion to the stomach, but in four out of the seven patients the improvement has been unusual and uninterrupted.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

5: 345-460 (April) 1923

*Sarcoma of Uterus. J. C. Masson, Rochester, Minn.—p. 345.
*Urinary Tract of Eighty Fetuses and Young Infants. G. V. Brown and C. Corbeille, Detroit.—p. 358.
Glycosuria Test for Pregnancy. P. F. Williams, Philadelphia.—p. 369.
Craniotomy. A. M. Mendenhall, Indianapolis.—p. 372.
Double Salpingo-oophorectomy with Partial Auto-Ovarian Transplantation, Followed by Twelve Years of Menstruation, Normal Pregnancy and an Uncomplicated Menopause at Fifty-One Years of Age. W. S. Bainbridge, New York.—p. 379.
Transplantation of Cervix. W. W. Babcock, Philadelphia.—p. 380.
Pernicious Effects of Use of Stems in Uterus, and Danger of Introducing Sounds and Other Foreign Bodies Without Preparation. J. N. West, New York.—p. 383.
Renal Tuberculosis. Diagnosis and Treatment. H. D. Furniss, New York.—p. 386.
Bladder Surgery in Relation to Fourth Era of Surgery. R. T. Morris, New York.—p. 392.
So-Called Hernia in Mammary Areola: Etiology of Mamma Areolata and Vicarious Menstruation. G. L. Moench, New York.—p. 394.
*Toxemias of Pregnancy from New Aspect. O. M. Gruhzit, Detroit.—p. 400.
Management of Third Stage of Labor. C. A. Gordon, Brooklyn.—p. 403.
Patency of Fallopian Tubes Ascertained by Transuterine Injection of Fluids. I. S. Stone, Washington, D. C.—p. 408.
*Phenobarbital Sodium (Luminal Sodium) Treatment for Hyperemesis Gravidarum. R. Luikart, Omaha.—p. 410.
Obstetrico-Gynecologic Diagnosis. Report of Three Cases (Hematosalpinx; Dermoid Cyst; Eclampsia). A. P. Leighton, Portland, Me.—p. 415.
Operation for Retrodisplacements of Uterus. J. W. Keefe, Providence, R. I.—p. 418.

Sarcoma of Uterus.—In the series of fifty cases analyzed by Masson there were two deaths, an operative mortality of 4 per cent. Of the remaining forty-eight patients, one was not heard from. Ten had died, four within one year of the date of operation, and the remaining six within two years. In all probability, most of them died from recurrence of the malignant growth. Thirty-six (76.59 per cent.) are apparently in good health, or at least have no symptoms to suggest recurrence. One patient reported that she is feeling much worse, thinks there is a recurrence of the growth, and has marked dyspnea, weakness and dropsy, evidently a case of recurrence, but Masson feels that the possibility of a cardiorenal disorder must also be considered, as it is now five years since her operation.

Urinary Tract of Fetuses and Infants.—Only twenty-five, or 31.25 per cent., of the eighty cases studied by Brown and Corbeille were found entirely free from pathology. A group comprising 13.75 per cent. of the cases showed only such slight changes as edema and passive congestion. Of the 68.75 per cent. abnormal cases, only nine presented negligible alterations.

Typing of Blood of Eclamptic Mother and Her Child.—Blood typing was undertaken by Gruhzit to determine incidence of incompatibility of the blood of the mother and her offspring in normal pregnancy as well as in toxemias. In every case of eclampsia the mother's and baby's blood grouping produced agglutination of the baby's red cells by the mother's serum. Not a single case of normal pregnancy showed a possible blood grouping which could result in agglutination of the fetal red cell elements by the mother's serum in vivo or in vitro. The noticeable signs and symptoms of an eclamptic attack appear toward the later stages of pregnancy, i. e., at the time of the most rapid growth of the fetus. The increased anabolic process goes hand in hand with increased rate of catabolism. Increased amounts of waste products, including the waste products of the blood system, are thrown or diffused into the mother's system. Whether the specific agglutinating substance is passed to the mother's system in the waste products as an albumin molecule or as a hypothetical "agglutinogen," is not known. In the fetal body it is associated with the red cells. When in the mother's blood stream, it is agglutinated and suspended as fine colloidal particles. A new colloidal state of the blood is produced which probably accounts for the more viscous "thicker," blood of the eclamptics. This new state of the blood Gruhzit believes is the paramount factor of the disease. The physical and chemical processes which associate with a colloidal substance in the blood stream may readily explain the signs and symptoms of eclampsia.

Phenobarbital Sodium in Treatment of Vomiting of Pregnancy.—Luikart has administered phenobarbital sodium to allay vomiting and nausea long enough for food to be taken and assimilated. The use of phenobarbital sodium is not an immediate cure for hyperemesis gravidarum, but a relief to such an extent that the patient can often be carried to the end of the third month of pregnancy with her weight and general strength but little impaired. Phenobarbital sodium, from 1 to 2 grains, is administered hypodermically, every four hours, in the majority of cases, though it may be given at shorter intervals, for three or four doses, if relief is not prompt. If the woman is seen early, regular feedings are continued—six a day. Great care must be taken with the general management. There should be examinations of urine, a record of total intake and output of fluids, daily blood pressure determinations, pulse, temperature and respiration records. The sensation caused by phenobarbital sodium is described by patients as a "fluid feeling" of the entire body. Occasionally the patient becomes a day sleeper and complains of wakeful nights. A hypodermic of 7 grains of caffein sodium benzoate, administered with the phenobarbital sodium, helps to overcome this, and does not interfere with the quieting effect on the nausea of the phenobarbital sodium. The only untoward effect of phenobarbital sodium thus far observed has been urticaria. This is relieved, to a large degree, by sponge baths of 1 per cent. lysol solution as needed.

American Review of Tuberculosis, Baltimore

7: 67-140 (April) 1923

Nature of Tuberculosis of Eye. W. C. Finnoff, Denver.—p. 67.
Tuberculosis of Eye and Its Treatment: Review of Recent Literature. C. A. Clapp, Baltimore.—p. 81.
Studies on Biochemistry and Chemotherapy of Tuberculosis: XXV. Tissue Changes Produced by Action of Lipins of Tubercle, Grass and Colon Bacilli, and of Liver. L. W. Ray and J. S. Shipman, Chicago.—p. 88.
Studies on Biochemistry and Chemotherapy of Tuberculosis. XXVI. Fat-Splitting Ferments in Lymphocytes. C. C. Reed, Chicago.—p. 105.
*Demineralization in Tuberculosis: Distribution of Calcium in Tuberculous Guinea-Pig. O. Barkus, Saranac Lake, N. Y.—p. 111.
*Dish Towel as Source of Tuberculous Infection. C. Floyd and L. Sikorsky, Boston.—p. 117.
*Apical Tuberculosis. O. H. Brown, Phoenix, Ariz.—p. 120.
Corporation Care of Tuberculous Employees: Experiment as Carried Out in Colfax by Large Corporation. R. A. Peers, Colfax, Calif.—p. 133.

Demineralization in Tuberculosis.—An appreciable loss of calcium due to progressive tuberculosis could not be proved in any case by Barkus. Spontaneously healed tuberculous lesions produced by infection with a strain of low virulence, which should, in the light of the theory of demineralization, yield a low calcium content, showed, on the contrary, quite normal values.

Dish Towel as Source of Infection with Tubercle Bacillus.—In a series of twenty-five instances of guinea-pigs inoculated from the washings of dish towels used by tuberculosis patients no positive results were obtained by Floyd and Sikorsky. In three control experiments, in which gauze was thoroughly impregnated with viable tubercle bacilli and thoroughly washed, no positive results were obtained. The most reasonable explanation of these negative results would seem to be that the strong alkali soap or soap powder used for a period of weeks in the home must very deleteriously affect any viable tubercle bacilli that may be caught in the meshes of the dish towel and either kill them or so impair their vitality as to make them unable to produce infection in small numbers.

Mode of Infection in Apical Tuberculosis.—The paramount determining factor in the selection of the apices by pulmonary phthisis, in Brown's opinion, is the long continued assault, which occurs in all adults, on the topmost bronchial

lymph nodes by bacteria and their toxins. The germs and their poisons are picked up by the lymphatics from the nose and mouth and the entire head, and are passed on by the lymphatics to the deep cervical nodes and thence to the mediastinal and bronchial nodes. The swelling of the bronchial lymph node dams back the lymph into the area drained; since it is the topmost bronchial node which usually is affected most seriously, the resulting stagnant lymph will be in the apex of the lung, where already the circulation of lymph, by virtue of the relative immobility of this part of the lung, is at a low ebb. In this way there is produced a fertile soil for tubercle bacilli coming from whatever source they may.

Archives of Dermatology and Syphilology, Chicago

7: 573-720 (May) 1923

*Biologic Reactions of Arsphenamin. IV. Effect of Large Doses on Coagulability of Blood. J. Oliver and E. Douglas, San Francisco.—p. 573.
*Value of Bismuth Salts in Treatment of Syphilis. V. Pardo-Castello, Cuba.—p. 586.
Hydrogen-Ion Concentration of Surface of Healthy Intact Skin. H. Sharlit and M. Scheer, New York.—p. 592.
*Aspergillus in Scalp Lesions Following Red-Bug (Leptus) Bites. K. M. Lynch, Dallas, Tex.—p. 599.
Unusual Case of Dermatitis Venenata Caused by Colored Paper. H. G. Rowell, New Bedford, Mass.—p. 603.
*Ulcus Epidemicum. Preliminary Report. W. B. Adams, Beirut, Syria.—p. 604.
Leukoderma Acquisitum Centrifugum (Sutton). J. H. Stokes, Rochester, Minn.—p. 611.
Frambesiform Syphilid: Report of Case. H. Goodman and E. F. Traub, New York.—p. 619.
Bullous Eruptions in Hemorrhagic Sarcoma of Kaposi and Lichen Planus. F. Wise and J. J. Eller, New York.—p. 625.
Pituitary Gland Dystrophies. L. Hollander, Pittsburgh.—p. 632.

Effect of Large Doses of Arsphenamin on Blood Coagulability.—Oliver and Douglas did not find any evidence indicating marked action of arsphenamin on thrombin or its precursors. They did find, however, a marked change in the properties of the fibrinogen and other globulins of the arsphenamin plasma, rendering them incoagulable to heat or thrombin. No action on thrombin could be demonstrated. The practical importance of the effect of arsphenamin on the coagulability of the blood is not very evident at the present time. In its therapeutic use, the concentration needed to produce definite changes is never reached. The experiments detailed indicate only that there is some reaction between the arsphenamin and the globulins which renders them incoagulable to thrombin and heat, and that they are not "destroyed" as they may be recovered by precipitation by carbon dioxid.

Value of Bismuth Salts in Treatment of Syphilis.—Pardo-Castello reviews the literature and presents results obtained in the treatment of nine cases. Quinin bismuth iodid seems to be the compound of choice. The author has not observed a single accident with its use in more than 180 injections. Sodium and potassium tartrobismuthate is painful, and stomatitis is likely to occur with its use. Spirochetes disappear from the chancre and mucous patches after the second or third injection of quinin bismuth iodid. The primary lesion and all the secondary manifestations heal in a short time, and the general disturbance and headache also disappear after the fourth or sixth injection. Tertiary lesions respond more slowly, but they finally disappear entirely. The effect on the Wassermann test is marked. It became negative in seven of nine cases. Bismuth, in the light of Pardo-Castello's experience, is entitled to a prominent place among antisyphilitic remedies. Time alone will demonstrate whether bismuth will take the place of the other antisyphilitics or be used in combination with them. It will also show whether the effects are permanent.

Treatment of Aspergillus Scalp Lesions.—A sulphur ointment was used by Lynch in the treatment of some of these sores. The hair was not disturbed, the masses of exudate were removed and the ointment applied twice daily on the elevated and eroded area. A few small yellowish masses reformed but were easily removed, and in a few days no further formation occurred. The skin lesion gradually disappeared in the course of ten days or two weeks.

Epidemic Tropical Ulcers.—Adams describes an epidemic of ulcers, frequently called "tropical," which began in Syria in 1916, swept through the land, reached its height in 1919, and now seems gradually to be disappearing. It is a dry weather disease, flourishing during the summer drought and never beginning in the rainy season. The painful, obstinate ulcers invariably occur on the exposed parts of the poorer people of the community. The etiology seems to be a fusiform bacillus and a commensal spirillum found in the edges; but a rich flora flourishes on the floor of the ulcers. The host, if there be no other than man, is unknown, as is the carrier. The treatment calls for prompt and energetic measures; but at best, the healing is slow. The painful ulcers incapacitate patients for work for a long time, thus causing a serious loss to the community.

Archives of Neurology and Psychiatry, Chicago

9: 547-688 (May) 1923

Some Problems in Epilepsy. W. Timme, New York.—p. 547.
Ecology of Epilepsy. I. Epilepsy in Colonies. C. L. Dana, New York.—p. 551.
Id. II. Racial and Geographic Distribution of Epilepsy. C. B. Davenport, Long Island, N. Y.—p. 554.
Epilepsy and Convulsive State. F. Kennedy, New York.—p. 567.
Symptomatic Epilepsy in Birds. Anatomico-Pathologic and Clinical Report. G. Mingazzini, Rome.—p. 576.
Infantile Progressive Muscular Atrophy of Werdnig-Hoffmann Type. Case Report with Necropsy. J. C. Michael, Minneapolis.—p. 582.
*Cystic Blastomycosis of Cerebral Gray Matter. Caused by Torula Histolytica Stoddard and Cutler. W. Freeman and F. D. Weidman, Philadelphia.—p. 589.
*Experimental Convulsions. Epileptogenous Zones of Central Nervous System. L. J. Pollock, Chicago.—p. 604.
*Studies on Epilepsy. I. Convulsions Experimentally Produced in Animals Compared with Convulsive States in Man. Preliminary Report. C. A. Elsberg and B. P. Stookey, New York.—p. 613.
Metabolic States Contributing to Uremia. N. B. Foster, New York.—p. 627.

Cystic Blastomycosis of Brain.—Freeman and Weidman report a twelfth case of cystic infiltration of the cerebral gray matter with a blastomyces. The cinical picture is that of tuberculous meningitis or unlocalized brain tumor, but the organisms are readily found in the spinal fluid. The organism in this case was *Torula histolytica,* Stoddard and Cutler. The disease was transmitted to guinea-pigs. These developed a general infection, and, in one animal, there was cystic infiltration of the brain and testes.

Experimental Convulsions.—Pollock states that from his experiments no conclusive evidence could be adducted that an isolated segment of the brain stem contained epileptogenous elements. It appeared highly probable, however, that such was the case. It would seem that epileptogenous qualities are possessed by the ganglion cells both of the brain and the brain stem; that convulsive movements may be evoked by proper stimulation of such cells at any level; and that the first symptom produced depends on the level so stimulated.

Experimental Convulsions Produced by Shutting Off Blood Supply to Brain.—Elsberg and Stookey report on their work in this field, the convulsions being produced, not by the introduction of a drug into the circulation which may affect every part of the body, but by the simple method of shutting off the blood from the brain. The method also made it possible to establish an artificial circulation through the brain, so that a variety of fluids could be passed through the intracranial circulation. All that was necessary was to inject fluid into a carotid artery above the clamps and to drain off the fluid from one of the jugular veins, a ligature having been tied around the animal's neck and all structures excepting the trachea, esophagus, carotid vessels, and vagus nerves being compressed. This ligature prevents the return of the fluid into the general circulation, except for an amount, that cannot be controlled, that is carried off through the veins in the spinal canal. Thus there was a cranial organism—a living test tube for the study of the influence of various solutions and various drugs on the brain.

Iowa State Medical Society Journal, Des Moines

13: 177-220 (May) 1923

Subacute Bacterial Endocarditis. W. L. Bierring, Des Moines.—p. 177.
Routine Wassermann Test in Ophthalmology. H. B. Gratiot, Dubuque.—p. 186.

Opportunities and Means of Giving Patients Consulting Surgeon a Better Service. H. J. Vanden Berg, Grand Rapids, Mich.—p. 191.
Hyperemesis Gravidarum. D. F. Crowley, Des Moines.—p. 195.
Consideration of Some Practical Problems in Artificial Feeding of Normal Baby. J. D. Geissinger, St. Paul.—p. 198.
Surgical Diseases of Urinary Organs; Plea for Early Recognition. W. Downing, Le Mars.—p. 201.
Function of Gallbladder. G. M. Crabb, Mason City.—p. 204.

Journal of Comparative Psychology, Baltimore

3: 85-145 (April) 1923

Some Effects of Duration and Direction of Rotation on Postrotation Nystagmus. J. Q. Holsopple, Baltimore.—p. 85.
Validity of Tests of Musical Talent. M. Schoen, Pittsburgh.—p. 101.
Behavior of Birds in Maze. M. P. Sadovinkova, Moscow.—p. 123.
Brightness Value of Red for Light Adapted Eye of Calf. E. Kittredge.—p. 141.

Journal of Infectious Diseases, Chicago

32: 315-399 (May) 1923

Rabbit Spirochetosis. A. S. Warthin, E. Buffington and R. C. Wanstrom, Ann Arbor, Mich.—p. 315.
*Hypertrophy of Hemolymph Nodes in Texas Fever Immunes. A. S. Warthin, Ann Arbor, Mich.—p. 333.
Bacterial Parasitism, Bacterial Pathogenism, and Resistance to Bacterial Infection. A. I. Kendall, Chicago.—p. 341.
Estimation of Small Amounts of Carbohydrates by Bacterial Procedures. A. I. Kendall and S. Yoshida, Chicago.—p. 355.
Carbohydrate Identification by Bacterial Procedures. A. I. Kendall, Chicago.—p. 362.
Measurement of Carbohydrate Mixtures by Bacterial Procedures. A. I. Kendall and S. Yoshida, Chicago.—p. 369.
Carbohydrate Configuration and Bacterial Utilization. A. I. Kendall, R. Bly and R. C. Haner, Chicago.—p. 377.
*Etiology of Spontaneous Ulcer of Stomach in Domestic Animals. E. C. Rosenow, Rochester, Minn.—p. 384.

Hypertrophy of Hemolymph Nodes in Texas Fever Immunes.—Warthin asserts that in many Texas fever immunes there occurs a very marked generalized hypertrophy of the hemolymph nodes, which is to be interpreted as a manifestation of protective reactions against a latent infection. Inasmuch as Meyer has emphasized the involvement of the hemolymph nodes in East Coast fever, there appears to be a special predilection for these organs in piroplasma infections.

Streptococci Cause Experimental Ulcer of Stomach.—Streptococci were isolated consistently by Rosenow in pure cultures or in predominating numbers from a series of ulcers in the hog, calf, cow, sheep, and dog. This organism was demonstrable in the tissues, and the number was roughly proportional to the acuteness of the condition. There was an increasing incidence of pure cultures in the tissues as the distance from the source of contamination, the ulcerated surface, increased. Ulcer, hemorrhage, and infiltration of the stomach were produced in 86 per cent. of rabbits and dogs injected with the freshly isolated cultures from ulcers in the different species, often with no lesions elsewhere. Similar results were obtained with cultures of the streptococcus from the infected tonsils in the cow and dog that had ulcer. The streptococcus was demonstrated in, and isolated from, experimentally produced ulcers when other tissues were sterile, and produced ulcer on reinjection. Specific localizing powers were retained for seven and one-half years in two of three strains preserved in ascites-glucose-agar shake cultures, layered with oil. Rosenow asserts that results such as these have not been obtained with streptococci of similar morphology from sources other than ulcer. Ulcer of the stomach in animals, as in man, is apparently often due to localized blood borne infection by streptococci having selective affinity for the mucous membrane or other parts of the stomach.

Journal of Metabolic Research, Morristown, N. J.

2: 401-545 (Oct.) 1922

Feeding Experiments on Rats with Plants at Different Stages of Development. I. Experiments with Corn. B. Harrow and F. Krasnow, New York.—p. 401.
*Studies of Thyroid Apparatus. XI. Effect of Thyroparathyroidectomy on Reproduction in Albino Rat. F. S. Hammett, Philadelphia.—p. 417.
*Treatment of Arterial Hypertension. F. M. Allen and J. W. Sherrill, Morristown, N. J.—p. 429.

Effect of Thyroparathroidectomy on Reproduction.—Studies have been made by Hammett of the reproductive ability of thyroidless albino rats. He found that conception occurred when completely thyroidectomized males were mated with completely thyroidectomized females; when partially thyroidectomized males were mated with completely thyroidectomized females, and when completely thyroidectomized males were mated with partially thyroidectomized females. When the thyroid apparatus was removed from young rats 45 or 56 days of age, there was no apparent inhibition of function of the internal secretion of the gonads (stimulation to development of the secondary sexual characteristics, stimulation to sexual activity, preparation of the uterine mucosa for nidation). The processes of reproduction concerned in the formation, maturation and discharge of the gametes were apparently disturbed by the loss or deficiency of the thyroid secretion, as were the reproductive processes subsequent to gonadal participation. This is shown by the increased sterility, greater age at breeding, high birth mortality, high mortality during and after weaning, the smaller number of rats in the litters, and the failure of the rats to thrive during the nursing period as do the young of normal mothers. From these results and from the point of view of comparative physiology it is concluded that the disturbances in reproductive ability following the loss of or a deficiency in the thyroid function are not due to any particular effect on the endocrine functions of the gonads of either sex or to the lack of a specific influence of the thyroid on the processes of reproduction subsequent to fertilization, but that they are the result of the general lowering of the anabolic level of the organism due to the lack of the specific stimulus to metabolism supplied by the thyroid, which results in a condition of partial physiologic inanition.

Sodium Chlorid Treatment of Hypertension.—Allen and Sherrill describe 180 severe cases of hypertension treated by close restriction of the sodium chlorid intake, for periods from one month to three years. Fully normal blood pressure was restored in only thirty-four cases (18.9 per cent.). In seventy-five other cases (41.9 per cent.) the relief of hypertension and other symptoms was sufficient to be regarded as a disinct therapeutic success. Transitory benefit, followed by relapse or death after several months, was obtained in sixteen cases (8.9 per cent.). Complete failure of treatment was encountered in fifty-five cases (30.5 per cent.). The total mortality for the four year period was twenty-five (13.8 per cent.), with no appreciable difference between cases of long and short duration, as success or failure is determined by the character of the case rather than by a time element. Incomplete and unsuccessful results are believed to be due to organic changes which cannot be removed by a treatment based only on the principle of functional rest. In successful cases not only are symptoms relieved but the progressiveness is arrested, so far as the present duration of observations can decide. The chief requirement for success, which needs emphasis above everything else in the use of this treatment, is that sufficiently strict salt privation must be carried out for a sufficient length of time. Facts are presented to show that the therapeutic results described are not due to physical or psychic rest, protein restriction, or general undernutrition. Chlorid restriction has acted favorably on the serious accompaniments of hypertension, such as cardiac failure, incipient pulmonary edema, and vascular crises, including to some extent angina pectoris. The authors believe it to be the best treatment for eclampsia in the broad sense, though in the puerperal form an active toxic process, comparable to that in acute nephritis, may seriously limit the possibilities of any dietetic treatment. With due allowance for other possible causes and treatments, these observations create the impression that sodium chlorid is the most important direct factor in nephritic retinitis, either with or without hypertension, and the arrest of this process by salt privation is highly important practically and theoretically. It appears rational that sodium chlorid, as the principal osmotic regulator of the body, should play an important part in such phenomena. Clinical experience supports the view that chlorid restriction acts powerfully not only in relieving immediate symptoms but also in checking the progressiveness of the condition.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

17: 1-112 (April) 1923

Case of Creeping Eruption in European in Gold Coast. J. F. Corson.—p. 1.
Depth, and Larvae and Pupae of Stegomyia Fasciata, F. J. W. S. Macfie.—p. 5.
Note on Action of Lithium Chlorid on Mosquito Larvae. J. W. S. Macfie.—p. 9.
Malaria in Chimpanzees in Sierra Leone. S. Adler.—p. 13.
New and Old Observations on Ceratopogonine Midges Attacking Other Insects. F. W. Edwards.—p. 19.
Strongylid Larvae in Horse, Especially Those of Cylicostomum. J. E. W. Ihle and G. J. Van Oordt.—p. 31.
Avian Cestodes from New Guinea. II. Cestodes from Casuariformes. A. Kotlan.—p. 47.
Id. III. Cestodes from Galliformes. A. Kotlan.—p. 59.
Anopheles of Myzorhynchus Group (Anopheles amazonicus Sp. N.) from South America. S. R. Christophers.—p. 71.
*Etiology of Blackwater Fever. B. Blacklock.—p. 79.
New Species and New Variety of Culex from Belgian Congo. A. M. Evans.—p. 89.
Report on Sleeping Sickness in Eket District, Southern Nigeria. R. W. Orpen.—p. 93.
Culicidae in Venezuela; Descriptions of New Species. III. A. M. Evans.—p. 101.

Blackwater Fever Not Caused by Parasite.—The existence of a parasitic cause of blackwater fever has been frequently suggested but experimental human inoculation, with blood from a severe case of blackwater fever which ended fatally, Blacklock says, elicited no evidence in favor of the existence of such a parasite after an observation period of two months.

British Medical Journal, London

1: 747-794 (May 5) 1923

*Cancer of Breast. C. Rowntree.—p. 747.
Blood Transfusion. E. F. Skinner.—p. 750.
*Composition of Gases in Artificial Pneumothorax. L. Hill and J. A. Campbell.—p. 752.
Sterilization of Unfit. R. A. Gibbons.—p. 754.
Miners' Nystagmus. A. S. Percival.—p. 757.
*Posterior Gravity Drainage in Empyema. J. O'Conor.—p. 758.

Early Symptom of Breast Cancer.—The symptom which Rowntree puts first, and a long way first, in diagnostic importance, is adhesions between the growth and the skin overlying it—not the coarse and obvious infiltration met with in advanced cases, but a much more delicate involvement, resulting in a faint dimpling of the skin which is often of so slight a degree that it may only be visible after careful examination in suitable conditions of light. In its earliest stages, it can be made to appear by grasping the breast on each side of the suspicious nodule and trying to push the skin away from the tumor. By then looking along the surface of the breast it may be possible to perceive slight irregularity in the contour not hitherto apparent. If this sign be evident—and it nearly always is when carefully looked for—a definite diagnosis of malignancy may safely be made with the utmost confidence, irrespective of the presence or absence of retraction of the nipple, alteration in the size and shape of the breast, enlargement of glands, or any of the other classical signs of cancer. Absence of adhesion to the skin does not necessarily indicate that the tumor is benign, for the growth may be too small, or, if the breast be large and fat, the distance to the skin may be too great. Rowntree reviews, briefly, the results of treatment—surgical, radium and roentgen ray. He favors the Handley operation adapted to the individual case.

Composition of Gases in Artificial Pneumothorax.—Experimental research made on animals by Hill and Campbell, with regard to changes in composition of gases injected for the purpose of producing pneumothorax, showed that the carbon dioxid percentage in the gases of pneumothorax appears to approximate very rapidly to that of the blood bathing the compressed lung. The volume of gas introduced in carrying out artificial pneumothorax may thus be increased at first, but not more than about 6 per cent. The oxygen percentage in the gases of the pneumothorax cavity approximates very slowly to that in the tissues bounding the cavity. As nitrogen diffuses out equally, it makes little difference whether oxygen or air be used for inducing artificial pneumothorax. Pathologic fluids and tissues usually cause abnormally high percentages of carbon dioxid. Pathologic changes probably lower the oxygen content. Any leakage in the thoracic cavity lowers the carbon dioxid percentage, but increases the oxygen percentage in the imprisoned gas.

Posterior Gravity Drainage in Empyema.—O'Conor claims for his method of drainage at the posterior inferior angle, that it is based on anatomic facts, and on roentgen-ray study of the normal living thorax which demonstrated the existence of a distinct potential sulcus in the pleural cavity, between the scapular line and the vertebrae beneath the ninth and tenth ribs, formed at the junction of the parietal and diaphragmatic pleura. This, combined with the fact that these patients do not pose in bed in the prone position but invariably assume a supine slope, and that those who have a resection of a rib performed for empyema on textbook lines have a tendency to tilt the affected side upward in order to avoid pressure pain, rendered it obvious that this posterior angle was the strategic site for gravity drainage in general suppurative pleuritis. Personal experience has convinced O'Conor that the lung expands more rapidly if unhampered by having to force liquid uphill. This seat of election is ideal for an encysted empyema between lung and diaphragm, not to mention the ready ingress it affords in cases of suppurating hydatid cysts, abscess of the liver, or subdiaphragmatic abscess, which have perforated the diaphragm on their tracking to a bronchus.

China Medical Journal, Shanghai

37: 205-350 (March-April) 1923

Present Status of Insulin Therapy in Diabetes. F. C. McLean.—p. 205.
Intraperitoneal Saline Infusion. H. C. Chang.—p. 215.
Dermatology: Recent Advances in Treatment. L. F. Heimburger.—p. 220.
Statistics of Communicable Diseases Among Hospital Employees. E. Tso.—p. 226.
*Embadomonas Sinensis, Faust and Wassell, 1921. E. C. Faust.—p. 231.
Convenient Test of Autoclave Efficiency. R. M. Atwater.—p. 234.
*Cholesterol: Occurrence in Two Thyroid Cysts: Modification of Salkowski's Test. B. E. Read and F. L. Meleney.—p. 236.
Campaign Against Smallpox in Wuhu. R. E. Brown.—p. 239.
Medical Mission Policy. H. Fowler.—p. 246.

Embadomonas Intestinalis in Dysentery.—*Embadomonas intestinalis* has been found in Alexandria, Egypt, and in overseas and home service troops of the U. S. Army in New York, as well as in natives in the United States who have had no contact with imported cases. *E. sinensis* has been found only in native Chinese at Wuchang. In both instances the infection was observed in diarrheic stools or those containing *Endameba dysenteriae* or *Trichomonas hominis.* In amebic dysentery the parasite appears several days after the critical period and is found to grow more rapidly at room temperature than at body heat. However, Faust has noted particularly that it has been derived from the stool and not as a contamination from bedpan or specimen box. It seems more than likely, therefore, that the organism is not itself primarily a parasite, although large numbers of the species in the stool may give rise to diarrhea. Nevertheless, it is significant that the species occurs in patients suffering from amebic dysentery. It seems safe to assert, then, that it fits into the environment and same organic cycle as *Endameba dysenteriae.* Even in questionable cases, when the latter organism has not been demonstrated in the stool, the presence of *Embadomonas,* Faust says, may be indicative of amebic infection.

New Test for Cholesterol.—A modification of Salkowski's reaction for cholesterol is described by Read and Meleney. The material is dissolved in 4 or 5 mils of chloroform; 1 or 2 drops of glycerin are added, and then an equal volume of strong sulphuric acid. There develops in a few minutes a characteristic red color, varying according to the amount of cholesterol present, from a deep magenta to a faint pink. Compared with the test made without glycerin, there is observed a more distinct coloration of the chloroform layer; moreover, the color is developed more quickly. Strong solutions of cholesterol give a deep purple color, which on standing may greatly deepen in color and change to a deep blue. It is essential that only a drop (or two) of glycerin be added.

A larger amount, instead of clarifying the reaction, only delays or spoils the result by setting up a third layer of fluid between the chloroform layer and the strong sulphuric acid layer.

Glasgow Medical Journal

17: 209-272 (April) 1923

High Blood Pressure and Its Treatment. J. Henderson.—p. 209.
Influence of Local Anesthesia on Mortality Rate of Laryngectomy. J. Adam.—p. 219.
Surgical Diathermy in Treatment of Malignant Disease of Throat. W. S. Syme.—p. 221.
*Tendon Transplantations for Musculospiral Paralysis. G. H. Stevenson.—p. 225.
*Appendicitis: Its Diagnosis and Treatment. W. J. Moore.—p. 231.

Splint for Musculospinal Paralysis.—After discarding the metal splint which is applied immediately after operation, Stevenson applies a light papier maché splint made on a plaster cast and usually prepared before the operation. The materials for its production are ordinary brown paper and paste. It is easily made waterproof by a solution of cotton wool, the formula of which is as follows: water, 1¾ pints; liquor ammoniae (0.880 sp. gr.), 2 pints; copper carbonate, 3¾ ounces. After standing four hours or longer the copper has dissolved. One-half pint of water and the cotton wool, not wadding, 1¾ ounces, are added. The mixture is shaken frequently till the cotton wool is dissolved (about twenty-four hours).

Diagnosis and Treatment of Appendicitis.—Moore describes an incision which he makes when operating for appendicitis for which he claims that no nerves are cut, there is no traction of wound edges, there is free exposure and easy access to the peritoneal cavity, excellent for drainage, less tendency to occurrence of postoperative ventral hernia, the appendix in the majority of cases is more easily found. Easy access is given to other contents of the right side of the abdomen, if desired. There is less postoperative pain, and no structure is interfered with which would predispose to inguinal hernia. A point is taken from 1½ to 2 inches perpendicularly below McBurney's point, and a transverse incision 3 inches long is made, having its center at that point. The first incision is through skin and subcutaneous tissues. The aponeurosis of the external oblique is now incised in the same direction as the skin. The internal oblique and transversalis muscles are separated and the peritoneum is then reached.

Irish Journal of Medical Science, Dublin

14: 49-96 (April) 1923

Pernicious Anemia. J. H. Pollock.—p. 49.
*Two Cases of Paroxysmal Tachycardia. L. Abrahamson.—p. 58.
Deep Roentgen-Ray Therapy in Gynecology. G. E. Pepper.—p. 67.
*Case of Subcutaneous Traumatic Emphysema Complicating Labor. A. H. Davidson.—p. 79.

Paroxysmal Tachycardia.—One of Abrahamson's cases demonstrates a paroxysm of extrasystoles; the second case was one of paroxysm of auricular fibrillation.

Traumatic Subcutaneous Emphysema Complicating Labor.—Davidson's patient, aged 21, entered labor at full term, and reached the second stage in twelve hours. The pains during the first stage and the first part of the second stage were normal in force and character, but as the head came down on the perineum (a normal vertex), the patient bore down with frantic efforts. In a few minutes the head began to show, and then the patient's face became very markedly swollen, especially about the eyelids so that the eyes were almost closed. She complained of nothing except a little pain about her face and of not being able to see well. The swelling involved not only her face and eyelids, but also extended to the neck and chest. On palpation, there was no edema or pitting on pressure, but there was a marked sensation of crackling all over the swollen area. There was some tenderness. Next day the crackling and a slight amount of swelling was noticeable down both arms, and over the back, chest and abdomen to the level of the umbilicus. There was no dyspnea or pain in the chest, and the lungs yielded nothing in the way of physical signs. The crackling and swelling gradually disappeared, and the patient was normal at the end of eight days. No treatment was adopted.

Japan Medical World, Tokyo

3: 67-94 (April) 1923

Experimental Investigation on Passage of Hemolysin, Ferment and Drugs Into Cerebrospinal Fluid Under Normal and Pathologic Conditions of Animals. N. Kimura.—p. 67.
Metabolism of Transplanted Tumors. 1. Carbohydrate Metabolism. K. Tadenuma, S. Hotta and J. Homma.—p. 71.
*Nonacid Dysentery Bacillus. A. Tanaka.—p. 74.

Nonacid Dysentery Bacillus.—A nonacid dysentery bacillus was isolated by Tanaka almost in pure culture from the stools of two patients with typical dysentery symptoms and from three mild diarrhea cases. This organism had common characteristics, morphologically and culturally, with the other dysentery bacilli. It does not split mannit but forms indol. It resembles the Schmitz strain in the weakness of virulence against the rabbit, but it differs in sugar splitting actions (maltose and dextrin). It is highly agglutinated with the patient's serum, and weakly agglutinated with immune rabbit serums of Shiga or the other atypical strains. Immune serum of this organism agglutinates already known dysentery organisms only weakly; even when the agglutination titer of the serum is very high. A strain of dysentery bacillus isolated from a dysentery patient in Tokio in 1922, agrees with the Flexner type in sugar splitting actions, but agglutinability corresponds to Hiss' Y type. It, however, is very similar to this organism. Some of the characteristics of this organism resemble those described by Yoshida, Maruyama, Shirai and Kasai, but it differs from them in immunologic reactions.

Journal of Tropical Medicine and Hygiene, London

26: 103-118 (April 2) 1923

Castellani's Bronchospirochetosis, Pneumonic and Asthmatic Varieties; Roentgen-Ray Examination; Treatment with Intravenous Injections of Iodin. N. Farah.—p. 103.
Nervous Sequelae of Phlébotomous Fever. I. H. Lloyd.—p. 110.
Personal Experiences of Bilharzia Disease. F. G. Cawston.—p. 111.

26: 119-134 (April 16) 1923

Treatment of Bilharziasis with Antimony. J. E. R. McDonagh.—p. 119.
*"Blackwater," A Disease of Metabolism. G. R. Hall.—p. 119.
Virulence of Bacillus Metadysentericus (Castellani) in Rabbit. Its Resistance to Action of Sunlight. G. Olivi.—p. 123.

Blackwater Fever a Disease of Metabolism.—The view put forward by Hall is that hemoglobinuric fever is a disease of metabolism, and that the final stages resulting in "blackwater" are intensely influenced by any process of pyrexia coincident with it or preceding it.

Medical Journal of Australia, Sydney

1: 393-416 (April 14) 1923

Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne. S. W. Patterson.—p. 393.
Commonwealth Serum Laboratories. W. J. Penfold.—p. 396.
Microbiologic Laboratory in Relation to Problems of Research. E. W. Ferguson.—p. 400.
Bacteriologic Laboratory of University of Melbourne. R. J. Bull.—p. 403.
Pathologic Department of University of Adelaide and South Australian Government Laboratory of Pathology and Bacteriology. J. B. Cleland and L. B. Bull.—p. 404.
Physiologic Laboratories of University of Sydney. H. G. Chapman.—p. 405.
Facilities for Research in Department of Physiology and Bio-Chemistry. T. B. Robertson.—p. 407.
Physiologic Laboratory of University of Melbourne. W. A. Osborne.—p. 407.
University of Melbourne: Provision for Medical Research. H. B. Allen.—p. 408.
Research Facilities of Department of Anatomy, University of Sydney. J. I. Hunter.—p. 408.
Anatomic Department of University of Melbourne. R. J. A. Berry.—p. 409.
Pathologic Laboratory at Children's Hospital. R. Webster.—p. 411.
Laboratories of Lunacy Department of New South Wales. O. Latham.—p. 411.
Victorian Lunacy Department Pathologic Laboratories. W. A. T. Lind.—p. 412.

1: 435-462 (April 21) 1923

Further Series of Cases Closely Resembling Typhus Fever. F. S. Hone.—p. 435.
Serologic Examinations. L. B. Bull.—p. 443.
Possibilities in Transmission of Onchocerca Gibsoni. R. W. Cilento.—p. 445.
Death from Progressive Emphysema. C. G. McDonald.—p. 446.
Case of Acute Gangrenous Cholecystitis. J. M. Andrew.—p. 447.

Archives des Maladies de l'App. Digestif, Paris

13: 201-304 (March) 1923

*Influence of Sleep on Motility of Stomach. D. Daniélopolu and Carniol. —p. 201.
Insufficiency of Pylorus and Aortic Aneurysm. M. Klippel and J. Rachet.—p. 205.
*Chronic Intestinal Invagination. E. Delannoy.—p. 215.

Influence of Sleep on the Motility of the Stomach.—Daniélopolu and Carniol found in three patients with stenosis of the pylorus a complete or almost complete inhibition of movements of the stomach during sleep. When the patients were awakened, the gastric contractions started and increased progressively to the usual strength.

Chronic Intestinal Invagination.—Delannoy does not discuss the well known cardinal symptoms but points out a few minor ones. Loss in weight is usually present. Guinon wrote: "Some children, who become pale and cry without apparent reason may have chronic intussusception; we guess at appendicitis too much." The rectum should always be examined in intestinal disturbances. The anus is wide open, especially during the attack, and the invaginated "sausage" may be felt. The stool is sometimes normal and regular. The diagnosis between dysentery and intussusception is made by the microscopic and bacteriologic examination of feces and the agglutinins in the serum, or the presence of a tumor or a mass in the abdomen. The treatment is surgical. Reduction may be possible even after months. Tabulated details of forty-two cases from the literature conclude the paper.

Bulletin de l'Académie de Médecine, Paris

89: 239-284 (Feb. 20) 1923

*Acidosis from Fasting and from Diabetes. Labbé.—p. 242.
Montaigne's Philosophy Conduces to Long Life. Armaingaud.—p. 255.
Mask for Inhalation of Oxygen as Aid in Artificial Respiration. M. Nicloux and R. Legendre.—p. 267.
Intramuscular Injection of Alcohol in Treatment of Recurring Luxation of the Jaw. Sicard.—p. 271.
Influenzal Sinusitis. G. Laurens.—p. 274.
Bulbar Paralysis in Course of Acute Anterior Poliomyelitis. Rapid Recovery Under Specific Antiserum. L. Babonneix.—p. 276.
Disinfecting Soaps that Can Be Used with Sea Water. Brunet.—p. 280.

Essential Difference Between the Acidosis of Fasting and Diabetic Acidosis.—Labbé finds it probable that the outcome of the alimentary glycemia test depends on the rapidity of absorption of the test substances used. It is not a test of the utilization of carbohydrates. Acidosis of diabetes is a much more complex phenomenon than the acidosis of fasting, and is characterized by the abundance of acetone bodies and other organic acids excreted. Other discrepancies between the findings of himself and others he ascribes to defective technic, saying that Van Slyke's method has revealed the actual high figures. Forssner's severe acidosis after a diet containing little carbohydrate and much fat, he ascribes to indigestion from such a "terrible" diet as 306 gm. of fat, 163 gm. of protein and 300 of Bordeaux wine, the whole equivalent to 3,650 calories. The twenty-first day he eliminated 42.8 gm. of acetone bodies and some albumin, but Labbé insists that the disturbances were not from the diet, but from indigestion. He fails to see any essential difference between the acidosis of fasting and of a diet with preponderance of fats.

Journal d'Urologie, Paris

15: 161-248 (March) 1923

*Movable Kidney. G. Potel and P. Cordier.—p. 161.
*Alternating Hermaphrodism. K. Sand.—p. 181.
Perinephric Abscess. X. Delore and C. Dunet.—p. 195.
Two Ureters in a Tuberculous Kidney. A. Giuliani.—p. 197.
*Some Minor Points in Treatment of Gonorrhea. J. Janet.—p. 201.

Movable Kidney.—Embryology explains why the right kidney is movable so much more frequently than the left.

Alternating Sex Glands.—Sand's description of a case of true hermaphrodism was mentioned when published elsewhere (Oct. 14, 1922, p. 1374). Brought up as a boy, the child at the age of 10 seemed to be developing feminine characteristics and tastes, and Sand discusses what should be done in such a case: a testis on one side and an ovary on the other.

Minor Points in Treatment of Gonorrhea.—Janet regards a series of six injections of a 20 per cent. solution of protargin strong in three days as the ideal abortive for gonorrhea. After each injection he introduces a protargin-cocoa butter pencil, pushing it up to the bulb. The failure of abortive treatment is often due to gonococci lurking in the mucous crypts.

Paris Médical

13: 241-268 (March 17) 1923

Dermatology in 1923. G. Milian and L. Brodier.—p. 241.
*Sporotrichoid Tuberculous "Gummas." J. Nicolas et al.—p. 245.
Mycotic Eczema and Intertrigo. G. Petges.—p. 249.
*The Nature of Eczema. B. Bloch.—p. 251.
*Epidermal Mycosis Due to Yeasts. G. Petges.—p. 256.
*Etiology of Herpes. E. Rivalier.—p. 257.
*Treatment of Eczema. G. Sauphar.—p. 262.

Sporotrichoid Tuberculous "Gumma" Without Adenopathy.—Nicolas, Gaté and Dupasquier are of the opinion that before the existence of sporotrichosis was known, many cases were classified as tuberculous; now there is a tendency to think of it in every case of multiple cutaneous gumma, especially when adenopathy, so long considered indispensable evidence of tuberculosis, is absent. Their researches show that tuberculosis may cause multiple gummas, without adenopathy, and with a good general condition of health, thus increasing the difficulties of dermatologic diagnosis. The lesions in their patients simulated sporotrichosis. The existence or absence of adenopathy with gummas does not indicate nature of the lesion. Inconstant in sporotrichosis, it may be absent in certain cases of tuberculosis, while a syphilitic gumma may be accompanied by serious glandular lesions. In the cases they examined, the Wassermann reaction was negative; tuberculin elicited positive reactions, but the streptothrix could never be cultivated from the pus.

Nature and Treatment of Eczema.—Bloch says that to ascribe eczema to arthritism, metabolic disturbances, etc., is only to conceal our ignorance. Nothing is known about the relations of eczema to metabolic disturbances, which include nearly all internal diseases. Persons affected with eczema are frequently free from other pathologic stigmas. Of a number of individuals in the same trade and thus exposed to the same external conditions, liable to induce eczema, only a small proportion will develop it. The individual factor is the important one. Bloch has experimented with 200 eczema patients and 500 normal subjects. The substances tested were turpentine, mercuric chlorid, arnica, quinin, iodoform and formaldehyd which were left on the skin for twenty-four hours. In normals, an inflammatory reaction followed in 5 per cent., and in the eczema patients in 50 per cent. He asks if eczema may not be an anaphylactic phenomenon, localized in the skin. Theoretically there are three methods of treating eczema: removing the antigen or toxic substance; desensitization; transforming the hypersensitive cell complex. For the last, we have arsenic and the roentgen rays, and he declares that these are indispensable in treatment of eczema.

Epidermal Mycosis Due to Yeast Fungus.—Petges says that the signs indicating mycotic eczema or intertrigo are those found in all cutaneous lesions due to yeast fungi, a greasy creamy discharge, early desquamation, especially around the edges of the lesions, and the presence of islets of various size around the principal lesion. These signs call for microscopic examination. He has often found mycotic lesions in diabetes.

Etiology of Herpes.—Rivalier recalls that in man herpes appears to be a recurrent disease and there is no effective immunization. In rabbits, on the other hand, experimental keratitis from inoculation with human herpes virus is followed by permanent local immunity, and, if encephalitis develops, it is followed by general immunity. No author has been able to show a keratogenetic virus in herpes zoster vesicles. Analogy between the virus of herpes and that of epidemic encephalitis is shown in descriptions of herpetic encephalitis in rabbits, and also by experimental epidemic encephalitis in the same animal, first produced by Levaditi and Harvier in 1920. The two affinities are also experimentally dissociable, and several authors agree in considering the encephalitic virus a neurotropic modification of common herpetic virus.

Treatment of Eczema.—Sauphar places eczematous persons, whose diet has previously been restricted, on a normal

diet, and says this favors the effects of local treatment. Milian has for many years been using a paste prepared from coal tar and zinc oxid, 20 gm. each and petrolatum and hydrous wool fat, 30 gm. each. This paste should be applied freely on the lesions, renewing it as often as necessary.

Presse Médicale, Paris

31: 353-360 (April 18) 1923

*Ptosis of the Duodenum. F. Ramond and G. Parturier.—p. 353.
Bismuth in Inherited Syphilis. Cajal and Spierer.—p. 354.
*Paralysis of Inferior Laryngeal Nerve. Trivas.—p. 356.

Tender Points with Ptosis of the Duodenum.—Ramond and Parturier remark that the supports of the duodenum are not so solid as we have been taught to believe. The first third follows the movement of the pylorus, and the ligament supporting the pylorus may extend down on the duodenum. With ptosis, this ligament may pull on the gallbladder. The other portions of the duodenum follow the movement of the pancreas. They discuss the tender points which aid in differentiating the various affections in this region.

Paralysis of Inferior Laryngeal Nerve.—Trivas diagnosed the complete paralysis of the inferior laryngeal nerve on one side in two cases and abductor paralysis on both sides in two other cases as traumatic neuroses. In the case described here, the left laryngeal palsy developed three days after a fall of 15 feet on the right side, without bleeding. The corneal and pharyngeal reflexes were abolished, and the sudden subsidence of the paralysis five or six months later confirmed Trivas' diagnosis of *hystéro-traumatisme*. He adds that the interval, the *phase de méditation*, of several days between the accident and the recurrent paralysis suggests its true nature.

Revue Franç. de Gynécologie et d'Obstét., Paris

18: 113-144 (Feb. 25) 1923

Vaccination Treatment in Obstetrics. R. Riss.—p. 113.
*Testis Extract in Treatment of Women. B. Zénope.—p. 119.
Ovarian Cancer After Roentgen-Ray Treatment. Grosse.—p. 125.

Extract of Testes in Gynecology.—Zénope, describing its use in twelve cases, says that testis extract treatment is indicated in all cases of ovarian insufficiency and to check excessive thyroid functioning. He reports the case of a woman at the menopause with insomnia, palpitation, breathlessness when walking, etc., the last symptom being the most serious. He prescribed 0.75 gm. of the extract daily, divided into three doses. She returned eight days later and reported that she could climb stairs without any difficulty and that the other symptoms had also disappeared. This form of organotherapy seems also to have a regulating action on menstruation.

Pediatria, Naples

31: 225-288 (March 1) 1923

*Brahmachari's Reaction in Infantile Leishmaniasis. I. Nasso.—p. 225.
Blood and Hemopoietic Organs in Leishmaniasis under Treatment. M. Mallardi.—p. 230.
*Roentgen Treatment and Sun Treatment in Tuberculosis. Corica.—p. 247.
Rectal Infusions of Arsphenamin in Syphilis of Children. E. Modigliani and V. Castana.—p. 258. Cont'd.

Brahmachari's Reaction in Infantile Leishmaniasis.—Nasso finds that the reaction devised in 1907 by Brahmachari for the diagnosis of leishmaniasis is also positive in other anemias. The test consists in adding two or three volumes of distilled water to the serum.

Roentgen Treatment and Sun Treatment for Tuberculous Lesions.—Corica recommends roentgen rays with climatotherapy in surgical tuberculosis of children.

Policlinico, Rome

30: 361-392 (March 19) 1923

*Fever from Occult Tuberculosis. U. Arcangeli.—p. 361. Conc'n.
Hydrocele of Tuberculous Origin. M. Segrè.—p. 368.
*Symptom of Bladder Calculus. G. Gaeta.—p. 372.

Fever from Occult Tuberculosis.—Arcangeli insists that almost all slight fevers that are ascribed to autointoxication, indigestion or other ill defined cause, are in reality traceable to overlooked tuberculosis, especially in children.

Sign of Calculus in Bladder.—Gaeta calls attention to the chilliness experienced in the penis during the paroxysms of pain from a calculus in the bladder. It seems to be a reflex vascular spasm, as evidenced by the pallor from the ischemia and the sensation of local coolness.

30: 165-220 (April 1) 1923 (Medical Section)

*Sequelae of Epidemic Encephalitis. A. Borgherini.—p. 165.
*Necropsy in Case of Epidemic Encephalitis. R. Vegni.—p. 195.
*Brain Tumors. O. D'Allocco.—p. 207.

Epidemic Encephalitis.—Borgherini's extensive experience has demonstrated that the later symptoms of epidemic encephalitis are fully as grave in the cases with a mild primary phase as in those with a stormy onset. He explains the disease as an essentially chronic affection with phases of improvement deceptively suggesting complete recovery; but the virus persists in the nerve centers. The tardy manifestations are not so much sequelae as symptoms of a still active process, notwithstanding the regressive character of the special symptoms and their mutability.

Necropsy in Epidemic Encephalitis.—Vegni found evidences of acute inflammation in the locus niger region at necropsy, twenty months after subsidence of the symptoms of the primary phase of the disease. The striatal region was less involved in the inflammatory and degenerative process.

Brain Tumors.—D'Allocco compares the clinical course and necropsy findings in ten more brain tumor cases, a total of thirty thus analyzed. In one case the man recovered after an operation on the hematoma. The symptoms were misleading in the multiple tumor cases. A sarcoma in the left rolandic region was successfully removed in 1899; a decompression operation was applied in four cases, and the necropsies in many other cases showed that the tumors had offered every chance for successful extirpation. He advises operation in every case.

Revista Médica del Rosario, Argentina

13: 1-87 (Jan.) 1923

*Uremic Symptoms in Heart Disease. Clemente Alvarez.—p. 1.
*Recovery After Removal of Brain Tumor. T. Fracassi.—p. 12.
Stab Wounds of the Kidney. P. L. Mirizzi and R. Gonzalez.—p. 20.
Septic Injury of Kidney. Idem.—p. 29.
Monster with Eventration, etc. P. Ferrazini.—p. 40.

Uremic Symptoms in Heart Disease.—Alvarez comments on the variability of the urea content in the urine in asystoly and the lack of any apparent relation to the urea in the blood. In thirteen cases tabulated, with from 0.51 to 2.6 per thousand in the blood, the range in the urine was between 12.1 and 35, the total output of urine between 150 and 700 c.c. Analysis of the cases showed that the retention of urea was not due to the oliguria alone, but to disturbances in the ureosecretory function of the kidneys. The symptoms suggesting uremia were due not to the retention of urea but to the retention of chlorids. This applies particularly to the Cheyne-Stokes breathing, as this occurs even with very moderate retention of urea and even without any retention.

Recovery After Removal of Tumor in Parietal Lobe.—Fracassi's patient was a girl aged 12 who had complained of frontal headaches for nine months. They lasted for five or six hours and returned at intervals of two or three days, and were sometimes accompanied by vomiting. After the sixth week there was formication in the right side of the body with weakness and paroxysmal limping on that side. Six weeks before she entered the hospital, vision in the right eye and two weeks later in the left became impaired. Tympany in the left parietal region and pain on percussion confirmed the assumption of tumor, and the glioma was removed at a two-stage operation.

Beiträge zur klinischen Chirurgie, Tübingen

129: 1-243, 1923

*Loose Bodies in Joints. R. Sommer.—p. 1.
Cause of Köhler's Disease. M. Kappis.—p. 61.
Etiology of Stieda's Fracture. M. P. Schüller and S. Weil.—p. 71.
Surgical Tuberculosis in East Prussia, 1911-1920. H. Käfer.—p. 78.
*Histologic Blood Examination in Surgery. K. Bringmann.—p. 99.
*Cancer on Soil Modified by Actinomycosis. N. v. Hedry.—p. 157.
*Reverdin-Halsted Grafts on Granulating Surfaces. K. Schläpfer.—p. 162.
Importance of Anaerobic Streptococci for Appendicitis. H. Brütt.—p. 175.
*Rectopexy by Kümmell's Method. D. Frank.—p. 186.

Experimental Research on Pointed Bullets. Bircher and Berger. —p. 193.
*Periarterial Sympathectomy in Treatment of Peripheral Roentgen Ulcers. Gundermann.—p. 231.

Loose Bodies in Joints.—In only seven of Sommer's twelve cases was there a history of trauma, but some contusion, possibly too slight to be noted, had probably occurred in all. Repair of the more or less injured cartilage had entailed the casting off of the injured cartilage or bone tissue. This aseptic regeneration process has been called osteochondritis dissecans, but there were no signs of inflammation in his cases.

Surgical Import of Histologic Findings in the Blood.—Bringmann says that in addition to determining the hemoglobin, color index and differential count, and examining stained and unstained specimens, the platelet count and the "thick drop" findings (to detect the efforts at regeneration) should also be recorded in every thorough examination of the blood. He presents, for ready reference, the histologic blood picture of the conditions that confront the surgeon, and their interpretation. Four of the fifty-eight pages are devoted to the eosinophils.

Cancer in Actinomycotic Lesions.—In two cases the fungus, entering by a cavity in a tooth, had induced a lesion in the lower jaw and cheek. The microscope revealed cancer in a fragment excised from each.

Transplantation of Skin on Granulating Wounds.—Schläpfer describes, with four illustrations, the Reverdin grafts as modified by Halsted. He extols the method as prompt and reliable. The raw area heals over with an elastic, resistant skin, even after crushing wounds and roentgen burns.

Rectal Prolapse.—Frank relates that in twelve cases Kümmell has corrected prolapse of the rectum by fixation to the anterior longitudinal ligament of the spine. Access is through the perineum, and this simple method cures the prolapse permanently, even when extensive, and the elasticity of the sphincter is soon restored.

Sympathectomy in Treatment of Roentgen Ulcers.—Gundermann was impressed with the rapid healing in two cases of ulcer of the foot after periarterial sympathectomy. They had persisted for years after injury of the nerve. This success impelled him to apply the treatment in two cases of rebellious roentgen ulcer of the dorsum of the hand, and in a large roentgen ulcer in the elbow region. In all three the ulcer had persisted for one or more years. Wherever healing was not hampered by the presence of necrotic tissue, the surface was soon covered with vigorous granulations. The pain subsided as if by magic. In one case the swollen inflamed aspect of the upper arm returned to normal within twenty-four hours, but this was followed at once by profuse suppuration requiring puncture to release the fluid pus. It is evident from such experience, he says, that both vasodilating and vasoconstricting nerves accompany the sensory bundles of the spinal nerves to the vessels. The vasodilators seem to be more resistant than the constrictors. Venous hyperemia is not the consequence of inflammatory transudation but one of its main causes. Periarterial sympathectomy breaks up the deadlock of the vasoconstrictors and thus transforms conditions.

Deutsche medizinische Wochenschrift, Berlin

49: 303-334 (March 9) 1923

*Seroreaction in Tuberculosis. A. v. Wassermann.—p. 303.
Etiology of Rheumatic Polyarthritis. E. Keeser.—p. 308.
Frambesia and Syphilis. A. Müller.—p. 309.
*Titration in Sachs-Georgi and Wassermann Reactions. Sparmann.—p. 311.
Intestinal Cartridge Without Electromagnet for Examination of Micro-Organisms. van der Reis.—p. 312.
Our Blood Transfusions and the American Method of Grouping. G. C. J. Scholten.—p. 314.
Hypertrophy of Prostate. Voelcker.—p. 315. Cont'n.
Payr's Pepsin-Iodin Solution for Softening of Scars. W. Falb.—p. 317.
*Toxicity of Tobacco Smoke. R. Heinz.—p. 318.
Suicide by Fluor Sodium Silicate. G. Kurtzahn.—p. 319.
Protein Injections in Atrophic Infants. E. Kovács.—p. 320.
Dermatologic Diagnosis. M. Joseph.—p. 321. Cont'n.

Experimental Basis for Specific Reaction for Tuberculosis.—This paper was reviewed editorially on page 1456.

Titration with Variable Amounts of Serum in Sachs-Georgi and Wassermann Reactions.—Sparmann finds that some serums give positive reactions in low concentrations, and negative with the usual amounts. The use of stronger concentrations is advantageous in seronegative syphilis, in approaching relapses, and in the course of treatment. The Wassermann is superior in both ways to the Sachs-Georgi reaction, but the latter is of great value in anticomplementary serums.

Toxicity of Tobacco Smoke, Especially Cigaret Smoke.—Heinz reports on Bogner's experiments on smoking. It was found that with inhalation of the smoke, eight times more nicotin was absorbed than in smoking without inhaling.

49: 369-400 (March 23) 1923

Pathology and Treatment of Kidney Disease. I. F. Umber.—p. 369.
Exophthalmic Goiter. II. Goldscheider.—p. 371. Discussion.
*Bilirubin in Serum in Gallbladder Disease. Strauss and Sandherr.—p. 376.
*Epinephrin Test in Thyroid Disease. Csépai et al.—p. 379.
Quinin Treatment of Pneumonia. M. John.—p. 380.
Surgical Treatment of Dorsal Luxation of Two Metacarpophalangeal Joints. Sonntag.—p. 382.
Torsion of Testis. H. Weitz.—p. 384.
Hypernephroma After Accident. Rückart.—p. 384.
Abscess After Ruptured Empyema of Gallbladder. Schenk.—p. 385.
Acute Occlusion of Intestines in Infants. A. Reiche.—p. 386.
*Sense of Smell as Aid in Diagnosis. A. Niedermeyer.—p. 387.
Prophylactics Against Gonorrhea. P. Schwarz.—p. 388.
The "Conscientious Objector" in Social Hygiene. C. Flügge.—p. 389.
Etiology of Smallpox. v. Niessen.—p. 389. Reply. Gins.—p. 390.
Medicine in the History of Civilization. Vorwahl.—p. 390.

Clinical Significance of Bilirubin Determination in Serum with Regard to Diseases of Gallbladder.—Strauss and Sandherr in chronic affections of the gallbladder always found an increased amount of bilirubin in the blood during the attacks. In the intervals, 70 per cent. had a normal bilirubinemia. Fresh cases of cholecystitis only exceptionally gave positive results.

Determination of Epinephrin Sensibility in Diseases of Thyroid Gland.—Csépai, Fornet and Tóth use the reading of the blood pressure only after intravenous injections of epinephrin. With these precautions, they find the test valuable in diagnosis and prognosis of affections of the thyroid gland.

Diagnosis by Smelling.—Niedermeyer recalls the cadaverous odor, which is almost always a sign of imminent death. It may be the reason why a dog sometimes avoids his master, before a physician can make the prognosis. In two cases of intra-uterine fetal death, the odor was present in the breath of the mother until the fetus was removed.

Jahrbuch für Kinderheilkunde, Berlin

101: 127-250 (March) 1923

*Proteins and Bacterial Fermentation. R. Rühle.—p. 127.
Acidity and Buffer Action of Feces. K. Scheer and F. Müller.—p. 143.
Acidosis and Hyperglycemia in the Toxic Syndromes of Infants. S. Ederer and E. Kramer.—p. 159.
Epidemic Encephalitis in Early Infancy. F. Rund.—p. 175.
Icterus of the New-Born. H. L. Ratnoff.—p. 187.
Scarlet Fever After Lye Poisoning. J. Von Petheö.—p. 197.
*Anatomical Findings in Nutritional Disturbances of Infants. E. Stephani.—p. 201.
Morphologic Variations of Eggs of Ascaris. D. Lebedev.—p. 221.
Comment on Zeissler and Käckell: Bacteriology of Infant's Feces. A. Adam.—p. 225.
Reply to Cahn and Steiner: On Resorption and Action of Epinephrin. K. Csépai.—p. 227.
Reply. R. Cahn and B. Steiner.—p. 229.
Gummatous Syphilis in Infants. J. Ambrus.—p. 231.

Proteins and Bacterial Fermentation.—Rühle confirms Kayser's and Blühdorn's observation of increased formation of acid in the presence of proteins. The figures are still higher if products of peptic tryptic digestion are used. The stronger fermentation is simply due to the physicochemical binding of acid with the proteins. This enables the micro-organisms to continue the fermentation, and produce more titratable acid, but for the same reason this acid does not hurt the mucosa of the intestines. Therefore proteins have no harmful effects in intestinal fermentation.

Anatomic Findings in Nutritional Disturbances of Infants.—Stephani reports the results of 121 necropsies on children

with nutritional disturbances. In the acute forms she found almost constantly a severe fatty degeneration of the liver with loss of fat in the cortex of the suprarenal capsules. The chronic cases did not have fatty degeneration of the liver, but had large deposits of hemosiderin in the spleen and a little less in the liver.

Klinische Wochenschrift, Berlin

2: 525-572 (March 19) 1923

*Action of Protein Treatment. H. Vollmer.—p. 529.
Comparison of Bilirubin Determinations with Herzfeld's and Bergh's Methods. L. Frigyér.—p. 532.
Indications and Results of Radical Phrenicotomy. H. Fischer.—p. 535.
Anesthesia with Dichlormethane in Gynecology and Obstetrics. P. Schumacher.—p. 536.
Changes in Shape of Stomach with Stenoses of Intestines. Markó.—p. 538.
*Bile Acids in Fluids in Icterus. Borchardt.—p. 541.
Xanthoma or Xanthomatous Degeneration of Skin? Urbach.—p. 542.
Phenomena of Growth in Micro-Organisms. F. W. Oelze.—p. 545.
Traumatic Parthenogenesis. Haberlandt and Levy.—p. 547. Reply. Voss.—p. 547.
*Relation Between Blood Viscosity and Corpuscles. Drossbach.—p. 548.
Experiments on Acquired Resistance of Bacilli. Jungeblut.—p. 549.
Diagnosis Between Tumor of Lungs and Chronic Pneumonia. Deist.—p. 550.
Orthopedics of Jaws in Relation to Whole Organism. Weber.—p. 552.
Rachitis in Large Cities and Significance. Engel.—p. 554.

Action of Protein Treatment on Intermediary Metabolism and Glycemia.—Vollmer finds that injections of proteins injure at first the organism and inhibit oxidative processes in the cells, which leads to an increased acidity of urine. The stimulative stage is secondary, and due to the products of disintegration of the own cells of the organism. Specific stimulating bodies, like tuberculin, have not only their specific action, but also a nonspecific influence on metabolism identical with other proteins. Protein treatment inhibits the hyperglycemic action of epinephrin. He attributes this in accordance with some experiments of György and Herzberg to the "alkalotic" change of the metabolism.

Bile Acids in Urine, Blood, Duodenal and Cerebrospinal Fluid in Icterus.—Borchardt examined 200 cases of icterus and was never able to find in mechanical icterus a dissociation between the elimination of bilirubin and bile salts. He attributes different findings to the use of Hay's test, while he prefers the more sensitive stalagmometry. The hemolytic forms of icterus were always dissociated. The threshold for excretion of bile salts is low and the serum contains very rarely larger quantities of them. The patients with drops of serum smaller than 90 c.mm. died. The duodenal contents from healthy persons formed droplets of the maximal size of 62.5 to 69.5 c.mm. Higher figures (up to 82.7 c.mm.) were found only in persons with impaired liver function, and are due to the absence of the surface-active bile salts. The cerebrospinal fluid contains bilirubin only in cases with affections of vessels or hemorrhages. He was not able to find any bile salt in cerebrospinal fluids.

Relation Between Blood Viscosity and Blood Corpuscles and the Action of Caffein on it.—Drossbach found with the hematocrit method that caffein increases the volume of the erythrocytes. It increased the viscosity of blood if he used a low pressure to determine it.

Medizinische Klinik, Berlin

19: 265-298 (March 4) 1923

Tumors of Bladder. R. Paschkis.—p. 265.
Speed of Sedimentation of Erythrocytes and Its Analogy with Non-specific Agglutination of Micro-Organisms. J. Vorschütz.—p. 269.
*Prophylactic Immunization of Pregnant Women Against Streptococci. Louros.—p. 272.
Collective Inquiry on Eclampsia.—p. 274. Cont'n.
Generalized Vaccinia After Spontaneous Infection. Althoff.—p. 275.
Blood Pressure in Irradiation with Artificial Sunlight. B. Günther.—p. 276.
Treatment of Nervous Breakdowns with Regard to the Blood Corpuscles. V. Kafka.—p. 278.
Use of Kathodic Tubes for Demonstrations of Heart Sounds. L. Jacobsohn.—p. 280.
Survey of Physiology and Pathology of the Organs of Digestion. W. Wolff.—p. 286.

Prophylactic Immunization of Pregnant Women Against Streptococci.—Louros injects twenty and ten days before labor 250 millions and 500 millions of streptococci. Women who come to the clinic too late for this, receive 50 c.c. of antistreptococcus serum. No case of puerperal generalized infection occurred in 2,500 women thus immunized at Athens, notwithstanding the bad hygienic conditions at the clinic.

19: 371-406 (March 25) 1923

Diagnostic and Therapeutic Progress in Foreign Bodies in Esophagus. von Eicken.—p. 371.
*Responsibility for Ischemic Contracture. Schubert.—p. 373.
Clinic and Diagnosis of Hodgkin's Disease. W. Weis.—p. 375.
*Treatment of Chronic Gastric and Duodenal Ulcers. Holler.—p. 379.
*Gout in Etiology of Neuralgia and Myalgia. W. Alexander.—p. 380.
Case of Malignant Syphilis Treated with Extracts of Syphilitic Organs. A. Perutz.—p. 383.
Treatment of Lobar Pneumonia with Franke's Digitalis-Salicylate-Antipyrin Mixture. H. Hoffmann.—p. 385.
Rupture of Sigmoid During a Curettement. E. Parsch.—p. 386.
Colloidal Reactions in Cerebrospinal Fluid with Berlin Blue and Indigo. P. Kirchberg.—p. 387.
"Dold Reaction." Sachs and Georgi.—p. 388. Reply. Dold.—p. 388.
Fracture of Neck of Femur and Tabes Mistaken for Simple Contusion. Engel.—p. 389.
Survey on New Results of Surgery. O. Nordmann.—p. 392.

Responsibility of Physician for Ischemic Contracture.—Schubert emphasizes the significance of simultaneous lesion of artery and nerve in the pathogenesis of ischemic contracture. A circular cast may increase the existing circulatory trouble. The contracture develops very quickly—within six or eight hours—so that even an early removal of the dressing does not help. Yet the physician cannot be held responsible if the dressing was applied correctly and removed early. In cases of fractures, especially in supracondylar fractures of the humerus, circular dressing is contraindicated if pulsation is absent.

Treatment of Chronic Gastric and Duodenal Ulcers.—Holler found changes in the medulla oblongata in two cases of ulcers. He recommends parenteral protein treatment in ulcers, and found that, unlike normal persons, disappearance of hemoclastic crises occurs. Large amounts of alkali are beneficial.

Gout in Etiology of Neuralgia and Myalgia.—Alexander finds myalgia frequently in gout, but believes that neuritis is practically never due to gout.

Monatsschrift für Kinderheilkunde, Leipzig

24: 769-848 (March) 1923

*Further Signs of Anal Fissure. K. Svehla.—p. 769.
Significance of Presence of Colon Bacilli in Stomach of Infants. W. Grävinghoff.—p. 784.
Colon Bacilli Agglutinins. E. Kramár.—p. 799.
Pathogenesis of Köhler's Disease. P. Caffier.—p. 810.
Juvenile Delinquency. K. Planner.—p. 813.

Signs of Anal Fissure.—Svehla adds new signs to the coxalgia he described before: loss of weight, pain, especially in the liver and cecal region, and diarrhea alternating with constipation; psychic irritability may also be due to an anal fissure. He illustrates, with several cases, the importance of examining the rectum even if the symptoms seem to have no connection with it. The pathognomonic sign is severe pain on digital examination and pulling on the rectal mucosa. He treats with calomel (three times at one hour intervals), giving 0.01 gm. per year and dose, but never more than 0.03 at one dose. If the bowels do not move after the third administration, an enema should be given. Then a suppository containing 0.01 gm. cocain is given and is repeated the next morning and evening without regard to defecation. More than ten suppositories are rarely needed.

Münchener medizinische Wochenschrift, Munich

70: 353-384 (March 23) 1923

Affections of Adnexa and Appendicitis. M. Flesch.—p. 353.
*Titration of Antitoxic Serums. R. Kraus and Rocha Botelho.—p. 354.
Meinicke's Reaction in Diagnosis of Syphilis. Y. Huang.—p. 356.
*Tubercle Bacilli in Feces. K. Nüssel.—p. 357.
Psychogenous Disturbance of Defecation with Erroneous Roentgen Diagnosis of Organic Stenosis. Tscherning.—p. 358.
Epidemic of Necrotizing Erysipelas. Hoesch.—p. 359.
Varicella and Ultraviolet Rays. A. Reiche.—p. 360.
Treatment of Breech Presentations in Old Primiparas. F. Benzel.—p. 361.
Etiology of Köhler's Disease. Dürig.—p. 362.
Fever in Toxic Dermatitis. F. Jacoby.—p. 362.
Goldsol Reaction. W. Lohmann.—p. 363.

"Localization of Cervix in Gynecologic Irradiation." W. Simon.—p. 363.
Life, Stimulus, Disease and Inflammation. K. E. Ranke.—p. 363. Conc'n.
Parasitic Affections of Skin. L. v. Zumbusch.—p. 368.
Method of Teaching Nurses. J. E. Kayser-Petersen.—p. 370.

Titration of the Avidity of Antitoxic Serums Against Snake Venoms.—Kraus' and Botelho's experiments on snake venom antitoxins confirmed the importance of the quality of antitoxin. The number of antitoxic units is not the only decisive factor, especially in snake bites, when the action must be rapid. Differences between the action of antitoxins in vitro and in the living body are best explained by assuming a different avidity (speed of combining with toxins) of the antitoxins.

Tubercle Bacilli in Feces.—Nüssel examined simple smears and preparations of feces. Patients, who had tubercle bacilli in the sputum, also had them in the stools. If no sputum is available, the stool should be examined.

Wiener klinische Wochenschrift, Vienna

36: 213-230 (March 22) 1923

*Treatment and Prevention of Goiter. B. Breitner.—p. 213.
Splanchnic Anesthesia. E. Kutscha-Lissberg.—p. 216.
*Agglutination of Dysentery Bacilli in Children. Widowitz.—p. 220.
Hypercholesterolemias. I. Barát.—p. 221.
Statistics of Trachoma. H. Wassing.—p. 223.

Indications for Surgical Treatment and Prevention of Goiter.—Breitner finds that the mere size of a goiter is rarely an absolute indication for surgical treatment; ptosis of the gland is more important. It may be necessary to transplant a substernal remnant of the gland under the skin or into the subperitoneum. Roentgenologically demonstrated deviation or compression of the trachea is an absolute indication. Tracheomalacia caused by a goiter requires, in the average, six months before it is cured. Blauel's and Reich's experiments demonstrated the significance of stenosis of the trachea (lack of oxygen) in the formation of colloid goiters. Treatment with iodids mobilizes the secretion and thus diminishes the volume of the gland. Exophthalmic goiter in a patient who has formerly had a simple goiter, is suitable for operation. When combined with persistent thymus, the indications are not clear. It may be, that other endocrine glands are primarily affected. Resection of the thyroid may ameliorate the condition and removes the compression of trachea. Thymectomy may also be considered. The surgical treatment of small, vascular goiters, without affection of the trachea, is difficult and dangerous. Roentgen rays are indicated here. He adds that a sojourn in localities where endemic goiter is prevalent sometimes has a beneficial influence on exophthalmic goiter. The preventive treatment of goiters with iodids, recommended thirty years ago by Wagner-Jauregg, is almost generally accepted.

Agglutination of Dysentery Bacilli in Children.—Widowitz studied children with dysentery in a hospital. He finds that formation of agglutinins indicates a present or previous infection. The so-called normal agglutinins are specific remnants of real agglutinins. He believes that coagglutination is also due to infections with the germs.

Zeitschrift für Kinderheilkunde, Berlin

35: 67-126 (March 18) 1923

Body Frame and State of Nutrition in Their Influence on the Index of Fulness of Body. E. Helmreich and K. Kassowitz.—p. 67.
Noma. P. Kuhn.—p. 79.
*Digestion Leukocytosis and Leukopenia in Children. J. C. Schippers and C. de Lange.—p. 95.
Determination of Pelidisi in Normal Infants and Children. S. Newman.—p. 102.
Three Cases of Acute Appendicitis in School Children. Rheindorf.—p. 105.
*Eczema Death and Myocarditis. I. Bernheim-Karrer.—p. 120.

Digestion Leukocytosis and Leukopenia in Children.—Schippers and de Lange find that the leukocyte count in healthy children and babies is subject to so many influences, that it is impossible to give any rule. It is impossible in medicine to rely on one sign; only marked differences are of value.

Eczema Death and Myocarditis.—Bernheim-Karrer seventeen years ago found interstitial myocarditis in two cases of eczema. He reports another case history of a child, aged 13 months, suffering from an extensive suppurating eczema. The child died suddenly. Myocarditis, with predominance of round cell infiltration, was the cause of death.

Zeitschrift für Tuberkulose, Leipzig

37: 401-466 (March) 1923

Ways of Tuberculous Infection. H. Beitzke.—p. 401.
Sanitariums and Fight Against Tuberculosis. G. Schröder.—p. 413.
*Diazo and Urochromogen Reactions in Tuberculosis. K. Lemmens.—p. 423.
"Problem of Tuberculosis." G. Schellenberg.—p. 426.
Some Problems of Tuberculosis. H. Rieckenberg.—p. 430.

Clinical and Prognostic Significance of Diazo and Urochromogen Reactions in Pulmonary Tuberculosis.—Lemmens examined repeatedly the urine of 328 tuberculous patients, using Ehrlich's diazo and Weiss' permanganate tests. In twelve very severe exudative cases, both reactions were present. Weiss' reaction was constantly present in thirty-two other progressive cases. It is thus preferable to the diazo test. If the diazo is negative and Weiss' test is positive, this may indicate severity. Both tests negative, indicates a good prognosis. Sometimes the reaction becomes negative a few days before death.

Zeitschrift für urologische Chirurgie, Berlin

12: 81-402 (March 29) 1923. J. Israel Festschrift

*Menstrual and Hypertonic Hematuria. H. Strauss.—p. 84.
Suppuration in Adipose Capsule of Kidney. H. Maass.—p. 90.
*Operative Treatment for Incontinence of Urine. E. Unger and F. Höring.—p. 96.
*Albuminuric Neuroretinitis and Kidney Disease. F. Umber and M. Rosenberg.—p. 100.
*Treatment of Suppurating Nephritis. Lehmann.—p. 106.
*Transudation from Tumors in Bladder. Dobrotworski.—p. 118.
*Exploratory Exposure of Kidney. G. Ekehorn.—p. 123.
Renal Hemorrhage Month After Trauma. C. Posner.—p. 153.
Reconstruction of Male Urethra. H. Joseph.—p. 158.
*Pyelotomy. M. Zondek.—p. 163.
*Recent Progress in Urology. A. Lewin.—p. 171.
Simultaneous Gallstones and Kidney Stones. F. Karewski.—p. 182.
Clinical Significance of Pus in Urine. T. Cohn.—p. 191.
Origin of Kidney Cysts. E. Holländer.—p. 202.
Nephritis Dolorosa and Calculus Anuria. W. Israel.—p. 206.
*Pyelitis or Hydronephrosis? A. Bloch.—p. 219.
Diverticulum in the Bladder. A. Bloch and P. Frank.—p. 242.
Hydronephrosis from Aberrant Vessels. C. H. Ludowigs.—p. 250.
*Ignipuncture for Cystic Kidney. E. Payr.—p. 254.
Anterior Pyelotomy. P. Rosenstein.—p. 269.
Diverticulum in the Bladder. V. Blum.—p. 290.
*Pneumoradiography of the Kidney Bed. A. Mosenthal.—p. 303.
*Elasticity of the Bladder. M. Katzenstein and M. Rosen.—p. 310.
Defect in Female Urethra. K. Franz.—p. 315.
*Chromocystoscopy. H. Janke.—p. 323.
Contractility of Kidney Pelvis and Ureter. A. Israel.—p. 328.
*Surgery of Urogenital System. H. Riese.—p. 334.
Total Removal of Bladder. E. Joseph.—p. 353.
*Diagnosis and Treatment of Calculi in the Kidneys. T. Rovsing.—p. 358.
Electrocoagulation of Bladder Tumors. E. Wossidlo.—p. 385.
*List of Israel's Publications.—p. 390.

Menstrual and Hypertonic Hematuria.—Strauss regards the painless and afebrile hematuria in a case described as vicarious menstruation. The hematuria persisted several days and returned three times in the course of nine months during two years of amenorrhea. The vasomotor system in this young woman seemed to be peculiarly unstable. In three other cases the brief hematuria was explained by the high blood pressure. In conclusion, Strauss remarks that not enough attention is paid to the agglutination of crystals in the urine as a sign of a tendency to calculus production. In one case this "clumping phenomenon" helped to distinguish cases of the oxaluric diathesis from purely alimentary oxaluria.

Operative Treatment of Incontinence of Urine.—Unger and Höring describe, with illustrations, the application of the Goebell and Stoeckel method. A vertical flap, 8 cm. long by 4 cm. wide, is cut in the muscular tissue above the symphysis. This flap is slit to form two strips and these strips are brought down toward the vagina and sutured together. They embrace the urethra and exert enough pressure to insure continence.

"Albuminuric Neuroretinitis."—If there is no acute kidney disease accompanying the neuroretinitis, then the latter signifies merely sclerosis of the minute arteries in the retina;

probably other organs are also affected. But it is not a sign of insufficiency of the kidneys. The patient may live for years. Three years was the longest survival after the first signs of neuroretinitis in the cases analyzed. In the case with the fatal arteriolosclerosis of the brain, there was only incipient sclerosis in the kidney vessels.

Conservative Operation for Suppuration in the Kidney.—In Lehmann's five cases of this kind in a recent year, he decapsulated the kidney and made a small incision in it only large enough to hold a drain. Prompt recovery followed.

Transudation Through Villous Tumors in Bladder.—The profuse transudation might mislead in diagnosis. In two cases reported the ureters had been implanted in the bowel, but the bladder continued to void large amounts of what was supposed to be urine until the absence of urea in it was noted. The fluid was not stained with the indigo carmine test.

Exploratory Exposure of Kidney Before Removing its Mate.—Ekehorn reviews his experience in this line in twenty-seven cases. He never witnessed any disadvantage from it; the nephrectomy was always done at the same sitting. The aspect of the upper ureter is always instructive in renal tuberculosis. He says the functional tests are useless in this disease.

Pyelotomy.—Zondek's data confirm the advantages of anterior pyelotomy even when the calculus is in a major calyx or extends to the upper ones.

Progress in Urology.—Lewin reviews the progress of the last few years in diagnosis and treatment of inflammatory affections of the bladder and kidney pelvis, exclusive of tuberculosis and syphilis. He has had excellent results from vaccine therapy in a number of cases of pure streptococcus cystitis and pyelitis, but otherwise has found vaccine therapy often disappointing. The heat applied to kill the bacteria injures their bodies to such an extent that they fail to stimulate antibody production. Little if any progress has been realized in treatment of nontuberculous ulcerating cystitis—simple ulcer of the bladder.

Chronic Pyelitis Versus Infected Hydronephrosis.—Bloch gives details of eight cases in which the clinical picture of chronic pyelitis was traced to a mechanical or dynamic obstruction to the flow of urine as the primary cause. If the obstruction is unilateral and cannot be corrected, nephrectomy may be advisable.

Polycystic Degeneration of the Kidneys.—Payr's colored illustration shows a kidney brought to the surface to be treated by ignipuncture. With the galvanocautery he pierces the cysts separately, or makes a crucial incision in the cyst with it, or cuts out the presenting portion by running the cautery around it. He has applied this treatment in five of the fourteen cases of congenital cystic kidney he has encountered. The patients were all women but three. One patient returned for repetition of the procedure so that he has applied it to date nine times. All were benefited, and all are in good condition except one patient who succumbed to the progress of a duodenal cancer. The decidedly favorable action of ignipuncture was confirmed anew by necropsy in this case.

Pneumoradiography of the Bed of the Kidney.—Mosenthal extols the simplicity and instructive findings with insufflation of oxygen to facilitate roentgen-ray examination of the kidney. It has been applied in thirty-eight cases in his service.

Elasticity of the Bladder and Kidney Pelvis.—Research in this line and a case of spontaneous rupture of the bladder are reported.

Chromocystoscopy.—Janke injected indigo carmine by the vein in 100 cases, and declares that the findings with the test are far more instructive than with the usual intramuscular technic.

Surgery of Urogenital Apparatus.—Among the operations reviewed by Riese, nine were for removal of a hypernephroma. Three of the patients are still in good health, the interval in one case in which postoperative roentgen exposures had been given, being more than five years.

Kidney Calculi.—Rovsing analyzes 716 cases of nephrolithiasis encountered in twenty-nine years. The list includes two cases of cystinuria and cystin stones. He ascribes the permanent cure after removal of the large cystin stones to the daily ingestion of 1 or 2 liters of distilled water. One patient was a woman, the other a girl, aged 4. The intervals since are nine and four years.

Israel's Works.—The list fills twelve pages, including about fifty works by Israel's pupils. His first publication appeared in 1875 and described the nervous phenomena in a case of foreign body in the pancreas.

Zentralblatt für Chirurgie, Leipzig

50: 505-552 (March 31) 1923

Heminephrectomy in Pyonephrosis of Horseshoe Kidney. W. Carl.—p. 506.
*Gangrene of Intestine as Complication of Typhus. A. Gregory.—p. 507.
Rhinoplasty with Flap from Patient's Chest. K. Steinthal.—p. 508.
The Significance, for Surgery, of Menstrual Changes in the Mammae. A. Rosenburg.—p. 510.
Tendoplasty in Paralysis of Popliteal Nerve. Birt.—p. 511.
Retrosternal Luxation of the Clavicle. Wachendorf.—p. 514.
Illumination of Operating Rooms. L. Drüner.—p. 516.
Splint for Fractured Femur. Schönbauer and Orator.—p. 518.
Rubber Protector for Trephining Operations. W. Porzelt.—p. 520.
A Two-Eyed Ligating Needle. E. Braatz.—p. 521.
An Instrument for Removing Plaster Casts. H. Knorr.—p. 522.

Gangrene of Intestine as Complication of Typhus.—Gregory observed during typhus epidemics 827 instances of surgical complications in 7,237 cases of typhus. Gangrene of the intestine was rare, fifteen cases being noted. The cause of the gangrene was necrotic thrombovasculitis, produced by the typhus virus. The ascending colon is usually first affected. The complication begins from eighteen to sixty days after onset of the typhus and follows a somewhat typical course. The seven cases in which no operation was performed ended fatally; also the cases in which operation was not done till the second stage was reached. In the two cases in which operation was done in the first stage, an artificial anus at the cecum was established. The intestinal condition cleared up, but one patient died from pneumonia; the other recovered. Gregory emphasizes: (1) after recovery from typhus, no operation that is not urgent should be performed before two months; (2) peritoneal manifestations after typhus usually point to disturbed circulation in the intestinal wall and constitute a dangerous complication, which, if left untreated, or treated conservatively, ends fatally. An artificial anus at the cecum, at the beginning of the peritoneal manifestations, may save the patient's life.

Zentralblatt für Gynäkologie, Leipzig

47: 497-544 (March 31) 1923

*Normal Total Blood Volume in Pregnancy. G. Kaboth.—p. 498.
Chondrodystrophia and Pregnancy. E. Wehefritz.—p. 503.
Compressor for Abdominal Aorta. K. Riediger.—p. 507.
Rodent Ulcer of the Vulva. F. Jess.—p. 509.
Pregnancy After Bilateral Tumors of Adnexa. E. A. Koch.—p. 514.
Symptoms of Rupture in Tubal Pregnancy. B. Herzfeld.—p. 517.
Cleansing of Surgeon's Hands and Bathing of Patients Before Operations. E. Ekstein.—p. 519.
Protein Therapy in Febrile Abortion. J. Trebing.—p. 521.

Normal Total Blood Volume in Pregnancy.—Kaboth examined 11 nonpregnant and 20 pregnant women. The total blood volume in the nonpregnant ranged between 2,805 and 4,480 gm., or from 5.21 to 7.62 per cent. of the body weight. The total blood volume of the 20 pregnant women was from 2,982 to 4,810 gm. or from 5.96 to 8.50 per cent. of the body weight of the women, after deducting the approximate weight of the fetus. The increase in the total blood volume in women is due partly to added growth of tissue. In pregnant women approaching term, whose body weight ranged between 50 and 70 kg., there was an increase of from 300 to 450 gm. of blood.

Zentralblatt für innere Medizin, Leipzig

44: 209-224 (March 31) 1923

*Mechanism of Introduction of Gastroscopic Tube. W. Sternberg.—p. 209.

Physiologic Identity of Difficulty and Danger in the Mechanism of Introducing the Gastroscopic Tube.—Sternberg applies the contrast between effort and success, as discussed by Bernard Shaw in "Cashel Byron's Profession," to the introduction of the gastroscope. Safe introduction is easy,

and vice versa. The minimum of effort required results in the maximum of effect and safety, everywhere in physiology. Both patient and physician must relax completely.

Polska Gazeta Lekarska, Lwow

1: 637-652 (Aug. 6) 1922

Influence of the Great War on Diseases of the Eye. J. Kolinski.—p. 637.
*Retroflexion of the Uterus. W. Falgowski.—p. 638. Conc'n.
*Typhus Fever. J. Grek.—p. 641. Conc'n p. 677.
*Psychical Needs of the Sick and Hospital. A. Chelmonski.—p. 650.

1: 653-668 (Aug. 13) 1922

Quantity of Cholesterol in Blood. Z. Michalski.—p. 653.
Lenticular Lenses. A. Lipka.—p. 653.
Torsion of the Spermatic Cord. H. Hilarowicz.—p. 654.
Serotherapy of Scarlatina. W. Pulawski.—p. 654.
Question of Labor in Poland. E. Artwinski.—p. 665.

1: 669-684 (Aug. 20) 1922

Congenital Bifurcation of the Inferior Part of the Digestive Tract. J. Glatzel.—p. 669.
Pathology of Blood-Producing System. M. Semeran.—p. 670. Conc'n p. 686.
Salt of Morszyn in Mouth Hygiene. H. Allerhand.—p. 675.
Typhus Fever. J. Grek.—p. 677. Conc'n.
Question of Epidemic Hospitals in Poland. A. Kühn.—p. 682.

1: 685-700 (Aug. 27) 1922

Treatment of Appendicitis. T. Kozuchowski.—p. 685.
Treatment with Colloids and Proteins. S. Baley.—p. 690.
Teaching Oto-Laryngology in Poland. I. Szmurlo.—p. 696.

1: 701-716 (Sept. 3) 1922

Rupture of Gravid Uterus with Primary Cancer of the Cervix. W. Janusz.—p. 701.
Morphology of the Cell. M. Konopacki.—p. 703.
Provocation of Neoplasms by Irritation with Tar. L. Paszkiewicz.—p. 707.
Wire of Hypo-Needle in the Left Ventricle of the Heart. W. Czarnocki.—p. 708.
Treatment with Colloids and Proteins. W. Ziembicki, M. Selzer and S. Ruff.—p. 708. Cont'd.
Medicine and Esperanto. M. Blassberg.—p. 714.

Retroflexion of the Uterus.—Falgowski's article was summarized on page 1350.

Typhus.—Previous instalments of Grek's analysis of his experiences with typhus were reviewed on page 1111.

Psychic Needs of the Sick in Hospitals.—In this article Chelmonski is touching an interesting subject, the importance of the individual care of the sick not only physically but also psychically. To support his view of the importance of this, he cites various physiologic phenomena excited directly by the mind, such as the secretion of saliva and gastric juice from the imagination of savory food. Chelmonski reiterates the necessity for consideration of psychic influences on sick persons, especially in hospitals.

Acta Chirurgica Scandinavica, Stockholm

55: 437-631 (April 11) 1923

*Phlegmonous Enteritis. G. Bohmansson.—p. 437.
Fracture of Scaphoid Bone of Hand. A. Troell.—p. 490.
*Bleeding from Cauterized Pleural Adhesions. H. Dahlstedt.—p. 497.
*Tuberculous Epididymitis. G. Söderlund.—p. 513.
*Gastroscopy. W. Sternberg.—p. 563.
*Coxa Plana. H. Waldenström.—p. 577.
Tuberculosis in Kidneys with Two Ureters. E. Perman.—p. 591.
Amputation Stumps in Sweden. Silfverskiöld and Hansson.—p. 602.

Phlegmonous Enteritis.—Bohmansson has compiled 68 cases of acute purulent processes in the intestinal wall, only 24 surviving. Of the 18 cases treated by primary resection, only 22.2 per cent. terminated fatally while the mortality in cases without radical operation was 80 per cent. His list includes 9 from his own experience and 2 other unpublished cases. The exact diagnosis cannot be made until the abdomen is opened; the prognosis is favorable with resection. In 4 fatal cases there was no peritonitis at any time. The ages ranged from 16 to 80 except 2 children of 3 and 12.

Hemorrhage After Cauterization of Pleural Adhesions.—The application of the Jacobæus method was a complete success although conditions had seemed exceptionally unfavorable. Blood spurted as one of the adhesions was severed. There had been nothing to indicate that this adhesion contained a blood vessel. Attempts to char the stump failed on account of the spurting blood, and the skin was sutured and the woman left over night on the operating table, the pulse gradually improving. In a second case two of the adhesions bled as they were divided, and about 150 c.c. of blood accumulated in the pleura. The hemorrhage soon stopped. In this case one of the adhesions had torn loose spontaneously. This occurred also in another case during a course of treatment for scabies.

Tuberculous Epididymitis.—Söderlund analyzes the course and outcome in fifty-two cases given operative treatment. In thirteen other cases the diagnosis of tuberculosis proved erroneous. The chronic epididymitis in one nontuberculous case followed eighteen months after removal of the testis on the other side for unmistakable tuberculosis. The testis seems to be peculiarly resistant to tuberculosis. After removal of the tuberculous epididymis, mild tuberculous lesions in the testis generally heal spontaneously. In two cases, however, the lesion progressed and the testis had to be removed later. Fistulas and abscesses do not necessarily contraindicate epididymectomy alone.

Progress in Gastroscopy.—Sternberg relates that study of the mechanics of endoscopy has enabled him to devise an effectual method of treating asthma and stuttering, and to perfect gastroscopy. He asserts that direct local treatment of gastric ulcer under direct visual inspection, even at the pylorus or beyond, is possible with his gastroscope.

Coxa Plana.—Waldenström remarks that Legg and he were the first to describe this affection (1909), Sourdat's, Calvé's and Perthes' descriptions not appearing until 1910. He has traced the course with the roentgen rays through the years in forty cases, and states that the outcome is about the same in cases given no treatment as in the others. The functional outcome is remarkably good. The affection runs about a six year course; he advises that, the first three to five years, the child should not take part in gymnastic exercises, jump, nor take long walks. But this advice is purely theoretic as his cases offer no clue to treatment, except of course with pains and much contracture. Thirteen roentgenograms accompany the article, which is in English.

Acta Medica Scandinavica, Stockholm

57: 515-622 (Feb. 22) 1923

*Essential Hypertension. W. Kerppola.—p. 515.
Preserved Sensibility of Last Sacral Segments in Differential Diagnosis Between Extramedullary and Intramedullar Tumors. W. Kerppola.—p. 527.
*Wassermann Reaction in Prognosis in Syphilitic Disease of Aorta. T. E. H. Thaysen.—p. 543.
*Clinical Determination of Capillary Tension. E. Kylin.—p. 566.
*Blood Picture in Erythema Nodosum. W. A. Hoyer.—p. 587.
*Frontal Reflex in Cerebral Affections. I. Holmgren.—p. 616.

Essential Hypertension.—Kerppola examined thirty-one cases of essential hypertension. About 50 per cent. had a higher amount of hemoglobin; 45 per cent. increased numbers of erythrocytes; 60 per cent. monocytosis. The coagulation time was slightly prolonged in 40 per cent. The blood sugar was normal on a fasting stomach; the sugar tolerance was lowered in 80 per cent.; alimentary glycosuria was present in 25 per cent.

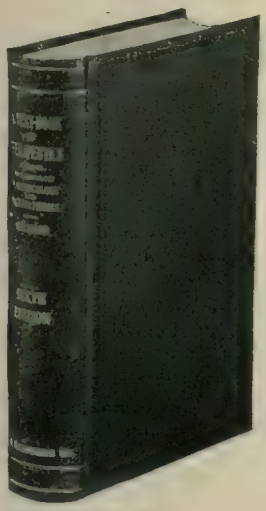
Syphilitic Affections of the Aorta.—Thaysen finds that the Wassermann reaction is of no prognostic value in syphilitic aortitis.

Clinical Determination of Capillary Tension.—Kylin gives details of his technic for determining capillary blood pressure. This and the preceding article are in English; the last is in French; the others are in German.

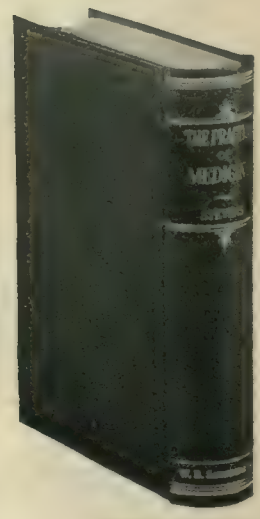
Blood Picture in Erythema Nodosum and Etiology.—Hoyer examined the blood in twenty patients with erythema nodosum. Slight neutrophilic and eosinophilic leukocytosis in the incubation period is followed by lymphocytosis and monocytosis with progressive lowering of the number of neutrophils. This picture is very different from that of acute rheumatism, and resembles an anaphylactic reaction—possibly to proteins of tubercle bacilli.

Frontal Reflex in Some Cerebral Affections.—Holmgren, in some hemiplegic patients, found that gliding pressure on the forehead of the healthy side provoked bilateral elevation of the eyebrows. Most of these patients had hemorrhage or thrombosis affecting the lentiform nucleus. He calls his symptom the frontal reflex.

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Kentucky State Medical Association	Frank Boyd, Paducah	A. T. McCormack, 532 W. Main St., Louisville	Crab Orchard, 1923
Louisiana State Medical Society	Lester J. Williams, Baton Rouge	P. T. Talbot, 1551 Canal St., New Orleans	
Maine Medical Association	Langdon T. Snipe, Bath	B. L. Bryant, 265 Hammond St., Bangor	
Maryland, Med. and Chir. Faculty of	Philip Briscol, Mutual	J. A. Chatard, 1211 Cathedral St., Baltimore	
Massachusetts Medical Society	E. H. Bigelow, Framingham C'ter	W. L. Burrage, 182 Walnut St., Brookline 46	Boston, June 10-11, 1924
Michigan State Medical Society	W. T. Dodge, Big Rapids	F. C. Warnshuis, Powers Th'r Bldg., Gr. Rap'ds	Gr. Rapids, Sept. 11-13, '23
Minnesota State Medical Assn.	Edward Starr Judd, Rochester	Carl B. Drake, Central Bank Bldg., St. Paul	St. Paul, October, 1923
Mississippi State Medical Assn.	W. A. Dearman, Long Beach	T. M. Dye, Clarksdale	
Missouri State Medical Association	George W. Robinson, Kansas City	E. J. Goodwin, 3529 Pine St., St. Louis	Springfield, 1924
Montana, Medical Association of	H. T. Rhoads, Choteau	E. G. Balsam, 222 Hart-Albin Bldg., Billings	Butte, July 11-12, 1923
Nebraska State Medical Association	Benjamin F. Bailey, Lincoln	R. B. Adams, 1013 Terminal Bldg., Lincoln	
Nevada State Medical Association	J. La Rue Robinson, Reno	Horace J. Brown, Thoma-Bigelow Bldg., Reno	Reno, October, 1923
New Hampshire Medical Society	Herbert L. Smith, Nashua	D. E. Sullivan, 7 N. State St., Concord	
New Jersey, Medical Society of	James Hunter, Jr., Westville	William J. Chandler, South Orange	
New Mexico Medical Society	Harry A. Miller, Clovis	J. W. Elder S. F. H., Albuquerque	
New York, Med. Soc. of the State of	Arthur W. Booth, Elmira	Edward L. Hunt, 17 W. 43d St., New York	
N. Carolina, Med. Soc. of the State of	Vance McGougan, Fayetteville	L. B. McBrayer, Sanatorium	Raleigh, 1924
North Dakota State Med. Assn.	Eric P. Quain, Bismarck	H. J. Rowe, Lisbon	
Ohio State Medical Association	Joseph S. Rarden, Portsmouth	Mr. D. K. Martin, Ex. Sec., 131 E. State St., Columbus	Cleveland, 1924
Oklahoma State Medical Association	McLain Rogers, Clinton	C. A. Thompson, 508 Barnes Bldg., Muskogee	
Oregon State Medical Society	Philip J. Bartle, Eugene	C. L. Booth, Selling Bldg., Portland	Portland, July 10-11, 1923
Pennsylvania, Med. Soc. of State of	Lawrence Litchfield, Pittsburgh	W. F. Donaldson, Jenkins Arcade, Pittsburgh	Pittsburgh, 1923
Philippine Islands Medical Assn.	Antonio G. Sison, Manila	I. Concepcion, Coll. of Med. & Surg., Manila	Manila, December, 1923
Porto Rico, Med. Assn. of	A. Martinez Alvarez, San Juan	Augustin R. Laugier, San Juan	San Juan, Dec. 14-16, 1923
Rhode Island Medical Society	A. T. Jones, Providence	J. W. Leech, 369 Broad St., Providence	
South Carolina Medical Association	Leland O. Mauldin, Greenville	Edgar A. Hines, Seneca	Orangeburg, Apr. 15-17, '24
South Dakota State Med. Assn.	Gilbert G. Cottam, Sioux Falls	R. D. Alway, 423 S. Lincoln St., Aberdeen	
Tennessee State Medical Assn.	Hampton L. Fancher, Chattanooga	J. F. Gallagher, Jackson Bldg., Nashville	Knoxville, 1924
Texas, State Medical Association of	Arthur C. Scott, Temple	Holman Taylor, 207½ W. 11th St. Fort Worth	San Antonio, 1924
Utah State Medical Association	J. C. Landerberger, Salt Lake City	Wm. L. Rich, Boston Bldg., Salt Lake City	
Vermont State Medical Society	J. A. Stevenson, Chester	W. G. Ricker, St. Johnsbury	Bennington, Oct. 11-12, 1923
Virginia, Medical Society of	John Staige Davis, University	Mr. G. H. Winfrey, 104½ W. Grace St., Richmond	Roanoke, October, 1923
Washington State Medical Assn.	John H. O'Shea, Spokane	C. H. Thomson, 508 Cobb Bldg., Seattle	Spokane, September, 1923
West Virginia State Med. Assn.	John N. Simpson, Morgantown	Robert A. Ashworth, Moundsville	
Wisconsin, State Med. Society of	F. Gregory Connell, Oshkosh	Mr. J. G. Crownhart, Ex Sec., 558 Jefferson St., Milwaukee	Milwaukee, Oct. 3-5, 1923
Wyoming State Medical Society	G. A. Fox, Cheyenne	Earl Whedon, Sheridan	

List of National Societies appeared in this space two weeks ago; Officers of the A. M. A. last week. Corrections will be appreciated



Neosalvarsan

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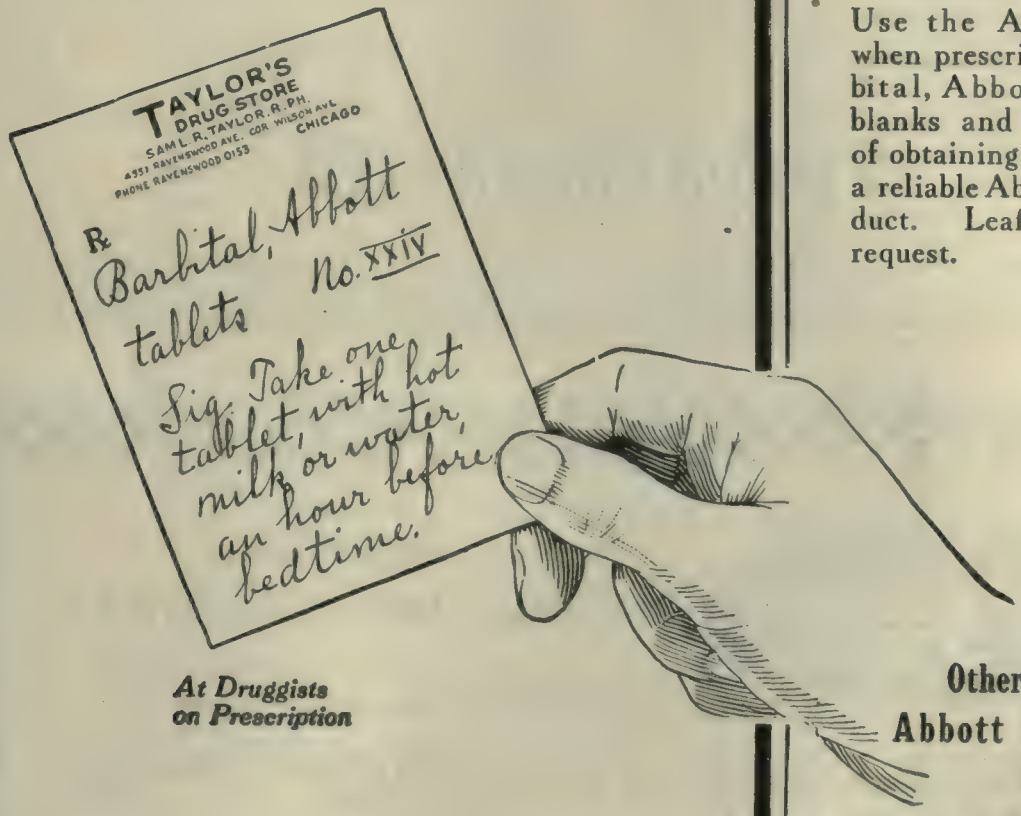
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Dosage			
I, 0.15	gram	$ .60	per ampule
II, 0.3	"	.65	" "
III, 0.45	"	.70	" "
IV, 0.6	"	.80	" "
V, 0.75	"	.90	" "
VI, 0.9	"	1.00	" "

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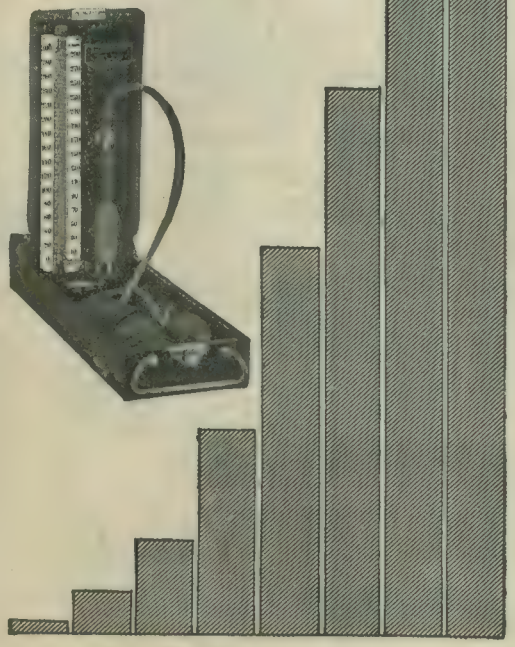
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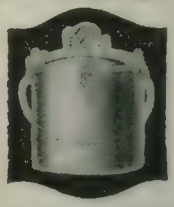
Here Doctors Agree

The universal use of National High Pressure Sterilizers proves the wholehearted consensus of medical minds on their daily advantages.

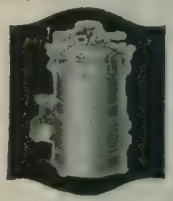
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3 hours	0.18	4 days	0.13	3 months	0.16	9 months	0.13
3 hours	0.19	5 days	0.14	5 months	0.18	9 months	0.11
3 hours	0.21	24 days	0.12	6 months	0.16	9 months	0.12
24 hours	0.16	28 days	0.12	6 months	0.14	12 months	0.13
24 hours	0.15	33 days	0.13	6 months	0.19	12 months	0.16
24 hours	0.13	35 days	0.17	7 months	0.14	12 months	0.18
24 hours	0.14						

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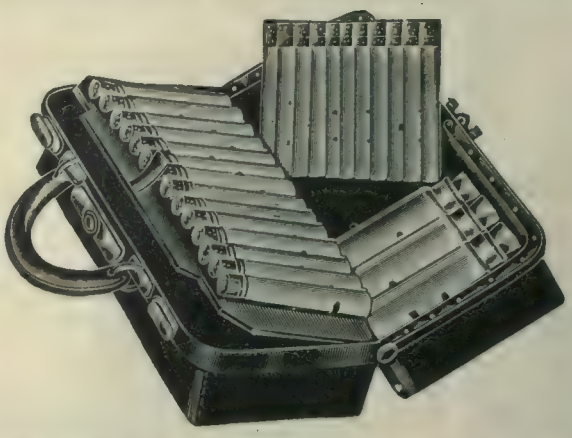
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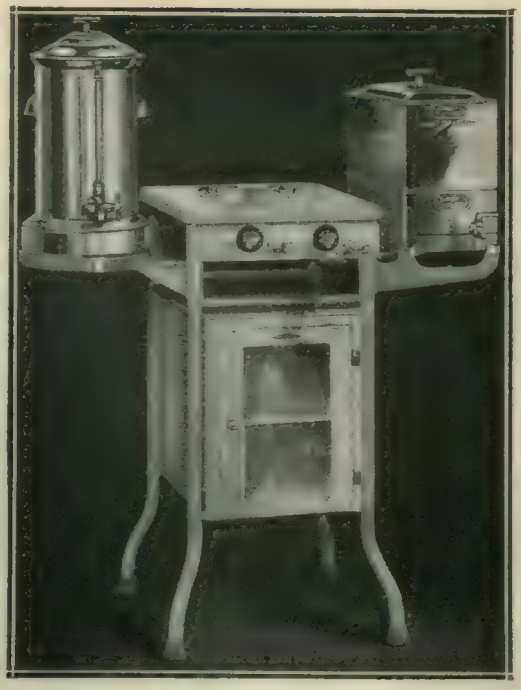
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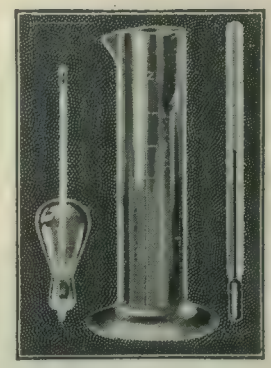
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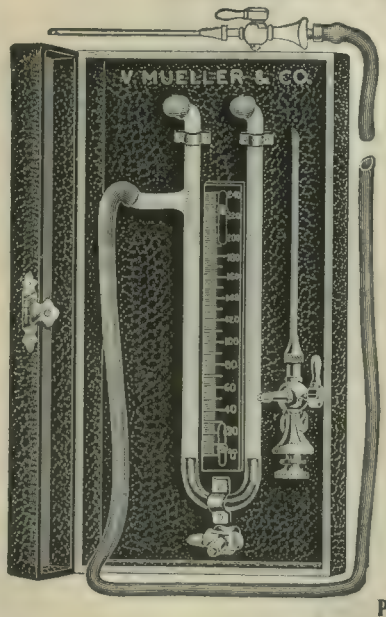
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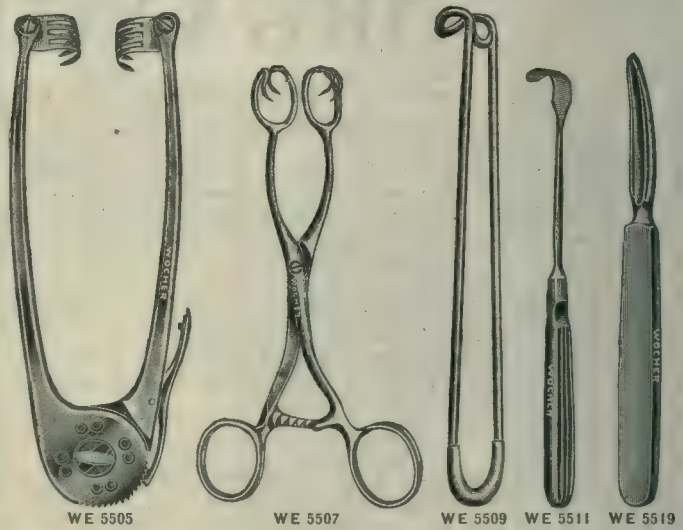
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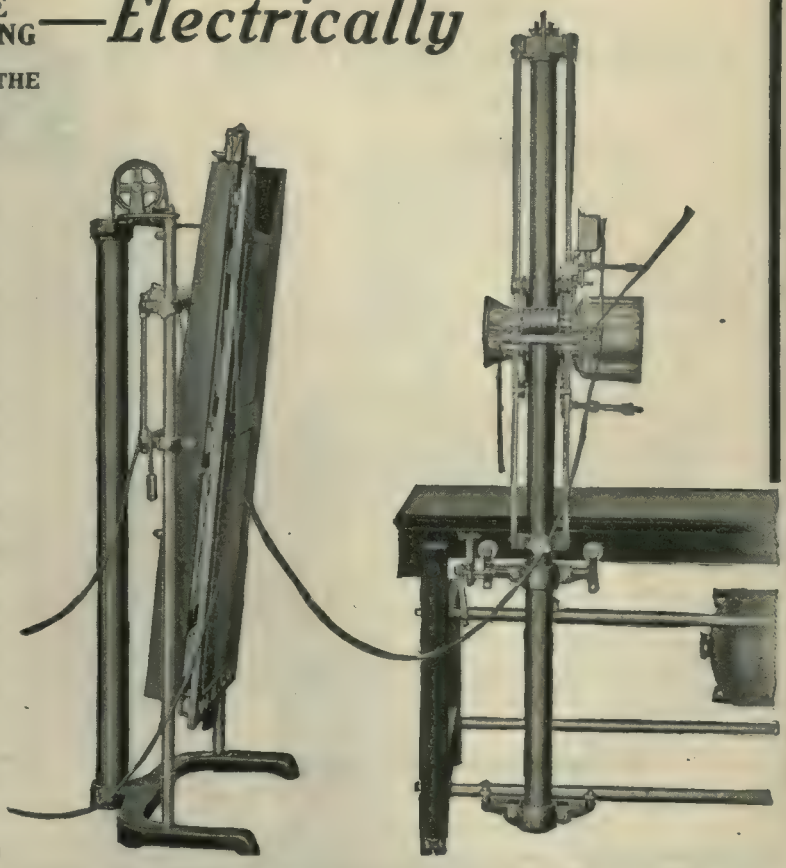
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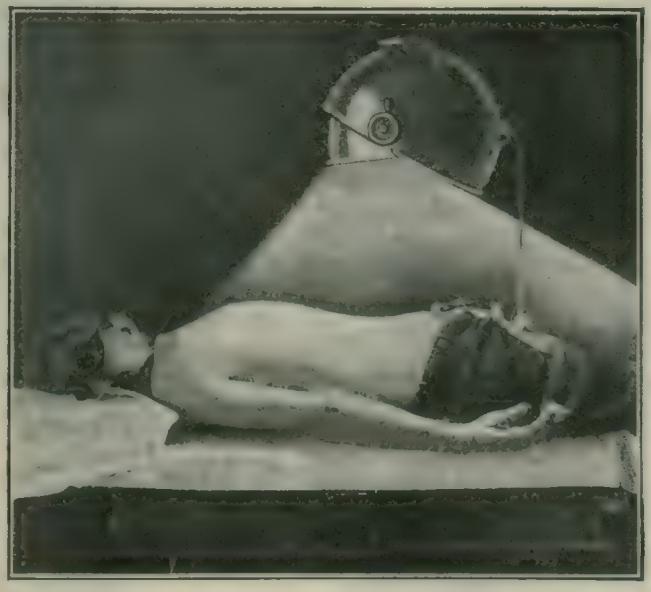
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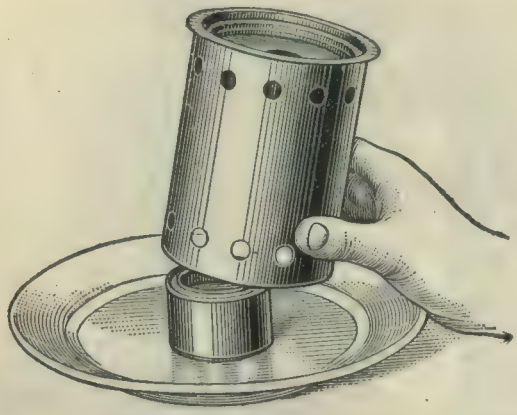
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HUMAN WELFARE AND MODERN MEDICINE *

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"The objects of this Association are to promote the science and art of medicine and the betterment of public health," states the constitution of the nation-wide organization we represent here tonight. Not only are these the objects, but they have been the goals already won, and still constitute the guiding stars before our profession here in America and throughout the world.

PROGRESS OF CIVILIZATION AND MEDICINE

Civilization is a constantly expanding phenomenon. It must remain alive, sensitive, mobile, since it rests on myriads of lives. If it fails to grow, it stagnates. While individuals are born, develop, mature, decay and die and all society must rest on them, there must always be more of the vigor of youth and growth than of maturity and senility if progress is to be made. Life, and life more abundantly, is the key to human welfare. Life means health. It must have the plus sign in order to be effective enough to provide the great driving forces needed to push the human race onward and upward. Each year our increasing knowledge of the past events that have taken place on this world of ours are better known, and we can more clearly follow man's conquest of himself and his environment. These conquests have come from experience, reasoning and experiment. Man has had to recognize his physical and mental limitations; but with his marked capacity for social organization, his developed ability to leave written records that carry over the accomplishments of one generation to the next and with the glory of the spirit of unselfishness, mutual service and religion, which is his alone, he has been able to harmonize many of his actions with the unswerving, immutable and dependable laws of an orderly universe. Wherever he has been able to find solid bottom on these great laws, his environment has yielded him support from which to reach toward newer fields. As a thinking animal, hemmed in by his sense organs and controlled by his emotions, mental processes and inhibitions, the path upward has been full of the terrors of the unknown, of superstitions, idols. Even in this day of steam, electric lights, radio, aeroplanes and submarines, the residues of these inherited dreads are about us all of the time.

The history of the art and science of medicine has run more or less parallel with human advance. In general, it has reflected the mental attitude of those it served. If demons were thought to be the cause of disease, then firecrackers or drums to scare them off were used by the medicine man. Even where the microscope has proved that bacteria acting as parasites in the human body cause a disease, many minds have not gone beyond the stage of demonology, and, in considering it, they insist on going through mental processes resulting solely from tradition and superstition. There is no possibility of uniform understanding or advance by all members of the human family, for at any given time the variation in the individual units is too great. Nevertheless, there is and has been a steadily growing recognition of the structure of fact on which the art and science of medicine have come to rest.

Man's nerves, provided to keep him intact as an organism made up of trillions of diverse cells, brought his brain sensations of pain and distress, and told him of the dangers of injuries, hemorrhages and diseases. He was not content to lick his wounds like a dog, or patient enough to wait for "Nature to take its course." The very spirit that made him a man made him ask why and seek relief. Medicine is thus as old as man. Its history begins in magic, and ends in the roentgen-ray laboratory. Its aims have always been relief of human suffering and the release of human power from physical and mental handicaps. It began and still is primarily personal in its activities; but, with time and the growth of civilization, it has become more and more interwoven in the whole fabric of human society. No modern community could stand today without using the benefits of the art and science of medicine as practically applied in community life.

Without the "betterment of public health" no lasting progress can be made, since, as living beings subject to the great biologic laws, our actual existence can be secured only through the understanding and control of the factors that hamper or favor human welfare.

There has been much discussion as to just what constitutes human welfare and goes to make up human progress. Where is the human race going? What are we seeking so busily, as we multiply in numbers and spread our control over this great ball that goes hurling through the vast spaces of a universe which it is beyond the range of our senses to grasp? There is a general opinion that we are moving in a desirable direction and that the outcome will be a favorable one for us, the most favored of all living creatures. The visualization of our destination is as varied as are the ideals and aims of man, but the maximum of human happiness for the maximum number of men is a universal

* President's address before the American Medical Association at the Seventy-Fourth Annual Session, San Francisco, June, 1923.

standard of welfare. MacKaye,[1] in "The Happiness of Nations," says:

> Now the total amount of happiness achieved by a nation in any given period of time is equal to the amount experienced by the average individual composing said nation during that period, multiplied by the number of individuals. That is, the happiness of a nation is merely the aggregate happiness of the individuals who compose it. There is no such thing as the interest or welfare of society as something distinct from the interest or welfare of the members of society, present and future.

The individual and his life and happiness are basic in any scheme of human welfare, and the happiness of the individual depends largely on the condition of the living vehicle which carries around the brain which records his impressions of his environment. Sustained health and normality of bodily function are given to but few. If the height of human happiness is to be obtained, then every advantage must be taken of all that is known of health and relief from sickness and injury. Individual and collective living can be promoted as much, if not more, by carrying out the expressed objects of this association than in any other way.

Medicine in human service has almost unlimited possibilities. Its accomplishments show us what is yet to come. Even now our information is far in advance of our application of the facts we know. Men are not educated in the mass to the point at which they are seeking all that we of the medical profession can offer them either in personal or in community relief. Much of our attitude toward life is not unlike that of the African village described by a colonial governor, who said: "Yes, ——— is a hell on earth, but the natives seem to want it that way." It takes time, patience, education to make things better. The rules of biology work all the time; they are as sure as the rules that control electricity or falling bodies. The duty of medicine is to learn the rules and to help men to meet them. History tells us that we of the civilized races can lose all that we have gained if we fail to follow the guidance of experience and fact. Nation after nation, race after race, are known today only by a few pots or arrowheads. One biologic mistake after another, and they are merged with the dust that is our common fate.

Progress requires constant thought, planning and foresight; and men who forget this are, says Karl Pearson,[2]

> Like the older political economists, who thought all real progress depended upon an all-round fight within the community. They forgot that the herd exists owing to its social instincts, and that human sympathy and racial and national feelings are strong natural forces controlling individual conduct and economic theories based purely on questions of supply and demand. It is the herd, the tribe, or the nation which forms the fundamental unit in the evolution of man, and it is to the leaders of the herd, or nation, that we ought to look for conscious recognition of this fact.

There is no inherent positive force making for progress aside from the expansion of knowledge and the conquering thereby of environment together with the persistent growth of so-called moral qualities, which biologically help to protect the herd.

We as social animals can make our particular civilization secure only by developing and controlling our food supply and housing, holding aloof our enemies, particularly the microscopic ones, keeping up proper physical standards of individual and group health, and having ideals of service and religion that make life cooperative and wholesome.

1. MacKaye: The Happiness of Nations, p. 98.
2. Pearson, Karl: National Life, p. 53.

RELATIONSHIP OF MEDICINE TO HUMAN ADVANCE

It is inspiring to think of the noble position of the man of medicine in this program. In every one of these vital fields, his voice and his services can be invaluable. For too long a period our work has been thought of by ourselves and others largely from the standpoint of the relief of the ill and the care of the weak. Our success has been so unusual that, with the great material advances made in every direction, the whole practice of medicine is undergoing vast and fundamental changes. It is no longer possible to think traditionally in medicine. The pace forward is too fast. Drained swamps, septic tanks, filter beds, safe water, physical training, closed saloons, extinguished red lights, compensated injuries, pure milk, open windows, clean car floors, have brought permanent health benefits. Gasoline, good roads, the up-to-date hospital, trained nurses, modern chemistry, arsphenamin, diphtheria antitoxin, and a host of other measures have sent many methods in recent vogue in practice to join in the oblivion of the plug hat and the high phaeton.

Methods have changed, but the aims have not. They still revolve around the individual relationship of a physician to a patient. The touch of sympathy and the need of personal helpfulness are just as important as ever before.

With the spread of general information, decrease in the number of home patients, the increase in hospital beds, the enlargement of office practice, the development of laboratories, the changes in the disease processes due to the betterment of public health, the increasing need of early diagnosis, the enhanced significance of prognosis, and the increase in size and number of cities, the practice of medicine is being remodeled right under our eyes. This is particularly true from the broad standpoint of society responsibility. Not many years ago the doctor was nurse, druggist and social worker, as well as physician. Gradually these functions have been changed or dropped, and aids of various kinds have been substituted. In smaller communities and more primitive times, the doctor was his own social worker. He knew home conditions and problems. Today he is less and less able to do that social investigation which is imperative for sensible treatment and for his own protection.

It is probable that the members of the American Medical Association do the largest amount of charitable work of any voluntary organized body in the world. Up to date, much of it has been as thoughtlessly done as is the giving of doles to street corner beggars. The whole problem of charitable and semicharitable work of the medical profession needs intelligent and modern organization from within the profession. In too many instances we have even lost leadership in our own charitable work. Hit and miss individualistic methods, protected by tradition and prejudice, are not in keeping with our forward leadership in science. The social relationships of medicine are so intimate and imperative that they are bound to multiply and continue. We cannot stop them by calling them bolshevik or socialistic or pro-German, but we can guide them if we get away from the brake and begin to steer. We can, too, if we do not think, put on the blinders of prejudice and fail to make a diagnosis and prognosis of society, its great sweeping activities and its needs.

As a profession, we are now deeply entwined in the meshes of legislation and in the service of government. In many instances those outside the profession have, without our aid, made the rules that govern medicine.

The emergencies and requirements of war brought medicine into an early and vital relationship with government. Those nations won whose armies were in the best physical condition. Much of war is settled by the way casualties, including sickness, are handled. Under war conditions, sentiment, prejudice and shortsightedness in health matters exact a direct toll. It would be difficult to say how far the superb organizing genius of the great surgeon Larrey contributed to the success of some of Napoleon's campaigns. Since his time we have seen an increasing control by medical science of numerous aspects of war. The nation entering on a modern war without the advantages offered by medical knowledge and skill for both the military and the civilian population would soon crumble.

Much of the competition in modern industrial life has in it the same aspects as are presented by war. As war is now a war of peoples, so industrial success, in a world growing smaller each year with improvements in communication and transportation, demands the maximum of health and achievement consistent with that sound health requisite for production. Every sick worker, every injured workman, every demand for expenditure of energy or goods in caring for unnecessary incapacity of human industrial units, is a handicap. Our civilization must carry along the very young and the very old and a certain number of the sick, but it has in addition the terrible burden of the insane, criminal, feebleminded, blind, crippled, diseased and those who are a prey to alcohol and drugs and their own vices. It is only good common sense to reduce this burden by education, the development of character and the use of medical knowledge. The length of the bread line will eventually compel such action. As members of the great profession of medicine, we can do more than any other force in our country to minimize this load, since so much of our knowledge can be made directly applicable to its reduction.

Increasing pressure of population, the growth of industrial centers, the spread in popular education, have required and made possible more and more order in human society. As Americans, we want to see this order kept so that individual freedom is maintained. We know that where the rights of many are concerned the rights of one cannot prevail. In medicine we do not want to become mere medical automatons carrying out legislative orders, but we do need to interest ourselves actively in the spread of legislation for the "betterment of public health." Our fellow citizens, in one way or another, will have a try at every possible benefit science can offer them.

Throughout we must keep free the individuality of the physician. The voluntary association of two men, one giving and one seeking relief, is at the heart of the art of medicine. The unfeeling rules of the law must and can be carried out so that the public welfare can be protected without destroying this bond. Health or its lack will be more and more of a public matter. We need a more even distribution of medical relief, for we have to live with the results of individual failures.

Our growing youth need instruction in health matters. They need not only to know life for their own protection, but to protect the lives that will be dependent on them as they grow to maturity. Our greatest service to the human race can be done only when we help to make possible a marked increase in positive health. Already our efforts are crowned with a marked prolongation of life, particularly through the economic productive period. We can free human beings from many of the things that bring them down before the race is run. As a race, our success is dependent on the strong and the reproduction of the strong. In the control of the human germ plasm lies man's future. In this great field we have not as yet even reached the amateur stage.

We hear much of the melting pot and of Americanization, but how many of our citizens realize that good minds and sound bodies can come only from those with these qualifications? Since all who come to our shores are permanently added to our American stock, we at least must be wise enough to see that we are protected against the diseased, the feebleminded and the criminal. We need to keep out the diseased as well as the diseases. Great possibilities are before us. When we can keep the spirochetes of syphilis out of the body of every new-born babe, we shall have added enough to human life and happiness to heal the wounds of the Great War.

We must join in on the great game of collective living and make ourselves felt on the constructive side. By our failure to lead in some instances we are already being forced into a position that may be interpreted as obstruction to progress. The danger is that organized medicine may become a defense organization. If it does, it will lose rampart after rampart before the great offensive provided by the development and spread of science. We must be as altruistic in our public service as we have been in the relief of private need throughout the generations, since medicine now serves all in serving one, and serves one in serving all. We need an informed, alert board of strategy, looking ahead, advising the public in its health measures. At present too many view our medical organizations as self-centered and engrossed in selfish aims. When interested legislators and laymen turn to us for help, the attitude will change. Bringing science into medicine has brought a great flood of workers into the broad domains of physical health who lack full medical training. They are appreciative of much of the science of medicine, but they lack that deeper professional insight which comes from medicine as an art. Our medical training, too, has been remiss in cultivating the art of medicine. The general practitioner, that real disciple, interpreter and practical exponent of medical science, has been pushed aside in many parts of the country, both from within the profession and from without.

MEDICAL EDUCATION

The ideals of the medical student have been largely influenced by the necessary location of medical schools in growing cities. The big surgeon, the specialist and the limousine doctor have set the pace. The medical curriculum has gone through the usual changes that occur when an attempt is made to cover a rapidly expanding field of information. Steps are now going forward for sounder and more complete fundamental training in medicine, surgery, obstetrics and public health. After proper laboratory training, it is in these fields that the right point of view can be obtained. We are learning, too, that there is no substitute for adequate *sense training* and its corrollary, clinical sense.

Medical education differs from most other educational projects because of its wide range of services. While its primary object is and must always be the

training of physicians for the general practice of medicine, it must develop also large numbers of anatomists, physiologists, biochemists, bacteriologists, pharmacologists, specialists in the fields of medicine and hospital administration, roentgenographers, laboratory technicians, nurses, physiotherapists, social workers and public health officials. It requires, too, an unusual combination of agencies to achieve its primary object.

The sick human being forms the necessary center about which must be gathered the teacher, the intern, the student and the nurse. At every step the teacher has a double function. He is the teacher with all that the term implies, and the personal physician of a fellow human being. If he fails in the second, he is worse than a failure in the first. His real success as the physician depends largely on his capacity to view his patient as a social unit. He must combine treatment and prevention of disease. He must see his patient put back on the firing line of ordinary life, tell him how to stay there, and see that he does not become a focus of trouble for others.

Every person brought into contact with medical education owes a duty to the public. He must help to bring to it that knowledge of medicine which it needs for its own protection. Miseducation in health matters has been the rule of the ages. The empiricist, the quack, the crank, the fanatic, have too long had domain over the minds of men. The truth presented in a practical form is needed not only to help mankind, but to protect that further research without which medicine will stagnate.

The success of modern man in medicine must rest on the same three factors of safety given by Allbutt [3] as the guides of the wise Greek physicians of more than two thousand years ago—freedom from magic, mastery of hygiene and, in spite of abstract notions, never to forget to treat the individual.

Medical education, in its essence, is to get the young physician ready to serve fellow citizens from a period of five to forty years after graduation. He must deal with them under conditions that are ahead and unknown. His preparation must be forward looking, although grounded in the best that time has brought to his profession. The faculties of medical schools should be fully conscious of the changes that have come and are coming to medicine. Early recognition of the first deviations from the normal, both physical and mental, are most difficult to recognize and to teach, but the young physician without such training will find himself a premature antique. He, too, must remember what Hippocrates [4] says on the theme of the *Prognosis:*

> He seems to me the best physician who is able to know in advance the entire group of phenomena constituting the disease, to wit, to divine its previous conduct, its present action, its future course. Thus he will be able to supplement the patient's faulty statements, gain his confidence, keep clear of blame, and be the better able to manage a cure when that is possible.

The physician is the middleman who delivers to an individual patient the results of all accumulated medical lore. His effectiveness is not a question of how much he knows, but how much he makes applicable to a fellow human being. This human being is in an acutely conscious, susceptible and impressionable state, and needs the instillation of confidence and courage as much as the administration of drugs or other therapeutic measures. There must be direct personal contact, man to man, to give the best that medicine offers. All sorts of aids may be used, but the physician alone can deliver the art of medicine to the patient. The doctor must visualize his patient not as a living mass of cells stuffed inside a skin, but as a member of a great social organism on which he must be a burden if he is not a worker. He must see the general health aspects of his disease or ailment, and think in terms of the needs of the great economic world which now has so firmly bound into itself the fortunes of man.

The young physician unfamiliar with the social appreciation of medicine will find his wings clipped. He must administer and direct all of the necessary agents needed in the practical applications of science to medicine. His primary assets must be clinical sense, social sense and common sense. In the past, men have made and, in the future, men will make money because they were able to convince others, at least temporarily, that certain things "were good" for certain ailments. Such methods of treatment are moving along on the shelf toward the end where the old-fashioned yarbs, rheumatism rings and pukes are already crowding one another. Science demands more accurate relationship between cause and effect.

The human mind, the human will and human personality will be as important for the medical student of today when he comes into full practice as typhoid fever, smallpox and cholera have been to physicians in the past. Moral and spiritual qualities play as large a part in life as do the more physical of the biologic processes. As Morison [5] has said:

> The liver of a miser is more likely to break down in the course of his life than his passion for gold. The muscular heart of the benevolent man may, and often does, fail before the spiritual heart which makes him unwearied in doing deeds of mercy. The common sense of mankind has always, when not perverted by the necessities of a theory, recognized the permanence of moral qualities, not only in the individual, but in the race.

The modern physician, viewing man as a social animal, must see through his patient the great living group of which he is but a unit.

OPPORTUNITIES OF ASSOCIATION

The opportunities before this great association are almost beyond parallel. We have numbers, organization, intelligence and sympathy, and are in possession of a fund of knowledge which, if applied to the full extent to human need and human development, would give untold happiness to humanity. The traditions of our profession are noble and heartening. In the march forward of organized society, we have too long carried out our greatest function as personal physician to individuals, neglecting our functions as educators and as protectors of the structure that is imperative for us as social animals. We must exercise the patient leadership of the man who knows. No group of men understands human weakness and human needs better than we. The "betterment of public health" can come only through legislation in our form of organized life. That legislation which will grow and change needs to be guided by us for the public good. No city would trust its crowds to a bridge built without an engineer; no community can afford to trust its health protection to laws made without expert knowledge or to administrators without a training in the medical sciences.

There is at present no one best way of handling the social relationships of medicine. Fortunately, there are

3. Taylor: Greek Biology and Medicine, p. 90.
4. Taylor: Greek Biology and Medicine, p. 28.
5. Morison, J. C.: The Service of Man, p. 205.

forty-eight states in the Union, so that experiments can be tried out in them without too much risk. When a good plan is discovered, it can be repeated by other states. Not until we are sure of our ground is national social health legislation advisable. At every step we must be available to help in making wise decisions. To those to whom are delegated the safeguarding of the public health should go the responsibility for our protection against inadequately trained and vicious practitioners of all sorts. We should see that high educational standards are maintained for all those granted the degree of Doctor of Medicine, and that there is clear publicity as to the training of all those treating the sick; but we should not as physicians be responsible for policing the treatment of the sick.

Most important in public health is the safeguarding of the death certificate. When any one who is not a trained physician is allowed to declare the cause of a death there is danger of the spread of unrecognized disease, vital statistics are impaired, and crime is made easier. It is imperative for the life of the state to guard carefully the birth of its citizens, to have marriage laws that protect its children, and to know the causes of all deaths.

HOSPITALS

We can and must keep our medical societies and hospital staffs on a plane above reproach. The patient entering a hospital should be guaranteed good nursing, a careful physical examination, proper laboratory service, scientific treatment and, if necessary, the use of a trustworthy operating room with trained anesthetists. Our lives as physicians are so closely bound up with hospitals that we must keep a full share of responsibility in their management and policies.

Along with the growth of the modern hospital there has been, particularly in our own country, a remarkable development of training schools for nurses. A large number of fine spirited and trained lieutenants have been educated to help us in the care of the sick. They are even more intimately associated with the hospitals than are we. Together, the two great professions of medicine and nursing must work forward in the mutual control of educational and hospital standards. There can be no successful separation of interests, since the good of the patient is primary and the field of operations is the same. The practice of medicine will change, the graduate nurse will have new duties, but the proper relationship of physician, nurse and patient must go on undisturbed.

NEW POSITION OF WOMEN

The new position of woman as citizen and voter, and the capacity of women to replace men as industrial workers and as administrators, together with the marked shift of women from the home and farm to the congested city with its boarding and apartment houses, have already had their effect on medical practice. The hospital is rapidly replacing the home in the care of the sick, and is having an increasing relationship to child-bearing. Women still pay a heavy toll for motherhood. But, as Sir Arthur Newsholme [6] has said:

> If only we are prepared to do what is almost immediately practicable for this end, death or injury associated with child-bearing will become rare, the loss of infant and child life will be halved, and, what is still more important, mothers and infants will cease to be damaged by neglect or ignorance at critical periods of their life and will not become burdens to themselves and to the community.

6. Newsholme, Arthur: Public Health and Insurance: American Addresses, p. 133.

SCIENTIFIC AND PUBLIC ADVANCEMENT

The Association has been unusually successful in developing side by side the organization of the medical profession of the United States and the science of medicine. Much of our progress is due fundamentally to the double representation in our governing body of geographic units of the country and the various branches of the medical sciences as typified by the constituent scientific sections. Through the high standards of THE JOURNAL and the steady improvement in the spirit and quality of the section programs, a great educational service has also been given.

Now as an association we have just begun to educate the public in health matters and thus to extend our work into wider fields. Much has been done in the past by those interested in endeavoring to improve health conditions of all sorts. Many of these steps have been poorly thought out, and based on opinions rather than experience and ascertainable information. More general dissemination of the facts of medicine and life will lead to sounder development and, at the same time, will show the public the help it can receive from the medical profession as the only group trained in such matters.

When every student in school receives some training in biology, the quack, the "patent medicine" cheat, the aggrandized rubber and manipulator, and the knotted string faddist will have a less fertile soil for their mushroom activities. Since we are alive, we need to be able to think biologically about our individual and our mass problems if we are to avoid deception and danger.

Medicine, in its foundations and in its applications, is based on research. The most sacred heritages of medicine have come through the transcendent genius of a comparatively few men applied to human woes. The protection and advancement of research is our greatest opportunity, but it is as important to apply the results of research as to foster it. All dealing with life is relative, and will be so until we can know more of the unknown. For the present we can only expect to get high percentage results in the application of medicine. Every time we learn a new fact, the structure of medicine becomes firmer and more dependable. Near facts must fall before facts. There can be no present finality. Dogma has no place in medicine today. Facts and not authority control.

With minds open and unafraid and with a growing appreciation of all human values, our profession faces the days ahead ready to give to our race that full service which it is our privilege and glory to render.

Chimney-Sweeps' Cancer.—Chimney-sweeps' cancer was one of the first occupational skin diseases to be described, having been referred to by Percival Pott in 1775. The employment of climbing boys for sweeping chimneys was regulated in the reign of George III, the masters being compelled to provide proper clothes and to cause them to be cleaned once a week, and no apprentice of less than 8 years of age being allowed to be employed. A Liverpool newspaper of 1828 refers to climbing boys suffering from "incurable skin diseases." The use of climbing boys has long since been legally abolished in these islands. Coal soot is known to contain considerable quantities of arsenic derived from arseniferous pyrites present in the coal, and the work of Bayet and Slosse points very definitely in the direction of arsenic being a serious factor in the production of the precancerous conditions, if not actually of the cancer itself.—Hope: Industrial Hygiene and Medicine, 1923.

TREATMENT OF MIGRAINE WITH PEPTONE

EVIDENCE OF THE ANAPHYLACTIC CHARACTER OF THE SEIZURE

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Three years ago, Pagniez, Vallery-Radot and Nast [1] published a report on the treatment of migraine by the intravenous injection of horse serum, later substituting peptone for the serum. At this time they advanced the view that the migraine seizure was an anaphylactic manifestation. Independently, Abel [2] during the same year, reported the results of treating 100 cases of migraine by intramuscular injection of a placental extract. He was led to select the placenta for making an extract on account of the frequent disappearance of the disease during pregnancy. His theory of the method of action was not one of desensitization, but rather of some obscure endocrine effect.

Becoming interested in this subject from reading these reports, we have treated during the last two years twenty-five migrainous patients. The results have been sufficiently striking to lead us to conclude that migraine is definitely benefited by this procedure, and we have sought for evidence to support the anaphylactic theory.

Our knowledge of clinical anaphylaxis is at present in the developmental stage, as the list of diseases proved to be of this character is gradually increasing. At present there is included hay-fever, asthma, urticaria and some forms of eczema and, as possible candidates, angioneurotic edema, intermittent hydrarthrosis, epilepsy and migraine. This group of diseases presents wide differences in their symptomatology, and there is little to suggest from a clinical standpoint that they are of common origin.

They have, however, some points in common, of which periodicity is probably the most striking. Asthmatic attacks develop suddenly and are usually self-limited in duration, followed by a longer or shorter period of freedom. In this respect they resemble migraine seizures. Migraine sufferers frequently state that, following a seizure, they enjoy a period of relative immunity, during which period nerve strain that ordinarily would precipitate an attack is without effect. This might be interpreted as a refractory period corresponding to the antianaphylactic state observed in animals following anaphylactic shock—a period in which they are relatively desensitized.

Migraine, like its congeners asthma and hay-fever, is distinctly hereditary. Gowers [3] and others have called attention to the frequent association of asthma and migraine in certain families. Liveing and Möbius [4] refer to the not infrequent development of asthma in patients suffering from migraine.

The importance of nervous influences in precipitating an attack of migraine corresponds to what has been observed in asthma. Trousseau considered asthma a pure neurosis, and the nervous theory has still many adherents. They are unwilling to accept in full its anaphylactic origin, on account of the preeminence of nervous factors in precipitating an attack. It is only necessary to recall cases referred to in the literature in which the sight of an artificial rose or a vivid description of a mustard field was sufficient to excite a paroxysm in those sensitive to these pollens. Migraine attacks associated with the menstrual period might be explained on the basis of disturbed stability of the nervous system at this time. It is not improbable that nervous influence plays a rôle in increasing the patient's sensitiveness.

Migraine seizures frequently disappear temporarily after severe, prolonged infections, especially typhoid fever. This might be explained by desensitization acquired through the infection. In this respect it resembles asthma, as not infrequently the asthmatic patient may enjoy a prolonged period of freedom following a severe infection.

Migraine and asthma are frequently influenced favorably by pregnancy. The former, in the majority of instances, subsides during the latter half of pregnancy. This is much less constant in asthma, and, in fact, attacks may first appear at this time. Many instances are on record, however, in which the attacks have disappeared during this period. Coke [5] recently referred to a chronic asthmatic patient who during six pregnancies was entirely free from attacks. An explanation that has been offered is that the placenta, which behaves as a foreign protein, may desensitize the individual.

Mention is frequently made of the rôle played by foods in precipitating an attack of migraine. Little reference is made in regard to the responsibility of a specific food. Pagniez refers to a patient who had migraine after eating chocolate. Möbius refers to attacks being precipitated by odors and certain drugs, and also to a series of ninety cases studied by Symond, in nineteen of which the seizures were considered as due to dietary errors. Brown,[6] who recently reviewed this subject, refers to one case in which eggs would precipitate a seizure. He states that some patients are greatly benefited by a diet free from animal protein, and others by a diet in which carbohydrates are restricted. This particular phase of the subject deserves further study. When we recall that many of the older medical writers do not refer to specific foods as playing a rôle in asthma, it can be readily seen how this factor might easily be overlooked in migraine. In case migraine is a sensitization disease, beyond the possible rôle played by foods, there is no information available regarding the character of the sensitizing agent or agents.

The presence of eosinophilia during the attack is perhaps the strongest evidence of the possible anaphylactic nature of migraine. Neusser,[7] in 1892, reported a definite eosinophilia during severe attacks of migraine, and, Gänsslen [8] recently, in forty-two patients with migraine, examined during an attack, reported an eosinophilia of from 5 to 16 per cent. in thirty-one. Seventeen of these had an eosinophilia of 9 per cent. or more. If further observations confirm these findings, they would furnish highly suggestive evidence of the anaphylactic character of the attack.

The relief obtained following the use of peptone in migraine is temporary, as, within from a few weeks to a few months after it has been discontinued, the headaches return, in this respect behaving like hay-fever and

1. Pagniez, P.; Vallery-Radot, P., and Nast, A.: Presse méd. **27**: 172 (April 3) 1919. Pagniez, P., and Nast, A.: Ibid. **28**: 253 (April 28) 1920. Pagniez, P.: Ibid. **29**: 45 (Jan. 15) 1921.
2. Abel, G.: Deutsch. med. Wchnschr. **47**: 1229 (Oct. 13) 1921.
3. Gowers, W. R.: Diseases of the Nervous System **2**.
4. Möbius, P. J.: Die Migräne, in Nothnagel's Specielle Pathologie and Therapie.
5. Coke, F.: Brit. M. J. **1**: 455, 1922.
6. Brown, T. R.: Rôle of Diet in Etiology and Treatment of Migraine and Other Types of Headaches, J. A. M. A. **77**: 1396 (Oct. 29) 1921.
7. Neusser, E.: Wien. klin. Wchnschr. **5**: 41-64, 1892.
8. Gänsslen, M.: Med. Klin. **17**: 1202 (Oct. 2) 1921.

asthma, in which diseases the desensitization is rarely lasting.

Finally, Van Leeuwen and Zeydner [9] have isolated from the blood, in cases of asthma, urticaria, epilepsy and migraine, a substance that stimulates unstriated muscle. They were unable to isolate this substance from normal persons or patients suffering from a variety of other diseases. As stimulation of unstriated muscle is one of the constant physiologic reactions in anaphylaxis, they suggest that migraine and epilepsy may be allergic diseases.

Summing up the foregoing evidence, it cannot be considered more than suggestive, and more specific studies must be made before it can be stated that migraine seizures are a manifestation of sensitization.

The reported relief from migraine by the use of horse serum, typhoid vaccine, placental extract and peptone indicates that a variety of proteins are capable of producing changes responsible for this improvement. That desensitization is not strictly specific has been generally accepted by immunologists, recognizing, however, that it is less complete and probably of shorter duration than that produced by specific proteins.

Biedl and Kraus,[10] in 1909, reported that animals sensitized to a foreign serum would not react to a second dose if, in the interval, peptone was administered. Weil [11] demonstrated that a preliminary injection of sheep serum protects guinea-pigs in a certain percentage of cases against the sensitizing effect of immune rabbit's serum. An animal sensitized simultaneously to several proteins, when desensitized to one, is partially desensitized to all the others.[12] Dale [13] has shown that the uterus of a guinea-pig previously sensitized to several serums and, in addition, to egg white, could be desensitized to the serums with egg white. Auld [14] has reported favorable results in a certain percentage of asthma cases by the intravenous use of peptone.

TREATMENT

We began treating migraine patients by this method two years ago. The first patient treated was given typhoid vaccine intravenously. After eight injections, her migraine disappeared and did not return until four months later. On account of the inconvenience of a chill after each injection, this method was discontinued, and a 5 per cent. solution of Armour's "Peptonum Siccum" employed. Auld, in the treatment of asthma, called attention to the advantage of this preparation over Witte's peptone. The latter at times gave an anaphylactic-like reaction after a single injection. The explanation offered is that Witte's peptone contains a larger amount of primary proteoses. It is also possible that its action as a desensitizer may be due to the proteoses and not to the peptone, as Auld reported he was not able to secure favorable results in asthma when pure peptone was used. In several hundred injections we have never observed any symptoms resembling anaphylactic shock, nor, in fact, any reaction, provided the preparation is sterile. When a chill follows the injection, it is due to an infected solution. Recently, however, another physician observed marked urticaria following a single injection in two patients. No doubt, different preparations of the same brand differ in their composition. In order to produce peptone anaphylaxis in dogs, large amounts are required, according to Biedl and Kraus, 0.3 gm. per kilogram of body weight. The total quantity administered in a single dose in this treatment, however, does not exceed 0.1 gm.

The solution is prepared by dissolving the peptone in 0.9 per cent. sodium chlorid solution so as to make a solution of about 6 or 7 per cent. strength. This is neutralized, half normal sodium hydroxid solution being used and litmus paper as an indicator. The solution is then made to the volume required to make a 5 per cent. solution, filtered until clear, and then placed in 5 c.c. ampules, and autoclaved in the usual manner. In order to determine whether the preparation is sterile, the ampules are incubated, and if they remain clear, they are ready to use. The first intravenous injection is 0.5 c.c., the dose being rapidly increased to 2 c.c. The interval between injections is unimportant. We have usually given two injections a week until the headache disappears; then weekly, and, if the improvement continues, once in two weeks, and finally once a month.

Results of Treatment in Twenty-Five Cases

Patient	Number of Attacks per Month	Nausea and Vomiting	Number of Injections	Results: Marked Improvement	Results: Moderate Improvement	Results: No Improvement
1	4	+	17	+	..	..
2	4	+	42	+	..	..
3	2	+	18	..	+	..
4	3	+	10	+	..	..
5	3	+	15	..	..	+
6	5	0	28	..	+	..
7	8	0	17	..	+	..
8	2	0	13	+	..	..
9	8	+	12	..	+	..
10	2	+	27	+	..	..
11	1	+	20	..	+	..
12	4	+	16	..	..	+
13	4	+	25	..	+	..
14	3	+	14	..	+	..
15	3	0	6	..	+	..
16	3	0	10	..	..	+
17	2	0	21	..	..	+
18	2	+	11	..	+	..
19	2	+	16	+	..	..
20	3	+	16	..	+	..
21	2	+	17	..	+	..
22	3	+	22	+	..	..
23	3	+	26	..	+	..
24	2	+	24	+	..	..
25	4	+	9	+	..	..

It has not been determined how frequently the injections must be given in order to prevent a recurrence. This period will probably show individual variation. If the injections are discontinued, sooner or later the migraine will return. The longest period of freedom observed after discontinuance of the treatment was nine months.

RESULTS

Twenty-five patients have been under observation a sufficient period of time to permit conclusions to be drawn in regard to the results of the treatment. This group could all be considered as relatively severe types, as may be seen in the accompanying table. Twenty-one were females, four males. Their ages ranged from 12 to 51 years. Ten had seizures at the menstrual period, but in only one were they confined to this time. Four had a systolic blood pressure above 150, and seven below 110. Nausea or vomiting was present during the attack in seventeen. Two had ophthalmic manifestations. A definite hereditary history was obtained in seventeen. One had a family history of epilepsy, one, hay-fever and one, urticaria. The total number of injections given varied from six to forty-two.

9. Van Leeuwen, W. S., and Zeydner: Brit. J. Path. & Pharmacol. **3**: 282 (Dec.) 1922.
10. Biedl, A., and Kraus, R.: Wien. klin. Wchnschr. **22**: 363-554, 1909.
11. Weil, Richard: J. Immunol. **2**: 456, 1917.
12. Karsner, H. T.: Principles of Immunology, 1921.
13. Dale, H. H.: Brit. M. J. **2**: 689 (Oct. 29) 1921; **1**: 45 (Jan. 14) 1922.
14. Auld, A. G.: Brit. M. J. **1**: 696 (May 14) 1921.

In reporting the results of treatment, we have divided the patients into three groups—much improved, moderately improved and not benefited.

In the group of much improved are included those patients who were free from headaches for a period of two months or more after the treatment was discontinued. Nine patients fell in this group. Four were free from headaches two months, two were free three months, one was free four months, one, six months and one, nine months. At the end of this period the headaches returned, but were again controlled by the peptone.

In the group of moderately improved were those patients in whom the attacks were definitely less frequent and less severe. Ten in this group had nausea, and in all but two it disappeared. Twelve patients were included in this group.

Four patients were not benefited—at least not appreciably. One of the male patients was in this group, two were in the group of much improved, and one in the moderately improved group.

Expressed in percentage, 36 per cent. were much improved, 48 per cent. were moderately improved, and 16 per cent. were not benefited. These results correspond quite closely to those reported in the treatment of hay-fever by desensitization.

For further information in regard to the frequency of attacks and duration of improvement, the reader is referred to the accompanying table.

CONCLUSIONS

The intravenous injection of peptone has a definite action in temporarily relieving or modifying migraine attacks. Whether these results are due to desensitization or to some other action of peptone is not known. Clinically, migraine has many of the characteristics of a sensitization disease.

STUDIES ON THE THERAPEUTIC APPLICATION OF BACILLUS ACIDOPHILUS MILK

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At birth, the meconium is sterile, as would naturally be anticipated, in view of the fact that the uterine cavity is normally sterile. The first manifestations of bacterial contamination of the meconium are discernible several hours postpartum. These early invaders are adventitious microbes, resembling in every respect those commonly encountered in the infant's environment, and probably gain entrance to the intestinal tract through the mouth and anus.

As soon as the digestive tube becomes permeated with milk, a marked change is recognizable in the intestinal flora. The heterogeneous aggregation of promiscuous micro-organisms gives way to a simplified flora dominated by *Bacillus acidophilus*. The stools of healthy infants are yellowish, slightly acid in reaction, nonputrefactive, and soft and pasty in their physical appearance. It is now a well known and widely accepted fact that lactose is the chemical constituent of the infant's diet directly responsible for the predominance of *B. acidophilus*. As the child grows older and the artificial feeding becomes more varied, a new distribution of bacteria makes its appearance, in the course of time approaching that of an adult. The increased variety of food, furnishing new combinations of pabulum easily attacked by various kinds of bacteria, while relatively unavailable for *B. acidophilus*, is the essential cause of complicating the bacterial picture of the feces of man. Under such ordinary conditions of alimentation, the presence of *B. acidophilus* is reduced to a minimum, and the metabolic activities of the putrefactive microbes are supported to a maximum.

The intestinal tract of man represents a combined culture medium and incubator of a highly perfected type. It is constantly teeming with bacterial life. Thus, MacNeal, Latzer and Kerr [1] demonstrated that the average adult, subsisting on a so-called ordinary mixed diet, excretes daily thirty-three trillions of bacteria, and that this extremely large number of microbes represents about 5.34 gm. of dried matter, or 0.585 gm. of bacterial nitrogen. Combe, Herter and others have shown that the fecal flora of the adult is almost always putrefactive, producing substances toxic to the host and considerable amounts of gas in the intestine. The stools are foul smelling, compact and desiccated. Metchnikoff [2] and his co-workers asserted that the absorption of these poisonous substances, especially in the case of chronic constipation and intestinal stasis, is cumulative in nature and gives rise to autointoxication, arteriosclerosis and high blood pressure. While the theory of autointoxication is by no means universally accepted, it is now a well-established clinical assumption, at least, that the absorption of toxic substances from the lower bowel gives rise to changes in the liver, brain, kidneys and blood vessels.

The observations of Metchnikoff on the antagonistic effects of *B. bulgaricus* on the putrefactive microbes are generally known to the medical world. Appreciating the baneful influence which the unrestrained activities of the large microbic army of the lower bowel might exercise on the general health of man, Metchnikoff advocated the introduction into the alimentary canal of living cultures of *B. bulgaricus*, absolutely benign to the host, for the purpose of completely displacing the undesirable pernicious intestinal bacteria. However, many investigators failed to substantiate the assertions of Metchnikoff. In their recent extensive investigations, Cheplin and Rettger [3] have proved that *B. bulgaricus* cannot be acclimatized to the intestinal tract of both animal and man, and they strongly emphasized the fact, by furnishing experimental evidence, that the bacteria in the stools, identified by Metchnikoff as *B. bulgaricus*, were in reality *Bacillus acidophilus*, whose growth had been stimulated by the lactose in the milk fed to the patients. These investigators pointed out that bacterial implantation within the intestine for therapeutic purposes was possible and could be accomplished only when organisms possessing the requisite

1. MacNeal, W. J.; Latzer, L. L., and Kerr, J. E.: The Fecal Bacteria of Healthy Men, J. Infect. Dis. **6**: 123-169; 571-609, 1909.
2. Metchnikoff, E.: The Prolongation of Life, New York, 161-183, 1907.
3. Cheplin, H. A., and Rettger, L. F.: Studies on the Transformation of the Intestinal Flora, Abstr. Bacteriol. **4**: 8-9, 1920; Transformation of the Intestinal Flora of Man, ibid. **5**: 20-21, 1921; The Therapeutic Application of Lactobacillus Acidophilus, ibid. **6**: 24, 1922; Studies on the Transformation of the Intestinal Flora of Albino Rats, Proc. Nat. Acad. Sc. **6**: 423-26, 1920; Studies on the Transformation of the Intestinal Flora of Man, ibid. **6**: 704-06, 1920; Studies on Intestinal Implantation of Bacillus Acidophilus, Proc. Soc. Exper. Biol. & Med. **17**: 192-95, 1920; Further Studies on the Intestinal Implantation of Bacillus Acidophilus, ibid. **18**: 30-32, 1921; A Treatise on the Transformation of the Intestinal Flora, New Haven Conn., Yale University Press, 1921; Bacillus Acidophilus and Its Therapeutic Application, Arch. Int. Med. **29**: 357-67 (March) 1922.

qualifications for colonization and proliferation in the alimentary canal are employed.

Cheplin and Rettger have also demonstrated that the most effective method of simplifying the intestinal flora is through the use of milk cultures of *B. acidophilus,* which were employed by them for the first time in 1920. In some instances, 500 c.c. of acidophilus milk was sufficient to bring about complete transformation of the fecal flora with the elimination of the undesirable putrefiers. A total of 1,000 c.c., taken daily in from two to three doses, in every instance effected the desired change of the flora in the course of from four to seven days. Their work at the start was conducted with animals and apparently normal human beings, and the conclusions suggested that the simplification of the fecal flora might possibly be of benefit in certain pathologic cases in which there is associated a predominance of the putrefactive forms of bacteria in the intestinal tract. The first clinical application of the so-called *B. acidophilus* milk therapy was made by Cheplin and Rettger early in 1920, and the treatment was given in more than sixty cases. They reported that the ingestion of *B. acidophilus* milk resulted in relief from chronic constipation, chronic diarrhea and mucous colitis, as well as sprue. They also reported beneficial results in the treatment of eczema referable directly to the bacteriology of the intestinal tract. Cheplin and Wiseman,[4] in their studies on the effect of acidophilus milk in cases of chronic constipation, found that this milk culture exerted a beneficial influence in regulating the fecal eliminations from the bowel and in changing the character of the intestinal flora. Kopeloff [5] has shown that relief from chronic constipation has persisted for six months after the ingestion of *B. acidophilus* milk has been discontinued. Gompertz and Vorhaus,[6] in their recent experiments with 200 patients suffering from chronic constipation and 100 with diarrhea and mucous colitis, reported that from the purely clinical standpoint, the results have been most gratifying, 70 per cent. of all the cases of either group showing complete relief from symptoms and toxemia, and 15 per cent. showing some relief and improvement. Norman and Eggston [7] have given the acidophilus therapy a widespread application, and strongly advocate the acidophilization of the intestinal tract by means of milk cultures.

EXPERIMENTS

The milk feeding experiments presented in this paper were conducted for the purpose of extending the observations on the therapeutic value of the oral administration of *B. acidophilus* milk in cases of chronic constipation and mucous colitis. Our chief aim was to establish *B. acidophilus* in the alimentary canal and, while maintaining the acidophilus-dominating flora, to ascertain the extent of clinical improvement.

The acidophilus milk was prepared, in accordance with the method advocated by Cheplin and Rettger, in liter lots, and living twenty-four to thirty-six hour cultures were administered daily to the patients. With but few exceptions, 1,000 c.c. of the milk culture, enriched with from 50 to 100 gm. of lactose, was ingested by the subjects each day in three equal doses, from two to three hours after meals. At no time during the investigation were any special or modified diets prescribed, and the milk culture was consumed regularly in addition to the ordinary daily dietary regimen. It was definitely arranged that no cathartics or laxatives be taken by any patient throughout the entire experimental period. In the event of no response during forty-eight consecutive hours, enemas, consisting of from two to three parts of warm water and one part of acidophilus milk, were resorted to, and these were given in but five instances.

Bacteriologic examinations of the stools were made of every patient before treatment and then at intervals of from five to seven days. These routine fecal examinations were carried out with the chief object of determining the progress in the transformation of the intestinal flora from the ordinary mixed type to one dominated by *B. acidophilus.* It has also been our endeavor to establish, if possible, a correlation between the simplified acidophilus flora and any benefits that might be noted clinically.

REPORT OF CASES

CASE 1.—A woman, aged 29, in whose family there had been tuberculosis, in the spring of 1920 was stricken with influenza, which was followed by symptoms of fatigue, loss of weight and expectoration. Roentgen-ray examination of the chest showed a lesion at the hilum of the left lung. No acid fast bacilli were found in the sputum. In 1922, the patient was reexamined, and the lesion in the lung had disappeared. All active symptoms had subsided, except that the patient showed plainly the signs of fatigue and asthenia. Constipation was marked. An urticaria developed, with other manifestations of autointoxication. Treatment included enemas and aloin, belladonna and strychnin tablets, together with a fruit, vegetable and milk diet.

In the fall of 1922, she was given an intensive treatment of acidophilus milk. One liter of the milk culture, reinforced with 50 gm. of lactose, was consumed daily for eight weeks. Then this amount was reduced to one glass a day. Without the use of cathartics or enemas, complete elimination followed. The patient has improved, and her symptoms have cleared up to a large extent.

CASE 2.—A boy, aged 5, whose family history was negative, had been troubled since birth with constipation. The mother gave liberal amounts of magnesia magma, and liquid petrolatum for relief. Malnutrition and undernourishment were noticeable. The abdomen was distended, with no areas of tenderness. The child had repeated attacks of pain in the pit of the stomach, and this was always relieved by the passing of considerable amounts of gas.

On the oral administration of acidophilus milk, 12 ounces (355 c.c.) daily, movements were recorded each day, followed by disappearance of the distention and symptoms. When last seen, the child had regained his proper weight. The treatment was discontinued after eight weeks.

CASE 3.—A woman, aged 62, whose family history revealed cancer, had been troubled with constipation extending over a period of fifteen years. She had gone the rounds of physicians and had been told that the liver was torpid. She was in the habit of taking ox-gall, cascara and phenolphthalein tablets as laxatives. She also had consumed large quantities of liquid petrolatum. The main symptoms, beside the chronic constipation, were lassitude, lack of ambition, loss of appetite and headache, with sensations of heat and cold in the extremities.

One liter of acidophilus milk, in addition to 100 gm. of lactose, was consumed daily for eighteen weeks. Daily bowel movements followed. At the end of twelve weeks, the patient refused to discontinue the treatment because of its beneficial effect. Her toxic symptoms disappeared, and she resumed

4. Cheplin, H. A., and Wiseman, J. I.: Observations on the Effect of B. Acidophilus Milk upon Cases of Chronic Constipation, Boston M. & S. J. **185**: 627-30 (Nov. 24) 1921.

5. Kopeloff, Nicholas, and Cheney, C. O.: Studies on the Therapeutic Effect of Bacillus Acidophilus Milk and Lactose, J. A. M. A. **79**: 609-611 (Aug. 19) 1922. Kopeloff, Nicholas: Is the Action of Bacillus Acidophilus a Strictly Bacteriologic Phenomenon? ibid. **80**: 602-604 (March 3) 1923.

6. Gompertz, L. M., and Vorhaus, M. G.: Observations on B. Acidophilus: Its Bacteriological Characteristics and Possible Therapeutic Significance, M. Rec. **100**: 497 (Sept. 17) 1921; Bacteriologic and Clinical Experience with Bacillus Acidophilus, J. A. M. A. **80**: 90-92 (Jan. 13) 1923.

7. Norman, N. P., and Eggston, A. A.: Pyogenic Infections of the Digestive Tract and Their Biological Treatment, New York M. J. **115**: 449 (April 19) 1922.

her daily duties with, as she repeatedly stated in person, new strength and endurance.

CASE 4.—A woman, aged 31, whose family history was negative, for ten years had suffered with recurring attacks of pain in the abdomen, headache and constipation, with no relief. In the summer of 1922, the appendix and gallstones were removed. This operation relieved the pain. The constipation and headache persisted. For weeks after the operation, the patient was in the habit of taking Epsom salt.

In November, 1922, the acidophilus milk treatment was prescribed, and was taken for a period of nine weeks. The patient responded unsatisfactorily during the first eight days, requiring enemas on two occasions. After the tenth day, she reported a daily defecation, which continued for the remainder of the experimental period. Removal of the toxic symptoms and relief from most obstinate constipation resulted in marked physical improvement.

CASE 5.—A woman, aged 42, whose family history revealed cancer, under a barium series showed a visceroptosis. The stomach and transverse colon were both ptosed to a marked degree. The intestinal stasis was extreme. The uterus was retroflexed. An operation was not advisable on account of the ptosis. The symptoms were dizziness, headache, bearing down pains and eye strain. Intestinal toxemia was acute.

An intensive treatment with 1 liter of acidophilus milk, enriched with 100 gm. of lactose, daily, was extended over a period of eight weeks. The response was slow during the first two weeks, necessitating the use of enemas in three instances. After completely transforming the fecal flora at the end of the third week, relief from constipation, headache and dizziness were noted. Correction of glasses relieved eye strain.

CASE 6.—A woman, aged 38, with a family history of tuberculosis and arterial disease, had, at the age of 18, lived in a tent for the treatment of an attack of pulmonary tuberculosis. Recovery followed. In 1917, she developed an attack of renal colic, which was wrongly diagnosed as uremia at the time. In 1921, the condition was diagnosed as a tuberculous kidney. A nephrectomy was performed. Recovery followed, but the constipation became chronic. Barium series revealed a ptosis of the viscera, particularly the stomach and the transverse colon. Elimination through the kidney was sluggish and headaches were common. High enemas with sweating and purging had to be resorted to.

In the fall of 1922, the patient commenced the treatment of acidophilus milk, reinforced with 100 gm. of lactose. She responded immediately after the first liter of the milk culture was ingested. She gained 10 pounds in weight, and the uremic symptoms cleared up with the daily movements of the bowels. Bacteriologic examinations of the stools revealed *B. acidophilus* as the predominating organism. The patient was under treatment for twelve weeks.

CASE 7.—A man, aged 29, complained of insomnia, nervousness, nausea and a great deal of gas after eating. He had been constipated for five years, and was losing weight. A bismuth meal roentgen-ray series proved negative. Nothing was found of diagnostic value in the chest. A diagnosis of chronic constipation with acidosis was made.

The treatment consisted of daily oral administrations of 1 liter of acidophilus milk, with 50 gm. of lactose, and continued for a period of fifteen weeks. The subject responded very readily, having at least one daily movement, not infrequently two, and on several occasions as many as three defecations a day. The fecal flora was completely transformed within twenty days. The patient claimed pronounced relief from abdominal pains and gaseous distention.

CASE 8.—A woman, aged 30, anemic, had a red blood count of 4,035,000, and a white blood cell count of 17,000. Many evacuolated red cells were found in the differential count. At this time she was in a great deal of distress from gas in the stomach and bowels, with occasional pain in the right groin which sometimes shot up the right side of the abdomen. She had diarrhea alternated with constipation. She also complained of being very tired and depressed, especially in the morning, and of lacking the ambition to do much work. A diagnosis of intestinal infection and toxemia was reached.

After the patient had taken 1 liter of acidophilus milk and 100 gm. of lactose daily, with no other medicine, over a period of three months, the red cell count was 5,020,000, and the white cell count, 12,300. With daily elimination throughout the entire experimental period, her general condition manifested marked improvement. The fecal flora was completely simplified, the gas-producing and proteolytic microbes being almost entirely displaced by *B. acidophilus* within sixteen days.

CASE 9.—A man, aged 36, aside from typhoid fever at the age of 12, and an attack of acute rheumatism with quinsy six years later, had always been in good health. With the removal of the tonsils, the rheumatism disappeared. For the past five years, he had had considerable gastric and abdominal distress with more or less soreness in the region of McBurney's point, but no acute pain. He was compelled to be exceedingly careful of his diet on account of nausea and gas formation. He felt all tired out, and was on the verge of discontinuing his charge unless he could get relief. A diagnosis of intestinal toxemia was made.

The patient ingested 1 liter of acidophilus milk, together with 100 gm. of lactose, daily for fourteen weeks. During the first three weeks, the response was unsatisfactory, in spite of daily defecations. The subject's general condition manifested some improvement by the end of the fourth week. From that time on until the end of the experiment, the transformation of the fecal flora was in evidence, and the disappearance of the patient's symptoms was clearly noted.

CASE 10.—A woman, aged 25, an underdeveloped "hunchback" girl, for eighteen months had had bowel trouble, and was very nervous and depressed. Her weight was 70 pounds (31 kg.). The pain in the abdomen was severe, and she passed so much mucus with tenesmus in the rectum that she took as many as eighteen enemas a day to rid herself of long ribbons of foul-smelling mucus. Her case was diagnosed as chronic mucous colitis.

The treatment of acidophilus milk, reinforced with 100 gm. of lactose, commenced, Nov. 27, 1922, and continued for four months. During the first week, the condition was somewhat aggravated, the patient claiming to have had as many as seven defecations in one day, with increased amounts of mucus. By the end of the third week, the amount of mucus was much lessened; after the fourth week, the abdominal pain and distress had practically disappeared, the mucus had almost completely ceased, and the flora was represented by *B. acidophilus* to the extent of 80 per cent. Beginning with the seventh week and thereafter until the termination of the course of observation, the patient reported, with but two exceptions, one natural and normal bowel passage free from mucus. There was a marked physical improvement; the patient ate and slept better, gained in strength and showed an increase of 10 pounds (4.5 kg.) in body weight.

COMMENT

From the results obtained in this investigation, we are confident of the therapeutic value of *Bacillus acidophilus* milk in the intestinal conditions outlined in this paper. That viable cultures of *B. acidophilus,* when ingested in sufficient amounts, can be successfully implanted in the human intestine is no longer disputable, as is also the fact that the resultant simplified flora can be maintained as long as the administration of the culture continues.

B. acidophilus is, according to all available information, an organism which does not elaborate toxic or other injurious by-products. It is considered as a strictly nonputrefactive microbe. Its therapeutic virtue is embodied not only in its ability to suppress *B. coli,* as recently claimed by Gompertz and Vorhaus, but also to its inhibiting influence on *B. welchii, B. proteus, B. putrificus* and other toxicogenic intestinal microorganisms.

B. acidophilus milk therapy possesses distinct merits in the treatment of chronic constipation and mucous colitis, as the numerous experiments that we have thus

far conducted conclusively show. Its beneficial effects in simplifying the complex fecal flora are manifested in two well-defined ways: (1) In the constipation group, the physical characteristics of the feces are noticeably changed, becoming yellowish, soft, comparatively odorless, quite resembling the infantile type of stool, and accompanied by the elimination of pain at straining of stool; in the diarrhea and mucous colitis group, there is a gradual formation of the fecal material, finally resulting in soft, light and partially formed stools, with a complete disappearance of the mucus; (2) marked improvement in the clinical picture by relieving the toxic symptoms which previously coexisted. The accumulated evidence and clinical belief that the absorbed by-products of intestinal putrefaction are harmful offer additional and significant relation to our results under discussion. We believe that the theory of autointoxication deserves perhaps more consideration than it has hitherto been given. If the ordinary complex fecal flora, ever harbored within the recesses of our bowels, were simplified to a point at which its bacterial population is reduced to a minimum with a concomitant lessening in the total elaboration of their poisonous products, much would be accomplished toward combating the evils of so-called toxic intestinal conditions. *B. acidophilus* milk apparently achieves such results, and merits further investigation.

Undoubtedly, individuals will manifest great variations and idiosyncrasies in their reaction to acidophilus milk; and, while we do not deem it safe to generalize on the benefits of this mode of treatment, the fact remains that up to this time we had not observed a single patient, no matter how chronically constipated, who has not been relieved of constipation and clinical symptoms, following an intensive course of treatment with acidophilus milk and lactose. In this respect, the range of usefulness of *B. acidophilus* milk seems quite clearly defined. In any application of the acidophilus milk therapy, however, immediate results should not always be expected. In several instances in which the treatment finally became effective, we have failed to obtain a favorable reaction until after the expiration of from one to three weeks; and in a few other cases, still under treatment, there was no favorable response until a month or six weeks after the initial ingestion of the acidophilus milk culture.

In view of our own results and those of other observers, we feel that the application of the acidophilus milk therapy is worthy of further investigation in the treatment of other ailments directly or indirectly referable to intestinal disturbances We suggest also that it be given a trial in specific infections, such as typhoid and paratyphoid fevers and dysentery. Torrey[8] showed that the oral administration to typhoid patients of from 250 to 300 gm. of lactose, in addition to the Coleman-Shaffer diet, resulted in an acidophilus-dominating intestinal flora, cut short the course of the disease, reduced the tendency to complication, and conserved body weight. These results suggest definite indications for future experimentation with *B. acidophilus*.

It has long been known that the growth of one organism inhibits that of another. Metchnikoff made attempts with *B. bulgaricus*, and the fact that his conclusions have not been confirmed by further experimental evidence does not affect the main issue. We do not question his clinical findings. We believe that *B. acidophilus* actually accomplishes all that Metchnikoff attributed to *B. bulgaricus*, and we fully support the contention of Cheplin and Rettger to the effect that the former has been mistaken for the latter.

We wish to emphasize that *B. acidophilus* milk therapy is not an elixir nor the fountain of youth in the sense that Metchnikoff's *Bacillus bulgaricus* was for a while, at least, supposed to be. The ingestion of relatively few acidophilus bacilli will not be conducive to complete implantation and clinical improvement. A minimum amount of the bacterial culture, containing, on an average, fifty billions of viable organisms, is required each day to bring about these changes, and for these reasons, we strongly advocate the use of acidophilus milk cultures as the most effective means of attaining the desired results. We are of the opinion that the acidophilus milk therapy, if properly executed, is a resource which has a sound, logical, scientific foundation, and which in time may take a high place in the scale of efficiency.

SUMMARY AND CONCLUSIONS

1. *Bacillus acidophilus*, when given by mouth in the form of minimum amounts of milk cultures, lends itself to complete implantation and colonization within the human digestive tract, effecting a complete simplification of the fecal flora, and supplanting almost all known intestinal toxicogenic microbes.

2. In chronic constipation, there was marked clinical improvement in the so-called toxic symptoms and regulation of the fecal eliminations from the bowel.

3. In mucous colitis, beneficial changes were noted clinically, with daily natural defecations free from any mucus.

8. Torrey, J. C.: The Fecal Flora of Typhoid Fever and Its Reaction to Various Diets, J. Infect. Dis. **16**: 72-108, 1915.

SOME LESS FREQUENTLY CONSIDERED PORTALS OF INFECTION IN ARTHRITIS AND IRITIS

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The general principle that recurrent metastatic infections may result from chronic local infections seems well established, and the search for chronic hidden infections has become routine in the examination of patients, particularly those afflicted with arthritis and iritis. In many cases the removal of such chronic local infections is followed by freedom from recurrences of the metastatic lesions in eyes or joints, and the relief of the patient from his disability. In other cases, in many of which the clinical appearances of the lesions in the joints are indistinguishable from those of the favorable group, the removal of chronic local infections, if found, fails to free the patient from recurrent lesions, and the disease progresses. While much has been accomplished in the treatment of arthritis and similar metastatic infections, the study of the symptomatology and mechanism of chronic infections is by no means complete, and offers an interesting field for investigation not alone in relation to lesions of the joints and eyes, but also in other branches of medicine, notably in dermatology. In inviting attention to portals of entry other than those of the conventional sites of chronic infection, I recognize that the mechanism suggested is applicable to only a part, and perhaps a small part, of the unsolved group. The problem is, however, complex, and efforts to solve a part may contribute to the solution of the whole.

Before I pass to the consideration of the unsolved group, it will be of advantage to consider what hap-

pens in the patient in whom the removal of a tonsillar abscess, for example, is followed by freedom from a previously recurrent arthritis or iritis. The removal of the tonsils may occasion very little local reaction, and the subsequent improvement in the joints or the eye may be slowly progressive, so that after a few days the joint is free from pain or swelling, and the residual functional disturbance is proportional only to the mechanical damage incurred by previous inflammation; the inflammatory reaction in the eye subsides gradually, and the return of vision depends on the degree of clouding of the media, and mechanical disturbance resulting from the inflammation of the uveal tract. The favorable end-result is apparently effected by the removal of the local infection, from which infection organisms can now no longer pass into the circulation and produce distant metastases.

In occasional cases in which the final result may be equally favorable, the removal of the tonsils may or may not be attended by fever and local inflammation. The effect on the eye or joint is, however, more striking; the inflammation in the eye disappears within twenty-four hours, perhaps permanently; the effect on the joint may be as rapid, but is less easily observed. Such results are similar to those seen occasionally after the intravenous injection of foreign protein, and, like them, are probably nonspecific. This sudden and remarkable improvement following the removal of a local area of infected tissue may be misleading, in that it may occur in patients in whom subsequent events show that the removal of this tissue did not effect a cure. Either the patient was the subject of multiple infections, of which only part was removed, or the cause of the disease in the joint or eye entered the body from some other source.

A review of the group of cases in which search for, and removal of, chronic local infections failed to give favorable results will show that many belong to the composite group of arthritis known as arthritis deformans, in which other factors, such as disturbances of nutrition, family predisposition, and the persistence of infection in the joints themselves, presumably play an important part in the continuation of the disease. In the present discussion it is desired to omit the group of frank arthritis deformans, not because the same principles may not apply here, but because other factors first enumerated complicate the problem to a degree greater than in other types of arthritis and metastatic infection, and tend to lead aside from the issue of the portal of entry. There remain a considerable number of metastatic infections in which a thorough examination fails to give a satisfactory result in the search for the cause along the commonly accepted definition of focal infection. The prompt relief from metastatic infection which has followed the removal of chronic local lesions in favorable cases, the evident soundness of the general principle that recurrent bacterial invasion of the joints may originate from small areas of local infection, and the name "focal infection" itself have led to the general clinical conception, assumed, if not formally expressed, that all metastatic lesions of this sort, not preceded by one of the recognized general bacterial infections, enter the body from some preexisting focus. It is consequently assumed that if the search is thorough and extensive enough, a primary offending lesion may be found and removed. The search is prosecuted with more diligence than thought, and frequently patients lose teeth and other parts of their bodies without profit, and to the discredit of a fundamentally sound but misinterpreted clinical principle.

Three less frequently considered portals of entry of recurrent infections present themselves: (1) the mucous membranes of the upper respiratory tract; (2) the tissues about the hila of the lungs, and (3) the intestinal tract. In some of these, the lesions are chronic and localized; in others, the infection enters directly through mucous membranes without evident previous lesion.

THE UPPER RESPIRATORY TRACT

It is generally accepted that many infections begin as local superficial inflammatory lesions of the nasopharynx; if mild, they pass under the diagnosis of a "cold"; if more severe, they may become general infections, as in the severe streptococcal infections of 1917. In health, organisms that reach the buccal and pharyngeal mucous membranes are usually quickly removed, to a large extent by the mechanical flushing action of the secretions, as shown by Bloomfield.[1] As he points out, there is evidence that invasion of intact mucous membranes by bacteria may occur, and if at the time of such invasion the resistance of the body cells and fluids is lowered, or if the virulence or invasiveness of the organism is high, the invader may enter the blood stream. The experiments of Thiele and Embleton showed that general infection from the buccal mucous membrane occurs in guinea-pigs fed with virulent bacteria, provided the food is coarse enough to produce minor lesions of the mouth.[2] The invasion of the body by way of the buccal and pharyngeal mucous membranes is often accompanied by evidence of enlargement of regional lymph nodes, as in experimental infections with tubercle bacilli, and clinically, regional lymph node enlargement may afford the clue to the route of invasion in developed infections of other kinds. A group of acute infections characterized by initial pharyngitis without tonsillitis, and by cervical and sometimes general enlargements of lymph nodes and spleen, which apparently is similar to the disease described years ago under the title of glandular fever, has recently been brought to the attention of pediatricians. While most of these cases occur in children, a like condition is sometimes encountered in adults, and occasionally in these a mild acute arthritis occurs. The arthritis as well as the adenopathy subsides rather promptly, and therefore does not present a serious problem. The condition is, however, of interest as an example of probable systemic invasion through the pharyngeal mucous membranes, and because the occurrence of the arthritis may suggest a search for other conventional sources of infection in arthritis. In patients subject to acute articular rheumatism, recurrences of acute rheumatic fever, preceded by pharyngitis, are sometimes seen in those whose tonsils have been removed as a prophylactic measure. Mild temporary arthritis occasionally follows acute streptococcal pharyngitis and colds in patients in whom there is no evidence of intervening sinus or other local infection.

THE LOWER RESPIRATORY TRACT

Aside from the chronic suppurative lesions of the lungs which may be the source of distant metastases, there is an interesting group of cases in which the primary lesion is apparently at the hila of the lungs, and in which other areas of chronic infection can be

1. Bloomfield, A. L.: Am. J. M. Sc. **164**: 854 (Dec.) 1922.
2. Thiele, F. H., and Embleton, D.: Proc. Roy. Soc. Med. **7**: 69, 1913-1914.

excluded with reasonable certainty. These cases have been more numerous in the years since influenza has been epidemic.[3]

The clinical features of this group are: recurrent arthritis; attacks of erythema, with nodular swellings resembling clinically erythema nodosum or erythema multiforme; frequently asthmatic seizures in adults not previously subjects of asthma, and definite peribronchial thickening, particularly of the lower lobes, with sometimes enlargement of the lymph nodes at the hilum of the lung, as shown by fluoroscopy and roentgenograms. The erythema, arthritis and asthma may occur singly or together. The pulmonary condition has usually followed bronchopneumonia, and is not tuberculous. Periods of irregular fever of from 100 to 103, lasting from a few days to a week, occur, and with these febrile attacks come the erythema and arthritis. There is a moderate leukocytosis. Blood cultures, both aerobic and anaerobic, during the exacerbations of fever have usually shown no growth. Apparently, the infection is resident in the peribronchial tissues and lymph nodes at the hilum of the lung, and is therefore to be regarded as an unusual type of infection resident in a local lesion rather than as a renewed invasion of the body through the respiratory mucous membranes. The diffuse erythema and asthma suggest a protein intoxication possibly derived from the infecting bacteria or from the tissues affected by them. Several of these patients have been greatly benefited by therapeutic doses of the roentgen ray directed toward the tissues at the hila of the lungs.

THE GASTRO-INTESTINAL TRACT AS A PORTAL OF INFECTION

In certain of the acute specific diseases, such as typhoid fever, and in some chronic infections, such as tuberculosis of intestinal origin, the infecting organisms enter the body by way of the gastro-intestinal tract. The question as to whether other organisms which are not able to produce acute or chronic continuous infection can pass through the intestinal wall at intervals, enter the blood stream, lodge in the joints or other tissues and produce recurrent metastatic lesions similar to those produced by organisms resident in chronically infected areas, is of considerable clinical importance. It is evident that, in view of the large numbers of bacteria either temporarily or permanently resident in the bowel, the wall of the intestine must present, under normal conditions of health, a fairly effective barrier against bacterial invasion. When, however, these normal conditions are varied by inflammatory or other changes in the intestinal wall, or by modifications in normal resistance of the body to infection, it is conceivable that bacteria other than those capable of causing a progressive bacteremia may enter the body through this portal. The problem is evidently concerned with (1) the passage of bacteria through the stomach and their fate in the small and large intestine; (2) the permeability of the mucosa of the intestine for small particles and for bacteria, and (3) the survival of these bacteria in the lymphatics, lymph nodes and blood, and their subsequent lodgment in the eyes, joints and other structures. As in other problems of infection, the relative values of the ability of the invading bacteria to survive a progressively changing environment, and the resistance of the body cells and fluids to bacteria, are intimately involved.

In addition to gastro-intestinal symptoms which occur in the specific infectious diseases, such as typhoid fever, the causal organisms of which usually enter the body by way of the gastro-intestinal tract, disturbances in the stomach and intestine of varying degree, with nausea, vomiting, anorexia, diarrhea or constipation, are frequent in many other infections and are often merely expressions of functional disturbances of the intestinal tract coincident with actual infection elsewhere in the body. In some of these infections it is possible that the infecting organisms, whose chief site of attack is the tonsil, nose or respiratory tract, pass down the gastro-intestinal canal and there act as direct excitants of inflammation and diarrhea. In another group, the intestinal symptoms apparently result from the embolic lodgment of organisms in the intestinal mucosa, a mechanism similar to that in infectious arthritis. This seems to be true in certain cases of colitis, in which a proctoscopic examination shows, in addition to the ulcers, small hemorrhagic areas in the mucosa, with here and there beginning necrosis.

In infectious arthritis, there are sometimes accompanying gastro-intestinal disturbances; in many, these disturbances appear to be secondary effects of the infection, or to result from interference with normal exercise and food-taking; but in some, the relation of symptoms is such as to suggest the possibility that the intestinal infection came first, and that the arthritis resulted from bacteria which entered the body through the intestinal mucosa.

There are numerous case reports of iritis associated with gastro-intestinal upsets, constipation or diarrhea in which healing of the iritis has apparently been hastened by treatment directed toward the intestinal tract, either by laxatives or by modifications in diet, with the elimination or reduction of proteins, fats or carbohydrates. It is entirely possible that the real source of infection in some of these cases was in the intestinal tract as assumed, but in many cases, no evidence is furnished to show that other of the recognized possible sources of infection were investigated and excluded. Further, it is possible that recovery may have been hastened by some of the measures referred to, indirectly through the improvement of general nutrition and increase of bodily resistance to infection; and hence, the fact of recovery following dietary or other treatment is not conclusive evidence of the direct etiologic relation of the intestinal infection to the iritis. It is thus difficult to prove directly, in the individual case of iritis or arthritis, that the infection that caused the metastatic lesion entered through the intestinal tract; but by demonstrating the absence of other sites of infection, the probability of an intestinal portal of entry may be arrived at, provided the conditions under which invasion of the body from the intestine occurs are known.

PERMEABILITY OF THE INTESTINAL WALL

The number and the varieties of organisms that enter the intestine are greatly reduced by the antiseptic action of the gastric juice. Normal stomach contents after an Ewald meal are usually sterile so far as concerns ordinary pyogenic bacteria; yeasts, sarcinae and certain aciduric bacteria are frequently found in stomach contents of normal or increased acidity. Gastric juice (free hydrochloric acid from 20 to 40) or hydrochloric acid of corresponding strength in dilution of 1:16 will

3. Harkavy, Joseph (Rôle of Unresolved Pneumonia in Bronchial Asthma, J. A. M. A. 79: 1970 [Dec. 9] 1922) has noted the occurrence of asthma, and in one instance, arthritis, in patients, following bronchopneumonia.

kill hemolytic streptococci in ten minutes and, in higher dilutions up to 1:64, in one hour. Other common pathogenic bacteria, such as the colon bacillus and *Streptococcus viridans* show a similar, though somewhat less, degree of susceptibility to normal gastric juice. This antiseptic action is not continuously effective throughout the twenty-four hours, however, for we were able to isolate hemolytic streptococci from the stools of 30 per cent. of eighty-five patients with scarlet fever, although in some instances repeated attempts were necessary.[4] Organisms within the intestine thus may be recent arrivals as well as older residents.

The permeability of the wall of the intestine to small particles and bacteria within its lumen has been extensively studied in the investigation of the intestinal origin of tuberculosis, of pulmonary anthracosis, of conditions affecting the sterility of stored blood serum, of the route of invasion of certain infectious diseases and, in the course of observations, on antiperistalsis and on the mechanism of the absorption of fat. From experimental evidence in animals, it appears that while the intestinal wall is not readily permeable to bacteria, or at least, bacteria which do pass the first barrier are caught in the mesenteric lymph nodes, in exceptional cases a few organisms may pass into the blood by way of the thoracic duct.[5] It does not follow, of course, that the presence of such bacteria indicates a condition of sepsis, for they may still be destroyed in the blood, or may perish in the tissues in which they lodge. When acute diarrhea is produced, the experiments of Basset, Carré and others would indicate that the number of organisms entering the thoracic duct is larger. In a limited number of experiments in dogs after free catharsis, we were not able to obtain such an increase, however. Williamson and Brown[6] were unable to recover *B. prodigiosus* from a fistula of the thoracic duct in dogs by culture of the lymph after ingestion of the organisms, regardless of diet or previous catharsis.

The observations of McCarrison[7] on monkeys, fed on a deficient diet, in which he found bacteria already present in the tissue spaces and within the blood vessels of the intestinal wall at the site of hemorrhagic and ulcerating lesions of the intestine, indicate the importance of the factor of injury to the bowel wall.

BLOOD CULTURES IN ULCERATIVE COLITIS

In attempting to correlate the results of animal experiment with conditions encountered in man, it seemed advisable, first, to determine whether or not bacterial invasion of the blood could be demonstrated in ulcerative lesions of the intestine of man in the absence of fatal or serious sepsis. Ulcerative colitis, or colitis gravis, presents conditions in several respects suitable for such study. In addition to the abdominal distress, mucus, pus and blood in the stools, the ulcerative lesions of the bowel demonstrable by the proctoscope and at operation and necropsy, and the symptoms of malnutrition and anemia, patients with ulcerative colitis frequently show periods of increased fever, occasionally chills, and in some cases recurrent arthritis. At necropsy, also, enlargement of the mesenteric lymph nodes is pronounced. The arthritis and accessions of fever are suggestive of recurrent bacterial invasion, and it therefore seemed possible that a transient bacteremia might be demonstrable.

Through the courtesy of Drs. Sippy and Brown, Dr. Apfelbach and I have had the opportunity of studying four cases of ulcerative colitis, and in two of the four have isolated organisms in cultures from the blood during febrile periods. In both successful cases the organism was a gram-positive staphylococcus which produced a marked zone of hemolysis on blood agar plates, and was identical with a staphylococcus occurring in overwhelming numbers in cultures of the stools of the same patients. Great care was exercised in providing necessary bacteriologic controls, and it is believed that the organisms present in repeated blood cultures, though in small numbers (not more than two or three colonies on a plate), were present in the blood and were not contaminations. All four patients recovered.

In the experiments on animals, as well as in the observations in man, the conditions of bacterial invasion of the body in this type of infection are not those encountered in sepsis, but rather those of the entry of occasional organisms which are detected at various points along their route of invasion. The difficulty of detecting occasional organisms, and of determining their origin, by excluding contamination, is much greater than when experiments concern conditions of overwhelming sepsis. Experimental and clinical results therefore require the more critical evaluation before they can be accepted, and it is recognized that these clinical observations should be extended and repeated. Even when organisms have entered the blood stream, it of course does not follow that they will be able to produce clinically recognizable metastatic lesions. Many will be destroyed en route in the blood stream, provided the resistance of the patient to infection is not unduly depressed; when, however, conditions are favorable to the entry of organisms through the bowel wall, and when at the same time resistance to infection is depressed, it seems quite possible that metastatic lesions from an intestinal portal may occur.

It should be made clear that instances of this sort are few, compared with the large numbers of metastatic infections of other origin, and that in perhaps the majority of instances in which temporary intestinal symptoms accompany recurrent metastatic infections, they are secondary and incidental. The satisfactory demonstration of direct invasion through the intact intestinal mucosa of man by organisms which can cause arthritis without continued general infection presents difficulties that so far have not been overcome. That the intestinal tract may sometimes be the portal of entry of recurrent metastatic infection seems certain.

122 South Michigan Avenue.

4. Moody, W. B., and Irons, E. E.: J. Infect. Dis. **27**: 363 (Oct.) 1920.
5. Moody, W. B., and Irons, E. E.: J. Infect. Dis. **32**: 226 (March) 1923.
6. Williamson, C. S., and Brown, R. O.: Am. J. M. Sc. **165**: 480, 1923.
7. McCarrison, R.: Brit. M. J. **1**: 822 (June 19) 1920.

Undergraduate Training in Tuberculosis and Public Health Work.—Physicians will greatly appreciate the opportunity which many of the present undergraduate men are having to acquire more training in tuberculosis work and in public health matters generally than was their lot in former years. In 1916 the National Tuberculosis Association endorsed the idea of having tuberculosis wards in general hospitals while at the Atlanta, Ga., meeting of the National Nursing Associations and at the Boston meeting of the American Medical Association the project of having pavilions for the tuberculous in connection with general hospitals was approved. This means greater efficiency in the training of both physicians and nurses in work for the tuberculous. So much is the national association impressed by this need that it is giving special attention to work with medical colleges, aiding them to develop their undergraduate tuberculosis training.—A. J. Strawson: *Nation's Health* **5**:148 (March) 1923.

OBSERVATIONS ON USE OF INSULIN IN DIABETES MELLITUS*

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AND
S. H. KAHN, M.D.
ST. LOUIS

The discoverers of insulin have made fundamental observations[1] on its clinical application to the treatment of diabetes. The observations may be thus summarized:

1. Blood sugar is reduced and glycosuria disappears.
2. Glycogen is stored in diabetic animals, and the respiratory quotients are raised, showing the burning of sugar.
3. Ketonuria rapidly disappears, and patients in coma may be successfully restored to consciousness and life.
4. An overdose of insulin in animals produces violent symptoms of a convulsive nature, followed by coma and death. The antidote for this state is glucose.

Of the mass of invaluable physiologic data presented by the Toronto workers, these are the main facts of direct clinical bearing.

Through the courtesy of Professor Shaffer of the department of biologic chemistry, insulin[2] produced

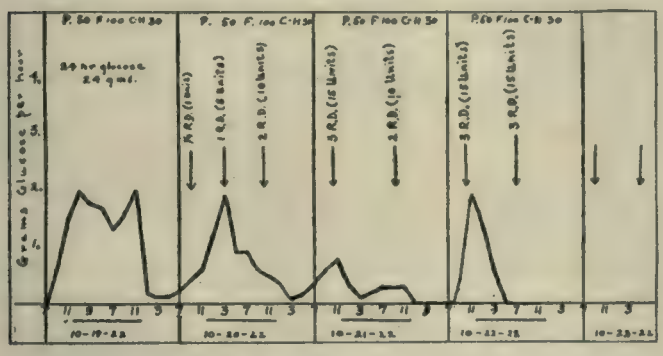


Chart 1.—Rate of excretion of sugar in Case 1 (L. S., a woman, aged 23). Duration of disease, two and one-half years. Weight at onset, 130 pounds (59 kg.); height, 5 feet, 1½ inches (156 cm.); present weight, 82 pounds (37 kg.). In Charts 1 and 2, *R. D.* refers to rabbit dose. This insulin was standardized on rabbits weighing about 2.5 kg.; therefore an *R. D.* would equal about 5 or 6 "units." The urine was collected every two hours. The sugar was determined by Benedict's method.

by his laboratory became available for clinical use, Oct. 1, 1922. The observations here recorded have been made from work on more than forty patients. Effort has been made to restrict our observations to severe cases and to make them as complete as possible.

GLYCOSURIA AND ACETONURIA

The effect of insulin on sugar and acetone excretion is graphically shown by Charts 1, 2, 3 and 4. These two patients with diabetes were under observation at the time insulin was made available for our use. They illustrate well the facts demonstrated by Banting and his co-workers.

The disappearance of sugar from the urine with administration of insulin is proportional to the sugar present and the dose of the extract given. All diabetic patients may be made sugar free if enough extract is given. In the two patients whose charts are shown (Charts 1 and 2), the dosage was more than twice as great in the one case as in the other, and sugar present before administration bore the same ratio. This observation suggested a quantitative relationship between sugar metabolized and insulin given. If the administration of insulin is stopped, sugar promptly reappears in a few hours, but may not reach its former level for several days (Chart 6).

The effects of insulin on the blood sugar is very marked, as seen in Table 1. Large doses were here

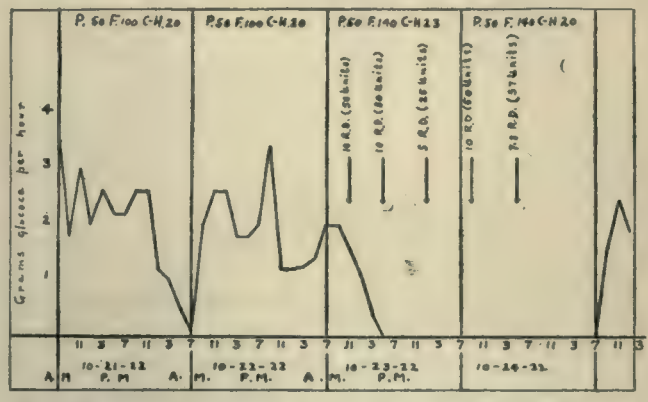


Chart 2.—Rate of excretion of sugar in Case 2 (R. H., a man, aged 20). Duration of disease, two years; weight at onset, 120 pounds (54 kg.); height, 5 feet, 7 inches (170 cm.); present weight, 90 pounds (41 kg.).

purposely given to note the effect of insulin on the basal metabolic rate. When insulin is being used in treatment, blood sugar determinations are of value in preventing overdose. If symptoms of the latter con-

TABLE 1.—*Effect of Insulin on Blood Sugar**

		Blood Sugar Before Insulin		Insulin		Blood Sugar	
Case	Date	Time	Gm. per 100 C.c.	Time	Units	Time	Gm. Sugar per 100 C.c.
1	11/27/22	.....	.....	7:15 a.m.	28	10:55 a.m.	0.045
3	11/28/22	7:15 a.m.	0.162	7:55 a.m.	20	11:25 a.m.	0.046
4	12/20/22	8:10 a.m.	0.160	8:15 a.m.	26	11:20 a.m.	0.061

* Insulin was administered in the postabortive state.

dition are marked, it is not well to wait on sugar determination before treatment is instituted. Blood sugar determinations are especially useful when one is treating cases of coma. Here, when the patient is

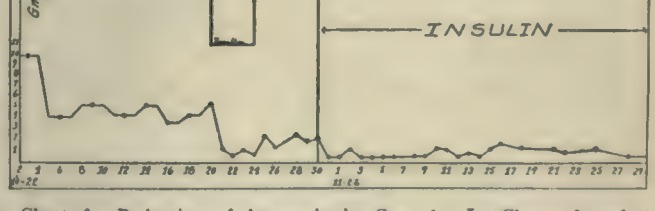


Chart 3.—Reduction of ketonuria in Case 1: In Charts 3 and 4, figures represent the days of the month; arrows, two days of insulin administration; figures on base line, days of month.

incontinent, the response of the blood sugar to a set dose is a rough index to further dosage. It should be pointed out that the ordinary method of taking the blood from the patient before breakfast gives no indication of his blood sugar during the absorption period.

Charts 3 and 4 illustrate the rapidity of the fall of acetone excretion. Chart 4 illustrates a patient with

* From the Department of Internal Medicine, Barnes Hospital, Washington University School of Medicine.

1. An excellent summary of the publications of Banting and his collaborators up to November, 1922, is given by Allen, F. M.: J. Metabol. Res. 2: 125, 1922. McLeod, Brit. M. J., Jan. 6, 1923.

2. Insulin-Lilly was supplied by Eli Lilly & Co. This product and that made by the university were identical in their effects.

complete diabetes. The acetone found in this case represents 70 gm. of incompletely burned fat. From metabolism studies, it has been calculated that about 100 gm. of fat was metabolized. If we were to add to the urine the acetone that was excreted through the lungs, a not inconsiderable figure, it would probably be shown that all fat was incompletely burned. The acetone in this case disappeared after the administration of insulin, the diet containing 30 gm. of carbohydrate and 50 gm. of protein. It is significant that in the course of the month's treatment shown, the acetone bodies did not completely disappear from the urine, but fractions of a gram, up to a gram of total acetone, were found every day. The same observation has been made on other patients. From the standpoint of the ketogenic-antiketogenic balance, no acetone should have appeared. In Chart 4, after the administration of insulin was stopped, the acetone excretion never reached its former level, even after ten days. This patient left the hospital to go on a carbohydrate spree, and returned in coma with an accompanying high degree of acetonuria.

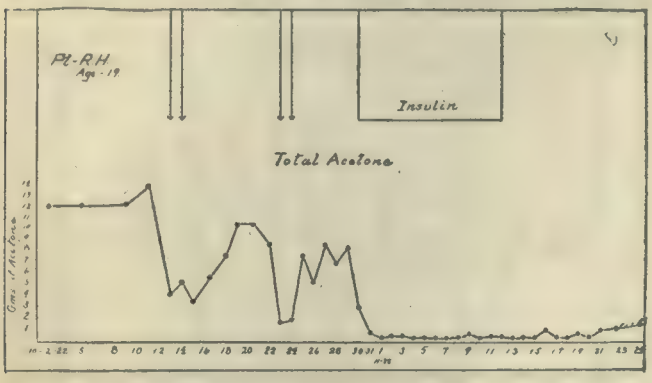


Chart 4.—Reduction of ketonuria in Case 2.

NITROGEN BALANCE

One of the most striking influences of insulin administration on metabolism is the rapidity with which nitrogen balance is established in a severe case. Charts 5 and 6 illustrate the effect of insulin administration on the nitrogen balance in the same two patients shown in previous charts. Both were losing from 0.5 to 2 gm. of nitrogen daily. The first day of insulin administration established a positive nitrogen balance in both. When insulin was stopped, a negative balance resulted, and on the administration of insulin again, a positive balance was shown. Attention is called to the fact that a nitrogen balance was established without a substantial increase in the calories above the preinsulin level. In all cases in which the urine nitrogen has been followed (more than twenty), no difficulty has been met in establishing a nitrogen balance, even with total loss of carbohydrate tolerance. Table 2 is the urinary nitrogen of a patient with diabetic coma (Patient 2). In four days, a nitrogen balance was established. To recall the doubtful success of low protein, high fat diets without insulin, Table 3 is shown. Here are six patients with diabetes, all with a carbohydrate tolerance below 10 gm. Although four of the six were fed from 200 to 500 calories in excess of their basal requirements, all but one were in negative balance. No better illustration of the protein-sparing properties of carbohydrate can be shown than the effects of adequate doses of insulin to the patient with severe diabetes. The value of fat in this respect must be considered entirely subsidiary.

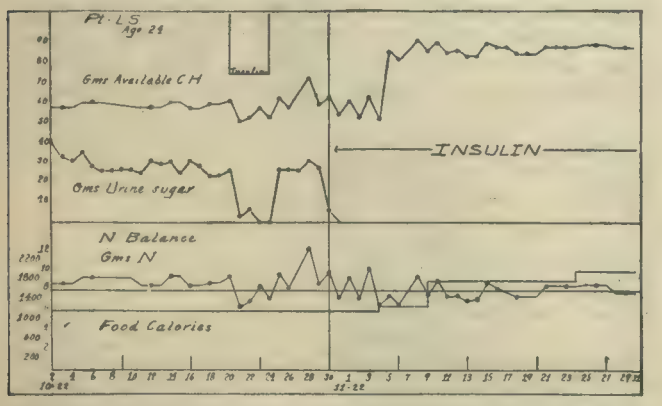


Chart 5.—Available carbohydrate in the urine in Case 1. Nitrogen multiplied by 3.3 plus food starch. The food nitrogen was kept at 8 gm. during the whole two months. Average insulin dosage, 7 R. D. a day; sugar excretion before insulin, from 25 to 30 gm.

TABLE 2.—*Urinary Nitrogen of a Patient with Diabetic Coma (Case 2)**

Date	Urine Sugar	Urine Nitrogen	Food Calories
12/ 8/22	29 ?	.....	.....
12/ 9/22	47	12.18	.....
12/10/22	50	16.65	.....
12/11/22	45	13.30	1,340
12/12/22	38	10.83	1,340
12/13/22	19	7.66	1,340
12/14/22	21	6.90	1,340
12/15/22	15	5.48	1,340

* Basal calories, 1,200; food nitrogen, 8 gm.; carbon dioxid in percentage by volume: 12:30 p. m. (12/7/22), 14; 6:45 p. m., 13.6; 10:30 a. m. (12/8/22), 59.5.

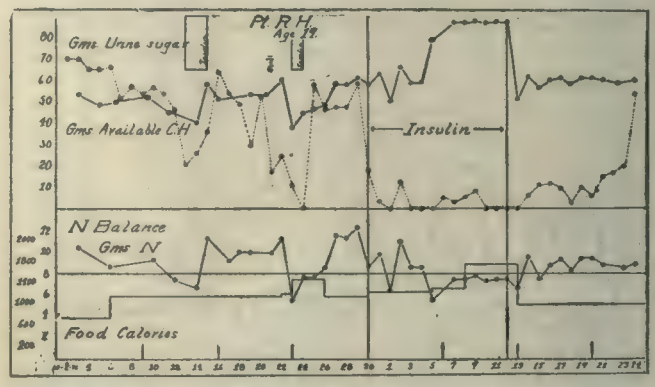


Chart 6.—Available carbohydrate in the urine in Case 2: Average insulin dosage, 14 R. D. a day; sugar excretion before insulin, from 55 to 60 gm.

TABLE 3.—*Nitrogen Balance (Before Insulin) in Cases of Severe Diabetes Treated with High Fat-Low Protein Diets*

Case	Carbohydrate Tolerance Gm.	24 Hour Basal Calories	Basal Rate	Food Calories	Food Nitrogen	Urine Nitrogen	Balance
5	0	1,330	—12	1,820	8	11.4	—3
6	10	1,200	....	1,500	8	8.65	—0.65
7	0	1,240	—11	1,100	8	9.50	—1.5
8	5	1,360	— 7	1,820	8	10.40	—2.4
9	0	1,280	—19	1,460	8	7.86	±0
10	5	1,170	....	1,100	8	8.90	—0.9

TOTAL METABOLISM

Insulin offers a particularly inviting opportunity to study the rise of the metabolic rate in patients with severe diabetes. Table 3 shows the usually low rates

attained in severe cases. Before insulin, the lower the rate the less bodily tissue was consumed. We have seen rates as low as 30 per cent. below the normal for age and sex. With the feeding of these patients, the basal rates rise but very slowly. Tables 4, 5 and 6 show three such cases. Usually it requires from fourteen to twenty-one days for rates as low as 20 per cent. below normal to rise to a level of 10 per cent. below normal—the lower limit of the normal variation. The depths to which undernutrition has hindered oxidative processes may be clearly realized. With insulin available for use, it becomes unnecessary to force metabolic rates so low. In fact, undernutrition must give way to normal, or perhaps slightly subnormal, metabolism. Even with the use of the extract, it will not be possible, in some cases, to feed sufficient work calories, and mild degrees of undernutrition will be necessary. Experience with undernutrition leads to the belief that low rates always reduce resistance to infection, and the best that can be said for extreme degrees of undernutrition is that it is a lingering death.

TABLE 4.—*Basal Metabolism in Case 11* *

Date	Days after Insulin	Basal Rate %	Basal Calories per 24 Hrs.	Food Calories	Units Insulin
11/14/22	4	27.3—	902	1,336	22.4
11/20/22	10	29.0—	881	1,563	25
11/26/22	16	19.0—	998	1,831	25
12/ 2/22	22	12.7—	1,036	1,890	25
12/12/22	32	7.3—	1,063	2,140	30
12/19/22	39	10.0—	1,048	2,096	40
12/28/22	48	10.0—	1,070	2,188	40

* Mrs. S., aged 47; the food calory tolerance was less than the twenty-four hour basal requirement.

TABLE 5.—*Basal Metabolism in Case 4* *

Date	Days Before or After Insulin	Basal Rate %	Basal Calories per 24 Hrs.	Food Calories	Units Insulin
12/ 3/22	4	19.0—	1,159	1,215	..
12/ 6/22	1	22.0—	1,147	1,215	..
Insulin treatments begun 12/7/22					
12/ 7/22	..	19.0—	1,187	1,215	20
12/12/22	5	11.0—	1,324	1,350	18
12/18/22	11	10.7—	1,339	1,472	35.3
12/19/22	12	21.0—	1,159	1,472	26.4
12/20/22	13	12.0—	1,291	1,469	26.4
12/27/22	20	12.0—	1,276	1,350	26.4
1/ 2/23	26	11.6—	1,291	1,980	26.4

* R. S., aged 24; the food calory tolerance was less than the twenty-four hour basal requirement.

TABLE 6.—*Basal Metabolism in Case 12* *

Date	Days Before or After Insulin	Basal Rate %	Basal Calories per 24 Hrs.	Food Calories	Units Insulin
11/10/22	6	19.5—	860	1,221	..
11/13/22	3	16.0—	890	1,189	..
Insulin treatments begun 11/16/22					
11/19/22	2	15.5—	915	1,200	7
11/22/22	6	19.3—	885	1,341	20
11/26/22	10	8.5—	995	1,787	20
11/27/22	11	7.2	1,000	1,787	20
11/28/22	12	11.5—	967	1,787	20
12/11/22	25	6.9—	1,056	1,913	10
12/18/22	32	5.6+	1,140	1,890	26
12/27/22	41	Normal	1,082	1,905	35
1/ 2/23	47	5.8+	1,173	1,791	36

* Mrs. M., aged 33.

SUBJECTIVE SYMPTOMS

Those who have been interested in the treatment of patients with severe diabetes have been impressed with the listlessness, weakness and inertia shown. The earliest manifestation shown after the administration of insulin is the return of energy. Patients voluntarily get out of bed and exhibit evidence of return of strength in their movements. Men often exhibit a definite return of sexual power and libido.

When given without accompanying sufficient carbohydrate, insulin produces symptoms accompanying the hypoglycemia which can be tabulated as in Table 7.

These symptoms pass off rapidly with administration of carbohydrate food. Animals (rabbits) in a considerable percentage have convulsions when the blood sugar reaches 0.04. As already shown, patients with blood sugars as low as 0.045, although showing marked symptoms, have not, in our experience, reached the convulsive stage.

TABLE 7.—*Symptoms Accompanying Hypoglycemia*

Subjective	Objective
Prodromal	
Headache, giddiness or dizziness, restlessness, numbness of extremities	Restlessness
Second Stage	
Chilliness or sense of warmth	Sweating, Paleness
Stage of Hypoglycemia	
Blood sugar, from 0.06 to 0.04	
Trembling	Shaking chill without fever
Sense of cold	Muscular tremors, hypothermia

QUANTITATIVE RELATIONSHIP OF INSULIN TO CARBOHYDRATE BURNED

In the earliest experiments on two patients, the one eliminating just twice as much sugar as the other, it was observed that the amount of insulin necessary to make both aglycosuric amounted in the one case to twice as much as in the other. A mathematical relationship between the dose of insulin and the amount of carbohydrate burned was indicated. Our interest has been centered about the determination of this relationship, and a later paper on the subject is under preparation.

It can be said that in the patient with severe diabetes who is not gaining in tolerance there is apparently a very definite relationship between insulin unitage and the amount of carbohydrate burned. The relationship is comparable to that found between ketogenic and antiketogenic substances. For each unit of insulin-Lilly given, from 1 to 2 gm. of carbohydrate is burned.

TABLE 8.—*Twenty-Four-Hour Course of Blood Sugar in a Patient Receiving One Dose of Insulin Followed by a Meal Containing Two Thirds of the Total Carbohydrate*

Time	Blood Sugar per Cent.	Insulin Units	Food		
			Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.
Midnight	0.261	..	....	....	....
7 a. m.	0.184	..	....	....	....
8 a. m.	.....	..	10.8	40.1	8.8
10:30 a. m.	0.200	..	....	....	....
11:00 a. m.	.....	20	....	....	....
12:30 p. m.	.....	..	20.4	31.6	39.9
2 p. m.	0.216	..	....	....	....
5 p. m.	.....	..	20.0	67.3	9.3
7:30 p. m.	0.224	..	....	....	....
10:30 p. m.	0.216	..	....	....	....
Totals			51.2	139.0	58.0

TECHNIC OF INSULIN ADMINISTRATION

At present it is necessary to administer insulin by the subcutaneous or intravenous route. Since it acts vigorously and within one or two hours' time, it must be given when carbohydrate is being absorbed. If

given in the fasting state, hypoglycemia will result, as shown by Table 1. It seems best, therefore, to administer insulin a short time before meals, or possibly twice a day. Such technic means multiple injections, which are objectionable to the patient and especially impracticable after the patient leaves the hospital. The curve of the rate of sugar excretion in the diabetic depends on the time of the administration of meals. Chart 7 illustrates the rate of excretion found in patients in the metabolism ward, where meals are served at 8 a. m., 12 m., and 5 p. m. Attention is called to the low rate of sugar excretion occurring in the early morning hours. If, now, we could prolong this low excretion by concentrating the carbohydrate in the diet as early in the day as possible, and precede this carbohydrate concentration by one large dose of insulin, it would seem possible to limit the insulin injections to one each day. For five months the following procedure has been used:

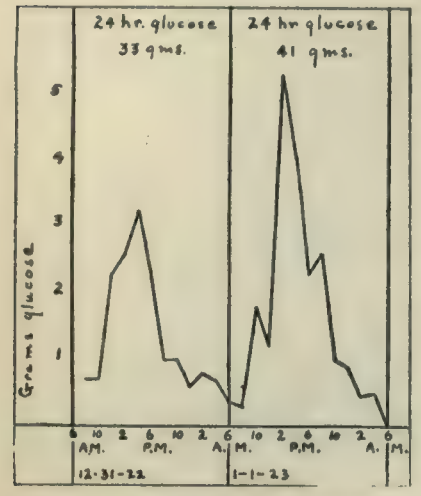


Chart 7.—Rates of glucose elimination (no insulin). Figures on base line are hours. Urine collected every two hours. This chart is only one of several thus charted. Meals at 8 a. m., 12 noon and 5 p. m.

Two thirds of the total carbohydrate in the diet is concentrated in the 12 o'clock meal in all patients who are receiving from 20 to 40 units of insulin each day. The total insulin which is being given in twenty-four hours is administered at 10: 30 a. m., one and one-half hours before the carbohydrate meal. The morning and evening meals combined are thus restricted to one third of the total carbohydrate. The results have been quite satisfactory. Patients who have been receiving two injections a day were much happier when changed to this procedure. Without its being intentional, it was found that this technic greatly appeals to the psychology of the patient, for it gives him one fairly good meal each day. A trial of the method would, we believe, be especially convincing in this one respect. The disadvantage of the method lies in the volume of the injection necessary. Concentrated solutions of insulin are necessary, at least 10 units per cubic centimeter, and 20 units per cubic centimeter are better.

The question arises, Is this method as efficient as administering insulin in smaller, more frequent doses? Only two patients have been given periods of two injections and also periods of one injection, for comparison. One showed no difference in the amount of sugar burned, and the other burned a few grams more when receiving two injections. Table 8 is the record of the blood sugars of a patient being treated with one injection, and shows the technic of food distribution for three meals.

In using insulin on more than forty diabetic patients, we have never used less than 10 units a day. This adds from 15 to 20 gm. of carbohydrate to the tolerance of the patient, an amount often sufficient, when used with appropriate amounts of fat, to bring about a positive nitrogen balance in place of a negative one. In such a class of patients, it hardly seems worth while to use smaller amounts of the extract.

Shaffer [3] has shown the numerical relationship between the carbohydrate burned and the theoretical amounts of fat that can be burned without ketonuria. For a year and a half, such possible fat tolerance has been evaluated in the metabolism ward by the formula:

$$\frac{\text{Gm. of protein}}{2} + \text{CH in diet} = \text{total carbohydrate}$$

The total carbohydrate multiplied by 2½ equals the possible fat burned without ketonuria. The protein is calculated by multiplying the urine nitrogen by 3.3. Such a simple formula ignores the antiketogenic value of fat and the ketogenic value of protein. But when supplied constantly in work on patients, it has been found practical, and diets can be estimated without tables or slide rule. Table 9 shows the formula worked out. If Shaffer's rules for calculating the ketogenic and antiketogenic balance are applied to this table, it will be found that there are from 100 to 200 antiketogenic millimols in excess of ketogenic millimols. The table shows that by the use of from 10 to 20 units of insulin each day, even the patient with severe diabetes can tolerate 2,000 calories.

Insulin, besides increasing the caloric tolerance, is invaluable in coma and in conditions in which severe infections complicate the disease. Ten patients (Chart 8) in comatose and precomatose states have been treated, and all have shown blood alkali percentages by the Van Slyke method of 25 per cent. or less by volume. Six were below 15 per cent. by volume. In our experience, insulin alone in certain cases does not bring about so rapid a return of blood alkali as when used in conjunction with intravenous alkali. A procedure adapted to the treatment of coma is the administration of 20 units of the extract every three hours. Blood sugar and blood carbonate determinations are done before each dose, and future dosage is regulated by the change in the blood sugar. When chemical tests of

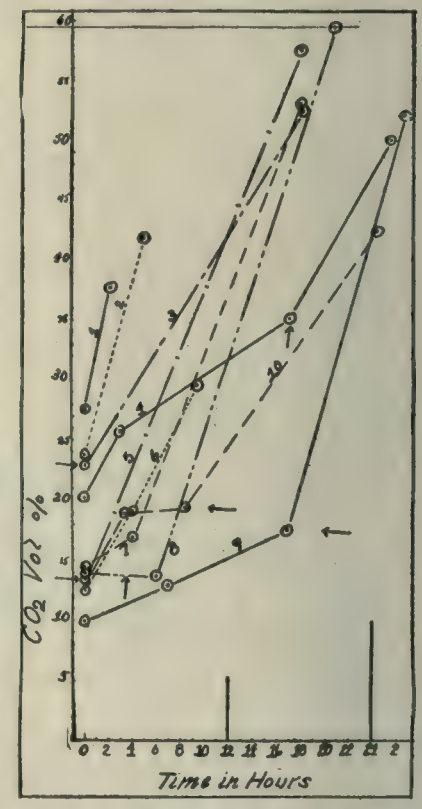


Chart 8.—Rise in blood alkali in cases of severe acidosis. The arrow indicates time when sodium bicarbonate was given intravenously. The amounts of the extract and of alkali shown below were given to bring the blood alkali to normal:

Case	Insulin Units (Lilly)	Sodium Bicarbonate, Gm.
13.....	27	0
14.....	17	8
15.....	25	20
16.....	65	24
17.....	27	56
18.....	70	0
19.....	150	0
20.....	90	36
21.....	118	40
22.....	130	40

3. Shaffer, P. A.: J. Biol. Chem. 54: 399 (Oct.) 1922.

blood are not available, the urine sugar and ferric chlorid reaction must be watched constantly. As soon as the blood carbonate is normal, or the ferric chlorid reaction in the urine becomes faint, the intervals between doses are lengthened to six or eight hours. Carbohydrate food should be given as fruit juices as soon as consciousness fully returns. If, after six hours (60 units), the blood alkali has not risen markedly, we feel that

TABLE 9.—*Possible Fat Tolerance* *

Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories, (P + CH) × 4; Fat × 9
40	75	10	875
40	100	20	1,140
40	125	30	1,405
40	150	40	1,670
50	87	10	923
50	100	20	1,288
50	137	30	1,553
50	162	40	1,818
50	187	50	2,083
60	175	40	1,975
60	200	50	2,240
60	225	60	2,505
70	237	60	2,653
70	262	70	2,918
70	287	80	3,013

* As shown by $\left\{\frac{P}{2} + C - H\right\} 2\frac{1}{2} = \text{Fat}$.

bicarbonate should be administered intravenously in doses of from 25 to 50 grams.[4] Chart 8 shows the recovery from comatose or precomatose states. In Cases 16, 20, 21 and 22, we feel that alkali was especially helpful. Eight of these patients made rapid recoveries from their comatose states. In the two cases in which the patients died, complications were present; in one, complete anuria and in the other, gangrene of the orbit. Of the eight patients making complete recoveries from acidosis and coma, three died at a later time of pyogenic infection, one of pneumonic tuberculosis and one of recurrence of diabetic coma. In the latter case the patient refused to take insulin. We feel that no deaths from diabetic coma should occur when insulin is available for use.

As is well known, when pyogenic infection complicates diabetes, mild cases become quite severe, and patients often pass into coma before they come under suitable treatment. By the use of insulin in such cases, the blood alkali may be restored to normal, and carbohydrate may be administered before the necessary operative procedures are carried out. After such crises, the patients' tolerance may improve to such a degree that insulin may not be required.

When the diabetic patient is operated on, we have found it a useful procedure to give from 20 to 25 gm. of glucose an hour or two before operation and, at the same time, a dose of insulin, which will make possible the burning or storage of this sugar. The evaluation of this dose is based on the assumption that one unit of insulin makes possible the burning of 1.5 gm. of glucose. If the patient is to be operated on in the morning, his usual dose of insulin is added to the dose calculated to burn the glucose. It is of advantage to know the blood sugar level just before the operation, as this information helps evaluate the insulin dosage. Table 10 shows how the blood sugar responds to such procedure.

4. The formula of Van Slyke and Palmer is used: Gm. = wt. × K wt. = weight in kilograms. K = 53 minus the Van Slyke blood alkali reading; gm. = grams of sodium bicarbonate.

DOES INSULIN INCREASE THE CARBOHYDRATE TOLERANCE?

We have observed two patients in diabetic coma, both of which (Cases 7 and 9) showed blood alkali of less than 15 per cent. by volume, which, under insulin, gained in tolerance up to 60 and 75 gm. a day, respectively. This gain is no more than has previously been recorded by Du Bois and Allen. On the other hand, many patients with severe diabetes show no gain in tolerance even after months of insulin administration. The young patient who has a good tolerance is of greater importance than the one who has lost most of his tolerance. Before insulin, the majority of the former class entered the severe class sooner or later. In such cases insulin offers the greatest opportunity to preserve tolerance. Our experience with this group of cases is limited, but the impression is gained that insulin should be administered in small doses, especially to those under the age of 40 who are not overweight. Overweight patients should be reduced by dietary procedures. Great care should be taken in these cases to keep the urine sugar free. We feel that insulin may do great harm if, through its use, laxity in diet results. Even though insulin is being administered, there is no reason to believe that tolerance can be maintained at a high level if the urine contains sugar.

TABLE 10.—*Use of Insulin in Surgical Cases*

Case	Time	Blood Sugar, per Cent.	Blood Carbonate, % by Vol.	Insulin Units	Glucose, Gm.	Operative Procedure
23	8:00 a. m.	0.154	58.9	..	..	
	8:15 a. m.	.....	....	40	..	
	9:15 a. m.	.....	....	..	40	
	10:15 a. m.	0.145	67.3	..	..	
	10:50 a. m.	0.131	64.5	..	..	
	10:55 a. m.	.....	....	..	..	Nitrous oxid anesthesia 20 minutes
	11:20 a. m.	0.127	61.7	..	..	Amputation midthigh of right leg
24	6:40 p. m.	.....	....	40	40	
	8:05 p. m.	0.295	61.7	..	..	Nitrous oxid anesthesia 37 minutes; amputation midthigh of leg
	9:25 p. m.	0.269	51.3	..	..	
	11:30 p. m.	0.200	57.0	..	..	
25*	10:20 a. m.	0.194	47.5	0	..	Nitrous oxid anesthesia 10 minutes; plaster cast for fracture of femur
	11:30 a. m.	0.228	43.8	..	..	
26*	7:00 a. m.	0.160	....	..	..	Ether anesthesia for hysterectomy and appendectomy
	7:05 a. m.	.....	....	30	50	
	8:00 a. m.	.....	....	..	..	Scopolamin, 1 c.c., morphin 0.015
	8:45 a. m.	.....	....	..	..	Scopolamin, 1 c.c.
	10:10 a. m.	0.189	52.2	..	..	
	10:15-11:15 a. m.		....	..	..	Ether anesthetic, 1 hour (4 oz.)
	11:25 a. m.	0.182	47.5	..	..	
	12:00 m.	.....	....	15	..	
	12:10 p. m.	.....	....	..	..	Rectal tap, 750 c.c. H_2O
	4:35 p. m.	0.134	54.1	..	..	
	7:05 p. m.	.....	....	..	..	Rectal tap, 500 c.c.
	10:00 p. m.	.....	....	..	..	25 c.c. orange juice
	1:30 a. m.	.....	....	10	25	+ 100 c.c. lemon juice

* In Case 25, the patient had no insulin, and only ten minutes of nitrous oxid; the blood sugar rose and the blood alkali fell. In Case 26 the patient had one hour of ether anesthesia and laparotomy. Both patients had mild diabetes, and showed approximately the same carbohydrate tolerance.

The use of insulin, more than ever before, lays a great responsibility on the physician to train the patient in the knowledge of dietetics. Food and insulin must be most carefully balanced so that the blood sugar will be as near normal as possible. Under these conditions the fullest opportunity is given for a gain in tolerance.

A STUDY OF THE ACTION OF CALCIUM IN EXPERIMENTAL COCAIN POISONING *

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Toxic symptoms arising after the use of cocain have been observed by practically all men with an extensive practice. Their frequent occurrence was recently emphasized by a report on anesthesia in nose and throat work.[1] This report was prepared by a committee of the Section on Laryngology, Otology and Rhinology of the American Medical Association, and cites the occurrence of thirty-two deaths from local anesthetics in a period of about three years. Of these, twenty-two deaths were verified, and eleven of the twenty-two were due to cocain alone. Cocain combined with procain, apothesin or alypin was responsible for seven more deaths, while the other four were due to procain or apothesin.

The symptoms of cocain poisoning usually appear quite promptly. They are ushered in by a period of nervousness and excitation, sometimes almost of hysteria. Respiration is rapid and deeper than normal, and the pulse is markedly accelerated. The throat is dry, and the patient may complain of a choking sensation. The pupils are dilated, owing possibly to direct action on the muscular fibers of the iris. Convulsions generally follow promptly in the severe cases, but may be absent. They are at first tonic in type, later becoming clonic. Respiration may be entirely suspended during a convulsion, the patient becoming markedly cyanotic. Death may follow quickly from respiratory arrest or from exhaustion, the convulsions following one another in rapid succession. Recovery may occur after a convulsive dose of cocain, but it is the exception. The pharmacologic action of cocain is at first that of a stimulant. The cerebrum is first affected, and later the lower segments of the nervous system. The period of stimulation is short in the severe cases, being quickly followed by a period of depression. Cushny [2] states that both stimulation and depression may be present at one time in different segments of the brain and stem. The period of stimulation may be so short that it is scarcely noticed, depression being present from the onset of symptoms.

The treatment of cocain poisoning has been entirely symptomatic. General anesthetics have been used to control the convulsions. Morphin has been used for the same purpose, further depressing the exhausted respiratory center. Strychnin has been used for its stimulant effect, but it increases the convulsions. Hofoendahl [3] has used chloral hydrate, barbital sodium, and sodium diethylbarbiturate in the treatment of experimental cocain poisoning.

The extensive researches of Auer and Meltzer with calcium chlorid, in which they showed its stimulating effect on the respiratory center, suggested to Mayer the possibility of its usefulness as an antidote in cocain poisoning. Mayer,[4] in a series of experiments, investigated this question and reported favorable results. His conclusions, drawn from experiments on the excised frog heart and guinea-pig uterus, may be disregarded because of the necessity of having calcium present in the perfusing solution if the muscles are to retain their activity. Frogs, guinea-pigs and dogs were experimented on, and the conclusion was that calcium is antagonistic to cocain. The antagonistic action is due, according to Mayer, to the calcium ion; and any calcium salt may be used. He reports one clinical case of cocain poisoning in which he used calcium chlorid solution, 10 per cent. intravenously, with satisfactory results. Fabry [5] also reports a case in which calcium chlorid was used with excellent results.

With the idea of confirming the results obtained by these observers, a series of experiments was undertaken, since, if calcium is actually antagonistic to the depressant toxic effect of cocain, we should have in the use of calcium a valuable, and perhaps life-saving, measure. Rabbits were used throughout the series. Cocain hydrochlorid, 2 per cent., in physiologic sodium chlorid solution, was prepared and sterilized. Sufficient solution of this strength was prepared for twenty-five rabbits, thus assuring a standard solution throughout the experiment. From the literature, it was learned that the lethal dose of cocain for rabbits is about 13 mg. per kilogram of body weight, injected subcutaneously. The lethal dose for the solution prepared was then established, and care taken not to inject any of the solution intracutaneously.

SERIES 1.—EXPERIMENTS TO DETERMINE THE SEQUENCE OF SYMPTOMS AND THE LETHAL DOSE OF COCAIN

Experiment 1.—A rabbit, weighing 1,050 gm., was injected with 6.8 c.c. of 2 per cent. cocain solution, equivalent to 13 mg. per kilogram of body weight, given subcutaneously. Slightly increased movements occurred after two minutes. Paralysis of the hind legs was noted in seven minutes. In nine minutes, the front legs spread apart, the ears dropped, and the head was markedly flexed on the body. In twelve minutes, the rabbit went into a strong convulsion, clonic in type. This lasted about one minute. There was slight opisthotonos. Respirations were too rapid to count, as was also the pulse rate. There was marked salivation. Urination and defecation occurred. Slight convulsive movements persisted for eighteen minutes. In twenty minutes after the onset of convulsions, the rabbit attempted to raise the head. It was able to maintain an upright position in thirty-eight minutes, and was returned to its cage in one hour.

Experiment 2.—A rabbit, weighing 1,050 gm., was injected with 8.4 c.c. of the cocain solution, equivalent to 16 mg. per kilogram of body weight. A convulsion occurred in five minutes. This was tonic, followed by the clonic type. There was a short, involuntary cry during the convulsion. Convulsive movements lasted for fifteen minutes, and after thirty minutes, the rabbit was sitting upright. It was returned to its cage in forty-five minutes.

Experiment 3.—A rabbit, weighing 1,110 gm., was injected with 10.5 c.c. of the solution, equivalent to 19 mg. per kilogram of body weight. A convulsion occurred in ten minutes, and the rabbit died twenty minutes after the injection. Any dose of cocain less than 16 mg. per kilogram of body weight was not to be used, and the lethal dose was evidently between 16 and 19 mg. per kilogram of body weight.

SERIES 2.—EXPERIMENTS WITH CALCIUM LACTATE

Experiment 4.—A rabbit, weighing 1,290 gm., was injected with 13.2 c.c. solution, equivalent to 20.5 mg. per kilogram of body weight. This was an increase of about 6 per cent.

* From the Nelson Morris Memorial Institute for Medical Research of the Michael Reese Hospital.

1. Mayer, Emil; Skillern, R. H.; Sonnenschein, Robert, and Chamberlain, W. B.: Anesthesia in Nose and Throat Work, J. A. M. A. **77**: 1336 (Oct. 22) 1921.
2. Cushny: Pharmacology and Therapeutics, p. 356.
3. Hofoendahl, A.: Treatment of Cocain Intoxication in Animals, Ztschr. f. Hals-, Nasen- u. Ohrenh. **1**: 233 (March 22) 1922.
4. Mayer, Karl: The Prevention and Treatment of Cocain Poisoning, Ztschr. f. Ohrenh. **82**: 42 (March) 1922.
5. Fabry, F.: Calcium Chlorid in Cocain Poisoning, München. med. Wchnschr. **69**: 969 (June 30) 1922.

over the lethal dose. A convulsion occurred in five minutes. An injection of 10 c.c. of 5 per cent. sterile solution of calcium lactate was given subcutaneously in the back. The rabbit died in twelve minutes.

EXPERIMENT 5.—A rabbit, weighing 1,025 gm., was injected with 9.75 c.c. of cocain solution, equivalent to 19 mg. per kilogram of body weight, preceded, two minutes before, by an intravenous injection into the jugular vein of 10 c.c. of 5 per cent. calcium lactate. A convulsion occurred in three minutes, and the rabbit died in five minutes. This rabbit had previously received an injection of 16 mg. per kilogram of body weight in Experiment 2.

EXPERIMENT 6.—A rabbit, weighing 1,100 gm., was injected, through the jugular vein, with 10 c.c. of 5 per cent. sterile calcium lactate solution. This was followed immediately by the subcutaneous injection of 8.8 c.c. of cocain solution, equivalent to 16 mg. per kilogram of body weight. A convulsion occurred in four minutes, and the rabbit was dead in eight minutes. This injection of cocain was the same as that used in Experiment 2.

In these three experiments it was found that the injection of calcium lactate did not increase the lethal dose of cocain in rabbits, as none of them survived. One rabbit has received about 6 per cent. more than the lethal dose, one had been given a lethal dose, while the third received less than the certain lethal dose of cocain.

SERIES 3.—EXPERIMENTS WITH CALCIUM CHLORID

A solution of calcium chlorid, 10 per cent., in distilled water, was then prepared and sterilized. Before it was used in the treatment of a cocainized animal, it was thought best to try its effect on the normal rabbit.

EXPERIMENT 7.—A rabbit, weighing 1,100 gm., was injected intravenously with 5 c.c. of 10 per cent. calcium chlorid solution. No deleterious effect was noted. The respiration rate and the pulse rate remained practically constant.

EXPERIMENT 8.—A rabbit, weighing 1,480 gm., was injected, through the ear vein, with 5 c.c. of 10 per cent. calcium chlorid solution, followed in three minutes by the subcutaneous injection of 11.1 c.c. of the cocain solution, equivalent to 15 mg. per kilogram of body weight. A severe convulsion occurred in six minutes, with marked opisthotonos. The convulsion lasted for nine minutes, with slight interruptions. In fifty minutes, the rabbit was apparently normal. This rabbit had received less than the lethal dose of cocain, and the recovery could not be attributed to the action of the calcium chlorid.

EXPERIMENT 9.—A rabbit, weighing 1,000 gm., was injected, through the marginal ear vein, with 5 c.c. of calcium chlorid solution. It was injected subcutaneously, five minutes later, with 8 c.c. of the cocain solution. This was equivalent to 16 mg. per kilogram of body weight. A convulsion occurred in four minutes and the rabbit was dead in nine minutes.

EXPERIMENT 10.—A rabbit, weighing 1,550 gm., was injected subcutaneously with a mixture of 12.4 c.c. cocain solution (16 mg. per kilogram of body weight) and 10 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in five minutes, and lasted for fifteen minutes. The rabbit recovered. This rabbit had been used in Experiment 8.

EXPERIMENT 11.—A rabbit, weighing 1,035 gm., was injected with a mixture of 8.3 c.c. of cocain solution (16 mg. per kilogram of body weight) and 8 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in seven minutes, and the rabbit died in forty minutes.

EXPERIMENT 12.—A rabbit, weighing 1,910 gm., was injected with 15 c.c. of 2 per cent. calcium chlorid solution, mixed with 15.25 c.c. of 2 per cent. cocain solution (16 mg. per kilogram of body weight). A convulsion occurred in two minutes, and the rabbit died in thirty minutes.

EXPERIMENT 13.—A rabbit, weighing 1,675 gm., previously used in Experiments 8 and 10, was now given a mixture of 16 mg. of cocain per kilogram of body weight, or 13.4 c.c. of 2 per cent. solution, combined with 10 c.c. of physiologic sodium chlorid solution. A convulsion occurred in five minutes and lasted for about twenty-five minutes. The rabbit was normal in one hour.

EXPERIMENT 14.—A rabbit, weighing 1,880 gm., was injected with a mixture of 16 c.c. cocain solution (17 mg. per kilogram of body weight) and 10 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in six minutes, and the rabbit died in thirty-seven minutes.

EXPERIMENT 15.—A rabbit, weighing 1,660 gm., was injected with a mixture of 13.3 c.c. of cocain solution (16 mg. per kilogram of body weight) and 10 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in eight minutes. A partial recovery was followed by death in one hour and fifteen minutes.

EXPERIMENT 16.—A rabbit, weighing 1,735 gm., previously used in Experiments 8, 10 and 13, was now given an injection subcutaneously of 16.5 c.c. cocain solution (19 mg. per kilogram of body weight), mixed with 15 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in five minutes; recovery ensued in thirty-five minutes.

EXPERIMENT 17.—A rabbit, weighing 1,715 gm., was injected with a mixture of 18 c.c. of cocain solution (19.9 mg. per kilogram of body weight) and 10 c.c. of 2 per cent. calcium chlorid solution, as in Experiment 15. Convulsion occurred in eight minutes; the rabbit died in twenty-two minutes. This was the same animal used in Experiments 8, 10, 13 and 15.

SUMMARY OF EXPERIMENTAL RESULTS

From the experiments it appears that the action of calcium lactate and calcium chlorid is not directly antagonistic to that of cocain. Convulsions occurred as quickly following the injection of cocain, even though a large dose of calcium had been given previously. The rabbits did not survive a dose of cocain appreciably larger than the lethal dose after the injection of either calcium preparation. When the cocain and calcium solutions were mixed, there seemed to be a slightly increased tolerance for cocain, but this may have been due to the greater dilution resulting from the mixture, thereby decreasing the rate of absorption.

CONCLUSIONS

The statement of Mayer that calcium acts antagonistically to the toxic effects of cocain by overcoming the depression of the medullary centers caused by cocain could not be confirmed by experiments on rabbits.

The results obtained experimentally do not warrant the use of calcium lactate or calcium chlorid as a therapeutic measure which can be relied on in acute cocain poisoning.

The Health Salesman.—The executive or organizer who seeks to interest a community in the control of tuberculosis will be able most easily to visualize his task if he considers himself as a salesman selling health. The tuberculosis executive, however, must do more than merely sell health. He must sell a very specific and concrete idea as a part of his general health concept, namely that infection with tuberculosis can be avoided and reduced to a comparative minimum, and that a normal physical resistance will help to ward off breakdown with tuberculosis even after infection has entered the body. The psychology of selling a particular idea such as tuberculosis control, will appeal to the health salesman as sound when he stops to analyze the proposition. No one is ever sick with public health and no one dies with public health. On the other hand, there is hardly a man in any community who does not know of someone who has been sick with or who has died of tuberculosis. To him tuberculosis is a concrete concept, while health is an abstract concept. The tuberculosis executive will gain health for his community much more rapidly by selling this narrower conception than by attempting to sell the larger idea.—Jacobs: The Tuberculosis Worker, Williams and Wilkins Company, Baltimore, 1923.

Clinical Notes, Suggestions, and New Instruments

A PERSONAL EXPERIENCE WITH SPRUE

S. M. LAMBERT, M.D., NEW YORK

Along the coast of North Queensland, Australia, there are endemic areas of sprue. In December, 1918, I began field work for the control of hookworm disease in this region, succeeding a man who had been invalided home with sprue. Previous to his departure, I had lived in close association with this man for six weeks. In January, 1919, I developed a condition that was diagnosed as sprue by Dr. Philip S. Clarke, a physician of Cairns, who has had years of experience with this infection. There were no mouth symptoms at first, but I had all the gastro-intestinal symptoms attendant on the disease: intestinal fermentation, and the characteristic frothy, straw colored stools, enormous in amount, which would begin early in the morning and continue until afternoon. These were accompanied by a mental depression out of all relation to the condition. I restricted my diet to bananas and milk, and this measure in a few days checked the number of stools. It brought about a severe constipation, however, but this was finally relieved by liquid petrolatum. In the district in which I was working, it was almost impossible to obtain bananas and fresh milk outside of Cairns, and when the supply of fruit and milk that I took with me on my field trips gave out and I tried other food, my sprue motions invariably returned.

By the early part of March, my weight had fallen from 232 to 193 pounds (from 105 to 87.5 kg.). About that time, my attention was called to an article by Brown,[1] who had studied the gastro-intestinal contents of a Porto Rican suffering from sprue, and had found them entirely lacking in hydrochloric acid and pancreatin. The patient showed marked improvement when these substances were administered to her.

I obtained a supply of the acid and pancreatin, and determined to give them a thorough trial. That night I took a dose of the acid and then, for the first time in two months, ate a hearty dinner. This included deviled crab and beefsteak. Half an hour later, I took 10 grains (0.65 gm.) of pancreatin, and passed a tranquil evening and night, though I had some distention with gas.

I continued the treatment until September, taking 15 minims (1 c.c.) of 0.2 per cent. hydrochloric acid before, and 10 grains of pancreatin after, each meal without dietary precaution. During this period I modified the method by sipping the acid in a large glass of water with my food. One day in May, I forgot my medicine, and was forced to eat a meal without it; the next day I was awake from very early morning with sprue stools. Fasting for one meal and resuming treatment corrected the difficulty. In July, I tried to discontinue the medication, but after five days I was forced to resume it, as this time I had a sore mouth as well as sprue stools. My tongue still shows the effects of this experience. By September, I found that I could do without the medicine, and I remained in Australia in endemic centers for another year without the recurrence of symptoms.

The hydrochloric acid-pancreatin treatment spread into general use along the Queensland coast, and was found quite satisfactory in the treatment of many early cases. We cannot expect it to be effective in cases of long standing when we remember the extreme destruction of tissue occurring in such cases.

I am giving my experience with this treatment because it saved my health and enabled me to continue my work, and I think that it merits more general attention than it has attracted.

1. Brown, T. R.: The Gastro-Intestinal Findings in a Case of Sprue, with a Note on the Treatment of These Findings, Bull. Johns Hopkins Hosp. **26**: 289 (Oct.) 1916.

New and Nonofficial Remedies

PEPTONE IN THE TREATMENT OF MIGRAINE

Preliminary Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following statement on the experimental status of Peptone in the treatment of migraine. W. A. PUCKNER, Secretary.

Drs. Joseph L. Miller and B. O. Raulston report on the effects produced by the intravenous administration of Peptonum Siccum-Armour in the treatment of migraine.[1] The authors report that twenty-five patients have been under observation for a sufficient period of time to permit conclusions to be drawn in regard to the results of the treatment. Of these patients, nine were much improved in that they were free from headache for two months or longer after the treatment was discontinued. When the headache returned, it was again controlled by the administration of Peptonum Siccum-Armour. Expressed in percentages, 36 per cent. were much improved; 48 per cent. were moderately improved, and 16 per cent. were not benefited. The authors report that in several hundred injections, they have never observed any symptoms resembling anaphylactic shock. Another physician, however, has observed marked urticaria following a single injection of peptone in two cases, and the opinion is expressed that different preparations may differ in composition.

Commercial peptones are heterogeneous mixtures of uncertain composition. No adequate tests and standards have been developed whereby the uniformity of a given brand of peptone may be controlled, and it is probable that different lots differ in composition. The results that are reported from the use of the peptone used by Miller and Raulston may have been due to tissue impurities rather than chemical peptone itself. It is evident, therefore, that the reported results cannot be made the basis for a rational treatment of migraine. However, if physicians decide to carry out controlled experiments along the lines indicated, it is most important that the identity of the peptone which is used be determined as far as possible.

The peptone preparation used by Miller and Raulston in their clinical study was Peptonum Siccum-Armour, manufactured by Armour & Co., Chicago. This product is stated to contain 90 per cent. proteins. Seventy per cent. of the protein content is stated to be in the form of peptone and secondary proteoses, while the remaining 30 per cent. is in the form of amino-acids. Those who wish to confirm the report of Miller and Raulston should use the particular product used by them or one which has essentially similar composition.

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

AMIDOPYRINE (See New and Nonofficial Remedies, 1923, page 250).

Amidopyrine-Abbott.—A brand of amidopyrine-N. N. R.

The Abbott Laboratories, Chicago, distributor. No U. S. patent or trademark.

Tablets Amidopyrine, 5 grains.

EPINEPHRIN CHLORIDE SOLUTION-ABBOTT.—A solution containing epinephrine chloride, equivalent to one part of epinephrine in 1,000 parts of physiological solution of sodium chloride, preserved by the addition of benzoic acid, 0.2 per cent., and by saturation with carbon dioxide.

Actions and Uses.—(See Epinephrine, N. N. R., 1923 p. 112).

Dosage.—(See Epinephrine, N. N. R., 1923, p. 112).

Prepared by the Abbott Laboratories, Chicago. No U. S. patent or trademark.

The epinephrine used in the preparation of Epinephrine Chloride Solution-Abbott complies with the requirements for Epinephrine-N. N. R. Epinephrine Chloride Solution-Abbott is standardized on dogs by the blood pressure method.

1. Miller, J. L., and Raulston, B. O.: Treatment of Migraine with Peptone, this issue, p. 1894.

PROCEEDINGS OF THE SAN FRANCISCO SESSION

MINUTES OF THE SEVENTY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT SAN FRANCISCO, JUNE 25-29, 1923

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 25

The House of Delegates met in the Civic Auditorium, San Francisco, and was called to order at 10 a. m. by the Speaker, Dr. F. C. Warnshuis, Grand Rapids, Mich.

Preliminary Report of the Committee on Credentials

The Chairman of the Committee on Credentials made a preliminary report for this committee, stating that the committee desired at this time to report progress, and that more than a quorum of delegates had qualified.

As there was no objection, the report was accepted.

Next in order was the roll call by the Secretary.

The Secretary stated that the registration of the delegates in attendance recorded the presence of more than a quorum.

A quorum being present, the Speaker announced that the House was constituted and ready for the transaction of business.

The next order of business was the presentation, correction, and adoption of the minutes of the Seventy-Third Annual Session.

The Secretary stated that the minutes had been printed and circulated among the members of the House of Delegates, with the request for criticisms or corrections, but none had been received.

It was moved that the reading of the minutes of the Seventy-Third Annual Session be dispensed with and approved as printed.

Seconded and carried.

Addresses of Executive Officers

Drs. F. C. Warnshuis, Speaker; G. E. de Schweinitz, President, and Ray Lyman Wilbur, President-Elect, addressed the House. See addendum in next week's issue.

Report of Officers

REPORT OF SECRETARY

Dr. Olin West, secretary, presented the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

Alexander Righter Craig died at Port Deposit, Md., Sept. 2, 1922. Elected Secretary of the American Medical Association at Los Angeles in 1911, his very life was devoted to its interests until the day of his death. Only those whose privilege it was to be actively and intimately associated with Dr. Craig will ever be able to appreciate how entirely he gave himself to his task, or to measure the value of his service. Never conspicuously aggressive, but always modest and unassuming, he was nevertheless determined and persistent in standing out for what he conceived to be best for the American Medical Association, and, through it, for the profession of medicine and for humanity. He shirked no duty; he evaded no responsibility which was his to assume nor which was imposed on him by his fellows; he made no compromise where principle was involved.

A professed Christian, Dr. Craig lived his religion. A sincere physician, he steadfastly upheld the traditions and ideals of his profession. An earnest and efficient servant of medical organization, he labored tirelessly and unselfishly for the promotion of its cause and for the extension of its beneficent service to mankind.

MEMBERSHIP

On May 1, 1923, the membership of this Association, according to records in the office of the Secretary, was 88,519, as compared with 89,048 on the corresponding date of the preceding year. The decrease to be noted is apparent, rather than actual and is to be accounted for by the removal of names from the roster which had been carried over for lack of specific instructions from state secretaries authorizing their removal. The membership figures presented in the accompanying table for the individual state associations do not represent the maximum number of members enrolled for the year in all cases, but the actual number of members reported by state secretaries to May 1, 1923, for the current year.

The fiscal year of most of the constituent associations has been made to correspond with the calendar year, though such action has not been taken in several states. No uniform procedure is followed in dropping members for nonpayment of dues. One constituent society continues names of members on its roll for three years, another for two years before removing them for nonpayment of dues. Another drops the names of all members not paid on January 1, the beginning of its fiscal year, while others have adopted April 1 as the date for removal of the names of all unpaid members. The adoption of the calendar year as the fiscal year and the adoption of, and strict adherence to a uniform rule for removing names of unpaid members would make it possible to have the membership records of the state associations and of the American Medical Association in exact agreement at all times, and to report the maximum enrolment for each state at each annual meeting of this House. A letter has been addressed to the secretary of each constituent association offering these suggestions. Two or three have indicated in their replies that it is preferred to follow present methods, some of which have been long established.

COMPONENT SOCIETIES

The 2,049 component societies reported represent approximately 2,400 counties, since in some instances the membership embraces physicians from two or more counties.

In some of the 595 counties reported as unorganized, societies have become dormant after varying periods of organizational activity. While most of the county societies maintain active operation, there are undoubtedly too many that exist in name only. Such societies have few meetings or none at all, fail to send delegates to their state associations, and, of course, do not have any beneficial influence on the lives of their members or in their respective communities. There is, beyond question, work that is greatly needed to be done by the councils of some of the constituent associations to the end that organizational efficiency may be increased. On the other hand, it is most gratifying to note that a great many component societies are broadening the scope of their work and rendering constantly increasing service for the improvement of their members and for the public welfare. These have regular meetings with well prepared scientific programs. Many of them have weekly or monthly bulletins. Diagnostic clinics and postgraduate courses of instruction appear to be gaining favor with some of the most active and progressive societies.

In many instances county societies are splendidly maintaining the leadership which naturally devolves on the medical profession. These are identifying themselves with worthy movements in which other organizations are actively engaged, and are giving them proper direction. Some are operating clinics in which the indigent receive treatment, medical or surgical, and to which those worthy are brought by lay organizations which assume the obligation of protecting the clinics against imposition. Some county societies are providing

newspapers with educational matter for their columns, this being published under the names of the societies. In all these ways, and in others too numerous to mention here, progressive county societies are striving for the improvement of their own members, and rendering public service for the honor and the benefit of scientific medicine.

ORGANIZATION OF CONSTITUENT ASSOCIATIONS

Consituent Association of	Number Counties in State	Number Component Societies in State Assn.	Number Counties in State Not Organized 1922	Number Counties in State Not Organized 1923	Number Physicians in State (8th Ed. Directory)	Number Members of State Association 1922	Number Members of State Association 1923	Number A. M. A. Fellows in State	Number Subscribers to Journal in State*
Alabama	67	67	..	..	2,313	1,667	1,666	441	293
Arizona	14	11	2	3	372	180	143	158	91
Arkansas	75	66	12	10	2,303	1,114	1,097	468	177
California	58	40	16	16	7,549	3,450	3,335	2,673	1,878
Colorado	63	25	27	25	1,882	1,045	1,070	673	365
Connecticut	8	8	..	..	1,727	1,083	1,112	709	433
Delaware	3	3	..	..	265	135	141	88	50
Dist. Columbia	....	....	..	..	1,924	570	549	370	280
Florida	54	29	23	24	1,348	580	622	301	242
Georgia	154	93	53	49	3,274	1,858	1,595	612	467
Idaho	44	10	18	18	452	313	273	151	96
Illinois	102	95	2	4	10,716	7,384	7,175	4,760	2,121
Indiana	92	83	2	2	4,353	2,444	2,436	1,365	634
Iowa	99	97	..	..	3,490	2,448	2,384	1,401	535
Kansas	105	61	38	40	2,492	1,632	1,577	909	345
Kentucky	120	110	6	10	3,155	2,158	2,028	743	314
Louisiana	64	37	23	25	2,058	1,076	1,109	702	270
Maine	16	15	1	1	1,067	748	746	349	144
Maryland [1]	23	21	2	1	2,349	1,291	1,288	808	480
Massachusetts [2]	14	18	..	..	5,977	3,944	4,059	2,625	1,075
Michigan	83	56	2	5	4,653	3,147	2,972	1,693	846
Minnesota	86	38	4	5	2,774	1,704	1,827	1,244	593
Mississippi	81	35	2	3	1,792	881	887	306	184
Missouri [1]	114	101	6	6	5,827	3,511	3,564	2,014	768
Montana	51	16	32	35	568	372	325	196	132
Nebraska	93	56	30	30	1,913	1,077	1,270	714	411
Nevada	17	3	14	14	140	99	107	59	33
New Hampshire	10	10	..	..	615	524	520	284	56
New Jersey	21	21	..	..	3,362	2,108	1,935	1,347	720
New Mexico	29	13	15	15	399	298	325	144	80
New York	62	60	1	1	16,857	9,270	9,879	5,937	3,311
North Carolina	100	71	18	20	2,226	1,412	1,367	582	386
North Dakota	53	14	2	2	517	415	417	289	107
Ohio	88	85	1	3	8,086	5,058	4,834	2,553	1,414
Oklahoma	77	69	11	8	2,600	1,350	1,586	697	291
Oregon	36	16	2	1	1,158	714	578	319	235
Pennsylvania [3]	67	63	4	4	11,241	7,429	7,309	4,603	2,063
Rhode Island [2]	5	6	..	..	754	380	388	290	139
South Carolina	46	41	5	5	1,368	714	873	422	337
South Dakota [2]	68	11	8	1	630	352	356	238	144
Tennessee	95	65	29	28	3,228	1,890	1,554	667	350
Texas	248	135	69	66	6,094	3,501	3,628	1,696	673
Utah	29	6	24	23	497	335	325	218	93
Vermont	14	10	2	3	556	402	394	177	102
Virginia [4]	100	52	35	43	2,503	1,951	1,773	680	143
Washington	39	19	20	19	1,756	1,113	1,121	6.0	347
West Virginia	55	28	14	14	1,751	1,314	1,496	510	366
Wisconsin	71	53	1	1	2,772	1,921	1,921	1,169	627
Wyoming	22	7	12	12	263	160	134	89	71
Misc., Foreign, Govt. sub. for Army, Navy & U. S. P. H. S.	..	..	..	..	.....	.....	.....	129	2,935
Alaska	..	..	..	..	.....	20	20	...	9
Hawaii	5	..	..	..	.....	92	92	45	46
Porto Rico	7	..	..	..	.....	127	98	30	37
Philippine Isl.	..	..	..	..	.....	196	129	51	95
Canal Zone	..	..	..	..	.....	91	110	17	32
Totals	3,047	2,049	588	595	145,966	89,048	88,519	50,265	28,769
Commissioned Officers,[5] Honorary and Affiliated Fellows								3,079	
								53,444	

* Not including Fellows of the American Medical Association.

1. Maryland has 23 counties and the city of Baltimore; Missouri has 114 counties and the city of St. Louis.
2. These state associations are divided into district societies, and these are listed in the table as component societies.
3. Provision is made for the physicians of each of these counties to join the component society in an adjoining county.
4. Virginia is perfecting the plan of organization with component county societies which was somewhat recently adopted by the state association.
5. This includes the Medical Corps of the Army, the Navy and the U. S. Public Health Service.

FELLOWSHIP

There was a net gain of 422 in the number of enrolled Fellows during the year, with 53,444 names on the roster on May 1, 1923. Removals were due to: (1) resignations, 1,098; (2) nonpayment of dues, 609; (3) ineligibility, 1,217; (4) not found, 14; (5) deaths, 593. Of those whose Fellowship was discontinued because of ineligibility, 353 were commissioned medical officers no longer on active duty. While 3,531 names were dropped from the Fellowship roster, 3,953 new names were enrolled during the year.

In spite of the fact that more than 60 per cent. of all members are Fellows, there is yet some misunderstanding and confusion with respect to membership and Fellowship. All members of constituent state medical associations are members of the American Medical Association, but those members who wish to become Fellows must make application, must subscribe for THE JOURNAL, and pay Fellowship dues for the current year, these dues and the subscription for THE JOURNAL being included in the one payment of $6. It appears to be true that many members think they are Fellows when, as a matter of fact, they are not, because they have not made the required application. Only Fellows are eligible for participation in the work of the Scientific Assembly, for election as delegates, or for election as officers of the association.

CONFERENCE OF SECRETARIES OF CONSTITUENT ASSOCIATIONS

The regular annual Conference of Secretaries of constituent state medical associations was held at Chicago, Nov. 17-18, 1922. Thirty-six secretaries were in attendance, and several other officers of state associations were present. The President, the President-Elect, and the members of the Board of Trustees and of the Council on Health and Public Instruction of the American Medical Association attended.

The purpose of this conference, and its only purpose, is to offer opportunity for study and discussion of organizational problems by those who are most directly concerned with them, to the end that the efficiency of medical societies, county, state and national, may be increased.

The prepared programs of these conferences lead to extended and helpful discussions, and their value is greatly enhanced by the opportunities afforded for the secretaries to meet one another and to learn, one from another, how their many problems are approached and solved.

THE AMERICAN MEDICAL ASSOCIATION BULLETIN

The AMERICAN MEDICAL ASSOCIATION BULLETIN is intended to serve as a medium for the interchange of opinion on organization and allied subjects and for the discussion of matters pertaining to medical economics or other matters, not of strictly scientific character, in which the medical profession may be interested. Invitations to use it for this purpose have been repeatedly extended to the members, and particularly to the officers of component and constituent associations. Very few contributions have been made to its columns in response to such invitations, but the BULLETIN seems to be attracting increasing notice, if not commendation. Its monthly circulation is about 5,200 copies. The BULLETIN is sent each month to the presidents and secretaries of all state associations, to the presidents and secretaries of all county societies, to all members of the councils of state associations whose names and addresses are known, and to the members of the House of Delegates and the general officers of the American Medical Association. The subscription list, while now larger than ever before, is still quite small. The subscription price is fifty cents a year. A few county societies have subscribed for their entire membership, under which circumstance subscription is reduced to forty cents for each member. The Speaker of the House of Delegates has offered constructive criticism of the BULLETIN, as well as suggestions for its improvement, and has made personal contribution to its columns. It is hoped that the members of this House and the officers of county societies and state associations will lend their aid toward making this publication more interesting and more useful.

The usefulness of the BULLETIN would be greatly increased if it were received by all Fellows. Such distribution would undoubtedly lead to more liberal contribution to its columns, and its general quality would thereby be improved, while its scope would be enlarged.

HOTEL RESERVATIONS FOR DELEGATES

At Boston, the House of Delegates authorized and instructed the Secretary to make hotel reservations for all members of the House. This instruction to the Secretary was repeated at St. Louis. Accordingly, 150 rooms were tentatively reserved at the Palace Hotel, San Francisco, for the accommodation of Delegates during this meeting. In spite of the fact that this was done on specific instruction by the House of Delegates, there has been very considerable complaint from many states because the Secretary has reserved so many rooms at a leading hotel. Explanations and assurances that abundant hotel accommodations are available have had little effect in lessening such complaint. It seems very probable that if the annual session of the Association should be held at some future time in a city with more limited hotel facilities than are offered in San Francisco, much more objection would be offered.

While every possible effort has been made to prevent, there has been some confusion in the minds of delegates with respect to reservations. There has been, also, objection to hotel rates which have been fixed by the hotels themselves. Some delegates are accompanied by members of their families at annual sessions, and require more than one room for their accommodation. Not infrequently, two or more Fellows, not delegates, are desirous of having reservations at the hotel where their state delegates are registered. The reservation of one or two hundred rooms for delegates and officers makes it difficult for any but the very largest hotels to offer accommodations to other Fellows and, at the same time, to care for their regular transient patronage.

For all these reasons, but chiefly because the reservation of rooms *en bloc* not only engenders ill feeling and resentment but is unpractical, it is respectfully recommended that the House of Delegates give the matter due consideration.

AD INTERIM APPOINTMENT OF DELEGATES

In some instances, delegates and alternate delegates duly elected by constituent associations have been unable to attend annual sessions. There is no provision in the Constitution or in the By-Laws giving authority to the officers of state associations to make ad interim appointments to insure representation in this House. It is respectfully recommended that the House of Delegates consider the advisability of conferring authority on the councils of the constituent state associations for electing delegates and alternate delegates when those duly elected at the annual meetings cannot serve.

ORGANIZATION

Medical organization exists for the purposes of (1) creating for its members opportunities for their scientific improvement, and (2) promoting the general welfare of the medical profession. The beneficent service of the profession can be rendered to best advantage only as its members are kept abreast of advances in medical science; the truths and proved methods of scientific medicine can be applied by its practitioners to the best advantage only when their economic status is such that they will be able to devote themselves as wholly as may be to their professional duties.

The achievements and successes of medicine and medical organization have been based on the fact that scientific advancement and helpful service to humanity have been the great fundamental considerations always held in the view of worthy physicians. It is on this basis, too, that the destiny of medicine and medical organization will be worthily fulfilled. It is nevertheless true that the organization which takes no thought for the material interests of its members fails in a most important duty to them and to the public they serve. In striving for economic improvement, we must never lose sight of the fact that the interests of the patient and of the public are paramount.

That the American Medical Association has wrought powerfully for the promotion of medical science and for the enrichment of the scientific knowledge of its members, none will deny. There are those who affirm that it has not labored efficiently for the improvement of the economic status of the medical profession. The fact is that a great deal of thought and effort have been expended by the general officers and the entire administrative personnel of the Association for making it serve to the greatest possible extent the promotion of the general professional welfare.

Within the last year or so innovations have been made, some of which are succeeding splendidly while some are not yet operating as intended because of conditions which, in time, will be removed. The Bureau of Legal and Legislative Medicine, as will be seen from the report submitted to this House, has been busy with many important matters and has achieved some notable successes, even though the Bureau is only one year old.

The publication of HYGEIA has been undertaken with the purpose of giving authentic information to the public for its benefit and to bring about an understanding of the aims, methods and purposes of the medical profession that will result in securing increased respect and esteem for it from the general public.

The creation of a field secretaryship was an effort to increase organizational efficiency. The work of this department was temporarily suspended because conditions arose that were beyond control and that made suspension necessary. It is proposed to resume this work at the earliest possible time.

With a view of establishing closer contact between component and constituent societies and the Association, its President, members of the Board of Trustees, the Secretary, the Field Secretary and several of the department heads have attended meetings of state, district and county medical societies and of councils of state associations during the past year. At these meetings, when opportunity offered, the work of the Association was presented and suggestions were sought as to how it might be made more helpful to medical societies and their members. On specific requests, representatives of the Association have appeared before medical societies whenever possible to discuss organizational problems and methods and to secure information that might be used to good advantage for increasing and extending the service of the parent organization to its component and constituent units. It is proposed to make further development along these lines and to provide speakers to address themselves to subjects of general professional interest, but more particularly to those bearing on medical organization and medical economics. Of course, it cannot be undertaken to provide contributions to scientific programs at society meetings.

Some constituent associations, notably those of Wisconsin, Pennsylvania and North Carolina, have, in cooperation with universities, initiated postgraduate courses of study for members of county medical societies. Some sectional societies, notably the Pacific Northwest Medical Association and the Tri-State District Medical Society, all of whose members are required to be members of this Association, have developed splendid programs with diagnostic clinics as an outstanding feature. It may be feasible, at some time in the not distant future, for the American Medical Association to undertake activities of this nature. The matter is now being considered in the hope that a plan can be worked out whereby teachers and demonstrators for postgraduate lectures and diagnostic clinics can be provided for cooperating county or district societies. It is respectfully recommended that this House authorize the proper officers of the Association to organize such a plan and put it into effect.

The American Medical Association, with its nearly 90,000 members, is made up of more than fifty separate and largely independent organizations, each with its own peculiar problems and its own determining influences. In such a body it is oftentimes difficult, if not impossible, to determine where the weight of opinion lies with respect to any debatable question or procedure. It sometimes happens that when those upon whom administrative responsibility has been placed act to discharge what they conceive to be their duty in given premises, they receive as much of condemnation as of commendation. One large group insists that an attitude of most aggressive opposition should be assumed toward all or toward certain cults and their programs, legislative and otherwise. Another group, just as large and altogether as representative, takes exactly the opposite position. One state association may demand what another definitely objects to.

Our scheme of medical organization is, theoretically, extremely democratic. In its practical application it is evidently the desire of the members and of the officers of this Association that it shall operate along democratic lines to the fullest extent compatible with effective methods and with the possibilities for real accomplishment. It would seem, therefore, that the constituent state association should assume initiative in most organizational affairs and in most movements of interest to the medical profession. There appears to be, however, a very decided difference of opinion as to where the initiative of the American Medical Association should begin and where the responsibility of the constituent state association leaves off. There are those things which the state association must do for itself, which the American Medical Association cannot do for it and should not do if it could. There are those things which the state association can do for itself or which the American Medical Association can do for it. In such matters it would seem wise for the state association to take the initiative and for the parent body to act only on the request of the constituent organization. There are still other things that the American Medical Association can do for its constituent and component societies and their members which they cannot do as independent organizations. These the Association should do on its own initiative and to the limit of its facilities. The publication of six scientific journals and a magazine for the lay public, all of which have won recognition as meritorious periodicals, is evidence that the Association has not been unmindful of its duties and responsibilities. The headquarters organization is a veritable service bureau, in which all departments cooperate in replying to thousands of inquiries of every conceivable kind each year. Numerous other examples of service rendered by the Association in an effort to discharge the responsibilities which devolve directly on it might easily be cited. That so much has been done is an earnest that more will be undertaken, when, as a result of constructive criticism, supplemented with constructive suggestions, methods can be devised and means provided. It is for this House of Delegates, composed of the chosen representatives of the nearly 90,000 physicians who make up its membership, to determine and define the policies of the Association with respect to its relations with component and constituent societies, its relations with other organizations, and its relations with the body politic.

CHANGE IN NAME OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The House of Delegates at St. Louis adopted the report of the Reference Committee on Medical Education with a recommendation that the name of the Council on Medical Education and Hospitals be changed to "The Council on Education and Hospitals of the American Medical Association." This recommendation was offered because, in the opinion of the committee, the present name of the council is unduly long. No change was made in the By-Laws. It is respectfully recommended that the House of Delegates shall make the indicated amendments. If the purpose of the Reference Committee was to shorten the name of the Council, this will not be accomplished by the addition of the words "of the American Medical Association" to the new name suggested. No other council is so designated in the By-Laws.

The following amendments to the By-Laws appear to be indicated: (1) Amend Section 3 of Chapter VII by striking out the word "Medical" in the fifth line of that section. (2) Amend Section 2, Chapter VIII, by striking out the word "Medical" in the ninth line of that section. (3) Amend Section 3, Chapter IX, by striking out the word "Medical" in the caption of that section and also in the second line of that section. (4) Amend Section 4, Chapter X, by striking out the word "Medical" in the fourth line of Paragraph 3 of that section.

In Section 3, Chapter IX of the By-Laws, one function of this Council is declared to be "To investigate conditions of *Medical* education," while in Paragraph 3 of Section 4, Chapter X, a "Committee on *Medical* Education" is provided for. In considering the amendments to the By-Laws proposed above, the House may wish to consider also the elimination of the word "Medical" as here referred to in Section 3, Chapter IX and Section 4, Chapter X.

UNFINISHED BUSINESS

The following amendments to the Constitution and By-Laws were submitted at the St. Louis Session last year, to lie over for action at this session of the House of Delegates.

By Dr. Mongan: Amend Article 5, Section 2 and Section 3 of the Constitution to read:

SEC. 2.—The House of Delegates is composed of delegates elected by the constituent associations. The Trustees shall be ex-officio members of the House of Delegates, but without the right to vote.

SEC. 3.—The total voting membership of this House of Delegates shall not be in excess of 150, which shall be apportioned among the constituent associations in proportion to their actual active membership as hereinafter provided in the By-Laws.

By Dr. Upham: Article 5, Section 2 and Section 3:

SEC. 2.—COMPOSITION.—The House of Delegates is composed of delegates elected by the constituent associations and of delegates from the Medical Departments of the Army and Navy, and the Public Health Service, appointed by the Surgeon General of the respective departments, and of section delegates elected by the sections of the scientific assembly.

The section delegates shall have the privilege of the floor, but only the right to vote on matters directly affecting the activities of the sections. The trustees shall be ex-officio members of the House of Delegates, but without the right to vote.

SEC. 3.—The total unrestricted voting membership of the House of Delegates shall not exceed 150. The Medical Departments of the Army and the Navy, and the United States Public Health Service shall each be entitled to one delegate, and the remainder shall be apportioned among the constituent associations in proportion to their actual membership as hereinafter provided in the By-Laws. The scientific sections shall each be entitled to one section delegate; should the right of the section delegates to vote be challenged on a question before the House, decision shall be made by a ruling of the Speaker, subject to the approval of the House.

By Dr. Mongan: Amend Article 7 of the Constitution by striking out all words after the word "Association."

By Dr. Mongan: Amend Chapter I, Section 2, of the By-Laws to read:

SEC. 2.—TERM.—Delegates and alternates from constituent associations shall be elected for two years. Constituent associations entitled to more than one representative shall elect them so that one half, as near as may be, shall be elected each year.

By Dr. Mongan: Amend Chapter I, Section 4, of the By-Laws to read:

SEC. 4.—REGISTRATION OF DELEGATES.—Each delegate representing a constituent association, before being seated, shall deposit with the Committee on credentials a certificate signed by the Secretary and under the seal of the constituent association, stating that he has been regularly elected by that constituent association.

The following communication is submitted to the House for its consideration:

UNITED STATES VETERANS BUREAU
WASHINGTON

May 1, 1923.

Dr. Olin West, Secretary,
American Medical Association,
535 N. Dearborn Street,
Chicago, Illinois.

Dear Doctor:

It is the desire of the Director and the Medical Adviser that this Bureau be represented in the future at the annual meetings of your association.

Will you kindly indicate how such representatives should be accredited in order to appear as official delegates of the Bureau to the Association, provided such arrangement is feasible under your organization.

A copy of a preliminary program will be appreciated.

By direction,
(Signed) J. R. McDILL,
J. R. McDILL, M.D.,
Chief Consultant.

Numerous activities of the Association in which the Secretary has been called on to participate, not touched on in this report, are referred to in other reports to be submitted to this House.

The sudden and unexpected death of Dr. Craig brought about a somewhat trying situation, because he alone was familiar with many details of affairs administered by the Secretary's office. The most generous cooperation has since

been extended to that office by all the officers of the American Medical Association and of the constituent and component societies, for which sincere gratitude is hereby acknowledged.

OLIN WEST, Secretary.

REPORT OF THE BOARD OF TRUSTEES

Dr. Oscar Dowling, Chairman, presented the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

SUBSCRIPTION DEPARTMENT

In the tables in the addenda to the Trustees' report will be found the main facts regarding the circulation of THE JOURNAL covering last year—1922. Table 1 indicates that there were 4,204,844 copies of THE JOURNAL printed, and a weekly average of 80,862. Table 2 shows the number of physicians in the United States, the number receiving THE JOURNAL, and the approximate percentage in each state (the copies sent to the U. S. Army, the U. S. Navy, the Public Health Service and to advertisers, and the complimentary and exchange copies are not included). It will be noted that in twenty-seven of the states more than 50 per cent. of the physicians are receiving THE JOURNAL. Minnesota shows the highest percentage, 69; North Dakota the next highest, 67; California, Connecticut and Illinois, 65. Table 3 indicates the number of Fellows and subscribers each year from Jan. 1, 1900, to Jan. 1, 1923, and shows that with two exceptions there has been a steady annual increase in the number of Fellows, the exceptions being in 1911, a decrease of about 240; and in 1918, of about 700. There also has been a steady, consistent increase so far as subscribers are concerned, although the number of these is more likely to go up and down than the number of Fellows, for the reason that the Fellowship roll is continually being augmented by transfers from the subscription list. The vast majority of Fellows originally were subscribers, and were transferred to the Fellowship list; last year 2,898 were so transferred; in 1921, 3,329; and in 1920, 3,914.

For the first time in many years, there was an actual falling off in the bona fide circulation of THE JOURNAL. This occurred only once before, viz., in 1916, the second year of the World War. The decrease last year was only 112, and this could be explained by the fact that the government services decreased their order by 136. However, there has been quite a little falling off because of the $6 subscription price: many physicians have written that they understood the increase in price was to be only temporary, and that the $5 rate soon would be restored.

ADVERTISING DEPARTMENT

A reference to the Auditor's report will show that the Advertising Department of THE JOURNAL earned during the year a little over $600,000—$31,421 more than in 1921. This earning exceeded the amount received from subscription and Fellowship dues, which was $463,586. The increase in advertising receipts is accounted for, not by an increase in advertising space sold, but by the increase in rates which went into effect in January, 1922. It is needless to say that the high standard of the advertising pages has been maintained.

COOPERATIVE MEDICAL ADVERTISING BUREAU

This bureau now represents all but one (twenty-nine) of the state journals. These twenty-nine journals, however, represent thirty-four state societies: the *California State Journal of Medicine* is the official publication of the California and Nevada state societies; *Southwestern Medicine*, the official journal for Arizona and New Mexico; and *Northwestern Medicine*, for Oregon, Washington, Idaho and Utah. The bureau evidently is proving satisfactory to all the journals it represents; not only does it secure for them advertising which many otherwise would not be able to procure, but it also relieves those personally responsible for these journals—many of whom are active practitioners—of work in which they are not at all interested and which is entirely out of the sphere of activities of physicians. The bureau is self-supporting, and for the last three years has been able to return to the journals a bonus out of the commissions earned by it.

SPANISH EDITION

The publication of the Spanish Edition has been seriously handicapped on account of the exchange difficulty, as was emphasized in our report to you last year. The conditions in this regard have not improved; rather, in some of the countries they have become worse. This handicap affects both advertising and subscription, not only because of the depreciated currency of the different countries, but also because the difficulty in sending small amounts, since it is necessary for our Latin-American subscribers to send remittances on the dollar basis. However, arrangements have been made which we believe will solve this problem so that from now on we may look for improvement, so far, at least, as circulation is concerned.

The loss on the publication of this journal last year was $11,171.08, of which amount the Rockefeller Foundation paid one half.

The representatives of the Foundation in Latin-American countries and in the Philippine Islands have reported to the Foundation that the journal is doing good in various ways, and have expressed the hope that it could be continued. It is published every two weeks, contains the cream of the scientific matter appearing in THE JOURNAL itself, and is highly appreciated by the educated physicians in these countries. There is no doubt of this; letters received at the central office confirm it.

The present circulation is practically 3,000. Mexico has the largest, 598; Cuba, the next largest, 455; Argentina, 335; Spain, 224; Philippine Islands, 209; Brazil, 194; Colombia, 107; and the other copies are distributed in practically all the Spanish-speaking countries.

SPECIAL JOURNALS

A satisfactory report can be made regarding the five special journals now being published by the Association. The circulation of the ARCHIVES OF INTERNAL MEDICINE for 1922 was 2,526; of the AMERICAN JOURNAL OF DISEASES OF CHILDREN, 2,841; of the ARCHIVES OF NEUROLOGY AND PSYCHIATRY, 1,203; of the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, 1,316; and of the ARCHIVES OF SURGERY, 2,931.

In considering the circulation of these five journals, it is well to bear in mind that all are of special character and appeal not so much to the general practitioner as to the physician who is specializing in some particular line. For instance, we cannot expect that the ARCHIVES OF SURGERY will appeal to any but the more progressive surgeons. So also with the ARCHIVES OF INTERNAL MEDICINE: it is a medium for the publication of extended articles—articles representing advanced work and thus appealing only to the progressive internist. The AMERICAN JOURNAL OF DISEASES OF CHILDREN appeals to the pediatrician, and to the progressive general practitioner who is especially interested in this branch of medicine. The ARCHIVES OF NEUROLOGY AND PSYCHIATRY and the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY naturally have a limited circulation, since they appeal practically only to those who limit themselves to the specialties represented by these two journals.

Three of these journals—the ARCHIVES OF INTERNAL MEDICINE, the AMERICAN JOURNAL OF DISEASES OF CHILDREN, and the ARCHIVES OF SURGERY were published at a profit; two—the ARCHIVES OF NEUROLOGY AND PSYCHIATRY and the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY—at a slight loss. There was a net gain on the special journals of $9,266.85, but only actual cost was charged against them; i. e., no overhead was included. It may be that your Board of Trustees will find it convenient to reduce the price of the AMERICAN JOURNAL OF DISEASES OF CHILDREN and also of the ARCHIVES OF INTERNAL MEDICINE, unless there should be an increase in the cost of their production. On the contrary, it may be

necessary to increase the price of the Archives of Neurology and Psychiatry and of the Archives of Dermatology and Syphilology. However, the board proposes to consider this question at its fall meeting; at that time it will be possible to estimate the developments of the present year. It is unnecessary to say that the object of the Association is to supply these high-class scientific periodicals at only slightly above cost. The printing plant of the Association, its various facilities for procuring material, etc., make it possible to publish and to supply these special journals to subscribers at a less cost than they otherwise could be supplied.

American Medical Directory

The Eighth Edition of the American Medical Directory has been completed and will be in the hands of the subscribers before this session is held. Eight thousand five hundred copies have been printed. The number of prepublication subscriptions was practically the same as two years ago—approximately 7,000; presumably the demand for the book after publication will be as great as that for the Seventh Edition. It is impossible to tell definitely what the actual income on an edition is until it is known how many copies are sold before the next edition appears. The financial report for the last edition shows that the expenses were $136,884.39; and the receipts from subscriptions, advertising, etc., $135,045.40; thus there was an apparent loss on the Seventh Edition of $1,838.99. However, all the expenses connected with the Biographical Department have been charged to the Directory. The Biographical Department was being conducted before the publication of a directory was given consideration; the work carried on in it is a continuing one, but inseparable from that connected with the Directory. But the work in this department and that on the Directory are so closely connected that it is impossible to separate the charges. Under all the circumstances, the Directory may now be regarded as self-supporting.

Quarterly Cumulative Index

The Quarterly Cumulative Index is another of the publications issued by the Association solely in the interest of scientific medicine. The circulation for 1922 reached 1,129, which must be regarded as entirely satisfactory. It seems to be giving great satisfaction, and librarians are especially gratified; several report that the Index is so much used that it has become necessary for them to secure two copies. The outlook locally is very good. At the time this report was prepared, there was an increase of thirty-four over last year at the same time.

It may be interesting to note how the Index is taking abroad. It has a circulation of twenty-six copies in Canada; twenty-two in Great Britain; twelve in India; nine in China; five in Japan; four in Spain; three in Cuba, Hawaii, Philippine Islands, Africa, Denmark and Holland; two in Greece, Italy, Sweden and Switzerland; and one in Porto Rico, Austria, Belgium, Germany and Portugal. This makes a total foreign circulation of 127. There is a slow but steady increase in this foreign circulation, and it undoubtedly will continue to increase as the Index becomes generally known.

The financial statement shows a loss of a little over $5,000. The character of this publication is such that it probably never will be published at a profit. If the price were placed sufficiently high to cover the cost, the circulation naturally would drop. But the Association can afford to publish this book at a loss, in view of its very practical value.

Hygeia

An active campaign of promotion of Hygeia was begun among physicians in December and continued until about the middle of March. This promotion was in the form of advertisements in The Journal and through circulars. This campaign resulted in securing approximately 15,850 orders. About the middle of March, at the time the periodical appeared, a similar, active campaign was inaugurated among the public, appeals being made through circulars and personal letters to presidents of universities, state and county superintendents of schools, educational boards, women's clubs, teachers, etc. On the first of May, there were about 19,500 subscribers, the majority being those who had accepted the special offer. Since the first of May, orders have been continuing to come in at the rate of about twenty-five a day.

The Propaganda Department

The interest on the part of the public in The Journal's educational work on the nostrum evil, quackery and pseudomedicine increases yearly. Especially does the public show an intelligent appreciation of the task which the American medical profession has assumed of warning the layman against the pitfalls of the nostrum vender, the cultist and the quack. More letters from laymen were received during the last year than in any previous year. The activity of various lay organizations (women's clubs, chambers of commerce, advertising associations, etc.) which have called on the Propaganda Department for information also reflect the interest of the public. Letters have come not only from every state and every dependency of the United States, but also from such widely separated places as Australia, China, New Zealand, the British Isles, France, Germany, and some South American countries.

Although there is a noticeable laxity in the advertising standards of many newspapers and magazines, there are an encouraging number of lay publications that honestly try to protect their readers against fraudulent medical advertising copy. As a result, the number of inquiries from men and concerns interested in truthful advertising has steadily increased. Then, too, a not inconsiderable portion of the correspondence of the department has been with teachers and students of schools and colleges. The fact that several standard textbooks on home economics, civic biology and related subjects deal at least incidentally with the nostrum evil explains this interest on the part of students and teachers.

The second volume of "Nostrums and Quackery," which has now been on the market for more than a year, is selling steadily. Since the issuance of "Nostrums and Quackery," the individual pamphlets on the nostrum evil have been brought down to date, reedited and new editions published.

There is no question that the commercialization of the pseudoscientific vagaries of Albert Abrams of San Francisco is the most remarkable phenomenon of its kind since the days of the historic Perkins' Metallic Tractors. Certain members of the medical profession were at first disposed to give Abrams and his theories serious consideration, but with the publication of various articles on the subject in the Propaganda department of The Journal, Abrams' clientele shifted from that of the low-grade medical man to the osteopath. The unprecedented publicity given Abrams through sensational lay magazines, and the fact that the exploitation appeals alike to the faddist and to the mercenary, are responsible for the attention that has been given the subject. The material published in the Propaganda department of The Journal has been reprinted in pamphlet form with additions from other sources. Thousands of these reprints have been called for by the profession and the public, and the demand continues.

The first issue of Hygeia has brought to the Propaganda department additional inquiries on the subject with which the department deals, and there is every reason to believe that as Hygeia becomes better known the department will be called on more heavily than ever before, for the attention of the public will be drawn to the fact that in the Propaganda department the public and the profession have a clearing house for information on the nostrum evil and quackery, and that the data it furnishes are both reliable and authoritative.

Council on Pharmacy and Chemistry and the Chemical Laboratory

During 1922, the Council and the Chemical Laboratory have continued their work in the interest of rational therapy. Each year finds an increasing number of physicians who are supporting this work, for the profession is realizing that the Council provides it with unbiased and dependable information concerning proprietary and new therapeutic agents.

The second volume of "Propanda for Reform in Proprietary Medicine" was issued during the year, bringing the infor-

mative material up to date and making more available the important reports of the Council, the Laboratory and THE JOURNAL issued from 1917 to May, 1922.

The Council is devoting, and must continue to devote, a considerable part of its time to the routine examination of the new proprietaries that are brought out yearly. An increasing number of American firms are engaged in producing what promise to be worth-while additions to our materia medica. Even France, which in the past has been content with supplying for the most part ordinary drugs or drug mixtures under fancy titles or in fancy packages, is beginning to send to this country some of its products of importance.

The shotgun proprietary mixtures which handicapped scientific medicine fifteen or twenty years ago now give little concern. Today the pressing problems are the "mixed" vaccines, the pluriglandular preparations, products especially elaborated for intravenous therapy, and the attempts to commercialize our new knowledge of vitamins. The Council continues to examine each "mixed" vaccine that is offered, but has accepted few of such mixtures. In spite of an extensive propaganda by certain firms which specialize in the manufacture of mixtures of endocrine substances, little, if any, scientific, controlled, clinical evidence has been presented to justify the almost ludicrous claims made by promoters.

During the year, the Council has issued three reports bearing on vitamins: "Yeast Preparations," "Therapeutic Research into the Clinical Field of Yeast," and "Yeast Preparations and Vitamin B Concentrates." These reports will, it is hoped, convince physicians that vitamin deficiency is best overcome by the selection of proper foods and not by the use of proprietary preparations claimed to be vitamin concentrates.

As the routine work of the Council is becoming systematized, more time is given by the members of the Council to broader questions concerning medical advance. At the present time, an appeal is being formulated against unnecessary intravenous medication, which, the Council believes, should be limited in application; its use in those cases in which there is no definite warrant for the procedure is still a serious menace both to medical science and to public welfare.

The changing tendencies of the times are best shown by the methods used to introduce new drugs. In years gone by, the favorite method of introducing a new drug was by supplying physicians with free samples. In return, the promoter asked for—and frequently received—reports from the physicians as to the results they obtained from the use of these samples. The ability properly to weigh clinical and empiric evidence is not accorded to every observer; therefore, uncritical, laudatory reports were the rule, and these were promptly published. It required considerable time and controlled experimental work to produce accurate evidence to counteract such hastily published testimonials. Today, physicians look with a more critical eye on the evidence for new drugs, and the far-seeing manufacturer hesitates before investing money in a new drug that does not possess real merit. The Council has adopted a plan which, in time, should do much to prevent the flooding of the market with drugs that eventually will be found of little value. The plan includes the issuing of preliminary reports which enable the clinician to experiment with products of known composition that seem to have therapeutic promise.

The Chemical Laboratory continues to aid the Council in passing on new substances through an examination of the claims that are made for them regarding their chemical composition. It gives much time to the elaboration of standards for products that are admitted to New and Nonofficial Remedies, and thus insures that the products accepted for the book shall be of uniformly reliable composition. The Laboratory answers many inquiries in regard to the composition of medicines which come to THE JOURNAL from its readers; and, when the requested information is not available and the subject of inquiry is of sufficient importance, it undertakes analysis of these products. The Laboratory is largely responsible for the fact that the secret nostrum exploited to the profession is waning. Furthermore, it endeavors to accomplish a certain amount of original investigation in fields of materia medica.

APPROPRIATIONS FOR RESEARCH

For many years the Board of Trustees has provided funds for the encouragement of research. This money is distributed through two committees: the Committee on Scientific Research and the Committee on Therapeutic Research. The grants are made to investigators of recognized ability and, in the main, provide funds only for the purchase of materials.

The Committee on Scientific Research is composed of: Dr. Ludvig Hektoen (chairman), Chicago; Dr. F. F. Russell, Washington, D. C.; Dr. Herbert C. Moffitt, San Francisco; Dr. G. N. Stewart, Cleveland, and Dr. Charles H. Frazier, Philadelphia. The object is to further meritorious research on subjects relating to scientific medicine and of practical interest to the medical profession, which otherwise could not be carried on to completion. During the year the following appropriations were made:

Grant 55: $200, to Reynold A. Spaeth, School of Hygiene and Public Health, Johns Hopkins University, for a study of the influence of fatigue on infection.

Grant 56: $200, to John F. Churchman, Loomis Laboratory, Cornell University, New York, for a study of the action of certain chemicals in the treatment of acute arthritis.

Grant 57: $250, to Yandell Henderson, Laboratory of Applied Physiology, Yale University, for apparatus necessary for a study of the physiology of respiration.

Grant 58: $225, to E. B. Krumbhaar, Philadelphia General Hospital, for a study of inguinal granuloma.

Grant 59: $225, to F. W. Mulsow, University of Iowa, for a practical study of culture mediums for the gonococcus.

Grant 60: $400, to H. M. Evans, Anatomical Laboratory, University of California, for the continuation of the study of the relation of endocrine glands to ovulation.

The Committee on Therapeutic Research is a committee of the Council on Pharmacy and Chemistry, and the funds appropriated for it are used to aid in investigating therapeutic questions. A special grant of $1,000 has been made to a committee appointed by the Committee on Therapeutic Research to investigate the toxicity and availability of local anesthetics. This work has been in hand for some time, and much valuable information regarding this important question is being secured. The committee is composed of: Dr. Emil Mayer, chairman, New York (laryngology); Dr. Robert A. Hatcher, secretary, New York (pharmacology); Dr. Elliott C. Cutler, Boston (surgery); Dr. Henry S. Dunning, New York (stomatology); Dr. Robert S. Lamb, Washington, D. C. (ophthalmology); Dr. David I. Macht, Baltimore (medicine); Dr. Charles Norris, New York (pathology), and Dr. Alexander Randall, Philadelphia (urology). The committee has formulated a plan for carrying out an extensive investigation, and it is believed that the results will prove interesting and of practical value. To indicate the general character of the work carried on under the direction of the Committee on Therapeutic Research, we submit a list of the investigations conducted under the committee, the results of which were published during 1922:

The Effects of Some New Local Anesthetics: M. L. Bonar and Torald Sollmann: *J. Pharmacol. & Exper. Therap.* **18**: 467 (Jan.) 1922.

Uterine Effects of Intravenous Injections of Fluids: H. G. Barbour and F. H. Rapoport: *J. Pharmacol. & Exper. Therap.* **18**: 407 (Jan.) 1922.

Studies of Strychnin: Soma Weiss and R. A. Hatcher: *J. Pharmacol. & Exper. Therap.* **19**: 419 (July) 1922.

Seat of the Emetic Action of the Digitalis Bodies: R. A. Hatcher and Soma Weiss: *Arch. Int. Med.* **29**: 690 (May) 1922.

Action of Emetin Hydrochloride upon the Uterus: Paul Martin: *Am. J. Obst. & Gynec.* **3**: 241 (March) 1922.

Experimental Erysipelas: F. P. Gay: *J. Infect. Dis.* **31**: 101 (Aug.) 1922.

The Treatment of Syphilis by Mercury Inhalations: History, Methods and Results: H. N. Cole, A. J. Gericke and Torald Sollmann: *Arch. Dermat. & Syph.* **5**: 18 (Jan.) 1922.

The Relative Therapeutic Efficiency of Arsphenamine and Gelatin Arsphenamine: Jean Oliver: *Proc. Soc. Exper. Biol. & Med.* **20**: 56, 1922.

BUILDING

The report of the Board of Trustees last year contained a brief historical outline of the Association property and building; referred to the fact that the previous year—1921—the Trustees considered it advisable, on account of the high cost

of labor and material, to postpone the erection of the additions, and stated that by the time of their annual meeting in February prices had gone down sufficiently to make them feel justified in authorizing the completion of the plans. The general contract was signed, May 29, 1922, but the contract for the steel—the most important item among the material—was signed, June 31, at a price of $62.50 a ton erected. The next day (July 1) the price advanced, and increased steadily until it reached $102 a ton. In view of the fact that it is requiring approximately 800 tons, this item is an important one. Other prices—of labor and of material—also went up almost immediately after our various contracts were signed.

Progress on the building has been extremely slow, owing mainly to labor conditions. The addition on the east, covering the 40 foot lot purchased last year, was sufficiently completed the middle of April to permit of the transfer to it of several departments. At the present time, the outlook is that the complete building will be ready for occupancy sometime late in the fall.

When completed, the Association will own a building, 160 feet on Grand Avenue and 100 feet on Dearborn Street, with six stories and a high basement, of steel and concrete construction—a building which, while not ornate, will be substantial, a credit to the Association, and well fitted for the purpose for which it has been constructed.

Reduction in Dues

At the last meeting of the House of Delegates, the By-Laws were modified authorizing the Board of Trustees to change the annual dues, under certain limitations. At its last meeting, the board favorably considered reducing the annual dues and subscription to the old rate of $5. Final action will be taken at the October meeting, and unless unforeseen developments warrant otherwise, the board will at that time order this decrease put into effect.

Reorganization of the Board of Trustees

It is the unanimous opinion of the Board of Trustees that the three-year period of Trusteeship is too short to enable a member to gain a sufficient knowledge of the affairs of the Association to make his services of real value; that it takes two years before he becomes thoroughly acquainted with all its various activities. Further, the three-year term and the election of three members annually may result in a majority of the board being replaced by new members in too short a period; in fact, this has occurred: In 1907-1908, within a period of approximately twelve months, five new and inexperienced men were elected to membership on the board. Since 1883, at the time THE JOURNAL was started and the board created—forty years—fifty-nine Fellows of the Association have served as members of the Board of Trustees: twenty-three, from one to three years; seventeen, from four to six years; eight, from seven to nine years; five, twelve years, five, fifteen years; and one, eighteen years.

The board unanimously recommends that the term of service shall be five years and that a Fellow shall not be eligible to serve more than two consecutive terms as a Trustee. In the case of an election to fill a vacancy caused by the resignation or death of a member, the new member shall be regarded as having served one term, provided he has served three years.

The president, the president-elect, the speaker and the Board of Trustees all have certain duties and responsibilities in the administration of the affairs of the Association and the carrying out of the policies adopted by the House of Delegates. There should be cooperation of all these. The board believes that this cooperation would be more easily accomplished and the duties and responsibilities carried on more efficiently if the President, the President-Elect and the Speaker were ex-officio members of the board. As the Association is incorporated in Illinois, and the statutes of the state place the responsibility for the administration of financial affairs and the care of the property of a corporation upon the board of directors—in this case, the Board of Trustees—who are duly elected members of that body, it was considered wise to consult the attorneys of the Association regarding the matter. The attorneys have given the opinion that the President, President-Elect and Speaker may be ex-officio members of the board without the right to vote, but otherwise to have equal power with the duly elected members.

It has been the practice of the board recently to invite these officers to attend its meeting, and the Board of Trustees now recommends that the Constitution and By-Laws be changed to make these officers ex-officio members of the board.

These recommendations, if adopted by you, will require an amendment to the Constitution which will have to lay over for one year, and a modification of a by-law which can be acted on this year, viz.:

Amend Section 1, Chapter 6 by adding: The President, the President-Elect, and the Speaker of the House of Delegates shall be ex-officio members of the Board of Trustees, but without the right to vote.

Bureau of Legal Medicine and Legislation

At the Annual session in 1922, last year, you authorized the Board of Trustees to create a bureau of legal medicine and legislation; the activities of the Association along these lines had, since 1910, been under the jurisdiction of the Council on Health and Public Instruction. In accordance with this authorization, the Board of Trustees established this bureau, and elected as its executive secretary Dr. W. C. Woodward, formerly commissioner of health of the District of Columbia, and later of Boston. Dr. Woodward is especially qualified for this position, not only because of his active work in the past in public health and medicolegal matters, but also because, while a resident of Washington, he had much experience in connection with federal legislation as pertaining to the District of Columbia. He is further qualified because he has had legal training and holds a degree of Master of Laws. His report for the year to the Board of Trustees will be found among the addenda to this report. Dr. Woodward will present an abstract of his report to the House.

Death of Dr. Alexander R. Craig

On Sept. 2, 1922, Dr. Alexander R. Craig, Secretary of the Association, died at his country home in Maryland.

The majority of the Fellows and members of the Association never will know the loss sustained in the passing of Dr. Craig. He was so modest, so free from any assumption of unusual knowledge and so entirely devoid of a dictatorial spirit that his great influence made itself known by accomplishment rather than by a display of effort to bring about results. His advice and counsel were especially valuable in the many difficult problems presented in the program of organization of the profession which came under the jurisdiction of his office. He was always able to see the point of view of the other fellow, and his adherence to the principles of the Golden Rule enabled him to bring harmony out of what gave promise of discord. He not only filled the position of Secretary of the Association efficiently, but he was also the secretary and executive officer of the Council on Scientific Assembly and of the Judicial Council. As secretary of the Judicial Council, his character and exceptional tact were evident. He was a rare type of man, with a spirit devoted to service for this Association, which he loved.

On the death of Dr. Craig, Dr. Olin West, the Field Secretary of Association, was assigned to the work of the Secretary, and at the meeting of the Board of Trustees held Nov. 16, 1922, Dr. West was appointed Secretary of the Association for the unexpired term.

Memorial Tablet at Headquarters

In accordance with the action of this House made at the St. Louis session, the President, Dr. George E. de Schweinitz, appointed Drs. Wendell C. Phillips, George H. Simmons and Frank Billings to serve with him on a committee to select a suitable bronze tablet and its placement in the headquarters building in memory of the late Dr. Joseph N. McCormack. The placement of the tablet will be made when the new additions to the headquarters building shall have been completed;

naturally the place for such a tablet will be in the new assembly hall.

A. M. A. BULLETIN COMPLIMENTARY TO FELLOWS

In his report, the Secretary recommends that the A. M. A. BULLETIN be sent complimentary to Fellows of the Association, as well as to officers of state and county societies as at present. The Trustees endorse this recommendation.

AN APPRECIATION

For a period of twenty-five years, Dr. George H. Simmons has devoted his entire time and energy to service for the Association. The members of the board are unanimously of the opinion that an expression of appreciation should be made to him at this time. As Editor and Manager, he has manifested remarkable literary ability, and it is due chiefly to his editorial management that THE JOURNAL is recognized as the foremost general medical publication of the world, with a circulation at home and abroad of 80,000 copies weekly. He has shown rare and efficient administrative skill, which has won the respect and confidence of all the general officers, the members of the Board of Trustees, the members of the councils and committees, the personnel at headquarters, and the Fellows of the Association who have been fortunate enough to come in close contact with him. He has been honest, individually unselfish, loyal, and his efforts have been productive of the greatest service to the Association.

Respectfully submitted,

OSCAR DOWLING,
D. CHESTER BROWN,
CHARLES W. RICHARDSON,
W. T. SARLES,
A. R. MITCHELL,
WALTER T. WILLIAMSON,
FRANK BILLINGS,
WENDELL C. PHILLIPS,
THOMAS MCDAVITT.

ADDENDA TO TRUSTEES' REPORT

SUBSCRIPTION DEPARTMENT

TABLE 1.—The following table indicates the number of copies of THE JOURNAL printed each week, the total number for the year, and the weekly average:

January 1	80,296		July 1	80,092	
January 14	80,747		July 8	80,106	
January 21	80,729		July 15	80,127	
January 28	80,717		July 22	80,701	
		322,489	July 29	80,452	
					401,478
February 4	80,565				
February 11	80,630		August 5	80,603	
February 18	80,426		August 12	80,724	
February 25	80,889		August 19	80,571	
		322,510	August 26	80,563	
					322,461
March 4	80,609		September 2	80,320	
March 11	80,880		September 9	80,275	
March 18	80,591		September 16	80,498	
March 25	80,626		September 23	83,425	
		322,706	September 30	84,079	
					408,597
April 1	80,603				
April 8	80,335		October 7	83,333	
April 15	80,822		October 14	80,935	
April 22	90,800		October 21	80,716	
April 29	80,126		October 28	80,975	
		412,686			325,959
			November 4	80,552	
May 6	80,111		November 11	80,731	
May 13	80,281		November 18	80,870	
May 20	80,460		November 25	80,555	
May 27	80,176				322,708
		321,028			
			December 2	80,145	
June 3	80,243		December 9	80,668	
June 10	80,349		December 16	80,061	
June 17	80,144		December 23	80,197	
June 24	80,149		December 30	80,266	
		320,885			401,337
Total (52 issues)					4,204,844
Weekly average					80,862

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL

TABLE 2.—The number of physicians in the United States (based on the Seventh Edition of the American Medical Directory), the number receiving THE JOURNAL, and the approximate percentage in each state, are indicated in the following table. The copies to the U. S. Army, U. S. Navy, U. S. Public Health Service, etc., are not included.

State	Physicians in State 7th A. M. Directory	Number Receiving JOURNAL	Approximate Percentage 7th A. M. Directory
Alabama	2,405	745	31
Arizona	380	245	64
Arkansas	2,450	646	26
California	6,766	4,392	65
Colorado	1,817	1,041	57
Connecticut	1,729	1,136	65
Delaware	262	141	54
District of Columbia	1,689	641	38
Florida	1,281	585	46
Georgia	3,406	976	29
Idaho	553	241	44
Illinois	10,651	6,925	65
Indiana	4,446	2,026	46
Iowa	3,536	1,942	55
Kansas	2,550	1,278	50
Kentucky	3,323	1,064	32
Louisiana	2,001	973	48
Maine	1,105	500	45
Maryland	2,364	1,312	55
Massachusetts	5,959	3,715	62
Michigan	4,593	2,531	55
Minnesota	2,628	1,801	69
Mississippi	1,761	497	28
Missouri	5,921	2,795	47
Montana	620	317	51
Nebraska	1,965	1,102	55
Nevada	147	89	60
New Hampshire	641	351	55
New Jersey	3,260	2,085	64
New Mexico	529	229	43
New York	16,284	9,146	56
North Carolina	2,236	966	43
North Dakota	556	376	67
Ohio	8,092	3,949	49
Oklahoma	2,622	979	37
Oregon	1,145	559	49
Pennsylvania	11,348	6,716	60
Rhode Island	778	432	56
South Carolina	1,452	672	46
South Dakota	658	380	58
Tennessee	3,328	1,021	31
Texas	6,205	2,356	38
Utah	496	307	62
Vermont	594	281	47
Virginia	2,545	1,119	44
Washington	1,797	947	53
West Virginia	1,717	901	52
Wisconsin	2,750	1,753	64
Wyoming	267	158	59

TABLE 3.—The number of Fellows and of subscribers (not including advertisers, exchanges, libraries, colleges, etc.) on THE JOURNAL mailing list each year, beginning with 1900, are given below:

Year	Fellows	Subscribers
January 1, 1900	8,445	4,633
January 1, 1901	9,841	8,339
January 1, 1902	11,107	10,795
January 1, 1903	12,553	12,378
January 1, 1904	13,899	14,674
January 1, 1905	17,570	15,698
January 1, 1906	20,826	17,669
January 1, 1907	26,255	20,166
January 1, 1908	29,382	20,880
January 1, 1909	31,999	18,983
January 1, 1910	33,032	19,832
January 1, 1911	33,540	20,504
January 1, 1912	33,250	21,620
January 1, 1913	36,082	19,863
January 1, 1914	39,518	19,751
January 1, 1915	41,254	20,430
January 1, 1916	41,938	22,921
January 1, 1917	42,744	22,156
January 1, 1918	43,420	23,117
January 1, 1919	42,366	24,687
January 1, 1920	44,340	30,032
January 1, 1921	46,669	31,347
January 1, 1922	48,937	30,175
January 1, 1923	49,651	29,201

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ending December 31, 1922

ASSOCIATION RESERVE FUND

Reserve Fund as at December 31, 1921		$308,672.60
Interest—Bonds	$12,743.80	
Interest—Uninvested Balance	769.68	13,513.48
Reserve Fund as at December 31, 1922		$322,186.08

DAVIS MEMORIAL FUND

Bonds (at cost) as at December 31, 1921		$ 3,708.25
Bank Balance December 31, 1921	$ 314.90	
1922 Interest on Bonds	170.00	
1922 Interest on Bank Balance	9.97	494.87
Total Fund as at December 31, 1922		$ 4,203.12

AUSTIN A. HAYDEN, Treasurer.

AUDITORS' REPORT

CHICAGO, January 9, 1923.

To the Board of Trustees,

American Medical Association, Chicago, Illinois.

Dear Sirs:

In accordance with your instructions, we have audited the accounts of the American Medical Association for the year ended December 31, 1922, and have prepared therefrom the following statements, which are appended hereto.

Exhibit "A"—Balance Sheet as at December 31, 1922.
Exhibit "B"—Income Account for the year ended December 31, 1922.
Schedule "1"—Journal Operating Expenses—Year 1922.
Schedule "2"—Association and Miscellaneous Expenses—Year 1922.

The Balance Sheet submitted properly presents, in our opinion, the financial position of the Association as at December 31, 1922, and the Income Account, the results of the operations of the Association for the year then ended; subject to the remark that no provision has been made for accrued interest, taxes and "Journal" subscriptions paid in advance, and that no valuation has been placed on subscriptions and memberships due and unpaid.

We verified the cash in bank by certificates received from the various depositories, and that on hand by actual count. The receipt of the Continental and Commercial National Bank, covering $200,000.00 of U. S. Government Securities, held by it for safekeeping, was produced to us.

We also inspected the securities for the investments of the Association Reserve Fund and found them in order; these securities are stated at cost, without regard to the market value prevailing at December 31, 1922.

The Surplus Fund of the Association has increased since December 31, 1921, $263,470.91, representing the net income for the year 1922, and the recovery of 1921 expenses in the year 1922. This increase is spread over the assets and liabilities as follows:

Increase in Fixed Assets		$201,818.19
Increase in Current Assets		16,811.53
Increase in Prepaid Expenses		49,556.70
		$268,186.42
Less:		
Increase in Accounts Payable	$ 1,660.97	
Increase in Advance Payments	3,054.54	4,715.51
		$263,470.91

During the course of the audit we made an exhaustive test of the various sources of income and verified the expenditures against properly approved vouchers on file. We have pleasure in reporting that the accounts are well and accurately maintained.

Yours truly,

MARWICK, MITCHELL & Co.

EXHIBIT "A"

BALANCE SHEET AS AT DECEMBER 31, 1922

ASSETS:		
Property and Equipment at Cost, less Depreciation:		
Real Estate and Buildings		$ 394,305.19
Machinery		51,158.25
Type and Metal		7,378.76
Furniture and Equipment		20,839.41
Chemical Laboratory		1,983.74
Library		596.28
Total Property and Equipment		$ 476,261.63
Reserve Fund Investment:		
Government and Railroad Bonds—at Cost	$287,624.05	
Funds in Bank Awaiting Investment	34,562.03	322,186.08
Current Assets:		
Cash in Bank and on Hand	$ 29,641.09	
U. S. Government Securities	200,000.00	
Notes Receivable	955.38	
Accounts Receivable:		
Advertising	$67,794.00	
Cooperative Medical Advertising Bureau	7,381.80	
Reprints	6,038.19	
Miscellaneous	10,728.25	
	$91,942.24	
Inventory of Materials, Supplies and Work in Progress	$ 90,008.68	412,547.39
Prepaid Expenses:		
Insurance Premiums	$ 2,781.38	
Session—1923 Expenses	359.12	
Directory—8th Edition	46,585.93	
Hygeia Journal	2,689.71	52,416.14
Total		$1,263,411.24
LIABILITIES:		
Accounts Payable:		
Cooperative Medical Advertising Bureau		$ 5,519.58
Miscellaneous		31,787.22
		$ 37,306.80
Advance Payments on Publications		18,093.75
Association Reserve Fund (invested as noted above):		
Amount thereof as at December 31, 1921	$308,672.60	
Interest received on Bonds owned and uninvested Cash—Year 1922	13,513.48	322,186.08
Surplus Fund:		
Amount thereof as at December 31, 1921	$622,353.70	
Add Adjustment applicable to prior period	1,782.37	
Net Income for the year ended Dec. 31, 1922	261,688.54	885,824.61
Total		$1,263,411.24

EXHIBIT "B"

INCOME ACCOUNT

FOR THE YEAR ENDED DECEMBER 31, 1922

JOURNAL:		
Gross Earnings:		
Fellowship Dues and Subscriptions		$ 463,586.76
Advertising		600,499.99
Jobbing		17,589.36
Reprints		8,652.59
Books		11,297.77
Insignia		7,058.73
Miscellaneous Sales		12,595.76
Interest		12,644.44
Gross Earnings from JOURNAL		$1,133,925.40
Operating Expenses—Schedule "1"		764,289.21
Net Earnings from JOURNAL		$ 369,636.19
Miscellaneous Income:		
Rents	$ 1,937.50	
Special Journals	11,030.28	
Cooperative Medical Advertising Bureau	497.65	
Miscellaneous	4,511.70	17,977.13
Gross Income		$ 387,613.32
Association Expenses—Schedule "2"	$ 99,850.52	
Less—Session 1922	5,510.30	
	$ 94,340.22	
Miscellaneous Expenses—Schedule "2"	31,584.56	125,924.78
Net Income		$ 261,688.54

SCHEDULE "1"

JOURNAL OPERATING EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1922

Wages and Salaries	$328,708.80
Editorial, News and Reporting	11,550.29
Paper—JOURNAL Stock	235,321.43
Paper—Miscellaneous	9,731.66
Electrotype	18,634.85
Binding	1,252.65
Ink	6,996.45
Postage—First Class	22,395.13
Postage—Second Class	38,736.44
JOURNAL Commissions	6,231.00
Collection Commissions	1,543.69
Discounts	16,865.30
Express and Cartage	3,754.05
Exchange	1,968.70
Office Supplies	1,365.03
Telephone and Telegraph	1,884.88
Office Jobbing	8,065.98
Power and Light	4,451.90
Fuel	4,513.80
Factory Supplies	9,740.01

Repairs and Renewals—Machinery			5,541.69
Bad Debts—Net			930.98
Miscellaneous Operating Expenses			14,649.55
			$754,834.26
Depreciation of Property and Equipment:			
Machinery	10%	$5,684.24	
Furniture and Equipment	10%	1,780.11	
Factory Equipment	10%	535.37	
Type	10%	311.56	
Metal	20%	1,143.67	9,454.95
			$764,289.21

SCHEDULE "2"

ASSOCIATION AND MISCELLANEOUS EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1922

Association Expenses:	
Association	$ 35,498.17
Health and Public Instruction	8,740.37
Pharmacy and Chemistry and Chemical Laboratory	21,119.00
Medical Education and Hospitals	23,951.68
Organization and Field Secretary	3,546.59
Therapeutic Research	1,139.99
Legal, Medicine and Legislation	5,634.31
Laboratory Depreciation—10%	220.41
Total Association Expenses	$ 99,850.52
Miscellaneous Expenses:	
Insurance and Taxes	$ 10,285.60
Legal and Investigation	984.74
Sundry Publications	12,436.35
Building Expense	974.93
Building Depreciation—5%	6,836.69
Library Depreciation—10%	66.25
Total Miscellaneous Expenses	$ 31,584.56

REPORT OF THE BUREAU OF LEGAL MEDICINE AND LEGISLATION

Dr. William C. Woodward presented the report of the Bureau of Legal Medicine and Legislation, which was submitted to the Board of Trustees.

To the Board of Trustees:

The creation of a bureau of legal medicine and legislation, at headquarters, was authorized by recommendations made by the Reference Committees on Legislation and Public Relations, on Hygiene and Public Health and on Reports of Officers, all adopted at the St. Louis session by the House of Delegates. The scope of the proposed bureau was stated at some length in the report of the Reference Committee first named, as follows:

The committee recognizes in the several reports of officers, and in the report of the Council on Health and Public Instruction, a consensus of opinion that a central bureau should be established for the consideration of all legislative matters pertaining to medicine or the practice of medicine, and of the public health, relieving the Council on Health and Public Instruction of these duties, which must be carried out in view of the extension of the functions of the Council in the matter of public education, and it is recommended:

1. That the trustees be memorialized to establish a bureau of this character, under whatever name, with such whole-time assistance as may be necessary, the duties of which shall pertain to legislative matters and medicolegal problems in which the whole medical profession may be interested, and which shall be to (*a*) coordinate the activities of the several constituent state associations, (*b*) ascertain and crystallize the opinions of the medical profession and the said constituent state associations, and (*c*) represent the American Medical Association.

In this connection, your committee desires to point to the desirability of the national organization reflecting the will of the great bulk of the medical profession, and that the bureau contemplated and these recommendations should act in matters of general policy, following instructions of the House of Delegates, or in emergencies following expression of opinion from the proper authorities of the several constituent state associations.

In this connection, further, it is recognized that the details of organization and operation of the contemplated bureau may not be decided upon at this time. The discussion of this problem in the report of the Council on Health and Public Instruction is referred to.

Having been appointed executive secretary, I entered upon my duties, June 9. I respectfully submit the following report of my activities for the year next ensuing. The following are the more important matters that have come before the bureau during that period:

NATIONAL PROHIBITION ACT

The following resolution, adopted by the House of Delegates, was referred to the Bureau of Legal Medicine and Legislation for action:

WHEREAS, The medical profession has been subjected to criticism and unfavorable comment because of present conditions associated with the enforcement of the Volstead law, and

WHEREAS, The results of a referendum conducted by THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, covering 54,000 physicians, indicates that 51 per cent. of physicians consider whisky "necessary" in the practice of medicine, and

WHEREAS, The dosage, method, frequency and duration of administration of this drug in any given case is a problem of scientific therapeutics and is not to be determined by legal or arbitrary dictum, and

WHEREAS, The experience of physicians, as reported in THE JOURNAL, indicates that the present method of control, limitation of quantity and frequency of administration, licensure and supply of a satisfactory product constitutes a serious interference with the practice of medicine by those physicians who are convinced of the value of alcohol in medical practice, therefore be it

Resolved, That the House of Delegates of the American Medical Association in convention assembled, representing a membership of over 89,000 physicians, appeals to the Secretary of the Treasury and to the Congress of the United States for relief from the present unsatisfactory conditions, and recommends that provisions be made for supplying bonded whisky, *for medicinal use only*, at a fixed retail price to be established by the government.

An appeal was made to the Commissioner of Internal Revenue to limit the distribution of whisky for medicinal use to whisky bottled in bond, except in those cases in which the quantity ordered by the physician did not correspond with the quantity in any such container. As a result of that appeal and of the activities of other agencies toward the same end, the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, Dec. 22, 1922, issued Treasury Decision No. 3418, which provided that after April 1, 1923, only such spirits, not including alcohol, as are bottled in bond may be withdrawn for medicinal purposes from distillery warehouses and other like establishments. This decision will gradually make bottled-in-bond liquor available in all retail pharmacies holding retail liquor permits. The advisability of restricting retail sales to bottled-in-bond packages and providing for the issue of packages in such sizes as will make such retail distribution convenient and economical is now under consideration in the office of the Prohibition Commissioner.

Wholesale liquor permits issued only to venders of "patent" and proprietary medicines. The Prohibition Commissioner, March 17, 1923, notified a firm of pharmaceutical chemists that had applied for a wholesale liquor permit that such a permit could not be issued because the firm did not sell "patent" and proprietary medicines. The matter was brought to the attention of this bureau, which thereupon took the matter up with the Prohibition Commissioner. The firm directly affected by the demand, although it had not theretofore sold "patent" and proprietary medicines and had no desire to engage in the business, put in a stock of such articles in order that the business of the establishment might not be interfered with, and thereupon a wholesale liquor permit was issued. It is to be presumed, of course, that the ruling and practice of the Prohibition Commissioner, with respect to the sale of "patent" and proprietary medicines, is general in its application. An effort is being made, therefore, to find the basis for it, so that corrective action may be instituted.

HARRISON NARCOTIC LAW

Proposed inquiry into narcotic addiction. At the St. Louis session, the House of Delegates adopted the following resolution:

Resolved, That the House of Delegates of the American Medical Association approve House resolution number 258 (House of Representatives, Washington, D. C.), providing for a select committee of fifteen to inquire into the subject of narcotic conditions in the United States, the personnel of the Congressional committee to include all physicians who are now members of the House of Representatives.

The resolution then pending in Congress, to which the resolution of the House of Delegates related, lapsed at the close of the Sixty-Seventh Congress, March 4 last, not having been acted on.

Reduction of tax under Harrison Narcotic Law. An effort has been made to procure a reduction in the tax imposed on physicians under the Harrison Narcotic Act, which can be effected only by Congress. Through the courtesy of Hon. John J. Kindred, a representative from New York and a Fellow of this Association, a bill to accomplish that end was introduced. The Sixty-Seventh Congress expired without having acted on it. A revision of the Revenue Act of 1921 will probably be undertaken by the Congress that is to convene in December next, and the desirability of reducing the narcotic

tax imposed on physicians has been brought to the attention of the prospective chairman of the House Committee on Ways and Means, which will have the revision in charge.

Model state narcotic law. There was received, Nov. 16, 1923, from the Council on Health and Public Instruction the draft of a proposed model state narcotic law, prepared by a committee of the Council in conference with various representatives of the drug trades and others. The representatives of the drug trades have referred this proposed model law to their respective principals for consideration. It has been published in the Bulletin for such action as our several constituent associations may see fit to take with respect to it. Obviously, too, views of the law enforcement officers are essential to a thorough understanding of the situation. The matter of a uniform state narcotic law is now under consideration by the National Conference of Commissioners of Uniform State Laws, through a special committee on the subject.

Narcotic and prohibition regulations to be promulgated only after notice. In prescribing and administering liquor and narcotic drugs, the physician is dominated by two laymen, the Commissioner of Internal Revenue and the Secretary of the Treasury. They promulgate regulations to which the physician must conform. To these officers, the promulgation of such regulations is merely an incident in a busy day's work, and they must be guided largely by the advice of others. It seems unfortunate, however, that in the selection of their advisers they should have come to rely so largely on officers and employees serving under them, since the views of such men are unavoidably tinged by the official atmosphere in which they live. Certainly, better results would be accomplished were the Commissioner of Internal Revenue and the Secretary of the Treasury to seek the advice also of the practicing physicians of the country, for that would tend toward a better understanding by the medical profession, and toward simplicity, certainty, and practicability in the regulations promulgated.

This entire situation was called to the attention of the Commissioner of Internal Revenue some time ago, and, in connection with a proposed revision of the prohibition regulations, he has since invited suggestions by the bureau. It is now understood that a preliminary draft of so much of the proposed revision as is of interest to physicians will be submitted to the bureau for criticism. Such, however, should be the ordinary course in reference to all regulations; it should be recognized as a matter of right, not a mere matter of courtesy, for the physician to know and to discuss such legislation affecting him as is pending in the Treasury Department, before it is finally adopted. It is hoped that this point of view will ultimately be accepted by those vested with authority to regulate the practice of physicians in the matter of prescribing liquor and narcotics, without rendering necessary efforts to make it effective through the statutory enactment.

VETERANS' BUREAU AND CHIROPRACTIC

The following resolution, adopted by the House of Delegates relative to the training of veterans as chiropractors by the Veterans' Bureau, was referred to the Bureau of Legal Medicine and Legislation for action:

WHEREAS, The St. Louis Medical Society on May 16, 1922, by Memorial and Resolutions vigorously protested against the approval by the U. S. government of the School of Chiropractic as a means of vocational training for disabled ex-service men, and

WHEREAS, It appears that more than 250 ex-service men from all parts of the country, seventy of whom represented the Ninth District, composing the states of Missouri, Iowa, Kansas and Nebraska, are now enrolled in one Chiropractic School in this District with the sanction and approval of the U. S. government, therefore, be it

Resolved, That the House of Delegates of the American Medical Association, in annual session assembled, representing over 89,000 legally qualified physicians, adequately trained in the arts and sciences (the only foundation for the recognition, control and prevention of disease), approves the sentiments expressed in the Memorial and Resolutions adopted by the St. Louis Medical Society, which have been submitted to this House, and hereby directs that the proper officers of the American Medical Association memorialize and petition the federal government, particularly those officers charged with the responsibility for the rehabilitation of disabled ex-service men, and to take such action in the interest of the welfare of all the people, and also for the protection of those who honestly desire to administer to the sick, to the end that the ex-soldiers seeking vocational training, which will fit them for ministering to the sick and aiding in the recognition, control and prevention of disease, shall, at least, meet the requirements and shall receive such adequate training as is defined in the classification of medical schools of the American Medical Association, known as Class A, or acceptable medical schools—a standard which is approved by all right-thinking people moved by a desire for public welfare.

An investigation has been made to determine the basis on which the Veterans' Bureau gave its approval of chiropractic as a calling suitable for disabled veterans, but no such basis has been found. No record was found of any inquiry made by the bureau to determine through disinterested agencies what chiropractic was or what were the prospects of its permanence as a means of livelihood in the years to come. Apparently, the Veterans' Bureau never sought the advice of the Medical Department of the Army, the Navy, or the Public Health Service, nor did the Rehabilitation Division of the Veterans' Bureau, under the authority of which chiropractice training was given, ever take the advice even of the Medical Division of the Veterans' Bureau itself concerning the matter. Evidence of anything resembling adequate supervision and control over the courses of training for which the government was paying was apparently entirely lacking. The absurdity of the situation was pointed out to the Veterans' Bureau and protest was made against the continuing of chiropractic training at public expense and the implied approval of chiropractic as a means for treating the sick and injured. As a result, July 25, 1922, the Assistant Director in Charge of the Rehabilitation Division issued a letter purporting to limit governmental training of chiropractors to trainees professing their intention to practice in states wherein the practice of chiropractic had been legalized and to trainees who were high school graduates or had an equivalent education. The limitations were indefinite and easily evaded and seemed likely to accomplish no good. Protests were, therefore, patiently continued, but without apparent effect. April 27, 1923, the Director of the Veterans' Bureau announced that no new contracts for chiropractic training would be entered into except as might be authorized by him, personally. This announcement was recalled, however, May 18, and the Veterans' Bureau again stands sponsor for the doctrine that head lice, syphilis, gonorrhea, tuberculosis and intestinal parasites can be cured by spinal adjustment. The contest begun more than a year ago will, therefore, have to be continued. The fact that the Veterans' Bureau is at present under investigation by a select committee created by the U. S. Senate for that purpose will afford an opportunity for a consideration of the situation by a new tribunal and an appeal already has been made to it.

SHEPPARD-TOWNER MATERNITY ACT

The resolution adopted by the House of Delegates relative to the Sheppard-Towner Maternity Act was referred to the Bureau of Legal Medicine and Legislation. It reads as follows:

WHEREAS, The Sheppard-Towner law is a product of political expediency and is not in the interest of the public welfare, and

WHEREAS, The Sheppard-Towner law is an imported socialistic scheme unsuited to our form of government, and

WHEREAS, The Sheppard-Towner law unjustly and inequitably taxes the people of some of the states for the benefit of the people of other states for purposes which are lawful charges only upon the people of the said other states, and

WHEREAS, The Sheppard-Towner law does not become operative in the various states until the states themselves have passed enabling legislation, therefore be it

Resolved, That the American Medical Association disapprove the Sheppard-Towner law as a type of undesirable legislation which should be discouraged.

As the Sheppard-Towner Maternity Act had already been enacted by Congress, the resolution set forth above was directed rather to state activities than to the federal situation. The Bureau has confined itself, therefore, to cooperation with the state societies that have sought aid in efforts to defeat legislation looking toward the acceptance by the state of the law named. Since the last session of the House of Delegates, several states have passed laws agreeing to submit to the terms of the act. Bills looking toward state submission to the terms of the act have been rejected in some instances. The act is now before the Supreme Court of the United States for the determination of its constitutionality.

REORGANIZATION OF FEDERAL HEALTH ACTIVITIES

A conference was called in Washington, January 17, by Brig.-Gen. C. E. Sawyer to consider a plan formulated by the Joint Committee on the Reorganization of the Administrative Departments of the Federal Government for assembling all health activities of the government except those pertaining to the Army and Navy, all educational and welfare activities, and the work of the Veterans' Bureau in a proposed executive department, to be known as the Department of Education and Welfare. There were present, in addition to General Sawyer, the Surgeon Generals of the Army, the Navy, and the Public Health Service, the president of the Conference of State and Provincial Health Authorities of North America and the members of the executive committee of that organization, officers of the American Institute of Homeopathy and of the Eastern Homeopathic Medical Association, the Executive Secretary of your Bureau of Legal Medicine and Legislation, and others. The plan as submitted to the conference proposed that the department be called "The Department of Education and Welfare." The conference agreed, however, that if the health activities of the federal government are to be included, the department should be known as the Department of Education, Health and Welfare. The plan as officially announced to the public later did not provide, however, for this change of name. Moreover, in the announced plan it was provided that each of the four bureaus of the proposed department should be under the direction of an "assistant secretary" and not under the direction of a "director general," as proposed in the plan submitted to the conference. The latter change suggests the possibility that the activities of the several bureaus of which the department is to be made up are to be under the direction of political appointees, liable to change with each presidential election, and not under the direction of permanent, technically trained heads. The entire matter will probably come before Congress at its next session and should receive now the serious consideration of the Association. It might be well for the House of Delegates to define its position with respect to the matter and to instruct its officers and councils accordingly.

FEDERAL INCOME TAX

Liability of state associations. A demand having been made on the Nebraska State Medical Association by the Collector of Internal Revenue at Omaha for returns under the federal income tax law, with a view to the collection of the tax from that association, if any should be found to be due, the matter was referred to the Bureau of Legal Medicine and Legislation. The collector's demand was based on the hypothesis that the association, because it maintained a medical defense service for its members, lost the exemption to which it was entitled as a scientific body not organized for profit. The matter was taken up with the Commissioner of Internal Revenue, who held that the association was not required to make the returns demanded.

Expenses of attending meetings of medical associations not deductible. On or about March 1, 1922, the collector of internal revenue at Marion, O., notified a physician practicing in that city that traveling expenses incident to a meeting or convention of a medical society could not be deducted in computing his federal income tax. The physician appealed to the Commissioner of Internal Revenue, but the commissioner, after having referred the matter to the solicitor, sustained the collector's ruling. The matter came to the notice of the Association only through the publication of the commissioner's decision in the Internal Revenue Bulletin of June 26, 1922. Diligent efforts were made to convince the Commissioner of Internal Revenue that the ruling was not justified by the law and the facts in the case and to induce him to rescind it, but without effect. It is possible that relief may be afforded in connection with the proposed revision of the Revenue Act of 1921, to which reference has already been made. Otherwise, the only remedy is through the courts.

Search of clinical records under federal estate tax law. Representatives of the Commissioner of Internal Revenue have recently claimed the right of search, without search warrant, of the private records of a practicing physician, in an alleged effort to determine the extent to which the estate of a person at one time treated by that physician is liable to payment of a federal estate tax. The supposed basis of the claim to the arbitrary right of search is that the deceased patient might have disposed of property some time or other in anticipation of death, for the purpose of relieving his estate of the payment of taxes. The matter has been taken up with the Commissioner of Internal Revenue.

DEFENSE AND INDEMNITY IN MALPRACTICE SUITS

At the St. Louis Session, in May last, the Reference Committee on Reports of Officers said: "We approve legal defense indemnity in malpractice suits, and the Board of Trustees is requested to report a concrete plan at the next annual session." This report was adopted by the House of Delegates. The duty of investigating the situation with a view to the formulation of the plan requested was assigned to the Bureau of Legal Medicine and Legislation.

Letters have been sent to each constituent association to learn the nature and extent of the medical defense service furnished by it. From six, no replies have been received. Of the remainder, thirty-two, representing a membership of 75,324, provide legal defense, and of these, one, representing a membership of 3,335, for a specified annual premium indemnifies such of its members as subscribe for the service against loss through the award of damages. Fifteen constituent associations, representing a membership of 8,355, provide neither legal defense nor indemnity.

Twenty-one constituent associations furnished information as to the financing of their legal defense activities. In one state, where such service has been maintained for fourteen years, the per capita allotment to the medical defense fund has never exceeded 75 cents, and during 1918-1919 was reduced to 25 cents; and yet the fund contains a substantial balance at the present time. In one other state, 75 cents is set aside for the medical defense fund, out of the dues paid by each member. Four states set aside out of the dues, or collect, $1 per member; four set aside or collect $2; one sets aside $3; one collects $5, and one collects $7. In one state the fund is made up by voluntary contributions of $10 each. In the other states from which replies were received, the expenses of medical defense are paid as needed out of the general funds of the association, apparently no special allotment for that purpose being made. In the one state in which indemnity is provided, the cost per subscribing member per annum is $30, and in one year an assessment of $10 per member was levied in addition.

Membership	Court Action: Trial Courts	Court Action: Appellate Courts	Court Action: Total	Total Cost	Cost per Member
143	3	0	3	$404.63	$2.83
1,112	3	0	3	201.00	.18
2,436	12	2	14	740.00	.30
1,577	3	0	3	1,310.96	.83
1,109	..	..	?	360.00	.32
4,059	60 queries yearly			1,408.20	.35
2,973	43	2	45	4,242.26	1.43
1,827	..	..	?	1,412.09	.77
417	5	6	11	1,220.00	2.92
578	11	1	12	683.19	1.18
7,309	..	..	?	310.00	.04
3,628	21	11	32	1,843.68	.51
1,121	19	1	20	4,626.76	4.13
1,921	11	1	12	3,560.76	1.85

The returns are not sufficiently complete to permit a statement of cost to be made on the basis of the number of members actually eligible for medical defense service. Computations have been made, therefore, on the basis of the total membership of the associations reporting the cost of operations. Such operations include activities outside of cases pending in trial and appellate courts, and in stating costs, the number of court cases so pending have been given merely as indexes to the volume of work done. In the absence of complete information, it has been deemed best to omit from the table the names of the states to which the figures relate; their publication would seem to come properly in a table giving data for all states, and the publication of such a table is not yet feasible. It will be noted that the per capita cost during 1922, the year of these figures, varied from $.04 to $4.13.

In reply to the direct question, "In what ways, if any, can the American Medical Association best serve its constituent

associations, component societies, and individual members in the matter of protection and defense against claims based on alleged malpractice?" various answers were received, of which the following are fair illustrations:

"Make it unpopular for one physician to testify against another. The cause of most of our cases is due to unguarded comment of one physician regarding the work of another."

"By preaching in and out of season the value to physicians of loyalty to each other. Over 50 per cent. of suits that attain court life are due to jealousies and factional fights among the profession. Probably 45 per cent. of the remainder of the suits are due to loose talking and criticism of treatment given patients of which the physician has no knowledge whatever aside from hearsay."

"As malpractice defense is so much of a local matter, it seems as if the state society were a better agent to care for this than the national organization."

"By educating the doctors to stand together. Possibly by providing indemnity."

"Some states undertake successfully auto insurance for the profession and carry on the business very satisfactorily and at a much less cost than insurance companies. There seems no good reason why the American Medical Association could not carry on cheaply and successfully insurance to protect the profession generally, if they comply with the requirements."

"Do not believe it would be wise or practical [for the American Medical Association to enter the field] as conditions are different in nearly every state."

"Only by making defense a national matter instead of a state matter."

"By furnishing briefs."

"Try to educate its members not to instigate suits by careless remarks to a patient about a previous physician. I cannot speak for other states, but . . . is large enough and has sufficient members to take care of itself."

There have been correspondence and conferences with some of the more important companies engaged in medical defense insurance, but without developing any matters or principles other than appear from the foregoing statements.

So far as any conclusion may be drawn from the information now at hand, the following is submitted:

1. There is no evidence yet available to show that the American Medical Association could wisely undertake the organization of a medical defense service for its Fellows and members, or that services of this character cannot be best maintained by the constituent associations.

2. There is no evidence yet to show that the American Medical Association could wisely undertake to organize an association or corporation, mutual or otherwise, to indemnify Fellows and members of the Association against loss through judgments rendered in malpractice suits.

3. It is possible that the American Medical Association might serve its constituent associations by assembling records, not merely decisions, of malpractice cases, including records of proceedings in both inferior courts and appellate courts, and analyzing them from both medical and legal standpoints; and by the record of such analyses make available to constituent associations the procedure adopted successfully, or unsuccessfully, in cases that have come to trial.

The foregoing suggestions are submitted for consideration, in the hope that by discussing them something of value may be developed to guide the Bureau of Legal Medicine and Legislation in its further duties and activities in this field. Its inquiry into the relations of the national association to the state associations will be continued unless instructions be issued to discontinue it.

MEDICAL PRACTICE ACTS

The inadequacy of many of our medical practice acts to protect the public against ignorance and fraud has been shown by the efforts that have been made in various state legislatures to procure new or supplementary acts. It is shown, too, by the very large number of chiropractors and others who ply their callings without hindrance from prosecuting officers and courts, in jurisdictions that are protected by what are supposed to be effective medical practice acts. Despite vigorous campaigns for better laws, in only four states, Texas, Oklahoma, Missouri and Idaho, were substantial gains made.

Chiropractors, osteopaths, etc. Chiropractors have been more vigorous during the present year than ever before, in their efforts to gain legal foothold in new fields of activity. Their efforts have always been directed, too, toward establishing themselves as independent of all of the healing arts. Teaching in their schools, as they do, methods of getting business, including the art of self-exploitation, they seem to have little difficulty in raising large sums of money from their following, who get out of their contributions in the way of advertising much more than they put in. During the past year, too, they have adroitly gotten much free advertising out of the press of the country, and have won much ill-bestowed sympathy, through deliberate violations of the law and insistence on going to jail to pay the penalty, rather than pay even a small fine. This method of self and group exploitation is seemingly an integral part of their campaign for legislation, and, in order to mitigate any supposed hardship that might otherwise fall on chiropractors who go to jail, an organization is maintained which undertakes to pay the office rent of chiropractors while they are serving jail sentences in communities in which legislation is being sought, and to compensate them at the rate of $100 per month while they are serving their terms. To see legislators seriously considering the demands of such men for the legal recognition of a cult that teaches that head lice, syphilis, gonorrhea, tuberculosis, typhoid fever, appendicitis and other diseases cannot exist without a displacement of one or more vertebrae and can be cured by replacement, makes one wonder whether after all those psychologists who gaged the mental age of the American people at 14 years, did not place the figure much too high.

In California, where liberal provisions had already been made by law for licensing chiropractors, osteopaths, and all other healers under liberal conditions, both chiropractors and osteopaths carried their respective issues before the people, under the initiative, and had them voted on at the state election. Public attention was attracted to the movement by the procuring of jail sentences for law-breaking chiropractors, and by all other available means of publicity. In their campaigns, organized chiropractors spent $64,211, and organized osteopaths $40,481. How much was spent by individual and by unorganized groups is not known. The result was, however, the adoption of both measures. California has now a board of chiropractic examiners and a board of osteopathic examiners, independent of rational contacts or supervision. Laws creating independent boards of chiropractic examiners were passed by the legislatures of Nevada and Tennessee. Similar laws were defeated in Alabama, Ohio, South Carolina and Wyoming.

Basic medical sciences bills. In an effort to require as nearly as may be possible adequate basic training of all who practice the healing art in any of its branches, so-called basic medical sciences bills were submitted to the legislatures of Maine, Minnesota and Wisconsin. These bills have sought to create in each state a nonmedical board to examine all applicants in the so-called basic medical sciences, namely, anatomy, pathology and physiology. Applicants passing the examination were to be certified by the board for further examination by the medical licensing boards and the chiropractic, osteopathic and other such boards, where they exist. In this way, none of the boards last named could lawfully examine a candidate who had not had an adequate basic medical training, as certified to by the state board of examiners in the basic sciences. These bills uniformly met strenuous opposition from the groups that frankly recognized that their members were without knowledge of the basic medical sciences, and by reason of that fact, they were uniformly defeated.

ANIMAL EXPERIMENTATION

Organized forces opposing the use of animals for research have been active during the year. In Congress, a bill was introduced to prevent the use of living animals for experimentation in connection with the Army and the Navy. In California and in Colorado, under the initiative, proposed laws forbidding animal experimentation came before the people to be voted on, November 7. In Louisiana and New York, bills were introduced to prohibit the use of dogs for research. In the Ohio legislature and in the Denver city council, measures were introduced to permit to be delivered to medical schools, for educational and research purposes, vagabond dogs duly impounded. None of these measures were enacted.

The situations which arose under the initative in Califoria and in Colorado, and a similar situation that arose under the referendum in the state of Washington with respect to the medical inspection of school children, emphasize the necessity for effective state-wide organization on the part of our constituent associations, particularly in those jurisdictions in which the initiative and referendum may be called into operation. The problem of enlightening legislatures directly and through their constituents as to the fallacies of proposed legislation is much less difficult than the problem of enlightening the people individually and as a whole, so as to induce them to vote wisely. In any event, however, whether the effort is to secure wise legislation through the legislature or by direct vote of the people, events have abundantly proved the necessity for effective organization throughout each state.

COOPERATION

Field work. The Executive Secretary has endeavored to meet as far as possible the wishes of constituent associations desiring his presence within their several jurisdictions. Two visits have been made to Colorado, three to New York State, and one to Connecticut and to Ohio. Visits to Washington have been made at various times for conferences with the Commissioner of Internal Revenue, Brigadier-General Sawyer and others, on the business of the Association. He attended the annual meeting of the American Public Health Association in Cleveland, the Ohio State Medical Society in Dayton, Ohio, the Connecticut Conference of Social Agencies in Hartford, Conn., and the National Antinarcotic Conference in Washington, D. C.

Office activities. A large volume of correspondence has been conducted with our several constituent associations and their members, with respect to matters of legislation, medical defense, income tax law, the national prohibition law, the Harrison narcotic law and other matters. An effort was made during the legislative sessions of the past year to keep as closely in touch as possible with state activities, but with only fair success. It is hoped that as time goes on, and as our constituent associations come to realize that the Bureau is the best agency through which each association can help all others, and through which it can obtain help from all others, the Bureau will be able through their aid better to collate and analyze for the service of each of our several constituent associations the experiences of all.

Respectfully submitted,

WILLIAM C. WOODWARD,
Executive Secretary.

REPORT OF THE JUDICIAL COUNCIL

Dr. M. L. Harris, Illinois, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Report of Officers:

To the Members of the House of Delegates of the American Medical Association:

A large number of communications have been addressed to the Judicial Council during the past year, some of which more properly should have gone to local councils, as they dealt with local ethical matters the principles governing which are already set forth in the principles of medical ethics. These communications have dealt principally with questions of ethics which should be determined by the boards of censors of component county medical societies or, on appeal, by the boards of councilors of constituent state medical associations. Of course, appeal from boards of councilors of constituent state medical associations can always be taken to the Judicial Council of the American Medical Association. The Judicial Council is not disposed to refuse to accept responsibilities that may be imposed upon it with respect to questions which can best be adjudicated by this Council, but feels that the boards of censors of component county medical societies and boards of councilors of constituent state medical associations first should attempt to adjust local matters involving their own members. Adequate machinery has been provided for the fair adjudication and settlement of misunderstandings and disputes between individual physicians, or between physicians and medical societies, and adequate provision has been made for orderly appeal from decisions which may not be acceptable to parties concerned. The Judicial Council stands ready at all times to give advice or assistance in the settlement of questions which may be presented to boards of censors or boards of councilors; but while it is desirous of being helpful to officers of component and constituent societies, it is also desirous of avoiding even the appearance of interfering with the operations of established agencies of the county and state medical societies.

A great many communications have been received with advertisements used by individual physicians, group clinics, pay clinics and hospitals owned by individuals or groups. Practically all of the advertising that has been thus submitted, some of which has been sent anonymously, has been found objectionable. This council wishes to state, however, that the members of state associations who use objectionable advertising are responsible to and under the control of the censorial agencies of the societies of which they are members. The Secretary has been directed, therefore, to refer communications of this nature to the secretary of the constituent medical association concerned, with the suggestion that they should be brought to the attention of the board of councilors, or, through them, to the attention of the board of censors of the component society concerned.

An interesting communication which was presented to the Council during the year was one inquiring as to the propriety of the use of radio broadcasting stations by individual physicians for the dissemination of medical information. It is the opinion of the Judicial Council that radio broadcasting is a form of publicity and its use is subject to the same rules as those which apply to newspaper advertising and, therefore, is to be governed by the ethical principles of the profession. The decision of any special question concerning radio broadcasting in individual cases falls within the jurisdiction of component medical organizations.

In a communication received from a group clinic, inquiry is made as to the ethics involved in the admission of an osteopath into the clinic group. It seems that an osteopath had actually been admitted into this particular group and that a complaint had been registered with the county medical society. The Judicial Council is of the opinion that it is not in keeping with the Principles of Medical Ethics of the American Medical Association for members to associate themselves with osteopaths; that the by-laws of component societies not in conflict with by-laws of their state associations or of the American Medical Association cannot be ignored; that under the Principles of Medical Ethics, physicians cannot act with or support those who base their practice on an exclusive dogma or sectarian system; and that physicians associated with an osteopath in a clinic or otherwise cannot be debarred from membership in the American Medical Association in the absence of action by their component society.

From another source, inquiry was made of the right of a county medical society to withhold membership or to withdraw the privileges of membership from a registered physician who graduated from an osteopathic school. This inquiry came from Texas, in which state a diploma from a high grade osteopathic school entitles the holder thereof to take the examination by the state board of medical examiners for a license to practice medicine. This examination must be in all respects the same as that to which a graduate of a medical school is required to submit, and the graduate of the osteopathic school who passes the examination successfully is granted the same kind of license to practice medicine as that granted to a graduate of a reputable medical school. The Judicial Council is of the opinion that a legally registered physician who has complied with the requirements of the law in securing a license by the state to practice medicine and who, having secured such license, has not practiced or claimed to practice sectarian medicine, but has conformed to the requirements of the Principles of Medical Ethics of the American Medical Association, and who has been accepted into membership in a county medical society, cannot be expelled therefrom without cause.

It seems to be true that a concerted movement has been organized covering most of the states, to secure entrance to

"regular" hospitals for osteopaths and chiropractors, and possibly for followers of other sects and their patients. In response to several inquiries, received almost simultaneously, the Judicial Council formulated and submitted the following opinion:

The board of control of any hospital (not maintained by general taxation) has the legal right for reasons sufficient to the board to refuse the privileges of the hospital at any time to any practitioner regardless of his so-called school of practice. The fact that the person applying for permission to bring to and treat in the hospital a particular patient is licensed by the state to practice does not alter the situation. The medical staff of a hospital likewise has the moral right to refuse to accept as an associate any person whom the staff may consider objectionable for reasons sufficient to the staff, and should insist on maintaining that right.

Section 1 of Chapter XI of the By-Laws of the American Medical Association provides that "a member of a constituent association who removes to, and engages in the practice of medicine at, a location in another state in which there is a constituent association, shall forfeit his membership in this Association, and the Secretary shall remove his name from the roster of members of the American Medical Association unless within one year after such change of residence he becomes a member of the constituent association in the state to which he has moved." Section 3 of Chapter XI of the By-Laws provides that "a Fellow who changes the location at which he practices medicine, from the state through whose constituent association he holds membership in the American Medical Association to another state in which there is a constituent association, is eligible to membership in the component society of his new location. . . . He shall forfeit his Fellowship in the American Medical Association one year after such change of location, unless he becomes a member of the constituent association of the state to which he has moved."

A number of the Fellows of the American Medical Association have moved to states other than those in which their membership is held. Some of these are engaged in the private practice of medicine; some are engaged in teaching, and others are engaged in other special lines of professional work. In some instances, these Fellows are not eligible to membership in the county societies and state associations of the states in which they have taken up residence, for the reason that they are not legally registered as licensed practitioners in those states. In some instances, these Fellows would be required to submit to an examination by the boards of examiners in order to secure license. For that reason and for reasons sentimental and otherwise, some of these Fellows are greatly averse to relinquishing their membership in the associations of the states from which they have moved.

In the case of a teacher in the medical school of a state university, the claim has been made that he is not engaged in the practice of medicine, since he attends no patients except those seen in the university hospital in the course of his work as a teacher.

The claim is made by some Fellows of the Association who have moved to other states than those in which they hold membership that because they are engaged in certain special lines of work, as for instance radiology, they are not engaged in the practice of medicine and that there is, therefore, no occasion for securing license in the states in which they have moved. Without license, they are ineligible to membership in the medical societies of such states. They, therefore, wish to continue their membership in the societies of the states from which they have moved.

The Judicial Council is of the opinion that the provisions of the Constitution and By-Laws of the American Medical Association apply equally to those physicians who practice in institutions and to those in private practice. It is urged, therefore, that Fellows who have removed from one state to another shall seek to secure membership in the component county medical societies at their new locations within one year of the time of removal, in order that they may be continued as Fellows of the American Medical Association, and in order that they may give their active support to medical organization in the communities in which they have taken up residence.

The House of Delegates, at St. Louis in 1922, provided for the appointment by the President of a special committee for revision of the Principles of Medical Ethics. The President appointed the Judicial Council to serve as that committee. After a careful study of the Principles of Medical Ethics, the following amendments are recommended:

The heading to Section 2, Article I, Chapter II, page 6, should read, "Medical Societies" rather than as it now reads, "Duty of Medical Societies."

The heading of Section 1, Article III, Chapter II, page 11, should be changed by the substitution of the word, "Encouraged," for the word, "Required," so that this heading should read, "Consultations Should Be Encouraged."

The word, "may," in the third line of Section 5, Article III, Chapter II, page 13, should have substituted for it the word, "should," so as to make the first three lines of this Section read, "After the physicians called in consultation have completed their investigations of the case, they should meet by themselves to," etc.

The following sentence should be added to Section 1, Article IV, Chapter II, page 15, at the end of the section: "In embarrassing situations or wherever there may seem to be a possibility of misunderstanding with a colleague, the physician should always seek a personal interview with his fellow."

The fourth line of Section 1, Article VI, Chapter II, page 18, should be changed by the elimination of the words, "by societies," and transposition of the word "endowed," so that this line shall read, "physician. But endowed institutions," and

Section 1, Article VI, Chapter II, page 19, should be further changed by the elimination of the words, "should be accorded no such privileges," which now appear at the end of that section, and the substitution therefor of the words, "have no claim upon physicians for uncompensated services." These changes will make Section 1, Article VI, Chapter II, read as follows: "Section 1.—The poverty of a patient and the mutual professional obligation of physicians should command the gratuitous services of a physician. But endowed institutions and organizations for mutual benefit, or for accident, sickness and life insurance, or for analogous purposes, have no claim upon physicians for uncompensated services."

The heading of Section 2, Chapter III, page 20, should be changed by the substitution of the words, "Public Health," for the present heading of this section.

No other changes are thought to be necessary.

M. L. Harris, Chairman.
W. S. Thayer.
I. C. Chase.
J. N. Hall.
J. H. J. Upham.
Olin West, Secretary.

REPORT OF THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

Dr. John M. Dodson, Chicago, secretary, presented the report of the Council on Health and Public Instruction, which was referred to the Reference Committee on Reports of Officers:

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The Council on Health and Public Instruction has held three meetings during the year: at St. Louis, May 19-22, 1922; at Chicago, Nov. 16-17, 1922, and at Chicago, March 6-7, 1923.

At the St. Louis session it was voted to recommend:

That legislative and legal matters heretofore referred to the Council be transferred to the Bureau of Legal Medicine and Legislation to be created by the Board of Trustees with a full-time secretary.

That a sum of $200 be appropriated for the National Health Council; that the Chairman of the Council be the delegate of the Council on Health and Public Instruction to this organization.

That the pamphlets of the Council on the Protection of Scientific Research, about twenty-eight in number, be condensed into two or three pamphlets under the supervision of Dr. Cannon of the Council.

That the pamphlets in the series on the Conservation of Vision, on Cancer, and on other subjects be revised and condensed into a smaller number by suitable committees, to be appointed for that purpose.

That the Secretary of the Council be authorized to use a sum not to exceed $3,000, if available or procurable, for the purpose of providing such educational material (addresses, syllabi, charts and other illustrated matter) as the present immediate demands of the medical profession may make useful for the instruction of the public.

The suggestion that food charts be prepared by the Council was not approved.

It was also voted not to publish a manuscript on "The Venereal Peril" which had been prepared.

The Chairman and the Acting Secretary of the Council were directed to advise with the Board of Trustees in selecting a permanent secretary.

It was voted that the Council invite the Medical Women's National Association to select a committee to coordinate the activities of their association with the work of this council.

It was voted that it would be in the interests of health and honesty in medical practice if existing statutes relative to obscenity and crime were amended so as not to hamper the licensed physician in advising his patients in the matter of prevention of conception with the proviso that he is given no right to advertise or exploit such means in any way whatsoever.

It was voted to recommend that the Council be authorized by the House of Delegates to prepare suitable forms for the examination of persons supposedly in health, and that county medical societies be encouraged to make the announcement that their members are prepared and ready to conduct such examinations; only the indigent to be examined free of charge, all others to pay for such examinations.

The secretary reported that a total of 141,500 pamphlets has been sent out in response to requests during the previous year.

Meeting of the Council, November 16-17

At its meeting, Nov. 16-17, 1922, in Chicago, Dr. Vaughan was elected Chairman for the ensuing year.

It was voted to send a complete file of the publication of the Council to the National Health Council Library.

That Dr. Daniel Morton, who had prepared a Catechism of Public Health, be requested to submit a full text of it for further examination.

That the Bureau of Legal Medicine and Legislation be requested to use its facilities to secure the passage of the Model Vital Statistics Law in the three states not having such legislation. The bureau was requested to take cognizance of the inadequacy of enforcement of the vital statistics law in many states.

In reference to the new journal for the laity, the following action was taken by the Board of Trustees in conference with the Council:

(*a*) The Name of the new journal will be: "Hygeia, A Journal of Individual and Community Health; Founded and Published by the American Medical Association."

(*b*) The journal shall appear as a monthly publication.

(*c*) Each issue shall consist of about sixty-four pages of double column reading matter set in double leaded ten point.

(*d*) The price of the journal will be three dollars a year or twenty-five cents per copy.

The Chairman of the Council made the following recommendations which were approved by the Board of Trustees:

(*a*) The editorial control of the journal shall be vested in the Council on Health and Public Instruction with such assistance as this Council may require.

(*b*) The executive editorial committee shall consist of Victor C. Vaughan, Arthur J. Cramp and Morris Fishbein.

(*c*) The Council on Health and Public Instruction will not prepare a budget for the expense of running the journal. All such expense shall be submitted to the General Manager, and it is expected that the Board of Trustees will pay all bills approved by the Council on Health and Public Instruction and endorsed for payment by the General Manager.

In reference to narcotic drugs, the following action was taken:

The report of the conference with representatives of the professional organizations of the dentists, pharmacists, and of veterinary surgeons and of the drug manufacturing and trade organizations was accepted, and it was ordered that the draft of the proposed model state Narcotic Drug Law be transmitted to the Legal Bureau of the American Medical Association, with the recommendation that it be not altered without notifying members of the conference group of the proposed changes and reasons therefor.

It was voted that the preparation of literature dealing with smallpox and vaccination shall be in the hands of the Council on Health and Public Instruction, and its distribution shall be supervised by the Bureau of Legal Medicine and Legislation.

The Chairman was authorized to appoint a committee to confer with Dr. Meanes of the Women's Foundation for Health, as to the revision of the booklets in the Positive Health Series of the Foundation.

It was voted that $500 be appropriated for the financing of the educational propaganda of the Council through the women's organizations where these expenses are not properly a charge on the Women's Foundation for Health or one of the constituent organizations.

It was ordered that an item be included in the next budget to defray the expense of advertising in the lay magazines the educational publications of the Council, and to cover the cost of revision of these pamphlets pending such time as revised texts may be published in Hygeia.

The Chairman, as editor of Hygeia, was authorized to appoint an editorial board to advise with him and the Council on the policy and material for publication in Hygeia.

The Conference of State Secretaries was requested to suggest members of a committee to confer with the Council on the preparation of forms for periodic medical examinations of persons supposedly healthy.

Statement of expenditures of the Council was presented by Dr. West, Acting Secretary, showing a total expense for the year 1922, up to November 1, of $12,933.78, leaving a balance of $8,151.22. Detailed report is shown on a subsequent page. He also made report on the publications of the Council.

Council Meeting, March 16-17, 1923

The Chairman of the Council stated that the first number of Hygeia was ready and that a subscription list of 12,800 had been secured.

Dr. John M. Dodson was appointed as Acting Secretary of the Council and Editor-in-Chief of Hygeia.

A report of the subcommittee cooperating with the National Education Association for the study of Health Problems in Education was presented and placed on file. The report showed very gratifying progress in this important movement, and that a detailed program of training and education for health in the public schools, from the kindergarten through the normal school, is now in process of preparation by the Joint Committee and a technical committee of expert educators.

It was voted that Dr. Cannon be appointed a committee of one to prepare a Source Book on Protection of Medical Research and also to revise and condense the pamphlets on this subject for reprinting and lay distribution.

A blank form for periodic medical examination of presumably healthy persons was presented by Dr. Emerson, discussed by members of the Committee of the Conference of State Secretaries. It was ordered that Dr. Emerson, with Drs. Sleyster, Throckmorton, Hines and West, of that committee, be requested to revise the form and accompanying text in accordance with suggestions made in the discussion; to prepare a final text as soon as possible with authorization to publish it in the American Medical Association Bulletin as soon as ready.

The Council recommended an appropriation of $250 for the National Health Council for the current year.

It was voted that the Board of Trustees be requested to appropriate the sum of $25,000 for the work of the Council for the year 1923.

It was voted to hold a meeting of the Council each year at the time and place of the session of the American Medical Association, this year in San Francisco, the place and exact time to be arranged by the Chairman.

The reports of the Subcommittee on Health Problems in Education are appended. The reports of the Subcommittee on Narcotic Drugs, and of the Committee on "Periodic Examinations of Healthy Persons" were printed in the A. M. A. BULLETIN for April, 1923, copies of which will be distributed to the House of Delegates.

There is a continuous and steady demand for most of the pamphlets published by the Council. The report to date is as follows:

Series	No. of Vols. in Series	Calls for in 1922	No. Now On Hand
Infant Welfare	7	235,520	81,176
Sex Education	5	11,300	11,325
Public Health	8	60,290	4,200
Health Problems in Education	4	3,200	15,470
Cancer	10	3,279	8,975
Conservation of Vision	20	4,432	14,950
Protection of Research	28	2,300	23,310
Miscellaneous	9	200	16,100
Totals	91	320,521	175,506

REPORT OF THE JOINT COMMITTEE ON HEALTH PROBLEMS IN EDUCATION

To the Council on Health and Public Instruction of the American Medical Association:

The second annual conference of the committees of the several state medical societies on health problems in education was held in St. Louis, May 23, 1922. Addresses were given by Drs. Welch of Alabama, Rankin of North Carolina, Leathers of Mississippi, McCormack of Kentucky, Hager of Maryland and Leiser of Washington. It is recommended that no further conferences of this sort be held until the members of the state committees have expressed a desire for such.

At the meeting of the National Education Association in Boston last July, $1,000 was appropriated for the work of the Joint Committee, and it was recommended that a similar amount be appropriated for the use of the committee. The National Education Association also appropriated $1,500 for the special work of the Joint Committee in drafting a comprehensive program of health education. It is *not* expected that this special appropriation will be duplicated by the American Medical Association. Dr. William B. Owen, member of the Joint Committee, was elected president of the National Education Association for the current year.

Two important reports were issued by the Joint Committee during the summer of 1922, namely, "Health Improvement in Rural Schools" and "Health Service in City Schools." An edition of 5,000 copies of each of these reports has been printed for distribution in response to demand. The report of the chairman of the Joint Committee, Dr. Wood, under date of June 19, 1922, presents an admirable summary of the activities of the committee for the last decade and of its plans for future work.

Your Committee on Health Problems in Education would recommend that diligent effort be made during the ensuing year to arouse greater activity on the part of the committees of the several state medical societies approved by the House of Delegates at its meeting in New Orleans. This can be most effectively accomplished by personal contact, and we would recommend that the Secretary of the Council or some member thereof or some member of your Committee on Health Problems in Education attend as many as possible of the meetings of the state medical societies during the coming year.

A meeting of the Joint Committee was held in Cleveland, March 1, 1923, at which were present eight members of the National Education Association group and two members of the American Medical Association contingent. At this meeting a detailed report was made by Dr. Wood of the progress of the technical committee in preparing a program of health education. Mrs. Ira Couch Wood presented for the special Committee on Ventilation and Heating a report somewhat revised from that of last year. In brief, the essence of this report is that ventilation by open windows and ventilator shafts for outgoing air is more effective than any of the mechanical systems. This report is to be submitted to each of the members of the Joint Committee. When finally revised as approved, it was recommended that an edition of 5,000 copies be printed.

It was voted to print 5,000 copies of the report on "Daylight in the Schoolroom," prepared by a special committee, of which Dr Edward Jackson was the chairman.

Attention is called to the fact that again this year the American Medical Association and the National Education Association will hold their annual meetings in close proximity as to time and place. This committee would recommend that the House of Delegates appoint a committee of the American Medical Association to attend the meeting of the National Education Association in Oakland to convey greetings from the American Medical Association and express the great appreciation of the medical profession for the prompt and satisfactory response of that organization to the request made by the American Medical Association, at its session in Los Angeles in 1911, that more attention be paid to health problems in education.

Approved.

VICTOR C. VAUGHAN, Chairman.
W. S. RANKIN.
HAVEN EMERSON.
MILTON BOARD.
W. B. CANNON.
JOHN M. DODSON, Secretary.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Dr. A. D. Bevan, Illinois, Chairman, presented the report of the Council on Medical Education and Hospitals, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

The present report of the Council makes reference to (1) the progress of the year in medical education; (2) the problems in medical practice; (3) hospital improvement; (4) nurse education and service, and (5) graduate and postgraduate medical schools.

1. PROGRESS OF THE YEAR IN MEDICAL EDUCATION

Since our report a year ago, the number of medical schools in the United States has decreased from eighty-three to eighty-one through the closing by the state universities of Michigan and Ohio of their separate homeopathic medical schools. It is interesting to note that the number of medical schools at the present time is just half the number that existed in 1906, when there were 162 colleges—the largest number—which was more than half of the world's supply and many more than were really needed in this country.

MEDICAL COLLEGES

A new medical school is being established on an elaborate plan by the University of Rochester, N. Y., and is expected to begin active teaching in 1924. Two state university medical schools, those of Wisconsin and Missouri, which now offer only two years of the medical course, are enlarging their plants in order to give the full four-year course. During the last fifteen years, in addition to many new, enlarged or remodeled buildings in medical schools, greatly enlarged medical plants have been established in eleven universities;[1] similar large plants are now under construction in five other universities;[2] and plans for large plants have been prepared for still six others,[3] and construction of the buildings will begin in the early future.

1. These universities are Cincinnati, Georgia, Emory, Johns Hopkins, Harvard, Indiana, Minnesota, Nebraska, St. Louis, Washington and Yale.
2. Universities of Colorado, Illinois, Oregon, Rochester, N. Y., and Wisconsin.
3. Universities of Chicago, Iowa, Northwestern, Ohio, Vanderbilt and Western Reserve.

MEDICAL STUDENTS

In 1919, the total enrolment in all medical schools was 13,052—the lowest number recorded since 1890. Of this number, however, approximately 90 per cent. possessed higher educational qualifications [4] as compared with only 6.2 per cent. in 1904. Since 1919, the total enrolment (Table 1) in all medical schools has increased at the rate of about 1,000 students each year, the total in 1922 being 16,140, and an estimate based on reports from all but a few of the schools shows that the present enrolment is approximately 17,700, the largest enrolment since 1912. There is now an average of 218 students in each of the eighty-one medical colleges, as compared with 176 students in each of the 160 medical colleges existing in 1904.

TABLE 1.—*Enrolments of Medical Students for Eight Years, Showing Variation in Numbers by Classes*

College Session	Freshmen	Sophomores	Juniors	Seniors	Intern Year	Totals
1914-15	3,373	3,919	3,675	3,864	...	14,891
1915-16	3,582	3,094	3,559	3,727	...	14,022
1916-17	4,107	3,117	2,866	3,674	...	13,764
1917-18	4,283	3,521	2,893	2,933	...	13,630
1918-19	3,104	3,587	3,272	2,967	122	13,052
1919-20	4,234	2,837	3,464	3,263	290	14,088
1920-21	4,825	3,588	2,637	3,416	406	14,872
1921-22	5,412	4,219	3,355	2,649	505	16,140
1922-23*	5,224	4,626	3,972	3,278	600	17,700

* Estimate.
The light line drawn through the table underscores the figures which show the lowest ebb in the enrolment in the respective classes following the adoption of higher entrance requirements. A temporary diminution in the numbers, shown by the dotted line, began with the freshmen in 1918-19 which was due to the enlistments in the World War. While the figures for 1922-23 are estimated, they are fairly accurate, since reports from all but a few colleges were obtained.

MEDICAL GRADUATES

The class of 2,529 students who graduated in 1922 was small because it was the "war class," made up of the few students who matriculated in 1918. The larger numbers enrolled in the three following years, as may be noted in Table 1, indicate that there will be approximately 3,000 graduates this year, about 3,800 in 1924, and about 4,500 in 1925. The last figure mentioned will bring the annual output of physicians to about what it was in 1907, when there were 4,980 graduates from the 159 medical schools. In 1907 there were only thirty-one graduates on the average from each college, while in 1925, according to our estimate, the eighty-one colleges will graduate approximately fifty-seven students each. At present, also, more than 90 per cent. of all graduates possess higher qualifications in both preliminary and professional education, as compared with less than 10 per cent. of those who graduated in 1907.

AGES OF GRADUATES

As shown in Table 2, the average age of the students graduating in the class of 1922 was 26.8 years. In 1916 [5] the average age was 26.5. It is evident, therefore, that the increase in the average age of students on graduation since the adoption of higher entrance requirements has been only a fraction (three tenths) of a year.

MEDICAL CURRICULUM

During the last few years, in the conferences on medical education, the need of a reorganization of the medical curriculum has been emphasized. During the campaign for the greatly needed standardization and development of medical education, as the need of instruction in certain subjects was recognized they were added, so the curriculum has grown to be an accumulation of many courses with a certain number of hours allotted to each. The result has been the development of a more or less rigid curriculum in which the various laboratory subjects are taught in so-called "water-tight compartments." There is now a general movement in teaching to secure a better correlation between the laboratory and clinical subjects. One marked improvement has already been made. Instead of allotting in a detailed manner a specified number of hours to each minute subject in the curriculum, each laboratory and clinical department is allotted a total number of hours, which may be used by that department in the manner that will produce the best results. Thus the head of the department is free, if he thinks wise, to establish courses in cooperation with other departments, whereby a student may see the application in the clinic of the ideas he has just obtained in the laboratory.

IMPROVED TEACHING PLANTS

Another step toward bringing about a better correlation between laboratory and clinical subjects is indicated in the plans for new teaching plants which are already in process of construction or which have been adopted by several of our prominent university medical schools. The plans for the new hospitals of the Universities of Chicago, Colorado, Rochester, Vanderbilt, and others place the medical school and hospital in the same building where the laboratories are in intimate contact with the hospital wards. Such an arrangement will bring the medical student throughout his medical course in constant contact, not only with the teachers of both laboratory and clinical departments, but also with interns, house physicians, and the members of the attending staff, all in the same building where sick people are being constantly cared for. All will have a common meeting ground in the medical library, which will also be in the same building.

This single building arrangement is in marked contrast with medical schools where the laboratories are widely separated from clinical departments, the latter sometimes being in separate and distant cities. The extreme situation is found in the two-year medical schools where the student goes necessarily not only to a distant city, but also to a different medical school for his two years of clinical instruction.

The tabulation gives also, comparatively, the numbers of hospitals in the various states in the years 1921 and 1923. The number in the latter year in some states is smaller than in the previous year, owing to the fact that more than 500 "homes" have been eliminated from the list, since they were found not to have hospital departments. Names of several hospitals that have ceased to exist have also been struck from the list. The number of hospitals now totals 6,570, a net increase of 334 since 1921.

2. PROBLEMS OF MEDICAL PRACTICE

The rapid expansion of medical knowledge has brought with it several problems in medical education and practice, including:

(*a*) The modern training of general practitioners.—The training of the general practitioner is a matter of special importance since they should always constitute the great majority of physicians and will be called on to care for patients representing all varieties of diseases and injuries. This is a problem for further study by the Council in the early future.

(*b*) The training of the specialist.—Part 5 of this report deals in full with this subject.

(*c*) The relationship of the general practitioner to the specialist and the proportion of each type which is needed.—Reliable estimates are that from 80 to 90 per cent. of all cases of illness can be properly cared for by well qualified and resourceful general practitioners. While there is a legitimate and important field for properly trained specialists, therefore, the need of them should not be overemphasized. The trouble at the present time is that many physicians are posing as specialists without having first obtained the essential training.

(*d*) The proportion of patients which require hospitalization.—A reliable estimate states that over 90 per cent. of all patients can be cared for efficiently in their homes or in the physicians' offices without the need of the hospital.

(*e*) The development and function of group practice.—This is dealt with in Part 3 of this report.

(*f*) The measure by which the benefits of modern medical knowledge and practice can be furnished to the entire public, including the supplying of physicians to rural communities.

4. Two or more years of college work in addition to a four year high school education.
5. See Table 1, Average Age of Graduates of 1916, American Medical Association Bulletin, March 15, 1917, pages 214-217.

SUPPLYING PHYSICIANS FOR RURAL COMMUNITIES

The difficulty of providing medical care for rural communities is still one of the problems of medical practice. Particularly is this true in communities where the population is scattered or where the physician has to practice under extreme difficulties.

The reasons for the scarcity of physicians in rural districts are mostly economic and are briefly outlined as follows:

(*a*) Many physicians in rural communities graduated before medical schools had undergone the tremendous developments that have taken place during the last fifteen or twenty years. Although many of these, in spite of handicaps, have kept in touch with the progress in medical knowledge, there are some who, for financial or other reasons, could not get away to secure a postgraduate education.

(*b*) Recent graduates in medicine naturally prefer to live in the city with its better social, educational and living conditions.

(*c*) Also, aided by public choice, there has been a rapid trend in recent years for the treatment of patients in hospitals, especially where surgical procedures are required.

(*d*) Furthermore, with rare exceptions, hospitals are built only in cities where the population is sufficiently large to support them.

(*e*) With the improved transportation facilities, wealthy people in rural districts have developed the habit of obtaining most of their necessities from nearby cities. They go there, also, to secure hospital care or to physicians who have, or are supposed to have, established reputations.

(*f*) Except in emergencies, therefore, the country practitioner has only the mild cases and patients who are unable to or do not pay reasonably high fees.

(*g*) While there always has been a scarcity of physicians in rural districts, the situation became more pronounced when the war called many physicians away from the country districts. Then, at the close of the war, they took the opportunity

TABLE 2.—*Average Age of Graduates of 1922* *

	Number of Graduates at Various Ages																Total Students	Total Years	Average Age
	Under 21	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	Over 35			
College of Medical Evangelists	..	..	..	..	2	7	2	..	2	2	2	2	..	2	..	..	2	23	681	29.1
Stanford University	..	..	..	..	1	1	4	9	1	1	1	2	3	..	..	..	5	28	833	29.7
University of California	..	..	..	..	..	2	11	9	9	3	1	2	..	2	1	..	1	41	1,148	28.0
University of Colorado	..	..	..	..	..	1	3	4	2	2	1	1	1	..	..	..	..	15	418	27.8
Yale University	..	..	..	2	3	4	6	4	1	..	1	..	..	1	1	..	..	23	607	26.3
Georgetown University	..	..	..	1	10	4	3	1	1	..	..	..	..	..	2	..	..	22	564	25.6
George Washington University	..	..	..	1	4	3	1	..	..	..	..	1	..	..	..	..	1	11	287	26.0
Howard University	..	..	..	..	1	6	1	6	..	1	..	1	1	2	1	..	1	22	633	28.7
Emory University	..	1	3	5	12	10	6	2	2	5	1	1	1	..	..	..	1	50	1,283	25.6
University of Georgia	..	..	..	1	3	3	2	2	2	..	..	..	..	..	..	..	..	13	332	25.5
Hahnemann Medical College	..	..	..	1	2	2	2	2	1	..	1	..	1	..	1	..	..	13	365	28.0
Loyola University	..	..	..	1	5	7	11	6	4	6	10	4	1	..	2	2	5	64	1,831	28.6
Northwestern University	..	..	..	..	7	12	18	11	7	8	4	3	3	3	..	..	2	78	2,170	27.8
Rush Medical College	..	..	1	1	7	16	26	13	10	16	6	5	6	3	..	4	4	118	3,305	28.0
University of Illinois	..	..	..	..	4	8	19	3	6	4	3	1	1	..	1	1	..	51	1,367	26.8
Indiana University	..	..	..	2	5	8	7	3	2	3	2	..	1	..	..	..	..	33	864	26.1
State University of Iowa	..	..	..	..	7	10	8	6	1	3	3	..	..	..	..	..	..	38	993	26.1
University of Kansas	..	..	..	1	1	2	3	4	3	3	1	..	1	..	1	1	3	24	706	29.4
University of Louisville	..	..	..	1	1	5	6	2	4	..	1	..	..	1	1	..	..	22	591	26.8
Tulane University	..	..	2	7	21	7	11	6	4	4	1	1	1	1	3	..	3	72	1,903	26.4
Johns Hopkins University	..	..	1	3	5	27	15	7	10	3	..	1	..	1	3	..	3	79	2,108	26.6
University of Maryland	..	1	1	4	8	8	9	13	5	3	1	2	..	..	..	..	..	55	1,431	26.0
Boston University School of Medicine	..	..	..	..	4	4	6	..	1	1	3	..	1	1	..	..	2	23	643	27.9
Harvard University	..	..	1	5	19	22	19	13	7	8	6	2	3	1	1	1	3	111	2,971	26.7
Tufts College Medical School	..	1	3	14	14	15	11	6	2	3	6	1	..	..	..	..	1	77	1,967	25.5
Detroit College of Medicine and Surgery	..	..	1	2	2	2	2	1	2	2	3	1	1	..	1	1	1	22	623	28.3
University of Michigan (R)	..	..	1	4	15	13	15	4	4	4	..	2	1	1	..	..	2	66	1,784	26.6
University of Michigan (H)	..	..	..	1	1	1	1	1	..	..	..	..	..	..	..	1	1	7	207	29.5
University of Minnesota	..	..	..	..	..	11	6	8	6	2	1	2	..	1	..	1	1	39	1,071	27.4
Kansas City University of Phys. and Surgs.	..	..	..	..	1	3	..	2	..	..	2	5	1	..	2	..	14	30	1,033	34.4
St. Louis University	..	..	..	..	5	7	13	5	4	1	2	..	..	..	..	..	2	39	1,048	26.8
Washington University	..	..	..	2	9	8	13	4	4	1	3	..	..	1	2	..	1	48	1,277	26.6
Creighton Medical College	..	..	..	..	5	6	5	3	..	1	..	..	..	..	..	..	..	20	510	25.5
University of Nebraska	..	..	..	1	2	3	6	3	1	1	..	..	..	..	..	..	..	17	440	25.7
Albany Medical College	..	..	1	..	2	4	2	1	..	1	..	1	..	..	..	..	..	12	309	25.7
Columbia University Coll. of Phys. and Surgs.	..	..	4	9	19	19	6	2	1	4	1	..	2	..	..	..	1	68	1,693	24.8
Cornell University	..	..	..	5	4	17	6	4	1	1	2	1	..	..	2	..	..	43	1,116	25.9
Long Island College Hospital	..	..	1	2	19	9	4	7	..	1	1	..	1	..	1	1	..	47	1,202	25.5
New York Homeopathic College	..	..	..	..	1	3	4	..	1	2	1	2	..	..	..	..	4	18	526	29.2
Syracuse University	..	..	1	3	9	7	7	3	2	1	1	2	..	..	..	..	..	36	922	25.6
University and Bellevue	..	..	6	10	24	20	7	5	2	1	..	1	1	1	..	..	..	78	1,916	24.5
University of Buffalo	..	..	..	3	5	6	2	3	..	..	1	..	..	..	..	..	2	22	576	26.1
Eclectic Medical College	..	..	..	1	3	4	4	1	6	4	2	5	..	..	..	..	4	34	979	28.7
Ohio State University (R)	..	..	..	..	5	8	7	2	4	..	1	1	..	..	..	..	2	30	802	26.7
Ohio State University (H)	..	..	..	..	..	2	4	..	..	1	..	..	..	..	..	..	..	7	183	26.1
University of Cincinnati	..	..	..	2	5	10	[illegible]	12	2	1	1	2	1	2	..	..	..	46	1,223	26.5
Western Reserve University	..	..	..	..	8	7	4	2	1	2	..	..	..	1	..	..	..	25	644	25.7
University of Oklahoma	..	..	..	..	2	3	5	..	1	1	1	..	..	..	1	..	1	15	411	27.4
University of Oregon	..	..	..	..	..	3	1	..	1	1	1	..	1	..	..	..	2	10	308	30.8
Hahnemann, Philadelphia	..	..	..	..	6	2	..	2	2	3	..	1	1	..	..	..	..	17	454	26.7
Jefferson Medical College	..	..	1	15	14	26	13	[illegible]	5	4	1	..	..	..	1	..	..	88	2,226	25.2
Temple University	..	..	..	..	1	1	3	2	4	2	1	1	..	1	1	..	2	19	556	29.7
University of Pennsylvania	..	..	3	10	27	31	21	7	9	3	2	..	2	1	..	..	1	117	2,996	25.6
University of Pittsburgh	..	..	2	..	7	9	1	2	1	..	1	..	1	2	..	..	..	26	673	25.8
Woman's Medical College, Pa.	..	..	..	3	5	5	3	2	4	2	..	4	1	..	..	..	3	32	907	28.3
Medical College of South Carolina	..	..	..	3	1	3	4	..	1	..	..	..	..	..	..	..	1	13	350	26.9
Meharry Medical College	..	..	..	3	7	3	3	1	1	1	2	1	..	2	..	..	4	28	786	28.0
University of Tennessee	..	..	..	..	1	..	1	3	1	1	1	..	1	..	..	..	2	11	336	30.3
University of West Tennessee	..	..	..	..	1	1	1	1	..	..	..	..	..	..	..	..	..	4	102	25.5
Vanderbilt University	..	..	..	1	3	1	4	1	..	1	..	..	..	..	1	..	1	13	351	27.0
Baylor University	..	..	..	..	3	6	3	2	1	..	2	1	..	1	..	2	1	22	620	28.1
University of Texas	..	..	1	6	9	9	8	3	3	2	..	1	..	..	..	..	..	42	1,063	25.3
University of Vermont	..	..	..	..	3	5	3	1	2	1	1	..	..	..	..	..	..	16	417	26.0
Medical College of Virginia	..	..	..	2	6	4	5	1	1	3	..	..	1	..	2	..	2	27	710	26.2
University of Virginia	..	..	1	3	5	4	2	1	..	1	1	..	..	..	..	..	2	20	526	26.3
Marquette University	..	..	..	..	..	1	7	7	4	1	2	..	..	..	1	..	..	23	631	27.4
Totals	..	3	35	141	391	481	424	249	169	137	93	64	41	32	33	15	95	2,403	64,508	26.8

* This table gives the ages of all students graduating in the class of 1922 for whom the information was available. It is noteworthy that all but one of the fifteen colleges having the lowest age average are Class A institutions, while four of the fifteen medical schools having the highest age averages are rated in Class B or Class C. The highest average, 34.4, is that of the graduates of the Kansas City University of Physicians and Surgeons, an institution which gives liberal advanced standing to graduates of osteopathic colleges, and which does not require of all students admitted two years of work in a reputable college of arts and sciences or a full equivalent education. The age average, therefore, does not depend so much on the amount of premedical education as it does on the acceptance of older students who have previously been engaged in other occupations. It appears, therefore, that the adoption of higher entrance requirements has tended to lower and not increase the average age on graduation.

to obtain postgraduate work and to locate in more favorable communities. Meanwhile, investigation of many rural districts from which requests for physicians have come, shows that in most them physicians could not make a livelihood without undue sacrifice and difficulty.

It is believed that any community that can support a physician can get one if its citizens are willing to pledge themselves to guarantee an income of from $2,500 to $3,000 a year and to interest the community in the physician's support. This plan has worked out satisfactorily in a Middle West community where the physician selected secured from his practice an income larger than the amount pledged, so that the guarantors have not been called on to pay out any money.

The points in favor of this plan are that (*a*) the people of the community have a voice in the selection of their physician, and (*b*) the fact that they have pledged themselves to his support will induce them to patronize him so far as is possible and not go to physicians in distant cities. A third point is that many young physicians are short of funds at the time they complete their medical training and will be attracted to places where some reasonable income is guaranteed. Reasonable guaranties from rural districts, it is believed, will be attractive to recent graduates and will bring a physician to any community having a population sufficient to support one.

TABLE 3.—*Number of Physicians and Hospitals in the United States and Dependencies*

	Physicians			Hospitals, etc.	
United States	1921	1923	Gain or Loss	1921	1923
Alabama	2,405	2,313	92—	70	78
Arizona	380	372	8—	47	66
Arkansas	2,440	2,303	137—	43	56
California	6,766	7,549	783+	253	419
Colorado	1,817	1,882	65+	99	111
Connecticut	1,729	1,727	2—	83	92
Delaware	262	265	3+	13	20
District of Columbia	1,689	1,924	235+	57	41
Florida	1,281	1,348	67+	49	58
Georgia	3,406	3,274	132—	87	94
Idaho	478	452	26—	35	49
Illinois	10,651	10,716	65+	365	379
Indiana	4,446	4,353	93—	170	164
Iowa	3,536	3,490	46—	166	195
Kansas	2,550	2,492	58—	119	137
Kentucky	3,290	3,155	135—	112	114
Louisiana	2,001	2,058	57+	82	75
Maine	1,105	1,067	38—	65	77
Maryland	2,364	2,349	15—	136	107
Massachusetts	5,959	5,977	18+	334	340
Michigan	4,593	4,653	60+	188	218
Minnesota	2,628	2,774	146+	217	230
Mississippi	1,761	1,792	31+	52	61
Missouri	5,921	5,827	94—	163	163
Montana	610	568	42—	59	71
Nebraska	1,965	1,913	52—	92	128
Nevada	147	140	7—	22	27
New Hampshire	641	615	26—	61	57
New Jersey	3,260	3,362	102+	177	154
New Mexico	427	399	28—	46	50
New York	16,284	16,857	573+	670	597
North Carolina	2,236	2,226	10—	112	125
North Dakota	554	517	37—	50	53
Ohio	8,092	8,086	6—	304	302
Oklahoma	2,622	2,600	22—	71	94
Oregon	1,145	1,158	13+	69	80
Pennsylvania	11,348	11,241	107—	456	409
Rhode Island	778	754	24—	46	36
South Carolina	1,452	1,368	84—	55	52
South Dakota	658	630	28—	46	54
Tennessee	3,328	3,228	100—	100	98
Texas	6,205	6,094	111—	192	205
Utah	496	497	1+	25	35
Vermont	594	556	38—	33	35
Virginia	2,545	2,503	42—	119	113
Washington	1,797	1,756	41—	120	142
West Virginia	1,717	1,751	34+	64	62
Wisconsin	2,750	2,772	22+	215	217
Wyoming	267	263	4—	27	30
Total	145,376	145,966	490+	6,236	6,570
Dependencies of the United States					
Alaska	68	60	8—	19	28
Canal Zone	113	112	1—	7	7
Hawaii	175	198	23+	24	59
Philippine Islands	781	854	73+	41	61
Porto Rico	304	312	8+	38	45
Guam, Samoa, Virgin Islands	29	28	1—	0	3
Total	1,470	1,564	94+	129	203
Addresses unknown	3,175	4,078	903+		
Total in the United States	145,376	145,966	590+	6,236	6,570
Total in United States and Dependencies	150,021	151,608	1,587+	6,365	6,773

In New Hampshire, a law has just been enacted which permits any town to appropriate sufficient money to support a resident physician when the town cannot otherwise obtain one.

3. Report of Hospital Work

The Council on Medical Education and Hospitals in its relation to hospitals maintains three main lines of work, namely, (1) information about all hospitals, for publication in THE JOURNAL and in the Directory; (2) the list of hospitals that furnish acceptable internships, and (3) information service bureau, to answer inquiries and give assistance on hospital problems.

Along with the preparation of hospital data for the eighth edition of the Directory, a complete recanvass of all hospitals has been made. As a result, we have published in the Directory, not only revised data on all hospitals, but also a list of special hospitals and related institutions classified according to the kind of cases received, and a revised list of the hospitals approved for internships. The list of special hospitals is published as a convenience to physicians in referring special cases and contains 38 schools for backward and mentally defective children; 52 schools for the blind; 100 children's hospitals; 27 convalescent and rest homes; 59 schools for the deaf; 53 drug addiction and alcoholic sanatoriums; 55 eye, ear, nose and throat hospitals; 49 epileptic hospitals; 243 maternity hospitals; 548 nervous and mental hospitals; 45 orthopedic hospitals; 15 skin and cancer hospitals; 16 schools for speech defects; 577 tuberculosis hospitals, and 5 trachoma hospitals.

The mass of data that has been collected from individual hospitals, and now being prepared for publication, will include reliable statistics heretofore unobtainable on such items as number of roentgen-ray departments; clinical laboratories; nurse training schools; hospitals having no resident physicians or interns; proportion of superintendents having M.D. degree, R.N., or other; capacity and number of hospitals supported by the different units of government, as state, federal, county and municipal, as well as those supported by private means such as individuals and partnerships, churches, fraternities and private corporations.

The 627 hospitals that were on the approved list for internships on May 22, 1922, have during the past year been canvassed as thoroughly as was possible by correspondence and otherwise, giving us new data about each institution for the approved list. Twenty hospitals were removed from the list, and 47 have been added, making a net gain of 27, making a total of 654 at present on the approved list. Thirty-seven hospitals that have applied for recognition are being held in abeyance pending the completion of certain improvements. The 654 approved hospitals represent a capacity of 187,314 beds and afford 3,671 internships. These internships include 3,103 in general hospitals, which would be sufficient to absorb the entire annual output of the medical colleges in the United States. The other 568 internships are devoted to the various specialties and should be considered as supplementary to a general internship. Women interns are admitted by 183 of the approved hospitals.

Next in importance to the improvement of internships is the hospital information service of the Council. The most frequent demands for assistance are concerned with plans for buildings, staff organization and administration problems touching professional ethics. A count of these service calls for certain weeks in the year indicates that the whole number of calls for information and assistance relative to hospitals was over 1,200 per year.

PRESENT NUMBERS OF PHYSICIANS AND HOSPITALS

As shown in Table 3, from figures based on the 1923 edition of the American Medical Directory, there are now 145,966 physicians in the United States, or 590 more than in 1921. There has been a decrease in the numbers of physicians in thirty-two states, but this decrease has been more than offset by the increases in seventeen states. The small increase in the two years is due partly to the small class—2,529—graduating in 1922, the war class, consisting of the few who matriculated in 1918. The proportion of physicians to population is now 1 to every 724 people.

SURVEY OF GROUP CLINICS

A survey of group clinics was made in 1922 in connection with the Council's survey of dispensaries. While this survey was being launched by the Council, the Trustees of the American Medical Association, in connection with the Judicial Council, was planning an investigation into the status of group medicine and pay clinics. By common consent the work of actually canvassing the clinics was done by the Council on Medical Education and Hospitals, and a preliminary report was made to the Trustees and to the House of Delegates in May, 1922. A perpetual file of groups is now being maintained, and reports of new groups are added as their existence becomes known.

An outstanding fact about the whole subject of group medicine is the loose way in which the terms "clinics," "group," "diagnostic group," "group practice," "medical group" and a number of similar terms are ordinarily used. Out of a total of 270 groups that have been listed up to the present time, not more than 100 would answer to even a liberal definition of group medicine, and still fewer have been found to be actually correlating the services of specialists as a routine in the examination and treatment of patients. Many situations that are learned of as "groups" turn out to be simple business arrangements for the common use of a building, including the sharing of the waiting room, telephone, clerical assistance, nurses, laboratory, roentgen ray and other facilities not available to the independent practitioner. The various types of groups may be thus classified:

1. *Closed Hospital Group.*—Relatively very few, the members of the staff of a "closed hospital" conducting a "clinic" in a suite of their private offices, and each member of the staff usually collecting his own fee.

2. *One Man Group.*—More numerous than any other type. Other specialists on salaries or paid on the percentage basis.

3. *Diagnostic Group.*—Work confined solely to diagnosis.

4. *Cooperative Group.*—A group more or less closely organized for the purpose of private medical practice, the aim being for each member to be a mature specialist along a chosen line, and to care for work pertaining to his specialty.

(*a*) Primitive Type: A cooperative organization composed of general practitioners from the same community.

(*b*) Departmental Type: A cooperative group organization composed of men, each of whom has already devoted a certain number of years to acquiring a thorough training in some special field of medicine or surgery, and is confining his private work to that specialty.

The geographic distribution of group clinics plainly shows the influence of certain of the larger clinics from which have developed numerous others. The states having the highest number of group clinics, without applying a strict definition to the term, are:

Wisconsin	36	Indiana	10
Minnesota	31	Washington	10
Texas	28	Arkansas	9
Illinois	13	California	9
Louisiana	11	Montana	9
Michigan	11		

On the average, there were nine physicians connected with each of the groups from which lists were received. This would make a total of approximately 2,430 physicians in the 270 groups listed.

That there is a growth in actual group medicine is certain, but the rate of such growth is hard to ascertain because of the difficulty of obtaining detailed returns from the groups. It is also certain that a large number of groups are dissolved on the death, withdrawal or removal of one or more members, and this prevents the phenomenal growth that is sometimes ascribed to group practice.

Group medicine is a type of practice which, if properly organized and conducted, will afford efficient service to the 15 or 20 per cent. of the sick and injured who may require specialized treatment. However, there is an opportunity afforded the groups efficiently to aid the general practitioner in consultations, and in the diagnosis and treatment of his patients. The attitude of the group in its relations to the general practitioner should be characterized by the same fundamental principles and standard of ethics that apply to the individual physician who is called into consultation by the general practitioner.

Some of the larger and properly conducted group clinics are also providing graduate instruction both in general practice and in the specialties. Groups that develop research work and furnish a high quality of treatment can add materially to their service to the profession by providing residentships for those who seek to develop proficiency in the various specialties.

OTHER CLINICS AND DISPENSARIES

The Survey of Dispensaries and Clinics not only gave us the most complete information yet obtained regarding group medicine, but also yielded a mass of facts that have been digested and published regarding dispensaries and clinics and in fact all forms of organizations for the examination and treatment of ambulatory patients.

Excluding group practice the number and classification of dispensaries covered by the survey are as follows:

General dispensaries		935
Special dispensaries:		
Tuberculosis	888*	
Venereal disease	831*	
Nervous and mental	345*	
Baby and child hygiene	566	
Outpatient departments of eye, ear, nose and throat hospitals	37	
Outpatient offices and stations of the United States Public Health Service	139	
Outpatient departments of orthopedic hospitals	16	
Miscellaneous	53	
		2,875
		3,811
Industrial (enumeration not completed)		134
Total dispensaries known		3,944

* Including special clinics of general dispensaries as follows: tuberculosis, 221; venereal, 344; nervous and mental, 85. Exclusive of duplications, the total number of individual dispensaries known is 3,294.

The total number of individual *patients* in all the general and special dispensaries within a year is approximately 8,000,000, and the number of *visits* made by them is approximately 29,500,000 per year.

The survey brought out the fact that whereas the services of dispensaries were formerly almost entirely free, the idea of allowing the indigent to contribute a small amount has grown until now fully 60 per cent. of all the dispensaries of the country receive partial compensation from at least some of their patients. There is evidence that the abuse of medical charity in dispensaries is held down to a reasonable minimum. There is, however, absolute lack of uniformity or consistency in the schedules of charges to dispensary patients.

4. NURSE TRAINING

The suggestion regarding nurse education in the address of the Speaker to the House of Delegates, May 22, 1922, was referred to the Council on Medical Education and Hospitals. In accordance with the instructions of the House, and after conference with the Executive Committee of the Board of Trustees, a special committee[6] was appointed to make a preliminary investigation of the problems of nurse education and to recommend what should be done.

The creation of the committee was completed early in November, 1922, and the investigation covered a period of about four months. An extensive exchange of ideas by correspondence was carried on, and the chairman held numerous conferences with groups of physicians, leaders in nursing education, and such members of the committee as were in the eastern part of the country. No complete survey of the nursing field was either possible or necessary, since the detailed report of the recent extensive survey made under

6. This committee consisted of: Dr. Robert W. Lovett, Boston, chairman; Dr. Austin Flint, professor of obstetrics and gynecology, University and Bellevue Hospital Medical College, New York; Dr. Lawrence R. DeBuys, professor of pediatrics, Tulane University School of Medicine, New Orleans; Dr. Richard O. Beard, associate professor of physiology, University of Minnesota Medical School, Minneapolis; Dr. Thomas McCrae, professor of medicine, Jefferson Medical College, Philadelphia; Dr. Winford Smith, superintendent, Johns Hopkins Hospital, Baltimore; Dr. George B. Sommers, superintendent, Stanford University Hospital, San Francisco.

the auspices of the Rockefeller Foundation was placed at the service of the committee. The wide extent of the committee's investigation, made in so short a time, is indicative of the vigor and activity of the chairman, Dr. Lovett, to whom a great deal of credit is due. The report presented by this committee to the Council is abstracted as follows:

THE EDUCATION OF THE TRAINED NURSE

The growth of the nursing profession has been very rapid. In 1880 there were fifteen training schools for nurses in the United States, with 323 pupils; in 1920 there were 1,755 schools with 55,000 pupils, and the number of women applying for admission to training schools shows no signs of falling off.

The course of study in nurse training schools has not kept pace in educational development with the rapid increase in numbers. As a result, many problems have arisen which require investigation and adjusting by the cooperative action of both physicians and nurses, and not by either physicians or nurses alone. In the hospital the pupil nurse is directly responsible to the superintendent of nurses, but on leaving the hospital, while engaged in private nursing, she becomes responsible to and acts as the assistant of the physician.

The carrying out of a sound scheme of nursing education, therefore, should be a cooperative enterprise between the physicians and the nurses, and differences of opinion should be settled by frank discussion. The best results can be obtained by a united effort of the two professions, and adequate service to the public is the reason for which both these professions exist.

PRESENT STATUS OF NURSE TRAINING

Nurse training in the United States today is not standardized, systematic or uniform in the matter of entrance requirements, length of the course, and methods of teaching. The nurse training schools connected with the great modern hospitals differ widely from those existing throughout the country away from medical centers.

Legislation cannot be looked to as a solution. All states except New Mexico have laws governing the registration of nurses. Wide variations are allowed in entrance requirements and length of course which account, perhaps, for the equally wide variations in the methods of administration of nurse training schools and in the character of the courses offered.

The defects in the training schools of today are:

1. The course, on the whole is unsystematized, unstandardized, and far from uniform.
2. There is too little systematic instruction in practical work and too much theory, and certainly a lack of correlation between the two elements.
3. Too many of the teachers are poorly qualified.
4. There is too much waste of the pupil nurses' time in uneducational routine work.
5. Many schools are connected with hospitals having utterly inadequate clinical facilities.

THE CHARACTER OF THE NURSE TRAINING COURSE

An analysis of twenty-three schools of reasonably typical character shows that, although the curriculums include the same general subjects, there are wide variations in sequence and methods of teaching. In certain schools, part of the fundamental instruction bears no relation to the nurses' work, and there is a wide variation of time allotted to the subjects taught. In bacteriology it varied from eleven to eighty hours; in nursing procedures it varied from fifty-five to 222 hours; in dietetics, from seventeen to sixty-four, and in chemistry, from ten to 150 hours. These instances are typical of the lack of uniformity in the curriculums of today.

Theoretical effective class room instruction must be correlated with practical bedside work on patients, and this requires the cooperation of the visiting physician, the head nurse of the ward, and the superintendent of nurses. It is essential that the nurse should be trained in "doing things" as well as hearing why they should be done. There are three fundamental needs: (*a*) sound fundamental theory stripped of all nonessentials; (*b*) bedside demonstrations, and (*c*) practical work on patients to the largest possible extent.

EQUIPMENT OF TEACHERS

In January, 1921, there were in the United States approximately 1,800 schools of nursing and 55,000 sudents, graduating about 15,000 a year. Many teachers are required, who must be medical men and nurses working in cooperation.

As teachers, the medical men cannot be retained or prepared for this special task. Some will be good teachers and some bad; some will be enthusiastically helpful, while others will be indifferent and frankly bored. The physician lectures about what he pleases, with little or no correlation with his colleagues, or with the school in general. Physicians cannot escape some blame for the present situation, and, if an attempt is made to make the nurses' training an orderly, systematic education, we are sure that physicians will assist with interest and spirit.

Some of the teaching nurses, both intellectually and pedagogically, are often unfit to teach. The teaching nurse has generally drifted into the teaching position by force of circumstances, perhaps without any adaptability. To establish an effective educational scheme will require the education of the teacher nurse; more and better instructors will be needed in an effective educational scheme, and this most important function of the university schools of nursing should be emphasized and utilized.

WASTE OF THE PUPIL'S TIME

The nurse is to be trained only by educational means and methods. In the training of an artist, a musician, a teacher, a stenographer, the educational problem alone is considered; but in the training of nurses the hospital needs come in, and the hospital expenses are conserved by having pupil nurses, for an unprofitably long time, perform duties that should fall to cleaning women, maids, cooks, waitresses, messengers, head-nurses, and the like. Reports state that such profitless duties consume about two hours daily, or one fifth of the nurse's time.

Although the heavy cleaning is supposed to be done by paid workers, the dusting, cleaning and sweeping for the patients under the care of the nurse require in different hospitals from one-half hour to one and a half hours a day or even longer. In many hospitals the time devoted by the student to the cleaning of lavatories, service rooms, bathrooms, care of the linen closets, patients' clothing, the condition of the serving kitchens, and other similar duties, is far in excess of what is of practical value to her training.

Much time also is spent in special routine duties. In some hospitals the nurse gets more credit for making routine records than for caring for the patients. If she has an unusual number of very ill patients, she cannot complete the routine records, or has to slight them. But for her standing in the training school, the routine is frequently more important. A nurse has been known to be severely reprimanded because she had not kept the record of temperature of the ward each hour when she could not leave a very sick patient. Ward routine must be learned by the nurse, but the continuation of it for too long a time is without profit.

Authorities on hospital problems state that hospital organizations of the future should include a permanent staff of paid workers, trained nurses and others. The needs of the hospitals must be met, and the sick cannot be neglected; but the pupil nurse must not be sacrified to this end. This will mean an increased cost to the hospital for maintaining the training school. The hospitals are none too well supported now, and any additional expense is to be deprecated. Nevertheless, the object of the training school is to educate nurses who are competent to care for the sick; and, if nurse-training is to be put on an educational basis, the expenditure of time on profitless ward routine duties must be reduced.

CONNECTION WITH INADEQUATE HOSPITALS

It is a question how an effective training school can be conducted with such meager clinical facilities as are offered by many hospitals.

A series of instances taken at random from the tables in a recent survey shows how inadequate is the number of patients in certain hospitals as compared with the number of pupil nurses enrolled. For example: One hospital which

maintained a training school had a daily average of five patients and five pupil nurses, while seven other hospitals had, respectively, 193 patients and 111 pupil nurses; 192 patients and 22 nurses; 8 patients and 7 nurses; 10 patients and 10 nurses; 21 patients and 15 nurses; 75 patients and 41 nurses, and 40 patients and 27 nurses. Adequate instruction is hardy possible in these institutions, and they should be discouraged from maintaining so-called training schools.

RECOMMENDATIONS

The recommendations of the committee were, briefly:

1. That a committee be appointed, made up of (*a*) physicians who are competent clinical teachers, (*b*) representative nurses, and (*c*) at least one educator who is neither a physician nor a nurse; that this committee be arranged for by the American Medical Association in conjunction with the National League of Nursing Education, each having equal representation and appointing its own representatives, and that the educator be selected by the other members of the committee when appointed.

2. That a standard minimum curriculum for the training of nurses be formulated and put into effect; that this standard define the lower level of the education of the bedside nurse; that the university school of nursing be developed in order to educate more and better teachers for nurse training schools, and that graduate courses of instruction of at least eight months' duration be established for graduate nurses who desire to specialize, to teach, or to become administrators.

3. That the educational standard of nurse training include (*a*) entrance requirements consisting of a four year high school education; (*b*) that the length of the course be two years and four months, or twenty-eight months; (*c*) that the waste of the student nurses' time in noneducational ward routine be greatly reduced; (*d*) that better teachers from both the medical and nursing professions be secured in the schools; (*e*) that the character and sequence of the subjects taught, the percentage of time allotted to each subject, and the correlation of practical and theoretical instruction be considered with special care, and (*f*) that the standard be such that it may be carried out by relatively small as well as the large hospitals.

4. That there be a classification of nurse training schools in which only those which conform to the standard outlined be considered as acceptable.

The committee appreciated the fact that these changes in nurse training schools may cause increased expenses in the hospitals maintaining nurse training schools. Nevertheless, it was believed that the improvements would more than offset this expense in preventing serious results and greater expense which might accrue to the hospitals from the present increasingly chaotic conditions in nurse education.

5. Graduate Medical Education

Since October, 1922, an inspection of all graduate medical schools in the United States has been made by the Secretary of the Council and Dr. Louis B. Wilson of the Mayo Foundation. Inquiry was made in regard to the opportunities not only for formal graduate study in preclinical and clinical branches, but also for informal graduate study in hospitals through internships, residencies, etc.

Inquiry in each instance was made regarding the corporate character of the institution, its relationships to other institutions, its financial resources and annual expenditures, its teaching resources in laboratories, hospitals, dispensaries, libraries and museums, the number and qualifications of its teaching staff, its standards for admission of students, the length and character of its courses of study in various fields, its methods of determining and recording the progress made by its students, and the character and form of certificates granted by the institution.

Two previous surveys of graduate medical schools have been made, the first in 1915, by Dr. Horace D. Arnold of Boston and the Secretary; the other, in 1919, by Dr. Bevan, the chairman of the Council, and Dr. Louis B. Wilson, in certain instances in company with Dr. William Pepper, Dr. James Ewing, or other individual members of the Council's special committee on graduate medical education.

GRADUATE EXTENSION WORK

The Council calls attention to the increasing opportunities afforded to county, state and district medical societies to organize and operate once or twice each year diagnostic clinics such as those which are being conducted by the Tri-State District Medical Society, the Pacific Northwest Medical Association and others, as well as the extension courses of lectures and clinics given under the auspices of the Universities of North Carolina, Pennsylvania, Wisconsin and Washington and by several of the state medical societies and state university medical schools. The Council will be very glad to cooperate with any county, state or district medical society in the securing of clinicians or other instructors when it is desired to organize similar courses or clinics. Details in regard to these courses were presented at the Conference of State Secretaries held last November, and the report containing the discussions was published in the January number of the AMERICAN MEDICAL ASSOCIATION BULLETIN.

The Council's present report, however, deals chiefly with the opportunities for study found in various postgraduate medical schools and hospitals.

PROGRESS SINCE LAST SURVEY

There has been a decided improvement in the character of the graduate medical schools in the United States since the survey in 1919. Thorough work on the highest plane of university graduate study is in progress in some institutions, while in others the conditions are almost inconceivably bad. As compared with the needs, the development of opportunities for graduate study is still far from adequate.

OPPORTUNITIES FOR PRECLINICAL WORK

In several university medical schools, opportunities for graduate study in the preclinical branches have long existed, usually as a part of the graduate school of the university in which the students are working for higher degrees in arts or sciences. As far as can be seen, there has been no material increase in the number of graduate students availing themselves of these opportunities except where graduate medical education is being emphasized.

ADVANCED STUDY IN CLINICAL FIELDS

The demands for advanced instruction in the clinical fields come from two groups of physicians: (1) Those desiring to prepare themselves for the practice of some specialty, and (2) those desiring to improve themselves in general practice or in the practice of a specialty in which they are already engaged.

1. *Long Term Students.*—The first group consists largely of (*a*) recent graduates who wish to fit themselves in a special field, either preclinical or clinical, and usually without having engaged in general practice as a means of livelihood; or (*b*) older graduates who have been in general practice for several years and who wish to fit themselves for, usually, special practice in some clinical field, using their experience in general medicine as a basis for their further study.

The larger numbers of graduate students in both of these groups are still obtaining their preparation informally in advanced internships, residencies, assistantships, apprenticeships and various minor teaching positions in medical schools and the hospitals attached thereto. Their ability to practice in a chosen field is usually a matter of self-determination, occasionally aided by advice from their immediate superiors. At present no university or accrediting body certifies to their special qualifications, and there is no means for public recognition of their attainments except through membership in one or more of the associations or societies of specialists. At present only two universities, the Universities of Minnesota and Pennsylvania, have well organized opportunities for preparation in clinical fields, including supplementary study in the supporting laboratory sciences and, when the graduates have attained proficiency, recognize it by the granting of advanced degrees. The University of Minnesota gives the degrees of Master of Science and Doctor of Philosophy, modified by the name of the specialty selected. The University of Pennsylvania gives the degrees of Master of Science and Doctor of Science, modified by the words "in Medicine."

2. *Short Term Students.*—The second group consists of physicians desiring to make further preparation, either in general practice or in some clinical specialty in which they

are already engaged. This group includes men and women of all degrees of preparation, from the most meager to the most advanced. They seek opportunities for study, ranging from a few days or a few weeks of intensive instruction to a year of laboratory or clinical experience. To provide courses of instruction, therefore, which they may take without too long an absence from their practice is a most complicated problem. There is a great need for continuation work for both the general practitioner and the specialist, aside from what is obtainable in daily practice and through personal reading, such as the new developments in diagnosis and treatment and the later diagnostic methods and operative procedures.

Too frequently the period that the practitioner can afford to take is so brief that his instructor, who is responsible for the care of patients, does not feel warranted in trusting him with any of that responsibility. Much good, however, is being accomplished by lectures and laboratory courses and clinical demonstrations, however brief. The instruction, therefore, must usually be limited to lectures, demonstrations and laboratory work. When periods of several months can be spent in one field, the instructor may gradually place clinical material at the disposal of the practitioner-student.

CERTIFICATES

A number of institutions grant diploma-like certificates of attendance to practitioner-students for unreasonably short periods of study. Two institutions, indeed, grant such certificates after one week of study. It is fundamentally wrong to grant diploma-like certificates which may be used for wall display to any except those whom the institution knows are proficient in a particular field. It is sometimes urged that these are certificates of attendance only, but the name of the student and the name of the specialty are stated in so conspicuous a manner as quickly to catch the eye of the observer. The public cannot easily distinguish between such a certificate and a diploma in the specialty named; hence they assume that the physician is truly qualified to practice the specialty named. This often false impression is all the more harmful if the certificate bears the name of some well-known university or if the name of some special field, as surgery or ophthalmology, is included in the name of the institution, or if it bears the legible signatures of men widely known as specialists in any field of medicine or surgery. Such certificates may readily be, and undoubtedly are, frequently used by unqualified physicians to mislead the public as to their qualifications in the fields named on the certificates.

If a graduate school determines that one of its students is thoroughly competent to practice in any special field of medicine or surgery, there is no reason why it should not give him a certificate or confer on him an advanced degree. If, however, it does not know that he possesses such competence, it is wrong to grant him a certificate that can be readily displayed on the wall of his office to mislead his patients. Therefore, no diploma-like certificate should be granted to any one who is not known to be proficient in that field, nor to any one under any circumstances, who has not completed at least one academic year in full-time study of a single special subject in the institution granting the certificate. For lesser degrees of proficiency and shorter periods of study, the most that should be granted in the way of a certificate should be a statement in letter form or, better still, on a card that does not contain all the essential data on one side.

These principles should apply also to certificates from hospitals for internships in special fields in which the special field is named. They should not necessarily apply to certificates from hospitals for general internships or resident service in which no special field is named.

PRINCIPLES REGARDING GRADUATE OR POSTGRADUATE MEDICAL SCHOOLS, SCHOOLS OF LABORATORY TECHNIC, AND OTHER INSTITUTIONS PROFESSING TO FURNISH COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE

The following principles are recommended as a basis for the grading of graduate medical schools by the Council:

1. *Admission Requirements.*—The minimum admission requirement for those wishing to prepare themselves for the practice of a specialty should be graduation from an acceptable (Class A) medical college and completion of at least one year's internship in an approved hospital. In the case of reputable physicians who desire to improve themselves for general practice, lenient admission requirements are justified. Courses for general practitioners should be open to all physicians who have received the degree of Bachelor or Doctor of Medicine from medical colleges considered acceptable by this Council, or to reputable physicians who were licensed in certain states before graduation was required.

2. *Records.*—Records are just as essential in a graduate as in an undergraduate school. Graduate physicians, indeed, will vary more in their preliminary and professional qualifications than the present-day undergraduates, and a knowledge of these qualifications is essential to decide the character and grade of the work to which the graduate student should be assigned. Again, a knowledge of his proficiency in the work to which he is assigned is essential to know whether he is worthy of advancement, or whether he can be trusted with responsibility for the diagnosis and treatment of patients who may be assigned to his care.

Records should be kept by each institution, therefore, showing (*a*) the preliminary and professional entrance qualifications of every student, which should be verified by authentic or documentary evidence; (*b*) previous attendance at graduate courses and grades obtained; (*c*) the subjects for which he is enrolled; (*d*) evidence of his faithful attendance at his work; (*e*) evidence of the student's proficiency as demonstrated by his routine or research work, examinations or otherwise, and (*f*) whether an advanced degree or certificate was granted.

3. *Supervision.*—There should be careful and intelligent supervision of the entire school by a dean or other executive officer who holds, and has sufficient authority to carry out, fair ideals as determined by the present day needs of graduate medical education.

4. *Curriculum and Grading of Instruction Offered.*—The graduate school should have its various courses of instruction so graded that the student, if he desires, can obtain progressive work in a continuous course of two or three years, as may be necessary to prepare him satisfactorily for the practice of a chosen specialty. If it is found that at some previous time the student has satisfactorily completed certain portions of the work, he might be given advanced standing and thereby enabled to complete his preparation in a shorter time.

Where short courses are offered in any of the clinical specialties, these also should be so graded that, in effect, they would be segments of and, in total, the time and educational equivalent of the longer courses. These segments might be taken at different times, but would ultimately lead the student to the same objective. With the exception of the courses in general medicine, all short courses should fit in with a scheme, the ultimate aim of which would be a complete and satisfactory training in the specialty for which the graduate school provides instruction. Any institution offering work in any specialty, therefore, should provide (*a*) review courses in anatomy, pathology and the other basic preclinical sciences which apply to the respective specialties; (*b*) clinics in which students can have the opportunity personally to examine patients in hospital wards and outpatient departments and in which various therapeutic and operative procedures can be demonstrated; (*c*) courses of operative and laboratory technic; and (*d*)—to be assigned only when the student's previous training will warrant—assistantships in which, under the supervision of a physician already having recognized skill in the particular specialty, he can gradually assume responsibility in the diagnosis and therapeutic or operative treatment of the sick. Opportunity should be provided also for research work in the chosen specialty bearing on both the fundamental sciences and clinical fields. With courses so graded, no student should be admitted to any advanced short course unless, on careful investigation, he is found to possess the knowledge and skill, such as are obtainable in the other prerequisite courses.

5. *Teachers.*—In some institutions it was found that courses of instruction were being given by those not qualified either by training or by teaching experience in the subject or subjects to which they were assigned. The general practitioner

who can spend only a short period in acquainting himself with the newer things in diagnosis and treatment should receive his instruction from the very best men available. Certainly, their instruction should not be left to recent graduates of inferior schools or others who have not been able to obtain teaching recognition in acceptable medical schools.

The graduate medical school, therefore, should be supplied with a corps of teachers well trained in and responsible for the work in all subjects in which opportunities for study are announced. This should include teachers for essential review or advanced work in the preclinical sciences, as well as those who have in charge work in clinical subjects. The teaching staff should be made up of graduates of or teachers in Class A medical colleges or other high grade educational institutions. The faculty should be organized under the various teaching departments in which work is offered, and a competent teacher should be at the head of each department.

6. *Laboratories.*—The school should possess well-equipped laboratoreis to provide proper review or advanced work in both laboratory and clinical subjects essential for the specialty or specialties in which opportunities are offered. There should also be an adequate supply of special apparatus, such as stereopticons, balopticons, photomicrographic outfits and roentgen-ray equipment.

7. *Library and Museum Facilities.*—All graduate work in medicine demands intensive reading in the field studied. Library facilities in most of the graduate schools are either totally lacking or wofully inadequate. In some instances, however, this lack is provided for by good medical libraries attached to other nearby institutions. The graduate school, therefore, should have a medical library which should include an ample supply of modern text and reference books, files of bound medical periodicals, and the essential indexes. It should also receive regularly thirty or more standard medical periodicals, the latest numbers of which should be on tables or in racks where they are easily accessible to the graduate students.

The school should be supplied with adequate museum facilities, including anatomic and pathologic specimens.

8. *Hospitals and Dispensaries.*—Graduate courses in clinical subjects cannot be presented profitably in lectures only. There are objections to allowing short term graduate medical students to assume responsibility for the diagnosis and treatment of patients; nevertheless, ample clinical material must be available for demonstrations for short course students and for the personal use of properly qualified students in the longer term. The graduate medical school, therefore, should have a teaching hospital with a daily average of 200 or more patients, and an outpatient clinic with an average of 100 or more patients each day; or, if teaching is limited to a single specialty, a hospital of not less than twenty-five patients daily, and an outpatient clinic of at least fifty patients daily. In brief, it should have sufficient clinical material to enable it to provide satisfactory clinical study in the specialty or specialties for which opportunities are offered. In connection with the courses for general practitioners, ample clinical material should be available so that the student may be given the opportunity personally to examine patients in hospital wards and in the outpatient department, and to make the essential laboratory examinations.

9. *Annual Announcements.*—The graduate school should publish annually announcements, bulletins or catalogues giving detailed information in regard to its teachers, laboratories, dispensaries and hospitals; outlines of the various opportunities for study offered in both fundamental and clinical branches; a complete list of the students enrolled during the last preceding year, showing their medical schools and years of graduation and the subjects for which they registered, and a list of those to whom advanced degrees or diploma-like certificates were granted.

10. *Advanced Degrees, Diplomas, Certificates.*—No advanced degree of diploma-like certificate should be granted to any one who is not known to be proficient in the specialty pursued; nor to any one, under any circumstances, who has not completed at least one academic year in full-time study of a single special subject in the institution granting the certificate; and unless scholarship records of the student show that, throughout the period, he has faithfully attended to his work, and unless reasonable tests show that he has diligently and satisfactorily completed the work for which he was registered.

Summary

The following points in the Council's complete report are of particular interest:

MEDICAL EDUCATION

1. Greatly enlarged or entirely new teaching plants have been completed during the last fifteen years in eleven medical schools and are now under construction or planned for the immediate future in eleven others.

2. The total number of medical students has increased since 1919 at the average rate of 1,162 each year.

3. During the next three years indications are that the numbers of medical graduates will be increased by about 900 each year, reaching 4,500 in 1925.

4. The adoption of higher entrance requirements in medical schools has advanced the average age of students graduating by only three tenths of a year. The average age in 1922 was 26.8, as compared with 26.5 in 1916.

5. In order to establish a better correlation between laboratory and clinical teaching in medical schools, two definite measures are being adopted: (*a*) Making the curriculum more flexible by omitting detailed requirements, and (*b*) by erecting new plants whereby hospital and college will be in one building, where laboratories and hospital wards will be in immediate contact.

PROBLEMS OF MEDICAL PRACTICE

The rapid expansion of medical knowledge has brought with it several problems in medical education and practice, including:

1. *The modern training of general practitioners.* The training of general practitioners is a matter of special importance, since they should always constitute the great majority of physicians and will be called on to care for patients representing all varieties of diseases and injuries. This is a problem for further study by the Council in the early future.

2. *The training of the specialist.* Part 5 of this report deals in full with this subject.

3. *The relationship of the general practitioner to the specialist and the proportion of each type that is needed.* Reliable estimates are that from 80 to 90 per cent. of all cases of illness can be properly cared for by well qualified and resourceful general practitioners. While there is a legitimate and important field for properly trained specialists, therefore, the need of them should not be overemphasized. The trouble at the present time is that many physicians are posing as specialists without having first obtained the essential training.

4. *The proportion of patients that require hospitalization.* A reliable estimate states that over 90 per cent. of all patients can be cared for efficiently in their homes or in the physicians' offices without the need of the hospital.

5. *The development and function of group practice.* There are at present 270 groups listed with a total staff membership of approximately 2,430 physicians. These groups are divided into (*a*) the Closed Hospital Group, very few; (*b*) the One Man Group, most numerous; (*c*) the Diagnostic Group; (*d*) the Cooperative Group. (See Part 3 of this report.)

6. *The measures by which the benefits of modern medical knowledge and practice can be furnished to the entire public, including the supplying of physicians to rural communities.* The best solution at present appears to be for citizens of a community to guarantee a physician an income of $2,500 or more each year for a term of five years. By this measure, it it believed that any community having a sufficient population to support a physician can secure one.

HOSPITALS AND DISPENSARIES

In 1921 there were 6,236 hospitals, sanatoriums and homes listed. In the two years since that time about 512 "homes" which did not have hospital departments have been eliminated and the names of about 846 other hospitals have been added, making a total of 6,570 at the present time.

Of the hospitals for intern training, the required number of beds in those eligible for approval has been increased to

100; nevertheless the number of those approved for intern training has been increased from 627 to 654 and provision is made for 3,671 interns.

There are listed 3,294 dispensaries and clinics (excluding group practice) which provide care each year for approximately 8,000,000 *patients* who during the year make approximately 29,500,000 *visits* to the dispensaries. An increasing check is being kept regarding the financial status of the patients so that the abuse of medical charity in dispensaries is being held down to a reasonable minimum.

NURSE TRAINING

The suggestion regarding nurse education in the address of the Speaker to the House of Delegates, May 22, 1922, was referred to the Council on Medical Education and Hospitals. In accordance with the instructions of the House, a special committee was appointed to make a preliminary investigation of the problems of nurse education and to recommend what should be done.

The committee's report shows that the defects in the training schools of today are:

1. The course, on the whole, is unsystematized, unstandardized, and far from uniform.
2. There is too little systematic instruction in practical work and too much theory and certainly a lack of correlation between the two elements.
3. Too many of the teachers are poorly qualified.
4. There is too much of the pupil nurses' time wasted in uneducational routine work.
5. Many schools are connected with hospitals having utterly inadequate facilities.

RECOMMENDATIONS

The committee recommended:

1. That a committee be appointed made up of (*a*) physicians who are competent clinical teachers; (*b*) representative nurses, and (*c*) at least one educator who is neither a physician nor a nurse; that this committee be arranged for by the American Medical Association in conjunction with the National League of Nursing Education, each having equal representation and appointing its own representatives, and that the educator be selected by the other members of the committee when appointed.
2. That this joint committee prepare a standard minimum curriculum for the training of nurses; and
3. That it prepare a classification of nurse training schools in which only those which conform to the standard outlined be considered as acceptable.

THE COUNCIL'S RECOMMENDATIONS

After careful consideration, the Council makes the following recommendations:

(1) That the three following named individuals be selected to represent the American Medical Association in dealing with the problems of nurse education and service in cooperation with a similar committee appointed by the National League of Nursing Education:

Chairman, Dr. William Darrach, Dean of the Columbia University College of Physicians and Surgeons, New York.

Dr. Winford H. Smith, Superintendent of the Johns Hopkins Hospital, Baltimore.

Dr. Thomas McCrae, Professor of Medicine, Jefferson Medical College, Philadelphia.

(2) That in order to bring about the proper correlation of the work with the existing educational and hospital policies, it is recommended that the secretary of the Council on Medical Education and Hospitals be the secretary of the committee of three, without voting power.

GRADUATE MEDICAL EDUCATION

During the last year an inspection of all graduate medical schools in the United States has been completed by the Secretary of the Council and Dr. Louis B. Wilson of the Mayo Foundation.

From the data obtained in this investigation, a series of principles has been prepared as a basis for a proposed classification of the various graduate medical schools.

(See the Principles, Pages 23 to 27.)

CLASSIFICATION OF GRADUATE MEDICAL SCHOOLS

Based on the foregoing principles, the following classification of graduate medical schools is recommended:

CLASS A.—Those which have adequate equipment, which are furnishing acceptable and complete graduate courses of instruction in one or more specialties and which grant advanced degrees or diploma-like certificates only to students who are properly qualified.

CLASS B.—Those which (*a*) are seriously deficient in certain respects, or (*b*) which have ample equipment and offer acceptable courses but which grant advanced degrees or diploma-like certificates to students who are not properly qualified.

CLASS C.—Those which (*a*) do not have adequate equipment or teaching facilities, or (*b*) are not properly organized, or (*c*) do not adhere to the prescribed educational standards, or (*d*) offer courses in a specialty too brief or inferior to insure proper qualifications in the specialty, or (*e*) grant advanced degrees or diploma-like certificates to those not properly qualified.

Respectfully submitted.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS.
ARTHUR D. BEVAN, Chairman.
MERRITTE W. IRELAND.
RAY LYMAN WILBUR.
SAMUEL W. WELCH.
WILLIAM PEPPER.
N. P. COLWELL, Secretary.

REPORT OF THE COUNCIL ON SCIENTIFIC ASSEMBLY

Dr. J. S. Horsley, Virginia, Chairman, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work.

To the Members of the House of Delegates of the American Medical Association:

A meeting of the Council was held in Chicago, Dec. 28 and 29, 1922. All members were present except Dr. Ray Lyman Wilbur, President Elect, and Dr. George H. Simmons, Editor and General Manager, members ex-officio. December 29, the Council held a conference with the secretaries of the Scientific Assembly at the headquarters of the Association. All of the sections were represented by their secretaries or by other officers, with the exception of the Section on Practice of Medicine, the secretary of which, unavoidably absent, submitted a written report.

Assignments for the meeting hours of the different sections for the 1923 annual session were made as follows:

Sections to convene at 9 o'clock in the mornings of Wednesday, Thursday and Friday, June 27, 28 and 29: Practice of Medicine; Obstetrics, Gynecology and Abdominal Surgery; Laryngology, Otology and Rhinology; Stomatology; Pathology and Physiology; Orthopedic Surgery; Urology, and Gastro-Enterology and Proctology.

Sections to convene at 2 o'clock in the afternoons of Wednesday, Thursday and Friday, June 27, 28 and 29: Diseases of Children; Surgery, General and Abdominal; Ophthalmology; Pharmacology and Therapeutics; Nervous and Mental Diseases; Dermatology and Syphilology, and Preventive and Industrial Medicine and Public Health.

A memorial on the death of Dr. Alexander R. Craig, who served as Secretary of the Council on Scientific Assembly for a number of years, was adopted and ordered spread on the minutes of the Council.

Dr. F. H. McMechan requested a session for the anesthetists. Because the dates named in the resolution of the American and Midwestern Associations of Anesthetists, as set out in the letter of Dr. McMechan, appeared to conflict with the dates of the annual session of the American Medical Association, and because the Council believes it mutually advantageous for the members of the regularly established sections of the Scientific Assembly and the anesthetists to have papers on anesthesia and allied subjects before several

sections, it was decided that the request for a session on anesthesia in the Section on Miscellaneous Topics at the San Francisco annual session be not granted. In addition to the reasons stated above for this action of the Council, there was the further reason that, under the provisions of the Constitution and By-Laws of the American Medical Association, none but Fellows may participate in the work of the Scientific Assembly. It appeared that the several associations of anesthetists expecting to hold meetings in San Francisco embraced within their membership those who are not Fellows of the American Medical Association, but who would be expected to attend and participate in the program of the session requested. Dr. McMechan was notified of the decision of the Council in a letter addressed to him by the Secretary under date of Jan. 16, 1923, in which the reasons for this decision were set out fully. In this letter it was suggested, as directed by the Council on Scientific Assembly, that the members of the American Association of Anesthetists who are also Fellows of the American Medical Association seek to secure assignments on the programs of the regular sections of the Scientific Assembly.

A letter from Dr. J. M. Anders was transmitted to the Council through Dr. G. E. de Schweinitz, President of the Association, suggesting the creation of a new section in the Scientific Assembly, to be known as the Section on Physiotherapeutics and Hydrology, and presenting argument in support of this proposal.

The Council finds itself in thorough agreement with Dr. Anders' views with respect to the need for arousing the interest of the medical profession in the various forms of physiotherapy, but believes that the best place for papers on subjects pertaining to physiotherapeutics is in the Section on Pharmacology and Therapeutics, and that such papers may well be presented in other regular sections of the Scientific Assembly in which their informative value and their stimulating influence will be greatest. The Council is also of the opinion, as expressed in the report presented to the House of Delegates at St. Louis, that no radical changes should be made in the sections of the Scientific Assembly as they are now constituted. This opinion seemed to have the approval of the Reference Committee, to which the Report of the Council was submitted at St. Louis, as well as the approval of the House of Delegates itself.

January 13, a letter addressed to the President of the American Medical Association was received from Eleanor Clarke Slagle, secretary of the American Occupational Therapy Association, transmitting a resolution adopted at the last annual meeting of that association, in which it is requested that the American Medical Association and other scientific organizations shall set aside, in the program of their respective association meetings for 1923, a section for the discussion of occupational therapy. This letter was received too late for consideration by the Council at its regular meeting. The views of the Council with respect to the creation of new sections were fully set out in its report made to the House of Delegates at the St. Louis Annual Session, and those views have in no wise changed since that report was made.

A vacancy was created in the chairmanship of the Section on Obstetrics, Gynecology and Abdominal Surgery, when Dr. Edward P. Davis, after his election to this office at St. Louis, declared his unwillingness to serve. The By-Laws of the Association make no specific provision with respect to the advancement of the vice chairman of the section in case of the vacancy in the chairmanship. However, as it seemed necessary that the Section on Obstetrics, Gynecology and Abdominal Surgery should have a chairman specifically designated as such, by unanimous vote of the Council, Dr. H. S. Crossen, Vice Chairman, was advanced to the chairmanship, and authorization was given for having Dr. Crossen's name appear on the stationery of that section as its chairman. It is recommended that the By-Laws of the American Medical Association be so changed as to provide for filling any vacancy that may occur in the offices of chairman, vice chairman, and secretary of any section.

Dr. D. Chester Brown, Chairman of the Committee on Scientific Exhibit of the Board of Trustees, appeared before the Council at its meeting and presented the plans being considered by the Board of Trustees for the advancement of the Scientific Exhibit. The Council on Scientific Assembly feels that the Scientific Exhibit should be used for the promotion of scientific research, but also for the purpose of demonstrating to general practitioners practical methods of diagnosis and treatment; and that there is an important direct connection between the scientific sections and the Scientific Exhibit, because of the possibilities for using this exhibit to illustrate and to demonstrate papers which may be read before the sections. The Scientific Exhibit has been of increasing interest and value each year, and its possibilities for helpful instruction and for stimulating the interest of the Fellows of the Association in scientific methods of investigation, diagnosis and treatment have been demonstrated thoroughly. There undoubtedly should be closer connection established between the sections of the Scientific Assembly and the Scientific Exhibit, to the end that this exhibit shall be developed further as a means of instruction and assistance to the Fellows and members of the Association.

Dr. Frank Billings, Secretary of the Board of Trustees, appeared before the Council for the purpose of discussing the advisability of holding diagnostic clinics at the place of annual session of the Association each year. In the opinion of the Council, diagnostic clinics, to be held at the annual sessions of the Association, will offer splendid opportunity for a very helpful service to the members of the Association who may attend its meetings, and this Council heartily approves of the efforts that are being made by the Board of Trustees to provide for such clinics at the annual sessions.

At the conference of the Council with the section secretaries, held, December 29, a great many matters of importance to the Scientific Assembly were discussed. The benefits of this annual conference have been demonstrated amply, and it is probable that in no other way could the work of the Scientific Assembly be better advanced than by giving opportunity for discussion, between the section officers and the Council, of the many details that must be considered in providing programs of work for the Scientific Assembly.

On suggestion of the conference, which suggestion is heartily approved by the Council, it is recommended that Section 2, Chapter XV, of the By-Laws of the American Medical Association be changed by substituting in the third line of that section for the words, "immediately after it is read," the words, "before reading." Thus Section 2, Chapter XV, of the By-Laws would be made to read as follows:

"Sec. 2. PAPERS MUST BE READY FOR PUBLICATION.—Each author shall hand his paper to the secretary of the section before reading. The secretary shall endorse thereon that it has been read and shall hand it to the chairman of the executive committee. All papers approved by the executive committee shall be returned to the secretary of the section, who shall at once forward them to the editor of THE JOURNAL."

Some of the section secretaries expressed themselves at the conference with the Council to the effect that a rule should be adopted requiring all papers read before a section to be read in the order as presented in the Official Program. A rule of this kind seems to have become necessary, as proved by the experience of certain sections, and the Council has, therefore, adopted Rule No. 10 as follows:

"All papers read before a section shall be read in the order as presented in the Official Program."

Respectfully submitted,

J. SHELTON HORSLEY, Chairman.
ROGER S. MORRIS.
F. P. GENGENBACH.
JOHN E. LANE.
E. S. JUDD.

Ex Officio

RAY LYMAN WILBUR, President-Elect.
GEORGE H. SIMMONS, Editor and General Manager.
OLIN WEST, Secretary.

(To be continued)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 30, 1923

THE ETIOLOGY OF TYPHUS FEVER IN LABORATORY WORKERS

The infectious diseases have all too often taken their toll of human offerings from the ranks of those self-sacrificing investigators who have devoted themselves to the study of the etiology of these deadly maladies. The pathos of this devotion to our welfare has been peculiarly accentuated in the case of typhus fever, to which one distinguished student after another has succumbed, the latest of the victims being the distinguished entomologist A. W. Bacot of the Lister Institute in London, who died a year ago while engaged in investigations of typhus fever at Cairo, Egypt.[1] Certain lessons derived from this untimely loss of an eminent investigator should not be allowed to pass unnoticed. It is commonly stated in current textbooks that there is little, if any, doubt that typhus fever is transmitted by the bite of the body louse whose body harbors the infectious agent.[2] The exact manner in which laboratory workers, who have presumably been intelligently careful to avoid the bites of infected lice, have become infected with typhus fever has not always been clear. It has usually been accepted that an actual transference of at least one infected louse from the sick to the healthy has occurred. Contact with patients has presumably presented the risk of acquiring infected lice.

Nevertheless, Arkwright and the late A. W. Bacot,[3] both of whom became infected in the course of their investigations at Cairo in 1922, engaged to study the added possibility that infection may occur by means of the excreta as well as the actual bites of the louse. Atkin and Bacot [4] had attempted to infect monkeys by allowing infected lice, *Pediculus humanus,* to feed on them, taking care that the infection should not occur by inoculation of the excreta. Arkwright and Bacot have pointed out the lack of microscopic evidence suggesting that *Rickettsia* might be transferred from the louse by the act of biting; nor can these bodies be demonstrated in the fore part of the intestine, mouth parts or salivary glands.

In the case of both Arkwright and Bacot, it appears that neither of these workers had recently seen a typhus patient or been near a fever hospital. There is no reason to suppose that living infected lice had found their way to them. Consequently, Arkwright has concluded that probably the excreta of infected lice are one, if not the chief, source of laboratory infections with typhus; but of course other means of infection cannot be ignored, such as a prick with an infected dissecting needle. That the virus in louse excreta can readily enter the body through abrasions or slight wounds is very probable, and this has been shown to happen in the analogous case of trench fever. It is not unlikely that Schüssler met his untimely death after a laboratory infection with typhus, in which the virus was in all probability introduced into the eye or the mouth by the finger. These lessons and suggestions, secured at the cost of precious human lives, must assuredly not be forgotten or allowed to pass without receiving the most serious consideration.

1. Another Martyr to the Study of Typhus—A. W. Bacot, editorial, J. A. M. A. **78**: 1542 (May 20) 1922.
2. Brill, N. E., and Baehr, G.: Typhus Fever, in Nelson's Loose Leaf Living Medicine **1**: 192.
3. Arkwright, J. A., and Bacot, A. W.: Investigation of the Aetiology of Typhus Fever, Especially Undertaken for the Egyptian Government in the Public Health Laboratories, Cairo, Brit. J. Exper. Path. **4**: 70 (April) 1923.
4. Atkin, E. E., and Bacot, A. W.: Experiments on the Infectivity of Typhus Virus, Brit. J. Exper. Path. **3**: 196, 1922.

RESEARCH IN EPILEPSY

In spite of extensive clinical and experimental study, epilepsy still remains an unsolved problem. Only within comparatively recent times has it been realized that it is a symptom-complex that may be elicited by many causes, and is not a disease *sui generis.* Even the site of the nervous discharge that is responsible for the convulsions has not been established, and the mechanism of the discharge has been variously ascribed to defective neuron construction, the action of toxins, vasomotor disturbances, and finally to purely psychogenic factors. In the April, May, and June issues of the *Archives of Neurology and Psychiatry* is a noteworthy series of articles reviewing previous work and reporting the results of clinical, ecologic and experimental investigations that show real progress in this baffling problem.

The resemblance between the tonic spasm of the early stage of an epileptic convulsion and the extensor rigidity of the decerebrate animal has been noted by various observers; the clonic spasms, on the other hand, have seemed to correspond with the effects of stimulating the cerebral cortex. Using injections of picrotoxin to excite convulsions, Pollock has demonstrated, in cats and dogs, that both tonic and clonic phases, indistinguishable from those in the intact animal, occur in animals that have been decerebrated by section of the brain stem below the optic thalami. Even after section below the level of the seventh nerve nuclei, similar fits are sometimes evoked, though they are less severe, and a larger dose of picrotoxin is required.

These observations, if confirmed, establish that the cerebral cortex is not necessary for the evocation of a typical fit. From clinical and experimental study, Rosett propounds a highly suggestive and fundamental conception of the epileptic seizure. He points out that typical tonic spasm, and even at times clonic twitchings, can be observed in the every-day reactions of normal people to sudden and unexpected shocks, and that these reactions are influenced, in a manner identical with that shown by the seizures of epilepsy, by the administration of bromids, phenobarbital and caffein. He also calls attention to the fact that the one constant feature of the epileptic seizure is loss of consciousness, a fact which suggests that ablation of cerebral function is essential. He concludes that the epileptic fit is a discharge of midbrain centers when released from the control of the cerebral cortex, and is not a cortical discharge. This concept of "normal epileptoid reactions" accords well with many otherwise inexplicable facts and agrees with Pollock's findings just described.

Elsberg and Stookey studied convulsions produced by injections of absinth, and have also developed a new method of experimentation which depends on the fact that epileptic convulsions occur after temporary interruption of the cerebral circulation. By clamping off the arteries, it is possible also to establish an artificial circulation and to study the effects of various substances on the living brain. Among other results of their preliminary work, they find that, in cats and dogs, susceptibility to convulsions is increased by thyroidectomy and is not diminished by starvation. Even more striking is the conclusion that susceptibility is not exaggerated by diminishing the alkalinity of the blood by the direct injection of lactic acid. This observation appears directly to contradict widely accepted views on the rôle of acidosis in the mechanism of epilepsy. Acidosis is the cornerstone of the theory built up by Cuneo from his remarkable clinical and chemical studies. Cuneo demonstrated the presence of a proteose in the blood which he has been able to find only after an epileptic seizure, and compares it with histon derived from nuclei in which it exists in combination with nucleinic acid. Histon produces convulsions when painted on the cerebral cortex. Cuneo's work, which is appreciatively reviewed by Osnato, leads him to conclude that, contrary to general belief, the acidosis which he conceives as liberating the toxic proteose is due to faulty digestion of starches from deficiency of the alkalization function of the intestinal mucosa and liver, with the consequence that salts of organic acids are set free in the circulation. He found that convulsions were more numerous and severe on a diet rich in starches than on a meat diet, and also that administration of sodium acetate or tartrate to epileptics resulted in such severe fits that the experiment had to be discontinued.

These observations, as yet unconfirmed, open fresh leads which promise results for the future, of importance not only for the interpretation and eventual rational treatment of epilepsy, but also for the elucidation of some obscure phases of metabolism in uremia and other disorders accompanied by convulsions.

THE TREATMENT OF AMEBIASIS

Amebic dysentery, one of the more important diseases caused by protozoa, has not yet been put into the category of disorders for which a treatment that is both satisfactory and rational has been established. Emetin has long been known to have a toxic action on cultural amebas, and there seems to be little doubt that the drug possesses a definite remedial potency in the endamebic infections in man. However, despite the benefits secured in human therapy with emetin, the management of amebic infections still leaves much to be desired. Sellards and Leiva[1] of the Bureau of Science at Manila, for example, have lately called attention to the circumstance that few of the poorer Filipinos, even though they live in Manila, ever receive adequate and thorough treatment with emetin under satisfactory laboratory control. These investigators have given consideration to several plants belonging to the family *Simarubaceae*, which are very popular among the peoples native to the tropics as remedies for the treatment of dysentery. The outcome of the studies has been the demonstration that *Castela nicholsoni*, the chaparro amargoso of Mexico, possesses a chemical principle distinctly toxic for amebas. Therapeutic doses are well borne by patients suffering from amebiasis; and in several cases examined carefully, extracts of the plant gave prompt relief of symptoms, accompanied by disappearance of the amebas. According to the Philippine investigators, their results with *Castela*, which can be administered very simply, suggest a favorable comparison with emetin, in both the immediate and the final effects of treatment.

Although any drug that affords prompt clinical relief from amebiasis deserves serious consideration, it should be clearly appreciated, in the interest of progress, that neither *Castela nicholsoni* nor emetin, as employed at present, is an ideal agent for the eradication of *Endamoeba histolytica* infections in man. It has long since become evident, through careful examination of the stools of patients, that freedom from clinical symptoms does not constitute a biologic test for the eradication of the invading protozoa. A serious difficulty in the study of drugs detrimental to amebas has been the lack of satisfactory methods for artificial cultivation of the admittedly pathogenic species. From an experimental standpoint it is fortunate that amebiasis can be induced with more or less success in some of the common laboratory animals, notably cats. Spontaneous recovery is rarely noted.

Sellards and Leiva have come to the tentative conclusion, from their observations in treating infected

1. Sellards, A. W., and Leiva, L.: Investigations Concerning the Treatment of Amoebic Dysentery, Philippine J. Sc. **22**: 1 (Jan.) 1923.

animals with emetin, that recovery from amebic dysentery in man and other species results from a combined action of the natural resistance of the host and a moderate action of the drug on the amebas. The summation of these two factors is necessary for a radical cure. A lowering of either allows the disease to progress. Incidentally, also, they [2] have come to the conclusion that stasis is probably an important factor in determining the location of the lesions within the large bowel, in spontaneous amebic dysentery in man.

Current Comment

A STUDY OF SALICYLATES IN RHEUMATISM

The use of salicylic acid or its derivatives in clinical medicine is not a novelty. These continue to be employed with satisfactory results in a variety of disorders, among which acute rheumatic fever is outstanding in respect to the improvement or relief of patients affected by it. One cannot ascribe such widely recognized results to the passing enthusiasm for some novelty in drug therapy. Substantiated by years of empiric observation, they must have some more worthy explanation. Obviously, the search for the latter is rendered much more difficult so long as the etiology of the disorder is not clearly established. If we adopt the current hypothesis that rheumatic fever is an infection—a sort of "attenuated pyemia"—it seems logical to think first of all of the possible antiseptic action of salicylic acid in the body fluids, particularly in the inflamed joints where the infection may be localized. In previous issues of THE JOURNAL it has been pointed out, however, that the conditions existing in the living body preclude the possibility, or at any rate render it extremely improbable, that salicylic acid can accumulate in bactericidal quantities in the tissues during life. The antipyretic potency of the salicylates does not account for their beneficial effect in rheumatic arthritis, since other potent antipyretics are not equally efficient; and a similar argument of comparison applies to the doctrine of the analgesic virtues of salicylic acid derivatives. Morphin, for example, does not relieve the redness, heat and swelling of inflamed joints. In an attempt to imitate rheumatic arthritis experimentally in animals, Swift and Boots [3] of the Hospital of the Rockefeller Institute have noted that rabbits inoculated intravenously with nonhemolytic streptococci, while under the influence of full therapeutic doses of sodium salicylate, developed almost as many inflamed joints as the untreated controls similarly inoculated. The salicylated rabbits, on the other hand, had a much higher proportion of mildly inflamed joints than did the controls. This anti-inflammatory action was most evident in the animals inoculated with streptococci of the lowest virulence, and could not be demonstrated in animals inoculated with hemolytic streptococci. Thus we stand before the experimentally demonstrated fact that salicylates may modify favorably certain types of inflammation of the joints, while the explanation of this fortunately beneficent result still remains to be ascertained.

2. Sellards, A. W., and Leiva, L.: The Effect of Stasis on the Development of Amoebic Dysentery in the Cat, Philippine J. Sc. **22**: 39 (Jan.) 1923.

3. Swift, H. F., and Boots, R. H.: Influence of Sodium Salicylate on the Arthritis of Rabbits Inoculated with Nonhemolytic Streptococci, J. Exper. Med. **33**: 553 (April) 1923.

ACQUIRED RACIAL IMMUNITY TO INFECTIOUS DISEASES

The problem of successfully meeting the complex and unusual conditions that confront the sanitarian in the less developed semitropical countries of the world is one that tries the patience and engages the intellect of even the most highly trained persons. The principal medical officer of health of the Siamese government has recently remarked that "parlor sanitarians are uncommonly successful in devising ways and means to be applied in combating the epidemic diseases, but practicing hygienists not infrequently discover the impracticability of many of the hard-and-fast rules as decreed, and in no place is this so pronounced as in the Orient." This hygienist [1] has gained the conviction that students of the subject have overlooked a high degree of natural immunity to infection and resistance to disease that has gradually been acquired by many Oriental peoples. Thus, he believes that the specific immunity to typhoid demonstrable in 15 per cent. of the population of Siam is in the nature of racial immunity, acquired as the result of using for many generations an infected water and food supply. Mendelson believes that the nervous system of Orientals is more resistant to the effects of germ infection than that of Occidentals, and he alleges that, owing to a "general infection immunity," mortality may often be low even where morbidity from common infectious diseases is high. The instances of so-called "natural" immunity are always interesting to the student of hygiene. Will statistics and a broader experience bear out the thesis that has just been discussed? If they do, it will represent an important generalization in relation to world-wide conditions.

A MAD MOUNTAIN LION

In 1909 a girl, living near Morgan Hill, Calif., was attacked by a mountain lion and seriously bitten. The young woman made an uneventful recovery from the bites and scratches of the animal, but about seven weeks after the time of the injury she developed hydrophobia, and after being ill for one week with this condition, she died. A postmortem examination failed to reveal any other possible cause for the death. A boy who accompanied the girl and who had been severely scratched by the lion also died shortly afterward from a condition pronounced by the attending physician as tetanus, although another physician was inclined to diagnose the condition as hydrophobia. The incident was especially noteworthy because it is a general belief that the California mountain lion does not ordinarily attack human beings; in fact, there had been but one previously recorded instance in which this animal had, without obvious provocation, attacked a human being. Because of his interest in the case,

1. Mendelson, R. W.: National Immunity to Infection and Resistance to Disease, as Exhibited by the Oriental, with Special Reference to Siamese, Philippine J. Sc. **22**: 115 (Feb.) 1923.

T. I. Storer,[1] of the Museum of Vertebrate Zoology of the University of California, has made the present investigation. According to the records of the California State Board of Health, rabies has previously occurred in that state in horses, mules, cattle, sheep, goats, hogs, domestic cats, dogs, wild cats, coyotes and once each in the case of a ground squirrel and gray fox. The disease in the mountain lion may be added to the latter instances as a curiosity which, nevertheless, indicates the serious effects of this disease and emphasizes the importance of early Pasteur antirabic treatment in any instance in which a human being is bitten by one of the lower animals, particularly when it is impossible to determine definitely whether or not the animal is subject to this disease.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Chiropractor Fined.—Mrs. Blanche R. Fisher, a chiropractor of Sheffield, arrested recently on a charge of practicing medicine without a license, was fined $500, with the understanding that the fine would be reduced to $50 if she discontinued practice.

University News.—One of the new buildings of the University of Alabama School of Medicine, Tuscaloosa, will be named after Josiah Clark Nott, the founder of the Medical College of Alabama, Mobile, 1859. The college was removed to Tuscaloosa in 1920.

ARKANSAS

State Medical Examiners Elected.—At a reorganization meeting of the state board of medical examiners, in Little Rock, June 12, Dr. William H. Toland, Nashville, was elected president; Dr. Thomas H. A. Ross, Arkadelphia, vice president; Dr. James W. Walker, Fayetteville, secretary, and Dr. John T. Palmer, Pine Bluff, treasurer. Drs. Thad Cothern, Jonesboro, and Earle H. Hunt, Clarkesville, were elected to fill the vacancies made by the retirement of Drs. Wells F. Smith, Little Rock, and Julius A. Bogart, Forrest City. Revocation of license proceedings against Dr. James Ennis Parramore, Russellville, on a charge of advertising and offering to treat and cure chronic disease, will be continued at the next meeting of the board in November. The application for a license to practice medicine of George J. Henning, Dell, under act No. 244 of the recent legislature, was rejected.

CALIFORNIA

Orange County Medical Society.—At the annual meeting of the society in Santa Ana, May 10, Dr. Bessica F. C. M. Raiche, Anaheim, was elected president; Dr. Rowland P. Yeagle, Santa Ana, vice president, and Dr. Samuel A. Marsden, Santa Ana, secretary.

CONNECTICUT

State Medical Meeting.—At the annual meeting of the Connecticut State Medical Society at New Haven, May 23-24, the following officers were elected for the ensuing year: president, Dr. Elias Pratt, Torrington; vice presidents, Drs. George Newton Bell, Hartford, and Henry Gray Anderson, Waterbury; secretary, Dr. Charles Williams Comfort, Jr., New Haven, and treasurer, Dr. Phineas Henry Ingalls, Hartford.

GEORGIA

Personal.—Dr. Henry L. Akridge, Camilla, has resigned as health commissioner of Mitchell County and will accept a similar post with Glynn County. Dr. Charles O. Rainey, Camilla, was selected to succeed him.——Dr. John H. Winn has resigned as city physician of Columbus.——Dr. Montague L. Boyd, Atlanta, was the guest of honor at a meeting of the Bartow County Medical Society at Cartersville, in June.

ILLINOIS

Public Health Appropriations Curtailed.—The fifty-third General Assembly, which adjourned, June 19, cut nearly $200,000 from the biennial budget of the state department of public health. Funds requested in the budget were virtually the same in amount and character as those granted two years ago, so that the curtailment places the department on practically the same financial basis as on July 1, 1919. About $30,000 was trimmed from the social hygiene budget, while the item of printing was cut 20 per cent. Besides curtailing the regular public health appropriations, the legislature also declined to accept federal funds available under the Sheppard-Towner Act and those available for social hygiene work. It declined also to enact enabling bills, sponsored by the state department of public health, which would provide for the creation of county public health units. According to the state health commissioner, the department of public health will not be able to continue a number of constructive projects already in progress. The safe milk campaign, epidemiologic surveys based on individual reports of typhoid and smallpox, medical inspection of school children, better baby conferences and other similar field service will be limited. No public health legislation other than the bills providing funds for the state health department was enacted.

Chicago

Chicago Medical Society.—At the annual meeting of the Chicago Medical Society, June 19, the following officers were elected for the ensuing year: president, Dr. Archibald Church; president-elect, Dr. Jeremiah H. Walsh, and secretary, Dr. Roy R. Ferguson.

Gifts to Northwestern University.—At the annual commencement exercises of the university, June 18, it was announced that $100,000 has been received under the will of Mrs. G. F. Swift, and a like amount from Elbert H. Gary, John C. Shaffer and "A Friend."

INDIANA

Hospital News.—The contract has been let for the erection of the Cass County Hospital at Logansport, for $78,532. Other contracts for heating, plumbing and electrical work have also been let for $32,387.——The County Hospital, Noblesville, will be closed indefinitely after July 1, pending the installation of new heating equipment, it is announced. ——The new Clinton County Hospital, Frankfort, was formally opened, June 10. Rooms have been furnished and equipment donated by private and group funds. The institution will accommodate sixty-eight patients.

KENTUCKY

Laboratory for Louisville University.—The University of Louisville Medical Department will have three additional chemical laboratories erected that will double the capacity of the present laboratory, it was recently announced by Prof. A. W. Homberger, director of the chemistry department. Industrial chemistry, a new course teaching the relation of the science to all branches of industry, will be added to the list of allied subjects already taught at the university. Other courses will be extended to include more advanced work.

LOUISIANA

New Orleans Free from Bubonic Plague.—The U. S. Public Health Service has declared the port of New Orleans to have been completely free from any trace of bubonic plague for the last two years, and will entirely withdraw its services. Precautionary work in rat eradication and tests will be undertaken by the city board of health. A test of 200,000 rats caught in the last two years revealed no trace of infection whatever.

MAINE

Dr. Hagerthy to Succeed Dr. Searle.—Governor Baxter has appointed Dr. George R. Hagerthy, Bar Harbor, a member of the Maine Board of Registration of Medicine, to succeed Dr. Frank W. Searle, who has retired on account of ill health.

1. Storer, T. I.: Rabies in a Mountain Lion, California Fish and Game 9: 45 (April) 1923.

Child Welfare Campaign.—The Maine Public Health Association has appointed a committee to draft a state-wide program of child health work for volunteer health workers. Dr. E. D. Merrill, Dover-Foxcroft, is chairman. The high death rate in Maine among children, especially children of pre-school age, has been a matter of great concern to health workers throughout the state.

MARYLAND

Conference of Health Officers.—The annual conference of health officers and boards of health from the counties of Maryland was held at the Medical and Chirurgical Faculty Building, Baltimore, June 8. It was determined at this time to secure a full-time health officer for every county in the state. This method of conducting public health service, previously advocated by the state department of health, was given particular impetus at the meeting by an address on the subject by Dr. Warren F. Draper, assistant surgeon-general of the U. S. Public Health Service. At present, Allegany and Montgomery counties are the only two which have the services of a full-time health officer.

MASSACHUSETTS

State Medical Meeting.—At the annual convention of the Massachusetts Medical Society in Pittsfield, June 12-13, the following officers were elected for 1923-1924: president, Dr. Enos H. Bigelow, Framingham; vice president, Dr. Ayers P. Merrill, Pittsfield; secretary, Dr. Walter L. Burrage, Brookline, and treasurer, Dr. Arthur K. Stone, Framingham. Dr. Dean Lewis, Chicago, delivered the annual Shattuck lecture, June 12.

Hospital News.—The new forty-bed Methuen General Hospital, Lawrence, was formally opened, recently. This institution was equipped by Drs. Timothy Daly, Harry Penn, Constant Calitri and James I. Lawlor, local physicians who will comprise the staff. Drs. Wyman Whittemore, Frederick B. Lund, A. J. Leary and Russell Sullivan of Boston will be attending physicians.——The New England Deaconess Hospital, formally opened its new hospital in Boston, which was erected at a cost of $400,000. The new extension has a capacity of 125 beds, making a total of 175 for the entire building. Bishop Hughes, dedicated the building and Governor Cox gave an address.

MINNESOTA

Hospital News.—The name of the Hopewell Hospital, Minneapolis, has been changed to Parkview Sanatorium.—— The St. Paul City and County Hospital has been renamed the Ancker Memorial Hospital in honor of the late Dr. Arthur B. Ancker.——Two new buildings will be erected at the Willmar State Hospital, Willmar, at a cost of $166,000, it is announced. ——A three-story addition to Naeve Hospital (now the City and County Hospital), Albert Lea, to cost $65,000, is under construction.

Personal.—At the recent commencement exercises of McGill University, Montreal, the honorary degree of doctor of laws was conferred on Dr. William J. Mayo of Rochester. Dr. Mayo has sailed for Europe, where the degree of master of surgery will be conferred on him by Trinity College, the University of Dublin, and the degree of doctor of science by the University of Leeds. He will present a paper before the International Surgical Congress, July 17.——Dr. Frederic Wharton Rankin of the Mayo Clinic, Rochester, has been appointed professor of surgery at the University of Louisville Medical Department, Louisville, Ky. Dr. Rankin was recently married to Miss Edith Mayo.

MISSOURI

Leper at Large.—It is reported by the state board of health that Emery Lambert Langley, of Essex, Stoddard County, afflicted with leprosy, is at large in Missouri, having escaped from the government clinic at Hot Springs, Ark., where he had been sent for treatment, and where it was discovered he had leprosy.

Applicants for Licenses Examined.—The state board of health examined 142 applicants for license to practice medicine at the meeting held in St. Louis, June 6-9. This is the last examination which will be held under the law passed in 1921 removing the word "reputable" from the statute. The new law passed in 1923 restoring the word "reputable" became effective June 18.

NEW JERSEY

Amendment to Midwifery Act.—During the last session of the legislature of New Jersey, the midwifery act was amended to require 1,800 hours' training in a period of not less than nine months to make a candidate eligible for examination for a midwifery license.

Campaign Against Rabies.—The board of health of Bayonne made an emergency appropriation of $1,000, June 12, with which to combat the stray dog nuisance in the city. Dr. William W. Brooke, health officer, is making an effort to have all the dogs in the city vaccinated. Fourteen persons have been bitten by dogs and cats recently. Eleven of the dogs were found to have rabies and the eleven persons bitten by them are under treatment. The cost to the city of each case will be $40.

NEW YORK

Personal.—Dr. George F. Mills, formerly health officer of Oneida, has been appointed on the staff of the public health lecturers employed by the Council on Health and Public Instruction of the American Medical Association.——Dr. John S. McCormick, Albany, has been appointed to the medical staff of the workmen's compensation bureau of the state department of labor.

Hospital News.—A drive has just been completed in which the sum of $50,000 was collected for the new fifty-five bed Wyoming County Community Hospital, to erect an addition to the present Warsaw Hospital.——The Southside Hospital, Babylon, L. I., will move into its new home at Bayshore, L. I., July 1.——The board of managers of Tarrytown Hospital have voted to use the Dr. Coutant Memorial Fund of $14,000 to construct a nurses' home, if the plan meets with the approval of Mrs. Coutant. The fund was raised among citizens of the community as a memorial to Dr. Coutant. A tablet will also be placed in the main hospital building in memory of the late physician.——Charles H. Hornby has resigned the superintendency of St. John's Riverside Hospital, Yonkers, and will locate at Schenectady. Mr. Hornby was for twelve years superintendent of the Flower Hospital, and for eight years head of the New York Medical College and Hospital for Women, New York.——In accordance with a bill passed by the last legislature, plans are being prepared for a new hospital for the care of mental cases at Kings Park, L. I., to be erected at a cost of $1,500,000. It is planned to concentrate at this institution all the war veterans now scattered through the state hospitals for the insane. Ground will be broken by Governor Smith, July 4. An elaborate program has been arranged for that occasion.

New York City

Worthless Checks Cause Physician's Arrest.—According to reports, Dr. David B. Ballin, New York, was arrested, May 31, in New Orleans, on complaint of the Memphis, Tenn., police that he had passed several worthless checks while in that city recently.

Death Rate This Year.—The death rate for New York City for the week ending June 16 was below that of the corresponding week of last year, that week and the one previous being the only ones during the last three months of which this is true. This was 10.26 as compared with 11.21 for the corresponding week of last year. The mortality for the first twenty-four weeks of 1923 has been 13.79, as compared with 14.06 for 1922.

NORTH CAROLINA

Hospital News.—Through a gift from William H. Williamson of Raleigh, additions are being made to the Rex Hospital, Raleigh. The former surgical department is being made over into a children's ward and new quarters are being provided in the building for surgical service. Twenty beds will thus be added to the institution.——Another unit will be added to Salisbury Hospital, Salisbury, at the same time as the repairs made necessary by a recent fire are being made.

Course in Internal Medicine.—Graduate courses in internal medicine will be conducted in several western North Carolina cities during the next three months under the auspices of the extension division of the University of North Carolina. This work was started in 1916, but lapsed and was revived in 1922, when courses were given in various places in the state. The courses proved so popular that the university decided to continue and extend them. Asheville, Charlotte, Raleigh and New Bern will be centers for the circuits. Twelve lec-

tures and clinics, one each week, will be held at specified times and places. Dr. Frank A. Chapman, instructor in medicine, Rush Medical College, Chicago, will conduct the courses.

OHIO

Bill to Protect Hospitals.—Senate bill 104, which becomes effective July 22, increases the penalty for defrauding a private hospital by permitting the trial judge to impose a penitentiary sentence of from one to five years.

Personal.—Mayor Carrell has appointed Dr. Miffin B. Brady a member of the city board of health of Cincinnati, to succeed the late Dr. George A. Fackler.——Dr. George P. O'Malley, Lakewood, has been awarded the distinguished service cross for "extraordinary heroism in action in France" during the World War.——Dr. Raphael Isaacs, Cincinnati, has been appointed instructor in medicine at Harvard Medical School, Boston, and assistant physician at the Huntington Hospital.——Dr. George M. Logan delivered an address on "Gas Gangrene" before the Summit County Medical Society at Akron, June 5.——Physicians of Ashland County gave a dinner in honor of Dr. William H. Reinhart, Polk, and Dr. Oliver B. Richards, Nova, two of the oldest members of the profession in the county, June 26.——Dr. Porter C. Pennington, has resigned as coroner of Hancock County. His successor has not yet been named.

OREGON

State Health Officers Convene.—The Oregon State Health Officers' Association was organized in Portland, June 12-13. Dr. George Parrish, city health officer of Portland, was elected president of the association, and Dr. Frederick D. Stricker, state health officer, was elected secretary. Dr. Richard B. Dillehunt, dean of the University of Oregon Medical School, spoke on "Preventive Medicine." A symposium on syphilis was the feature of the afternoon session, June 12.

PENNSYLVANIA

State Health Commissioner Entertained.—Members of the Luzerne County Medical Society gave a dinner, June 1, at Wilkes-Barre, in honor of Dr. Charles H. Miner, state health commissioner. Dr. Edgar M. Green spoke on "Community Health," and Dr. Frank R. Wheelock, city health officer of Scranton, on "The Relation Between the City and State Health Departments." Col. P. M. Ashburn, commandant at the army field medical school, Carlisle, also gave an address.

Personal.—Dr. Lawrence Litchfield, Pittsburgh, president of the state medical society, was the guest of honor of the Venango County Medical Society at Oil City, May 18. Dr. Litchfield gave an address on "Diagnostic Problems of the General Practitioner.——At the fifty-fifth commencement of Muhlenberg College, Allentown, June 14, the honorary degree of doctor of science was conferred on Dr. William A. Hausman, Jr., dean of the surgical department of the Sacred Heart Hospital, Allentown.

Philadelphia

University News.—Dr. Bowman C. Crowell, Charleston, S. C., has been appointed professor of pathology in the Jefferson Medical College of Philadelphia, to succeed Dr. William M. L. Coplin, who resigned.——At the election of the general alumni of the University of Pennsylvania, Dr. John Norman Henry was reelected president.——Members of the Hahnemann Medical College and Hospital of Philadelphia, 325 in number, gave a testimonial dinner to the thirty-one graduates of the 1923 class. Dr. Harvey W. Wiley, Washington, D. C., delivered the principal address at the commencement exercises. —Dr. Collier F. Martin has resigned the chair of proctology; Dr. Eugene J. Asnis has resigned the chair of pathology and bacteriology, and Dr. Harry Z. Hibshman has been advanced to clinical professor of proctology at the Temple University Department of Medicine, Philadelphia.

SOUTH CAROLINA

Personal.—Dr. William M. Bevis, past assistant surgeon, U. S. Veterans' Hospital No. 78, North Little Rock, Ark., has been appointed medical director of the Waverley Sanatorium, Columbia, to succeed Acting Director Dr. Connie M. Guion, who has returned to her practice in New York City.——Dr. Julius H. Taylor, Columbia, and Dr. Robert E. Able, Chester, were appointed members of the state board of medical examiners by the governor, June 4.

University News.—Announcement that the degree of doctor of philosophy, in addition to the master's degree, will be offered by the University of South Carolina was made, June 5, by the university authorities. A preliminary education equivalent to the full university course, and three years of full-time work will be required of applicants for the doctor's degree. The announcement states:

> This degree aims to foster the spirit of scientific research and to register its results in the form of an approved dissertation which shall either add to the sum of human knowledge or shall contribute to the solution of some important problem by the systematic and original rearrangement of knowledge already acquired.

TENNESSEE

County Society Reorganized.—The Robertson County Medical Society was reorganized, May 1. Dr. William W. Porter, Springfield, was elected president; Dr. Will F. Fyke, vice president, and Dr. Benjamin F. Fyke, secretary-treasurer.

WEST VIRGINIA

West Virginia State Medical Association.—At the fifty-sixth annual convention of the state medical association in Beckley, June 19-21, Dr. Robert A. Ashworth, Moundsville, was elected president; Dr. Charles S. Smith, Beckley, vice president; Dr. Delivan A. MacGregor, Wheeling, secretary, and Dr. Hugh G. Nicholson, Charleston, treasurer. The 1924 session will be held at Wheeling.

WISCONSIN

Hospital News.—A new nurses' home will be erected in the near future at South View Hospital, Milwaukee.——Waldheim Park Sanatorium, Oconomowoc, operated by Dr. John H. Voje, has been purchased by the Toren Restoration Hospital. Dr. Julius A. Toren, Chicago, will be medical director. Improvements and remodeling are planned.——The Holy Family Hospital, Alverna, near Manitowoc, has taken bids on a $300,000 addition.——Plans are being prepared for the Methodist Hospital building to be erected at Richland Center. Bids will be called for about July 1.

CANADA

Personal.—Dr. Charles K. Clarke, Toronto, delivered the Maudsley lecture before the Medico-Psychological Association of Great Britain and Ireland, May 24.——Dr. Albert E. Best, Toronto, has returned to West China for a second term of service. He will lecture on internal medicine at the Union University, Chengtu. —— Dr. Helen MacMurchy, Toronto, recently received the honorary degree of doctor of medicine from the University of Toronto.——Dr. Orfila, professor of gynecology at the University of Montevideo, Uruguay, and Dr. Leiva, professor of anatomy at the University of Salvador, Central America, were recent visitors to Toronto, Ont. —— Dr. C. D. Parfitt, Toronto, was elected president of the Canadian Tuberculosis Association at the annual convention in Edmonton, Alta., recently —— Dr. W. Easson Brown, Toronto General Hospital, read a paper on "Ethylene as a General Anesthetic" before the Canadian Society of Anesthetists at Montreal, recently.——Dr. Thomas C. Routley, secretary of the Canadian Medical Association, has left Toronto for San Francisco to attend the annual session of the American Medical Association as representative of the Canadian association. He will attend medical meetings in Victoria, Vancouver, Calgary, Saskatoon and Winnipeg on his way back.——Dr. Stewart S. Skinner has resigned as registrar for New Brunswick on account of his health. Dr. John S. Bentley will succeed him.——Dr. Archibald L. C. Gilday has been appointed superintendent of the Western General Hospital, Montreal.——Dr. Arthur Rousseau, dean of Laval University Faculty of Medicine, Quebec, and Dr. Louis De L. Harwood, dean of the University of Montreal Faculty of Medicine, were appointed delegates to represent the governments of Quebec and Ottawa as well as their respective universities at the convention in Strasbourg in June. —— Dr. Charles M. Anderson, Toronto, has been appointed director of laboratories for the Ontario Board of Health to succeed H. M. Lancaster, Sc.——Dr. Joseph W. Warren, Calgary, has been appointed director of the department of radiology at the Provincial Royal Jubilee Hospital, Victoria, B. C.

CANAL ZONE

Yellow Fever in Colombia.—The International Health Board announces an outbreak of yellow fever in the Republic of Colombia, at Bucaramanga, 450 miles in the interior. A statement was received from the national director of hygiene, Gogata, Colombia, giving his opinion that the disease was "ictero-epidemica de Weil," with some cases of pernicious

malaria, but Surgeon Joseph H. White, U. S. Public Health Service, May 16, confirmed the diagnosis of yellow fever. Seventy-three cases appeared within four months, with fifteen deaths.

PORTO RICO

Tuberculosis in Porto Rico.—The U. S. Public Health Service announces, following a five months' study by Dr. J. G. Townsend, that the death rate in Porto Rico from tuberculosis is more than 200 per 100,000, which is higher than in any state in the Union except Colorado. The rate in Porto Rico is especially high among laborers and is largely due, it is said, to housing and diet conditions.

GENERAL

Medical Journal Changes Hands.—Owing to the death of Dr. Harold C. Ernst, Boston, editor of the *Journal of Medical Research* since 1896, that journal has become the property of the American Association of Pathologists and Bacteriologists and will be published in the future by a board of editors appointed by the council of the association. It will be devoted to the prompt publication of original observations and investigations in the field of pathology. Papers in the field of medicine covered by the journal are solicited for publication. All communications should be addressed to the editor-in-chief, Dr. F. B. Mallory, Boston City Hospital, Boston. Members of the association will receive the journal as in the past.

Society News.—The first convention of the American Child Health Association will be held in Detroit, October 15-17. The program will be designed to cover child health from prenatal life to maturity.——The annual meeting of the Southern Minnesota Medical Association was held in Faribault, Minn., June 11-12, at the Minnesota School for the Deaf. Members and visitors were entertained by the Rice County Medical Association. Clinics were held by Drs. E. Starr Judd, Rochester, Minn.; Archibald MacLaren, St. Paul; Archa E. Wilcox, Minneapolis, and Olin W. Rowe, Duluth, Minn.——The eleventh annual meeting of the Eugenics Research Association was held in Cold Spring Harbor, N. Y., June 16. Judge Olson, chief justice of the municipal courts of Chicago, presided.——The annual meeting of the Valley of Virginia Medical Society was held in Winchester, May 31. Dr. Hunter H. McGuire, Winchester, is president of the society.

LATIN AMERICA

Yellow Fever in Bahia.—The director of the public health service at Rio de Janeiro has received information from Bahia to the effect that the yellow fever epidemic has declined, only four cases being reported during the previous month.

New Medical Organization in Brazil.—The Sociedade Brasileira de Hygiene has been formed in Rio de Janeiro for the study of sanitation questions, under the presidency of Dr. Carlos Chagas. Its first congress will be held Sept. 7, 1923.

New Medical Journal in Central America.—The first number of the *Boletin de la Subsecretaria de Higiene y Salud Pública*, San José, Costa Rica, has made its appearance, with the statement that there is no other strictly scientific publication in that country. Dr. Solón Núñez, the undersecretary of the public health department, is the editor.

Public Assistance in Peru.—A bureau of public assistance has been organized in Peru, headed by Dr. Felipe Chueca. The new bureau is divided into four sections, namely, first aid, venereal prophylaxis, laboratory and dental clinics, headed, respectively, by Drs. J. Romero, M. García Godos, J. Monteverde and J. E. Bellido. A syphilis hospital-dispensary has also been opened to give treatment, free of charge.

Prizes Offered by the Academy of Sciences of Cuba.—The prizes to be awarded in May, 1924, are: the Dr. Suárez Bruno prize consisting of a diploma and 300 pesos, for the best work on "Anemias of Parasitic Origin"; also a diploma and 100 pesos; the Cañongo prize of 250 pesos for the best work without specified topic; the Gordon prize of a gold medal for the best work on the "Respiratory Functions and the Circulation in Cubans." The competing articles, written in Spanish, English or French, must be sent anonymously, with the author's name in an accompanying sealed envelop, and must be received before March 30, 1924.

Personal.—Dr. Enrique Bazterrica has been elected president of the new board of directors of the Surgical Society of Buenos Aires. Other officers elected are: Drs. José M. Jorge, vice president; Oscar Copello, general secretary; Guillermo Zorraquín, corresponding secretary; Adrian J. Bengolea, manager of publications; Guillermo Bosch Arana, librarian; Marcelo Viñas, treasurer, and Enrique Finochietto and Luis Lenzi.——Dr. Alvaro Alvim has returned to Rio de Janeiro from his trip to Europe where he went for treatment of a persistent professional radiodermatitis, and has resumed his practice at the Alvaro Alvim Institute of Radiology. His twenty-eighth anniversary as founder and director of this institute was recently celebrated in company with professional associates, friends and representatives of the press.——Dr. A. Navarro, professor of surgery at Montevideo, has been elected foreign corresponding member of the Instituto Médico Sucre in Bolivia.——The *A. M. M.*, the official organ of the Mexican Medical Association, states that Drs. Gabriel Malda and Quevedo y Mendizábal of Mexico City have left for Europe to attend some of the medical congresses this summer in France.——Dr. Salvador Zubirán y Anchondo of Mexico, is in New York for postgraduate work in internal medicine.

FOREIGN

Investigation of Health Conditions in Japan.—As a result of the request of Dr. Miyajima at the fourth conference of the International Health Commissioners at Geneva, in 1922, the conference committee recently sent experts to Japan to investigate health conditions, especially the methods for the prevention of epidemic diseases. The investigating committee is working at the laboratories of the department of home affairs in Tokyo, Yokohama, Kobe, Osaka, Nagoya and Kyoto.

Royal Institute of Public Health.—The annual meeting of the Royal Institute of Public Health was held in Scarborough, England, May 16-21. Dr. J. R. Kerr read a paper on the "American Industrial Doctor," outlining the progress in medical and surgical care for employees in the United States during the last fifty years. The second day was devoted to discussions on venereal disease, and the third to problems of birth control. Sir Leonard Rogers called attention to the intimate relation between leprosy and rainfall; Whittingham and Rock described their work on the prevention of phlebotomus fever in Malta; and Major Frost, R. A. M. C., read a paper on "The Interaction Between Syphilis and the Ductless Glands."

League of Nations Health Committee.—At the sixth session of the League health committee, at Paris, May 26, the development of intergovernmental cooperation in public health matters was discussed. As regards epidemiologic intelligence and public health statistics, a regular and rapid method for distributing information has been installed. Three committees were formed: the first, to investigate the prevalence of epidemic (lethargic) encephalitis and tuberculosis in tropical Africa since the World War; the second, to investigate the quantity of opium and other habit-forming drugs required annually by the various nations for legitimate purposes, and the third to collect information for a conference among various European states having navigable inland waterways, for the purpose of coordinating and strengthening sanitary control, without interfering with the normal functions of the waterways. A report was made of research work conducted in laboratories scattered all over the world during the last eighteen months, aiming at an international standardization of serums. A similar program was proposed in regard to insulin, digitalis, and pituitary extract. Public health courses are being conducted for public health officials in Warsaw, Kharkov and Moscow under the auspices of the health organization of the League, and, by an arrangement with the Soviet Russian delegation at the Genoa conference, the members of the health committee, together with a delegate from the central health authorities of Soviet Russia, constitute a special international commission for discussing the anti-epidemic campaign as it affects Russia.

Deaths in Other Countries

Dr. **T. R. L. P. Pillai Avl,** assistant surgeon to the Viceroy of India; aged 52; of angina pectoris.——Dr. **Eric A. Lanford** of London, Eng., at sea, May 22.—Dr. **John Chiene,** emeritus professor of surgery at the University of Edinburgh, Scotland, recently.——Col. **James C. Robertson,** Indian Medical Service, at Simla, of pneumonia, May 13.——Dr. **James M. G. Swainson,** demonstrator in anatomy, St. Thomas's Hospital Medical School, London, Eng., aged 50.——Dr. **Henry Willey,** aged 84, at Reigate, Eng.——Dr. **Edward V. B. Harley,** professor of pathological chemistry, University College, London, suddenly, May 21, aged 59.——Dr. **Henry F. E. Harrison** in London.——Dr. **F. C. R. M. Knight** of London, May 7, following an operation.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 3, 1923.

The Prevention of Venereal Disease

A committee appointed more than a year ago by the ministry of health to inquire into and report on the best medical measures for preventing venereal disease in civilian communities has presented an important report. The committee, consisting of a number of specialists, held twenty-eight meetings and examined a large number of medical witnesses, including medical officers in charge of clinics for venereal disease, health officers, medical women and social workers. Under the terms of reference, the committee was confined to the consideration of medical measures, but it records its conviction that these alone can never be an absolute preventive; their success must always depend largely on the cooperation of the community. Such cooperation can be hoped for only if full knowledge of the nature of the problems becomes common property. Such measures as extension of knowledge as to the nature of venereal disease and its consequences should be employed contemporaneously with medical measures. The community should be made to appreciate, as far as possible, that promiscuous intercourse is the main cause of venereal disease; that there is no absolute preventive except continence; that a large number of sufferers are innocent persons; that syphilis is a disease of great gravity if not treated early; that it causes serious results and is transmissible to children; that gonorrhea is a more serious disease than is commonly supposed, and that these diseases are a menace to the maintenance and advancement of the physical and intellectual standard of the race. Measures should also be taken to diminish those conditions of life which tend to foster promiscuous sexual intercourse and the spread of disease.

Medical measures are divided into two classes—those for preventing disease or minimizing the risk in persons exposed to infection, and measures for rendering noninfective and for curing diseased persons. With regard to prevention, the committee thinks that a man who, after exposure, thoroughly and promptly uses disinfectants runs little risk of infection. But the chances of failure increase rapidly as the interval between exposure and the application of disinfectants lengthens. In syphilis, disinfection within an hour would generally be successful, and in gonorrhea, there is a prospect of success after a longer interval. But it is extremely difficult for a woman to disinfect herself, and the prospects of success in disinfection by another person, however skilful, are less than in the case of a man. Though chances of success are greater in the case of skilled disinfection than in that of self-disinfection, an intelligent man, furnished with reasonable instruction, should, in favorable conditions, be able to disinfect himself. Should public facilities be afforded for disinfection? There is little direct evidence on the point. The committee thinks that the success of any public facilities for self-disinfection in the civil community is likely to be small. The law should be altered so as to permit pharmacists to sell *ad hoc* disinfectants, provided in an approved form with instructions from a competent authority. The Medical Research Council should be invited to draw up the instructions. The commercial advertisement of *ad hoc* disinfectants should be prohibited. The instruction of male patients by medical officers of venereal disease clinics in the preventive use of disinfectants would be a useful means of educating the community. But money spent on a general system of providing facilities for self-disinfection would be less profitable than money spent either on treatment or on measures of education and improvement of social conditions. The chances of the success of skilled disinfection must necessarily be much limited by reason of the time that generally elapses between exposure and disinfection. The cost of any general system of skilled disinfection would be large; the system is inappropriate to rural districts or small towns, and the committee does not recommend its adoption as part of any general system.

With regard to the treatment of the disease, the general physician is not yet adequately equipped with the most advanced knowledge to enable him to deal competently with all cases. The venereal disease clinics are doing valuable work, which should be extended and improved. One of the difficulties is the tendency of patients to cease to attend clinics before they have completed their course. As to notification, it would be of little value unless supported by a system of compulsory treatment, and, if necessary, detention. In the present state of public opinion, any system of compulsory notification would tend to concealment and would be a backward step. Another difficulty in the way of compulsion is that there is no generally accepted standard of noninfectivity or cure. The attention of public authorities should be directed to the entry into the country of persons suffering from venereal disease. This may be a serious source of danger. The treatment of seamen suffering from venereal disease is important, and requires special organization. A considerable number of mental defectives suffer from venereal disease, and the arrangements for their control and treatment are inadequate. In certain areas, special measures for prevention would be justifiable, such as measures for dealing with defaulters, or, in a large seaport, public ablution centers, for disinfection in the neighborhood of docks. So far as conclusions can be drawn from figures of attendances at clinics, venereal disease is declining, as it was before the war.

Presentation to Dr. Byrom Bramwell

At the Royal College of Physicians of Edinburgh, a large and distinguished company assembled for the presentation of portraits of Dr. Byrom Bramwell, one to himself and another to the college. Subscriptions for the purpose, amounting to more than $2,300, had been received and were still coming in. The subscribers numbered more than 250, and were physicians not only from all parts of the British Isles but also from the dominions and the colonies and from the United States. The original intention was to present Dr. Bramwell with a portrait from old medical friends and pupils; but, in view of the large number of subscriptions, the second portrait was presented to the college, of which he had been a distinguished president. Sir David Drummond, in making the presentation, referred to Dr. Bramwell's great abilities as a teacher, and the esteem in which he had been held by generations of students. As a worker, he had always occupied the first rank of clinical investigators. His works and his recorded cases had always commanded the confidence and attention of the profession, and his opinion as a physician had been sought far and wide. Sir Humphry Rolleston, president of the Royal College of Physicians of London, in presenting the second portrait, said that Dr. Bramwell's pupils welcome the opportunity of expressing their admiration for a clinical teacher of world-wide fame. To no other physician-teacher of the Edinburgh school had outsiders looked up, during the last thirty or forty years, as they had to him.

The New Buildings at University College

The king and queen visited University College to lay the foundation stones of the new obstetric hospital and new nurses' home, and to open the new anatomy buildings. These

have been made possible by the munificent gift from the Rockefeller Foundation of $6,000,000. The anatomy building has five floors, the ground floor being devoted to dissecting and radiography, the second to teaching and museums, the third and fourth to research in anatomy, histology and embryology, and the fifth to microscopic anatomy. There is accommodation for live animals and a room for cinematographic study of animal movements. The king said that there could be but few instances in which such a gift had been received from a single benefactor. It was the more impressive as it had been bestowed by a citizen of the United States on a college and hospital in London, and thus on the people of Great Britain. It created another tie of sympathy and friendship which linked us with the United States, and was also evidence of the conviction that the progress of science and the welfare of mankind were not limited by national or racial boundaries. The Rockefeller trustees were influenced in their decision by the establishment at the college of the "unit system" of medical teaching, which was a substantial development of the traditional British system of entrusting the teaching to men actively engaged in private practice. But the advance of knowledge had necessitated this reorganization, which would give impetus to the more effective training and equipment of the British practitioner. The underlying principle was as old as Ecclesiasticus: "The wisdom of a learned man cometh by opportunity of leisure; and he that hath little business shall become wise." Among the distinguished company present were the staff of the American embassy and Dr. G. E. Maclean, director of the American University Union in Europe.

PARIS

(From Our Regular Correspondent)

June 1, 1923.

The Criminal Liability of Trephined Persons

Prof. Jean Lépine, dean of the faculty of medicine of the University of Lyons, recently presented to the Academy of Moral and Political Sciences a communication on the subject of the criminal liability of persons who have been trephined. Persons who have suffered skull injuries, when prosecuted for a misdemeanor, often plead as an excuse the mental upset caused by their wound. This excuse, which, for sentimental reasons, has considerable weight when ex-service men are concerned, has secured indulgent verdicts from many juries and even from tribunals. The plea has the twofold disadvantage of gradually establishing unfortunate judicial precedents (for, before long, the benefits of this partial exemption from punishment will be extended to traumas received elsewhere than on the battle field) and of being not strictly scientific. Misdemeanors for which the sequels of a cranial wound might most legitimately be invoked are, more especially, attacks on the person, or acts due to impulsiveness. Lépine endeavors to show that this impulsiveness, which may reach the height of frenzy of an epileptic equivalent, and, like an epileptic seizure, be not consciously felt by the subject, is not due solely to the presence of the wound. It depends to a great extent on the temperament of the person, and still more on the action of toxins, such as alcohol. Alcohol plays a decidedly important part in the impulsiveness of persons who have suffered skull injuries, as well as in their susceptibility to epileptic attacks. The problem is a delicate one, because simple cerebral shock due to an explosion, without exterior trauma, may produce the same results as a trephining operation. It is very doubtful, however, whether many persons who have suffered cranial injuries but who are able to live a normal life may justly claim total irresponsibility. For the more numerous class of persons in whom the skull wound exerts no real effect or, at most, constitutes only an accessory element, the reduction of penalties is pernicious. Whether responsible or not, delinquents of this type are a menace to society. They should be kept under surveillance and treated. Neither our present penal institutions nor our psychopathic hospitals seem to satisfy this double need.

The League of Mental Hygiene

A formal gathering of the Ligue d'hygiène mentale was recently held in the main amphitheater of the Sorbonne, under the chairmanship of M. Justin Godart, former undersecretary of the Army Medical Corps and honorary president of the league, in honor of Mr. Beers, general secretary of the national committee of public hygiene in the United States, and the foreign delegates, Professors Christiansen (Copenhagen), Ley (Brussels), Ferrari (Boulogne), Ladislav Haskovec (Prague), and Dr. Belarmino Rodriguez (Barcelona).

After the reading of the report of the general secretary, Dr. Genil-Perrin, who called attention to the world-wide movement in favor of mental hygiene, Professor Ley spoke in behalf of the foreign delegates. He praised Mr. Beers and read a translation of the latter's address. Dr. Henri Claude, professor of psychiatry at the Faculté de médecine of Paris, afterward delivered a lecture on what he termed "social" poisons, morphin and cocain, stressing particularly the peculiar system of proselytism in vogue among drug addicts, which justifies the suppressive measures taken, showing that, in the campaign that has been launched, international laws would be the most effective to shut off the supply of the poison, and setting forth the utility of services for mental prophylaxis in the campaign against voluntary intoxications. A letter from M. Paul Bourget was read, the conclusion of which ran thus:

> To warn all trades and professions and all classes of people of the psychoses that threaten, in modern life, to upset the inner equilibrium of civilized man, is to confer a great benefit upon them. Fortunately civilization is like the legendary sword of the warrior of whom Homer tells us, which cured the wounds that it inflicted. While it is true that modern civilization exposes the individual to many things that tend to weaken and destroy his mental and moral fiber, it gives him, at the same time, many opportunities for conservation and cure. The purpose of your league, I take it, is to place these opportunities at the disposal of the increasing number of persons who are in need of them. There is, to my mind, no more useful undertaking.

Results of the Pasteur Tag Day

More than 15 million insignia (tags) were sold, for the benefit of the scientific laboratories, on Pasteur tag day. In the environs of Paris alone, the sum collected reached around 600,000 francs. There were several different forms of insignia, all of them designed by our best artists. The "tag" designed by Maurice Denis represents Pasteur leaning over his work table, examining with a microscope the milk he is taking from various bottles. In the foreground is the figure of a young mother, seated, with a sick child on her lap, the drawn lines on her face betraying her great anxiety. The man who pushed back death is the theme developed by Paul Albert Laurens. His design represents an angel thrusting back the scythe swung by the skeleton figure draped in white, which has been for centuries the incarnate conception of death. Poulbot designed a vignette which represented a young boy bitten by a mad dog, thus recalling the discovery of the antirabic vaccine. Abel Faivre was content to perpetrate an amusing pun. The scientist is represented with a halo about his head, while beneath are inscribed the words: *Le bon Pasteur* (the Good Shepherd).

Cases of Plague Within the Environs of Paris

About ten days ago, five cases of plague developed in the northern environs of Paris. Two cases have resulted fatally. A child is still under treatment at the hospital, but appears to be on the road to recovery. The minister of

health has been informed that the outbreak may be regarded as terminated, and the special services hold the same opinion. No new cases have developed during the last six days. The patients, when discovered, were immediately isolated. All persons who might have been in contact with them, even though for only an instant, have been vaccinated, and rigorous disinfection measures have been instituted.

Death of Dr. Georges Gaillard

Dr. Georges Gaillard, former director of the Ecole odontotechnique de France, has died at the age of 78. He was born, Feb. 10, 1845; became doctor of medicine in 1879, publishing, at the time, a noteworthy thesis on the deviations of the dental arches and their treatment. He was trained in the art of dentistry by his father, Dr. Eugene Gaillard. Their collaboration was so intimate that it is almost impossible to distinguish what was contributed by the one and what by the other in the different works and in the different methods of treatment for which we are indebted to them. Reduction of dental irregularities, gold fillings, prosthesis—they were interested in everything pertaining to the dental art. Being advocates of simple, practical methods, they were instrumental in causing the art of dentistry to make considerable progress in France. At the time they entered the profession, dentistry was practiced only by empirics.

Drs. Eugene and Georges Gaillard endeavored to make of dentistry a true science, not permitting it to be regarded in any wise inferior to the other medical specialties.

It was due to the initiative of Georges Gaillard that the first scientific dental society was founded—the Société odontologique de France—of which he later become honorary president. He was also president of the Société de stomatologie, and chairman of the Congrès de stomatologie held in 1889. A Traité de stomatologie was published under his direction, with the collaboration of Dr. Nogué. The last fasciculus of this treatise, which appeared in 1921 and dealt with orthodontia, was from his pen.

BELGIUM

(From Our Regular Correspondent)

May 20, 1923.

Results of Spirometric Examinations of Women

Before the Société d'anthropologie of Brussels, M. Galet reported recently the results of spirometric examinations of several hundred Belgian women. His conclusions coincide very closely with those of MacAuliffe. The vital capacity increases with, but does not parallel, growth. Vital capacity increases with weight up to a certain limit, when obesity diminishes vigor; it increases with age, the maximal capacity being observed between 23 and 30. After 45, diminution is marked, and, with rare exceptions, the capacity drops to from 1.5 to 2 liters after the age of 50. Vital capacity is directly proportional to the "respiratory type" and constitutional robustness. When the vital capacity is insufficient in an apparently healthy person, there is often some accidental cause that will account for this insufficiency. This cause may be an alteration in the respiratory passages: obstruction of a nostril, an old pleural lesion, bronchial catarrh, an anomaly of the circulatory system, or some abdominal disturbance, ptosis of the intestine, gastric upsets, laxity of the abdominal wall, an operative scar or even early pregnancy. From ten to fifteen persons out of a hundred do not know how to breathe deeply and yet present no pathologic trouble that would explain the anomaly. The vital capacity is subject, moreover, to the influence of certain other factors, such as fatigue, asthenia and emotion. Spirometry furnishes precise indications in certain conditions, but these must not be exaggerated. It has unquestionable value in the control of the progress from physical training and in the determination of fitness. But the vital capacity may be low in healthy subjects and normal in some who are sick.

The Second General Assembly of Young People's Societies

It will be recalled that, at the instance of the Red Cross Society, a new movement for the protection of childhood was launched by the international assembly of young people's societies. Since 1921, the office of the international secretary has been working to bring into touch with one another all young people's organizations whose main object is child welfare, and to broadcast the slogan of these societies, "The young must aid the young." The Union internationale de secours aux enfants and the international committee of the Red Cross Society have cooperated heartily in these efforts of the international secretary.

The second international assembly was held at Brussels in April, and was attended by more than ninety representatives. The plan for practical collaboration in child welfare was the central point of discussion. The international secretary offered several suggestions with reference to the future development of young people's societies. Although it was held that emergency aid to children in misfortune should continue to be the first consideration of the committees, the assembly proclaimed the necessity of rendering aid to children irrespective of the cause and origin of their sufferings. The assembly passed resolutions in favor of a charter setting forth the rights and liberties of children, and of the "international society for the aid of peoples overtaken by calamities," proposed by Senator Giovanni Ciraolo, which is now under consideration by several international organizations (Paris Letter, THE JOURNAL, June 16, 1923, p. 1787).

Another question affecting child welfare is the proposal to establish an international outdoor camp for the debilitated children of eastern Europe, under a plan to be elaborated by a commission of experts. The medical responsibility for this project would be entrusted to young physicians, and the organization and practical direction would be placed in the hands of scout masters from different countries. The purpose would be, by means of a sojourn in a healthy climate, a rational and carefully selected diet, and well graduated physical exercises, during two months of the summer, to eliminate for these children the baneful effects of undernutrition, or at least to lessen, as far as possible, their intensity.

The International Research Council

At the close of hostilities, in 1918, the allied nations had hoped to continue the mutual aid in scientific work that they had given during the war. In various fields this collaboration had excellent effects, and the work of the interallied conference on war surgery, especially, had given very encouraging results. It was as an immediate outgrowth of this conference that two scientific conferences, one dealing with the natural sciences and the other with mathematics, met in London and Paris, respectively. Every branch of science is represented in this international research council, each forming a special league. There are, for example, the international leagues for biology, chemistry, and geodesy and geophysics. At the last meeting of the council, which was held in Brussels, many nations (Belgium, Canada, Czechoslovakia, Denmark, England, France, Greece, Italy, Japan, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the United States) were represented by delegates. The following proposal, presented by the United States, was adopted: "That the International Research Council should organize international research projects requiring the cooperation of men representing several branches of science. They suggest investigation of the energy supply of the world (fuel, solar

energy, etc.) as a promising field of research." Several new leagues were added to the international council (geography, radiotelegraphy, medical sciences). The last, which interests us more particularly, has been kept distinct from the league for biology. The officers of the new international league for the medical sciences are: M. Widal of Paris, president; Dr. Gibson of Baltimore, vice president, and M. Nolf of Liége, secretary.

PRAGUE

(From Our Regular Correspondent)

June 2, 1923.

Antituberculosis Congress

The first Czechoslovak scientific congress against tuberculosis was held in Prague, May 19 to 21. The purposes of the congress were: to discuss scientific problems in tuberculosis with special reference to conditions prevailing in the Czechoslovak Republic; to disseminate knowledge of new methods in the fight against tuberculosis; to stimulate cooperative research in tuberculosis, and to foster friendly relations among the tuberculosis workers of the country. Dr. Ladislav Syllaba, professor of internal medicine at the Czech university in Prague, presided, and Dr. O. Horak served as general secretary. The congress was divided into three sections. The first section was devoted to clinical problems, the second to social questions and the third to veterinary problems. The sessions were arranged so that there were three general sessions in which the main papers were read by the most prominent representatives of the three sections. After the general sessions, separate meetings were held of the three sections. The program was extended, 106 different papers being read during the congress. Jugoslavia was represented by Dr. M. Yovanovicz-Batut, professor of social medicine in Belgrade; Russian physicians were represented by Dr. P. Yourevicz, formerly professor of histology in Petrograd. The general meeting of the Masaryk league against tuberculosis was held one day before the opening of the congress so that all the delegates to the meeting, who are largely physicians, could participate in the congress. During the congress, a tuberculosis exhibit was organized showing the development of the antituberculosis movement in the Czech countries up to the present time. One of the most interesting parts of the exhibit was the complete literature on tuberculosis published in the Czech language. After the congress, excursions to tuberculosis institutions were organized for the members of the congress. While the variety of the material presented was a surprise to the participants, it was felt that in the future it would be better to select a few topics to the discussion of which more time should be devoted than was possible at the present congress. The credit for the organization of the congress is due to the Czech Scientific Association Against Tuberculosis, which will publish the transactions and gave financial assistance to many research workers before the congress.

Syphilis in Children

The ministry of health and physical education has issued a decree directing that Wassermann blood tests be performed free of charge by the state Wassermann laboratories for all institutions working with children. The purpose is to popularize the use of the Wassermann test in pediatric practice, especially in the child welfare centers, foundling asylums, orphanages and homes for children. Heretofore, blood tests were performed free of charge only on samples collected by the state health officer. According to the new decree, any physician in a public institution working with children has the right to have the blood test performed by the state laboratory free of charge. This measure is the result of the investigation of the ministry into the prevalence of syphilis among the population of the Czechoslovak Republic by which it was brought out that, while the rate of new infections with syphilis in adults has been declining since the close of the war, there is a very high rate of hereditary syphilis which was brought into the families by soldiers returning home without having been cured of syphilis acquired during the war.

BERLIN

(From Our Regular Correspondent)

May 26, 1923.

Housing Conditions as Affecting Children

An inquiry among the school children of Pankow, a suburb of Berlin, instituted at the suggestion of the American Friends Service Committee, has shown that only 24 per cent. of the children have a bed to themselves, as compared with 33 per cent. in 1907; 71 per cent. sleep two in a bed, and 5 per cent. (in 1907 only 3.5 per cent.) sleep there in a bed. Forty-seven per cent. live in rear dwellings (on the back of the lot); 26 per cent. in one and two room apartments, with kitchen, for the most part; but, in many instances, one room with kitchen is sublet, or, on account of an apartment being occupied by two families, one family has to dispense with the kitchen. In the case of 13.7 per cent. of the children, persons outside the family were occupying the same apartment, and it was noted that the more children there were in the family, the more strangers had to be taken in, so that in families of ten the number of outsiders constituted more than a third of the number of children. In view of the bad conditions as shown by this survey, together with the enormously high prices for food and clothing of an inferior quality, the following figures are not at all surprising: Of the 485,000 children of Berlin, 29,000 are tuberculous, 77,000 are sick, and 120,000 are undernourished. The total mortality for children of the 5 to 15 age group, in 1914, was 25,730; in 1918, 50,391.

Venereal Disease in the German Army During the World War

Soon after the beginning of the World War, special military hospitals were established for venereal subjects. For every such patient a special record card was introduced, and these records remained under the supervision of the medical service, until, on dismissal of the subjects, they were handed on, for the purpose of further control, to the *Landesversicherungsanstalt* (central health insurance body) to whose jurisdiction they belonged, provided the consent of patients to this procedure was secured. This limitation in the application was bitterly opposed by some authorities, and experience showed that in case the physicians took an energetic stand in favor of such control, the consent of the patients was readily obtained, but that, when the physicians were indifferent, consent was denied. The total number of record cards as finally collated was 306,005, which covered 352,202 cases of illness, so that there were 46,197 more cases of illness than patients. Generaloberarzt Jungeblut, who has made a special study of the statistical material, has just published a report in which, on the basis of these relationships, he reaches the remarkable conclusion that the number of venereal patients in the army during the war was less than in peace times. All who have a clear insight into conditions are well aware that it was not the excessive number of venereal patients that proved such a menace to the health of the home population but rather the fact that, as a consequence of the hasty demobilization, together with the revolution, patients were dismissed from the military hospitals in an uncured and frequently infective condition. Thus, foci of infection were created everywhere, which were all the more dangerous owing to the fact that in

the smaller towns and the rural districts much ignorance prevailed in regard to these questions. Another circumstance that added to the danger was the depression of the moral sense of the people whereby the normal checks on promiscuous sexual intercourse were weakened. We are indebted in no small measure to the activities of the German Society for the Combating of Sexual Diseases for the marked decrease in the incidence of venereal disease.

Periodic Health Examinations

In November, 1919, the Krupp industrial health insurance society perfected an arrangement by which all its members are given the opportunity of receiving a periodic health examination, at least every two years. The examination follows a definitely established method and is very thorough. It not only takes into account the general condition, but includes also the organs of sense and all the internal organs; and, if there is any suspicion of the existence of any particular affection, the necessary clinical investigations are made; examination of the sputum and of the stomach contents after a test breakfast, microscopic examination of the urine, and a blood Wassermann test, together with the cooperation of the various specialists. In all persons past 40 years of age the blood pressure is taken. Of 50,000 insured members, as may be learned from the report of the factory physician Weiss for the year 1921, 3,210 took advantage of this new arrangement. More than 50 per cent. of those examined in the various age groups were found to be healthy. In the 14 to 20 age group, tuberculosis was diagnosed in 4.7 per cent., and "suspected pulmonary tuberculosis" in 12.2 per cent.; in the 20 to 25 age group the corresponding percentages were 3.3 and 11.5, respectively; in the 25 to 40 age group, 5.1 and 7.7 respectively. In the higher age groups, the number of tuberculous and suspectedly tuberculous examinees decreases, whereas, as would naturally be expected, the number of those suffering from cardiac and vascular affections increases from 3.75 per cent. in the youngest to 17.24 per cent. in the oldest members (those over 50 years of age). Also the number of cases of gastric and duodenal ulcer and suspected ulcer was large: 5.8 per cent. in the 25 to 40 age group.

Marriages

FRANKLIN CHAMBERS MCLEAN, Peking, China, to Miss Helen Vincent of Boston, at Tientsin, China, June 11.

WILLIAM BENJAMIN HOPKINS, Richmond, Va., to Miss Mary Conrad Nicholson of Littleton, N. C., May 6.

OSCAR BRUTON DARDEN, Richmond, Va., to Miss Mary Wyckoff Dunlap of Dunlap, N. C., June 12.

WALTER ALLEN ANNEBERG, Carroll, Iowa, to Miss Margaret Dolliver of Fort Dodge, June 17.

THOMAS DURLAND VAN ORDEN to Miss Alice Frances Einstein, both of New York, June 6.

JACOB MORRIS CAHAN to Miss Hilda Gertrude Barmach, both of Philadelphia, June 10.

WAYNE KING TEMPLETON, Toledo, to Miss Thelma R. Zipfel of Monroeville, Ohio, June 7.

CHARLES RICE, Mattapan, Mass., to Miss Dora Florence Finn of Dorchester, May 30.

RALPH REUBEN HOLZMAN, Portland, Ore., to Miss Meta R. Winter of Chicago, June 21.

LEROY EDWARD JENSEN to Miss Lorraine Graham, both of Audubon, Iowa, in June.

GEORGE L. APFELBACH, Chicago, to Miss Alice Hotz of Glencoe, Ill., June 28.

LIONEL NEWKIRK MERRILL to Miss Ethel Williams, both of Detroit, June 30.

FREDERICK ROBIN GREEN to Miss Helen Hutchinson, both of Chicago, June 30.

Deaths

Henry Ling Taylor, New York; Medical Department of Columbia College, New York, 1881; died at his home in Montclair, N. J., June 9, from heart disease. Dr. Taylor was born in New York in 1857. In 1902 he was appointed to the chair of orthopedic surgery at the Post-Graduate Medical School and Hospital, New York, which he retained until 1917. Dr. Taylor was surgeon to the New York Hospital for the Ruptured and Crippled, the New York Post-Graduate Hospital, the Mountainside Hospital, Montclair, N. J., and the Fresh Air Home, Southampton, N. Y. In 1908 he was elected president of the American Orthopedic Association; he was one of the founders of the American Posture League and the New York Physical Education Society and secretary of the former. Dr. Taylor was the author of "Orthopedic Surgery for Practitioners" in 1909.

Augustus Korndoerfer, Philadelphia; Homeopathic Medical College of Pennsylvania, Philadelphia, 1868; emeritus professor of clinical medicine, Hahnemann Medical College and Hospital of Philadelphia; formerly physician to the Children's Homeopathic, the Hahnemann, Woman's Homeopathic and the Woman's Southern Homeopathic hospitals, Philadelphia, and the J. Lewis Crozer Home for Incurables and the Homeopathic Hospital, Chester, Pa.; aged 79; died, June 10, of senility.

Edward Parker Pitts ⊕ Atchison, Kan.; Ensworth Medical College, St. Louis, 1902; eye, ear, nose and throat specialist to the Missouri Pacific Railroad and the State Orphans' Home; aged 43; was instantly killed, June 14, in an automobile accident while en route to San Francisco to attend the session of the American Medical Association.

Francis A. Halliday, Captain, M. C., U. S. Army, retired, Lexington, Texas; Washington University Medical School, St. Louis, 1872; veteran of the Civil, Spanish-American and Indian wars; aged 81; died, June 8, at the station hospital, Fort Sam Houston.

Richard Curd Bowles, Kents Store, Va.; University of Maryland School of Medicine, Baltimore, 1861; member of the Medical Society of Virginia; surgeon in the Confederate navy; aged 86; died, June 7, of senility.

William H. Hope ⊕ Union, S. C.; Atlanta (Ga.) College of Physicians and Surgeons, 1910; aged 35; on the staff of the Wallace Thompson Hospital, where he died suddenly, June 8, of internal hemorrhage.

James Alvin Bradbrook, Asherton, Texas; Kansas City Hahnemann Medical College, Kansas City, Mo., 1911; member of the State Medical Association of Texas; served in the M. C., U. S. Army, during the World War; aged 35; was shot and killed, June 9.

Wiley Hugh Billingsley ⊕ Shreveport, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1912; served in the M. C., U. S. Army, during the World War; aged 34; died, June 1, of a self-inflicted wound, while suffering from poor health.

George S. Attmore, Stonewall, N. C.; Washington University School of Medicine, Baltimore, 1870; member of the Medical Society of the State of North Carolina; Civil War veteran; aged 77; died, June 2, in a local hospital, of injuries received in a fall.

William L. Shields, Jacksonville, Pa.; University of Louisville (Ky.) Medical Department, 1885; member of the Medical Society of the State of Pennsylvania; for many years member of the school board; aged 62; died, May 27.

William Laurens Dick ⊕ Columbus, Ohio; Starling Medical College, Columbus, 1888; for fifteen years member of the board of health; formerly surgeon to the Baltimore and Ohio Railroad; aged 63; died, May 28, of influenza.

George Davis Couch, Hapeville, Ga.; University of Georgia Medical Department, Augusta, 1875; at one time mayor of Hapeville; aged 69; died, May 30, at the Georgia Baptist Hospital, Atlanta, of cerebral hemorrhage.

Henry John Stephens ⊕ Detroit; Western University Medical School, London, Ont., Canada, 1911; served in the Canadian Army Medical Corps, during the World War; aged 41; died, May 28, of influenza.

Daniel Seward Brosnan ⊕ New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1901; formerly proprietor of the Brosnan Hospital; aged 44; died, June 8, following a long illness.

Jacob Allen Milem, Sikeston, Mo.; University of Louisville (Ky.) Medical Department, 1896; member of the Missouri State Medical Association; aged 56; died, June 6, following a long illness.

Edwin H. Cross, Chicago; Cincinnati (Ohio) College of Medicine and Surgery, 1872; member of the Illinois State Medical Society; aged 79; died suddenly, June 15, of angina pectoris.

Samuel M. Riggs, Muscotah, Kan.; Eclectic Medical Institute, Cincinnati, 1874; aged 69; died, May 28, at the Christian Hospital, Kansas City, Mo., of acute edema of the lungs and influenza.

Charles F. Roulet, Toledo, Ohio; Northwestern Ohio Medical College, Toledo, 1886; formerly county coroner; aged 59; died, May 30, at St. Vincent's Hospital, of meningitis.

John McGinty ⊕ Fort Smith, Ark.; Kentucky School of Medicine, Louisville, 1884; on the staff of St. Edward's Infirmary; aged 62; died, May 27, following a long illness.

Ambrose J. Herr ⊕ Lancaster, Pa.; Jefferson Medical College of Philadelphia, 1861; formerly on the staff of St. Joseph's Hospital; aged 85; died, May 27, of senility.

George A. Willeford, Indianapolis; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1907; aged 43; died, June 3, of cerebral hemorrhage.

Alfred Ernest Smolt ⊕ Newton, Kan.; Rush Medical College, Chicago, 1897; aged 52; died, June 2, at a hospital in Kansas City, Mo., following a long illness.

Charles Adolph Schrader, Tucson, Ariz.; Hahnemann Medical College of the Pacific, San Francisco, 1893; aged 53; died, May 27, of carcinoma of the throat.

Henry William Rover, Denver; Miami Medical College, Cincinnati, 1885; member of the Colorado State Medical Society; aged 61; died, June 5.

George Danforth Bliss ⊕ Boston; Boston University School of Medicine, 1881; aged 67; died, June 7, at the Johns Hopkins Hospital, Baltimore.

Alfred Victor Marion, Spokane, Wash.; University of Oregon Medical School, Portland, 1892; also a druggist; died, May 26, at Seattle.

James Montgomery Reece ⊕ Elkin, N. C.; College of Physicians and Surgeons, Baltimore, 1886; aged 64; was found dead in bed, May 31.

Henry E. W. Barnes ⊕ Santa Ana, Calif.; State University of Iowa College of Medicine, Iowa City, 1873; aged 73; died, May 31, of gangrene.

David Humboldt Strahan ⊕ Pewamo, Mich.; Albany (N. Y.) Medical College, 1883; aged 66; died, June 1, of mitral regurgitation.

Lydia A. Muma, Salt Lake City; American Medical College, St. Louis, 1894; aged 88; died, June 1, at a local hospital, of senility.

Needham Bryan Herring, Wilson, N. C.; New York University Medical College, New York, 1861; aged 84; died, May 27, of senility.

Joseph Eugene Tucker, San Diego, Calif.; New York University Medical College, New York, 1872; aged 72; died, May 30, of senility.

Samuel A. Brown, Eton, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1893; aged 56; died, May 31, of heart disease.

Alfred M. Newman ⊕ Canadian, Texas; Medical College of Ohio, Cincinnati, 1884; aged 61; died suddenly, June 5, of heart disease.

James Henry Enloe, Nashville, Tenn.; University of Michigan Homeopathic Medical School, Ann Arbor, 1879; aged 70; died, June 2.

Alexander X. Campbell, Oklahoma City; University of Michigan Medical School, Ann Arbor, 1876; aged 76; died, May 28.

Richard Frederick Viehe, St. Louis; Hahnemann Medical College and Hospital of Philadelphia, 1903; aged 45; died, May 28.

Elijah Haynie Knight, Granville, Tenn. (licensed, Tennessee, 1889); Confederate veteran; aged 82; died, May 29, of senility.

Henry Wald, New York; University of Vienna, Austria, 1872; aged 78; died, June 5, of arteriosclerosis and pulmonary edema.

Albert C. Dillon, Osborne, Kan. (licensed, Kansas, 1901); Civil War veteran; aged 73; died, June 2.

Correspondence

PROTEST AGAINST THE CIRCULARIZATION OF A SCIENTIFIC ARTICLE

To the Editor:—I feel it my duty to inform the readers of THE JOURNAL of an unusual proceeding in which the Lederle Antitoxin Laboratories of New York took part.

I gladly gave the Lederle Laboratories permission to reprint my paper, entitled "The Treatment of Seasonal Hay-Fever and Some Possible Causes of Failure," which appeared in THE JOURNAL, May 5, 1923. During the last week of May and the first week of June, reprints of my paper were sent by the Lederle Laboratories to the profession throughout the country. A card of advertisement of their products was, also, enclosed. It is noteworthy that the customary statement that the article was reprinted through the courtesy of the author was omitted.

Without my knowledge and without authority, my name and address were printed in the upper left hand corner of the envelop. This gave the impression that I personally caused to be mailed the reprints from Washington, although the postmark was that of New York City.

I desire to correct this false impression and to state that I had no participation in the advertising of a commercial product.

HARRY S. BERNTON, M.D., Washington, D. C.
United States Public Health Service.

REQUEST FOR REPRINTS OF ARTICLES ON ORAL HYGIENE

To the Editor:—For many years we have placed on file articles, reprints, leaflets and pamphlets on oral hygiene and related topics. This file is always open for the use of those interested in this work. Will authors and committees who publish such articles kindly place us on their mailing list? Due acknowledgment will be made of the receipt of such articles.

THADDEUS P. HYATT, D.D.S., New York.
Dental Director, Metropolitan
Life Insurance Company.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STENO'S, STENSEN'S OR STENSON'S DUCT

To the Editor:—Will you be good enough to advise the proper appellation of the duct leading from the parotid to the buccal cavity? Cowie, Kerley, Holt and Griffith call it Steno's. Dunn, Cunningham, Gray and Piersoll call it Stenson's. Dorland's dictionary gives it as Steno's or Stenson's. Stedman's dictionary gives it as Stensen's, Steno's or Stenon's. If Niels Stensen discovered it, why is it called Steno's, Stenson's or Stenon's duct? If any one, or if all are correct it would be interesting to know.

A. BRET RATNER, M.D., New York.

ANSWER.—The name given to this duct by the International Anatomical Association, Basle, 1896, is Ductus parotideus, Stenonis. Niels Stensen, Nikolas Stenson (German form), Steno (Latin form), was born in 1638, and died in 1686. He was professor of anatomy at Copenhagen, Denmark, and afterward apostolic vicar. He was a famous anatomist, physiologist, geologist and theologian. He discovered the connections and functions of this duct in the sheep in 1661. He published, among other works, De Musculis et Glandulis Observationum Specimen, 1661; Observationes Anatomicae, 1662; Work on Muscles, 1667; on the Brain, 1669; Work on Geology, including an account of strata, fossils and geologic

formations, 1669. In the latter work, he showed that the "Glossopetrae" of Tuscany were fossil teeth.

In 1669, he became rather romantically converted to the Catholic faith, and his further work was in the line of theology. In the church of San Lorenzo, Florence, is a bust in his memory.

TREATMENT OF DEFECTIVE VISION

To the Editor:—I have read that glasses have been discarded in Germany for the treatment of defective vision among school children. The reason given is that while it is a convenient way of correcting a defect, the ultimate results are worse than no correction at all. This from a prominent layman. Is there any truth in this? Is there a tendency here to treat only gross defects in this way and to let minor defects adjust themselves? C. E. EATON, M.D., Seattle.

ANSWER.—The recent scientific literature from Germany and Austria does not convey the impression contained in the inquiry. On the contrary, ophthalmologists in Germany are leaning more and more toward the careful refractive methods of their American confrères, and minor refractive defects in vision that, ten years ago were passed over as negligible, are now receiving the attention they deserve. Our correspondent has probably been reading some of the preposterous claims of a New York concern that advertises "perfect sight without glasses." The methods promulgated by this concern are so entirely without the pale of scientific fact as to be laughable.

Medicolegal

Patients Not Alleged to Have Been Human Beings

(People v. Ryan (Calif.), 212 Pac. R. 35)

The District Court of Appeals of California, First District, Division 2, says that this was an appeal taken by the people of the state from an order dismissing an action on the failure of the district attorney to amend an information for misdemeanor, namely, violation of the medical practice act, filed against the defendant, to which information a demurrer had been sustained. The portion of the information material here stated that the defendant did at a certain time and place wilfully and unlawfully "practice, attempt to practice and advertise and hold himself out as practicing a system or mode of treating the sick and afflicted in this state, without having at the time of so doing a valid unrevoked certificate from the board of medical examiners of the state of California." The trial court sustained the demurrer on the ground that the information did not state a public offense, because it did not allege that the sick and afflicted on whom the defendant was alleged to have practiced were "human beings." But in several other cases indictments substantially identical with this one were approved; and the court here, without giving any new reasons, reverses the orders dismissing the action and sustaining the demurrer. A hearing has been denied by the Supreme Court of California.

Exemption of Automobile Used by Physician

(Spangler v. Corless, Sheriff, et al. (Utah), 211 Pac. R. 692)

The Supreme Court of Utah, in affirming a judgment in favor of the plaintiff, a regularly licensed and practicing physician, says that he brought this action to recover the value of an automobile owned by him, which the defendant sheriff levied on and sold to the other defendant in the case—a corporation. The plaintiff averred in his complaint that he used the car in making his professional visits as a physician and surgeon. Subdivision 6 of Section 6925 of the Compiled Laws of Utah of 1917 provides, among other things, that "one horse, with vehicle and harness, or other equipments, used by a physician, surgeon, or minister of the gospel, in making his professional visits" shall be exempt from execution. The jury was instructed that if it believed from a preponderance of the evidence that the automobile in question was in fact, at the time of the levy under the execution, used by the plaintiff as a physician and surgeon in making his professional visits, then, as a matter of law, the automobile was a vehicle and equipment exempt from execution under the provisions of said statute and was exempt from execution, and any levy on and sale of it by the defendants would constitute an unlawful conversion of the automobile by the defendants for which the plaintiff would be entitled to recover damages. The defendants excepted to this instruction, and the vital question in the case was whether an automobile used by a physician or surgeon in making his professional visits is exempt from execution.

While automobiles were unknown when the Utah statute was first enacted, the intent of the legislature was, nevertheless, to exempt the means of conveyance used by the physician in making his professional calls. An automobile is a vehicle. An automobile is as essential to the physician now as a horse and buggy were in the past. In these days an automobile is his only practical means of conveyance. If, then, the exemption statute is liberally construed, the conclusion is not far fetched that its purpose is to exempt the physician's means of conveyance when calling on his patients. The authorities on this subject, however, are not in harmony.

During the oral argument it was suggested by the defendants' counsel that, if an automobile was held to be exempt, a physician could use a $5,000 machine and defy his creditors. The same thing would be true if the physician had a $5,000 carriage, silver mounted harness, and a horse worth as much more. But the value of the horse, harness and vehicle would be wholly immaterial under the exemption law. Nor is the value material when a motor vehicle is owned and used by a physician for professional calls.

Inference as to Injury Causing Death—Medical Certificate Not Evidence

(Omaha & C. B. St. Ry. Co. v. Johnson (Neb.), 191 N. W. R. 691)

The Supreme Court of Nebraska, in reversing a judgment that awarded Mrs. Johnson compensation under the workmen's compensation law for the death of her husband, says that the latter—a man, aged 67—sustained injuries to his head, arm and side; but the nature and extent of the injuries were not clearly disclosed by the evidence. After the accident, the injured man was never able to work. He was troubled with headache and dizzy spells. A complaint of insanity was filed against him about four months before his death, which occurred three years and two months after the accident. No medical testimony was introduced to show the cause of his death. It was the plaintiff's contention that, since the injuries were disclosed, and since disability was shown to have continued from the time of the injury until death occurred, nothing more need be proved, and that an inference arose that death was the result of that injury.

Where an injury is sustained and death immediately results, an inference that the injury was the cause of death may arise without anything further to show it; but as the period of time increases between the time of injury and the date of death, that inference must necessarily weaken according to the length of time that ensues. The evidence in this case did not give that assurance for decision which should support the judgment of a court. The plaintiff must not merely ask the court to guess that the original injury was the cause of death, or merely that it was probable it was, but she must prove it either by evidence or by legitimate inference to be drawn from the facts actually made to appear.

The defendant, on the other hand, introduced, over objection, the medical certificate of death, made out in accordance with the provisions of the Nebraska statute by the physician of the deceased last in attendance, which certificate by the statute is required to disclose the cause of death, and must be filed before a burial permit can be issued. By this certificate the defendant attempted to show, from the recitals therein, that the cause or death was one entirely distinct and apart from the injuries. Such a certificate, however, though filed publicly with the registrar, is not a public record entitled to be introduced as independent evidence in such a case as this. It is filled out by the attending physician in an ex parte manner, without a hearing and without the right of parties interested to cross-examine. In a controversy between individuals, where the cause of death is a material issue, such certificate has no direct evidentiary value, and its recitals must be disregarded by this court.

Society Proceedings

COMING MEETINGS

Montana, Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Seventeenth Annual Meeting, held in New York, May 22-24, 1923

(Continued from page 1873)

SYMPOSIUM ON SERUM THERAPY

Pneumonia

DR. AUGUSTUS WADSWORTH, Albany: The work done in New York state in the development of serum therapy in pneumonia was started in 1915, when centers for distribution of Type I antipneumococcus serum were established. This distribution is now more general. The serum has always been of the highest potency, according to the methods developed by Cole. The results from the civil population and from the army camps have been studied. The reduction in mortality is not convincing, although statistics have been influenced by many factors, such as the difficulty of getting control cases, difficulty of getting standardized serum, and delay in treatment until an unfavorable prognosis could be expected. A study of the pneumonic process in man shows that the pneumococci develop in a partially immunized host, and that immunity is preserved by immune serum, although the pneumococci may survive for several days after immunization of the serum. Cases studied at the Rockefeller Institute were recorded under optimal conditions, and the mortality of 1.5 per cent. in 107 cases was very favorable. We have not been able to obtain such standardized serum, nor is serum labeled according to its potency, so that protective results are only approximate. The results reported from various localities and groups give contradictory results. In cases in which the serum is standardized and given early, the treated cases show greatly lessened mortality. In cases in which there is delay in treatment and perhaps serum of low potency, the results are poor. There is no evidence that the serum is harmful unless the technic of administration is careless. The proper dose is from 50 to 100 c.c. four or five times. If Type I antiserum is given, promptly, carefully and regularly, it is of definite value in the treatment of Type I pneumonia.

Poliomyelitis—Epidemic Encephalitis—Bacillary Dysentery

DR. SIMON FLEXNER, New York: There is no serum treatment of amebic dysentery, emetin being specific. Bacillary dysentery is due to a group of organisms, the most vigorous of these being the bacillus of Shiga, which produces a soluble toxin, and also an endotoxin. The exotoxin can be used for immunizing animals. We have an actual, active, accurate method of neutralizing the Shiga bacillus poison, but difficulty exists in establishing the fact that a case of dysentery is of bacillary origin. In this country, however, the problem is not pressing, because only occasional outbreaks of dysentery occur. If there should, there is a supply of antidysenteric serum available.

Poliomyelitis and encephalitis are two distinct diseases. They differ as much as measles and scarlet fever differ. Poliomyelitis is a disease which appears sporadically, and lately has appeared epidemically. It is more frequent in children. It is successfully transmitted to monkeys and the value of serum tested out. There is no such thing as artificially produced serum against poliomyelitis, although we have a filtrable virus from the nervous system of patients. We cannot use this material, however, to immunize large animals, such as the horse, in order to get serum. On the other hand, in a recovered case, in monkey or man, there is for many months in the veins an antiserum which neutralizes the virus of poliomyelitis. Curative serum, therefore, exists. Monkey serum cannot be used for man. The animals are too small and too prone to other diseases to utilize their serum. Some measure of success has been attained in using serum of recovered humans in the treatment of other persons. During an epidemic people are, perhaps, more generous in this respect, and diagnoses are made more readily, but the method must be applied early because such widespread damage occurs to the nervous system that restoration is impossible. Fatality may be avoided, however, even if crippling cannot be prevented. Death follows involvement of the medulla with paralysis of the respiratory centers. The serum is given intraspinally, not intravenously.

Encephalitis is a disease which has appeared in a pandemic form during the past three or four years. There have been descriptions of the disease and of outbreaks before, but not in pandemic form. One explanation of this is that it is concomitant with influenza. There is some relationship to influenza. On the other hand, some workers think it is an independent disease but coincident chronologically. Hitherto the disease has not been so prominent as to make a great impression on the medical profession and laity, so that if you consider it as part of influenza, you must prove your thesis, whereas if you consider it as an independent disease, the approach to study is more effective. We cannot be sure that we have communicated it to animals, although we may have transmitted it to the rabbit. The monkey is not susceptible. The micro-organism which causes it is unknown. I think the solution of this disease is still in the future, for although every effort has been made, so far we have not been able to reach any definite conclusions, as we have with poliomyelitis.

Treatment of the Meningitides

DR. JAMES B. AYER, Boston: In the last ten years there has been no great advance in the treatment of meningitis in any form. For meningococcus meningitis we have no efficient serum; but, if we had, the end of a long channel seems a somewhat illogical approach from which to treat a general disease. There are various conceptions as to the origin and distribution of infection in meningitis. One is that the fluid originates in the choroid spaces of the lateral ventricles, and flows thence downward into the fourth ventricle and into the cisterna magna, upward over the convexities and over the arachnoid spaces. Meningitis is almost always a primary cerebral process; very rarely does the process start near the cord. Later there is a generalized cerebrospinal meningitis. As early as the second or third day there is blocking in the pathways by formation of exudate which obstructs any form of treatment given intraspinally. There may be blocking at one or two points. These facts demand that we seek some method of treating meningitis other than the lumbar route. In three days the canal is full of exudate and fibrin, and the infection has extended to the pia, the crus and the ventricles. There are also small abscesses from infection of the perivascular spaces. Ventriculitis also occurs in man as early as the fourth day. These conditions offer tremendous obstacles to treatment, and it is a wonder that serum ever reaches the brain at all. The fluid passes from the ventricles downward to the cisterna magna, from thence outward, upward and forward into a smaller cistern at the base of the chiasm and to the pons. In 1908, Cushing put a needle into the ventricle and introduced serum. The patient died, but lives were saved later by this procedure. I have lately used a method of puncture of the cisterna magna in 350 patients, without accident, at the Massachusetts General Hospital. My method offers three routes of choice, giving opportunity for irrigation. The ventricle can be approached by the cortex or by puncture of the corpus callosum. The method of approach hitherto has been miles away from the site of infection, and the pathways have early become blocked, making remedial measures impossible because they did not reach the trouble. These cases must be treated early and as near the process as possible. We have a choice of routes by which we can drain and introduce the serum, and we can irrigate efficiently by double or treble punctures, if necessary. If desired, we can reduce the volume of the ventricles by introducing a 30 per cent. hypertonic salt solution.

DISCUSSION

DR. RUFUS I. COLE, New York: Statistics in regard to antipneumococcus serum are very bewildering. There is difference in different hospitals, in different wards in the same hospital and difference from season to season. Personal observations seem to have more merit than statistical study. We have treated 241 cases of Type I pneumonia, with twenty-four deaths, a mortality of 10 per cent., approximately. These were divided into cases in which serum might have been effective; and cases in which no serum treatment would have availed. I have never known of recovery to occur in pneumococcus meningitis, with or without serum. The other class of cases was due to too late, or poorly administered serum treatment. In this class, mortality might have been slightly reduced. In other cases, serum was given early and intensively, until the patient either died or recovered. The best guide to efficacy of the serum is the positive or negative blood culture. Pneumonia is a focal infection, likely to become generalized. Effective serum treatment eliminates bacteremia. If bacteremia persists, it is accompanied by endocarditis or meningitis, so that we do save lives even if not a considerable number. Serum treatment is more difficult for the private practitioner, on account of delay in early diagnosis, but with the aid of the state board of health I think the difficulties are not insurmountable.

DR. W. W. HERRICK, New York: Our conception of meningitic infections has been too narrow. Clinical studies under the right conditions have shown that the disease is primarily a systemic infection with metastases into the meninges or elsewhere. Not only are the meninges involved but also the encephalon. Foci are present throughout the brain as a whole. In the treatment of meningococcus infections in general, if one can make a diagnosis early, I think intravenous treatment, supplemented by intraspinal treatment, is sufficient; but mechanical accidents in these cases are so common that the methods of meeting them are valuable. There are two phenomena: early blocking and late blocking. Early blocking is tragic, and due to inflammatory swelling of the encephalon, causing sudden death in the first twenty-four hours. Necropsy shows wedging of the brain substance down into the foramen magnum. I think the way to meet this situation is by injecting 30 per cent. hypertonic salt solution intravenously, or by injecting 50 per cent. saline sulphate of magnesium by rectum. There are two types. Most often there is involvement of the foramina of Luschka and of Magendie. I have seen one case in the aqueduct of Sylvius, and one case of cord blocking. There is one point of interest which is useful. Before undertaking ventricular puncture or cisterna magna puncture, the lumbar puncture needle can be placed in the foramen and manipulated vigorously (under anesthesia), and if there is an accumulation blocking the foramina, the tissue that roofs over the floor of the fourth ventricle may be moved and cause breaking through of the tenuous subarachnoid adhesions. If this is unsuccessful, we can do a puncture of the cisterna magna, and lastly puncture of the ventricles. Cistern puncture is free from danger. In one case there was hemorrhage from the plexus of veins found in that region into the fourth ventricle. Whether that caused death, I do not know. Dr. Ayer's method is useful in handling the mechanical accidents that so frequently occur in this infection.

DR. GEORGE ROBEY, Rochester: In a case of pneumonia, it takes the physician a day or two to make up his mind and notify the health bureau; it takes the bureau a day or two to type the sputum and get the serum to the physician. By that time the patient, if the case is mild, has a crisis and does not need the serum, so that if the serum is used at all, it is in very sick patients. We have had 126 treated and 126 not treated, and the mortality in treated cases was 5 per cent. less than in untreated cases. Very remarkable results are seen in the treated cases. Case after case of very high temperatures show very early drop after serum injection. This is striking. The results are not all they should be, but this is field work with all kinds of difficulties. If we had had Dr. Cole's management, results would have been better. Hospital results were better than those in home treatment. The coincidence of improvement, however, was repeated so many times that we feel sure it is satisfactory evidence.

DR. AUGUSTUS WADSWORTH, Albany: We had one case in which serum had been given, and a dose was given ten days later without desensitization, causing anaphylactic shock and death. Careful records should be kept and desensitization insisted on. Serum conserves the immune action in the tissues.

DR. J. B. AYER, Boston: When lumbar puncture has failed, partially or entirely, it is no use waiting; one must do something right away. In the meningitides for which we have no serum, streptococcus, staphylococcus and pneumococcus, lumbar drainage does not work. We must do more. Irrigation is a rational procedure and we must work along that line in suppurative cases.

(To be continued)

AMERICAN ASSOCIATION OF PHYSICIANS

Thirty-Eighth Meeting, held at Atlantic City, N. J., May 1-2, 1923

(Continued from page 1876)

Certain Aspects of Polycythemia

DRS. G. R. MINOT and THOMAS E. BUCKMAN, Boston: In polycythemia there is excessive stimulation of the bone marrow, with increase of red blood cell formation as compared with white blood cell formation. This is comparable to the excess growth of a neoplasm. In these cases the peripheral blood often appears to be normal, but is abnormal to some degree. There is increase of white blood cells as well as red blood cells, but the latter show immature forms. The platelets may be immature and look like giant cells. Signs of a disorderly bone marrow take some time to appear, and the patient may die before the stage at which immature cells appear in the peripheral blood. In fifteen cases studied, there were three cases of polycythemia which was followed by enlarged spleen, then anemia, and finally death. The blood picture looked like that of myelogenous leukemia. In one case that came to necropsy, one year before death the blood picture showed 15 per cent. myeloblasts and 15 per cent. myelocytes. The tissues presented a remarkable picture. The spleen weighed 3,200 gm. and looked like that of myelogenous leukemia. The bone marrow was hyperplastic. The patient had shown a red blood cell count above 8 million for four years. It dropped to 2 million before death. The necropsy findings resembled those of myelogenous leukemia. These diseases are, perhaps, intimately associated. We may have cases of erythema that involve the activities of the bone marrow in all three of its elements. Some basal metabolic determinations were made, and were found to be from plus 6 to plus 10. There is a higher rate when there is greater bone marrow activity. Fluctuations in the formation of red blood cells occur in the course of the disease, and also variations between blood formation and blood destruction. Perhaps there is overcompensation by blood destruction, which causes the anemia following years of excessive bone marrow activity. The bone marrow then is unable to respond to excessive strain and responds with overproduction of immature cells. Many megalokaryocytes were seen in the blood-forming organs at necropsy. The increase of urobilin is very intimately associated with blood destruction, but does not always occur. In these patients the red blood cells are more resistant than normally, and erythemic serum breaks up normal cells more rapidly than usual.

Effects of Operative Interference with the Endocrines on the Growth and Malignancy of a Transplanted Tumor of the Rabbit

DRS. WADE H. BROWN, LOUISE PEARCE and C. M. VAN ALLEN, New York: A tumor arising on the site of an old syphilitic lesion on the scrotum of a rabbit was transplanted and followed through twenty generations, and the pathologic reactions following inoculation were studied. This was of interest because of possible relationship of tumors following syphilitic lesions of the mouth. The experimental animals were matched in regard to size and age. Observations on growth, malignancy and metastases of the tumors were made

and tested at necropsy. Different groups of experiments were done to note the effect of removal of thyroid, suprarenals, spleen and thymus, respectively, on the tumor, and a fourth group without endocrine interference was used as a control. Operations were designed to interfere with the function of the organ, but to leave the animal in good condition. Operative procedures were carried out both before and after inoculation of the rabbits. We found that in the thyroidectomized animals the tumor grows steadily and rapidly. With the thymus removed, the tumor grows slowly, as in old animals. With partial thyroidectomy, the tumor at first grows rapidly but is brought under control. With complete thyroidectomy, very widespread metastases occurred in all cases; that is, this operation increased malignancy. A seasonal incidence was noted; namely, that malignancy was low in summer and high in spring. In summer, partial thyroidectomy gave a stronger result. The conclusions were that any operation disturbing the animal economy will disturb the resistance of the animal. This work seems to be in line with that of Dr. Murphy on the lymph structures, and is probably part of the same body mechanism.

Results of Administering Iodin to Patients Having Exophthalmic Goiter

DR. H. S. PLUMMER, Rochester, Minn.: It has been taught that iodin should not be administered to patients with exophthalmic goiter, on the ground that it causes hyperfunction. There are two entities included in the term hyperthyroidism: first, exophthalmic goiter, second, hyperfunctioning adenomatous goiter. In the latter, the basal metabolism is more nearly normal. In exophthalmic goiter there are certain symptoms: (1) nervous phenomena, (2) eye symptoms. The first include purposeful but useless movements. The higher psychic processes are chaotic. The patients cannot explain why they cry or laugh. In the vegetative nervous system there is the same process of imbalance. These signs have given rise to such terms as "sympathotonic" or "vagotonic" goiter. These symptoms seem to be due to underlying metabolic disturbances. Often, after slight operations, the temperature rises and death occurs in a few hours. We judge the differential diagnosis by the nervous phenomena, which, if excessive, point to a great surgical risk. The eye phenomena are two: the exophthalmos, or protrusion of the eyeball, and the stare which fluctuates with the nervous phenomena. Anything that will overstimulate the thyroid can give the clinical picture of exophthalmic goiter. In such cases, the normal hormone, thyroxin, is not completely iodized. This incompletely built up thyroxin, as it leaves the gland, can enter into catabolic reaction faster than the normal, stable molecule and raise the metabolic rate more rapidly. If, therefore, we can change the character of the molecule, we can change the basal metabolism. If there is intense metabolic stress for lack of iodin, death occurs from lack of iodin. From this it follows that if we can change the production of abnormal substance to properly iodized substance we can cut down postoperative mortality, avoid crises, and change the picture of the nervous phenomena. Acting on this plan, we administered 10 drops of compound solution of iodin for ten days following operation, with the result that we have found there is no such thing as postoperative deaths from hyperthyroidism if this dosage has been administered to the patient with regularity. In other words, the patient is relatively short of iodin, and dies from lack of it. When we replace the iodin, we do away with postoperative deaths.

DISCUSSION

DR. H. A. HARE, Philadelphia: Is it not true that, in districts of the United States in which goiter is very prevalent, iodin is lacking? Would it not also be true that in such an area there would be a higher percentage of poor operative results? It would be interesting to know whether in noniodin bearing areas, the surgeons would need to reinforce their procedures by iodin administration.

DR. HAVEN EMERSON, New York: In Rochester, N. Y., there is a lack of iodin, and the municipal health authorities have been putting iodin into the water supply. This would forestall any tendency on the part of the community to develop endemic goiter. The proportion of iodin in the thyroid gland has some relation to the kind of food, and that varies in the individual, and from time to time, and also in geographic areas, so that the average clinical picture may vary according to the geographic location. In England, the iodin-bearing sea breezes produce a different atmosphere than that in the Mississippi valley, for instance. Probably, the mortality in geographic areas inferior in this respect could be overcome, or balanced, by sufficient iodin supply. In any case in which the gland is cut short of iodin supply there is a potential stimulus to hyperthyroidism because of production of abnormal thyroid secretion.

Clinical Study of Digitalis Toxemia

DRS. HARLOW BROOKS and BLAKE DONALDSON, New York: We used standardized doses (1 c.c., or 1 cat unit). The patients were tested under constant conditions and were observed as to symptoms of toxemia—vertigo, confusion, nausea and vomiting, and also as to heart rate. An average dose of 1.13 cat units per kilogram of body weight has been recorded by Eggleston, but we found wide variation of tolerance as estimated by dosage in relation to body weight. In abnormal hearts we found that the blood pressure was decreased and the ventricular rate markedly reduced in auricular fibrillation. In cases of hypertension with moderate nitrogen retention, the rate was decreased, on an average, 11 points; in more severe cases, 4 points. In normal hearts, pushing digitalis to the point of nausea had no effect on the heart rate. The first sign of digitalis toxemia is nausea. The effect of the drug is on the smooth musculature, and atropin does not relieve the symptoms. Our average dosage was 0.26 c.c. per pound of body weight.

DISCUSSION

DR. H. A. HARE, Philadelphia: I want to protest against carrying the dosage of this drug up to or near the toxic point. I think that the promulgation of this idea will lead to a great deal of error, if it is generally accepted. Many necropsy studies have indicated that there has been excessive digitalis dosage. I think that it will be unsafe in the future to follow the lines of this very sweeping conclusion. In cases of ruptured compensation we may need one or two maximal doses up to the point of nausea and vomiting, but there are hundreds of cases of failing heart in which much smaller doses can be given with excellent result. One difficulty may present itself, and that is that sufficient distinction has not been made between severe ruptured compensation, in which compensation is suddenly broken down and the condition of the patient is grave, and that form of gradual rupture of compensation in which more moderate symptoms are recognized as a manifestation of the condition. In the first case, doses that are approximately toxic can be given. That is practiced by many English physicians. They give large doses until the effect is produced, and then the dose is cut down. In the second type, it is not necessary to give large toxic doses in order to give the heart a rest. Another factor must be borne in mind: Many physicians fail to recognize that digitalis is a distinctly dangerous drug in some abnormal conditions of the circulatory system. When there is partial heart block, the giving of massive doses may complete the heart block. I have seen such a patient moribund from the administration of very massive doses. It has been my practice to give from 15 to 20 minims of a good tincture to rest the heart over a long period of time. The whole theory of administration of digitalis is the rest and better nutrition of the heart muscle. We cannot rest the heart in twenty-four hours. We have to continue the effect of a massive dose by very many small doses. We put a man to bed to rest his body, and we must also use this idea in resting the heart over a long period of time. Satisfactory results cannot be accomplished in any other way.

DR. HORATIO WOOD, Philadelphia: These massive doses often produce a very rapid fall in blood pressure. Another point in question is the prevailing idea that digitalis is to be administered according to pounds of body weight of the patient, based on the cat unit scale. I have learned the value of animal experimentation in the laboratory in working out

the cat unit dose, but it is applicable only to a certain extent. In medical practice there is a different element. Persons do not react according to so many pounds body weight, but according to the type of organism. One naturally supposes that a person of 300 pounds weight needs more than one of 100 pounds, but there are many cases in which there is a moderate degree of dropsy, not very marked, but still in which a dosage of digitalis graduated to scale of body weight would give rise to erroneous conclusions. There is too great a tendency to impress the profession at large with the idea that massive doses must be given in every case, and that each case is not to be handled as an individual entity.

DR. BLAKE DONALDSON, New York: This was not a study of therapy. It was a study of toxic action of the drug. We thought we could develop auricular flutter and possibly increase of rate by increasing the pacemaker. We administered 4 c.c., three times a day, in some cases. In estimating the nausea point in regard to body weight, it was determined by weight, less edema.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

31: 439-545 (May) 1923

*Ovogenesis During Sexual Maturity. E. Allen, St. Louis.—p. 439.
Postnatal Growth in Weight of Body and of Various Organs in Guinea-Pig. A. N. Bessesen, Jr., and H. A. Carlson, Minneapolis.—p. 483.
Problem of Embryonic Pathology in Mammals; Intrauterine Mortality in Pig. G. W. Corner, Baltimore.—p. 523.

Ovogenesis During Sexual Maturity.—The concept that the definitive ova are already differentiated in the ovary shortly after birth, or at least before the attainment of puberty, requiring that they remain dormant for long periods, is questioned by Allen. The evidence presented by him consists of a description of the earliest stages of ovogenesis in ovaries from sexually mature mice removed at various stages of the estrual cycle. It is asserted that ovogenesis during sexual maturity is a cyclic phenomenon correlated with estruation. A cyclic proliferation of the germinal epithelium gives rise to a new addition of young ova to the cortex of the adult ovary at each normal estrual period. The periodic recurrence of ovogensis during sexual maturity probably depends on the maturation of a set of follicles from a preceding generation. The evidence is in opposition to the theory that the definitive ova are in a direct line of chromosomal descent from the primordial ova.

Archives of Ophthalmology, New York

52: 209-312 (May) 1923

Primary Gliomas of Chiasm and Optic Nerves in Their Intracranial Portion. P. Martin, Brussels, N. Y., and H. Cushing, Boston.—p. 209.
Fundamental Considerations in Correction of Squint. A. Whitmire, New Orleans.—p. 242.
Case of Orbital Abscess Producing Clinical Picture of Separation of Retina. Pathological Findings, Including Anemic Infarct of Optic Nerve. R. C. Cheney, Boston.—p. 252.
Case Records in Ophthalmological Clinic. C. Berens, Jr., and G. E. Sturges, New York.—p. 259.

Boston Medical and Surgical Journal

188: 711-754 (May 10) 1923

Rôle of Imaginative Faculty in Medicine. J. W. Courtney, Boston.—p. 711.
Profuse Unilateral Hematuria the Result of Malignant Endocarditis as Complication of Cancer of Prostate. W. C. Quinby.—p. 717.
Abnormalities of Bladder Function in Women. W. C. Quinby, Boston.—p. 718.
Intestinal Obstruction: Report of Cases. J. W. Lane, Boston.—p. 725.
One Child Sterility. D. Macomber, Boston.—p. 729.
Household Nursing Association. R. B. Osgood, Boston.—p. 732.
Physical Improvement of Students at Citizens' Military Training Camps. J. R. Kean.—p. 733.
Pulmonary Sequel (Peribronchial Infiltration) of Influenza. O. H. Stansfield, Worcester, Mass.—p. 734.
Circumscribed Proctitis of Traumatic Origin. W. A. Rolfe, Boston.—p. 735.
*Occurrence of Tubercle Bacilli in Feces of Tuberculous Patients. B. M. Fried, Boston.—p. 735.
Doctor's Opportunities. R. E. Dickson, Holyoke, Mass.—p. 737.

Tubercle Bacilli in Feces of Tuberculous Patients.—The stools of 126 patients at various stages of pulmonary tuberculosis, were examined by Fried for tubercle bacilli with positive results in 101 cases. Of 103 cases in which the sputum was positive, the feces were positive in ninety-eight. Of twenty-three cases in which the sputum was negative, the feces were positive in three cases. This is important, from a diagnostic point of view, in people who swallow their sputum, and especially in old people and children. It is also important, from a sanitary standpoint, to disinfect the feces and the linen of the patients.

Canadian Medical Association Journal, Montreal

13: 223-300 (April) 1923

Problems of Country Practice in New Brunswick. A. B. Walter, Cambridge, N. B.—p. 227.
Diagnosis and Treatment of Duodenal and Gastric Ulcer. E. M. Eberts, Montreal.—p. 230.
*Influence of Chronic Disease of Gallbladder in Producing Stomach Symptoms. F. A. C. Scrimger, Montreal.—p. 235.
Chronic Appendicitis: Its Differential Diagnosis and Treatment. F. B. Gurd, Montreal.—p. 237.
Visceroptosis. R. H. M. Hardisty, Montreal.—p. 241.
Pregnancy and Heart Disease. D. G. Campbell, Montreal.—p. 244.
*Unusual Contents of Ovarian Cysts. Report of Two Cases. W. Bolt, Winnipeg.—p. 250.
*Maternal Mortality. W. B. Hendry, Toronto.—p. 252.
Pyelitis. G. S. Gordon, Vancouver, B. C.—p. 255.
Symptoms of Acute Osteomyelitis. D. E. Robertson, Toronto.—p. 262.
New Bismuth Therapy of Syphilis. C. J. Gross, Montreal.—p. 265.

Gallbladder Disease as Cause of Stomach Symptoms.—The case records of one hundred cases of chronic or recurring gallbladder disease and fifty cases of chronic gastric or duodenal ulcer were qualyzed by Scrimger. The large majority of the proved cases of gallbladder disease gave a distinctive and fairly constant history of repeated attacks of pain over a period of months or years, nearly always localized to the "right upper quadrant" "below the right costal border," "in the gallbladder region." The pain was often felt through to the back and sometimes between the shoulder blades; rarely (in two instances) was it noted as being felt in the right shoulder or in the right side of the neck. The pain associated with disease of the stomach, when it was severe, was referred to the back about as often as was the pain from the gallbladder. In a minority of the cases, the main history was a recurrence of periods of dull, aching pain in the epigastrium with eructations of gas, and occasional vomiting. Rarely, however, in a proved case of cholecystitis or cholelithiasis was there not some history of acute pain localized to the right upper quadrant. Pain referred to the shoulder was not frequently noted, and when noted, it was usually brought out as the result of questioning. Jaundice was an infrequent occurrence. In five of the 100 cases there was no history of severe attacks of pain, only a grumbling, gnawing pain relieved by food and alkalis and not to be distinguished by the history alone from the pain of stomach diseases as the history was that of the associated hyperacidity. Throughout the whole series, there was a recurring group of stomach symptoms resembling the picture of hyperacidity, sometimes with a moderate retention. During the acute attack these symptoms are submerged by the more violent ones of pain and vomiting but reappear during the intervals. In others, the lesser signs dominated the picture.

Dermoid Cyst of Ovary.—Bolt reports two cases. The interesting points clinically in the first case were: (1) the lateness of the symptoms (age 61, eleven years after menopause); (2) the large tumor; (3) simulation of malignancy; (*a*) uterine hemorrhage; (*b*) irregular and nodular tumor; (*c*) free abdominal fluid; (*d*) marked loss of weight. Pathologic examination showed a dermoid cyst and no evidence of malignancy. On cutting the tumor in half, the part which looked spherical from the outside was seen to consist of a round encapsulated mass of the usual greasy material containing hair and teeth, and on top of this, and separated from it by a fibrous capusle, was a darker body, mottled, greyish in parts, reddish in others, broken into lobules by

fibrous strands, and looking like thyroid tissue, which it proved to be. The second patient was 35 years of age. From her a rightsided ovarian tumor was removed. It proved to be a dermoid cyst, containing three teeth, strands of hair, a papillary skin projection, and the usual greasy or buttery substance. In the wall of one side of the tumor was an elevated triangular nodule about three-quarters of an inch high and one and a half inches at the base. On cutting into this nodule, a small triangular area, deep yellow in color, resembling suprarenal cortex was found. Microscopic section of this part showed cells very like those of the cortical layer of the suprarenal, a definite capsule of smooth muscle fibus, a somewhat indefinite zona glomerulosa but a quite definite zona fasciculata of round or cuboidal cells containing a deeply staining nucleus, granules and fat vacuoles, but with no basement membrane.

Maternal Mortality.—Among 6,982 deliveries effected in one hospital during a period of about eight years the maternal mortality was 1.24 per cent. The main causes of death were: placenta praevia, 4 deaths; ruptured uterus, 6 deaths; shock, 5 deaths; cesarean section, 8 deaths; eclampsia, 19 deaths; pneumonia, 17 deaths; septicemia, 8 deaths; pulmonary embolus, 4 deaths.

Journal of Social Hygiene, New York

9: 257-320 (May) 1923

Centralized French Endeavor in Field of Social Hygiene. T. C. Merrill, Paris, France.—p. 257.
Moral Conditions in Rural New England. G. E. Hall.—p. 267.
New York State Venereal Disease Control Program. J. S. Lawrence, Albany.—p. 271.
North Carolina Venereal Disease Program. J. S. Mitchener, Raleigh. —p. 288.

Minnesota Medicine, Minneapolis

6: 279-362 (May) 1923

Lung Abscess. G. J. Heuer, Cincinnati.—p. 279.
*Diaphragmatic Hernia. Report of Cases. A. T. Mann, Minneapolis. —p. 285.
Tuberculosis Crusade in Minnesota. H. L. Taylor, St. Paul.—p. 291.
Minnesota's Antituberculosis Campaign. R. Bosworth, St. Paul. —p. 296.
*Status of Present-Day Methods of Examination in Diagnosis of Intestinal Tuberculosis. W. S. Lemon, Rochester, Minn.—p. 300.
Surgical Treatment of Ureter in Tuberculosis of Kidney. W. Walters, Rochester, Minn.—p. 307.
Case of Acute Delirium Apparently Due to Bromidia Poisoning. C. E. Riggs, St. Paul.—p. 310.
Ulcer of Stomach and Duodenum. E. S. Judd, Rochester, Minn. —p. 311.
Dysmenorrhea. J. L. Rothrock, St. Paul.—p. 314.
Mental Aspects in Delinquency. J. C. Michael, Minneapolis.—p. 319.
Roentgen Rays in Thyroid Therapy. M. I. Bierman, St. Louis.—p. 322.

Treatment of Diaphragmatic Hernia.—Mann feels that some cases will be best treated by the abdominal approach, through the right rectus incision down to or below the level of the umbilicus and extending upward in a slight curve along the margin of the cartilages into the sternal notch, and some best by way of the chest, through a long incision between the ribs, with retractors widely spreading the ribs, which seems much better than the resection of long portions of two ribs. When there are abdominal complications and abdominal adhesions, the abdominal route will be chosen. When there are more or less extensive adhesions in the thorax, the best approach will be by way of the chest. When both abdominal complications and extensive adhesions in the thorax are present, the combined method of approach will sometimes be needed.

Diagnosis of Intestinal Tuberculosis.—The diagnosis of intestinal tuberculosis, in Lemon's opinion, must be based on circumstantial evidence collected from the history of the ailment, the examination of the patient, the laboratory data afforded especially by: (1) direct examination of the rectum through the proctoscope; (2) the study of material collected at the proctoscopic examination; (3) the examination of the stools for tubercule bacilli, especially in cases of healed or latent pulmonary disease in which the sputum is negative, or in which there is no demonstrable pulmonary disease; (4) the examination of stools for evidence of ulceration, as in other ulcerative conditions; (5) the very definite and accurate observations of the roentgenologist; and (6) the microscopic examination of tissue removed by the surgeon in operations performed from choice when the diagnosis is certain, or when advisable because of severity of symptoms, or when an opinion cannot be given with certainty.

Missouri State Medical Association Journal, St. Louis

20: 153-184 (May) 1923

Birth of Scientific Surgery. L. S. McMurtry, Louisville, Ky.—p. 153.
*Diagnosis of Pernicious Anemia. R. L. Haden, Rosedale, Kan.—p. 158.
*Transfusion in Treatment of Anemia. W. W. Duke and D. D. Stofer, Kansas City, Mo.—p. 161.
Syphilis in Orthopedic Surgery. A. O'Reilly, St. Louis.—p. 166.
Myringotomy from Standpoint of Pathology of Early Otitis Media. A. M. Alden, St. Louis.—p. 169.
Pathology in Cases of Appendicitis with Diarrhea. Report of Cases. J. G. Sheldon and E. P. Heller, Kansas City, Mo.—p. 172.

Diagnosis of Pernicious Anemia.—Haden analyzes the results of the study of twenty-nine undoubted cases of pernicious anemia. The average red cell count was 1,700,000, the lowest was 740,000, the highest, 3,330,000. The anisocytosis, poikilocytosis, basophilia and nucleated red cells are associated typically with very low counts and disappear as the count rises. The white cell counts varied from 1,950 to 6,450 per c.mm. The platelets were usually reduced but were very variable. The color index varied from 0.80 to 1.61, being less than 1 in only three cases. The volume index was much more constant. It was always greater than 1. The saturation index was never more than 1 and usually was less than 1. The results of gastric analysis are available in twenty-three of the twenty-nine patients. Free hydrochloric acid was constantly absent. The combined acid was usually very low and the hydrochloric acid deficit usually very high. No patient found to have a volume index above 1 showed free hydrochloric acid in the gastric contents. The combination of an absence of free hydrochloric acid in the gastric juice and an average sized red cell above normal, as indicated by a plus volume index, Haden says, is constant in pernicious anemia. A plus color index, when present, if correctly determined, has the same significance as a plus volume index, but is not constantly present, however. A diagnosis of pernicious anemia should not be made unless the volume index is above and free hydrochloric acid is absent.

Transfusion in Treatment of Anemia.—From an experience with direct transfusion of blood in more than 400 cases, Duke and Stofer conclude that it is the logical method of treating anemia of almost every type, for three reasons: First, it is harmless if the technic is good and the donors are carefully chosen. Second, the result is immediate. Third, the result is certain. The permanence of the result, of course, depends on the cause of the anemia.

Texas State Journal of Medicine, Fort Worth

18: 589-632 (April) 1923

Posture Work in Children. F. P. Gengenbach, Denver.—p. 596.
Pyelitis in Infants and Children. J. A. Rawlings and H. Leigh, El Paso.—p. 600.
Colic in Infants. A. H. Braden, Sherman.—p. 604.
Value of Enterostomy in Intestinal Obstruction. J. W. Long, Greensboro, N. C.—p. 606.

Virginia Medical Monthly, Richmond

50: 71-146 (May) 1923

Some Reactions in Treatment of Syphilis and Their Probable Significances. S. G. Gill, Norfolk.—p. 71.
*Lumbar Puncture in Routine Treatment of Syphilis. W. T. Vaughan, Richmond.—p. 75.
Plea for More Comprehensive View of Correlations in Study of Medicine. J. H. Hiden, Pungoteague.—p. 79.
Prenatal Care and Treatment. R. P. Kelly, Lynchburg.—p. 82.
Cancer, Tribulus Terrestris of Diseases. S. Harnsberger, Warrenton. —p. 85.
Obstetrics, a Neglected Science and Art. G. T. Myers, Norfolk.—p. 86.
Latent Maxillary Sinusitis. J. W. White, Norfolk.—p. 90.
Art as Applied to Anatomy. J. W. Brodnax, Richmond.—p. 92.
Relation of Biology to Surgery. J. S. Horsley, Richmond.—p. 101.
Relationship of Eye to General Diseases. G. B. Dudley, Jr., Martinsville.—p. 110.
Planning Hospital in Chinese City. C. M. Lee, Wusih, China.—p. 114.
Phlyctenular Keratoconjunctivitis. S. Trattner, Richmond.—p. 117.
After-Care of Obstetric Patients. C. J. Andrews, Norfolk.—p. 122.
Diagnosis of Tuberculosis in Childhood. F. B. Stafford, Charlottesville. —p. 124.
Newer Methods of Determining Condition of Nutrition in Children. S. Newman.—p. 127.

Routine Lumbar Puncture in Syphilis.—Vaughan advocates performing at least one lumbar puncture in every case of

syphilis early in the course of the disease. In case of doubt, a diagnostic lumbar puncture will give valuable information. The intrathecal pressure should be roughly estimated, cell count and globulin content should be recorded, and Wassermann reaction should be determined.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 795-840 (May 12) 1923

*Australian Fauna and Medical Science. W. C. MacKenzie.—p. 795.
*Pathogenicity and Treatment of Flagellate Dysentery. H. E. Whittingham.—p. 799.
*Effects of Excess of Calcium on Skeleton. V. Korenchevsky.—p. 802.
Intussusception Supervening on Congenital Stenosis of Ileum. W. T. Warwick.—p. 804.
Optic Atrophy. R. E. Wright.—p. 806.
Diphtheria Carriers. F. W. Sumner.—p. 808.

Value of Knowledge of Applied Comparative Anatomy to Physician.—MacKenzie dwells on the fact that the medical graduate has little concern with that department of biology termed "applied zoology," or better, "applied comparative anatomy." Yet, for the study of causation, without which no true advance can be made or principles enunciated, and intimate knowledge of applied comparative anatomy is essential, since by its means the student is brought into contact with numberless experiments on the part of Nature which call for explanation—experiments that represent the functional struggles through which the human body has been evolved. A recognition that structure is a response to function is all essential to those engaged in the practice of medicine. The teaching of zoology needs complete reorganization; it should be dominated by the needs of those whom it really most concerns—the general medical practitioner. In the Australian Commonwealth are to be found, still living in their natural state, members of the two oldest orders of mammals—namely, monotremes and marsupials, corresponding to life on this planet many millions of years ago. They are examples of living embryology. Through them man is enabled to explore his past. To study these mammals from the point of view not only of structure, but function in relation to medical science, the Australian Institute of Anatomical Research has been founded in Melbourne, and receives an annual subsidy from the government of Victoria. The government has also reserved an area of nearly 600 acres, 80 of which have been converted into a great wire netting cage. Here, for example, the platypus, echidna and koala can be found living, though under observation, in their natural state.

Flagellate Dysentery.—Whittingham emphasizes the following points: Flagellate dysentery is a pathogenic condition which, if allowed to persist, will eventually undermine the health of the patient and cause neurasthenia. Certain cases are simply "carriers" as are some cases of *Endameba histolytica* infection. This in no way proves them nonpathogenic. Such "carriers" are a great source of danger as they may infect others, especially in a military service where they are likely to be drafted overseas. Contrary to what is usually stated, flagellate dysentery may be cured in at least 50 per cent. of cases. Stress is laid on the advisability of the combined treatment by purgation, thymol, emetin bismuthous iodid and lavage of the colon. All cases of recurrent diarrhea or neurasthenia for which no cause can be found, and in which flagellates can be detected in the stools, should have a course of treatment as outlined above.

Effects of Excess of Calcium on Skeleton.—Details of experiments made are given by Korenchevsky and on the basis of the results obtained, the following conclusions are drawn: Butter bought in winter may contain a considerable amount of the antirachitic principle. When the amount of calcium in a normal diet containing 8 per cent. butter and 2 per cent. cod liver oil was increased two or three times, the calcification of the skeleton was either not increased at all or only slightly. The ingestion of even very large quantities of calcium did not cure the rachitic calcium impoverishment of the skeleton of rats on a diet deficient in the fat soluble factor. When the exhaustion of the fat soluble factor in the body of rats is not complete, an excess of calcium in diets deficient in fat soluble factor may in some cases slightly increase the amount of calcium in the skeleton, though never sufficiently to make the calcification normal. On the basis of the data obtained from the chemical and histologic examination, the skeletal affections in rats on vitamin A deficient diet must be classed in the group of rachitic affections, which develop even with an excess of calcium in the diet.

Indian Medical Gazette, Calcutta

58: 145-192 (April) 1923

Beriberi and Epidemic Dropsy Problem. J. W. D. Megaw.—p. 145.
Relationship of Intestinal Protozoa of Man to Hydrogen Ion Concentration of Their Environment. R. Knowles, L. E. Napier and B. M. Das Gupta.—p. 151.
Strongyloidosis. S. K. Roy.—p. 155.
Operative Treatment of Trachoma by Excision of Fornix. D. D. Kapur.—p. 158.
Day in Life of Port Health Officer. A. B. De Castro.—p. 160.
*Accessory Mouth. A. B. De Castro.—p. 162.
*Stone in Bladder Removed by Midwifery Forceps. M. Singh.—p. 163.
Case of Bronchomoniliasis. S. C. Sen.—p. 164.
Filariasis and Hemoptysis. R. N. Banerji.—p. 165.
Case of Idiopathic Dilatation of Colon. J. C. De.—p. 166.
*Unusual Termination of Pyopneumothorax Secondary to Pneumonia. R. V. Rajam.—p. 168.
Relapsing Fever in Raichur. S. Mallannah.—p. 168.

Accessory Mouth.—In de Castro's case there was present a horizontal cleft above the hyoid from which the tongue could be protruded, and deglutition performed. The two horizontal rami of the lower jaw were fused together and occupied a position in the center of the floor of the mouth, the capacity of which was very small. On the right ramus there was one molar and two bicuspid teeth, on the left two bicuspids. The upper maxilla was ununited in the middle line of the palate, about the posterior two thirds, and with ease two fingers could be passed up to the frontal bone. The palate and throat were anesthetic to a marked degree. The man could drink liquids from this malformed opening as easily as from his mouth. Masticatory work was performed by the natural mouth.

Unusually Large Bladder Calculus.—The stone in Singh's case occupied the whole bladder. Efforts to remove the stone were futile until midwifery forceps were used. The weight of the stone is not given.

Pyopneumothorax Secondary to Pneumonia.—One month after an attack of high fever with cough and dyspnea which lasted for a fortnight, the mother of Rajam's patient noticed a small swelling on the left side of the back. It increased in size. The only trouble the child had was a dry hacking cough, worse at night and in the recumbent posture. The swelling at the back extended from the suprascapular region above to the tenth rib below. Horizontally, it was limited on the outer side by the posterior axillary fold and on the inner side by the spine. On exploring the swelling with a needle and syringe, the piston was suddenly shot out of the barrel with the escape of an odorless gas and subsequently of white thin odorless pus. A one-half inch incision was made at the dependent part of the abscess, and the whole of the pus mixed with air was evacuated. After the evacuation of the cavity, it was noticed that there was sucking in and out of air into the pleural cavity with each respiratory movement. Digital examination through the wound revealed a perforation in the chest wall between the eighth and ninth ribs in the line of the angle of the scapula, and the expanded lung substance could be felt through the fistulous opening in the wall. The abscess was dressed with firm pressure outside. The whole cavity was completely obliterated and the incision healed by first intention in ten days.

Tubercle, London

4: 337-384 (May) 1923

Diagnosis and Treatment of Tuberculosis of Kidneys and Urinary Tract: Mode of Development and Dissemination of Tuberculosis in Kidneys and Other Organs of Urinary Tract. G. Ekehorn.—p. 337.
Effects, Immediate and Remote, of Mustard Gas (Dichlorethylsulphid) Poisoning on Respiratory Tract. P. R. McNaught.—p. 345.
Treatment of Tuberculosis with Colloid of Calcium. D. C. Lloyd.—p. 348.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1923

The following journals have been abstracted in the Currrent Literature Department of THE JOURNAL during the past six months. Any of the foreign journals, except those starred, will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where located.

Acta chirurgica Scandinavica. Irregular. 20 kronor. Stockholm.
Acta medica Scandinavica. Irregular. 20 kronor. Stockholm.
Acta Pædiatrica. Irregular. $6 per volume. Uppsala.
Acta scholae medicinalis universitatis imperialis in Kioto. Irregular. 3.30 yen. Kioto.
American Journal of Anatomy. Bi-m. $7.50 per volume. 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children. M. $4. American Medical Association, 535 N. Dearborn St., Chicago.
American Journal of Hygiene. Bi-m. $6. 310-312 W. Monument St., Baltimore.
American Journal of the Medical Sciences. M. $6. Lea & Febiger, 706 Sansom St., Philadelphia.
American Journal of Obstetrics and Gynecology. M. $6. C. V. Mosby Co., St. Louis.
American Journal of Ophthalmology. M. $10. 7 W. Madison St., Chicago.
American Journal of Physiology. M. $5 per volume. 1222 St. Paul St., Baltimore.
American Journal of Psychiatry. Q. $5 per volume. Johns Hopkins Press, Baltimore.
American Journal of Public Health. M. $5. 370 Seventh Ave., New York.
American Journal of Roentgenology and Radium Therapy. M. $6. Paul B. Hoeber, 67 E. 59th St., New York.
American Journal of Syphilis. Q. $7. C. V. Mosby Co., St. Louis.
American Journal of Tropical Medicine. Bi-m. $5 per volume. Williams & Wilkins Co., Baltimore.
American Review of Tuberculosis. M. $4 per volume. Williams & Wilkins Co., Baltimore.
Anales de la Facultad de Medicina, Universidad de Lima. Bi-m. 1.50 soles per issue. Lima, Peru.
Anales de la Facultad de Medicina, Universidad de Montevideo. M. 6 pesos per year. Montevideo.
Annales de l'Institut Pasteur. M. 55 francs. Paris.
Annales des maladies vénériennes. M. 52 francs. Paris.
Annales de médecine. M. 55 francs. Paris.
Annali d'igiene. M. 60 lire. Rome.
Annali italiani di chirurgia. M. 70 lire. Naples.
Annals of Clinical Medicine. Bi-m. $6. Williams & Wilkins Co., Baltimore.
Annals of Medical History. Q. $8. Paul B. Hoeber, 67 E. 59th St., New York.
Annals of Otology, Rhinology and Laryngology. Q. $6. Times Bldg., St. Louis.
Annals of Surgery. M. $7.50. J. B. Lippincott Co., E. Washington Square, Philadelphia.
Annals of Tropical Medicine and Parasitology. Irregular. £1 2s. 6d per volume. Liverpool.
Arbeiten aus dem anatomischen Institut der kaiserlich-japanischen Universität zu Sendai. Irregular. Price varies. Tokyo.
Archiv für Gynaekologie. Irregular. Price varies. Berlin.
Archiv für Kinderheilkunde. Irregular. 21 Swiss francs per volume. Stuttgart.
Archiv für klinische Chirurgie. Irregular. Price varies. Berlin.
Archiv für Verdauungs-Krankheiten. Irregular. 200 marks per volume. Berlin.
Archives of Dermatology and Syphilology. M. $6. American Medical Association, 535 N. Dearborn St., Chicago.
Archives of Diagnosis. Q. $3. Rebman Co., 141 W. 36th St., New York.
Archives Franco-Belges de Chirurgie. M. 55 francs. Brussels.
Archives of Internal Medicine. M. $5. American Medical Association, 535 N. Dearborn St., Chicago.
Archives Internationales de laryngologie, otologie, rhinologie et bronchoœsophagoscopie. M. 60 francs. Paris.
Archives des maladies de l'appareil digestif et de la nutrition. Monthly except August and September. 45 francs. Paris.
Archives des maladies du cœur, des vaisseaux et du sang. M. $3. Paris.
Archives de médecine des enfants. M. 40 francs. Paris.
Archives de médecine et de pharmacie militaires. M. Paris.
Archives of Medical Hydrology. Irregular. 15 francs. London.
Archives médicales belges. M. 30 francs. Brussels.
Archives of Neurology and Psychiatry. M. $6. American Medical Association, 535 N. Dearborn St., Chicago.
Archives of Occupational Therapy. Bi-m. $5. Williams & Wilkins Co., Baltimore.
Archives of Ophthalmology. Bi-m. $6. G. P. Putnam's Sons, 2 W. 45th St., New York.
Archives of Radiology and Electrotherapy. M. £2, 2 shillings per year. Rebman Co., 141 W. 36th St., New York.
Archives of Surgery. Bi-m. $6. American Medical Association, 535 N. Dearborn St., Chicago.
Archivio italiano di chirurgia. Irregular. 80 francs per volume. Bologna.
Archivio italiano di scienze mediche coloniali. M. 36 lire. Tripoli.
Archivio di ostetricia e ginecologia. M. 40 lire. Naples.
Archivio per le scienze mediche. Bi-m. 36 francs. Torino.
Archivos de cardiología y hematología. Bi-m. 24 pesetas. Madrid.
Archivos españoles de pediatría. M. 25 pesetas. Madrid.
Archivos latino-americanos de pediatría. M. $5. Buenos Aires.
Arquivos do Instituto Bacteriologico Camara Pestana. Irreg. Lisbon.
Atlantic Medical Journal. M. $3. 230 State St., Harrisburg, Pa.
Beiträge zur klinischen Chirurgie. Irregular. Price varies. Tübingen.
Boletin de Medicina y Cirugia. M. Guayaquil, Ecuador.
Boston Medical and Surgical Journal. W. $6. 126 Massachusetts Ave., Boston.
Brain. A Journal of Neurology. Irregular. 24 shillings. London.
Brazil-medico. W. 25 milreis. Rio de Janeiro.
Bristol Medico-Chirurgical Journal. Q. 10s. 6d. per year.
British Journal of Children's Diseases. Q. 25 shillings per year. London.
British Journal of Experimental Pathology. Bi-m. £2. London.
British Journal of Medical Psychology. Q. 30s. net per volume. London.
British Journal of Surgery. Q. $10. William Wood & Co., 51 Fifth Ave., New York.
British Journal of Tuberculosis. Q. $2.50 per year. London.
British Medical Journal. W. 1 shilling 3 d. per issue. London.
Bulletin de l'Académie de médecine. W. 40 francs. Paris.
Bulletin of the Johns Hopkins Hospital. M. $4. Baltimore.
Bulletin of the Lying-In Hospital, New York. Irregular. $1. Bulletin of Lying-In Hospital Press, New York.
Bulletin médical. Semi-w. 20 francs. Paris.
Bulletin of the Medical and Chirurgical Faculty of Maryland. M. (except June, July, August and September) 25 cents. 1211 Cathedral St., Baltimore.
Bulletin of the Naval Medical Association of Japan. Tokio.
Bulletin of the Porto Rico Medical Association. Bi-m. $3 per year. San Juan, Porto Rico.
Bulletins et mémoires de la Société médicale des hôpitaux de Paris. W. 65 francs. Paris.
Calcutta Medical Journal. M. Rs. 5. Calcutta.
California State Journal of Medicine. M. $4. Balboa Bldg., Second and Market Sts., San Francisco.
Canadian Journal of Mental Hygiene. Q. $2. 207 St. Catherine St., West, Montreal.
Canadian Medical Association Journal. M. $6. 836 University St., Montreal.
*Casopis lekaruv ceskych. W. 170 k. Prague.
China Medical Journal. M. $5. Shanghai.
Chirurgia degli organi di movimento. Irregular. 80 francs. Bologna.
Colorado Medicine. M. $2. Metropolitan Bldg., Denver.
Crónica médica. M. $3.50. Lima, Peru.
Delaware State Medical Journal. Q. $1. 309 Shipley St., Wilmington.
Deutsche medizinische Wochenschrift. W. $6 per year. Leipzig.
Deutsche Zeitschrift für Chirurgie. Irregular. Price varies. Leipzig.
Deutsches Archiv für klinische Medizin. Irregular. Price varies. Leipzig.
Echo medical du nord. W. 15 francs. Lille.
Edinburgh Medical Journal. M. 40 shillings.
Encéphale. M. 70 francs. Paris.
Endocrinology: Bulletin of the Association for the Study of Internal Secretions. Bi-m. $6. 1100-1103 Title Insurance Bldg., Los Angeles.
Finska läkaresällskapets handlingar. Bi-m. 60 Finnish marks per year. Helsingsfors.
Gaceta médica de Caracas. Semi-m. 24 bolivares. Caracas, Venezuela.
Gaceta médica de Mexico. Irregular. $6. Mexico City.
Gann. Irregular. Tokio.
Gazette des hôpitaux. W. 35 francs. Paris.
Glasgow Medical Journal. M. 30 shillings per year.
Gynécologie et Obstétrique. M. 65 francs. Paris.
Hospitalstidende. W. 30 kroner. Copenhagen.
Hygiea. Semi-m. 24 kronor. Stockholm.
Illinois Medical Journal. M. $3. 155 N. Ridgeland Ave., Oak Park.
Indian Journal of Medical Research. Q. 10s. Calcutta.
Indian Journal of Medicine. Q. Rs. 6. Calcutta.
Indian Medical Gazette. M. Rs. 18. Calcutta.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly. * Cannot be loaned.

International Journal of Psycho-Analysis. Q. $6. London.
Irish Journal of Medical Science. M. £1 5s. Dublin.
Jahrbuch für Kinderheilkunde und physische Erziehung. M. 800 marks per volume. Berlin.
Japan Medical World (Nippin No Ikai Sha). M. $6. Tokio.
Journal of the American Medical Association. W. $6. 535 N. Dearborn St., Chicago.
Journal of the Arkansas Medical Society. M. $3. 810 Boyle Bldg., Little Rock.
Journal of Bacteriology. Bi-m. $5 per volume. Williams & Wilkins Co., Baltimore.
Journal of Biochemistry. Q. $5.50 per volume. Tokio.
Journal of Biological Chemistry. M. $5 per volume. Rockefeller Institute for Medical Research, 66th St., and Avenue A, New York.
Journal of Bone and Joint Surgery. Q. $5. 372 Marlborough St., Boston.
Journal of Cancer Research. Q. $5 per volume. Williams & Wilkins Co., Baltimore.
Journal de chirurgie. M. 85 francs. Paris.
Journal of Experimental Medicine. M. $5 per year. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
Journal of the Florida Medical Association. M. $1.50. 602-603 Consolidated Bldg., Jacksonville.
Journal of General Physiology. Bi-m. $5. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
Journal of Immunology. Bi-m. $5 per volume. Williams & Wilkins Co., Baltimore.
Journal of the Indiana State Medical Association. M. $3. 406 W. Berry St., Fort Wayne.
Journal of Industrial Hygiene and Abstract of Literature. M. $6. 240 Longwood Ave., Boston.
Journal of Infectious Diseases. M. $5. 637 S. Wood St., Chicago.
Journal of Iowa State Medical Society. M. $2.75. Des Moines.
Journal of Kansas Medical Society. M. $2. 303 Commerce Bldg., Topeka.
Journal of Laboratory and Clinical Medicine. M. $6. C. V. Mosby Company, St. Louis.
Journal of Laryngology and Otology. M. $10. Edinburgh.
Journal of Maine Medical Association. M. $2. Portland.
Journal de médecine de Bordeaux. Semi-m. 25 francs.
Journal de médecine de Lyon. Semi-m. 32 francs.
Journal of Medical Association of Georgia. M. $3. 208 Professional Bldg., 65 Forrest Ave., Atlanta.
Journal of Medical Research. Irregular. $5 per volume. 240 Longwood Ave., Boston.
Journal of Medical Society of New Jersey. M. $2. 14 S. Day St., Orange, N. J.
Journal of Mental Science. Q. 30 shillings. London.
Journal of Metabolic Research. M. $10. Physiatric Institute, Morristown, N. J.
Journal of Michigan State Medical Society. M. $5. Powers Theatre Bldg., Grand Rapids.
Journal of Missouri State Medical Association. M. $2. 3529 Pine St., St. Louis.
Journal of Nervous and Mental Diseases. M. $10 per year. 64 W. 56th St., New York.
Journal of Neurology and Psychopathology. Q. 30 shillings. William Wood & Co., 51 Fifth Ave., New York.
Journal of Obstetrics and Gynæcology of the British Empire. Q. 42 shillings. Manchester.
Journal of Oklahoma State Medical Association. M. $4. 508 Barnes Bldg., Muskogee.
Journal of Parasitology. Q. $3. Prof. H. B. Ward, University of Illinois, Urbana.
Journal of Pathology and Bacteriology. Q. 40 shillings. Edinburgh.
Journal of Pharmacology and Experimental Therapeutics. M. $6. Williams and Wilkins Co., Baltimore.
Journal of the Philippine Islands Medical Association. Bi-m. $5. Manila.
Journal de radiologie et d'électrologie. M. 60 francs. Paris.
Journal of Radiology. M. $5. Radiological Society of North America, 121 S. 33d St., Omaha, Neb.
Journal of Social Hygiene. M. (except July, August and September). $3. American Social Hygiene Association, 370 Seventh Ave., New York.
Journal of South Carolina Medical Association. M. $3. Greenville.
Journal of State Medicine. M. 2 shillings per issue. London.
Journal of Tennessee State Medical Association. M. $2. 154 8th Ave., N., Nashville.
Journal of Tropical Medicine and Hygiene. Semi-m. 30 shillings. London.
Journal d'urologie médicale et chirurgicale. M. 60 francs. Paris.
Journal of Urology. M. $6. Williams & Wilkins Co., Baltimore.
Kentucky Medical Journal. M. $5. State and Twelfth Sts., Bowling Green.
Kitasato Archives of Experimental Medicine. Irregular. 3.40 yen per volume. Tokio.
Klinische Wochenschrift. W. $4 per year. Berlin.
Lancet. W. $12. London.
Laryngoscope. M. $6. 3858 Westminster Place, St. Louis.
Lyon chirurgical. Bi-m. 50 francs.
Lyon médical. Semi-m. 25 francs.
Médecine. M. 20 francs Paris.
Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indië. Irregular. Price varies. Batavia, Java.
Medical Journal of Australia. W. £2 5s. Sydney.
Medical Journal of South Africa. M. £1 5s. Johannesburg.
Medicina contemporanea. W. Lisbon, Spain.
Medizinische Klinik. W. 260 marks per year. Berlin.
Memorias do Instituto Oswaldo Cruz. Irregular. Rio de Janeiro.
Mental Hygiene. Q. $2. National Committee for Mental Hygiene, Inc., 27 Columbia St., Albany, N. Y.
Military Surgeon. M. $4. Army Medical Museum, Washington, D. C.
Minnesota Medicine. M. $3. 403 Central Bank Bldg., St. Paul.
*Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie. Irregular. Jena.
Mitteilungen aus der medizinischen Fakultät der kaiserlichen Universität Kyushu. Irregular. Price varies. Fukuoka.
Mitteilungen aus der medizinischen Fakultät der kaiserlichen Universität zu Tokyo. Irregular. Price varies. Tokio.
*Monatsschrift für Geburtshülfe und Gynäkologie. M. Price varies. Berlin.
Monatsschrift für Kinderheilkunde. M. 320 marks. Leipzig.
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Acad.—Academy
A.—Association
Am.—American
Coll.—College
Conf.—Conference
Cong.—Congress
Conv.—Convention
Dist.—District
Hosp.—Hospital
Internat.—International
M.—Medical or Medicine
Nat.—National
Phar.—Pharmaceutical
Phys.—Physicians
Ry.—Railway
S.—Society
Surg.—Surgical or Surgeon, Surgery

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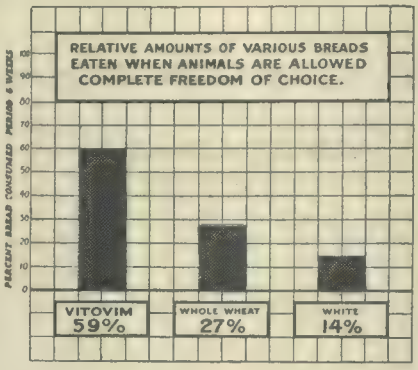
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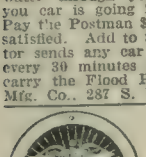
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The Face Brick house is not only beautiful when completed but takes on a more attractive hue as it ages. Slow depreciation, painting only around doors and windows, low insurance rates and smaller fuel bills are a few of the favorable financial considerations. Send for the free booklet, "The Story of Brick." Any of the 4 books showing plans for 3 to 4 room, 5-room, 6-room, 7 to 8 room houses, 25c each. AMERICAN FACE BRICK ASS'N, 1742 People's Life Bldg., Chicago.

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WHY NAUSEATE the patient with bad-tasting medicines? Conceal them in Konseals—rice flour capsules. Tasteless, soluble and as easily swallowed as a drink of water. Make you independent in prescribing. Use your own formulas. Po tcard will bring sample packet of Konseals. J. M. Grosvenor & Co., Lynn, Mass.

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IN THE PHYSICIANS' REFERENCE AND PURchasing Index, THE JOURNAL, June 9, the name Berger Brothers, New Haven, Connecticut, should appear under these headings:

Abdominal Supporters	Maternity Supports
Corsets and Supports	Orthopedic Appliances
Hernia Supports	Sacro-Iliac Supports
Supports (Abdominal)	

Clip this and paste on your Index. At the same time, send for name of nearest Spencer corsetiere.

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fresh from the Minnesota leaf, standardized by the Hatcher cat method, is offered in capsule and tincture form. More details in our quarter page Journal ad two weeks ago. Write for interesting literature. Upsher Smith, Inc., 720 Washington Ave., S. E., Minneapolis.

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or thermostatic metal. Current breaks automatically before water is all gone. Ask for catalog "H" of Sterilizers for Physicians, Hospitals and Laboratories. Wilmot Castle Co., 1167 University Ave., Rochester, N.Y.

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Four slightly used, completely equipped, high power machines on such easy terms that they pay for themselves. Write for these terms and other equipment bargains. Thompson Plaster X-Ray Co., Leesburg, Va.

Doctor: When You Read This Page
have on your desk a few postal cards and write for samples or descriptions of the articles mentioned. You will find many items of value.

The AD vantages of AD reading

2—*The Literature of Science*

EVERY week brief descriptions of the latest medical volumes are found in the advertising pages of THE JOURNAL. By glancing through the book ads the physician or surgeon can keep himself informed on the literature of science that is most helpful to him. Valuable research aids and survey services relating to all phases of the practice of medicine are offered in the advertising pages. Many interesting brochures and prospectuses are available to those who use the coupons.

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If your dealer can't supply, write us direct

Tonics and Sedatives

OFFICIAL CORRESPONDENCE

Letter and reply from our Philippine Colleagues

THE LETTER

Municipal President

————————, *P. I.*

Sir: I hope, Sir that notwithstanding the susterity of the chair, your good nature will inclined you to some degree of indulgence towards human frailty, you will not think it unnatural that those who have an object spending which strongly engages their hopes and fears, should be somewhat inclined to superstition. As I came into this province full of anxiety about the event of my motives, I found, to infinite surprise, that the disposal of sewage, by which I had passed sentence as a record of progress on sanitation is found to be a failure.

My principal aim is corporation to insure the service we are to render to our people and to cloth them with human knowledge and human education to all future times and so that the work is final and undesputable in the annuals of history. It is with hope that your love and symphaty should be touched with the electric spark of continues service in cementing the solid structure of lasting and enduring education.

If you go from our land to other lands, if you go to the land which has been kept clean and sanitary, if you go to the people of America, if you go to the great man in ancient times who live in the intellect, if you go to the illustrious names that every one recalls—they represent a life thru the instrumental power of sanitation and hygiene.

Great is the advance of civilization, might are the engines of force, but men are greater than that which he produces. Vast is that machine which stands in the dark unconsciously lifting, lifting—the only human slave—the iron—the Corliss engine, but he that made the engine is greater than the engine itself. Wonderful is the skill by which that most exquisite mechanism of modern life, the watch, is constructed, but Greater is the man that made the watch than the watch that is made. Great is the press, Great are hundred instrumentalities and institution and customs of society, but above them all is man. The living force is greater than any of its creation—greater than society—greater than the laws. The sabbath was made for man, and not man for the sabbath, said the Lord. Man is greater than his own institutions, and this living force is worthy, of all culture — of all culture in the power of beauty, of all culture in the direction of persuation, of all culture in the art of reasoning.

To make man patriots, to make man christians, to make men the sons of God let all comports, enjoyments, happiness and complete education be opened to their eyes, but at present we are incomplete, insanitary and not just to our hundred school children not only to them but to the eyes of the civilized educators. Now let us work hand and hand to establish mutual advantages, united purpose and strength to put at least two closets for the school before the future leaders will once more enter in that temple and nursery of human freedom, where to develope iron brain by the instrumental power of human labor—"The spirit of labor."

Sincerely yours,

(Sgd.) JUAN DE LA CRUZ, R.N., A.B.
School Nurse

THE REPLY

1st Indorsement

April 9, 1923

Respectfully returned to Mr. Juan de la Cruz, R.N., A.B. thru the Division Superintendent of Schools, P. I.

The interesting perusal of the attached letter has pleased the undersigned so much, and due to the profound and wise references with regard to the ark-biblical sentences and sublime phylological notions which it embodies the undersigned has been completely swayed and

(Continued on page 24)

(Continued from page 20)

WANTED — ASSISTANT FOR MEDICAL laboratory located in Chicago; must be well qualified in all chemical and bacteriological work; x-ray not required; give full history of training and experience and state salary. Add. 6140 B, % AMA.

WANTED—ASSISTANT PHYSICIAN, EXperienced in tuberculosis work at Wisconsin State Sanatorium; beginning salary $1,800; complete maintenance; single man preferred; give full particulars and references in first letter. Add. Dr. L. W. Dudley, Supt., Statesan, Wis. B

WANTED—ASSISTANT, GENTILE, TO A busy doctor in general practice and compensation work in New York City; salary $150 monthly and commission; board and room provided. Add. 6146 B, % AMA.

WANTED — TWO ASSISTANT PHYSIcians, A1 graduates; must be single; generous salary; permanent position; internists; one skilled blood chemistry and Wassermann examinations; scientifically equipped ethical sanitarium in middle west; 300 beds; 12 full-time salaried physicians. Add. 5679 B, % AMA.

WANTED—ASSISTANT—GENERAL PRACtice, in industrial town, near large city; recent graduate preferred; single, Protestant; salary $225 per month with maintenance; increase after reasonable period; auto furnished; no mines; Pennsylvania license required; state age, nationality, school and send photo first letter; position to be filled at once. Add. 5810 B, % AMA.

WANTED — AN ASSISTANT PHYSICIAN at a Pennsylvania hospital for mental diseases; salary $1,500 to $1,800; house for married physician. Add. 6105 B, % AMA.

WANTED — A YOUNG MAN AS ASSIStant in hospital for the insane in western Pennsylvania; single; graduate of Class A medical school. Add. 6113 B, % AMA.

WANTED — ONE MALE AND ONE FEmale physician, preferably single, who have just finished internship for one year by manufacturing company in Ohio; salary $225 per month; must be graduate of Class A school, with one year's internship in recognized hospital, preferably with rotating service; must have Ohio license; not over 35 years of age; state age, height, weight, race, nativity, education and experience; only those whose letters are considered will be answered. Add. 6107 B, % AMA.

WANTED — FOUR RESIDENT PHYSIcians, graduates of Class A schools; the service is for one year and covers medicine, surgery, obstetrics and psychiatry; salary $60 per month and maintenance. Apply Superintendent, Gallinger Municipal Hospital, Washington, D. C.★ B

WANTED — IN A MIDWEST HOSPITAL for the insane an assistant superintendent; single; at least 3 years' experience in psychiatry; $2,200 and maintenance; references in first letter. Add. 6094 B, % AMA.

WANTED—WOMAN PHYSICIAN AS ASsistant in ear, nose and throat practice; city of 100,000 in middle west; send particulars regarding education, training; also salary expected in first letter. Add. 6100 B, % AMA.

WANTED — ASSISTANT PHYSICIAN under 35 years of age for mine practice; single; Gentile; good habits; registered in Pennsylvania; salary $200 per month; room furnished. Add. 6092 B, % AMA.

WANTED—PATHOLOGIST AND ROENTgenologist; must be experienced, capable; M.D. preferred; standardized 100-bed hospital; state salary expected. Add. 6017 B, % AMA.

WANTED—AN ASSISTANT IN A SMALL western town who has surgical ability and some experience; must have A1 references; will pay $250 per month first year and partnership at end of that time if agreeable to both; give full particulars and description of self in first letter. Add. 6040 B, % AMA.

WANTED — ASSISTANT PHYSICIAN, July 1, in tuberculosis sanatorium near large eastern city; single man only; recent graduate with hospital experience preferred; salary $1,500 with full maintenance; wonderful opportunity for the right man. Add. 6018 B, % AMA.

(Continued on page 24)

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PURE wholesome fruit juice—valuable in sickness, in convalescence, in health! Welch's Grape Juice has been famous more than fifty years for its purity and uniform goodness. Made of choice ripe Concord grapes.

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(Tonics and Sedatives Continued)

dazzled by the splendor of such a wit, since it is an stupendous as well as a unique singularity to make use of, and be armed with, such aphorisms to ask only for two toilets for the school.

Please be advised of the enthusiasm and devotion which the undersigned professes to all those who rightly possess literary knack; and, recognizing, accordingly, your peerless literary endowment and the portent and geniality in which you indulge even in the office letters of the government, the undersigned would feel belittled not to grant such a request termed in glowing and peculiar English expressions.

The undersigned has been and still sees the necessity of furnishing 2 pails for use at the school, and this matter will therefore be taken up with the Municipal Council for consideration at its next session, with the understanding, however, that the school will construct a closet building wherein such pails will be placed.

—◈—

JUST A LITTLE BLUE

She gently rocked the baby
In its cradle, to and fro;
She sang an old-time lullaby,
The kind our mothers know.
The baby gazed at her askance,
Within its eye a tear;
"Why don't you cut that stuff," it said,
"And jazz it, mother dear?"

—*Brown Jug.*

—◈—

He Tells the World!

Harrisburg (Ill.) Register

To whom this may concern: I, John Cathcart, went through an operation for ulcers of the stomach and enlargement of the liver and have been a sufferer for 28 years. I have been to several specialists and got no relief until I went to Dr. Lightner, one of Harrisburg's best surgeons. This is true. You can see me at West Elm street.

—◈—

TEACHING HYGIENE

BILLY *(age 6).*—"I was!"
FRANCES *(age 8).*—"You were not!"
BILLY.—"I was too!"
FRANCES.—"You were not!"
MOTHER.—"What are you children arguing about?"
BILLY.—"Mother, wasn't I an egg before Frances was born?"

S., Oregon.

—◈—

Lots of Expenses at Home

Ad in San Luis Obispo (Calif.) Obispan

WANTED—Young man will drive car east for expenses. Box 37, Obispan Office.

—◈—

A Wonderful Thrill

Seattle Star

WOMAN WHOM LAFAYETTE KILLED IS STILL ALIVE

SHE TELLS WHAT A THRILL SHE GOT FROM IT

PARIS, March 29.—There is a woman living in France today who was kissed by Lafayette.

—◈—

A GENTLEMAN OF LEISURE

Census Taker—What's your husband's trade, profession or business?

Mrs. Mokeby (who conducts a one-woman laundry)—He's a gen'l'man, mah man is.

"Ah! Living on his money?"

"Livin' on his honey!"—*Pickup.*

—◈—

FROM THE DOCTOR'S CORRESPONDENCE

Letter received by a Wisconsin colleague

Dr. you statement receive. thank you doc pleas be kin wait o wile I was gonto mak fu doll on my spring incom abought 70 but big brud sow with a pigs died. so doc I run in behin. soon I get a fu doll I sen' him. Cordilly

C. D——

(Continued from page 22)

WANTED—RESIDENT PHYSICIAN FOR the Physicians and Surgeons Hospital, Wilmington, Del.; a 75-bed capacity; vacancy June 15; state qualifications and salary expected. Ira Burns, M.D., Secretary Medical Board. B

WANTED — IN THE DEPARTMENT OF Pathology, two men who have had general laboratory experience; those with teaching experience preferred, as pathologists to the two teaching hospitals and as instructors in the School of Medicine, Emory University; salary $3,000 each, and part maintenance; reference required. Add. Dr. W. S. Elkin, 98 N. Butler St., Atlanta, Ga. B

WANTED — PATHOLOGIST FOR GENeral hospital; must have extensive experience in all branches of pathology to take complete charge of a modernly equipped laboratory; state experience and salary desired. Add. Superintendent, P. O. Station K, Box 42, Brooklyn, N. Y. B

WANTED—ASSISTANT, SINGLE, PROTestant; contract practice, central Pennsylvania; Pennsylvania license required; salary $200 per month to begin with; all modern conveniences and electrical equipment, including x-ray, cystoscopic and wall plate. Add. 6083 B, % AMA.

WANTED—AN EXPERIENCED PATHOLogist; must be a medical man. Apply State Hospital No. 1, Fulton, Mo. B

WANTED — ASSISTANT PHYSICIANS, men and women; salary $1,500 per year and maintenance; must be single, have good general education and hospital experience; also roentgenologist; give age, education, medical college, hospital and other qualifications; date can accept appointment, including references and a copy of a recent photograph in application. Add. Superintendent, The New Jersey State Village for Epileptics, Skillman, N. J. B

PHYSICIANS WANTED

WANTED—SURGEON TO TAKE OVER modern building, attractive lawn, trees; suitable for 20-bed hospital; county seat, 3,500; 10,000 tributary; richest farming region southern Idaho; no hospital, wants one badly; no active surgeon, 4 M.D.'s; unusual opportunity; $6,000 will handle. Add. Dr. F. B. Smith, Nampa, Idaho. C

WANTED—MARRIED MAN OF ABILITY, good habits, to take over my practice in a northern Ohio town of 3,000; only two of us under 50 years and one other under 60; exceptional opportunity, as right man will be well introduced; am specializng. Add. 6080 C, % AMA.

WANTED — A1 MAN TO DO GENERAL practice with group in middle west; will make guarantee; give full particulars in first letter. Add. 6171 C, % AMA.

WANTED — TWO MALE PHYSICIANS, September 24, by health clinic responsible for health of 5,000 men and women; general examining, advising, dispensary treatment; main efforts along preventive lines; particularly need men with orthopedic or psychiatric training; location in university town of 20,000, New York state; salary to begin, $2,000; $2,250 for nine month year; send references and recent photograph with application. Add. 6169 C, % AMA.

WANTED—PHYSICIAN, GENERAL PRACtice; mining company, northern Michigan; single, recent graduate; some laboratory work; salary $2,400; chance for outside work; must room in hospital; state age and references. Add. C. and H. Hospital, Calumet, Mich. C

WANTED—PHYSICIAN—GOOD OPENING for a doctor in a fine prosperous agricultural county. For information communicate with H. Bernard, Schenevus, Otsego County, N. Y. C

WANTED—DOCTOR—ONE OF BEST LOcations in southwest Missouri goes to purchaser of 3-room office and 8-room residence, priced to sell; easy terms; good roads, good churches and schools; good collections; investigate; I am going to California. Add. 6065 C, % AMA.

WANTED — TWO RECENT GRADUATE physicians; man and woman; Northern Indiana Hospital for Insane. Add. Dr. Samuel Dodds, Medical Superintendent, Logansport, Ind. C

(Continued on page 26)

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TOURING CAR

If there is one word which will sum up the average owner's impression of Dodge Brothers Touring Car, that word is *dependable.*

If there is a word to express the quality which Dodge Brothers have striven, above all else, to build into the Touring Car, it is—again—*dependable.*

Indeed, it is not too much to say that the word *dependable* has come to be definitely associated, the nation over, with Dodge Brothers Touring Car—and the other vehicles bearing their name.

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D. B.

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Short courses in x-ray shadow interpretation in thoracic, abdominal, bone and joint lesions will be available during the summer months to a limited number of graduates in medicine. These courses are designed for the busy physician and surgeon who wishes to increase his knowledge of the x-ray shadow values as an aid to him in diagnosis in his daily practice. (Roentgen therapy and X-ray technique not included.) *Write for particulars.*
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Names of Classified Advertisers using key number cannot be given out by THE JOURNAL. Kindly do not ask for them.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

HELIOTHERAPY. By A. Rollier, M.D., Medical Director of the Institutions for Heliotherapy, Leysin. With the Collaboration of A. Rosselet, D.Sc., M.D., Lecturer on Physicotherapy, Geneva University, H. J. Schmid, M.D., Radiologist at Rollier's Institutions, Leysin, and E. Amstad, M.D., Surgeon at Rollier's Institutions, Leysin. With forewords by Sir John Henry Gauvain, M.A., M.D., M.R.C.S., and Caleb Williams Saleeby, M.D., F.R.S. Cloth. Price, $8. Pp. 288, with illustrations. New York: Oxford University Press, 1923.

DISEASES OF THE HEART. By John Cowan, D.Sc., M.D., F.R.F.P.S., Physician to the Royal Infirmary, Glasgow, and W. T. Ritchie, O.B.E., M.D., F.R.C.P.E., Physician to the Ministry of Pensions Hospital, Edinburgh. With a chapter on The Ocular Manifestations of Arterial Disease, by Arthur J. Ballantyne, M.D., F.R.F.P.S., Lecturer on Ophthalmology, University of Glasgow. Second edition. Cloth. Price, $10, net. Pp. 605, with 321 illustrations. New York: Longmans, Green & Co., 1922.

NON-SURGICAL DRAINAGE OF THE GALL TRACT. A Treatise Concerned With the Diagnosis and Treatment of Certain Diseases of the Biliary and Allied Systems, In Their Relation to Gastro-Enterology and General Clinical Medicine. By B. B. Vincent Lyon, A.B., M.D., Chief of Clinic, Gastro-Intestinal Department of the Jefferson Hospital. Cloth. Price, $10. Pp. 640, with 185 illustrations. Philadelphia: Lea & Febiger, 1923.

THE URETHRA AND THE URETHROSCOPE. A Manual of Practical Urethroscopy. By F. Carminow Doble, M.R.C.S., L.R.C.P., Officer in Charge Gonorrhœal Division, Military Hospital, Rochester Row. With a foreword by Major A. T. Frost, O.B.E., R.A.M.C., Officer Commanding Military Hospital, Rochester Row. Cloth. Price, $3.40. Pp. 120, with illustrations. New York: Oxford University Press, 1923.

TRAITÉ PRATIQUE DE CYSTOSCOPIE ET DE CATHÉTÉRISME URÉTÉRAL. Par G. Marion, Professeur agrégé à la Faculté, Chirurgien de l'Hôpital Lariboisière, and M. Heitz-Boyer, Professeur agrégé de Chirurgie des voies urinaires à la Faculté, Chirurgien de l'Hôpital St.-Louis. Second edition. Cloth. Price, 100 francs, net. Pp. 480, with illustrations. Paris: Masson et Cie, 1923.

LES GLANDES ENDOCRINES ET LEUR VALEUR FONCTIONNELLE. Méthodes d'Exploration et de Diagnostic. Par Jacques Parisot, Prof. agr., chargé du cours de Pathologie générale et expérimentale à la Faculté de Nancy, et Gabriel Richard, Ancien interne des Hôpitaux de Nancy. Paper. Price, 15 francs. Pp. 247, with illustrations. Paris: Gaston Doin, 1923.

THE CHEMISTRY OF UREA. The Theory of Its Constitution, and of the Origin and Mode of Its Formation in Living Organisms. By Emil A. Werner, M.A., Sc.D., F.I.C., Professor of Applied Chemistry in the University of Dublin. Boards. Price, $4.75, net. Pp. 212. New York: Longmans, Green & Co., 1923.

DISEASES OF THE GUMS AND ORAL MUCOUS MEMBRANE. By Sir Kenneth Goadby, K.B.E., M.R.C.S., L.R.C.P., Lecturer on Bacteriology of the Mouth, Dental Department, University College Hospital. Cloth. Price, $14. Pp. 383, with illustrations. New York: Oxford University Press, 1923.

PRACTICAL LOCAL ANESTHESIA AND ITS SURGICAL TECHNIC. By Robert Emmett Farr, M.D., F.A.C.S. Cloth. Price, $8. Pp. 529, with 219 illustrations. Philadelphia: Lea & Febiger, 1923.

TRANSACTIONS OF THE TWENTY-THIRD ANNUAL SESSION OF THE AMERICAN PROCTOLOGIC SOCIETY. Cloth. Price, $3. Pp. 121, with illustrations. New York: Paul B. Hoeber, 1923.

(Continued on page 26)

(Continued from page 24)

WANTED—AT ONCE — PHYSICIAN TO locate in hustling town; nothing to buy; rich farming country; good fees. Write Aredale Savings Bank, Aredale, Iowa. C

WANTED — THE VILLAGE OF INMAN, Neb., wants a resident physician; good opening. Write J. S. Jackson, Secretary Inman Commercial Club. C

WANTED — IN A LARGE INSTITUTION for the insane in middle west, a woman physician; unmarried; kindly give full credentials in first reply. Add. 6046 C, % AMA.

WANTED—CLASS A PHYSICIANS, PATHologists for salaried positions; internists, assistants, surgeons, hospitals, contract, industrial, group, appointments; if you desire a permanent position anywhere send for application form. Aznoe's National Physicians' Exchange, 30 N. Michigan. Chicago. C

WANTED — MEDICAL DIRECTOR AND teacher for negro medical college hospital; young medical man, Class A college graduate; must have had at least one year in good hospital; internist and skilled diagnostician; graduate of Pennsylvania preferred, and must be sympathetic with negro education; state minimum salary expected, religion, married or single, teaching experience, etc. Add. 6053 C, % AMA.

WANTED — SCHOOL PHYSICIAN FOR northern Minnesota; graduate Class A school and qualified to do eye and ear work; state age, experience and salary expected. Add. 6064 C, % AMA.

INTERNS WANTED

Advertisements marked with a star (★) are of hospitals on the list of those approved for intern training by the Council on Medical Education & Hospitals of the A. M. A.

WANTED—INTERNS FOR 100-BED GENeral hospital; one year service; allowance $25 per month; bonus of $100 and diploma at expiration of service; largest industrial city in vicinity of New York City; active dispensary service. Apply to Superintendent, Bayonne Hospital and Dispensary, 12 E. 30th St., Bayonne, N. J.★ D

WANTED — INTERN, 175-BED GENERAL hospital, chronic diseases; $75 per month and maintenance. Send qualifications with applications at once to Dr. W. J. Monaghan, Medical Superintendent, Hudson County Hospital, Secaucus, N. J. D

WANTED—INTERNS FOR ONE YEAR OR six months, beginning July 1, 1923; service rotating medical, surgical and orthopedic. The Children's Hospital of Washington, D. C. Apply M. M. Gibson, Supt.★ D

WANTED — AN INTERN FOR A HIGH class small hospital in West Virginia; $75 a month and maintenance; may increase later; give all details in first letter. Add. 6138 D, % AMA.

WANTED—TWO INTERNS FOR JULY 1 and two for September 1, to complete house staff of 12; 200-bed general charity hospital, outpatient department, laboratories; well organized staff and training school; service rotating surgery, medicine and all specialties; $25 monthly and bonus of $100 on completion of term of service, which begins July 1. Add. W. P. Morrill, M.D., Shreveport Charity Hospital, Shreveport, La.★ D

WANTED—INTERNS, UNMARRIED—ROtating mixed service; $35 first year, $45 second year, with full maintenance; bed capacity until July, 1923, 120 beds; then enlarged building 250 beds; service to begin July 1, 1923. Apply to Superintendent, Vassar Hospital, Poughkeepsie, N. Y.★ D

WANTED—TWO INTERNS FOR 250-BED county hospital; 12 months' service; outpatient department; allowance $50 monthly and maintenance. Add. Dr. H. E. Morrison, Med. Supt., Sacramento County Hospital, Box 600, Sacramento, Calif. D

LOCUM TENENS WANTED

WANTED — M.D. TO RELIEVE EXAMINing doctor for two weeks beginning as soon as possible; salary $50 per week; no night work. Add. 6168 F, % AMA.

WANTED — LOCUM TENENS FOR A period of four to six months, beginning about September 1; Kansas wheat belt; unopposed practice, $3,000 to $5,000; probably for sale later. Add. 6154 F, % AMA.

LOCUM TENENS WORK WANTED

WANTED — LOCUM TENENS WORK— Graduate of reputable eye, ear, nose and throat hospital wants to take physician's practice through July, August and September; best of references given. Add. 6148 FF, % AMA.

LABORATORY TECHNICIANS WANTED

WANTED—EXPERIENCED X-RAY TECHnician for a diagnostic clinic in southern city of 300,000; only women need apply; must have highest references and photograph must accompany application; state salary. Add. 6150 V, % AMA.

WANTED — X-RAY TECHNICIAN, FEmale; 200-bed hospital, New York City; salary moderate to start, $100 month; excellent chance for advancement; plate work and records; no therapy. Add. 6141 V, % AMA.

WANTED — LABORATORY TECHNICIAN capable of doing ordinary city laboratory work except Wassermanns. Apply to Chairman, Board of Health, New Britain, Conn. V

WANTED—X-RAY TECHNICIAN—GRADuate nurse required with knowledge of bookkeeping and stenography, as permanent assistant and office executive for dermatologist; state experience in x-ray, x-ray therapy and physiotherapy, including special course; give age, photograph, literary education, dependents, health, eyes; must be willing to work long hours; salary $150 per month to person strictly conforming to above requirements. Add. 6009 V, % AMA.

WANTED—THOROUGHLY TRAINED laboratory technicians and x-ray operators; male and female; for positions in all parts of the country; must be competent and well educated; A1 references required; correspondence solicited. Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. V

LOCATIONS WANTED

WANTED—INDUSTRIAL OR CONTRACT practice in Colorado, New Mexico, Arizona, Utah or Mexico; graduate Class A school; best of references given. Add. 5764 E, % AMA.

WANTED—LOCATION — WILL TRADE river bottom cotton farm in Clay County, Ark., for good residence (modern), office and equipment in small town in western Missouri, where roads are good and people prosperous, or trade for fruit farm southern Florida. Add. 6147 E, % AMA.

WANTED—INDIANA OR ILLINOIS LOcation; prefer town of 1,000 or over; competition moderate; must have good roads; use car year round; would buy property priced reasonable. Lock Box 7, Commiskey, Ind. E

WANTED — BY EXPERIENCED WOMAN physician, oculist and aurist, assistantship, location or association with group. Add. 6024 E, % AMA.

WANTED — MEDICAL PRACTICE BY physician in modern town; partnership considered; also in same town drug store or opportunity to open one by pharmacist; central states preferred; best references; give details. Add. 6123 E, % AMA.

WANTED — LOCATION IN CITY OF 20,000 or more; surgeon, 32, able, energetic; Gentile; graduate 1916 A school; 2 years' internship; 2 years' work in large clinic; last 3 years general and abdominal surgery; prefer ethical group; will buy practice, accept partnership or position. Add. 6002 E, % AMA.

WANTED—LOCATION IN CALIFORNIA where physician is needed; any part of state; small investment considered. Add. 6029 E, % AMA.

WANTED—THE NAME OF EVERY TOWN in the United States without a physician, and the name of every doctor with an established practice for sale. Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. E

(*Continued on next page*)

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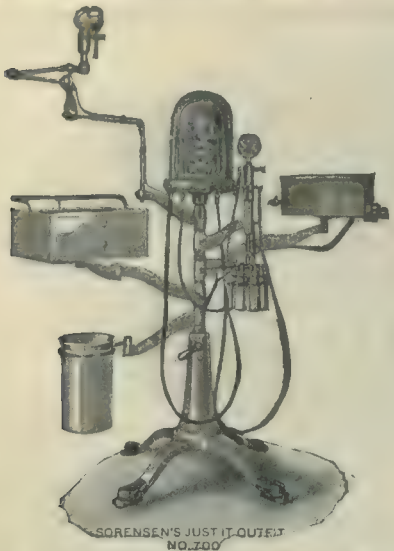
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(Books Received—Continued)

SENILE CATARACT: METHODS OF OPERATING. By W. A. Fisher, M.D., F.A.C.S., Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College. With the Collaboration of Prof. E. Fuchs, Prof. I. Barraquer, Lt. Col. Henry Smith, Dr. H. T. Holland, and Dr. John Westley Wright. Cloth. Price, $2.50. Pp. 256, with 160 illustrations. Chicago: Chicago Eye, Ear, Nose and Throat College, 1923.

THE COLLOIDAL STATE IN ITS MEDICAL AND PHYSIOLOGICAL ASPECTS. By Sir William M. Bayliss, F.R.S., M.A., D.Sc., Professor of General Physiology in University College, London. Cloth. Price, $2.15. Pp. 95, with illustrations. New York: Oxford University Press, 1923.

THE MEDICINE MAN. A Sociological Study of the Character and Evolution of Shamanism. By John Lee Maddox, Ph.D. With a foreword by Professor A. G. Keller. Cloth. Price, $2.25. Pp. 330, with illustrations. New York: The Macmillan Company, 1923.

HÆMATOLOGY IN GENERAL PRACTICE. By A. Knyvett Gordon, M.B., B.C., B.A., Medical Superintendent of the Virol Pathological Research Laboratories. Cloth. Price, $1.75, net. Pp. 100, with 5 illustrations. New York: William Wood & Co., 1923.

WAR BLINDNESS AT ST. DUNSTAN'S. By Sir Arnold Lawson, K.B.E., M.D., F.R.C.S., Senior Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery, Middlesex Hospital. Cloth. Price, $2.50. Pp. 148. New York: Oxford University Press, 1922.

LEHRBUCH DER UROLOGIE MIT EINSCHLUSS DER MÄNNLICHEN SEXUALERKRANKUNGEN. Von Dr. Leopold Casper, a.ö. Professor a. d. Universität Berlin. Fourth edition. Paper. Pp. 632, with 227 illustrations. Berlin: Urban & Schwarzenberg, 1923.

THE PRE-SCHOOL CHILD FROM THE STANDPOINT OF PUBLIC HYGIENE AND EDUCATION. By Arnold Gesell, Ph.D., M.D., Director of Yale Psycho-Clinic, Yale University. Cloth. Price, $1.90. Pp. 264. Boston: Houghton Mifflin Company, 1923.

EXPLORATION CLINIQUE ET DIAGNOSTIC CHIRURGICAL. Par Félix Lejars, Professeur de Clinique Chirurgicale a la Faculté de Médecine de Paris. Cloth. Price, 60 francs. Pp. 778, with 907 illustrations. Paris: Masson et Cie, 1923.

CHILD LABOR AND THE WORK OF MOTHERS IN THE BEET FIELDS OF COLORADO AND MICHIGAN. Children's Bureau, Publication No. 115. Price, 20 cents. Pp. 122, with 11 illustrations. Washington: Government Printing Office, 1923.

LEITFADEN FÜR DIE KLINISCH-BAKTERIOLOGISCHEN KULTURMETHODEN. Von Dr. Hugo Schottmüller, Professor und Direktor der medizinischen Poliklinik der Universität Hamburg. Paper. Pp. 96. Berlin: Urban & Schwarzenberg, 1923.

CHOLERA AND ITS MODERN TREATMENT (FOR PRACTITIONERS AND STUDENTS). By Dhirendra Nath Banerjee, M.B. With a foreword by Sir Leonard Rogers, C.I.E., I.M.S. Cloth. Pp. 59. Calcutta: Butterworth & Co., 1921.

AN INDEX TO GENERAL PRACTICE. By A. Campbell Stark, M.B., B.S., L.S.A., Exhibitioner and Gold Medallist of the University of London. Cloth. Price, $2, net. Pp. 181. New York: William Wood & Co., 1923.

A SYNOPSIS OF MEDICINE. By Henry Letheby Tidy, M.A., M.D., B.Ch., Assistant Physician to St. Thomas's Hospital. Third edition. Cloth. Price, $6. Pp. 985. New York: William Wood & Co., 1923.

DUFF HOUSE PAPERS. Edited by Edmund I. Spriggs, M.D., F.R.C.P. Volume One. Cloth. Price, $9.50. Pp. 387, with 191 illustrations. New York: Oxford University Press, 1923.

COLLECTED PAPERS FROM THE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE. Volume I, 1921. Cloth. Price, $12. Pp. 1079, with 347 illustrations. St. Louis: C. V. Mosby Company, 1923.

(Continued from preceding page)

NURSES & DIETITIANS WANTED

WANTED—REGISTERED NURSE AS SUperintendent of a 20-bed hospital; location central Kansas; salary $100 per month with increase as ability is demonstrated; board, room, laundry, etc.; state age, place of training, year of graduation, experience, religion, reference, etc. Add. 6142 T, % AMA.

WANTED—SUPERINTENDENT OF nurses, assistant superintendents, surgical, general duty, instructresses, laboratory technicians, dietitians desiring hospital positions anywhere in United States, write for free book. Aznoe's Central Registry for Nurses, 30 N. Michigan, Chicago. T

NURSES AND DIETITIANS' LOCATIONS WANTED

WANTED—PHYSICIAN'S WIDOW, AGED 48, congenial and obliging, desires position as dietitian or housekeeper in hospital, sanitarium or physician's home where young daughter would be permitted and where kindness would be appreciated. Add. 6165 W, % AMA.

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PARTNERSHIP WANTED

WANTED — PARTNERSHIP BY OBSTETrician, of excellent training and experience; Class A school; aged 43; married; have taught clinical obstetrics; consider busy practitioner, group practice or any high class proposition. Add. 6167 H, % AMA.

WANTED—PARTNERSHIP — INTERNIST of ability desires association with group, hospital, surgeon or internist; competent in physical, laboratory and x-ray diagnosis; Protestant, married, aged 40; experienced in general, special and group practice; capable writer and speaker. Add. 6062 H, % AMA.

GROUP PRACTICE

GROUP ORGANIZING IN MIDDLE WESTern town of 30,000, offers opportunity to specialists; eye, ear, nose and throat; internist; pediatrist and x-ray; real workers preferred; send photo, nationality, experience, age, school, etc. Add. 6008, % AMA.

SITUATIONS WANTED

WANTED—POSITION — YOUNG LADY, college graduate, one year postgraduate work, desires position as laboratory technician; knowledge of bacteriology, serology, clinical pathology, histology, blood and urine chemistry, Wassermanns. Add. 5898 I, % AMA.

WANTED—SITUATION, INDUSTRIAL, railroad insurance, contract, assistant, superintendent; 40 years old; been in active practice since 1909; can furnish best of references. Add. 6136 I, % AMA.

WANTED — LABORATORY POSITION, expert laboratory technician, can do any kind of laboratory work; male; 28 years of age; college graduate; five years' experience. Add. 6152 I, % AMA.

WANTED — POSITION AS CHIEF RESIdent in tuberculosis sanatorium; young man; experienced; do artificial pneumothorax, laryngeal and x-ray work; references; prefer west. Add. 6153 I, % AMA.

WANTED — EXPERIENCED BACTERIOLogist wants laboratory position; A.B. degree; research; food and water analyses, tissue; blood and urine analyses, including blood chemistry, Wassermanns, etc., and any other routine laboratory work; references. Add. 6164 I, % AMA.

WANTED — SITUATION AS CLINICAL laboratory and x-ray technician; also registered pharmacist; have had full charge of 3 departments for 4 years. Add. 6162 I, % AMA.

WANTED—SITUATION — DO GENERAL practice; unmarried; aged 46; well referenced; good appearance, habits, etc.; registered several states; ready at once. Add. 6166 I, % AMA.

WANTED—UROLOGIST AND ROENTGENologist desires location; hospital or group connections preferred; this adv. appears but once. Add. 6160 I, % AMA.

WANTED — SITUATION — EYE, EAR, nose and throat, preferably eye, and connection with clinic; finishing course leading to degree doctor ophthalmology; aged 35; single; first-class training, references and appearance; go anywhere. Add. Doctor, % Elks Club, Denver, Colo. I

WANTED — INTERNSHIP UNTIL OCTOber 1 by eye, ear, nose and throat graduate. Add. 6149 I, % AMA.

WANTED — EYE, EAR, NOSE AND throat man, competent, desires position as assistant, associate or in group; have had excellent training in above specialties as resident in hospital; will consider good location. Add. 6028 I, % AMA.

WANTED — GRADUATE REGISTERED nurse, 29 years of age, wishes x-ray technician position; 2 years' x-ray experience; also postgraduate work; may consider combining x-ray with some other hospital work; best of references. Add. 6130 I, % AMA.

WANTED—POSITION IN THE LABORAtory doing all kinds of work; histoclinicopathology, postmortem, blood chemistry, bacteriology, serology; graduated foreign medical college. Add. 6125 I, % AMA.

WANTED — ASSISTANTSHIP TO SURgeon, contract practice or surgical residency; M.D., Class A university; 3 years' surgical internship, Bellevue Hospital; one year senior resident surgeon to large New York hospital; formerly associated with well-known New York surgeon; wide experience in cancer and plastic surgery; aged 32, single; references. Add. 6104 I, % AMA.

WANTED—SUPERINTENDENT OF health; physician of wide experience wants position with well organized department; long executive training; expert in contagious diseases; salary less an object than freedom from political interference; available about August 1. Add. 6097 I, % AMA.

WANTED — YOUNG WOMAN LABORAtory technician, single; 4 years' experience, both clinical and research, desires to go abroad as technician; would be interested in an expedition; available August 20; best references. Add. 6034 I, % AMA.

WANTED — BY WOMAN PHYSICIAN, Class A graduate, fine institutional experience, desires college or school work, or would consider hospital position; considerable experience among girls; excellent references; please give all details first letter. Add. 6050 I, % AMA.

WANTED — MANAGING SUPERINTENdent of hospital or insane institution, with construction experience desires change. Add. 6071 I, % AMA.

WANTED—WOMAN PHYSICIAN DESIRES institutional or industrial position; Class A graduate; competent; have had experience in tuberculosis work. Add. 6077 I, % AMA.

WANTED—POSITIONS—CLASS A PHYSIcians are registered with us from all parts of United States for salaried positions anywhere; we have candidates whose references, moral and medical standings have been carefully investigated; open for ethical appointments; no charge for our service. Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. I

WANTED — ASSISTANTSHIP TO FIRSTclass surgeon by Class A man; intern one year; general practice 18 years; surgeon to small hospital past 10 years; would consider residence physician in surgical hospital. Add. 6014 I, % AMA.

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(*Continued on next page*)

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FOR SALE—CENTRAL ILLINOIS — EStablished practice; wealthy farming community surrounding; oiled roads, high school, Protestant churches; competition normal; stock of drugs, office equipment, instruments, etc.; death of physician. Add. 6045 N, % AMA.

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(*Continued on page 32*)



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(Continued from page 30)

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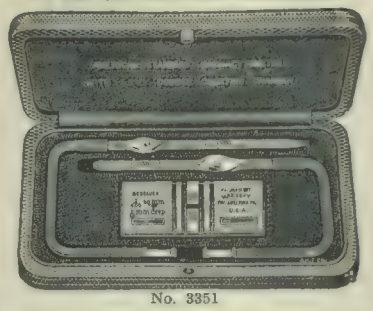
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CORRECTION IN TITLE—THROUGH AN oversight in the advertisement of "The Infant and Young Child," on front cover of June 9 issue of The Journal, the title of one of the authors was incorrectly stated. Dr. Edwin T. Wyman was given as Professor of Pediatrics at Harvard, whereas this should have read "Instructor in Pediatrics," as appears on the title page of the books. Saunders Publishers. GG

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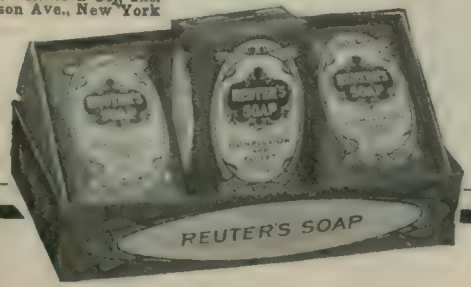
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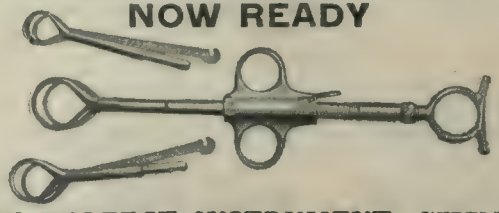


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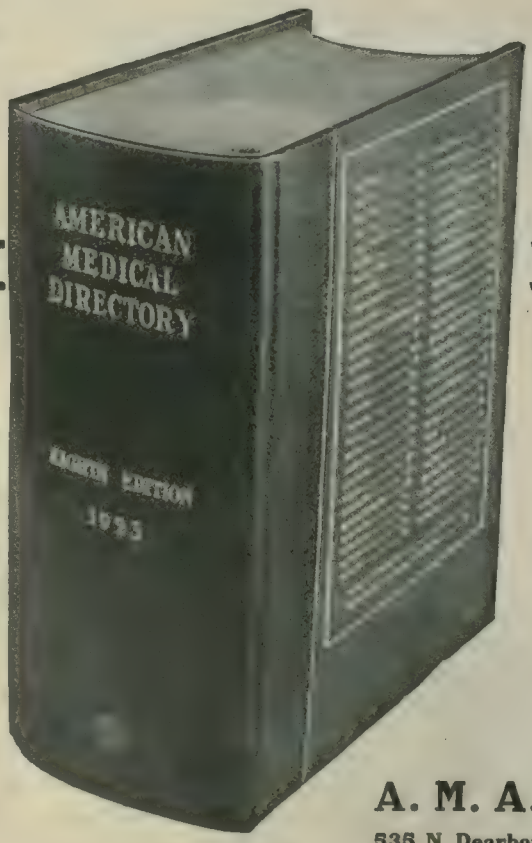
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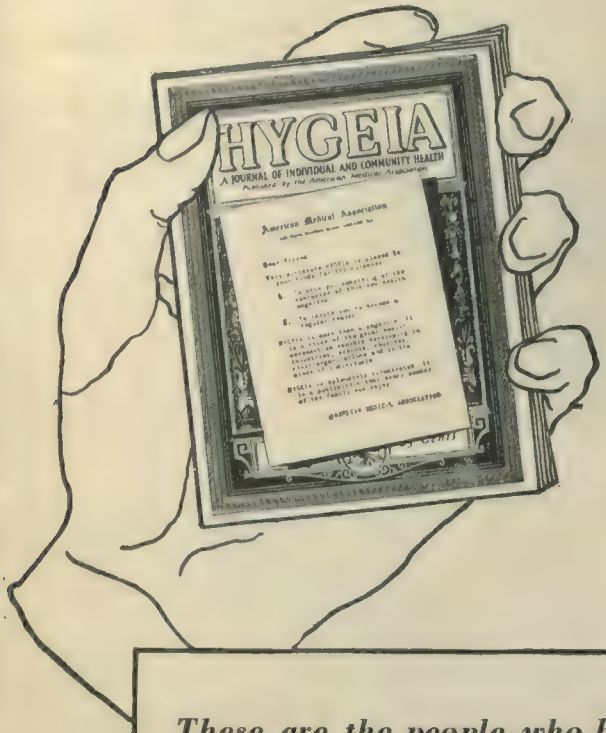
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1:15—2		*Normal Roentgen Anatomy No. 2	*Normal Roentgen Physiology No. 2	*Normal Roentgen Anatomy No. 2	*Physics and Mathematics in Relation to Radiology	
2—3	*Technique X-Ray Courses No. 1 or 4	*Routine Fluroscopy X-Ray Course No. 2 or No. 3 (Daily except Saturday)			‡Fluroscopy	*Technique X-Ray Courses No. 1 or No. 4
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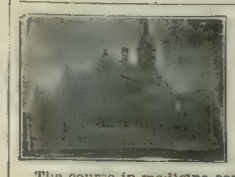
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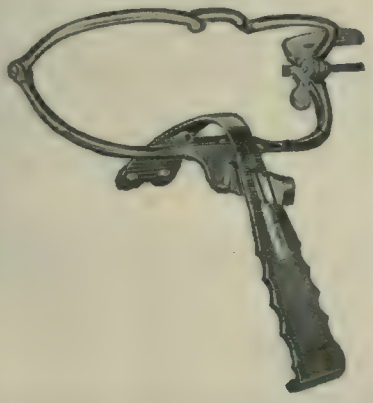
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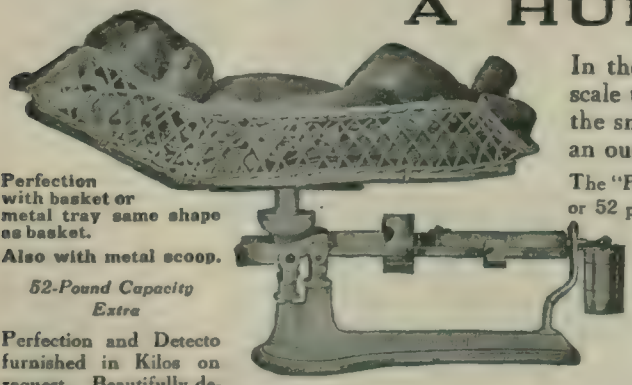
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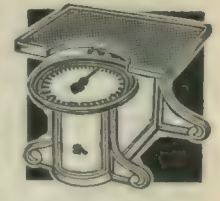
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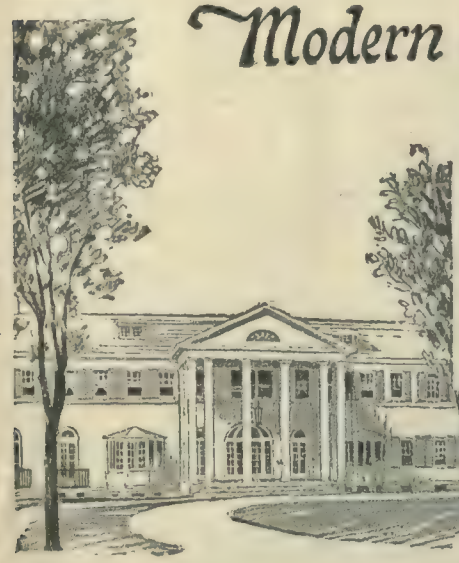


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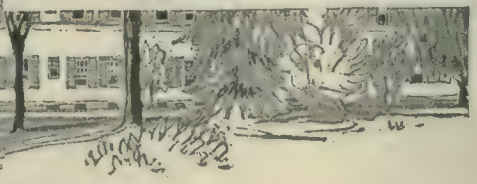
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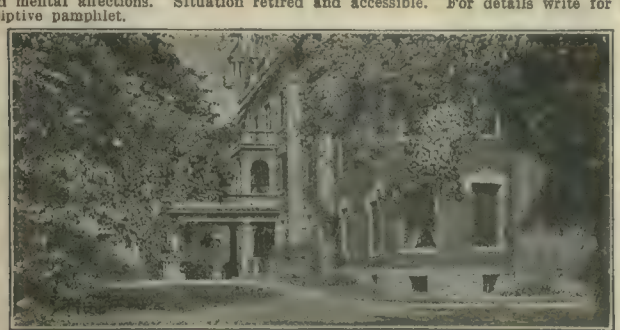
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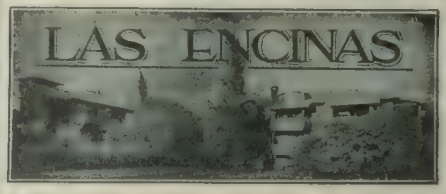
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